

Solutions for Power, Control, Safety & Energy Efficiency

2017
2018



your energy
our expertise

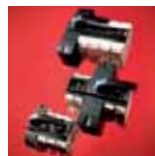


socomec
Innovative Power Solutions

Contents

An independent manufacturer	p. 4
Your energy, our expertise	p. 5
Adapted solutions	p. 6
Expert Services your partner	p. 8
A cutting-edge laboratory	p. 9

A high-quality power supply	p. 10
Webspace at your service	p. 11
Alphabetical index.....	p. 12
References list	p. 778



Load break switches

Load break switches for machine control,
power distribution and photovoltaic applications . . . p. 17



**SIRCO M and
MV**
p. 26



**SIRCO and
SIRCO AC**
p. 44



Fuse protection

Fuses, fuse bases
and fuse combination switches p. 249



FUSERBLOC
p. 254



**FUSOMAT and
SIDERMAT**
combination
p. 316



Transfer switches

Transfer switches and control relays. p. 377



COMO C
p. 384



**SIRCOVER and
SIRCOVER Bypass**
p. 412



Metering, monitoring & power quality

Energy meters, multifunction meters
and supervision software p. 491



DIRIS Digiware
p. 504



TE, TR, TF
sensors
p. 522



Electronic protection

Differential protection, voltage surge protection,
current protection p. 623



RESYS M40R
p. 632



**Core balance transformers
type A**
p. 636



Enclosures & accessories

Components to facilitate
the use of your electrical equipment p. 661



COMBIESTER
p. 664



CADRYS
enclosures
p. 665



Integrated products & solutions

Enclosed protection and switching devices p. 719



**Enclosed
switches**
p. 726



**Safety
enclosures**
p. 734



INOSYS LBS
AC
p. 66



SIDERMAT
p. 94



SIRCO PV
p. 132



INOSYS LBS
DC and PV
p. 150



RM-RMS
p. 324



Fuse bases
p. 332



Industrial fuses
p. 344



Photovoltaic fuses
p. 368



ATyS M
p. 416



ATyS S
p. 432



ATyS
p. 442



Control relays
p. 470



COUNTIS E
p. 530



DIRIS A
p. 552



DIRIS G
p. 604



Software suite
p. 614



SURGYS
type 1/2/3
p. 640



SURGYS
low current
p. 656



CADRYS Delta
modular
p. 666



Busbar supports
p. 676



Mounting rails
and profiles
p. 710



Enclosed
transfer switches
p. 752

IEC/EN 61439
R E A D Y

An independent manufacturer

The benefit of a specialist

3,500 m²
of test platforms

One of the leading
independent power testing
labs in Europe

60,000
on-site interventions
per year

Nearly 400 experts in
commissioning, technical
audit, consultancy and
maintenance

10 %
of turnover invested
in R&D

Always at the cutting-edge
of technology for innovative,
high-quality products



SO innovative!

Since its foundation more than 90 years ago, SOCOMEC continues to design and manufacture its core products in Europe. Notably solutions for its primary mission: the availability, control and safety of low voltage electrical networks.

As an independent manufacturer, the Group is committed to constant innovation to improve the energy performance of electrical installations in infrastructures as well as industrial and commercial sites.

Throughout its history, SOCOMEC has constantly anticipated market changes by developing cutting-edge technologies, providing solutions that are adapted to customer requirements and fully in keeping with international standards.

"Optimising the performance of your system throughout its life cycle" - this is the commitment carried out every day by the SOCOMEC teams around the world, wherever your business is located.

SYD 181 B



Your energy, our expertise



Critical Power

Ensuring the availability and storage of high quality power

With its wide range of continuously evolving products, solutions and services, Socomec are recognised experts in the cutting-edge technologies used for ensuring the highest availability of the electrical power supply to critical facilities and buildings, including:

- static uninterruptible power supplies (UPS) for high-quality power free of distortions

and interruptions occurring on the primary power supply,

- changeover of static, high availability sources for transferring the supply to an operational back-up source,
- permanent monitoring of the electrical facilities to prevent failures and reduce operating losses,
- energy storage for ensuring the proper energy mix of buildings and for stabilisation of the power grid.



© Datadock



Power Control & Safety

Managing power and protecting persons and facilities

Active in the industrial switching market since its foundation in 1922, Socomec is today an undisputed leader in the field of low voltage switchgear, providing expert solutions that ensure:

- isolation and on load breaking for the most demanding applications,
- continuity of the power supply to electrical facilities via manual or automatic changeover switching systems,
- protection of persons and assets via fuse-based and other specialist solutions.



APPL 575A



Energy Efficiency

Managing the energy performance of buildings

Socomec solutions, from current sensors through to a wide choice of innovative scalable software packages are driven by experts in energy performance. They meet the critical requirements of facility managers and operators of commercial, industrial and local authority buildings for:

- measuring energy consumption, identifying sources of excess consumption and raising the awareness of occupants about their impact,
- limiting reactive energy and avoiding the associated tariff penalties,
- using the best available tariffs, checking utility bills and accurately distributing energy billing among consumer entities,
- monitoring and detecting insulation faults.



APPL 571A



Expert Services

Enabling available, safe and efficient energy

Socomec is committed to delivering a wide range of value-added services to ensure the reliability and optimisation of end-users' equipment:

- prevention and service operations to lower the risks and enhance the efficiency of operations,

- measurement and analysis of a wide range of electrical parameters leading to recommendations for improving the site's power quality,
- optimisation of the total cost of ownership and support for a safe transition when migrating from an old to a new generation of equipment.
- consultancy, deployment and training from the project engineering stage through to final procurement.



APPL 760A

Adapted solutions

to meet your energy objectives

SMART BUILDINGS

Reducing your energy bills and energy dependency



DIRIS Digiware multi-circuit measurement system



ENERGY MANAGEMENT software packages



ATyS automatic and remotely operated transfer switch



SUNSYS PCS² energy converter and energy storage system

HEAVY

Controlling and securing your energy



DELPHYS MX UPS



COUNTIS E energy meter and DIRIS A multifunction meter (PMD)

NAVAL SHIPS

Energy conversion in environments with harsh restrictions



SHARYS IP rectifier



NETYS RT-M UPS



UPS and other customised products



SIRCO load break switches

SHOPPING CENTERS

Assuring your business continuity and visitor safety



COUNTIS E energy meter and multi-utility pulse concentrator



ATyS M automatic and remotely operated modular transfer switch



EMERGENCY CPSS, secure power supply for emergency systems



ENERGY MANAGEMENT software packages

PUBLIC DISTRIBUTION AND SMART GRID

Helping you to meet the challenge of energy demand and response



SUNSYS PCS² Power Conversion System and Storage



TIPI low-voltage feeder pillar with DIRIS multi-function meter



Auxiliary unit with ATyS transfer switch



SIRCO and SIDER load break switches



DIRIS Digiware multi-circuit measurement system

RENEWABLE ENERGY

Guaranteeing the performance, security and durability of your photovoltaic facilities



SUNSYS PCS² Power Conversion System and Storage



INOSYS load break switches with tripping function



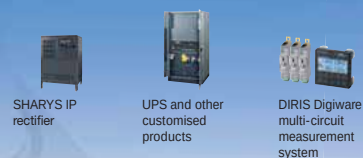
PV string enclosure combiner box

INDUSTRY



POWER PLANTS

Securing the piloting of your high-security installations and installations with seismic constraints



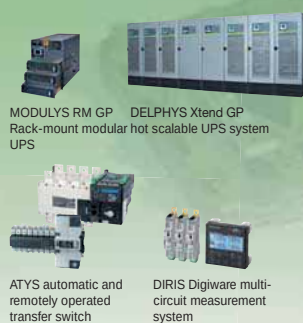
TRANSPORT

Securing the continuity of your installations



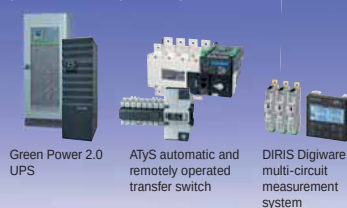
DATA CENTRES

Meeting the challenge of the availability and performance of your energy



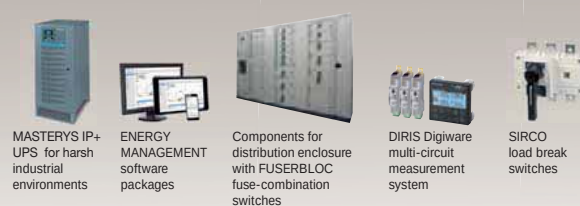
MEDICAL FACILITIES

Assuring patient safety and the energy performance of your hospital



INDUSTRY

Ensuring the competitiveness of your site



Expert Services your partner

enabling available, safe and efficient energy

SOCOMEK is committed to deliver a wide range of value-added services to ensure the availability of your critical installation, the safety of your site operations and the performance optimisation of your low voltage equipment during its life cycle. The expertise and proximity of our specialists are there to ensure the reliability and durability of your equipment.



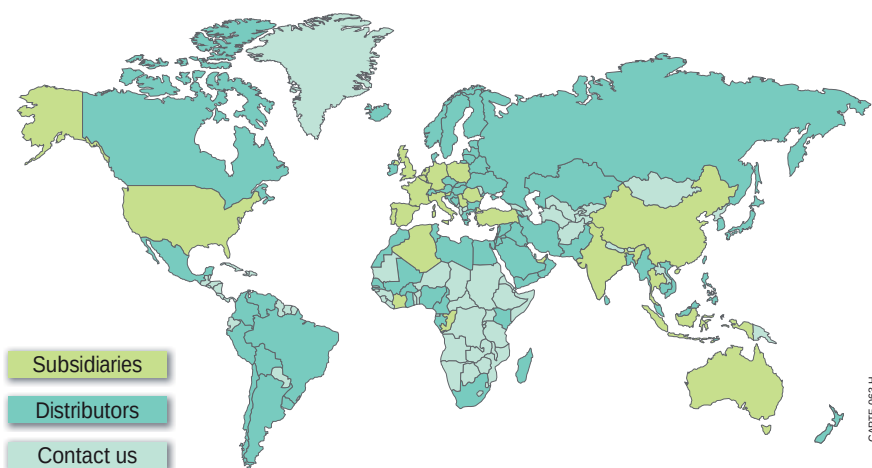
APPLI 724 A

Key figures

More than 370 Socomec experts supported by 175 engineers and technicians from our distributors, drive the solutions to your specific needs.

Our global presence includes:

- 10 branches in France,
- 12 European subsidiaries,
- 8 Asian subsidiaries,
- representatives in 70+ countries.



CARTE 063 H

On-site service management

- 60,000 service operations per year (mainly preventive visits).
- 98% Service Level Agreement compliance rate.



APPLI 571 A

Technical hotline network

- 20+ languages spoken.
- 3 advanced technical support centres.
- 100,000+ incoming calls handled per year.



SITE 588 A

Certified expertise

- 4,500 hours of technical training deployed per year (product, methodology and safety).



CORPO 268 A

A cutting-edge laboratory

the backing of an expert

Created in 1965, SOCOMEC's laboratory brings its expertise to guarantee the reliability and the conformity of our products and solutions.

Since 2015, the laboratory renamed Tesla Lab – Power Testing and Certification in 2015, offers its testing and certification services to all its customers.



Proven expertise

Tesla Lab is an independent laboratory specialised in testing of LV switchgears, components and switchgear assemblies.

4 M€ has been invested since 2011 in this 2000 m² laboratory, where 30 experts guarantee the quality of the performed tests, making the Tesla Lab one of the most modern laboratories in Europe.

Vast range of tests

The laboratory has 100 MVA (I_{cc} 100 kA rms 1 s) short-circuit platform, three 10 kA overload platforms and many other test facilities covering 2000 m² for:

- functional tests,
- mechanical tests: endurance,
- dielectric tests,
- environmental tests: vibrations,
- Ingress Protection (IP),
- temperature rise tests up to 60 °C ambient.

International partnership

The laboratory is recognised by the major certification bodies worldwide: member of ASEFA and LOVAG, it is accredited by COFRAC, UL (CTDP), CSA (shared certification) and DEKRA (WMT).

The partnership with many international certification bodies guarantees the quality and safety requirements in each country.

Implementation of standard IEC / EN 61439

Electrical switchgear manufacturers

IEC / EN 61439 standards define the requirements of "Low voltage switchgear assemblies" as well as the tests necessary to ensure the achievement of the specified levels of performance. The compliance with these standards gives a guarantee of safety and performance to the user of the equipment



An original manufacturer according to IEC / EN 61439 standards

Socomec offers a wide range of original manufacturer solutions complying with IEC 61439 standards.

- FLEXYS and CADRYs cabinet systems designed for distribution panel applications.
- Local switching and equipment cabinets covering requirements in power availability and safety.
- Components for integration.

Tesla Lab accredited by COFRAC

With its world-class testing facilities, the Tesla Lab can perform all of the tests required by IEC / EN 61439 standards for switchgear assemblies

We can therefore help you to:

- define a verification program,
- perform conformity tests,
- issue test reports in order to get certification from third party certification bodies (ASEFA, LOVAG, DEKRA, UL, CSA, COFRAC, ASTA...).

A high-quality power supply

innovative solutions

Critical equipment requires an uninterrupted and continuously available power supply, using energy of the highest quality. Our uninterruptible power supplies (UPS), static transfer systems (STS), energy storage systems and rectifiers comprise the most complete ranges in the world and cover a very wide variety of applications for every sector of activity.



100% availability

High quality energy supply at any moment is strategic in many fields such as telecommunications, data processing or certain industrial processes. It is vital to a number of medical applications. In all these sectors, SOCOMEC has over 45 years of experience at your disposal.

Customised solutions

Underpinned by significant R&D resources, our products are constantly evolving to adapt to the needs of our customers.

Our products have the approval of some of the most stringently demanding users: telecom companies, nuclear industry, naval industry, and many more.

Recognised expertise

SOCOMECS UPS solutions (inverters) have received the most prestigious awards in the industry; testimony to the way we listen to the needs of our users:

- Award for excellence in customer service (2004),
- Award for product innovation (2006),
- Award for Europe's best product range strategy (UPS) (2009),
- Award for product innovation (2011),
- Award for excellence in product differentiation (2013)
- Award for European company of the year in the UPS sector (2014)
- Award for European technological leadership (UPS) (2015)

Continuous innovation

Embedded in the DNA of SOCOMEC, innovation is a challenge that itself undergoes constant reinvention:

- First French manufacturer to offer static power supplies (1968)
- First UPS to use PWM technology (1980)
- First high-performance range of UPS with IGBT technology (1996)
- First modular UPS, with scalable and redundant architecture (2001)
- First manufacturer to integrate hybrid components (2001)
- First 200-kVA UPS with IGBT rectifier (2003)
- New battery charging design (2004)
- Dynamic energy storage system: the flywheel (2006)
- First UPS with 96% efficiency in online double conversion mode (2008)
- Most compact STS with 19" hot-swappable rack design (2009)
- Most compact 900-kVA UPS (2010)
- First complete UPS range (10-2400 KW/ kVA) with triple-tier technology, 96% efficiency and an output power factor of 1 (2012)
- "Forever Young" design for modular UPS (2014)

Always attentive to customer needs

With our extensive sales and after-sales network, we are always there for you. Our clients are happy with the quality of our products and their availability and our commitment to their needs.

Keeping on track with Socomec

SUNSYS PCS² power converter storage solution



This bidirectional power converter is the key element of the energy storage system. It ensures that the batteries are charged and discharged according to the required functions.



Webspace at your service

all our solutions can be adapted to your needs

www.socomec.com

Expertise, customised solutions, products and services, downloads... All yours in a couple of clicks!

- 1 Tap into our expertise
- 2 Discover our customised solutions
- 3 Access all our products and services
- 4 Download photos, documentation, software and CAD files



CORPO 385 A

www.diris-digiware.com

Check out the dedicated site about DIRIS Digiware, our measuring and monitoring system. It gives you all the information you need, including videos, images and documentation on the most revolutionary solution on today's market.



CORPO 466 A

Follow us on social media!



Alphabetical index

A

Analogue meters	602
ATyS	442
ATyS C20/C30/C40	470
ATyS d H	466
ATyS d M	418
ATyS M	416
ATyS p	448
ATyS p M	422
ATyS r - ATyS d	444
ATyS S	432
ATyS S - ATyS d S	434
ATyS t - ATyS g	446
ATyS t M - ATyS g M	420
ATyS UL	484
AUXIGAINÉ	708

B

BS88 industrial fuselinks	338
Busbar	661
Busbar supports	676

C

Cable clamps and cage terminals	700
Cable trunking	714
CADRYs Delta modular	666
CADRYs enclosures	665
Central mechanism FUSERBLOC	374
COMBIESTER	664
Communication accessories	612
COMO C	384

Connecting the RS485 link	612
Core balance transformers - type A	636
COUNTIS and DIRIS management software tools	618
COUNTIS E0x	530
COUNTIS E1x	532
COUNTIS E2x	534
COUNTIS E3x	536
COUNTIS E4x	538
COUNTIS E63	540
COUNTIS ECix	542
Current transformers	584

D

Datalogger	608
Differential protection	623
Digital meters	603
DIRIS A10	552
DIRIS A14	556
DIRIS A20	560
DIRIS A40/A41	564
DIRIS A60	570
DIRIS A80	576
DIRIS B-30	516
DIRIS Digiware	504
DIRIS Digiware D and C	506
DIRIS Digiware I	512
DIRIS Digiware U	510
DIRIS G	604
DIRIS Q800	580
Distribution	661
Distribution blocks	702

E

Electronic protection	623
Enclosed switches	719
Fuse combination switches FUSERBLOC	730
Load break switches SIRCO M and SIRCO	726
Enclosed transfer switches	752
ATyS Bypass motorised switching	774
Manual operation	754
Motorised and automatic switching	760
Motorised operation ATSE	768
Motorised operation ATyS Bypass "no-break" solution ATSE	774
Enclosed transfer switches - Motorised operation RTSE	760
Enclosures & accessories	661
Energy measurement & management	491

F

Fuse base	249
Fuse bases	332
Fuse combination switches	249
Fuse combination switches for specific applications	374
Fuse combination switches	
with tripping function and visible breaking	249
Fuse protection	249
Fused changeover switches	374
FUSERBLOC	254
FUSERBLOC and high speed fuses	298
FUSERBLOC LMDC	375
FUSERBLOC rear connection	375
FUSERBLOC UL	284
FUSOMAT	304

G

Gateways, dataloggers and interfaces	491
--------------------------------------	-----

H

High-speed fuses	354
Hour counters	603
HYPERVIEW	616

I

Indicators & transducers	491
Industrial fuses	249
Industrial fuses	344
INOSYS for specific applications	173
INOSYS LBS	173
INOSYS LBS for AC applications	66
INOSYS LBS for DC & PV applications	150
INOSYS LBS UL 98	236
INOSYS LBS UL 98B	182
Insulated copper braids	674
Insulated flexible copper bars	672
Integrated products & solutions	719

L

Load break switches	17
Load break switches	
for DC & PV applications with tripping function	17
Load break switches for photovoltaic applications	17
Load break switches standards UL & CSA	17

Alphabetical index

M

Manual transfer switches	377
Measurement devices	491
Measurement devices - Other electrical measurement devices	602
Measurement devices - Other products	600
Measurement shunts	598
Modbus/Profinet communication gateway	612
Modular fuse holders	249
Modular transducers	602
Motorised modular transfer switches	377
Motorised transfer switches	377
Mounting accessories	661
Mounting rails and profiles	710
Multi-circuit metering & measurement	491
Multipolar FUSERBLOC	374
MULTIS L50	548

N

N'VIEW	617
--------	-----

P

Photovoltaic application fuses	249
Photovoltaic enclosures	722
Photovoltaic fuses	368
Plug-in FUSERBLOC	375
Power terminals	698
Protection against overvoltages	623
PTI: CT automatic short-circuiter	600
PV fuse bases	366

R

RESYS M40	630
RESYS M40R	632
RESYS P40	634
RETROFIT Line	544
Rigid copper bars	670
RM and RMS	324
RM CC	328
RM PV	364
RS422 / RS485 repeater	613

S

Safety enclosures	734
Safety enclosures - Explosive atmosphere (ATEX)	748
Safety enclosures - Normal atmospheres polyester	736
Safety enclosures - Normal atmospheres steel	740
Selection guide	
Busbar supports	677
COUNTIS E	498
Current transformers	502
Differential protection	626
DIRIS A	500
DIRIS Digiware	494
Energy monitoring and management software	614
Fuse protection	252
Load break switches	20
Load break switches PV applications	22
Load break switches UL products	24
Manually operated Transfer Switching Equipment	380
Remotely operated	
and Automatic Transfer Switching Equipment	382
SURGYS surge protection devices	628
Selector switches	603
Sensor PT100 - screw type	600

SIDER	78
SIDERMAT	94
SIDERMAT combination	316
Single-circuit metering, measurement & analysis	491
SIRCO	44
SIRCO AC	44
SIRCO early break AC	172
SIRCO for earthing	173
SIRCO high short-circuit withstand	172
SIRCO M	388
SIRCO M and MV	26
SIRCO M UL 508	220
SIRCO M UL 98	230
SIRCO MC PV IEC	114
SIRCO MC PV UL	174
SIRCO MOT AT	104
SIRCO MOT PV	164
SIRCO MV PV	126
SIRCO PV IEC	132
SIRCO PV UL 98B	196
SIRCO range with overrated neutral	172
SIRCO VM1	392
SIRCOVER	396
SIRCOVER ATS Bypass	412
SIRCOVER UL	474
Software suite	491
Software tools	491
Solutions for medical locations	724
SURGYS® D40	652
SURGYS® E10	654
SURGYS® G100-F	644
SURGYS® G140-F	642
SURGYS® G40-FE	648
SURGYS® G50-FE	646
SURGYS® G51-PV	640
SURGYS® G70	650
SURGYS® RS-3, mA-3, TEL-3	656

T

TE sensors	522
TF sensors	528
TR sensors	526
Transducers	602
Transfer switches	377
Transformer with integrated converter (CTA-VA)	601

U

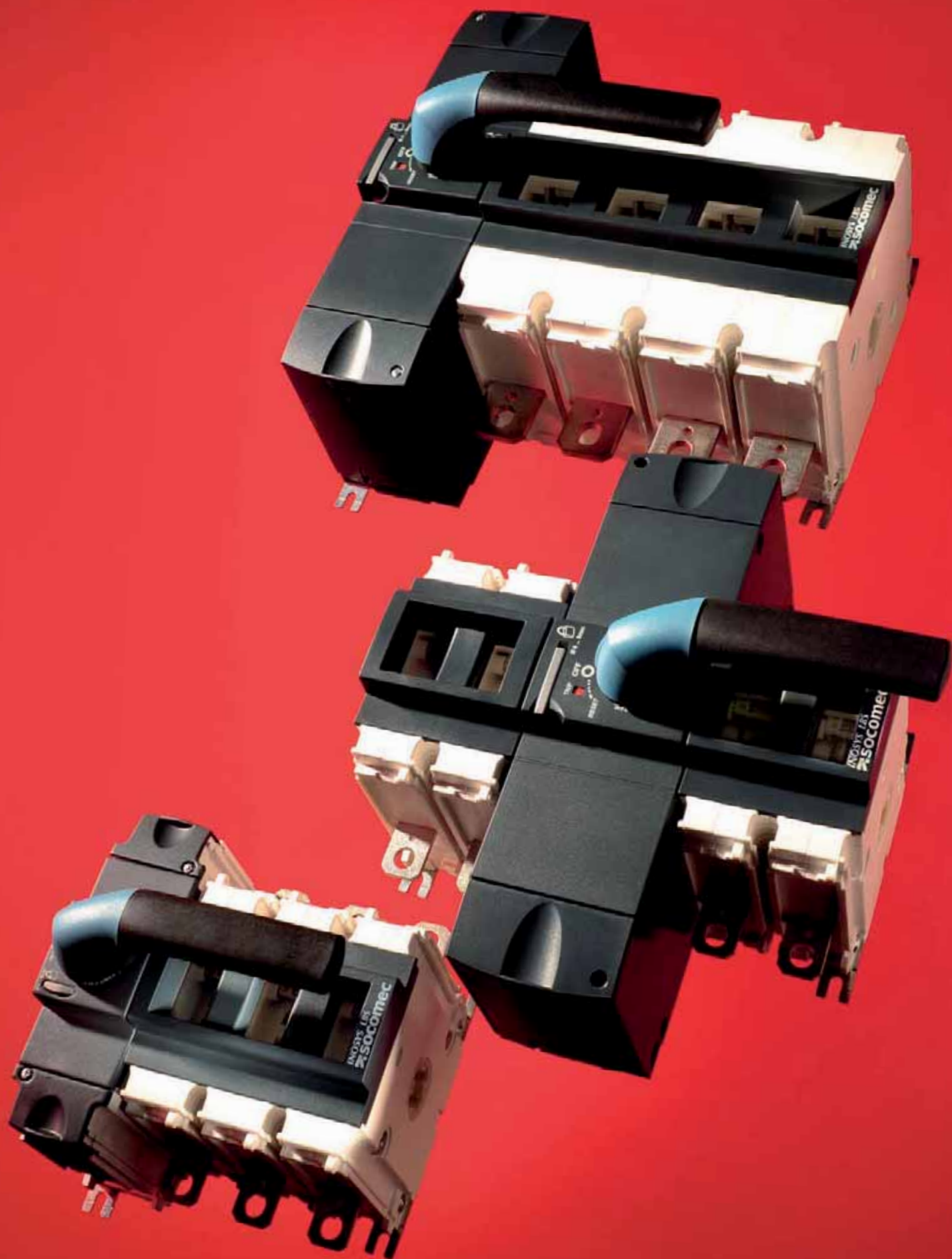
UL product range	472
Universal ATS controller	377
USB / RS485 interface	612

V

Voltage transformer BTV 25	601
----------------------------	-----

W

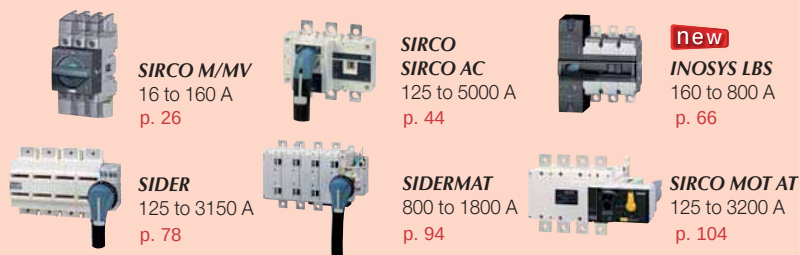
WEBVIEW	615
Wireless communication interfaces	610
Wireless metering & measurement	491



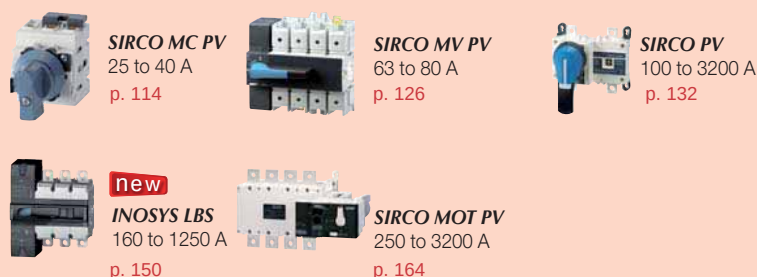
Load break switches

Load break switches for all your applications	p. 18
Why choose a load break switch designed for photovoltaic applications?	p. 19
Load break switch selection guide	p. 20
Photovoltaic load break switches selection guide	p. 22
UL load break switches selection guide	p. 24

Load break switches



Load break switches for photovoltaic applications



Load break switches for DC and PV applications with tripping function



Load break switches standards UL and CSA



Specific applications

Load break switches:

- with overrated neutral,
- high short-circuit withstand,
- multipolar,
- for earthing,
- for 1000 V network,
- motorised models.



Find out more

Enclosed devices

SOCOMEK offers a range of pre-assembled steel and polyester enclosures.



Special requests

SOCOMEK makes specific products. We will help you to find the best solution for your application. Contact your local sales office.

Load break switches for all your applications

Machine control, power distribution and photovoltaic installations

Operating in the electrical breaking technology market since 1922, SOCOMEC is both a global leader and unrivalled benchmark reference.

The SOCOMEC load break switches range is one of the largest on the market. INOSYS LBS is the latest range of load break switches incorporating tripping function especially designed and tested for most demanding applications.

It completes the two lead product ranges in this category: SIRCO M and SIRCO.

If the three ranges INOSYS LBS, SIRCO and SIRCO M cover most needs, the complete range of SOCOMEC load break switches meets every application.

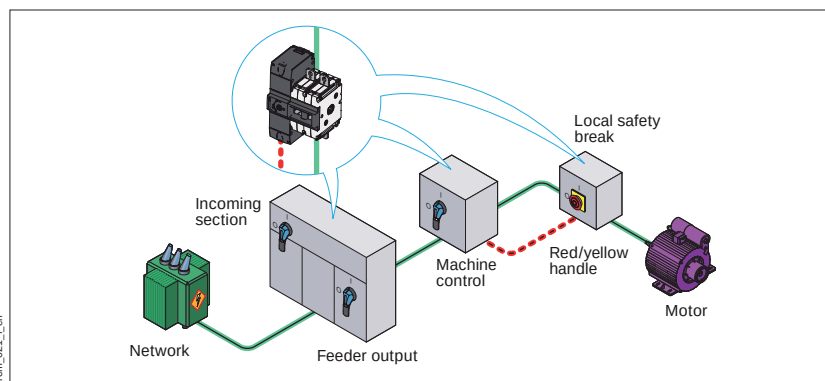
A specific need?

We have developed many customised solutions: switches with overrated neutral, high short circuit withstand, multipolar switches, earthing switches, switches for 1000 V networks, special motorised switches, etc. Whatever your application, you will find the right solution in the following pages!

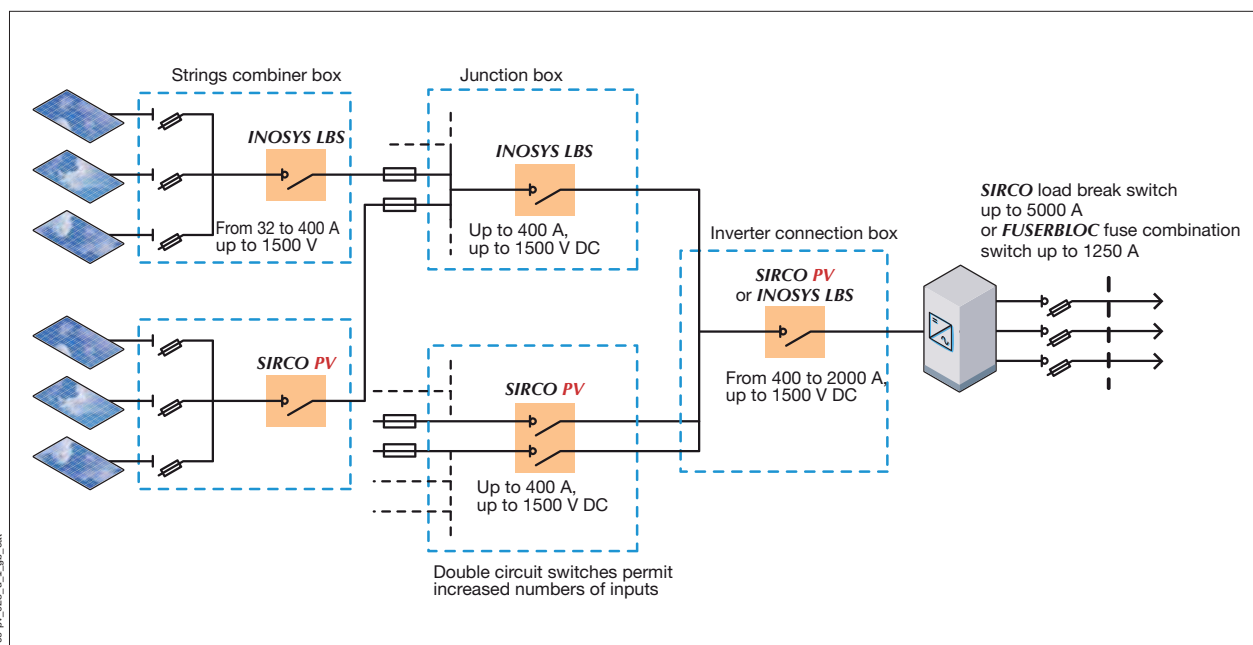


Discover all our products in the selection guides in the following pages.

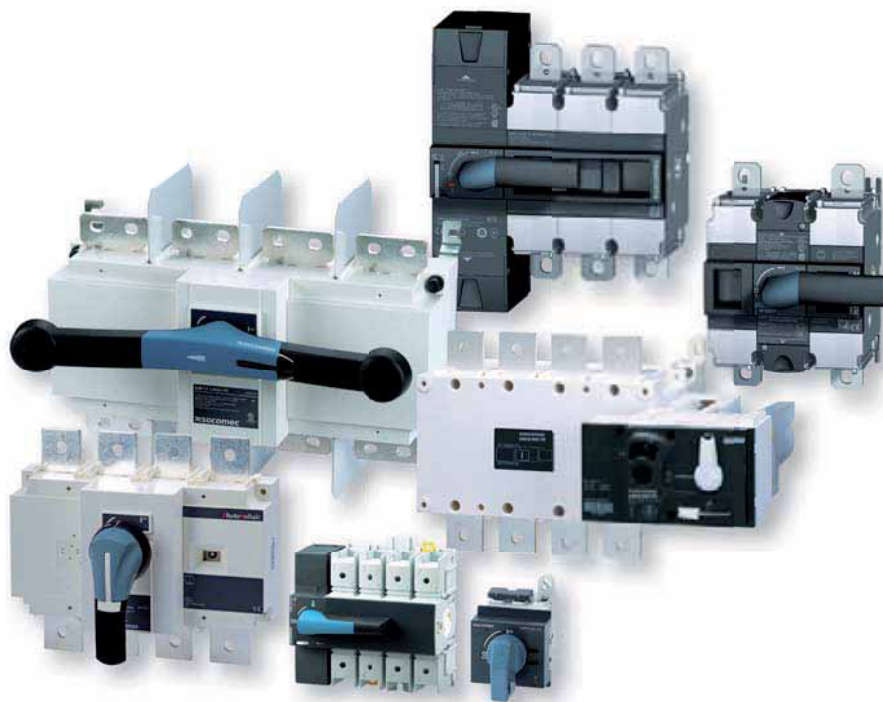
SOCOMEC load break switches in power distribution and machine control applications



SOCOMEC load break switches in photovoltaic applications



Why choose a load break switch designed for photovoltaic applications?



SIRCO MC PV, SIRCO PV and INOSYS LBS devices are available in IEC and UL versions.

Safe operations

To ensure electrical isolation during maintenance operations, or for emergency breaking to prevent a risk of fire or electrical shock, it is essential that dedicated photovoltaic switches are used.

These devices must be installed at each functional level of the installation based on its architecture.

In order to disconnect a direct current photovoltaic string, generator or UPS, only INOSYS LBS, SIRCO PV or SIRCO MC PV devices can:

- Isolate the associated high DC voltages ,
- Guarantee safe on-load disconnection several thousand times across the full range of DC currents linked to daily fluctuations in sunlight, up to 1500 VDC.

Devices designed for extreme conditions

Socomec load break switches have been designed for industrial use. They are extremely robust, with casings made from glass fibre-reinforced thermoset materials, bringing numerous benefits:

- Thermal stability, unlike some thermoplastics,
- Excellent resistance to high temperatures,
- Good electrical characteristics: Arc and insulation resistance,
- Good mechanical characteristics: Dimensional stability and rigidity over time.

These benefits are particularly important in photovoltaic installations, where the temperature may be below 0°C or above 50°C.

Back-to-back design, an innovative solution

The SOCOMEK range of photovoltaic load break switches enables simultaneous on-load disconnection of two circuits using a single handle.

Advantages

- **Space saving:** The overall width is the same as that of 3 or 4 pole devices. This enables significant savings, as compared to the use of two separate devices.
- **Simple connection and integration.**
- **Increasing the voltage:** Connecting the two devices in series allows on-load disconnection of voltages above 1000 VDC.
- **Doubling the rating:** By connecting the two devices in parallel.

What are the standards that apply to photovoltaic installations?

For installations

Photovoltaic installations are governed by international standards such as IEC and UL. These standards provide the guidelines for commissioning a photovoltaic installation.

- IEC 60364-7-712: Electrical installations of buildings — Requirements for special installations or locations — Solar photovoltaic (PV) power supply systems.
- IEC 62548: Installation and safety requirements for photovoltaic (PV) generators.

For breaking devices

To date there is no specific IEC standard.

Manufacturers must therefore refer to standard IEC 60947-3. In the USA, the reference standard is UL98B. This standard, which is more stringent than IEC 60947-3, requires strict testing, in particular concerning temperatures and resistance to electrical arcing.

SIRCO PVs have been developed in compliance with both IEC 60947-3 and UL98B.





Selection guide

Load break switches

Load break switches

Which application?



Which function?

	Machine control		
			
	SIRCO M 16 to 125 A p. 26	SIRCO MV 100 to 160 A p. 26	
Applications			
Main switchboard	•	•	
Distribution panel	•	•	
Emergency load break	•	•	
Genset output	•	•	
Network coupling	•	•	
Local safety load break	•	•	
Machine control	•	•	
Photovoltaic load break			
Enclosed switches	•	•	
Functions			
3/4 pole load break switch	•	•	
6/8 pole load break switch	•		
3/4 pole transfer switch (I-O-II)	•		
3/4 pole transfer switch (I-I+II-II)	•		
Characteristics			
Operation			
Manual (rotating)	•	•	
Manual toggle	•		
Trippable			
Motorised			
Direct operation handle			
Front	•	•	
Side			
External operation handle			
Front	•	•	
Right side	•	•	
Left side	•	•	
Indication of breaking			
Positive break indication	•	•	
Visible contacts		•	
Switch body			
Modular	•	•	

(1) Please consult us.

Which type of breaking?





Selection guide

Load break switches

PV applications

Which
application?



Which
function?

Photovoltaics					
					
SIRCO MC PV IEC 25 to 40 A p. 114	SIRCO MV PV 63 to 80 A p. 126	SIRCO PV IEC 100 to 3200 A p. 132	SIRCO MOT PV 250 to 3200 A p. 164		
Applications					
Main switchboard					
Distribution panel					
Emergency load break			•		
Genset output					
Network coupling					
Local safety load break				•	
Machine control					
Photovoltaic load break	•	•	•	•	
Fitted enclosures	•	•	•	•	
Functions					
3/4 pole load break switch	•	•	•	•	
6/8 pole load break switch	•		•		
3/4 pole transfer switch (I-O-II)					
3/4 pole transfer switch (I-I+II-II)					
Characteristics					
Operation					
Manual (rotating)	•	•	•	•	
Manual toggle					
Trippable					
Motorised				•	
Direct operation handle					
Front	•	•	•		
Side					
External operation handle					
Front	•	•	•		
Right side					
Left side					
Indication of breaking					
Positive break indication	•	•	•	•	
Visible contacts					
Switch body					
Modular	•				

(1) Please consult us.

Which type of breaking?

Which switch body?

[illegible]



Selection guide

Load break switches

UL products

Load break switches

Which application?



Which function?

	Machine control		Power distribution	
				
	SIRCO M UL 508 16 to 80 A p. 220	SIRCO M UL 98 30 to 100 A p. 230	new INOSYS LBS UL 98 with tripping function 100 to 600 A p. 236	

Applications

Main switchboard	•	•	•	
Distribution panel	•	•	•	
Emergency load break	•	•	•	
Genset output		•		
Network coupling		•	•	
Local safety load break	•	•	•	
Machine control	•	•		
Photovoltaic load break				
Enclosed switches	•	•	•	
Surge protection				

Functions

3/4 pole load break switch	•	•	•	
6/8 pole load break switch	•		• ⁽¹⁾	
3/4 pole changeover switch (I-O-II)	•			
3/4 pole changeover switch (I-I+II-II)	•			

Characteristics

Operation

Manual (rotating)	•	•	•	
Manual toggle	•			
Motorised			•	
Tripping function			•	

Direct operation handle

Front	•	•	•	
-------	---	---	---	--

External operation handle

Front	•	•	•	
Right side	•		•	

Indication of breaking

Positive break indication	•	•	•	
Visible contacts			•	

Switch body

Modular	•	•	•	
---------	---	---	---	--

Which type of breaking?

	•	•	•	•
				•
	•	•	•	•
	•	•	•	•
	•	•	•	•
			•	•
	•		•	•



SIRCO M and MV

Universal load break switches
from 16 to 160 A

Load break
switches



Function

SIRCO M and MV are manually operated modifiable and modular multipolar load break switches.

They make and break under load conditions and provide safety isolation for any low voltage circuit, particularly for machine control circuits.

Through the use of accessories, SIRCO M can be transformed into multipolar load break or 3/4 pole changeover switches. SIRCO M changeover switches provide on load changeover switching between two sources or two low voltage power circuits, as well as their safety isolation.

Advantages

Total integration

The SIRCO M and MV fully integrate isolation, breaking and switching functions.

Within a single product, SIRCO M offers front, right side or left side operation. Their highly functional design enables the product to be easily transformed from a load break switch to a changeover switch, offering a highly innovative modular solution for numerous applications.

A wide range of accessories

A single standard module, which can be complemented with a choice of accessories, offers a range of advantages:

- Simplicity when choosing the device.
- Flexibility to adapt to the most varied applications.
- Reduction in the cost of management and storage.

Upgradeability

Its wide range of accessories means that the SIRCO M can be upgraded even after it has been commissioned, enabling future requirements to be met.

Compliance with major certifications and approvals

The SIRCO M and MV range of load break switches have been designed, qualified and tested according to the criteria defined by standards IEC 60947-3, UL508 and UL98.

This process guarantees a high quality level for the product which is fully adapted to arduous operating environments.

General characteristics

- Double break per pole.
- Mounting options: DIN rail, panel or modular panel with 45 mm front cut out.
- IP20 accessories and device.
- Severe utilisation categories (AC-22 and AC-23).

Specific characteristics

SIRCO M:

- Positive break indication.
- Contact point technology.
- Product can be mounted directly on the door or panel side; see "Door mounting kit" in the accessory section.

SIRCO MV:

- Visible double breaking based on a sliding contact system (SIRCO type, see page
- Positive break indication.

The solution for

- > Main incoming load break
- > Distribution load break
- > Machine control
- > Local safety load break



Strong points

- > Total integration
- > A wide range of accessories
- > Upgradeability
- > Compliance with major certifications and approvals
- > Specific characteristics

Conformity to standards

- > IEC 60947-3



- > Other standards available



*See pages SIRCO UL and CSA range

Approvals and certifications⁽¹⁾



(1) Product reference on request.

Local safety enclosures

- > Fitted within a polycarbonate enclosure, the SIRCO M can be used, for example, for on-load breaking of a motor (AC23).



What you need to know

SIRCO M

- SIRCO M can be operated in 3 different ways:



Complete switch body for toggle operation



Direct front operation with handle



External operation
front, left side or right side

- The SIRCO M is a 3 pole load break switch which is available from 16 to 125 A. It can be combined with a switched 4th pole, an unswitched neutral or PE pole and pre-break and signalling auxiliary contacts. The basic 3 pole device is available enclosed in a polycarbonate enclosure from 16 to 100 A page 726).
- From 16 to 125 A, through the wide range of available accessories, it is possible to convert a 3 pole load break switch into a 4, 6 or 8 pole load break switch or a 3/4 pole changeover switch. Through use of its door mounting kit, SIRCO M load break switches can be mounted on the panel door.



Changeover switches I - 0 - II

SIRCO MV

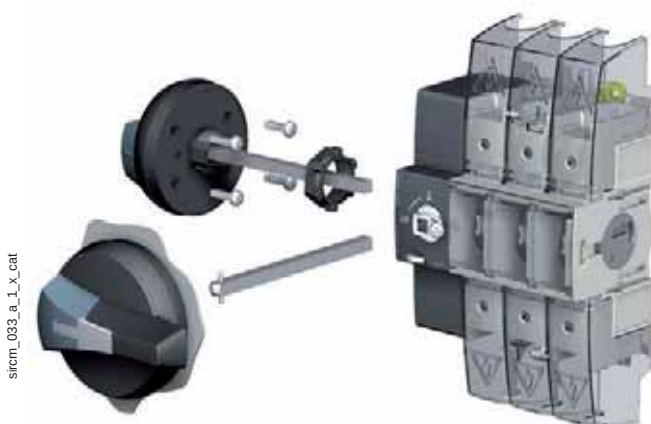
- 3 operations are available:



Direct front operation



External right side operation



External front and left side operation

- SIRCO MV can be ordered in 3 or 4 pole from 100 to 160 A.
- Two types of auxiliary contacts are available:
 - U-type pre-break,
 - M-type for signalisation.

References

SIRCO M

SIRCO M - from 16 to 125 A									
Rating (A) / Frame size	No. of poles	Complete switch body toggle operation	Switch body	Direct handle	Door interlocked external front and right side handle ⁽⁸⁾	External left side handle ⁽⁸⁾	Front external handle for changeover switches ⁽⁸⁾	Shaft for external front and side handle ⁽⁸⁾	4 th pole
16 A / M1	3 P	2205 3000	2200 3000 ⁽¹⁾⁽²⁾⁽³⁾	M00 type Blue 2299 5012 Red 2299 5013	S00 type I - O Black IP55 1471 1111 ⁽⁴⁾ Black IP65 1473 1111 ⁽⁴⁾ Red/Yellow IP65 1474 1111 ⁽⁴⁾	S00 type I - O Black IP65 147A 5111 Red/Yellow IP65 147B 5111	S00 type I - O - II Black IP65 1473 1113 ⁽⁴⁾ I - I+II - II Black IP65 1473 1114 ⁽⁴⁾	S0, S00 type 150 mm 1407 0515 200 mm 1407 0520 320 mm 1407 0532	2200 1000
20 A / M1	3 P	2205 3001	2200 3001 ⁽¹⁾⁽²⁾⁽³⁾						2200 1001
25 A / M1	3 P	2205 3002	2200 3002 ⁽¹⁾⁽²⁾⁽³⁾						2200 1002
32 A / M1	3 P	2205 3003	2200 3003 ⁽¹⁾⁽²⁾⁽³⁾						2200 1003
40 A / M1	3 P	2205 3004	2200 3004 ⁽¹⁾⁽²⁾⁽³⁾						2200 1004
63 A / M2	3 P	2205 3006	2200 3006 ⁽¹⁾⁽²⁾⁽³⁾						2200 1006
80 A / M2	3 P	2205 3008	2200 3008 ⁽¹⁾⁽²⁾⁽³⁾	M01 type Blue 2299 5032	S0 type I - O Black IP55 1481 1111 ⁽⁴⁾ Black IP65 1483 1111 ⁽⁴⁾ Red/Yellow IP65 1484 1111 ⁽⁴⁾	S0 type I - O Black IP65 148A 5111 Red/Yellow IP65 148B 5111	S00 type I - O - II Black IP65 1473 0113 I - I+II - II Black IP65 1473 0114		2200 1008
100 A / M3	3 P		2200 3010 ⁽¹⁾⁽²⁾⁽³⁾						2200 1010
125 A / M3	3 P		2200 3011 ⁽¹⁾⁽²⁾⁽³⁾						2200 1011

(1) Front and side operation.

(2) For a 6-pole device in direct operation, order 2 x 3 pole device + conversion kit (for external operation, add the shaft + the handle).

(3) For an 8-pole device in direct operation, order 2 x 3 pole device + 2 x 4th poles + conversion kit (for external operation, add the shaft + the handle).

(4) Defeatable handle.

(5) Top and bottom.

(6) Delivered with a direct handle.

(7) Delivered with a shaft.

(8) Other handles are available. Please see accessory pages.

SIRCO M

SIRCO M - from 16 to 125 A								
Rating (A) / Frame size	No. of poles	Complete switch body toggle operation	Switch body	Unswitched neutral pole	Unswitched protective earth module	Auxiliary contact	Terminal shrouds	Door mounting kit
16 A / M1	3 P	2205 3000	2200 3000 ⁽¹⁾⁽²⁾⁽³⁾	1 P 2200 5005	1 P 2200 9005	M type 1 contact NO + NC 2299 0001	1 P 2294 1005 ⁽⁵⁾ 3 P 2294 3005 ⁽⁵⁾	3/4 P Complete protection IP2X 2299 3309 ⁽⁷⁾ Compact design 2299 3409 ⁽⁷⁾
20 A / M1	3 P	2205 3001	2200 3001 ⁽¹⁾⁽²⁾⁽³⁾					
25 A / M1	3 P	2205 3002	2200 3002 ⁽¹⁾⁽²⁾⁽³⁾					
32 A / M1	3 P	2205 3003	2200 3003 ⁽¹⁾⁽²⁾⁽³⁾					
40 A / M1	3 P	2205 3004	2200 3004 ⁽¹⁾⁽²⁾⁽³⁾					
63 A / M2	3 P	2205 3006	2200 3006 ⁽¹⁾⁽²⁾⁽³⁾	1 P 2200 5009	1 P 2200 9009	1 contact 2 NC 2299 0011	1 P 2294 1009 ⁽⁵⁾ 3 P 2294 3009 ⁽⁵⁾	6/8 P Steel support 2299 3609 ⁽⁷⁾
80 A / M2	3 P	2205 3008	2200 3008 ⁽¹⁾⁽²⁾⁽³⁾					
100 A / M3	3 P		2200 3010 ⁽¹⁾⁽²⁾⁽³⁾	1 P 2200 5011	1 P 2200 9011		1 P 2294 1011 ⁽⁵⁾ 3 P 2294 3016 ⁽⁵⁾	3/4 P Steel support 2299 3609 ⁽⁷⁾
125 A / M3	3 P		2200 3011 ⁽¹⁾⁽²⁾⁽³⁾					

(1) Front and side operation.

(2) For a 6-pole device in direct operation, order 2 x 3 pole device + conversion kit (for external operation, add the shaft + the handle).

(3) For an 8-pole device in direct operation, order 2 x 3 pole device + 2 x 4th poles + conversion kit (for external operation, add the shaft + the handle).

(4) Defeatable handle.

(5) Top and bottom.

(6) Delivered with a direct handle.

(7) Delivered with a shaft.

(8) Other handles are available. Please see accessory pages.

SIRCO MV

SIRCO M - from 100 to 160 A									
Rating (A)	No. of poles	Switch body	Direct handle	Door interlocked external front and right side handle ⁽⁴⁾	External left side handle ⁽⁴⁾	Shaft for external front and side handle ⁽⁴⁾	Auxiliary signal contact	Pre-break auxiliary contact	Terminal shrouds
100 A	3 P	2200 3110	M0b type Blue 2299 5042 ⁽¹⁾ M0 type Blue 2299 5022	S0 type I-O Black IP55 1491 0111 ⁽²⁾ Black IP65 1493 0111 ⁽²⁾ Red/Yellow IP65 1494 0111 ⁽²⁾	S0 type I-O Black IP65 149A 9111 Red/Yellow IP65 149B 9111	S0 type 150 mm 1409 0615 200 mm 1409 0620 320 mm 1409 0632	M type 1 contact NO + NC 2299 0001 1 contact 2 NC 2299 0011	U type 1 contact NC 3999 0701 1 contact NO 3999 0702	3 P 2294 3016 ⁽³⁾ 4 P 2294 4016 ⁽³⁾
	4 P	2200 4110							
125 A	3 P	2200 3012							
	4 P	2200 4012							
160 A	3 P	2200 3016							
	4 P	2200 4016							

(1) Standard.

(2) Defeatable handle.

(3) Top and bottom.

(4) Other handles are available. Please see accessory pages.

Accessories

Direct operation handle

For SIRCO M

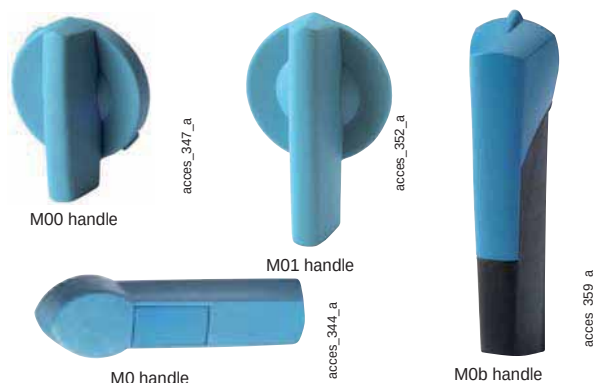
Rating (A) / Frame size	Handle colour	Handle	Reference
16 ... 80 / M1 ... M2	Blue	M00 type	2299 5012 ⁽¹⁾
16 ... 80 / M1 ... M2	Red	M00 type	2299 5013
100 ... 125 / M3	Blue	M01 type	2299 5032 ⁽¹⁾

(1) Standard.

For SIRCO MV

Rating (A)	Handle colour	Handle	Reference
100 ... 160	Blue	M0b type	2299 5042 ⁽¹⁾
100 ... 160	Blue	M0 type	2299 5022

(1) Standard.



External handle operation - SIRCO M

S000 type handle

Rating (A) / Frame size	Type	No. of poles	Operation	Handle colour	External IP	Defeatable handle	Reference
16 ... 80 / M1... M2	Switch	3/4 P	Front and side operation	Black	IP65	no	1463 5111
	Switch	3/4 P	Front and side operation	Red/Yellow	IP65	no	1464 5111
16 ... 80 / M1... M2	Changeover switches I - 0 - II	3/4 P	Front	Black	IP65	no	1463 5113
	Changeover switches I - I+II - II	3/4 P	Front	Black	IP65	no	1463 5114



S000 handle

access_307_a_1_cat

S00 type handle

Rating (A) / Frame size	Type	No. of poles	Operation	Handle colour	External IP	Defeatable handle	Reference
16 ... 80 / M1... M2	Switch	3/4 P ⁽¹⁾	Front and side operation	Black	IP55	yes	1471 1111
	Switch	3/4 P ⁽¹⁾	Front and side operation	Black	IP65	yes	1473 1111
	Switch	3/4 P ⁽¹⁾	Front and side operation	Red/Yellow	IP65	yes	1474 1111
	Switch	3/4 P	Left side	Black	IP65	no	147A 5111
	Switch	3/4 P	Left side	Red/Yellow	IP65	no	147B 5111
100 ... 125 / M3	Switch	6/8 P	Front	Black	IP55	yes	1471 0111
	Switch	6/8 P	Front	Black	IP65	yes	1473 0111
	Switch	6/8 P	Front	Red/Yellow	IP65	yes	1474 0111
16 ... 80 / M1... M2	Changeover switches I - 0 - II	3/4 P	Front	Black	IP65	yes	1473 1113
	Changeover switches I - I+II - II	3/4 P	Front	Black	IP65	yes	1473 1114
100 ... 125 / M3	Changeover switches I - 0 - II	3/4 P	Front	Black	IP65	yes	1473 0113
	Changeover switches I - I+II - II	3/4 P	Front	Black	IP65	yes	1473 0114



S00 handle

access_341_a_1_cat

(1) Can also be used with 6 and 8 poles with front operation.

External operation handle - SIRCO M (continued)

S0 type handle

Rating (A) / Frame size	Type	No. of poles	Operation	Handle colour	External IP	Defeatable handle	Reference
100 ... 125 / M3	Switch	3/4 P	Front and side operation	Black	IP55	yes	1481 1111
	Switch	3/4 P	Front and side operation	Black	IP65	yes	1483 1111
	Switch	3/4 P	Front and side operation	Red/Yellow	IP65	yes	1484 1111
	Switch	3/4 P	Left side	Black	IP65	no	148A 5111
	Switch	3/4 P	Left side	Red/Yellow	IP65	no	148B 5111



access_343_a

S01 type handle

Rating (A) / Frame size	Type	No. of poles	Operation	Handle colour	External IP	Defeatable handle	Reference
16 ... 125 / M1 ... M3	Switch	3/4 P ⁽²⁾	Front and side operation	Black	IP65	yes	1403 2111
	Switch	3/4 P ⁽²⁾	Front and side operation	Red/Yellow	IP65	yes	1404 2111
16 ... 125 / M1 ... M3	Changeover switches I - 0 - II	3/4 P	Front	Black	IP65	yes	1403 2113
	Changeover switches I - 0 - II	3/4 P	Front	Black	IP65	yes	1403 2813⁽¹⁾
	Changeover switches I - I+II - II	3/4 P	Front	Black	IP65	yes	1403 2114
	Changeover switches I - I+II - II	3/4 P	Front	Black	IP65	yes	1403 2814⁽¹⁾

(1) Padlockable in 3 positions.

(2) Can also be used with 6 and 8 pole devices from 16 to 40 A.



S0 handle

S01 handle

access_304_a_1_cat

External operation handle - SIRCO MV

S0 type handle

Rating (A)	Type	No. of poles	Operation	Handle colour	External IP	Defeatable handle	Reference
100 ... 160	Switch	3/4 P	Front and side operation	Black	IP55	yes	1491 0111
100 ... 160	Switch	3/4 P	Front and side operation	Black	IP65	yes	1493 0111
100 ... 160	Switch	3/4 P	Front and side operation	Red/Yellow	IP65	yes	1494 0111
100 ... 160	Switch	3/4 P	Left side	Black	IP65	no	149A 9111
100 ... 160	Switch	3/4 P	Left side	Red/Yellow	IP65	no	149B 9111



S0 handle

access_343_a

S1 type handle

Rating (A)	Type	No. of poles	Operation	Handle colour	External IP	Defeatable handle	Reference
100 ... 160	Switch	3/4 P	Front	Black	IP55	yes	1411 2111
100 ... 160	Switch	3/4 P	Front	Black	IP65	yes	1413 2111
100 ... 160	Switch	3/4 P	Front	Red/Yellow	IP65	yes	1414 2111
100 ... 160	Switch	3/4 P	Right side	Black	IP55	no	1415 2111
100 ... 160	Switch	3/4 P	Right side	Black	IP65	no	1417 2111
100 ... 160	Switch	3/4 P	Right side	Red/Yellow	IP65	no	1418 2111
100 ... 160	Switch	3/4 P	Left side	Black	IP65	no	141A 2111
100 ... 160	Switch	3/4 P	Left side	Red/Yellow	IP65	no	141B 2111



S1 Handle

access_284_a_2_cat

Accessories (continued)

Shaft for external handle

SIRCO M 3/4 P

Rating (A) / Frame size	Handle type	Type	Length (mm)	Reference
16 ... 125 / M1... M3	S000 / S00 / S0	Switch	150 mm	1407 0515
	S000 / S00 / S0	Switch	200 mm	1407 0520
	S000 / S00 / S0	Switch	320 mm	1407 0532
	S01	Switch	200 mm	1404 0520
	S01	Switch	320 mm	1404 0532
	S01	Switch	400 mm	1404 0540



aces_346_a_1_cat

SIRCO M 6/8 pole load break switch and 3/4 pole changeover switch

Rating (A)	Handle type	Type	Length (mm)	Reference
16 ... 80 / M1...M2	S000, S00	6/8 P and changeover switch	150 mm	1407 0515
	S000, S00	6/8 P and changeover switch	200 mm	1407 0520
	S000, S00	6/8 P and changeover switch	320 mm	1407 0532
100 ... 125 / M3	S00	6/8 P and changeover switch	150 mm	1409 0615
	S00	6/8 P and changeover switch	200 mm	1409 0620
	S00	6/8 P and changeover switch	320 mm	1409 0632
16 ... 40 / M1 ... M2	S01	6/8 P	200 mm	1404 0520
	S01	6/8 P	320 mm	1404 0532
	S01	6/8 P	400 mm	1404 0540
	S01	Changeover switch	200 mm	1404 0520
	S01	Changeover switch	320 mm	1404 0532
	S01	Changeover switch	400 mm	1404 0540
100 ... 125 / M3	S01	Changeover switch	150 mm	1409 0615
	S01	Changeover switch	200 mm	1409 0620
	S01	Changeover switch	320 mm	1409 0632

Use

Standard lengths:

- 150 mm,
- 200 mm,
- 320 mm,
- 400 mm.

Other lengths: Please consult us.

For 3/4 pole switches, shaft extensions are for external front and side operation.

For 6/8 pole switches and changeover switches, shaft extensions for front operation only.

For SIRCO MV

Rating (A)	Handle type	Type	Length (mm)	Reference
100 ... 160	S0	Switch	150 mm	1409 0615
100 ... 160	S0	Switch	200 mm	1409 0620
100 ... 160	S0	Switch	320 mm	1409 0632
100 ... 160	S1	Switch	200 mm	1401 0620
100 ... 160	S1	Switch	320 mm	1401 0632
100 ... 160	S1	Switch	400 mm	1401 0640

Shaft guide for external operation

Use

To guide the shaft extension into the external handle.

This accessory enables the handle to engage the extension shaft with a misalignment of up to 15 mm.
Required for a shaft length over 320 mm.

Description	Handle type	To be ordered in multiples of	Reference
Shaft guide	S00 and S0 / S000	10 pieces	1419 0000
Shaft guide	S01 and S1	1 piece	1429 0000



aces_260_a_2_cat

Additional pole for SIRCO M

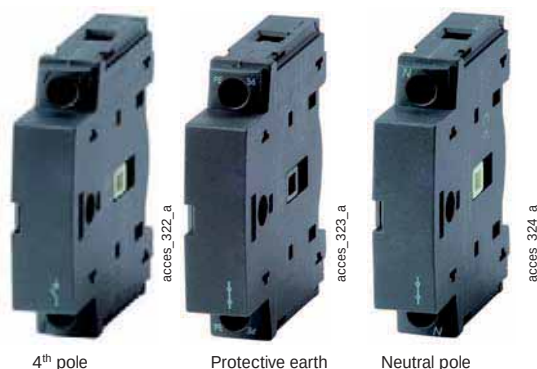
Switched fourth pole module

Rating (A) / Frame size	No. of poles	Type	Reference
16 / M1	1 P	switched	2200 1000
20 / M1	1 P	switched	2200 1001
25 / M1	1 P	switched	2200 1002
32 / M1	1 P	switched	2200 1003
40 / M1	1 P	switched	2200 1004
63 / M2	1 P	switched	2200 1006
80 / M2	1 P	switched	2200 1008
100 / M3	1 P	switched	2200 1010
125 / M3	1 P	switched	2200 1011

Use

Adds one or two poles and transforms:

- a 3 pole SIRCO M into a 4 pole load break switch,
- a 6 pole SIRCO M into a 8 pole load break switch,
- a 3 pole SIRCO M into a 4 pole changeover switch.

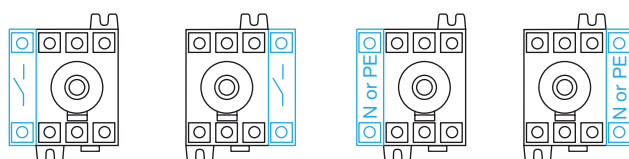


Neutral pole

Rating (A) / Frame size	No. of poles	Type	Reference
16 ... 40 / M1	1 P	unswitched	2200 5005
63 ... 80 / M2	1 P	unswitched	2200 5009
100 ... 125 / M3	1 P	unswitched	2200 5011

Use

Transforms the 3-pole switch into a 3-pole + solid neutral.

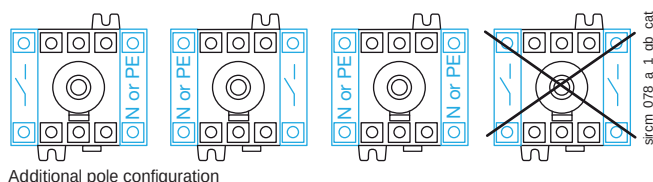


Protective earth module

Rating (A) / Frame size	No. of poles	Type	Reference
16 ... 40 / M1	1 P	unswitched	2200 9005
63 ... 80 / M2	1 P	unswitched	2200 9009
100 ... 125 / M3	1 P	unswitched	2200 9011

Use

Adds 1 protective earth module pole to the switch-disconnector.



Terminal shrouds

Use

Top and bottom protection against direct contact with the terminals or connection parts.

Available in 1 or 3 pole versions for SIRCO M and in 3 or 4 pole versions for SIRCO MV.

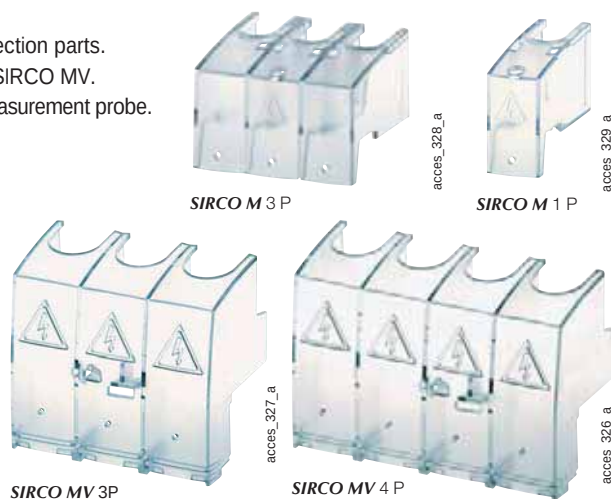
An opening on each terminal cover makes it possible to insert a temperature measurement probe.

For SIRCO M

Rating (A) / Frame size	No. of poles	Position	Reference
16 ... 40 / M1	1 P	top and bottom	2294 1005
16 ... 40 / M1	3 P	top and bottom	2294 3005
63 ... 80 / M2	1 P	top and bottom	2294 1009
63 ... 80 / M1	3 P	top and bottom	2294 3009
100 ... 125 / M3	1 P	top and bottom	2294 1011
100 ... 125 / M3	3 P	top and bottom	2294 3016

For SIRCO MV

Rating (A)	No. of poles	Position	Reference
100 ... 160	3 P	top and bottom	2294 3016
100 ... 160	4 P	top and bottom	2294 4016



Accessories (continued)

M type auxiliary contacts

Use

Pre-break and signalisation of positions 0 and I by NO+NC or 2 NO auxiliary contacts.

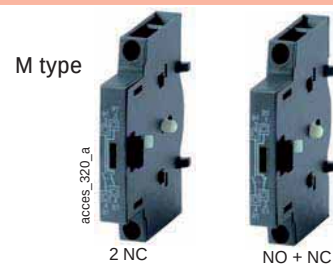
They allow to anticipate the switching of the main poles. They can be mounted on the left or on the right side of the device.

Max 4 auxiliary contacts (2 modules).

Pre-break is not guaranteed on the SIRCO MV.

Characteristics

NO+NC auxiliary contacts: IP2 with front operation.



For SIRCO M

Rating (A) / Frame size	Number of AC	Type of AC	Reference
16 ... 125 / M1...M3	1 AC	NO + NC	2299 0001
	1 AC	2 NO	2299 0011

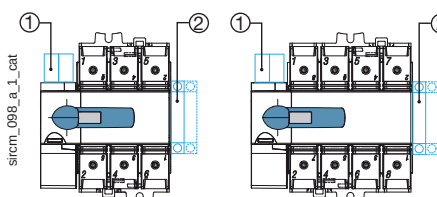
For SIRCO MV

Rating (A)	Number of AC	Type of AC	Reference
100 ... 160	1 AC	NO + NC	2299 0001
100 ... 160	1 AC	2 NO	2299 0011

Characteristics

Contact type	Nominal current (A)	Operating current I _e (A)	
		AC-13	AC-15
NO + NC	10	10	6

Auxiliary contact configurations for SIRCO MV



1. Maximum 2 "U" type auxiliary contacts.
2. Maximum 2 "M" type auxiliary contact modules.

For SIRCO MV

Rating (A)	Number of AC	Type of AC	Reference
100 ... 160	1 AC	NC	3999 0701
100 ... 160	1 AC	NO	3999 0702

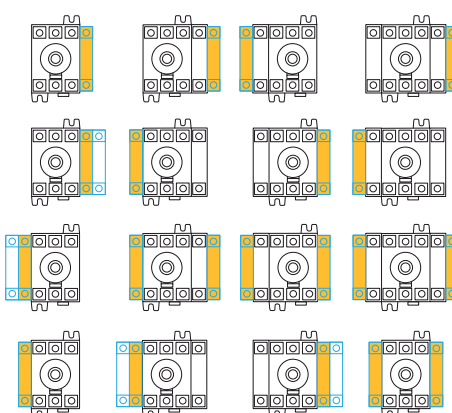
Characteristics

Contact type	Nominal current (A)	Operating current I _e (A)			
		250 VAC AC-15	400 VAC AC-15	24 VDC DC-13	48 VDC DC-13
NC	10	3	1.8	2.8	1.4
NO	10	3	1.8	2.8	1.4

Auxiliary contacts configurations for SIRCO M

Max: 2 blocks / Max: 2 AC

Pre-break No Pre-break



U type



Use

Pre-break and signalisation by NO or NC auxiliary contact can be mounted on the device.

Maximum 2 auxiliary contacts. Only available for SIRCO MV switches.

Conversion kit

Use

It must be ordered together with the handle for external control.

This accessory enables the assembly of two 3 pole switches (+ additional pole) in order to create :

- a 6 or 8 pole SIRCO M load break switch,
- a 3 or 4 pole SIRCO M changeover switch.

Load break switches 6/8 P

Rating (A) / Frame size	Type	Reference
16 ... 80 / M1 ... M2	6/8 P switch	2269 6009
100 ... 125 / M3	6/8 P switch	2269 6011

Changeover switches I - 0 - II

Rating (A) / Frame size	Type	Reference
16 ... 80 / M1 ... M2	Changeover switches I - 0 - II	2209 6009
100 ... 125 / M3	Changeover switches I - 0 - II	2209 6011

SIRCO M changeover switches provide on load changeover switching between two sources or two low voltage power circuits, as well as their safety isolation (I - 0 - II); transfer without interruption of the supply is also possible (I - I+II - II).

Changeover switches I - I+II - II

Rating (A) / Frame size	Type	Reference
16 ... 80 / M1 ... M2	Changeover switches I - I+II - II	2299 6009
100 ... 125 / M3	Changeover switches I - I+II - II	2299 6011



Conversion kit for 6 or 8 pole load break switches



Conversion kit for changeover switches I - 0 - II



Conversion kit for changeover switches I - I+II - II

Door mounting kit⁽¹⁾

Use

This kit enables a direct mounting of the switch on the door panel, on the right or left side of the panel.

The connection clamps of the switch are always accessible.

The external handle is quick and easy to install with the supplied internal locking nut mounted on the inside of the enclosure.

3 kits are available:

- one for complete protection IP2X
- one with compact design
- one in steel for 6/8 P and 100/125 A.

For SIRCO M

(1) Kit compatible with S00 type handle only.

Rating (A) / Frame size	No. of poles	Description	Reference
16 ... 80 / M1 ... M2	3/4 P	Complete protection IP2X	2299 3309
	3/4 P	Compact version	2299 3409
	6/8 P	Metallic support	2299 3609
100 ... 125	3/4 P	Metallic support	2299 3609



Cap for side operation mounting

Use

This accessory enables the front face of the SIRCO M to be capped when the switch is side operated. 20 pieces supplied per pack.

This piece snaps into place directly on the front face of the switch.

For SIRCO M

Rating (A) / Frame size	Pack	Reference
16 ... 125 / M1 ... M3	20 pieces	2299 9409



6/8 pole joining accessory

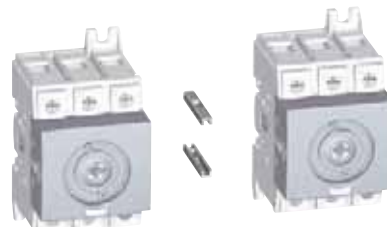
Use

This accessory enables two 3/4 pole switches to be coupled in order to provide a 6 or 8 pole switch for external side operation. 40 pieces supplied per pack.

For multi-pole switches, please consult us.

For SIRCO M

Rating (A) / Frame size	Pack	Reference
16 ... 80 / M1 ... M2	40 pieces	2299 9909



DIN rail locking clip

Use

This locking clip prevents the SIRCO MV from sliding when DIN rail mounted.

For SIRCO MV

Rating (A)	Type	Reference
100 ... 160	Locking clip M4	5000 0041
100 ... 160	Locking clip M5	5000 0051



Voltage sensing and power supply tap

Use

It allows connection of 2x ≤1.5 mm² voltage sensing or power cables.

This single-pole voltage sensing tap allows the connection of 2 x ≤1.5 mm² voltage sensing or power cables to any SIRCO MV power terminal without reducing its connection capacity.

For SIRCO MV

Rating (A)	Pack	Reference
100 ... 160	2 pieces	1399 4006



Characteristics

Characteristics according to IEC 60947-3

	SIRCO M - from 16 to 125 A								
Thermal current I_{th} (40 °C)	16 A	20 A	25 A	32 A	40 A	63 A	80 A	100 A	125 A
Frame size	M1	M1	M1	M1	M1	M2	M2	M3	M3
Rated insulation voltage U_i (V)	800	800	800	800	800	800	800	800	800
Rated impulse withstand voltage U_{imp} (kV)	8	8	8	8	8	8	8	8	8

Rated operational currents I_e (A)

Rated voltage	Utilisation category	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾
415 VAC	AC-20 A / AC-20 B	16/16	20/20	25/25	32/32	40/40	63/63	80/80	100/100	125/125
415 VAC	AC-21 A / AC-21 B	16/16	20/20	25/25	32/32	40/40	63/63	80/80	100/100	125/125
415 VAC	AC-22 A / AC-22 B	16/16	20/20	25/25	32/32	40/40	63/63	80/80	100/100	125/125
415 VAC	AC-23 A / AC-23 B	16/16	20/20	25/25	32/32	40/40	63/63	80/80	100/100	125/125
500 VAC	AC-20 A / AC-20 B	16/16	20/20	25/25	32/32	40/40	63/63	80/80	100/100	125/125
500 VAC	AC-21 A / AC-21 B	16/16	20/20	25/25	32/32	40/40	63/63	80/80	100/100	125/125
500 VAC	AC-22 A / AC-22 B	16/16	20/20	25/25	32/32	40/40	63/63	80/80	100/100	125/125
500 VAC	AC-23 A / AC-23 B	16/16	20/20	25/25	25/25	25/25	63/63	63/63	80/80	100/100
690 VAC	AC-20 A / AC-20 B	16/16	20/20	25/25	32/32	40/40	63/63	80/80	100/100	125/125
690 VAC	AC-21 A / AC-21 B	16/16	20/20	25/25	32/32	40/40	63/63	80/80	100/100	125/125
690 VAC	AC-22 A / AC-22 B	16/16	20/20	25/25	32/32	32/40	40/63	63/80	80/100	100/125
690 VAC	AC-23 A / AC-23 B	16/16	20/20	25/25	25/25	25/25	40/40	40/40	63/63	63/63
110 VDC	DC-20 A / DC-20 B	16/16	20/20	25/25	32/32	40/40	63/63	80/80	100/100	125/125
110 VDC	DC-21 A / DC-21 B	16/16 ⁽²⁾	20/20 ⁽²⁾	25/25 ⁽²⁾	32/32 ⁽²⁾	40/40 ⁽²⁾	63/63 ⁽²⁾	80/80 ⁽²⁾	100/100 ⁽²⁾	125/125 ⁽²⁾
250 VDC	DC-20 A / DC-20 B	16/16	20/20	25/25	32/32	40/40	63/63	80/80	100/100	125/125
250 VDC	DC-21 A / DC-21 B	16/16 ⁽³⁾	20/20 ⁽³⁾	25/25 ⁽³⁾	32/32 ⁽³⁾	40/40 ⁽³⁾	63/63 ⁽³⁾	80/80 ⁽³⁾	100/100 ⁽³⁾	125/125 ⁽³⁾
400 VDC	DC-20 A / DC-20 B	16/16	20/20	25/25	32/32	40/40	63/63	80/80	100/100	125/125
400 VDC	DC-21 A / DC-21 B	16/16 ⁽⁴⁾	20/20 ⁽⁴⁾	25/25 ⁽⁴⁾	25/25 ⁽⁴⁾	25/25 ⁽⁴⁾	40/40 ⁽⁴⁾	40/40 ⁽⁴⁾	63/63 ⁽⁴⁾	63/63 ⁽⁴⁾

Operational power in AC-23 (kW)

400 VAC without pre-break AC(kW) ⁽⁵⁾	7.5	9	11	15	18.5	30	37	45	55
500 VAC without pre-break AC(kW) ⁽⁵⁾	7.5	9	11	15	18.5	30	37	45	55
690 VAC without pre-break AC(kW) ⁽⁵⁾	7.5	11	15	15	15	30	37	45	55

Fuse protected short-circuit withstand (kA rms prospective)⁽⁶⁾

Prospective short-circuit current (kA rms)	50	50	50	50	50	50	50	25	25
Associated fuse rating (A)	16	20	25	32	40	63	80	100	125

Circuit breaker protected short-circuit withstand with any circuit breaker that ensures tripping in less than 0.3s

Rated short-time withstand current 0.3s. I_{cw} (kA rms)	2.5	2.5	2.5	2.5	2.5	3	3	5	5
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Short-circuit capacity (without protection)

Rated short-time withstand current 1s. I_{cw} (kA rms)	1.26	1.26	1.26	1.26	1.26	1.5	1.5	2.75	2.75
Rated peak withstand current (kA peak) ⁽⁶⁾	6	6	6	6	6	9	9	12	12

Connection

Maximum Cu cable cross-section (mm ²)	1.5	1.5	1.5	1.5	1.5	2.5	2.5	10	10
Maximum Cu cable cross-section (mm ²)	16	16	16	16	16	35	35	70	70
Tightening torque min/max (Nm)	2 / 2.2	2 / 2.2	2 / 2.2	2 / 2.2	2 / 2.2	3.5 / 3.85	3.5 / 3.85	4/4.4	4/4.4

Mechanical characteristics

Durability (number of operating cycles)	100 000	100 000	100 000	100 000	100 000	100 000	100 000	100 000	100 000
Operating effort - 3 pole device (Nm)	1	1	1	1	1	1.4	1.4	1.6	1.6
Operating effort - 4 pole device (Nm)	1.2	1.2	1.2	1.2	1.2	1.6	1.6	2	2
Weight of a 3 pole device (kg)	0.18	0.18	0.18	0.18	0.18	0.27	0.27	0.55	0.55
Weight of a 4 pole device (kg)	0.23	0.23	0.23	0.23	0.23	0.33	0.33	0.72	0.72
Weight of a 6 pole device (kg)	0.40	0.40	0.40	0.40	0.40	0.59	0.59	1.30	1.30
Weight of a 8 pole device (kg)	0.50	0.50	0.50	0.50	0.50	0.69	0.69	1.65	1.65
Weight of a 3 pole device (kg)	0.40	0.40	0.40	0.40	0.40	0.59	0.59	1.30	1.30
Weight of a 4 pole device (kg)	0.50	0.50	0.50	0.50	0.50	0.69	0.69	1.65	1.65

(1) Category with index A = frequent operation -
Category with index B = infrequent operation.

(2) One pole per polarity.

(3) 3-pole device with 2 poles in series for the "+" and 1 pole for the "-".

(4) 4-pole device with 2 poles in series per polarity.

(5) The power value is given for information only, the current values vary from one manufacturer to another.

(6) For a rated operational voltage U_e = 415 VAC.

Characteristics

Characteristics according to IEC 60947-3

	SIRCO MV - from 100 to 160 A		
Thermal current I_{th} (40 °C)	100 A	125 A	160 A
Rated insulation voltage U_i (V)	800	800	800
Rated impulse withstand voltage U_{imp} (kV)	8	8	8

Rated operational currents I_e (A)

Rated voltage	Utilisation category	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾
415 VAC	AC-20 A / AC-20 B	100/100	125/125	160/160
415 VAC	AC-21 A / AC-21 B	100/100	125/125	160/160
415 VAC	AC-22 A / AC-22 B	100/100	125/125	160/160
415 VAC	AC-23 A / AC-23 B	100/100	125/125	125/160
500 VAC	AC-20 A / AC-20 B	100/100	125/125	160/160
500 VAC	AC-21 A / AC-21 B	100/100	125/125	160/160
500 VAC	AC-22 A / AC-22 B	100/100	125/125	125/160
500 VAC	AC-23 A / AC-23 B	80/80	100/100	100/100
690 VAC	AC-20 A / AC-20 B	100/100	125/125	160/160
690 VAC	AC-21 A / AC-21 B	100/100	125/125	160/160
690 VAC	AC-22 A / AC-22 B	63/80	80/100	100/125
690 VAC	AC-23 A / AC-23 B	63/63	80/80	80/80
110 VDC	DC-20 A / DC-20 B	100/100	125/125	160/160
110 VDC	DC-21 A / DC-21 B	100/100 ⁽²⁾	125/125 ⁽²⁾	160/160 ⁽²⁾
250 VDC	DC-20 A / DC-20 B	100/100	125/125	160/160
250 VDC	DC-21 A / DC-21 B	100/100 ⁽³⁾	125/125 ⁽³⁾	160/160 ⁽³⁾
400 VDC	DC-20 A / DC-20 B	100/100	125/125	160/160
400 VDC	DC-21 A / DC-21 B	100/100 ⁽⁴⁾	125/125 ⁽⁴⁾	160/160 ⁽⁴⁾

Operational power in AC-23 (kW)

400 VAC without pre-break AC(kW) ⁽⁵⁾	45	55	75
500 VAC without pre-break AC(kW) ⁽⁵⁾	45	55	75
690 VAC without pre-break AC(kW) ⁽⁵⁾	45	75	75

Fuse protected short-circuit withstand (kA rms prospective)⁽⁶⁾

Prospective short-circuit current (kA rms)	100	65	50
Associated fuse rating (A)	100	125	160

Circuit breaker protected short-circuit withstand with any circuit breaker that ensures tripping in less than 0.3s

Rated short-time withstand current 0.3s. I_{cw} (kA rms)	7	7	7
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Short-circuit capacity (without protection)

Rated short-time withstand current 1s. I_{cw} (kA rms)	4	4	4
Rated peak withstand current (kA peak) ⁽⁶⁾	12	12	12

Connection

Maximum Cu cable cross-section (mm ²)	10	10	10
Maximum Cu cable cross-section (mm ²)	70	70	70
Tightening torque min/max (Nm)	4 / 4.4	4 / 4.4	4 / 4.4

Mechanical characteristics

Durability (number of operating cycles)	50 000	50 000	50 000
Operating effort - 3 pole device (Nm)	4	4	4
Operating effort - 4 pole device (Nm)	4.2	4.2	4.2
Weight of a 3 pole device (kg)	0.68	0.68	0.68
Weight of a 4 pole device (kg)	0.85	0.85	0.85

(1) Category with index A = frequent operation - Category with index B = infrequent operation.

(2) One pole per polarity.

(3) 2 poles in series for the "+" and 1 pole for the "-".

(4) 2 poles in series per polarity.

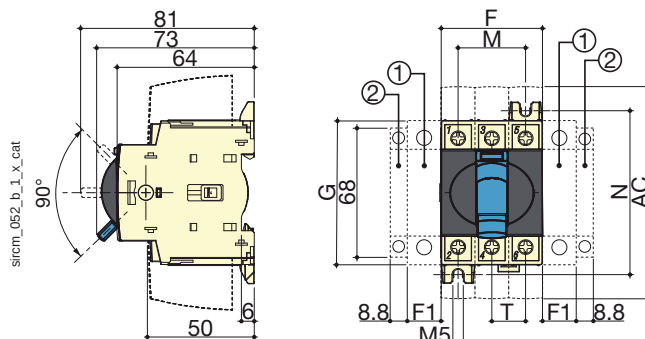
(5) The power value is given for information only, the current values vary from one manufacturer to another.

(6) For a rated operational voltage U_e = 415 VAC.

Dimensions

SIRCO M1 and M2 16 to 80 A

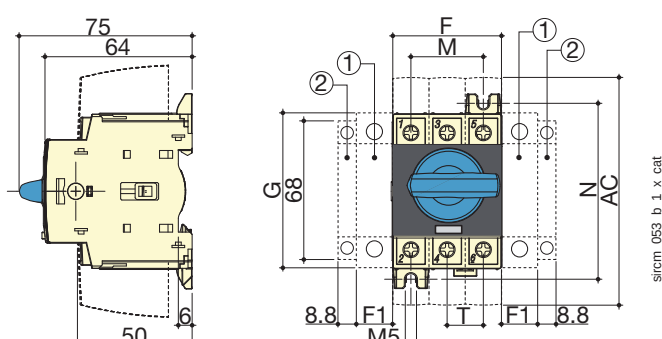
Toggle operation



1. Location for: 1 switched fourth pole module (1 per device max.) or 1 unswitched neutral pole or 1 protective earth module or 1 auxiliary contact.
2. Position for 1 auxiliary contact module only.

Note: max 2 additional blocks.

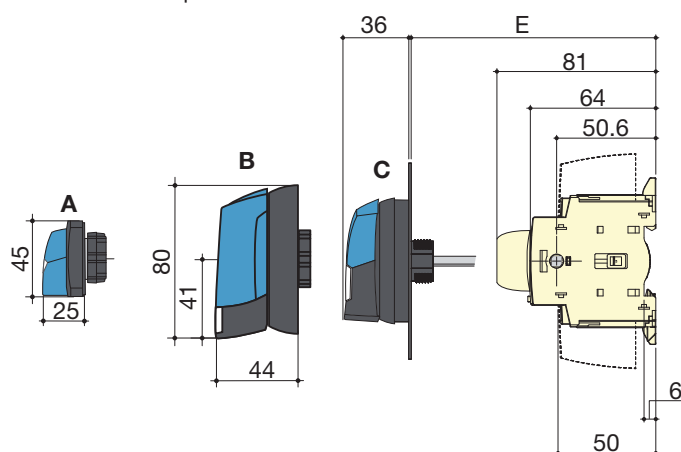
Direct operation with handle



1. Location for: 1 switched fourth pole module (1 per device max.) or 1 unswitched neutral pole or 1 protective earth module or 1 auxiliary contact.
2. Position for 1 auxiliary contact module only.

Note: max 2 additional blocks.

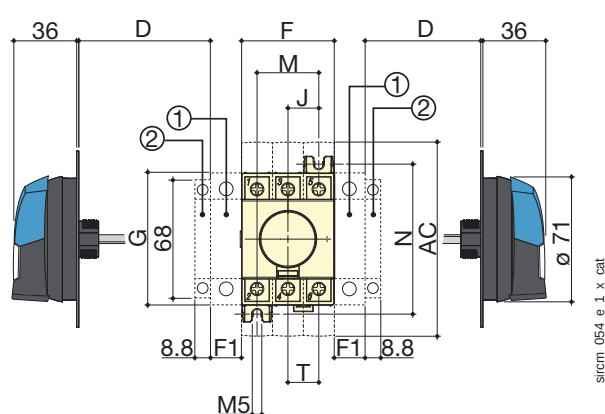
External front operation



1. Location for: 1 switched fourth pole module (1 per device max.) or 1 unswitched neutral pole or 1 protective earth module or 1 auxiliary contact.
2. Position for 1 auxiliary contact module only.

Note: max 2 additional blocks.

External side operation



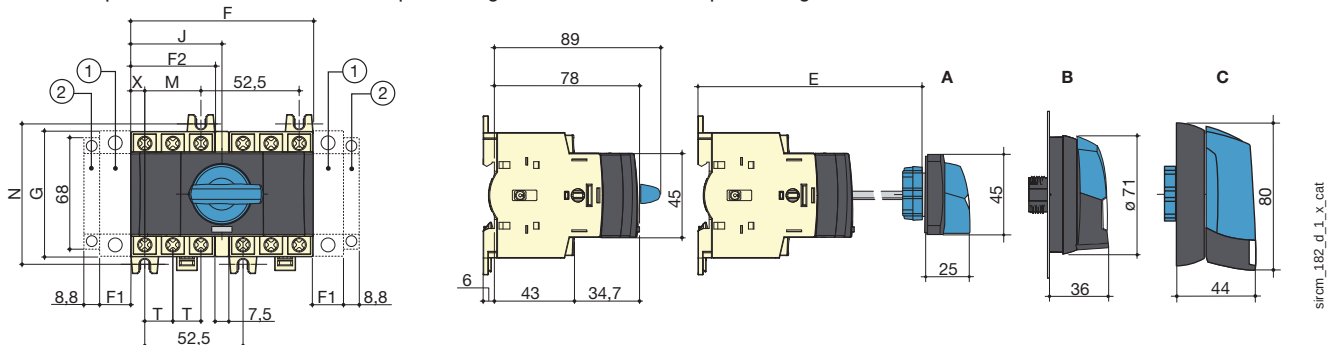
- A. S000 Handle
- B. S01 Handle
- C. S00 Handle.

Rating (A) / Frame size	Overall dimensions				Terminal shrouds		Switch body				Switch mounting		Connection
	D min	D max	E min	E max	AC	F	F1	G	J	M	N	T	
16 ... 40 / M1	30	235	100	372	110	45	15	68	15	30	75	15	
63 ... 80 / M2	30	235	100	372	110	52.5	17.5	76	17.5	35	85	17.5	

SIRCO M1 and M2 16 to 80 A (continued)

Direct front operation for
6/8-pole load break switches or 3/4-pole changeover switches

External front operation for 6/8-pole load break switches or
3/4-pole changeover switches



1. Location for: 1 switched fourth pole module (1 per device max.) or 1 unswitched neutral pole or 1 protective earth module or 1 auxiliary contact.
2. Position for 1 auxiliary contact module only.

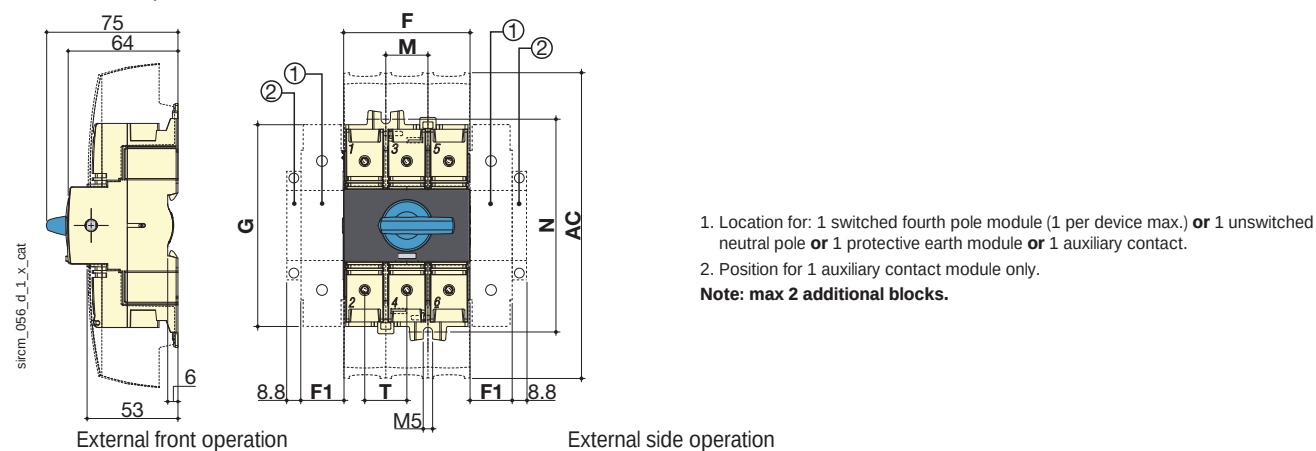
Note: max 2 additional blocks.

- A. S000 handle
B. S00 handle
C. S01 handle

Rating (A) / Frame size	Overall dimensions		Switch body					Switch mounting		Connection	
	E min	E max	F	F1	F2	G	J	M	N	T	X
16 ... 40 / M1	105	372	97.5	15	45	68	48.75	30	75	15	7.5
63 ... 80 / M2	105	372	105	17.5	52.5	76	52.5	35	85	17.5	8.75

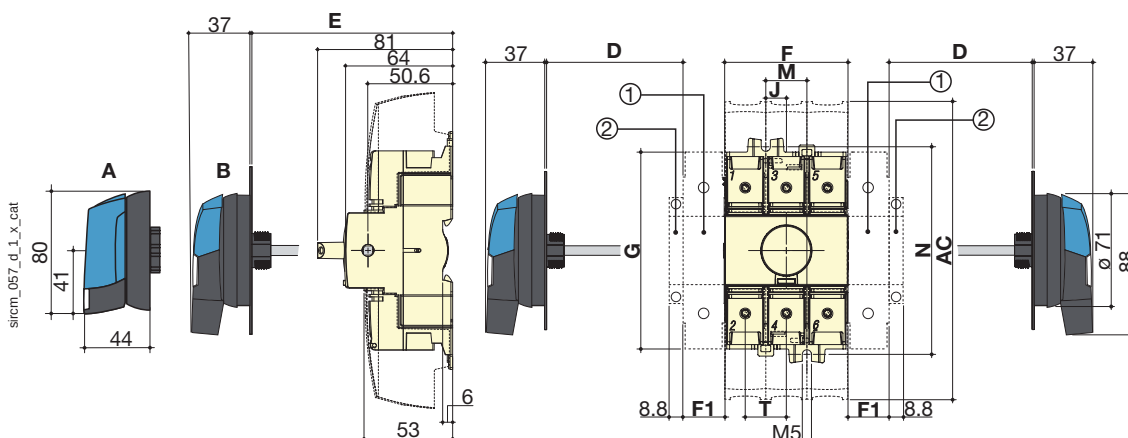
SIRCO M3 100 to 125 A

Direct operation with handle



1. Location for: 1 switched fourth pole module (1 per device max.) or 1 unswitched neutral pole or 1 protective earth module or 1 auxiliary contact.
2. Position for 1 auxiliary contact module only.

Note: max 2 additional blocks.



1. Location for: 1 switched fourth pole module (1 per device max.) or 1 unswitched neutral pole or 1 protective earth module or 1 auxiliary contact.
2. Position for 1 auxiliary contact module only.

Note: max 2 additional blocks.

- A. S01 handle
B. S00 handle

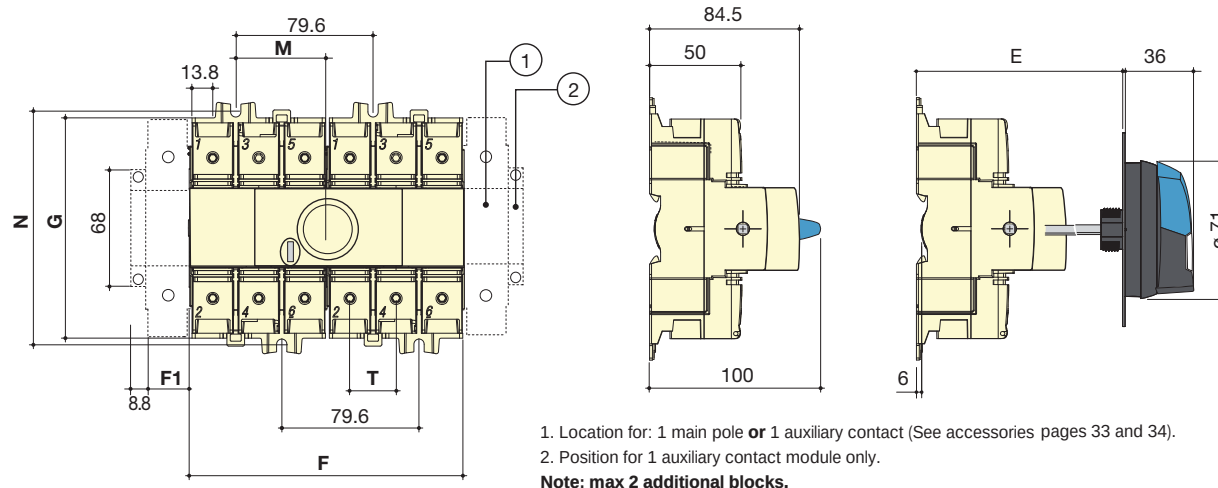
Rating (A) / Frame size	Overall dimensions				Terminal shrouds	Switch body				Switch mounting		Connection
	D min	D max	E min	E max	AC	F	F1	G	J	M	N	T
100 ... 125 / M3	30	201	100	372	189	78	26	124.6	13	26	131.4	26

Dimensions (continued)

SIRCO M3 6/8 P and changeover switch M3 100 to 125 A

Direct front operation for 3/4 pole changeover switches

External front operation for 3 and 4 pole changeover switches



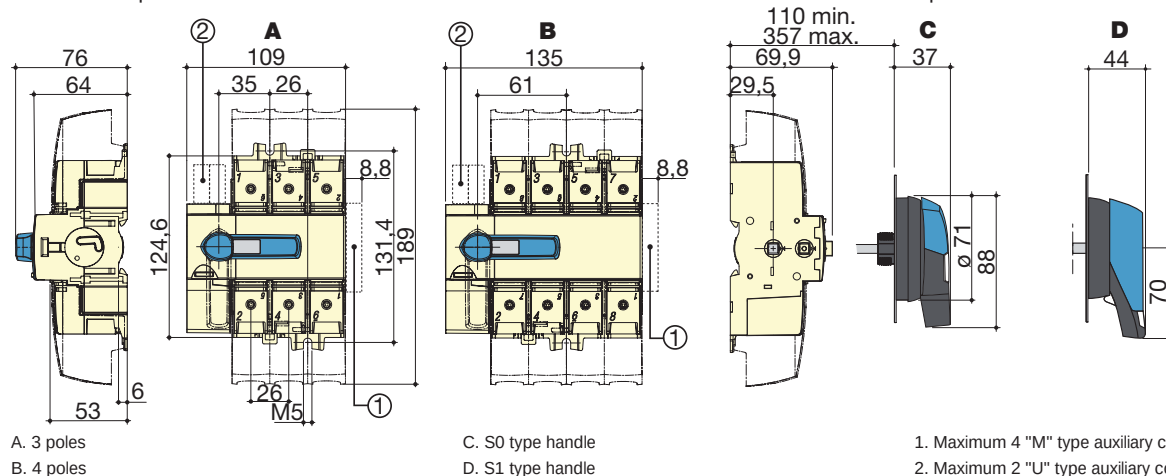
sircm_183_e_1_x_cat

Rating (A) / Frame size	Overall dimensions		Switch body			Switch mounting		Connection
	E min	E max	F	F1	G	M	N	
100 ... 125 / M3	105	372	159	26	124.5	52.8	131.5	26

SIRCO MV 100 to 160 A

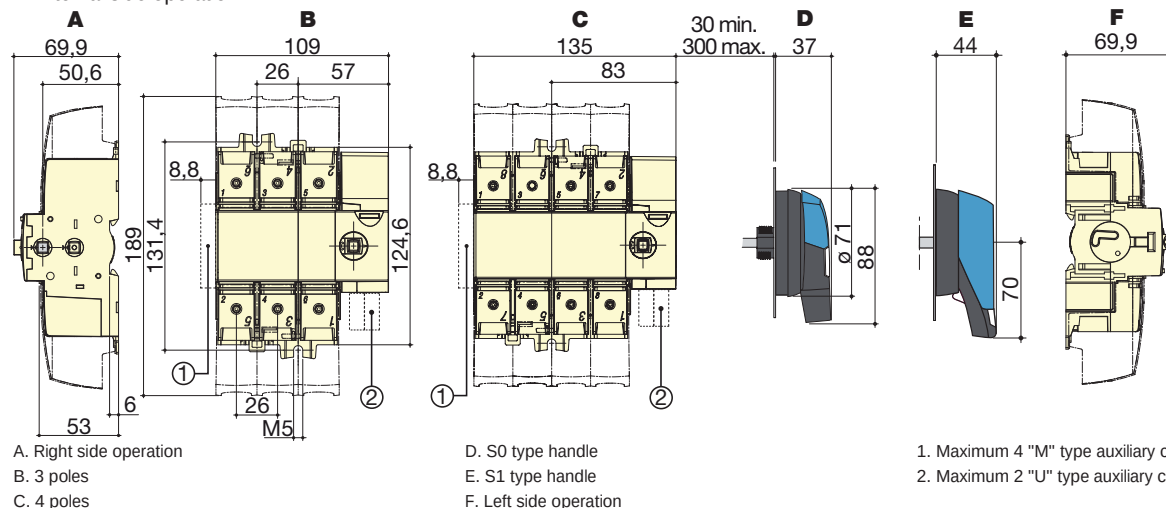
Direct front operation

External front operation



sircm_058_c_1_x_cat

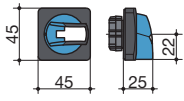
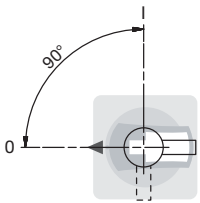
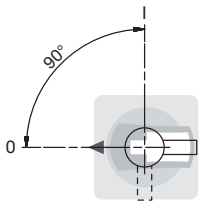
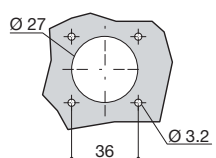
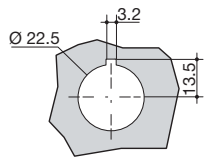
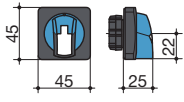
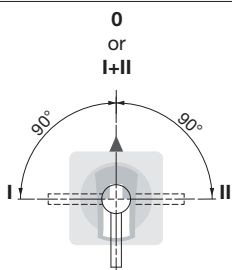
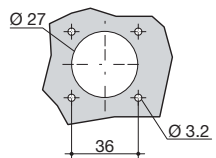
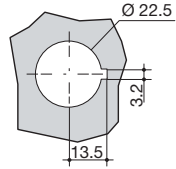
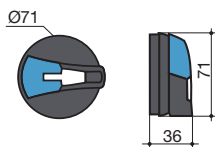
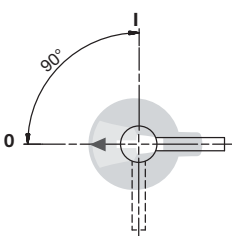
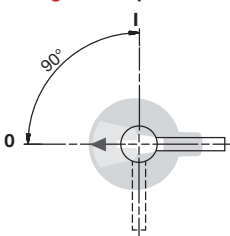
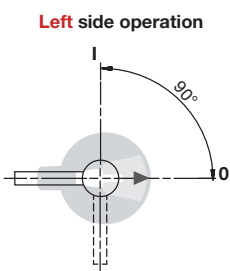
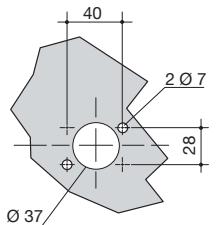
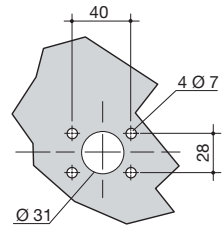
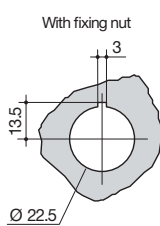
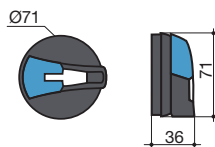
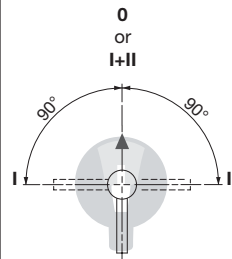
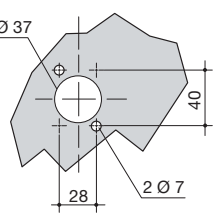
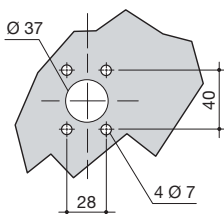
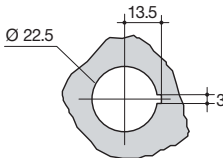
External side operation



sircm_058_d_1_x_cat

Dimensions for external handles

SIRCO M1 and M2

Handle type	Front operation Direction of operation	Side operation Direction of operation	Door drilling	
S000 type Load break switches 		Right side operation 	With 4 fixing screws 	With fixing nut 
Handle type	Front operation Direction of operation		Door drilling	
S000 type Transfer switches I-0-II and I - I+II - II 			With 4 fixing screws 	With fixing nut 
Handle type	Front operation Direction of operation	Side operation Direction of operation	Door drilling	
S00 type Load break switches 		Right side operation  Left side operation 	IP55 with 2 fixing clips 	IP65 with 4 fixing screws  With fixing nut 
Handle type	Front operation Direction of operation	Door drilling		
S00 type Transfer switches I-0-II and I - I+II - II 		IP55 with 2 fixing clips 	IP65 with 4 fixing screws 	With fixing nut 

poign_016_a_1_gb_cat

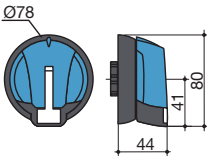
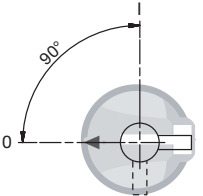
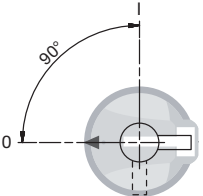
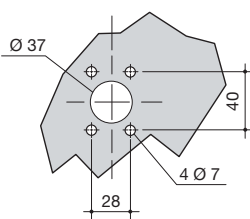
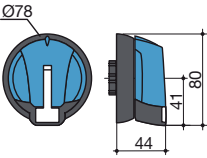
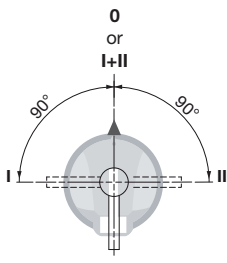
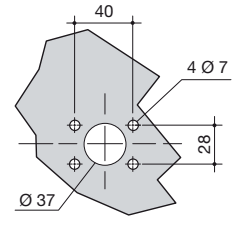
poign_017_b_1_gb_cat

poign_024_a_1_gb_cat

poign_025_b_1_gb_cat

Dimensions for external handles

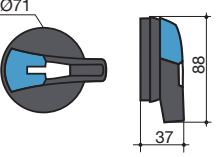
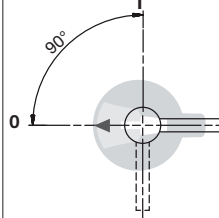
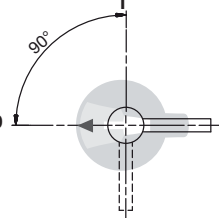
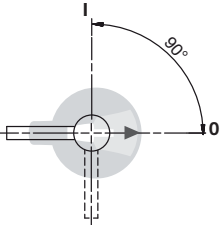
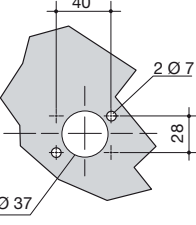
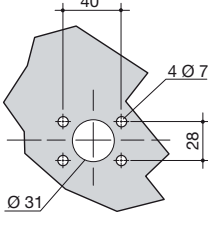
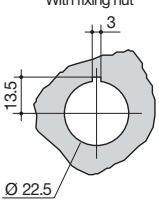
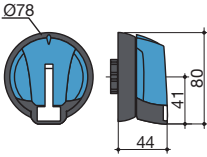
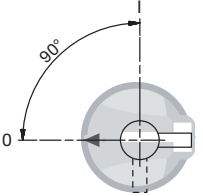
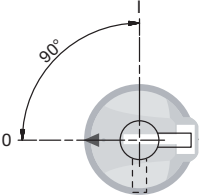
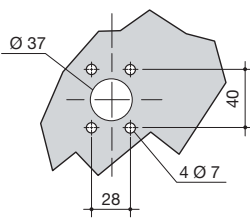
SIRCO M1 and M2 - 3/4 P and 6/8 P

Handle type	Front operation Direction of operation	Side operation Direction of operation	Door drilling
S01 type Load break switches 			Door drilling IP65 with 4 fixing screws 
S01 type Transfer switches I-0-II and I - I+II - II 	Front operation Direction of operation 		Door drilling IP65 with 4 fixing screws 

poign_018_a_1_gb_cat

poign_019_b_1_gb_cat

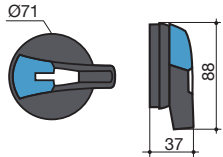
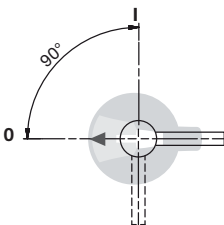
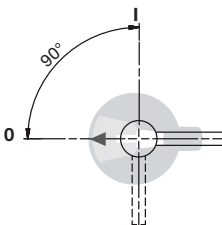
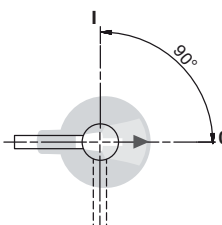
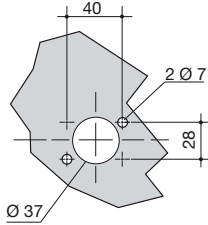
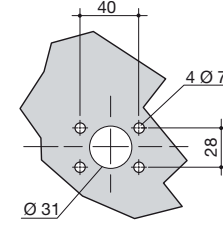
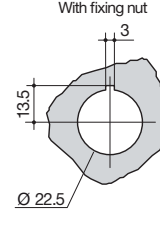
SIRCO M3

Handle type	Front operation Direction of operation	Side operation Direction of operation	Door drilling
S0 type Load break switches 		Right side operation  Left side operation 	Door drilling IP55 with 2 fixing clips  IP65 with 4 fixing screws  With fixing nut 
S01 type Load break switches 			Door drilling IP65 with 4 fixing screws 

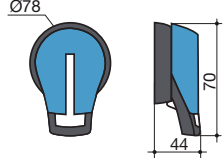
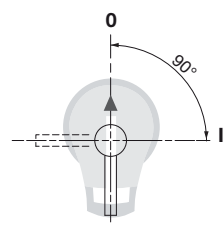
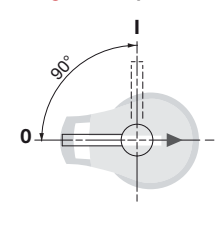
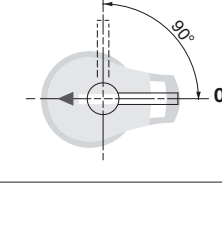
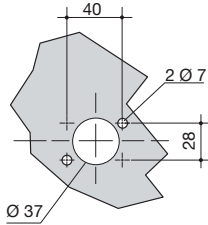
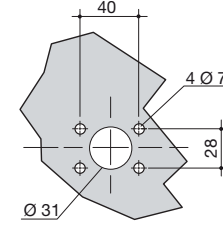
poign_026_a_1_gb_cat

poign_018_a_1_gb_cat

SIRCO MV

Handle type	Front operation Direction of operation	Side operation Direction of operation	Door drilling
S0 type Load break switches 		Right side operation  Left side operation 	IP55 with 2 fixing clips  IP65 with 4 fixing screws  With fixing nut 

polign_026_a_1_gb_cat

Handle type	Front operation Direction of operation	Side operation Direction of operation	Door drilling
S1 type Load break switches 		Right side operation  Left side operation 	IP55 with 2 fixing clips  IP65 with 4 fixing screws 

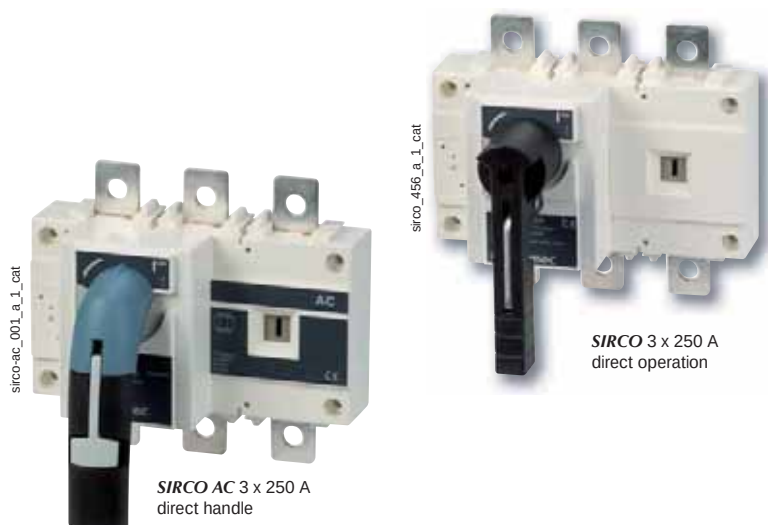
polign_027_a_1_gb_cat



SIRCO

Load break switches for power distribution
from 125 to 5000 A

Load break
switches



Function

SIRCO and SIRCO AC are manually or remotely operated multipolar load break switches. They make and break under load conditions and provide safe isolation. SIRCO are designed for 415 VAC and DC low voltage electrical circuits. SIRCO AC are designed for heavy duty applications up to 690 VAC - AC 23.

General characteristics

- Double positive break indication given through a position indication window, located directly on the product, and by the operating handle.
- Severe load duty categories (AC-22 and AC-23).
- High resistance to damp heat (supplied "tropicalised").

Advantages

Reliability and performance

The double breaking per pole, achieved through its sliding bar contact system, is a proven design that offers very high durability and short-circuit withstand. Improved breaking performance with quick opening and rapid closure.

Safety of property and personnel

The position indicator is located directly on the sliding bar contact mechanism, ensuring it can be seen in all circumstances.

The use of glass fibre reinforced polyester gives the SIRCO and SIRCO AC both high mechanical and thermal resistance.

Simplicity

The standardisation of the SIRCO and SIRCO AC range and its wide choice of common accessories enable:

- Simple mounting.
- Reduced stock management and storage costs.

Easy to install

The outdoors ranges are easy to install thanks to:

- A good centre-to-centre distance (up to 120 mm).
- Connection up to 6 x 185 mm².
- Connection accessories which facilitate both flat and edgewise connections.

The solution for

- > Main switchboard
- > Distribution panel
- > Emergency breaking
- > Network coupling
- > Local safety breaking



Strong points

- > Reliability and performance
- > Safety of property and personnel
- > Simplicity
- > Easy to install

Compliance with standards

- > IEC 60947-3



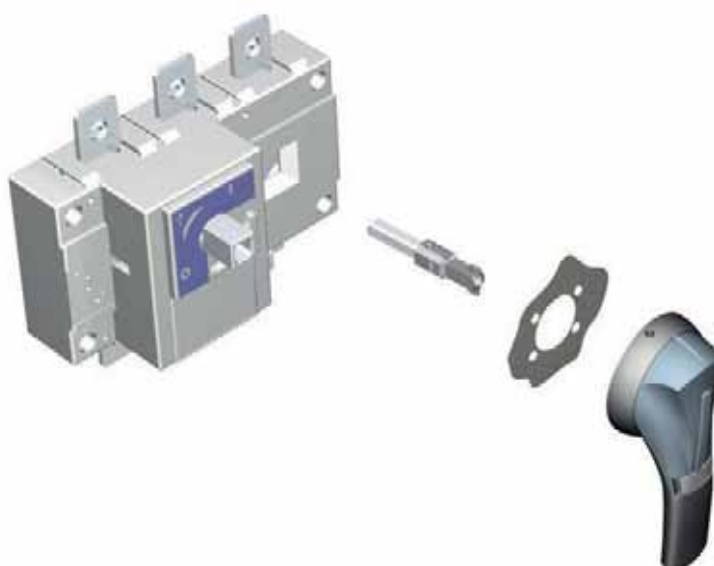
Enclosures

- > The SIRCO and SIRCO AC range can be easily fitted in our enclosures and cabinets designed for electrical distribution.



What you need to know

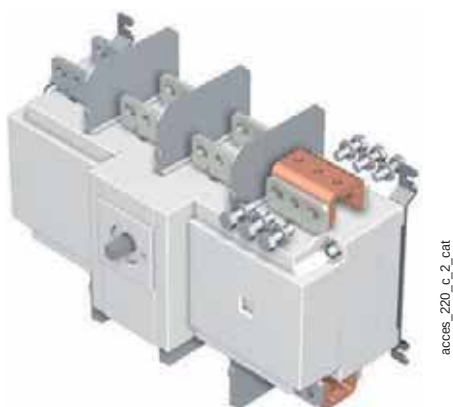
- In front **direct** or **external** operation, SIRCO is available in 3 and 4-pole versions from 125 to 5000 A.
- It can be ordered in 6 or 8-pole versions from 125 to 1600 A.
- SIRCO is available in a polyester or sheet metal enclosure from 125 to 1250 A.



sirco_372_b_1_cat

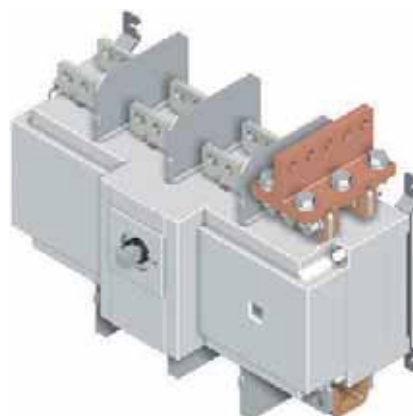
For ratings 2000, 2500 and 3200A, a copper **bar connection kit** enables the connection between the two power terminals of one pole.

Flat connection
top or bottom



accos_220_c_2_cat

Edgewise connection
top or bottom



accos_223_b_2_cat

SIRCO - References

Standard applications - Front operation - 3 & 4-pole

Rating (A) / Frame size	No. of poles	Switch body ⁽¹⁾	Direct handle	External handle	Shaft for external handle	Auxiliary contact	Terminal shrouds	Terminal screens																				
125 A / B3	3 P	2600 3014	B1 type Black 2699 5042 ⁽²⁾ Red 2699 5043	S2 type Black IP55 1421 2111 ⁽²⁾ Black IP65 1423 2111 Red IP65 1424 2111	200 mm 1400 1020 320 mm 1400 1032 ⁽²⁾ 500 mm 1400 1050		3 P	3 P																				
	4 P	2600 4014					2694 3014 ⁽³⁾ 4 P 2694 4014 ⁽³⁾	2698 3012 ⁽³⁾ 4 P 2698 4012 ⁽³⁾																				
160 A / B3	3 P	2600 3017	B2 type Black 2699 5052 ⁽²⁾ Red 2699 5053				3 P 2698 3021 ⁽³⁾ 4 P 2694 4021 ⁽³⁾	3 P 2698 3020 ⁽³⁾ 4 P 2698 4020 ⁽³⁾																				
	4 P	2600 4017																										
200 A / B4	3 P	2600 3021							1 st NO/NC contact 2699 0031 2 nd NO/NC contact 2699 0032	3 P 2698 3051 ⁽³⁾ 4 P 2694 4051 ⁽³⁾	3 P 2698 3050 ⁽³⁾ 4 P 2698 4050 ⁽³⁾																	
	4 P	2600 4021																										
250 A / B4	3 P	2600 3026										Type S4 Black IP65 1443 3111 ⁽²⁾ Red IP65 1444 3111	200 mm 1401 1520 320 mm 1401 1532 ⁽²⁾ 400 mm 1401 1540	-	3 P 2698 3120 ⁽³⁾ 4 P 2698 4120 ⁽³⁾													
	4 P	2600 4026																										
315 A / B5	3 P	2600 3032														C2 type Black 2799 7012 ⁽²⁾ Red 2799 7013	3 P 2698 3119 4 P 2600 4119	3 P 2698 3120 ⁽³⁾ 4 P 2698 4120 ⁽³⁾										
	4 P	2600 4032																										
400 A / B5	3 P	2600 3041																	V2 type Black IP65 2799 7136 ⁽²⁾ Red IP65 2799 7134	200 mm 2799 3015 320 mm 2799 3018 ⁽²⁾ 450 mm 2799 3019	1 st /2 nd NO/NC contact included	-						
	4 P	2600 4041																										
500 A / B5	3 P	2600 3051																					V0 type Black 2799 7072 ⁽²⁾	V0 type Black IP65 2799 7155 ⁽²⁾	-			
	4 P	2600 4051																										
630 A / B5	3 P	2600 3064																								V0 type Black 2799 7072 ⁽²⁾	V0 type Black IP65 2799 7155 ⁽²⁾	-
	4 P	2600 4064																										
800 A / B6	3 P	2600 3081	V0 type Black 2799 7072 ⁽²⁾	V0 type Black IP65 2799 7155 ⁽²⁾	-																							
	4 P	2600 4081																										
1000 A / B6	3 P	2600 3099					V0 type Black 2799 7072 ⁽²⁾	V0 type Black IP65 2799 7155 ⁽²⁾	-																			
	4 P	2600 4099																										
CD 1250 A / B6	3 P	2600 3119								V0 type Black 2799 7072 ⁽²⁾	V0 type Black IP65 2799 7155 ⁽²⁾	-																
	4 P	2600 4119																										
1250 A / B7	3 P	2600 3121											V0 type Black 2799 7072 ⁽²⁾	V0 type Black IP65 2799 7155 ⁽²⁾	-													
	4 P	2600 4121																										
1600 A / B7	3 P	2600 3161														V0 type Black 2799 7072 ⁽²⁾	V0 type Black IP65 2799 7155 ⁽²⁾	-										
	4 P	2600 4161																										
1800 A / B7	3 P	2600 3181																	V0 type Black 2799 7072 ⁽²⁾	V0 type Black IP65 2799 7155 ⁽²⁾	-							
	4 P	2600 4181																										
2000 A / B8	3 P	2600 3200	V0 type Black 2799 7072 ⁽²⁾	V0 type Black IP65 2799 7155 ⁽²⁾	-																							
	4 P	2600 4200																										
2500 A / B8	3 P	2600 3250					V0 type Black 2799 7072 ⁽²⁾	V0 type Black IP65 2799 7155 ⁽²⁾	-																			
	4 P	2600 4250																										
3200 A / B8	3 P	2600 3320								V0 type Black 2799 7072 ⁽²⁾	V0 type Black IP65 2799 7155 ⁽²⁾	-																
	4 P	2600 4320																										
4000 A / B9	3 P	2600 3401				V0 type Black 2799 7072 ⁽²⁾							V0 type Black IP65 2799 7155 ⁽²⁾	-														
	4 P	2600 4401																										
5000 A / B9	3 P	2600 3500													V0 type Black 2799 7072 ⁽²⁾	V0 type Black IP65 2799 7155 ⁽²⁾	-											
	4 P	2600 4500																										

(1) Device available enclosed (see "Enclosed load break switches" page 726).

(2) Standard.

(3) Top or bottom.

SIRCO AC - References

Heavy duty applications - Front operation 3 & 4 pole

Rating (A) / Frame size	No. of poles	Switch body	Direct handle	External handle	Shaft for external handle	Auxiliary contact	Terminal shrouds	Terminal screens		
200 A / B4	3 P	26AC 3020	J1 type Black 1112 1111 ⁽¹⁾ J1 type Red 1113 1111	S2 type Black IP55 1421 2111 ⁽¹⁾ Black IP65 1423 2111 Red IP65 1424 2111	200 mm 1400 1020 320 mm 1400 1032 ⁽¹⁾ 500 mm 1400 1050		3P 2694 3021 ⁽²⁾⁽³⁾ 4 P 2694 4021 ⁽²⁾⁽³⁾	3P 2698 3020 ⁽³⁾ 4 P 2698 4020 ⁽³⁾		
	250 A / B4	3 P							26AC 3025	4 P
4 P		26AC 4025								
315 A / B4	3 P	26AC 3031							4 P	2694 4021 ⁽²⁾⁽³⁾
	4 P	26AC 4031								
400 A / B5	3 P	26AC 3040					4 P	2694 4051 ⁽²⁾⁽³⁾		
	4 P	26AC 4040								
500 A / B5	3 P	26AC 3050					4 P	2694 4051 ⁽²⁾⁽³⁾		
	4 P	26AC 4050								
CD 630 A / B5	3 P	26AC 3063					4 P	2694 4051 ⁽²⁾⁽³⁾		
	4 P	26AC 4063								
630 A / B6	3 P	26AC 3064	J4 type Black 1142 1111 ⁽¹⁾ Red 1143 1111	S4 type Black IP65 1443 3111 ⁽¹⁾ Red IP65 1444 3111	200 mm 1401 1520 320 mm 1401 1532 ⁽¹⁾ 400 mm 1401 1540	1 st contact NO/NC 2699 0031 2 nd contact NO/NC 2699 0032	3 P 2698 3080 ⁽²⁾⁽³⁾ 4 P 2698 4080 ⁽²⁾⁽³⁾			
	800 A / B6	3 P						26AC 3080	4 P	2698 4120 ⁽²⁾⁽³⁾
4 P		26AC 4080								
1000 A / B6	3 P	26AC 3100						4 P	2698 4120 ⁽²⁾⁽³⁾	
	4 P	26AC 4100								
CD 1250 A / B6	3 P	26AC 3120						4 P	2698 4120 ⁽²⁾⁽³⁾	
	4 P	26AC 4120								
1250 A / B7	3 P	26AC 3121						4 P	2698 4120 ⁽²⁾⁽³⁾	
	4 P	26AC 4121								
1600 A / B7	3 P	26AC 3160						4 P	2698 4120 ⁽²⁾⁽³⁾	
	4 P	26AC 4160								
2000 A / B8	3 P	26AC 3200	S5 type Black 2799 7042 ⁽¹⁾ Red 2799 7043	S5 type Black IP65 1453 8111 ⁽¹⁾ Red IP65 1454 8111	200 mm 2799 3015 320 mm 2799 3018 ⁽¹⁾ 450 mm 2799 3019	1 st / 2 nd included	3 P 2698 3200 ⁽²⁾⁽³⁾ 4 P 2698 4200 ⁽²⁾⁽³⁾			
	4 P	26AC 4200								
4000 A / B9	3 P	26AC 3400	V0 type Black 2799 7072 ⁽¹⁾	V0 type Black 2799 7155 ⁽¹⁾			3/4P 1509 4200 ⁽⁴⁾			
	4 P	26AC 4400								

(1) Standard.

(2) Mandatory for voltage greater than 415 VAC.

(3) Top or bottom.

(4) Top and bottom.

SIRCO - References

Standard applications - Front operation - 6 & 8-pole

Rating (A) / Frame size	No. of poles	Switch body	Direct handle	External handle	Shaft for external handle	Auxiliary contact	Terminal shrouds	Terminal screens		
125 A / B3 _{DS}	6 P	2601 6013	Type B3 Black 4199 5012 ⁽¹⁾	S2 type Black IP55 1421 2111 ⁽¹⁾ Red IP65 1424 2111	200 mm 1400 1020 320 mm 1400 1032 ⁽¹⁾	1 st NO/NC contact 2699 0061 2 nd NO/NC contact 2699 0062	6 P 2694 3014 ⁽²⁾⁽³⁾ 8 P 2694 4014 ⁽²⁾⁽³⁾	6 P 1509 3012 ⁽⁴⁾ 8 P 1509 4012 ⁽⁴⁾		
	8 P	2601 8013								
160 A / B3 _{DS}	6 P	2601 6016							6 P 2694 3051 ⁽²⁾⁽³⁾ 8 P 2694 4051 ⁽²⁾⁽³⁾	6 P 1509 3063 ⁽⁴⁾ 8 P 1509 4063 ⁽⁴⁾
	8 P	2601 8016								
250 A / B4 _{DS}	6 P	2601 6025	Type C1 Black 2799 7052 ⁽¹⁾ Red 2799 7053	Type S4 Black IP65 1443 3111 ⁽¹⁾ Red IP65 1444 3111	200 mm 1401 1520 320 mm 1401 1532 ⁽¹⁾		6 P 2694 3021 ⁽²⁾⁽³⁾ 8 P 2694 4021 ⁽²⁾⁽³⁾	6 P 1509 3025 ⁽⁴⁾ 8 P 1509 4025 ⁽⁴⁾		
	8 P	2601 8025								
400 A / B5 _{DS}	6 P	2601 6040					6 P 2694 3051 ⁽²⁾⁽³⁾ 8 P 2694 4051 ⁽²⁾⁽³⁾	6 P 1509 3063 ⁽⁴⁾ 8 P 1509 4063 ⁽⁴⁾		
	8 P	2601 8040								
630 A / B5 _{DS}	6 P	2601 6063							6 P 2694 3051 ⁽²⁾⁽³⁾ 8 P 2694 4051 ⁽²⁾⁽³⁾	6 P 1509 3063 ⁽⁴⁾ 8 P 1509 4063 ⁽⁴⁾
	8 P	2601 8063								
800 A / B6 _{DS}	6 P	2601 6080	C2 type Black 2799 7012 ⁽¹⁾ Red 2799 7013	Type V1 Black IP65 2799 7145 ⁽¹⁾	320 mm 2799 3018 ⁽¹⁾		-	6 P 1509 3080 ⁽⁴⁾ 8 P 1509 4080 ⁽⁴⁾		
	8 P	2601 8080								
1000 A / B6 _{DS}	6 P	2601 6100							6 P 1509 3080 ⁽⁴⁾ 8 P 1509 4080 ⁽⁴⁾	
	8 P	2601 8100								
1250 A / B7 _{DS}	6 P	2601 6120							6 P 1509 3080 ⁽⁴⁾ 8 P 1509 4080 ⁽⁴⁾	
	8 P	2601 8120								
1600 A / B7 _{DS}	6 P	2601 6160						6 P 1509 3160 ⁽⁴⁾ 8 P 1509 4160 ⁽⁴⁾		
	8 P	2601 8160								

(1) Standard.

(2) Top or bottom on the front or rear of the device.

(3) Select 2 sets for front or rear.

(4) Top or bottom at the front of the device.

Accessories

Direct operation handle

SIRCO direct operation handle				
Rating (A) / Frame size	No. of poles	Handle type	Handle colour	Reference
125 ... 160 / B3	3/4 P	B1	Black	2699 5042⁽¹⁾
125 ... 160 / B3	3/4 P	B1	Red	2699 5043
125 ... 160 / B3 _{DS}	6/8 P	B3	Black	4199 5012⁽¹⁾
200 ... 630 / B4-B5	3/4 P	B2	Black	2699 5052⁽¹⁾
200 ... 630 / B4-B5	3/4 P	B2	Red	2699 5053
250 ... 630 / B4 _{DS} -B5 _{DS}	6/8 P	C1	Black	2799 7052⁽¹⁾
250 ... 630 / B4 _{DS} -B5 _{DS}	6/8 P	C1	Red	2799 7053
800 ... 3200 / B6...B8	3/4 P	C2	Black	2799 7012⁽¹⁾
800 ... 3200 / B6...B8	3/4 P	C2	Red	2799 7013
800 ... 1600 / B6 _{DS} -B7 _{DS}	6/8 P	C2	Black	2799 7012⁽¹⁾
800 ... 1600 / B6 _{DS} -B7 _{DS}	6/8 P	C2	Red	2799 7013
4000 ... 5000 / B9	3/4 P	V0	Black	2799 7072⁽¹⁾

(1) Standard.

SIRCO AC direct operation handle				
Rating (A) / Frame size	No. of poles	Handle type	Handle colour	Reference
200 ... CD 630 / B4 ... B5	3/4 P	J1	Black	1112 1111⁽¹⁾
200 ... CD 630 / B4 ... B5	3/4 P	J1	Red	1113 1111
630 ... 1600 / B6 ... B7	3/4 P	J4	Black	1142 1111⁽¹⁾
630 ... 1600 / B6 ... B7	3/4 P	J4	Red	1143 1111
2000 / B8	3/4 P	S5	Black	2799 7042⁽¹⁾
2000 / B8	3/4 P	S5	Red	2799 7043
4000 / B9	3/4 P	V0	Black	2799 7072⁽¹⁾

(1) Standard.



Door interlocked external operation handle

SIRCO and SIRCO AC external front operation handle						
Rating (A) / Frame size		No. of poles	Handle type	Handle colour	External IP ⁽¹⁾	Reference
125 ... 630 / B3 ... B5	200 ... CD 630 / B4 ... B5	3/4 P	S2	Black	IP55	1421 2111⁽²⁾
				Black	IP65	1423 2111
				Red	IP65	1424 2111
				Black	IP55	1421 2111⁽²⁾
125 ... 160 / B3 _{DS}		6/8 P	S2	Black	IP65	1423 2111
				Red	IP65	1424 2111
250 ... 630 / B4 _{DS} -B5 _{DS}		6/8 P	S4	Black	IP65	1443 3111
				Red	IP65	1444 3111
800 ... 1600 / B6 _{DS} -B7 _{DS}		6/8 P	V1	Black	IP65	2799 7145⁽²⁾
				Black	IP65	1443 3111⁽²⁾
800 ... 1800 / B6-B7	630 ... 1600 / B6 ... B7	3/4 P	S4	Black	IP65	1444 3111
				Black	IP65	1444 3111
2000 ... 3200 / B8	2000 / B8	3/4 P	V2	Black	IP65	2799 7136⁽²⁾
				Red	IP65	2799 7134
			S5	Black	IP65	1453 8111
				Red	IP65	1454 8111
4000 ... 5000 / B9	4000 / B9	3/4 P	V0	Black	IP65	2799 7155⁽²⁾

(1) IP: protection degree according to IEC 60529 standard.

(2) Standard.

Use

Door interlocked external operation handles include an escutcheon, are padlockable and must be utilised with an extension shaft.



Accessories (continued)

Shaft for external operation

For 3/4 pole SIRCO and SIRCO AC

Rating (A) / Frame size		Dimension X (mm)	Length (mm)	Reference
SIRCO	SIRCO AC			
125 ... 160 / B3		125 ... 250	200	1400 1020
		125 ... 300	250	1400 1025
		125 ... 370	320	1400 1032
		125 ... 550	500	1400 1050
		125 ... 850	750	1400 1075
200 ... 250 / B4	200 ... 315 / B4	135 ... 265	200	1400 1020
		135 ... 315	250	1400 1025
		135 ... 385	320	1400 1032
		135 ... 565	500	1400 1050
		135 ... 880	750	1400 1075
315 ... 630 / B5	400 ... CD 630 / B5	165 ... 295	200	1400 1020
		165 ... 345	250	1400 1025
		165 ... 415	320	1400 1032
		165 ... 595	500	1400 1050
		165 ... 940	750	1400 1075
800 ... 1800 / B6...B7	630 ... 1600 / B6 ... B7	221 ... 343	200	1401 1520
		221 ... 463	320	1401 1532
		221 ... 543	400	1401 1540
2000 ... 3200 / B8	2000 / B8	415 ... 570	200	2799 3015
		415 ... 690	320	2799 3018
		415 ... 820	450	2799 3019
4000 ... 5000 / B9	4000 / B9	550 ... 680	200	2799 3015
		651 ... 921	320	2799 3018

For 6/8-pole SIRCO

Rating (A) / Frame size	Dimension X (mm)	Length (mm)	Reference
125 ... 160 / B3 _{DS}	270 ... 436	200	1400 1020
125 ... 160 / B3 _{DS}	270 ... 556	320	1400 1032
250 ... 630 / B4 _{DS} -B5 _{DS}	221 ... 308	200	1401 1520
250 ... 630 / B4 _{DS} -B5 _{DS}	221 ... 428	320	1401 1532
250 ... 630 / B4 _{DS} -B5 _{DS}	221 ... 508	400	1401 1540

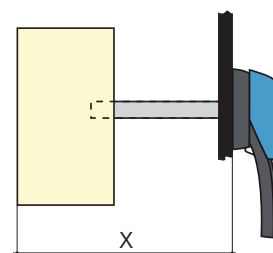
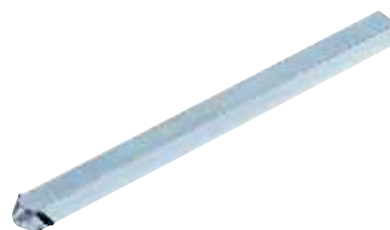
Use

Standard lengths:

- 200 mm
- 250 mm
- 300 mm
- 400 mm
- 500 mm
- 750 mm

Other lengths available:

- please consult us.



Alternative handle cover colours

Use

For S type handles.

Handle colour	To be ordered in multiples of	Handle type	Reference
Light grey	50	S2, S3	1401 0001
Dark grey	50	S2, S3	1401 0011
Light grey	50	S4	1401 0031
Dark grey	50	S4	1401 0041



S type cover

S type handle adapter

Use

Adds 12 mm to the depth of the handle.

Handle colour	To be ordered in multiples of	External IP ⁽¹⁾	Reference
Black	1	IP65	1493 0000

(1) IP: protection degree according to IEC 60529 standard.



Shaft guide for external operation

Use

For use with S-type handles, to guide the shaft extension into the external handle. This accessory enables the handle to engage the extension shaft with a misalignment of up to 15 mm. Recommended for shaft lengths over 320 mm.

Description	Reference
Shaft guide	1429 0000



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Auxiliary contact

Use

Pre-break and signalling of positions 0 and I:
- 1 to 2 NO/NC auxiliary contacts.
- 1 to 4 NO+NC auxiliary contacts.
- 1 to 2 low level NO/NC auxiliary contacts.

Characteristics

NO/NC A/C: IP2 with front operation.

Connection to the control circuit

6.35 mm fast-on terminal.

Electrical characteristics

30 000 operations.

NO/NC contact for 3/4 pole SIRCO and SIRCO AC		
Rating (A) / Frame size	Position A/C	Reference
125 ... 3200 / B3 ... B8	1 st	2699 0031
125 ... 3200 / B3 ... B8	2 nd	2699 0032
4000 ... 5000 / B9	1 st /2 nd	included

NO/NC contact for 6/8 pole SIRCO		
Rating (A) / Frame size	Position A/C	Reference
125 ... 1600 / B3 _{DS} ... B7 _{DS}	1 st	2699 0061
125 ... 1600 / B3 _{DS} ... B7 _{DS}	2 nd	2699 0062

NO+NC contact for 3/4 pole SIRCO and SIRCO AC		
Rating (A) / Frame size	Position A/C	Reference
125 ... 3200 / B3 ... B8	1 st	2699 0141
125 ... 3200 / B3 ... B8	2 nd /3 rd /4 th	2699 0142

NO/NC low level contact for 3/4 pole SIRCO and SIRCO AC		
Rating (A) / Frame size	Position A/C	Reference
125 ... 3200 / B3 ... B8	1 st	2699 0301
125 ... 3200 / B3 ... B8	2 nd	2699 0302

Characteristics

			Operating current I _o (A)									
Rating (A) / Frame size	Contact type	Current nominal (A)	230 VAC		400 VAC		24 VDC			48 VDC		
			AC-12	AC-13/15	AC-12	AC-13/15	DC-12	DC-13	DC-14	DC-12	DC-13	DC-14
125 ... 3200 / B3 ... B8	NO/NC	16	16	4	12	3	2.5	2.5	1	2.5	1.2	0.2
125 ... 3200 / B3 ... B8	NO + NC	16	16	4	16	3	16	5	1	2.5	1.2	0.2

Inter-phase barrier

Use

Safe isolation between the terminals, essential for use at 690 VAC or in a polluted or dusty atmosphere.

For 3/4 poles SIRCO and SIRCO AC

Rating (A) / Frame size	SIRCO AC	No. of poles	Reference
SIRCO			
125 ... 160 / B3		3 P	2998 0033
125 ... 160 / B3		4 P	2998 0034
200 ... 250 / B4	200 ... 315 / B4	3 P	2998 0023
200 ... 250 / B4	200 ... 315 / B4	4 P	2998 0024
315 ... 630 / B5	315 ... CD 360 / B5	3 P	2998 0013
315 ... 630 / B5	315 ... CD 360 / B5	4 P	2998 0014
800 ... 5000 / B6 ... B9	630 ... 4000 / B6 ... B9	3 P	included
800 ... 5000 / B6 ... B9	630 ... 4000 / B6 ... B9	4 P	included



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Accessories (continued)

Terminal shrouds

Use

Top or bottom protection against direct contact with terminals or connection parts.

Advantage

Perforations allow remote thermographic inspection without the need to remove the shrouds. The terminal shrouds also provide phase separation for SIRCO and SIRCO AC from 125 to 630 A.



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For 3/4 poles SIRCO and SIRCO AC

Rating (A) / Frame size	SIRCO	SIRCO AC	No. of poles	Position	Reference
125 ... 160 / B3			3 P	top or bottom	2694 3014 ⁽¹⁾
125 ... 160 / B3			4 P	top or bottom	2694 4014 ⁽²⁾
200 ... 250 / B4		200 ... 315 / B4	3 P	top or bottom	2694 3021 ⁽¹⁾
200 ... 250 / B4		200 ... 315 / B4	4 P	top or bottom	2694 4021 ⁽²⁾
315 ... 630 / B5		400 ... CD 630 / B5	3 P	top or bottom	2694 3051 ⁽¹⁾
315 ... 630 / B5		400 ... CD 630 / B5	4 P	top or bottom	2694 4051 ⁽²⁾

(1) Reference includes 3 parts for top or bottom protection.

(2) Reference includes 4 parts for top or bottom protection.

For 6/8-pole SIRCO

Rating (A) / Frame size	No. of poles	Position	Reference
125 ... 160 / B3 _{DS}	6 P	Top or bottom	2694 3014 ⁽¹⁾⁽³⁾
125 ... 160 / B3 _{DS}	8 P	Top or bottom	2694 4014 ⁽²⁾⁽³⁾
250 / B4 _{DS}	6 P	Top or bottom	2694 3021 ⁽¹⁾⁽³⁾
250 / B4 _{DS}	8 P	Top or bottom	2694 4021 ⁽²⁾⁽³⁾
400 ... 630 / B5 _{DS}	6 P	Top or bottom	2694 3051 ⁽¹⁾⁽³⁾
400 ... 630 / B5 _{DS}	8 P	Top or bottom	2694 4051 ⁽²⁾⁽³⁾

(1) Reference includes 3 parts for top or bottom protection on the front or rear of the device.

(2) Reference includes 4 parts for top or bottom protection on the front or rear of the device.

(3) Select 2 sets for front or rear.

Distribution block

Use

Easy connection of multiple cables, bottom of the SIRCO.

For 3/4-pole SIRCO

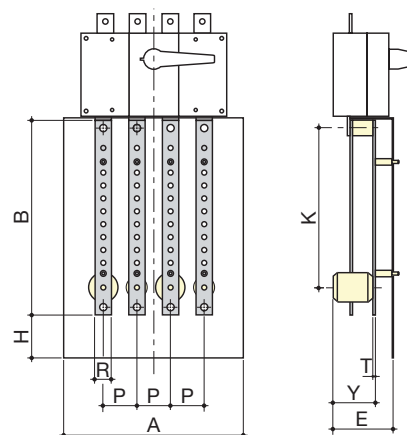
Rating (A) / Frame size	No. of poles	No. of feeders per section (mm ²)	I _{cc} (kA rms) ⁽¹⁾	Reference
160 / B3	3 P	1x95 + 8x25	10	5411 3016
160 / B3	4 P	1x95 + 8x25	10	5411 4016
250 / B4	3 P	1x150 + 8x50	15	5411 3025
250 / B4	4 P	1x150 + 8x50	15	5411 4025
400 / B5	3 P	1x240 + 8x95	21	5411 3040
400 / B5	4 P	1x240 + 8x95	21	5411 4040
630 / B5	3 P	1x300 + 8x150	21	5411 3063
630 / B5	4 P	1x300 + 8x150	21	5411 4063

Dimensions

Rating (A) / Frame size	No. of poles	A	B	T	H	K	P	R	T	Y
160 / B3	3 P	154	286	73	46.5	261.5	36	20	4	54
160 / B3	4 P	190	286	73	46.5	261.5	36	20	4	54
250 / B4	3 P	210	307	83	57.5	279	50	25	4	56
250 / B4	4 P	260	307	83	57.5	279	50	25	4	56
400 / B5	3 P	281	375	116	82.5	340	65	32	5	82
400 / B5	4 P	346	375	116	82.5	340	65	32	5	82
630 / B5	3 P	271	438	117	90.5	410.5	65	40	6	83
630 / B5	4 P	346	438	117	90.5	410.5	65	40	6	83



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Terminal screens

Use

Top or bottom protection from direct contact with terminals or connection parts.

For 3/4 poles SIRCO and SIRCO AC

Rating (A) / Frame size		No. of poles	Position	Reference
SIRCO	SIRCO AC			
125 ... 160 / B3		3 P	top or bottom	2698 3012
125 ... 160 / B3		4 P	top or bottom	2698 4012
200 ... 250 / B4	200 ... 315 / B4	3 P	top or bottom	2698 3020
200 ... 250 / B4	200 ... 315 / B4	4 P	top or bottom	2698 4020
315 ... 630 / B5	400 ... CD 630 / B5	3 P	top or bottom	2698 3050
315 ... 630 / B5	400 ... CD 630 / B5	4 P	top or bottom	2698 4050
800 ... CD 1250 / B6	630 ... CD 1250 / B6	3 P	top or bottom	2698 3080
800 ... CD 1250 / B6	630 ... CD 1250 / B6	4 P	top or bottom	2698 4080
1250 ... 1800 / B7	1250 ... 1600 / B7	3 P	top or bottom	2698 3120
1250 ... 1800 / B7	1250 ... 1600 / B7	4 P	top or bottom	2698 4120
2000 ... 3200 / B8	2000 / B8	3 P	top or bottom	2698 3200
2000 ... 3200 / B8	2000 / B8	4 P	top or bottom	2698 4200
4000 ... 5000 / B9	4000 / B9	3/4 P	top or bottom	1509 4200



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For 6/8-pole SIRCO

Rating (A) / Frame size	No. of poles	Position	Reference
125 ... 160 / B3 _{DS}	6 P	Top or bottom	1509 3012
125 ... 160 / B3 _{DS}	8 P	Top or bottom	1509 4012
250 / B4 _{DS}	6 P	Top or bottom	1509 3025
250 / B4 _{DS}	8 P	Top or bottom	1509 4025
400 ... 630 / B5 _{DS}	6 P	Top or bottom	1509 3063
400 ... 630 / B5 _{DS}	8 P	Top or bottom	1509 4063
800 ... 1250 / B6 _{DS} -B7 _{DS}	6 P	Top or bottom	1509 3080
800 ... 1250 / B6 _{DS} -B7 _{DS}	8 P	Top or bottom	1509 4080
1600 / B7 _{DS}	6 P	Top or bottom	1509 3160
1600 / B7 _{DS}	8 P	Top or bottom	1509 4160

Cage terminals

Use

They enable a direct terminal-free connection to rigid copper and aluminium conductors with integration under the IP2X protective cover.

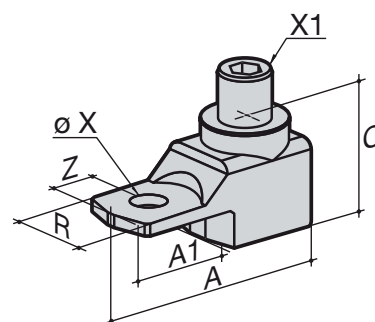
Material: tin-plated aluminium

Dimensions

Rating (A) / Frame size	A	A1	C	T	R	T	ØX	X1	Z
125 ... 160 / B3	47.5	22.5	25	12	20	3.5	8.5	M12	10
200 ... 250 / B4	62	31.5	31.5	16.5	25	2.5	10.5	M16	14
315 ... 400 / B5	71.5	32	38	9	32	5	10.5	M20	15
500 ... 630 / B5	76.5	37	38	9	40	5	12.5	M20	15

References

Rating (A) / Frame size	Tightening capacity (mm²)	No. of poles	Tightening torque (Nm)	Flexible bar width (mm)	Reference
125 ... 160 / B3	16 ... 95	3 P	14	13	5400 3016
125 ... 160 / B3	16 ... 95	4 P	14	13	5400 4016
200 ... 250 / B4	16 ... 185	3 P	25	18	5400 3025
200 ... 250 / B4	16 ... 185	4 P	25	18	5400 4025
315 ... 400 / B5	50 ... 240	3 P	45	20	5400 3040
315 ... 400 / B5	50 ... 240	4 P	45	20	5400 4040
500 ... 630 / B5	70 ... 300	3 P	45	24	5400 3063
500 ... 630 / B5	70 ... 300	4 P	45	24	5400 4063



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Accessories (continued)

Copper bar connection kits

Use

To allow connection between the two power terminals of the same pole for 2000 to 3200 A ratings (Fig. 1 and Fig 2).

For 3200 A rating, the connection pieces (part A) are delivered bridged as standard.

Bolt sets must be ordered separately.

Further details for these specific accessories are available in the user guide downloadable from www.socomec.com.

Top or bottom flat connection - Fig. 1

Rating (A) / Frame size	Part	Quantity to order per pole ⁽¹⁾	Reference
2000 ... 2500 / B8	Connection - part A	1	2619 1200
2000 ... 2500 / B8	Bolt set - part B	1	2699 1200
3200 / B8	Connection - part A		included
3200 / B8	Bolt set - part B	1	2699 1200
4000 ... 5000 / B9	Standard connection		

(1) Example for 3-pole device equipped top only: order 3 times the indicated quantity.

Fig. 1

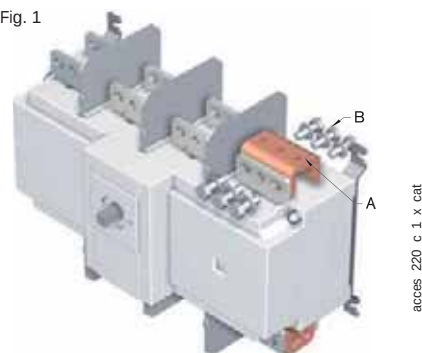
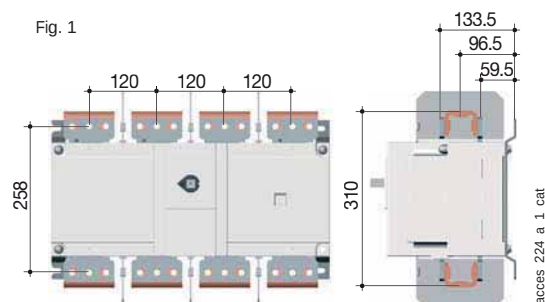


Fig. 1



Top or bottom edgewise connection - Fig. 2

Rating (A) / Frame size	Part	Quantity to order per pole ⁽¹⁾	Reference
2000 ... 2500 / B8	Connection - part A	1	2619 1200
2000 ... 2500 / B8	T piece - part C	1	2629 1200⁽²⁾
2000 ... 2500 / B8	Bracket - part D	1	2639 1200⁽²⁾
3200 / B8	Connection - part A		included
3200 / B8	T piece - part C	1	2629 1200
3200 / B8	Bracket - part D	1	2639 1200
4000 ... 5000 / B9	Standard connection		

(1) Example for 3-pole device equipped top only: order 3 times the indicated quantity.

(2) Bolt set is provided with the accessories.

Fig. 2

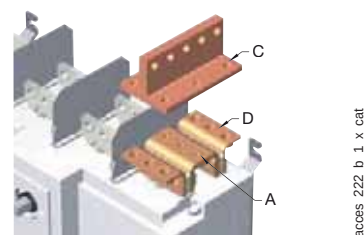
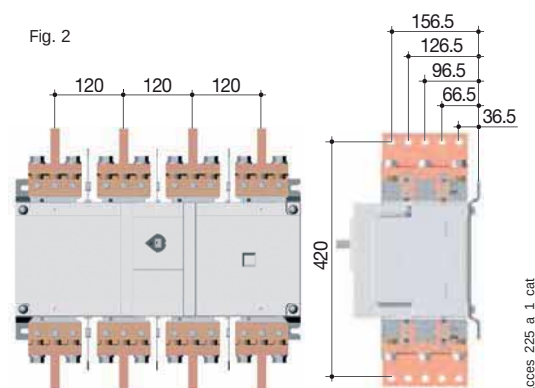


Fig. 2



Key handle interlocking system

Use

Locking in position 0 of the front or side operation handle:

- using a padlock (not supplied) and standard padlocking function of the handle. From 125 to 1800 A, padlocking the external front operation handle provides door interlocking,

- using a lock (not supplied): see diagrams opposite,
- using an undervoltage coil: the SIRCO can only be closed if the coil is energised.

For 6 / 8-pole, please consult us.

For SIRCO

Locking using RONIS EL11AP lock (not supplied)

Rating (A) / Frame size	No. of poles	Operation	Figure	Reference
125 ... 630 / B3 ... B5	3/4 P	Front direct	1	2699 6008⁽¹⁾
125 ... 1800 / B3 ... B7	3/4 P	External front	3	1499 7701
800 ... 3200 / B6 ... B8	3/4 P	Front direct	2	2699 6027
1250 ... 5000 / B7 ... B9	3/4 P	External front	4	2799 7002

(1) Front operation handle included.

For SIRCO AC

Locking using RONIS EL11AP lock (not supplied)

Rating (A) / Frame size	No. of poles	Operation	Figure	Reference
200 ... CD 630 / B4 ... B5	3/4 P	Front direct	1	2699 6011⁽¹⁾
630 ... 1600 / B6 ... B7	3/4 P	Front direct	2	2699 6028

(1) The locking system is directly mounted on the device.

For SIRCO

Locking using 230 VAC undervoltage coil

(For other voltages, please contact us)

Rating (A) / Frame size	No. of poles	Operation	Reference
125 ... 630 / B3 ... B5	3/4 P	External front	2699 9063⁽¹⁾
800 ... 3200 / B6 ... B8	3/4 P	Front direct	2699 9315⁽¹⁾

(1) The locking system is directly mounted on the device.

Locking using CASTELL lock (not supplied)

Rating (A) / Frame size	No. of poles	Handle type	Lock type	Operation	Figure	Reference
125 ... 160 / B3	6/8 P	S2	K	External front	2	4109 8507
125 ... 1 800 / B3 ... B8	3/4 P	S2, S4	FS	External front	3	1499 7703
125 ... 1 800 / B3 ... B8	3/4 P	S2, S4	K	External front	3	1499 7702
250 ... 630 / B4 ... B5	6/8 P	S4	K	External front	2	2999 8707
800 ... 1 600 / B6 ... B7	6/8 P	S5	K	External front	2	2799 7003
1 250 ... 4 000 / B7 ... B9	3/4 P	S5, S0	K	External front	2	2799 7003

Fig. 1

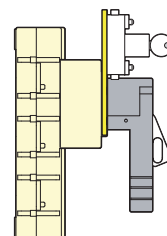


Fig. 3

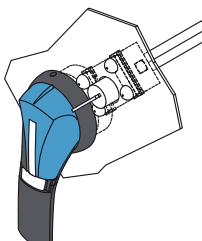


Fig. 2

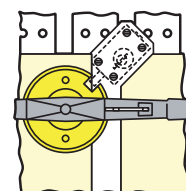
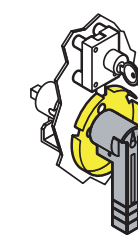


Fig. 4



Other specific accessories



- Mechanical coupling device for making switches with "n" poles of the same or different ratings
- Mechanical interlocking device

SIRCO characteristics according to IEC 60947-3

125 to 800 A

Thermal current I_{th} at 40°C	125 A	160 A	200 A	250 A	315 A	400 A	500 A	630 A	800 A
Frame size	B3	B3	B4	B4	B5	B5	B5	B5	B6
Rated insulation voltage U_i (V)	800	800	800	800	1000	1000	1000	1000	1000
Rated impulse withstand voltage U_{imp} (kV)	8	8	8	8	12	12	12	12	12

Rated operational currents I_e (A)

Rated voltage	Utilisation category	A / B ⁽¹⁾	A / B ⁽¹⁾	A / B ⁽¹⁾	A / B ⁽¹⁾	A / B ⁽¹⁾	A / B ⁽¹⁾	A / B ⁽¹⁾	A / B ⁽¹⁾	A / B ⁽¹⁾
415 VAC	AC-20 A / AC-20 B	125 / 125	160 / 160	200 / 200	250 / 250	315 / 315	400 / 400	500 / 500	630 / 630	800 / 800
415 VAC	AC-21 A / AC-21 B	125 / 125	160 / 160	200 / 200	250 / 250	315 / 315	400 / 400	500 / 500	630 / 630	800 / 800
415 VAC	AC-22 A / AC-22 B	125 / 125	160 / 160	200 / 200	250 / 250	315 / 315	400 / 400	500 / 500	630 / 630	800 / 800
415 VAC	AC-23 A / AC-23 B	125 / 125	160 / 160	200 / 200	250 / 250	315 / 315	400 / 400	500 / 500	500 / 500	800 / 800
220 VDC	DC-20 A / DC-20 B	125 / 125	160 / 160	200 / 200	250 / 250	315 / 315	400 / 400	500 / 500	630 / 630	800 / 800
220 VDC	DC-21 A / DC-21 B	125 / 125	160 / 160	160 / 200	250 / 250	315 / 315	400 / 400	500 / 500	630 / 630	800 / 800
220 VDC	DC-22 A / DC-22 B	125 / 125	160 / 160	160 / 200	250 / 250	315 / 315	400 / 400	400 / 500	500 / 500	800 / 800
220 VDC	DC-23 A / DC-23 B	125 / 125	125 / 125	160 / 160	200 / 200	315 / 315	400 / 400	400 / 400	500 / 500	800 / 800
440 VDC	DC-20 A / DC-20 B	125 / 125	160 / 160	200 / 200	250 / 250	315 / 315	400 / 400	500 / 500	630 / 630	800 / 800
440 VDC	DC-21 A / DC-21 B	125 ⁽³⁾ / 125 ⁽³⁾	160 ⁽³⁾ / 160 ⁽³⁾	160 ⁽³⁾ / 200 ⁽³⁾	200 ⁽³⁾ / 200 ⁽³⁾	315 ⁽³⁾ / 315 ⁽³⁾	400 ⁽³⁾ / 400 ⁽³⁾	400 ⁽³⁾ / 400 ⁽³⁾	500 ⁽³⁾ / 500 ⁽³⁾	800 ⁽⁴⁾ / 800 ⁽⁴⁾
440 VDC	DC-22 A / DC-22 B	125 ⁽³⁾ / 125 ⁽³⁾	125 ⁽³⁾ / 125 ⁽³⁾	160 ⁽³⁾ / 160 ⁽³⁾	200 ⁽³⁾ / 200 ⁽³⁾	315 ⁽³⁾ / 315 ⁽³⁾	400 ⁽³⁾ / 400 ⁽³⁾	400 ⁽³⁾ / 400 ⁽³⁾	500 ⁽³⁾ / 500 ⁽³⁾	800 ⁽⁴⁾ / 800 ⁽⁴⁾
440 VDC	DC-23 A / DC-23 B	125 ⁽⁴⁾ / 125 ⁽⁴⁾	125 ⁽⁴⁾ / 125 ⁽⁴⁾	160 ⁽⁴⁾ / 160 ⁽⁴⁾	200 ⁽⁴⁾ / 200 ⁽⁴⁾	315 ⁽⁴⁾ / 315 ⁽⁴⁾	400 ⁽⁴⁾ / 400 ⁽⁴⁾	400 ⁽⁴⁾ / 400 ⁽⁴⁾	500 / 500	800 ⁽⁴⁾ / 800 ⁽⁴⁾
500 VDC	DC-20 A / DC-20 B	125 / 125	160 / 160	200 / 200	250 / 250	315 / 315	400 / 400	500 / 500	630 / 630	800 / 800
500 VDC	DC-21 A / DC-21 B	125 ⁽³⁾ / 125 ⁽³⁾	125 ⁽³⁾ / 125 ⁽³⁾	160 ⁽³⁾ / 200 ⁽³⁾	200 ⁽³⁾ / 200 ⁽³⁾	315 ⁽³⁾ / 315 ⁽³⁾	400 ⁽³⁾ / 400 ⁽³⁾	400 ⁽³⁾ / 400 ⁽³⁾	500 ⁽³⁾ / 500 ⁽³⁾	800 ⁽⁴⁾ / 800 ⁽⁴⁾
500 VDC	DC-22 A / DC-22 B	125 ⁽⁴⁾ / 125 ⁽⁴⁾	125 ⁽⁴⁾ / 125 ⁽⁴⁾	160 ⁽⁴⁾ / 160 ⁽⁴⁾	200 ⁽⁴⁾ / 200 ⁽⁴⁾	315 ⁽⁴⁾ / 315 ⁽⁴⁾	315 ⁽⁴⁾ / 400 ⁽⁴⁾	315 ⁽⁴⁾ / 400 ⁽⁴⁾	500 ⁽⁴⁾ / 500 ⁽⁴⁾	800 ⁽⁴⁾ / 800 ⁽⁴⁾
500 VDC	DC-23 A / DC-23 B	125 ⁽⁴⁾ / 125 ⁽⁴⁾	125 ⁽⁴⁾ / 125 ⁽⁴⁾	160 ⁽⁴⁾ / 160 ⁽⁴⁾	200 ⁽⁴⁾ / 200 ⁽⁴⁾	315 ⁽⁴⁾ / 315 ⁽⁴⁾	315 ⁽⁴⁾ / 400 ⁽⁴⁾	315 ⁽⁴⁾ / 400 ⁽⁴⁾	500 ⁽⁴⁾ / 500 ⁽⁴⁾	800 ⁽⁴⁾ / 800 ⁽⁴⁾

Operational power in AC-23 (kW)⁽¹⁾⁽⁵⁾

At 415 VAC without AC pre-break ⁽¹⁾	63 / 63	80 / 80	100 / 100	132 / 132	160 / 160	220 / 220	280 / 280	280 / 280	450 / 450
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Reactive power (kvar)

At 400 VAC (kvar) ⁽⁵⁾	55	75	90	115	145	185	230	290	365
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gG DIN fuse protected short-circuit withstand (kA rms prospective)⁽⁶⁾

Prospective short-circuit current (kA rms)	100	100	80	50	100	100	100	70	50
Associated fuse rating (A)	125	160	200	250	315	400	500	630	800

Circuit breaker protected short-circuit withstand with any circuit breaker that ensures tripping in less than 0.3s

Rated short-time withstand current 0.3s. I_{cw} (kA rms)	15	15	17	17	25	25	25	25	50
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Short-circuit operation (switch only)

Rated short-time withstand current I_{cw} 1s (kA rms)	7	7	9	9	13	13	13	13	26
Rated peak withstand current in I_{cc} (kA peak) ⁽⁶⁾⁽⁷⁾	20	20	30	30	45	45	45	45	55

Connection

Minimum Cu cable cross-section (mm ²)	35	50	70	95	150	185	240	2 x 150	2 x 185
Minimum Cu busbar cross-section (mm ²)								2 x 30 x 5	2 x 40 x 5
Maximum Cu cable cross-section (mm ²)	50	95	95	150	240	240	240	2 x 300	2 x 300
Maximum Cu busbar width (mm)	25	25	32	32	40	40	40	50	63
Tightening torque min/max (Nm)	9 / -	9 / -	20 / -	20 / -	20 / -	20 / -	20 / -	40 / 45	40 / 45

Mechanical characteristics

Durability (number of operating cycles)	10000	10000	10000	10000	10000	10000	10000	10000	3000
Operating effort (Nm)	6.5	6.5	10	10	14.5	14.5	14.5	14.5	37
Weight of a 3-pole device (kg)	1	1.5	2	2	3.5	3.5	3.5	3.5	8
Weight of a 4-pole device (kg)	1.5	1.5	2	2	4	4	4.5	4.5	10

(1) Category with index A = frequent operation - Category with index B = infrequent operation.

(2) With terminal shrouds or phase barrier.

(3) 3-pole device with 2 poles in series for the '+' and 1 pole for the '-'.

(4) 4-pole device with 2 poles in series per polarity.

(5) The power value is given for information only, the current values vary from one manufacturer to another.

(6) For a rated operational voltage $U_e = 415$ VAC.

(7) Coordination tables with circuit breaker: please consult us.

SIRCO characteristics according to IEC 60947-3

1000 to 5000 A

Thermal current I_{th} at 40°C	1000 A	CD 1250 A	1250 A	1600 A	1800 A	2000 A	2500 A	3200 A	4000 A	5000 A
Frame size	B6	B6	B7	B7	B7	B8	B8	B8	B9	B9
Rated insulation voltage U_i (V)	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Rated impulse withstand voltage U_{imp} (kV)	12	12	12	12	12	12	12	12	12	12

Rated operational currents I_e (A)

Rated voltage	Utilisation category	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾
415 VAC	AC-20 A / AC-20 B	1000 / 1000	1250 / 1250	1250 / 1250	1600 / 1600	1800 / 1800	2000 / 2000	2500 / 2500	3200 / 3200	4000 / 4000	5000 / 5000
415 VAC	AC-21 A / AC-21 B	1000 / 1000	1250 / 1250	1250 / 1250	1600 / 1600	1800 / 1800	2000 / 2000	2500 / 2500	3200 / 3200	4000 / 4000	5000 / 5000
415 VAC	AC-22 A / AC-22 B	1000 / 1000	1250 / 1250	1250 / 1250	1600 / 1600	1800 / 1800	2000 / 2000	2500 / 2500	2500 / 3200	2500 / 3200	2500 / 3200
415 VAC	AC-23 A / AC-23 B	1000 / 1000	1250 / 1250	1250 / 1250	1250 / 1250	1250 / 1250	1600 / 1600	1600 / 1600	1600 / 1600	1800 / 2000	1800 / 2000
220 VDC	DC-20 A / DC-20 B	1000 / 1000	1250 / 1250	1250 / 1250	1600 / 1600	1800 / 1800	2000 / 2000	2500 / 2500	3200 / 3200	4000 / 4000	5000 / 5000
220 VDC	DC-21 A / DC-21 B	1000 / 1000	1250 / 1250	1250 / 1250	1250 / 1600	1250 / 1600	2000 / 2000	2000 / 2500	2000 / 2500	2500 / 3200	2500 / 3200
220 VDC	DC-22 A / DC-22 B	1000 / 1000	1250 / 1250	1250 / 1250	1250 / 1250	1250 / 1250	1250 / 1600	1250 / 1600	1250 / 1600	1800 / 2000	1800 / 2000
220 VDC	DC-23 A / DC-23 B	1000 / 1000	1250 / 1250	1250 / 1250	1250 / 1250	1250 / 1250	1250 / 1250	1250 / 1250	1250 / 1250	1250 / 1600	1250 / 1600
440 VDC	DC-20 A / DC-20 B	1000 / 1000	1250 / 1250	1250 / 1250	1600 / 1600	1800 / 1800	2000 / 2000	2500 / 2500	3200 / 3200	4000 / 4000	5000 / 5000
440 VDC	DC-21 A / DC-21 B	1000 ⁽⁴⁾ / 1000 ⁽⁴⁾	1250 ⁽⁴⁾ / 1250 ⁽⁴⁾	1250 ⁽⁴⁾ / 1250 ⁽⁴⁾	1250 ⁽⁴⁾ / 1600 ⁽⁴⁾	1250 ⁽⁴⁾ / 1600 ⁽⁴⁾	2000 ⁽⁴⁾ / 2000 ⁽⁴⁾	2000 ⁽⁴⁾ / 2500 ⁽⁴⁾	2500 ⁽⁴⁾ / 3200 ⁽⁴⁾	3200 ⁽⁴⁾ / 4000 ⁽⁴⁾	3200 ⁽⁴⁾ / 5000 ⁽⁴⁾
440 VDC	DC-22 A / DC-22 B	1000 ⁽⁴⁾ / 1000 ⁽⁴⁾	1250 ⁽⁴⁾ / 1250 ⁽⁴⁾	1250 ⁽⁴⁾ / 1250 ⁽⁴⁾	1250 ⁽⁴⁾ / 1250 ⁽⁴⁾	1250 ⁽⁴⁾ / 1250 ⁽⁴⁾	1250 ⁽⁴⁾ / 1250 ⁽⁴⁾	1250 ⁽⁴⁾ / 1250 ⁽⁴⁾	1250 ⁽⁴⁾ / 1250 ⁽⁴⁾	1600 ⁽⁴⁾ / 1800 ⁽⁴⁾	1600 ⁽⁴⁾ / 1800 ⁽⁴⁾
440 VDC	DC-23 A / DC-23 B	1000 ⁽⁴⁾ / 1000 ⁽⁴⁾	1250 ⁽⁴⁾ / 1250 ⁽⁴⁾	1250 ⁽⁴⁾ / 1250 ⁽⁴⁾	1250 ⁽⁴⁾ / 1250 ⁽⁴⁾	1250 ⁽⁴⁾ / 1250 ⁽⁴⁾	1250 ⁽⁴⁾ / 1250 ⁽⁴⁾	1250 ⁽⁴⁾ / 1250 ⁽⁴⁾	1250 ⁽⁴⁾ / 1250 ⁽⁴⁾	1250 ⁽⁴⁾ / 1250 ⁽⁴⁾	1250 ⁽⁴⁾ / 1250 ⁽⁴⁾
500 VDC	DC-20 A / DC-20 B	1000 / 1000	1250 / 1250	1250 / 1250	1600 / 1600	1800 / 1800	2000 / 2000	2500 / 2500	3250 / 3250	4000 / 4000	5000 / 5000
500 VDC	DC-21 A / DC-21 B	1000 ⁽⁴⁾ / 1000 ⁽⁴⁾	1250 ⁽⁴⁾ / 1250 ⁽⁴⁾	1250 ⁽⁴⁾ / 1250 ⁽⁴⁾	1250 ⁽⁴⁾ / 1600 ⁽⁴⁾	1250 ⁽⁴⁾ / 1600 ⁽⁴⁾	1250 ⁽⁴⁾ / 1250 ⁽⁴⁾	1250 ⁽⁴⁾ / 1250 ⁽⁴⁾	1250 ⁽⁴⁾ / 1250 ⁽⁴⁾	1600 ⁽⁴⁾ / 1800 ⁽⁴⁾	1600 ⁽⁴⁾ / 1800 ⁽⁴⁾
500 VDC	DC-22 A / DC-22 B	1000 ⁽⁴⁾ / 1000 ⁽⁴⁾	1250 ⁽⁴⁾ / 1250 ⁽⁴⁾	1250 ⁽⁴⁾ / 1250 ⁽⁴⁾	1250 ⁽⁴⁾ / 1250 ⁽⁴⁾	1250 ⁽⁴⁾ / 1250 ⁽⁴⁾	1250 ⁽⁴⁾ / 1250 ⁽⁴⁾	1250 ⁽⁴⁾ / 1250 ⁽⁴⁾	1250 ⁽⁴⁾ / 1250 ⁽⁴⁾	1250 ⁽⁴⁾ / 1600 ⁽⁴⁾	1250 ⁽⁴⁾ / 1600 ⁽⁴⁾
500 VDC	DC-23 A / DC-23 B	1000 ⁽⁴⁾ / 1000 ⁽⁴⁾	1250 ⁽⁴⁾ / 1250 ⁽⁴⁾	1250 ⁽⁴⁾ / 1250 ⁽⁴⁾	1250 ⁽⁴⁾ / 1250 ⁽⁴⁾	1250 ⁽⁴⁾ / 1250 ⁽⁴⁾	1000 ⁽⁴⁾ / 1000 ⁽⁴⁾	1000 ⁽⁴⁾ / 1000 ⁽⁴⁾	1000 ⁽⁴⁾ / 1000 ⁽⁴⁾	1000 ⁽⁴⁾ / 1000 ⁽⁴⁾	1000 ⁽⁴⁾ / 1000 ⁽⁴⁾

Operational power in AC-23 (kW)⁽¹⁾⁽⁵⁾

At 415 VAC without AC pre-break ⁽¹⁾	560 / 560	710 / 710	710 / 710	710 / 710	710 / 710	710 / 710	710 / 710	710 / 710	710 / 710	710 / 710	710 / 710
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Reactive power (kvar)

At 400 VAC (kvar) ⁽⁵⁾	460										
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gG DIN fuse protected short-circuit withstand (kA rms prospective)⁽⁶⁾

Prospective short-circuit current (kA rms)	100	100	100	100	100	100	100				
Associated fuse rating (A)	1000	1250	1250	2 x 800	2 x 800	2 x 1000	2 x 1250				

Circuit breaker protected short-circuit withstand with any circuit breaker that ensures tripping in less than 0.3s

Rated short-time withstand current 0.3s. I_{cw} (kA rms)	65	65	100	100	100	100	100	100			
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Short-circuit operation (switch only)

Rated short-time withstand current I_{cw} 1s (kA rms)	35	35	50	50	50	50	50	50	75	75	
Rated peak withstand current in I_{cc} (kA peak) ⁽⁶⁾⁽⁷⁾	80	80	110	110	110	110	110	120	165	165	

Connection

Minimum Cu cable cross-section (mm ²)	2 x 240										
Minimum Cu busbar cross-section (mm ²)	2 x 50 x 5	2 x 60 x 5	2 x 60 x 5	2 x 80 x 5	3 x 100 x 5	3 x 100 x 5	4 x 100 x 5	4 x 100 x 5	2 x 200 x 10	2 x 200 x 10	
Maximum Cu cable cross-section (mm ²)	4 x 185	4 x 185	4 x 185	6 x 185	6 x 185						
Maximum Cu busbar width (mm)	63	63	100	100	100	100	100	100			
Tightening torque min/max (Nm)	40/45	40/45	40/45	40/45	40/45	40/45	40/-	40/-	40/-	40/-	

Mechanical characteristics

Durability (number of operating cycles)	3000	3000	4000	4000	4000	3000	3000	3000	2000	2000	
Operating effort (Nm)	37	37	56	56	56	75	75	75	105	105	
Weight of a 3-pole device (kg)	8	8	12	12	12	22	22	22	45	45	
Weight of a 4-pole device (kg)	10	10	15	15	15	25	25	25	50	50	

(1) Category with index A = frequent operation - Category with index B = infrequent operation.

(2) With terminal shrouds or phase barrier.

(3) 3-pole device with 2 poles in series for the '+' and 1 pole for the '-'.

(4) 4-pole device with 2 poles in series per polarity.

(5) The power value is given for information only, the current values vary from one manufacturer to another.

(6) For a rated operational voltage U_e = 415 VAC.

(7) Coordination tables with circuit breaker: please consult us.

SIRCO AC characteristics according to IEC 60947-3

200 to 630 A

Thermal current I_{th} at 40°C	200 A	250 A	315 A	400 A	500 A	CD 630 A	630 A
Rated insulation voltage U_i (V)	1000	1000	1000	1000	1000	1000	1000
Rated impulse withstand voltage U_{imp} (kV)	12	12	12	12	12	12	12

Rated operational currents I_e (A)

Rated voltage	Utilisation category	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾
500 VAC	AC-20 A / AC-20 B	200/200	250/250	315/315	400/400	500/500	630/630	630/630
500 VAC	AC-21 A / AC-21 B	200/200	250/250	315/315	400/400	500/500	630/630	630/630
500 VAC	AC-22 A / AC-22 B	200/200	250/250	315/315	400/400	500/500	630/630	630/630
500 VAC	AC-23 A / AC-23 B	200/200	250/250	315/315	400/400	500/500	630/630	630/630
690 VAC	AC-20 A / AC-20 B	200/200	250/250	315/315	400/400	500/500	630/630	630/630
690 VAC	AC-21 A / AC-21 B	200/200	250/250	315/315	400 ⁽²⁾ /400 ⁽²⁾	500 ⁽²⁾ /500 ⁽²⁾	630 ⁽²⁾ /630 ⁽²⁾	630 ⁽²⁾ /630 ⁽²⁾
690 VAC	AC-22 A / AC-22 B	200/200	250/250	315/315	400 ⁽²⁾ /400 ⁽²⁾	500 ⁽²⁾ /500 ⁽²⁾	630 ⁽²⁾ /630 ⁽²⁾	630 ⁽²⁾ /630 ⁽²⁾
690 VAC	AC-23 A / AC-23 B	200/200	250/250	315/315	400 ⁽²⁾ /400 ⁽²⁾	500 ⁽²⁾ /500 ⁽²⁾	630 ⁽²⁾ /630 ⁽²⁾	630 ⁽²⁾ /630 ⁽²⁾

Operational power in AC-23 A (kW) ⁽³⁾

At 690 VAC without pre-break AC	160	220	250	400	500	500	630
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Reactive power (kvar)

At 690 VAC (kvar)	160	190	250	325	400	400	450
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Fuse protected short-circuit withstand (kA rms prospective) at 690 VAC ⁽⁴⁾

Prospective short-circuit current (kA rms)	50	50	50	50	50	50	50
Associated fuse rating (A)	200	250	315	400	500	630	630

Circuit breaker protected short-circuit withstand with any circuit breaker that ensures tripping in less than 0.3s at 690 VAC

Rated short-time withstand current 0.3s. I_{cw} (kA rms)	15	15	15	15	15	15	28
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Short-circuit capacity (without protection)

Rated short-time withstand current 1s. I_{cw} (kA rms)	8	8	8	11	11	11	20
Rated short-circuit making capacity without fuses I_{cm} (kA peak)	22	22	22	22	22	22	40

Connection

Maximum Cu cable cross-section (mm ²)	70	70	70	185	240	2 x 150	2 x 185
Minimum Cu busbar cross-section (mm ²)						2 x 30 x 5	2 x 40 x 5
Maximum Cu cable cross-section (mm ²)	95	95	95	240	240	2 x 300	2 x 300
Maximum Cu busbar width (mm)	32	32	32	40	40	63	63
Tightening torque min/max (Nm)	20/-	20/-	20/-	20/-	20/-	20/-	40/45

Mechanical characteristics

Durability (number of operating cycles)	10000	10000	10000	5000	5000	5000	4000
Operating effort (Nm)	10	10	10	14.5	14.5	14.5	48
Weight of a 3 pole device (kg)	2	2	2	3.5	3.5	3.5	8
Weight of a 4 pole device (kg)	2	2	2	4	4	4	10

(1) Category with index A = frequent operation - Category with index B = infrequent operation.

(2) With terminal shrouds or phase barrier.

(3) The power value is given for information only, the current values vary from one manufacturer to another.

(6) For a rated operational voltage U_e = 690 VAC.

SIRCO AC characteristics according to IEC 60947-3

800 to 4000 A

Thermal current I_{th} at 40°C	800 A	1000A	CD 1250 A	1250 A	1600 A	2000 A	4000 A
Rated insulation voltage U_i (V)	1000	1000	1000	1000	1000	1000	1000
Rated impulse withstand voltage U_{imp} (kV)	12	12	12	12	12	12	12

Rated operational currents I_e (A)

Rated voltage	Utilisation category	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾
500 VAC	AC-20 A / AC-20 B	800/800	1000/1000	1250/1250	1250/1250	1600/1600	2000/2000	4000/4000
500 VAC	AC-21 A / AC-21 B	800/800	1000/1000	1250/1250	1250/1250	1600/1600	2000/2000	-/3200
500 VAC	AC-22 A / AC-22 B	800/800	1000/1000	1250/1250	1250/1250	1600/1600	2000/2000	-
500 VAC	AC-23 A / AC-23 B	800/800	1000/1000	1250/1250	1250/1250	1250/1250	1600/1600	-
690 VAC	AC-20 A / AC-20 B	800/800	1000/1000	1250/1250	1250/1250	1600/1600	2000/2000	4000/4000
690 VAC	AC-21 A / AC-21 B	800/800	1000/1000	1250/1250	1250/1250	1600/1600	2000/2000	-/3200
690 VAC	AC-22 A / AC-22 B	800/800	1000/1000	1250/1250	1250/1250	1600/1600	2000/2000	-/-
690 VAC	AC-23 A / AC-23 B	800/800	1000/1000	1250/1250	1250/1250	1250/1250	1600/1600	-/-

Operational power in AC-23 A (kW) ⁽³⁾

At 690 VAC without pre-break AC	900	900	-	-	-	-	-
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Reactive power (kvar)

At 690 VAC (kvar)	550	750	950	950	-	-	-
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Fuse protected short-circuit withstand (kA rms prospective) at 690 VAC⁽⁴⁾

Prospective short-circuit current (kA rms)	50	50	50	50	50	-	-
Associated fuse rating (A)	800	800	2 x 500	1250	2 x 800	-	-

Circuit breaker protected short-circuit withstand with any circuit breaker that ensures tripping in less than 0.3s at 690 VAC

Rated short-time withstand current 0.3s. I_{cw} (kA rms)	28	55	55	53	53	53	53
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Short-circuit capacity (without protection) at 690 VDC

Rated short-time withstand current 1s. I_{cw} (kA rms)	20	30	30	35	35	35	35
Rated short-circuit making capacity without fuses I_{cm} (prospective kA peak)	40	80	80	75	75	75	75

Connection

Maximum Cu cable cross-section (mm²)	2 x 185	2 x 240					
Minimum Cu busbar cross-section (mm²)	2 x 40 x 5	2 x 50 x 5	2 x 60 x 5	2 x 60 x 5	2 x 80 x 5	3 x 100 x 5	1 x 100 x 5
Maximum Cu cable cross-section (mm²)	2 x 300	4 x 185	4 x 185	4 x 185	6 x 185		
Maximum Cu busbar width (mm)	63	63	63	100	100	100	
Tightening torque min/max (Nm)	40/45	40/45	40/45	40	40	40	40

Mechanical characteristics

Durability (number of operating cycles)	4000	4000	3000	4000	4000	3000	2000
Operating effort (Nm)	48	48	48	55	55	75	100
Weight of a 3 pole device (kg)	8	8	8	12	12	22	45
Weight of a 4 pole device (kg)	10	10	10	15	15	25	50

(1) Category with index A = frequent operation - Category with index B = infrequent operation.

(2) With terminal shrouds or phase barrier.

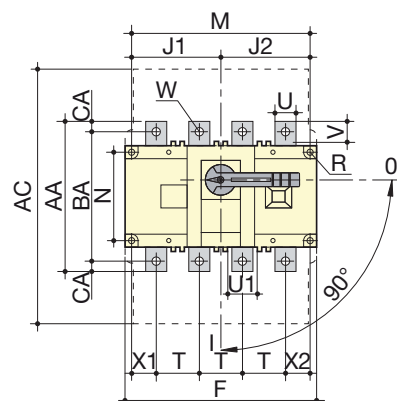
(3) The power value is given for information only, the current values vary from one manufacturer to another.

(6) For a rated operational voltage U_e = 690 VAC.

Dimensions - Front operation

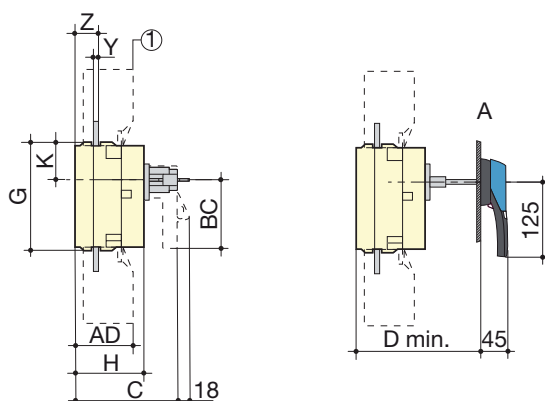
SIRCO 125 to 630 A and SIRCO AC 200 to CD 630 A - B3 to B5

Direct front operation



1. Terminal shrouds

External front operation



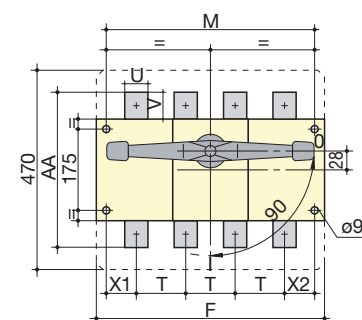
A. S2 type handle

Rating (A) / Frame size		Overall dimensions		Terminal shrouds		Switch body										Switch mounting					Connection												
SIRCO	SIRCO AC	C	D min	AC	AD	F 3p.	F 4p.	G	H	J1 3p.	J1 4p.	J2	K	BC	M 3p.	M 4p.	N	R	T	U	U1	V	W	X1 3p.	X1 4p.	X2	Y	Z	AA	BA	CA		
125...160/ B3		115	125	235	50	140	170	93	65	45	75	75	31.5	80	120	150	65	5.5	36	20	20.5	25	9	28	22	20	3.5	20.5	135	115	10		
200...250 / B4	200...250 / B4			280	60	180	230	108	75	55	105	105	34	115	160	210	80	5.5	50	20 35	25.5	21.5	11	33	33	27	3.5	22.5	160	130	15		
	315 / B4																																
315...400/ B5	400...500 / B5	160	165	401	89	230	290	170	110	75	135	135	55	115	210	270	140	7	65	32	45.5	29	11	42.5	37.5	37.5	5	36	235	205	15		
500 / B5	-																																
630/ B5	CD 630 / B5																				45		41.5	13						260	220	20	

circo_198 i 1 x cat

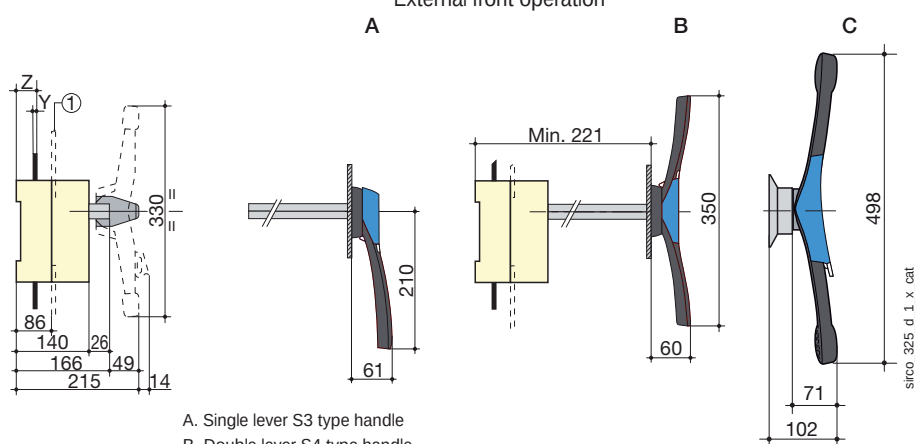
SIRCO 800 to 1800 A and SIRCO AC 630 to 1600 A - B6 to B7

Direct front operation



1. Terminal screens

External front operation



A. Single lever S3 type handle

B. Double lever S4 type handle

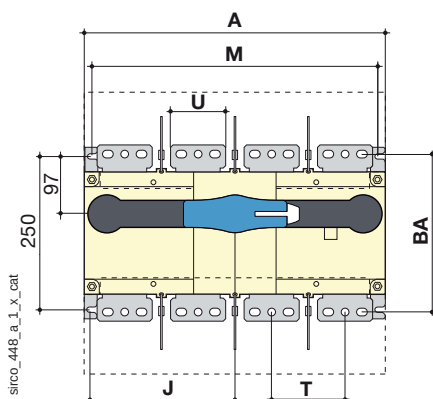
C. Double lever S5 type handle

Rating (A) / Frame size		Switch body		Switch mounting		Connection							
SIRCO	SIRCO AC	F 3p.	F 4p.	M 3p.	M 4p.	T	U	V	Y	X1	X2	Z	AA
800 ... 1000 / B6	630 ... 1000 / B6	280	360	255	335	80	50	60.5	7	47.5	47.5	46.5	321
CD 1250 / B6	CD 1250 /B6						60	65					330
1250 ... 1800 / B7	1250 ... 1600 / B7	372	492	347	467	120	90	44	8	53.5	53.5	47.5	288

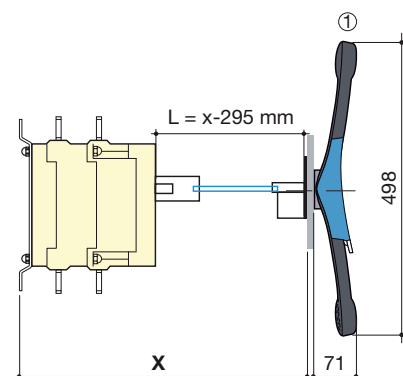
— circo 325 d 1 x cat

SIRCO 2000 to 3200 A and SIRCO AC 2000 A - B8

Direct front operation



External front operation

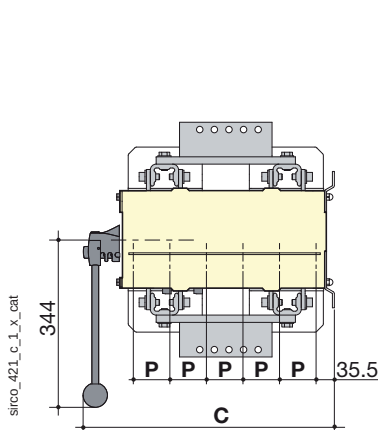


1. Double lever S5 type handle

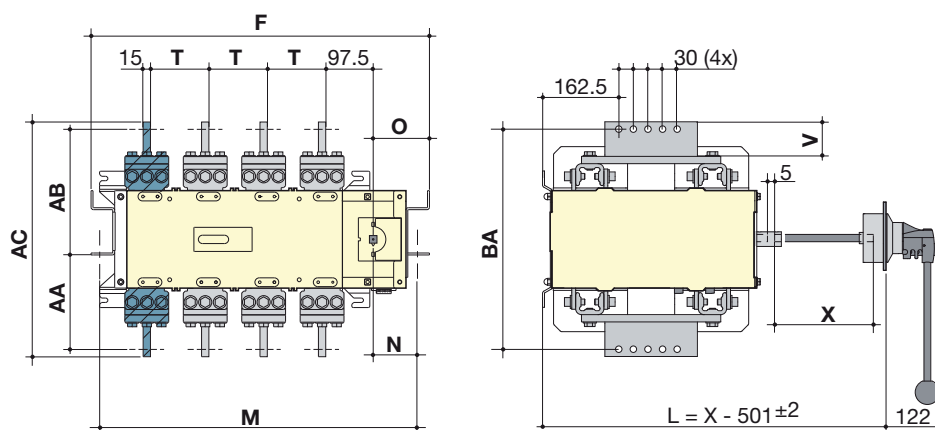
Rating (A) / Frame size		Overall dimensions		Switch body		Switch mounting		Connection			
SIRCO	SIRCO AC	A 3p.	A 4p.	J 3p.	J 4p.	M 3p.	M 4p.	T	U	Y	BA
2000 ... 3200 / B8	2000 / B8	372	492	173.5	233.5	347	367	120	90	8	258

SIRCO 4000 to 5000 A and SIRCO AC 4000 A - B9

Direct front operation



External front operation



Rating (A) / Frame size		Overall dimensions	Switch body		Switch mounting					Connection					
SIRCO	SIRCO AC	C	F 3p.	F 4p.	M 3p.	M 4p.	N	O	P	T	V	AA	AB	AC	BA
4000 ... 5000 / B9	4000 / B9	514	695	695	660	660	98	115.5	75	120	86	160	292	482	452

B3 to B5

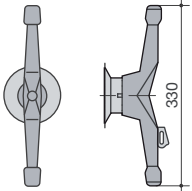
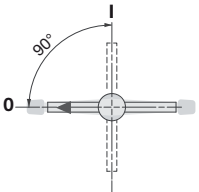
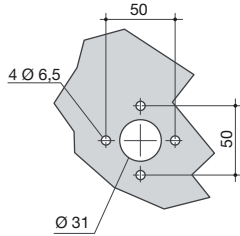
coign 010 a 1 qb cat

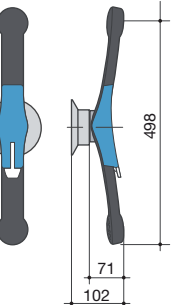
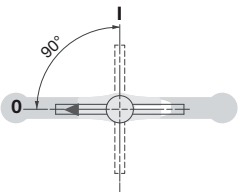
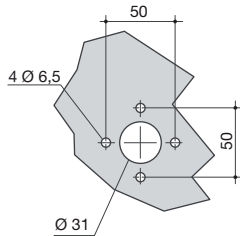
poian 028 a 1 qb cat

poign 011 a 1 ab cat

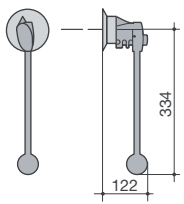
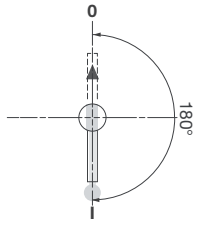
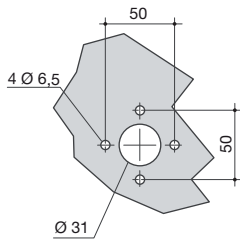
poian 029 a 1 qb cat

B7 and B8

Handle type	Front operation Direction of operation	Door drilling
V2 Type  poign_055_a_1_gb_cat		

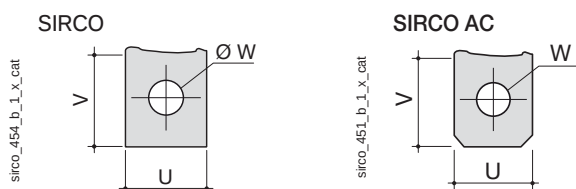
Handle type	Front operation Direction of operation	Door drilling
S5 type with V Escutcheon  poign_020_a_1_gb_cat		

B9

Handle type	Front operation Direction of operation	Door drilling
V0 type  poign_009_a_1_gb_cat		

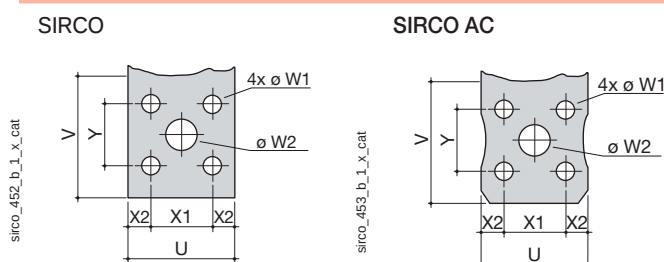
Connection terminal

SIRCO 125 to 630 A and SIRCO AC 200 to CD 630 A



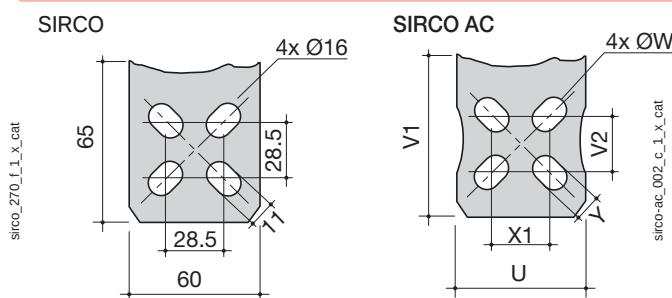
Rating (A)		U	V	W
SIRCO	SIRCO AC			
125 ... 160		20	25	9
200 ... 250	200 ... 250	25	21.5	11
	315	35		
315 ... 400	400 ... 500	32	29	13
500				
630	CD 630	45	41.5	

SIRCO 800 to 1000 A and SIRCO AC 630 to 1000 A

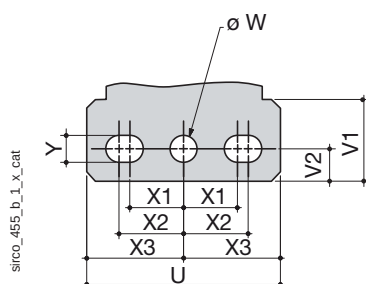


Rating (A)		U	V	W1	W2	X1	X2	Y
SIRCO	SIRCO AC							
800 ... 1000	630 ... 1000	50	60.5	9	15	33	8.5	33

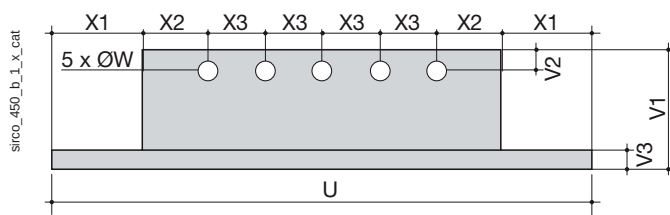
SIRCO and SIRCO AC CD 1250 A



Rating (A)		U	V1	V2	W	X1	Y
SIRCO	SIRCO AC						
CD 1250 A	CD 1250 A	60	65	28.5	16	28.5	11

SIRCO 1250 to 3200 A and SIRCO AC 1250 to 1600 A


Rating (A)		U	V1	V2	W	X1	X2	X3	Y
SIRCO	SIRCO AC								
1250 ... 3200	1250 ... 1600	90	35.8	15	12.5	25	30	45	12.5

SIRCO 4000 to 5000 A and SIRCO AC 4000 A


Rating (A)		U	W	X1	X2	X3	V1	V2	V3
SIRCO	SIRCO AC								
4000 ... 5000	4000	286	13	48	35	30	86	15	15



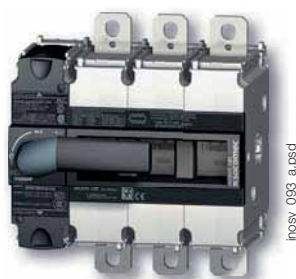
INOSYS LBS

Load Break Switches for AC applications

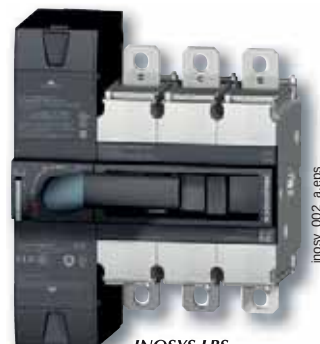
from 160 to 800 A, up to 1000 VAC incorporating tripping function

Load break switches

new



INOSYS LBS
3-poles



INOSYS LBS
3-poles with tripping function

The solution for

- > Emergency switching
- > Main switchboards
- > Distribution panels
- > Motor load breaking

Strong points

- > High-performance switching in a compact footprint
- > Safe operation
- > Enhanced disconnection and isolation
- > Tripping function
- > Easy to install
- > Highly reliable solution

Conformity to standards

- > IEC 60947-3
- > UL 98⁽¹⁾

Compatible with requirements:

- > IEC 60364
- > IEC 60204-1
- > NEC

(1) Consult us.



Function

Reliability and guaranteed safety combined with low maintenance costs are vital when selecting components for integration in electrical systems. With its proven switching technology and tripping function, INOSYS LBS can be used for performing safe maintenance in the installation as well as emergency breaking.

INOSYS LBS are multi-polar load break switches which are available with integrated tripping function. They can be operated manually using the handle or remotely (via tripping coils) to disconnect part or all of the electrical installation.

They make and break under load conditions, provide safety isolation for any low voltage circuits and are suitable for emergency switching.

Advantages

High-performance switching in a compact frame

INOSYS LBS switches integrate a patented technology that offers high switching capacity with optimum arc containment up to 1000 VAC - all within a compact device.

Safe operation

- Reliable position indication through visible contacts.
- The opening and closing of the switch is fully independent from the speed of operation, ensuring safe operation under all conditions.

Enhanced disconnection and isolation

- ON, OFF and TRIP positions are stable: resistant to voltage fluctuations and external environmental constraints.
- Guaranteed disconnection in both OFF & Trip positions.
- Padlocking in OFF position available directly on the switch and on the external handle.

Tripping function: flexible and robust

- Fully immune to external disturbances: no nuisance tripping.
- Shunt-trip or undervoltage release from 24 to 220 VDC and from 24 to 230 VAC.
- Wide operating temperature range: -25 to +70°C (-15 to +160°F).
- Fast disconnection (<50 ms) emergency switching, compliant with installation standards.
- Compatible with virtually any protection relay.

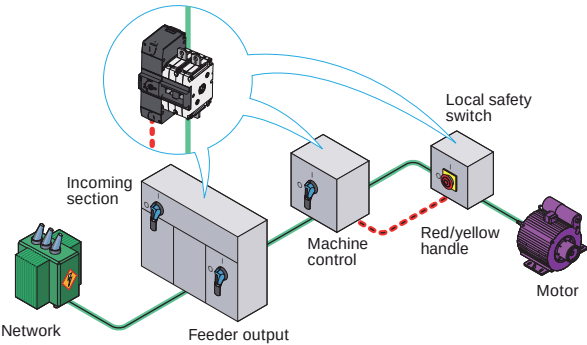
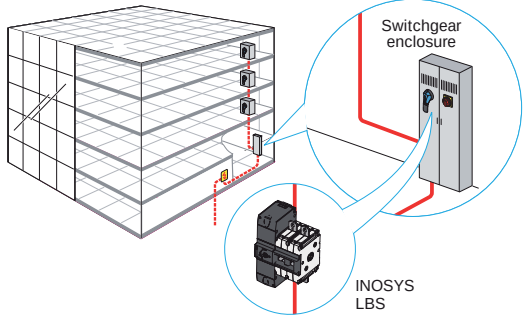
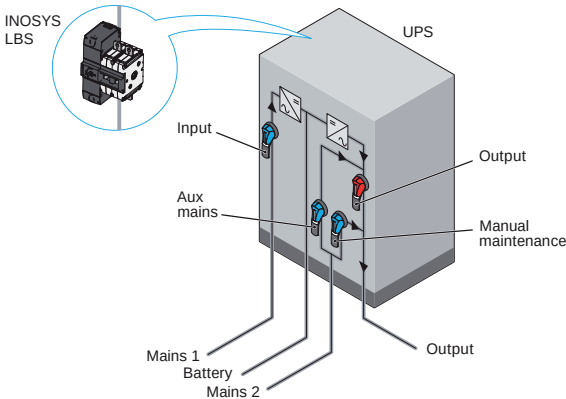
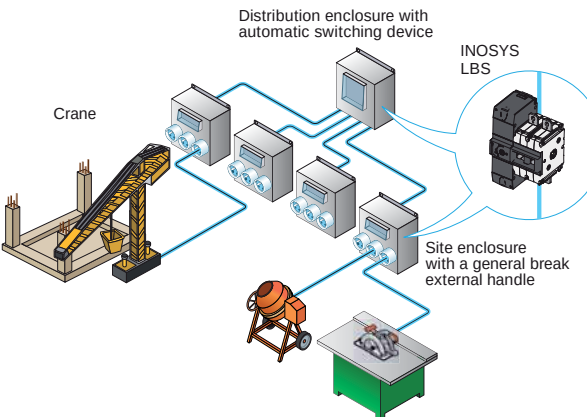
Easy to install

- Mounting: back plate mounting either between poles or through the use of fixing pads.
- Free access to terminals for flexible wiring.
- Easy access without tools to integrate auxiliary contacts and tripping coil (both located within the switch footprint).

Highly reliable solution

- High-performance and guaranteed safety: the contacts opening and closing speed is fully independent of the handle operation.
- High temperature withstand: no derating up to 60°C (140° F).

Application examples: local and remote safe disconnection for AC applications

Machine emergency switching  Network Incoming section Feeder output Machine control Local safety switch Red/yellow handle Motor sircm_021_f_en.ai	Building emergency switching  Switchgear enclosure INOSYS LBS inosy_094_a_en.ai
Power electronics: UPS, backfeed, battery protection  INOSYS LBS UPS Input Output Aux mains Manual maintenance Mains 1 Battery Mains 2 inosy_095_a_en.ai	Mobile equipment  Distribution enclosure with automatic switching device INOSYS LBS Crane Site enclosure with a general break external handle inosy_096_a_en.ai

The SOCOMEC solutions

SIRCO Local manual operation  from 125 to 5000 A	INOSYS LBS Up to 1000 VAC with visible contact indication - with or without tripping function  from 160 to 800 A
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Overview



References

INOSYS LBS

Rating (A)	Frame size	No. of poles	Switch with tripping function			Switch without tripping function		Other compatible accessories	
			Switch body ⁽¹⁾	External operation	Tripping coil	Switch body ⁽¹⁾	External operation ⁽²⁾	Aux. Contact	Terminal shrouds ⁽³⁾
160 A	F2	3 P	84A0 3016	Shaft 320 mm 1400 1032	Shunt trip coil	86A0 3016	Shaft 320mm 1400 1032	NO/NC 8499 0001	Top or Bottom
		4 P	84A0 4016			86A0 4016			
250 A	F2	3 P	84A0 3025	S2 type handle	24 V AC/DC 8499 7002	86A0 3025	S2 type handle		
		4 P	84A0 4025			86A0 4025			
315 A	F2	3 P	84A0 3031	Black IP55 7421 2118	48 V AC/DC 8499 7004	86A0 3031	Black IP55 1421 2111		3 P 8499 4213
		4 P	84A0 4031			86A0 4031			
400 A	F3	3 P	84A0 3040	Black IP65 742F 2118	230 V AC/DC 8499 7023	86A0 3040	Black IP65 1423 2111		4 P 8499 4214
		4 P	84A0 4040			86A0 4040			
500 A	F3	3 P	84A0 3050	Shaft 320 mm 1400 1032	Undervoltage releases	86A0 3050	Shaft 320mm 1400 1032		Top or bottom
		4 P	84A0 4050			86A0 4050			
630 A	F3	3 P	84A0 3063	S2L type handle	230 VAC 8499 8123	86A0 3063	S2L type handle		
		4 P	84A0 4063			86A0 4063			
CD 800 A	F3	3 P	84A0 3079	Black IP55 74A1 2118	24 VDC 8499 8202	86A0 3079	Black IP55 14A1 2111		3 P 8499 4313
		4 P	84A0 4079			86A0 4079			
		3 P	84A0 3079	Black IP65 74AF 2118	48 VDC 8499 8204	86A0 3079	Black IP65 14A3 2111		4 P 8499 4314
		4 P	84A0 4079			86A0 4079			

(1) The basic devices are delivered without accessories.

(2) For external side operation on the left, please order the S2 handle reference 142A2111 for case sizes F2 and F3. Please consult us if you require a device with side operation on the right.

(3) Compatible with the holding insert which can be fitted to lock the shrouds in place.

Accessories

Direct operation handle

Frame size	Handle type	Handle colour	Reference
F2	E2	Black	8499 5022
F2	E2	Red	8499 5023
F3	E3	Black	8499 5032



E2 type handle

acces_400_a_1_cat

Door interlocked external operation handle

Use

Door interlocked external operation handles include an escutcheon and are padlockable. External handles must be utilised with an extension shaft.

Example of application

As the handle is interlocked in the "ON" position the operator must safely disconnect and isolate the circuit prior to accessing the panel for maintenance procedures. Opening the door when the switch is in the "ON" position can only be done by defeating the interlocking function with the use of a dedicated tool (authorised persons only). The interlocking function is restored when the door is re-closed.



S2 type handle

acces_150_a_1_cat.eps

For LBS with tripping function

Frame size	Handle type	Handle colour	Degree of protection	Reference
F2	S2	Black	IP55	7421 2118
F2	S2	Black	IP65	742F 2118
F2	S2	Red	IP65	742G 2118
F3	S2L ⁽¹⁾	Black	IP55	74A1 2118
F3	S2L ⁽¹⁾	Black	IP65	74AF 2118
F3	S2L ⁽¹⁾	Red	IP65	74AG 2118

(1) S2L handles have an extended grip; please refer to the dimensions section.

For LBS without tripping function

Frame size	Handle type	Handle colour	Degree of protection	Reference
F2	S2	Black	IP55	1421 2111
F2	S2	Black	IP65	1423 2111
F2	S2	Red	IP65	1424 2111
F3	S2L ⁽¹⁾	Black	IP55	14A1 2111
F3	S2L ⁽¹⁾	Black	IP65	14A3 2111
F3	S2L ⁽¹⁾	Red	IP65	14A4 2111

(1) S2L handles have an extended grip; please refer to the dimensions section.

Shaft for external handle

Frame size	Handle type	Length (mm)	Reference
F2 ... F3	S2, S2L	200	1400 1020
F2 ... F3	S2, S2L	320	1400 1032
F2 ... F3	S2, S2L	400	1400 1040

Other lengths: please consult us.



Shaft for S2 and S2L type handle

acces_401_a_1_cat

Shaft guide for external handle

Use

To guide the shaft extension into the external handle.

This accessory enables the handle to engage the shaft extension with a misalignment of up to 15 mm / 0.59 in.

Required for a shaft length over 320 mm / 12.6 in.



acces_260_a_2_cat

Description	Reference
Shaft guide	1429 0000

Accessories (continued)

Alternative S-type handle cover colours

Use

For S2 and S2L type single grip handles.

Handle colour	Handle type	To be ordered in multiples of	Reference
Light grey	S2, S2L	50	1401 0001
Dark grey	S2, S2L	50	1401 0011

Other colours: please consult us.



access_198_a_1_cat

Auxiliary contact

Use

The same auxiliary contact can be used to provide position and tripping information. The function of the auxiliary contact depends on where it is mounted on the mechanism.

Characteristics

Changeover type: NO/NC,
IP2 with front operation.
30 000 operations.
Maximum 3 per switch.

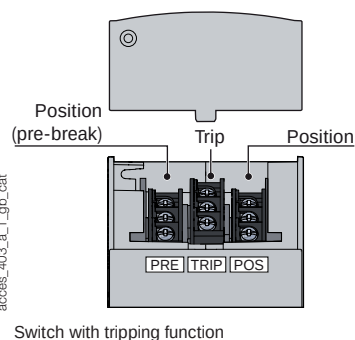
Frame size	Connection type	Type	Reference
F2 ... F3	Screw	NO/NC standard	8499 0001
F2 ... F3	Screw	NO/NC low level	8499 0002
F2 ... F3	Screw	NC > 600 V	8499 0003



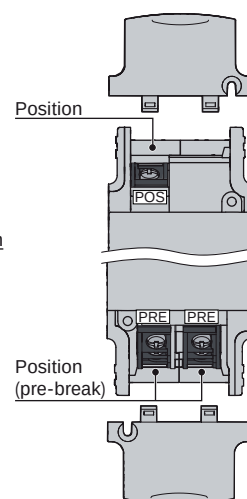
access_402_a_1_cat

Characteristics

Auxiliary contact type	Min. current (A)	I _{th} (A)	Operating current I _e (A)				
			24 VDC DC-14	48 VDC DC-14	230 VAC AC-15	440 VAC AC-15	690 VAC AC-15
Standard	12.5 mA / 24 V	16	1	0.2	4	4	-
Low level	1 mA / 4 V	16	1	0.2	2	1	-
> 600 V	10 mA / 24 V	16	1	0.2	4	4	0.5



Switch with tripping function



Switch without tripping function

access_403_a_1_gb_cat

Tripping coil

Use

Allows remote activation of the switch's tripping mechanism. Shunt trip and undervoltage release coils are available.

Connection: 1.5 mm², push in type.
Maximum one tripping coil per switch.
Safe and easy coil replacement by using standard tools.



Shunt trip coil

Shunt trip coil

Frame size	Voltage (V)	Reference
F2 ... F3	24 V AC/DC	8499 7002
F2 ... F3	48 V AC/DC	8499 7004
F2 ... F3	110 - 127 VAC ; 110 - 125 VDC	8499 7011
F2 ... F3	230 V AC/DC	8499 7023

Other voltage ratings available, please consult us.

Undervoltage release

Frame size	Voltage (V)	Reference
F2 ... F3	48 VAC	8499 8104
F2 ... F3	110 - 120 VAC	8499 8111
F2 ... F3	230 - 240 VAC	8499 8123
F2 ... F3	24 VDC	8499 8202
F2 ... F3	48 VDC	8499 8204

Other voltage ratings available, please consult us.

Characteristics

Shunt trip coils

AC type (±10%)	24 VAC	48 VAC	110 VAC	230 VAC
Inrush consumption (A); <10ms	6.85	2.95	1.25	0.73
DC type (-5% ... +20%)	24 VDC	48 VDC	110 VDC	230 VDC
Inrush consumption (A), <10ms	7.6	3.28	1.39	0.78

Max supply time 2 s.

Undervoltage release

AC type	24 VAC	48 VAC	110 VAC	230 VAC
Max permanent consumption (VA), at 110% U _n	-	1.8	1.4	1.5
DC type	24 VDC	48 VDC	110 VDC	230 VDC
Max permanent consumption (VA), at 110% U _n	1.6	1.4	-	-

Holding: up to 85% x U_n

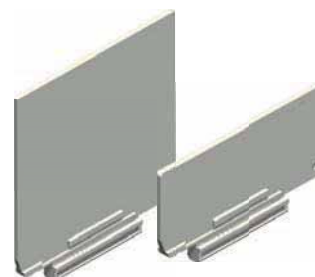
Release: < 35 to 70% x U_n

Inter-phase barrier

Use

Provides safety isolation between the terminals, essential for use with voltages > 500 VAC.

Frame size	Type	Pack (unit)	Reference
F2 ... F3	Short	2	8499 2202
F2 ... F3	Short	3	8499 2203
F2 ... F3	Long	2	8499 2212
F2 ... F3	Long	3	8499 2213



Accessories (continued)

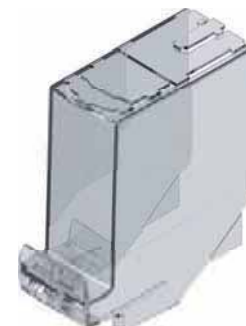
Terminal shroud

Use

For top or bottom protection against direct contact with terminals or connection parts; provides IP4 protection and phase separation.

Advantages

Perforations for thermographic inspection / voltage check without the need to remove the shrouds. Terminal shrouds can be fixed in place with a holding insert. Includes break-off tabs for precise adaptation to cables or insulated bars.



acces_407_a_1_cat

Frame size	Pack (unit)	No. of poles	Position	Reference
F2	3	1 P	Top or bottom	8499 4213 ⁽¹⁾
F2	4	1 P	Top or bottom	8499 4214 ⁽¹⁾
F3	3	1 P	Top or bottom	8499 4313 ⁽¹⁾
F3	4	1 P	Top or bottom	8499 4314 ⁽¹⁾

(1) Compatible with the holding insert which can be fitted to lock the shrouds in place.

Terminal screen

Use

Provides top and bottom protection against direct contact with terminals or connection parts.

Advantages

Perforations for thermographic inspection. Mounting requires holding inserts (supplied with the terminal screens).



acces_408_a_1_cat

Frame size	No. of poles	Position	Reference ⁽¹⁾
F2	3 P	Top and bottom	8499 3232
F2	4 P	Top and bottom	8499 3242
F3	3 P	Top and bottom	8499 3332
F3	4 P	Top and bottom	8499 3342

(1) Each reference comprises 2 terminal screens for top and bottom protection.

Holding insert

Use

Used to secure terminal shrouds / inter-phase barriers on the switch.

Frame size	Pack (unit)	Reference
F2 ... F3	10	8499 6220
F2 ... F3	100	8499 6221



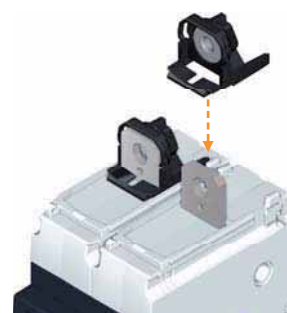
acces_409_a_1_cat

Captive nut

Use

This accessory enables simple one-handed connection to the power terminals. It can be mounted on either side of the terminal for front or rear connection.

Frame size	Pack (unit)	Reference
F2	12	8499 6120
F2	120	8499 6121
F3	12	8499 6130
F3	120	8499 6131



acces_399_a_1_cat

Voltage tap

Use

Allows connection of voltage sensing or power cables, with fast-on connection.



Frame size	Pack (unit)	Reference
F2	12	8499 9012
F3	12	8499 9013

Characteristics

Characteristics according to IEC 60947-3

Thermal current I^h (40°C)	160 A	250 A	315 A	400 A	500 A	630 A	CD 800 A
Frame size	F2	F2	F2	F3	F3	F3	F3
Rated insulation voltage U_i (V)	1000	1000	1000	1000	1000	1000	1000
Rated impulse withstand voltage U_{imp} (kV)	12	12	12	12	12	12	12

Rated operational currents I_e (A)

Rated voltage	Utilisation category	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾
415 VAC	AC-20 A / AC-20 B	160	250	315	400	500	630	800
415 VAC	AC-21 A / AC-21 B	160	250	315	400	500	630	800
415 VAC	AC-22 A / AC-22 B	160	250	315	400	500	630	800
415 VAC	AC-23 A / AC-23 B	160	250	315	400	500	630	630
500 VAC	AC-20 A / AC-20 B	160	250	315	400	500	630	800
500 VAC	AC-21 A / AC-21 B	160	250	315	400	500	630	630
500 VAC	AC-22 A / AC-22 B	160	250	315	400	500	630	630
500 VAC	AC-23 A / AC-23 B	160	250	315	400	500	630	630
690 VAC	AC-20 A / AC-20 B	160	250	315	400	500	630	800
690 VAC	AC-21 A / AC-21 B	160	250	315	400	500	630	630
690 VAC	AC-22 A / AC-22 B	160	250	315	400	500	630	630
690 VAC	AC-23 A / AC-23 B	160	250	250	400	500	630	630
1000 VAC	consult us							

Operational power in AC-23 (kW)

400 VAC without pre-break AC (kW) ⁽²⁾	80	140	160	220	280	355	450
--	----	-----	-----	-----	-----	-----	-----

Fuse protected short-circuit withstand

Rated conditional short-circuit current I_p (kA rms) ⁽³⁾	100	100	100	100	100	100	100
Associated fuse rating (A)	160	250	315	400	500	630	800

Short-circuit capacity (without protection)

Rated short-time withstand current - I_{cw} 1s (kA rms)	8	8	8	20	20	20	20
Rated short-time making capacity - I_{cm} (kA peak)	30	30	30	70	70	70	70
Rated peak withstand current (kA peak)	30	30	30	70	70	70	70

Connection

Recommended Cu rigid cable cross-section (mm ²)	70	120	185	240	2 x 150	2 x 185	2 x 240
Recommended AL rigid cable cross-section (mm ²)	120	185	2 x 120	2 x 150	2 x 240	2 x 300	3 x 240
Busbar width (mm) (non insulated bar / insulated bars)	20/25	20/25	20/25	25/32	25/32	25/32	25/32

Mechanical characteristics

Durability (number of operating cycles)	15000	15000	15000	10000	10000	10000	10000
Weight of 3 pole device (kg)	trip / non-trip	3.35/2.25	3.35/2.25	3.35/2.25	4.91/3.82	4.91/3.82	4.91/3.82
Weight of 4 pole device (kg)	trip / non-trip	3.84/2.75	3.84/2.75	3.84/2.75	5.93/4.83	5.93/4.83	5.93/4.83

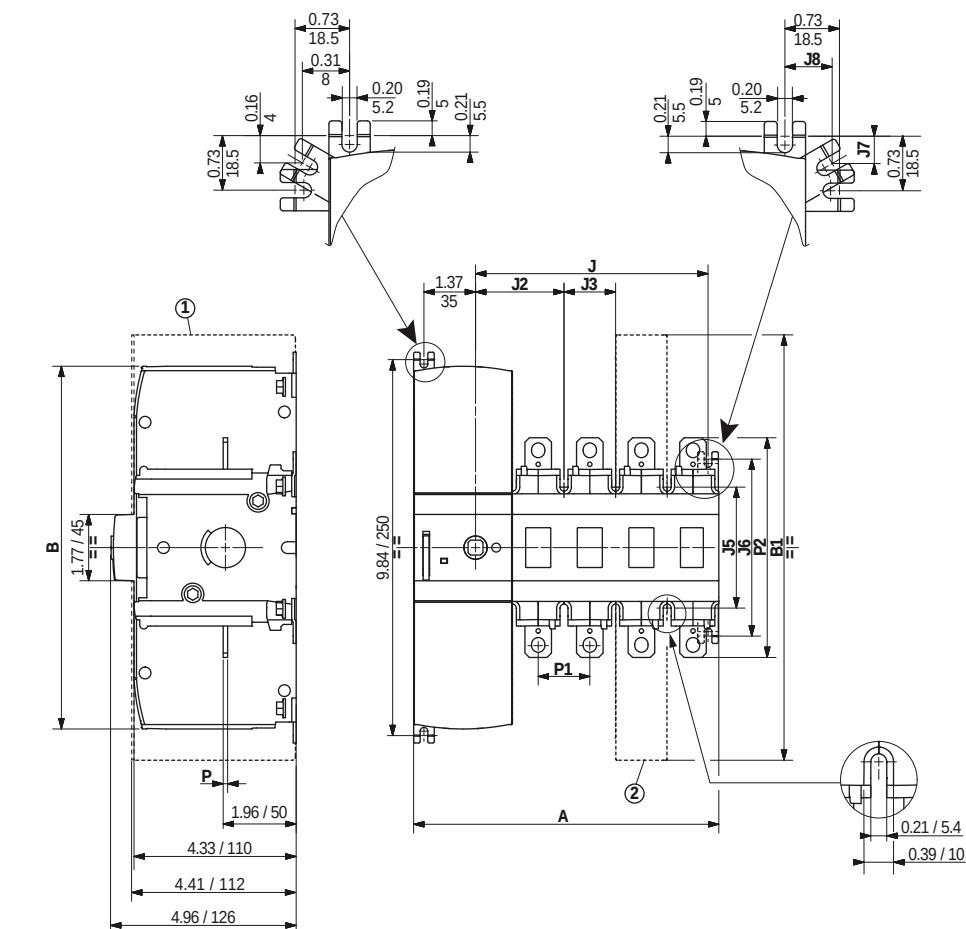
(1) Category with index A = frequent operation - Category with index B = infrequent operation.

(2) Note that these values may slightly vary depending on type and manufacturer of motors.

(3) Value at 415 VAC.

Dimensions (in/mm)

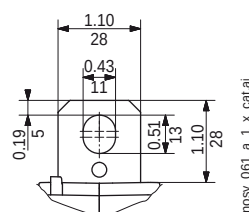
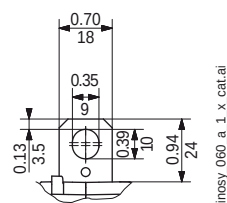
INOSYS LBS with tripping function



1. Inter-phase barrier.
2. Terminal shrouds.

Connection terminal F2

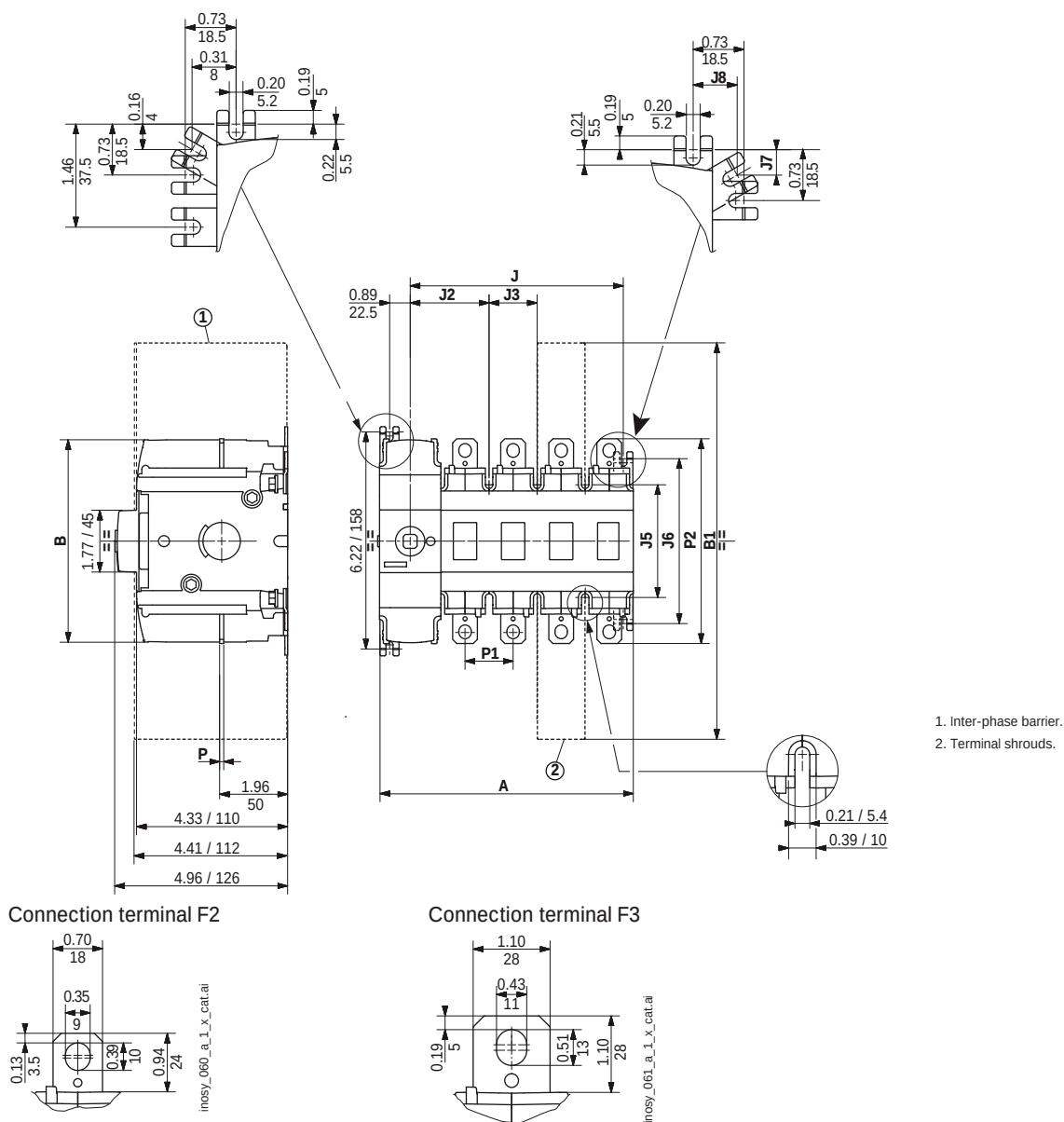
Connection terminal F3



Rating (A)	Frame size	No. of poles	A		J	
			3 P	4 P	3 P	4 P
160 ... 315	F2	in	6.77	8.15	4.83	6.21
		mm	172	207	123	158
400 ... 800	F3	in	9.95	9.72	6.01	7.78
		mm	202	247	153	198

Rating (A)	Frame size		B	B1	J2	J3	J5	J6	J7	J8	P	P1	P2
160 ... 315	F2	in	9.69	11.64	2.36	1.38	3.23	4.72	0.39	0.58	0.12	1.38	5.87
		mm	246	296	60	35	82	120	10	15	3	35	149
400 ... 800	F3	in	9.69	14.12	2.76	1.77	4.72	6.22	0.16	0.33	0.20	1.77	6.69
		mm	246	359	70	45	120	158	4	8	5	45	170

INOSYS LBS without tripping function



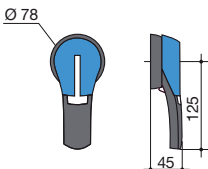
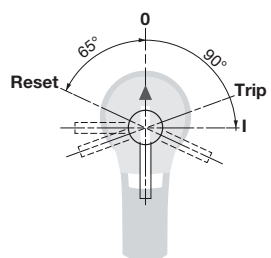
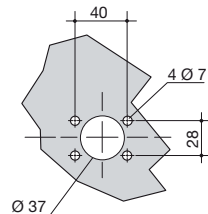
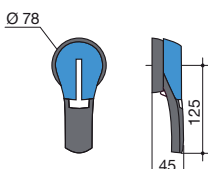
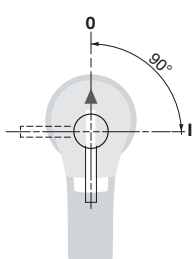
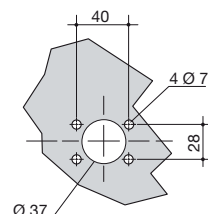
inosy_081_a_1_x_cat.ai

Rating (A)	Frame size	No. of poles	A		J	
			3 P	4 P	3 P	4 P
160 ... 315	F2	in	5.91	7.28	4.73	6.11
		mm	150	185	120	155
400 ... 800	F3	in	7.09	8.86	5.91	7.69
		mm	180	225	150	195

Rating (A)	Frame size		B	B1	J2	J3	J5	J6	J7	J8	P	P1	P2
160 ... 315	F2	in	5.91	11.64	2.26	1.38	3.23	4.72	0.39	0.58	0.12	1.38	5.87
		mm	150	296	58	35	82	120	10	15	3	35	149
400 ... 800	F3	in	5.91	14.12	2.66	1.77	4.72	6.22	0.16	0.33	0.20	1.77	6.69
		mm	150	359	68	45	120	158	4	8	5	45	170

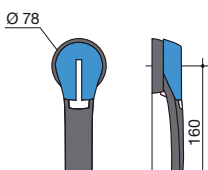
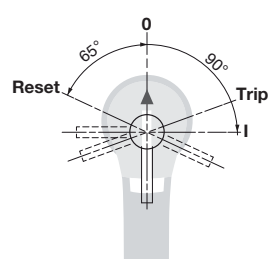
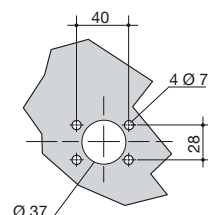
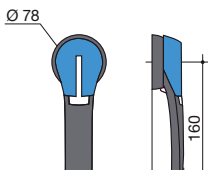
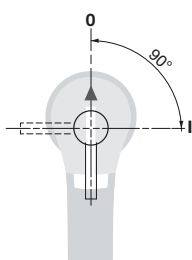
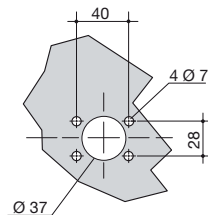
Dimensions for external handles (mm)

F2 frame size

Handle type	Front operation Direction of operation	Door drilling
S2 type with trip 		
S2 type 		

For external side operation on the left, please order the S2 handle reference 142A2111 for case sizes F2 and F3.
Please consult us if you require a device with side operation on the right.

F3 frame size

Handle type	Front operation Direction of operation	Door drilling
S2L type with trip 		
S2L type 		

For external side operation on the left, please order the S2 handle reference 142A2111 for case sizes F2 and F3.
Please consult us if you require a device with side operation on the right.

Mounting orientation

F2 - F3

All mounting orientations are possible. Derating may apply - please consult us.



inosy_098_a.psd



SIDER

Load break switches for power distribution
from 125 to 3150 A with visible breaking

Load break
switches



SIDER ND 4 x 500 A
External right side operation



SIDER 3 x 1250 A
external front operation



SIDER 2500 A
direct front operation handle

The solution for

- > Main switchboard
- > Distribution panels
- > Safety enclosures for emergency load break
- > Normal atmosphere
- > Explosive atmosphere



Strong points

- > Safety thanks to visible breaking
- > Modularity

Conformity to standards

- > IEC 60947-3
- > EN 60947-3
- > VDE 0660-107 (1992)
- > NBN EN 60947-3
- > BS EN 60947-3



Approvals and certifications

- > GOST (Russie)

Function

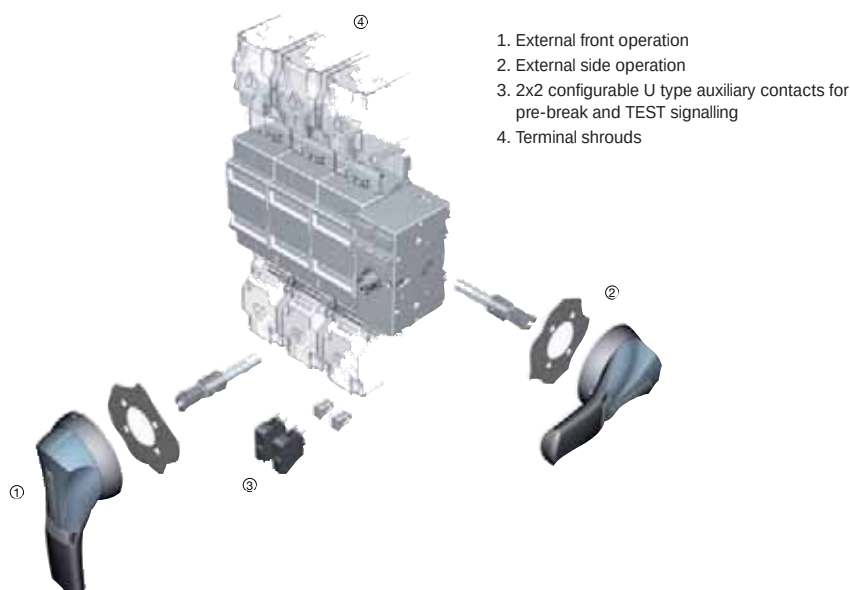
SIDER units are manually operated 3 or 4-pole load break switches. They make and break under load conditions and provide safe isolation for any low voltage circuit.

Advantages

Safety thanks to visible breaking
Visible breaking and positive break indication ensure safe switching. The user can assess the condition of the device either during a preventive check or before an operation. SIDER load break switches are most suitable for use in safety enclosures in explosive atmospheres (zones 21 and 22). The addition of a mechanical flag indicator, directly connected to the device's breaking system, provides reliable position information on the front of the enclosure.

Functional diagram

For further details see the installation instructions supplied with the product.



sider_091_b_1_x_cat

References

Front operation

Rating (A)	No. of poles	Switch body Direct operation	Switch body External operation	Direct handle	External handle	Shaft for external handle	Auxiliary contact
ND 125 A	3 P	2915 3012	2921 3012	Black 3629 7901⁽¹⁾	S2 type Black IP55 1421 2111⁽¹⁾ Black IP65 1423 2111 Red IP65 1424 2111	200 mm 1400 1020 320 mm 1400 1032⁽¹⁾ 500 mm 1400 1050	1 st contact NO/NC 3999 0021⁽²⁾⁽³⁾
	4 P	2915 4012	2921 4012				2 contacts NO/NC 3999 0022⁽²⁾⁽³⁾
ND 200 A	3 P	2915 3021	2921 3020				1 contact NC 3999 0701⁽⁴⁾⁽⁵⁾
	4 P	2915 4021	2921 4020				1 contact NO 3999 0702⁽⁴⁾⁽⁵⁾
ND 250 A	3 P	2915 3025	2921 3025				
	4 P	2915 4025	2921 4025				
ND 315 A	3 P	2915 3031	2921 3031				
	4 P	2915 4031	2921 4031				
ND 400 A	3 P	2915 3041	2921 3041				
	4 P	2915 4041	2921 4041				
ND 500 A	3 P	2915 3051	2921 3051				
	4 P	2915 4051	2921 4051				
630 A	3 P	2900 3063	2900 3063	Black 2799 7012⁽¹⁾ Red 2799 7013	Type S4 Black IP65 1443 3111⁽¹⁾ Red / Yellow IP65 1444 3111	200 mm 1401 1520 320 mm 1401 1532⁽¹⁾ 400 mm 1401 1540	1 st NO / NC contact 2799 0001
	4 P	2900 4063	2900 4063				2 nd NO / NC contact 2799 0002
800 A	3 P	2900 3080	2900 3080				
	4 P	2900 4080	2900 4080				
1250 A	3 P	2900 3120	2900 3120				
	4 P	2900 4120	2900 4120				
1600 A	3 P	2900 3160	2900 3160				
	4 P	2900 4160	2900 4160				
1800 A	3 P	2901 3180⁽⁶⁾		Black 2799 7012	Type S4 Black IP65 1443 3111 Red/Yellow 1444 3111	200 mm 1401 1520 320 mm 1401 1532 400 mm 1401 1540	
2000 A	3 P	2901 3200⁽⁶⁾					
2500 A	3 P	2901 3250⁽⁶⁾					
3150 A	3 P	2901 3310⁽⁶⁾					

(1) Standard.

(2) Auxiliary signal contact - Type S.

(3) For direct operation.

(4) For external operation.

(5) Auxiliary signal contact - Type U.

(6) Switch body front operation

SIDER

Load break switches for power distribution
from 125 to 3150 A with visible breaking

References

Side operation

Rating (A)	No. of poles	Switch body Direct operation	Switch body External right side operation	Direct handle	External handle	Shaft for external handle	Auxiliary contact
ND 125 A	3 P	2915 3012	2921 3012	Black 3629 7901 ⁽⁴⁾	S2 type Black IP55 1425 2111 ⁽⁴⁾ Black IP65 1427 2111 Red / Yellow IP65 1428 2111	200 mm 1400 1020 ⁽⁴⁾	1 st contact NO/NC 3999 0021 ⁽²⁾⁽³⁾ 2 contacts NO/NC 3999 0022 ⁽²⁾⁽³⁾ 1 contact NC 3999 0701 ⁽⁴⁾⁽⁶⁾ 1 contact NO 3999 0702 ⁽⁴⁾⁽⁶⁾
	4 P	2915 4012	2921 4012				
ND 200 A	3 P	2915 3021	2921 3020				
	4 P	2915 4021	2921 4020				
ND 250 A	3 P	2915 3025	2921 3025				
	4 P	2915 4025	2921 4025				
ND 315 A	3 P	2915 3031	2921 3031				
	4 P	2915 4031	2921 4031				
ND 400 A	3 P	2915 3041	2921 3041				
	4 P	2915 4041	2921 4041				
ND 500 A	3 P	2915 3051	2921 3051				
	4 P	2915 4051	2921 4051				
630 A	3 P	2905 3063	2905 3063	Black 2799 7052 ⁽⁴⁾ Conversion kit 2799 7070 ⁽⁵⁾ Red 2799 7053 Conversion kit 2799 7070 ⁽⁵⁾	S3 type Black IP65 1437 3111 ⁽⁴⁾ Red / Yellow IP65 1438 3111	200 mm 1404 1520 ⁽⁴⁾	1 st contact NO/NC 2799 0011 2 nd contact NO/NC 2799 0012
	4 P	2905 4063	2905 4063				
800 A	3 P	2905 3080	2905 3080				
	4 P	2905 4080	2905 4080				
1250 A	3 P	2905 3120	2905 3120				
	4 P	2905 4120	2905 4120				
1600 A	3 P	2905 3160	2905 3160				
	4 P	2905 4160	2905 4160				

(1) Standard.

(2) Auxiliary signal contact - Type S.

(3) For direct operation.

(4) For external operation.

(5) Conversion kit necessary for any direct operation.

(6) Auxiliary signal contact - Type U.

Accessories

Direct operation handle

For front operation Rating (A)	Handle colour	Reference
ND 125 ... ND 500	Black	3629 7901
630 ... 3150	Black	2799 7012⁽¹⁾
630 ... 3150	Red	2799 7013

(1) Standard.

For side operation Rating (A)	Handle colour	Reference
ND 125 ... ND 500	Black	3629 7901
630 ... 1600	Black	2799 7052
630 ... 1600	Red	2799 7053

Direct side operation escutcheon Rating (A)	External IP	Reference
630 ... 1600	IP54	2799 7070⁽¹⁾

(1) To be ordered together with a direct side operation handle.



External operation handle

For front operation Rating (A)	Handle colour	Handle type	External IP ⁽¹⁾	Reference
ND 125 ... ND 500	Black	S2	IP55	1421 2111⁽²⁾
ND 125 ... ND 500	Black	S2	IP65	1423 2111
ND 125 ... ND 500	Red	S2	IP65	1424 2111
630 ... 3150	Black	S4	IP65	1443 3111⁽²⁾
630 ... 3150	Red	S4	IP65	1444 3111

(1) IP: protection degree according to IEC 60529 standard. (2) Standard.

For right side operation Rating (A)	Handle colour	Handle type	External IP ⁽¹⁾	Reference
ND 125 ... ND 500	Black	S2	IP55	1425 2111
ND 125 ... ND 500	Red	S2	IP65	1428 2111
630 ... 1600	Black	S3	IP65	1437 3111
630 ... 1600	Red	S3	IP65	1438 3111

(1) IP: protection degree according to IEC 60529.



Shaft guide for external operation

Use

To guide the shaft extension into the external handle. This accessory enables the handle to engage the extension shaft with a misalignment of up to 15 mm.

Required for a shaft length over 320 mm.

Description	Reference
Shaft guide	1429 0000



SIDER

Load break switches for power distribution
from 125 to 3150 A with visible breaking

Accessories (continued)

Type S handle adapter

Use

Enables S-type handles to be fitted in place of existing older style Socomec handles.

Dimensions

Adds 12 mm to the handle depth.

Handle colour	To be ordered in multiples of	External IP ⁽¹⁾	Reference
Black	1	IP65	1493 0000

(1) IP: protection degree according to IEC 60529 standard.



Alternative S type handle cover colour

Use

For single lever handle S1, S2, S3 types and double lever handle S4 type.

Other colours available - please contact us.

Handle colour	To be ordered in multiples of	Handle type	Reference
Light grey	50	S1, S2	1401 0001
Dark grey	50	S1, S2	1401 0011
Light grey	50	S4	1401 0031
Dark grey	50	S4	1401 0041



Shaft for external operation

Use

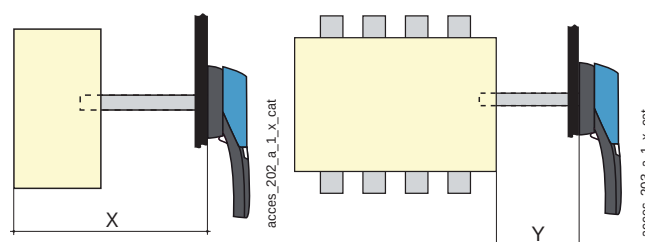
Standard lengths:

- 80 mm,
- 200 mm,
- 320 mm,

- 400 mm,
- 500 mm.

Other lengths available - please contact us.

For front operation				
Rating (A)	Dimension X (mm)	Shaft length (mm)	Type	Reference
ND 125 ... ND 500	95 ... 230	200 mm	10 x 10	1400 1020
ND 125 ... ND 500	95 ... 350	320 mm	10 x 10	1400 1032
ND 125 ... ND 500	95 ... 530	500 mm	10 x 10	1400 1050
630 ... 3150	295 ... 555	200 mm	15 x 12	1401 1520
630 ... 3150	295 ... 675	320 mm	15 x 12	1401 1532
630 ... 3150	295 ... 755	400 mm	15 x 12	1401 1540
For side operation				
Rating (A)	Dimension Y (mm)	Shaft length (mm)	Type	Reference
ND 125 ... ND 500	20 ... 110	80 mm	10 x 10	included
ND 125 ... ND 500	20 ... 230	200 mm	10 x 10	1400 1020
630 ... 1600	98 ... 258	200 mm	15 x 12	1404 1520



Auxiliary contacts for pre-break and signalling - Front operation

- Use
Pre-break and signalling of positions 0 and I:
- 1 to 2 NO/NC auxiliary contacts,
- 1 to 4 NO or NC auxiliary contacts,
- 1 to 4 NO+NC auxiliary contacts.
- Connection to the control circuit
6.35 mm fast-on terminal.
Characteristics
NO/NC A/C: IP2X.
Electrical characteristics
30 000 operations.



NO/NC contact Rating (A)	Position AC	Reference
ND 125 ... ND 500	1 st	3999 0021 ⁽¹⁾
ND 125 ... ND 500	2 nd	3999 0022 ⁽¹⁾
630 ... 1600	1 st	2799 0001
630 ... 1600	2 nd	2799 0002

(1) For direct operation.

NC contact Rating (A)	Position AC	Reference
ND 125 ... ND 500	1 to 4	3999 0701 ⁽¹⁾

(1) For external operation.

Characteristics

Rating (A)	Contact type	Current nominal (A)	Operating current I _e (A)			
			250 VAC AC-13	400 VAC AC-13	24 VDC DC-13	48 VDC DC-13
ND 125 ... ND 500	changeover NO/NC	16		3	12	2
ND 125 ... ND 500	NC	10	6	4	5	3
ND 125 ... ND 500	NO	10	6	4	5	3
630 ... 1600	changeover NO/NC	16	12	8	14	6
630 ... 1600	NO + NC	15	10	6	15	12

NO contact Rating (A)	Position AC	Reference
ND 125 ... ND 500	1 to 4	3999 0702 ⁽¹⁾

(1) For external operation.

NO + NC contact Rating (A)	Position AC	Reference
630 ... 1600	1	2799 0005

Low level NO/NC auxiliary contacts		
Rating (A)	Position AC	Reference
630 ... 1600	1	2699 0101

Auxiliary contacts for pre-break and signalling - Right side operation

- Use
Pre-break and signalling of positions 0 and I:
- 1 to 2 NO/NC auxiliary contacts,
- 1 to 4 NO or NC auxiliary contacts.
- Connection to the control circuit
By 6.35 mm fast-on terminal.
Characteristics
NO/NC A/C: IP2X.
Electrical characteristics
30 000 operations.



NO/NC contact Rating (A)	Position AC	Reference
ND 125 ... ND 500	1 st	3999 0021
ND 125 ... ND 500	2	3999 0022
630 ... 1600	1 st	2799 0011
630 ... 1600	2 nd	2799 0012

NC contact Rating (A)	Position AC	Reference
ND 125 ... ND 500	1 to 4	3999 0701

NO contact Rating (A)	Position AC	Reference
ND 125 ... ND 500	1 to 4	3999 0702

Low level NO/NC auxiliary contacts		
Rating (A)	Position AC	Reference
630 ... 1600	1	2799 0111

Characteristics

Rating (A)	Contact type	Current nominal (A)	Operating current I _e (A)			
			250 VAC AC-13	400 VAC AC-13	24 VDC DC-13	48 VDC DC-13
ND 125 ... ND 500	changeover NO/NC	16		3	12	2
ND 125 ... ND 500	NC	10	6	4	5	3
ND 125 ... ND 500	NO	10	6	4	5	3
630 ... 1600	changeover NO/NC	16	12	8	14	6

Accessories (continued)

S type auxiliary contacts for signalisation - Front and right side operation

Use

Signalling of positions 0 and I,
1 to 4 NO+NC auxiliary contacts.

Connection to the control circuit

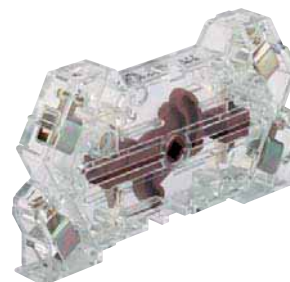
By terminals with a max. cross-section of
10 mm².

Electrical principle

The NO+NC S-type auxiliary contacts can
be configured as 2 NO or 2 NC.

Electrical characteristics

30 000 operations.



access_051_a_2_cat

NO+NC contact Rating (A)	Position AC	Reference
ND 125 ... ND 500	1	3999 0041
ND 125 ... ND 500	2	3999 0042
ND 125 ... ND 500	3	3999 0043
ND 125 ... ND 500	4	3999 0044

Characteristics

Rating (A)	Contact type	Current nominal (A)	Operating current I _e (A)	
			250 VAC	400 VAC
ND 125 ... ND 500	NO + NC	20	AC-13 10	AC-13 8

Terminal shrouds

Use

Top or bottom protection against direct
contact with terminals or connection parts.

Perforations allow remote thermographic
inspection without the need to remove the
shrouds.

Advantage

Rating (A)	No. of poles	Position	Reference
ND 125 ... ND 200	3 P	top or bottom	3998 3016⁽¹⁾
ND 125 ... ND 200	4 P	top or bottom	3998 4016⁽²⁾
ND 250 ... ND 500	3 P	top or bottom	3998 3025⁽¹⁾
ND 250 ... ND 500	4 P	top or bottom	3998 4025⁽²⁾

(1) Reference composed of 3 pieces.

(2) Reference composed of 4 pieces.



access_093_a_1_cat

Terminal screens

Use

Top or bottom protection against direct contact with terminals or connection parts.

Rating (A)	No. of poles	Position	Reference
630 ... 800	3 P	top or bottom	2998 3080
630 ... 800	4 P	top or bottom	2998 4080
1250 ... 3150	3 P	top or bottom	2998 3120
1250 ... 1600	4 P	top or bottom	2998 4120



access_058_a_1_cat

Inter-phase barrier

Use

Safe isolation between the terminals, essential for use at 690 VAC or
in a polluted or dusty atmosphere.

Rating (A)	No. of poles	Reference
630 ... 3150	3 P	2998 0003
630 ... 1600	4 P	2998 0004



access_036_a_1_cat

Handle key interlocking accessories

Use

Locking in position 0 of the front or side operation handle:

- using RONIS EL11AP lock in direct right-side operation (Fig. 1),
- using RONIS EL11AP lock in direct front operation (Fig. 2),

- using RONIS EL11AP or CASTELL type K-type lock in external front operation (Fig. 3),
- using RONIS EL11AP lock in external right-side operation,
- using CASTELL FS-type in external front operation (Fig. 4).

Locking using RONIS EL11AP lock (not supplied)

Rating (A)	Operation	Figure	Reference
ND 125 ... ND 500	front direct	1	3629 7913 ⁽¹⁾
630 ... 1600	front direct	2	2799 7007 ⁽²⁾
ND 125 ... 1600	external front	3	1499 7701
ND 125 ... ND 500	direct side operation	1	3629 7913 ⁽¹⁾
ND 125 ... 1600	external right side	3	1499 7701

(1) Handle included.

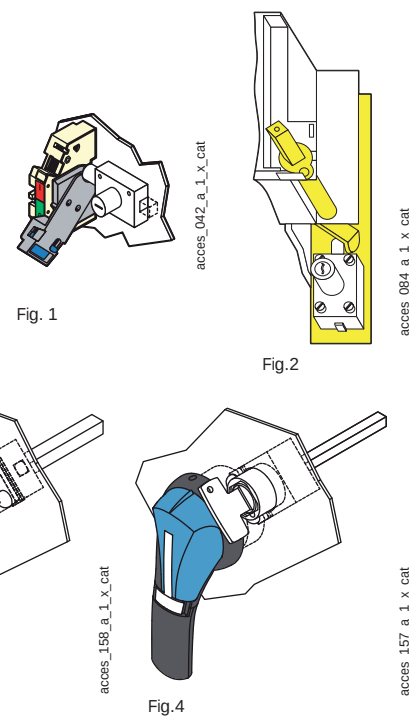
(2) Factory mounting only.

Locking using type K CASTELL lock (not supplied)

Rating (A)	Operation	Figure	Reference
ND 125 ... ND 500	external front	3	1499 7702

Locking using type FS CASTELL lock (not supplied)

Rating (A)	Operation	Figure	Reference
ND 125 ND 500	external front	4	1499 7703



Other specific accessories

- Mechanical coupling device for combining switches with "n" poles of the same or different ratings.
- Mechanical interlocking device.
- Mechanical plates and escutcheon for standard systems.

Characteristics according to IEC 60947-3

SIDER ND 125 to 500 A

Thermal current I_{th} at 40°C		ND 125 A	ND 200 A	ND 250 A	ND 315 A	ND 400 A	ND 500 A
Rated insulation voltage U_i (V)		800	800	800	800	800	800
Rated impulse withstand voltage U_{imp} (kV)		8	8	8	8	8	8
Rated operational currents I_e (A)							
Rated voltage	Utilisation category	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾
415 VAC	AC-20 A / AC-20 B	125/125	200/200	250/250	315/315	400/400	500/500
415 VAC	AC-21 A / AC-21 B	125/125	200/200	250/250	315/315	400/400	500/500
415 VAC	AC-22 A / AC-22 B	125/125	200/200	250/250	315/315	400/400	500/500
415 VAC	AC-23 A / AC-23 B	125/125	200/200	250/250	315/315	400/400	500/500
500 VAC	AC-20 A / AC-20 B	125/125	200/200	250/250	315/315	400/400	500/500
500 VAC	AC-21 A / AC-21 B	125/125	160/160	250/250	250/250	400/400	500/500
500 VAC	AC-22 A / AC-22 B	125/125	160/160	250/250	250/250	400/400	500/500
500 VAC	AC-23 A / AC-23 B	125/125	160/160	250/250	250/250	315/315	315/315
690 VAC ⁽²⁾	AC-20 A / AC-20 B	125/125	200/200	250/250	315/315	400/400	500/500
690 VAC ⁽²⁾	AC-21 A / AC-21 B	125/125	160/160	250/250	315/315	400/400	500/500
690 VAC ⁽²⁾	AC-22 A / AC-22 B	125/125	160/160	250/250	315/315	400/400	500/500
690 VAC ⁽²⁾	AC-23 A / AC-23 B	125/125	160/160	250/250	250/250	315/315	315/315
220 VDC	DC-20 A / DC-20 B	125/125	200/200	250/250	315/315	400/400	500/500
220 VDC	DC-21 A / DC-21 B	125/125	160/160	250/250	250/250	315/315 ⁽³⁾	315/315 ⁽³⁾
220 VDC	DC-22 A / DC-22 B	125/125	160/160	250/250	250/250	315/315 ⁽³⁾	315/315 ⁽³⁾
220 VDC	DC-23 A / DC-23 B	125/125	125/125	200/200	200/200	200/315 ⁽³⁾	200/315 ⁽³⁾
440 VDC	DC-20 A / DC-20 B	125/125	200/200	250/250	315/315	400/400	500/500
440 VDC	DC-21 A / DC-21 B	125/125 ⁽⁴⁾	160/160 ⁽⁴⁾	250/250 ⁽⁴⁾	250/250 ⁽⁴⁾	315/315 ⁽⁴⁾	315/315 ⁽⁴⁾
440 VDC	DC-22 A / DC-22 B	125/125 ⁽⁴⁾	160/160 ⁽⁴⁾	250/250 ⁽⁴⁾	250/250 ⁽⁴⁾	315/315 ⁽⁴⁾	315/315 ⁽⁴⁾
440 VDC	DC-23 A / DC-23 B	125/125 ⁽⁴⁾	125/125 ⁽⁴⁾	200/200 ⁽⁴⁾	200/200 ⁽⁴⁾	200/315 ⁽⁴⁾	200/315 ⁽⁴⁾
500 VDC	DC-20 A / DC-20 B	125/125	200/200	250/250	315/315	400/400	500/500
500 VDC	DC-21 A / DC-21 B	125/125 ⁽⁴⁾	160/160 ⁽⁴⁾	250/250 ⁽⁴⁾	250/250 ⁽⁴⁾	315/315 ⁽⁴⁾	315/315 ⁽⁴⁾
500 VDC	DC-22 A / DC-22 B	125/125 ⁽⁴⁾	160/160 ⁽⁴⁾	250/250 ⁽⁴⁾	250/250 ⁽⁴⁾	315/315 ⁽⁴⁾	315/315 ⁽⁴⁾
500 VDC	DC-23 A / DC-23 B	125/125 ⁽⁴⁾	125/125 ⁽⁴⁾	200/200 ⁽⁴⁾	200/200 ⁽⁴⁾	200/315 ⁽⁴⁾	200/315 ⁽⁴⁾
Operational power in AC-23 A (kW) ⁽¹⁾⁽⁵⁾							
At 400 VAC without pre-break in AC-23 (kW) ⁽¹⁾		63/63	110/110	140/140	160/160	220/220	295/295
At 500 VAC without pre-break in AC-23 (kW) ⁽¹⁾		85/85	110/110	160/160	160/160	220/220	220/220
At 690 VAC without pre-break in AC-23 (kW) ⁽¹⁾		110/110	150/150	220/220	220/220	295/295	295/295
Reactive power (kvar)							
At 400 VAC (kvar)		55	90	115	145	185	230
Fuse protected short-circuit withstand (kA rms prospective) ⁽⁶⁾							
Prospective short-circuit current (kA rms)		100	60	100	60	50	30
Associated fuse rating (A)		125	200	150	315	400	500
Circuit breaker protected short-circuit withstand with any circuit breaker that ensures tripping in less than 0.3s							
Prospective short-circuit 0.3s (kA rms)		15	15	17	17	17	17
Short-circuit capacity (without protection)							
Rated short-time withstand current 1s. I_{cw} (kA rms)		7	7	9	9	9	9
Rated peak withstand current (kA peak) ⁽⁶⁾		20	20	32.5	32.5	40	40
Connection							
Minimum Cu cable cross-section (mm ²)							
Minimum Cu busbar cross-section (mm ²)							
Maximum Cu cable cross-section (mm ²)		120	120	240	240	2 x 150	2 x 150
Maximum Cu busbar width (mm)		20	20	32	32	45	45
Tightening torque min (Nm)		9	9	20	20	20	20
Mechanical characteristics							
Durability (number of operating cycles) ⁽⁶⁾		10 000	10 000	10 000	10 000	10 000	10 000
Operating effort (Nm)		10	10	12	12	15	15
Weight of a 3 pole device (kg)		1.8	1.8	3.2	3.2	4.8	4.8
Weight of a 4 pole device (kg)		2.3	2.3	4.5	4.5	6.1	6.1

(1) Category with index A = frequent operation - Category with index B = infrequent operation.

(2) With terminal shrouds or phase barrier.

(3) 3-pole device with 2 poles in series for the "+" and 1 pole for the "-".

(4) 4-pole device with 2 poles in series per polarity.

(5) The power value is given for information only, the current values vary from one manufacturer to another.

(6) For a rated operational voltage $U_e = 415$ VAC.

Characteristics according to IEC 60947-3

SIDER 630 to 3150 A

Thermal current I_{th} at 40°C	630 A	800 A	1250 A	1600 A	1800 A	2000 A	2500 A	3150 A
Rated insulation voltage U_i (V)	1000	1000	1000	1000	1000	1000	1000	1000
Rated impulse withstand voltage U_{imp} (kV)	12	12	12	12	12	12	12	12
Rated operational currents I_e (A)								
Rated voltage	Utilisation category	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾
415 VAC	AC-20 A / AC-20 B	630 / 630	800 / 800	1250 / 1250	1600 / 1600	1800 / 1800	2000/2000	2500/2500
415 VAC	AC-21 A / AC-21 B	630 / 630	800 / 800	1250 / 1250	1600 / 1600	1800 / 1800	2000/2000	2500/2500
415 VAC	AC-22 A / AC-22 B	630 / 630	800 / 800	1250 / 1250	1250 / 1250	-	-	-
415 VAC	AC-23 A / AC-23 B	630 / 630	630 / 800	1000 / 1000	1000 / 1000	-	-	-
500 VAC	AC-20 A / AC-20 B	630 / 630	800 / 800	1250 / 1250	1600 / 1600	1800 / 1800	2000/2000	2500/2500
500 VAC	AC-21 A / AC-21 B	630 / 630	800 / 800	1250 / 1250	1600 / 1600	-	-	-
500 VAC	AC-22 A / AC-22 B	630 / 630	800 / 800	1000 / 1000	1000 / 1000	-	-	-
500 VAC	AC-23 A / AC-23 B	500 / 500	500 / 500	800 / 800	800 / 800	-	-	-
690 VAC ⁽²⁾	AC-20 A / AC-20 B	630 / 630	800 / 800	1250 / 1250	1600 / 1600	1800 / 1800	2000/2000	2500/2500
690 VAC ⁽²⁾	AC-21 A / AC-21 B	630 / 630	800 / 800	1000 / 1000	1250 / 1250	-	-	-
690 VAC ⁽²⁾	AC-22 A / AC-22 B	315 / 315	315 / 315	400 / 400	400 / 400	-	-	-
690 VAC ⁽²⁾	AC-23 A / AC-23 B	100 / 100	125 / 125	200 / 200	200 / 200	-	-	-
220 VDC	DC-20 A / DC-20 B	630 / 630	800 / 800	1250 / 1250	1600 / 1600	-	-	-
220 VDC	DC-21 A / DC-21 B	630 / 630	800 / 800	1000 / 1000	1250 / 1250	-	-	-
220 VDC	DC-22 A / DC-22 B	630 / 630	800 / 800	800 / 800	800 / 800	-	-	-
220 VDC	DC-23 A / DC-23 B	630 / 630	800 / 800	800 / 800	800 / 800	-	-	-
440 VDC	DC-20 A / DC-20 B	630 / 630	800 / 800	1250 / 1250	1600 / 1600	-	-	-
440 VDC	DC-21 A / DC-21 B	500 / 500	630 / 630	800 / 800	1000 / 1000	-	-	-
440 VDC	DC-22 A / DC-22 B	630 / 630 ⁽⁴⁾	800 / 800 ⁽⁴⁾	800 / 800 ⁽⁴⁾	800 / 800 ⁽⁴⁾	-	-	-
440 VDC	DC-23 A / DC-23 B	630 / 630 ⁽⁴⁾	800 / 800 ⁽⁴⁾	800 / 800 ⁽⁴⁾	800 / 800 ⁽⁴⁾	-	-	-
500 VDC	DC-20 A / DC-20 B	630 / 630	800 / 800	1250 / 1250	1600 / 1600	-	-	-
500 VDC	DC-21 A / DC-21 B	500 / 500	630 / 630	800 / 800 ⁽⁴⁾	1000 / 1000	-	-	-
500 VDC	DC-22 A / DC-22 B	630 / 630 ⁽⁴⁾	800 / 800 ⁽⁴⁾	800 / 800 ⁽⁴⁾	800 / 800 ⁽⁴⁾	-	-	-
500 VDC	DC-23 A / DC-23 B	630 / 630 ⁽⁴⁾	800 / 800 ⁽⁴⁾	800 / 800 ⁽⁴⁾	800 / 800 ⁽⁴⁾	-	-	-
Operational power in AC-23 (kW) ⁽¹⁾⁽⁵⁾								
At 400 VAC without pre-break auxiliary contact in AC-23 (kW) ⁽¹⁾	355 / 355	355 / 355	560 / 560	560 / 560	-	-	-	-
At 500 VAC without pre-break in AC-23 (kW) ⁽¹⁾	355 / 355	355 / 355	560 / 560	560 / 560	-	-	-	-
At 690 VAC without pre-break in AC-23 (kW) ⁽¹⁾	90 / 90	110 / 110	185 / 185	185 / 185	-	-	-	-
Reactive power (kvar)								
At 400 VAC (kvar)	290	365	575	-	-	-	-	-
Current rated as conditional short-circuit with fuse gG DIN								
Prospective short-circuit current (kA rms.) ⁽⁵⁾	100	70	100	120	-	-	-	-
Associated fuse rating (A) ⁽⁵⁾	630	800	1250	2 x 800	-	-	-	-
Circuit breaker protected short-circuit withstand with any circuit breaker that ensures tripping in less than 0.3s								
Rated short-time withstand current 0.3s. I_{cw} (kA rms)	50	50	100	100	-	-	-	-
Short-circuit operation (switch only)								
Rated short-time withstand current I_{cw} 1s (kA rms)	26	26	50	50	50	50	50	50
Rated peak withstand current in I_{cc} (kA peak) ⁽⁶⁾	55	55	100	110	80	80	80	80
Connection								
Minimum Cu cable cross-section (mm ²)	2 x 150	2 x 185			-	-	-	-
Minimum Cu cable cross-section (mm ²)	2 x 30 x 5	2 x 40 x 5	2 x 60 x 5	2 x 80 x 5	2 x 80 x 5	2 x 80 x 10	4 x 100 x 5	-
Minimum Cu cable cross-section (mm ²)	2 x 300	2 x 300	4 x 185	6 x 240	6 x 240	3 x 100 x 5	2 x 100 x 10	3 x 100 x 10
Maximum Cu busbar width (mm)	63	63	100	100	100	100	100	100
Tightening torque min/max (Nm)	20	20	20	40	40	-	-	-
Mechanical characteristics								
Durability (number of operating cycles) ⁽⁷⁾	5000	4000	4000	3000	3000	-	-	-
Operating effort (Nm)	45	45	45	65	65	-	-	-
Weight of a 3-pole device (kg)	8	8.5	11	16.5	16.5	-	-	-
Weight of a 4-pole device (kg)	9.5	10	14	20.5	20.5	-	-	-

(1) Category with index A = frequent operation - Category with index B = infrequent operation.

(2) With terminal shrouds or phase barrier.

(3) 3-pole device with 2 poles in series for the '+' and 1 pole for the '-'.
(4) 4-pole device with 2 poles in series per polarity

(5) The power value is given for information only - the current values vary from one manufacturer to another

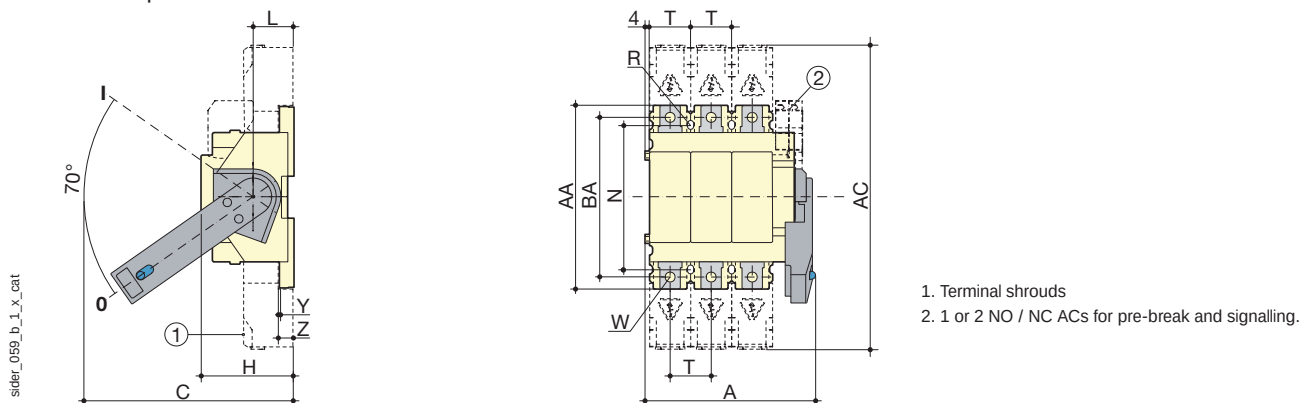
(6) For a rated operational voltage $U_n = 415$ VAC

(7) For higher endurances, please contact us.

Dimensions - Front operation

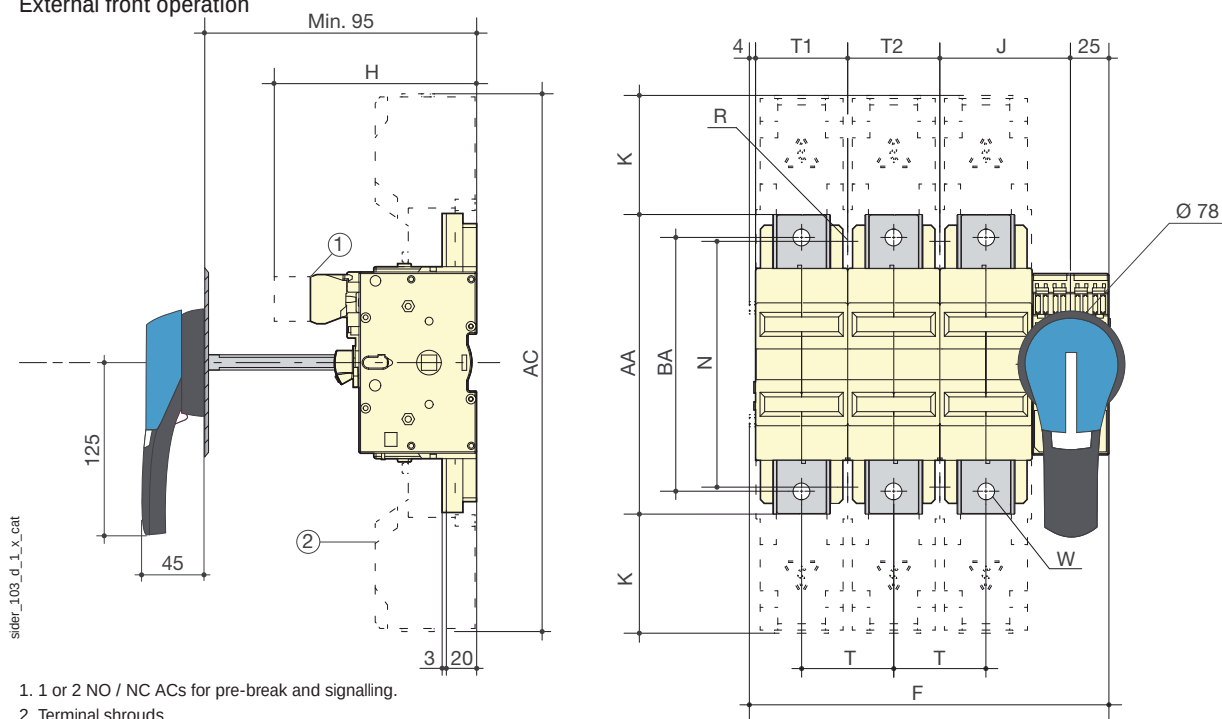
SIDER ND 125 to 500 A

Direct front operation



Rating (A)	Overall dimensions			Terminal shrouds	Switch body		Switch mounting		Connection					
	A 3p.	A 4p.	C		AC	H	L	N	R	T	W	Y	Z	AA
ND 125	160	196	178	268	82	36	130	5	36	8	3	20	162	141
ND 200	160	196	178	268	82	36	130	5	36	8	3	20	162	141
ND 250	232	322	173	350	77	31	162	6	60	10	3	20	195	165
ND 315	232	322	173	350	77	31	162	6	60	10	3	20	195	165
ND 400	280	346	173	360	77	31	172	6	66	10	3	20	214	175
ND 500	280	346	173	360	77	31	172	6	66	10	3	20	214	175

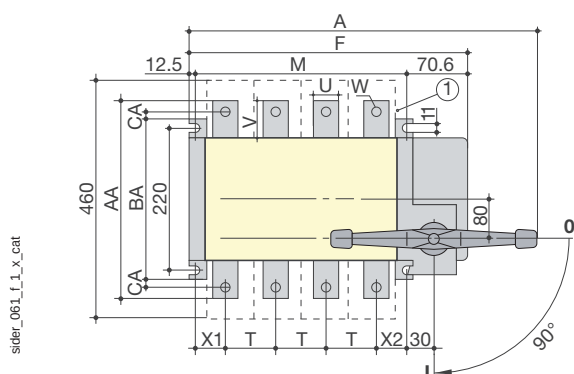
External front operation



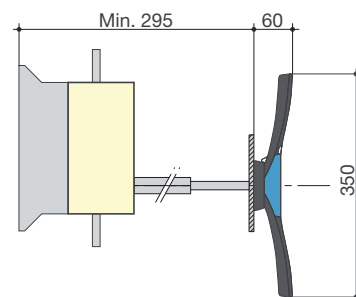
Rating (A)	Terminal shrouds		Switch body				Switch mounting		Connection					
	AC	F 3p.	F 4p.	H	J	K	N	R	T	W	AA	BA	T1	T2
ND 125	268	148	184	137	54	53	130	5	36	8	162	141	36	36
ND 200	268	148	184	137	54	53	130	5	36	8	162	141	36	36
ND 250	350	234	294	132	85	77.5	162	6	60	10	195	165	60	60
ND 315	350	234	294	132	85	77.5	162	6	60	10	195	165	60	60
ND 400	360	252	318	132	91	73	172	6	66	10	214	175	66	66
ND 500	360	252	318	132	91	73	172	6	66	10	214	175	66	66

SIDER 630 to 1800 A

Direct front operation



External front operation

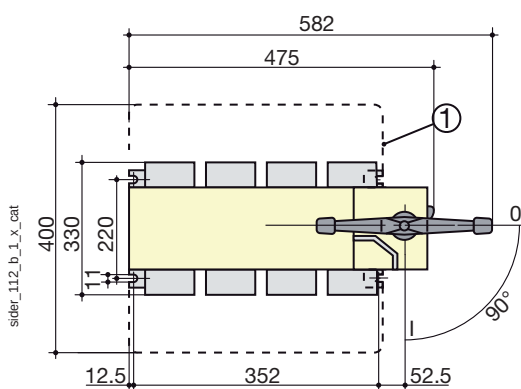


1. Terminal screens

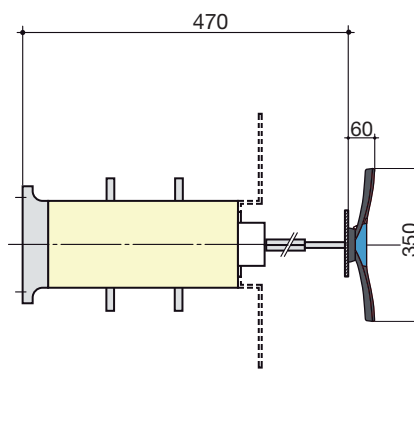
Rating (A)	Overall dimensions		Switch body		Switch mounting		Connection											
	A 3p.	A 4p.	F 3p.	F 4p.	M 3p.	M 4p.	T	U	V	W	X1	X2	Y	Z	AA	BA	AC	
630	463	543	358	438	255	335	80	40	50	13	42.5	52.5	6	106	300	260	20	
800	463	543	358	438	255	335	80	50	60	9	47.5	47.5	6	106	320			
1250	555	675	430	550	347	467	120	63	65	16 x 11	46.5	60.5	7	107	330			
1600	555	675	430	550	347	467	120	80	80	13	46.5	60.5	15	111	360			
1800	479		417		345		120	100	80		46.5	60.5	15	112	360	250		

SIDER 2000 to 2500 A

Direct front operation



External front operation



1. Terminal screens.

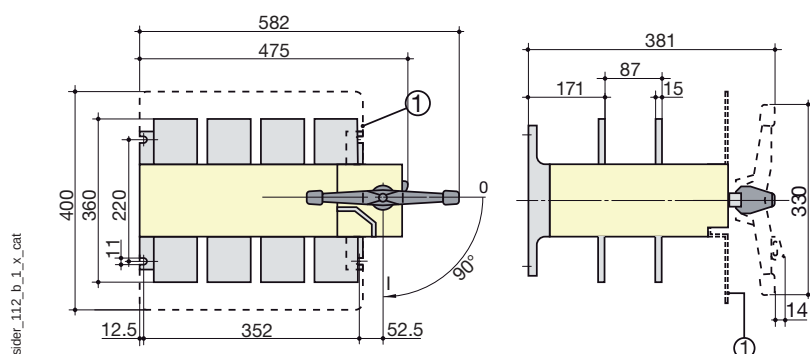
SIDER

Load break switches for power distribution
from 125 to 3150 A with visible breaking

Dimensions - Front operation (continued)

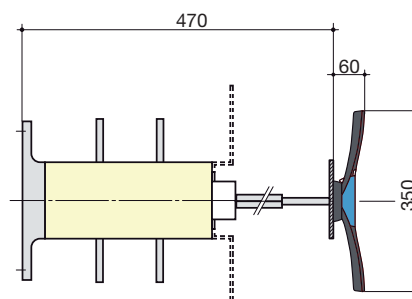
SIDER 3150 A

Direct front operation



1. Terminal screens.

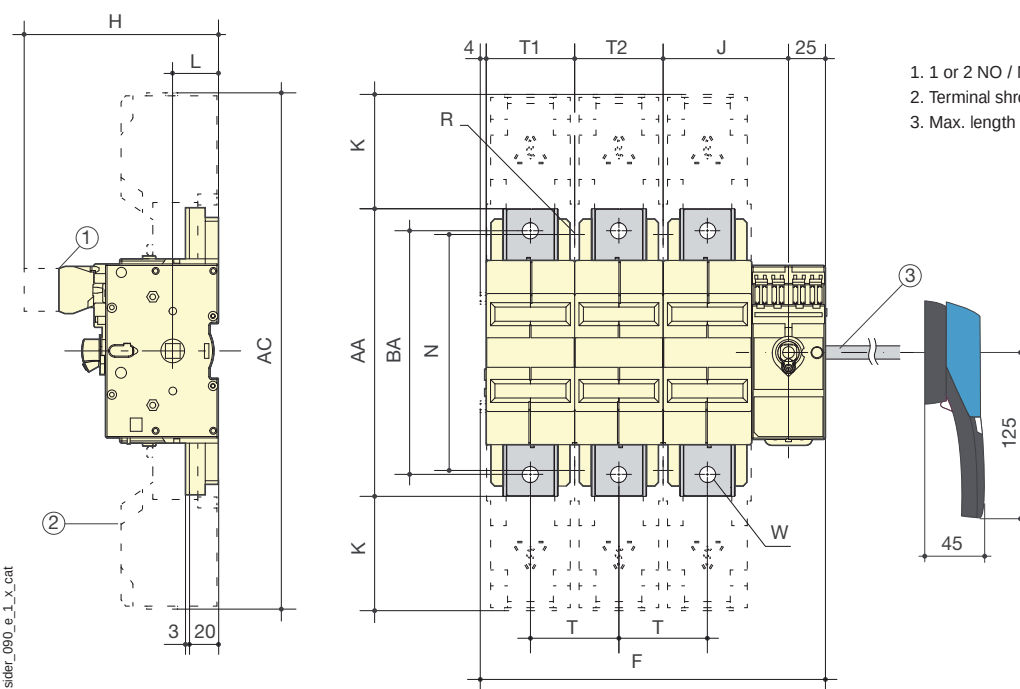
External front operation



Dimensions - Side operation

SIDER ND 125 to 500 A

External side operation



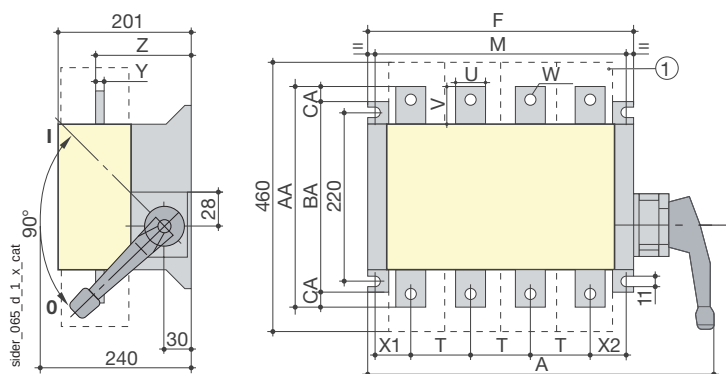
- 1. 1 or 2 NO / NC ACs for pre-break and signalling.
- 2. Terminal shrouds
- 3. Max. length with shaft extension: 230 mm

Rating (A)	Terminal shrouds	Overall dimensions		Switch body				Switch mounting		Connection					
	AC	F 3p.	F 4p.	H	J	K	L	N	R	T	W	AA	BA	T1	T2
ND 125	268	148	184	137	54	53	36	130	5	36	8	162	141	36	36
ND 200	268	148	184	137	54	53	36	130	5	36	8	162	141	36	36
ND 250	350	234	294	132	85	77.5	31	162	6	60	10	195	165	60	60
ND 315	350	234	294	132	85	77.5	31	162	6	60	10	195	165	60	60
ND 400	360	252	318	132	91	73	31	172	6	66	10	214	175	66	66
ND 500	360	252	318	132	91	73	31	172	6	66	10	214	175	66	66

Dimensions - Side operation (continued)

SIDER 630 to 1600 A

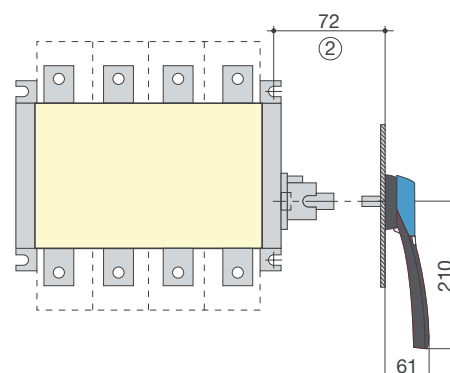
Direct side operation



1. Terminal screen

2. Min. length with shaft extension: 111 mm

External side operation



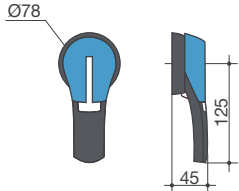
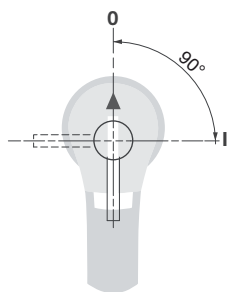
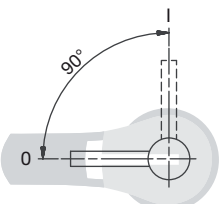
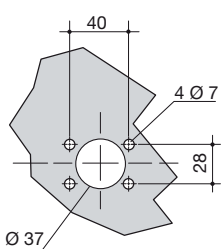
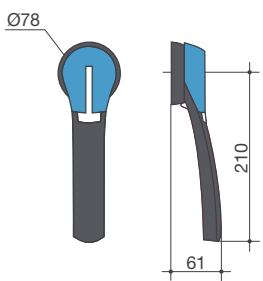
	Overall dimensions		Switch body		Switch mounting		Connection										
Rating (A)	A 3p.	A 4p.	F 3p.	F 4p.	M 3p.	M 4p.	T	U	V	W	X1	X2	Y	Z	AA	BA	AC
630	395	475	280	360	255	335	80	40	50	13	42.5	52.5	6	147	300	260	20
800	395	475	280	360	255	335	80	50	60	15	47.5	47.5	6	147	320		
1250	480	600	372	492	347	467	120	63	65	16 x 11	46.5	60.5	7	148	330		
1600	480	600	372	492	347	467	120	80	80	13	46.5	60.5	15	152	360		

SIDER

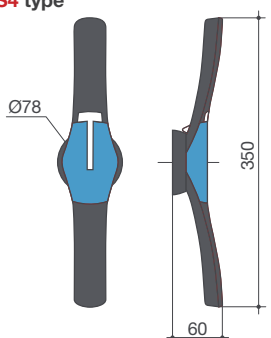
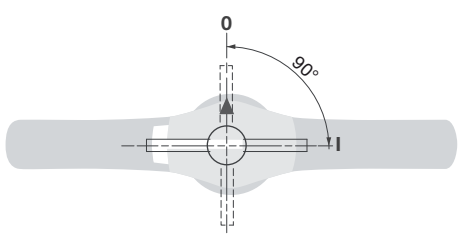
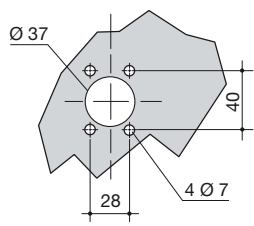
Load break switches for power distribution
from 125 to 3150 A with visible breaking

Dimensions for external handles

SIDER ND 125 to 500 A

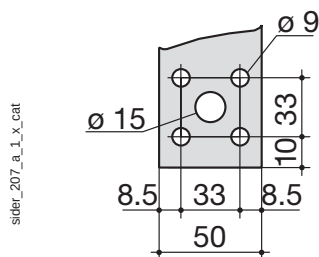
Handle type	Front operation Direction of operation	Side operation Direction of operation	Door drilling
S2 type 		Right side operation 	
S3 type 			

SIDER 630 to 1800 A

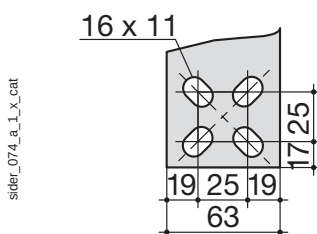
Handle type	Front operation Direction of operation	Door drilling
S4 type 		

Connection terminal

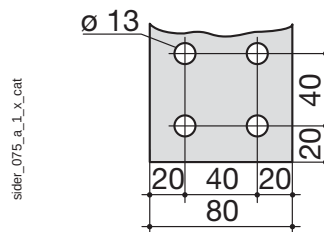
800 A



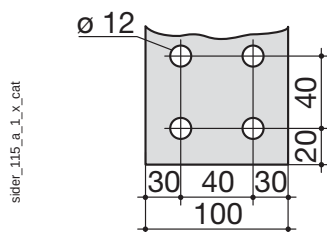
1250 A



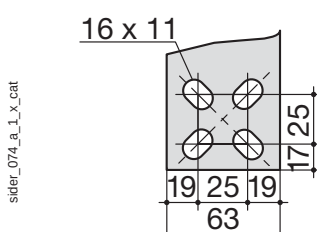
1600 A



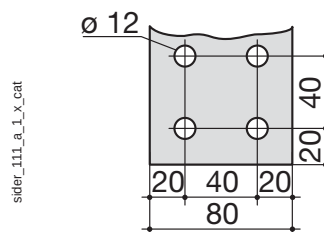
1800 A



2000 to 2500 A



3150 A

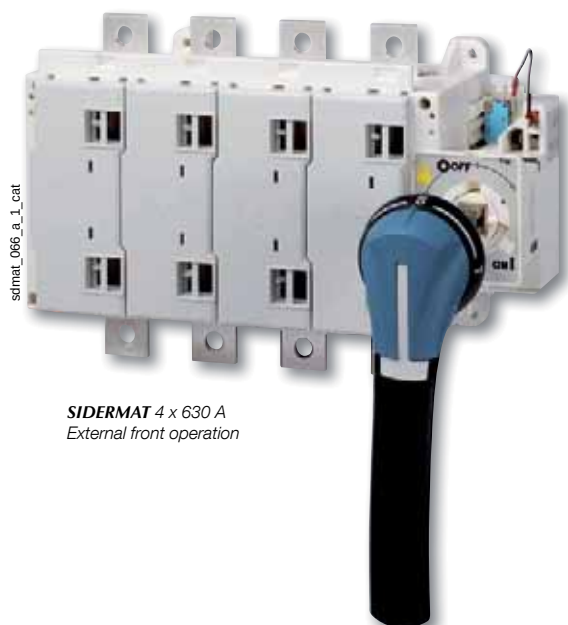




SIDERMAT

Load break switches for power distribution
from 250 to 1800 A with tripping function

Load break
switches



*SIDERMAT 4 x 630 A
External front operation*

The solution for

- > Main switchboard
- > Distribution panel
- > Motor load break



Strong points

- > Remote tripping
- > Safety with visible double breaking
- > Robustness in harsh conditions

Something to think about

- > SIDERMAT combination:
Manually operated fuse switches which can be tripped remotely.

Function

SIDERMAT are manually operated 3 or 4 pole load break switches with visible breaking and a remote tripping function.

They make and break under load conditions and provide safety isolation for any low voltage circuit.

The tripping function assures the following:

- protection of persons against insulation faults through combination with toroids and differential relays
- protection against overloads through combination with CTs and thermal relays
- protection against short circuits with fuses (see "SIDERMAT fuse-combination switches" page 316).

Advantages

Remote tripping

Disconnection by a shunt trip device enables the power to the installation to be switched off with a remote pushbutton.

Safety with visible double breaking

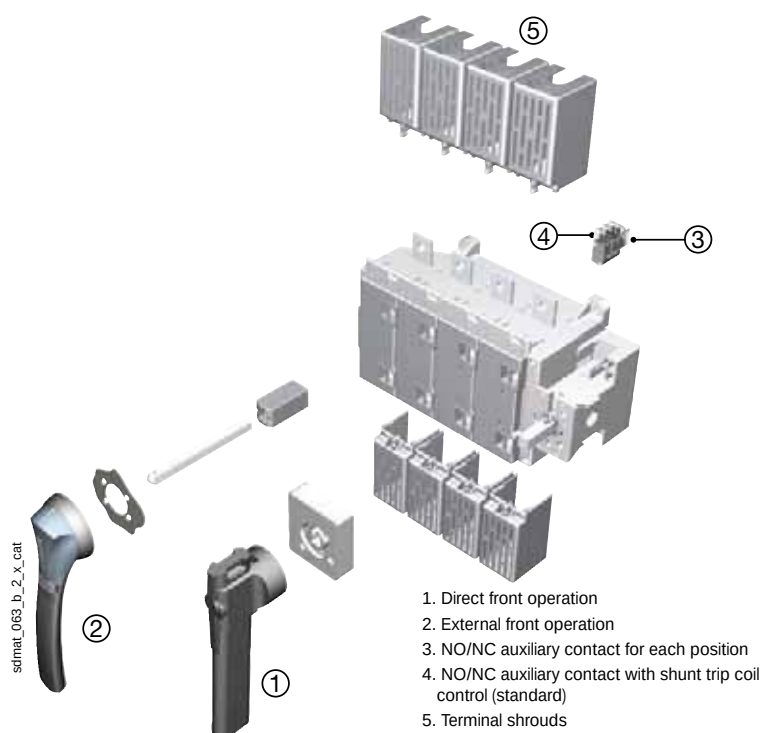
SIDERMATs are visible double breaking devices (quadruple up to 800 A) providing real and secure display.

Robustness in harsh conditions

By lowering the current via a limiting resistor, a SIDERMAT fitted with an undervoltage coil may be used in continuous processes or exposed to high ambient temperatures.

Functional diagram

For more details, please see the installation instructions supplied with the product.



1. Direct front operation
2. External front operation
3. NO/NC auxiliary contact for each position
4. NO/NC auxiliary contact with shunt trip coil control (standard)
5. Terminal shrouds

References

Front operation - Switch body with a shunt trip coil 230 VAC

Rating (A)	No. of poles	Switch body	Direct handle	External handle	Shaft for external handle	Auxiliary contact position	Auxiliary contact tripping	Terminal shrouds	Terminal screens	Inter phase barrier
250 A	3 P	3500 3026	Black 3999 6203	S3 type Black IP55 1431 3511 ⁽¹⁾ S3 type Red/Yellow IP55 1432 3511	200 mm 1401 1520 320 mm 1401 1532 ⁽¹⁾	1 st contact NO/NC 3999 0051 2 nd contact NO/NC 3999 0052	1 contact NO/NC 3999 0031	3 P 3998 3040 ⁽²⁾ 4 P 3998 4040 ⁽²⁾		
	4 P	3500 4026								
400 A	3 P	3500 3041								
	4 P	3500 4041								
630 A	3 P	3500 3064								
	4 P	3500 4064								
800 A	3 P	3500 3081						3 P 3998 3063 ⁽²⁾ 4 P 3998 4063 ⁽²⁾		
	4 P	3500 4081								
1250 A	3 P	3500 3121							3 P 2998 3120 ⁽²⁾ 4 P 2998 4120 ⁽²⁾	3 P 2998 0003 4 P 2998 0004
	4 P	3500 4121								
1600 A	3 P	3500 3161								
	4 P	3500 4161								
1800 A	3 P	3500 3180								included
	4 P	3500 4180								

(1) Standard.

(2) Top/bottom.

Side operation - Switch body with a shunt trip coil 230 VAC

Rating (A)	No. of poles	Switch body	Direct handle	External handle	Shaft for external handle	Auxiliary contact position	Auxiliary contact tripping	Terminal shrouds	Terminal screens	Inter phase barrier
250 A	3 P	3505 3026	Black 3999 6012 ⁽¹⁾ Red 3999 6013	S3 type Black IP55 1435 3511 ⁽¹⁾ S3 type Red IP55 1436 3511	200 mm 1403 1520	1 st contact NO/NC 3999 0051 2 nd contact NO/NC 3999 0052	1 contact NO/NC 3999 0031	3 P 3998 3040 ⁽²⁾ 4 P 3998 4040 ⁽²⁾		
400 A	4 P	3505 4026								
	3 P	3505 3041								
630 A	4 P	3505 4041								
	3 P	3505 3064								
800 A	4 P	3505 4064								
	3 P	3505 3081						3998 3063 ⁽²⁾		
4 P	3505 4081	3998 4063 ⁽²⁾								
1250 A	3 P	3505 3121							3 P 2998 3120 ⁽²⁾ 4 P 2998 4120 ⁽²⁾	3 P 2998 0003 4 P 2998 0004
	4 P	3505 4121								
1600 A	3 P	3505 3161								
	4 P	3505 4161								
1800 A	3 P	3505 3180								included
	4 P	3505 4180								

(1) Standard.

(2) Top/bottom.

SIDERMAT

Load break switches for power distribution
from 250 to 1800 A with tripping function

Accessories

External operation handle

For front operation				
Rating (A)	Handle type	Handle colour	External IP ⁽¹⁾	Reference
250 ... 1800	S3	Black	IP55	1431 3511 ⁽²⁾
250 ... 1800	S3	Red / Yellow	IP55	1432 3511

(1) IP: protection degree according to IEC 60529.

(2) Standard.

For side operation				
Rating (A)	Handle type	Handle colour	External IP ⁽¹⁾	Reference
250 ... 1800	S3	Black	IP55	1435 3511 ⁽²⁾
250 ... 1800	S3	Red	IP55	1436 3511

(1) IP: protection degree according to IEC 60529.

(2) Standard.



Handle type S3

Direct operation handle

For front operation		
Rating (A)	Handle colour	Reference
250 ... 1800	Black	3999 6203

For side operation		
Rating (A)	Handle colour	Reference
250 ... 1800	Black	3999 6012



access_156_a_2_cat

Alternative colour Type S handle cover

Use

For single lever S3 type handles.

Other colours: please contact us.

Colour	To be ordered in multiples of	Handle type	Reference
Light grey	50	S3	1401 0001
Dark grey	50	S3	1401 0011



access_198_a_2_cat

Type S handle adapter

Use

Enables S-type handles to be fitted in place of existing older style Socomec handles.

Dimensions

Adds 12 mm to the handle depth.

Handle colour	To be ordered in multiples of	External IP ⁽¹⁾	Reference
Black	1	IP65	1493 0000

(1) IP: protection degree according to IEC 60529.



access_187_a_1_cat

Shaft for external operation

Use

Standard lengths:

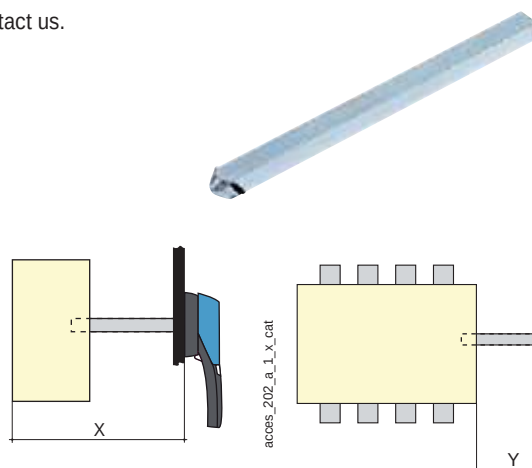
- 200 mm,
- 320 mm.

Other lengths: please contact us.

For front operation			
Rating (A)	Dimension X (mm)	Shaft length (mm)	Reference
250 ... 630	275 ... 439	200 mm	1401 1520
250 ... 630	275 ... 559	320 mm	1401 1532 ⁽¹⁾
800	296 ... 460	200 mm	1401 1520
800	296 ... 580	320 mm	1401 1532 ⁽¹⁾
1250 ... 1800	291 ... 455	200 mm	1401 1520
1250 ... 1800	291 ... 575	320 mm	1401 1532 ⁽¹⁾

(1) Standard.

For side operation			
Rating (A)	Dimension Y (mm)	Shaft length (mm)	Reference
800 ... 1800	110 ... 279	200	1403 1520



access_202_a_1_x_cat

access_144_b_1_cat

access_203_a_1_x_cat

Tripping coil

Use

Omnipolar breaking remotely controlled by a shunt trip or undervoltage release coil.

Note: the shunt trip coil must not be supplied for more than 5s.

A 230 VAC shunt trip coil is fitted as standard to the switch body. To have an alternative coil, one of the references below must be ordered with the switch.

Examples of ordering

- SIDERMAT with 230 VAC shunt trip coil - 1 part number: SIDERMAT 250 A, 3-pole, front operation: 3500 3026.
- SIDERMAT with other coil type or voltage - 2 part numbers: SIDERMAT 250 A, 3-pole, front operation, with undervoltage trip coil 110 VAC: 3500 3026 + 3991 3110.



Shunt trip coil



Undervoltage trip coil

access_049_a_1_cat

access_050_a_1_cat

Characteristics

Shunt trip coil

AC voltage (V) (+5% to -20%) ⁽¹⁾	24	48	110	230	400
In-rush consumption (VA)	80	100	100	120	120
DC voltage (V) (+5% to -20%)	12	24	48	110	220
In-rush consumption (W)	80	100	100	120	120

⁽¹⁾ Note: Note: the shunt trip coil must not be supplied for more than 5 s.
A 230VAC shunt trip coil is fitted as standard.

AC undervoltage trip coil

AC voltage (V) (+5% to -10%)	24	48	110	230	400
Continuous consumption (VA)	13	13	13	13	20
In-rush consumption (VA)	13	13	13	13	20
Minimum maintaining voltage (V)	15	25	60	140	200

DC undervoltage trip coil

Continuous voltage (V) (+5% to -10%)	12	24	48	110	220
Continuous consumption (W)	13	13	13	13	13
In-rush consumption (W)	13	13	13	13	13
Minimum maintaining voltage (V)	6	15	25	60	140

Delayed undervoltage trip coil

Voltage	Time (ms)	Reference
230 VAC	430	3993 3230 ⁽¹⁾
400 VAC	410	3993 3400 ⁽¹⁾

⁽¹⁾ To be ordered with the switch.

References

Shunt trip coil

Voltage	Reference	Reference
24 VAC	3990 1024	3991 1024 ⁽¹⁾
48 VAC	3990 1048	3991 1048 ⁽¹⁾
110 VAC	3990 1110	3991 1110 ⁽¹⁾
230 VAC	3990 1220	included
400 VAC	3990 1380	3991 1380 ⁽¹⁾
12 VDC		3991 2012 ⁽¹⁾
24 VDC	3990 2024	3991 2024 ⁽¹⁾
48 VDC	3990 2048	3991 2048 ⁽¹⁾
110 VDC	3990 2220	3991 2220 ⁽¹⁾
220 VDC		3991 2220 ⁽¹⁾

⁽¹⁾ To be ordered with the switch.

Undervoltage trip coil

Voltage	Replacement coil Reference	Alternative coil Reference
24 VAC	3990 3024	3991 3024 ⁽¹⁾
48 VAC	3990 3048	3991 3048 ⁽¹⁾
110 VAC	3990 3110	3991 3110 ⁽¹⁾
230 VAC	3990 3220	3991 3220 ⁽¹⁾
400 VAC	3990 3380	3991 3380 ⁽¹⁾
12 VDC	3990 4012	3991 4012 ⁽¹⁾
24 VDC	3990 4024	3991 4024 ⁽¹⁾
48 VDC	3990 4048	3991 4048 ⁽¹⁾
110 VDC	3990 4110	3991 4110 ⁽¹⁾
220 VDC	3990 4220	3991 4220 ⁽¹⁾

⁽¹⁾ To be ordered with the switch.

Current-reducing resistor for undervoltage trip coil

Use

By limiting the current, the resistor reduces the effects on undervoltage trip coils used in continuous processes or those exposed to high ambient temperatures.

Voltage	Reference
110 VAC	3999 3112
230 VAC	3999 3230
400 VAC	3999 3400
110 VDC	3999 4110

Accessories (continued)

Auxiliary contact

Use

Pre-break and signalling of positions 0 and I:
1 to 2 NO / NC auxiliary contacts.
Coil tripping
1 to 2 NO / NC auxiliary contacts.
Connection to the control circuit
By 6.35 mm fast-on terminal.

Characteristics

NO / NC auxiliary contact: IP2.
Electrical characteristics:
30000 operations.



acces_048_a_1_cat

Characteristics

NO / NC position contact					
Rating (A)	Rated current (A)	Operating current I _e (A)			
		250 VAC	400 VAC	24 VDC	48 VDC
		AC-13	AC-13	DC-13	DC-13
250 ... 1800	16	12	8	14	6

References

NO / NC position contact		
Rating (A)	AC position	Reference
250 ... 1800	1 st	3999 0051
250 ... 1800	2 nd	3999 0052

NO / NC coil trip signalling					
Rating (A)	Rated current (A)	Operating current I _e (A)			
		250 VAC	400 VAC	24 VDC	48 VDC
		AC-13	AC-13	DC-13	DC-13
250 ... 1800	16	12	8	12	2

NO / NC low level position contact		
Rating (A)	AC position	Reference
250 ... 1800	1 st	3999 0111
250 ... 1800	2 nd	3999 0112

NO / NC coil trip signalling		
Rating (A)	AC position	Reference
250 ... 1800	1	3999 0031

Terminal shrouds

Use

Top or bottom protection against direct
contact with terminals or connection parts.

Perforations allow remote thermographic
inspection without the need to remove the
shrouds.

Advantage

Rating (A)	No. of poles	Position	Reference
250 ... 630	3 P	top or bottom	3998 3040
250 ... 630	4 P	top or bottom	3998 4040
800	3 P	top or bottom	3998 3063
800	4 P	top or bottom	3998 4063



acces_212_a_2_cat

Terminal screen

Use

Top or bottom protection against direct contact with terminals or connection parts.

Rating (A)	No. of poles	Position	Reference
1250 ... 1800	3 P	Top or bottom	2998 3120
1250 ... 1800	4 P	Top or bottom	2998 4120

Inter-phase barrier

Use

Safety isolation between the terminals, essential for use at 690 VAC or in
a polluted or dusty atmosphere.

Rating (A)	No. of poles	Reference
1250 ... 1600	3 P	2998 0003
1250 ... 1600	4 P	2998 0004
1800	3 / 4 P	included



acces_036_a_2_cat

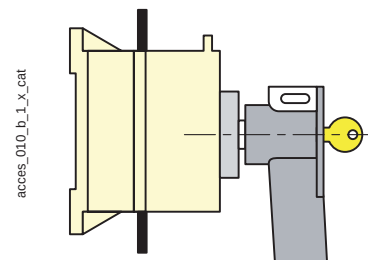
Key handle interlocking system

Use

Locking in position 0 of the front or side operation handle:

- using a padlock (not supplied) and standard padlocking function of the handle. Padlocking in external front operation interlocks the door.

- using a RONIS 1104 A lock (key BC 3318) - to be mounted directly on the padlockable handle,
- using RONIS EL11AP lock (not supplied).



RONIS 1104A lock

Locking using RONIS EL11AP lock 1104 (supplied)		
Rating (A)	Operation	Reference
250 ... 1800	direct	3999 8104

Locking using RONIS EL11AP lock (not supplied)		
Rating (A)	Operation	Reference
250 ... 630	direct	3999 6107
800 ... 1800	direct	3999 7007

Locking using RONIS EL11AP lock (not supplied)		
Rating (A)	Operation	Reference
250 ... 1800	external	1499 7701

Cage terminals

Use

Connection of bare copper cables onto the terminals (without lugs).

Connections

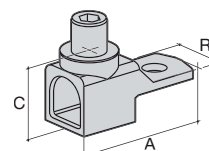
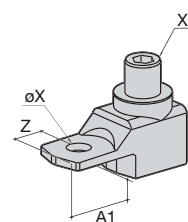
Rating (A)	Flexible cable cross-section (mm²)	Rigid cable cross-section (mm²)	Flexible bar width (mm)	Stripped over (mm)
250	16 ... 185	16 ... 185	18	27
400	50 ... 240	50 ... 300	20	34
630	70 ... 300	70 ... 300	24	34

Dimensions

Rating (A)	A	A1	C	R	ØX	X1	Z
250	62	31.5	31.5	25	10.5	M16	14
400	71.5	32	38	32	10.5	M20	15
630	76.5	37	38	40	12.5	M20	15

References

Rating (A)	No. of poles	Reference
250	3 P	5400 3025
250	4 P	5400 4025
400	3 P	5400 3040
400	4 P	5400 4040
630	3 P	5400 3063
630	4 P	5400 4063



Other specific accessories

- Connection accessories.
- Mounting plates for standard systems.
- Special construction available for specific environments.

Characteristics according to IEC 60947-3

250 to 1800 A

Thermal current I_{th} at 40°C		250 A	400 A	630 A	800 A	1250 A	1600 A	1800 A
Rated insulation voltage U_i (V)		1000	1000	1000	1000	1000	1000	1000
Rated impulse withstand voltage U_{imp} (kV)		8	12	12	12	12	12	12
Rated operational currents I_e (A)								
Rated voltage	Utilisation category	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾
400 VAC	AC-22 A / AC-22 B	250/250	400/400	630/630	800/800	1250/1250	1600/1600	1600/1800
400 VAC	AC-23 A / AC-23 B	250/250	400/400	630/630	630/630	1250/1250	1600/1600	1600/1600
500 VAC	AC-22 A / AC-22 B	250/250	400/400	630/630	800/800	1250/1250	1600/1600	1600/1600
500 VAC	AC-23 A / AC-23 B	200/250	315/400	500/630	630/630	1000/1000	1250/1250	1250/1250
690 VAC ⁽²⁾	AC-21 A / AC-21 B	250/250	400/400	630/630	800/800	1250/1250	1600/1600	1600/1600
690 VAC ⁽²⁾	AC-22 A / AC-22 B	250/250	400/400	500/630	630/800	1000/1000	1250/1250	1250/1250
690 VAC ⁽²⁾	AC-23 A / AC-23 B	200/250	315/400	400/500	500/500	800/800	1000/1000	1000/1000
400 VDC	DC-20 A / DC-20 B	250/250	400/400	630/630	800/800	1250/1250	1600/1600	1800/1800
400 VDC	DC-21 A / DC-21 B	250/250	400/400	630/630	800/800	1250/1250	1600/1600	1600/1600
400 VDC	DC-22 A / DC-22 B	250/250	400/400 ⁽³⁾	630/630 ⁽³⁾	800/800 ⁽³⁾	1250/1250 ⁽⁴⁾	1600/1600 ⁽⁴⁾	1600/1600 ⁽⁴⁾
400 VDC	DC-23 A / DC-23 B	200/250	315/400 ⁽³⁾	500/630 ⁽³⁾	630/800 ⁽³⁾	1250/1250 ⁽⁴⁾	1250/1250 ⁽⁴⁾	1250/1250 ⁽⁴⁾
Operational power in AC-23 (kW)								
At 400 VAC without pre-break in AC-23 (kW) ⁽¹⁾⁽⁵⁾		132/132	220/220	355/355	355/355	710/710	900/900	900/900
At 690 VAC without pre-break in AC-23 (kW) ⁽¹⁾⁽⁵⁾		185/220	295/400	400/475	475/475	750/750	900/900	900/900
Reactive power (kvar)								
At 400 VAC (kvar) ⁽⁵⁾		115	185	290	365	575		
Fuse protected short-circuit withstand (kA rms prospective)								
Prospective short-circuit (kA rms) ⁽⁶⁾		100	100	100	100	100	120	120
Associated fuse rating (A) ⁽⁶⁾		250	400	630	800	1250	2 x 800	2 x 900
Short-circuit capacity (without protection)								
Rated short-time withstand current 0.3 s. I_{CW} (kA rms)		17	25	50	65	65	80	80
Rated peak withstand current (kA peak) ⁽⁶⁾		30	45	55	80	100	120	120
Connection								
Minimum Cu cable cross-section (mm ²)		95	185	2 x 150	2 x 185			4 x 240
Minimum Cu busbar cross-section (mm ²)				2 x 30 x 5	2 x 40 x 5	2 x 60 x 5	2 x 80 x 5	
Maximum Cu cable cross-section (mm ²)		240	240	2 x 300	2 x 300	4 x 185	6 x 240	8 x 240
Maximum Cu busbar width (mm)		40	40	50	63	100	100	100
Tightening torque min (Nm)		20	40	40		20	40	40
Mechanical characteristics								
Durability (number of operating cycles)		8000	8000	5000	5000	5000	3000	3000
Weight of a 3 pole device (kg)		6.5	7	8	11	14	19	21
Weight of a 4 pole device (kg)		7.5	8	9.5	13	16	21.5	23.5

(1) Category with index A = frequent operation - Category with index B = infrequent operation.

(2) With terminal shrouds or phase barrier.

(3) Poles cannot be juxtaposed.

(4) 4-pole device with 2 poles in series per polarity.

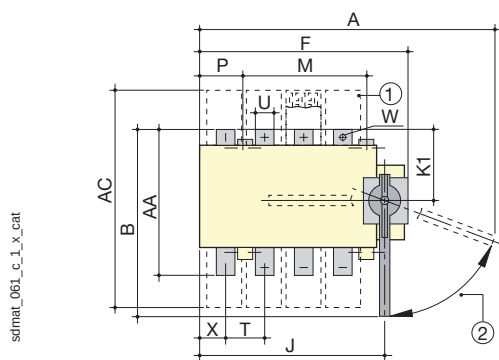
(5) The power value is given for information only, the current values vary from one manufacturer to another.

(6) For a rated operational voltage U_e = 400 VAC.

Dimensions - Front operation

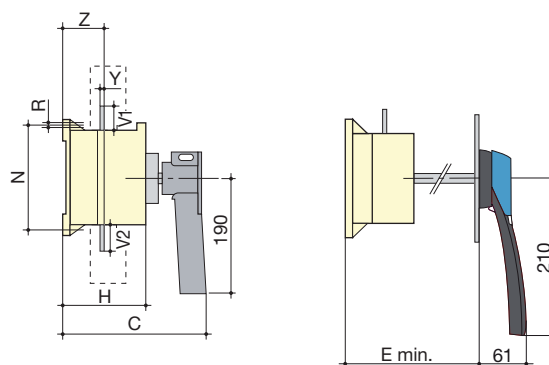
250 to 800 A

Direct front operation



sdmat_061_c_1_x_cat

External front operation

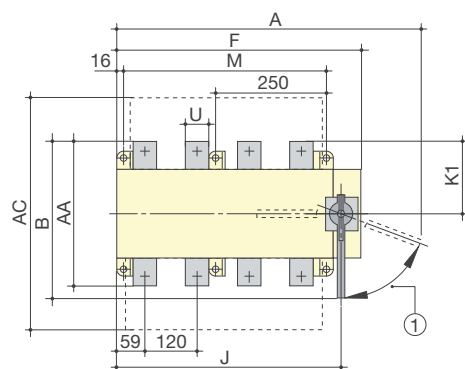


1. Terminal shroud 2. 70° reset

	Overall dimensions					Terminal shrouds	Switch body						Switch mounting					Connection									
Rating (A)	A 3p.	A 4p.	W	C	E min	AC	F 3p.	F 4p.	H	J 3p.	J 4p.	K1	M	N	P 3p.	P 4p.	R	T	U	V1	V2	W	X 3p.	X 4p.	Y	Z	AA
250	435	495	309	248	275	388	285	345	148	253	313	115	210	180	10	70	7	65	32	35	43	11	31	46	3	67	238
400	435	495	309	248	275	388	285	345	148	253	313	115	210	180	10	70	7	65	32	35	43	13	31	46	5	69	238
630	435	495	318.5	248	275	388	285	345	148	253	313	115	210	180	10	70	7	65	32	35	43	13	31	46	8	72	257
800	491	570	350	262	296	470	346	426	178	308	388	160	250	250	20	100	9	80	50	60	60	15	36	65	7	72	320

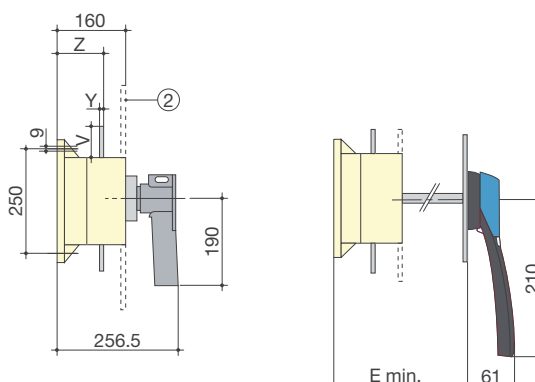
1250 to 1800 A

Direct front operation



sdmat_062_c_1_x_cat

External front operation



1. 70° reset
2. Terminal screens

Rating (A)	Overall dimensions				Terminal shrouds	Switch body					Switch mounting		Connection				
	A 3p.	A 4p.	B	E min	AC	F 3p.	F 4p.	J 3p.	J 4p.	K1	M 3p.	M 4p.	U	V	Y	Z	AA
1250	582	702	355	250	480	437	557	400	520	165	345	465	63	65	7	106	330
1600	582	702	370	250	480	437	557	400	520	180	345	465	80	80	15	110	360
1800	582	702	370	250	480	437	557	400	520	180	345	465	100	80	15	110	360

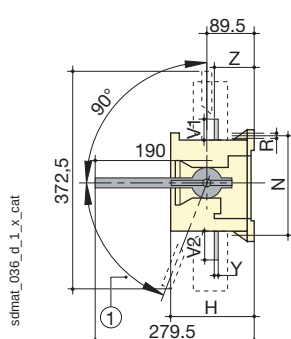
SIDERMAT

Load break switches for power distribution
from 250 to 1800 A with tripping function

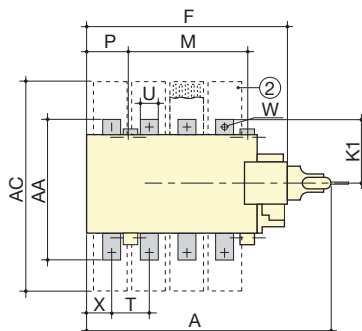
Dimensions for side operation

250 to 800 A

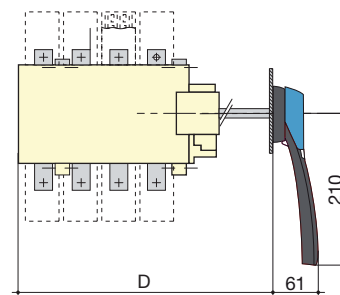
Direct side operation



1. 70° reset
2. Terminal shrouds



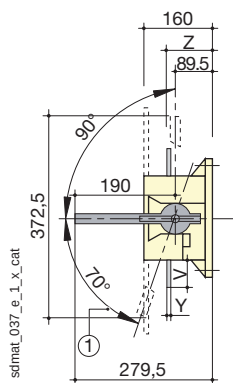
External side operation



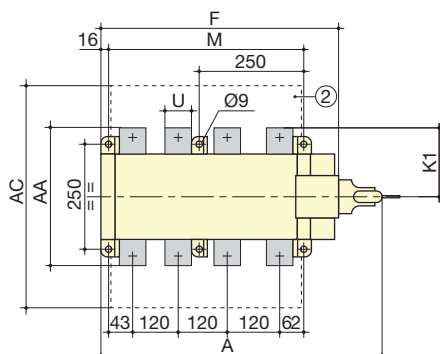
	Overall dimensions				Terminal shrouds	Switch body				Switch mounting					Connection											
Rating (A)	A 3p.	A 4p.	D 3p.	D 4p.	AC	F 3p.	F 4p.	H	K1	M	N	P 3p.	P 4p.	R	T	U	V1	V2	W	X 3p.	X 4p.	Y	Z	AA		
250	365	425	357	417	388	285	345	148	115	210	180	10	70	7	65	32	35	43	11	31	46	3	67	238		
400	365	425	357	417	388	285	345	148	115	210	180	10	70	7	65	32	35	43	13	31	46	5	69	238		
630	365	425	357	417	388	285	345	148	129	210	180	10	70	7	65	45	49	49	13	31	46	8	72	257		
800	421	501	413	493	470	346	426	178	160	250	250	20	100	9	80	50	60	60	15	36	65	7	72	320		

1250 to 1800 A

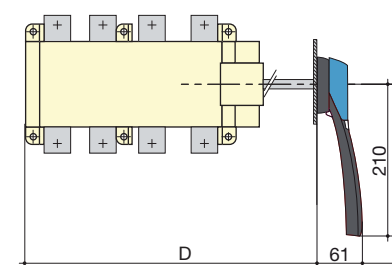
Direct side operation



1. 70° reset
2. Terminal screens



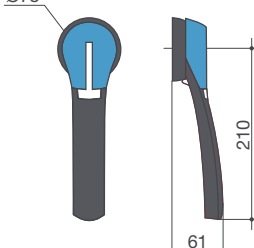
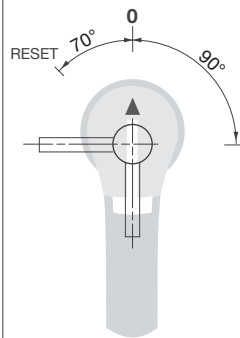
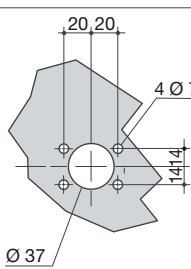
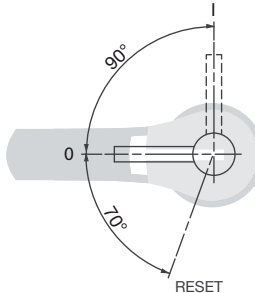
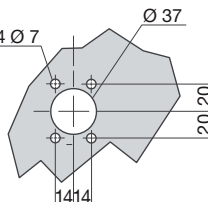
External side operation



Rating (A)	Overall dimensions				Terminal shrouds	Switch body		Switch mounting		Connection				
	A 3p.	A 4p.	D 3p.	D 4p.		F 3p.	F 4p.	M 3p.	M 4p.	U	V	Y	Z	AA
1250	522	641	504	624	480	437	557	345	465	63	65	7	106	330
1600	522	641	504	624	479	437	557	345	465	80	80	15	110	360
1800	522	641	504	624	479	437	557	345	465	100	80	15	110	360

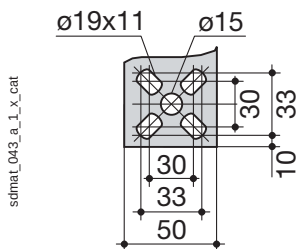
Dimensions for external handles

800 to 1800 A

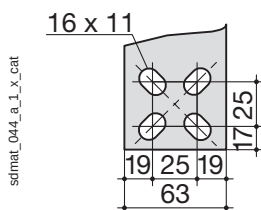
Handle type	Front operation		Side operation	
	Direction of operation	Door drilling	Direction of operation	Door drilling
S3 type 				

Connection terminal

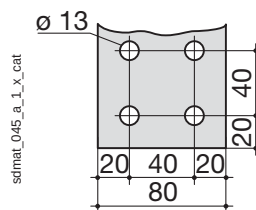
800 A



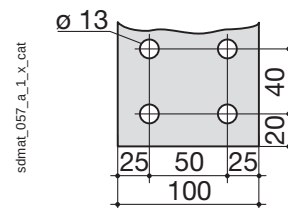
1250 A



1600 A



1800 A





SIRCO MOT AT

Remotely operated load break switches
from 125 to 3200 A



SIRCO MOT AT
4 x 630 A



SIRCO MOT AT
4 x 1600 A

Function

SIRCO MOT AT are remotely operated 3/4 pole load break switches. They make and break under load conditions via remote operation and provide safety isolation for any low voltage circuit.

This is ensured via volt-free contacts using either a pulse or contactor logic.

Advantages

Extended power range

These products offer great power flexibility thanks to a wide power supply range of 208 to 277 VAC $\pm 20\%$.

Integrated auxiliary contacts

As part of the product monitoring function, the SIRCO MOT AT enables the transmission of information relating to their position.

This is possible thanks to the standard integration of an auxiliary contact for each position.

General characteristics

- 2 stable positions (I, 0)
- One auxiliary contact per position as standard
- Positive break indication
- AUTO/MANU selector
- Manual emergency operation
- Padlocking in position 0 (position I optional).
- Ratings: 125 to 3200 A

The solution for

- > Building
- > Network coupling
- > Emergency disconnection



Strong points

- > High performance breaking capacity - up to 3200 A 690 VDC
- > Motorised remote operation
- > Manual emergency operation

Compliance with standards

- > IEC 60947-3
- > EN 60947-3
- > NBN EN 60947-3
- > BS EN 60947-3
- > GB 14048



References

SIRCO MOT AT

Rating (A) / Frame size	N° of poles	Power supply voltage	Switch body	Terminal screens	Terminal shrouds		
125 A / B3	3 P	230 VAC	9915 3012	3 P 1509 3012 4 P 1509 4012	3 P 2694 3014 4 P 2694 4014		
	4 P		9915 4012				
160 A / B3	3 P		9915 3016			3 P 1509 3016 4 P 1509 4016	3 P 2694 3016 4 P 2694 4016
	4 P		9915 4016				
250 A / B4	3 P		9915 3025	3 P 1509 3025 4 P 1509 4025	3 P 2694 3021 4 P 2694 4021		
	4 P		9915 4025				
400 A / B4	3 P		9915 3040			3 P 1509 3040 4 P 1509 4040	3 P 2694 3041 4 P 2694 4041
	4 P		9915 4040				
630 A / B5	3 P		9915 3063	3 P 1509 3063 4 P 1509 4063	3 P 2694 3051 4 P 2694 4051		
	4 P		9915 4063				
800 A / B6	3 P		9915 3080	3 P 1509 3080 4 P 1509 4080			
	4 P		9915 4080				
1000 A / B6	3 P		9915 3100			3 P 1509 3100 4 P 1509 4100	
	4 P		9915 4100				
1250 A / B6	3 P		9915 3120			3 P 1509 3120 4 P 1509 4120	
	4 P		9915 4120				
1600 A / B7	3 P		9915 3160	3 P 1509 3160 4 P 1509 4160			
	4 P		9915 4160				
2000 A / B8	3 P		9915 3200	3 P 1509 3200 4 P 1509 4200			
	4 P		9915 4200				
2500 A / B8	3 P		9915 3250			3 P 1509 3250 4 P 1509 4250	
	4 P		9915 4250				
3200 A / B8	3 P		9915 3320			3 P 1509 3320 4 P 1509 4320	
	4 P		9915 4320				

Accessories

Terminal shrouds

Use

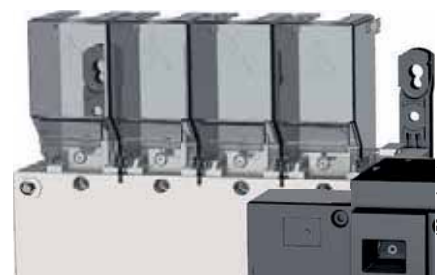
Protection IP2X against direct contact with terminals or connecting parts.

Advantages

Perforations allow remote thermographic inspection without the need to remove the shrouds.

Rating (A)	Frame size	N° of poles	Position	Reference
125 ... 200	B3	3 P	Upstream or downstream	2694 3014 ⁽¹⁾
125 ... 200	B3	4 P	Upstream or downstream	2694 4014 ⁽¹⁾
250 ... 400	B4	3 P	Upstream or downstream	2694 3021 ⁽¹⁾
250 ... 400	B4	4 P	Upstream or downstream	2694 4021 ⁽¹⁾
630	B5	3 P	Upstream or downstream	2694 3051 ⁽¹⁾
630	B5	4 P	Upstream or downstream	2694 4051 ⁽¹⁾

(1) For complete protection, order the reference 2 times.



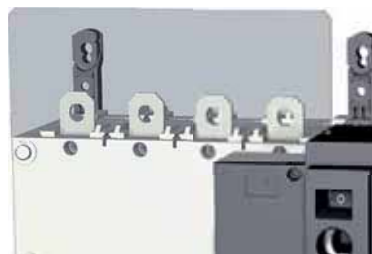
Accessories (continued)

Terminal screens

Use

Upstream and downstream protection from direct contact with terminals or connection parts.

Rating (A)	Frame size	N° of poles	Position	Reference
125 ... 200	B3	3 P	Upstream/downstream	1509 3012
125 ... 200	B3	4 P	Upstream/downstream	1509 4012
250 ... 400	B4	3 P	Upstream/downstream	1509 3025
250 ... 400	B4	4 P	Upstream/downstream	1509 4025
630	B5	3 P	Upstream/downstream	1509 3063
630	B5	4 P	Upstream/downstream	1509 4063
800 ... 1250	B6	3 P	Upstream/downstream	1509 3080
800 ... 1250	B6	4 P	Upstream/downstream	1509 4080
1600	B7	3 P	Upstream/downstream	1509 3160
1600	B7	4 P	Upstream/downstream	1509 4160
2000 ... 3200	B8	3 P	Upstream/downstream	1509 3200
2000 ... 3200	B8	4 P	Upstream/downstream	1509 4200



acces_453_a_1_cat

Copper bar connection kits

Use

Enables:

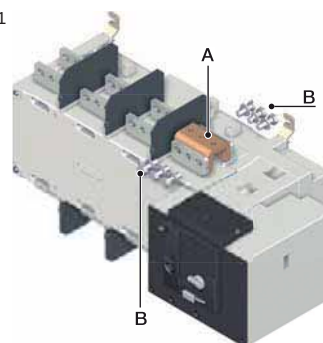
- To allow connection between the two power terminals of the same pole for 2000 to 3200 A ratings

For 3200 A rating, the connection pieces (part A) are delivered bridged from factory.

Bolt sets must be ordered separately.

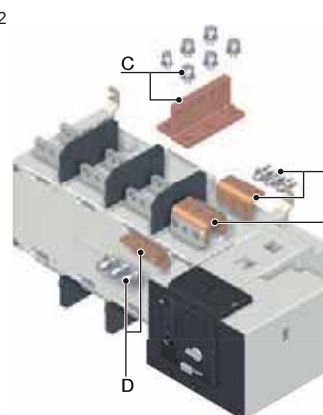
Further details for these specific accessories are available in the user guide downloadable from www.socomec.com.

Fig. 1



acces_454_a_1_x_cat

Fig. 2



acces_455_a_1_x_cat

Top or bottom flat connection - Fig. 1

Rating (A)	Part	Fig. 1 - Part	Quantity to order per pole	Reference
2000 ... 2500	Connection	A	1	2619 1200
2000 ... 2500	Screws	B	1	2699 1200
3200	Connection	A		included
3200	Screws	B	1	2699 1200

Top or bottom edgewise connection - Fig. 2

Rating (A)	Part	Fig. 2 - Part	Quantity to order per pole	Reference
2000 ... 2500	Connection	A	1	2619 1200
2000 ... 3200	T piece + bolts	C	1	2629 1200
2000 ... 3200	Bracket + bolts	D	1	2639 1200
3200	Connection	A		included

Autotransformer

Use

Enables a 230 VAC device to be supplied with 400 VAC.

Rating (A)	Frame size	Reference
125 ... 3200	B3 ... B8	1599 4064

DC power supply

Use

For power supplied from one 12 or 24 VDC source.

To be positioned as close as possible to DC power supply source.

Rating (A)	Frame size	Operating voltage	Reference
125 ... 3200	B3 ... B8	12 VDC / 230 VAC	1599 5012
125 ... 3200	B3 ... B8	24 VDC / 230 VAC	1599 5112

Auxiliary contact

Use

Pre-break and signalling of positions I:

Up to 2 NO/NC auxiliary contacts

(1 fitted as standard).

Low level AC: contact us.

Connection to the control circuit

By 6.35 mm fast-on terminal.

Electrical characteristics

30,000 operations.

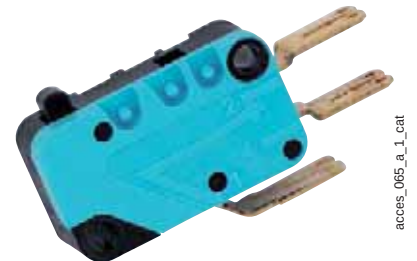
Characteristics

Rating (A)	Rated current (A)	Operating current I _o (A)			
		250 VAC AC-13	400 VAC AC-13	24 VDC AC-13	48 VDC AC-13
125 ... 1600	16	12	8	14	6

References

NO/NC changeover contact

Rating (A)	Contact(s)	Reference
125 ... 800	2 nd	1999 1002
800 ... 1600	2 nd	1999 1032
2000 ... 3200	2 nd	Included



access_065_a_1_cat

2-position padlocking (I-0)

Use

Enables the product to be padlocked in positions 0, I and II (factory fitted).

Rating (A)	Frame size	Reference
125 ... 630	B3 ... B5	9599 0003
800 ... 3200	B6 ... B8	9599 0004



atys_867_a

Key handle interlocking system

Use

Locking of the electrical control and the emergency control in position 0 using a RONIS EL11AP lock (factory fitted).

As standard, locking in position 0.

Optional padlocking in 2 positions: locking in position 0 and 1

Rating (A)	Frame size	Reference
125 ... 630	B3 ... B5	9599 1006
800 ... 3200	B6 ... B8	9599 1004



atys_868_a

SIRCO MOT AT

Remotely operated load break switches
from 125 to 3200 A

Accessories (continued)

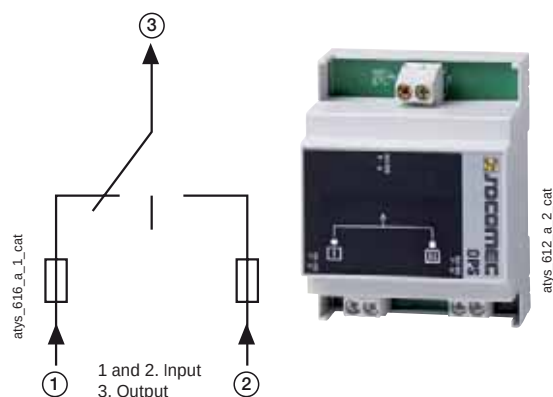
Double power supply - DPS

Use

Provides power to the SIRCO MOT from two 230 VAC, 50/60 Hz networks.

Input

- The input is considered as "active" from 200 VAC.
- Maximum voltage: 288 VAC.
- Internal protection: each input is fuse protected (3.15 A).
- Connecting to fixed terminals: maximum 6 mm².
- Modular product: 4 module width.



Accessories	Reference
DPS	1599 4001

Mounting spacers

Use

Increases the distance between the rear power terminals and the backplate by 1 cm.

This accessory may also be used to replace the original mounting spacers.



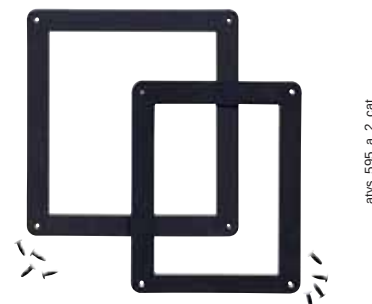
Rating (A)	Frame size	Accessories	Reference
125 ... 630	B3 ... B5	1 set of 2 spacers	1509 0001

Door protective surround

Use

When direct access to the SIRCO MOT front face is required, the door surround can be utilised to provide a clean and safe finish to the panel's cut-out.

Rating (A)	Frame size	Reference
125 ... 630	B3 ... B5	1529 0012
800 ... 3200	B6 ... B8	1529 0080



Characteristics according to IEC 60947-3 and IEC 60947-6-1

125 to 630 A / B3 to B5

Thermal current I_{th} at 40°C	125 A	160 A	250 A	400 A	630 A
Frame size	B3	B3	B4	B4	B5
Rated insulation voltage U_i (V) (power circuit)	800	800	1000	1000	1000
Rated impulse withstand voltage U_{imp} (kV) (power circuit)	8	8	12	12	12

Rated operational currents I_e (A) according to IEC 60947-3

Rated voltage	Utilisation category	A/B	A/B	A/B	A/B	A/B
415 VAC	AC-21 A / AC-21 B	125/125	160/160	250/250	400/400	630/630
415 VAC	AC-22 A / AC-22 B	125/125	160/160	250/250	400/400	630/630
415 VAC	AC-23 A / AC-23 B	125/125	160/160	200/200	400/400	630/630
500 VAC	AC-20 A / AC-20 B	125/125	160/160	250/250	400/400	630/630
690 VAC	AC-20 A / AC-20 B	125/125	160/160	250/250	400/400	630/630
690 VAC	AC-21 A / AC-21 B	125/125	160/160	200/200	200/200	500/500
690 VAC	AC-22 A / AC-22 B	125/125	125/125	160/160	160/160	400/400
690 VAC	AC-23 A / AC-23 B	63/80	63/80	125/125	125/125	400/400
220 VDC	DC-20 A / DC-20 B	125/125	160/160	250/250	400/400	630/630
220 VDC	DC-21 A / DC-21 B	125/125	160/160	250/250	250/250	630/630
220 VDC	DC-22 A / DC-22 B	125/125	160/160	250/250	250/250	630/630
220 VDC	DC-23 A / DC-23 B	125/125	125/125	200/200	200/200	630/630
440 VDC	DC-20 A / DC-20 B	125/125	160/160	250/250	400/400	630/630
440 VDC	DC-21 A / DC-21 B	125 ⁽¹⁾ /125 ⁽¹⁾	125 ⁽¹⁾ /125 ⁽¹⁾	200 ⁽¹⁾ /200 ⁽¹⁾	200 ⁽¹⁾ /200 ⁽¹⁾	500 ⁽¹⁾ /500 ⁽¹⁾
440 VDC	DC-22 A / DC-22 B	125 ⁽¹⁾ /125 ⁽¹⁾	125 ⁽¹⁾ /125 ⁽¹⁾	200 ⁽¹⁾ /200 ⁽¹⁾	200 ⁽¹⁾ /200 ⁽¹⁾	500 ⁽¹⁾ /500 ⁽¹⁾
440 VDC	DC-23 A / DC-23 B	125 ⁽²⁾ /125 ⁽²⁾	125 ⁽²⁾ /125 ⁽²⁾	200 ⁽²⁾ /200 ⁽²⁾	200 ⁽²⁾ /200 ⁽²⁾	500 ⁽²⁾ /500 ⁽²⁾

Short-circuit capacity

Rated short-time withstand current 1s. I_{cw} (kA rms)	7	7	9	9	13
Rated peak withstand current in I_{cc} (kA peak)	20	20	30	30	45
Prospective short-circuit current (kA rms)	100	100	50	18	70
Associated fuse rating (A)	125	160	250	400	630

Connection

Minimum Cu cable cross-section (mm ²)	35	50	95	185	2 x 150
Minimum Cu busbar cross-section (mm ²)					2 x 30 x 5
Maximum Cu cable cross-section (mm ²)	50	95	150	240	2 x 300
Maximum Cu busbar width (mm)	25	25	32	32	50
Min./max. tightening torque (Nm)	9/13	9/13	20/26	20/26	20/26

Switching time (at nominal voltage)

I-0 or 0-II (s)	0.45	0.45	0.85	0.85	0.85
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Power supply

Min./max. value (VAC)	166/332	166/332	166/332	166/332	166/332
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Control supply power demand

Power supply 230 VAC inrush/nominal (VA)	184/92	184/92	276/115	276/115	276/150
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Mechanical characteristics

Durability (number of operating cycles)	10000	10000	8000	8000	5000
Weight 3 (kg)	5.7	5.7	6.6	6.6	11.4
Weight 4 (kg)	6.9	6.9	7.4	7.4	13.3

(1) 3-pole device with 2 poles in series for the '+' and 1 pole for the '-'.
(2) 4-pole device with 2 poles in series per polarity.

Characteristics according to IEC 60947-3 and IEC 60947-6-1 (continued)

800 to 3200 A / B6 to B8

Thermal current I_{th} at 40°C	800 A	1000 A	1250 A	1600 A	2000 A	2500 A	3200 A
Frame size	B6	B6	B6	B7	B8	B8	B8
Rated insulation voltage U_i (V) (power circuit)	1000	1000	1000	1000	1000	1000	1000
Rated impulse withstand voltage U_{imp} (kV) (power circuit)	12	12	12	12	12	12	12

Rated operational currents I_e (A) according to IEC 60947-3

Rated voltage	Utilisation category	A/B	A/B	A/B	A/B	A/B	A/B	A/B
415 VAC	AC-21 A / AC-21 B	800/800	1000/1000	1250/1250	1600/1600	-/2000	-/2500	-/3200
415 VAC	AC-22 A / AC-22 B	800/800	1000/1000	1250/1250	1600/1600	-/2000	-/2500	-/3200
415 VAC	AC-23 A / AC-23 B	800/800	1000/1000	1250/1250	1250/1250	-/1600	-/1600	-/1600
690 VAC	AC-20 A / AC-20 B	800/800	1000/1000	1250/1250	1600/1600	2000/2000	2500/2500	3200/3200
690 VAC	AC-21 A / AC-21 B	800/800	800/800	800/800	1000/1000	-/2000	-/2500	-/3200
690 VAC	AC-22 A / AC-22 B	800/800	800/800	800/800	1000/1000			
690 VAC	AC-23 A / AC-23 B	200/250	200/250	200/250	500/500			
220 VDC	DC-20 A / DC-20 B	800/800	1000/1000	1250/1250	1600/1600			
220 VDC	DC-21 A / DC-21 B	800/800	1000/1000	1250/1250	1250/1250			
220 VDC	DC-22 A / DC-22 B	800/800	1000/1000	1250/1250	1250/1250			
220 VDC	DC-23 A / DC-23 B	800/800	1000/1000	1250/1250	1250/1250			
440 VDC	DC-20 A / DC-20 B	800/800	1000/1000	1250/1250	1600/1600			
440 VDC	DC-21 A / DC-21 B	800 ⁽¹⁾ /800 ⁽¹⁾	1000 ⁽²⁾ /1000 ⁽²⁾	1250 ⁽¹⁾ /1250 ⁽¹⁾	1250 ⁽¹⁾ /1250 ⁽¹⁾			
440 VDC	DC-22 A / DC-22 B	800 ⁽¹⁾ /800 ⁽¹⁾	1000 ⁽²⁾ /1000 ⁽²⁾	1250 ⁽¹⁾ /1250 ⁽¹⁾	1250 ⁽¹⁾ /1250 ⁽¹⁾			
440 VDC	DC-23 A / DC-23 B	800 ⁽²⁾ /800 ⁽²⁾	1000 ⁽²⁾ /1000 ⁽²⁾	1250 ⁽²⁾ /1250 ⁽²⁾	1250 ⁽²⁾ /1250 ⁽²⁾			

Short-circuit capacity

Rated short-time withstand current 1s. I_{cw} (kA rms)	26	35	50	50	50	50	50
Rated peak withstand current in I_{cc} (kA peak)	55	80	110	120	120	120	120
Prospective short-circuit current (kA rms)	50	100	100	100			
Associated fuse rating (A)	800	1000	1250	2x800			

Connection

Minimum Cu cable cross-section (mm ²)	2 x 185	2 x 240	2 x 60 x 5	2 x 80 x 5	2 x 100 x 10	2 x 100 x 10	2 x 100 x 10
Minimum Cu busbar cross-section (mm ²)	2 x 40 x 5	2 x 50 x 5					
Maximum Cu cable cross-section (mm ²)	2 x 300	4 x 185	4 x 185	6 x 185			
Maximum Cu busbar width (mm)	63	63	63	100	100	100	100
Min./max. tightening torque (Nm)	20/26	20/26	20/26	40/45	40/45	40/45	40/45

Switching time (at nominal voltage)

I-O or II-O (s)	1.6	1.6	1.6	1.6	1	1	1
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Power supply

Min./max. value (VAC)	166/332	166/332	166/332	166/332	166/332	166/332	166/332
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Control supply power demand

Power supply 230 VAC inrush/nominal (VA)	460/184	460/184	460/184	460/230	812/322	812/322	812/322
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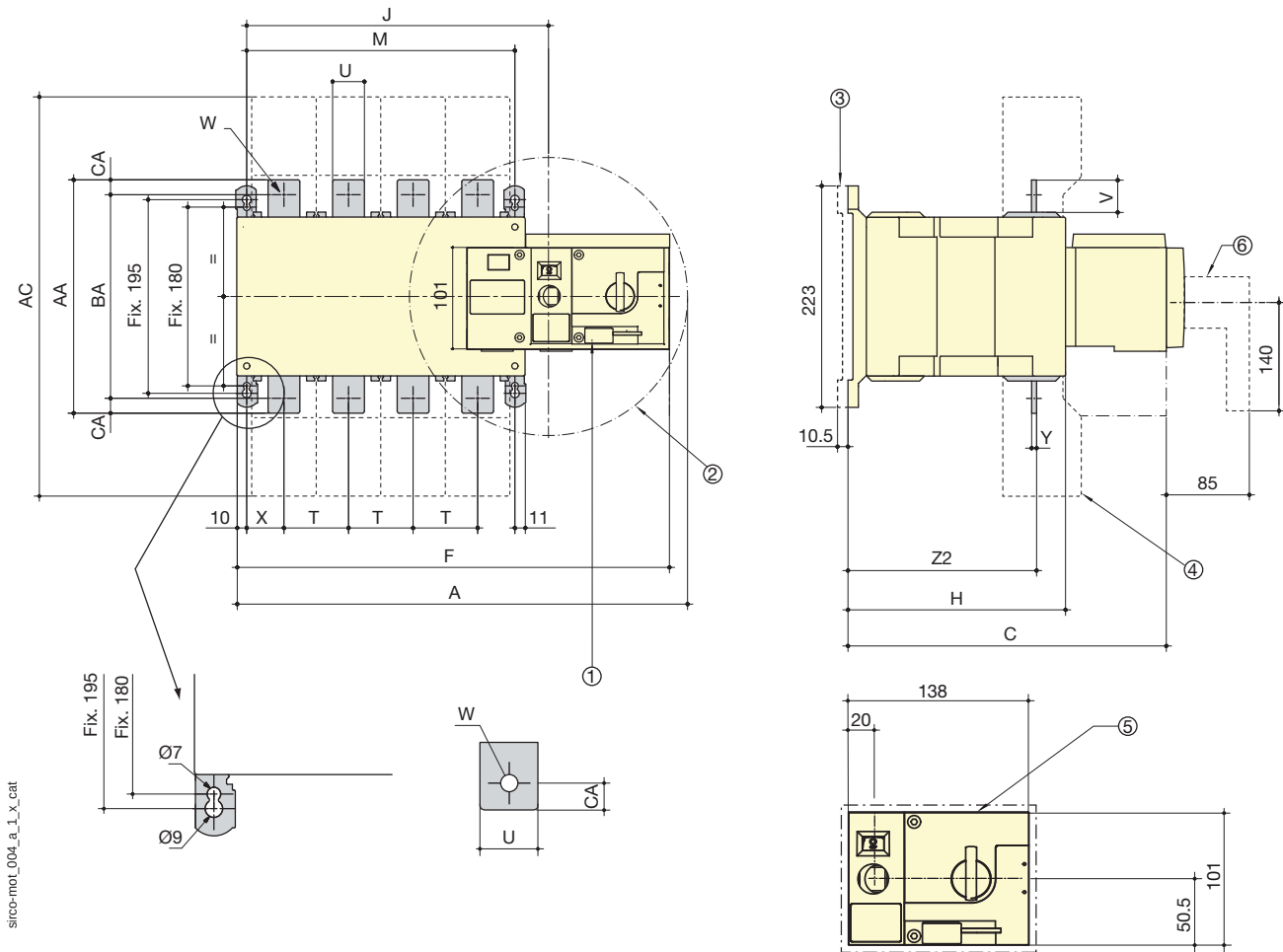
Mechanical characteristics

Durability (number of operating cycles)	4000	4000	4000	3000	3000	3000	3000
Weight 3 P (kg)	27.9	27.9	27.9	30.4	50.7	50.7	50.7
Weight 4 P (kg)	32.2	32.2	32.2	34.5	61.6	61.6	61.6

(1) 3-pole device with 2 poles in series for the '+' and 1 pole for the '-'.
(2) 4-pole device with 2 poles in series per polarity.

Dimensions

125 to 630 A

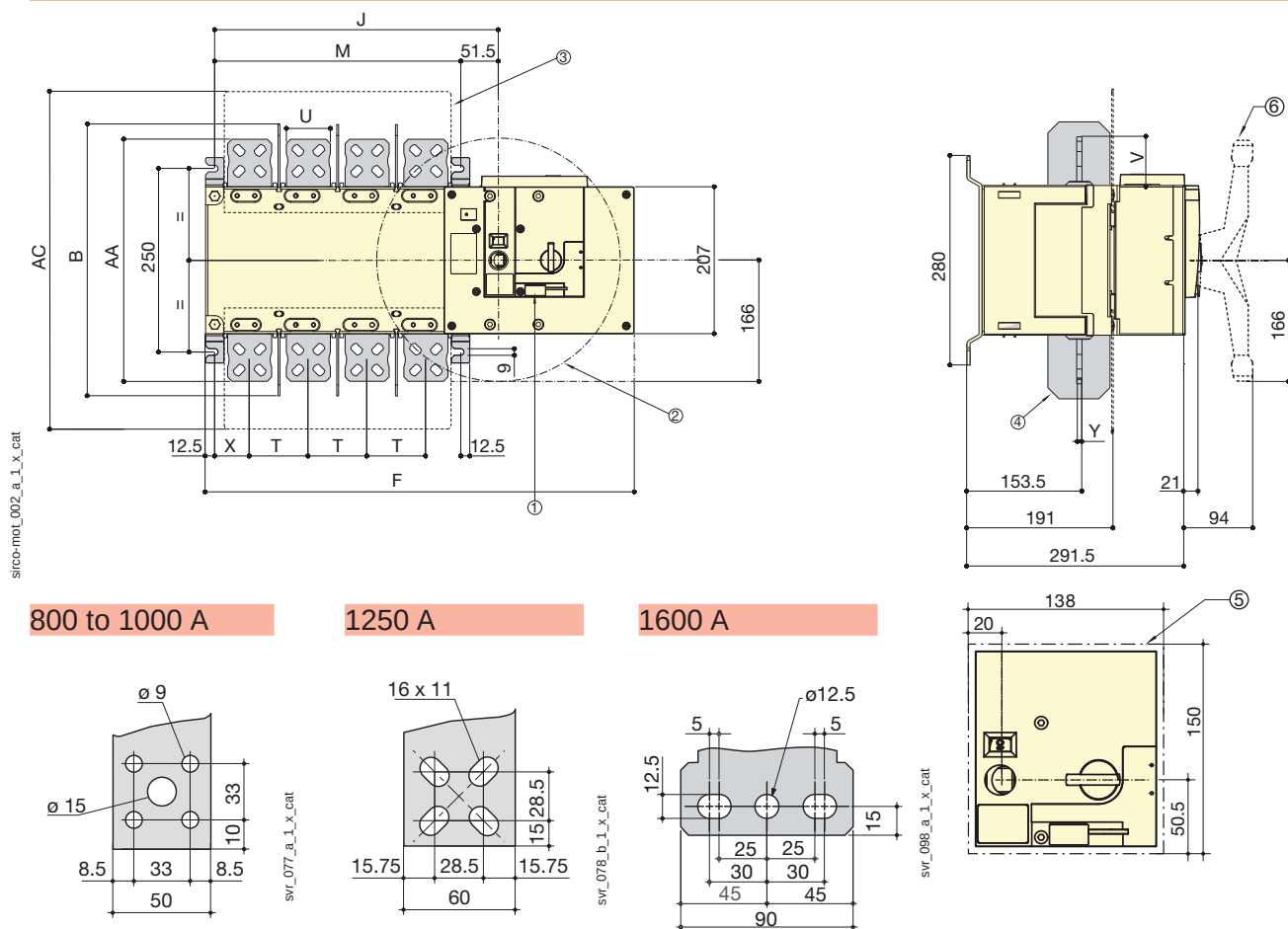


1. Triple padlock tab, 4-8 mm
2. Emergency manual operation: max. handle radius, operating angle 90°
3. Spacers
4. Inter-phase screen
5. Cut out dimension
6. Manual emergency operation

Rating (A) / Frame size	Overall dimensions			Terminal shrouds		Case				Switch mounting		Connection										
	A 3p.	A 4p.	C	AC	F 3p.	F 4p.	H	J 3p.	J 4p.	M 3p.	M 4p.	T	U	V	W	X 3p.	X 4p.	Y	Z2	AA	BA	AC
125 / B3	304	340	244	235	266.5	322.5	151	154	184	120	150	36	20	25	9	26	22	3.5	134	135	115	10
160 / B3	304	340	244	235	266.5	322.5	151	154	184	120	150	36	20	25	9	26	22	3.5	134	135	115	10
250 / B4	345	395	244.5	260	328	378	153	195	245	160	210	50	25	30	11	33	33	3.5	134.5	160	130	15
400 / B4	345	395	244.5	260	328	378	153	195	245	160	210	50	35	35	11	33	33	3.5	134.5	170	140	15
630 / B5	394	459	320.5	400	377	437	221	244	304	210	270	65	45	50	13	42.5	37.5	5	190	260	220	20

Dimensions (continued)

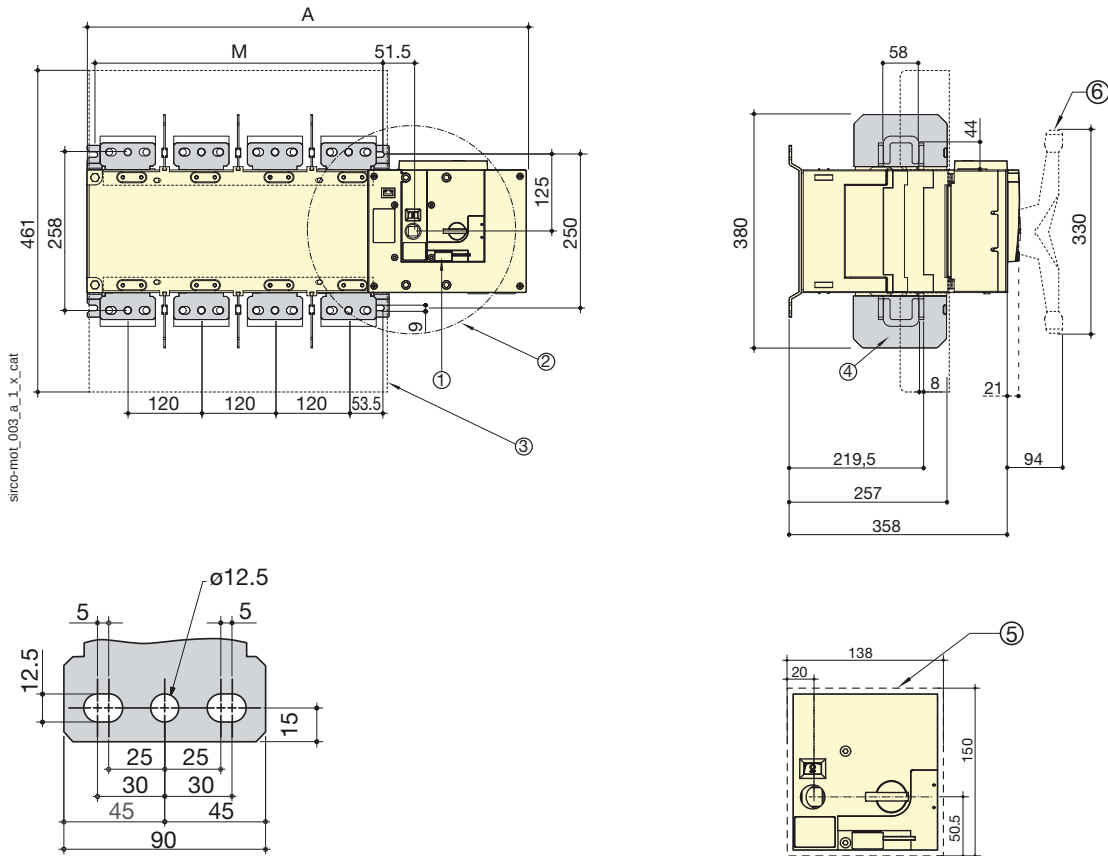
800 to 1600 A



1. Triple padlock tab, 4-8 mm
2. Emergency manual operation: max. handle radius, operating angle 90°
3. Terminal screens
4. Inter-phase screen
5. Cut out dimension
6. Manual emergency operation

Rating (A)	Overall dimensions	Terminal shrouds	Case				Switch mounting		Connection						
	B	AC	F 3p.	F 4p.	J 3p.	J 4p.	M 3p.	M 4p.	T	U	V	X	Y	Z1	AA
800	370	461	504	584	307	387	255	335	80	50	60.5	47.5	7	66.5	321
1000	370	461	504	584	307	387	255	335	80	50	60.5	47.5	7	66.5	321
1250	370	461	504	584	307	387	255	335	80	60	65	47.5	7	66.5	330
1600	380	531	596	716	399	519	347	467	120	90	44	53	8	67.5	288

2000 to 3200 A



1. Triple padlock tab, 4-8 mm
2. Emergency manual operation: max. handle radius, operating angle 90°
3. Terminal screens
4. Inter-phase screen
5. Cut out dimension
6. Manual emergency operation

Rating (A)	Overall dimensions		Switch mounting	
	A 3p.	A 4p.	M 3p.	M 4p.
2000 ... 3200	596	716	347	467

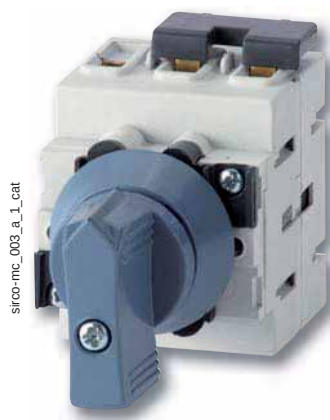


SIRCO MC PV IEC 60947-3

Load break switches for photovoltaic applications
from 25 to 40 A, up to 1000 VDC



SIRCO MC PV 25 A - 1000 VDC
DIN-rail mounting



SIRCO MC PV 25 A - 1000 VDC
Door mounting

Function

SIRCO MC PV are DC load break switches. They make and break under load conditions and provide optimum safety isolation for any PV circuit.

Advantages

Compact

Thanks to its compact design, the space needed within the combiner box or the solar inverter is greatly reduced.

High breaking capacity up to 1000 VDC

- Making and breaking capacity under load conditions up to 1000 VDC.
- Specific photovoltaic test beyond requirements of IEC 60947-3 standard.

Safety

- Bridging bars are factory fitted for easier, quicker and safer connection.
- Direct access to connection terminals for adequate tightening.

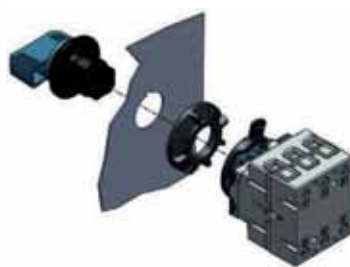
Easy mounting

Three mounting possibilities are available for optimum integration and time saving:

- DIN-rail or back plate mounting.
- Door mounting.
- "Quick Fix" mounting (quarter turn fixation without tools).



SIRCO MC PV
DIN-rail mounting



SIRCO MC PV
Door mounted

The solution for

- > Residential buildings
- > Buildings
- > Solar parks



Strong points

- > Compact
- > High breaking capacity up to 1000 VDC
- > Safety
- > Easy assembling

Check it out

- > Need an enclosed switch? No problem with our specific product department. We have solutions for any requirement.



Conformity to standards

- > IEC 60947-3
- > UL508i⁽¹⁾



(1) See UL version page 174.

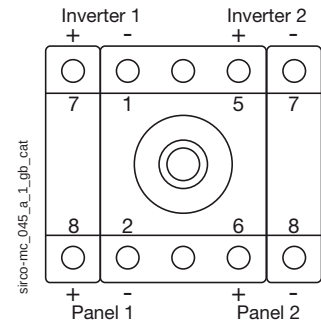
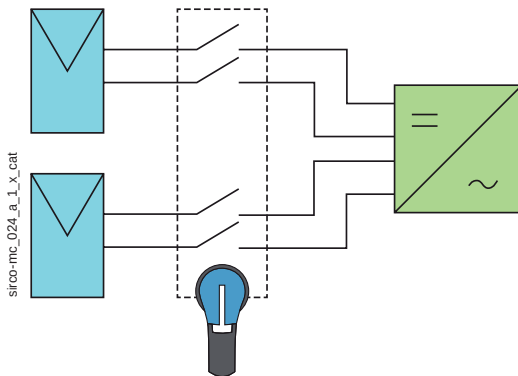
Approvals and certifications⁽¹⁾



(1) Product reference on request.

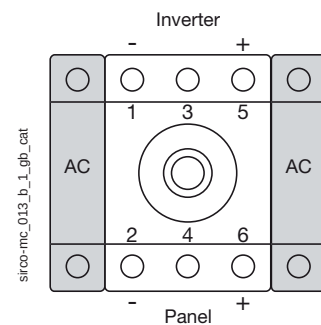
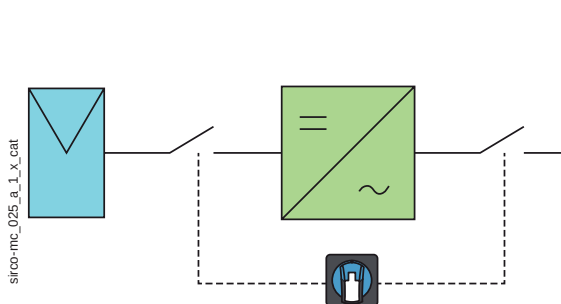
Multi-circuit switching

- The SIRCO MC PV for dual circuits (2 MPPT: Maximum Power Point Tracking) enables connection of two independent photovoltaic circuits to a single switch in order to reduce the costs of the global solution.



Completely isolate the inverter within one operation

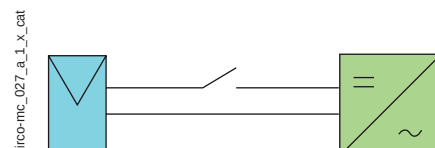
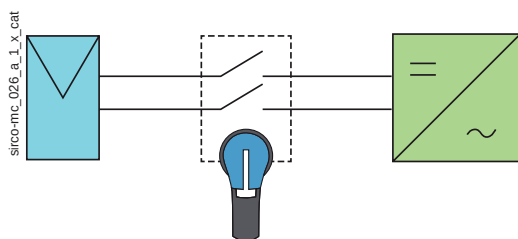
- The SIRCO MC PV with two additional AC poles can be integrated into the inverter to provide complete and simultaneous isolation of the PV and AC circuits. This improves safety and reduces the overall product size.



What you need to know

For grounded or ungrounded networks:

It is possible to use the SIRCO MC PV in both network systems, either switching one or both polarities.



SIRCO MC PV IEC 60947-3

Load break switches for photovoltaic applications

from 25 to 40 A, up to 1000 VDC

References

600 VDC - DIN rail or back plate mounting

Rating (A)	Circuit type	Number of poles by PV polarity ⁽³⁾	No of poles AC current	Switch body	Direct handle ⁽¹⁾	External handle	Shaft for external handle	Auxiliary contact
30 A	Single PV circuit	1 P+, 1 P-	-	21PV 2102	MC0 type Blue 2119 0012 ⁽²⁾ MC01 type Blue 2119 1012	MC1 type Black IP65 2119 3312 ⁽²⁾ Red / Yellow IP65 2119 3313	165 ... 200 mm 2107 0516	1 contact NC+NO 2119 0001
	PV + AC circuit	1 P+, 1P-	2 P	21PV 2162				
	Dual PV circuit	2 x (1P+, 1P-)	-	21PV 5102				
40 A	Single PV circuit	2 P+, 1 P-	-	21PV 3124	MC01 type Blue 2119 1412	Red / Yellow IP65 2119 3313	165 ... 200 mm 2107 0516	1 contact NC+NO 2119 0001
	PV + AC circuit	2 P+, 1 P-	2 P	21PV 3184				
	Dual PV circuit	2 x (1P+, 1P-)	-	21PV 6124				

(1) 45 mm modular DIN front plate included.

(2) Standard handle.

(3) Default connected device (see "Poles connections" page 124).

1000 VDC - DIN rail or back plate mounting

Rating (A)	Circuit type	Number of poles by PV polarity ⁽³⁾	No of poles AC current	Switch body	Direct handle ⁽¹⁾	External handle	Shaft for external handle	Auxiliary contact
25 A	Single PV circuit	2 P+, 1 P-	Please consult us	21PV 3722	MC0 type Blue 2119 0012 ⁽²⁾ MC01 type Blue 2119 1012	Black MC1 type IP65 2119 3312 ⁽²⁾ Red / Yellow IP65 2119 3313	165 ... 200 mm 2107 0516	1 contact NO + NC 2119 0001
	Dual PV circuit	2 x (1P+, 1P-)		21PV 6722	MC01 type Blue 2119 1412			
40 A	Single PV circuit	2 P+, 2 P-		21PV 4754	MC0 type Blue 2119 0012 ⁽²⁾ MC01 type Blue 2119 1012			
	Dual PV circuit	2 x (2 P+, 2 P-)		21PV 8154	MC01 type Blue 2119 1412			

(1) 45 mm modular DIN front plate included.

(2) Standard handle.

(3) Default connected device (see "Poles connections" page 124).

SIRCO MC PV IEC 60947-3
Load break switches for photovoltaic applications
from 25 to 40 A, up to 1000 VDC

600 VDC - Door mounting

Rating (A)	Circuit type	Number of poles by PV polarity ⁽¹⁾	No of poles AC current	Switch body ⁽³⁾	External handle ⁽³⁾	Switch body "Quick Fix"	External handle "Quick Fix"	Auxiliary contact
30 A	Single PV circuit	1 P+, 1 P-	-	21PV 2202	MC2 type Blue IP55 2129 0112 ⁽²⁾	21PV 2302	MC3 type Blue IP65 2139 1212 ⁽²⁾	1 contact NC+NO 2129 0001
	PV + AC circuit	1 P+, 1 P-	2 P	21PV 2262		21PV 2362		
	Dual PV circuit	2 x (1P+, 1P-)	-	21PV 5202		21PV 5302	MC4 type Black IP65 2139 3312	
40 A	Single PV circuit	2 P+, 1 P-	-	21PV 3224		21PV 3324	Red/Yellow IP65 2139 3313	
	PV + AC circuit	2 P+, 1 P-	2 P	21PV 3284		21PV 3384		

(1) Default connected device (see "Poles connections" page 124).

(2) Standard handle.

(3) Door mounted standard.

1000 VDC - Door mounting

Rating (A)	Circuit type	Number of poles by PV polarity ⁽¹⁾	No of poles AC current	Switch body ⁽³⁾	External handle ⁽³⁾	Switch body "Quick Fix"	External handle "Quick Fix"	Auxiliary contact
25 A	Single PV circuit	2 P+, 1 P-	Please consult us	21PV 3822	MC2 type Blue IP55 2129 0112	21PV 3922	MC3 type Blue IP65 2139 1212 ⁽²⁾	1 contact NC+NO 2129 0001
40 A	Single PV circuit	2 P+, 2 P-		21PV 4854		21PV 4954	Red/Yellow IP65 2139 3313	

(1) Default connected device (see "Poles connections" page 124).

(2) Standard handle.

(3) Door mounted standard.

SIRCO MC PV IEC 60947-3

Load break switches for photovoltaic applications
from 25 to 40 A, up to 1000 VDC

Accessories

Direct operation handle

Use

The direct operation conversion kit requires an additional 4 mm distance on each side of the 2 and 3 pole device.

Rating (A)	Handle colour	Type of locking	Handle type	45 mm modular DIN front plate	Reference
25 ... 40	Blue	-	MC0	yes	2119 0012 ⁽¹⁾
25 ... 40	Blue	1 padlock Ø 5 mm	MC01	yes	2119 1012

(1) Standard handle.

2 MPPT 600 V					
Rating (A)	Handle colour	Type of locking	Handle type	45 mm modular DIN front plate	Reference
30	Blue	-	MC0	yes	2119 0012
30	Blue	1 padlock Ø 5 mm	MC01	yes	2119 1012
40	Blue	1 padlock Ø 5 mm	MC01	yes	2119 1412

2 MPPT 1000 V					
Rating (A)	Handle colour	Type of locking	Handle type	45 mm modular DIN front plate	Reference
25 ... 40	Blue	1 padlock Ø 5 mm	MC01	yes	2119 1412



MC0 handle

access_305_a_1_cat



MC01 handle

access_293_a_1_cat

Door interlocked external operation handle

Use

The external control will allow the operator to safely disconnect and isolate the solar strings prior to any intervention.

External controls are user-friendly and adapted to meet requirements of residential installations, large roofs and ground-based generators.

DIN-rail or back plate mounting					
Rating (A)	Handle type	Handle colour	Type of locking	External IP ⁽¹⁾	Reference
25 ... 40	MC1	Black	3 padlocks Ø9 mm	IP65	2119 3312 ⁽²⁾⁽³⁾
25 ... 40	MC1	Red/Yellow	3 padlocks Ø9 mm	IP65	2119 3313 ⁽³⁾
25 ... 40	S000	Black	3 padlocks Ø6 mm	IP55	1461 5111
25 ... 40	S000	Black	3 padlocks Ø6 mm	IP65	1463 5111
25 ... 40	S000	Red/Yellow	3 padlocks Ø6 mm	IP65	1464 5111

(1) IP: protection degree according to IEC 60529 standard.

(2) Standard handle.

(3) No padlocking.



S000 handle

access_307_a_1_cat



MC4 handle

access_302_a_1_cat

Door mounting					
Rating (A)	Handle type	Handle colour	Type of locking	External IP ⁽¹⁾	Reference
25 ... 40	MC2	Blue	-	IP55	2129 0112 ⁽²⁾

(1) IP: protection degree according to IEC 60529 standard.

(2) Standard handle

"Quick Fix" door mounting					
Rating (A)	Handle type	Handle colour	Type of locking	External IP ⁽¹⁾	Reference
25 ... 40	MC3	Blue	1 padlock Ø5 mm	IP65	2139 1212 ⁽²⁾
25 ... 40	MC4	Black	3 padlocks Ø9 mm	IP65	2139 3312
25 ... 40	MC4	Red/Yellow	3 padlocks Ø9 mm	IP65	2139 3313



MC2 handle

access_306_a_1_cat

Shaft for external handle

Use

MC1 and S000 shafts can be adjusted and cut depending on the need.

Shaft length

MC1 type:

- 165 mm (adjustable up to 177 mm)

S000 type:

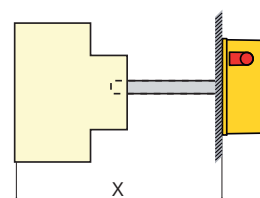
- 150 mm

- 200 mm

- 320 mm



S000 type shaft



acces_297_a_1_cat

acces_308_a_1_x_cat

DIN-rail or back plate mounting				
Rating (A)	Handle type	Dimension X (mm)	Length (mm)	Reference
25 ... 40	MC1	249 ... 259	165	2107 0516
25 ... 40	S000	234 ... 246	150	2107 0515
25 ... 40	S000	284 ... 496	200	2107 0520
25 ... 40	S000	404 ... 416	320	2107 0532

Terminal shrouds

Use

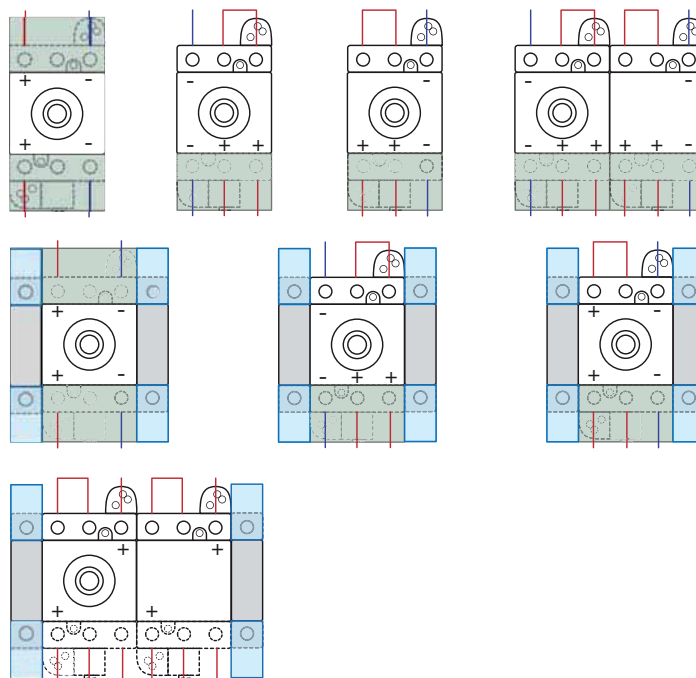
Top or bottom protection against direct contact with the terminals or connection parts.
1 and 3 poles are available.

The SIRCO MC PV load break switch is pre-bridged. Terminal covers are mounted on the top or bottom free space of the device.

Possibility to assemble a terminal shroud on the bridge side by removing the insulating material of the series connection bar (irreversible step).

For SIRCO MC PV

Rating (A)	Type of mounting	No. of poles	Position	Reference
25 ... 40	rail / door mounting	1 P	top or bottom	2194 1004
25 ... 40	rail / door mounting	3 P	top or bottom	2194 3004



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acces_299_a_1_cat



Terminal shrouds 1 pole

acces_300_a_1_cat



Terminal shrouds 3 pole

SIRCO MC PV IEC 60947-3

Load break switches for photovoltaic applications
from 25 to 40 A, up to 1000 VDC

Accessories (continued)

Auxiliary contact

Use

These auxiliary contacts signalling position 0 and 1 can be normally open or normally closed contacts. They can be fixed on the left or right side of the switch body and/or on the power additional pole.

Connections

Min./max cross-sections: 1 mm²/4 mm²
Tightening torque: 0.6 Nm

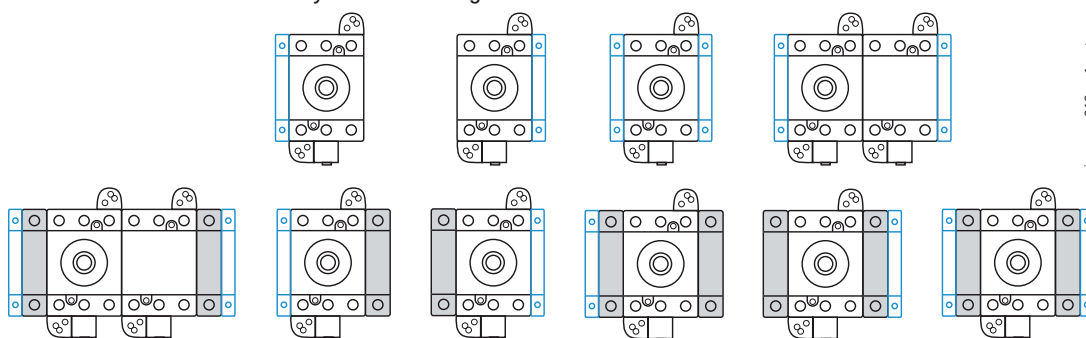
Rating (A)	Type of mounting	Contact(s)	Contact type	Reference
25 ... 40	DIN-rail / back plate mounted	1 contact	NO + NC	2119 0001
25 ... 40	Door mounted	1 contact	NO + NC	2129 0001

Characteristics according to IEC 60947-5-1

Rating (A)	Contact type	Thermal current I _{th} (A)	Operating current I _e (A)		
			230 VAC AC-15	400 VAC AC-15	690 VAC AC-15
25 ... 40	NO + NC	16	6	4	2



Auxiliary contacts configurations



Characteristics according to IEC 60947-3

25 to 40 A

Rated current	25 A	30 A	40 A
Thermal current I _{th} at 40°C (A)	25	30	40
Thermal current at 50°C (A)	25	30	40
Thermal current at 60°C (A)	25	30	40
Rated insulation voltage U _i (V)	1000	1000	1000
Rated impulse withstand voltage U _{imp} (kV)	8	8	8

Rated operational currents I_e (A)

Rated voltage	Utilisation category	Circuit type	Number of poles of the device	Number of pole(s) in series per polarity	(A)	(A)	(A)
600 VDC	DC-21 B	Single PV circuit	2 P	1 P+ and 1 P-	-	30	-
600 VDC	DC-21 B	Single PV circuit	3 P	2 P+ and 1 P-	-	-	40
600 VDC	DC-21 B	Dual PV circuit	4 P	2 x (1 P+ and 1 P-)	-	30	-
600 VDC	DC-21 B	Dual PV circuit	6 P	2 x (2 P+ and 1 P-)	-	-	40
1000 VDC	DC-21 B	Single PV circuit	3 P	2 P+ and 1 P-	25	-	-
1000 VDC	DC-21 B	Single PV circuit	4 P	2 P+ and 2 P-	-	-	40
1000 VDC	DC-21 B	Dual PV circuit	6 P	2 x (2 P+ and 1 P-)	25	-	-
1000 VDC	DC-21 B	Dual PV circuit	8 P	2 x (2 P+ and 2 P-)	-	-	40

Connection

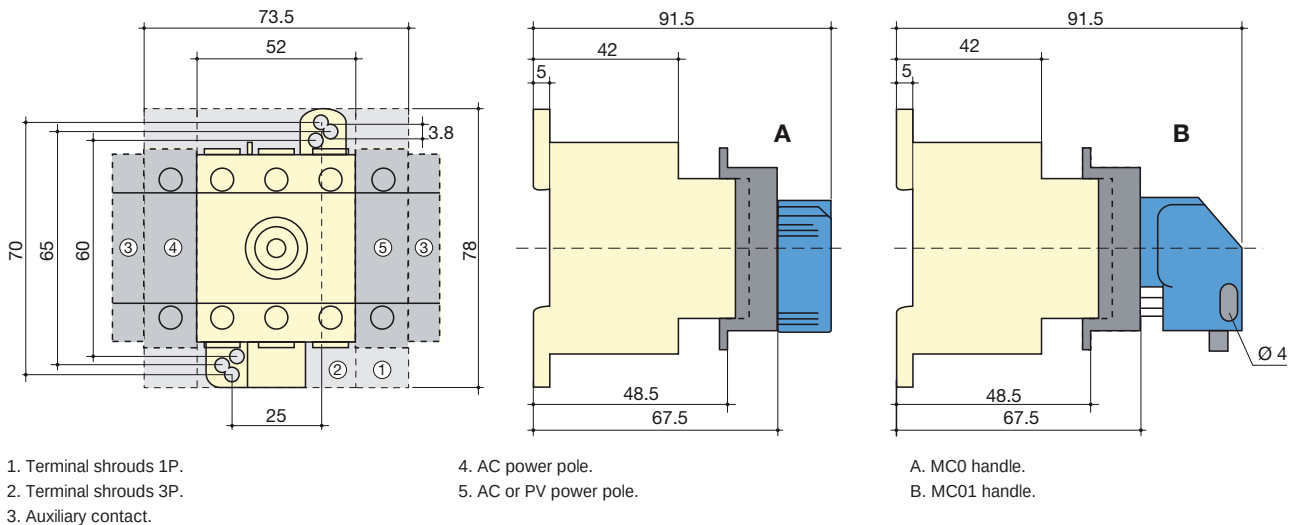
Minimum Cu cable cross-section	1.5	1.5	1.5
Maximum Cu cable cross-section (mm ²)	10	10	10
Tightening torque mini / maxi (Nm)	2	2	2

Mechanical characteristics

Durability (number of operating cycles)	30 000	30 000	30 000
Operating torque (Nm)	0.8	0.8	0.8
Weight of a 2 pole PV device (kg)	0.110	0.110	-
Weight of a 3 pole PV device (kg)	0.125	0.125	0.125
Weight of a 2 pole PV and 2 pole AC device (kg)	0.180	0.180	-
Weight of a 3 pole PV and 2 pole AC device (kg)	-	-	0.195
Weight of a 4 pole PV device (kg)	-	-	0.160
Weight of a 4 pole PV device, dual PV circuit (kg)	0.145	0.145	-
Weight of a 6 pole PV device, dual PV circuit (kg)	-	-	0.250
Weight of an 8 pole PV device, dual PV circuit (kg)	-	-	0.320

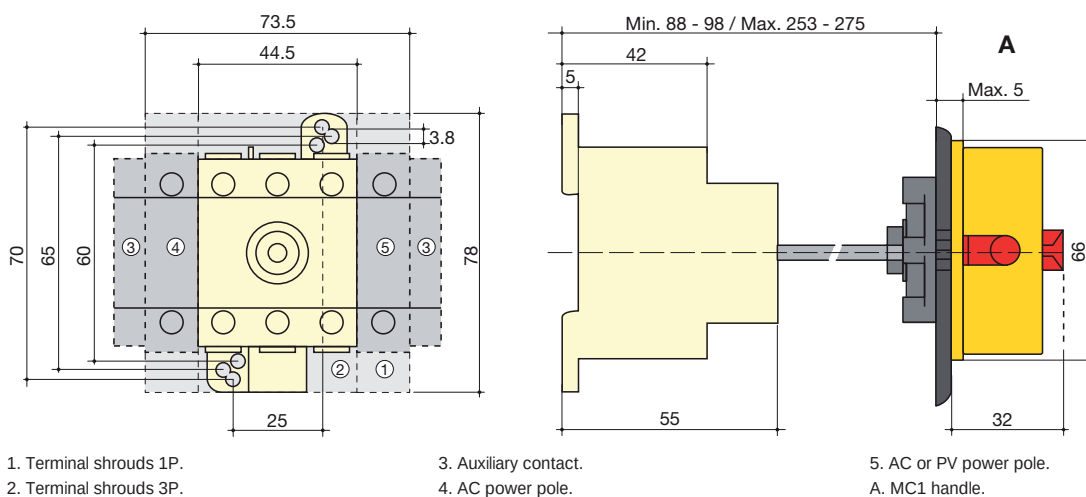
Dimensions

DIN-rail mounting - Direct operation



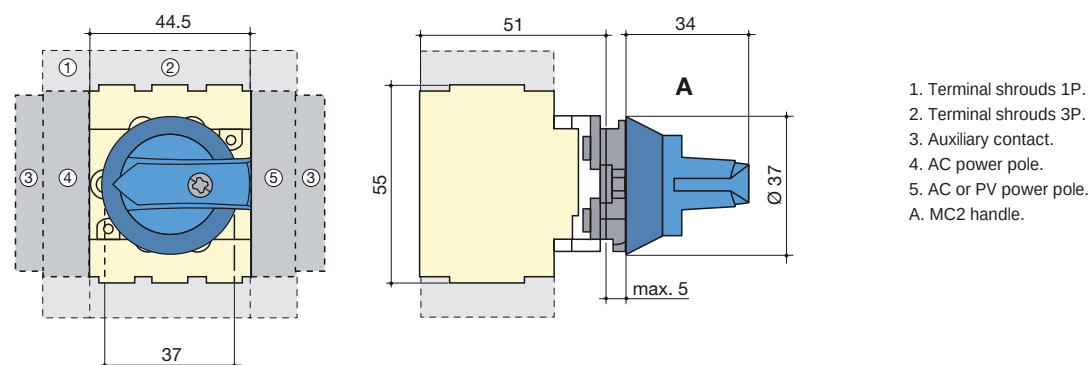
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DIN-rail mounting - External operation



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Door mounting



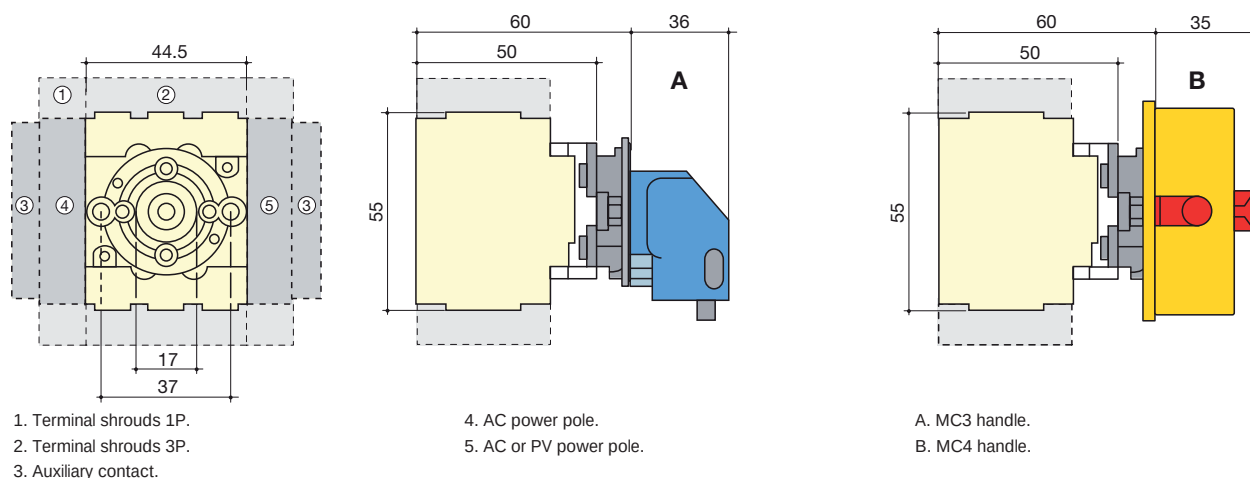
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SIRCO MC PV IEC 60947-3

Load break switches for photovoltaic applications
from 25 to 40 A, up to 1000 VDC

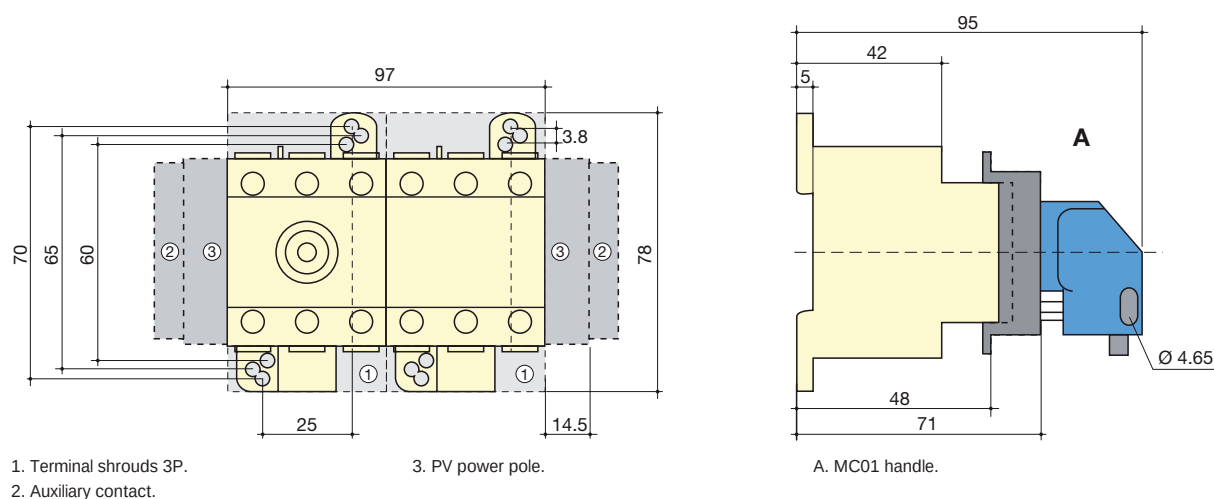
Dimensions

"Quick Fix" door mounting



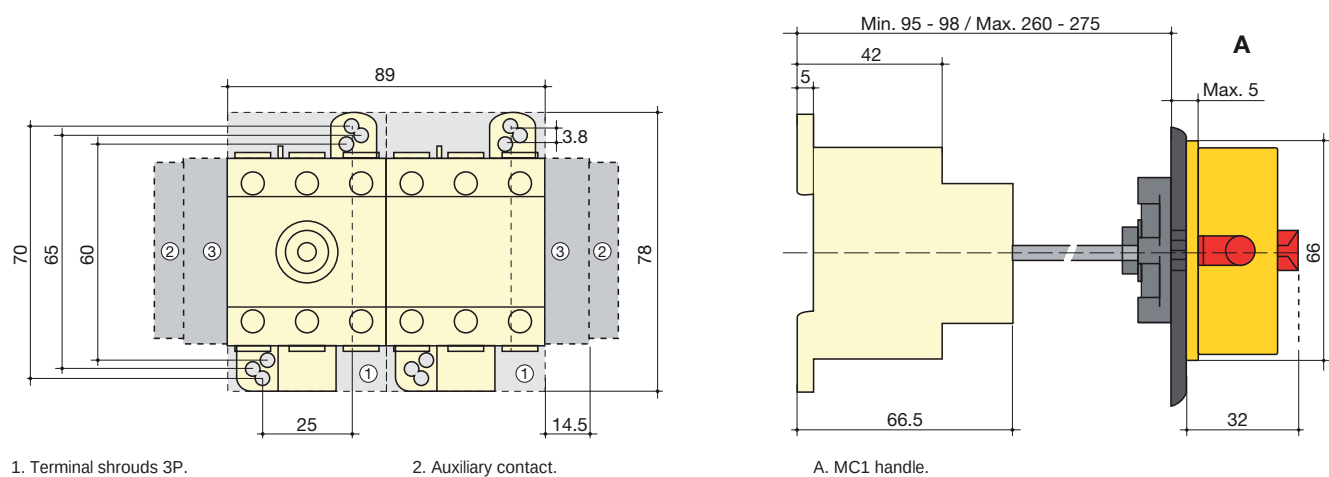
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2 MPPT - 40 A - 600 VDC and 25 and 40 A - 1000 VDC - DIN-rail mounting - Direct operation



sirco-mc_039_a_1_x_cat

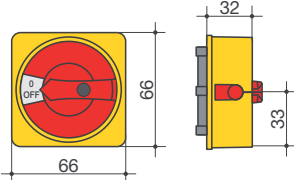
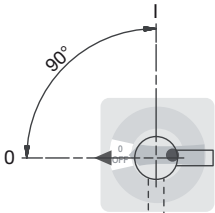
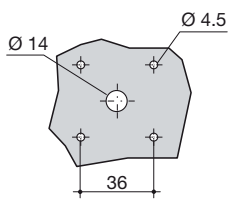
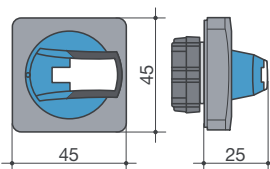
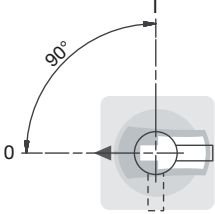
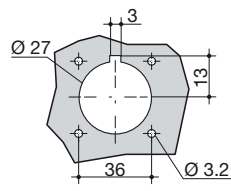
DIN-rail mounting - External operation



sirco-mc_040_b_1_x_cat

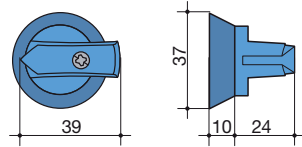
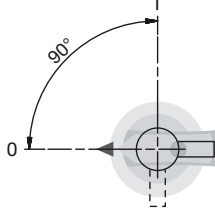
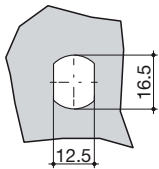
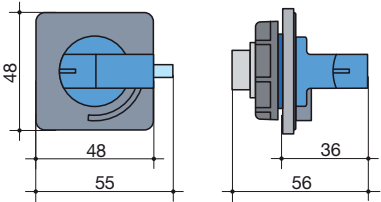
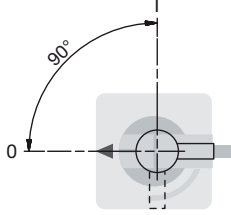
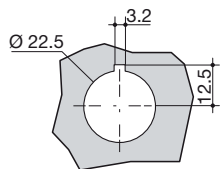
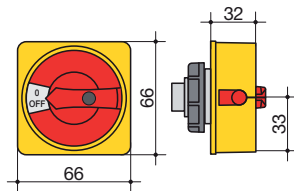
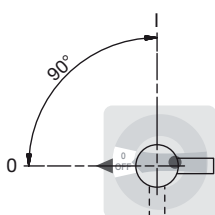
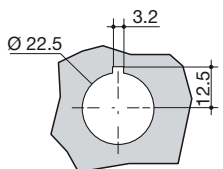
Dimensions for external handles

DIN-rail or back plate mounting

Handle type	Front operation Direction of operation	Door drilling
MC1 type 		
S000 type 		

polign_006_a_1_gb_cat

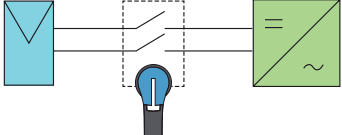
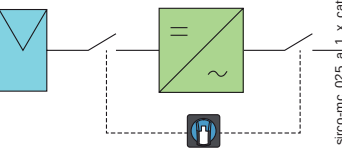
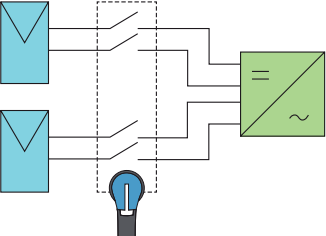
Door mounting

Handle type	Front operation Direction of operation	Door drilling
MC2 type 		
MC3 type Quick Fix 		
MC4 type Quick Fix 		

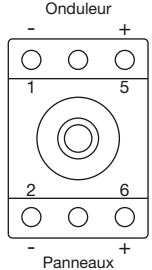
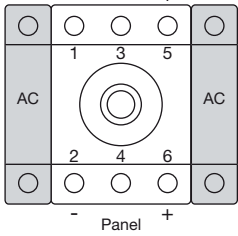
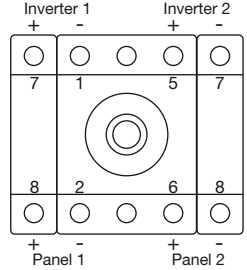
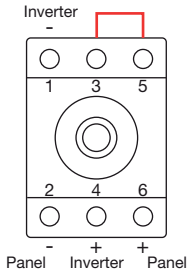
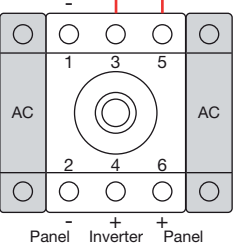
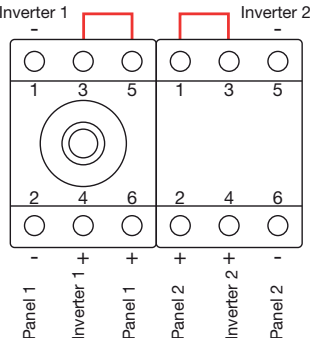
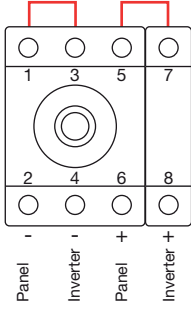
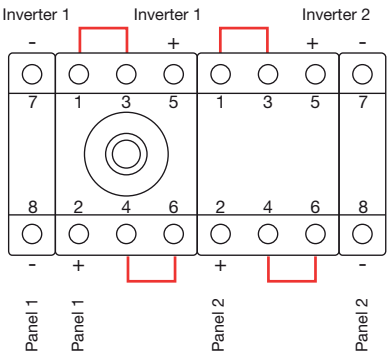
polign_007_a_1_gb_cat

Poles connections

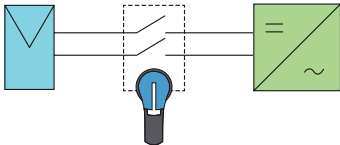
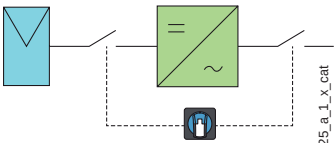
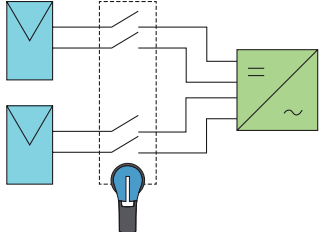
Switching of polarities + and -

Single PV circuit	PV and AC circuit	Dual PV circuit
		

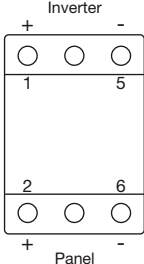
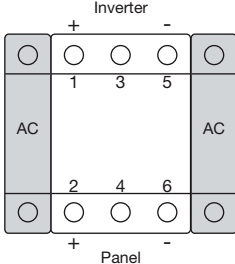
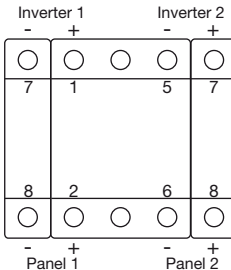
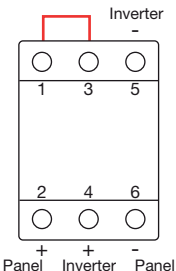
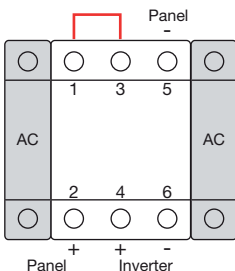
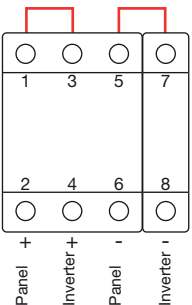
Direct operation

Rating	Single PV circuit	PV and AC circuit	Dual PV circuit
25 A - 600 VDC	21PV 2102  siro-mc_044_a_1_gb_cat	21PV 2162  siro-mc_013_a_1_gb_cat	21PV 5102  siro-mc_045_a_1_gb_cat
40 A - 600 VDC 25 A - 1000 VDC	21PV 3124 21PV 3722  siro-mc_046_a_1_gb_cat	21PV 3184  siro-mc_009_a_1_gb_cat	21PV 6124 21PV 6722  siro-mc_047_b_1_gb_cat
40 A - 1000 VDC	21PV 4754  siro-mc_048_a_1_gb_cat		21PV 8154  siro-mc_065_a_1_gb_cat

Switching of polarities + and -

Single PV circuit	PV and AC circuit	Dual PV circuit
 sirco-mc_026_a_1_x_cat	 sirco-mc_025_a_1_x_cat	 sirco-mc_024_a_1_x_cat

Door mounting

Rating	Single PV circuit	PV and AC circuit	Dual PV circuit
25 A - 600 VDC	21PV 2202 21PV 2302  sirco-mc_049_a_1_gb_cat	21PV 2262 21PV 2362  sirco-mc_008_a_1_gb_cat	21PV 5202 21PV 5302  sirco-mc_050_a_1_gb_cat
40 A - 600 VDC 25 A - 1000 VDC	21PV 3224 21PV 3324 21PV 3822 21PV 3922  sirco-mc_051_a_1_gb_cat	21PV 3284 21PV 3384  sirco-mc_010_a_1_gb_cat	
40 A - 1000 VDC	21PV 4854 21PV 4954  sirco-mc_052_a_1_gb_cat		



SIRCO MV PV

Load break switches for photovoltaic applications
from 63 to 80 A, up to 1000 VDC



SIRCO MV PV 1000 V - 80 A
direct operation

Function

SIRCO MV PV are manually operated multipolar load break switches. They make and break under load conditions and provide optimum safety isolation for any PV circuit.

Advantages

Modular device

SIRCO MV PV are devices which are DIN rail or backplate mountable and can be integrated into a modular panel with a 45 mm front cut-out.

Patented switching technology

SIRCO MV PV with benefit from proven breaking technology based on a system of double break contacts with arc extinguishing chambers.

The solution for

- > Residential buildings
- > Buildings
- > Solar parks



Strong points

- > Modular device
- > Patented switching technology
- > Performance - 1000 VDC

Conformity to standards

- > IEC 60947-3
- > IEC 60364-4-410
- > IEC 60364-7-712



Approvals and certifications⁽¹⁾



(1) Product reference on request.

References

SIRCO MV PV 1000 VDC - DIN rail or back plate mounting

Rating (A)	Circuit type	No. of poles	Switch body	Direct handle	External front handle	Shaft for external front handle	Auxiliary contact	Bridging bar
63 A	Single PV circuit	4 P	22PV 4106	M0b type Blue 2299 5042 ⁽¹⁾ M0 type Blue 2299 5022	S0 type Black IP55 1491 0111 ⁽¹⁾⁽²⁾ Black IP65 1493 0111 ⁽²⁾ Red / Yellow IP65 1494 0111 ⁽²⁾	S0 type 150 mm 1409 0615 200 mm 1409 0620 320 mm 1409 0632	1 contact NC+NO 2299 0001 ⁽³⁾ 1 contact 2 NC 2299 0011 ⁽³⁾	2 pieces 2209 2016
80 A		4 P	22PV 4108		S1 type Black IP55 1411 2111 ⁽²⁾ Black IP65 1413 2111 ⁽²⁾ Red / Yellow IP65 1414 2111 ⁽²⁾	S1 type 200 mm 1401 0620 320 mm 1401 0632 400 mm 1401 0640	1 contact NO 3999 0701 1 contact NC 3999 0702	

(1) Standard.

(2) Defeatable handle.

(3) Signalling contact only.

Accessories

Direct operation handle

M0b type direct operation handle		
Rating (A)	Handle colour	Reference
63 ... 80	Blue	2299 5042 ⁽¹⁾

(1) Standard.

Compact M0 type direct operation handle		
Rating (A)	Handle colour	Reference
63 ... 80	Blue	2299 5022



M0b handle

access_359_a



M0 handle

access_344_a

Accessories

Door interlocked external operation handle

Use

Door interlocked external operation handles include an escutcheon, are padlockable and must be utilised with an extension shaft. In a combiner box, located close to the solar cell strings, or located close to the inverter, we recommend to use a door interlocked external handle for safety.

Example

The locking function of the enclosure in the "ON" position will force the operator to safely disconnect and isolate the solar cell strings prior to any intervention.

Opening the door when the switch is on "ON" position is possible by defeating the interlocking function with the use of a tool (authorised persons only). The interlocking function is restored when the door is re-closed.



S0 type handle

aces_343_a



S1 type handle

aces_149_a_1_cat

S0 type handle - Front operation I - 0

Rating (A)	Handle type	Handle colour	External IP ⁽¹⁾	Reference
63 ... 80	S0	Black	IP55	1491 0111 ⁽²⁾
63 ... 80	S0	Black	IP65	1493 0111 ⁽²⁾
63 ... 80	S0	Red/Yellow	IP65	1494 0111 ⁽²⁾

S1 type handle - Front operation I - 0

Rating (A)	Handle type	Handle colour	External IP ⁽¹⁾	Reference
63 ... 80	S1	Black	IP55	1411 2111 ⁽²⁾
63 ... 80	S1	Black	IP65	1413 2111 ⁽²⁾
63 ... 80	S1	Red/Yellow	IP65	1414 2111 ⁽²⁾

(1) IP: protection degree according to IEC 60529 standard.

(2) Defeatable handle.

Shaft for external handle

Use

Standard lengths:

- 150 mm
- 200 mm
- 320 mm
- 400 mm

Other lengths: please consult us.



Shaft for S0 type handle for SIRCO MV PV 63 ... 80 A

aces_280_a_2_cat



Shaft for S1 type handle for SIRCO MV PV 63 ... 80 A

aces_369_a_1_cat

For SIRCO MV PV

Rating (A)	Handle type	Length (mm)	Reference
63 ... 80	S0	150 mm	1409 0615
63 ... 80	S0	200 mm	1409 0620
63 ... 80	S0	320 mm	1409 0632
63 ... 80	S1	200 mm	1401 0620
63 ... 80	S1	320 mm	1401 0632
63 ... 80	S1	400 mm	1401 0640

Auxiliary contact

Use

M type

Signalisation of positions 0 and I by NO+NC or 2 NO auxiliary contacts. They can be mounted on the right side on the SIRCO MV PV. Up to 2 auxiliary contact modules can be installed.

U type

Pre-break and signalisation by NO or NC auxiliary contact.
Max 2 auxiliary contacts.

M type			
Rating (A)	Contact(s)	Contact type	Reference
63 ... 80	1 contact	NO + NC	2299 0001 ⁽¹⁾
63 ... 80	1 contact	2 NC	2299 0011 ⁽¹⁾

(1) Signalling contact only.

U type			
Rating (A)	Contact(s)	Contact type	Reference
63 ... 80	1 AC	NO	3999 0701
63 ... 80	1 AC	NC	3999 0702

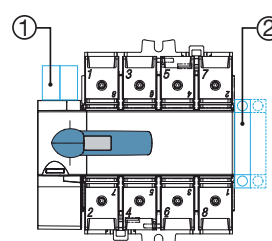


M type



U type

accos_056_a_1_cat



M type

Auxiliary contacts configurations for SIRCO MV PV

1. Maximum 2 "U" type auxiliary contacts
2. Maximum 2 "M" type auxiliary contact modules

Terminal shrouds

Use

Top and bottom protection against direct contact with the connection parts (set of 2 units).

Advantage

Perforations allow remote thermographic inspection without the need to remove the shrouds.

The terminal shrouds also provide phase separation.

For SIRCO MV PV			
Rating (A)	No. of poles	Position	Reference
63 ... 80	4 P	top and bottom	2294 4016



accos_326_a

Bridging bars for connecting poles in series

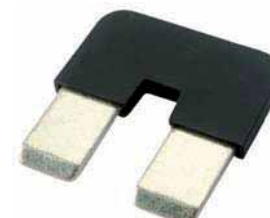
Use

The bridging bars facilitate the connection of poles in series, allowing the below configurations:

- Bottom/Bottom
- Top/Top
- Bottom /Top
- Top/Bottom

Connection diagrams, see "Pole series connection" page 131.

For SIRCO MV PV		
Rating (A)	Pack	Reference
63 ... 80	1 piece	2209 0016
63 ... 80	2 pieces	2209 2016



accos_339_a

SIRCO MV PV

Load break switches for photovoltaic applications

from 63 to 80 A, up to 1000 VDC

Characteristics according to IEC 60947-3

63 to 80 A

Rated current	63 A	80 A
Thermal current I_{th} at 40°C (A)	63	80
Thermal current I_{th} at 50°C (A)	63	80
Thermal current I_{th} at 60°C (A)	63	80
Rated insulation voltage U_i (V)	1000	1000
Rated impulse withstand voltage U_{imp} (kV)	8	8

Rated operational currents I_e (A)

Rated voltage	Utilisation category	Circuit type	No. of poles	Number of pole(s) in series per polarity	(A)	(A)
1000 VDC ⁽¹⁾	DC-21 B	Single PV circuit	4 P	2 P + and 2 P -	63	80

Short-circuit capacity at 1000 VDC

Rated short-time withstand current 1s. I_{cw} (kA rms)	5	5
Rated peak withstand current (kA peak) ⁽²⁾	12	12

Connection

Maximum Cu rigid cable cross-section (mm²)	70	70
Tightening torque min (Nm)	4	4
Tightening torque max (Nm)	5,5	5,5

Mechanical characteristics

Operating effort (Nm)	4,2	4,2
Weight of a 3 pole device (kg)	0,7	0,7
Weight of a 4 pole device (kg)	0,9	0,9

(1) Photovoltaic load break switches SIRCO MV PV are subject to overvoltage test conditions which are 5% higher than the rated voltage.

They can therefore be used at 1050 VDC in non-permanent operating conditions.

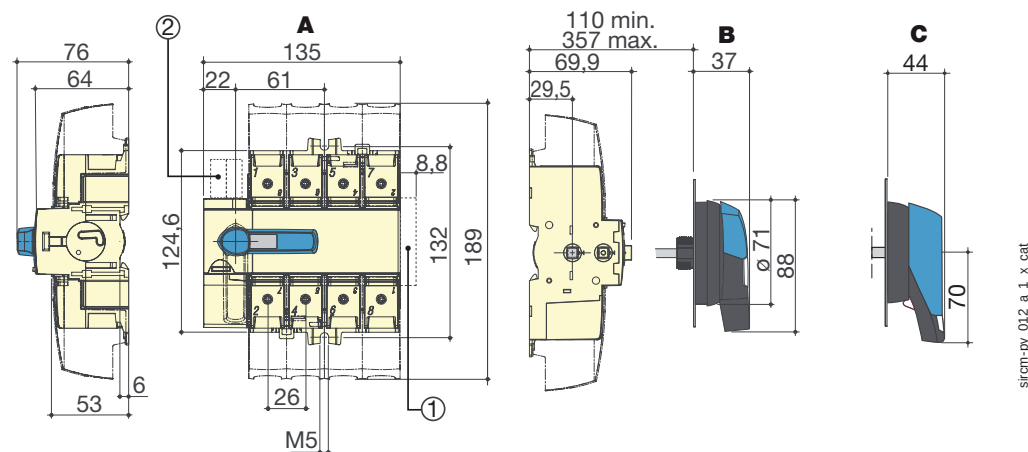
(2) For a rated operational voltage $U_e = 400$ VAC

Dimensions

SIRCO MV PV 63 to 80 A

Direct front operation

External front operation



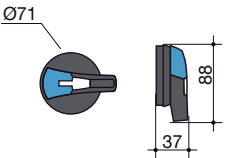
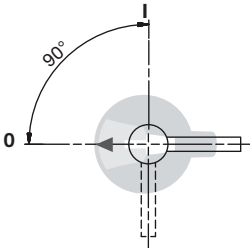
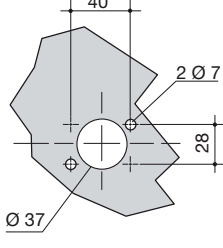
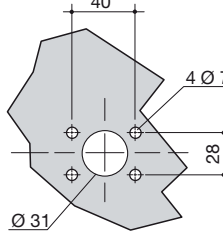
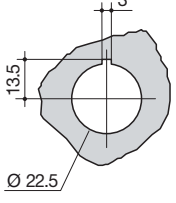
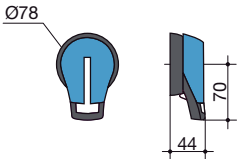
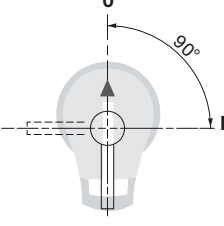
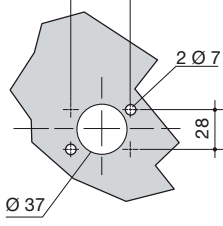
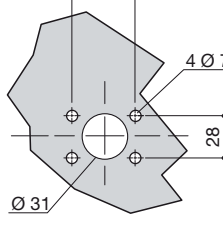
- A. 4 poles
- B. S0 type handle
- C. S1 type handle

- 1. Maximum 2 "M" type auxiliary contact modules
- 2. Maximum 2 "U" type auxiliary contacts

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Dimensions for external handles

SIRCO MV PV 63 to 80 A

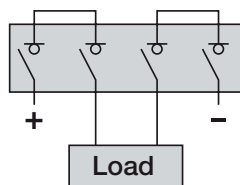
Handle type	Front operation Direction of operation	Door drilling		
S0 type		IP55 with 2 fixing clips	IP65 with 4 fixing screws	With fixing nut
				
S1 type		IP55 with 2 fixing clips	IP65 with 4 fixing screws	
				

sirco_038_a_1_gb_cat

sirco_039_a_1_gb_cat

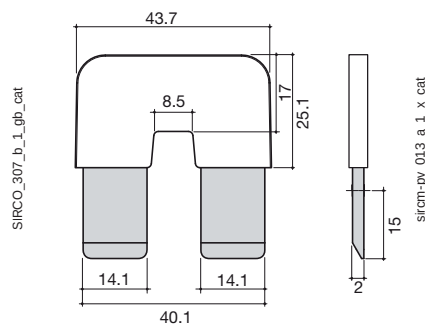
Pole series connection⁽¹⁾

4 poles - bottom / bottom



(1) Other connections: refer to mounting instructions.

Bridging bars 63 to 80 A





SIRCO PV IEC 60947-3

Load break switches for photovoltaic applications
from 100 to 3200 A, up to 1500 VDC



Function

SIRCO PV are manually operated multipolar load break switches. Making and breaking capacity under load conditions up to 1500 VDC. These extremely durable switches have been tested and approved for use in the most demanding applications. They have been designed and tested for all types of applications: earthing, floating or bipolar.

Advantages

Optimise your investment

- Thanks to a reduced number of bridging bars, you can limit your costs and save mounting time.
- A 2 pole SIRCO PV will reduce wiring and can be placed in a smaller enclosure.

High quality materials

SIRCO PV is an extremely robust device in a glass fibre reinforced polyester frame. This material provides:

- high mechanical strength,
- stability to temperature variations (RTI of 130°C),
- high dielectric strength (high CTI / tested as per standard ASTM D 2303).

Take advantage of an innovative design

The SIRCO PV can be directly connected to up to four independent PV panel strings. The global solution cost is therefore reduced in comparison with the use of four distinct switches.

Reliability and performance

Our range of SIRCO PV load break switches is compliant to standards UL98B and IEC 60947-3.

SIRCO PV have been tested to critical currents and at a 10 kA short-circuit during 50 ms without specific protection. The type of cable protection against voltage surges can therefore be selected.

The solution for

- > Combiner box
- > Recombiner box
- > Inverter



Strong points

- > Patented switching technology up to 500 VDC/pole
- > Positive break indication
- > Up to 1500 VDC as per characteristics by IEC 60947-3
- > Up to 4 branch circuits per switch

Conformity to standards

- > IEC 60947-3
- > IEC 60364-7-712
- > UL 98B⁽¹⁾



(1) Veuillez nous consulter.

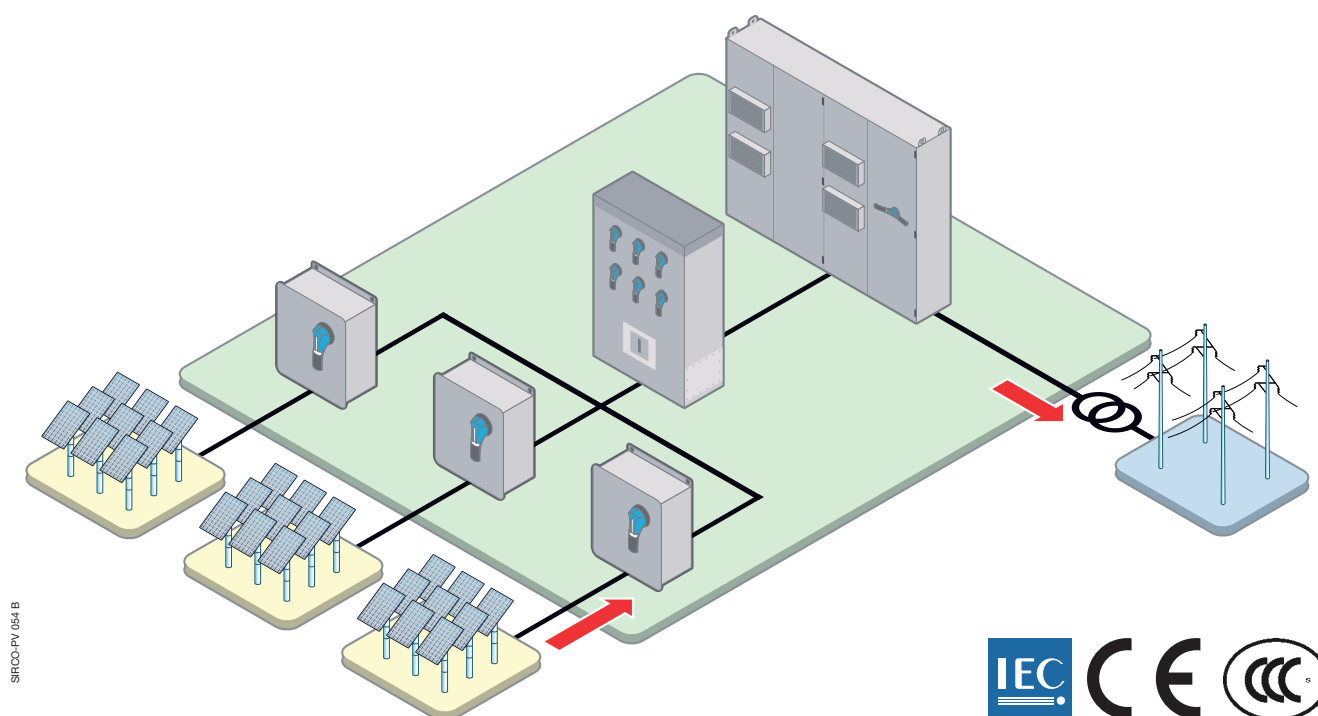
Approvals and certifications⁽¹⁾



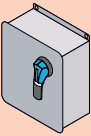
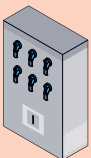
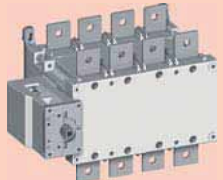
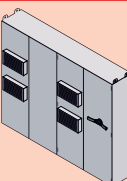
(1) Product reference on request.

Typical PV architecture

The SIRCO PV range provides safe disconnection and isolation at all levels within your PV installation.



The SOCOMEC solutions

LEVEL OF INSTALLATION	SOCOMEK SOLUTIONS	
Combiner box		
		SIRCO PV One circuit up to 500 A at 1500 VDC
Recombiner box		
		SIRCO PV 4 circuits up to 500 A at 1000 VDC 2 circuits up to 500 A at 1500 VDC
Inverter		
		SIRCO PV One circuit up to 3200 A at 1000 VDC up to 2000 A at 1500 VDC

SIRCO PV IEC 60947-3

Load break switches for photovoltaic applications

from 100 to 3200 A, up to 1500 VDC

References

1000 VDC - Back plate mounting

Rating (A)	Frame size	Number of poles	Switch body	Direct handle	External handle	Shaft for external handle	Quantity to be ordered to connect 2 poles in series		
1 PV circuit									
100 A	B4	2 P	26PV 2010	J1 type Black 1112 1111 Red 1113 1111	S2 type ⁽¹⁾ Black IP55 1421 2111 Black IP65 1423 2111 Red IP65 1424 2111	200 mm 1400 1020 320 mm 1400 1032 400 mm 1400 1040	-		
160 A	B4	2 P	26PV 2016						
250 A	B4	2 P	26PV 2025						
315 A	B4	2 P	26PV 2031				2x 2609 0025		
400 A	B4	4 P	26PV 4040						
500 A	B4	4 P	26PV 4050						
630 A	B5	4 P	26PV 4063						
800 A	B5	4 P	26PV 4080	1x 2609 0080					
1250 A	B6	4 P	26PV 4120	C2 type Black 2799 7012 Red 2799 7013	S4 type ⁽¹⁾ Black IP65 1443 3111 Red IP65 1444 3111	200 mm 1401 1520 320 mm 1401 1532 400 mm 1401 1520	1x 2609 1100		
2000 A	B7	4 P	26PV 4200				2x 2609 1200		
3200 A	B8	4 P	Please consult us		V1 type Black IP65 2799 7145	320 mm 2799 3018 450 mm 2799 3019	Please consult us		
2 PV circuits									
100 A	B4 _{DS}	4 P	26PV 5010	J2 type Black 1122 1111 Red 1123 1111	S2 type ⁽¹⁾ Black IP55 1421 2111 Black IP65 1423 2111 Red IP65 1424 2111	200 mm 1400 1020 320 mm 1400 1032 400 mm 1400 1040	-		
160 A	B4 _{DS}	4 P	26PV 5016						
250 A	B4 _{DS}	4 P	26PV 5025						
315 A	B4 _{DS}	4 P	26PV 5031	J1 type Black 1112 1111 Red 1113 1111			1x 2709 0045		
400 A	B5	4 P	27PV 4032						
500 A	B5	4 P	27PV 4039	J2 type Black 1122 1111 Red 1123 1111			1x 2609 0080		
630 A	B5 _{DS}	8 P	26PV 8063						
800 A	B6 _{DS}	8 P	26PV 8080	C2 type Black 2799 7012 Red 2799 7013	V1 type Black IP65 2799 7145	320 mm 4199 3018	1x 2609 1100		
1250 A	B6 _{DS}	8 P	26PV 8120				1x 2609 1200		
2000 A	B7 _{DS}	8 P	26PV 8200						
4 PV circuits									
275 A	B5 _{DS}	8 P	27PV 8026	J2 type Black 1122 1111 Red 1123 1111	S2 type ⁽¹⁾ Black IP55 1421 2111 Black IP65 1423 2111 Red IP65 1424 2111	200 mm 1400 1020 320 mm 1400 1032 400 mm 1400 1040	4x 2709 0045		
400 A	B5 _{DS}	8 P	27PV 8032						
500 A	B5 _{DS}	8 P	27PV 8039						

(1) Defeatable handle.

1500 VDC - Back plate mounting

Rating (A)	Frame size	Number of poles	Switch body	Direct handle	External handle	Shaft for external handle	Quantity to be ordered to connect 2 poles in series
1 PV circuit							
275 A	B5	3 P	27PV 3026	J2 type Black 1122 1111 Red 1123 1111	S2 type ⁽¹⁾ Black IP55 1421 2111	200 mm 1400 1020	1x 2709 0027
400 A	B5	3 P	27PV 3032		Black IP65 1423 2111	320 mm 1400 1032	1x 2709 0045
500 A	B5	3 P	27PV 3039			400 mm 1400 1040	1x 2609 0080
630 A	B5 _{DS}	8 P	26PV 8063		C2 type Black 2799 7012 Red 2799 7013	V1 type Black IP65 2799 7145	320 mm 4199 3018
800 A	B6 _{DS}	8 P	26PV 8080	1x 2609 1200			
1250 A	B6 _{DS}	8 P	26PV 8120				
2000 A	B7 _{DS}	8 P	26PV 8200				
2 PV circuits							
275 A	B5 _{DS}	6 P	27PV 6026	J2 type Black 1122 1111 Red 1123 1111	S2 type ⁽¹⁾ Black IP55 1421 2111	200 mm 1400 1020	1x 2709 0027
400 A	B5 _{DS}	6 P	27PV 6032		Black IP65 1423 2111	320 mm 1400 1032	1x 2709 0045
500 A	B5 _{DS}	6 P	27PV 6039			400 mm 1400 1040	

(1) Defeatable handle.

Accessories

Direct operation handle

Frame size	Handle type	Handle colour	Reference
B4 ... B7	J1	Black	1112 1111
B4 ... B5	J1	Red	1113 1111
B6 ... B7	C2	Black	2799 7012
B6 ... B7	C2	Red	2799 7013
B4 _{DS} ... B5 _{DS}	J2	Black	1122 1111
B4 _{DS} ... B5 _{DS}	J2	Red	1123 1111
B4 _{DS} ... B7 _{DS}	C2	Black	2799 7012
B4 _{DS} ... B7 _{DS}	C2	Red	2799 7013



Door interlocked external operation handle

Use

Door interlocked external operation handles include an escutcheon, are padlockable and must be utilised with an extension shaft. In a combiner box, located close to the solar cell strings, or located close to the inverter, we recommend to use a door interlocked external handle for its safety features.

Example

The locking function of the enclosure in the "ON" position will force the operator to safely disconnect and isolate the solar cell strings prior to any intervention. Opening the door when the switch is on "ON" position is possible by defeating the locking function using a tool (authorised persons only). The interlocking function is restored when the door is re-closed.

Front operation

Frame size	Handle type	Handle colour	Degree of protection	Reference
B4 ... B5 - B4 _{DS}	S2	Black	IP55	1421 2111
B4 ... B5 - B4 _{DS}	S2	Black	IP65	1423 2111
B4 ... B5 - B4 _{DS}	S2	Red	IP65	1424 2111
B5 _{DS} - B6 ... B7	S4	Black	IP65	1443 3111
B5 _{DS} - B6 ... B7	S4	Red	IP65	1444 3111
B8 - B6 _{DS} - B7 _{DS}	V1	Black	IP65	2799 7145



Accessories (continued)

Shaft for external handle

Use

Standard lengths:

- 200 mm,
- 320 mm,
- 400 mm.

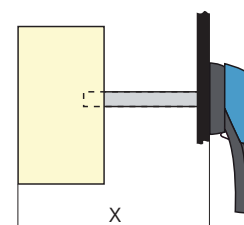
Other lengths: Please consult us.

Frame size	Handle type	Dimension Y (mm)	Length (mm)	Reference
B4	S2	150 ... 295	200	1400 1020
B4	S2	150 ... 415	320	1400 1032
B4	S2	150 ... 495	400	1400 1040
B5	S2	203 ... 328	200	1400 1020
B5	S2	203 ... 448	320	1400 1032
B5	S2	203 ... 525	400	1400 1040
B6	S4	220 ... 343	200	1401 1520
B6	S4	220 ... 463	320	1401 1532
B6	S4	220 ... 543	400	1401 1540
B7	S4	305 ... 366	200	1401 1520
B7	S4	305 ... 485	320	1401 1532
B7	S4	305 ... 564	400	1401 1540
B4 _{DS}	S2	305 ... 363	200	1400 1020
B4 _{DS}	S2	305 ... 485	320	1400 1032
B4 _{DS}	S2	305 ... 561	400	1400 1040
B5 _{DS}	S4	406 ... 467	200	1401 1520
B5 _{DS}	S4	406 ... 589	320	1401 1532
B5 _{DS}	S4	406 ... 668	400	1401 1540
B6 _{DS}	V1	508 ... 714	320	4199 3018
B6 _{DS}	V1	508 ... 795	400	4199 3019
B7 _{DS}	V1	508 ... 714	320	4199 3018
B7 _{DS}	V1	508 ... 795	400	4199 3019
B8	V1	415 ... 690	320	2799 3018
B8	V1	415 ... 820	450	2799 3019



acces_144_b_1_cat

acces_369_a_1_cat



acces_202_a_1_x_cat

Shaft guide for external operation

Use

To guide the shaft extension into the external handle.

Required for a shaft length over 320 mm.

This accessory enables the handle to engage the extension shaft with a misalignment of up to 15 mm.

Description	Reference
Shaft guide	1429 0000



acces_260_a_2_cat

S-type handle adapter

Use

Enables S-type handles to be fitted in place of existing older style Socomec handles. Adapter can also be utilised as a spacer to increase the distance between the panel door and the handle lever.

Dimensions

Adds 12 mm to the depth of the handle.

Handle colour	External IP ⁽¹⁾	To be ordered in multiples of	Reference
Black	IP65	1	1493 0000

(1) IP: protection degree according to IEC 60529 standard.



acces_187_a_1_cat

Alternative S-type handle cover colours

Use

For single lever handles type S1, S2, S3.

Other colours: Please consult us.

Handle colour	Handle type	To be ordered in multiples of	Reference
Light grey	S1, S2, S3	50	1401 0001
Dark grey	S1, S2, S3	50	1401 0011
Light grey	S4	50	1401 0031
Dark grey	S4	50	1401 0041



acces_198_a_1_cat

Auxiliary contact

Use

Pre-break and signalling of positions 0 and I:

- 1 to 2 NO/NC auxiliary contacts,
- 1 to 4 NO + NC auxiliary contacts,
- 1 to 2 low level NO/NC auxiliary contacts.

Characteristics

NO/NC AC: IP2 with front operation.

Connection to the control circuit

By 6.35 mm fast-on terminal.

Electrical characteristics

30 000 operations.

NO/NC changeover auxiliary contacts

Frame size	Position AC	Type	Reference
B4 ... B8	1 contact	NO/NC	2699 0031
B4 ... B8	2 contacts	NO/NC	2699 0032
B4 _{DS} ... B7 _{DS}	1 contact	NO/NC	2699 0061
B4 _{DS} ... B7 _{DS}	2 contacts	NO/NC	2699 0062

Low level NO/NC auxiliary contacts

Frame size	Position AC	Type	Reference
B4 ... B7	1 contact	NO/NC	2699 0301
B4 ... B7	2 contacts	NO/NC	2699 0302

NO+NC contact

Frame size	Position AC	Type	Reference
B4 ... B7	1 contact	NO + NC	2699 0061
B4 ... B7	2 contacts	NO + NC	2699 0062



acces_076_a_1_cat

Terminal screen

Use

Top and bottom protection against direct contact with terminals or connection parts.

Frame size	No. of poles	Position	Pack	Reference
B4	2 P	Top or bottom	1 unit	2698 3020
B4	4 P	Top or bottom	1 unit	2698 4020
B5	3 P	Top or bottom	1 unit	2698 3050
B5	4 P	Top or bottom	1 unit	2698 4050
B6	4 P	Top or bottom	1 unit	2698 4080
B7	4 P	Top or bottom	1 unit	2698 4120
B8	4 P	Top or bottom	1 unit	2698 4200
B4 _{DS}	2 P	Top or bottom	1 unit	1509 3025
B5 _{DS}	6 P	Top and bottom	2 units	1509 3063
B5 _{DS}	8 P	Top and bottom	2 units	1509 4063
B6 _{DS}	8 P	Top and bottom	2 units	1509 4080
B7 _{DS}	8P	Top and bottom	2 units	2698 4199



acces_079_a_1_cat

SIRCO PV IEC 60947-3

Load break switches for photovoltaic applications

from 100 to 3200 A, up to 1500 VDC

Accessories (continued)

Bridging bars for connecting poles in series

Use

The bridging bars will make easy the connection of the poles in series, allowing the following configurations⁽¹⁾.

(1) Other connections: refer to mounting instructions.

1000 VDC

Frame size	Rating (A)	Quantity to be ordered to connect 2 poles in series	Fig.	Reference
1 PV circuit				
B4	100	_(1)	-	_(1)
B4	160	_(1)	-	_(1)
B4	250	_(1)	-	_(1)
B4	315	_(1)	-	_(1)
B4	400	2	1	2609 0025
B4	500	2	1	2609 0025
B5	630	1	2	2609 0080
B5	800	1	2	2609 0080
B6	1250	1	3	2609 1100
B7	2000	1	3	2609 1200
B8	3200			Consult us
2 PV circuits				
B4 _{DS}	100	_(1)	-	_(1)
B4 _{DS}	160	_(1)	-	_(1)
B4 _{DS}	250	_(1)	-	_(1)
B4 _{DS}	315	_(1)	-	_(1)
B5	400	1	4	2709 0045
B5	500	1	4	2709 0045
B5 _{DS}	630	1	2	2609 0080
B6 _{DS}	800	1	3	2609 1100
B6 _{DS}	1250	1	3	2609 1100
B7 _{DS}	2000	1	3	2609 1200
4 PV circuits				
B5 _{DS}	500	1	4	2709 0045

1500 VDC

Frame size	Rating (A)	Quantity to be ordered to connect 2 poles in series	Fig.	Reference
1 PV circuit				
B5	275	1	5	2709 0027
B5	315	1	5	2709 0027
B5	400	1	4	2709 0045
B5	500	1	4	2709 0045
B5 _{DS}	630	1	2	2609 0080
B6 _{DS}	800	1	3	2609 1100
B6 _{DS}	1250	1	3	2609 1100
B7 _{DS}	2000	1	3	2609 1200
2 PV circuits				
B5 _{DS}	275	1	5	2709 0027
B5 _{DS}	400	1	4	2709 0045
B5 _{DS}	500	1	4	2709 0045

(1) Bridging bars not needed.

Bridging bars for connecting poles in series (continued)

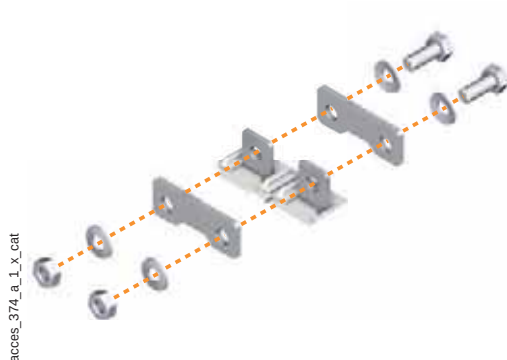


Fig. 1

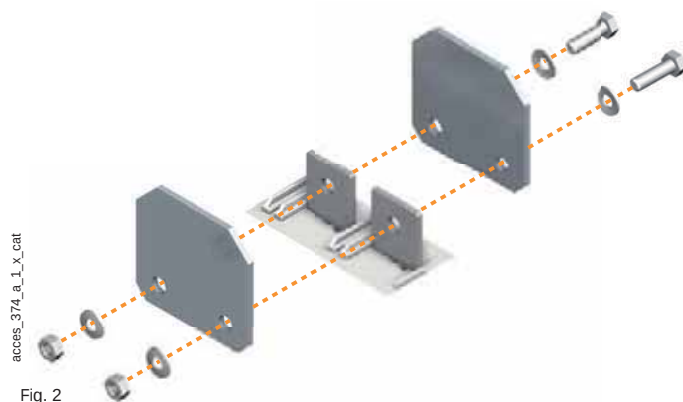


Fig. 2

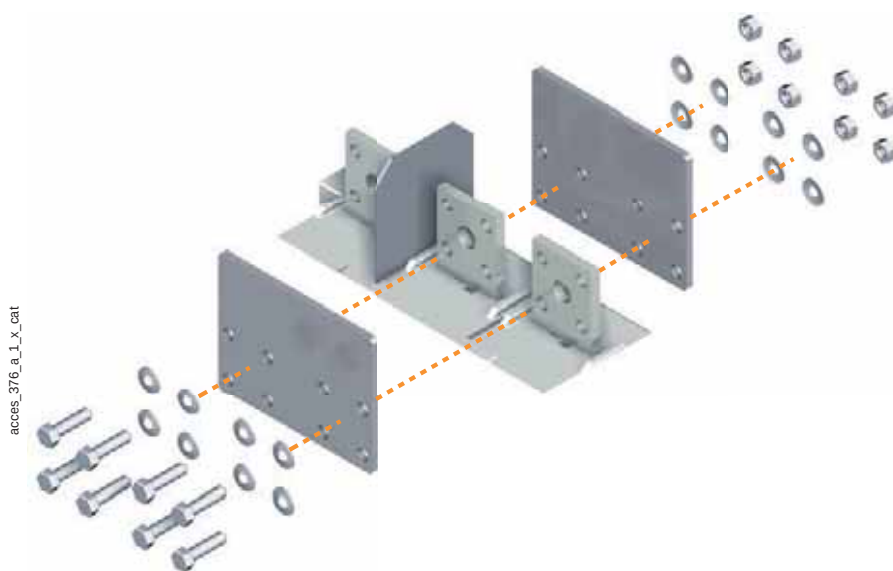


Fig. 3

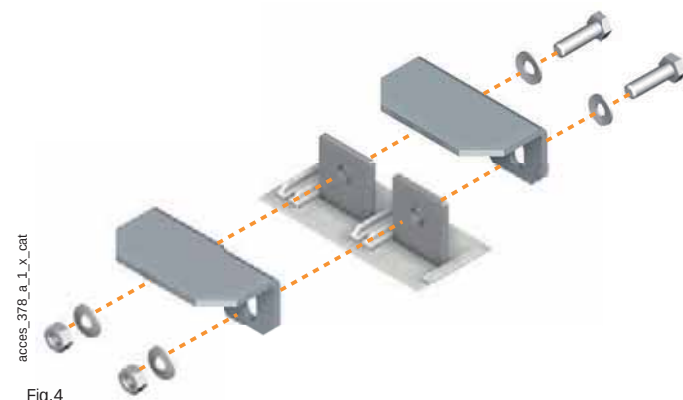


Fig. 4

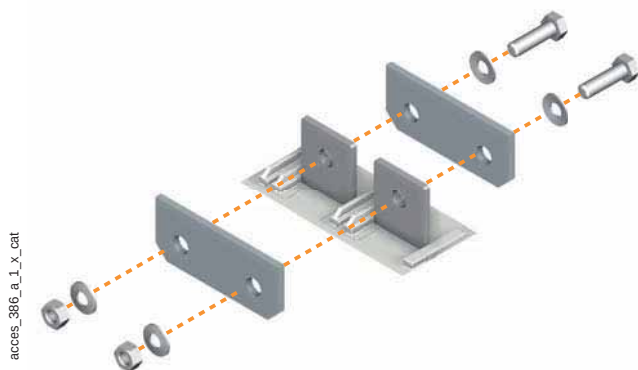


Fig. 5

Characteristics

Characteristics according to IEC 60947-3

Rated current In			100 A			160 A		
Thermal current at 40°C (A)			100			160		
Thermal current at 50°C (A)			100			160		
Thermal current at 60°C (A)			100			160		
Rated insulation voltage U_i (V)			1500			1500		
Rated impulse withstand voltage U_{imp} (kV)			12			12		

Number of circuits	Rated voltage	Utilisation category	I_e (A)	Number of pole(s) in series per circuit	Number of pole(s) of the device	Frame size	I_e (A)	Number of pole(s) in series per circuit	Number of pole(s) of the device	Frame size
1 circuit	1000 VDC	DC-21 B	100	1 P + ; 1 P	2 P	B4	160	1 P + ; 1 P	2 P	B4
1 circuit	1500 VDC	DC-21 B	100	3 P + ; 1 P -	4 P	B4 _{DS}	160	3 P + ; 1 P	4 P	B4 _{DS}
2 circuits	1000 VDC	DC-21 B	100	1 P + ; 1 P	4 P	B4 _{DS}	160	1 P + ; 1 P	4 P	B4 _{DS}

Short-circuit capacity (without protection)

Rated short-time withstand current 0.3 s. (kA eff)	10	10
Rated short-time withstand current 1 s. (kA eff)	5	5

Connection

Maximum Cu rigid cable cross-section (mm²)	35	70
Maximum Cu busbar width (mm)	32	32
Tightening torque min (Nm)	20	20
Tightening torque max (Nm)	26	26

Mechanical characteristics

Durability (number of operating cycles)	10 000	10 000
Operating effort (Nm)	10	10
Weight of a 2 pole device (kg)	1.8	1.8
Weight of a 4 pole device (kg)	4.3	4.3

Rated current In			250 A			275 A		
Thermal current at 40°C (A)			250			275		
Thermal current at 50°C (A)			250			275		
Thermal current at 60°C (A)			250			275		
Rated insulation voltage U_i (V)			1500			1500		
Rated impulse withstand voltage U_{imp} (kV)			12			12		

Number of circuits	Rated voltage	Utilisation category	I_e (A)	Number of pole(s) in series per circuit	Number of pole(s) of the device	Frame size	I_e (A)	Number of pole(s) in series per circuit	Number of pole(s) of the device	Frame size
1 circuit	1000 VDC	DC-21 B	250	1 P + ; 1 P	2 P	B4	275	1 P + ; 1 P -	3 P	B5
1 circuit	1500 VDC	DC-21 B	250	3 P + ; 1 P	4 P	B4 _{DS}	275	2 P + ; 1 P -	3 P	B5
2 circuits	1000 VDC	DC-21 B	250	1 P + ; 1 P -	4 P	B4 _{DS}	275	1 P + ; 1 P -	6 P	B5 _{DS}
2 circuits	1500 VDC	DC-21 B	-	-	-	-	275	2 P + ; 1 P -	6 P	B5 _{DS}
4 circuits	1000 VDC	DC-21 B	-	-	-	-	275	1 P + ; 1 P -	8 P	B5 _{DS}

Short-circuit capacity (without protection)

Rated short-time withstand current 0.3 s. (kA eff)	10	10
Rated short-time withstand current 1 s. (kA eff)	5	5

Connection

Maximum Cu rigid cable cross-section (mm²)	120	185
Maximum Cu busbar width (mm)	32	32
Tightening torque min (Nm)	20	20
Tightening torque max (Nm)	26	26

Mechanical characteristics

Durability (number of operating cycles)	10 000	10 000
Operating effort (Nm)	10	10
Weight of a 2 pole device (kg)	1.8	-
Weight of a 3 pole device (kg)	-	6
Weight of a 4 pole device (kg)	4.3	-
Weight of a 6 pole device (kg)	-	12.3
Weight of an 8 pole device (kg)	-	15

Characteristics according to IEC 60947-3 (continued)

Rated current In			315 A				400 A			
Thermal current at 40°C (A)			315				400			
Thermal current at 50°C (A)			315				400			
Thermal current at 60°C (A)			315				400			
Rated insulation voltage U _i (V)			1500				1500			
Rated impulse withstand voltage U _{imp} (kV)			12				12			
Number of circuits	Rated voltage	Utilisation category	I _e (A)	Number of pole(s) in series per circuit	Number of pole(s) of the device	Frame size	I _e (A)	Number of pole(s) in series per circuit	Number of pole(s) of the device	Frame size
1 circuit	1000 VDC	DC-21 B	315	1 P + ; 1 P -	2 P	B4	400	2 P + ; 2 P -	4 P	B4
1 circuit	1500 VDC	DC-21 B	315	2 P + ; 1 P -	3 P	B5	400	2 P + ; 1 P -	3 P	B5
2 circuits	1000 VDC	DC-21 B	315	1 P + ; 1 P -	4 P	B4 _{DS}	400	1 P + ; 1 P -	4 P	B5
2 circuits	1500 VDC	DC-21 B	-	-	-	-	400	2 P + ; 1 P -	6 P	B5 _{DS}
4 circuits	1000 VDC	DC-21 B	-	-	-	-	400	1 P + ; 1 P -	8 P	B5 _{DS}

Short-circuit capacity (without protection)

Rated short-time withstand current 0.3 s. (kA eff)	10	-
Rated short-time withstand current 1 s. (kA eff)	5	10
Rated peak withstand current (kA peak) ⁽¹⁾	30	30

Connection

Maximum Cu rigid cable cross-section (mm ²)	185	240
Maximum Cu busbar width (mm)	32	32
Tightening torque min (Nm)	20	20
Tightening torque max (Nm)	26	26

Mechanical characteristics

Durability (number of operating cycles)	10 000	5 000
Operating effort (Nm)	10	10
Weight of a 2 pole device (kg)	1.8	-
Weight of a 3 pole device (kg)	6	6 (B4) / 3.8 (B5)
Weight of a 4 pole device (kg)	4.3	2.3
Weight of a 6 pole device (kg)	-	12.3
Weight of an 8 pole device (kg)	-	15

(1) For a rated operational voltage U_e = 400 VAC.

Rated current In			500 A				630 A			
Thermal current at 40°C (A)			500				630			
Thermal current at 40°C (A)			500				630			
Thermal current at 60°C (A)			B4: 475 / B5: 500				560			
Rated insulation voltage U _i (V)			1500				1500			
Rated impulse withstand voltage U _{imp} (kV)			12				12			
Number of circuits	Rated voltage	Utilisation category	I _e (A)	Number of pole(s) in series per circuit	Number of pole(s) of the device	Frame size	I _e (A)	Number of pole(s) in series per circuit	Number of pole(s) of the device	Frame size
1 circuit	1000 VDC	DC-21 B	500	2 P + ; 2 P -	4 P	B5	630	2 P + ; 2 P -	4 P	B5
1 circuit	1500 VDC	DC-21 B	500	2 P + ; 1 P -	3 P	B5	630	4 P + ; 4 P -	8 P	B5 _{DS}
2 circuits	1000 VDC	DC-21 B	500	1 P + ; 1 P -	4 P	B5	630	2 P + ; 2 P -	8 P	B5 _{DS}
2 circuits	1500 VDC	DC-21 B	500	2 P + ; 1 P -	6 P	B5 _{DS}	-	-	-	-
4 circuits	1000 VDC	DC-21 B	500	1 P + ; 1 P -	8 P	B5 _{DS}	-	-	-	-

Short-circuit capacity (without protection)

Rated short-time withstand current 1 s. (kA eff)	10	10
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Connection

Maximum Cu rigid cable cross-section (mm ²)	2x150	2x185
Maximum Cu busbar width (mm)	32	40
Tightening torque min (Nm)	20	40
Tightening torque max (Nm)	26	40

Mechanical characteristics

Durability (number of operating cycles)	5 000	5 000
Operating effort (Nm)	10	14.5
Weight of a 3 pole device (kg)	6 (B4) / 3.8 (B5)	-
Weight of a 4 pole device (kg)	2.3	3.8
Weight of a 6 pole device (kg)	12.3	-
Weight of an 8 pole device (kg)	15	15

(1) For a rated operational voltage U_e = 400 VAC.

Characteristics (continued)

Characteristics according to IEC 60947-3 (continued)

Rated current In			800 A			1250 A		
Thermal current at 40°C (A)			800			1250		
Thermal current at 50°C (A)			800			1250		
Thermal current at 60°C (A)			B5: 650 / B6: 800			1125		
Rated insulation voltage U_i (V)			1500			1500		
Rated impulse withstand voltage U_{imp} (kV)			12			12		

Number of circuits	Rated voltage	Utilisation category	I_e (A)	Number of pole(s) in series per circuit	Number of pole(s) of the device	Frame size	I_e (A)	Number of pole(s) in series per circuit	Number of pole(s) of the device	Frame size
1 circuit	1000 VDC	DC-21 B	800	2 P + ; 2 P -	4 P	B5	1250 A	2 P + ; 2 P -	4 P	B6
1 circuit	1500 VDC	DC-21 B	800	4 P + ; 4 P -	8 P	B6 _{DS}	1250 A	4 P + ; 4 P -	8 P	B6 _{DS}
2 circuits	1000 VDC	DC-21 B	800	2 P + ; 2 P -	8 P	B6 _{DS}	1250 A	2 P + ; 2 P -	8 P	B6 _{DS}

Short-circuit capacity (without protection)

Rated short-time withstand current 1 s. (kA eff)	10	10
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Connection

Maximum Cu rigid cable cross-section (mm²)	2x240	2x240
Maximum Cu busbar width (mm)	50	63
Tightening torque min (Nm)	40	40
Tightening torque max (Nm)	45	45

Mechanical characteristics

Durability (number of operating cycles)	5 000	4 000
Operating effort (Nm)	14.5	37
Weight of a 4 pole device (kg)	3.8	3.8
Weight of an 8 pole device (kg)	15	15

Rated current In			2000 A			3200 A		
Thermal current at 40°C (A)			2000			3200		
Thermal current at 50°C (A)			1850			3200		
Thermal current at 60°C (A)			1600			2700		
Rated insulation voltage U_i (V)			1500					
Rated impulse withstand voltage U_{imp} (kV)			12					

Number of circuits	Rated voltage	Utilisation category	I_e (A)	Number of pole(s) in series per circuit	Number of pole(s) of the device	Frame size	I_e (A)	Number of pole(s) in series per circuit	Number of pole(s) of the device	Frame size
1 circuit	1000 VDC	DC-21 B	2000 A	2 P + ; 2 P -	4 P	B7	3200 A	2 P + ; 2 P -	4 P	B8
1 circuit	1500 VDC	DC-21 B	2000 A	4 P + ; 4 P -	8 P	B7 _{DS}	-	-	-	-
2 circuits	1000 VDC	DC-21 B	2000 A	2 P + ; 2 P -	8 P	B7 _{DS}	-	-	-	-

Short-circuit capacity (without protection)

Rated short-time withstand current 1 s. (kA eff)	10	10
--	----	----

Connection

Maximum Cu busbar width (mm)	100	4 x 100 x 5
Tightening torque min (Nm)	40	40
Tightening torque max (Nm)	45	45

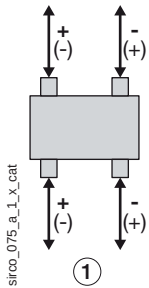
Mechanical characteristics

Durability (number of operating cycles)	4000	2000
Operating effort (Nm)	56	75
Weight of a 4 pole device (kg)	22	25
Weight of an 8 pole device (kg)	50	-

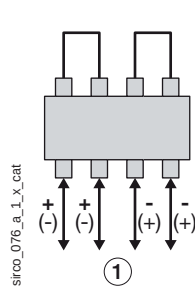
Pole connections in series

1 PV circuit - 1000 VDC

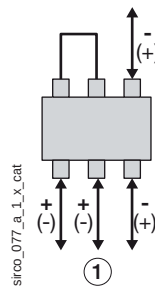
B4 - 2P



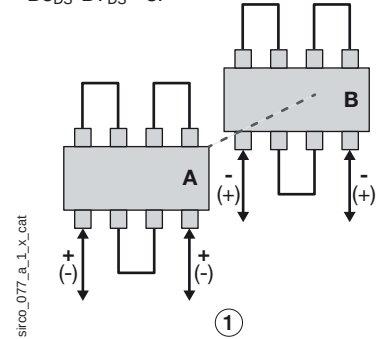
B4-B8 - 4P



B5 - 3P

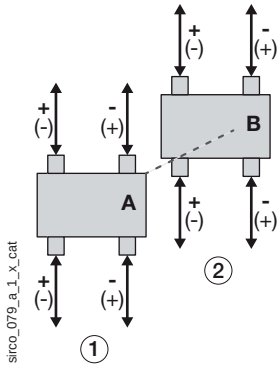


B5_{DS}-B7_{DS} - 8P

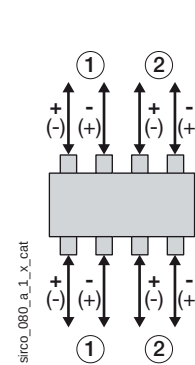


2 PV circuits - 1000 VDC

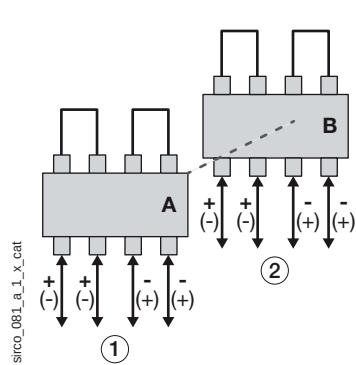
B4_{DS} - 4P



B5 - 4P

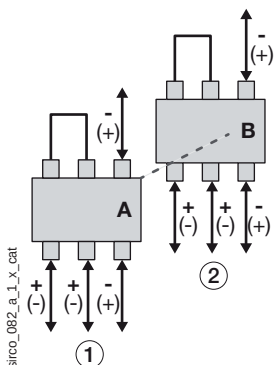


B5_{DS}-B7_{DS} - 8P



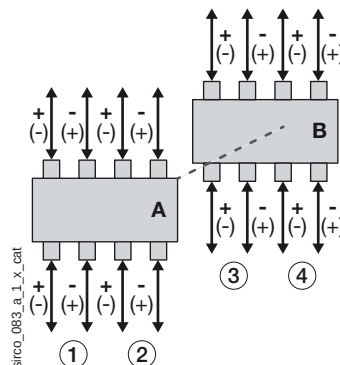
2 PV circuits - 1500 VDC

B5_{DS} - 6P



4 PV circuits - 1000 VDC

B5_{DS} - 8P



A. Front switch.
B. Rear switch.

1. Utility 1
2. Utility 2

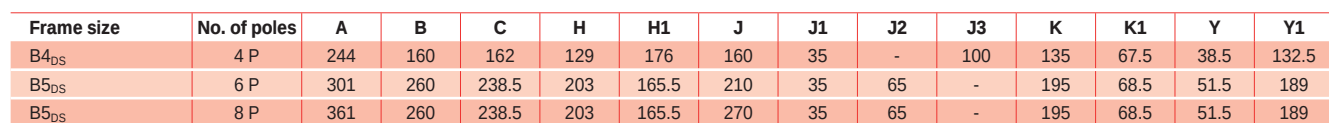
3. Utility 3
4. Utility 4

from 100 to 3200 A, up to 1500 VDC

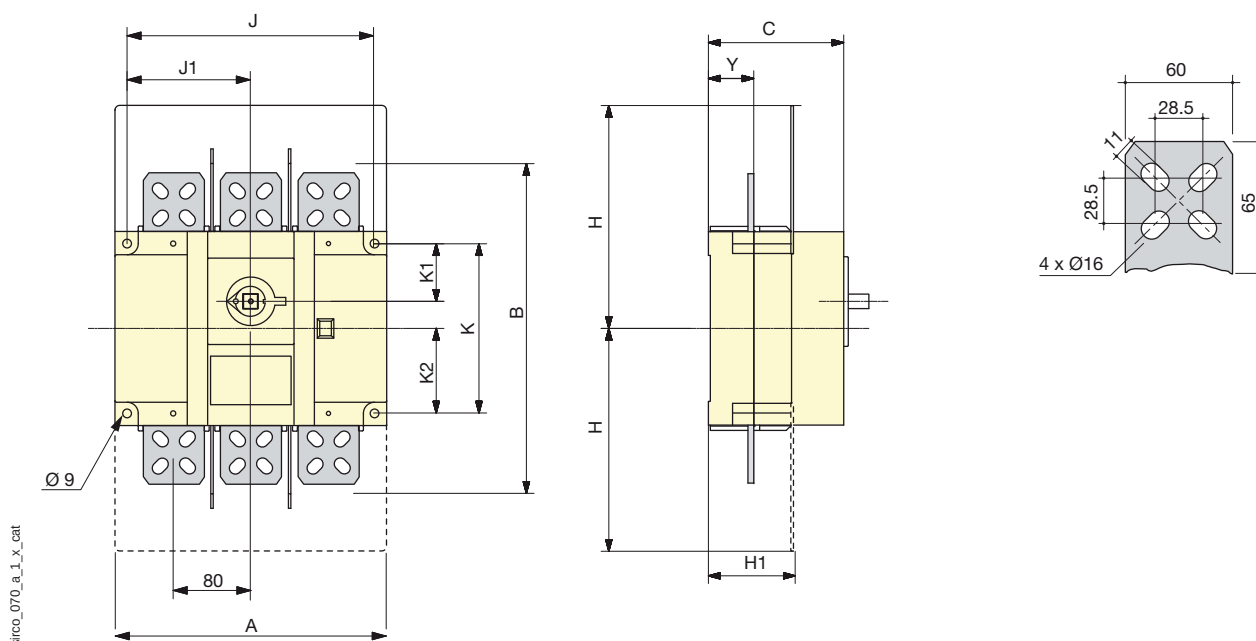
B4 - B5



B4_{DS} - B5_{DS}

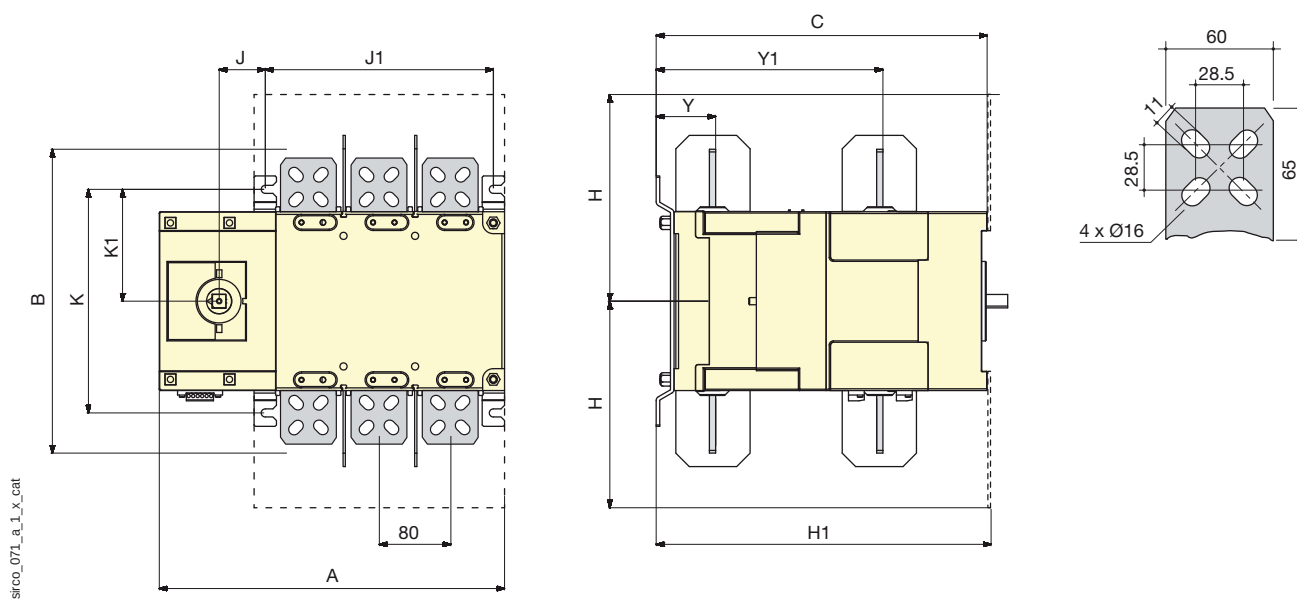


B6



Frame size	No. of poles	A	B	C	H	H1	J	J1	K	K1	K2	Y
B6	4 P	630	340	139	270	145	335	167.5	175	59.5	28	46.5

B6_{DS}



Frame size	No. of poles	A	B	C	H	H1	J	J1	K	K1	Y	Y1
B6 _{ds}	8 P	466	340	370	270	347	335	51.5	250	125	66.5	253.5

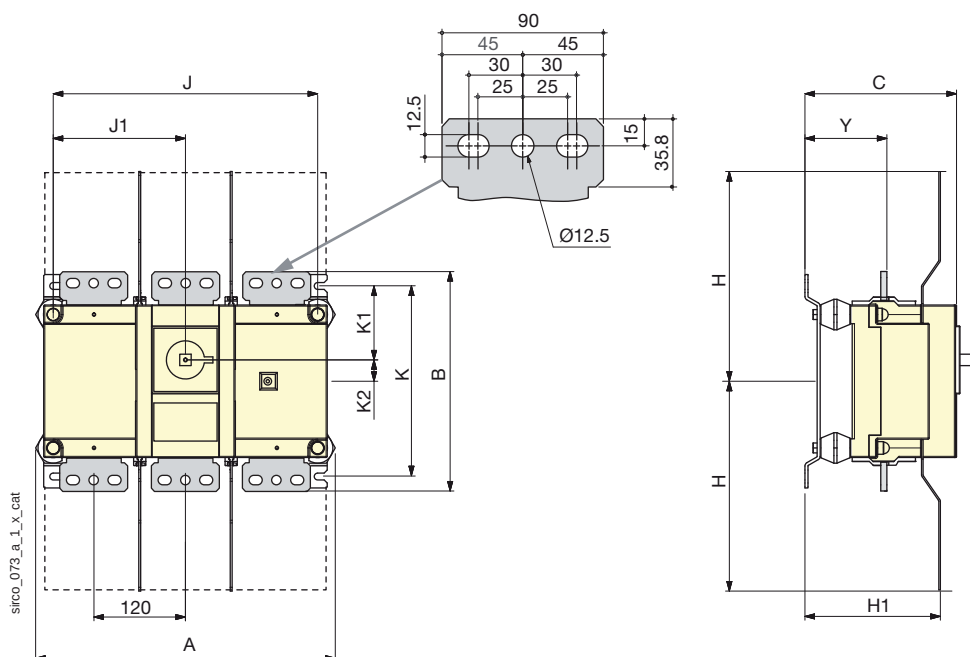
SIRCO PV IEC 60947-3

Load break switches for photovoltaic applications

from 100 to 3200 A, up to 1500 VDC

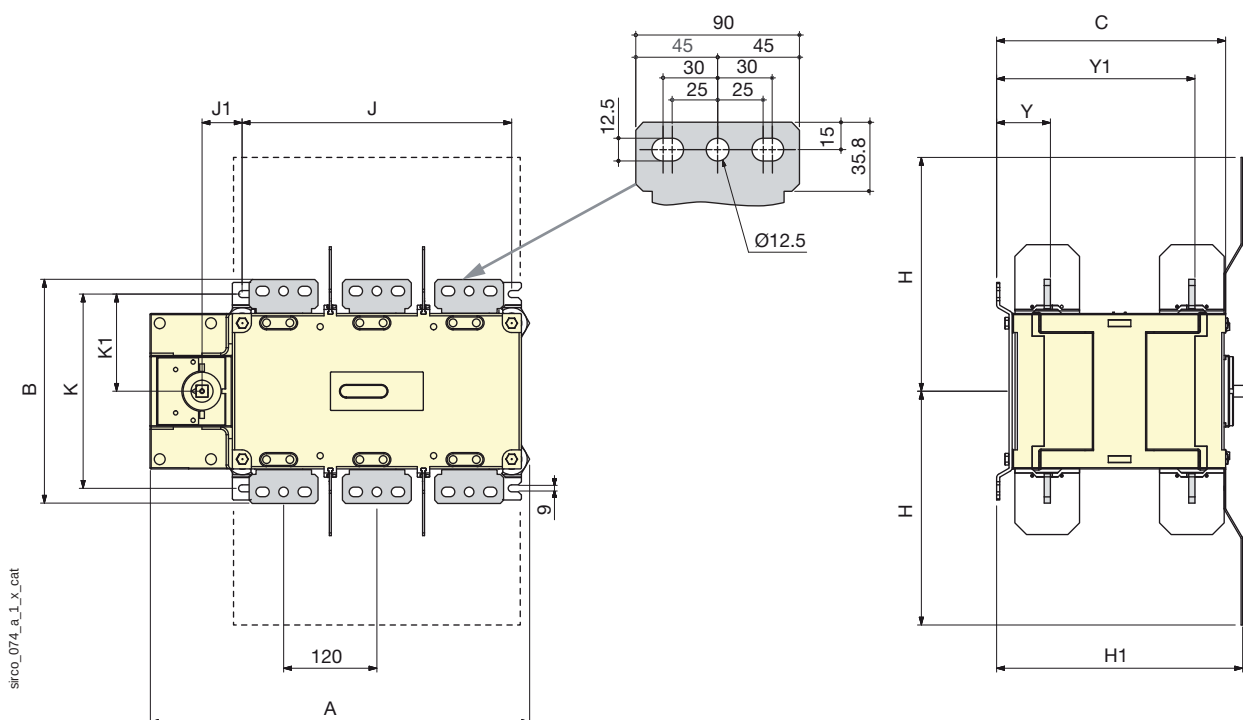
Dimensions (mm) (continued)

B7



Frame size	No. of poles	A	B	C	H	H1	H2	J	J1	K	K1	K2	Y
B7	4 P	513	288	200	302	211	203.5	467	233.5	250	97	28	107.5

B7_{DS}

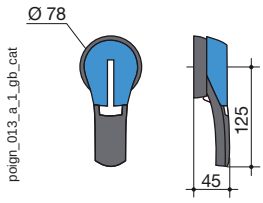
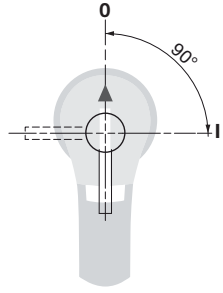
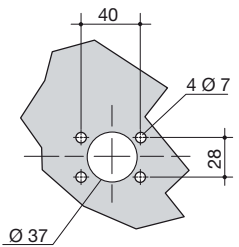


Frame size	No. of poles	A	B	C	H	H1	J	J1	K	K1	Y	Y1
B7 _{DS}	8 P	608.5	288	333	301	389	467	51.5	250	125	107.5	293.5

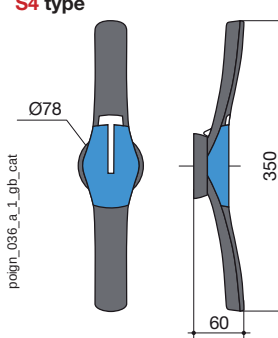
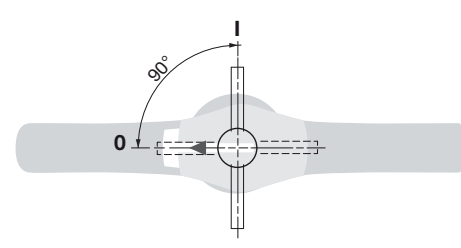
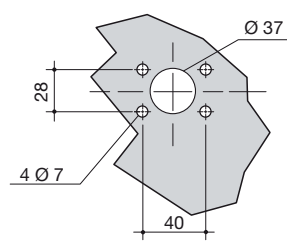
Dimensions of SIRCO PV 3200A - 1000 VDC - B8, please consult us.

Dimensions for external handles (mm)

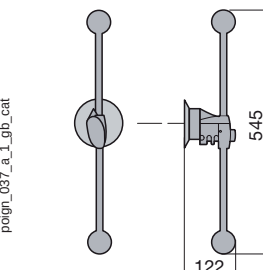
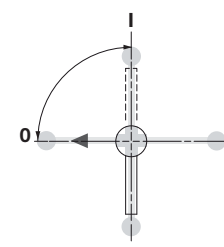
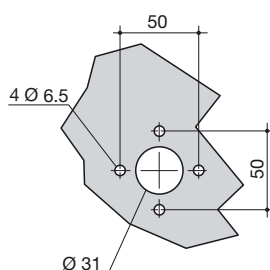
B4 - B4_{DS} - B5

Handle type	Front operation Direction of operation	Door drilling
S2 type 		

B5_{DS} - B6 - B7

Handle type	Front operation Direction of operation	Door drilling
S4 type 		

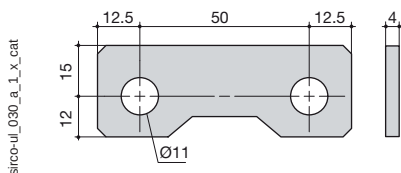
B8 - B6_{DS} - B7_{DS}

Handle type	Front operation Direction of operation	Door drilling
V1 type 		

Bridging bars (mm)

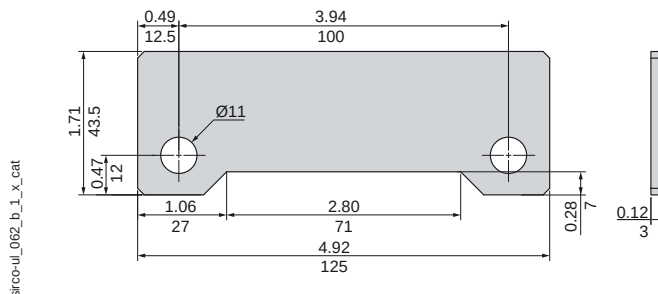
B4

2609 0025



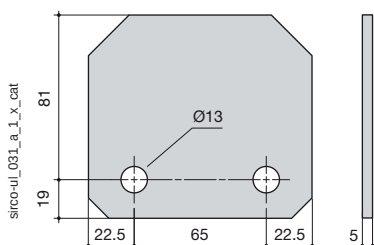
B5 - B5_{DS}

2709 0045

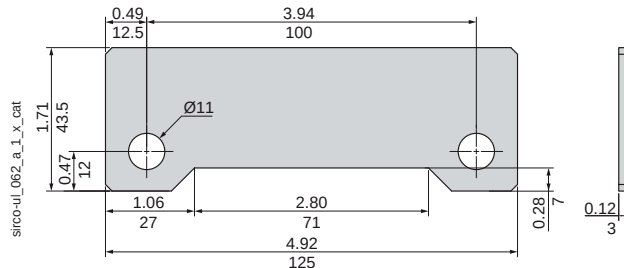


B5

2609 0080

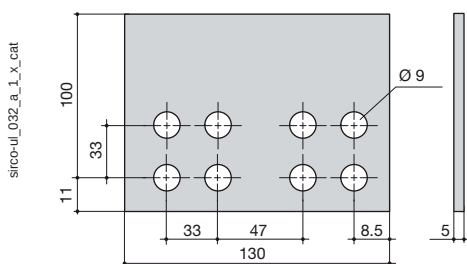


2709 0027



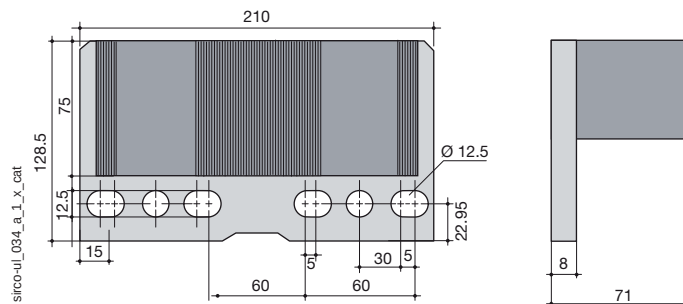
B6

2609 1100



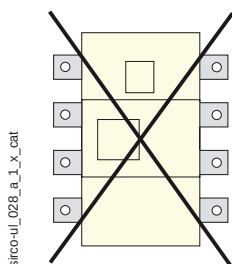
B7

2609 1200

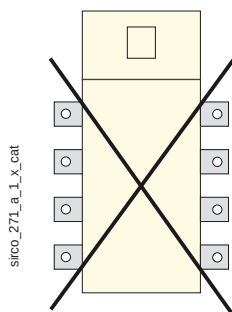


Mounting orientation

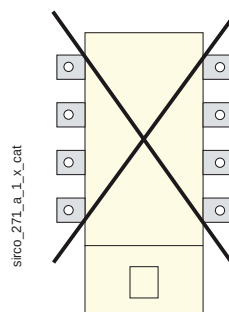
All frames



B4_{DS} - B5_{DS}



B6_{DS} - B7_{DS}





INOSYS LBS

Load Break Switches for DC & PV applications

from 160 to 1250 A, up to 1500 VDC incorporating tripping function

Load break switches

new



INOSYS LBS
2-poles

inosy_056_a.psd



INOSYS LBS
3-poles with tripping function

inosy_002_a.eps

The solution for

- > Disconnection within PV installation
- > Battery protection
- > Rapid shutdown for firefighter safety
- > Isolation of DC processes

Strong points

- > High-performance switching in a compact frame
- > Safe & reliable operation
- > Tripping function
- > Easy to install
- > Modular solution

Conformity to standards

- > IEC 60947-3
- > UL 98B

Compatible with requirements:

- > IEC 60364-7-712
- > NEC art. 690



Function

INOSYS LBS are multi-polar load break switches which are available with integrated tripping function. They can be operated manually using the handle or remotely (via tripping coils) to disconnect part or all of the electrical installation.

They make and break under load conditions, provide safety isolation for any low voltage circuits up to 1500 VDC and are suitable for emergency switching.

Advantages

High-performance switching in a compact frame

INOSYS LBS switches integrate a patented technology that offers high switching capacity of 500 VDC per pole with optimum arc containment and significant power loss reduction - all within a compact device.

Safe & reliable operation

- Reliable position indication through visible contacts.
- ON, OFF and TRIP positions are stable: resistant to voltage fluctuations.
- The trip position provides complete disconnection and isolation.
- The opening and closing of the switch is fully independent from the speed of operation, ensuring safe operation under all conditions.
- High temperature withstand: no derating up to 55 °C (131° F).

Tripping function: flexible and robust

- Fully immune to external perturbation: no nuisance tripping.
- Shunt-trip or undervoltage release from 24 to 220 VDC and from 24 to 230 VAC.
- Wide operating temperature range: -25 to +70 °C (-15 to +160 °F).
- Fast disconnection (<50 ms) for rapid firefighter shutdown, compliant with installation standards.
- Compatible with virtually any Arc-Fault Detection System, including the RESYS AFD solution.

Easy to install

- Mechanism can be centred or left aligned (in the factory) to accommodate installation requirements.
- Wiring: as the switch is non-polarised all types of wiring and connections are possible.
- Easy access without tools to integrate auxiliary contacts and tripping coil (both located within the switch footprint).

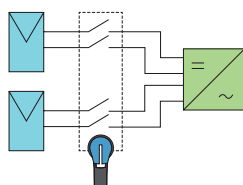
Modular solution for a flexible configuration

- Multi-circuit

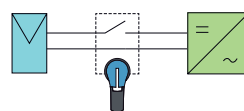
Disconnect up to three circuits with one switch: a compact and cost effective solution for recombiner and inverter applications.

- Single or dual polarity switching

The same switch can be used for installation with either grounded or floating networks by choosing the wiring configuration.

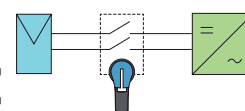


siro-mc_024_a



siro-mc_084_a

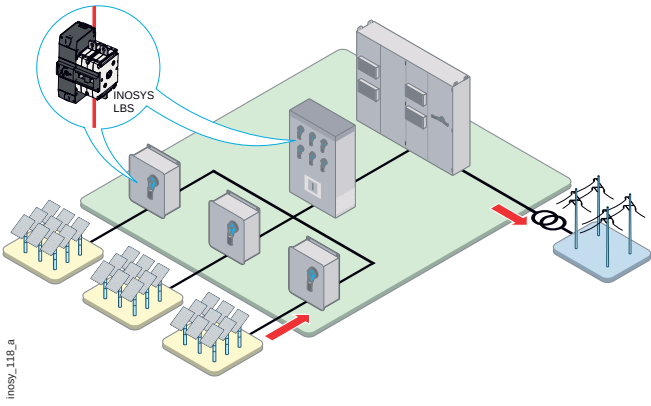
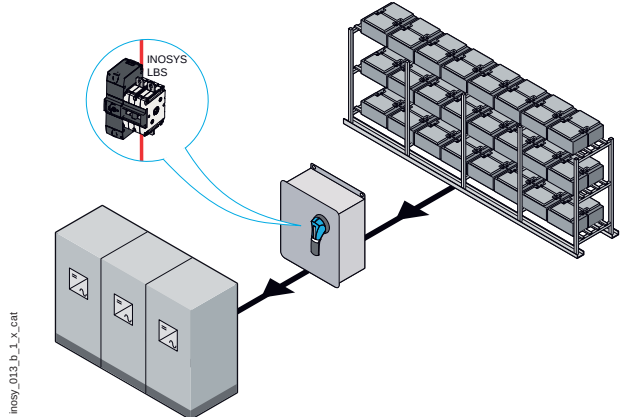
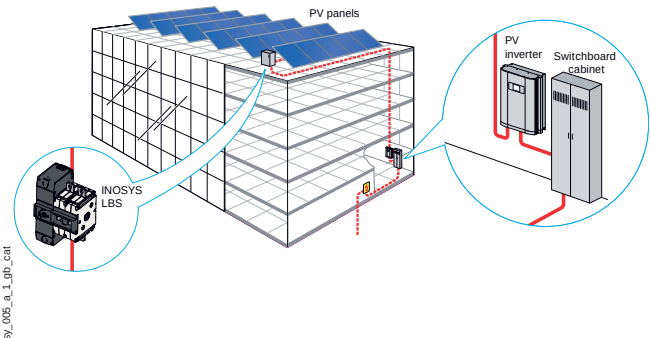
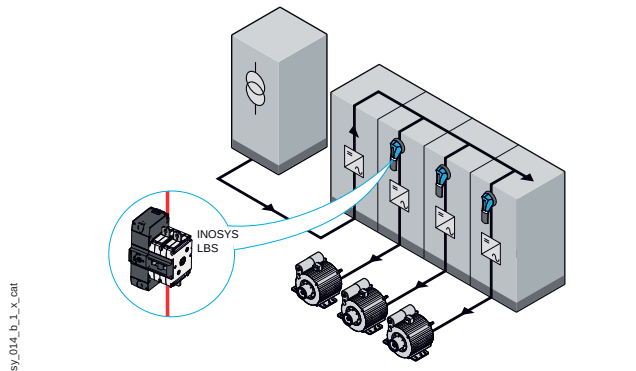
Single polarity switching



siro-mc_026_a

Dual polarity switching

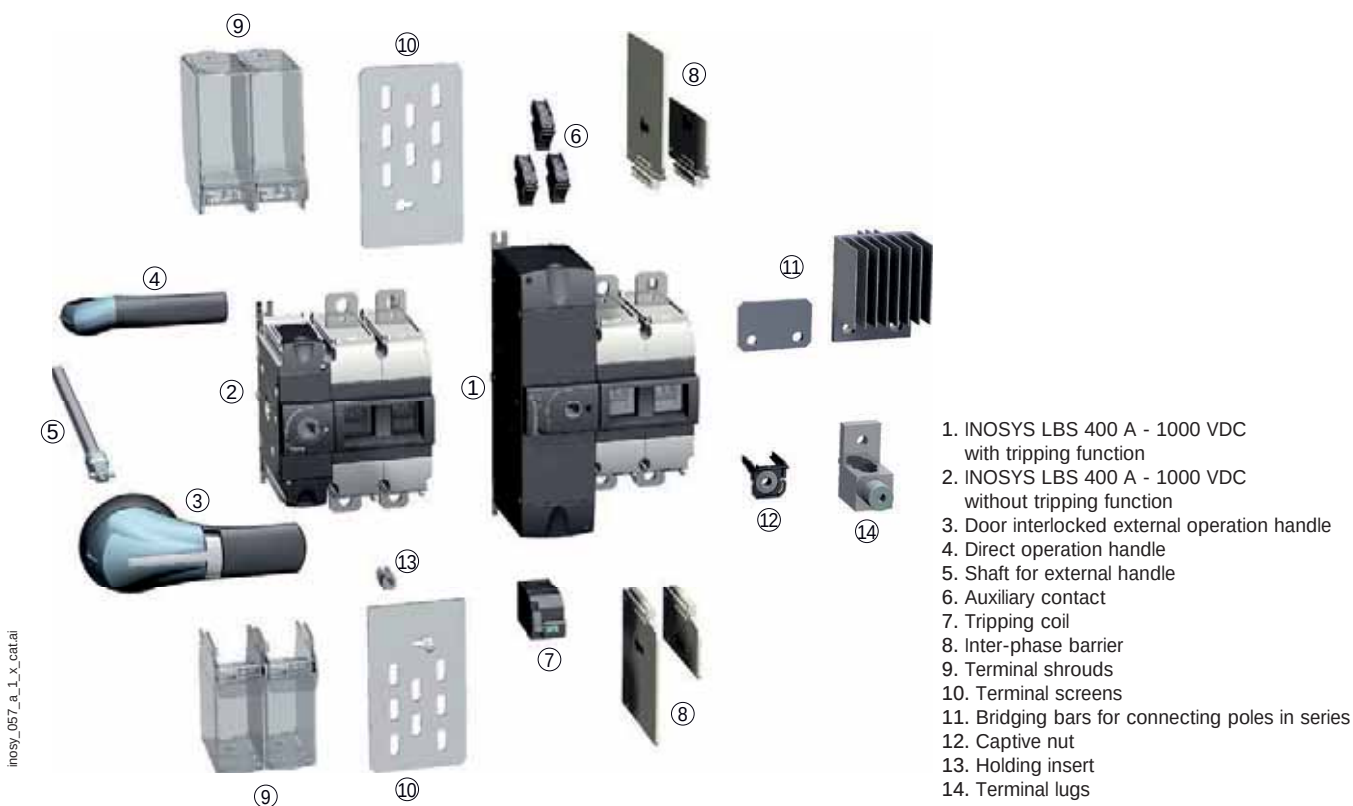
Typical applications: local and remote safe disconnection for DC and PV applications

PV installation: Combiner box, Recombiner box or Inverter  inosy_118_a	Battery protection  inosy_013_b_1_x_cat
Rapid shutdown for firefighter safety (compliant with installation standards, incl. NEC 2014)  inosy_005_a_1_gb_cat	Isolation of DC processes  inosy_014_b_1_x_cat

The SOCOMEC solutions

SIRCO PV Manual operation PV switches  up to 3200 A at 1000 VDC up to 2000 A at 1500 VDC up to 4 circuits sirco-pv_059 - 060 - 061_a	INOSYS LBS Up to 1500 VDC with visible contact indication - with or without tripping function  up to 1250 A at 1000 VDC up to 800 A at 1500 VDC up to 2 circuits inosy_001 - 002 - 056_a
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Overview



References

1000 VDC - 1 circuit

Rating (A)	Frame size	No. of poles per circuit	Switch with tripping function			Switch without tripping function		Other compatible accessories	
			Switch body ⁽³⁾	External operation	Tripping coil	Switch body ⁽³⁾	External operation	Aux. Contact	Bridging Bar ⁽²⁾
160 A	F2	2 P (1 P+, 1 P-)	84P1 1016	Shaft 320mm 1400 1032	Shunt trip coil 24 V AC/DC 8499 7002 48 V AC/DC 8499 7004 230 V AC/DC 8499 7023	86P1 1016	Shaft 320mm 1400 1032	NO/NC 8499 0001	
250 A	F2	2 P (1 P+, 1 P-)	84P1 1025	S2 type handle Black IP55 7421 2118		86P1 1025	S2 type handle Black IP55 1421 2111		
315 A	F2	2 P (1 P+, 1 P-)	84P1 1031	Black IP65 742F 2118		86P1 1031	Black IP65 1423 2111		
400 A	F3	2 P (1 P+, 1 P-)	84P1 1040	S2L type handle Black IP55 74A1 2118 Black IP65 74AF 2118	Undervoltage releases 48 VAC 8499 8104	86P1 1040	Shaft 320mm 1400 1032		
630 A	F3	2 P (1 P+, 1 P-)	84P1 1063		230 VAC 8499 8123 24 VDC 8499 8202 48 VDC 8499 8204	86P1 1063	S2L type handle Black IP55 14A1 2111		
800 A	F3	2 P (1 P+, 1 P-)	84P1 1080			86P1 1080	Black IP65 14A3 2111		
1000 A	2 x F3	4 P ⁽¹⁾ (2 P+ //, 2 P- //)	84P0 4099			86P0 4099			
1250 A	2 x F3	4 P ⁽¹⁾ (2 P+ //, 2 P- //)	84P0 4119			86P0 4119			

(1) Bridging bars for poles in parallel included with the switch body.

(2) For isolated networks.

(3) The switches are supplied without accessories.

References (continued)

1000 VDC - 2 circuits

Rating (A)	Frame size	No. of poles per circuit ⁽¹⁾	Switch with tripping function			Switch without tripping function		Other compatible accessories	
			Switch body ⁽³⁾	External operation	Tripping coil	Switch body ⁽³⁾	External operation	Aux. Contact	Bridging Bar ⁽²⁾
160 A	F2	2 P (1 P+, 1 P-)	84P2 2016	Shaft 320mm 1400 1032	Shunt trip coil	86P2 2016	Shaft 320mm 1400 1032	NO/NC 8499 0001	-
250 A	F2	2 P (1 P+, 1 P-)	84P2 2025	S2 type handle Black IP55 7421 2118	24 V AC/DC 8499 7002 48 V AC/DC 8499 7004	86P2 2025	S2 type handle Black IP55 1421 2111		
315 A	F2	2 P (1 P+, 1 P-)	84P2 2031	Black IP65 742F 2118	230 V AC/DC 8499 7023 Undervoltage releases	86P2 2031	Black IP65 1423 2111		
400 A	F3	2 P (1 P+, 1 P-)	84P2 2040	Shaft 320mm 1400 1032	48 VAC 8499 8104	86P2 2040	Shaft 320mm 1400 1032		
630 A	F3	2 P (1 P+, 1 P-)	84P2 2063	S2L type handle Black IP55 74A1 2118	230 VAC 8499 8123 24 VDC 8499 8202	86P2 2063	S2L type handle Black IP55 14A1 2111		
800 A	F3	2 P (1 P+, 1 P-)	84P2 2080	Black IP65 74AF 2118	48 VDC 8499 8204	86P2 2080	Black IP65 14A3 2111		

(1) 4-pole product with 2 poles per circuit - 1 P+, 1 P-.

(2) For isolated networks.

(3) The switches are supplied without accessories.

1500 VDC - 1 circuit

Rating (A)	Frame size	No. of poles per circuit	Switch with tripping function			Switch without tripping function		Other compatible accessories	
			Switch body ⁽²⁾	External operation	Tripping coil	Switch body ⁽²⁾	External operation	Aux. Contact	Bridging Bar ⁽¹⁾
160 A	F2	3 P (2 P+, 1 P-)	84P0 3016	Shaft 320mm 1400 1032	Shunt trip coil	86P0 3016	Shaft 320mm 1400 1032	NO/NC 8499 0001	8409 0016
250 A	F2	3 P (2 P+, 1 P-)	84P0 3025	S2 type handle Black IP55 7421 2118	24 V AC/DC 8499 7002 48 V AC/DC 8499 7004	86P0 3025	S2 type handle Black IP55 1421 2111		
315 A	F2	3 P (2 P+, 1 P-)	84P0 3031	Black IP65 742F 2118	230 V AC/DC 8499 7023 Undervoltage releases	86P0 3031	Black IP65 1423 2111		
400 A	F3	3 P (2 P+, 1 P-)	84P0 3040	Shaft 320mm 1400 1032	48 VAC 8499 8104	86P0 3040	Shaft 320mm 1400 1032		8409 0040
630 A	F3	3 P (2 P+, 1 P-)	84P0 3063	S2L type handle Black IP55 74A1 2118	230 VAC 8499 8123 24 VDC 8499 8202	86P0 3063	S2L type handle Black IP55 14A1 2111		
800 A	F3	3 P (2 P+, 1 P-)	84P0 3080	Black IP65 74AF 2118	48 VDC 8499 8204	86P0 3080	Black IP65 14A3 2111		

(1) For isolated networks.

(2) The switches are supplied without accessories.

Accessories

Direct operation handle

Frame size	Handle type	Handle colour	Reference
F2	E2	Black	8499 5022
F2	E2	Red	8499 5023
F3	E3	Black	8499 5032



E2 type handle

acces_400_a_1_cat

Door interlocked external operation handle

Use

Door interlocked external operation handles include an escutcheon and are padlockable. External handles must be utilised with an extension shaft.

Example of application

As the handle is interlocked in the "ON" position the operator must safely disconnect and isolate the circuit prior to accessing the panel for maintenance procedures.

Opening the door when the switch is in the "ON" position can only be done by defeating the interlocking function with the use of a dedicated tool (authorised persons only). The interlocking function is restored when the door is re-closed.



S2 type handle

acces_150_a_1_cat

For LBS with tripping function

Frame size	Handle type	Handle colour	Degree of protection	Reference
F2	S2	Black	IP55	7421 2118
F2	S2	Black	IP65	742F 2118
F2	S2	Red	IP65	742G 2118
F3	S2L ⁽¹⁾	Black	IP55	74A1 2118
F3	S2L ⁽¹⁾	Black	IP65	74AF 2118
F3	S2L ⁽¹⁾	Red	IP65	74AG 2118

(1) S2L handles have an extended grip; please refer to the dimensions section.

For LBS without tripping function

Frame size	Handle type	Handle colour	Degree of protection	Reference
F2	S2	Black	IP55	1421 2111
F2	S2	Black	IP65	1423 2111
F2	S2	Red	IP65	1424 2111
F3	S2L ⁽¹⁾	Black	IP55	14A1 2111
F3	S2L ⁽¹⁾	Black	IP65	14A3 2111
F3	S2L ⁽¹⁾	Red	IP65	14A4 2111

(1) S2L handles have an extended grip; please refer to the dimensions section.

Shaft for external handle

Frame size	Handle type	Length (mm)	Reference
F2 ... F3	S2, S2L	200	1400 1020
F2 ... F3	S2, S2L	320	1400 1032
F2 ... F3	S2, S2L	400	1400 1040

Other lengths: please consult us.



Shaft for S2 and S2L type handle

acces_401_a_1_cat

Shaft guide for external handle

Use

To guide the shaft extension into the external handle.

This accessory enables the handle to engage the extension shaft with a misalignment of up to 15 mm / 0.59 in.

Required for a shaft length over 320 mm / 12.6 in.



acces_260_a_2_cat

Description	Reference
Shaft guide	1429 0000

Alternative S-type handle cover colours

Use

For S2 and S2L type single grip handles.

Handle colour	Handle type	To be ordered in multiples of	Reference
Light grey	S2, S2L	50	1401 0001
Dark grey	S2, S2L	50	1401 0011

Other colours: please consult us.



access_198_a_1_cat

Auxiliary contact

Use

The same auxiliary contact can be used to provide position and tripping information. The function of the auxiliary contact depends on where it is mounted on the mechanism.

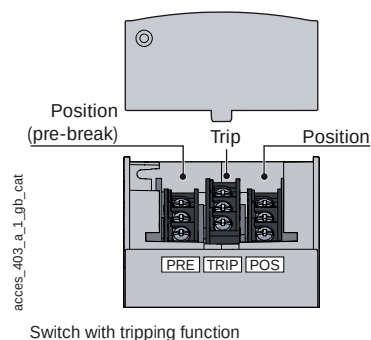
Characteristics

Changeover type: NO/NC,
IP2 with front operation.
30 000 operations.
Maximum 3 per switch.

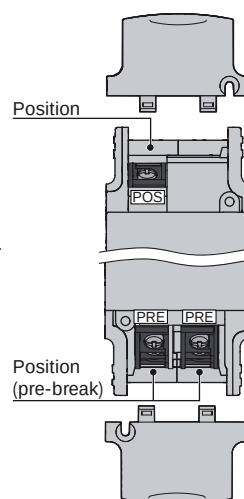
Frame size	Connection type	Type	Reference
F2 ... F3	Screw	NO/NC standard	8499 0001
F2 ... F3	Screw	NO/NC low level	8499 0002
F2 ... F3	Screw	NC > 600 V	8499 0003

Characteristics

Auxiliary contact type	Min. current (A)	I _{th} (A)	Operating current I _e (A)				
			24 VDC	48 VDC	230 VAC	440 VAC	690 VAC
Standard	12.5 mA / 24 V	16	1	0.2	4	4	-
Low level	1 mA / 4 V	16	1	0.2	2	1	-
> 600 V	10 mA / 24 V	16	1	0.2	4	4	0.5



Switch with tripping function



Switch without tripping function

access_402_a_1_cat

access_403_a_1_cat

Bridging bar for poles in series

Use

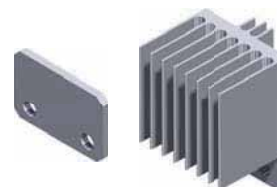
The bridging bars enable the poles to be connected in series, allowing the following configurations for 1500 VDC.

Connection diagrams, see "Pole connection in series" page 162.

Frame size	Rating (A)	Quantity to be ordered for 1500 VDC configuration	Reference
F2	160 ... 315	1 ⁽¹⁾	8409 0016 ⁽²⁾
F3	400 ... 630	1 ⁽¹⁾	8409 0040 ⁽²⁾
F3	800	1 ⁽¹⁾	8409 0063

(1) For insulated network (switching of both polarities + and -).

(2) Kit comprises 2 identical bridging bars.



access_411_a_1_cat

access_410_a_1_cat

Accessories (continued)

Tripping coil

Use

Allows remote activation of the switch's tripping mechanism. Shunt trip and undervoltage release coils are available.

Connection: 1.5 mm², push in type.

Maximum one tripping coil per switch.

Safe and easy coil replacement by using standard tools.



Shunt trip coil

aces_404_a_1_cat

Shunt trip coil

Frame size	Voltage (V)	Reference
F2 ... F3	24 V AC/DC	8499 7002
F2 ... F3	48 V AC/DC	8499 7004
F2 ... F3	110 - 127 VAC ; 110 - 125 VDC	8499 7011
F2 ... F3	230 V AC/DC	8499 7023

Other voltage ratings available, please consult us.

Undervoltage release

Frame size	Voltage (V)	Reference
F2 ... F3	48 VAC	8499 8104
F2 ... F3	110 - 120 VAC	8499 8111
F2 ... F3	230 - 240 VAC	8499 8123
F2 ... F3	24 VDC	8499 8202
F2 ... F3	48 VDC	8499 8204

Other voltage ratings available, please consult us.

Characteristics

Shunt trip coils

AC type (±10%)	24 VAC	48 VAC	110 VAC	230 VAC
Inrush consumption (A); <10ms	6.85	2.95	1.25	0.73
DC type (-5% ... +20%)	24 VDC	48 VDC	110 VDC	230 VDC
Inrush consumption (A); <10ms	7.6	3.28	1.39	0.78

Max supply time 2 s.

Undervoltage release

AC type	24 VAC	48 VAC	110 VAC	230 VAC
Max permanent consumption (VA), at 110% U _n	-	1.8	1.4	1.5
DC type	24 VDC	48 VDC	110 VDC	230 VDC
Max permanent consumption (VA), at 110% U _n	1.6	1.4	-	-

Holding: up to 85% x U_n

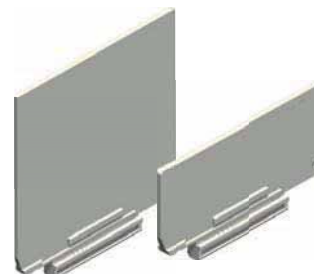
Release: < 35 to 70% x U_n

Inter-phase barrier

Use

Provides safety isolation between the terminals, essential for use at 1000 and 1500 VDC or between 2 circuits.

Frame size	Type	Pack (unit)	Reference
F2 ... F3	Short	2	8499 2202
F2 ... F3	Short	3	8499 2203
F2 ... F3	Long	2	8499 2212
F2 ... F3	Long	3	8499 2213



aces_405_a_1_cat aces_406_a_1_cat

Terminal shroud

Use

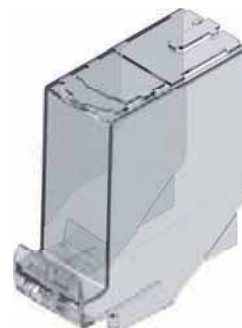
For top or bottom protection against direct contact with terminals or connection parts; provides IP4 protection and phase separation. 1 P type to cover 1 pole connection, 2 P type to cover one bridging bar.

Advantages

Perforations for thermographic inspection / voltage check without the need to remove the shrouds. Terminal shrouds can be fixed in place with a holding insert. Includes break-off tabs for precise adaptation to cables or insulated bars.

Frame size	Pack (unit)	No. of poles	Position	Reference
F2	3	1 P	Top or bottom	8499 4213 ⁽¹⁾
F2	4	1 P	Top or bottom	8499 4214 ⁽¹⁾
F2	1	2 P	Top or bottom	8499 4221 ⁽¹⁾
F3	3	1 P	Top or bottom	8499 4313 ⁽¹⁾
F3	4	1 P	Top or bottom	8499 4314 ⁽¹⁾
F3	1	2 P	Top or bottom	8499 4321

(1) Compatible with the holding insert which can be fitted to lock the shrouds in place.



access_407_a1_cat

Terminal screen

Use

Provides top and bottom protection against direct contact with terminals or connection parts.

Advantages

Perforations for thermographic inspection. Mounting requires holding inserts (supplied with the terminal screens).

Frame size	No. of poles	Position	Reference ⁽¹⁾
F2	2 P	Top and bottom	8499 3222
F2	3 P	Top and bottom	8499 3232
F2	4 P	Top and bottom	8499 3242
F3	2 P	Top and bottom	8499 3322
F3	3 P	Top and bottom	8499 3332
F3	4 P	Top and bottom	8499 3342

(1) Each reference comprises 2 terminal screens for top and bottom protection.



access_408_a1_cat

Holding insert

Use

Used to secure terminal shrouds / inter-phase barriers on the switch.

Frame size	Pack (unit)	Reference
F2 ... F3	10	8499 6220
F2 ... F3	100	8499 6221



access_409_a1_cat

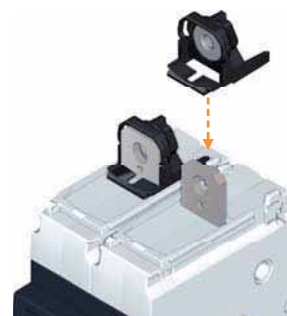
Accessories (continued)

Captive nut

Use

This accessory enables simple one-sided connection to the power terminals. It can be mounted on either side of the terminal for front or rear connection.

Frame size	Pack (unit)	Reference
F2	12	8499 6120
F2	120	8499 6121
F3	12	8499 6130
F3	120	8499 6131



acce_399_a_1_cat

Voltage tap

Use

Allows connection of voltage sensing or power cables, with fast-on connection.

Frame size	Pack (unit)	Reference
F2	12	8499 9012
F3	12	8499 9013



acce_412_a_1_cat

Characteristics

Characteristics according to IEC 60947-3

Rated current I_n			160 A	250 A	315 A	400 A	630 A	800 A	1000 A	1250 A
Frame size			F2	F2	F2	F3	F3	F3	2 x F3	2 x F3
Thermal current at 40°C (A)			160	250	315	400	630	800	1000	1250
Thermal current at 50°C (A)			160	250	315	400	630	760	1000	1250
Thermal current at 60°C (A)			160	250	315	400	630	685	1000	1250
Rated insulation voltage U_i (V)			1500	1500	1500	1500	1500	1500	1500	1500
Rated impulse withstand voltage U_{imp} (kV)			12	12	12	12	12	12	12	12
Number of circuits	Rated voltage	Utilisation category	I_e (A)	I_e (A)	I_e (A)	I_e (A)	I_e (A)	I_e (A)	I_e (A)	I_e (A)
1 circuit	1000 VDC ⁽¹⁾	DC-21 B	160	250	315	400	630	800	1000	1250
1 circuit	1000 VDC ⁽¹⁾	DC-22 B	160	250	315	400	630	800	1000	1250
1 circuit	1000 VDC ⁽¹⁾	PV-2	160	250	315	400	630	800	1000	1250
1 circuit	1500 VDC ⁽²⁾	DC-21 B	160	250	315	400	630	800	-	-
1 circuit	1500 VDC ⁽²⁾	DC-22 B	160	250	315	400	630	800	-	-
1 circuit	1500 VDC ⁽²⁾	PV-2	160	250	315	400	630	800	-	-
2 circuits	1000 VDC ⁽¹⁾	DC-21 B	160	250	315	400	630	800	-	-
2 circuits	1000 VDC ⁽¹⁾	DC-22 B	160	250	315	400	630	800	-	-
2 circuits	1000 VDC ⁽¹⁾	PV-2	160	250	315	400	630	800	-	-

Short-circuit capacity at 1000 & 1500 VDC (without protection)

Rated short-time withstand current I_{cw} 1s (kA eff.)	5	5	5	8	8	8	8	8
Rated short-circuit making capacity I_{cm} (kA peak) - 60 ms	10	10	10	10	10	10	10	10

Connection

Recommended cable cross-section (mm ²) ⁽⁴⁾	70	120	185	240	2 x 185	2 x 240	2 x 300 ⁽³⁾	2 x 400 ⁽³⁾
Recommended Cu busbar width (mm) ⁽⁴⁾	20	20	20	25	25	25	70	70

Mechanical characteristics

Durability (number of operating cycles)	15 000	15 000	15 000	10 000	10 000	10 000	8 000	8 000
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(1) 2 poles in series.

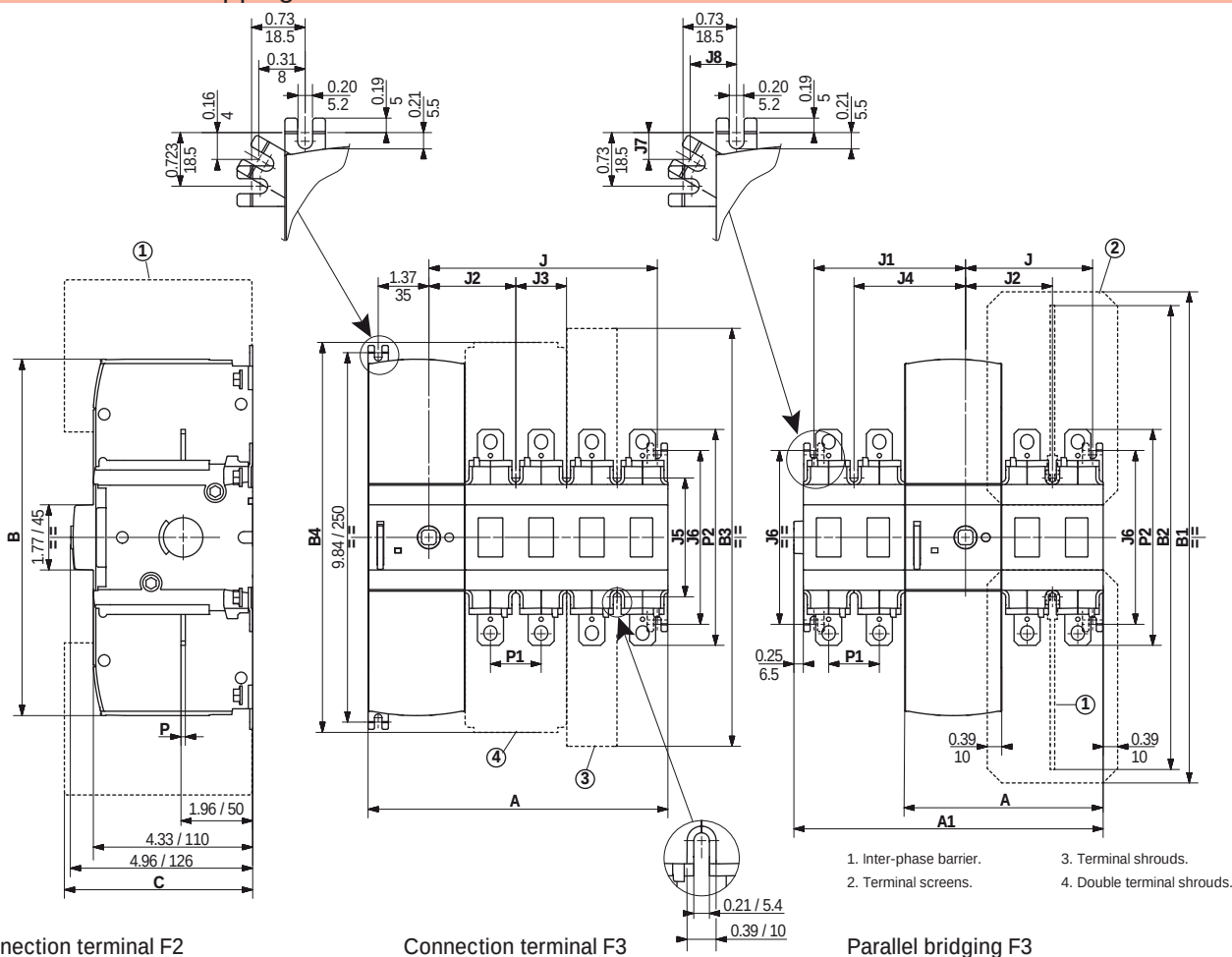
(2) 3 poles in series.

(3) Cu busbar.

(4) For aluminium connection, please consult us.

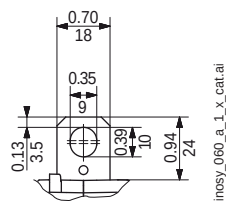
Dimensions (in/mm)

INOSYS LBS with tripping function

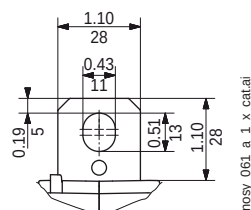


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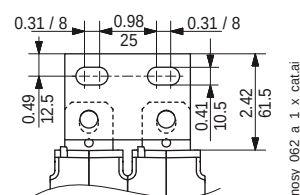
Connection terminal F2



Connection terminal F3



Parallel bridging F3

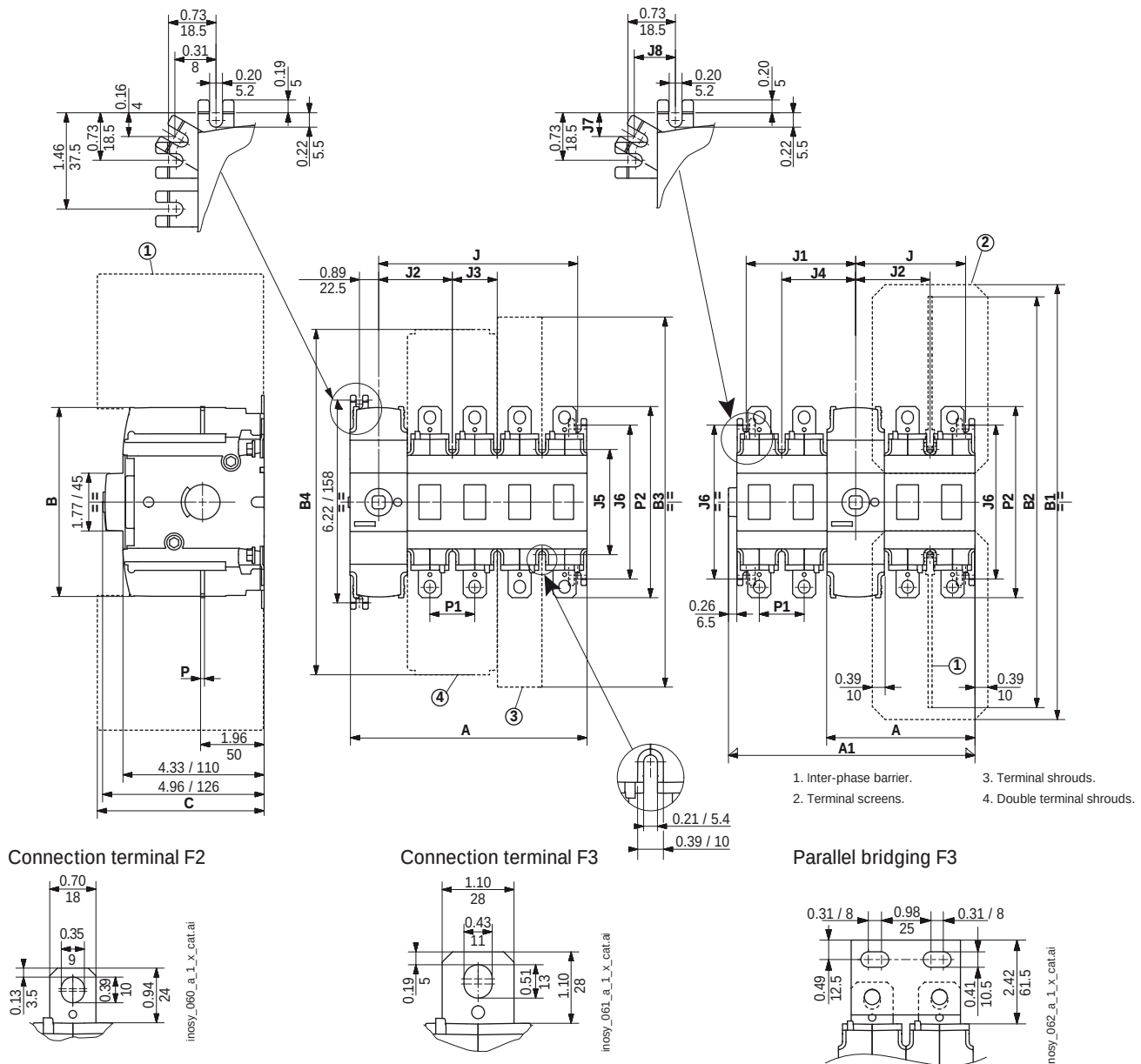


Rating (A)	Frame size	No. of poles	A			A1		J			J1	
			2 P	3 P	4 P	2+2 P		2 P	3 P	4 P	2 P	
160 ... 315	F2	in	5.39	6.77	8.15	8.15		3.45	4.83	6.21	4.12	
		mm	137	172	207	207		88	123	158	105	
400 ... 800	F3	in	6.18	9.95	9.72	9.72		4.24	6.01	7.78	4.91	
		mm	157	202	247	247		108	153	198	125	
1000 ... 1250	F3	in	-	-	9.72	-		-	-	7.78	-	
		mm	-	-	247	-		-	-	198	-	

Rating (A)	Frame size		B	B1	B2	B3	B4	C	J2	J3	J4	J5	J6	J7	J8	P	P1	P2
160 ... 315	F2	in	9.69	13.35	12.61	11.64	10.60	4.33	2.36	1.38	3.03	3.23	4.72	0.39	0.58	0.12	1.38	5.87
		mm	246	339	320	296	269	110	60	35	77	82	120	10	15	3	35	149
400 ... 800	F3	in	9.69	16.28	14.11	14.12	15.95	4.33	2.76	1.77	3.43	4.72	6.22	0.16	0.33	0.20	1.77	6.69
		mm	246	414	358	359	405	110	70	45	87	120	158	4	8	5	45	170
1000 ... 1250	F3	in	9.69	16.28	14.11	-	-	4.33	2.76	1.77	3.43	4.72	6.22	0.16	0.33	0.20	-	10.09
		mm	246	414	358	-	-	110	70	45	87	120	158	4	8	5	-	256

Dimensions (in/mm)

INOSYS LBS without tripping function

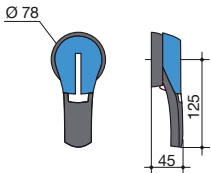
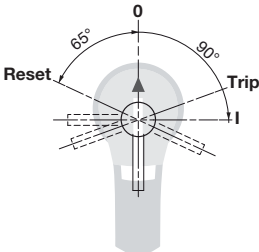
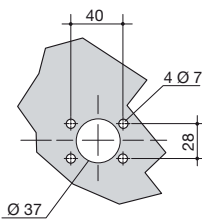
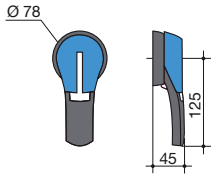
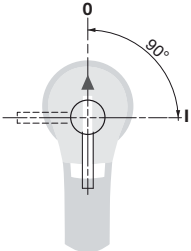
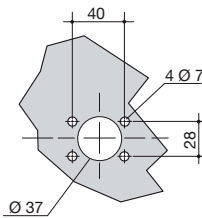


Rating (A)	Frame size	No. of poles	A			A1		J			J1	
			2 P	3 P	4 P	2+2 P	2 P	3 P	4 P	2 P	2 P	2 P
160 ... 315	F2	in	4.53	5.91	7.28	7.28	3.35	4.73	6.11	3.35		
		mm	115	150	185	185	85	120	155	85		
400 ... 800	F3	in	5.31	7.09	8.86	8.86	4.14	5.91	7.69	4.14		
		mm	135	180	225	225	105	150	195	105		
1000 ... 1250	F3	in	-	-	8.86	-	-	-	7.69	-		
		mm	-	-	225	-	-	-	195	-		

Rating (A)	Frame size		B	B1	B2	B3	B4	C	J2	J3	J4	J5	J6	J7	J8	P	P1	P2
160 ... 315	F2	in	5.91	13.35	12.61	11.64	10.60	4.33	2.26	1.38	2.26	3.23	4.72	0.39	0.58	0.12	1.38	5.87
		mm	150	339	320	296	269	110	58	35	58	82	120	10	15	3	35	149
400 ... 800	F3	in	5.91	16.28	14.11	14.12	15.95	4.33	2.66	1.77	2.66	4.72	6.22	0.16	0.33	0.20	1.77	6.69
		mm	150	414	358	359	405	110	68	45	68	120	158	4	8	5	45	170
1000 ... 1250	F3	in	5.91	16.28	14.11	-	-	4.33	2.66	1.77	2.66	4.72	6.22	0.16	0.33	0.20	-	10.09
		mm	150	414	358	-	-	110	68	45	68	120	158	4	8	5	-	256

Dimensions for external handles (mm)

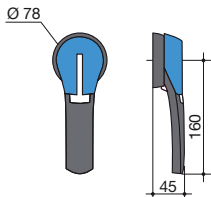
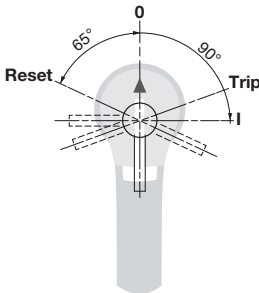
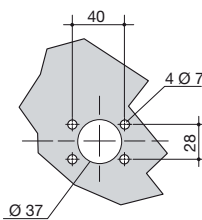
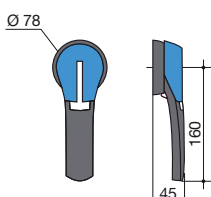
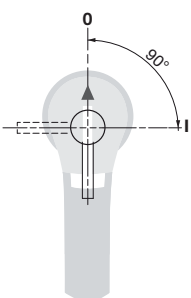
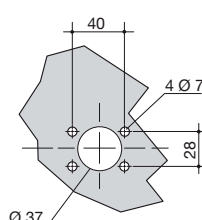
F2 frame size

Handle type	Front operation Direction of operation	Door drilling
S2 type with trip 		
S2 type 		

polign_057_a_1_gb_cat.eps

polign_013_a_1_gb_cat.eps

F3 frame size

Handle type	Front operation Direction of operation	Door drilling
S2L type with trip 		
S2L type 		

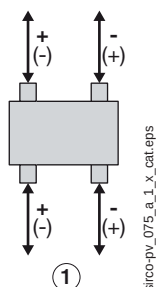
polign_068_a_1_gb_cat.eps

polign_069_a_1_gb_cat.eps

Pole connections in series

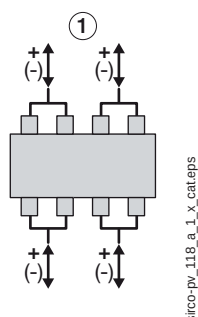
1 PV circuit - 1000 VDC

F2-F3 - 2 P



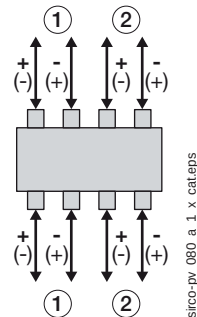
1. Circuit 1
2. Circuit 2

2x F3 - 4P



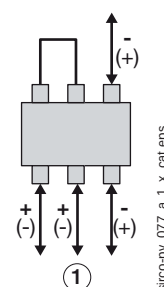
2 PV circuits - 1000 VDC

F2-F3 - 2 x 2 P



1 PV circuit - 1500 VDC

F2-F3 - 3 P

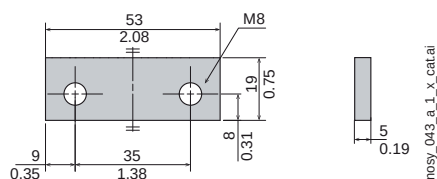


Bridging bars (mm/in)

F2

8409 0016⁽¹⁾

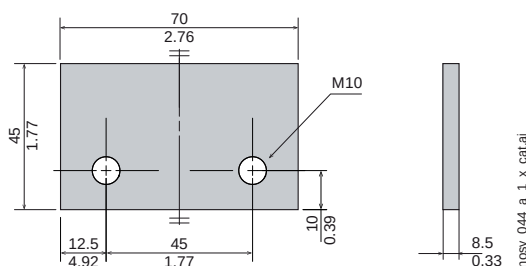
(1) Kit comprises 2 identical bars.



F3

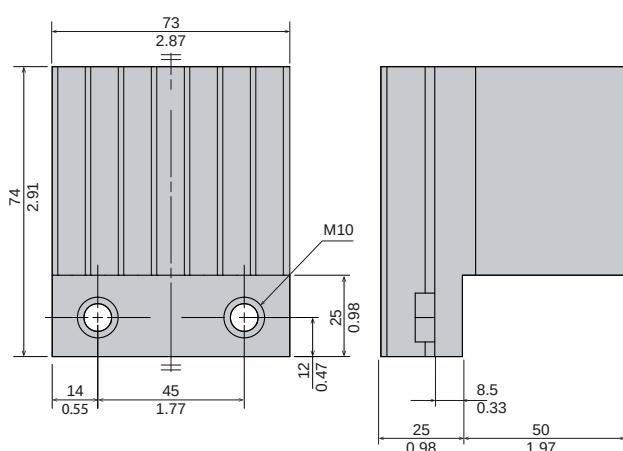
8409 0040⁽¹⁾

(1) Kit comprises 2 identical bars.

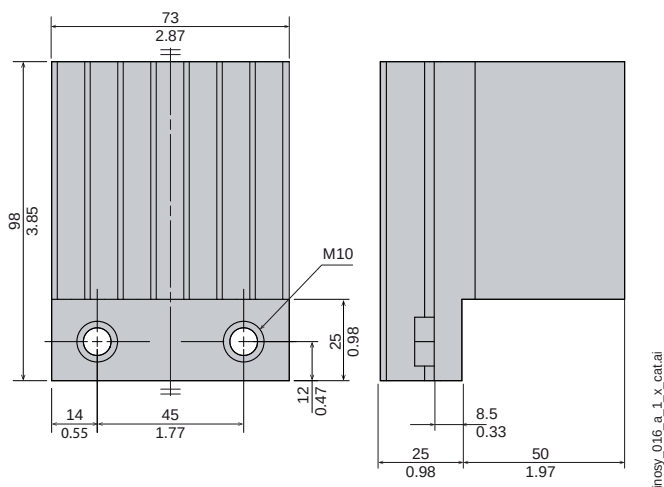


F3

8409 0041



8409 0063



Mounting orientation

F2 - F3

All mounting orientations are possible. Derating may apply - please consult us.



inosy_006_a.psd



SIRCO MOT PV

Load break switches for photovoltaic applications

remotely operated range from 250 to 3200 A, up to 1000 VDC



SIRCO MOT PV
4 x 400 A



SIRCO MOT PV
4 x 2000 A

The solution for

- > Buildings
- > Solar parks
- > Solar inverters



Strong points

- > High breaking capacity up to 3200 A, 1000 VDC
- > Remotely operated product
- > Manual emergency operation

Conformity to standards

- > IEC 60947-3



Function

SIRCO PV are remotely operated multipolar load break switches.

They make and break under load conditions and provide safety isolation for any low voltage circuit dedicated to photovoltaic applications up to 1000 VDC.

Advantages

High breaking performance

A glass fibre reinforced polyester break chamber with an arc extinguishing system provides a patented safety disconnection system offering rapid extinguishing of the electric arc up to 1000 VDC and current interruption up to 3200 A.

General characteristics

- Up to 1000 VDC from 250 to 3200 A.
- Patented switching technology.
- Remotely operated product (motor control).
- Positive break indication.
- 2 stable positions (I, 0).

Remotely operated product

SIRCO MOT PV are intended for use in photovoltaic installations and solar inverters. They can be remotely controlled via volt-free contacts, from either an external automatic controller or a switch.

Manual emergency operation

In addition to its motorised operation, the SIRCO MOT PV also includes a manual operation facility, enabling the switch position to be changed directly on the device if required.

References

1000 VDC - Back plate mounting

Rating (A) / Frame size	Circuit type	No. of poles	Switch body	Bridging bars for connecting poles in series	Inter phase barrier	Terminal screens	Terminal shrouds
250 A / B4	Single PV circuit	4 P	19PV 4025	4 P 2609 2025⁽¹⁾	4 P 2998 0024	4 P 1509 4025⁽²⁾	4 P 2694 4021⁽³⁾
400 A / B4			19PV 4038	4 P 2609 4050⁽¹⁾			
630 A / B5			19PV 4063	2 P 2609 0080	4 P 2998 0014	4 P 1509 4063	4 P 2694 4051⁽³⁾
800 A / B5			19PV 4080				
1000 A / B6			19PV 4100	2 P 2609 1100⁽¹⁾	included	4 P 1509 4080	
1250 A / B6			19PV 4120				
1600 A / B7			19PV 4160	2 P 2609 1160⁽¹⁾		4 P 1509 4160	
2000 A / B7			19PV 4200	2 P 2609 1200⁽¹⁾		4 P 1509 4200	
3200 A / B8			19PV 4320				

(1) Connection in series of 2 or 4 poles of the device

(2) 2 pieces: one for top side and another for bottom side.

(3) Terminal shrouds cannot be mounted when bridging bars for connecting poles in series are present.

Accessories

Bridging bars for connecting poles in series

Use

The bridging bars will make easy the connection of poles in series, allowing the following configurations:

- Bottom/Bottom
- Top/Top

- Top/Bottom

- Bottom/Top

Connection diagrams:
see "Pole series connections"
page 171.



Bridging bar 250 A

access_334_a_1_cat



Bridging bar 2000 ... 3200 A

access_392_a_1_cat

Frame size	Rating (A)	Number of poles of the device in series	Pack	Reference
B4	250	2 P	1 piece	2609 0025
B4	250	4 P	2 pieces	2609 2025
B4	400	4 P	4 pieces	2609 4050
B5	630 ... 800	2 P	2 pieces	2609 0080
B5	630 ... 800	4 P	4 pieces	2609 2080
B6	1000 ... 1250	2 P	2 pieces	2609 1100
B7	1600	2 P	2 pieces	2609 1160
B7 ... B8	2000 ... 3200	2 P	1 piece	2609 1200

Auxiliary contact

Use

Pre-break and signalisation of position I:
1 to 2 NO/NC auxiliary contacts
(1 as standard).
Low level auxiliary contacts: please consult us.

Connection to the control circuit

By 6.35 mm fast-on terminal.

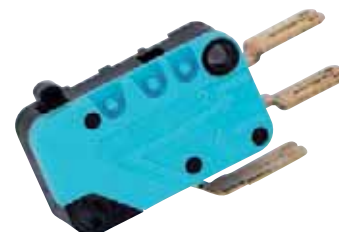
Electrical characteristics
30 000 operations.

Characteristics

Rating (A)	Nominal current (A)	Operating current I _e (A)			
		250 VAC AC-13	400 VAC AC-13	24 VDC AC-13	48 VDC AC-13
250 ... 3200	16	12	8	14	6

References

NO/NC changeover contact				
Frame size	Rating (A)	Contact(s)		Reference
B4 ... B5	250 ... 800	2 nd		1999 1002
B6 ... B7	1000 ... 2000	2 nd		1999 1032
B8	3200	2 nd		included



access_065_a_1_cat



svr_058_a_1_cat

Accessories (continued)

Terminal shrouds

Use

Protection against direct contact with terminals or connecting parts.
Not compatible for terminals with bridging bars connected.

Advantage of terminal shrouds

Perforations allow remote thermographic inspection without the need to remove the shrouds.



acces_206_a_2_cat

Frame size	Rating (A)	No. of poles	Position	Reference
B4	250 ... 400	4 P	top or bottom	2694 4021
B5	630 ... 800	4 P	top or bottom	2694 4051

Terminal screens

Use

Top and bottom protection against direct contact with terminals or connection parts.

Frame size	Rating (A)	No. of poles	Position	Reference
B4	250 ... 400	4 P	top or bottom	1509 4025
B5	630 ... 800	4 P	top or bottom	1509 4063
B6	1000 ... 1250	4 P	top or bottom	1509 4080
B7	1600	4 P	top or bottom	1509 4160
B7 ... B8	2000 ... 3200	4 P	top or bottom	1509 4200



acces_207_a_2_cat

Inter phase barrier

Use

Safety isolation between the terminals. For 200 to 800 A SIRCO MOT PV, the inter phase barriers allow insulation between pole connected in series.

Frame size	Rating (A)	No. of poles	Pack	Reference
B4	250 ... 400	4 P	3 pieces	2998 0024
B5	630 ... 800	4 P	3 pieces	2998 0014
B6 ... B8	1000 ... 3200	4 P	-	included



acces_036_a_2_cat

2 position padlocking (I - 0)

Use

Enables padlocking in position I (product can be padlocked in position 0 as standard).

Factory fitted.

Frame size	Rating (A)	Reference
B4 ... B5	250 ... 800	9599 0003
B6 ... B8	1000 ... 3200	9599 0004



atys_854_a_1_cat

Key handle interlocking system

Use

Motorised and manual operations can be locked in position 0 using a RONIS EL11AP lock.

Factory fitted.

As standard, locking in position 0.

Optional padlocking in 2 positions: Locking in position 0 and I.

Frame size	Rating (A)	Reference
B4 ... B5	250 ... 800	9599 1006
B6 ... B8	1000 ... 3200	9599 1004



atys_853_a_1_cat

Other specific accessories

Low level auxiliary contacts.

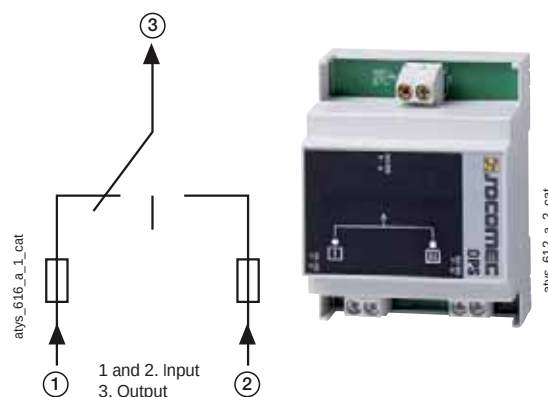
Double power supply - DPS

Use

Allows a SIRCO MOT to be supplied by two 230 VAC, 50/60 Hz networks.

Input

- The input is considered "active" from 200 VAC.
- Maximum voltage: 288 VAC.
- Internal protection: each input is fuse protected 3.15 A.
- Connection on terminals: max. 6 mm².
- Modular device: 4 module width.



Description of accessories	Reference
DPS	1599 4001

Mounting spacers

Use

Increases the distance between the rear power terminals and the backplate by 10 mm.

This accessory may also be used to replace the original mounting spacers.



Frame size	Rating (A)	Description of accessories	Reference
B3 ... B5	125 ... 630	1 set of 2 spacers	1509 0001

Door protective surround

Use

When direct access to the SIRCO MOT front face (mode selection, manual operation, display...) is required, the door surround can be utilised to provide a clean and safe finish to the panel's cut-out.

Frame size	Rating (A)	Reference
B3 ... B5	125 ... 630	1529 0012
B6 ... B8	800 ... 3200	1529 0080



Characteristics according to IEC 60947-3

200 to 3200 A

Thermal current I_{th} at 40°C	250 A	400 A	630 A	800 A	1000 A	1250 A	1600 A	2000 A	3200 A
Rated insulation voltage U_i (V)	1200	1200	1200	1200	1200	1200	1200	1200	1200
Rated impulse withstand voltage U_{imp} (kV)	12	12	12	12	12	12	12	12	12
Frame size	B4	B4	B5	B5	B6	B6	B7	B7	B8

Rated operational currents I_e (A)

Rated voltage	Utilisation category	Number of poles of the device	Number of pole(s) in series per polarity	Ambient temperature (°C)	(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)
1000 VDC	DC-21 B	4 P	2 P + and 2 P -	40	250	400	630	800	1000	1250	1600	2000	3200
1000 VDC	DC-21 B	4 P	2 P + and 2 P -	50	250	400	630	720	1000	1250	1600	1800	3200
1000 VDC	DC-21 B	4 P	2 P + and 2 P -	60	250	400	560	650	1000	1125	1600	1600	2700
1000 VDC	DC-21 B	4 P	2 P + and 2 P -	65	-	400	540	620	950	1050	1520	1520	2550

Switching time

I - 0	0.85	0.85	0.85	0.85	1.60	1.60	1.60	1.60	1
-------	------	------	------	------	------	------	------	------	---

Power supply

Power supply, 230 VAC min. / max. (VAC)	166/332	166/332	166/332	166/332	166/332	166/332	166/332	166/332	166/332
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Control supply power demand

Power supply 230 VAC inrush / nominal (VA)	276/115	276/115	176/150	276/150	460/184	460/184	460/230	460/230	812/322
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Connection

Rigid Cu cable cross-section (mm ²)	120	240	2 x 185	2 x 240	2 x 240	2 x 240	-	-	-
Maximum Cu busbar width (mm)	32	32	50	50	63	63	100	100	100
Tightening torque min/max (Nm)	20/26	40/45	40/45	40/45	40/45	40/45	40/45	40/45	40/45

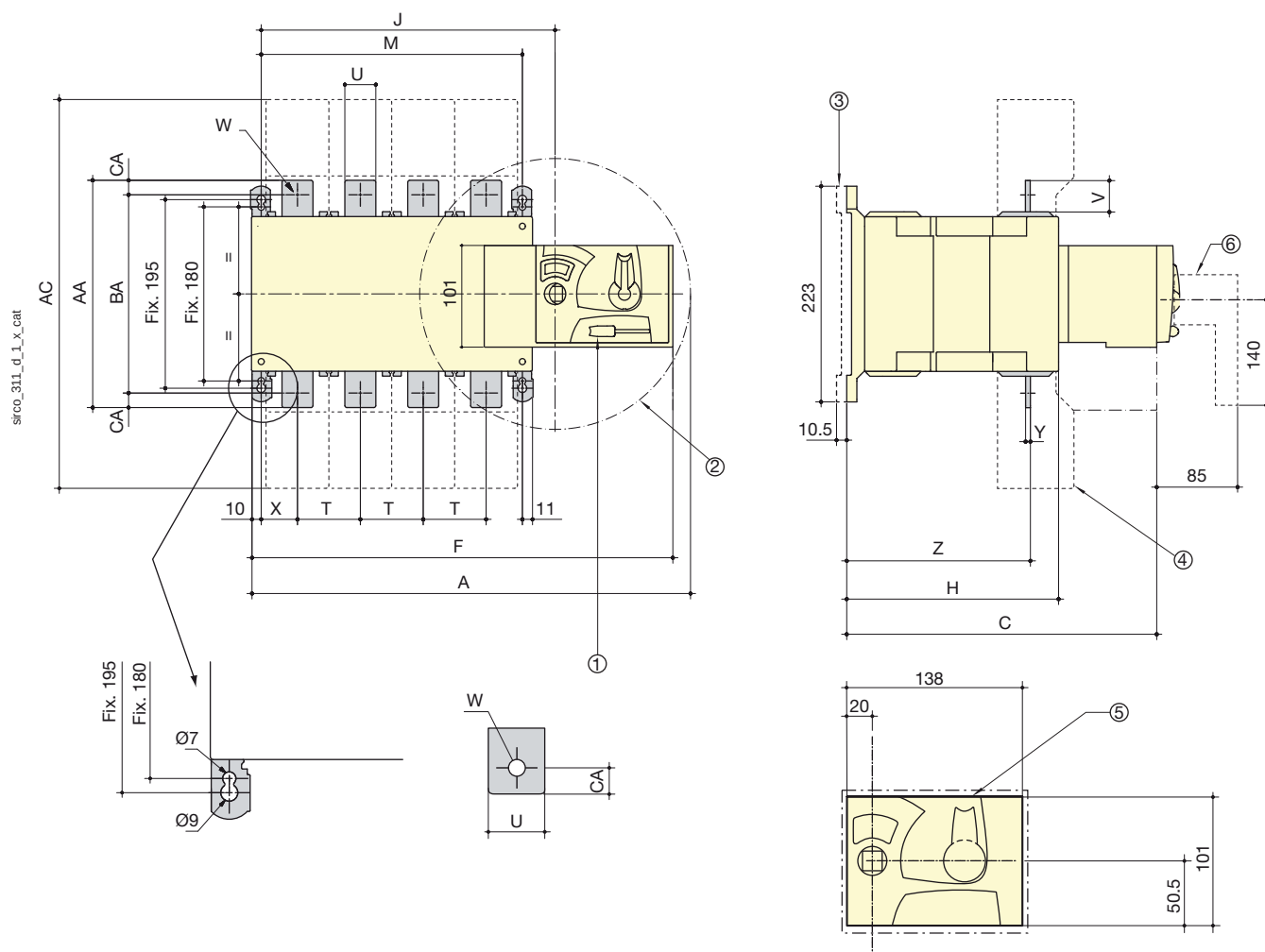
Mechanical characteristics

Durability (number of operating cycles) ⁽¹⁾	8000	5000	5000	5000	4000	4000	3000	3000	3000
Weight of a 4 pole device (kg)	7	8	14	14	33	33	42	42	69

(1) Improved endurance: Please consult us.

Dimensions

250 to 800 A / B4 to B5

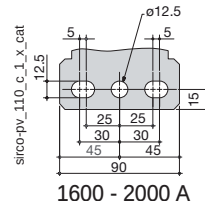
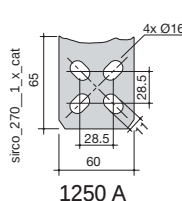
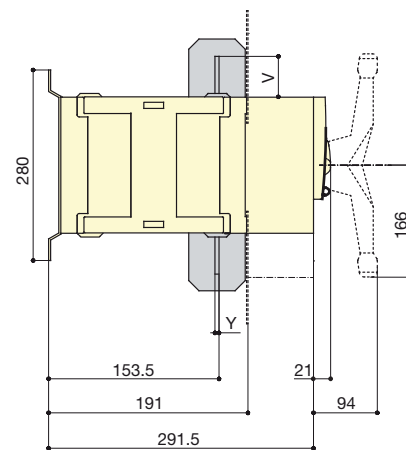
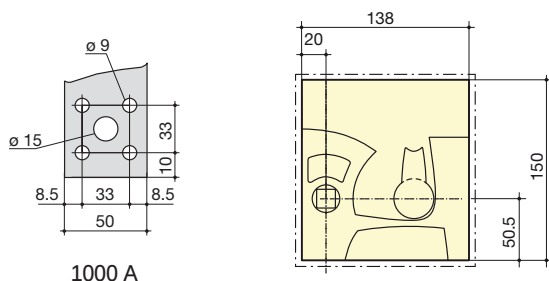
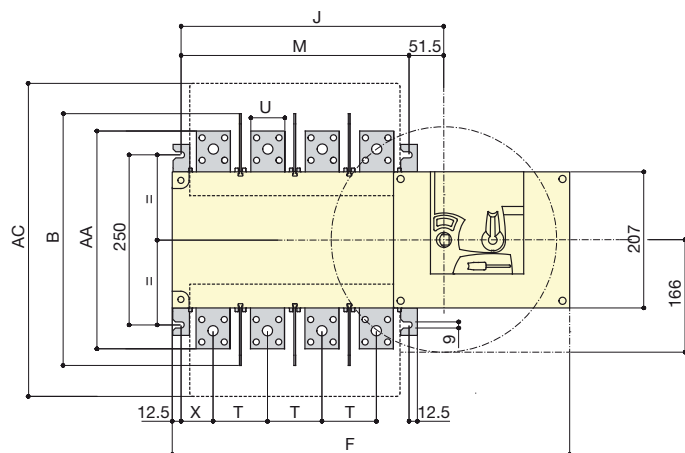


- 1. Locking bracket
- 2. Maximum handle radius, operating angle 2 x 90°
- 3. Mounting spacers
- 4. Terminal shrouds
- 5. Dimension of the cut-out
- 6. Handle

Rating (A) / Frame size	Overall dimensions		Terminal shrouds	Switch body			Switch mounting	Connection									
	A 4p.	C	AC	F 4p.	H	J	M 4p.	T	U	V	W	X 4p.	Y	Z	AA	BA	CA
250 / B4	395	244.5	280	378	153	245	210	50	25	30	11	33	3.5	134.5	160	130	15
400 / B4	395	244.5	280	378	153	245	210	50	35	35	11	33	3.5	134.5	170	140	15
630 / B5	459	320.5	400	437	221	304	270	65	45	50	13	37.5	5	190	260	220	20
800 / B5	459	320.5	400	437	221	304	270	65	45	50	13	37.5	5	190	260	220	20

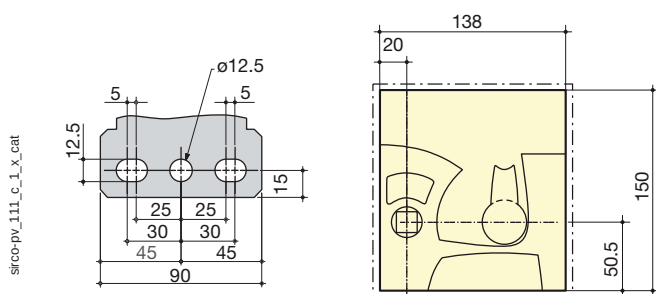
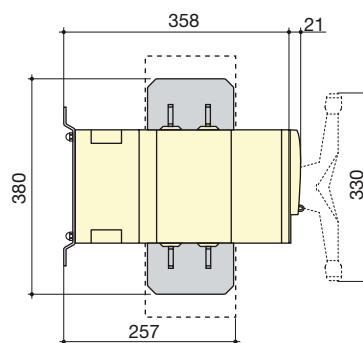
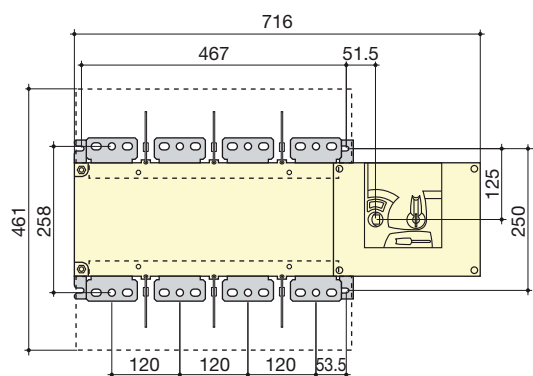
Dimensions (continued)

1000 to 1250 A / B6 to B7



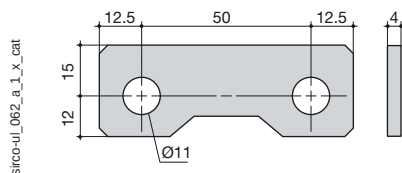
Rating (A) / Frame size	Overall dimensions	Terminal shrouds	Switch body		Switch mounting	Connection					
	B	AC	F 4p.	J 4p.	M 4p.	T	U	V	X	Y	AA
1000 / B6	370	461	584	387	335	80	50	60.5	60	7	321
1250 / B6	370	461	584	387	335	80	60	65	60	7	330
1600 / B7	380	531	716	518.5	467	120	90	44	53	8	288
2000 / B7	380	531	716	518.5	467	120	90	44	53	8	288

3200 A / B8

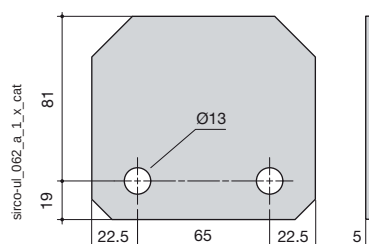


Bridging bar

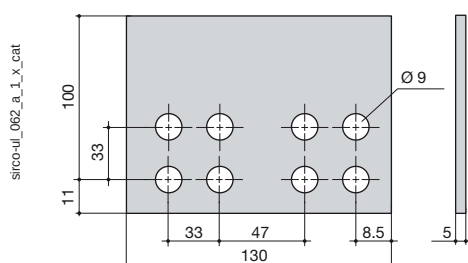
250 - 400 A



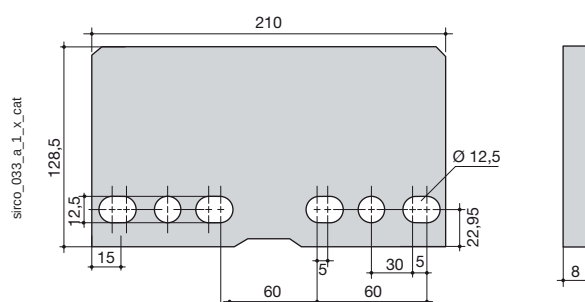
630 - 800 A



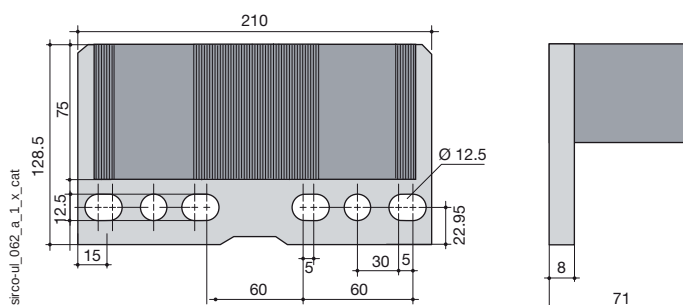
1000 - 1250 A



1600 A

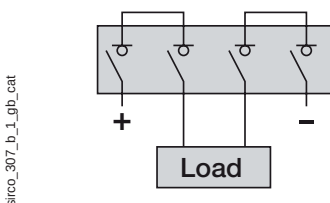


2000 - 3200 A



Pole series connections⁽¹⁾

4 poles - bottom / bottom



(1) Other connections: refer to mounting instructions



Load break switches

for specific applications

Despite already offering a wide range of load break switches, SOCOMEC also manufactures specific products to suit any requirement. Some of these products can be seen on these two pages. This list is not exhaustive.

Please do not hesitate to contact us.

Compliance with standards

- > IEC 60947-3
- > BS EN 60947-3
- > EN 60947-3
- > NBN EN 60947-3
- > VDE 0660-107 (1992)



SIRCO range with overrated neutral



SIRCO 3 x 250 A with 400 A rated neutral

The use of power electronics is becoming more and more frequent. Chopper, rectifiers and current inverters distort the signal by reinjecting the 3rd order harmonics which are combined in the neutral.

Range available from 125 to 1800 A.

SIRCO high short-circuit withstand



- 80 kA rms 1 s.
- 110 kA rms 0.1 s.
- 240 kA peak.

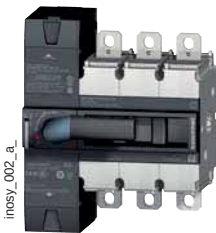
SIRCO early break AC



SIRCO 3 x 1250 A with early prebreak AC

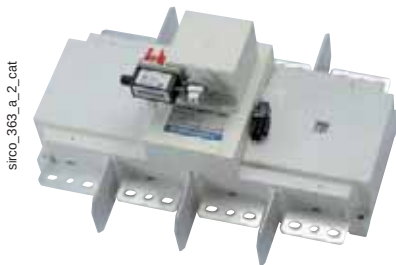
- Complete range from 125 to 3200 A.
- Double positive break indication given through a position indication window, located directly on the product, and by the operating handle.
- Features an early break auxiliary contact as standard.
- Severe load duty categories (AC-22 and AC-23).
- High resistance to damp heat (supplied "tropicalised").

INOSYS LBS

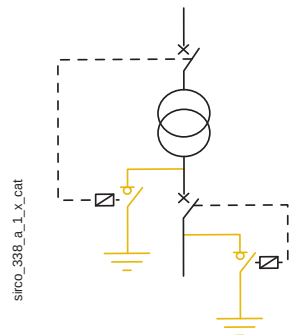


INOSYS LBS are load break switches integrating a patented breaking technology that allows a high breaking capacity up to 1000 VAC. Their modular design allows to configure the poles' availability on-demand and mix the ratings.

SIRCO for earthing



- From 800 to 1800 A.
- 50 kA rms 1 s.
- Special S4 type handle.
- Undervoltage coil interlocking.





SIRCO MC PV UL 508I

Load break switches for photovoltaic applications
from 25 to 45 A, up to 1000 VDC



SIRCO MC PV 25 A - 1000 VDC
DIN-rail mounting

The solution for

- > Residential
- > Buildings
- > Solar parks



Strong points

- > Compact
- > High breaking capacity up to 1000 VDC
- > Safety

Conformity to standards

- > UL 508I Guide NMSJ, file E365404



- > IEC 60947-3



Approvals and certifications⁽¹⁾



(1) Product reference on request.

Function

SIRCO MC PV are DC non-fusible disconnect switches. They make and break under load conditions and provide optimum safe isolation for any PV circuit.

Advantages

Compact

Thanks to its compact design, the space needed within the combiner box or the solar inverter is greatly reduced.

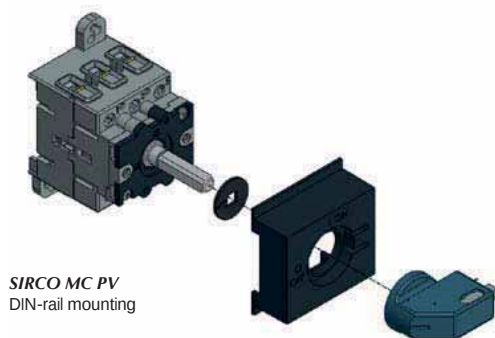
High breaking capacity up to 1000 VDC

- Making and breaking capacity under load conditions up to 1000 VDC.
- Specific photovoltaic test beyond requirements of UL 508I and IEC 60947-3 standard.

Safety

- Bridging bars are factory fitted for easier, quicker and safer connection.
- Direct access to connection terminals for adequate tightening.

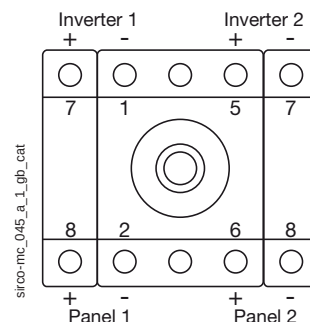
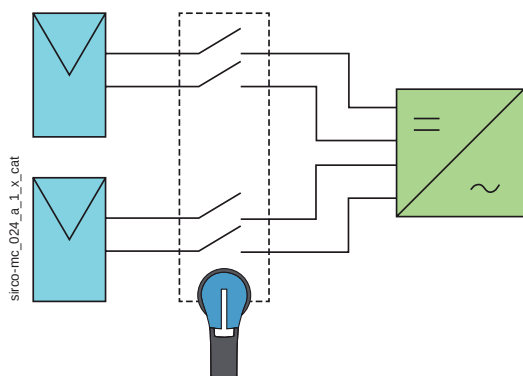
sirco-mc_028_a



SIRCO MC PV
DIN-rail mounting

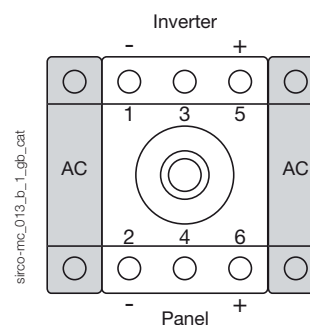
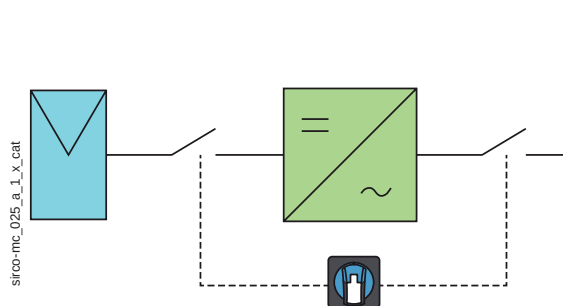
Multi-circuit switching

- The SIRCO MC PV for dual circuits (2 MPPT: Maximum Power Point Tracking) enables connection of two independent photovoltaic circuits to a single switch in order to reduce the costs of the global solution.



Completely isolate the inverter within one operation

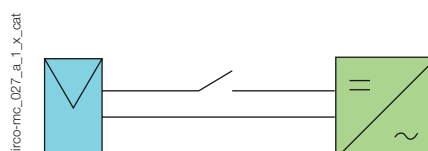
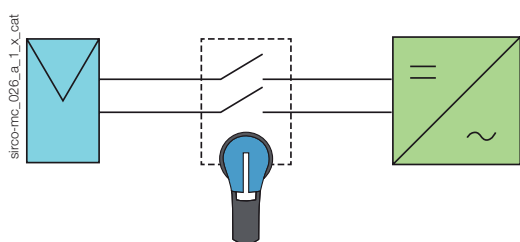
- The SIRCO MC PV with two additional AC poles can be integrated into the inverter to provide complete and simultaneous isolation of the PV and AC circuits. This improves safety and reduces the overall product size.



What you need to know

For grounded or ungrounded networks:

It is possible to use the SIRCO MC PV in both network systems, either switching one or both polarities.



SIRCO MC PV UL 508I

Load break switches for photovoltaic applications

from 25 to 45 A, up to 1000 VDC

References

600 VDC

Rating (A)	Circuit type	No. of poles	Switch body	Direct handle	External handle	Shaft for external handle	Auxiliary contact
25 A	Single PV circuit	2 P	21PV 2102-UL	MC01 type Blue 2119 1012	S00 type Black 4.4X 147D 0111⁽¹⁾	S00 type 265 mm 10.43 in 2107 0517	1 contact NC+NO 2119 0001
	Dual PV circuit	4 P	21PV 5102-UL				
45 A	Single PV circuit	4 P	21PV 4144	MC01 type Blue 2119 1412	Red 4.4X 147R 0111⁽¹⁾		
	Dual PV circuit	8 P	21PV 8144				

(1) Door interlocking.

1000 VDC

Rating (A)	Circuit type	No. of poles	Switch body	Direct handle	External handle	Shaft for external handle	Auxiliary contact
32 A	Single PV circuit	4 P	21PV 4144	MC01 type Black 2119 1012	S00 type Black 4.4X 147D 0111⁽¹⁾	S00 type 265 mm 10.43 in 2107 0517	1 contact NC+NO 2119 0001
	Dual PV circuit	8 P	21PV 8144	MC01 type Black 2119 1412			

(1) Door interlocking.

Accessories

Direct operation handle

Use

The direct operation conversion kit requires an additional 4 mm distance on each side of the 2 and 3 pole device.

Rating (A)	Handle color	Type of locking	Handle type	45 mm modular DIN front plate	Reference
25 ... 45	Blue	-	MC0	yes	2119 0012⁽¹⁾
25 ... 45	Blue	1 padlock Ø 5 mm / 0.20 in	MC01	yes	2119 1012

(1) Standard handle.

2 MPPT 600 V					
Rating (A)	Handle color	Type of locking	Handle type	45 mm modular DIN front plate	Reference
25	Blue	-	MC0	yes	2119 0012
25	Blue	1 padlock Ø 5 mm / 0.20 in	MC01	yes	2119 1012
45	Blue	1 padlock Ø 5 mm / 0.20 in	MC01	yes	2119 1412



MC0 handle



MC01 handle

access_305_a_1_cat

access_293_a_1_cat

External operation handle

Use

The external control will allow the operator to safely disconnect and isolate the solar strings prior to any intervention.

External controls are user-friendly and adapted to meet requirements of residential installations, large roofs and ground-based generators.



S00 handle



MC1 handle

access_341_a_1_cat

access_302_a_1_cat

DIN-rail or back plate mounting

Rating (A)	Handle type	Handle color	Type of locking	Protection degree ⁽¹⁾	Reference
25 ... 45	MC1	Black	3 padlocks Ø 8 mm / 0.35 in	4.4X	2119 3312
25 ... 45	MC1	Red/Yellow	3 padlocks Ø 8 mm / 0.35 in	4.4X	2119 3313
25 ... 45	S00	Black	3 padlocks Ø 8 mm / 0.31 in	4.4X	147D 0111
25 ... 45	S00	Red/Yellow	3 padlocks Ø 8 mm / 0.31 in	4.4X	147R 0111

(1) Nema/UL protection degree.

Shaft for external handle

Use

The shaft can be adjusted and cut depending on the need.

Shaft length

Device + shaft:
- 265 mm



access_297_a_1_cat

DIN-rail or back plate mounting

Rating (A)	Device + shaft Length	Reference
25 ... 45	265 mm / 10.43 in	2107 0517⁽¹⁾

(1) Shaft for door interlocking.

Terminal shrouds

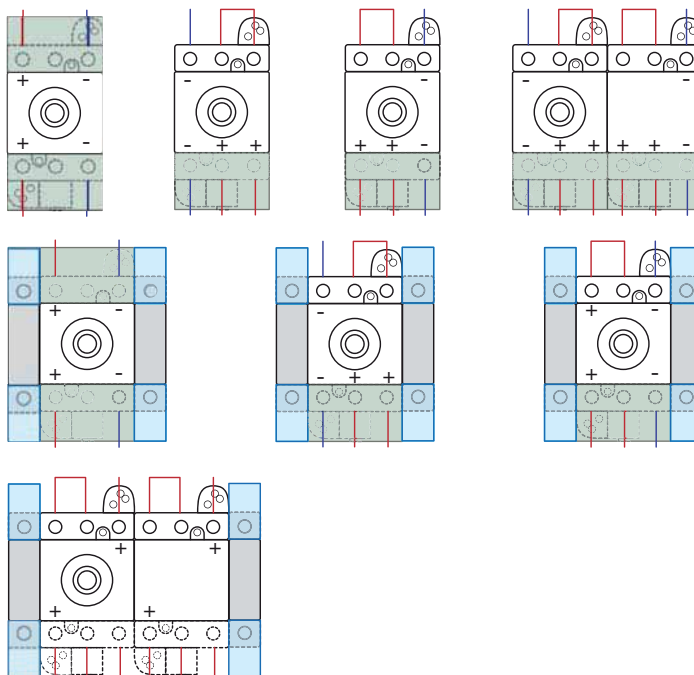
Use

Top or bottom protection against direct contact with the terminals or connection parts.
1 and 3 poles are available.

The SIRCO MC PV load break switch is pre-bridged. Terminal covers are mounted on the top or bottom free space of the device.

Possibility to assemble a terminal shroud on the bridge side by removing the insulating material of the series connection bar (irreversible step).

Rating (A)	Type of mounting	No. of poles	Position	Reference
25 ... 45	DIN-rail	1 P	top or bottom	2194 1004
25 ... 45	DIN-rail	3 P	top or bottom	2194 3004



sirco-mc_011_e_1_cat

access_299_a_1_cat



Terminal shrouds 1 pole

access_300_a_1_cat



Terminal shrouds 3 pole

SIRCO MC PV UL 508I

Load break switches for photovoltaic applications
from 25 to 45 A, up to 1000 VDC

Characteristics

according to UL 508I

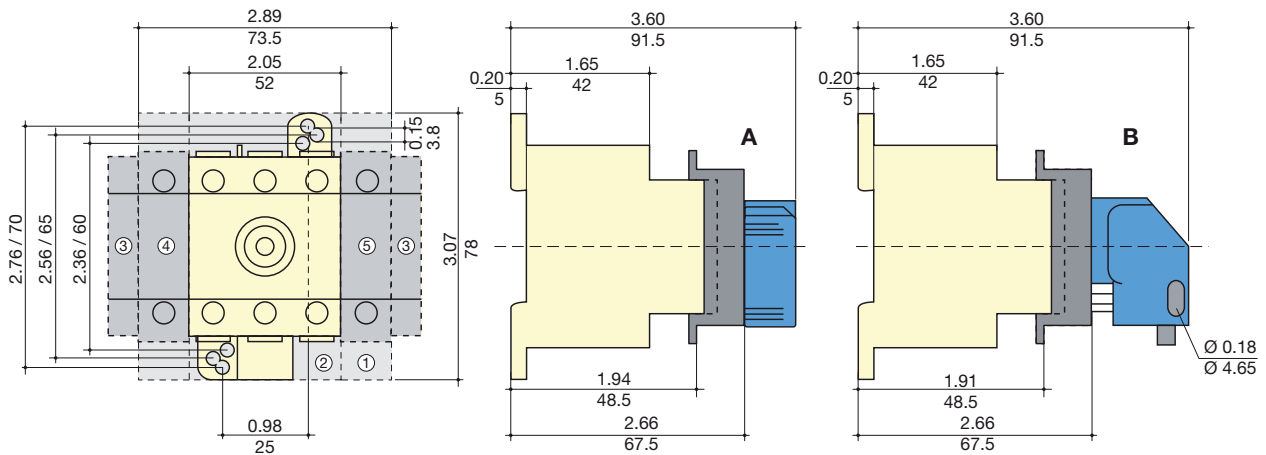
			25 A	45 A
General use rating with 200% overload extra test				
Rated voltage	Number of poles of the device	Number of PV circuits	(A)	(A)
600 VDC	2 P	1	25	-
600 VDC	4 P	1	-	45
600 VDC	2 x 2 P	2	25	-
600 VDC	2 x 4 P	2	-	45
1000 VDC	4 P	1	-	32
1000 VDC	2 x 4 P	2	-	32
Short-circuit capacity at 600 VDC				
Prospective short-circuit current (kA rms)			5	5
Type of fuse			gPV	gPV
Associated fuse rating (A)			25	80
Short-circuit capacity at 1000 VDC				
Prospective short-circuit current (kA rms)			5	5
Connection terminals				
Min. connection wire range / AWG (solid or stranded)			14 / 7	14 / 3
Mechanical characteristics				
Durability (number of operating cycles)			30 000	30 000
Tightening torque (Nm)			2	2

according to IEC 60947-3

Rated current			25 A	45 A
Thermal current I _{th} at 40°C (A)			25	45
Thermal current at 50°C (A)			25	45
Thermal current at 60°C (A)			25	45
Rated insulation voltage U _i (V)			1000	1000
Rated impulse withstand voltage U _{imp} (kV)			8	8
Rated operational currents I _e (A)				
Rated voltage	Number of poles of the device	Number of PV circuits	(A)	(A)
600 VDC	2 P	1	30	-
600 VDC	4 P	1	-	40
600 VDC	2 x 2 P	2	30	-
600 VDC	2 x 4 P	2	-	40
1000 VDC	2 P	1	10	-
1000 VDC	4 P	1	-	40
1000 VDC	2 x 2 P	2	10	-
1000 VDC	2 x 4 P	2	-	40

Dimensions (in/mm)

DIN-rail mounting - Direct operation



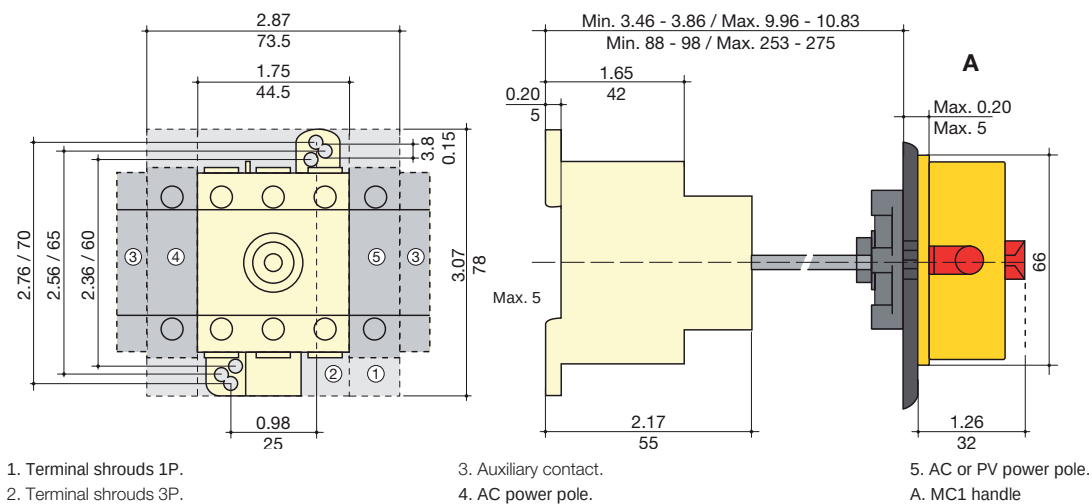
1. Terminal shrouds 1P.
2. Terminal shrouds 3P.
3. Auxiliary contact.

4. AC power pole.
5. AC or PV power pole.

- A. MC0 handle
- B. MC01 handle

sirco-mc_004_b_1_us_cat

DIN-rail mounting - External operation



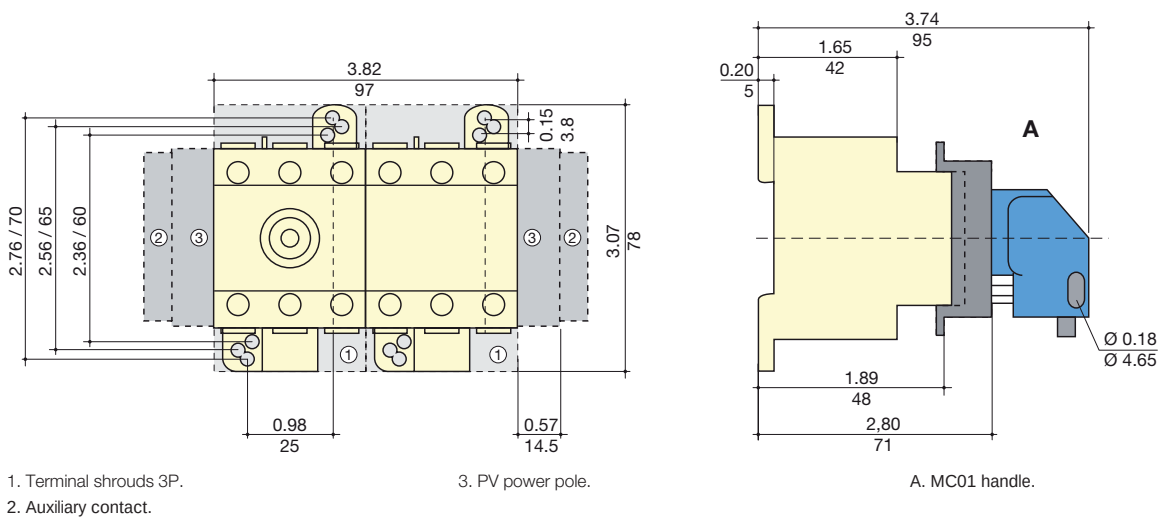
1. Terminal shrouds 1P.
2. Terminal shrouds 3P.

3. Auxiliary contact.
4. AC power pole.

5. AC or PV power pole.
- A. MC1 handle

sirco-mc_005_b_1_us_cat

2 MPPT - 45 A - 600 VDC and 32 A - 1000 VDC - DIN-rail mounting - Direct operation



1. Terminal shrouds 3P.
2. Auxiliary contact.

3. PV power pole.

- A. MC01 handle.

sirco-mc_039_a_1_us_cat

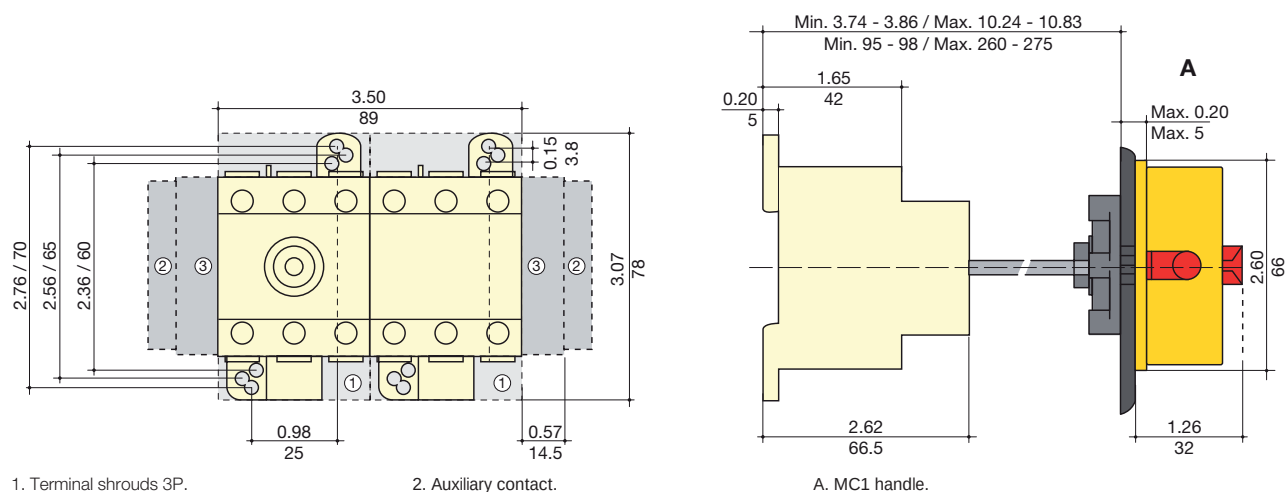
SIRCO MC PV UL 508I

Load break switches for photovoltaic applications

from 25 to 45 A, up to 1000 VDC

Dimensions (continued)

DIN-rail mounting - External operation



sirco-mc_040_b_1_us_cat

Dimensions for external handles (in/mm)

DIN-rail or back plate mounting

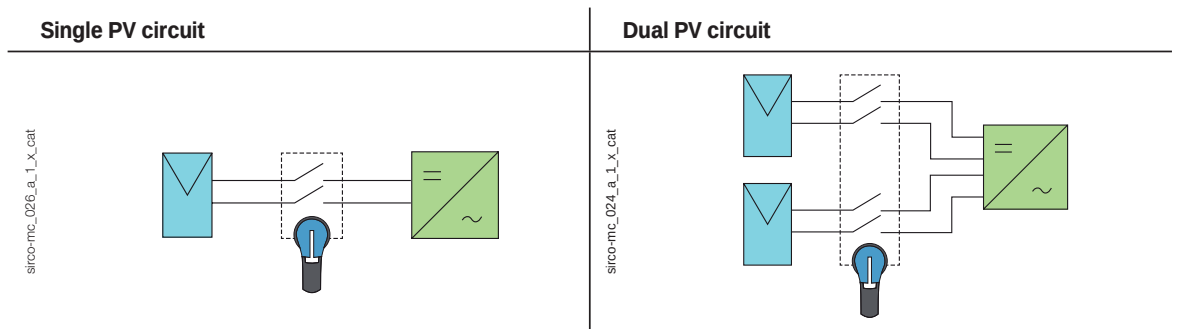
Handle type	Front operation Direction of operation	Door drilling
MC1 type 		
S00 type 		With 4 fixing screws With fixing nut

poign_001_a_1_us_cat

poign_056_a_1_us_cat

Poles connections

Switching of polarities + and - ⁽¹⁾



Rating	Single PV circuit	Dual PV circuit
25 A - 600 VDC	21PV 2102-UL sirco-mc_044_a_1_gb_cat	21PV 5102-UL sirco-mc_045_a_1_gb_cat
45 A - 600 VDC 32 A - 1000 VDC	21PV 4144 sirco-mc_083_a_1_gb_cat	21PV 8144 sirco-mc_065_a_1_gb_cat

(1) For grounded systems, single polarity switching, a bridge shall be added.
For spare bridging bars, please consult use.



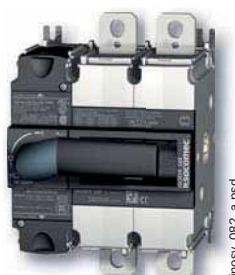
INOSYS *LBS* UL 98B

Load Break Switches for DC & PV applications

from 100 to 600 A, up to 1500 VDC incorporating tripping function

Load break
switches

new



INOSYS LBS
2-poles



INOSYS LBS
3-poles with tripping function

The solution for

- > Disconnection within PV installation
- > Battery protection
- > Rapid shutdown for firefighter safety
- > Isolation of DC processes

Strong points

- > High-performance switching in a compact frame
- > Safe & reliable operation
- > Tripping function
- > Easy to install
- > Modular solution

Conformity to standards

- > IEC 60947-3
- > UL 98B



Compatible with requirements:

- > IEC 60364-7-712
- > NEC art. 690



Function

INOSYS LBS are multi-polar load break switches which are available with integrated tripping function. They can be operated manually using the handle or remotely (via tripping coils) to disconnect part or all of the electrical installation.

They make and break under load conditions, provide safety isolation for any low voltage circuits up to 1500 VDC and are suitable for emergency switching.

Advantages

High-performance switching in a compact frame

INOSYS LBS switches integrate a patented technology that offers high switching capacity of 500 VDC per pole with optimum arc containment and significant power loss reduction - all within a compact device.

Safe & reliable operation

- Reliable position indication through visible contacts.
- ON, OFF and TRIP positions are stable: resistant to voltage fluctuations.
- The trip position provides complete disconnection and isolation.
- The opening and closing of the switch is fully independent from the speed of operation, ensuring safe operation under all conditions.
- High temperature withstand: no derating up to 55 °C (131° F).

Tripping function: flexible and robust

- Fully immune to external disturbances: no nuisance tripping.
- Shunt-trip or undervoltage release from 24 to 220 VDC and from 24 to 230 VAC.
- Wide operating temperature range: -15 to +122 °F (-25 to +50 °C).
- Fast disconnection (<50 ms) for rapid firefighter shutdown, compliant with installation standards.
- Compatible with virtually any Arc-Fault Detection System, including the RESYS AFD solution.

Easy to install

- Mechanism can be centred or left aligned (in the factory) to accommodate installation requirements.
- Wiring: as the switch is non-polarised all types of wiring and connections are possible.
- Easy access without tools to integrate auxiliary contacts and tripping coil (both located within the switch footprint).

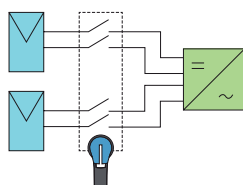
Modular solution for a flexible configuration

- Multi-circuit

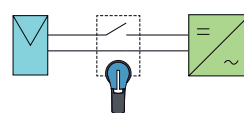
Disconnect up to three circuits with one switch: a compact and cost effective solution for recombiner and inverter applications.

- Single or dual polarity switching

The same switch can be used for installation with either grounded or floating networks by choosing the wiring configuration.

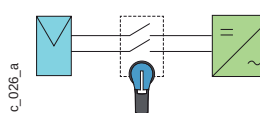


siro-mc_024_a



siro-mc_084_a

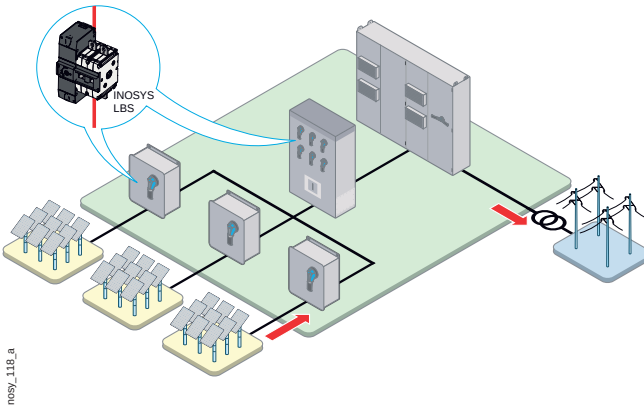
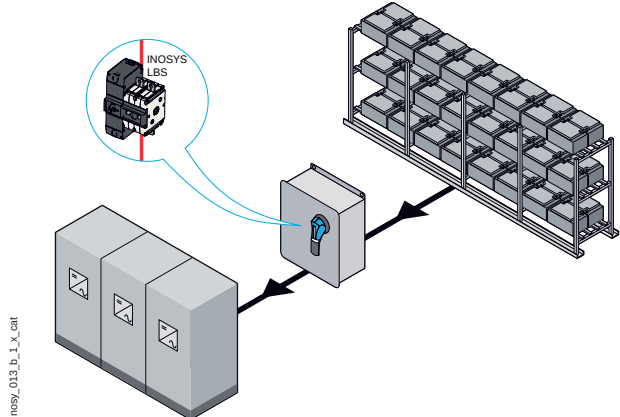
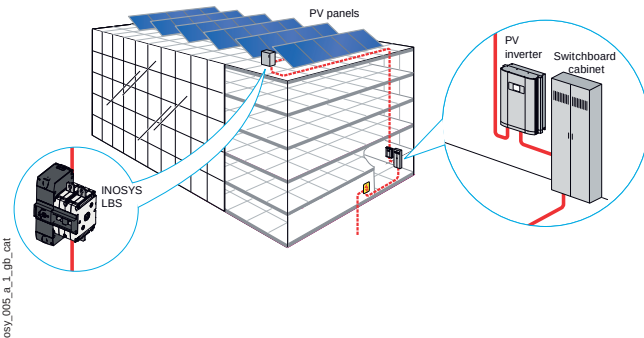
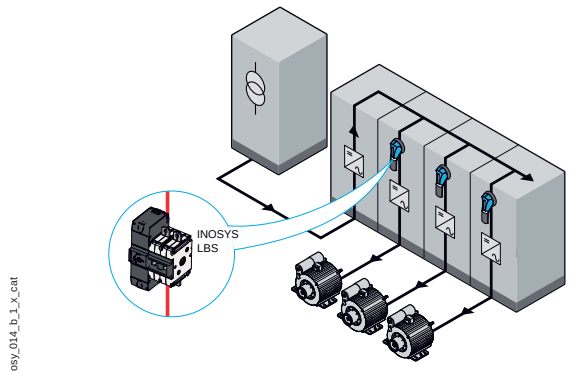
Single polarity switching



siro-mc_026_a

Dual polarity switching

Typical applications: local and remote safe disconnection for DC and PV applications

PV installation: Combiner box, Recombiner box or Inverter  inosy_118_a	Battery protection  inosy_013_b_1_x_cat
Rapid shutdown for firefighter safety (compliant with installation standards, incl. NEC 2014)  inosy_005_a_1_gb_cat	Isolation of DC processes  inosy_014_b_1_x_cat

The SOCOMEC solutions

SIRCO PV Manual operation PV switches  up to 3200 A at 1000 VDC up to 2000 A at 1500 VDC up to 4 circuits sirco-pv_059 - 060 - 061_a	INOSYS LBS Up to 1500 VDC with visible contact indication - with or without tripping function  up to 1250 A at 1000 VDC up to 800 A at 1500 VDC up to 2 circuits inosy_001 - 002 - 056_a
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INOSYS **LBS** UL 98B

Load Break Switches for DC & PV applications

from 100 to 600 A, up to 1500 VDC incorporating tripping function

Overview



References

1000 VDC - 1 circuit

Rating (A)	Frame size	No. of poles per circuit	Switch with tripping function			Switch without tripping function		Other compatible accessories	
			Switch body ⁽¹⁾	External operation	Tripping coil	Switch body ⁽¹⁾	External operation	Aux. Contact	Bridging Bar ⁽²⁾
100 A	F2	2 P	85P0 2010	Shaft 320 mm 12.6 inches 1400 1032	Shunt trip coil	87P0 2010	Shaft 320 mm 12.6 inches 1400 1032	NO/NC 8499 0001	8409 0016
250 A	F2	2 P	85P0 2025	S2 type handle Black 3R,12 - 4,4X 742D 2118	24 V AC/DC 8499 7002 48 V AC/DC 8499 7004	87P0 2025	S2 type handle Black 3R,12 - 4,4X 142D 2111		
400 A	F3	2 P	85P0 2040	Shaft 320 mm 12.6 inches 1400 1032 S2L type handle Black 3R,12 - 4,4X 74AD 2118	Undervoltage releases	87P0 2040	Shaft 320 mm 12.6 inches 1400 1032 S2L type handle Black 3R,12 - 4,4X 14AD 2111		8409 0040
500 A	F3	2 P	85P0 2050		230 V AC 8499 8123	87P0 2050			8409 0041
600 A	F3	2 P	85P0 2060		24 V DC 8499 8202 48 V DC 8499 8204	87P0 2060			8409 0063

(1) The switches are supplied without accessories.

(2) For grounded network, single polarity switching.

References (continued)

1000 VDC - 2 circuits

Rating (A)	Frame size	No. of poles per circuit	Switch with tripping function			Switch without tripping function		Other compatible accessories	
			Switch body ⁽¹⁾	External operation	Tripping coil	Switch body ⁽¹⁾	External operation	Aux. Contact	Bridging Bar ⁽²⁾
100 A	F2	2 P	85P2 2010	Shaft 320 mm 12.6 inches 1400 1032	Shunt trip coil 24 V AC/DC 8499 7002	87P2 2010	Shaft 320 mm 12.6 inches 1400 1032	NO/NC 8499 0001	2 x 8409 0016
250 A	F2	2 P	85P2 2025	S2 type handle Black 3R,12 - 4,4X 742D 2118	48 V AC/DC 8499 7004	87P2 2025	S2 type handle Black 3R,12 - 4,4X 142D 2111		2 x 8409 0031
400 A	F3	2 P	85P2 2040	Shaft 320 mm 12.6 inches 1400 1032 S2L type handle Black 3R,12 - 4,4X 74AD 2118	Undervoltage releases 48 V AC 8499 8104	87P2 2040	Shaft 320 mm 12.6 inches 1400 1032		2 x 8409 0041
500 A	F3	2 P	85P2 2050		230 V AC 8499 8123	87P2 2050	S2L type handle Black 3R,12 - 4,4X 14AD 2111		2 x 8409 0063
600 A	F3	2 P	85P2 2060		24 V DC 8499 8202 48 V DC 8499 8204	87P2 2060			

(1) The switches are supplied without accessories.

(2) For grounded network, single polarity switching.

1500 VDC - 1 circuit

Rating (A)	Frame size	No. of poles per circuit	Switch with tripping function			Switch without tripping function		Other compatible accessories	
			Switch body ⁽¹⁾	External operation	Tripping coil	Switch body ⁽¹⁾	External operation	Aux. Contact	Bridging Bar ⁽²⁾
100 A	F2	3 P	85P0 3010	Shaft 320 mm 12.6 inches 1400 1032	Shunt trip coil	87P0 3010	Shaft 320 mm 12.6 inches 1400 1032	NO/NC 8499 0001	2 x 8409 0016
250 A	F2	3 P	85P0 3025	S2 type handle Black 3R,12 - 4,4X 742D 2118	24 V AC/DC 8499 7002 48 V AC/DC 8499 7004	87P0 3025	S2 type handle Black 3R,12 - 4,4X 142D 2111		2 x 8409 0031
400 A	F3	3 P	85P0 3040	Shaft 320 mm 12.6 inches 1400 1032 S2L type handle Black 3R,12 - 4,4X 74AD 2118	Undervoltage releases	87P0 3040	Shaft 320 mm 12.6 inches 1400 1032 S2L type handle Black 3R,12 - 4,4X 14AD 2111		2 x 8409 0041
500 A	F3	3 P	85P0 3050		48 V AC 8499 8104 230 V AC 8499 8123	87P0 3050			2 x 8409 0063
600 A	F3	3 P	85P0 3060		24 V DC 8499 8202 48 V DC 8499 8204	87P0 3060			

(1) The switches are supplied without accessories.

(2) For grounded network, single polarity switching.

INOSYS *LBS* UL 98B

Load Break Switches for DC & PV applications

from 100 to 600 A, up to 1500 VDC incorporating tripping function

Accessories

Door interlocked external operation handle

Use

Door interlocked external operation handles include an escutcheon and are padlockable. External handles must be utilised with an extension shaft.

Example

As the handle is interlocked in the "ON" position the operator must safely disconnect and isolate the circuit prior to accessing the panel for maintenance procedures.

Opening the door when the switch is in the "ON" position can only be done by defeating the interlocking function with the use of a dedicated tool (authorised persons only). The interlocking function is restored when the door is re-closed.



access_150_a_1_cat.eps

S2 type handle

For LBS with tripping function

Frame size	Handle type	Handle colour	Degree of protection	Reference
F2	S2	Black	3R,12	742F 2118
F2	S2	Black	3R,12 - 4,4X	742D 2118
F2	S2	Red	3R,12 - 4,4X	742G 2118
F3	S2L ⁽¹⁾	Black	3R,12	74AF 2118
F3	S2L ⁽¹⁾	Black	3R,12 - 4,4X	74AD 2118
F3	S2L ⁽¹⁾	Red	3R,12 - 4,4X	74AG 2118

(1) S2L handles have an extended grip; please refer to the dimensions section.

For LBS without tripping function

Frame size	Handle type	Handle colour	Degree of protection	Reference
F2	S2	Black	3R,12	142F 2111
F2	S2	Black	4,4X	142D 2111
F2	S2	Red	4,4X	142E 2111
F3	S2L ⁽¹⁾	Black	3R,12	14AF 2111
F3	S2L ⁽¹⁾	Black	4,4X	14AD 2111
F3	S2L ⁽¹⁾	Red	4,4X	14AE 2111

(1) S2L handles have an extended grip; please refer to the dimensions section.

Shaft for external handle

Frame size	Handle type	Length (mm)	Reference
F2 ... F3	S2, S2L	200	1400 1020
F2 ... F3	S2, S2L	320	1400 1032
F2 ... F3	S2, S2L	400	1400 1040

Other lengths: please consult us.



access_401_a_1_cat

Shaft for S2 and S2L type handle

Auxiliary contact

Use

The same auxiliary contact can be used to provide position and tripping information. The function of the auxiliary contact depends on where it is mounted on the mechanism.

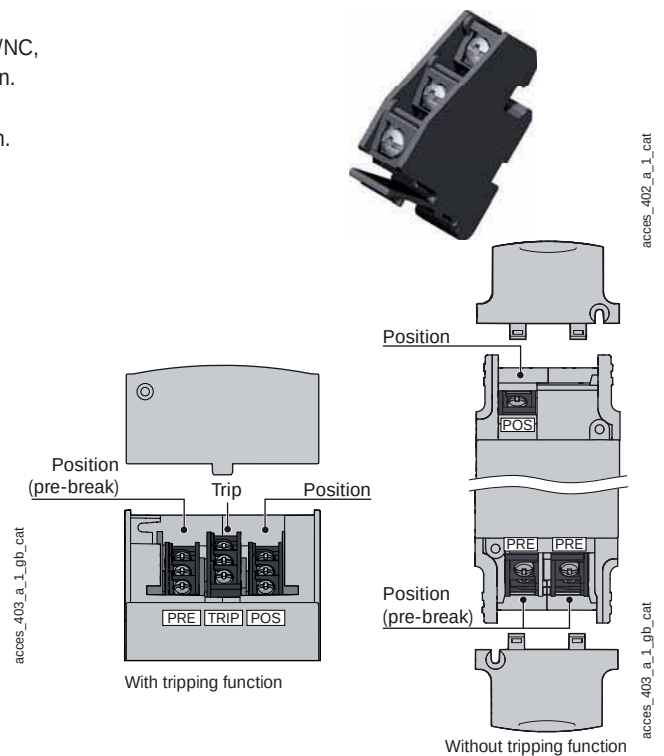
Characteristics

Changeover type: NO/NC,
IP2 with front operation.
30 000 operations.
Maximum 3 per switch.

Frame size	Connection type	Type	Reference
F2 ... F3	Screw	NO/NC standard	8499 0001
F2 ... F3	Screw	NO/NC low level	8499 0002
F2 ... F3	Screw	NC > 600 V	8499 0003

Characteristics

Auxiliary contact type	Min. current (A)	I _{th} (A)	Electrical characteristics per UL 60947-5-1
Standard	12.5 mA / 24 V	10	A300 - Q300
Low level	1 mA / 4 V	10	A300 - Q300
> 600 V	10 mA / 24 V	10	A600



Tripping coil

Use

Allows remote activation of the switch's tripping mechanism. Shunt trip and undervoltage release coils are available.

Connection: 1.5 mm², push in type.

Maximum one tripping coil per switch.

Safe and easy coil replacement by using standard tools.



Shunt trip coil

Shunt trip coil

Frame size	Voltage (V)	Reference
F2 ... F3	24 V AC/DC	8499 7002
F2 ... F3	48 V AC/DC	8499 7004
F2 ... F3	110 - 120 VAC	8499 8111
F2 ... F3	110 - 127 VAC ; 110 - 125 VDC	8499 7011
F2 ... F3	230 V AC/DC	8499 7023

Other voltage ratings available, please consult us.

Undervoltage release

Frame size	Voltage (V)	Reference
F2 ... F3	48 VAC	8499 8104
F2 ... F3	230 - 240 VAC	8499 8123
F2 ... F3	24 VDC	8499 8202
F2 ... F3	48 VDC	8499 8204

Other voltage ratings available, please consult us.

Characteristics

Shunt trip coils

AC type (±10%)	24 VAC	48 VAC	110 VAC	230 VAC
Inrush consumption (A); <10ms	6.85	2.95	1.25	0.73
DC type (-5% ... +20%)	24 VDC	48 VDC	110 VDC	230 VDC
Inrush consumption (A), <10ms	7.6	3.28	1.39	0.78

Max supply time 2 s.

Undervoltage release

AC type	24 VAC	48 VAC	110 VAC	230 VAC
Max permanent consumption (VA), at 110% U _n	-	1.8	1.4	1.5
DC type	24 VDC	48 VDC	110 VDC	230 VDC
Max permanent consumption (VA), at 110% U _n	1.6	1.4	-	-

Holding: up to 85% x U_n

Release: < 35 to 70% x U_n

INOSYS *LBS* UL 98B

Load Break Switches for DC & PV applications

from 100 to 600 A, up to 1500 VDC incorporating tripping function

Accessories (continued)

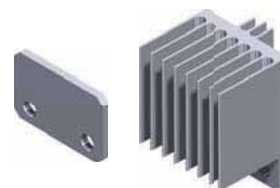
Bridging bar for poles in series

Use

The bridging bars enable the poles to be connected in series, allowing the following configurations for 1500 VDC.

Connection diagrams,

see "Pole series connection" page 194.



acce_410_a_1_cat acce_411_a_1_cat

1000 VDC - 1 circuit			
Frame size	Rating (A)	Quantity to be ordered	Reference
F2	100	1	8409 0016
F2	250	1	8409 0016
F3	400	1	8409 0040
F3	500	1	8409 0041
F3	600	1	8409 0063
1000 VDC - 2 circuits			
Frame size	Rating (A)	Quantity to be ordered	Reference
F2	100	2	8409 0016
F2	250	2	8409 0031
F3	400	2	8409 0041
F3	500 ... 600	2	8409 0063
1500 VDC - 1 circuit			
Frame size	Rating (A)	Quantity to be ordered	Reference
F2	100	2	8409 0016
F2	250	2	8409 0031
F3	400	2	8409 0041
F3	500 ... 600	2	8409 0063

Terminal screen

Use

Provides top and bottom protection against direct contact with terminals or connection parts.

Advantages

Perforations for thermographic inspection. Mounting requires holding inserts (supplied with the terminal screens).



access_408_a_1_cat

Frame size	No. of poles	Position	Reference ⁽¹⁾
F2	2 P	Top and bottom	8499 3222
F2	3 P	Top and bottom	8499 3232
F2	4 P	Top and bottom	8499 3242
F3	2 P	Top and bottom	8499 3322
F3	3 P	Top and bottom	8499 3332
F3	4 P	Top and bottom	8499 3342

(1) Each reference comprises 2 terminal screens for top and bottom protection.

Holding insert

Use

Used to secure terminal shrouds / inter-phase barriers on the switch.

Frame size	Pack (unit)	Reference
F2 ... F3	10	8499 6220
F2 ... F3	100	8499 6221



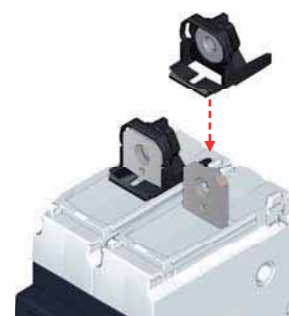
access_409_a_1_cat

Captive nut

Use

This accessory enables simple one-handed connection to the power terminals. It can be mounted on either side of the terminal for front or rear connection.

Frame size	Pack (unit)	Reference
F2	12	8499 6120
F2	120	8499 6121
F3	12	8499 6130
F3	120	8499 6131



acce_399_a_1_cat

Voltage tap

Use

Allows connection of voltage sensing or power cables, with fast-on connection.

Frame size	Pack (unit)	Reference
F2	12	8499 9012
F3	12	8499 9013



acce_412_a_1_cat

Terminal lugs

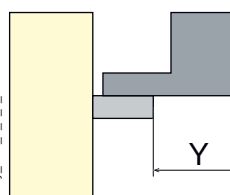
inosy_040_a_1_cat



inosy_041_a_1_cat



inosy_042_a_1_x_cat



Frame size	Number and size of cables	Type of cable	Openings per lug	Quantity per reference	Dimension "Y" (mm / in)	Type	Reference
F2	1 conductor (#6 – 300MCM)	Cu/ Al	1	2 Lugs	33.4 / 1.31	CMC LA300-R	3954 2020 ⁽¹⁾
F2	1 conductor (#6 – 300MCM)	Cu/ Al	1	3 Lugs	33.4 / 1.31	CMC LA300-R	3954 3020 ⁽¹⁾
F2	1 conductor (#6 – 300MCM)	Cu/ Al	1	4 Lugs	33.4 / 1.31	CMC LA300-R	3954 4020 ⁽¹⁾
F2	1 conductor (#6 – 300MCM)	Cu/ Al	1	6 Lugs	33.4 / 1.31	CMC LA300-R	3954 6020 ⁽¹⁾
F2	2 conductors (#4 – 2/0)	Cu/ Al	2	2 Lugs	20 / 0.79	CMC DLA-125	3954 2025 ⁽¹⁾⁽²⁾
F2	2 conductors (#4 – 2/0)	Cu/ Al	2	3 Lugs	20 / 0.79	CMC DLA-125	3954 3025 ⁽¹⁾⁽²⁾
F2	2 conductors (#4 – 2/0)	Cu/ Al	2	4 Lugs	20 / 0.79	CMC DLA-125	3954 4025 ⁽¹⁾⁽²⁾
F3	1 conductor (#4 – 600MCM)	Cu/ Al	1	2 Lugs	45.7 / 1.80	CMC LA630-R	3954 2040 ⁽¹⁾
F3	1 conductor (#4 – 600MCM)	Cu/ Al	1	3 Lugs	45.7 / 1.80	CMC LA630-R	3954 3040 ⁽¹⁾
F3	1 conductor (#4 – 600MCM)	Cu/ Al	1	4 Lugs	45.7 / 1.80	CMC LA630-R	3954 4040 ⁽¹⁾
F3	3 conductors (#6 – 350MCM)	Cu/ Al	3	2 Lugs or 3 Lugs	72.8 / 2.87	Lugs holder - BRUMALL BTP 350	3954 0039 Consult us

(1) Inter-phase barriers must be installed on the products (F2) or (F3).

(2) Screw and bolt not provided.

INOSYS **LBS** UL 98B

Load Break Switches for DC & PV applications

from 100 to 600 A, up to 1500 VDC incorporating tripping function

Characteristics

Characteristics according to UL 98B

Rating		100 A				250 A			
Number of circuits	Rated voltage	(A)	Number of poles(s) in series per polarity	Number of pole(s) of the device	Frame size	(A)	Number of poles(s) in series per polarity	Number of pole(s) of the device	Frame size
1 circuit	1000 VDC	100	2 P	2 P	F2	250	2 P	2 P	F2
1 circuit	1500 VDC	100	3 P	3 P	F2	250	3 P	3 P	F2
2 circuits	1000 VDC	100	2 P	4 P	F2	250	2 P	4 P	F2

Short-circuit capacity at 1000 & 1500 VDC (any circuit breaker)

Prospective short-circuit current (kA rms DC) $10^{(1)}$ $10^{(1)}$

Mechanical characteristics

Durability (number of operating cycles) 15 000 15 000

Rating		400 A				500 A			
Number of circuits	Rated voltage	(A)	Number of poles(s) in series per polarity	Number of pole(s) of the device	Frame size	(A)	Number of poles(s) in series per polarity	Number of pole(s) of the device	Frame size
1 circuit	1000 VDC	400	2 P	2 P	F3	500	2 P	2 P	F3
1 circuit	1500 VDC	400	3 P	3 P	F3	500	3 P	3 P	F3
2 circuits	1000 VDC	400	2 P	4 P	F3	500	2 P	4 P	F3

Short-circuit capacity at 1000 & 1500 VDC (any circuit breaker)

Prospective short-circuit current (kA rms DC) $10^{(1)}$ $10^{(1)}$

Mechanical characteristics

Durability (number of operating cycles) 10 000 10 000

Rating		600 A			
Number of circuits	Rated voltage	(A)	Number of poles(s) in series per polarity	Number of pole(s) of the device	Frame size
1 circuit	1000 VDC	600	2 P	2 P	F3
1 circuit	1500 VDC	600	3 P	3 P	F3
2 circuits	1000 VDC	600	2 P	4 P	F3

Short-circuit capacity at 1000 & 1500 VDC (any circuit breaker)

Prospective short-circuit current (kA rms DC) $10^{(1)}$

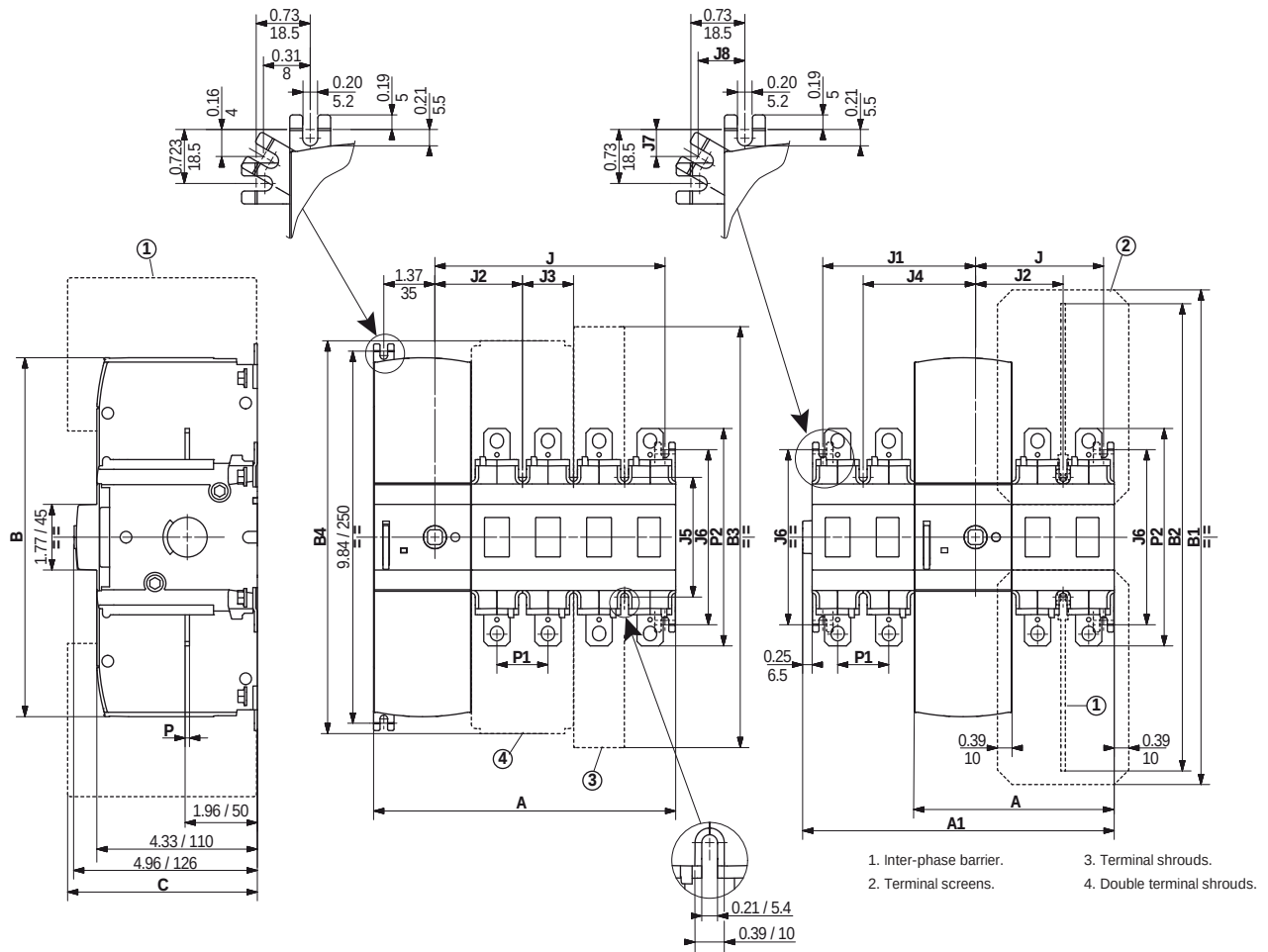
Mechanical characteristics

Durability (number of operating cycles) 10 000

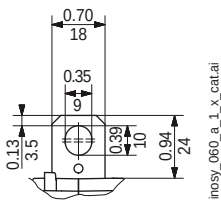
(1) Without fuse during 50 ms.

Dimensions (in/mm)

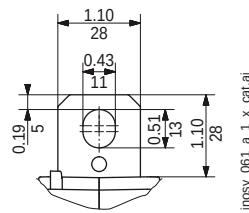
INOSYS LBS with tripping function



Connection terminal F2

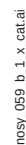


Connection terminal F3



			A							A1		J							J1	
		No. of poles																		
Rating (A)	Frame size		2 P	3 P	4 P				2+2 P	2 P	3 P	4 P				2 P				
100 ... 250	F2	in	5.39	6.77	8.15			8.15			3.45		4.83		6.21		4.12			
		mm	137	172	207			207			88		123		158		105			
400 ... 600	F3	in	6.18	9.95	9.72			9.72			4.24		6.01		7.78		4.91			
		mm	157	202	247			247			108		153		198		125			
Rating (A)	Frame size		B	B1	B2	B3	B4	C	J2	J3	J4	J5	J6	J7	J8	P	P1	P2		
100 ... 250	F2	in	9.69	13.35	10.31	11.64	10.60	4.33	2.36	1.38	3.03	3.23	4.72	0.39	0.58	0.12	1.38	5.87		
		mm	246	339	262	296	269	110	60	35	77	82	120	10	15	3	35	149		
400 ... 600	F3	in	9.69	16.28	15.50	14.12	15.95	5.12	2.76	1.77	3.43	4.72	6.22	0.16	0.33	0.20	1.77	6.69		
		mm	246	414	394	359	405	130	70	45	87	120	158	4	8	5	45	170		

INOSYS LBS without tripping function

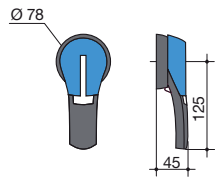
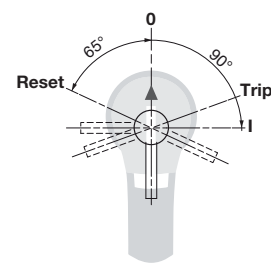
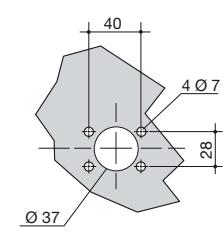
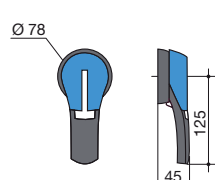
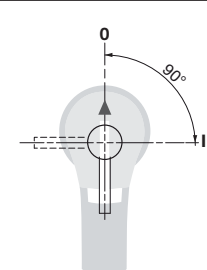
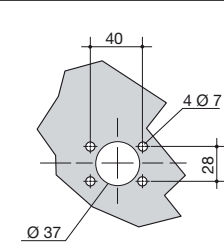


Technical drawing of a boat hull cross-section. The drawing shows a hull with a central circular opening. Dimensions are provided in inches (top) and centimeters (bottom). The total width is 0.70 inches (18 cm). The width of the central opening is 0.35 inches (9 cm). The height of the hull is 0.94 inches (24 cm). The height of the central opening is 0.39 inches (10 cm). The distance from the top edge to the center of the opening is 0.13 inches (3.5 cm). The distance from the bottom edge to the center of the opening is 0.39 inches (10 cm).

General Catalogue 2017-2018

Dimensions for external handles (mm)

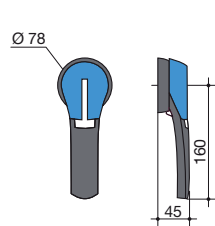
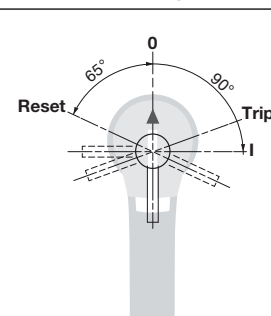
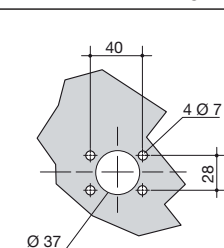
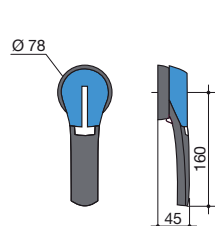
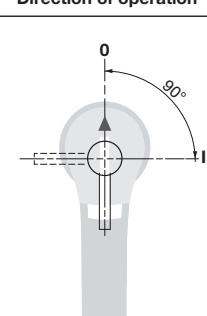
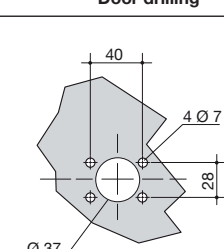
F2 frame size

Handle type	Front operation Direction of operation	Door drilling
S2 type with trip 		
S2 type 		

polign_057_a_1_gb_cat.eps

polign_013_a_1_gb_cat.eps

F3 frame size

Handle type	Front operation Direction of operation	Door drilling
S2L type with trip 		
S2L type 		

polign_068_a_1_gb_cat.eps

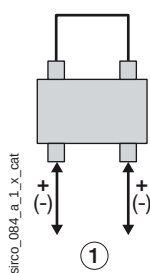
polign_069_a_1_gb_cat.eps

Pole series connections

1 PV circuit - 1000 VDC

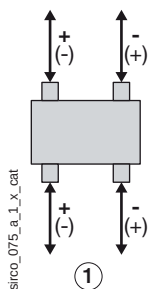
F2-F3 - 2 P

Grounded network



1. Circuit 1
2. Circuit 2

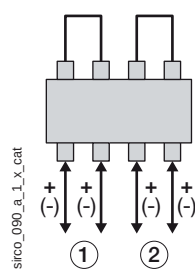
Floating network



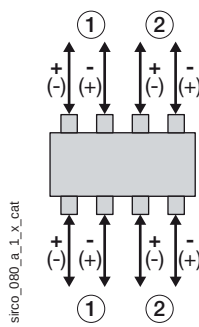
2 PV circuits - 1000 VDC

F2-F3 - 2 x 2 P

Grounded network



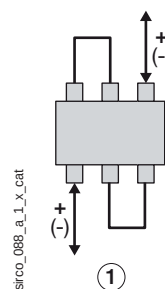
Floating network



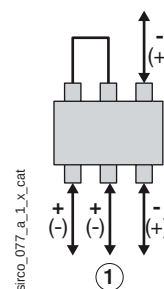
1 PV circuit - 1500 VDC

F2-F3 - 3 P

Grounded network



Floating network

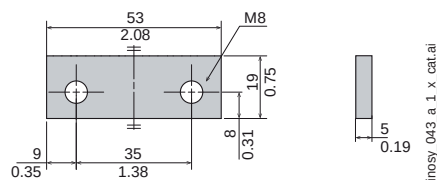


Bridging bars (mm/in)

F2

8409 0016⁽¹⁾

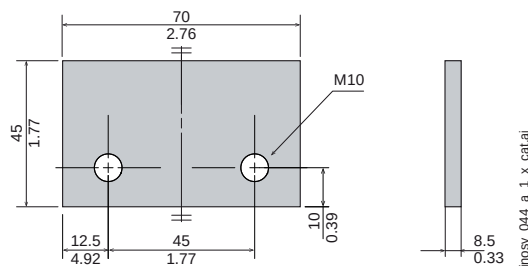
(1) Kit comprises 2 identical bars.



F3

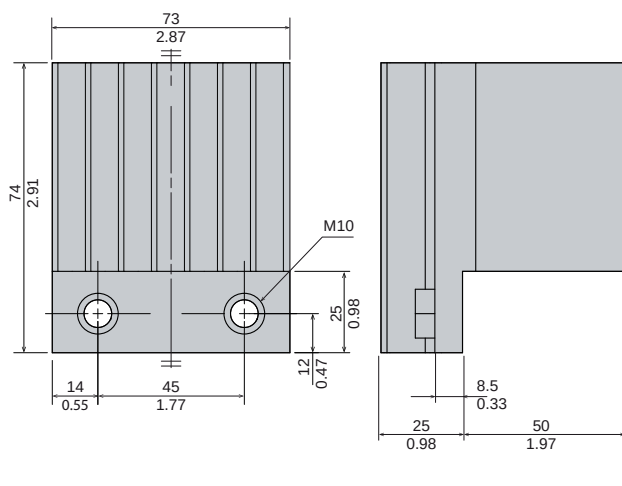
8409 0040⁽¹⁾

(1) Kit comprises 2 identical bars.

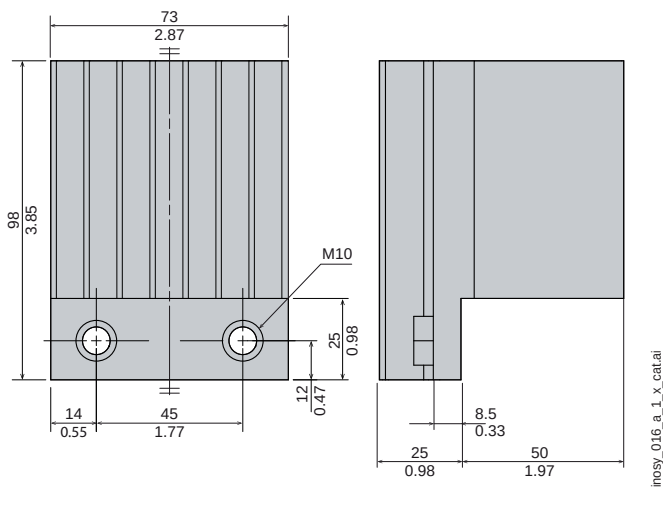


F3

8409 0041



8409 0063



Mounting orientation

F2 - F3

All mounting orientations are possible. Derating may apply - please consult us.



inosy_006_a.psd



SIRCO *PV* UL 98B

Load break switches for photovoltaic applications
from 100 to 2000 A, up to 1500 VDC



Function

SIRCO PV UL 98B are manually operated multipolar load break switches. They make and break under load conditions and provide safety isolation for any PV circuit up to 1000 VDC (as per UL 98B standard) and 1500 VDC (as per IEC 60947-3). They comply with NEC Art. 690 (US National Electrical Code) concerning photovoltaic installations. They are compliant for use within solar inverters and enclosures governed by standard UL1741.

Advantages

Performance

A glass fibre reinforced polyester break chamber with an arc extinguishing system provides a patented safety disconnection system offering rapid extinguishing of the electric arc up to 1500 VDC and current interruption up to 2000 A.

SIRCO PV are extremely durable switches that have been tested and approved for use in the most demanding environments. They have been designed and tested for all types of applications: connected to earth, floating or bipolar.

Back-to-back double load break switch

The system of back-to-back double switches enables:

- on load operation of two switches with a single handle,
- compact solution when connecting two separate photovoltaic circuits compared with the use of two separate switches,
- easy connection,
- voltages above 1000 VDC are broken by the use of two poles in series.

The solution for

- > Combiner box
- > Recombiner box
- > Inverter



Strong points

- > Patented switching technology
- > Positive break indication
- > Up to 1000 VDC as per characteristics by UL 98B
- > Up to 1500 VDC as per characteristics by IEC 60947-3
- > Suitable for use in accordance with NEC Art. 690

Conformity to standards

- > UL 98B Guide WHVA, file E346418
- > CSA C22.2#4, Class 4651-02, file 112964
- > NEC Art 690 Issue 2011
- > IEC 60947-3



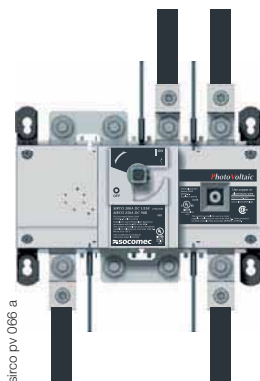
Approvals and certifications⁽¹⁾



(1) Product reference on request.

New patented switching technology to break 500 VDC per pole

Most PV systems today are designed at 1000 VDC. Our new range of switches allows on-load breaking of 1000 VDC on just 2 poles. This innovation provides an extremely compact solution.



Classic solution
Example of connection of a 1000 VDC disconnect.



New
With our new range we can break 1000 VDC with 2 poles in series.

Optimise your investment

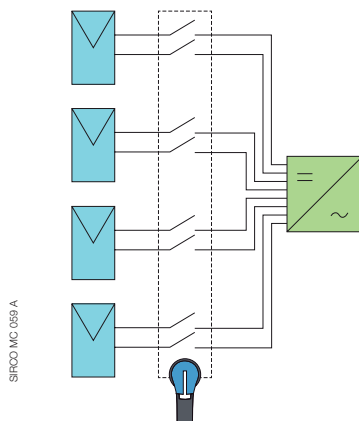
- Limit costs by reducing the number of bridging bars per device.
- Gain time by having a less number of bridging bars to install.
- Reduce the overall heat dissipation of the switch. A 2 pole SIRCO PV switch takes direct advantage of this, leading to possibility to use a smaller enclosure.

Limit potential risk

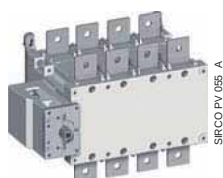
PV equipment is subject to extreme variation in temperature. Point of connection are therefore subject to potential loosening of connection due to breaking cooling effect. Limiting the number of poles greatly reduces the risk of a loose connection.

Allows to disconnect up to 4 circuits with one switch ("The Worlds first")

A compact and cost effective solution for recombined applications. Allows to break up to 24 circuits by respecting the NEC article 690.



4 MPPT switches, 4 circuits are switched together.

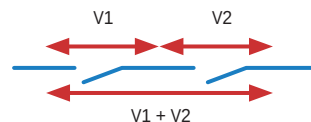


350 A 1000 VDC 4 circuits.

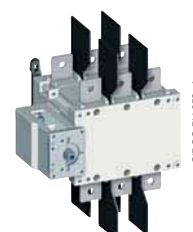
Achieving 1500 VDC characteristics in a compact footprint

SOCOMECS's new technology enables Utilisation at 1500 VDC by connecting three poles in series.

- Each pole of a switch has a maximum voltage breaking capacity. To break a high DC voltage it is necessary to connect poles in series. The global on-load breaking capacity of a switch is determined by multiplying the max voltage breaking capacity per pole by the number of poles in series.
- Paralleling the poles on our double-stack design permits a higher current rating to be achieved.



400 A 1500 VDC



800 A 1500 VDC with a 400 A double stack switch.

SIRCO PV UL 98B

Load break switches for photovoltaic applications
from 100 to 2000 A - up to 1500 VDC

References

1000 VDC - Back plate mounting

Rating (A)	Frame size	No. of poles	Switch body	External handle	Shaft for external handle
1 PV circuit					
100 A	B4	2 P	27PV 2009	S2 type Black 1, 3R, 12 142F 2111⁽¹⁾ Red/Yellow 1, 3R, 12 142G 2111⁽¹⁾ Black 4, 4X 142D 2111⁽¹⁾ Red/Yellow 4, 4X 142E 2111⁽¹⁾	200 mm 7.9 inches 1400 1020 320 mm 12.6 inches 1400 1032 400 mm 15.7 inches 1400 1040⁽²⁾
200 A	B4		27PV 2019		
250 A	B4		27PV 2024		
325 A	B5		27PV 2032		
400 A	B5		27PV 2039		
600 A	B6	4 P	27PV 4060	S3 type Black 4, 4X 143D 3111⁽¹⁾ Red/Yellow 4, 4X 143E 3111⁽¹⁾ S4 type Black 4, 4X 144D 3111⁽¹⁾ Red/Yellow 4, 4X 144E 3111⁽¹⁾	200 mm 7.9 inches 1401 1520 320 mm 12.6 inches 1401 1532 400 mm 15.7 inches 1401 1540⁽²⁾
800 A	B7		27DC 4081		
1200 A	B7		27DC 4121		
2000 A	B7 _{DS}	8 P	27DC 4201	V1 type Black 3R, 12 2799 7145	320 mm 12.6 inches 4199 3018
2 PV circuits					
100 A	B4 _{DS}	4 P	27PV 5009	S2 type Black 1, 3R, 12 142F 2111⁽¹⁾ Red/Yellow 1, 3R, 12 142G 2111⁽¹⁾ Black 4, 4X 142D 2111⁽¹⁾ Red/Yellow 4, 4X 142E 2111⁽¹⁾	200 mm 7.9 inches 1400 1020 320 mm 12.6 inches 1400 1032 400 mm 15.7 inches 1400 1040⁽²⁾
250 A	B4 _{DS}		27PV 5024		
325 A	B5		27PV 4032		
400 A	B5		27PV 4039		
600 A	B6 _{DS}	8 P	27PV 8060	V1 type Black 3R, 12 2799 7145	320 mm 12.6 inches 4199 3018
800 A	B7 _{DS}		27DC 8081		
1000 A	B7 _{DS}		27DC 8101		
4 PV circuits					
350 A	B5 _{DS}	8 P	27PV 8039	S3 type Black 4, 4X 143D 3111⁽¹⁾ Red/Yellow 4, 4X 143E 3111⁽¹⁾	200 mm 7.9 inches 1401 1520 320 mm 12.6 inches 1401 1532 400 mm 15.7 inches 1401 1540⁽²⁾

(1) Defeatable handle.

(2) Shaft guide reference 1429 0000 is required for shaft length over 15.7 inches (400mm).

SIRCO PV UL 98B
Load break switches for photovoltaic applications
from 100 to 2000 A - up to 1500 VDC

1500 VDC - Back plate mounting

UL 98B certification limit is 1000 VDC, that's why SIRCO PV UL switches are certified by the UL standard up to 1000 VDC and self-certified up to 1500 VDC.

Rating (A)	Frame size	No. of poles	Switch body	External handle	Shaft for external handle
1 PV circuit					
275 A	B5	3 P	27PV 3026	S2 type Black 1, 3R, 12 142F 2111⁽¹⁾	200 mm 7.9 inches 1400 1020
325 A	B5		27PV 3032	Red/Yellow 1, 3R, 12 142G 2111⁽¹⁾	320 mm 12.6 inches 1400 1032
400 A	B5		27PV 3039	Black 4, 4X 142D 2111⁽¹⁾ Red/Yellow 4, 4X 142E 2111⁽¹⁾	400 mm 15.7 inches 1400 1040⁽²⁾
600 A	B6 _{DS}	8 P	27PV 8060	V1 type Black 3R, 12 2799 7145	320 mm 12.6 inches 4199 3018
800 A	B7 _{DS}		27DC 8081		
1000 A	B7 _{DS}		27DC 8101		
2 PV circuits					
275 A	B5 _{DS}	6 P	27PV 6026	S3 type Black 4, 4X 143D 3111⁽¹⁾	200 mm 7.9 inches 1401 1520
350 A	B5 _{DS}		27PV 6039	Red/Yellow 4, 4X 143E 3111⁽¹⁾	320 mm 12.6 inches 1401 1532 400 mm 15.7 inches 1401 1540⁽²⁾

(1) Defeatable handle.

(2) Shaft guide reference 1429 0000 is required for shaft length over 15.7 inches (400mm).

SIRCO PV UL 98B

Load break switches for photovoltaic applications

from 100 to 2000 A - up to 1500 VDC

Accessories

External operation

Use

In a combiner box, located close to the solar cell strings, or located close to the inverter, we recommend to use a door interlocked external handle for its safety features.

Door interlocked external operation handles include an escutcheon, are padlockable and must be utilized with an extension shaft.

Example

The locking function of the enclosure in the "ON" position will force the operator to safely disconnect and isolate the solar cell strings prior to any intervention. Opening the door when the switch is on "ON" position is possible by defeating the locking function using a tool (authorized persons only). The interlocking function is restored when the door is re-closed.



S2 type handle



Reinforced S2 type handle⁽¹⁾
(1) Please consult us.



S3 type handle



S4 type handle



V1 type handle

Frame size	Handle type	Handle colour	Nema degree of protection	Reference
B4 ... B5 B4 _{DS}	S2	Black	1, 3R, 12	142F 2111
		Red/Yellow		142G 2111
		Black		142D 2111
		Red/Yellow		142E 2111
B5 _{DS} B6	S3	Black	4, 4X	143D 3111
		Red/Yellow		143E 3111
		Black		144D 3111
B7	S4	Red/Yellow		144E 3111
B6 _{DS} ... B7 _{DS}	V1	Black	1, 3R, 12	2799 7145

Shaft for external handle

Use

Standard lengths:

- 7.9 in / 200 mm,
- 12.6 in / 320 mm,
- 15.7 in / 400 mm.

Other lengths: please consult us.

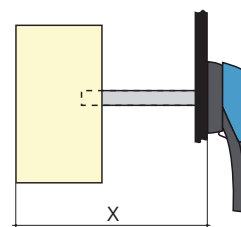
19.69 in / 500 mm available.



access_144_b_1_cat

access_369_a_1_cat

Frame size	Handle type	Dimension (inches)	Dimension X (mm)	Length (inches)	Length (mm)	Reference
B4	S2	6 ... 11.6	150 ... 295	7.9	200	1400 1020
		6 ... 16.3	150 ... 415	12.6	320	1400 1032
		6 ... 19.4	150 ... 495	15.7	400	1400 1040
B5	S2	8 ... 12.9	203 ... 328	7.9	200	1400 1020
		8 ... 17.6	203 ... 448	12.6	320	1400 1032
		8 ... 20.7	203 ... 525	15.7	400	1400 1040
B6	S3	8.70 ... 13.50	220 ... 343	7.9	200	1401 1520
		8.70 ... 18.23	220 ... 463	12.6	320	1401 1532
		8.70 ... 21.38	220 ... 543	15.7	400	1401 1540
B7	S4	12 ... 14.4	305 ... 366	7.9	200	1401 1520
		12 ... 19.1	305 ... 485	12.6	320	1401 1532
		12 ... 22.2	305 ... 564	15.7	400	1401 1540
B4 _{DS}	S2	12 ... 14.3	305 ... 363	7.9	200	1400 1020
		12 ... 19	305 ... 483	12.6	320	1400 1032
		12 ... 22.10	305 ... 561	15.7	400	1400 1040
B5 _{DS}	S3, S4	16 ... 18.4	406 ... 467	7.9	200	1401 1520
		16 ... 23.1	406 ... 589	12.6	320	1401 1532
		16 ... 26.3	406 ... 668	15.7	400	1401 1540
B6 _{DS}	V1	20 ... 28.1	508 ... 714	12.6	320	4199 3018
		20 ... 31.3	508 ... 795	15.7	400	4199 3019
		20 ... 28.1	508 ... 714	12.6	320	4199 3018
B7 _{DS}	V1	20 ... 39.4	508 ... 795	15.7	400	4199 3019



access_202_a_1_x_cat

S-type handle adapter

Use

For handles S2, S3 and S4.

Dimensions

Increases the distance between the handle grip and the door by 12 mm, for better handling.

Colour	Nema degree of protection	To be ordered in multiples of	Reference
Black	1, 3R, 12	10	1493 0000



access_187_a_3_cat

Alternative S-type handle cover colours

Use

For handles S2, S3 and S4.

Other colours: please consult us.

Handle colour	Handle type	To be ordered in multiples of	Reference
Light grey	S2, S3	50	1401 0001
Dark grey	S2, S3	50	1401 0011
Light grey	S4	50	1401 0031
Dark grey	S4	50	1401 0041



access_198_a_3_cat

Auxiliary contact

Use

Pre-break and signaling of positions 0 and I:
- 1 to 2 NO/NC auxiliary contacts,
- 1 to 2 low level NO/NC auxiliary contacts.

Electrical characteristics

A300.

NO/NC contact

Frame size	Position AC	Type	Reference
B4 ... B7	1 contact	NO/NC	2799 0021
	2 contacts		2799 0022
B4 _{DS} ... B7 _{DS}	1 contact		4159 0021

Low level NO/NC auxiliary contacts

Frame size	Position AC	Type	Reference
B4 ... B7	1 contact	NO/NC	2799 0121
	2 contacts		2799 0122
B4 _{DS} ... B7 _{DS}	1 contact		4159 0022



access_076_a_1_cat

Terminal screen

Use

Top or bottom protection against direct contact with terminals or connection parts.

Frame size	No. of poles	Position	Pack	Reference
B4	2 P	Top	1 unit	2798 3021
	2 P	Bottom	1 unit	2798 8021
B5	3 P	Top	1 unit	2798 3041
	3 P	Bottom	1 unit	2798 8041
B5	4 P	Top or bottom	1 unit	2798 4041
B6	4 P	Top or bottom	1 unit	2798 4061
B4 _{DS}	2 P	Top or bottom	1 unit	4158 3021
B5 _{DS}	6 P	Top or bottom	1 unit	4158 3041
	8 P	Top or bottom	1 unit	4158 4041
B6 _{DS}	8 P	Top and bottom	2 units	2798 8061
B7 _{DS}	8 P	Top or bottom	1 unit	2798 4121



access_079_a_1_cat

SIRCO PV UL 98B

Load break switches for photovoltaic applications

from 100 to 2000 A - up to 1500 VDC

Accessories (continued)

Bridging bars for connecting poles in series

Use

The bridging bars will make easy the connection of the poles in series, allowing the following configurations⁽¹⁾.

(1) Other connections: refer to mounting instructions.

1000 VDC

Switch Reference	Frame size	Rating (A)	Quantity of bridging bar kits to be order per switch		Fig. of one bridging bar kit	Bridging bar kit Reference
			Not connected to earth	Connected to earth		
1 PV circuit						
27PV 2009	B4	100	N/A	1	1	2709 1020
27PV 2019	B4	200	N/A	1	1	2709 1020
27PV 2024	B4	250	N/A	1	1	2709 1020
27PV 2032	B5	325	N/A	1	2	2709 1041
27PV 2039	B5	400	N/A	2	2	2709 1041
27PV 4060	B6	600	2	3	6	2709 0062
27PV 4081	B7	800	2	3	7	2709 0081
27PV 4121	B7	1200	2	3	8	2709 0121
27PV 4201	B7 _{DS}	2000	6	6 ⁽¹⁾	8	2709 0121
2 PV circuits						
27PV 5009	B4 _{DS}	100	N/A	2	1	2709 1020
27PV 5024	B4 _{DS}	250	N/A	2	1	2709 1020
27PV 4032	B5	325	N/A	2	3	2709 0027
27PV 4039	B5	400	N/A	2	4	2709 0045
27PV 8060	B6 _{DS}	600	4	6	6	2709 0062
27PV 8081	B7 _{DS}	800	4	6	8	2709 0121
27PV 8101	B7 _{DS}	1000	4	6	8	2709 0121
4 PV circuits						
27PV 8039	B5 _{DS}	350	N/A	4	5	2709 0046

1500 VDC

Switch Reference	Frame size	Rating (A)	Quantity of bridging bar kits to be order per switch		Fig. of one bridging bar kit	Bridging bar kit Reference
			Not connected to earth	Connected to earth		
1 PV circuit						
27PV 3026	B5	275	1	2	3	2709 0027
27PV 3032	B5	325	1	2	3	2709 0027
27PV 3039	B5	400	1	2	4	2709 0045
27PV 8060	B6 _{DS}	600	6	6 ⁽²⁾	6	2709 0062
27PV 8081	B7 _{DS}	800	6	6 ⁽¹⁾	8	2709 0121
27PV 8101	B7 _{DS}	1000	6	6 ⁽¹⁾	8	2709 0121
2 PV circuits						
27PV 6026	B5 _{DS}	275	2	4	3	2709 0027
27PV 6039	B5 _{DS}	350	2	4	4	2709 0045

(1) Please order paralleling kit to connect back and front switches, see paralleling connection kit.

(2) Paralleling kit is needed to connect back and front switches, please consult us

Bridging bars for connecting poles in series (continued)

Figures are showing the content of 1 piece of a bridging bar kit, some configuration will require 2 kits per series and some bridging bar kits are composed of one or several pieces as heat sinks.

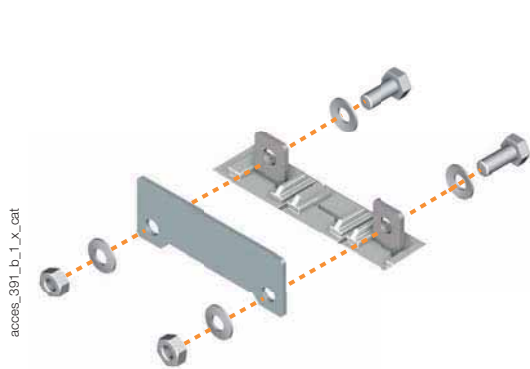


Fig. 1

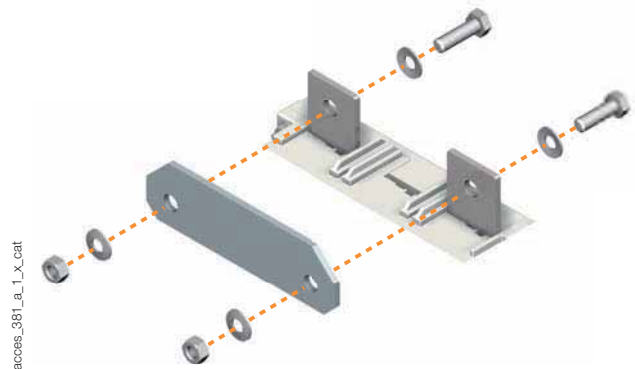


Fig. 2

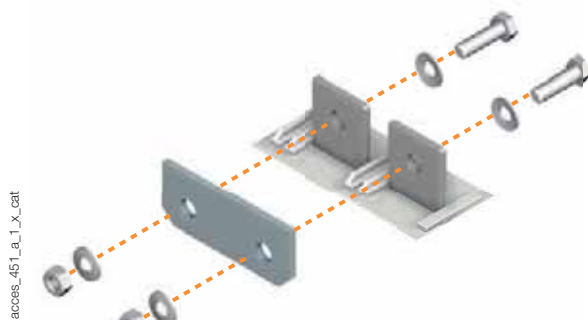


Fig. 3

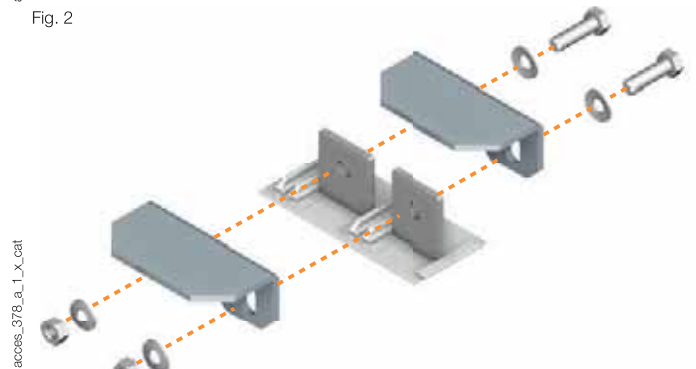


Fig. 4

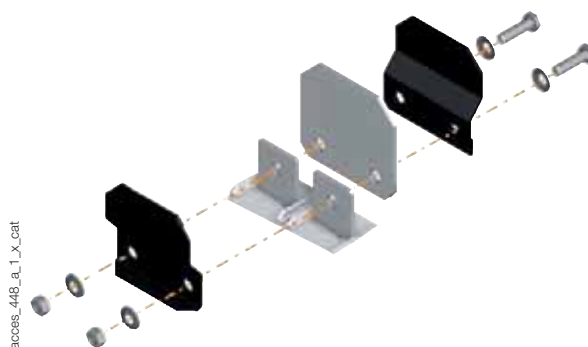


Fig. 5

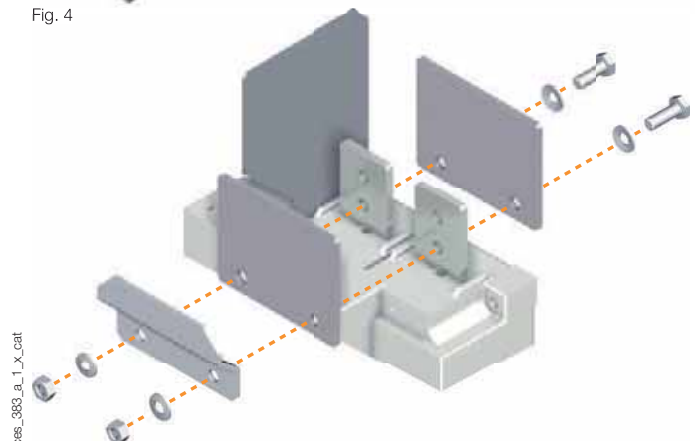


Fig. 6

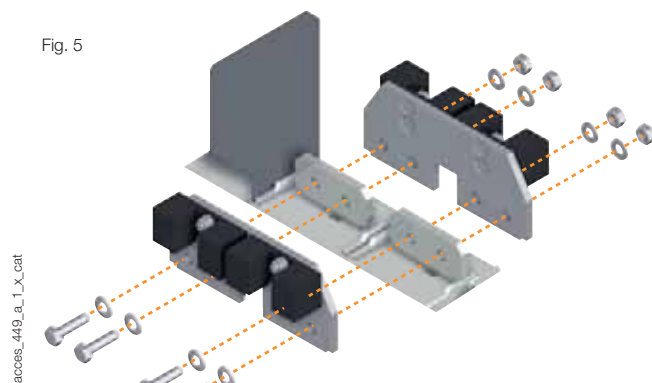


Fig. 7

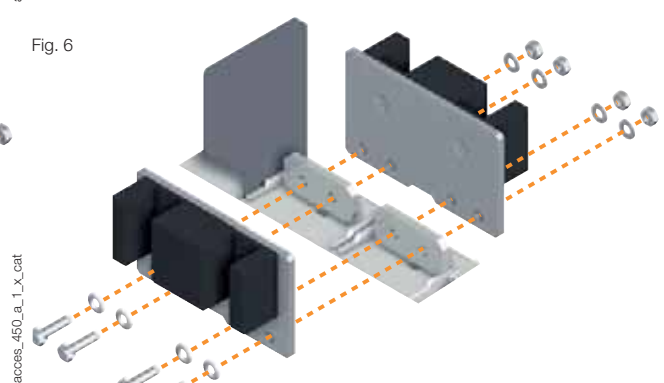


Fig. 8

SIRCO PV UL 98B

Load break switches for photovoltaic applications

from 100 to 2000 A - up to 1500 VDC

Accessories (continued)

Cage terminals

Use

Connection of bare copper cables onto the terminals (without lugs).

Optional fan out kit for ratings of 800 to 1200 A for connecting several cables to the switch.

Frame size	Rating max (A)	Number and size of cables	Max. number of connections per terminal	Type of cable	Quantity	Reference
B4 - B4 _{DS}	100 ... 250	1 conductor (#6-300MCM)	1	Cu / Al	2 lugs	3954 2020
		2 conductors (#4-2/0)	1	Cu / Al	2 lugs	3954 2025
B5 - B5 _{DS}	325 ... 400	1 conductor (#4-600MCM)	1	Cu / Al	2 lugs	3954 2040
		2 conductors (#6-350MCM)	1	Cu / Al	2 lugs	3954 2041
B6 - B6 _{DS}	600	2 conductors (#2-600MCM)	1	Cu / Al	2 lugs	3954 2060
B7	800 ... 1200	2 conductors (#2-600MCM)	2	Cu / Al	2 lugs	3954 2060
		2 conductors (#2-600MCM)	3 ⁽¹⁾	Cu / Al	3 lugs	3954 3060
B7 _{DS}	2000	2 conductors (#2-600MCM)	2 ⁽²⁾	Cu / Al	2 lugs	3954 2060
		2 conductors (#2-600MCM)	3 ⁽³⁾	Cu / Al	3 lugs	3954 3060



u_032_a

(1) Order a fan out kit reference 2709 1203 for connecting 3 connectors per terminal (6 in total for the switch).

(2) 2 connectors per terminal with the connection kit 2729 1200.

(3) 3 connectors per terminal with the connection kits 2729 1201 and 2709 1202.

Copper bar connection kits

Use

To allow connection between the two power terminals from a same pole for 2000 A ratings (Fig. 1, Fig. 2 and Fig. 3).

For 600 A, please consult us.

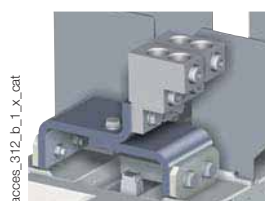
Top or bottom flat connection

Frame size	Rating (A)	Figure	Quantity to order per pole	Number of terminals	Reference
B7 _{DS}	800 ... 1000	1	1	2	2729 1200
		2	1	3	2729 1202
	2000	1	1	2	2729 1200
		2	1	3	2729 1202

Top or bottom edgewise connection

Frame size	Rating (A)	Figure	Quantity to order per pole	Number of terminals	Reference
B7 _{DS}	800 ... 2000	3	1	3	2729 1201

Fig. 1



access_312_b_1_x_cat

Fig. 3



Fig. 2



access_313_b_1_x_cat

access_314_b_1_x_cat

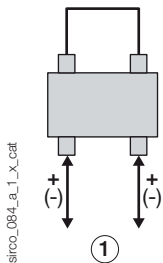


Pole connections in series

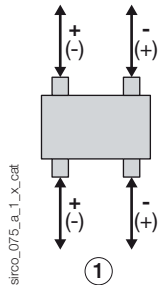
1 PV circuit - 1000 VDC

B4-B5 - 2 P

Connected to earth

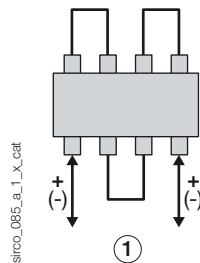


Not connected to earth

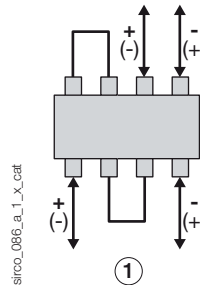


B6-B7 - 4 P

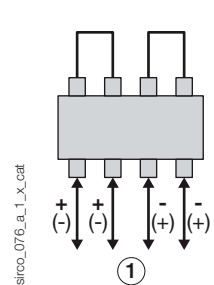
Connected to earth



Not connected to earth

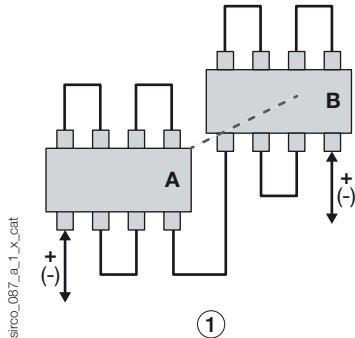


Not connected to earth

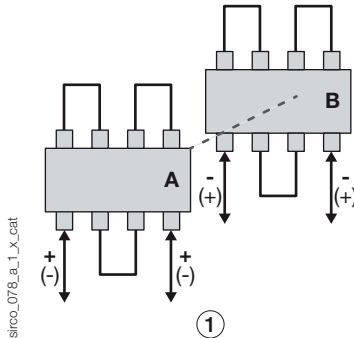


B7_{DS} - 8 P

Connected to earth



Not connected to earth

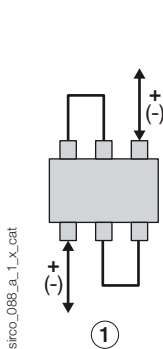


A. Front switch.
B. Rear switch.
1. Circuit 1.

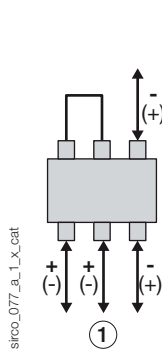
1 PV circuit - 1500 VDC

B4-B5 - 3 P

Connected to earth

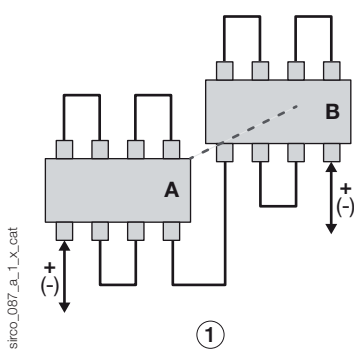


Not connected to earth

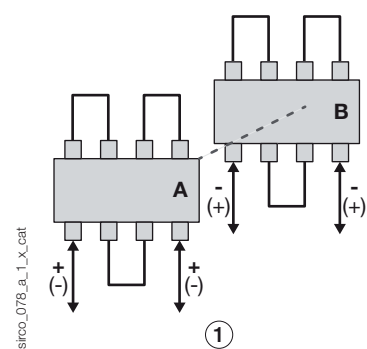


B6_{DS}-B7_{DS} - 8 P

Connected to earth



Not connected to earth



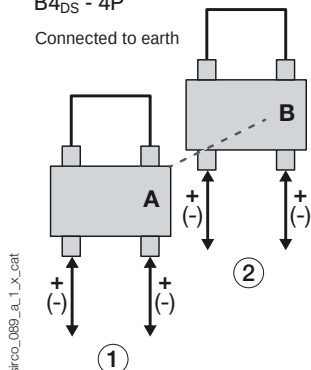
A. Front switch.
B. Rear switch.
1. Circuit 1.

Pole connections in series (continued)

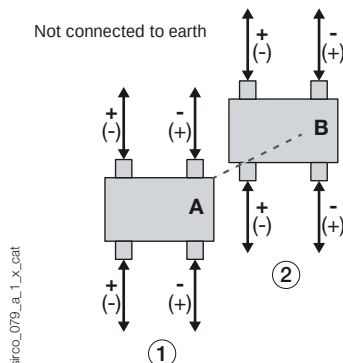
2 PV circuit - 1000 VDC

B4_{DS} - 4P

Connected to earth

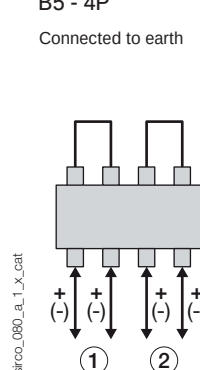


Not connected to earth

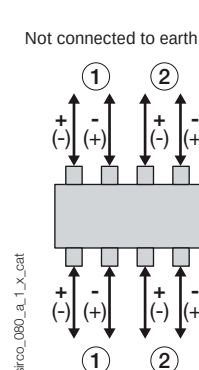


B5 - 4P

Connected to earth

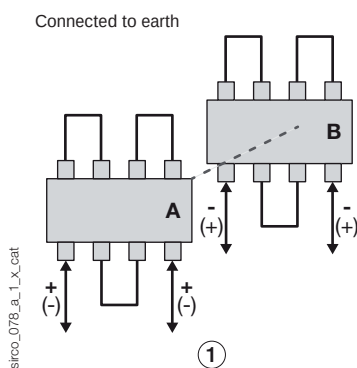


Not connected to earth

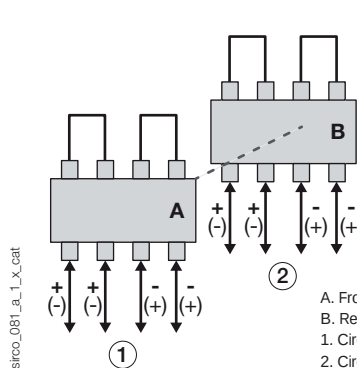
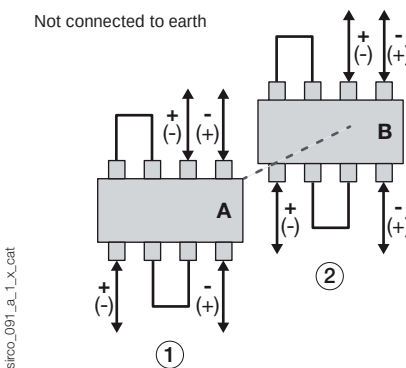


B5_{DS}-B7_{DS} - 8P

Connected to earth



Not connected to earth

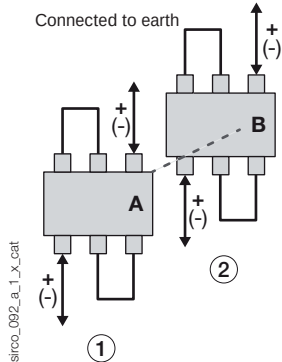


A. Front switch.
B. Rear switch.
1. Circuit 1.
2. Circuit 2.

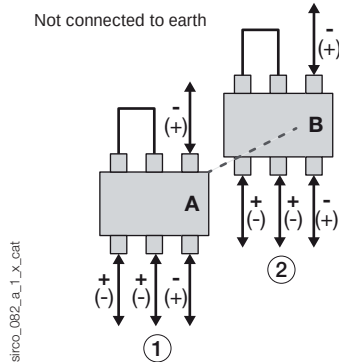
2 PV circuits - 1500 VDC

B5_{DS} - 6P

Connected to earth



Not connected to earth

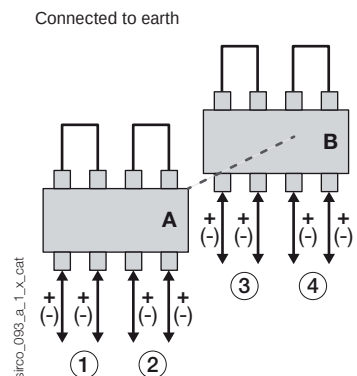


A. Front switch.
B. Rear switch.
1. Circuit 1.
2. Circuit 2.

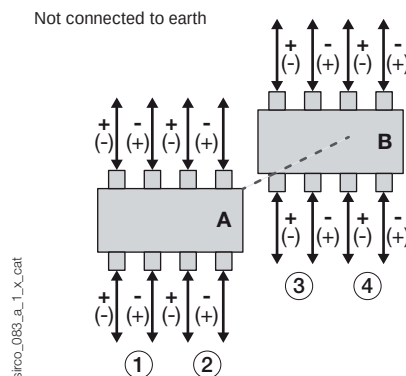
4 PV circuits - 1000 VDC

B5_{DS} - 8P

Connected to earth



Not connected to earth



A. Front switch.
B. Rear switch.
1. Circuit 1.
2. Circuit 2.
3. Circuit 3.
4. Circuit 4.

Characteristics

Compliance to UL 98B and IEC 60947-3 standards

SIRCO PV UL 98B switches comply with both UL 98B and IEC 60947-3 standards. As acceptance test criteria are different depending on one or the other standard, the same product can be referred to with two different ratings, identified in the characteristic table as follows:

- "Rating" for characteristics as per standard UL 98B.
- "Rated current" for characteristics as per standard IEC 60947-3.

UL 98B										
Rating (A)			100 A				200 A			
Number of circuits	Rated voltage		(A)	Number of pole(s) in series per polarity	Number of pole(s) of the device	Frame size	(A)	Number of pole(s) in series per polarity	Number of pole(s) of the device	Frame size
1 circuit	1000 VDC		100	2 P	2 P	B4	200	2 P	2 P	B4
2 circuits	600 VDC		100	1 P	2 P	B4	130	1 P	2 P	B4
2 circuits	1000 VDC		100	2 P	4 P	B4 _{DS}	200	2 P	4 P	B4 _{DS}
4 circuits	600 VDC		100	1 P	4 P	B4 _{DS}	130	1 P	4 P	B4 _{DS}
Short-circuit capacity at 1000 VDC (any circuit breaker)										
Prospective short-circuit current (kA rms DC)			10 ⁽¹⁾				10 ⁽¹⁾			
Connection terminals										
Min. connection wire range/ AWG			#6				#6			
Max. connection wire range/ AWG			300MCM				300MCM			
Mechanical characteristics										
Durability (number of operating cycles)			10 000				10 000			
Operating effort (lbs.in/Nm)			88.5/10				88.5/10			
Auxiliary contact										
Electrical characteristics			A300				A300			
IEC 60947-3										
Rated current I _n			160 A				250 A			
Thermal current at 40°C (A)			160				250			
Thermal current at 50°C (A)			160				250			
Thermal current at 60°C (A)			160				250			
Rated insulation voltage U _i (V)			1500				1500			
Rated impulse withstand voltage U _{imp} (kV)			12				12			
Number of circuits	Rated voltage	Utilisation category	(A)	Number of pole(s) in series per polarity	Number of pole(s) of the device	Frame size	(A)	Number of pole(s) in series per polarity	Number of pole(s) of the device	Frame size
1 circuit	1000 VDC	DC-21 B	160	2 P	2 P	B4	250	2 P	2 P	B4
1 circuit	1500 VDC	DC-21 B	160	4 P	4 P	B4 _{DS}	250	4 P	4 P	B4 _{DS}
2 circuits	1000 VDC	DC-21 B	160	2 P	4 P	B4 _{DS}	250	2 P	4 P	B4 _{DS}
4 circuits	600 VDC	DC-21 B	125	1 P	4 P	B4 _{DS}	160	1 P	4 P	B4 _{DS}

(1) Wwithout fuse during 50 ms.

SIRCO PV UL 98B

Load break switches for photovoltaic applications

from 100 to 2000 A - up to 1500 VDC

Characteristics (continued)

as per standards UL 98B and IEC 60947-3

UL 98B										
Rating			250 A				275 A			
Number of circuits	Rated voltage		(A)	Number of pole(s) in series per polarity	Number of pole(s) of the device	Frame size	(A)	Number of pole(s) in series per polarity	Number of pole(s) of the device	Frame size
1 circuit	1000 VDC		250	2 P	2 P	B4	275	2 P	2 P	B5
2 circuits	600 VDC		130	1 P	2 P	B4	215	1 P	2 P	B5
2 circuits	1000 VDC		250	2 P	4 P	B4 _{DS}	275	2 P	4 P	B5
4 circuits	600 VDC		130	1 P	4 P	B4 _{DS}	215	1 P	4 P	B5
4 circuits	1000 VDC		-	-	-	-	215	2 P	8 P	B5 _{DS}
6 circuits	600 VDC		-	-	-	-	215	1 P	6 P	B5 _{DS}
8 circuits	600 VDC		-	-	-	-	215	1 P	8 P	B5 _{DS}
Short-circuit capacity at 1000 VDC (any circuit breaker)										
Prospective short-circuit current (kA rms DC)			10 ⁽¹⁾				10 ⁽¹⁾			
Connection terminals										
Min. connection wire range/ AWG			#6				2x#6			
Max. connection wire range/ AWG			300MCM				600MCM			
Mechanical characteristics										
Durability (number of operating cycles)			10 000				6 000			
Operating effort (lbs.in/Nm)			88.5/10				128.3/14.5			
Auxiliary contact										
Electrical characteristics			A300				A300			
IEC 60947-3										
Rated current In			315 A				275 A			
Thermal current at 40°C (A)			315				275			
Thermal current at 50°C (A)			315				275			
Thermal current at 60°C (A)			315				275			
Rated insulation voltage U _i (V)			1500				1500			
Rated impulse withstand voltage U _{imp} (kV)			12				12			
Number of circuits	Rated voltage	Utilisation category	(A)	Number of pole(s) in series per polarity	Number of pole(s) of the device	Frame size	(A)	Number of pole(s) in series per polarity	Number of pole(s) of the device	Frame size
1 circuit	1000 VDC	DC-21 B	315	2 P	2 P	B4	275	2 P	2 P	B5
1 circuit	1500 VDC	DC-21 B	315	4 P	4 P	B4 _{DS}	275	3 P	3 P	B5
2 circuits	1000 VDC	DC-21 B	315	2 P	4 P	B4 _{DS}	275	2 P	4 P	B5
4 circuits	600 VDC	DC-21 B	160	1 P	4 P	B4 _{DS}	275	1 P	4 P	B5
4 circuits	1000 VDC	DC-21 B	-	-	-	-	275	2 P	8 P	B5 _{DS}
6 circuits	600 VDC	DC-21 B	-	-	-	-	275	1 P	6 P	B5 _{DS}
8 circuits	600 VDC	DC-21 B	-	-	-	-	275	1 P	8 P	B5 _{DS}

(1) Without fuse during 50 ms.

as per standards UL 98B and IEC 60947-3

UL 98B										
Rating		325 A				350 A				
Number of circuits	Rated voltage	(A)	Number of pole(s) in series per polarity	Number of pole(s) of the device	Frame size	(A)	Number of pole(s) in series per polarity	Number of pole(s) of the device	Frame size	
1 circuit	1000 VDC	325	2 P	2 P	B5	-	-	-	-	
2 circuits	600 VDC	215	1 P	2 P	B5	-	-	-	-	
2 circuits	1000 VDC	325	2 P	4 P	B5	350	3 P	6 P	B5 _{DS}	
4 circuits	600 VDC	215	1 P	4 P	B5	-	-	-	-	
4 circuits	1000 VDC	325	2 P	8 P	B5 _{DS}	350	2 P	8 P	B5 _{DS}	
6 circuits	600 VDC	215	1 P	6 P	B5 _{DS}	215	1 P	6 P	B5 _{DS}	
8 circuits	600 VDC	215	1 P	8 P	B5 _{DS}	215	1 P	8 P	B5 _{DS}	
Short-circuit capacity at 1000 VDC (any circuit breaker)										
Prospective short-circuit current (kA rms DC)		10 ⁽¹⁾				10 ⁽¹⁾				
Connection terminals										
Min. connection wire range/ AWG		2x#6				2x#6				
Max. connection wire range/ AWG		600MCM				600MCM				
Mechanical characteristics										
Durability (number of operating cycles)		6 000				6 000				
Operating effort (lbs.in/Nm)		128.3/14.5				128.3/14.5				
Auxiliary contact										
Electrical characteristics		A300				A300				
IEC 60947-3										
Rated current In		400 A				500 A				
Thermal current at 40°C (A)		400				500				
Thermal current at 50°C (A)		400				500				
Thermal current at 60°C (A)		400				500				
Rated insulation voltage U _i (V)		1500				1500				
Rated impulse withstand voltage U _{imp} (kV)		12				12				
Number of circuits	Rated voltage	Utilisation category	(A)	Number of pole(s) in series per polarity	Number of pole(s) of the device	Frame size	(A)	Number of pole(s) in series per polarity	Number of pole(s) of the device	Frame size
1 circuit	1000 VDC	DC-21 B	400	2 P	2 P	B5	-	-	-	-
2 circuits	1000 VDC	DC-21 B	400	2 P	4 P	B5	500	3 P	6 P	B5 _{DS}
4 circuits	600 VDC	DC-21 B	275	1 P	4 P	B5	-	-	-	-
4 circuits	1000 VDC	DC-21 B	400	2 P	8 P	B5 _{DS}	500	2 P	8 P	B5 _{DS}
6 circuits	600 VDC	DC-21 B	275	1 P	6 P	B5 _{DS}	275	1 P	6 P	B5 _{DS}
8 circuits	600 VDC	DC-21 B	275	1 P	8 P	B5 _{DS}	275	1 P	8 P	B5 _{DS}

(1) Without fuse during 50 ms.

SIRCO PV UL 98B

Load break switches for photovoltaic applications

from 100 to 2000 A - up to 1500 VDC

Characteristics (continued)

as per standards UL 98B and IEC 60947-3

UL 98B										
Rating			400 A				600 A			
Number of circuits	Rated voltage		(A)	Number of pole(s) in series per polarity	Number of pole(s) of the device	Frame size	(A)	Number of pole(s) in series per polarity	Number of pole(s) of the device	Frame size
1 circuit	1000 VDC		400	2 P	2 P	B5	600	4 P	4 P	B6
2 circuits	600 VDC		215	1 P	2 P	B5	600	3 P	6 P	B6 _{DS}
2 circuits	1000 VDC		400	2 P	4 P	B5	600	4 P	8 P	B6 _{DS}
4 circuits	600 VDC		215	1 P	4 P	B5	-	-	-	-
Short-circuit capacity at 1000 VDC (any circuit breaker)										
Prospective short-circuit current (kA rms DC)			10 ⁽¹⁾				10 ⁽¹⁾			
Connection terminals										
Min. connection wire range/ AWG			2x#6				2x#2			
Max. connection wire range/ AWG			600MCM				2 x 600MCM			
Mechanical characteristics										
Durability (number of operating cycles)			6 000				6 000			
Operating effort (lbs.in/Nm)			128.3/14.5				327.5/37			
Auxiliary contact										
Electrical characteristics			A300				A300			
IEC 60947-3										
Rated current I _n			500 A				800 A			
Thermal current at 40°C (A)			500				800			
Thermal current at 50°C (A)			500				800			
Thermal current at 60°C (A)			500				800			
Rated insulation voltage U _i (V)			1500				1200			
Rated impulse withstand voltage U _{imp} (kV)			12				12			
Number of circuits	Rated voltage	Utilisation category	(A)	Number of pole(s) in series per polarity	Number of pole(s) of the device	Frame size	(A)	Number of pole(s) in series per polarity	Number of pole(s) of the device	Frame size
1 circuit	1000 VDC	DC-21 B	500	2 P	2 P	B5	800	4 P	4 P	B6
1 circuit	1500 VDC	DC-21 B	500	3 P	3 P	B5	800	8 P	8 P	B6 _{DS}
2 circuits	1000 VDC	DC-21 B	275	1 P	4 P	B5	800	4 P	8 P	B6 _{DS}
4 circuits	600 VDC	DC-21 B	275	1 P	4 P	B5	-	-	-	-

(1) Without fuse during 50 ms.

(2) 1200 VDC for B6.

as per standards UL 98B and IEC 60947-3

UL 98B										
Rating		800 A				1200 A				
Number of circuits	Rated voltage	(A)	Number of pole(s) in series per polarity	Number of pole(s) of the device	Frame size	(A)	Number of pole(s) in series per polarity	Number of pole(s) of the device	Frame size	
1 circuit	1000 VDC	800	4 P	4 P	B7	1200	4 P	4 P	B7	
2 circuits	600 VDC	800	3 P	6 P	B7 _{DS}	1200	3 P	6 P	B7 _{DS}	
2 circuits	1000 VDC	800	4 P	8 P	B7 _{DS}	1200	4 P	8 P	B7 _{DS}	
Short-circuit capacity at 1000 VDC (any circuit breaker)										
Prospective short-circuit current (kA rms DC)		10 ⁽¹⁾				10 ⁽¹⁾				
Connection terminals										
Min. connection wire range/ AWG		4x#2				4x#2				
Max. connection wire range/ AWG		6x 600MCM ⁽²⁾				6x 600MCM ⁽²⁾				
Mechanical characteristics										
Durability (number of operating cycles)		3 500				3 500				
Operating effort (lbs.in/Nm)		495.7/56				663.9/75				
Auxiliary contact										
Electrical characteristics		A300				A300				
IEC 60947-3										
Rated current I _n		1000 A				1400 A				
Thermal current at 40°C (A)		1000				1400				
Thermal current at 50°C (A)		1000				1400				
Thermal current at 60°C (A)		1000				1400				
Rated insulation voltage U _i (V)		1200				1200				
Rated impulse withstand voltage U _{imp} (kV)		12				12				
Number of circuits	Rated voltage	Utilisation category	(A)	Number of pole(s) in series per polarity	Number of pole(s) of the device	Frame size	(A)	Number of pole(s) in series per polarity	Number of pole(s) of the device	Frame size
1 circuit	1000 VDC	DC-21 B	1000	4 P	4 P	B7	1400	4 P	4 P	B7 _{DS}
1 circuit	1500 VDC	DC-21 B	1000	8 P	8 P	B7 _{DS}	1000	8 P	8 P	B7 _{DS}
2 circuits	1000 VDC	DC-21 B	1000	4 P	8 P	B7 _{DS}	1000	4 P	8 P	B7 _{DS}

(1) Without fuse during 50 ms.

(2) Maximum 6 x 600MCM with fan out kit 2729 1203.

(3) 1200 VDC for B7.

SIRCO PV UL 98B

Load break switches for photovoltaic applications

from 100 to 2000 A - up to 1500 VDC

Characteristics (continued)

as per standards UL 98B and IEC 60947-3

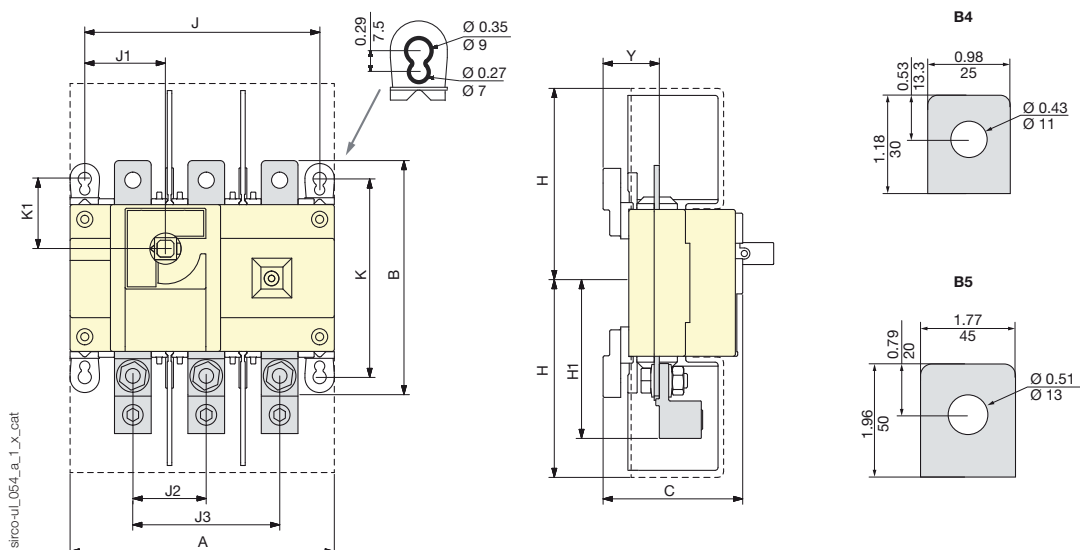
UL 98B						
Rating		2000 A				
Number of circuits	Rated voltage	(A)	Number of pole(s) in series per polarity	Number of pole(s) of the device	Frame size	
1 circuit	1000 VDC	2000	8 P	8 P	B7 _{DS}	
Short-circuit capacity at 1000 VDC (any circuit breaker)						
Prospective short-circuit current (kA rms DC)		10 ⁽¹⁾				
Connection terminals						
Min. connection wire range/ AWG		4x#2				
Max. connection wire range/ AWG		6x 600MCM ⁽²⁾				
Mechanical characteristics						
Durability (number of operating cycles)		3 500				
Operating effort (lbs.in/Nm)		663.9/75				
Auxiliary contact						
Electrical characteristics		A300				
IEC 60947-3						
Rated current I _n		2200 A				
Thermal current at 40°C (A)		2200				
Thermal current at 50°C (A)		1850				
Thermal current at 60°C (A)		1600				
Rated insulation voltage U _i (V)		1200				
Rated impulse withstand voltage U _{imp} (kV)		12				
Number of circuits	Rated voltage	Utilisation category	(A)	Number of pole(s) in series per polarity	Number of pole(s) of the device	Frame size
1 circuit	1000 VDC	DC-21 B	2200	8 P	8 P	B7 _{DS}

(1) Without fuse during 50 ms.

(2) Maximum 6 x 600MCM with fan out kit 2729 1203.

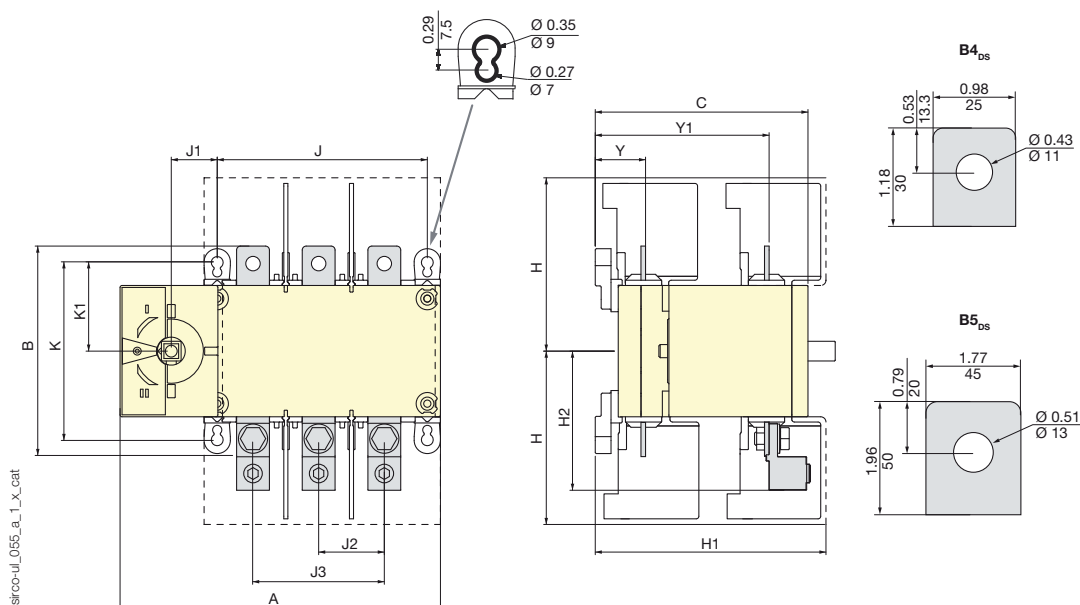
Dimensions (in/mm)

B4-B5



Frame size	No. of poles	Unit	A	B	C	H	H1 max.	J	J1	J2	J3	K	K1	Y
B4	2 P	inches	7.08	6.30	3.74	5.21	4.21	6.30	2.16	-	3.94	5.31	1.89	1.51
		mm	180	160	95	132.5	107	160	55	-	100	135	48	38.5
B5	2 P	inches	9.05	10.23	5.04	8	6.53	8.26	2.95	-	5.12	7.67	2.65	2.08
		mm	230	260	128	203	166	210	75	-	130	195	67.5	53
B5	3 P	inches	9.05	10.23	4.98	8	6.53	8.26	2.95	2.56	-	7.67	2.65	2.02
		mm	230	260	126.5	203	166	210	75	65	-	195	67.5	51.5
B5	4 P	inches	11.41	10.23	4.98	8	6.53	10.63	5.31	2.56	-	7.67	2.65	2.02
		mm	290	260	126.5	203	166	270	135	65	-	195	67.5	51.5

B4_{DS}-B5_{DS}



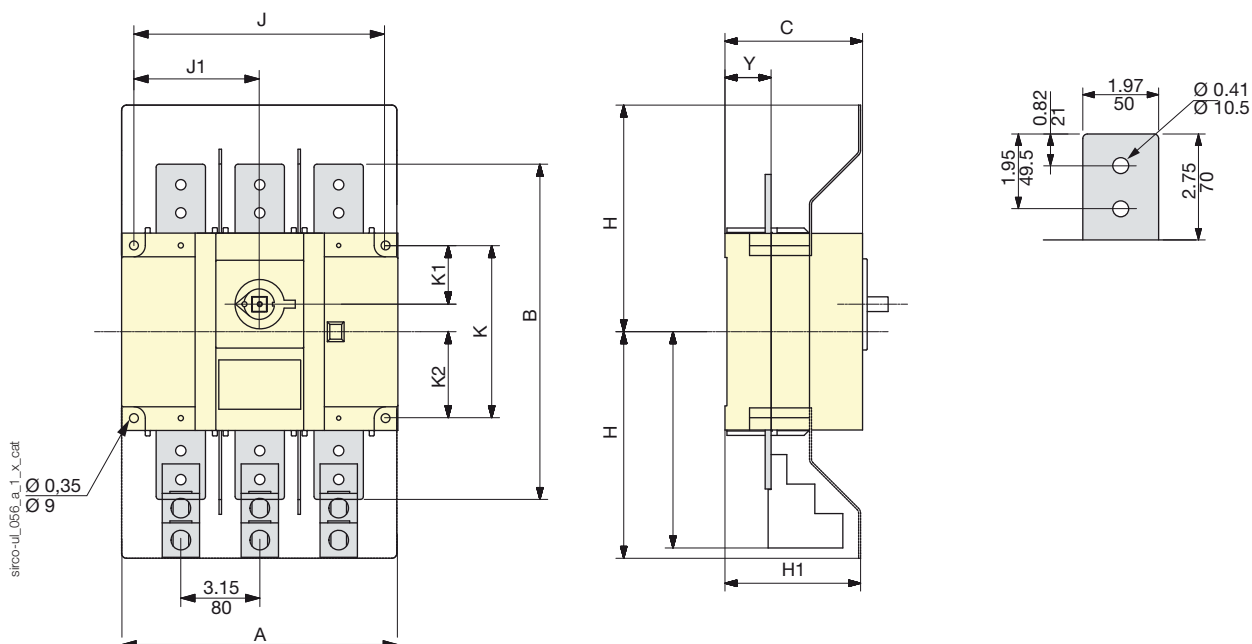
Frame size	No. of poles	Unit	A	B	C	H	H1	H1 max.	J	J1	J2	J3	K	K1	Y	Y1
B4 _{DS}	4 P	inches	9.60	6.30	6.37	5.08	6.93	4.21	6.30	1.37	-	3.93	5.31	2.65	1.51	5.21
		mm	244	160	162	129	176	107	160	35	-	100	135	67.5	38.5	132.5
B5 _{DS}	6 P	inches	11.85	10.23	9.39	8	6.51	6.53	6.26	1.37	2.56	-	7.67	2.70	2.02	7.44
		mm	301	260	238.5	203	165.5	166	210	35	65	-	195	68.5	51.5	189
B5 _{DS}	8 P	inches	14.21	10.23	9.39	8	6.51	6.53	10.63	1.37	2.56	-	7.67	2.70	2.02	7.44
		mm	361	260	238.5	203	165.5	166	270	35	65	-	195	68.5	51.5	189

SIRCO PV UL 98B

Load break switches for photovoltaic applications
from 100 to 2000 A - up to 1500 VDC

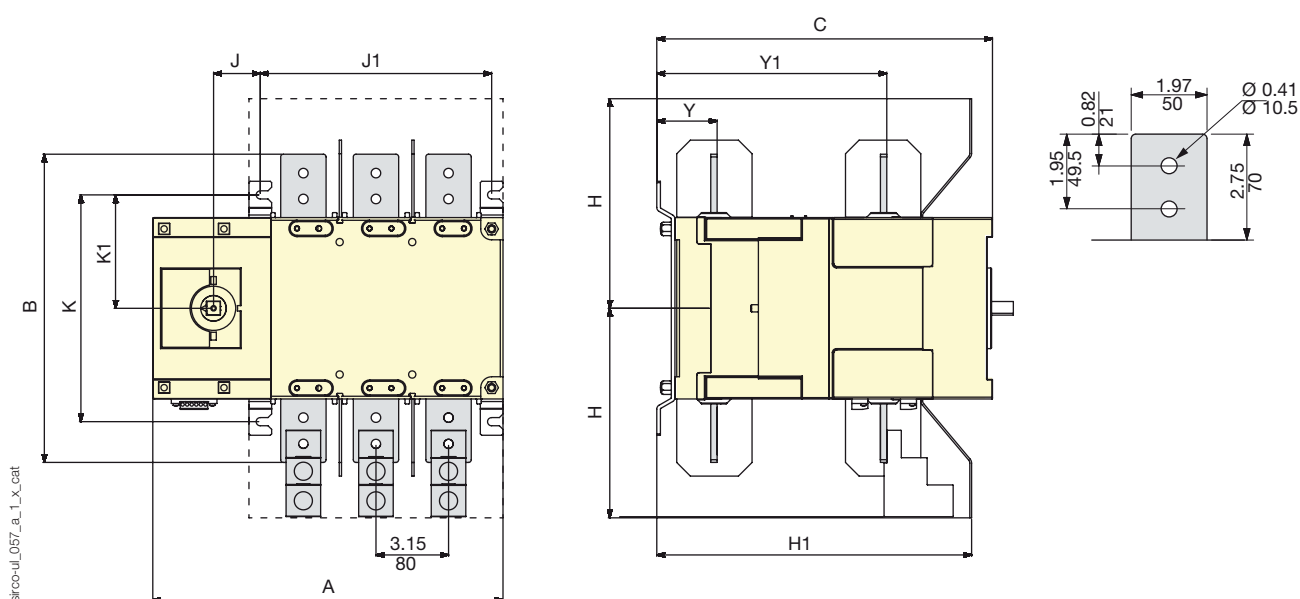
Dimensions (in/mm) (continued)

B6



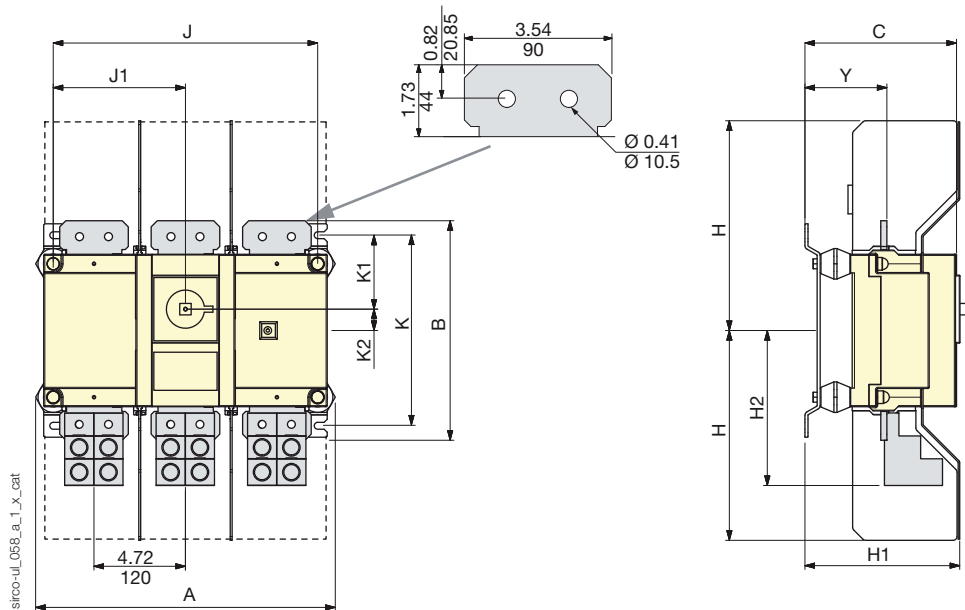
Frame size	No. of poles	Unit	A	B	C	H	H1	J	J1	K	K1	K2	Y
B6	4 P	inches	24.80	13.38	5.47	10.63	5.70	13.19	6.59	6.88	2.34	1.10	1.83
		mm	630	340	139	270	145	335	167.5	175	59.5	28	46.5

B6_{DS}



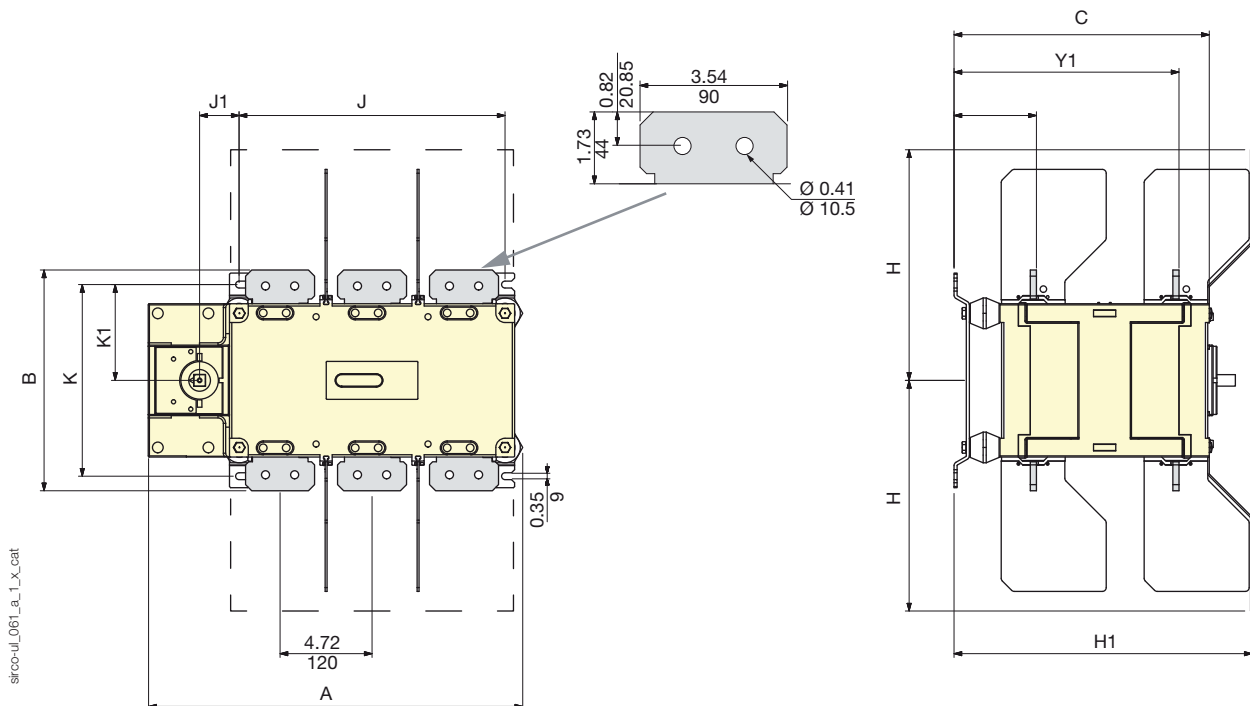
Frame size	No. of poles	Unit	A	B	C	H	H1	J	J1	K	K1	Y	Y1
B6 _{DS}	8 P	inches	18.34	13.38	14.56	10.63	13.66	13.18	2.02	9.84	4.92	2.61	9.98
		mm	466	340	370	270	347	335	51.5	250	125	66.5	253.5

B7



Frame size	No. of poles	Unit	A	B	C	H	H1	H2	J	J1	K	K1	K2	Y
B7	4 P	inches	20.19	11.33	7.97	11.89	8.30	8.01	18.38	9.19	9.84	3.82	1.10	4.23
		mm	513	288	200	302	211	203.5	467	233.5	250	97	28	107.5

B7_{DS}



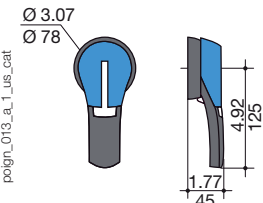
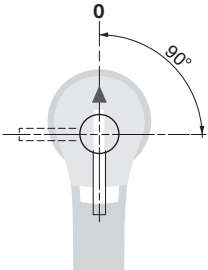
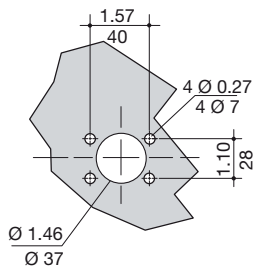
Frame size	No. of poles	Unit	A	B	C	H	H1	J	J1	K	K1	Y	Y1
B7 _{DS}	8 P	inches	23.95	11.33	13.11	11.85	15.31	18.38	2.02	9.84	4.92	4.23	11.55
		mm	608.5	288	333	301	389	467	51.5	250	125	107.5	293.5

SIRCO PV UL 98B

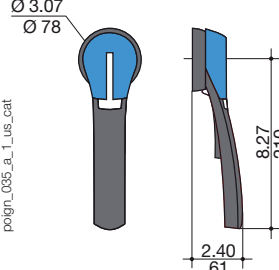
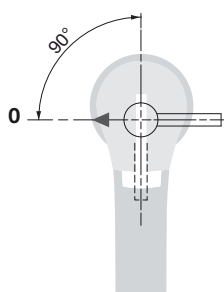
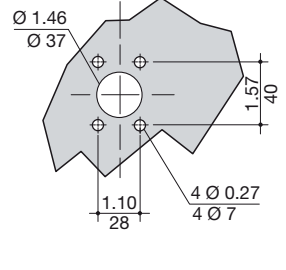
Load break switches for photovoltaic applications
from 100 to 2000 A - up to 1500 VDC

Dimensions for external handles (in/mm)

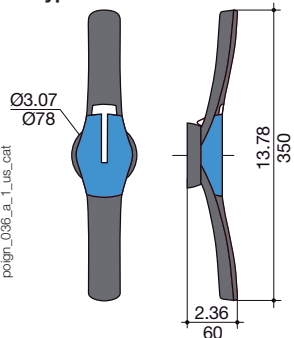
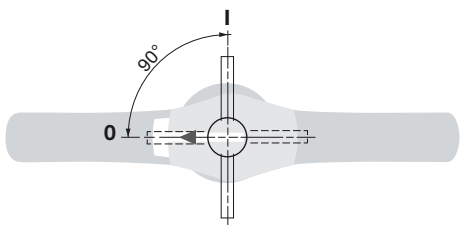
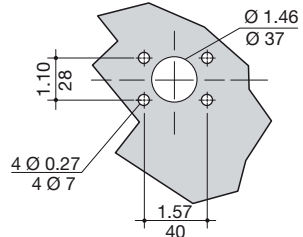
B4 - B4_{DS} - B5

Handle type	Front operation Direction of operation	Door drilling
S2 type 		

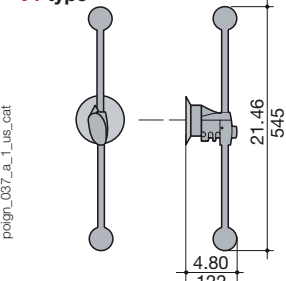
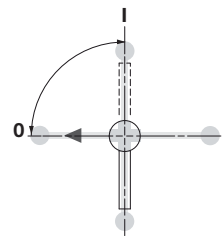
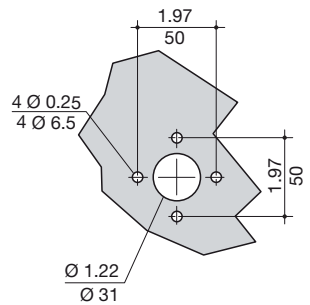
B5_{DS} - B6

Handle type	Front operation Direction of operation	Door drilling
S3 type 		

B7

Handle type	Front operation Direction of operation	Door drilling
S4 type 		

B6_{DS} - B7_{DS}

Handle type	Front operation Direction of operation	Door drilling
V1 type 		

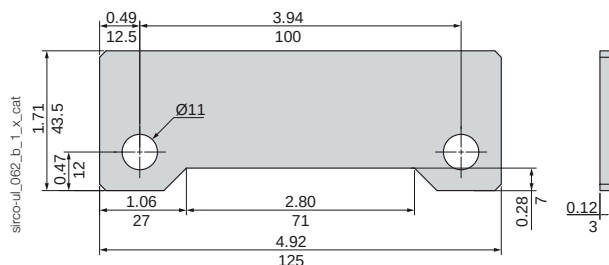
SIRCO PV UL 98B

Load break switches for photovoltaic applications
from 100 to 2000 A - up to 1500 VDC

Bridging bars (in/mm)

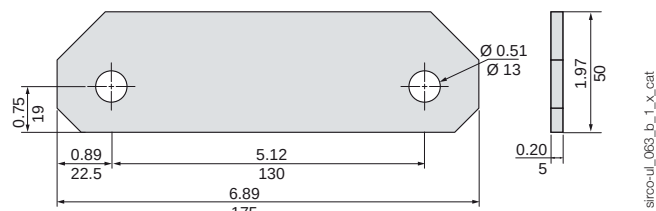
B4 - B4_{DS}

2709 1020



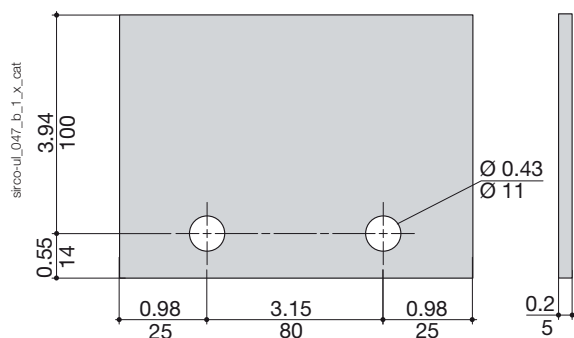
B5 - B5_{DS}

2709 1041

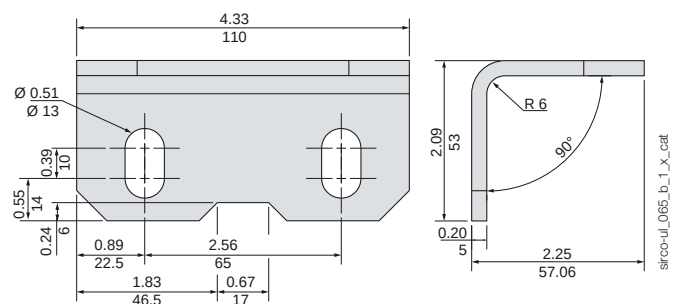


B6 - B6_{DS}

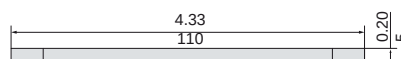
2709 0062



2709 0045

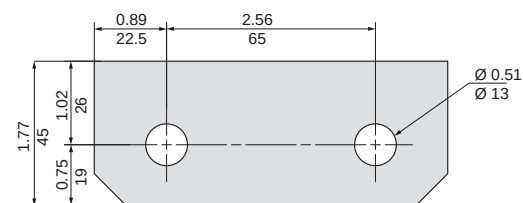
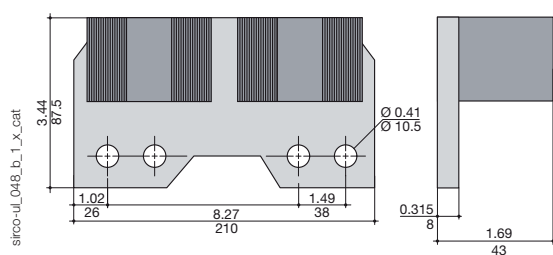


2709 0027



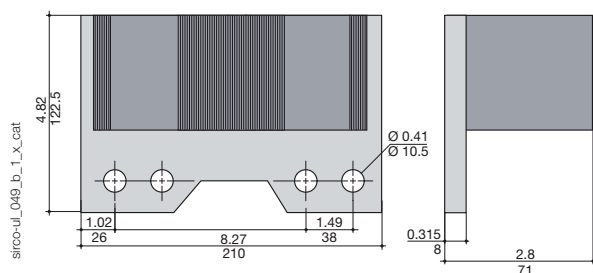
B7

2709 0081



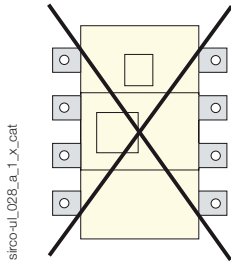
B7 - B7_{DS}

2709 0121



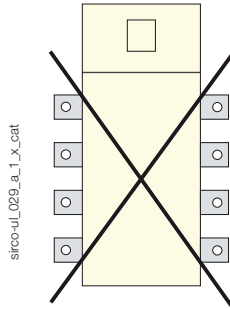
Mounting orientation

All frames



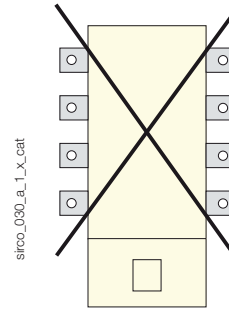
sirco-ul_028_a_1_x_cat

B4_{DS} - B5_{DS}



sirco-ul_029_a_1_x_cat

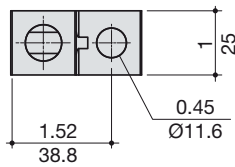
B6_{DS} - B7_{DS}



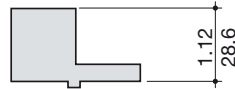
sirco_030_a_1_x_cat

Terminal lugs (in/mm)

100 to 250 A

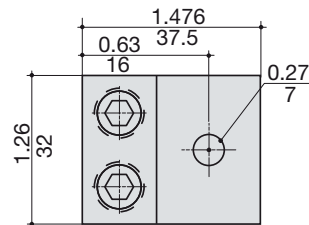


sirco_115_b_1_us_cat

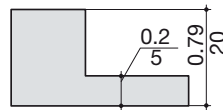


300MCM

100 to 250 A

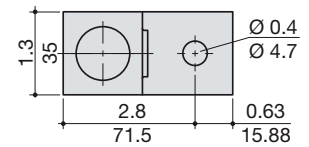


sirco-ul_038_a_1_us_cat



2/0

400 A

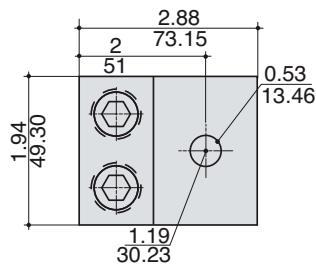


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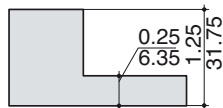


600MCM

400 A

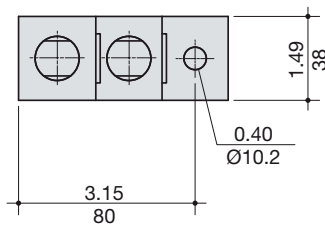


sirco-ul_026_b_1_us_cat

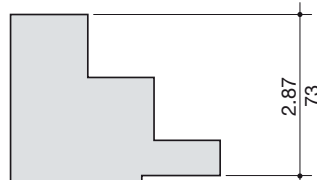


2 x 350MCM

600 to 2000 A



sirco_116_b_1_us_cat



2 x 600MCM

SIRCO M UL 508

Load break switches standards UL and CSA
from 16 to 80 A



Rotary switch
SIRCO M 3 x 80 A



Toggle switch
SIRCO M 3 x 80 A + 2 auxiliary contacts



Rotary switch
SIRCO M 3 x 80 A



The solution for

- > Industrial control systems



Strong points

- > Positive break indication
- > Direct or external operation
- > Compact footprint
- > DIN-rail or base mounting
- > Wide range of accessories
- > Up to 8 pole or 4 pole MTS

Conformity to standards⁽¹⁾

- > IEC 60947-3
- > UL 508 listed, Guide NLRV, File E173959
- > CSA C22.2§14, class 3211-05, File 112964



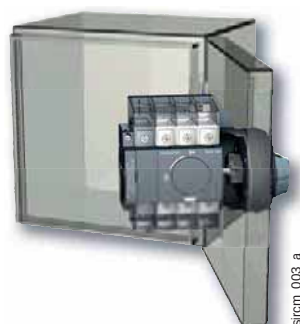
(1) Product reference on request.

Function

SIRCO M UL/CSA are compact and modular non-fusible disconnect switches. They make and break under all types of load conditions and provide safe isolation for any low voltage circuit, especially for machine control circuits.

General characteristics

- Positive break indication.
- Direct or external operation.
- Compact footprint.
- DIN-rail or base mounting.
- Wide range of accessories.
- Up to 8 pole or 4 pole MTS.



UL 508 non-metallic polycarbonate 4.4x enclosed SIRCO M

- > Enclosed SIRCO M switches allow safe control and disconnection of any motor application.



UL 508 manual motor controller “Suitable as motor disconnect”

References

Rating (A)	No. of poles	Toggle switch (direct handle included)	Rotary switch	Direct handle	External front and right side handles ⁽⁴⁾	Shaft for external handles	Switched fourth pole module	Auxiliary contacts	Terminal shrouds	Door mounting kit
16 A	3 P	2205 3000	2200 3000	Blue 2299 5012	S00 type I - O Black 3R, 12 ⁽¹⁾ 1473 1111	S00 and S0 type 150 mm 5.9 in 1407 0515 200 mm 7.9 in 1407 0520 320 mm 12.6 in 1407 0532 ⁽²⁾	1 P 2200 1000	M type 1 AC NO + NC 2299 0001 1 AC 2 NC 2299 0011	1 P 2294 1005 ⁽³⁾ 3 P 2294 3005 ⁽³⁾	2299 3409
20 A	3 P	2205 3001	2200 3001		Red / Yellow 3R, 12 ⁽¹⁾ 1474 1111		1 P 2200 1001			
25 A	3 P	2205 3002	2200 3002		Black 4, 4X ⁽¹⁾ 147D 1111		1 P 2200 1002			
32 A	3 P	2205 3003	2200 3003		Red / Yellow 4, 4X ⁽¹⁾ 147E 1111		1 P 2200 1003			
40 A	3 P	2205 3004	2200 3004		S0 type I - O Black 1, 3R, 12 ⁽¹⁾ 1483 1111		1 P 2200 1004			
63 A	3 P	2205 3006	2200 3006		Red / Yellow 1, 3R, 12 ⁽¹⁾ 1484 1111		1 P 2200 1006			
80 A	3 P	2205 3008	2200 3008		Black 4, 4X ⁽¹⁾ 148D 1111 Red / Yellow 4, 4X ⁽¹⁾ 148E 1111		1P 2200 1008		1 P 2294 1009 ⁽³⁾ 3 P 2294 3009 ⁽³⁾	

(1) Nema / UL type.

(2) Please order the shaft guide: 1419 0000 with the shaft.

(3) Top and bottom.

(4) There is no door interlocking when the switch is fitted on the side of the enclosure.

SIRCO M UL 508

Load break switches standards UL and CSA
from 16 to 80 A

UL 508 non-metallic polycarbonate 4, 4X enclosed SIRCO M



Function

Enclosed SIRCO M switches allow safe control and disconnection of any motor application.

General characteristics

- Grey enclosure with red handle.
- Equipped with a 3 pole SIRCO M.
- 1 removable ground terminal.
- Possibility of adding 1 power pole and 1 auxiliary contact.
- Nema/UL type 1, 3R, 12, 4, 4X.

Conformity to standards⁽¹⁾

- > IEC 60947-3
- > UL 508, Guide NLRV, file E173959
- > CSA C22.2#14, Class 3211-05, file 702154



(1) Product reference on request.

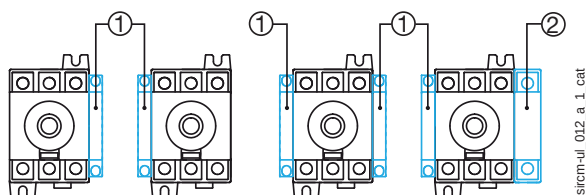
References

Rating (A)	No. of poles	Enclosed switches	Enclosure size	Switched fourth pole module	Unswitched neutral pole	Unswitched protective ground module	Auxiliary contacts	Terminal shrouds
32 A	3 P	2214 3503	Size 1	1 P 2200 1003	1 P 2200 5005⁽¹⁾	1 P 2200 9005⁽¹⁾	M type 1 AC NO + NC 2299 0001	1 P 2294 1005⁽²⁾
	3 P	2224 3503	Size 2					3 P 2294 3005⁽²⁾
63 A	3 P	2224 3506	Size 2	1 P 2200 1006⁽¹⁾	1 P 2200 5009⁽¹⁾	1 P 2200 9009⁽¹⁾	1 AC 2 NC 2299 0011	1 P 2294 1009⁽²⁾ 3 P 2294 3009⁽²⁾

(1) Not UL.

(2) Top and bottom.

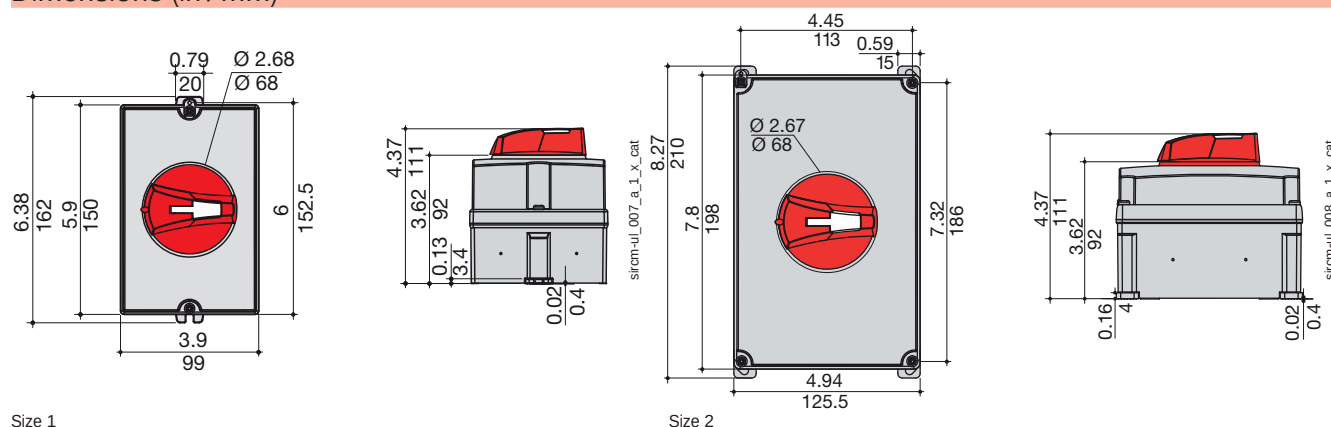
Configuration



Configuration of the auxiliary contacts for enclosed SIRCO M.

1. M type auxiliary contacts.
2. Additional pole.

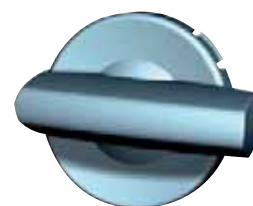
Dimensions (in / mm)



Accessories

Direct operation handle

Rating (A)	Handle color	Handle type	Reference
16 ... 80	Blue	M00	2299 5012



M00 handle

access_277_a_2_cat

External operation handle

Use

The handle locking function prevents the user from opening the door of the enclosure when the switch is in the "ON" position (only if the handle is fitted on the door).

Opening the door when the switch is in the "ON" position is possible by defeating the interlocking function with the use of a tool (authorised persons only). The interlocking function is restored when the door is closed. The handle is padlockable with 3 padlocks.



S00 handle

access_264_a_2_cat



S0 handle

access_279_a_2_cat



S01 handle

access_304_a_2_cat

Front and right side handles I - O

Rating (A)	Handle color	Handle type	Nema / UL type	Standard Reference	Heavy duty Reference
16 ... 80	Black	S00	3R, 12	1473 1111	
16 ... 80	Red / Yellow	S00	3R, 12	1474 1111	
16 ... 80	Black	S00	4, 4X	147D 1111	
16 ... 80	Red / Yellow	S00	4, 4X	147E 1111	
16 ... 80	Black	S0	1, 3R, 12	1483 1111	
16 ... 80	Red / Yellow	S0	1, 3R, 12	1484 1111	
16 ... 80	Black	S0	4, 4X	148D 1111	
16 ... 80	Red / Yellow	S0	4, 4X	148E 1111	
16 ... 80	Black	S01	3R, 12	140F 2111	
16 ... 80	Red / Yellow	S01	3R, 12	140G 2111	
16 ... 80	Black	S01	4, 4X	140D 2111	140D 2911
16 ... 80	Red / Yellow	S01	4, 4X	140E 2111	140E 2911

(1) Not UL.

Front handle for transfer switches I - O - II

Rating (A)	Handle color	Handle type	Nema / UL type	Reference
16 ... 80	Black	S00	IP65	1473 1113⁽¹⁾

Front handle for transfer switches I - I+II - II

Rating (A)	Handle color	Handle type	Nema / UL type	Reference
16 ... 80	Black	S00	IP65	1473 1114⁽¹⁾

Shafts for external handle

Use

Standard lengths:

- 150 mm,
- 200 mm,
- 320 mm.

Other lengths: please consult us.

For 3/4 pole switches, shaft extensions for external front and side handle.

For 6/8 pole switches and SIRCOVER M transfer switches.



access_280_a_2_cat

For 3/4 pole

Rating (A)	Handle type	Length		Reference
		(in)	(mm)	
16 ... 80	S00	5.9	150	1407 0515
16 ... 80	S00	7.9	200	1407 0520
16 ... 80	S00	12.6	320	1407 0532
16 ... 80	S01	7.9	200	1404 0520
16 ... 80	S01	12.6	320	1404 0532
16 ... 80	S01	15.7	400	1404 0540

For 6/8 pole

Rating (A)	Handle type	Length		Reference
		(in)	(mm)	
16 ... 80	S00	5.9	150	1407 0515
16 ... 80	S00	7.9	200	1407 0520
16 ... 80	S00	12.6	320	1407 0532

SIRCO M UL 508

Load break switches standards UL and CSA
from 16 to 80 A

Accessories (continued)

Shaft guide for external handle

Use

This accessory enables handle to engage extension shaft with a misalignment of up to 15 mm.

Required for a shaft lenght from 320 mm.

Handle type	Reference
S00 and S0	1419 0000



acces_260_a_2_cat

Additional pole

4th pole

Rating (A)	No. of poles	Type	Reference
16	1 P	switched	2200 1000
20	1 P	switched	2200 1001
25	1 P	switched	2200 1002
32	1 P	switched	2200 1003
40	1 P	switched	2200 1004
63	1 P	switched	2200 1006 ⁽¹⁾
80	1 P	switched	2200 1008 ⁽¹⁾

(1) Not UL.

Use

Transforms:

- 3 pole SIRCO M load break switch into a 4 pole,
- 3 pole SIRCOVER M transfer switch into a 4 pole.



sircm_072_b_1_cat

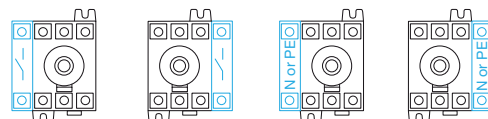
Solid neutral pole

Rating (A)	No. of poles	Type	Reference
16 ... 40	1 P	unswitched	2200 5005 ⁽¹⁾
63 ... 80	1 P	unswitched	2200 5009 ⁽¹⁾

(1) Not UL.

Use

Transforms the 3-pole switch into a 3-pole + solid neutral.



sircm_078_a_1_glb_cat

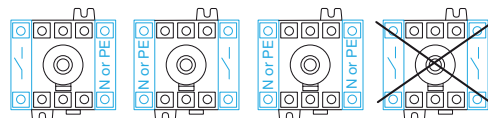
Ground module

Rating (A)	No. of poles	Type	Reference
16 ... 40	1 P	unswitched	2200 9005 ⁽¹⁾
63 ... 80	1 P	unswitched	2200 9009 ⁽¹⁾

(1) Not UL.

Use

Adds 1 protective ground module pole to the load break switch.



Terminal shrouds

Use

Top and bottom additional protection against direct contact with the terminals or connection parts.

1 or 3 pole are available.

Perforation on each terminal cover enables remote thermographic inspection without dismantling.

Rating (A)	No. of poles	Position	Reference
16 ... 40	1 P	top and bottom	2294 1005
16 ... 40	3 P	top and bottom	2294 3005
63 ... 80	1 P	top and bottom	2294 1009
63 ... 80	3 P	top and bottom	2294 3009



sircm_049_a_1_cat

M type Auxiliary Contacts

Use

Pre-break and signaling of positions 0 and I by NO+NC or 2 NO Auxiliary Contacts.

They can be mounted on the left or on the right side of the device.

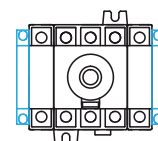
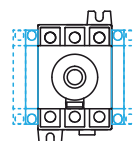
Max 4 Auxiliary Contacts per product (2 modules).

Characteristics
A300.

Rating (A)	No. of AC	AC type	Reference
16 ... 80	1 AC	NO + NC	2299 0001
16 ... 80	1 AC	2 NO	2299 0011



sircm_075_b_2_cat



sircm_081_a_1_x_cat

Auxiliary contacts configurations for SIRCO M

Conversion kit

Use

These accessories enable the assembly of 2 switches in order to achieve:

- 6 or 8 pole switches
- 3 or 4 pole open or close transition transfer switches.

Rating (A)	Type ⁽¹⁾	Reference
16 ... 80	Load break switches 6/8 pole	2269 6009
16 ... 80	Transfer switch 3/4 pole (I - 0 - II)	2209 6009
16 ... 80	Transfer switch 3/4 pole (I - I+II - II)	2299 6009

(1) Non UL.



sircm_050_c_2_cat



sircm_097_b_2_x_cat

Conversion kit for 6 or 8 pole load break switches

Conversion kit for 3 and 4-pole transfer switches (I - 0 - II) or (I - I+II - II)



sircm_086_b_1_cat

Door mounting kit

Use

This kit enables direct mounting of the switch on the panel door or on the right or left side of the panel with S00 and S0 handles.

The S0 and S00 external handles are quick and easy to install due to an internal locking nut mounted on the inside of the enclosure.

Rating (A)	No. of poles	Reference
16 ... 80	3/4 P	2299 3409



sircm_051_b_2_cat

SIRCO M UL 508

Load break switches standards UL and CSA
from 16 to 80 A

Characteristics

Characteristics according to UL 508 / CSA22.2#14 suitable as motor disconnect

General use rating (A)	16 A	20 A	25 A	32 A	40 A	63 A	80 A
Short circuit rating at 600 VAC (kA)	65	65	65	65	10/65	50/65	50/65
Type of fuse	J	J	J	J	J	J	J
Max fuse rating (A)	30	30	30	30	60/30	100/60	100/60

Max. motor hp / FLA 3 ph motor max.

208 VAC	3/0.6	5/16.7	7.5/24.2	7.5/24.2	7.5/24.2	15/46.2	15/46.2
220-240 VAC	5/15.2	5/15.2	7.5/22	7.5/22	7.5/22	20/54	20/54
440-480 VAC	10/14	10/14	15/21	20/27	20/27	40/52	40/52
600 VAC	10/11	15/17	20/22	25/27	25/27	40/41	40/41

Connection terminals

Solid - 1 wire	#14 - #10	#14 - #10	#14 - #10	#14 - #10	#14 - #10	#14 - #10	#14 - #10
Solid - 2 wires	2 x #12	2 x #12	2 x #12	2 x #12	2 x #12	2 x #12	2x #12
Stranded - 1 wire	#14 - #4	#14 - #4	#14 - #4	#14 - #4	#14 - #4	#14 - #1	#14 - #1
Stranded - 2 wires	2 x (#14 - #12)	2 x (#14 - #12)	2 x (#14 - #12)	2 x (#14 - #12)	2 x (#14 - #12)	2 x (#10 - #6)	2 x (#10 - #6)

Auxiliary contacts

Electrical characteristics	A300	A300	A300	A300	A300	A300	A300
----------------------------	------	------	------	------	------	------	------

Mechanical characteristics

Endurance (number of operating cycles)	10 000	10 000	10 000	10 000	10 000	10 000	10 000
Operating torque (lbs.in / Nm)	7/0.8	7/0.8	7/0.8	7/0.8	7/0.8	8.9/1	8.9/1

Characteristics according to IEC 60947-3

Thermal current I_{th} (40°C)	16 A	20 A	25 A	32 A	40 A	63 A	80 A
Rated insulation voltage U_i (V)	800	800	800	800	800	800	800
Rated impulse withstand voltage U_{imp} (kV)	8	8	8	8	8	8	8

Rated operational currents I_e (A)

Rated voltage	Utilization	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾
415 VAC	AC-23 A/AC-23 B	16/16	20/20	25/25	32/32	40/40	63/63	80/80
500 VAC	AC-22 A/AC-22 B	16/16	20/20	25/25	32/32	40/40	63/63	80/80
500 VAC	AC-23 A/AC-23 B	16/16	20/20	25/25	25/25	25/25	63/63	63/63
690 VAC	AC-21 A/AC-21 B	16/16	20/20	25/25	32/32	40/40	63/63	80/80
690 VAC	AC-22 A/AC-22 B	16/16	20/20	25/25	32/32	32/40	40/63	63/80
690 VAC	AC-23 A/AC-23 B	16/16	20/20	25/25	25/25	25/25	40/40	40/40

Operational power in AC-23 (kW)

At 400 VAC without prebreaking AC in AC-23 (kW) ⁽¹⁾⁽²⁾	7.5	9	11	15	18.5	30	37
At 500 VAC without prebreaking AC in AC-23 (kW) ⁽¹⁾⁽²⁾	7.5	9	11	15	15	30	37
At 690 VAC without prebreaking AC in AC-23 (kW) ⁽¹⁾⁽²⁾	7.5	11	15	18.5	18.5	30	37

Fuse protected short-circuit withstand (kA rms prospective)

Prospective short-circuit current (kA rms) ⁽³⁾	50	50	50	50	50	50	50
Associated fuse rating (A) ⁽³⁾	16	20	25	32	40	63	80

Overload capacity (U_e 415 VAC)

Rated short-time withstand current 0.3 s. I_{CW} (kA rms) ⁽³⁾	2.5	2.5	2.5	2.5	2.5	3	3
Rated short-circuit making capacity I_{cm} (kA peak) ⁽³⁾	6	6	6	6	6	9	9

Connection

Minimum Cu cable cross section (mm ²)	1.5	1.5	1.5	1.5	1.5	2.5	2.5
Maximum Cu cable section (mm ²)	16	16	16	16	16	35	35
Tightening torque min / max (Nm)	2/2.2	2/2.2	2/2.2	2/2.2	2/2.2	3.5/3.85	3.5/3.85

(1) A/B: Category with index A = frequent operation - Category with index B = infrequent operation.

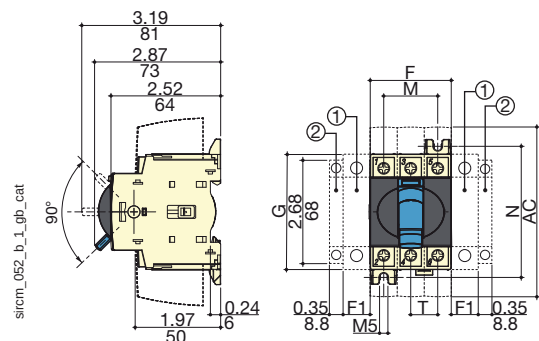
(2) The power value is given for information only, the current values vary from one manufacturer to another.

(3) For a rated operating voltage U_e = 400 VAC.

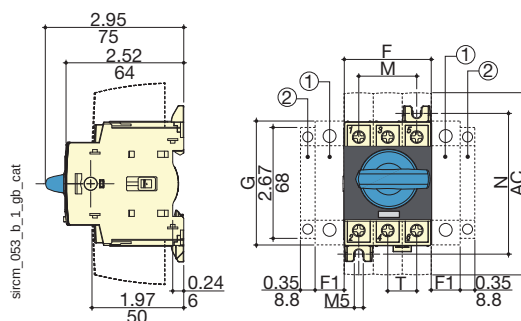
Dimensions (in / mm)

16 to 80 A

Toggle operation



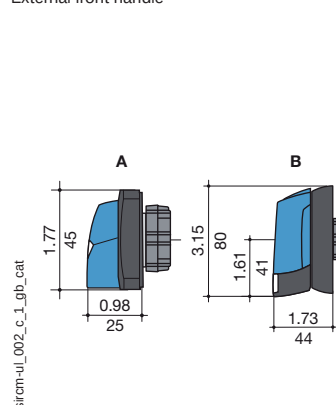
Direct operation with handle



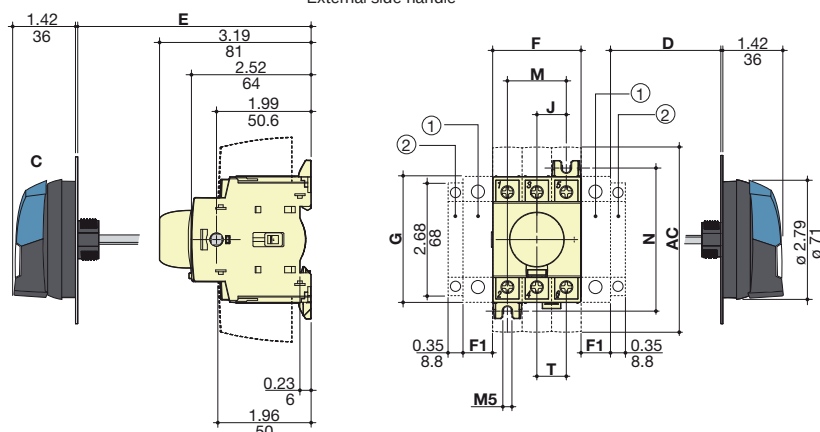
1. Position for 1 switched fourth pole module (1 per device max.) **or** 1 unswitched neutral pole **or** 1 protective ground module **or** 1 auxiliary contact.
2. Position for 1 auxiliary contact only.

Note: Maximum of 4 additional blocks.

External front handle



External side handle



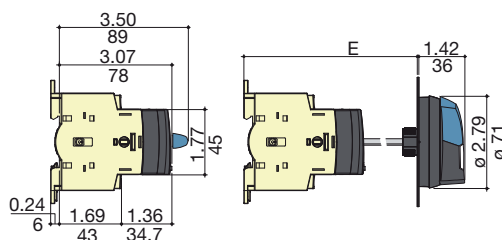
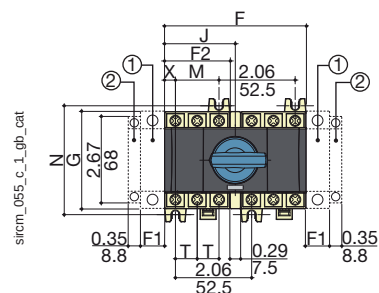
1. Position for 1 switched fourth pole module (1 per device max.) **or** 1 unswitched neutral pole **or** 1 ground module **or** 1 auxiliary contact.
2. Position for 1 auxiliary contact only.

Note: Maximum of 4 additional blocks.

Note: Maximum of 4 additional blocks.													
Rating (A)	Units	Overall dimensions				Terminal shrouds		Switch body			Switch mounting		Connection
		D min	D max	E min	E max	AC	F	F1	G	J	M	N	T
16 ... 40	in	1.18	9.25	3.94	14.64	4.33	1.77	0.59	2.67	0.59	1.18	2.95	0.59
	mm	30	235	100	372	110	45	15	68	15	30	75	15
63 ... 80	in	1.18	9.25	3.93	14.64	4.33	2.06	0.69	2.99	0.69	1.38	3.35	0.69
	mm	30	235	100	372	110	52.5	17.5	76	17.5	35	85	17.5

Direct front handle for 6/8-pole load break switches
or 3/4-pole transfer switches

External front handle for 6/8-pole load break switches
or 3/4-pole transfer switches



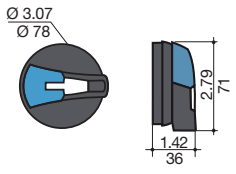
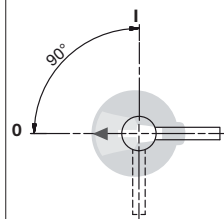
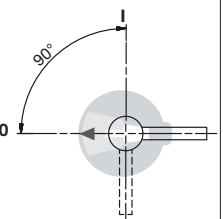
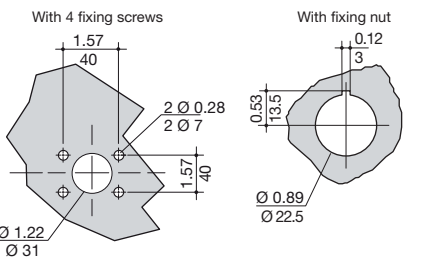
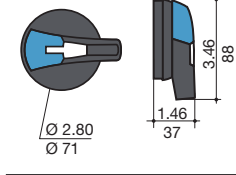
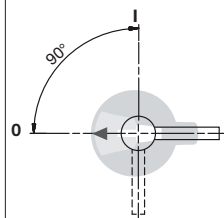
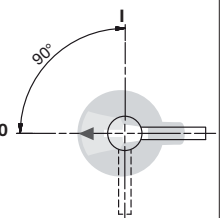
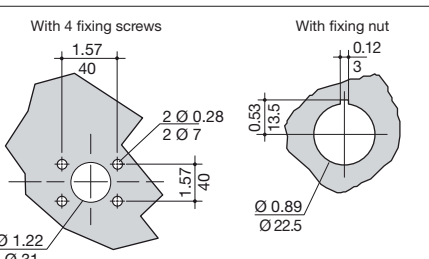
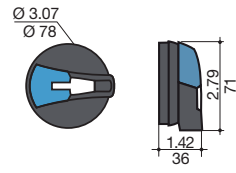
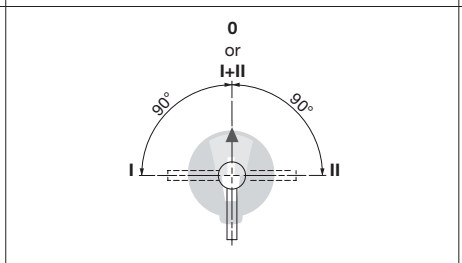
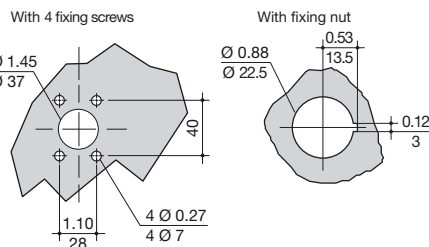
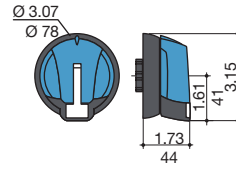
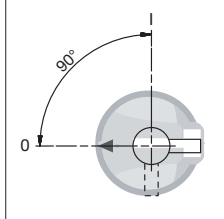
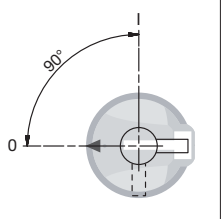
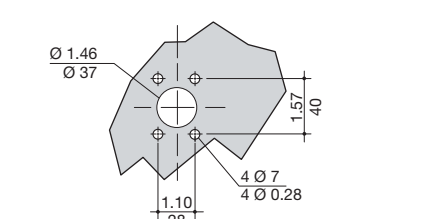
1. Position for 1 switched fourth pole module (1 per device max.) **or** 1 unswitched neutral pole **or** 1 ground module **or** 1 auxiliary contact.
2. Position for 1 auxiliary contact only.

Note: Maximum of 4 additional blocks.

Rating (A)	Units	Overall dimensions		Switch body					Switch mounting		Connection	
		E min	E max	F	F1	F2	G	J	M	N	T	X
16 ... 40	in	4.13	14.64	3.83	0.59	1.77	2.67	1.92	1.18	2.95	0.59	0.29
	mm	105	372	97.5	15	45	68	48.75	30	75	15	7.5
63 ... 80	in	4.13	14.65	4.13	0.69	2.06	2.99	2.06	1.38	3.35	0.69	0.34
	mm	105	372	105	17.5	52.5	76	52.5	35	85	17.5	8.75

External handles dimensions (in / mm)

16 to 80 A

Handle type	Front operation Direction of operation	Side operation Direction of operation	Door drilling
S00 type 			
S0 type 			
S00 type Transfer switches 			
S01 type 			

poign_059_c_1_us_cat

poign_060_a_1_us_cat

poign_070_a_1_gb_cat

poign_018_a_1_gb_cat



SIRCO *M* UL 98

Load break switches standards UL and CSA
from 30 to 100 A

Load break
switches



sircm_100_a_1_cat

Rotary switch
SIRCO M 3 x 100 A

Function

SIRCO M load break switches are compact switches. They make and break under on and off load conditions and provide safe isolation. These switches are extremely durable and are tested and approved for use in the most demanding applications.

General characteristics

- Positive break indication.
- Touch safe.
- DIN rail or back plate-mounted.
- Direct or external operation handle.

Specific characteristics

- Contact point technology.

The solution for

- > Power distribution



Strong points

- > Positive break indication
- > Touch safe
- > DIN rail or back plate-mounted
- > Direct or external operation handle
- > Contact point technology

Conformity to standards⁽¹⁾

- > IEC 60947-3
- > UL 98, Guide WHTY, file E201138
- > CSA 22.2#4, Class 4651-02, file 112964



(1) Product reference on request.

References

UL 98 Load break switches

Rating (A)	No. of poles	Switch body	Direct handle	External front and right side handles	Shafts for external front and side handles	Switched fourth pole module	Unswitched neutral pole	Ground module	Auxiliary contacts	Terminal shrouds
30 A	3 P	2201 3003	Blue 2299 5032	S00 type I - 0 Black 4, 4X 147D 1111	150 mm 5.9 in 1407 0515	1 P 2201 1003	1 P 2200 5011 ⁽²⁾	1 P 2200 9011 ⁽²⁾	M type 1 AC NO + NC 2299 0001 M type 1 AC 2 NC 2299 0011	1 P 2294 1011 ⁽³⁾
60 A	3 P	2201 3006		Red/Yellow 4, 4X 147E 1111	200 mm 7.9 in 1407 0520	1 P 2201 1006				
100 A	3 P	2200 3010		S0 type I - 0 Black 4, 4X 148D 1111 Red/Yellow 4, 4X 148E 1111	320 mm 12.6 in 1407 0532 ⁽²⁾	1 P 2200 1010				

(1) Shaft guide reference 14190000, is required for shaft length over 15.7 inches (400 mm).

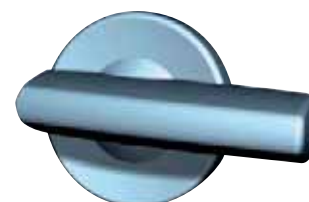
(2) Not UL.

(3) Top and bottom.

Accessories

Direct operation handle

Rating (A)	Handle colour	Handle type	Reference
30 ... 100	Blue	M01	2299 5032



M01 handle

aces_283_a_2_cat

External operation handle

Use

The handle locking function prevents the user from opening the door of the enclosure when the switch is in the "ON" position (only if the handle is fitted on the door).

Opening the door when the switch is in the "ON" position is possible by defeating the interlocking function with the use of a tool (authorised persons only). The interlocking function is restored when the door is closed. The handle is padlockable with 3 padlocks.



S0 handle

aces_279_a_2_cat

Front and right side handles I - 0

Rating (A)	Handle colour	Handle type	Nema/UL type	Reference
16 ... 80	Black	S0	1, 3R, 12	1483 1111
16 ... 80	Red/Yellow	S0	1, 3R, 12	1484 1111
16 ... 80	Black	S0	4, 4X	148D 1111
16 ... 80	Red/Yellow	S0	4, 4X	148E 1111
16 ... 80	Black	S01	3R, 12	140F 2111
16 ... 80	Red/Yellow	S01	3R, 12	140G 2111
16 ... 80	Black	S01	4, 4X	140D 2111
16 ... 80	Red/Yellow	S01	4, 4X	140E 2111



S01 handle

aces_304_a_2_cat

Shafts for external handle

Use

Standard lengths:

- 5.9 in / 150 mm,
- 7.9 in / 200 mm,
- 12.6 in / 320 mm.

Other lengths: please consult us.

For 3/4 pole switches, shaft extensions for external front and side handle.

For 6/8 pole switches and SIRCOVER M transfer switches.



aces_280_a_2_cat

For 3/4 pole

Rating (A)	Handle type	Length		Reference
		(inches)	(mm)	
16 ... 80	S0	5.9	150	1407 0515
16 ... 80	S0	7.9	200	1407 0520
16 ... 80	S0	12.6	320	1407 0532
16 ... 80	S01	7.9	200	1404 0520
16 ... 80	S01	12.6	320	1404 0532
16 ... 80	S01	15.7	400	1404 0540

SIRCO M UL 98

Load breaks witches standards UL and CSA
from 30 to 100 A

Accessories (continued)

Shaft guide for external handle

Use

This accessory makes shaft introduction easier with up to 15 mm misalignment.
Required for a shaft length from 12.6 in / 320 mm.

Handle type	Reference
S0	1419 0000



acces_260_a_2_cat

Additional pole for SIRCO M

4th pole

Rating (A)	No. of poles	Type	Reference
30	1 P	switched	2201 1003
60	1 P	switched	2201 1006
100	1 P	switched	2200 1010

Use

Adding one or two additional poles transforms a Load break switch from 3 poles to 4 poles.



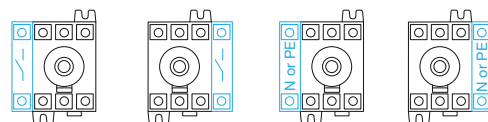
sircm_072_b_1_cat

Solid neutral pole

Rating (A)	No. of poles	Type	Reference
30 ... 100	1 P	unswitched	2200 5011 ⁽¹⁾

Use

Transforms the 3-pole switch into a 3-pole + solid neutral.



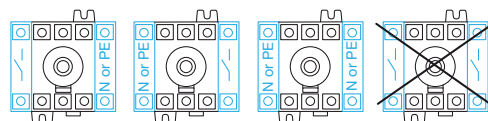
(1) Not UL.

Ground module

Rating (A)	No. of poles	Type	Reference
30 ... 100	1 P	unswitched	2200 9011 ⁽¹⁾

Use

Adds 1 ground module pole to the load break switch.



(1) Not UL.

Terminal shrouds

Use

Top and bottom additional protection against direct contact with the terminals or connection parts. 1 or 3 pole are available.

Perforation on each terminal cover enables remote thermographic inspection without dismantling.

Rating (A)	No. of poles	Position	Reference
30 ... 100	1 P	top and bottom	2294 1011
30 ... 100	3 P	top and bottom	2294 3016



sircm_049_a_1_cat

M type auxiliary contacts

Use

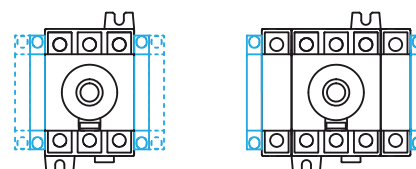
Pre-break and Signalling of positions 0 and I by NO+NC or 2 NO auxiliary contacts. They can be mounted on the left or on the right side of the switch. Max 4 auxiliary contacts (2 modules).

Characteristics
A300.

Rating (A)	No. of AC	AC type	Reference
30 ... 100	1 AC	NO + NC	2299 0001
30 ... 100	1 AC	2 NO	2299 0011



sircm_075_b_2_cat



sircm_081_a_1_x_cat

Auxiliary contacts configurations for SIRCO M

Characteristics

Characteristics according to UL 98/CSA22.2#4

General use rating	30 A	60 A	100 A
Short-circuit rating at 480 VAC (kA)	100	100	100
Short circuit rating at 600 VAC (kA)	100	100	25
Type of fuse	J	J	J
Max fuse rating (A)	30	60	100
Max. motor hp / FLA 3 ph motor max.			
220-240 VAC	10 / 28	20 / 54	20 / 54
440-480 VAC	20 / 27	40 / 52	50 / 65
600 VAC	25 / 27	50 / 52	50 / 52
Max. motor hp / FLA 1 ph motor max.			
120 VAC	2 / 24	3 / 34	5 / 56
240 VAC	5 / 28	10 / 50	10 / 50
Connection terminals			
Solid - 1 wire	#12 - #10	#12 - #10	#12 - #10
Stranded - 1 wire	#12 - 2/0	#12 - 2/0	#12 - 2/0
Mechanical characteristics			
Endurance (number of operating cycles)	10000	10000	10000
Operating torque (lbs.in/Nm)	12.4 / 1.4	12.4 / 1.4	12.4 / 1.4
Auxiliary contacts			
Electrical characteristics	A300	A300	A300

Characteristics according to IEC 60647-3

Thermal current I _{th} at 40°C (A)		30 A	60 A	100 A
Rated insulation voltage U _i (V)		800	800	800
Rated impulse withstand voltage U _{imp} (kV)		8	8	8
Rated operational currents I _e (A)				
Rated voltage	Utilisation category	A ⁽¹⁾	A ⁽¹⁾	A ⁽¹⁾
400 VAC	AC-22 A	32	63	100
400 VAC	AC-23 A	32	63	100
690 VAC	AC-22 A	32	63	80
690 VAC	AC-23 A	32	63	63
Operational power in AC-23 (kW)				
At 400 VAC without prebreak AC in AC23 (kW) ⁽²⁾⁽³⁾		15	30	45
At 500VAC without prebreak AC in AC23 (kW) ⁽²⁾⁽³⁾		15	30	45
At 690VAC without prebreak AC in AC23 (kW) ⁽²⁾⁽³⁾		18.5	30	45
Overload capacity (U _e 415 VAC)				
Rated short-circuit making capacity I _{cm} (kA peak) ⁽⁴⁾		12	12	12
Connection				
Min. connection section/ (mm ²)		2.5	2.5	10
Max. connection section/ (mm ²)		70	70	70

(1) Category with index A = frequent operation.

(2) A/B: Category with index A = frequent operation - Category with index B = infrequent operation.

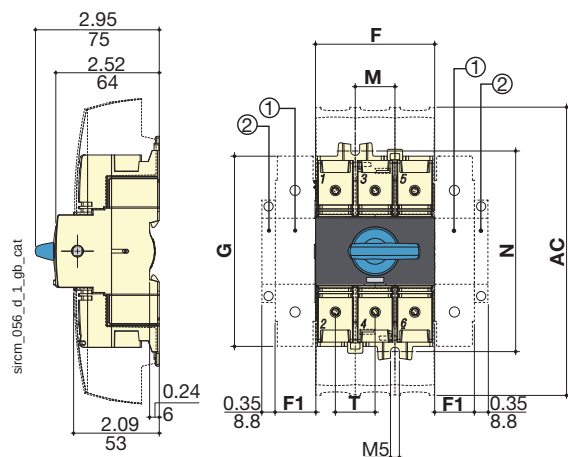
(3) The power value is given for information only, the current values vary from one manufacturer to another.

(4) For a rated operating voltage U_e = 400 VAC.

Dimensions (in/mm)

30 to 100 A

Direct operation with handle



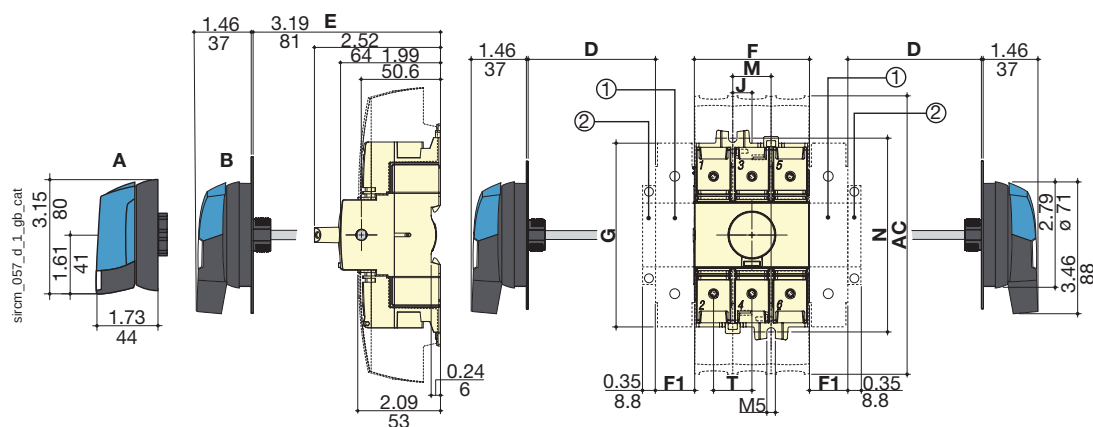
1. Location for: 1 switched fourth pole module (1 per device max.) **or** 1 unswitched neutral pole **or** 1 protective earth module **or** 1 auxiliary contact.

2. Position for 1 auxiliary contact module only.

Note: max 2 additional blocks.

External front operation

External side operation



1. Location for: 1 switched fourth pole module (1 per device max.) **or** 1 unswitched neutral pole **or** 1 protective earth module **or** 1 auxiliary contact.

2. Position for 1 auxiliary contact module only.

Note: max 2 additional blocks.

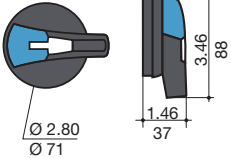
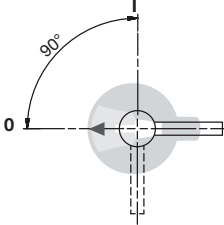
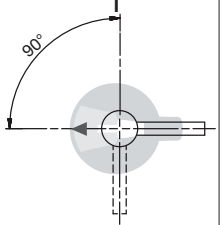
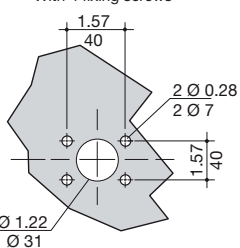
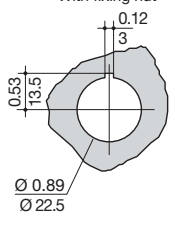
A. S01 handle

B. S00 handle

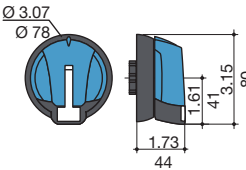
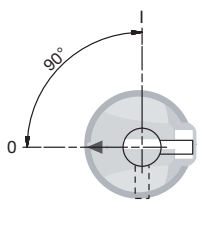
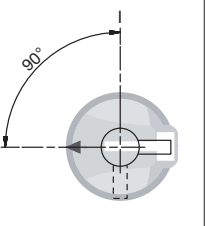
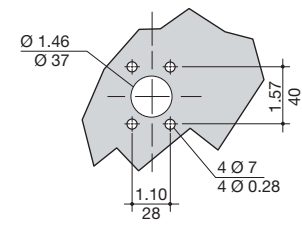
Rating (A) / Frame size		Overall dimensions				Terminal shrouds	Switch body				Switch mounting		Connection
		D min	D max	E min	E max	AC	F	F1	G	J	M	N	T
100 ... 125 / M3	mm	30	201	100	372	189	78	26	124,6	13	26	131,4	26
	in	1.18	7.93	3.94	14.64	7.44	3,07	1.02	4,90	0.51	1.02	5.17	1.02

External handles dimensions (in/mm)

30 to 100 A

Handle type	Front operation Direction of operation	Side operation Direction of operation	Door drilling
S0 type 			With 4 fixing screws  With fixing nut 

polgn_060_a_1_us_cat

Handle type	Front operation Direction of operation	Side operation Direction of operation	Door drilling
S01 type 			With 4 fixing screws 

polgn_018_a_1_us_cat



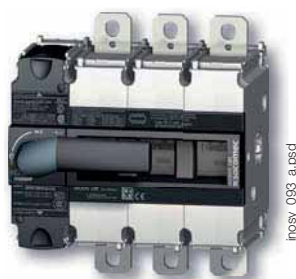
INOSYS *LBS* UL 98

Load Break Switches for AC applications

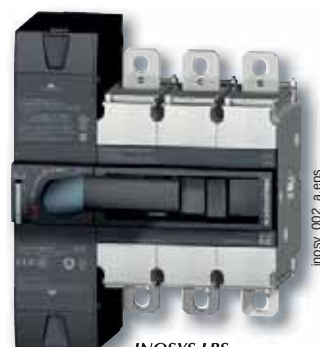
from 100 to 600 A, up to 1000 VAC incorporating tripping function

Load break
switches

new



INOSYS LBS
3-poles



INOSYS LBS
3-poles with tripping function

The solution for

- > Emergency switching
- > Main switchboards
- > Distribution panels
- > Motor load breaks

Strong points

- > High-performance switching in a compact footprint
- > Safe operation
- > Enhanced disconnection and isolation
- > Tripping function
- > Easy to install
- > Highly reliable solution

Conformity to standards

- > IEC 60947-3
- > UL 98⁽¹⁾

Compatible with requirements:

- > IEC 60364
- > IEC 60204-1
- > NEC

(1) Consult us.



Function

Reliability and guaranteed safety combined with low maintenance costs are vital when selecting components for integration in electrical systems. With its proven switching technology and tripping function, INOSYS LBS can be used for performing safe maintenance in the installation as well as emergency breaking.

INOSYS LBS are multi-polar load break switches which are available with integrated tripping function. They can be operated manually using the handle or remotely (via tripping coils) to disconnect part or all of the electrical installation.

They make and break under load conditions, provide safety isolation for any low voltage circuits and are suitable for emergency switching.

Advantages

High-performance switching in a compact frame

INOSYS LBS switches integrate a patented technology that offers high switching capacity with optimum arc containment up to 1000 VAC - all within a compact device.

Safe operation

- Reliable position indication through visible contacts.
- The opening and closing of the switch is fully independent from the speed of operation, ensuring safe operation under all conditions.

Enhanced disconnection and isolation

- ON, OFF and TRIP positions are stable: resistant to voltage fluctuations and external environmental constraints.
- Guaranteed disconnection in both OFF & Trip positions.
- Padlocking in OFF position available directly on the switch and on the external handle.

Tripping function: flexible and robust

- Fully immune to external disturbances: no nuisance tripping.
- Shunt-trip or undervoltage release from 24 to 220 VDC and from 24 to 230 VAC.
- Wide operating temperature range: -25 to +70°C (-15 to +160°F).
- Fast disconnection (<50 ms) emergency switching, compliant with installation standards.
- Compatible with virtually any protection relay.

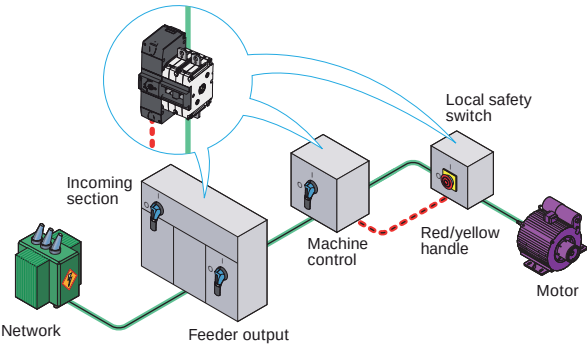
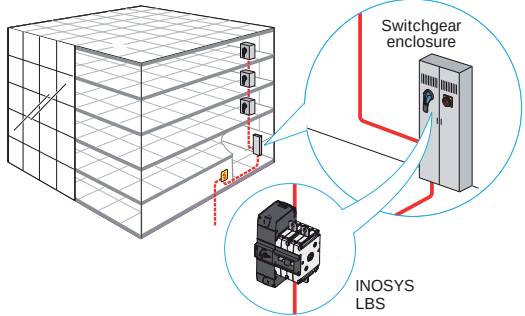
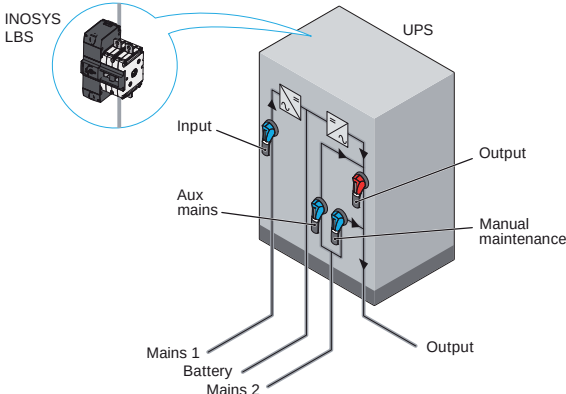
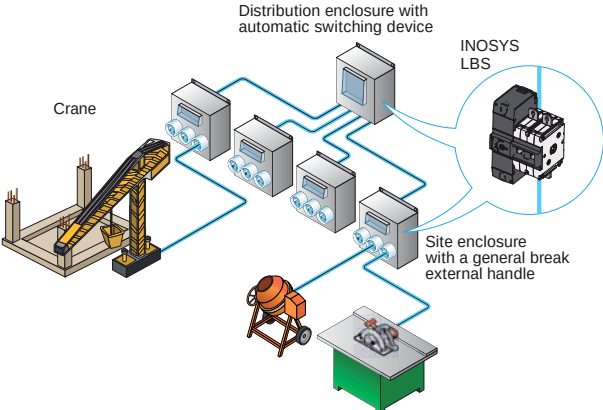
Easy to install

- Mounting: back plate mounting either between poles or through the use of fixing pads.
- Free access to terminals for flexible wiring.
- Easy access without tools to integrate auxiliary contacts and tripping coil (both located within the switch footprint).

Highly reliable solution

- High-performance and guaranteed safety: the contacts opening and closing speed is fully independent of the handle operation.
- High temperature withstand: no derating up to 60°C (140°F).

Application examples: local and remote safe disconnection for AC applications

Machine emergency switching  Network Incoming section Feeder output Machine control Local safety switch Red/yellow handle Motor sircm_021_f_en.ai	Building emergency switching  Switchgear enclosure INOSYS LBS inosy_094_a_en.ai
Power electronics: UPS, backfeed, battery protection  INOSYS LBS Input Output Aux mains Manual maintenance Mains 1 Battery Mains 2 Output inosy_095_a_en.ai	Mobile equipment  Distribution enclosure with automatic switching device INOSYS LBS Crane Site enclosure with a general break external handle inosy_096_a_en.ai

The SOCOMEC solutions

SIRCO Local manual operation  from 125 to 5000 A	INOSYS LBS Up to 1000 VAC with visible contact indication - with or without tripping function  from 100 to 600 A
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INOSYS **LBS** UL 98

Load Break Switches for AC applications

from 100 to 600 A, up to 1000 VAC incorporating tripping function

Overview



1. INOSYS LBS 600 A with tripping function
2. INOSYS LBS 600 A without tripping function
3. Door interlocked external operation handle
4. Direct operation handle
5. Shaft for external handle
6. Auxiliary contact
7. Tripping coil
8. Inter-phase barrier
9. Terminal shrouds
10. Terminal screens
11. Captive nut
12. Holding insert
13. Terminal lugs

References

INOSYS LBS

Rating (A)	Frame size	No. of poles	Switch with tripping function			Switch without tripping function		Other compatible accessories	
			Switch body ⁽¹⁾	External operation	Tripping coil	Switch body ⁽¹⁾	External operation ⁽²⁾	Aux. Contact	Terminal screen ⁽³⁾
100	F2	3P	85A0 3010	Shaft 320 mm 12.6 inches 1400 1032	Shunt trip coil 24 V AC/DC 8499 7002	87A0 3010	Shaft 320 mm 12.6 inches 1400 1032	NO/NC 8499 0001	8499 3232
		4P	85A0 4010			87A0 4010			8499 3242
200	F2	3P	85A0 3020	S2 type handle Black 3R,12 - 4,4X 742D 2118	48 V AC/DC 8499 7004 Undervoltage releases	87A0 3020	S2 type handle black 3R,12 - 4,4X 142D 2118		8499 3232
		4P	85A0 4020			87A0 4020			8499 3242
400	F3	3P	85A0 3040	Shaft 320 mm 12.6 inches 1400 1032	48 V AC 8499 8104 230 V AC 8499 8123	87A0 3040	Shaft 320 mm 12.6 inches 1400 1032		8499 3332
		4P	85A0 4040			87A0 4040			8499 3342
600	F3	3P	85A0 3060	S2L type handle Black 3R,12 - 4,4X 74AD 2118	24 V DC 8499 8202 48 V DC 8499 8204	87A0 3060	S2L type handle black 3R,12 - 4,4X 14AD 2111		8499 3332
		4P	85A0 4060			87A0 4060			8499 3342

(1) The basic devices are delivered without accessories.

(2) For external side operation on the left, please order the S2 handle reference 142A2111 for case sizes F2 and F3. Please consult us if you require a device with side operation on the right.

(3) Compatible with the holding insert which can be fitted to lock the shrouds in place.

Accessories

Door interlocked external operation handle

Use

Door interlocked external operation handles include an escutcheon and are padlockable. External handles must be utilised with an extension shaft.

Example of application

As the handle is interlocked in the "ON" position the operator must safely disconnect and isolate the circuit prior to accessing the panel for maintenance procedures.

Opening the door when the switch is in the "ON" position can only be done by defeating the interlocking function with the use of a dedicated tool (authorised persons only). The interlocking function is restored when the door is re-closed.



S2 type handle

access_150_a_1_cat.eps

For LBS with tripping function

Frame size	Handle type	Handle colour	Degree of protection	Reference
F2	S2	Black	3R, 12	742F 2118
F2	S2	Black	3R, 12 - 4,4X	742D 2118
F2	S2	Red	3R, 12 - 4,4X	742G 2118
F3	S2L ⁽¹⁾	Black	3R, 12	74AF 2118
F3	S2L ⁽¹⁾	Black	3R, 12 - 4,4X	74AD 2118
F3	S2L ⁽¹⁾	Red	3R, 12 - 4,4X	74AG 2118

(1) S2L handles have an extended grip; please refer to the dimensions section.

For LBS without tripping function

Frame size	Handle type	Handle colour	Degree of protection	Reference
F2	S2	Black	3R, 12	142F 2111
F2	S2	Black	4,4X	142D 2111
F2	S2	Red	4,4X	142E 2111
F3	S2L ⁽¹⁾	Black	3R, 12	14AF 2111
F3	S2L ⁽¹⁾	Black	4,4X	14AD 2111
F3	S2L ⁽¹⁾	Red	4,4X	14AE 2111

(1) S2L handles have an extended grip; please refer to the dimensions section.

Shaft for external handle

Frame size	Handle type	Length (mm)	Reference
F2 ... F3	S2, S2L	200	1400 1020
F2 ... F3	S2, S2L	320	1400 1032
F2 ... F3	S2, S2L	400	1400 1040

Other lengths: please consult us.



Shaft for S2 and S2L type handle

access_401_a_1_cat

Shaft guide for external handle

Use

To guide the shaft extension into the external handle.

This accessory enables the handle to engage the shaft extension with a misalignment of up to 15 mm / 0.59 in.

Required for a shaft length over 320 mm / 12.6 in.



access_260_a_2_cat

Description	Reference
Shaft guide	1429 0000

Accessories (continued)

Alternative S-type handle cover colours

Use

For S2 and S2L type single grip handles.

Handle colour	Handle type	To be ordered in multiples of	Reference
Light grey	S2, S2L	50	1401 0001
Dark grey	S2, S2L	50	1401 0011

Other colours: please consult us.



access_198_a_1_cat

Auxiliary contact

Use

The same auxiliary contact can be used to provide position and tripping information. The function of the auxiliary contact depends on where it is mounted on the mechanism.

Characteristics

Changeover type: NO/NC, IP2 with front operation. 30 000 operations. Maximum 3 per switch.

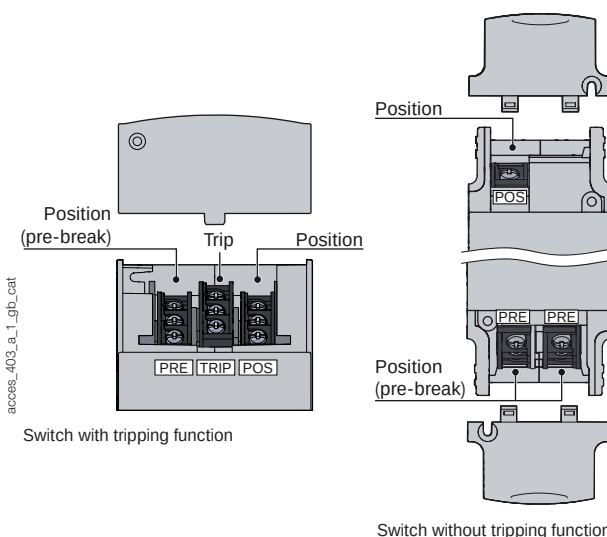
Frame size	Connection type	Type	Reference
F2 ... F3	Screw	NO/NC standard	8499 0001
F2 ... F3	Screw	NO/NC low level	8499 0002
F2 ... F3	Screw	NC > 600 V	8499 0003

Characteristics

Auxiliary contact type	Min. current (A)	I _{th} (A)	Electrical characteristics per UL 60947-5-1
Standard	12.5 mA / 24 V	10	A300 - Q300
Low level	1 mA / 4 V	10	A300 - Q300
600 V	10 mA / 24 V	10	A600



access_402_a_1_cat



access_403_a_1_gb_cat

Tripping coil

Use

Allows remote activation of the switch's tripping mechanism. Shunt trip and undervoltage release coils are available.

Connection: 1.5 mm², push in type.

Maximum one tripping coil per switch.

Safe and easy coil replacement by using standard tools.



Shunt trip coil

Shunt trip coil

Frame size	Voltage (V)	Reference
F2 ... F3	24 V AC/DC	8499 7002
F2 ... F3	48 V AC/DC	8499 7004
F2 ... F3	110 - 127 VAC ; 110 - 125 VDC	8499 7011
F2 ... F3	230 V AC/DC	8499 7023

Other voltage ratings available, please consult us.

Undervoltage release

Frame size	Voltage (V)	Reference
F2 ... F3	48 VAC	8499 8104
F2 ... F3	110 - 120 VAC	8499 8111
F2 ... F3	230 - 240 VAC	8499 8123
F2 ... F3	24 VDC	8499 8202
F2 ... F3	48 VDC	8499 8204

Other voltage ratings available, please consult us.

Characteristics

Shunt trip coils

AC type (±10%)	24 VAC	48 VAC	110 VAC	230 VAC
Inrush consumption (A); <10ms	6.85	2.95	1.25	0.73
DC type (-5% ... +20%)	24 VDC	48 VDC	110 VDC	230 VDC
Inrush consumption (A), <10ms	7.6	3.28	1.39	0.78

Max supply time 2 s.

Undervoltage release

AC type	24 VAC	48 VAC	110 VAC	230 VAC
Max permanent consumption (VA), at 110% U _n	-	1.8	1.4	1.5
DC type	24 VDC	48 VDC	110 VDC	230 VDC
Max permanent consumption (VA), at 110% U _n	1.6	1.4	-	-

Holding: up to 85% x U_n

Release: < 35 to 70% x U_n

Accessories (continued)

Terminal screen

Use

Provides top and bottom protection against direct contact with terminals or connection parts.

Advantages

Perforations for thermographic inspection. Mounting requires holding inserts (supplied with the terminal screens).

Frame size	No. of poles	Position	Reference ⁽¹⁾
F2	3 P	Top and bottom	8499 3232
F2	4 P	Top and bottom	8499 3242
F3	3 P	Top and bottom	8499 3332
F3	4 P	Top and bottom	8499 3342

(1) Each reference comprises 2 terminal screens for top and bottom protection.



aces_408_a_1_cat

Holding insert

Use

Used to secure terminal shrouds / inter-phase barriers on the switch.

Frame size	Pack (unit)	Reference
F2 ... F3	10	8499 6220
F2 ... F3	100	8499 6221



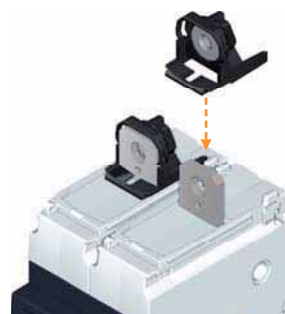
aces_409_a_1_cat

Captive nut

Use

This accessory enables simple one-sided connection to the power terminals. It can be mounted on either side of the terminal for front or rear connection.

Frame size	Pack (unit)	Reference
F2	12	8499 6120
F2	120	8499 6121
F3	12	8499 6130
F3	120	8499 6131



acce_399_a_1_cat

Voltage tap

Use

Allows connection of voltage sensing or power cables, with fast-on connection.

Frame size	Pack (unit)	Reference
F2	12	8499 9012
F3	12	8499 9013



acce_412_a_1_cat

Characteristics

Characteristics according to UL 98

General use rating (A)	100 A	200 A	400 A	600 A
Frame size	F2	F2	F3	F3
Short circuit rating at 600 VAC (kA)	200	200	200	200
Type of fuse	J	J	J	J
Max. fuse rating (A)	100	200	400	600
Max motor hp / FLA 3 ph motor max.				
220-240 VAC	40	75	125	200
440-480 VAC	75	150	250	450
600 VAC	100	200	350	500
Max. motor hp / DC FLA motor				
125 VDC	10	20	-	-
250 VDC	30	50	-	-
Connection terminals				
Min. connection section / (Cu)	3 AWG	3/0 AWG	2 x 3/0 AWG	2 x 350 kcmil
Min. connection section / (Al)	1 AWG	250 kcmil	2 x 250 kcmil	2 x 500 kcmil
Mechanical characteristics				
Endurance (number of operating cycles)	15 000	15 000	10 000	10 000
Auxiliary contacts				
Electrical characteristics	A300-Q300			

Characteristics according to IEC 60947-3

Thermal current I_{th} (40°C)	160 A	250 A	400 A	630 A
Frame size	F2	F2	F3	F3
Rated insulation voltage U_i (V)	1000	1000	1000	1000
Rated impulse withstand voltage U_{imp} (kV)	12	12	12	12
Rated operational currents I_e (A)				
Rated voltage	Utilisation category	A ⁽¹⁾	A ⁽¹⁾	A ⁽¹⁾
415 VAC	AC-22 A	160	250	400
415 VAC	AC-23 A	160	250	400
690 VAC	AC-22 A	160	250	400
690 VAC	AC-23 A	160	250	400
Connection				
Recommended Cu rigid cable cross-section (mm ²)	70	120	240	2 x 185
Recommended AL rigid cable cross-section (mm ²)	120	185	2 x 150	2 x 300
Busbar width (mm) (non insulated bar / insulated bars)	20/25	20/25	25/32	25/32
Operational power in AC-23 (kW)				
400 VAC without pre-break AC (kW) ⁽²⁾	80	140	220	355
Overload capacity (U_e 415 VAC)				
Rated short-circuit making capacity I_{cm} (kA peak)	30	30	70	70

(1) Category with index A = frequent operation.

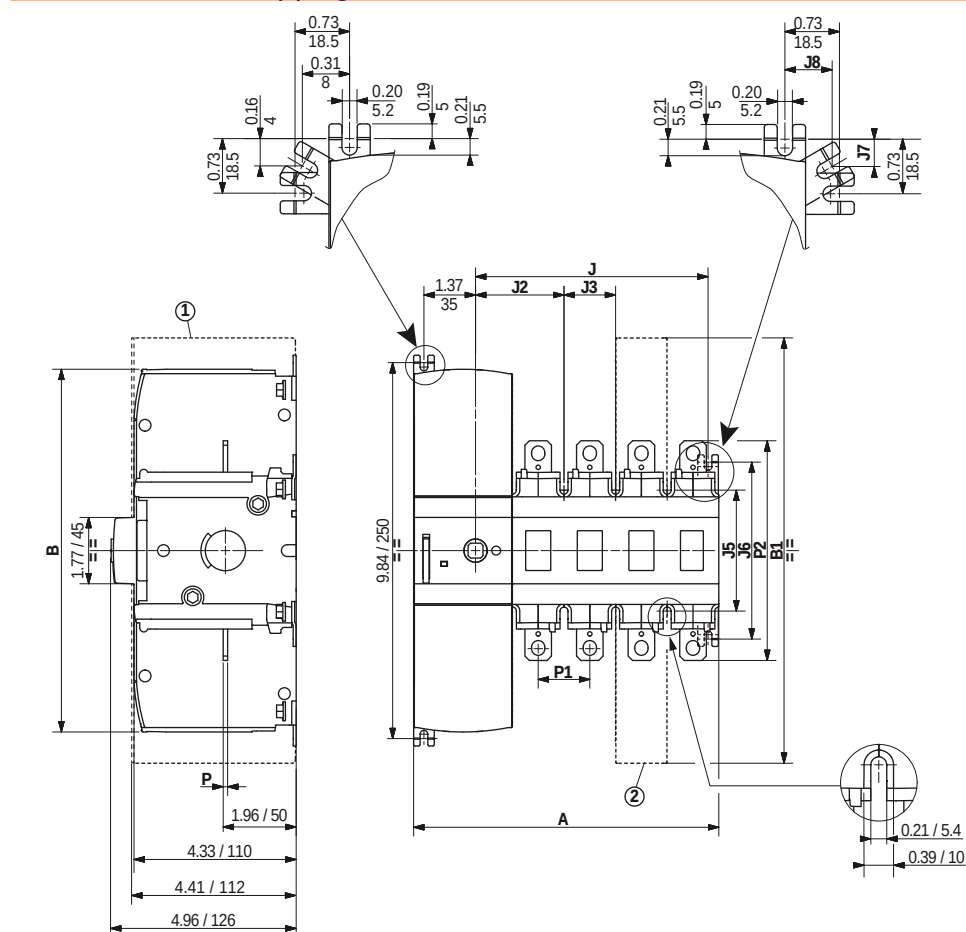
(2) Note that these values may slightly vary depending on type and manufacturer of motors.

Load Break Switches for AC applications

from 100 to 600 A, up to 1000 VAC incorporating tripping function

Dimensions (in/mm)

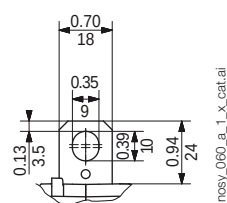
INOSYS LBS with tripping function



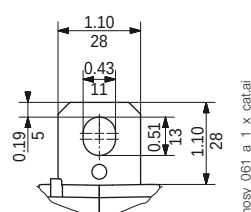
1. Inter-phase barrier.
2. Terminal shrouds.

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Connection terminal F2



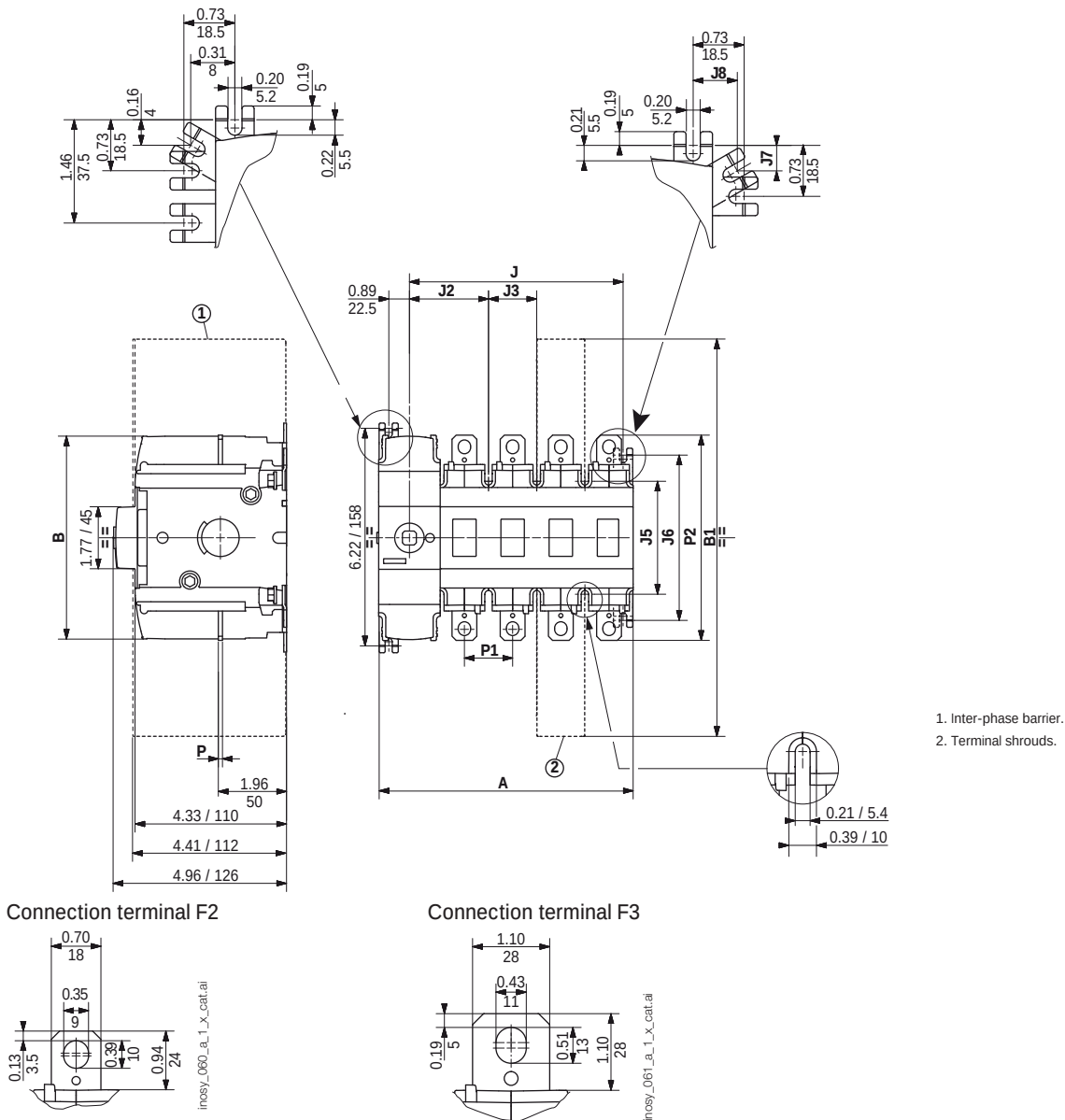
Connection terminal F3



		A		J		
		No. of poles				
Rating (A)	Frame size		3 P	4 P	3 P	4 P
100 ... 200	F2	in	6.77	8.15	4.83	6.21
		mm	172	207	123	158
400 ... 600	F3	in	9.95	9.72	6.01	7.78
		mm	202	247	153	198

Rating (A)	Frame size		B	B1	J2	J3	J5	J6	J7	J8	P	P1	P2
100 ... 200	F2	in	9.69	11.64	2.36	1.38	3.23	4.72	0.39	0.58	0.12	1.38	5.87
		mm	246	296	60	35	82	120	10	15	3	35	149
400 ... 600	F3	in	9.69	14.12	2.76	1.77	4.72	6.22	0.16	0.33	0.20	1.77	6.69
		mm	246	359	70	45	120	158	4	8	5	45	170

INOSYS LBS without tripping function



inosy_081_a_1_x_cat.ai

Rating (A)	Frame size	No. of poles	A		J	
			3 P	4 P	3 P	4 P
100 ... 200	F2	in	5.91	7.28	4.73	6.11
		mm	150	185	120	155
400 ... 600	F3	in	7.09	8.86	5.91	7.69
		mm	180	225	150	195

Rating (A)	Frame size		B	B1	J2	J3	J5	J6	J7	J8	P	P1	P2
100 ... 200	F2	in	5.91	11.64	2.26	1.38	3.23	4.72	0.39	0.58	0.12	1.38	5.87
		mm	150	296	58	35	82	120	10	15	3	35	149
400 ... 600	F3	in	5.91	14.12	2.66	1.77	4.72	6.22	0.16	0.33	0.20	1.77	6.69
		mm	150	359	68	45	120	158	4	8	5	45	170

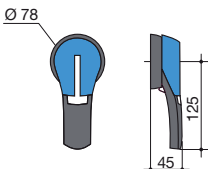
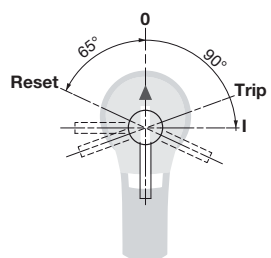
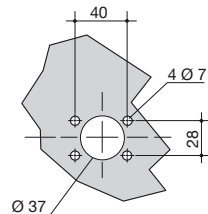
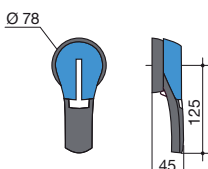
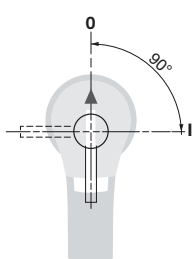
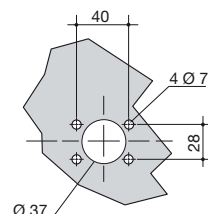
INOSYS **LBS** UL 98

Load Break Switches for AC applications

from 100 to 600 A, up to 1000 VAC incorporating tripping function

Dimensions for external handles (mm)

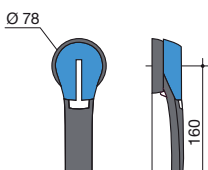
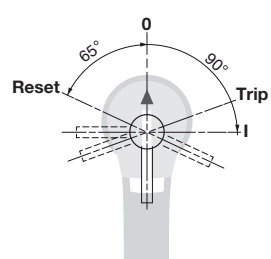
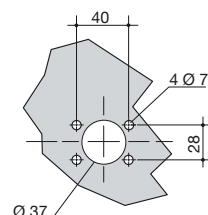
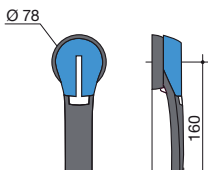
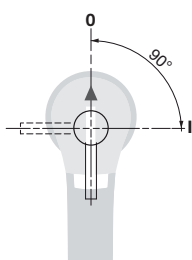
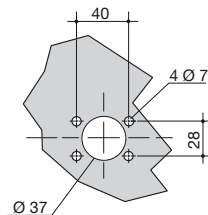
F2 frame size

Handle type	Front operation Direction of operation	Door drilling
S2 type with trip 		
S2 type 		

poign_057_a_1_gb_cat.eps

poign_013_a_1_gb_cat.eps

F3 frame size

Handle type	Front operation Direction of operation	Door drilling
S2L type with trip 		
S2L type 		

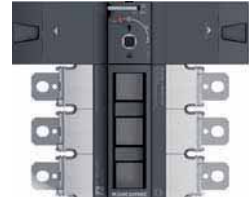
poign_068_a_1_gb_cat.eps

poign_069_a_1_gb_cat.eps

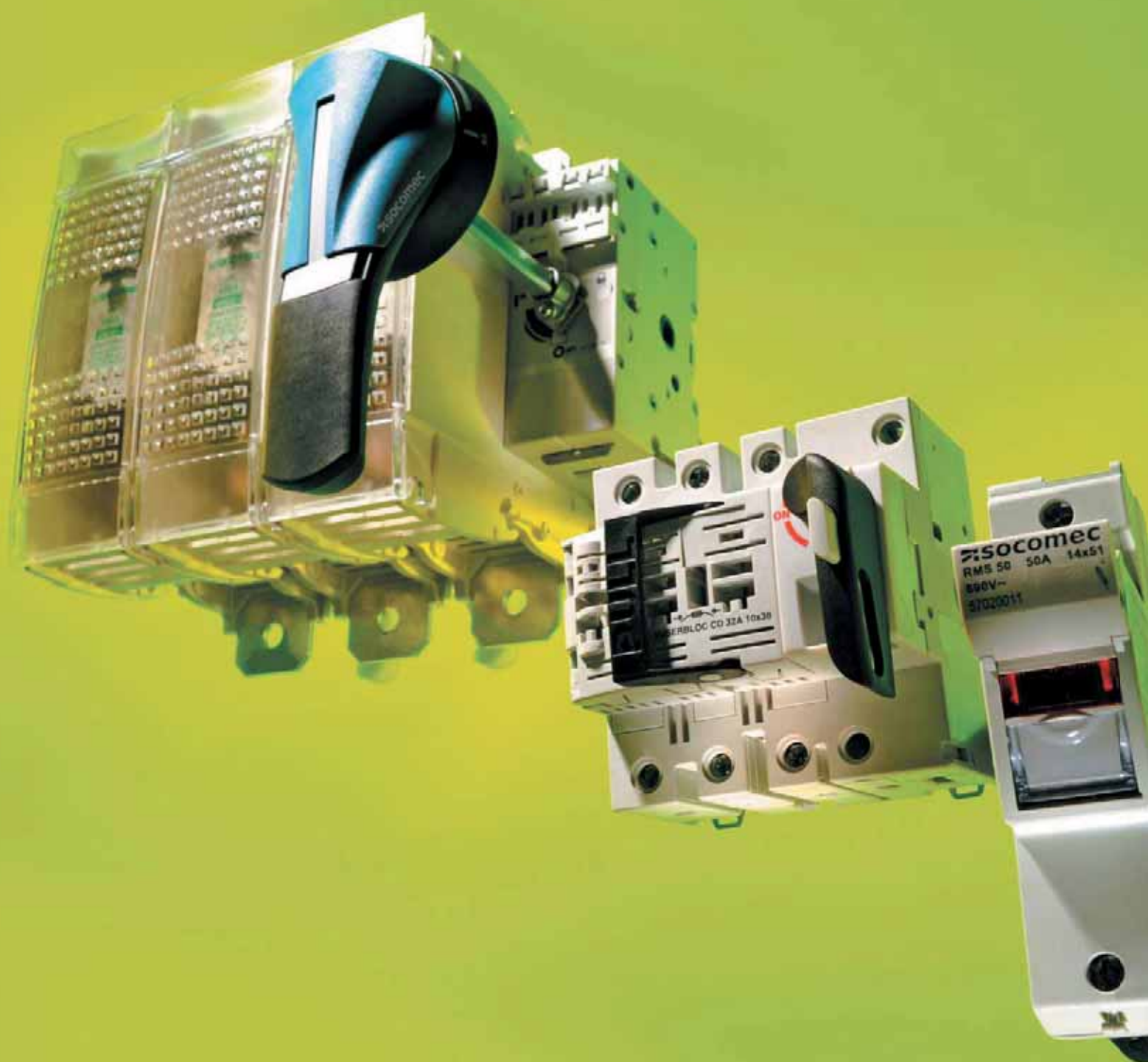
Mounting orientation

F2 - F3

All mounting orientations are possible. Derating may apply - please consult us.



inosy_098_a.psd



Fuse protection

Fuse solutions: undeniable advantages over circuit breakers.	p. 250
Why choose Socomec?	p. 251
Fuse protection selection guide	p. 252

Fuse combination switches



FUSERBLOC
BS88
20 to 1250 A
p. 254



FUSERBLOC
NFC/DIN
25 to 1250 A
p. 254



FUSERBLOC
UL
30 to 800 A
p. 284



FUSERBLOC
for uR fuses
50 to 1250 A
p. 298

Fuse combination switches with tripping function and visible breaking



FUSOMAT
250 to 1250 A
p. 304



SIDERMAT combination
630 to 1800 A
p. 316

Modular fuse holders



RM - RMS
NFC
32 to 125 A
p. 324



new
RM CC
Class CC
30 A
p. 328

Fuse base



IP2X fuse base
160 to 2500 A
p. 332

Industrial fuses

Distribution protection and motor protection

Semiconductor protection



gG & gM fuses
BS88
2 to 1250 A
p. 338



gG & aM fuses
NFC/DIN
0.16 to 1250 A
p. 344



uR fuses
5 to 2000 A
p. 354

Photovoltaic application



RM PV
32 to 50 A
p. 364



PV fuse bases
32 to 600 A
p. 366



gPV fuses
1 to 600 A
p. 368

Specific products

Fuse combination switches for specific applications



p. 374

Compliant with norm IEC/EN 61439

All the steps for producing an assembly that complies with this standard can be found in our guide, "Implementing standard IEC / EN 61439".
http://www.socomec.fr/Norme-IEC-EN-61439_fr.html



Fuse solutions: undeniable advantages over circuit breakers

SOCOMEK has always promoted the benefits of fuses for both personal and equipment safety. In fact, fuse protection offers serious benefits compared to the circuit breaker in a large number of applications.

Fuse switches guarantee reliable breaking and protection, from the distribution of power to protection of the motor. Key benefits at a glance:

- **Highly limited short circuits**

The thermal and mechanical effects generated during a short circuit can be considerable. The speed of a fuse's break capacity ensures a much better limitation of the fault current than circuit breaker solutions (see Fig. 1).

- **High breaking capacity**

Our fuses have a 100 kA breaking capacity (or more); so you don't have to worry about the short-circuit current when choosing the product for you.

- **Easy selection**

Discrimination between upstream and downstream fuses of the same type is guaranteed as long as the upstream fuse rating is 1.6 times or more higher than the downstream fuse. This feature guarantees a seamless supply of energy (see the example in Fig. 2).

- **Confined breaking**

During a short-circuit, the generated energy is absorbed by the silica and remains contained in the body of the fuse, avoiding the spread of the arc or even the projection of incandescent materials.

- **Double breaking**

Our switch disconnectors break the circuit upstream and downstream of the fuse, allowing it to be replaced safely.

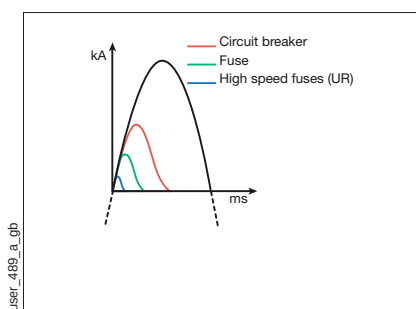


Fig. 1: Limiting the current

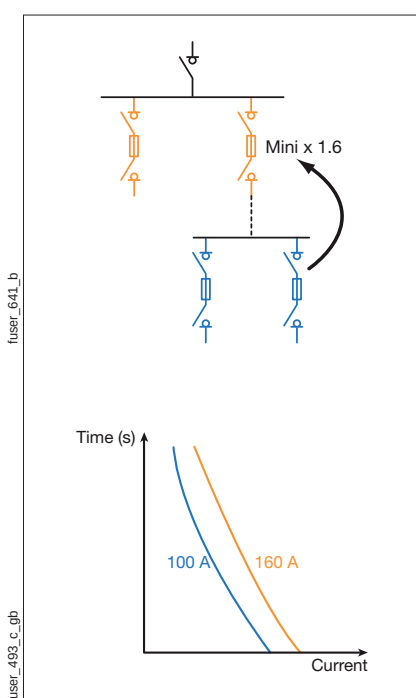


Fig. 2: Example of total selectivity

Good to know

- Controlled with the high/low voltage transformer sensor, triggering fuse switch disconnectors are the best way to ensure cut-off and general protection functions.
- Protecting your system with ultra-rapid (uR) fuses is the only way to effectively protect the semiconductors used in electronic equipment (variable speed drives, etc.) against short circuits.

Photovoltaic applications

SOCOMEK offers solutions for fuse load break switches and fuse disconnect switches.

Contact us

Technical specifications

All the information you need about how to control your electrical system is just one click away!



www.socomec.com/application-guide-scp_en



Why choose Socomec?

With over 90 years of experience, SOCOMEC offers a range of switches and components for building a complete fuse protection solution. Working with us will also bring you plenty of other benefits:



An active commercial network
Our service teams have built their reputation on reassuring guidance, flexible skills and reactivity.



A wide range
Whatever your business (industry, data centres, photovoltaics, etc.), we can meet all your electrical protection needs with this product range.



Quality products
SOCOMEC is recognised by its customers for the reliability of its fuse solutions.



Customised solutions
Do our standard products not meet your needs? As a specialised manufacturer, we can adapt our products to your specific needs. Contact us today to look into every option. Contact your SOCOMEC representative.

What you need to know!

We also offer a wide range of devices that safely protect both people and electronic devices (differential protection, surge protection). See the section, "Electronic protection" page 623.



Still not sure?

Find the answers to all your questions on electrical protection on the website of the association

Profuse International: www.profuseinternational.com

Our website includes a detailed presentation of the customer benefits of fuse technology:

- Ensure the safety of users.
- Ensure system reliability.
- Make savings.
- Enjoy an environmentally friendly solution.



www.profuseinternational.com

profuse
INTERNATIONAL
make a smart choice for your electrical protection



Selection guide

Fuse protection

Which application?

Which type of operation?

	Industry				
					
	FUSERBLOC BS88 NFC/DIN 20 to 1250 A p. 254	FUSERBLOC UL 30 to 800 A p. 284	FUSOMAT SIDERMAT combination 250 to 1800 A p. 316	RM - RMS 32 to 100 A p. 324	RM CC 30 A p. 328
Applications					
Transformer output			•		
Distribution panels				•	•
Main switchboards	•	•	•		
Cable ducting					
Motor circuits	•	•	•		•
Semi-conductor protection				•	
Device operation					
Manual	•	•	•	•	•
Remote trip			•		
Location of direct operation handle					
Front	•	•	•	•	•
Side	•	•	up to 1250 A		
Modular panel mounted	up to 32 A	up to 32 A			
Location of external operation handle					
Front	•	•	•		
Right side	•	•	up to 1250 A		
Left side	•	•			
Centred operation	please consult us	please consult us			
Indication of breaking					
Indication of breaking	•	•	•		
Visible break contacts			•		
Fuse					
NFC/DIN	• / •	• / •	- / •	• / -	
BS	•	•			
UL		•			•
Other					

	Photovoltaic		
			
	RM PV 32 to 50 A p. 364	PV fuse bases 32 to 600 A p. 366	gPV fuses 1 to 600 A p. 368
Applications			
Photovoltaic installations	•	•	•
Fuses			
Other	gPV	gPV	gPV

Positive break indication or visible breaking?





FUSERBLOC

Fuse combination switches
for industrial fuses up to 1250 A



FUSERBLOC
630 to 1250 A



FUSERBLOC
32 to 400 A



FUSERBLOC
20 to 32 A

Function

FUSERBLOC are manually operated multipolar fuse combination switches. They make and break on load and provide safety isolation and protection against overcurrent for any low voltage electrical circuit.

Advantages

Improved safety

- Complete isolation of the fuse with double breaking per pole (top and bottom of fuse).
- Positive break indication.
- IP2X protection with terminal shrouds front panel.

High breaking capacity

Protection against overloads and short-circuits thanks to high breaking capacity fuses (100 kA rms).

Specific functionalities for simplified use

- TEST position for testing control circuits without energising the power poles using U-type auxiliary contacts. In TEST position, the enclosure door can be opened.
- Mechanical or electronic fuse melting detection system (see DDMM or FMD page 270).

The solution for

- > Motor load break
- > Protection of industrial processes



Strong points

- > Improved safety
- > High breaking capacity
- > Specific functionalities for simplified use

A complete range

- > Centred or left side operation, rear connections, plug-in connections. Please consult us.

Conformity to standards

- > IEC 60947-3
- > EN 60947-3
- > BS EN 60947-3
- > NBN EN 60947-3
- > IEC 60269-1
- > DIN EN 60269-1
- > NF EN 60269-1
- > IEC 60269-2
- > VDE 0636-1
- > VDE 0660-107
- > Standards UL: see FUSERBLOC UL



Approvals and certifications⁽¹⁾



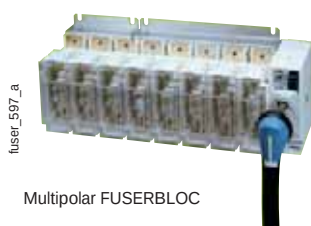
LOVAG



Lloyd's
Register

(1) Product reference on request.

Customised solutions



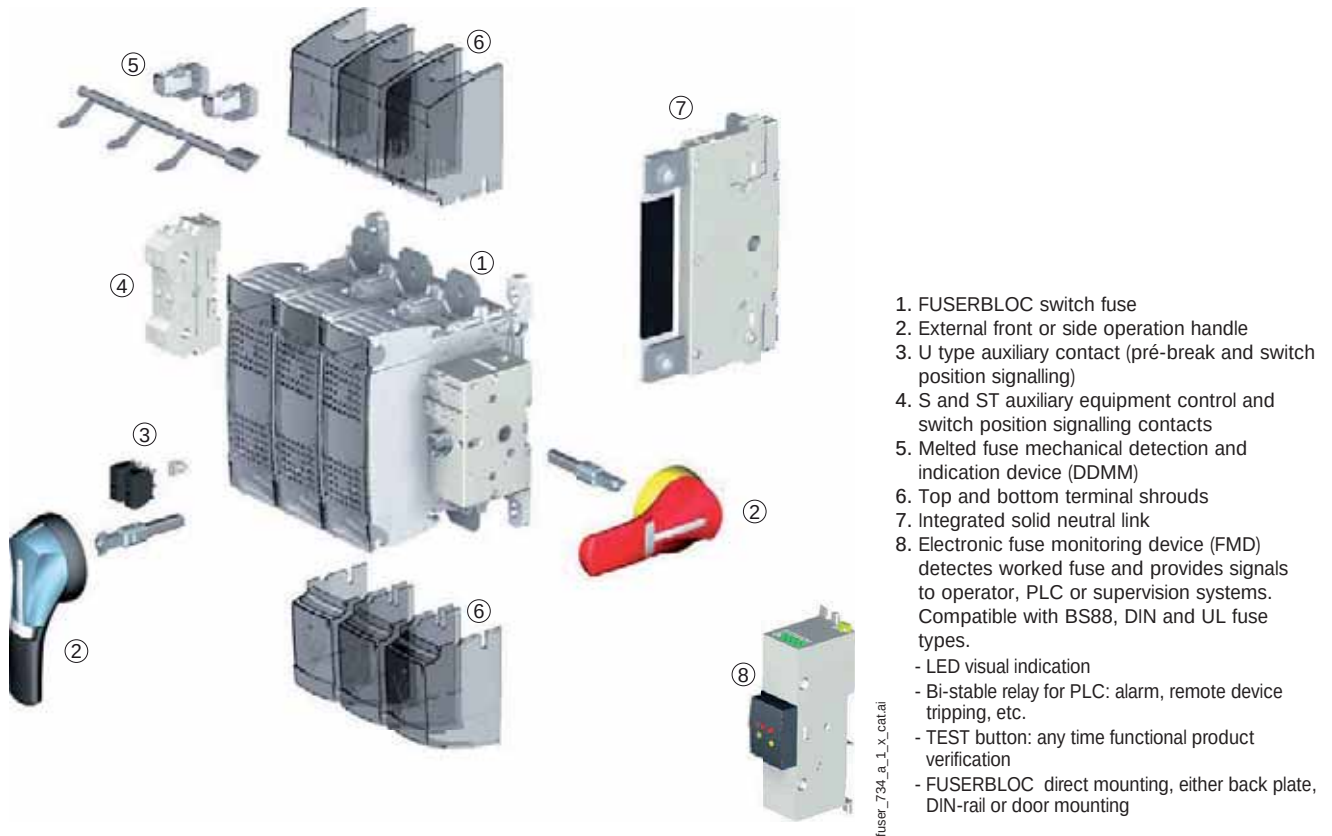
Multipolar FUSERBLOC



Centred operation

What you need to know

- In addition to the FUSERBLOC rating, product selection also depends on the fuse characteristics and functional specifications, which need to be in accordance with the application. SOCOMEC FUSERBLOC are available for utilisation with NFC, DIN or BS88 fuses.



- Whether it is 3 pole + switched neutral or 3 pole + solid neutral, the FUSERBLOC 20 to 32 A with direct front operation and external operation is the best suited solution in compact design.



- From 32 to 400 A, the FUSERBLOC is available in 2, 3 or 4 poles with direct right side operation.



- For ratings 20 to 400 A, the flat mounting kit provides a compact solution ideally suited to withdrawable applications.
- Maintenance of outputs from the DC common bus.



FUSERBLOC

Fuse combination switches

for industrial fuses up to 1250 A

References

BS 88 - External front and side operation - 20 to 160 A

Rating (A) Fuse size Frame size	Number of poles	Reference Switch I - 0 - TEST	Reference Changeover I - 0 - II	External front handle I - 0	TEST External front handle I - 0 - TEST	External right side handle I - 0	Changeover external front handle I - 0 - II	Shaft extensions for handle	Terminal shrouds ⁽³⁾	U type A/C ⁽²⁾	Integrated solid neutral link							
CD 20 A A1 0	3 P	3641 3000	3680 3000	S1 type Black IP65 1413 2111 ⁽¹⁾ Red/Yellow IP65 1414 2111 Red/Yellow IP65 1418 2111	S1 type Black IP65 1413 2115 ⁽¹⁾ Red/Yellow IP65 1414 2115	S1 type Black IP65 1417 2111 ⁽¹⁾ Red/Yellow IP65 1418 2111	S1 type Black IP65 1413 2113 ⁽¹⁾ Red/Yellow IP65 1414 2113	320 mm 1401 0532	IP2x as standard	1 contact NO 3999 0701 1 contact NC 3999 0702	3829 9310							
	3 P + switched neutral	3641 4000	3680 4000															
	3 P+solid neutral	3641 5000																
CD 32 A A1 0	3 P	3641 3001	3680 3001					S2 type Black IP65 1423 2111 ⁽¹⁾ Red/Yellow IP65 1424 2111				S2 type Black IP65 1423 2115 ⁽¹⁾ Red/Yellow IP65 1424 2115	S2 type Black IP65 1427 2111 ⁽¹⁾ Red/Yellow IP65 1428 2111	S2 type Black IP65 1421 2113 ⁽¹⁾ Red/Yellow IP65 1424 2113	320 mm 1400 1032	2 P 3998 2016 3 P 3998 3016 4 P 3998 4016	3829 9320	
	3 P + switched neutral	3641 4001	3680 4001															
	3 P + solid neutral	3641 5001																
32 A A1 11	2 P	3841 2003		S2 type Black IP65 1423 2111 ⁽¹⁾ Red/Yellow IP65 1424 2111	S2 type Black IP65 1423 2115 ⁽¹⁾ Red/Yellow IP65 1424 2115	S2 type Black IP65 1427 2111 ⁽¹⁾ Red/Yellow IP65 1428 2111	S2 type Black IP65 1421 2113 ⁽¹⁾ Red/Yellow IP65 1424 2113		320 mm 1400 1032						2 P 3998 2016 3 P 3998 3016 4 P 3998 4016			3829 9320
	3 P	3841 3003	3880 3003															
	4 P	3841 6003	3880 6003															
63 A A2-A3 12	2 P	3841 2006						S2 type Black IP65 1423 2111 ⁽¹⁾ Red/Yellow IP65 1424 2111	S2 type Black IP65 1423 2115 ⁽¹⁾ Red/Yellow IP65 1424 2115	S2 type Black IP65 1427 2111 ⁽¹⁾ Red/Yellow IP65 1428 2111	S2 type Black IP65 1421 2113 ⁽¹⁾ Red/Yellow IP65 1424 2113	320 mm 1400 1032	2 P 3998 2016 3 P 3998 3016 4 P 3998 4016	3829 9320				
	3 P	3841 3006	3880 3006															
	4 P	3841 6006	3880 6006															
100 A A4 ⁽⁴⁾ 13	2 P	3841 2010		S2 type Black IP65 1423 2111 ⁽¹⁾ Red/Yellow IP65 1424 2111	S2 type Black IP65 1423 2115 ⁽¹⁾ Red/Yellow IP65 1424 2115	S2 type Black IP65 1427 2111 ⁽¹⁾ Red/Yellow IP65 1428 2111	S2 type Black IP65 1421 2113 ⁽¹⁾ Red/Yellow IP65 1424 2113					320 mm 1400 1032				2 P 3998 2016 3 P 3998 3016 4 P 3998 4016	3829 9320	
	3 P	3841 3010	3880 3010															
	4 P	3841 6010	3880 6010															
CD 160 A A3-A4 ⁽⁴⁾ 13 A	2 P	3841 2014						S2 type Black IP65 1423 2111 ⁽¹⁾ Red/Yellow IP65 1424 2111	S2 type Black IP65 1423 2115 ⁽¹⁾ Red/Yellow IP65 1424 2115	S2 type Black IP65 1427 2111 ⁽¹⁾ Red/Yellow IP65 1428 2111	S2 type Black IP65 1421 2113 ⁽¹⁾ Red/Yellow IP65 1424 2113	320 mm 1400 1032			2 P 3998 2016 3 P 3998 3016 4 P 3998 4016			3829 9320
	3 P	3841 3014	3880 3014															
	4 P	3841 6014	3880 6014															
160 A A4 14	2 P	3841 2015		S2 type Black IP65 1423 2111 ⁽¹⁾ Red/Yellow IP65 1424 2111	S2 type Black IP65 1423 2115 ⁽¹⁾ Red/Yellow IP65 1424 2115	S2 type Black IP65 1427 2111 ⁽¹⁾ Red/Yellow IP65 1428 2111	S2 type Black IP65 1421 2113 ⁽¹⁾ Red/Yellow IP65 1424 2113					320 mm 1400 1032	2 P 3998 2016 3 P 3998 3016 4 P 3998 4016	3829 9320				
	3 P	3841 3015	3880 3015															
	4 P	3841 6015	3880 6015															
160 A B1-B2 14	2 P	3841 2016						S2 type Black IP65 1423 2111 ⁽¹⁾ Red/Yellow IP65 1424 2111	S2 type Black IP65 1423 2115 ⁽¹⁾ Red/Yellow IP65 1424 2115	S2 type Black IP65 1427 2111 ⁽¹⁾ Red/Yellow IP65 1428 2111	S2 type Black IP65 1421 2113 ⁽¹⁾ Red/Yellow IP65 1424 2113	320 mm 1400 1032				2 P 3998 2016 3 P 3998 3016 4 P 3998 4016	3829 9320	
	3 P	3841 3016	3880 3016															
	4 P	3841 6016	3880 6016															

(1) Standard.

(2) 4 auxiliary contacts as standard without additional contact holder.

(3) Top/bottom.

(4) For fuse size A4: max diameter 31 mm.

BS 88 - External front and side operation - 200 to 1250 A

Rating (A) Fuse size Frame size	Number of poles	Reference Switch I - 0 - TEST	Reference Changeover I - 0 - II	External front handle I - 0	TEST External front handle I - 0 - TEST	External right side handle I - 0	Changeover external front handle I - 0 - II	Shaft extensions for handle	Terminal shrouds ⁽³⁾	U type A/C ⁽²⁾	Integrated solid neutral link							
CD 200 A A3-A4 (5) 13 A	2 P	3841 2019		S2 type Black IP65 1423 2111⁽⁴⁾ Red/Yellow IP65 1424 2111	S2 type Black IP65 1423 2115⁽⁴⁾ Red/Yellow IP65 1424 2115	S2 type Black IP65 1425 2111⁽⁴⁾ Red/Yellow IP65 1428 2111	S2 type Black IP65 1422 2113⁽⁴⁾ Red/Yellow IP65 1424 2113	320 mm 1400 1032	2 P 3998 2016 3 P 3998 3016 4 P 3998 4016		3829 9320							
	3 P	3841 3019	3880 3019						2 P 3998 2025 3 P 3998 3025 4 P 3998 4025									
	4 P	3841 6019	3880 6019															
200 A B1-B2 15	2 P	3841 2021									S3 type Black IP65 1433 3111⁽⁴⁾ Red/Yellow IP65 1434 3111	S3 type Black IP65 1437 3111⁽⁴⁾ Red/Yellow IP65 1438 3111	S3 type Black IP65 1437 3111⁽⁴⁾ Red/Yellow IP65 1438 3111	S3 type Black IP65 1437 3111⁽⁴⁾ Red/Yellow IP65 1438 3111	320 mm 1400 1232	2 P 3998 2025 3 P 3998 3025 4 P 3998 4025	1 contact NO 3999 0701 1 contact NC 3999 0702	3829 9325
	3 P	3841 3021	3880 3021						2 P 3898 2040 3 P 3898 3040 4 P 3898 4040									
	4 P	3841 6021	3880 6021															
250 A B1-B2-B3 15	2 P	3841 2024		S3 type Black IP65 1433 3111⁽⁴⁾ Red/Yellow IP65 1434 3111	S3 type Black IP65 1437 3111⁽⁴⁾ Red/Yellow IP65 1438 3111	S3 type Black IP65 1437 3111⁽⁴⁾ Red/Yellow IP65 1438 3111	S3 type Black IP65 1437 3111⁽⁴⁾ Red/Yellow IP65 1438 3111			320 mm 1400 1232						2 P 3898 2040 3 P 3898 3040 4 P 3898 4040		1 contact NO 3999 0701 1 contact NC 3999 0702
	3 P	3841 3024	3880 3024						2 P 3898 2080 3 P 3898 3080 4 P 3898 4080									
	4 P	3841 6024	3880 6024															
315 A B1-B2-B3 16	2 P	3841 2031						S3 type Black IP65 1433 3111⁽⁴⁾ Red/Yellow IP65 1434 3111			S3 type Black IP65 1437 3111⁽⁴⁾ Red/Yellow IP65 1438 3111	S3 type Black IP65 1437 3111⁽⁴⁾ Red/Yellow IP65 1438 3111	S3 type Black IP65 1437 3111⁽⁴⁾ Red/Yellow IP65 1438 3111	320 mm 1400 1232		2 P 3898 2040 3 P 3898 3040 4 P 3898 4040	1 contact NO 3999 0701 1 contact NC 3999 0702	
	3 P	3841 3031	3880 3032⁽⁶⁾						2 P 3898 2080 3 P 3898 3080 4 P 3898 4080									
	4 P	3841 6031	3880 6032⁽⁶⁾															
400 A B1-B2- B3-B4 16	2 P	3841 2038		S3 type Black IP65 1433 3111⁽⁴⁾ Red/Yellow IP65 1434 3111	S3 type Black IP65 1437 3111⁽⁴⁾ Red/Yellow IP65 1438 3111	S3 type Black IP65 1437 3111⁽⁴⁾ Red/Yellow IP65 1438 3111	S3 type Black IP65 1437 3111⁽⁴⁾ Red/Yellow IP65 1438 3111								320 mm 1400 1232	2 P 3898 2080 3 P 3898 3080 4 P 3898 4080		1 contact NO 3999 0701 1 contact NC 3999 0702
	3 P	3841 3038							2 P 3898 2080 3 P 3898 3080 4 P 3898 4080									
	4 P	3841 6038																
630 A C1-C2 17	2 P	3821 2063						S3 type Black IP65 1433 3111⁽⁴⁾ Red/Yellow IP65 1434 3111		S3 type Black IP65 1437 3111⁽⁴⁾ Red/Yellow IP65 1438 3111	S3 type Black IP65 1437 3111⁽⁴⁾ Red/Yellow IP65 1438 3111	S3 type Black IP65 1437 3111⁽⁴⁾ Red/Yellow IP65 1438 3111	320 mm 1400 1232			2 P 3898 2080 3 P 3898 3080 4 P 3898 4080	1 contact NO 3999 0701 1 contact NC 3999 0702	
	3 P	3821 3063							2 P 3898 2080 3 P 3898 3080 4 P 3898 4080									
	4 P	3821 6063																
800 A C1-C2-C3 17	2 P	3821 2080		S3 type Black IP65 1433 3111⁽⁴⁾ Red/Yellow IP65 1434 3111	S3 type Black IP65 1437 3111⁽⁴⁾ Red/Yellow IP65 1438 3111	S3 type Black IP65 1437 3111⁽⁴⁾ Red/Yellow IP65 1438 3111	S3 type Black IP65 1437 3111⁽⁴⁾ Red/Yellow IP65 1438 3111							320 mm 1400 1232		2 P 3898 2080 3 P 3898 3080 4 P 3898 4080		1 contact NO 3999 0701 1 contact NC 3999 0702
	3 P	3821 3080							2 P 3898 2080 3 P 3898 3080 4 P 3898 4080									
	4 P	3821 6080																
1250 A D1 18	2 P	3821 2120						S3 type Black IP65 1433 3111⁽⁴⁾ Red/Yellow IP65 1434 3111		S3 type Black IP65 1437 3111⁽⁴⁾ Red/Yellow IP65 1438 3111	S3 type Black IP65 1437 3111⁽⁴⁾ Red/Yellow IP65 1438 3111	S3 type Black IP65 1437 3111⁽⁴⁾ Red/Yellow IP65 1438 3111			320 mm 1400 1232	2 P 3898 2120	1 contact NO 3999 0701 1 contact NC 3999 0702	
	3 P	3821 3120							2 P 3898 2080 3 P 3898 3080 4 P 3898 4080									
	4 P	3821 6120																

(1) Standard.

(2) 4 auxiliary contacts as standard without additional contact holder.

(3) Top/bottom.

(4) 8 AC as standard without support (the support is for 8 additional auxiliary contacts).

(5) For fuse size A4: max diameter 31 mm.

(6) Terminal shrouds: 3 P - 3998 3025, 4 P - 3998 4025.

FUSERBLOC

Fuse combination switches

for industrial fuses up to 1250 A

References (continued)

BS 88 - Direct operation - 20 to 160 A

Rating (A) Fuse size Frame size	Number of poles	Reference Side direct operation	Reference Direct front operation	Side direct handle	Direct front handle	Auxiliary contacts	Terminal shrouds ⁽³⁾	Cage terminals	Handle key interlocking accessories ⁽²⁾
CD 20 A A1 0	3 P		3641 3000		Black 3629 4012	1 contact NO/NC A-type 3999 0001⁽¹⁾ 2 contacts NO/NC A-type 3999 0002⁽¹⁾	IP2x as standard	Standard	
	3 P + switched neutral		3641 4000						
	3 P + solid neutral		3641 5000						
CD 32 A A1 0	3 P		3641 3001						
	3 P + switched neutral		3641 4001						
	3 P + solid neutral		3641 5001						
32 A A1 1	2 P	3625 2003	consult us	Black 3629 7900					3629 7903
	3 P	3625 3003	consult us						
	4 P	3625 6003	consult us						
63 A A2-A3 2	2 P	3625 2006	consult us						
	3 P	3625 3006	consult us						
	4 P	3625 6006	consult us						
100 A A4 ⁽⁴⁾ 3	2 P	3625 2010	consult us	Black 3629 7901		1 contact NO/NC A-type 3999 0021⁽¹⁾ 2 contacts NO/NC A-type 3999 0022⁽¹⁾			
	3 P	3625 3010	consult us						
	4 P	3625 6010	consult us						
CD 160 A A3-A4 ⁽⁴⁾ 3 A	2 P	3625 2014	consult us				2 P 3998 2016 3 P 3998 3016 4 P 3998 4016	3 P 5400 3016 4 P 5400 4016	3629 7913
	3 P	3625 3014	consult us						
	4 P	3625 6014	consult us						
160 A A4 4	2 P	3625 2015	consult us						
	3 P	3625 3015	consult us						
	4 P	3625 6015	consult us						
160 A B1-B2 4	2 P	3625 2016	consult us						
	3 P	3625 3016	consult us						
	4 P	3625 6016	consult us						

(1) Max. 2 contacts.

(2) Lock not included.

(3) Top/bottom.

(4) For fuse size A4: max diameter 31 mm.

BS 88 - Direct operation - 200 to 400 A

Rating (A) Fuse size Frame size	Number of poles	Reference Side direct operation	Reference Direct front operation	Side direct handle	Direct front handle	Auxiliary contacts	Terminal shrouds ⁽³⁾	Cage terminals	Handle key interlocking accessories ⁽²⁾
CD 200 A A3-A4 ⁽⁴⁾ 13 A	2 P	3625 2019	consult us	Black 3629 7901	consult us	1 contact NO/NC A-type 3999 0021⁽¹⁾ 2 contacts NO/NC A-type 3999 0022⁽¹⁾	2 P 3998 2016	3 P 5400 3016 4 P 5400 4016	3629 7913
	3 P	3625 3019	consult us				3 P 3998 3016		
	4 P	3625 6019	consult us				4 P 3998 4016		
200 A B1-B2 5	2 P	3625 2021	consult us				2 P 3998 2025 3 P 3998 3025 4 P 3998 4025	3 P 5400 3025 4 P 5400 4025	
	3 P	3625 3021	consult us						
	4 P	3625 6021	consult us						
250 A B1-B2-B3 5	2 P	3625 2024	consult us				2 P 3998 2025 3 P 3998 3025 4 P 3998 4025	3 P 5400 3025 4 P 5400 4025	
	3 P	3625 3024	consult us						
	4 P	3625 6024	consult us						
315 A B1-B2-B3 6	2 P	3625 2032	consult us				2 P 3998 2025 3 P 3998 3025 4 P 3998 4025	3 P 5400 3040 4 P 5400 4040	
	3 P	3625 3032	consult us						
	4 P	3625 6032	consult us						
400 A B1-B2-B3-B4 6	2 P	3625 2039	consult us				2 P 3998 2025 3 P 3998 3025 4 P 3998 4025	3 P 5400 3040 4 P 5400 4040	
	3 P	3625 3039	consult us						
	4 P	3625 6039	consult us						

(1) Max. 2 contacts.

(2) Lock not included.

(3) Top/bottom.

(4) For fuse size A4: max diameter 31 mm.

BS 88 - Direct operation - 630 to 1250 A

Rating (A) Fuse size Frame size	Number of poles	Reference Side direct operation	Reference Direct front operation	Side direct handle	Direct front handle	Auxiliary contacts	Terminal shrouds ⁽³⁾	Cage terminals	Handle key interlocking accessories ⁽²⁾
630 A C1-C2 17	2 P	3821 2063	3821 2063	S3 type Black 3899 7911 + 1437 3111	Black 3899 6011	1 contact NO U-type 3999 0701⁽¹⁾	2 P 3898 2080		
	3 P	3821 3063	3821 3063				3 P 3898 3080		
	4 P	3821 6063	3821 6063				4 P 3898 4080		
800 A C1-C2-C3 17	2 P	3821 2080	3821 2080		Black 3899 7011	1 contact NC U-type 3999 0702⁽¹⁾	3898 2120		
	3 P	3821 3080	3821 3080				3898 3120		
	4 P	3821 6080	3821 6080				3898 4120		
1250 A D1 18	2 P	3821 2120	3821 2120						
	3 P	3821 3120	3821 3120						
	4 P	3821 6120	3821 6120						

(1) Max. number of U-type auxiliary contacts is 8.

(2) Lock not included.

(3) Top/bottom.

FUSERBLOC

Fuse combination switches

for industrial fuses up to 1250 A

References

NFC and DIN - External front and right side operation - 25 to 125 A

Rating (A) / Fuse / Frame size	No. of poles	Switch I - 0 - TEST	Changeover switch I - 0 - II	External front handle	TEST external front handle	External right side handle	Changeover external front handle	Shaft for external handle	Auxiliary contacts ⁽³⁾	Terminal shrouds ⁽²⁾	Integrated solid neutral link																
CD 25 A 10 x 38 0	3 P	3631 3002 ⁽¹⁾	3670 3002	S1 type Black IP65 1413 2111 Red/Yellow IP65 1414 2111	S1 type Black IP65 1413 2115 Red/Yellow IP65 1414 2115	S1 type Black IP65 1417 2111 Red/Yellow IP65 1418 2111	S1 type Black IP65 1413 2113 Red/Yellow IP65 1414 2113	320 mm 1401 0532	U-type 1 contact NO 3999 0701 1contact NC 3999 0702	IP2x as standard																	
	3 P + switched neutral	3631 4002 ⁽¹⁾	3670 4002																								
	3 P + solid neutral	3631 5002 ⁽¹⁾																									
CD 32 A 10 x 38 0	3 P	3631 3003	3670 3003									S2 type Black IP65 1423 2111 Red/Yellow IP65 1424 2111	S2 type Black IP65 1423 2115 Red/Yellow IP65 1424 2115	S2 type Black IP65 1427 2111 Red/Yellow IP65 1428 2111	S2 type Black IP65 1423 2113 Red/Yellow IP65 1424 2113												
	3 P + switched neutral	3631 4003	3670 4003																								
	3 P + solid neutral	3631 5003																									
CD 32 A 14 x 51 0	3 P	3631 3004 ⁽¹⁾	3670 3004													S2 type Black IP65 1423 2111 Red/Yellow IP65 1424 2111	S2 type Black IP65 1423 2115 Red/Yellow IP65 1424 2115	S2 type Black IP65 1427 2111 Red/Yellow IP65 1428 2111	S2 type Black IP65 1423 2113 Red/Yellow IP65 1424 2113								
	3 P + switched neutral	3631 4004 ⁽¹⁾	3670 4004																								
	3 P + solid neutral	3631 5004 ⁽¹⁾																									
50 A 14 x 51 11	2 P	3831 2005						S2 type Black IP65 1423 2111 Red/Yellow IP65 1424 2111												S2 type Black IP65 1423 2115 Red/Yellow IP65 1424 2115	S2 type Black IP65 1427 2111 Red/Yellow IP65 1428 2111	S2 type Black IP65 1423 2113 Red/Yellow IP65 1424 2113					
	3 P	3831 3005 ⁽¹⁾	3870 3005																								
	4 P	3831 6005 ⁽¹⁾	3870 6005																								
63 A 00C 12	2 P	3831 2006																					S2 type Black IP65 1423 2111 Red/Yellow IP65 1424 2111	S2 type Black IP65 1423 2115 Red/Yellow IP65 1424 2115	S2 type Black IP65 1427 2111 Red/Yellow IP65 1428 2111	S2 type Black IP65 1423 2113 Red/Yellow IP65 1424 2113	
	3 P	3831 3006 ⁽¹⁾	3870 3006																								
	4 P	3831 6006 ⁽¹⁾	3870 6006																								
100 A 22 x 58 13	2 P	3831 2010		S2 type Black IP65 1423 2111 Red/Yellow IP65 1424 2111	S2 type Black IP65 1423 2115 Red/Yellow IP65 1424 2115	S2 type Black IP65 1427 2111 Red/Yellow IP65 1428 2111	S2 type Black IP65 1423 2113 Red/Yellow IP65 1424 2113																				
	3 P	3831 3010 ⁽¹⁾	3870 3010																								
	4 P	3831 6010 ⁽¹⁾	3870 6010																								
125 A 22 x 58 13	2 P	3831 2011										S2 type Black IP65 1423 2111 Red/Yellow IP65 1424 2111	S2 type Black IP65 1423 2115 Red/Yellow IP65 1424 2115	S2 type Black IP65 1427 2111 Red/Yellow IP65 1428 2111	S2 type Black IP65 1423 2113 Red/Yellow IP65 1424 2113												
	3 P	3831 3011	3870 3011																								
	4 P	3831 6011	3870 6011																								
125 A 00 13	2 P	3831 2012														S2 type Black IP65 1423 2111 Red/Yellow IP65 1424 2111	S2 type Black IP65 1423 2115 Red/Yellow IP65 1424 2115	S2 type Black IP65 1427 2111 Red/Yellow IP65 1428 2111	S2 type Black IP65 1423 2113 Red/Yellow IP65 1424 2113								
	3 P	3831 3012	3870 3012																								
	4 P	3831 6012	3870 6012																								

(1) Available enclosed (see page "Enclosed fuse switches" page 730).

(2) Top/bottom.

(3) Maximum 4 contacts.

NFC and DIN - External front and right side operation - 160 to 1250 A

Rating (A) / Fuse / Frame size	No. of poles	Switch I - TEST	Changeover switch I - 0 - II	External front handle	TEST external front handle	External right side handle	Changeover external front handle	Shaft for external handle	Auxiliary contacts ⁽³⁾	Terminal shrouds ⁽²⁾	Integrated solid neutral link
160 A 00 13	2 P	3831 2015									
	3 P	3831 3015	3870 3015								
	4 P	3831 6015	3870 6015								
160 A 0 14	2 P	3831 2016									
	3 P	3831 3016⁽¹⁾	3870 3016								
	4 P	3831 6016⁽¹⁾	3870 6016								
250 A 1 15	2 P	3831 2024									
	3 P	3831 3024⁽¹⁾	3870 3024								
	4 P	3831 6024⁽¹⁾	3870 6024								
400 A 2 16	2 P	3831 2038									
	3 P	3831 3038⁽¹⁾	3870 3039⁽⁴⁾								
	4 P	3831 6038⁽¹⁾	3870 6039⁽⁴⁾								
630 A 3 17	2 P	3811 2063									
	3 P	3811 3063⁽¹⁾									
	4 P	3811 6063⁽¹⁾									
800 A 3 17	2 P	3811 2080									
	3 P	3811 3080									
	4 P	3811 6080									
800 A 4 18	2 P	3811 2081									
	3 P	3811 3081									
	4 P	3811 6081									
1250 A 4 18	2 P	3811 2120									
	3 P	3811 3120									
	4 P	3811 6120									

(1) Available enclosed (see "Enclosed fuse switches" page 730).

(2) Top/bottom.

(3) Maximum 4 contacts.

(4) Terminal shrouds: 3 P - 3998 3025, 4 P - 3998 4025.

References (continued)

NFC and DIN - Direct operation - 25 to 125 A

Rating (A) Fuse size Frame size	No. of poles	Direct side operation	Direct front operation	Direct handle	Auxiliary contacts	Terminal shrouds	Cage terminals	Lock for fuse protection cover	Handle key interlocking accessories ⁽⁶⁾												
CD 25 A 10 x 38 0	3 P		3631 3002	Black 3629 4012 ⁽¹⁾⁽²⁾	A-type 1 contact NO/NC 3999 0001 ⁽³⁾ A-type 2 contacts NO/NC 3999 0002 ⁽³⁾	IP2x as standard	Standard	Standard													
	3 P + switched neutral		3631 4002																		
	3 P + solid neutral		3631 5002																		
CD 32 A 10 x 38 0	3 P		3631 3003							A-type 1 contact NO/NC 3999 0001 ⁽³⁾ A-type 2 contacts NO/NC 3999 0002 ⁽³⁾	IP2x as standard	Standard	Standard								
	3 P + switched neutral		3631 4003																		
	3 P + solid neutral		3631 5003																		
CD 32 A 14 x 51 0	3 P		3631 3004												Black 3629 7900 ⁽⁵⁾⁽²⁾	A-type 1 contact NO/NC 3999 0021 ⁽³⁾ A-type 2 contacts NO/NC 3999 0022 ⁽³⁾	2 P 3998 2016 ⁽⁴⁾ 3 P 3998 3016 ⁽⁴⁾ 4 P 3998 4016 ⁽⁴⁾	3 P 5400 3016 4 P 5400 4016	3999 8912	3629 7913	
	3 P + switched neutral		3631 4004																		
	3 P + solid neutral		3631 5004																		
50 A 14 x 51 1	2 P	3615 2005	consult us	Black 3629 7901 ⁽⁵⁾⁽²⁾	A-type 1 contact NO/NC 3999 0021 ⁽³⁾ A-type 2 contacts NO/NC 3999 0022 ⁽³⁾	2 P 3998 2016 ⁽⁴⁾ 3 P 3998 3016 ⁽⁴⁾ 4 P 3998 4016 ⁽⁴⁾	3 P 5400 3016 4 P 5400 4016	3999 8912	3629 7913												
	3 P	3615 3005	consult us																		
	4 P	3615 6005	consult us																		
63 A 00C 2	2 P	3615 2006	consult us							Black 3629 7901 ⁽⁵⁾⁽²⁾	A-type 1 contact NO/NC 3999 0021 ⁽³⁾ A-type 2 contacts NO/NC 3999 0022 ⁽³⁾	2 P 3998 2016 ⁽⁴⁾ 3 P 3998 3016 ⁽⁴⁾ 4 P 3998 4016 ⁽⁴⁾	3 P 5400 3016 4 P 5400 4016	3999 8912							3629 7913
	3 P	3615 3006	consult us																		
	4 P	3615 6006	consult us																		
100 A 22 x 58 3	2 P	3615 2010	consult us												Black 3629 7901 ⁽⁵⁾⁽²⁾	A-type 1 contact NO/NC 3999 0021 ⁽³⁾ A-type 2 contacts NO/NC 3999 0022 ⁽³⁾	2 P 3998 2016 ⁽⁴⁾ 3 P 3998 3016 ⁽⁴⁾ 4 P 3998 4016 ⁽⁴⁾	3 P 5400 3016 4 P 5400 4016	3999 8912	3629 7913	
	3 P	3615 3010	consult us																		
	4 P	3615 6010	consult us																		
125 A 22 x 58 3	2 P	3615 2011	consult us	Black 3629 7901 ⁽⁵⁾⁽²⁾	A-type 1 contact NO/NC 3999 0021 ⁽³⁾ A-type 2 contacts NO/NC 3999 0022 ⁽³⁾	2 P 3998 2016 ⁽⁴⁾ 3 P 3998 3016 ⁽⁴⁾ 4 P 3998 4016 ⁽⁴⁾	3 P 5400 3016 4 P 5400 4016	3999 8912	3629 7913												
	3 P	3615 3011	consult us																		
	4 P	3615 6011	consult us																		
125 A 00 3	2 P	3615 2012	consult us							Black 3629 7901 ⁽⁵⁾⁽²⁾	A-type 1 contact NO/NC 3999 0021 ⁽³⁾ A-type 2 contacts NO/NC 3999 0022 ⁽³⁾	2 P 3998 2016 ⁽⁴⁾ 3 P 3998 3016 ⁽⁴⁾ 4 P 3998 4016 ⁽⁴⁾	3 P 5400 3016 4 P 5400 4016	3999 8912							3629 7913
	3 P	3615 3012	consult us																		
	4 P	3615 6012	consult us																		

(1) Direct front operation.

(2) Standard.

(3) Maximum 2 contacts.

(4) Top or bottom.

(5) Direct right side operation.

(6) Locking using RONIS EL11AP lock (lock not included).

NFC and DIN - Direct operation - 160 to 400 A

Rating (A) Fuse size Frame size	No. of poles	Direct side operation	Direct front operation	Direct handle	Auxiliary contacts	Terminal shrouds	Cage terminals	Lock for fuse protection cover	Handle key interlocking accessories ⁽⁵⁾
160 A 00 3	2 P	3615 2015	consult us	Black 3629 7901 ⁽⁴⁾⁽¹⁾	A-type 1 contact NO/NC 3999 0021 ⁽²⁾	2 P 3998 2016 ⁽³⁾	3 P 5400 3016 4 P 5400 4016	3999 8912	3629 7913
	3 P	3615 3015	consult us			3 P 3998 3016 ⁽³⁾			
	4 P	3615 6015	consult us			4 P 3998 4016 ⁽³⁾			
160 A 0 4	2 P	3615 2016	consult us	Black 3629 7901 ⁽⁴⁾⁽¹⁾	A-type 2 contacts NO/NC 3999 0022 ⁽²⁾	2 P 3998 2025 ⁽³⁾	3 P 5400 3025 4 P 5400 4025	3999 8216	
	3 P	3615 3016	consult us					3999 8316	
	4 P	3615 6016	consult us					3999 8416	
250 A 1 5	2 P	3615 2024	consult us			3 P 3998 3025 ⁽³⁾	3 P 5400 3025 4 P 5400 4025	3999 8225	
	3 P	3615 3024	consult us					3999 8325	
	4 P	3615 6024	consult us					3999 8425	
400 A 2 6	2 P	3615 2039	consult us			4 P 3998 4025 ⁽³⁾	3 P 5400 3040 4 P 5400 4040	3999 8240	
	3 P	3615 3039	consult us					3999 8340	
	4 P	3615 6039	consult us					3999 8440	

(1) Standard.

(2) Maximum 2 contacts.

(3) Top/bottom.

(4) Direct right side operation.

(5) Locking using RONIS EL11AP lock (lock not included).

NFC and DIN - Direct operation - 630 to 1250 A

Rating (A) Fuse size Frame size	No. of poles	Direct side and front operation	Direct front handle	Direct side handle	Auxiliary contacts	Terminal shrouds
630 A 3 17	2 P	3811 2063	Black 3899 6011 ⁽¹⁾⁽²⁾	S3 type Black 3899 7911 + 1437 3111	U-type 1 contact NO 3999 0701 ⁽⁴⁾ 1 contact NC 3999 0702 ⁽⁴⁾	2 P 3898 2080 ⁽³⁾
	3 P	3811 3063				3 P 3898 3080 ⁽³⁾
	4 P	3811 6063				4 P 3898 4080 ⁽³⁾
800 A 3 17	2 P	3811 2080				2 P 3898 2120 ⁽³⁾ 3 P 3898 3120 ⁽³⁾ 4 P 3898 4120 ⁽³⁾
	3 P	3811 3080				
	4 P	3811 6080				
800 A 4 18	2 P	3811 2081	Black 3899 7011 ⁽¹⁾⁽²⁾			
	3 P	3811 3081				
	4 P	3811 6081				
1250 A 4 18	2 P	3811 2120				
	3 P	3811 3120				
	4 P	3811 6120				

(1) Direct front operation.

(2) Standard.

(3) Top/bottom.

(4) Maximum 8 contacts.

Accessories

Direct operation handle

For front operation				
Rating (A)	Frame size	Figure no.	Handle colour	Reference
20 ... 32	0	1	Black	3629 4012
20 ... 32	0	1	Red	3629 4013
32 ... 400	11 ... 16	2	Black	3629 7910 ⁽¹⁾
630 ... 800	17	2	Black	3899 6011
800 ... 1250	18	3	Black	3899 7011

For right side operation				
Rating (A)	Frame size	Figure no.	Handle colour	Reference
32 ... 63	1/2	4	Black	3629 7900
100 ... 400	3 ... 6	4	Black	3629 7901
630 ... 1250	17 ... 18	5	Black	1437 7911

(1) Direct operation handle for switches 3841 xxxx and 3831 xxxx.



External front operation handle

Padlockable handle in position 0							
Rating (A)	Frame size	Handle type	Handle colour	Operation	External IP ⁽¹⁾	Defeatable handle	Reference
CD 25 ... 63	0/11/12	S1	Black	I - 0	IP55	Yes	1411 2111
CD 25 ... 63	0/11/12	S1	Black	I - 0	IP65	Yes	1413 2111
CD 25 ... 63	0/11/12	S1	Red/Yellow	I - 0	IP65	Yes	1414 2111
CD 25 ... 63	0/11/12	S1	Black	I - 0 - Test	IP65	Yes	1413 2115
CD 25 ... 63	0/11/12	S1	Red/Yellow	I - 0 - Test	IP65	Yes	1414 2115
100 ... 400	13 ... 16	S2	Black	I - 0	IP55	Yes	1421 2111
100 ... 400	13 ... 16	S2	Black	I - 0	IP65	Yes	1423 2111
100 ... 400	13 ... 16	S2	Red/Yellow	I - 0	IP65	Yes	1424 2111
100 ... 400	13 ... 16	S2	Black	I - 0 - Test	IP65	Yes	1423 2115
100 ... 400	13 ... 16	S2	Red/Yellow	I - 0 - Test	IP65	Yes	1424 2115
630 ... 800	17	S3	Black	I - 0	IP65	Yes	1433 3111
630 ... 800	17	S3	Red/Yellow	I - 0	IP65	Yes	1434 3111
800 ... 1250	18	S4	Black	I - 0	IP65	Yes	1443 3111
800 ... 1250	18	S4	Red/Yellow	I - 0	IP65	Yes	1444 3111

(1) IP: protection degree according to IEC 60529 standard.

Padlockable handle in position 0 and I					
Rating (A)	Frame size	Handle type	Handle colour	External IP ⁽¹⁾	Reference
CD 25 ... 63	0/11/12	S1	Black	IP65	1413 2311
100 ... 400	13 ... 16	S2	Black	IP65	1423 2311

(1) IP: protection degree according to IEC 60529 standard.



External right side operation handle

Rating (A)	Frame size	Handle type	Handle colour	External IP ⁽¹⁾	Reference
CD 25 ... 63	0/11/12	S1	Black	IP55	1415 2111
CD 25 ... 63	0/11/12	S1	Black	IP65	1417 2111
CD 25 ... 63	0/11/12	S1	Red/Yellow	IP65	1418 2111
100 ... 400	13 ... 16	S2	Black	IP55	1425 2111
100 ... 400	13 ... 16	S2	Black	IP65	1427 2111
100 ... 400	13 ... 16	S2	Red/Yellow	IP65	1428 2111
630 ... 1250	17/18	S3	Black	IP65	1437 3111
630 ... 1250	17/18	S3	Red/Yellow	IP65	1438 3111

(1) IP: protection degree according to IEC 60529 standard.



External front operation handle with metal padlocking lever

Rating (A)	Frame size	Handle type	Handle colour	External IP ⁽¹⁾	Defeatable handle	Reference
CD 25 ... 63	0/11/12	S1	Black	IP65	Yes	141D 2911
CD 25 ... 63	0/11/12	S1	Red/Yellow	IP65	Yes	141E 2911
100 ... 400	13 ... 16	S2	Black	IP65	Yes	142D 2911
100 ... 400	13 ... 16	S2	Red/Yellow	IP65	Yes	142E 2911
600 ... 800	17	S3	Black	IP65	Yes	143D 3911
600 ... 800	17	S3	Red/Yellow	IP65	Yes	143E 3911
800 ... 1250	18	S4	Black	IP65	Yes	144D 3911
800 ... 1250	18	S4	Red/Yellow	IP65	Yes	144E 3911

(1) IP: protection degree according to IEC 60529 standard.



S-type handle adapter

Use

Enables S-type handles to be fitted in place of existing older style Socomec handles.
Adapter can be utilised as a spacer to increase the distance between the panel door and the handle lever.

Dimensions

Adds 12 mm to the depth of the handle.

Handle colour	To be ordered in multiples of	External IP ⁽¹⁾	Reference
Black	1	IP65	1493 0000

(1) IP: protection degree according to IEC 60529 standard.



Alternative S-type handle cover colours

Use

For single lever handles S1, S2, S3 types and double lever handle, S4 type.
Other colours: please consult us.

Handle colour	To be ordered in multiples of	Handle type	Reference
Light grey	50	S1, S2	1401 0001
Dark grey	50	S1, S2	1401 0011
Light grey	50	S4	1401 0031
Dark grey	50	S4	1401 0041

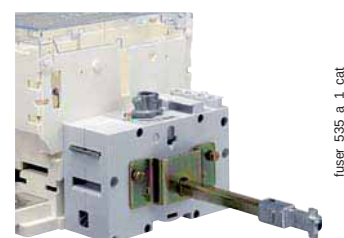


Flat mounting kit

Use

The flat mounting providing compact solution ideally suited to withdrawable applications.
Kit to be used with a handle for flat mounting.

Rating (A)	Frame size	Type	Reference
CD 25 ... CD 32	0	Kit + Shaft 200 mm	1429 7709
50 ... 400	11 ... 16	Kit + Shaft 200 mm	1429 7710



Handle for flat mounting kit

Padlockable handle in position 0					
Rating (A)	Frame size	Handle type	Handle colour	External IP ⁽¹⁾	Reference
CD 25 ... 63	0/11/12	S1	Black	IP55	1411 2111 ⁽²⁾
CD 25 ... 63	0/11/12	S1	Red/Yellow	IP65	1414 2111 ⁽²⁾
100 ... 400	13 ... 16	S2	Black	IP55	1421 2111 ⁽²⁾
100 ... 400	13 ... 16	S2	Red/Yellow	IP65	1424 2111 ⁽²⁾

(1) IP: protection degree according to IEC 60529 standard.

(2) Defeatable handle in position I.



Accessories (continued)

Front operation shaft support accessory

Use

This support maintains shaft position for extension shafts greater than 320 mm in length.



fuse_698_a_2_cat

Rating (A)	Frame size	Reference
50 ... 400	11 ... 16	3899 0400

Shaft guide for external operation

Use

To guide the shaft extension into the external handle.

This accessory enables the handle to engage the extension shaft with a misalignment of up to 15 mm.

Required for a shaft lengths over 320 mm.



access_260_a_2_cat

Description	Reference
Shaft guide	1429 0000

Shaft for external front operation handle

Use

Standard lengths:

- 200 mm
- 320 mm
- 400 mm
- 500 mm.

Other lengths: consult us.

Rating (A)	Frame size	Shaft length (mm)	Reference
CD 20 ... CD 32	0	200	1401 0520
CD 20 ... CD 32	0	320	1401 0532
CD 20 ... CD 32	0	400	1401 0540 ⁽¹⁾
32 ... 400	11 ... 16	200	1400 1020
32 ... 400	11 ... 16	320	1400 1032
32 ... 400	11 ... 16	500	1400 1050 ⁽²⁾
630 ... 800	17	200	1400 1220
630 ... 1250	17/18	320	1400 1232
630 ... 1250	17/18	500	1400 1250 ⁽¹⁾

(1) Use the shaft guide accessory for external operation.

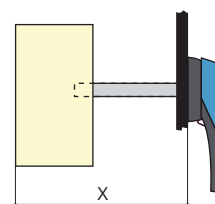
(2) Use the front operation shaft support accessory.

access_145_b_1_cat



access_369_a_1_cat

access_202_a_1_x_cat



Dimension X (mm) for FUSERBLOC BS88

Rating (A)	CD 20 ... CD 32	32	63 ... 160	CD160 ... CD200	160 ... 200	250 ... 315	630 ... 800	1250
Fuse size	A1	A1	A2-A3/A4	A3-A4	B1-B2	B1-B2-B3	C1-C2-C3	D1
Frame size	0	11	12/13/14	13 A	14/15	15/16	17	18
Shaft length (mm)								
200	102 ... 245	100 ... 230	125 ... 230	150 ... 230	135 ... 230	160 ... 230	270 ... 304	
320	102 ... 365	100 ... 350	125 ... 350	150 ... 350	135 ... 350	160 ... 350	270 ... 424	304 ... 424
400	102 ... 445							
500		100 ... 530	125 ... 530	150 ... 530	135 ... 530	160 ... 530	270 ... 600	304 ... 600

Dimension X (mm) for FUSERBLOC NFC and DIN

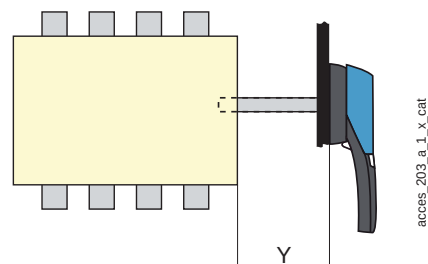
Rating (A)	CD 25 ... CD 32	50	63	100 ... 160	160	250 ... 400	630 ... 800	800 ... 1250
Fuse size	10x38/14x51	14x51	00C	22x58/00	0	1/2	3	4
Frame size	0	11	12	13	14	15/16	17	18
Shaft length (mm)								
200	102 ... 245	100 ... 230	125 ... 230	135 ... 230	145 ... 230	160 ... 230	270 ... 304	
320	102 ... 365	100 ... 350	125 ... 350	135 ... 350	145 ... 350	160 ... 350	270 ... 424	304 ... 424
400	102 ... 445	100 ... 430	125 ... 430	135 ... 430	145 ... 430	160 ... 430	270 ... 504	304 ... 504
500		100 ... 530	125 ... 530	135 ... 530	145 ... 530	160 ... 530	270 ... 604	304 ... 604

Shaft extensions for external side operation

Use

Standard lengths, 200 mm.

Rating (A)	Frame size	Handle type	Dimension Y (mm)	Shaft length (mm)	Reference
CD 25 ... CD 32	0	S	36 ... 159	200	1401 0520
50 ... 400	11 ... 16	S	36 ... 172	200	1400 1020
630 ... 1250	17/18	S	15 ... 150	200	1400 1220



Integrated solid neutral link

Use

Fixing the solid neutral onto the mechanism produces a device with a solid neutral of the same size as a standard three-pole device (+ 6 mm).

BS88 for external front operation			
Rating (A)	Switch body size	Bar rating (A)	Reference
32 ... 100	11/12/13	125	3829 9310
CD 160 ... CD 200	13a	200	3829 9320
160	14	200	3829 9320
200 ... 250	15	250	3829 9325
315 ... 400	16	400	3829 9339
630 ... 800	17	800	3829 9308
1250	18	1250	3829 9312

NFC and DIN For external front operation			
Rating (A)	Frame size	Bar rating (A)	Reference
50 ... 125	11/12/13	125	3829 9310
160	13	160	3829 9320
160	14	200	3829 9320
250	15	250	3829 9325
400	16	400	3829 9339
630 ... 800	17	800	3829 9308
800 ... 1250	18	1250	3829 9312



Solid neutral module

BS88 for external front operation				
Rating (A)	Switch body size	I _{max} (A)	Distance (mm)	Reference
32	1/11	32	27	3629 9227
63	2/12	63	32	3629 9232
100	3/13	100	36	3629 9236
CD 160 ... CD 200	13 a	200	36	3629 9237
160	4/14	160	50	3629 9250
200 ... 250	5/15	250	60	3629 9260
315 ... 400	6	400	66	3629 9266⁽¹⁾
630 ... 800	17	800	94	3629 9294
1250	18	1250	120	3629 9212

NFC and DIN For external front operation				
Rating (A)	Frame size	I _{max} (A)	Distance (mm)	Reference
50	1/11	50	27	3629 9227
63	2/12	63	32	3629 9232
100 ... 160	3/13	160	36	3629 9236
160	4/14	160	50	3629 9250
250	5/15	250	60	3629 9260
400	6/16	400	60	3629 9266⁽¹⁾
630 ... 800	17	800	94	3629 9294
800 ... 1250	18	1250	120	3629 9212

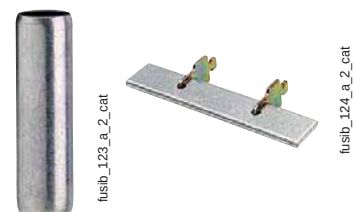


(1) For external front operation switches an adaptation kit 3999 0000 must be ordered in addition to the original product reference

Solid links

BS88 switches				
Rating (A)	Frame size	Fuse size	I _{max} (A)	Reference
32	11	A1	32	3629 9003
63	12	A2-A3	63	3629 9006
100	13	A4	160	3629 9010
CD 160	13a	A3-A4	160	3629 9010
160	14	A4	160	3629 9010
160	14	B1-B2	200	3629 9016
CD 200	13a	A3-A4	160	3629 9010
200	15	B1-B2	200	3629 9016
250	15	B1-B2-B3	315	3629 9025
315	16	B1-B2-B3	315	3629 9025
400	16	B1-B2-B3-B4	400	3629 9040
630 ... 800	17	C1-C3	800	3629 9063
1250	18	D1	1250	3629 9120

NFC and DIN switches				
Rating (A)	Frame size	Fuse size	I _{max} (A)	Reference
50	1/11	14 x 51	50	6029 0000
63	2/12	00C	160	6420 0000
100 ... 125	3/13	22 x 58	125	6039 0000
125 ... 160	3/13	00	160	6420 0000
160	4/14	0	160	6421 0000
250	5/15	1	250	6421 0001
400	6/16	2	400	6421 0002
630 ... 800	17	3	800	6421 0003
800 ... 1250	18	4	1250	6441 0005



Accessories (continued)

A-type auxiliary contacts

Use

Pre-break and position 0 and I signalling by 1 or 2 NO /NC auxiliary contacts. For low level use, specific auxiliary contacts: please consult us.

Connection to the control circuit

By 6.35 mm fast-on terminal.

Electrical characteristics

30 000 operations.

References

NO / NC auxiliary contacts			
Rating (A)	Frame size	Contact(s)	Reference
CD 20 ... CD 32	0	1	3999 0001
CD 20 ... CD 32	0	2	3999 0002
32 ... 400 ⁽¹⁾	1 ... 6	1	3999 0021 ⁽²⁾
32 ... 400 ⁽¹⁾	1 ... 6	2	3999 0022 ⁽²⁾

(1) Side direct operation switch only.

(2) A type auxiliary contacts cannot be mounted in conjunction with integrated solid neutral.

Characteristics

Rating (A)	Current nominal (A)	Operating current I _e (A)			
		250 VAC AC-13	400 VAC AC-13	24 VDC DC-13	48 VDC DC-13
CD 20 ... 400	16	4	2	12	2



access_046_a_1_cat



access_047_a_2_cat

U-type auxiliary contacts⁽¹⁾

Use

Compact universal type auxiliary contacts which can be configured for operation in either, or both, ON and TEST positions for CD 20 to 1250 A FUSERBLOC. Each slot can accommodate up to two interlocked A/Cs.

Connection to the control circuit

By terminals with max. section 2 x 2.5 mm².

For FUSERBLOC CD 20 to 400 A: Pre-break and signalling of positions 0, I and TEST.

For FUSERBLOC ≥ 630 A: Pre-break and position 0 and I signalling.

References

NO auxiliary contacts			
Rating (A)	Frame size	Contact(s)	Reference ⁽¹⁾
CD 20 ... 1250	0 ... 18	1	3999 0701 ⁽²⁾

NC auxiliary contacts			
Rating (A)	Frame size	Contact(s)	Reference ⁽¹⁾
CD 20 ... 1250	0 ... 18	1	3999 0702 ⁽²⁾

(1) Cannot be mounted in direct operation CD20 - CD32 switches..

(2) 4 auxiliary contacts as standard without additional A/C holder.

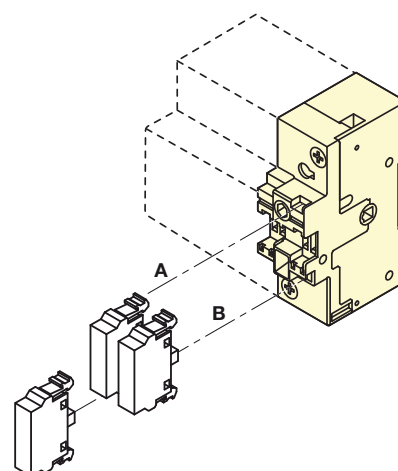
Contact holder for additional auxiliary contacts			
Rating (A)	Frame size	Contact(s)	Reference
CD 20 ... CD 32	0	4 (2 x 2 max)	3999 0710
32 ... 400	11 ... 16	4 (2 x 2 max)	3999 0600

Characteristics

Rating (A)	Operating current I _e (A)			
	250 VAC AC-15	400 VAC AC-15	24 VDC DC-13	48 VDC DC-13
CD 20 ... 1250	3	1.8	2.8	1.4



access_056_a_1_cat



access_043_a_1_x_cat

(1) CD 20 - CD 32 : U-type auxiliary contacts cannot be mounted on switches with an integrated solid neutral or with direct operation handle.

S and ST-type auxiliary contacts

Use

For FUSERBLOCs 32 to 1250 A, position 0 and I signalling by 1 to 4 NO + NC auxiliary contacts.

Electrical principle

The NO + NC S-type auxiliary contacts can be configured as 2 NC or 2 NO.

References

S-type auxiliary contacts 0-I for external front and right-side operation (Standard operation)

Rating (A)	Frame size	Contact type	S-type AC Reference	Drive shaft (optional) Reference
32 ... 1250	11 ... 18	NC+NO	3999 0041 ⁽¹⁾	3999 0003

ST-type auxiliary contacts I-0-TEST for external front and right-side operation (TEST operation)

Rating (A)	Frame size	Contact type	Description	ST-type AC Reference	Drive shaft Reference
32 ... 400	11 ... 16	NC+NO	TEST + ON	3999 0141 ⁽²⁾	3999 0103
32 ... 400	11 ... 16	2 O	TEST + ON	3999 0241 ⁽²⁾	3999 0103

(1) Drive shaft included with S-type Auxiliary Contact.

(2) Drive shaft to be ordered in addition to the ST-type Auxiliary Contact.

Characteristics

Rating (A)	Current nominal (A)	Operating current I _e (A)	
		250 VAC AC-13	400 VAC AC-13
32 ... 1250	20	10	8

Connection

By terminals with max. cross-section 10 mm².

Mechanical characteristics

30 000 operations.



access_051_a_2_cat



access_083_a_1_cat

Important:

> For the 400 A frame size 16, an adaptation kit reference 3999 0000 must be ordered in addition to the auxiliary contact kit.

Fuse cover interlocking

Use

On NFC and DIN, side direct operation, locking of the opening of the fuse protection cover when FUSERBLOC is engaged (position I).

Rating (A)	Frame size	Fuse size	No. of poles	Reference
CD 20 ... 50	0 ... 1	10 x 38 / 14 x 51	2 / 3 / 4	included
63	2	00C	2 / 3 / 4	3999 8906
100 ... 125	3	22 x 58	2 / 3 / 4	3999 8912
125 ... 160	3	00	2 / 3 / 4	3999 8912
160	4	0	2 P	3999 8216
160	4	0	3 P	3999 8316
160	4	0	4 P	3999 8416
250	5	1	2 P	3999 8225
250	5	1	3 P	3999 8325
250	5	1	4 P	3999 8425
400	6	2	2 P	3999 8240
400	6	2	3 P	3999 8340
400	6	2	4 P	3999 8440

Terminal shrouds

Use

Top or bottom IP20 protection (on the front) against direct contact with terminals or connection parts.

Two sets required to fully shroud both incoming and outgoing terminals.

Rating (A)	Frame size	Position	No. of poles	Reference
CD 20 ... 63	0/1/2/12	top / bottom	2 / 3 / 4 P	integrated
100 ... CD 200	3/4/13/14	top / bottom	2 P	3998 2016
100 ... CD 200	3/4/13/14	top / bottom	3 P	3998 3016
100 ... CD 200	3/4/13/14	top / bottom	4 P	3998 4016
200 ... 400	5/6/15	top / bottom	2 P	3998 2025
200 ... 400	5/6/15	top / bottom	3 P	3998 3025
200 ... 400	5/6/15	top / bottom	4 P	3998 4025
315 ... 400	16	top / bottom	2 P	3898 2040
315 ... 400	16	top / bottom	3 P	3898 3040
315 ... 400	16	top / bottom	4 P	3898 4040
630 ... 800	17	top / bottom	2 P	3898 2080
630 ... 800	17	top / bottom	3 P	3898 3080
630 ... 800	17	top / bottom	4 P	3898 4080
800 ... 1250	18	top / bottom	2 P	3898 2120
800 ... 1250	18	top / bottom	3 P	3898 3120
800 ... 1250	18	top / bottom	4 P	3898 4120



fuser_314_a_1_cat

FUSERBLOC

Fuse combination switches

for industrial fuses up to 1250 A

Accessories (continued)

NFC and DIN worked fuse indication

Use

For fuse cartridge with striker (size 14 x 51 22 x 58; 0; 1; 2; 3 and 4).

Electrical principle

A NO/NC auxiliary contact detects that the fuse has blown.

References

NO/NC type auxiliary contacts for 2 pole

Rating (A)	Frame size	Fuses	Contact(s)	Reference
50	11	14 x 51	1 st	3994 0405
100 ... 125	13	22 x 58	1 st	3994 0210
160	14	0	1 st	3994 0216
250	15/16	1-2	1 st	3994 0225
400 ⁽¹⁾	16	2	1 st	3894 0440
630	17	3	1 st	3894 1206
800 ... 1250	18	4	1 st	3894 1212

NO/NC type auxiliary contacts for 3 pole

Rating (A)	Frame size	Fuses	Contact(s)	Reference
CD 32	0	14 x 51	1 st	3994 0303
50	11	14 x 51	1 st	3994 0405
100 ... 125	13	22 x 58	1 st	3994 0310
160	14	0	1 st	3994 0316
250	15/16	1-2	1 st	3994 0325
400 ⁽¹⁾	16	2	1 st	3894 0440
630	17	3	1 st	3894 1306
800 ... 1250	18	4	1 st	3894 1312
50 ... 250	11	-	2 nd	3994 1901
400	16	2	2 nd	3994 1902
630 ... 1250	16	-	2	3994 1901

NO/NC type auxiliary contacts for 4 pole or 3 pole + neutral

Rating (A)	Frame size	Fuses	Contact(s)	Reference
50	11	14 x 51	1 st	3994 0405
100 ... 125	13	22 x 58	1 st	3994 0410
160	14	0	1 st	3994 0416
250	15/16	1-2	1 st	3994 0425
400 ⁽¹⁾	16	2	1 st	3894 0440
630	17	3	1 st	3894 1406
800 ... 1250	18	4	1 st	3894 1412
50 ... 250	11	-	2 nd	3994 1901
400	16	2	2 nd	3994 1902
630 ... 1250	16	-	2	3994 1901

(1) For front direct and external left side operation handles, please order references 39940225 (2P), 39940325 (3P), 39940425 (4P)

Characteristics

Rating (A)	Current nominal (A)	Operating current I _o (A)			
		250 VAC AC-13	400 VAC AC-13	24 VDC DC-13	48 VDC DC-13
CD 32 ... 1250	16	4	3	12	2

Electronic fuse monitoring device (FMD)

Use

Provides fuse state monitoring and worked fuse indication even for fuse links without monitoring device strikers. Suitable for use with BS88, DIN and UL type fuses.

Principle

The Fuse Monitoring Device (FMD) detects the worked fuse and provides a signal via: a relay and 1 LED (FMD10) or a bi-stable relay and 3 LEDs (FMD30).

The FMD can be DIN rail or back plate mounted close to the Fuserbloc, directly mounted on the FUSERBLOC, or it can be door mounted to provide information directly on the front of a panel.

References

For FUSERBLOC 63 to 1250A - size 000 to 4

Nb of LEDs	Operating voltage Ph/Ph	Reference
1 (FMD10)	120 - 260 VAC	3899 1120
1 (FMD10)	380 - 690 VAC	3899 1380
3 (FMD30)	120 - 260 VAC	3899 3120
3 (FMD30)	380 - 690 VAC	3899 3380

Accessories

Accessories	Reference
Kit for connection accessories	Standard 3819 9120
Kit for connection accessories	Door mounted 3829 9120

Relay characteristics

Rating (A)	Relay operating current I _o (A)	
	AC-15	DC-13
63 ... 1250	2.5 A	0.2

Connection to the control circuit

6.35 mm fast-on terminal.

Mechanical characteristics

30 000 operations.



DDMM for cylindrical fuses



DDMM for NH fuses



1 LED version (FMD10)



3 LED version (FMD30)

Important:

> For direct mounting on the 400 A frame size 16, an adaptation kit reference 3999 0000 must be ordered in addition to the FMD.

Cage terminals

Use

Connection of bare copper cables onto the terminals (without lugs).

References

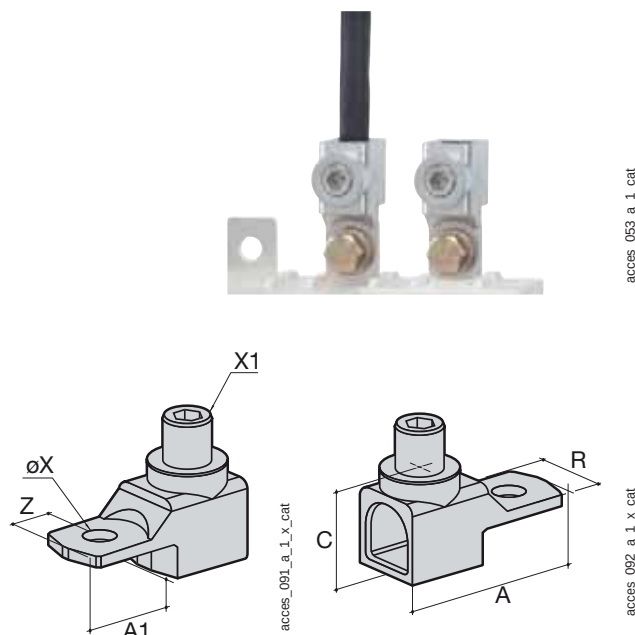
Rating max (A)	Frame size	No. of poles	Reference
CD 20 ... 63	0 ... 12	2 / 3 / 4 P	integrated
100 ... 160	13/14	3 P	5400 3016
100 ... 160	13/14	4 P	5400 4016
250	15	3 P	5400 3025
250	15	4 P	5400 4025
400	16	3 P	5400 3040
400	16	4 P	5400 4040

Connections

Rating (A)	Flexible cable cross-section (mm²)	Rigid cable cross-section (mm²)	Flexible bar width (mm)	Stripped over (mm)
100 ... 160	16 ... 95	16 ... 95	13	22
250	16 ... 185	16 ... 185	18	27
400	50 ... 240	50 ... 300	20	34

Dimensions

Rating (A)	A	A1	C	R	ØX	X1	Z
100 ... 160	47.5	22.5	25	20	8.5	M12	10
250	62	31.5	31.5	25	10.5	M16	14
400	71.5	32	38	32	10.5	M20	15



access_053_a_1_cat

access_092_a_1_x_cat

Handle key interlocking accessories

Use

Locking in position 0 of the direct, front or right side operation:

- using a padlock (not supplied) in direct right side operation: integrated into the handle,

- using a padlock (not supplied): right-side or front operation switch from 32 to 1250 A, factory integrated

- using a padlock (not supplied) in external operation.

Locking using RONIS EL 11 AP lock (not supplied)

Rating (A)	Frame size	Operation	Figure n°	Reference
CD 20 ... 1250	0 ... 18	external front	2	1499 7701
32 ... 63	1/2	direct	1	3629 7903
100 ... 400	3 ... 6	direct	1	3629 7913
630 ... 1250	17 ... 18	direct		3829 7923

Locking using K-type CASTELL lock (not supplied)

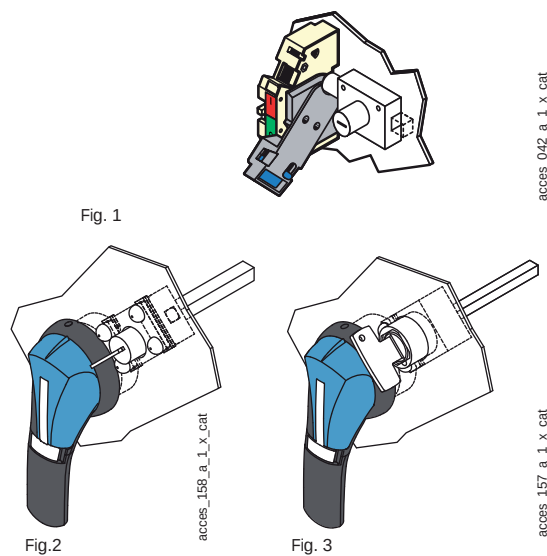
Rating (A)	Frame size	Operation	Figure n°	Reference
CD 20 ... 1250	0 ... 18	external front	3	1499 7702

Locking using FS-type CASTELL lock (not supplied)

Rating (A)	Frame size	Operation	Figure n°	Reference
CD 20 ... 1250	0 ... 18	external front	3	1499 7703

Locking using XOP (not supplied)

Rating (A)	Frame size	Operation	Reference
CD 20 ... 1250	0 18	external front	1499 7702



access_042_a_1_x_cat

access_157_a_1_x_cat

Label holder

Use

Recognisable self-adhesive label allowing identification of the devices.

Dimensions W x H (mm)	Nb of pieces in KIT	Reference
18 x 13	5	7769 9999



access_044_a_1_cat

Characteristics according to IEC 60947-3

20 to 100 A

Thermal current I_{th} (40°C)	20 A	25 A	CD 32 A	CD 32 A	32 A	50 A	63 A	100 A
BS88/DIN fuse size	A1/-	-/10 x 38	-/10 x 38	A1/14 x 51	A1/-	-/14 x 51	A2-A3/00C	A4*/22 x 58
Frame size for direct operation	0	0	0	0	1	1	2	3
Switch body size for front and side operation	0	0	0	0	11	11	12	13
Rated insulation voltage U_i (V)	800	800	800	800	800	800	800	800
Rated impulse withstand voltage U_{imp} (kV)	8	8	8	8	8	8	8	8

Rated operational currents I_e (A)

Rated voltage	Utilisation category	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾
400 VAC	AC-22 A / AC-22 B	20/20	25/25	32/32	32/32	32/32	50/50	63/63	100/100
400 VAC	AC-23 A / AC-23 B	20/20	25/25	32/32	32/32	32/32	50/50	63/63	100/100
690 VAC	AC-22 A / AC-22 B	20/20	25/25	32/32	32/32	32/32	50/50	63/63	100 ⁽²⁾ /100 ⁽²⁾
690 VAC	AC-23 A / AC-23 B	20/20	25/25	32/32	32/32	32/32	50/50	63/63	100 ⁽²⁾ /100 ⁽²⁾
220 VDC	DC-20 A / DC-20 B			-/32		32/32	50/50	63/63	100/100
220 VDC	DC-21 A / DC-21 B		-/25 ⁽⁴⁾			32/32	40/40	40/40	100/100
440 VDC	DC-20 A / DC-20 B					32 ⁽³⁾ /32 ⁽³⁾	50 ⁽³⁾ /50 ⁽³⁾	63 ⁽³⁾ /63 ⁽³⁾	100 ⁽³⁾ /100 ⁽³⁾
440 VDC	DC-21 A / DC-21 B					32 ⁽³⁾ /32 ⁽³⁾	40 ⁽³⁾ /40 ⁽³⁾	40 ⁽³⁾ /40 ⁽³⁾	100 ⁽³⁾ / 100 ⁽³⁾

Operational power in AC-23 (kW)

At 400 VAC without pre-break in AC ⁽¹⁾⁽⁵⁾	9/9	11/11	15/15	15/15	15/15	25/25	30/30	51/51
At 690 VAC without pre-break in AC ⁽¹⁾⁽⁵⁾	15/15	22/22	25/25	25/25	25/25	45/45	55/55	90/90

Reactive power (kvar)

At 400 VAC ⁽⁵⁾	8	11	15	15	15	23	28	45
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Fuse protected short-circuit withstand BS88/DIN (kA rms prospective)

Prospective short-circuit (kA rms) ⁽⁶⁾	80/-	-/100	-/100	80/100	80/100	-/100	80/100	80/100
Associated fuse rating (A) ⁽⁶⁾	20/-	-/25	-/32	32/32	32/32	-/50	63/63	100/100

Short-circuit capacity

Rated peak withstand current (kA peak) ⁽⁶⁾	5.5	5.5	5.5	5.5	9	7.6	10.6	20
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Fuse selection (maximum fuse size)**

SOCOMECS BS88 - Standard max	6A10 0020	6012 0025	6012 0032	6A10 0032	6A10 0032		6A30 0063	6A40 0100
SOCOMECS BS88 - Motor max	6A1M 0032	6013 0025	6013 0032	6A1M 0063	6A1M 0032		6A3M 0080	6A4M 0125
SOCOMECS DIN - Distribution (gl - gG)						6022 0050	6600 0063	6032 0100
SOCOMECS DIN - Motor (aM)						6023 0050	6601 0063	6033 0100
BUSSMANN - Standard max	NITD 20			NITD 32	NITD 32		BAO 63	CEO 100
BUSSMANN - Motor max	NITD 20M32			NITD 32M63	NITD 32M63		BAO 63M80	CEO 100M125
LAWSON - Standard max	NIT 20			NIT 32	NIT 32		TIS 63	TCP 100
LAWSON - Motor max	NIT 20M32				NIT 20M32		TIS 63M80	CTFP 100M125
GE - Standard max	NIT 20			NET 32	NET 32		TIS 63	TCP 100
GE - Motor max	NIT 20M32			NET 32M63	NET 32M63		TIS 63M80	OCP 100M125

Connection

Minimum Cu cable cross-section (mm ²)	2.5	2.5	2.5	2.5	6	6	10	25
Maximum Cu cable cross-section (mm ²)	16	16	16	16	25	25	25	95
Maximum busbar width (mm)								20
Min. / Max. tightening torque min (Nm)	2/-	2/-	2/3	2	2.5/3	2.5/3	2.5/3	8.3/13

Mechanical characteristics

Durability (number of operating cycles)	20 000	20 000	20 000	20 000	10 000	10 000	10 000	10 000
Weight of 3 P switch (kg)	0.48	0.48	0.48	0.50	0.80	0.80	1	1.5
Weight of 4 P switch (kg)	0.50	0.50	0.50	0.52	1	1	1.3	2
Weight of 1 P extra (kg)					0.2	0.2	0.3	0.5
Frame pitch (mm)					32	27	32	36

(1) Category with index A = frequent operation - Category with index B = infrequent operation.

(2) With terminal shrouds or terminal screen.

(3) 4-pole device with 2 pole in series by polarity.

(4) 3-pole device with 2 poles "+" in series and 1 pole "-".

(5) The power value is given for information only, the current values vary from one manufacturer to another.

(6) For a rated operational voltage $U_e = 400$ VAC.

* For fuse size A4: max diameter 31 mm.

** Please ensure that fuse let through current does not exceed short-circuit capacity of the switch (kA peak).

125 to 200 A

Thermal current I_{th} (40°C)	125 A	125 A	160 A	CD 160 A	160 A	160 A	CD 200 A	200 A
NFC/DIN fuse size	-/22 x 58	-/00	-/00	A3-A4*/-	A4/0	B1-B2/-	A3-A4*/-	B1-B2/-
Frame size for direct operation	3	3	3		4	4		5
Switch body size for front and side operation	13	13	13	13	14	14	13	15
Rated insulation voltage U_i (V)	800	800	800	800	800	800	800	800
Rated impulse withstand voltage U_{imp} (kV)	8	8	8	8	8	8	8	8

Rated operational currents I_e (A)

Rated voltage	Utilisation category	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾
400 VAC	AC-22 A / AC-22 B	125/125	125/125	160/160	160/160	160/160	160/160	200/200	200/200
400 VAC	AC-23 A / AC-23 B	125/125	125/125	160/160	160/160	160/160	160/160	200/200	200/200
690 VAC	AC-22 A / AC-22 B	125 ⁽²⁾ /125 ⁽²⁾	125 ⁽²⁾ /125 ⁽²⁾	160 ⁽²⁾ /160 ⁽²⁾	160 ⁽²⁾ /160 ⁽²⁾	160 ⁽²⁾ /160 ⁽²⁾	160 ⁽²⁾ /160 ⁽²⁾	160 ⁽²⁾ /160 ⁽²⁾	200 ⁽²⁾ /200 ⁽²⁾
690 VAC	AC-23 A / AC-23 B	100 ⁽²⁾ /100 ⁽²⁾	100 ⁽²⁾ /100 ⁽²⁾	125 ⁽²⁾ /125 ⁽²⁾	125 ⁽²⁾ /125 ⁽²⁾	125 ⁽²⁾ /125 ⁽²⁾	125 ⁽²⁾ /125 ⁽²⁾	125 ⁽²⁾ /125 ⁽²⁾	160 ⁽²⁾ /200 ⁽³⁾
220 VDC	DC-20 A / DC-20 B	125/125	125/125	160/160	160/160	160/160	160/160	160/160	200/200
220 VDC	DC-21 A / DC-21 B	100/100	100/100	125/125	125/125	125/125	125/125	125/125	200/200
440 VDC	DC-22 A / DC-22 B	125 ⁽³⁾ /125 ⁽³⁾	125 ⁽³⁾ /125 ⁽³⁾	160 ⁽³⁾ /160 ⁽³⁾	160 ⁽³⁾ /160 ⁽³⁾	160 ⁽³⁾ /160 ⁽³⁾	160 ⁽³⁾ /160 ⁽³⁾	160 ⁽³⁾ /160 ⁽³⁾	200 ⁽³⁾ /200 ⁽³⁾
440 VDC	DC-23 A / DC-23 B	100 ⁽³⁾ /100 ⁽³⁾	100 ⁽³⁾ /100 ⁽³⁾	125 ⁽³⁾ /125 ⁽³⁾	160 ⁽³⁾ /160 ⁽³⁾	125 ⁽³⁾ /125 ⁽³⁾	125 ⁽³⁾ /125 ⁽³⁾	125 ⁽³⁾ /125 ⁽³⁾	200 ⁽³⁾ /200 ⁽³⁾

Operational power in AC-23 (kW)

At 400 VAC without pre-break in AC ⁽¹⁾⁽⁴⁾	63/63	63/63	80/80	80/80	80/80	80/80	80/80	100/100
At 690 VAC without pre-break in AC ⁽¹⁾⁽⁴⁾	90/90	90/90	110/110	110/110	110/110	110/110	110/110	150/185

Reactive power (kvar)

At 400 VAC ⁽⁴⁾	55	55	75	70	75	75	90	90
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Fuse protected short-circuit withstand (kA rms prospective)

Prospective short-circuit (kA rms) ⁽⁵⁾	-/100	-/100	-/100 (50)	50/-	80/100	80/100	50/-	80/-
Associated fuse rating (A) ⁽⁵⁾	-/125	-/125	-/125 (160)	160/-	160/160	160/160	200/-	200/-

Short-circuit capacity

Rated peak withstand current (kA peak) ⁽⁵⁾	20	20	20	20	22.7	22.7	20	32.5
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Fuse selection (maximum fuse size)**

SOCOMECS BS88 - Standard max				6A40 0160	6A40 0160	6B20 0160	6A40 0200	6B20 0200
SOCOMECS BS88 - Motor max				6A4M 0160	6A4M 0160	6B1M 0200	6A4M 0315	6B2M 0315
SOCOMECS DIN - Distribution (gl - gG)	6032 0125	6692 0125	6692 0160		6702 0160			
SOCOMECS DIN - Motor (aM)	6033 0125	6693 0125	6693 0160		6703 0160			
BUSSMANN - Standard max				DEO 160	DEO 160	DD 160	DEO 200	DD 200
BUSSMANN - Motor max				CEO 100M160	DEO 100M200	CD 100M200	DEO 200M315	DD 200M315
LAWSON - Standard max				CTFP 160	TFP 160	TF 160	TF 200	TF 200
LAWSON - Motor max				CTCP 100M160	TCP 100M200	TCP 100M200	TC 200M315	TC 200M315
GE - Standard max				TCP 100	TFP 160	TF 160	TF 200	TF 200
GE - Motor max				OCP 100M160	TCP 100M201	TC 100M200	TF 200M315	TF 200M315

Connection

Minimum Cu cable cross-section (mm ²)	35	35	35	35	50	50	35	95
Maximum Cu cable cross-section (mm ²)	95	95	95	95	95	95	95	240
Maximum busbar width (mm)	20	20	20	20	20	20	20	32
Tightening torque min (Nm)	8.3/13	8.3/13	8.3/13	8.3/13	8.3/13	8.3/13	8.3/13	20/26

Mechanical characteristics

Durability (number of operating cycles)	10 000	10 000	10 000	10 000	10 000	10 000	10 000	10 000
Weight of 3 P switch (kg)	1.5	1.5	1.8	1.8	1.8	1.8	1.8	3.2
Weight of 4 P switch (kg)	2	2	2.3	2.3	2.3	2.3	2.3	4.5
Weight of 1 P extra (kg)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	1.3
Frame pitch (mm)	36	36	36	36	50	50	36	60

(1) Category with index A = frequent operation - Category with index B = infrequent operation.

(2) With terminal shrouds or phase barrier.

(3) 4-pole device with 2 poles in series per polarity.

(4) The power value is given for information only, the current values vary from one manufacturer to another.

(5) For a rated operational voltage $U_n = 400$ VAC.

** Please ensure that fuse let through current does not exceed short-circuit capacity of the switch (kA peak).

Characteristics according to IEC 60947-3 (continued)

250 to 1250 A

Thermal current I_{th} (40°C)	250 A	315 A	400 A	630 A	800 A	800 A	1250 A
NFC/DIN fuse size	B1-B2-B3/1	B1-B2-B3/-	B1-B2-B3-B4/2	C1-C2/3	C1-C2-C3/3	-/4	D1/4
Frame size for direct operation	5	6	6	17	17	18	18
Switch body size for front and side operation	15	16	16	17	17	18	18
Rated insulation voltage U_i (V)	800	1000(800*)	1000(800*)	1000	1000	1000	1000
Rated impulse withstand voltage U_{imp} (kV)	8	12(8*)	12(8*)	12	12	12	12

Rated operational currents I_e (A)

Rated voltage	Utilisation category	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾
400 VAC	AC-22 A / AC-22 B	250/250	315/315	400/400	630/630	800/800	800/800	1250/1250
400 VAC	AC-23 A / AC-23 B	250/250	315/315	400/400	630/630	800/800	800/800	1000/1250
690 VAC	AC-22 A / AC-22 B	250 ⁽²⁾ /250 ⁽²⁾	315 ⁽²⁾ /315 ⁽²⁾	400/400	500/630	800/800	800/800	800/1250
690 VAC	AC-23 A / AC-23 B	250 ⁽²⁾ /250 ⁽²⁾	315 ⁽²⁾ /315 ⁽²⁾	315/400	315/400	630/630	800/800	800/1250
220 VDC	DC-20 A / DC-20 B	250/250	315/315	400/400	630/630	800/800	800/800	1250/1250
220 VDC	DC-21 A / DC-21 B	200/200	315/315	315/315	630/630	800/800	800/800	1250/1250
440 VDC	DC-22 A / DC-22 B	250 ⁽³⁾ / 250 ⁽³⁾	315 ⁽³⁾ / 315 ⁽³⁾	315 ⁽³⁾ /315 ⁽³⁾	400 ⁽³⁾ /630 ⁽³⁾	800 ⁽³⁾ / 800 ⁽³⁾	800/800	1250 ⁽³⁾ / 1250 ⁽³⁾
440 VDC	DC-23 A / DC-23 B	200 ⁽³⁾ / 200 ⁽³⁾	250 ⁽³⁾ / 315 ⁽³⁾	250 ⁽³⁾ / 315 ⁽³⁾	400 ⁽³⁾ /630 ⁽³⁾	800 ⁽³⁾ / 800 ⁽³⁾	800/800 ⁽³⁾	1000 ⁽³⁾ / 1000 ⁽³⁾

Operational power in AC-23 (kW)

At 400 VAC without pre-break in AC ⁽¹⁾⁽⁴⁾	132/132	160/160	220/220	355/355	450/450	450/450	560/560
At 690 VAC without pre-break in AC ⁽¹⁾⁽⁴⁾	220/220	220/295	220/295	295/400	400/400	400/400	400/475

Reactive power (kvar)

At 400 VAC ⁽⁴⁾	115	145	185	290	365	355	460
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Fuse protected short-circuit withstand (kA rms prospective)

Prospective short-circuit (kA rms) ⁽⁵⁾	80/100	80/-	80/50	80/100	80/100	-/100	-/100
Associated fuse rating (A) ⁽⁵⁾	250/250	315/-	400/400	630/630	800/800	-/800	-/1250

Short-circuit capacity

Rated peak withstand current (kA peak) ⁽⁵⁾	32.5	40	40	70	80	80	90
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Fuse selection (maximum fuse size)**

SOCOMECS BS88	6B20 0250	6B30 0315	6B40 0400	6C20 0630	6C30 0800		
SOCOMECS BS88	6B2M 3015	6B3M 0400	6B4M 0500				
SOCOMECS DIN	6712 0250		6722 0400	6732 0400		6746 0800	6746 1200
SOCOMECS DIN	6713 0250		6723 0400	6733 0400		6747 0800	6747 1200
BUSSMANN	ED 250	ED 315	ED 400	FF 630	GF 800		
BUSSMANN	DD 200M315	ED 315M400	ED 400M500				
LAWSON	TKF 250	TKF 315	TMF 400	TTM 630	TLM 800		
LAWSON	TF 200M315	TKF 315M400	TMF 400M500				
GE	TKF 250	TKF 315	TMF 400	TTM 630	TLM 800		
GE	TF 200M315	TKF 315M355	TMF 400M450				

Connection

Minimum Cu cable cross-section (mm ²)	95	185	185	2 x 150	2 x 185		
Maximum Cu cable cross-section (mm ²)	240	240	240	2 x 300	2 x 300	4 x 185	4 x 185
Maximum busbar width (mm)	32	45	45	63	63	80	80
Tightening torque min (Nm)	20/26	20/26	20/26	40/45	40/45	40/45	40/45

Mechanical characteristics

Durability (number of operating cycles)	10 000	10 000	10 000	8 000	8 000	5 000	5 000
Weight of 3 P switch (kg)	3.2	4.8	4.8	16	17	25	25
Weight of 4 P switch (kg)	4.5	6.1	6.1	20	21.5	30	30
Weight of 1 P extra (kg)	1.3	1.3	1.3			3	3
Frame pitch (mm)	60	66	66	94	94	120	120

(1) Category with index A = frequent operation - Category with index B = infrequent operation.

(2) With terminal shrouds or terminal screen.

(3) 4-pole device with 2 pole in series by polarity.

(4) The power value is given for information only, the current values vary from one manufacturer to another.

(5) For a rated operational voltage $U_e = 400$ VAC.

* Direct operation switch.

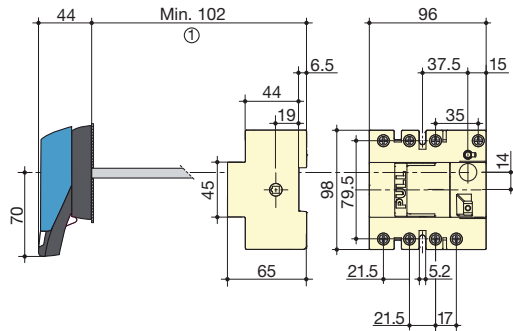
** Please ensure that fuse let through current does not exceed short-circuit capacity of the switch (kA peak).

Dimensions

External operation

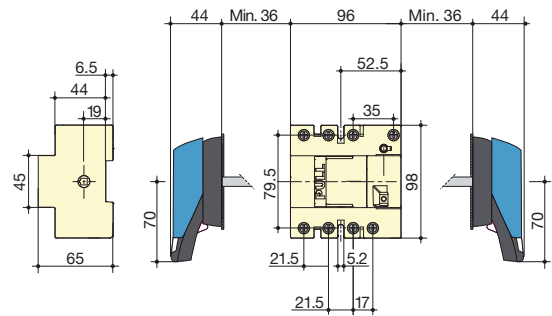
NFC and DIN CD 25 to CD 32 A in size 10 x 38

External front operation



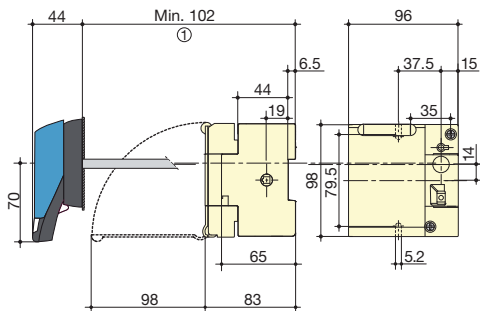
1. With 1 U-type AC: 130 mm.
With 2 U-type AC: 155 mm.

External side operation



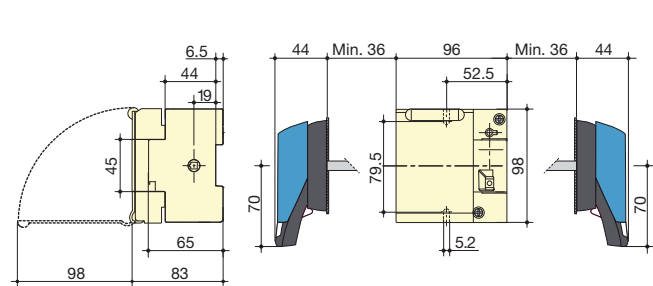
BS88 CD 20 to CD 32 A in size A1 - NFC and DIN 32 A in size 14 x 51

External front operation



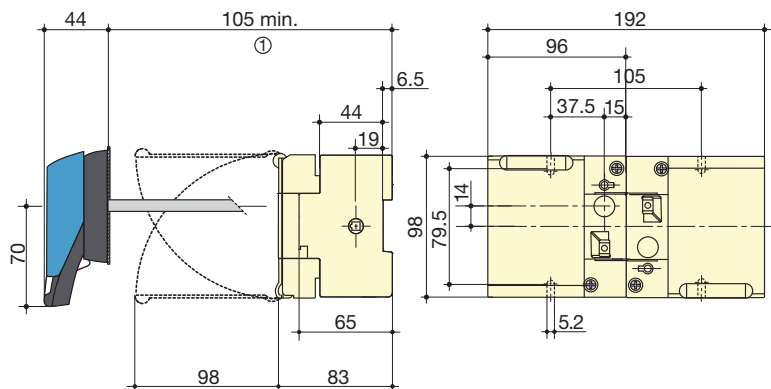
1. With 1 U-type AC: 130 mm.
With 2 U-type AC: 155 mm.

External side operation



BS88 CD 20 to CD 32 A in size A1 - NFC and DIN 25 to 32 in size 10 x 38 and 14 x 51

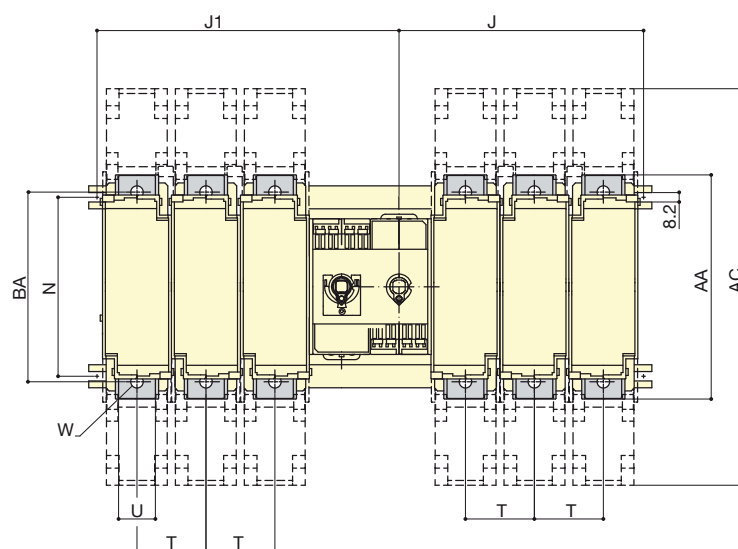
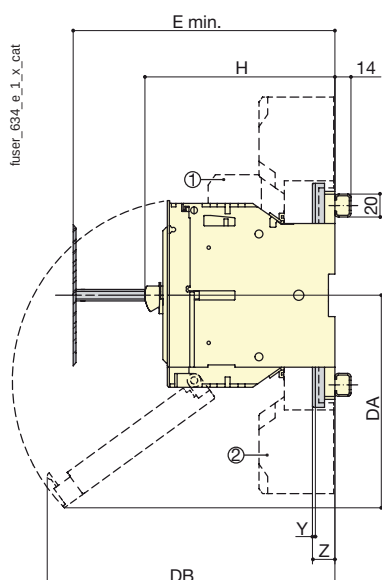
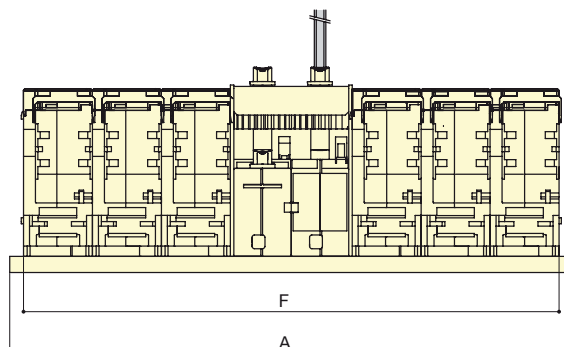
External front operation fuse combination changeover



1. With 1 U-type AC: 130 mm
With 2 U-type AC: 155 mm.

BS88 - External front operation fuse combination changeover

32 to 400 A



- A. S1 handle: 32 and 63 A
B. S1 handle: 100 to 400 A
C. Door drilling

1. Fuse blown indication not available for BS88
2. Terminal shrouds

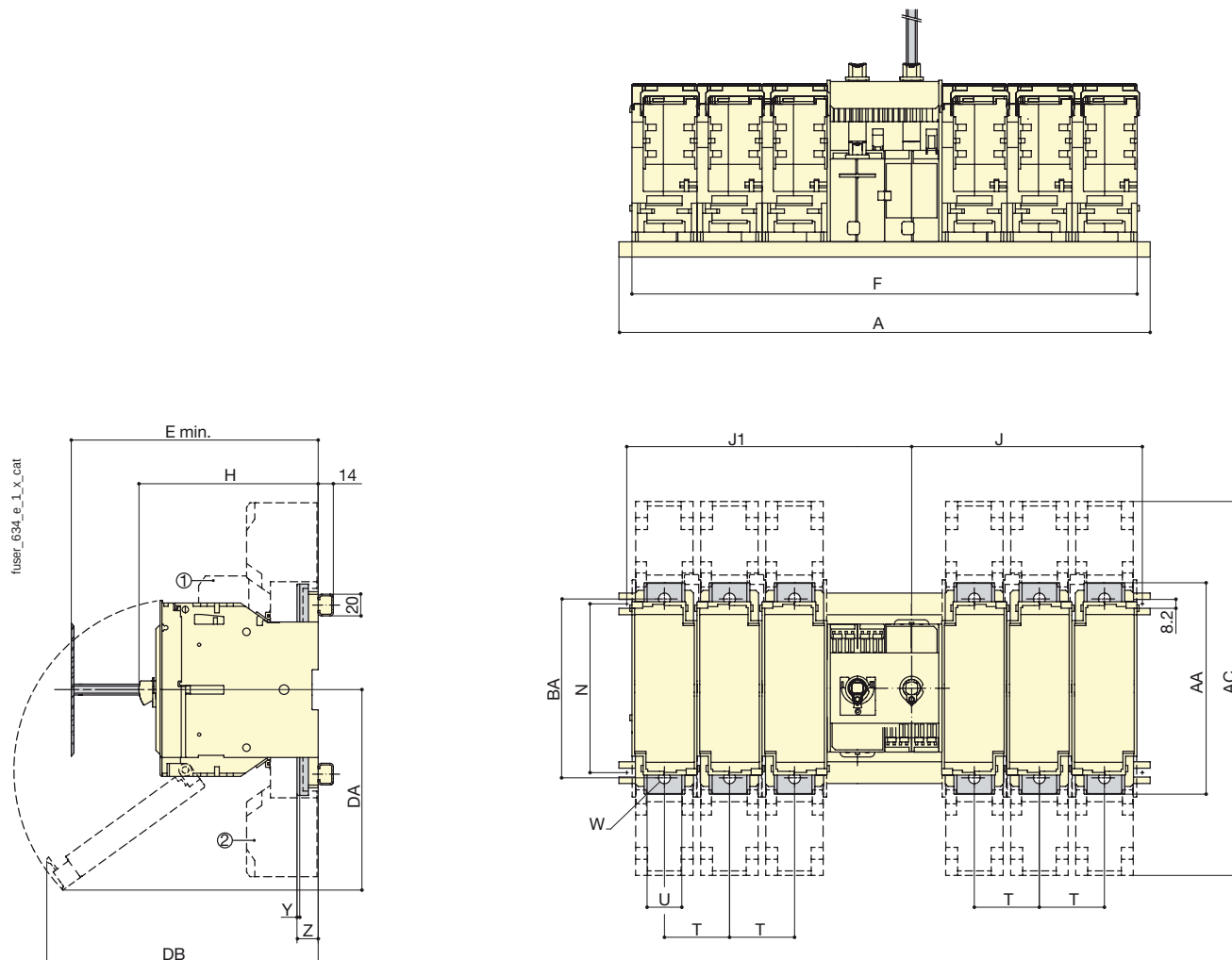
			Dimensions				Terminal shrouds	Switch body								Switch mounting	Connection							
Rating (A)	Fuse size	Frame size	A 3 P	A 4 P	E min	E max	AC	F 3 P	F 4 P	H	J 3 P	J 4 P	J1 3 P	J1 4 P	DA	DB	N	T	U	W	Y	Z	AA	BA
32	A1	11	264	318	100 ⁽¹⁾	146 ⁽¹⁾		242	296	87	102	129	138	165	85	153	90	27					118	
63	A2-A3	12	294	358	124	145		272	336	116.5	121	153	157	189	159	145	90	32					118	
100	A4	13	318	390	124	145	268	296	368	116 ⁽²⁾	133	169	169	205	141	179	128	36	20	8.5	2.5	19.5	162	141
CD 160	A3-A4	13 A	318	390	145	225	268	296	368	139	133	169	169	205			128	36	18	8.5	3	20	162	141
160	A4	14	402	502	124	225	268	380	480	136.5	176	226	212	262	174	229	128	50	20	8.5	2.5	19.5	162	141
160	B1-B2	14	402	502	130	225	268	380	480	136.5	176	226	212	262	174	229	128	50	20	8.5	2.5	19.5	162	141
CD 200	A3-A4	13 A	318	390	145	225	268	296	368	139	133	169	169	205			128	36	18	8.5	3	20	162	141
200	B1-B2	15	490	610	130	225	345	468	588	146	213	273	263	323	185	251	155	60	32	11	2.5	19.5	195	166
250	B1-B2-B3	15	490	610	154	225	345	468	588	146	213	273	263	323	185	251	155	60	32	11	2.5	19.5	195	166
315	B1-B2-B3	16	526	658	154	225	355	504	636	149	231	297	281	347	200	260	168	66	50	11	3	20	205	175
400	B1-B2-B3-B4	16	526	658	157	225	355	504	636	149	231	297	281	347	200	260	168	66	50	11	3	20	205	175

- (1) 1 AC: + 23.5 mm / 2 AC: + 47 mm.
(2) 132 mm with 2 AC.

Dimensions (continued)

NFC and DIN - External front operation fuse combination changeover

50 to 400 A



A. S1 handle: 50 and 63 A
B. S2 handle: 100 to 400 A
C. Door drilling

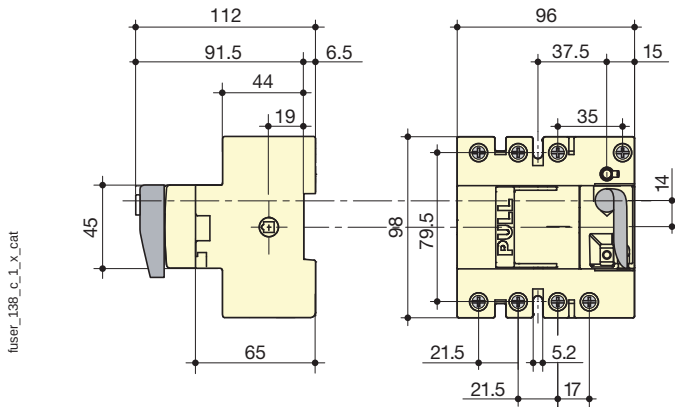
1. Fuse blown indication not available for BS88
2. Terminal shrouds

Rating (A)	Fuse size	Frame size	Overall dimensions				Terminal shrouds	Switch body										Switch mounting	Connection							
			A 3p	A 4p	E min	E max		AC	F 3 P	F 4 P	H	J 3 P	J 4 P	J1 3 P	J1 4 P	DA	DB		N	T	U	W	Y	Z	AA	BA
50	14 x 51	11	264	318	100 ⁽¹⁾	146 ⁽¹⁾		121	148	87 ⁽¹⁾	102	129	138	165	85	153	90	27					118			
63	00C	12	294	358	125	145		136	168	116.5 ⁽²⁾	121	153	158	189	159	145	90	32					118			
100	22 x 58	13	318	390	135	145	268	148	184	116 ⁽²⁾	133	169	169	205	141	187	128	36	20	8.5	2.5	19.5	162	141		
125	22 x 58	13	318	390	135	145	268	148	184	116 ⁽²⁾	133	169	169	205	141	179	128	36	20	8.5	2.5	19.5	162	141		
125	00	13	318	390	135	145	268	148	184	126.5	133	169	169	205	141	193	128	36	20	8.5	2.5	19.5	162	141		
160	00	13	318	390	135	145	268	148	184	126.5	133	169	169	205	141	193	128	36	20	8.5	2.5	19.5	162	141		
160	0	14	402	502	145	225	268	190	240	136.5	176	226	212	262	174	229	128	50	20	8.5	2.5	19.5	162	141		
250	1	15	490	610	154	225	345	234	294	146	213	273	263	323	185	251	155	60	32	11	2.5	19.5	195	166		
400	2	16	526	658	157	225	355	252	318	149	231	297	281	347	200	260	168	66	50	11	3	20	205	175		

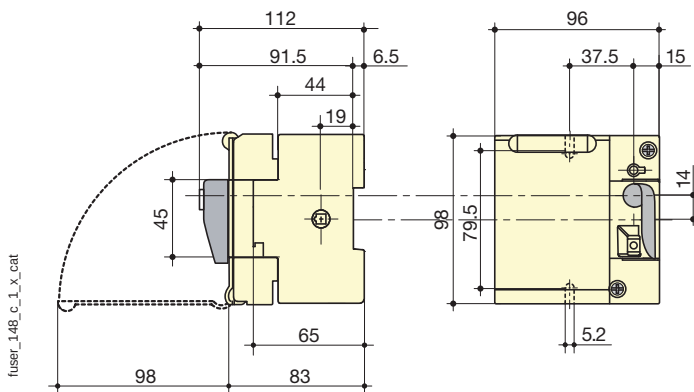
(1) 1 AC: +23.5 / 2 AC: +47
(2) 132 with 2 AC

Direct operation

NFC CD 25 to CD 32 A in frame size 0 / fuse size 10 x 38



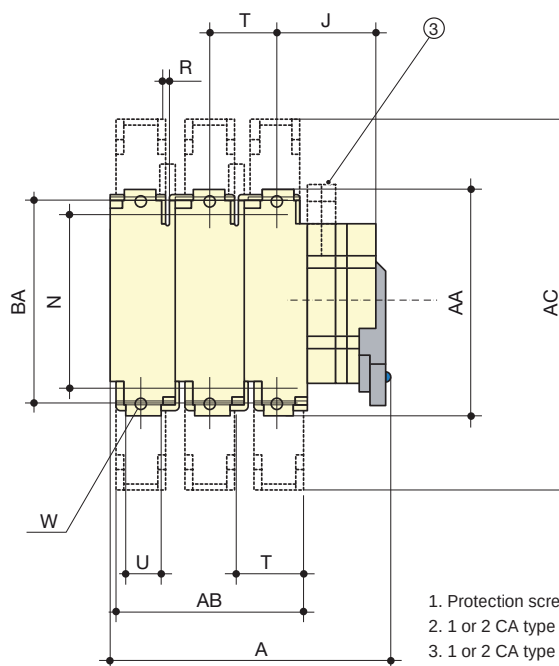
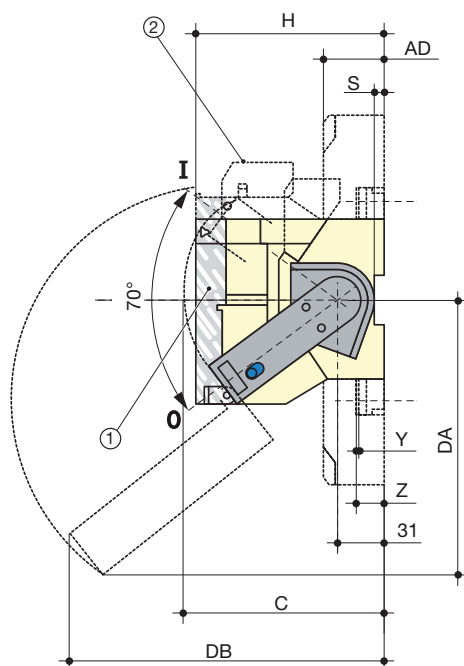
BS88 CD 20 to CD 32 A in frame size 0 / fuse size A1 - NFC CD 32 A in frame size 0 / fuse size 14 x 51



Dimensions (continued)

Direct operation (continued)

BS88 32 to 400 A - NFC and DIN 50 to 400 A



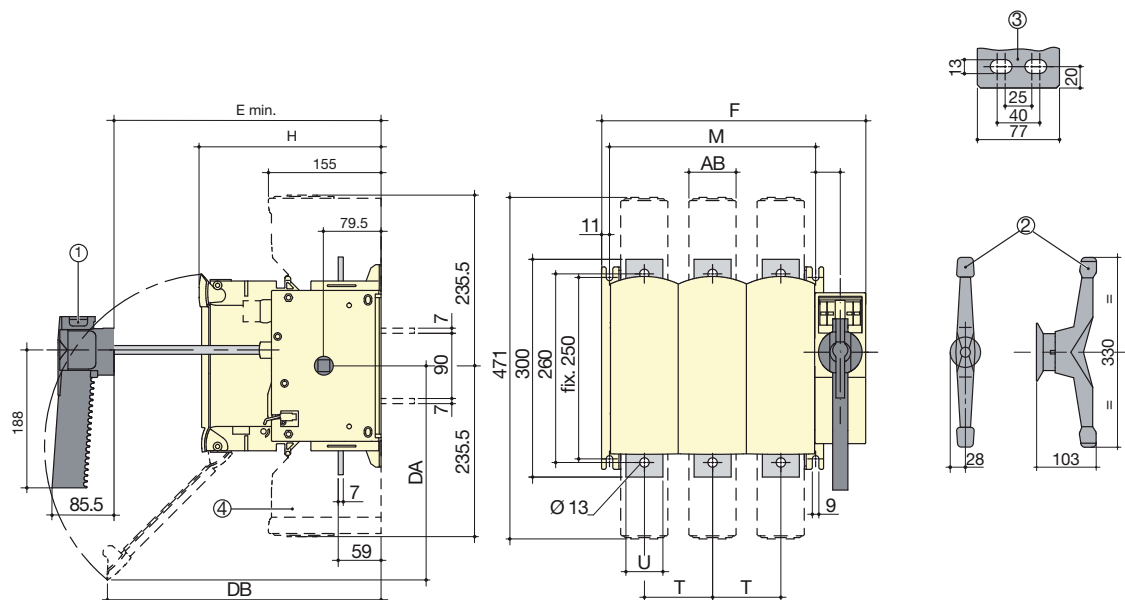
1. Protection screen lockable in position I
2. 1 or 2 CA type DDMM
3. 1 or 2 CA type A

fuser_064_b_1_x_cat

Rating (A)	NFC/DIN Fuse size	BS88 Fuse size	Frame size	Overall dimensions			Terminal shrouds				Switch body				Switch mounting			Connection									
				A 3p.	A 4p.	C	AB 3p.	AB 4p.	AC	AD	H	J	DA	DB	N	R	S	T	U	W	Y	Z	AA	BA			
32	-	A1	1	118	145	134	-	-	-	-	87	33.5	-	-	106	5.4	6.5	27	-	-	-	-	118	-			
50	14 x 51	-	1	118	145	134	-	-	-	-	87	33.5	-	-	106	5.4	6.5	27	-	-	-	-	118	-			
63	00C	A2-A3	2	133	165	134	-	-	-	-	116	36	159	145	106	5.4	6.5	32	-	-	-	-	118	-			
100	22 x 58	A4	3	150	186	173	108	144	268	44	116	38	-	-	127	5.4	-	36	20	8.5	2.5	19.5	162	141			
125	22 x 58	-	3	150	186	173	108	144	268	44	116	38	-	-	127	5.4	-	36	20	8.5	2.5	19.5	162	141			
125	00	-	3	150	186	173	108	144	268	44	126	38	141	193	127	5.4	-	36	20	8.5	2.5	19.5	162	141			
160	00	-	3	150	186	173	108	144	268	44	126	38	141	189	127	5.4	-	36	20	8.5	2.5	19.5	162	141			
CD 160	-	A3-A4	3A	152	188	173	108	144	268	44	139	38	-	-	130	5.4	-	36	20	8.5	3	19.5	162	141			
160	-	A4	4	192	242	173	136	172	268	44	136	45	174	229	140	5.4	-	50	20	8.5	2.5	19.5	162	141			
160	0	B1-B2	4	192	242	173	136	172	268	44	136	45	174	229	140	5.4	-	50	20	8.5	2.5	19.5	162	141			
CD 200	-	A3-A4	3A	152	188	173	108	144	268	44	139	38	-	-	30	5.4	-	36	20	8.5	3	19.5	162	141			
200	-	B1-B2	5	253	313	173	180	240	345	65	146	81	185	251	162	6.4	-	60	32	11	2.5	19.5	195	166			
250	1	B1-B2-B3	5	253	313	173	180	240	345	65	146	81	185	251	162	6.4	-	60	32	11	2.5	19.5	195	166			
315	-	B1-B2-B3	6	253	313	173	180	240	355	65	146	81	185	251	162	6.4	-	66	32	11	2.5	19.5	195	175			
400	2	B1-B2-B3-B4	6	271	337	173	192	258	355	65	149	86	200	260	172	6.4	-	66	50	11	3	20	205	175			

External and direct operation

BS88 630 to 800 A - DIN 630 to 1250 A



fuser_415_g_1_x_cat

1. For handle frame size 17.
2. For handle frame size 18.
3. Connection terminals for frame size 18.
4. Terminal shrouds.

Rating (A)	DIN Fuse size	BS88 Fuse size	Frame size	Overall dimensions E min	Switch body					Switch mounting		Connection		Terminal shrouds AB
					F 3p.	F 4p.	H	DA	DB	M 3p.	M 4p.	T	U	
630	3	C1-C2	17	265	364	458	250	300	380	284	378	94	51	65
800	3	C1-C2-C3	17	265	364	458	250	300	380	284	378	94	51	65
800	4	-	18	304	442	562	289	355	295	362	482	120	77	88
1250	4	D1	18	304	442	562	289	355	295	362	482	120	77	88

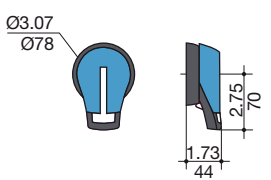
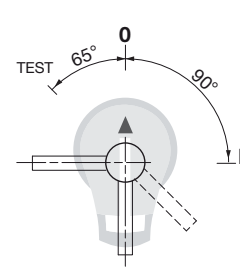
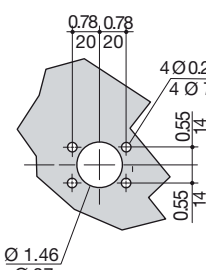
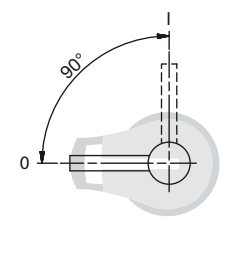
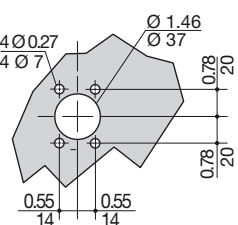
FUSERBLOC

Fuse combination switches

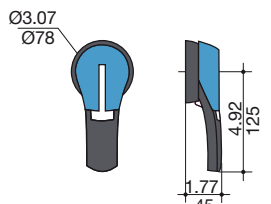
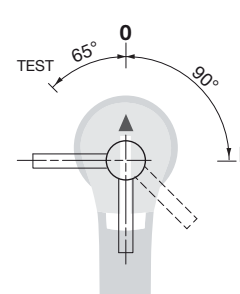
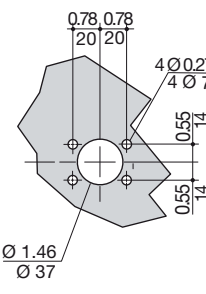
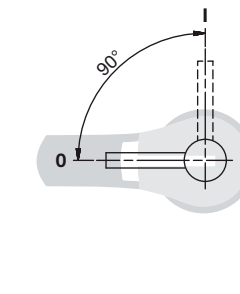
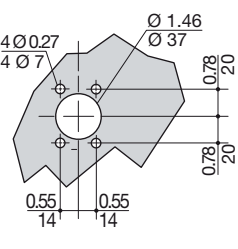
for industrial fuses up to 1250 A

Dimensions for external operation handles

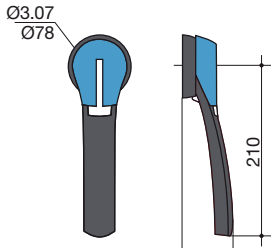
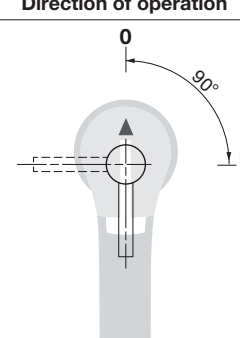
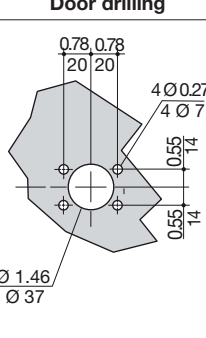
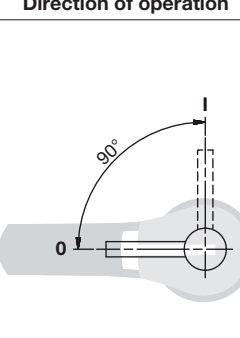
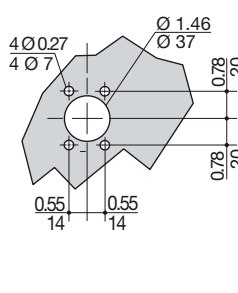
BS88 - 32 to 63 A - NFC and DIN - 25 to 63 A

Handle type	Front operation		Side operation	
	Direction of operation	Door drilling	Direction of operation	Door drilling
S1 type Box size 0 				

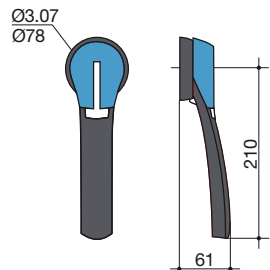
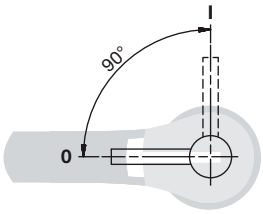
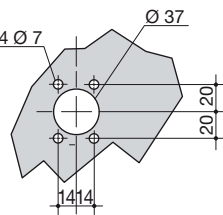
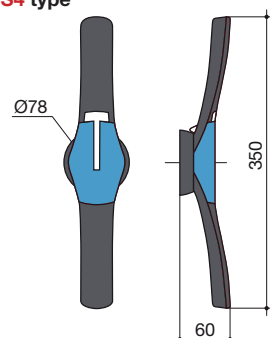
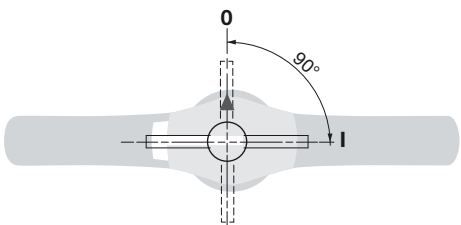
BS88 / NFC and DIN - 100 to 400 A

Handle type	Front operation		Side operation	
	Direction of operation	Door drilling	Direction of operation	Door drilling
S2 type Box size 11-16 				

BS88 / NFC and DIN - 630 to 800 A

Handle type	Front operation		Side operation	
	Direction of operation	Door drilling	Direction of operation	Door drilling
S3 type Box size 17 				

BS88 / NFC and DIN - 800 to 1250 A

Handle type	Front operation Direction of operation	Side operation Direction of operation	Door drilling
S3 type Box size 18 			
S4 type 			

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FUSERBLOC UL

Fusible disconnect switches UL and CSA
from 30 to 800 A



The solution for

- > Motor on-load disconnect
- > Protection of industrial cabinet
- > Electrical distribution



Strong points

- > Improved safety
- > High breaking capacity
- > A complet range of functions

Conformity to standards⁽¹⁾

- > IEC 60947-3
- > NFPA79 (2002 Edition)
- > UL489, Guide WJAZ, file E255272 (Frame size 1 and 2)
- > UL98, Guide WHTY, file E201138 (Frame sizes 3 to 8)
- > CSA22.2 #5, Class 4652-06, file 112964 (Frame size 1 and 2)
- > CSA22.2 #4, Class 4651-02, file 112964 (Frame sizes 3 to 8)



(1) Product reference on request.

Function

FUSERBLOC UL fusible disconnect switches are heavy duty switches that break and make power circuits on and off load.

The switches employ double break contacts per pole that ensure complete isolation of the fuse when the switch is in the "OFF" position. These switches are extremely durable and are tested and approved for use in the most demanding applications.

The TEST position function is enabled with handles with the TEST position. This function tests the control circuit auxiliaries without switching the main contacts. It is a simple alternative to a separately wired push button.

Advantages

Improved safety

- On load make and break power circuit applications.
- Double break by phase.
- Touch safe covers.

High breaking capacity.

- Up to 200 kA Short circuit rating.

A complet range of functions

- Compact footprints.
- Front or side operation.
- Flange operation.
- NFPA 79 compliant kits.
- Voltage sensing terminals.

References

Fusible disconnect

Rating (A) Fuses Frame size	No. of poles	Switch body	Direct handle	Front external handle	External right side handle ⁽¹⁾	Shaft external handle	NFPA79 kit	U-type auxiliary contacts	Terminal shrouds
CD 30 A CC 1	3 P	3710 3003	Black 3729 4012	S0 type Black IP65 I - O 1, 3R, 12 1493 0111 4, 4X 149D 0111		S0 type 200 mm 7.9 inches 1405 0620 320 mm 12.6 inches 1405 0632 400 mm 15.7 inches 1405 0640	3729 4532		
	3 P + switched neutral	3710 4003							
	3 P + solid neutral	3710 5003							
CD 30 A J 2	3 P	3710 3004	3729 4014	S1 type Black IP65 I - O 1, 3R, 12 141F 2111 4, 4X 141D 2111		S1 type 200 mm 7.9 inches 1401 0520 320 mm 12.6 inches 1401 0532 400 mm 15.7 inches 1401 0540		1 contact NO 3999 0701 1 contact NC 3999 0702	not required
	3 P + switched neutral	3710 4004							
	3 P + solid neutral	3710 5004							
30 A J 4	2 P	3861 2004	Black 3629 7910	S1 type Black I - O 1, 3R, 12 Defeatable 141F 2111 I - O 4, 4X Defeatable 141D 2111	S1 type Black I - O 4, 4X 141H 6111 S1 type Red / yellow I - O 4, 4X 141I 6111	S1 type 200 mm 7.9 inches 1400 1020 320 mm 12.6 inches 1400 1032	3729 7540		
	3 P	3861 3004							
	4 P	3861 6004							
60 A J 4	2 P	3861 2005		I - O - Test 4, 4X Defeatable 141D 2115					
	3 P	3861 3005							
	4 P	3861 6005							

(1) No door interlocking.

FUSERBLOC UL

Fusible disconnect switches UL and CSA
from 30 to 800 A

References (continued)

Rating (A) fuses Frame size	No. of poles	Switch body	Direct handle	Front external handles	External right side handle ⁽¹⁾	Shaft for external handle	NFPA79 kit	U-type auxiliary contacts	Terminal shrouds	
60 A J 5	2 P	3861 2006	Black 3629 7910	S2 type Black I - 0 1, 3R, 12 Defeatable 142F 2111	S2 type Black I - 0 4, 4X 142H 6111	S2 type 200 mm 7.9 inches 1400 1020	3729 7540	1 contact type NO 3999 0701 1 contact type NC 3999 0702	not required	
	3 P	3861 3006								
	4 P	3861 6006								
100 A J 5	2 P	3861 2010								3898 2020
	3 P	3861 3010								
	4 P	3861 6010								
200 A J 6	2 P	3861 2020				320 mm 12.6 inches 1400 1032	3729 7544		3898 3020	
	3 P	3861 3020								3898 4020
	4 P	3861 6020								
400 A J 7	2 P	3851 2038		3898 3040						
	3 P	3851 3038			3898 6040					
	4 P	3851 6038								
600 A J 8	2 P	3850 2060	Black 3859 6011	S3 type Black I - 0 1, 3R, 12 Defeatable 143F 3111		Red / yellow I - 0 4, 4X 142I 6111	S3 type 200 mm 7.9 inches 1400 1220	3729 7552	2 P 3898 2080 3 P 3898 3080 4 P 3898 4080	
	3 P	3850 3060								
	4 P	3850 6060								
800 A L 8	2 P	3850 2080			320 mm 12.6 inches 1400 1232					
	3 P	3850 3080								
	4 P	3850 6080								

(1) No door interlocking.

Accessories

Electronic fuse operation indication (FMD)

Use

For fuse cartridge BS88, DIN and UL.

Principle

The FMD detects fuse operation using a bistable relay and a signaling LED.
It can be mounted on a DIN rail, a back plate, next to the FUSERBLOC, or on the door.

References

For FUSERBLOC 100 to 800 A			
Nb of leds	Type	Operating voltage Ph/Ph	Reference
1	FMD10	120 - 260 VAC	3899 1120
1	FMD10	380 - 690 VAC	3899 1380
3	FMD30	120 - 260 VAC	3899 3120
3	FMD30	380 - 690 VAC	3899 3380

Accessories		Reference
Kit for connection accessories	Standard	3819 9120
Kit for connection accessories	Door mounted	3829 9120

Relay characteristics

Type	Relay operating current I _e (A)	
	AC-15	DC-13
FMD10 and FMD30	2.5 A	0.2



FMD10
1-led version

FMD30
3-leds version

NFPA79 accessories

Flange handle for flange operation

Use

Meets both UL508A and NFPA79 requirements.

The handle will operate the switch by cable or rod.

Rating (A)	Type	Nema type	Reference
30 ... 200	Standard handle	1, 3, 3R, 4, 12	3729 9002 ⁽¹⁾
30 ... 200	Chrome plated handle	1, 3, 3R, 4, 4X, 12	3729 9003 ⁽¹⁾

(1) Defeatable handle.



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Cable operator

Use

Link between the flange handle and the switch, please order the flange handle, the mechanism and a cable length of your choice.

Rating (A)	Description	Reference
30 ... 200	Cable flange mechanism	3729 9903

Cable length (inches)	Cable length (mm)	Reference
36	900	3729 9992
60	1500	3729 9993
120	3000	3729 9994



sfico_247_a_1_cat



ul_042_b_1

Rod operator

Use

Link between the flange handle and the switch. The rod flange is an economical solution, please order the flange handle and a rod kit.

Rating 30 ... 200 A

For enclosure depth (inches)	For enclosure depth (mm)	Reference
8 ... 24	203 ... 613	3729 9904



ul_043_a

NFPA79 "Through the door" kit

Use

Meets both UL508A and NFPA79 requirements.

Allows retrofit of your installations for ratings from 30 to 800 A.

Please order an S-type external handle separately.

Number of auxiliary contact installed on the switch will be limited to 1 layer (instead of 2). If more needed please use the S type auxiliary contacts



ul_121_b

Rating (A)	Frame size	Reference
CD 30	1/2	3729 4532
30 ... 200	3 ... 6	3729 7540
400	7	3729 7544
600 ... 800	8	3729 7552

FUSERBLOC UL

Fusible disconnect switches UL and CSA
from 30 to 800 A

Accessories

Direct handle

Rating (A)	Color	Fuses	Fig.	Reference
CD 30	Black	CC	1	3729 4012
CD 30	Black	J	1	3729 4014
30 ... 400	Black	J	2	3629 7910
600 ... 800	Black	J / L	2	3859 6011



Fig.1

Fig. 2

External handle

Use

The locking function of the front external handle prevents the user from opening the door of the enclosure when the switch is in the "ON" position, and when the switch is padlocked in the "OFF" position (S1, S2, S3 and S4 type handles only).

Opening the door when the switch is in the "ON" position is possible by defeating the interlocking function with the use of a tool (authorised persons only).

The interlocking function is restored when the door is re-closed.

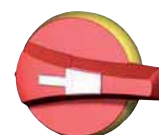
Front operation

Rating (A)	Frame size	Handle type	Nema type	Test	Handle color	Standard Reference	Heavy duty Reference
CD 30	1	S0	1, 3R, 12	I - 0	Black	1493 0111	
CD 30	1	S0	1, 3R, 12	I - 0	Red/Yellow	1494 0111	
CD 30	1	S0	4, 4X	I - 0	Black	149D 0111	
CD 30	1	S0	4, 4X	I - 0	Red/Yellow	149E 0111	
CD 30 ... 60	3/4	S1	1, 3R, 12	I - 0	Black	141F 2111	
CD 30 ... 60	3/4	S1	1, 3R, 12	I - 0	Red/Yellow	141G 2111	
CD 30 ... 60	3/4	S1	4, 4X	I - 0	Black	141D 2111	141D 2911
CD 30 ... 60	3/4	S1	4, 4X	I - 0	Red/Yellow	141E 2111	141E 2911
CD 30 ... 60	3/4	S1	4, 4X	I - 0 - Test	Black	141D 2115	
CD 30 ... 60	3/4	S1	4, 4X	I - 0 - Test	Red/Yellow	141E 2115	
60 ... 200 ⁽¹⁾	5 ... 7	S2	4, 4X	I - 0 - Test	Black	142D 2115	
60 ... 200 ⁽¹⁾	5 ... 7	S2	4, 4X	I - 0 - Test	Red/Yellow	142E 2115	
60 ... 400	5 ... 7	S2	1, 3R, 12	I - 0	Black	142F 2111	
60 ... 400	5 ... 7	S2	1, 3R, 12	I - 0	Red/Yellow	142G 2111	
60 ... 400	5 ... 7	S2	4, 4X	I - 0	Black	142D 2111	142D 2911
60 ... 400	5 ... 7	S2	4, 4X	I - 0	Red/Yellow	142E 2111	142E 2911
600 ... 800	8	S3	1, 3R, 12	I - 0	Black	143F 3111	
600 ... 800	8	S3	1, 3R, 12	I - 0	Red/Yellow	143G 3111	
600 ... 800	8	S3	4, 4X	I - 0	Black	143D 3111	143D 3911
600 ... 800	8	S3	4, 4X	I - 0	Red/Yellow	143E 3111	143E 3911

(1) No test position on 400 A.

Right side operation

Rating (A)	Frame size	Handle type	Nema type	Test	Handle color	Standard Reference	Heavy duty Reference
30 ... 60	3/4	S1	4, 4X	I - 0	Black	141H 6111	141H 6911
30 ... 60	3/4	S1	4, 4X	I - 0	Red/Yellow	141I 6111	141I 6911
100 ... 400	5 ... 7	S2	4, 4X	I - 0	Black	142H 6111	142H 6911
100 ... 400	5 ... 7	S2	4, 4X	I - 0	Red/Yellow	142I 6111	142I 6911
600 ... 800	8	S3	4, 4X	I - 0	Black	consult us	consult us
600 ... 800	8	S3	4, 4X	I - 0	Red/Yellow	consult us	consult us



S0-type handle



S- type handle



S2-type handle



S3-type handle

S-type handle raiser

Use

Enables S-type handles to be fitted in place of existing older style SOCOMEC handles. Adapter can also be used as a spacer to increase the distance between the panel door and the handle lever.

Dimensions

Increases distance to door by 0.47 in / 12 mm.

Handle color	Pack qty	External degree of protection (IP)	Reference
Black	10	IP65	1493 0000



access_187_a_1_cat

Alternative color S-type handle cover

Use

For single lever handle S-type S1, S2, S3 and double lever handle, type S4. Other colors: please consult us.

Handle color	Pack qty	Handle type	Reference
Light grey	50	S2, S3	1401 0001
Dark grey	50	S2, S3	1401 0011
Light grey	50	S4	1401 0031
Dark grey	50	S4	1401 0041



access_198_a_1_cat

Shaft for external handle

Use

Standard lengths:

- 7.9 in / 200 mm,
- 12.6 in / 320 mm,
- 15.7 in / 400 mm.

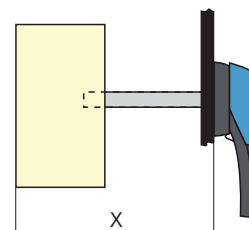
Other lengths: please consult us.

Rating (A)	Dimensions X		Handle type	Length		Reference
	(in)	(mm)		(in)	(mm)	
CD 30	4.02 ... 9.65	102 ... 245	S0	7.9	200	1405 0620
CD 30	4.02 ... 14.37	102 ... 365	S0	12.6	320	1405 0632
CD 30	4.02 ... 17.52	102 ... 445	S0	15.7	400	1405 0640
CD 30	4.02 ... 9.65	102 ... 245	S1	7.9	200	1401 0520
CD 30	4.02 ... 14.37	102 ... 365	S1	12.6	320	1401 0532
CD 30	4.02 ... 17.52	102 ... 445	S1	15.7	400	1401 0540
30 ... 100	5.3 ... 9.06	135 ... 230	S2	7.9	200	1400 1020
30 ... 100	5.3 ... 13.78	135 ... 350	S2	12.6	320	1400 1032
30 ... 100	5.3 ... 16.93	135 ... 430	S2	15.7	400	1400 1040
30 ... 100	5.3 ... 20.87	135 ... 530	S2	19.7	500	1400 1050
200	5.7 ... 9.06	145 ... 230	S2	7.9	200	1400 1020
200	5.7 ... 13.78	145 ... 350	S2	12.6	320	1400 1032
200	5.7 ... 16.93	145 ... 430	S2	15.7	400	1400 1040
200	5.7 ... 20.87	145 ... 530	S2	19.7	500	1400 1050
400	7.87 ... 10.24	200 ... 260	S2	7.9	200	1400 1020
400	7.87 ... 22	200 ... 560	S2	19.7	500	1400 1050
400	7.87 ... 14.96	200 ... 380	S2	12.6	320	1400 1032
400	7.87 ... 18.1	200 ... 460	S2	15.7	400	1400 1040
600 ... 800	10.63 ... 11.97	270 ... 304	S3	7.9	200	1400 1220
600 ... 800	10.63 ... 16.69	270 ... 424	S3	12.6	320	1400 1232
600 ... 800	10.63 ... 19.84	270 ... 504	S3	15.7	400	1400 1240
600 ... 800	10.63 ... 23.78	270 ... 604	S3	19.7	500	1400 1250



access_145_b_1_cat

access_369_a_1_cat



access_202_a_1_cat

FUSERBLOC UL

Fusible disconnect switches UL and CSA
from 30 to 800 A

Accessories (continued)

Shaft guide for external handle

Use

This accessory enables handle to engage shaft with a misalignment of up to 15 mm.
Required for a shaft length over 400 mm for S1 to S3 handles and for a shaft from 12.6 in / 320 mm for S0 handle.

Description	Reference
Shaft guide for S1 to S3 handles	1429 0000
Shaft guide for S0 handle	1419 0000



U-type auxiliary contacts

Use

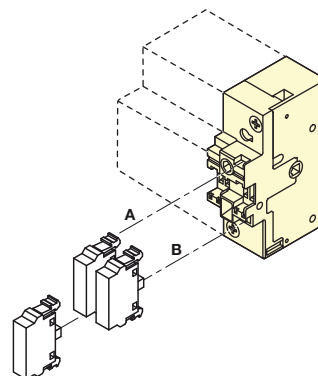
U-type AC can be configured to be operated on both, standard and TEST position switches from CD 30 to 800 A. Each slot can accommodate up to 2 interlocked ACs.

- For CD 30A/CC, a maximum of 4 ACs (8 with an additional holder):
- For CD 30A/J, maximum 2 ACs (6 with an additional holder),
- For 30 to 200A/J, maximum 4 ACs,
- For 400 to 800A/L, maximum 8 ACs.

Electrical characteristics

A600.

When FUSERBLOC is front operated, ACs are prebreak and signaling position I and 0.
When FUSERBLOC is side operated, ACs are signaling positions I and 0.



CD 30 : U-type auxiliary contacts cannot be mounted on switches with direct operation handle

NO auxiliary contacts		
Rating (A)	Number of contacts	Reference
CD 30 ... 800	1	3999 0701

NC auxiliary contacts		
Rating (A)	Number of contacts	Reference
CD 30 ... 800	1	3999 0702

Contact holder for additional auxiliary contacts		
Rating (A)	Fuses	Reference
CD 30	CC	3999 0710
CD 30	J	3999 0710

S-type auxiliary contacts

Use

Side operated auxiliary contacts for FUSERBLOC 30 to 400 A, position OFF and ON signalled by 1 to 4 NO + NC auxiliary contacts.

Electrical characteristics

A600/D600.

S-type auxiliary contacts are signaling position I and 0.

NO+NC auxiliary contacts		
Rating (A)	Number of contacts	Reference
30 ... 800	1	3999 U041
30 ... 800	2	3999 U042



Terminal shrouds

Use

Top or bottom protection against direct contact with terminals or connection parts.

2 sets required to fully shroud both line and load terminals.

Front and side operation Rating (A)	No. of poles	Reference ⁽¹⁾
30 ... 100	2/3/4 P	as standard
200	2 P	3898 2020
200	3 P	3898 3020
200	4 P	3898 4020
400	2 P	3898 2040
400	3 P	3898 3040
400	4 P	3898 6040
600 ... 800	2 P	3898 2080⁽²⁾
600 ... 800	3 P	3898 3080⁽²⁾
600 ... 800	4 P	3898 4080⁽²⁾

(1) Top or bottom. (2) Line side delivered as standard.



fuser_314_a_1_cat

Terminals lugs

Use

Connection of cables to the terminals.

Rating (A)	Wires range	No wires per lug	Lugs per kit	Wires	Reference
CD 30	#14 - #10	1		Cu	as standard
30	#14 - #10	1		Cu	as standard
30 ... 60	#10 - #6	1		Cu	as standard
60 ... 100	#12 - #1	1		Cu	as standard
200	#6 - 300MCM	1	2	Cu / Al	3954 2020
200	#6 - 300MCM	1	3	Cu / Al	3954 3020
200	#6 - 300MCM	1	4	Cu / Al	3954 4020
400	#2 - 600MCM	1	2	Cu / Al	3954 2040
400	#2 - 600MCM	1	3	Cu / Al	3954 3040
400	#2 - 600MCM	1	4	Cu / Al	3954 4040
400	2 x (#6 - 350 MCM)	2	2	Cu / Al	3954 2041
400	2 x (#6 - 350 MCM)	2	3	Cu / Al	3954 3041
400	2 x (#6 - 350 MCM)	2	4	Cu / Al	3954 4041
600 ... 800	2 x (#2 - 600MCM)	1	2	Cu / Al	3954 2060
600 ... 800	2 x (#2 - 600MCM)	2	3	Cu / Al	3954 3060
600 ... 800	2 x (#2 - 600MCM)	2	4	Cu / Al	3954 4060



ul_032_a

Solid links

Rating (A)	Fuses	No of links per kit	Reference
100	J	3	3799 9010
100	J	4	3799 8010
200	J	3	3799 9020
200	J	4	3799 8020
400	J	3	3799 9040
400	J	4	3799 8040
600 ... 800	J / L	3	3799 9080
600 ... 800	J / L	4	3799 8080



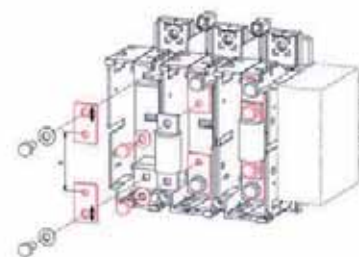
fuser-ul_019_a_1_cat

Class T fuse adapter

Use

The adapter makes it possible to fit class T fuses in the FUSERBLOC fuse switches.

Rating (A)	Size Class T fuse		No. of poles	Reference
	(in)	(mm)		
100	2.34	59.5	3 P	3729 8010
200	2.48	63	3 P	3729 8020
400	2.71	69	3 P	3729 8040
600	2.95	75	3 P	3729 8060
800	3.17	80.5	3 P	3729 8080
100	2.34	59.5	4 P	3729 9010
200	2.48	63	4 P	3729 9020
400	2.71	69	4 P	3729 9040
600	2.95	75	4 P	3729 9060
800	3.17	80.5	4 P	3729 9080



fuser-ul_014_b_1_cat

FUSERBLOC UL

Fusible disconnect switches UL and CSA
from 30 to 800 A

Characteristics according to UL98/CSA22.2 #4

CD 30 to 800 A

Characteristics UL and CSA	CD 30A ⁽³⁾	CD 30A ⁽³⁾	30A	60A	60A	100A	200A	400A	600A	800A
Short circuit rating at 600 VAC (kA)	100	100	200	100	200	200	200	200	200	200
Type of fuse	CC	J	J	J	J	J	J	J	J	L
Max. fuse rating (A)	30	30	30	60	60	100	200	400	600	800

Max. motor hp / FLA 3 ph motor max.

220-240 VAC	7.5 / 22	7.5 / 22	7.5 / 22	15 / 42	15 / 42	30 / 80	60 / 154	125 / 312	200 / 480	200 / 480
440-480 VAC	15 / 21	15 / 21	15 / 21	30 / 40	30 / 40	60 / 77	125 / 156	250 / 302	500 / 590	500 / 590
600 VAC	20 / 22	20 / 22	20 / 22	50 / 52	50 / 52	75 / 77	150 / 144	350 / 336	500 / 472	500 / 472
125 VDC ⁽¹⁾	3 / 25	3 / 25	3 / 25	3 / 25	3 / 25	7.5 / 58	15 / 112	20 / 148		
250 VDC ⁽²⁾	5 / 20	5 / 20	5 / 20	10 / 38	10 / 38	20 / 38	40 / 140	50 / 173		

Mechanical endurance

Endurance (number of operating cycles)	10 000	10 000	10 000	10 000	10 000	10 000	8 000	6 000	5 000	5 000
Operating torque (lbs.in / Nm)	31 / 3.5	31 / 3.5	71 / 8	71 / 8	71 / 8	71 / 8	90 / 10.2	150 / 17	586 / 66.2	586 / 66.2

Connection

Min. connection cross-section/ (mm ²) ⁽²⁾	#14	#14	#10	#10	#10	#10	#6	#2 or 2 x #6	2 x #2	2 x #2
Max. connection cross-section/ (mm ²) ⁽²⁾	#10	#10	#6	#6	#2/0	#2/0	300MCM	600MCM or 2 x 350MCM	2 x 600MCM	2 x 600MCM

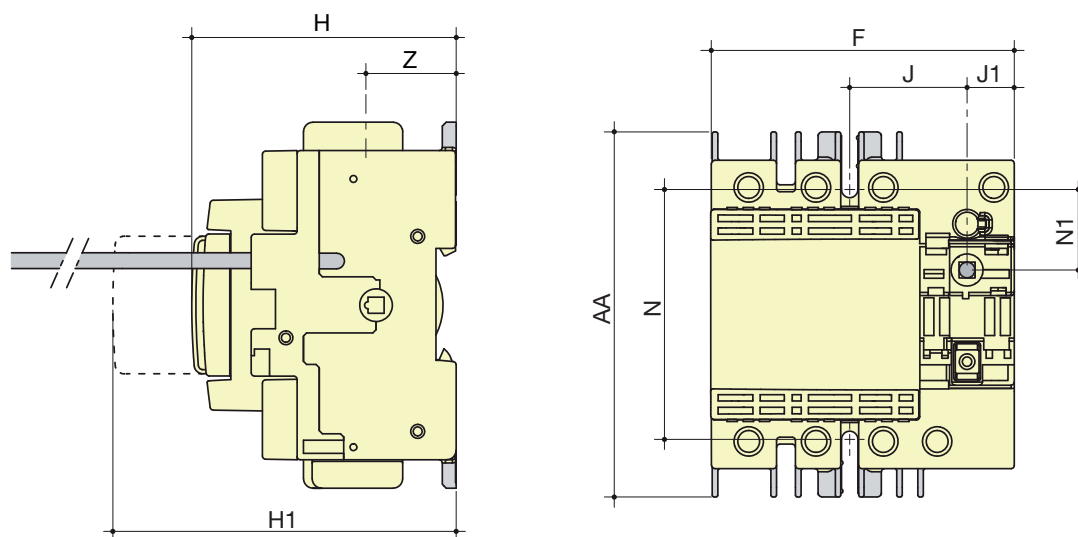
(1) 2 pole in series.

(2) 3 pole in series.

(3) UL 489/CSA22.2 #5.

Dimensions (in/mm)

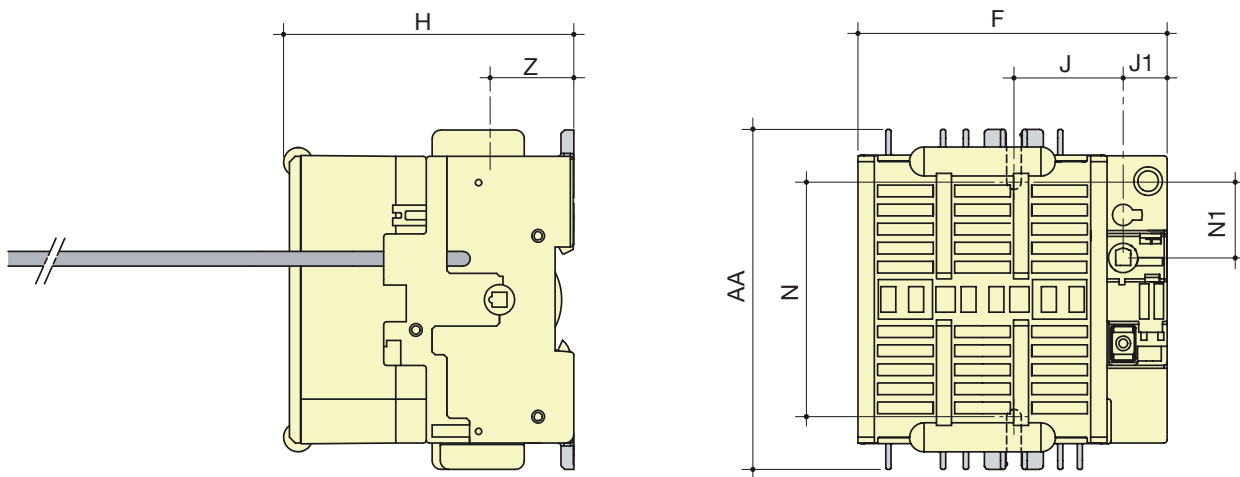
CD 30 A / CC - Frame size 1



fuser_655_a_1_x_cat

Rating (A) / Fuse	Unit	Switch body					Switch mounting		Connection	
		F	H	H1	J	J1	N	N1	AA	Z
CD 30 A / CC	in	3.78	3.28	5.19	1.47	0.59	3.13	1	4.56	1.12
	mm	96	83.5	132	37.5	15	79.5	25.5	116	28.5

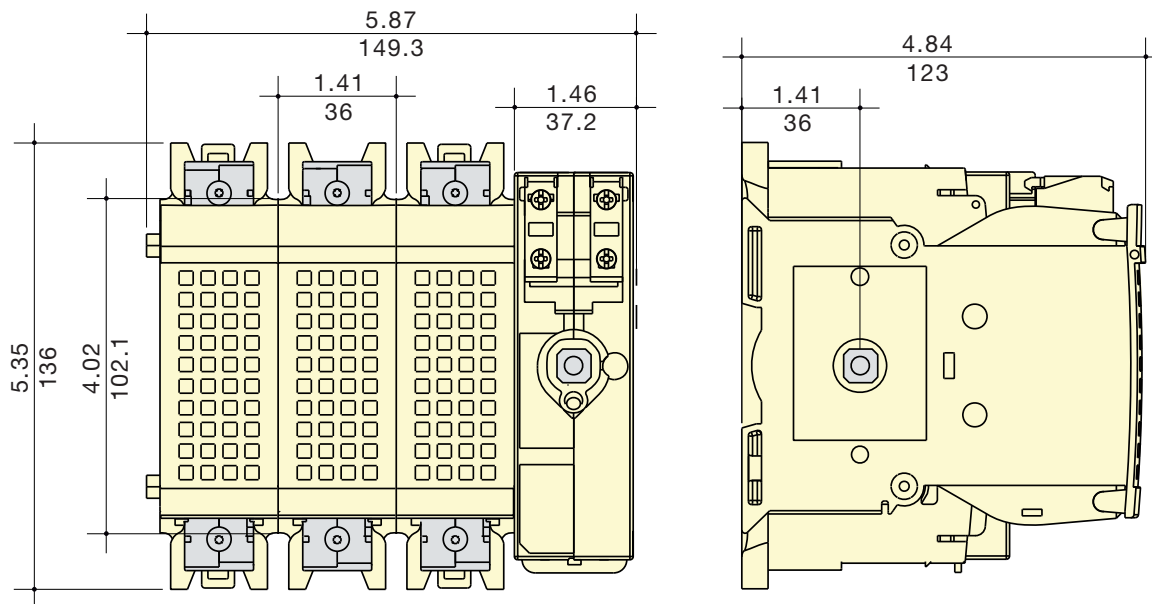
CD 30 A / J - Frame size 2



fuser_656_a_1_x_cat

Rating (A) / Fuse	Unit	Switch body				Switch mounting		Connection	
		F	H	J	J1	N	N1	AA	Z
CD 30 A / J	in	4.13	3.89	1.47	0.59	3.30	1	4.56	1.12
	mm	105	99	37.5	15	84	25.5	116	28.5

30 to 60 A / J - Frame size 4



fuser-ul_001_a_1_x_cat

Note for width:

For 2 pole device decrease overall width by 1.41 in / 36 mm.

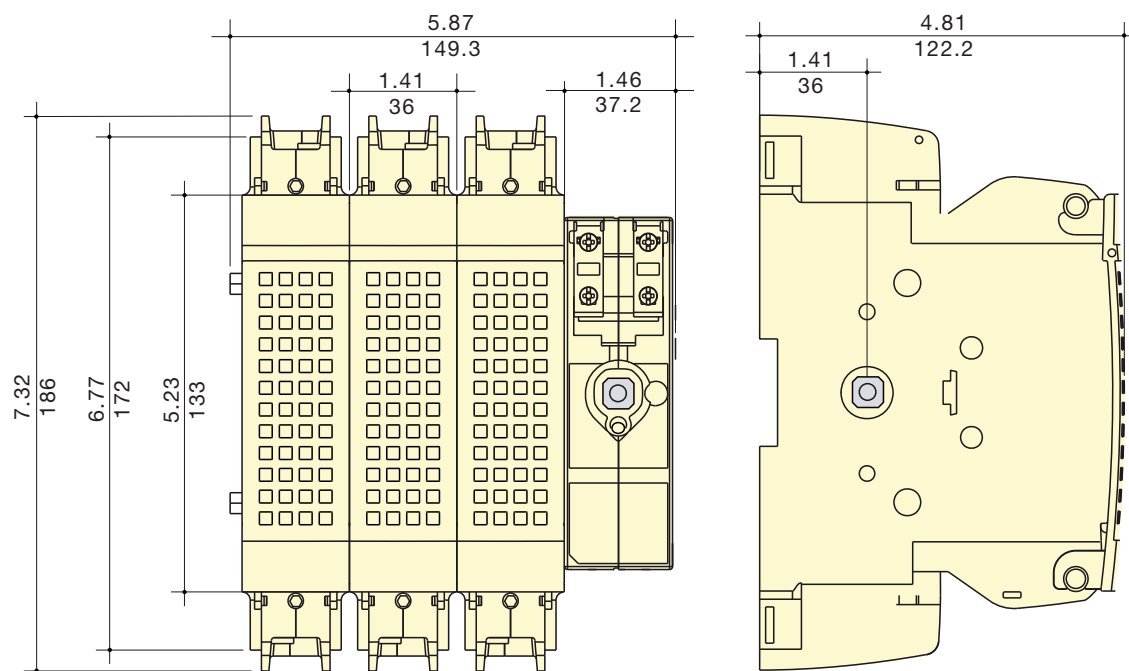
For 4 pole device increase overall width by 1.41 in / 36 mm.

FUSERBLOC UL

Fusible disconnect switches UL and CSA
from 30 to 800 A

Dimensions (in/mm) (continued)

60 to 100 A / J - Frame size 5

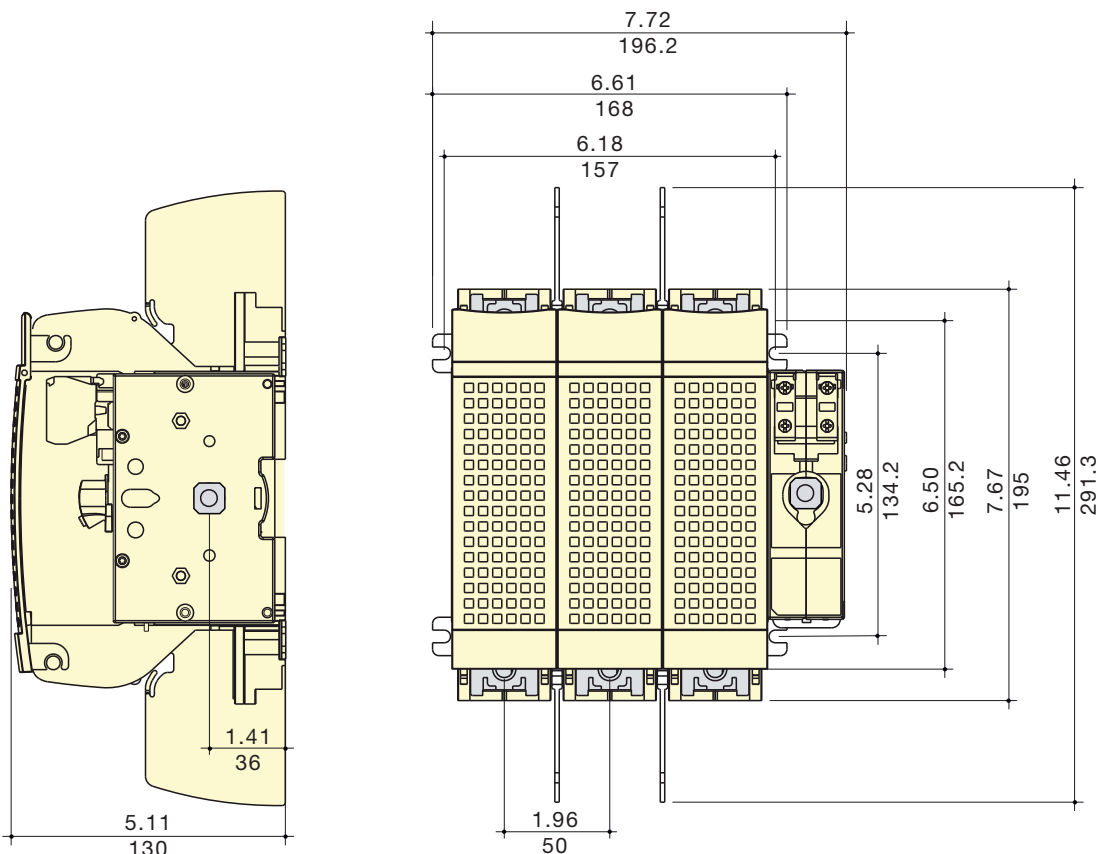


Note for width:

For 2 pole device decrease overall width by 1.41 in / 36 mm.

For 4 pole device increase overall width by 1.41 in / 36 mm.

200 A / J - Frame size 6



Note for width:

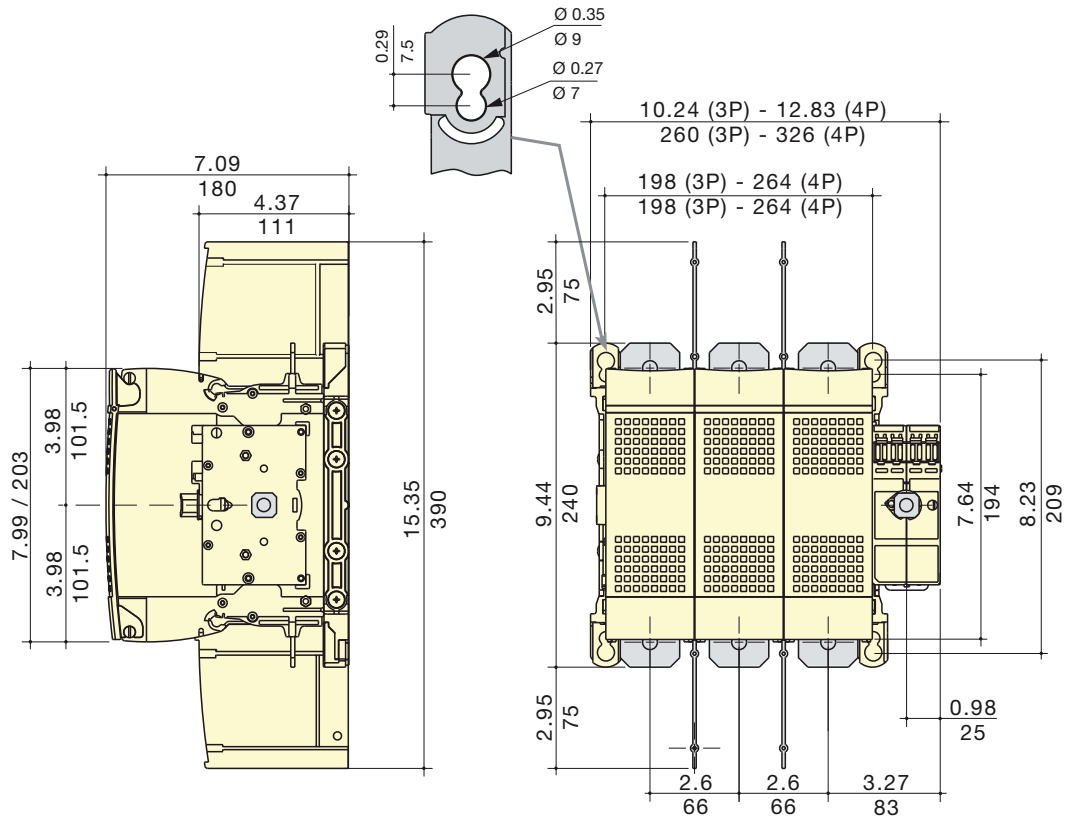
For 2 pole device decrease overall width by 1.96 in / 50 mm.

For 4 pole device increase overall width by 1.96 in / 50 mm.

fuser-ul_002_a_1_x_cat

fuser-ul_003_a_1_x_cat

400 A / J - Frame size 7

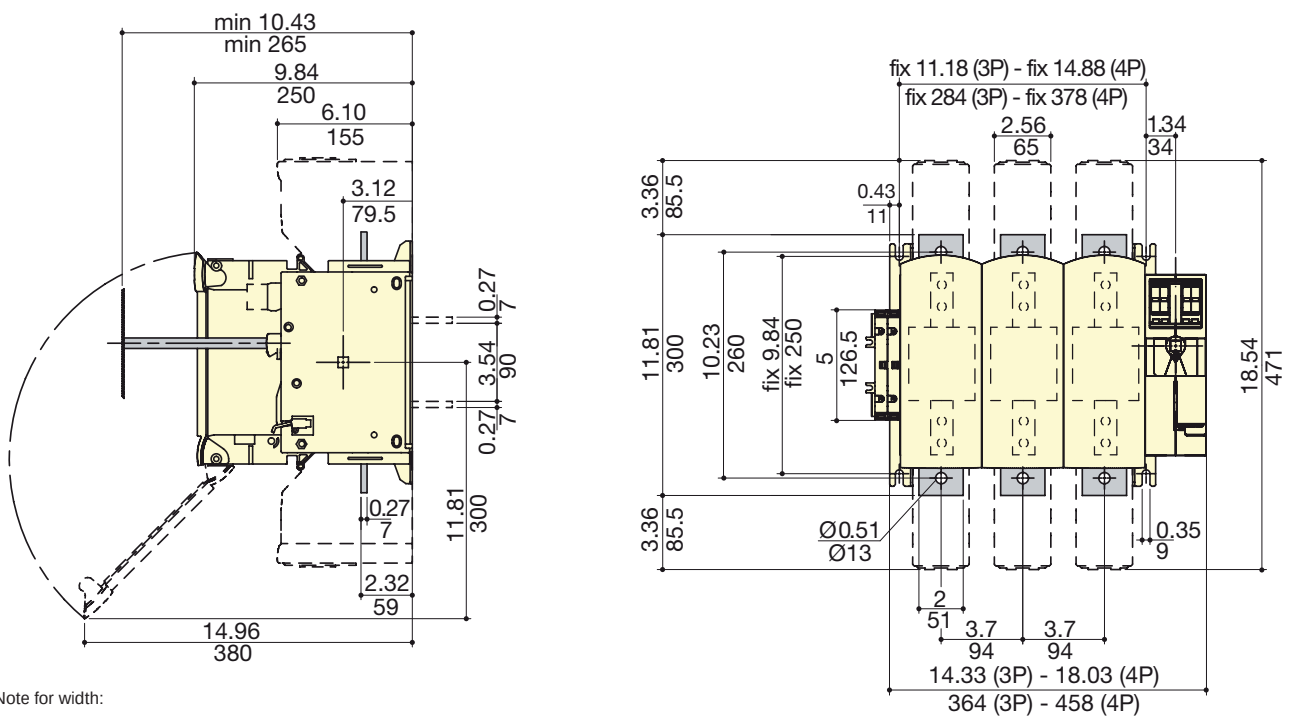


fuser-ul_004_d_1_x_cat

Note for width:

For 2 pole device decrease overall 3 pole width by 2.59 in / 66 mm.

600 to 800 A / J - Frame size 8



fuser_631_b_1_gb_cat

Note for width:

For 2 pole device decrease overall 3 pole width by 3.7 in / 94 mm.

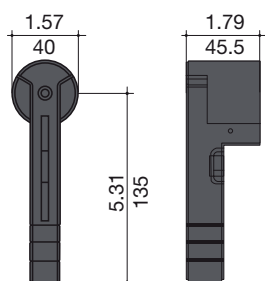
FUSERBLOC UL

Fusible disconnect switches UL and CSA
from 30 to 800 A

Dimensions (in/mm) (continued)

30 to 400 A

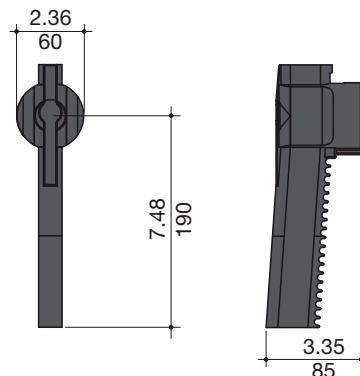
Front direct handle



siico-ul_027_a_1_x_cat

600 to 800 A

Front direct handle



siico_267_b_1_x_cat

External handle dimensions (in/mm)

CD 30 A - Frame size 1 / 2

Handle type	Front operation Direction of operation	Side operation Direction of operation	Door drilling
S0 type 			With 4 fixing screws With fixing nut

fuser-ul_015_a_1_gb_cat

CD 30 to 60 A - Frame size 1 / 2 / 4

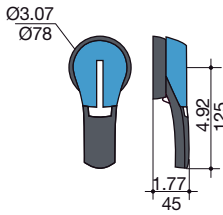
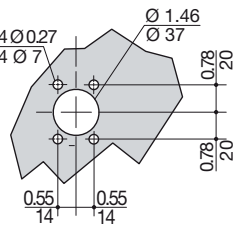
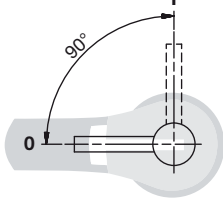
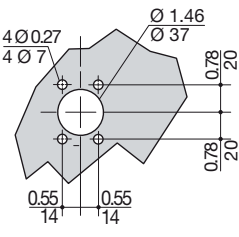
Handle type	Front operation Direction of operation	Door drilling	Side operation ⁽¹⁾ Direction of operation	Door drilling
S1 type 				

(1) Not for frames 1 and 2.

fuser-ul_015_b_1_gb_cat

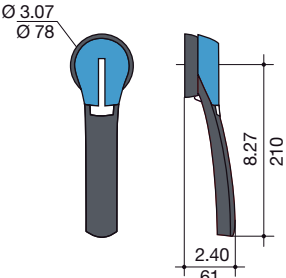
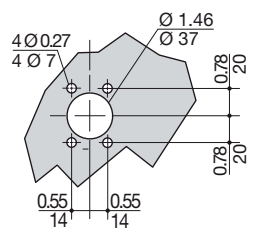
External handle dimensions (in/mm)

60 to 400 A - Frame size 5 / 6 / 7

Handle type	Front operation		Side operation	
	Direction of operation	Door drilling	Direction of operation	Door drilling
S2 type				

fuser-ul_016_b_1_gb_cat

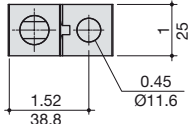
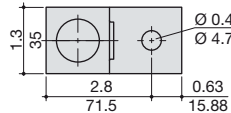
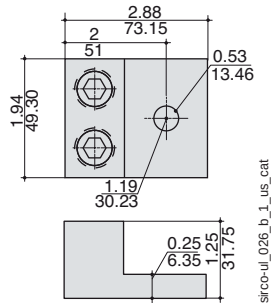
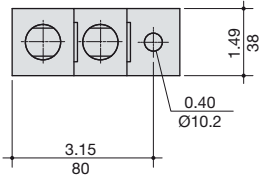
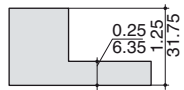
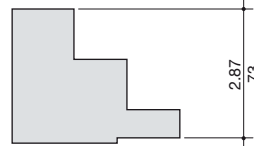
600 and 800 A - Frame size 8

Handle type	Front operation	Door drilling
S3 type		

fuser-ul_017_b_1_gp_cat

fuser-ul_017_b_1_gb_cat

Terminal lugs (in/mm)

200 A	400 A	400 A	600 to 800 A
			
			
300 kcmil	600 kcmil	2 x 350 kcmil	2 x 600 kcmil max

siroco_115_b_1_us_cat

siroco-ul_010_a_1_us_cat

siroco-ul_026_b_1_us_cat

siroco_116_b_1_us_cat



FUSERBLOC and **high speed** fuses (uR)

Fuse combination switches

protection of power semi-conductors up to 1250 A



FUSERBLOC
630 to 1250 A



FUSERBLOC
from 25 to 400 A

The solution for

- > Protection of inverters and variable speed drives



Strong points

- > Limitation of short-circuit current

Extended range

- > Contact us for any other combinations (1250 V uR fuses, notched fuses with 80 or 110 mm distance between centres, other sizes, etc.)

Function

FUSERBLOC fuse combination switches combined with high speed fuses (uR) provide optimal breaking and making on load, safety isolation and protection of power semiconductors (variable speed drives, inverters...)

Advantages

Limitation of short-circuit current

The limitation of short-circuit current provided by the fuse solution is the most performant and economical on the market (uR fuses).

FUSERBLOC and high speed fuses (uR)

Fuse combination switches

protection of power semi-conductors up to 1250 A

FUSERBLOC for 690 VAC uR cylindrical fuses

Characteristics

FUSERBLOC CD 50 A for fuse size 14 x 51									
Fuse rating (A)	10	12	16	20	25	32	40	50	
Max. I for the FUSERBLOC (A)	10	12	16	20	25	29	36	40	
FUSERBLOC CD 125 A for fuse size 22 x 58									
Fuse rating (A)	20	25	32	40	50	63	80	100	
Max. I for the FUSERBLOC (A)	20	25	32	40	50	63	71	85	

References

Direct side operation

Fuse rating (A) Frame size	No. of poles	Switch body	Direct handle	Auxiliary contact pre-break and position
50 A / 14 x 51 1	2 P	3615 2005	Black 3629 7900	1 contact NO/NC 3999 0021 2 contacts NO/NC 3999 0022
	3 P	3615 3005		
	4 P	3615 6005		
125 A / 22 x 58 3	2 P	3615 2011	Black 3629 7901	
	3 P	3615 3011		
	4 P	3615 6011		

External right side or front operation

Fuse rating (A) Frame size	No. of poles	Switch body	External front handle	External side handle	Shaft for external handle	Auxiliary contact pre- break and position
50 A / 14 x 51 11	2 P	3831 2005	Black IP55 1411 2111 Red / Yellow IP65 1414 2111	Black IP55 1415 2111 Red / Yellow IP65 1418 2111	320 mm 1400 1032	1 contact NC 3999 0701 1 contact NO 3999 0702
	3 P	3831 3005				
	4 P	3831 6005				
125 A / 22 x 58 13	2 P	3831 2011	Black IP55 1421 2111 Red IP65 1424 2111	Black IP55 1425 2111 Red / Yellow IP65 1428 2111		
	3 P	3831 3011				
	4 P	3831 6011				

Accessories

Other accessories: see "FUSERBLOC" page 264.

FUSERBLOC and high speed fuses (uR)

Fuse combination switches

protection of power semi-conductors up to 1250 A

FUSERBLOC for DIN 43620 uR knife-edge fuses

Characteristics

FUSERBLOC 160 A for fuse size 000 and 00															
Fuse rating (A)	10	16	20	25	32	40	50	63	80	100	125	160	200	250	315
Max. I for the FUSERBLOC (A)	10	16	20	25	32	32	37	44	51	92	105	121	140	140	140
FUSERBLOC 250 A for fuse size 1*															
Fuse rating (A)			40	50	63	80	100	125	160	200	250	315	350	400	
Max. I for the FUSERBLOC (A)			40	50	63	80	100	125	155	178	205	210	215	220	
FUSERBLOC 400 A for fuse size 2															
Fuse rating (A)						200	250	315	350	400	450	500	550	630	700
Max. I for the FUSERBLOC (A)						200	250	285	310	330	330	340	340	350	350
FUSERBLOC 630 A for fuse size 3															
Fuse rating (A)									500	550	630	700	800	900	1000
Max. I for the FUSERBLOC (A)									360	380	420	450	480	500	510

References

Direct side operation

Fuse rating (A) Frame size	No. of poles	Switch body	Direct handle	CA de précoupure et position	Fuse protection covers
160 A / 00 3	2 P	3615 2015	Black 3629 7901	1 contact NO/NC 3999 0021 2 contacts NO/NC 3999 0022	3990 7015 ⁽¹⁾
	3 P	3615 3015			3990 8015 ⁽¹⁾
	4 P	3615 6015			3990 9015 ⁽¹⁾
160 A / 0 4	2 P	3615 2016			3990 7016 ⁽¹⁾
	3 P	3615 3016			3990 8016 ⁽¹⁾
	4 P	3615 6016			3990 9016 ⁽¹⁾
250 A / 1 5	2 P	3615 2024			3990 7024 ⁽¹⁾
	3 P	3615 3024			3990 8024 ⁽¹⁾
	4 P	3615 6024			3990 9024 ⁽¹⁾
400 A / 2 6	2 P	3615 2039			3990 7039 ⁽¹⁾
	3 P	3615 3039			3990 8039 ⁽¹⁾
	4 P	3615 6039			3990 9039 ⁽¹⁾
630 A / 3 17	2 P	3811 2063	Black 3899 6011	1 contact NC 3999 0701 1 contact NO 3999 0702	3990 7063 ⁽¹⁾
	3 P	3811 3063			3890 8063 ⁽¹⁾
	4 P	3811 6063			3890 9063 ⁽¹⁾

(1) Terminal shrouds for FUSERBLOC fitted fuse blown microswitch.

External right side or front operation

Fuse rating (A) Frame size	No. of poles	Switch body	External front handle	External side handle	Shaft for external handle	Auxiliary contact pre-break and position	Fuse protection covers
160 A / 00 13	2 P	3831 2015	Black IP55 1421 2111 Red / Yellow IP65 1424 2111	Black IP55 1425 2111 Red / Yellow IP65 1428 2111	200 mm 1400 1020 320 mm 1400 1032	1 contact NC 3999 0701 1 contact NO 3999 0702	3990 7015⁽¹⁾
	3 P	3831 3015					3990 8015⁽¹⁾
	4 P	3831 6015					3990 9015⁽¹⁾
160 A / 0 14	2 P	3831 2016					3990 7016⁽¹⁾
	3 P	3831 3016					3990 8016⁽¹⁾
	4 P	3831 6016					3990 9016⁽¹⁾
250 A / 1 15	2 P	3831 2024					3990 7024⁽¹⁾
	3 P	3831 3024					3990 8024⁽¹⁾
	4 P	3831 6024					3990 9024⁽¹⁾
400 A / 2 16	2 P	3831 2039					3990 7039⁽¹⁾
	3 P	3831 3039					3990 8039⁽¹⁾
	4 P	3831 6039					3990 9039⁽¹⁾
630 A / 3 17	2 P	3811 2063	Black IP65 1433 3111 Red / Yellow IP65 1434 3111	Black IP65 1437 3111 Red / Yellow IP65 1438 3111	200 mm 1400 1220 320 mm 1400 1232		3990 7063⁽¹⁾
	3 P	3811 3063	3890 8063⁽¹⁾				
	4 P	3811 6063	3890 9063⁽¹⁾				

(1) Terminal shrouds for FUSERBLOC fitted fuse blown microswitch.

FUSERBLOC and high speed fuses (uR)

Fuse combination switches

protection of power semi-conductors up to 1250 A

Accessories

Terminal shrouds for FUSERBLOC fitted fuse blown microswitch

Use

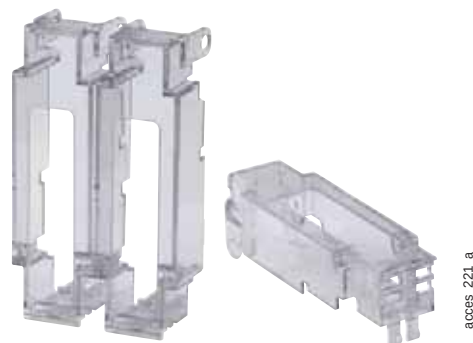
Protection against direct contact with live parts situated in the fuse compartment for FUSERBLOC fitted with uR fuses with fuse blown auxiliary contacts.

Rating (A)	Fuses ⁽¹⁾	No. of poles	Option ⁽²⁾ (factory mounted)	Accessories ⁽³⁾ (customer-mounted)
			References	References
160	00	2 P	3990 7015	3999 7015
160	00	3 P	3990 8015	3999 8015
160	00	4 P	3990 9015	3999 9015
160	0	2 P	3990 7016	3999 7016
160	0	3 P	3990 8016	3999 8016
160	0	4 P	3990 9016	3999 9016
250	1	2 P	3990 7024	3999 7024
250	1	3 P	3990 8024	3999 8024
250	1	4 P	3990 9024	3999 9024
400	2	2 P	3990 7039	3999 7039
400	2	3 P	3990 8039	3999 8039
400	2	4 P	3990 9039	3999 9039
630	3	3 P	3890 8063	3899 8063
630	3	4 P	3890 9063	3899 9063

(1) For the fuses: see "Fuses uR 10 to 2000 A" page 354.

(2) If ordered at the same time as the standard device.

(3) If ordered later.



access_221_a

Other accessories: see "FUSERBLOC" page 264.

FUSERBLOC for uR fuses type K/50

Characteristics

FUSERBLOC V 800 A for BK fuses size 2														
Fuse rating (A)	400	450	500	550	630	700	800	900	1000	1100	1250			
Max. I for the FUSERBLOC (A)	380	420	440	450	500	520	530	530	530	540	550			
FUSERBLOC 1250 A for fuse size 3														
Fuse rating (A)	500	550	630	700	800	900	1000	1100	1250	1400	1500	1600	1800	2000
Max. I for the FUSERBLOC (A)	500	550	620	630	720	790	870	940	1050	1100	1100	1100	1100	1100

References

Front operation

Rating (A) / Fuse	No. of poles	Switch body only ⁽¹⁾	Direct handle	External handle	Shaft for external handle	Fuse protection covers	Auxiliary contact pre-break and position	Terminal shrouds
800 A / 2	3 P	3680 3081	3999 6012	Black IP55 1443 3111 ⁽²⁾ Red / Yellow IP65 1444 3111	200 mm 1400 1220 320 mm 1400 1232	included	Consult us	3998 3063
	4 P	3680 6081						3998 4063
1250 A / 3	3 P	3680 3121						3998 3120
	4 P	3680 6121						3998 4120

(1) Please consult us.

(2) Standard.

FUSERBLOC and high speed fuses (uR)

Fuse combination switches

protection of power semi-conductors up to 1250 A

FUSERBLOC for uR fuses type K/110

Characteristics

FUSERBLOC 250 A for fuse size 1* (690 VAC) ⁽¹⁾															
Fuse rating (A)	40	50	63	80	100	125	160	200	250	315	350	400	450	500	630
Max. I for the FUSERBLOC (A)	40	50	63	80	100	120	140	165	195	215	230	240	240	240	240
FUSERBLOC 400 A for fuse size 1* (690 VAC) ⁽¹⁾															
Fuse rating (A)					200	250	315	350	400	450	500	550	630	700	900
Max. I for the FUSERBLOC (A)					145	165	200	220	240	265	290	310	340	370	395
FUSERBLOC 500 A for fuse size 2* (690 VAC) ⁽¹⁾															
Fuse rating (A)										400	450	500	550	630	700
Max. I for the FUSERBLOC (A)										320	345	370	390	425	460
FUSERBLOC 630 A for fuse size 2 to 690 VAC ⁽¹⁾															
Fuse rating (A)											800	900	1000	1100	1250
Max. I for the FUSERBLOC (A)											495	545	590	610	620
FUSERBLOC 800 A for fuse size 3 to 690 VAC ⁽¹⁾															
Fuse rating (A)			500	550	630	700	800	900	1000	1100	1250	1400	1500	1600	2000
Max. I for the FUSERBLOC (A)			370	395	440	480	535	590	645	695	760	800	800	800	800

FUSERBLOC 1250 A for fuse size 3 Please consult us.

(1) For uR fuses type K/110 1250 VAC, please consult us.

References

Direct right side or front operation switch

Rating (A) / Fuse	No. of poles	Switch body	Direct side handle	Direct front handle	Fuse protection covers	Auxiliary contact pre-break and signalisation	Terminal shrouds
250 A / 1*	2 P	36U1 2024	Black 3629 7901		2 P 3990 2839 ⁽¹⁾ 3 P 3990 3839 ⁽¹⁾	1 contact NO/NC 3999 0021	2 P 3998 2025 3 P 3998 3025
	3 P	36U1 3024					
400 A / 1	2 P	36U1 2039					
	3 P	36U1 3039					
500 A / 2	2 P	38U1 2050					
	3 P	38U1 3050					
630 A / 2	2 P	38U1 2063	Black 1437 7911	Black 3899 6011	2 P 3890 2U63 ⁽¹⁾ 3 P 3890 3U63 ⁽¹⁾	1 contact NC 3999 0701 1 contact NO 3999 0702	2 P 3898 2080 3 P 3898 3080
	3 P	38U1 3063					
800 A / 3	2 P	38U1 2080					
	3 P	38U1 3080					
1250 A / 3	2 P	38U1 2120		Black 3899 7011	Standard		3898 2120 3898 3120
	3 P	38U1 3120					

(1) Terminal shrouds for FUSERBLOC fitted fuse blown microswitch.

FUSERBLOC and high speed fuses (uR)

Fuse combination switches

protection of power semi-conductors up to 1250 A

References (continued)

External right side or front operation

Rating (A) / Fuse	No. of poles	Switch body	External front handle	External side handle	Shaft for external handle	Fuse protection covers	Auxiliary contact pre-break and position	Terminal shrouds
250 A / 1*	2 P	38U1 2024	S2 type Black IP55 1421 2111 S2 type Red IP65 1424 2111	S2 type Black IP55 1425 2111 S2 type Red/yellow IP65 1428 2111	320 mm 1400 1032	2 P 3990 2839 ⁽¹⁾ 3 P 3990 3839 ⁽¹⁾		2 P 3998 2025 3 P 3998 3025
	3 P	38U1 3024						
400 A / 1	2 P	38U1 2039						
	3 P	38U1 3039						
500 A / 2	2 P	38U1 2050	Type S3 Black IP65 1433 3111 S3 type Red/Yellow IP65 1434 3111	S3 type Black IP65 1437 3111 S3 type Red/Yellow IP65 1438 3111	320 mm 1400 1232	2 P 3890 2U63 ⁽¹⁾ 3 P 3890 3U63 ⁽¹⁾	1 contact NC 3999 0701 1 contact NO 3999 0702	2 P 3898 2080 3 P 3898 3080
	3 P	38U1 3050						
630 A / 2	2 P	38U1 2063						
	3 P	38U1 3063						
800 A / 3	2 P	38U1 2080						
	3 P	38U1 3080						
1250 A / 3	2 P	38U1 2120	S4 type Black IP65 1443 3111 S4 type Red/Yellow IP65 1444 3111			Standard		2 P 3898 2120 3 P 3898 3120
	3 P	38U1 3120						

(1) Terminal shrouds for FUSERBLOC fitted fuse blown microswitch.

Accessories

Terminal shrouds for FUSERBLOC fitted fuse blown microswitch

Use

Protection against direct contact with live parts situated in the fuse compartment for FUSERBLOC fitted with uR fuses with fuse blown auxiliary contacts.

Rating (A)	Fuses ⁽³⁾	No. of poles	Option ⁽²⁾ (factory mounted)	Accessories ⁽¹⁾ (customer-mounted)
			Reference	Reference
250... 400	1* / 1	2 P	3990 2839	3999 2839
250... 400	1* / 1	3 P	3990 3839	3999 3839
500 ... 800	2 / 3	2 P	3890 2U63	3899 2U63
500 ... 800	2 / 3	3 P	3890 3U63	3899 3U63
500 ... 800	2 / 3	2 P	3890 2U63	3899 2U63
1250	3	2 P	Standard	Standard
1250	3	3 P	Standard	Standard

(1) If ordered later.

(2) If ordered at the same time as the standard device.

(3) For the fuses: see "Fuses uR 10 to 2000 A" page 354.

Other accessories: see "FUSERBLOC" page 264.



access_221_a



FUSOMAT

Visible breaking and tripping fuse switches
from 250 to 1250 A



The solution for

- > Motor load break
- > Protection of industrial cabinet
- > Electrical distribution



Strong points

- > Tripping upon overload
- > High breaking capacity
- > Improved safety

A complete range

- > Can be combined with UR fuses for the protection of power semi-conductors. Please consult us.

Conformity to standards

- > IEC 60947-3
- > EN 60947-3
- > VDE 0660-107
- > NBN EN 60947-3
- > BS 88



Function

FUSOMAT are manually controlled tri- or tetrapolar fuse combination switches.

They can be tripped remotely.

They break or switch off on load and provide safety isolation and protection against overcurrent for any low voltage electrical circuit.

They can automatically disconnect a circuit in combination with:

- fuse blown indication.
- thermal relay.
- protective relays DIRIS.
- other protective devices.

Advantages

Tripping upon overload

Remote breaking by voltage release device.

High breaking capacity

Protection against overloads and short-circuits thanks to high breaking capacity fuses (100 kA rms).

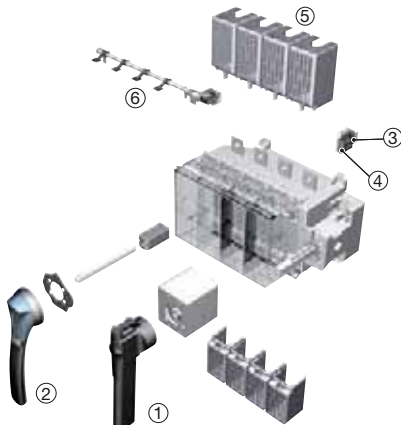
Improved safety

- Double break per phase (top and bottom of fuse - up to 630 A (NFC/DIN) and 800 A (BS88).
- Visible break up to 630 A
- Positive break indication.
- IP2X protection with terminal shrouds front panel.

Configurations

Functional diagram (for further details see the installation instructions supplied with the product).

1. Direct front operation.
2. External front operation.
3. NO/NC position AC.
4. NO/NC AC wired to ready mounted transmission coil.
5. Terminal shrouds.
6. Fuse blown indication device.



References

BS88 - Front and side operation - Switch body with a shunt trip coil - 230 VAC

Rating (A) Fuse ⁽¹⁾	No. of poles	Front operation Switch body	Side operation Switch body	Direct handle ⁽²⁾	External handle	Shaft for external handle	Auxiliary contact position	Auxiliary contact tripping	Terminal shrouds ⁽³⁾	Terminal screens ⁽⁴⁾	Inter phase barrier
250 A B1-B2-B3	3 P	3660 3026	3665 3026	Front operation Black 3999 6012	S3 type	Front operation 200 mm 1401 1520 320 mm 1401 1532 ⁽²⁾	1 st contact NO/NC 3999 0051 2 nd contact NO/NC 3999 0052	1 contact NO/NC 3999 0031	3 P 3998 3040 4 P 3998 4040		
	4 P	3660 6026	3665 6026								
400 A B1-B2- B3-B4	3 P	3660 3041	3665 3041	Side operation Black 3999 6012	Front operation Black IP55 1431 3511 ⁽²⁾ Red IP55 1432 3511	Side operation 200 mm 1403 1520			3998 3063		
	4 P	3660 6041	3665 6041								
630 A C1-C2	3 P	3660 3064	3665 3064	Front operation Black 3999 6012	Side operation Black IP55 1435 3511 ⁽²⁾ Red IP55 1436 3511				3998 4063		
	4 P	3660 6064	3665 6064								
800 A C1-C2-C3	3 P	3660 3080	3665 3080	Side operation Black 3999 6012					3 P 3998 3120 4 P 3998 4120	3 P 2998 0003 4 P 2998 0004	
	4 P	3660 6080	3665 6080								
1250 A D1	3 P	3660 3121	3665 3121								
	4 P	3660 6121	3665 6121								

(1) For the fuses: see "BS88 industrial fuselinks" page 338.

(2) Standard.

(3) Top/bottom.

(4) Bottom terminals protection screen as standard.

FUSOMAT

Visible breaking and tripping fuse switches
from 250 to 1250 A

References

NFC and DIN - Front operation - Switch body with a shunt trip coil - 230 VAC

Rating (A) Fuse	No. of poles	Switch body	Direct handle	External handle	Shaft for external handle	Auxiliary contact position	Auxiliary contact tripping	1 st Fuse blown AC	Terminal shrouds (1 piece)	Terminal screens top	Inter phase barrier			
250 A / 1	3 P	3650 3026	Black 3999 6201⁽¹⁾	S3 type Black IP55 1431 3511⁽¹⁾	200 mm 1401 1520	1 st contact NO/NC 3999 0051	1 contact NO/NC 3999 0031	3 P 3994 1304	3 P 3998 3040⁽²⁾					
	4 P	3650 6026						4 P 3994 1404	4 P 3998 4040⁽²⁾					
400 A / 2	3 P	3650 3041						3 P 3994 1306	3 P 3998 3063⁽²⁾					
	4 P	3650 6041						4 P 3994 1406	4 P 3998 4063⁽²⁾					
630 A / 3	3 P	3650 3064						3 P 3994 1312	3 P 3998 3120⁽³⁾					
	4 P	3650 6064						4 P 3994 1412	4 P 3998 4120⁽³⁾					
800 A / 4	3 P	3650 3080	Black 3999 6012⁽¹⁾					3 P 3994 1312		3 P 3998 3120⁽³⁾	3 P 2998 0003			
	4 P	3650 6080												
1250 A / 4	3 P	3650 3121										4 P 3994 1412	4 P 3998 4120⁽³⁾	4 P 2998 0004
	4 P	3650 6121												

(1) Standard.

(2) Top/bottom.

(3) Bottom terminals protection screen as standard.

NFC and DIN - Side operation - Switch body with a shunt trip coil - 230 VAC

Rating (A) Fuse	No. of poles	Switch body	Direct handle	External handle	Shaft for external handle	Auxiliary contact position	Auxiliary contact tripping	1 st Fuse blown AC	Terminal shrouds (1 piece)	Terminal screens top	Inter phase barrier		
250 A / 1	3 P	3655 3026	Black 3999 6012⁽¹⁾	S3 type Black IP55 1435 3511⁽¹⁾ S3 type Red IP55 1436 3511	200 mm 1403 1520	1 st contact NO/NC 3999 0051 2 nd contact NO/NC 3999 0052	1 contact NO/NC 3999 0031	3 P 3994 1304	3 P 3998 3040⁽²⁾				
	4 P	3655 6026											
400 A / 2	3 P	3655 3041						4 P 3994 1404	4 P 3998 4040⁽²⁾				
	4 P	3655 6041											
630 A / 3	3 P	3655 3064						3994 1306	3998 3063⁽²⁾				
	4 P	3655 6064											
800 A / 4	3 P	3655 3080						3 P 3994 1312				3 P 3998 3120⁽³⁾	3 P 2998 0003
	4 P	3655 6080											
1250 A / 4	3 P	3655 3121						4 P 3994 1412				4 P 3998 4120⁽³⁾	4 P 2998 0004
	4 P	3655 6121											

(1) Standard.

(2) Top/bottom.

(3) Bottom terminals protection screen as standard.

FUSOMAT

Visible breaking and tripping fuse switches
from 250 to 1250 A

Accessories

Direct handle

Front operation Rating (A)	Handle colour	Reference
250 ... 630	Black	3999 6201
800 ... 1250	Black	3999 6012
250 ... 1250	Red	consult us

Side operation Rating (A)	Handle colour	Reference
250 ... 1250	Black	3999 6012
250 ... 1250	Red	3999 6013



access_156_a_2_cat

External handle

Front operation				
Rating (A)	Handle type	Handle colour	External IP	Reference
250 ... 1250	S3	Black	IP55	1431 3511
250 ... 1250	S3	Red	IP55	1432 3511
Side operation				
Rating (A)	Handle type	Handle colour	External IP	Reference
250 ... 1250	S3	Black	IP55	1435 3511
250 ... 1250	S3	Red	IP55	1436 3511



access_151_a_1_cat



access_166_a_2_cat

S3 type handle

S3 type handle

S-type handle adapter

Use

Enables S-type handles to be fitted in place of existing older style Socomec handles.

Dimensions

Adds 12 mm to the depth of the handle.

Handle colour	To be ordered in multiples of	External IP ⁽¹⁾	Reference
Black	1	IP65	1493 0000

(1) IP: protection degree according to IEC 60529 standard.



access_187_a_1_cat

Alternative S-type handle cover colours

Use

For single lever S3 type handles.

Other colours: Please consult us.

Colour	To be ordered in multiples of	Handle	Reference
Light grey	50	S3 type	1401 0001
Dark grey	50	S3 type	1401 0011
Light grey	50	S4 type	1401 0031
Dark grey	50	S4 type	1401 0041



access_198_a_2_cat

Shaft for external handle

Use

Standard lengths:

- 200 mm
- 320 mm.

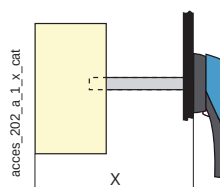
Other lengths: Please consult us.

Front operation				
Rating (A)	Dimension X (mm)	Shaft length (mm)	Type	Reference
250 ... 400	300 ... 422	200	15 x 12	1401 1520
250 ... 400	300 ... 542	320	15 x 12	1401 1532
630 ... 1250	345 ... 467	200	15 x 12	1401 1520
630 ... 1250	345 ... 587	320	15 x 12	1401 1532

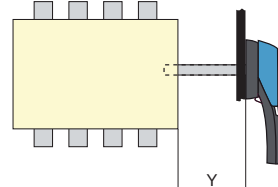
Side operation				
Rating (A)	Dimension Y (mm)	Shaft length (mm)	Type	Reference
250 ... 1250	78 ... 200	200	15 x 12	1403 1520



access_144_b_1_cat



access_202_a_1_x_cat



access_203_a_1_x_cat

Auxiliary contact

Use

Pre-break and signalling of positions 0 and I:

1 to 2 NO/NC auxiliary contacts.

Coil tripping

1 to 2 NO/NC auxiliary contacts.

Connection to the control circuit

By 6.35 mm fast-on terminal.

Characteristics

Auxiliary contact NO/NC IP2.

Electrical characteristics

30 000 operations.

NO/NC position contact

Rating (A)	Current nominal (A)	Operating current I _o (A)			
		250 VAC AC-13	400 VAC AC-13	24 VDC DC-13	48 VDC DC-13
250 ... 1250	16	12	8	14	6

NO/NC contact signalling coil tripping

Rating (A)	Current nominal (A)	Operating current I _o (A)			
		250 VAC AC-13	400 VAC AC-13	24 VDC DC-13	48 VDC DC-13
250 ... 1250	16	12	8	12	2

NO/NC position contact

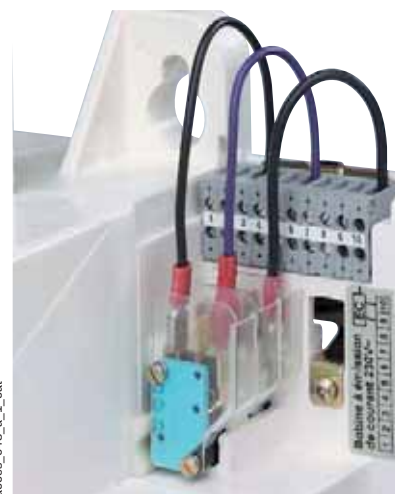
Rating (A)	Position AC	Reference
250 ... 1250	1 st AC	3999 0051
250 ... 1250	2 nd AC	3999 0052
630 ... 1250	3 rd and more	consult us

NO/NC low level position contact

Rating (A)	Position AC	Reference
250 ... 1250	1 st AC	3999 0111
250 ... 1250	2 nd AC	3999 0112

NO/NC contact signalling coil tripping

Rating (A)	Position AC	Reference
250 ... 1250	1 AC	3999 0031



acces_048_a_1_cat

Alternative tripping coil

Shunt trip coil

Voltage	Replacement tripping coil Reference	Modified Original coil Reference
24 VAC	3990 1024	3991 1024
48 VAC	3990 1048	3991 1048
110 VAC	3990 1110	3991 1110
230 VAC	3990 1220	included
400 VAC	3990 1380	3991 1380
12 VDC	3990 2012	3991 2012
24 VDC	3990 2024	3991 2024
48 VDC	3990 2048	3991 2048
110 / 200 VDC	3990 2220	3991 2220
220 VDC	3990 2220	

Undervoltage trip coil

Voltage	Replacement tripping coil Reference	Modified Original coil Reference
24 VAC	3990 3024	3991 3024
48 VAC	3990 3048	3991 3048
110 VAC	3990 3110	3991 3110
230 VAC	3990 3220	3991 3220
400 VAC	3990 3380	3991 3380
12 VDC	3990 4012	3991 4012
24 VDC	3990 4024	3991 4024
48 VDC	3990 4048	3991 4048
110 VDC	3990 4110	3991 4110
220 VDC	3990 4220	3991 4220

Use

Omnipolar breaking remotely controlled by shunt trip or undervoltage voltage release coil.

Note: the shunt trip coil must not be supplied for more than 5 s.

A 230 VAC shunt trip coil is fitted to the standard switch body. To modify this coil, the reference opposite must be added to the switch reference.

Examples for ordering:

- FUSOMAT with shunt trip coil 230 VAC - 1 reference: FUSOMAT 250 A, 3 pole, front operation, reference 3650 3026.
- FUSOMAT fitted with a non standard coil - 2 references: FUSOMAT 250 A, 3 pole, front operation, fitted with a 110 VAC undervoltage trip coil: 3650 3026 + 3991 3110.



Shunt trip coil

acces_049_a_1_cat



acces_050_a_1_cat

Accessories (continued)

Current-reducing resistor for undervoltage trip coil

Use

Reduces, by limiting the current, the effects on the undervoltage coils used in continuous processes or processes exposed to high ambient temperatures.

Voltage	Reference
110 VAC	3999 3112
230 VAC	3999 3230
400 VAC	3999 3400
110 VDC	3999 4110

Fuse blown indication

Use

For DIN fuse cartridge with striker.

Electrical principle

A NO/NC auxiliary contact detects that the fuse has blown.

Connection to the control circuit

By 6.35 mm fast-on terminal.

Electrical characteristics

30 000 operations.

Characteristics

Rating (A)	Current nominal (A)	Operating current I _e (A)			
		250 VAC AC-13	400 VAC AC-13	24 VDC DC-13	48 VDC DC-13
250 ... 1250	16	12	8	12	2

NO/NC changeover contact

Rating (A)	No. of poles	Position AC	Reference
250 ... 400	3 P	1 st	3994 1304
250 ... 400	4 P	1 st	3994 1404
630	3 P	1 st	3994 1306
630	4 P	1 st	3994 1406
800 ... 1250	3 P	1 st	3994 1312
800 ... 1250	4 P	1 st	3994 1412
250 ... 1250	3/4 P	2 nd	3994 1902

Terminal shrouds

Use

Top or bottom protection against direct contact with terminals or connection parts.

Advantage

Perforations allowing remote thermographic inspection without removal.

Rating (A)	No. of poles	Position	Reference
250 ... 400	3 P	top or bottom	3998 3040 ⁽¹⁾
250 ... 400	4 P	top or bottom	3998 4040 ⁽²⁾
630	3 P	top or bottom	3998 3063 ⁽¹⁾
630	4 P	top or bottom	3998 4063 ⁽²⁾

(1) Reference composed of 3 pieces.

(2) Reference composed of 4 pieces.



access_213_b_1_cat

Terminal screen

Use

Top or bottom protection against direct contact with terminals or connecting parts.

Rating (A)	No. of poles	Position	Reference
800 ... 1250	3 P	top	3998 3120
800 ... 1250	4 P	top	3998 4120
800 ... 1250	3/4 P	bottom	included



fusom_059_a_1_cat

Cage terminals

Use

Connection of bare copper cables onto the terminals (without lugs).

References

Rating max (A)	No. of poles	Reference
250	3 P	5400 3025
250	4 P	5400 4025
400	3 P	5400 3040
400	4 P	5400 4040
500 ... 630	3 P	5400 3063
500 ... 630	4 P	5400 4063



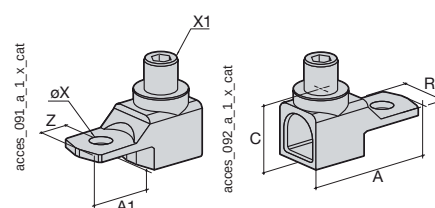
access_053_a_1_cat

Connections

Rating (A)	Flexible cable cross-section (mm²)	Rigid cable cross-section (mm²)	Width flexible bar (mm)	Stripped over (mm)
250	16 ... 185	16 ... 185	18	27
400	50 ... 240	50 ... 300	20	34
500 ... 630	70 ... 300	70 ... 300	24	34

Dimensions

Rating (A)	A	A1	C	R	ØX	X1	Z
250	62	31.5	31.5	25	10.5	M16	14
400	71.5	32	38	32	10.5	M20	15
500 ... 630	76.5	37	38	40	12.5	M20	15



Handle key interlocking accessories

Use

- Locking in position 0 of the front or side operation handle:
- using a padlock (not supplied) and factory integrated into the handle.
- using RONIS 1104 A lock (key BC 3318) to be mounted directly on the padlockable handle.
- Locking using CASTELL K (not supplied)
- Locking using RONIS EL11AP (not supplied).

Locking using RONIS EL 1104 A lock (supplied)

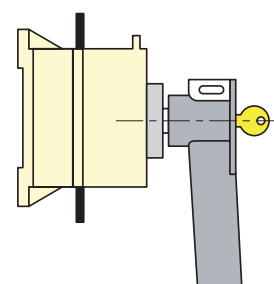
Rating (A)	Operation	Reference
250 ... 1800	front direct	3999 8104

Locking using RONIS EL11AP lock (not supplied)

Rating (A)	Operation	Reference
250 ... 1800	external	1499 7701
1600 ... 1800	front direct	3999 6117

Locking using CASTELL lock (not supplied)

Rating (A)	Operation	Reference
250 ... 1250	external	1499 7702



Lock RONIS 1104 A

access_010_b_1_x_cat

Label holder

Use

Recognisable self-adhesive label allowing identification of the devices.

Dimensions W x H (mm)	To be ordered in multiples of	Reference
18 x 13	50	7769 9999



access_044_a_1_cat

Other specific accessories

Use

- Customised protection screens (for specific dimensions or high ambient temperatures).
- Connection accessories.
- Mounting plates for standard systems.
- Special construction available for specific environments.

Characteristics according to IEC 60947-3

25 to 1250 A

Thermal current I_{th} (40°C)	250 A	400 A	630 A	800 A	1250 A
NFC/DIN fuse size	1	2	3	4	4
Rated insulation voltage U_i (V)	1000	1000	1000	1000	1000
Rated impulse withstand voltage U_{imp} (kV)	12	12	12	12	12

Rated operational currents I_e (A)

Rated voltage	Utilisation category	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾
400 VAC	AC-21 A / AC-21 B	250/250	400/400	630/630	800/800	1250/1250
400 VAC	AC-22 A / AC-22 B	250/250	400/400	630/630	800/800	1250/1250
400 VAC	AC-23 A / AC-23 B	250/250	400/400	630/630	800/800	1000/1000
690 VAC ⁽²⁾	AC-21 A / AC-21 B	200/200	315/400	500/630	800/800	800/1250
690 VAC ⁽²⁾	AC-22 A / AC-22 B	200/200	315/400	500/630	800/800	800/1000
690 VAC ⁽²⁾	AC-23 A / AC-23 B	200/200	250/315	315/400	630/630	630/630
220 VDC	DC-21 A / DC-21 B	200/200	315/315	400/630	800/800	800/1250
220 VDC	DC-22 A / DC-22 B	200/200	315/315	315/630	800/800	800/1250
220 VDC	DC-23 A / DC-23 B	200/200	200/315	400/630	800/800	800/1000
440 VDC	DC-21 A / DC-21 B	200/200	315/315	400/630 ⁽³⁾	800/800 ⁽⁴⁾	800/1250 ⁽⁴⁾
440 VDC	DC-22 A / DC-22 B	200/200	315/315 ⁽³⁾	315/630 ⁽³⁾	800/800 ⁽⁴⁾	800/1250 ⁽⁴⁾
440 VDC	DC-23 A / DC-23 B	200/200	200/315 ⁽³⁾	400/630 ⁽³⁾	800/800 ⁽⁴⁾	800/1000 ⁽⁴⁾

Operational power in AC-23 (kW)

At 400 VAC without pre-break in AC-23 (kW) ⁽¹⁾⁽⁵⁾	132/132	220/220	355/355	450/450	560/560
At 690 VAC without pre-break in AC-23 (kW) ⁽¹⁾⁽⁵⁾	185/185	220/295	295/400	400/400	600/600

Reactive power (kvar)

At 400 VAC (kvar) ⁽⁵⁾	115	185	290	365	575
----------------------------------	-----	-----	-----	-----	-----

Fuse protected short-circuit withstand (kA ms prospective)

Prospective short-circuit (kA rms) ⁽⁶⁾	80/100	80/100	80/100	80/100	80/100
Associated fuse rating (A) ⁽⁶⁾	250	400	630	800	1250

Short-circuit capacity

Rated peak withstand current (kA peak) ⁽⁶⁾	30	45	60	80	80
---	----	----	----	----	----

Connection

Min. connection wire range	95	185	2 x 150		
Minimum Cu busbar section (mm ²)			2 x 30 x 5	2 x 60 x 5	2 x 60 x 5
Maximum Cu cable section (mm ²)	240	240	2 x 300	4 x 185	4 x 185
Maximum Cu busbar width (mm)	40	40	50	100	100
Tightening torque min (Nm)	20	20	40		20

Mechanical characteristics

Durability (number of operating cycles)	8000	8000	5000	5000	5000
Weight of a 3 pole device (kg)	7	8	16	28	28
Weight of a 4 pole device (kg)	8.5	9.5	19	33	33

(1) Category with index A = frequent operation - Category with index B = infrequent operation.

(2) With terminal shrouds or phase barrier.

(3) Poles cannot be juxtaposed.

(4) 4-pole device with 2 pole in series by polarity.

(5) The power value is given for information only, the current values vary from one manufacturer to another.

(6) For a rated operational voltage $U_e = 400$ VAC.

Dimensions

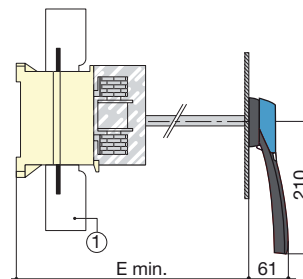
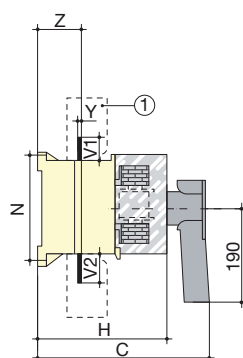
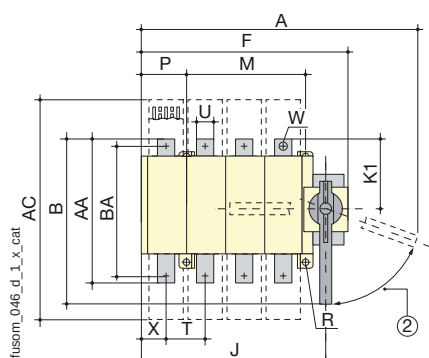
Front operation

BS88 - FUSOMAT 250 to 800 A

NFC and DIN - FUSOMAT 250 to 630 A

Direct front operation

External front operation



1. Terminal shrouds.
2. Reset 70°.

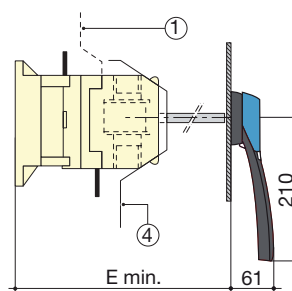
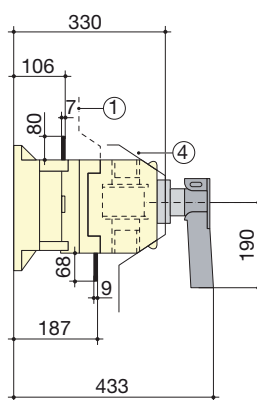
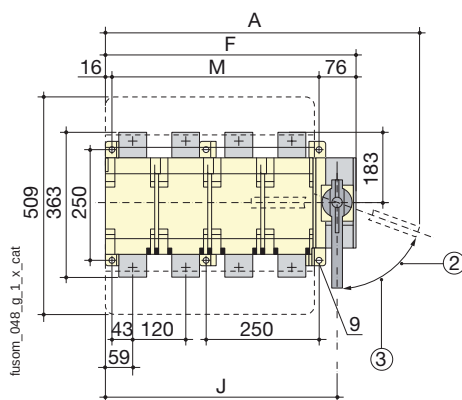
	Dimensions					Terminal shrouds	Switch body					Switch mounting					Connection											
Rating (A)	A 3p.	A 4p.	B	C	E	AC	F 3p.	F 4p.	H	J 3p.	J 4p.	K1	M	N	P 3p.	P 4p.	R	T	U	V1	V2	W	X 3p.	X 4p.	Y	Z	AA	BA
250	435	495	305	307	297 ... 343	380	285	345	221	253	313	115	210	180	10	70	7	65	32	35	43	11	31	46	3	67	238	208
400	435	495	305	307	293 ... 343	380	285	345	221	253	313	115	210	180	10	70	7	65	32	35	43	13	31	46	5	69	238	208
630	490,5	570,5	350	348	341 ... 440	470	345,5	425,5	268	308	388	150	250	250	20	100	9	80	50	50	50	13	36	65	7	72	300	260
800	490,5	570,5	350	348	341 ... 440	470	345,5	425,5	268	308	388	150	250	250	20	100	9	80	50	50	50	13	36	65	7	72	300	-

BS88 - FUSOMAT 1250 A

NFC and DIN - FUSOMAT 800 to 1250 A

Direct front operation

External front operation



1. Top terminal screens
2. Reset 70°.
3. Padlocking 65°.
4. Front terminal screens

Rating (A)	Overall dimensions			Switch body				Switch mounting	
	A 3p.	A 4p.	E min	F 3p.	F 4p.	J 3p.	J 4p.	M 3p.	M 4p.
800 ⁽¹⁾	582	702	345	437	557	399.5	519.5	345	465
1250	582	702	345	437	557	399.5	519.5	345	465

(1) NFC and DIN only.

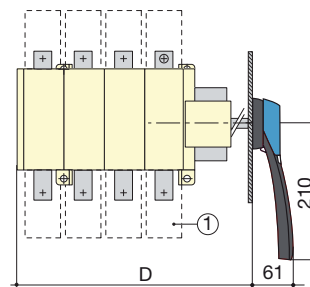
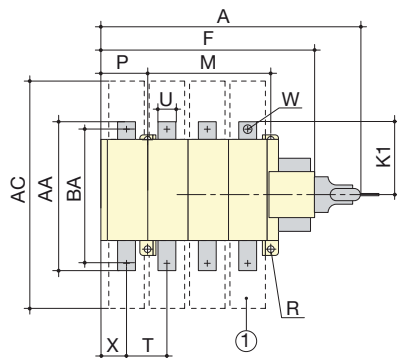
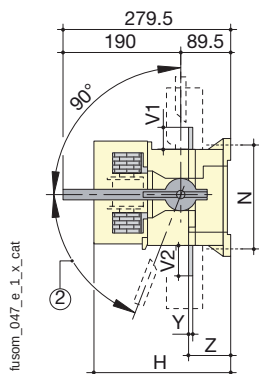
Dimensions (continued)

Side operation

BS88 / NFC and DIN - FUSOMAT 250 to 630 A

Direct side operation

External side operation



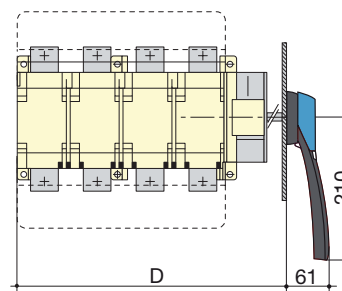
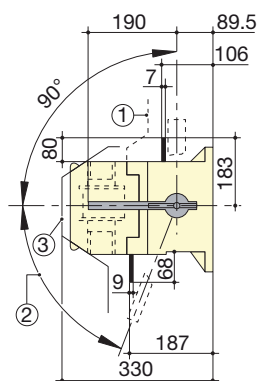
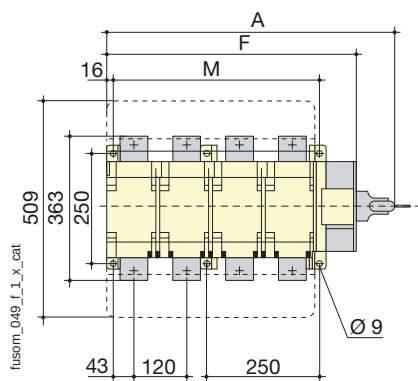
1. Terminal shrouds.
2. Reset 70°.

	Overall dimensions				Terminal shrouds	Switch body				Switch mounting					Connection									
Rating (A)	A 3p.	A 4p.	D 3p.	D 4p.	AC	F 3p.	F 4p.	H	K1	M	N	P 3p.	P 4p.	R	T	U	V1	V2	W	X 3p.	X 4p.	Y	Z	AA
250	365	425	357	417	388	285	345	221	115	210	180	10	70	7	65	32	35	43	11	31	46	3	67	238
400	365	425	357	417	388	285	345	221	115	210	180	10	70	7	65	32	35	43	13	31	46	5	69	238
630	421.5	501.5	413	493	470	345.5	425.5	268	150	250	250	20	100	9	80	50	50	50	13	36	65	7	72	300

BS88 / NFC and DIN - FUSOMAT 800 to 1250 A

Direct side operation

External side operation

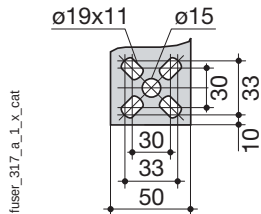


1. Top terminal screens
2. Reset 70°.
3. Front terminal screens

Rating (A)	Overall dimensions				Switch body		Switch mounting		
	A 3p.	A 4p.	D 3p.	D 4p.	F 3p.	F 4p.	M 3p.	M 4p.	
800	522	641	504	624	437	557	345	465	
1250	522	641	504	624	437	557	345	465	

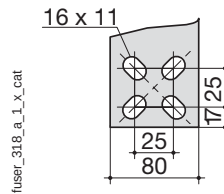
Connection terminals

FUSOMAT 800 A



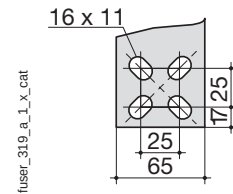
FUSOMAT 1250 A

A connection terminals
FUSOMAT 1250 A - Top



FUSOMAT 1250 A

A connection terminals
FUSOMAT 1250 A - bottom A



Dimensions for external handles

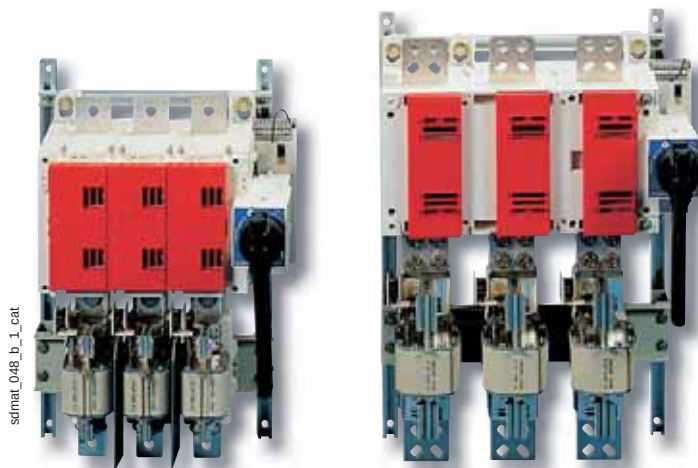
FUSOMAT 250 to 1250 A

Handle type	Front operation		Side operation	
	Direction of operation	Door drilling	Direction of operation	Door drilling
S3 type Ø3.07 Ø78 fusom_073_a_1_glb_cat				



SIDERMAT combination

Visible breaking and tripping fuse switches
from 630 to 1800 A



sdmat_048_b_1_cat

Function

SIDERMAT combination are manually operated tri- or tetrapolar fuse disconnecting switches which can be triggered remotely. They make and break under load conditions and provide safety isolation and protection against overcurrent for any low voltage electrical circuit.

Advantages

Tripping upon overload.

Remote breaking by voltage release device.

High breaking capacity

Protection against overloads and short-circuits thanks to high breaking capacity fuses (100 kA rms).

They can automatically switch on a power circuit in combination with:

- fuse blown indication,
- thermal relay,
- differential relay,
- protective relays DIRIS,
- other protective devices.

Improved safety

- Double break per phase.
- Visible break.
- Positive break indication.
- IP2X protection with terminal shrouds front panel.

The solution for

- > Motor load break
- > Protection of industrial cabinet
- > Electrical distribution



Strong points

- > Tripping upon overload
- > High breaking capacity
- > Improved safety

A complete range

- > Can be combined with uR fuses for the protection of power semi-conductors. Please consult us.

Conformity to standards

- > IEC 60947-3
- > EN 60947-3
- > BS EN 60947-3
- > NBN EN 60947-3
- > IEC 60269-1
- > IS 14947-3
- > DIN EN 60269-1
- > NF EN 60269-1
- > IEC 60269-2
- > VDE 0636-1
- > VDE 0660-107



References

NFC and DIN - Front operation - Switch body with a shunt trip coil - 230 VAC

Rating (A) / Fuse ⁽⁴⁾	No. of poles	Switch body	Direct handle	External handle	Shaft for external handle	1 st position AC	Tripping AC	Terminal shrouds top	Terminal screens top	Inter phase barrier
630 A / 3	3 P	3520 3063	Black 3999 6203⁽⁴⁾	S3 type Black IP55 1431 3511⁽⁴⁾ Red IP55 1432 3511	320 mm 1401 1532	1 st contact NO/NC 3999 0051 2 nd contact NO/NC 3999 0052	1 contact NO/NC 3999 0031	3998 3063		
	4 P	3520 6063						3998 4063		
800 A / 4	3 P	3520 3080								
	4 P	3520 6080								
1250 A / 4	3 P	3520 3120						3 P 2998 3120⁽²⁾ 4 P 2998 4120⁽²⁾		
	4 P	3520 6120								
1600 A / 2 x 4*	3 P	3520 3160							3 P 2998 0003 4 P 2998 0004	
	3 P + NC	3520 4160								
	4 P	3520 6160								
1800 A / 2 x 4*	3 P	3520 3180⁽³⁾						2998 3180⁽²⁾		
	3 P + NC	3520 4180⁽³⁾						included		
	4 P	3520 6180⁽³⁾						2998 4180⁽²⁾		

(1) Standard.

(2) Bottom terminals protection screen as standard.

(3) Only one of the two T4 fuses should be equipped with striker.

(4) For the fuses: see "NFC-DIN industrial fuselinks 0.16 to 1250 A" page 344.

* Two size 4 DIN fuses in parallel per pole.

SIDERMAT combination

Visible breaking and tripping fuse switches
from 630 to 1800 A

Accessories

Direct front operation handle

Rating (A)	Handle colour	Reference
630 ... 1800	Black	3999 6203
630 ... 1800	Red	consult us



acces_156_a_2_cat

External front operation handle

Rating (A)	Handle colour	External IP	Reference
630 ... 1800	Black	IP55	1431 3511
630 ... 1800	Red	IP55	1432 3511



acces_151_a_2_cat

acces_166_a_2_cat

S3 type handle

Alternative S-type handle cover colours

Use

For single lever S3 type handles.

Other colours: consult us.

Colour	To be ordered by multiple	Reference
Light grey	50	1401 0001
Dark grey	50	1401 0011



acces_198_a_2_cat

Shaft for external handle

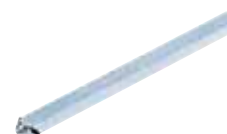
Use

Standard lengths:

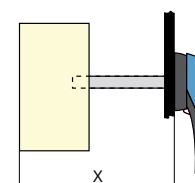
- 200 mm,
- 320 mm.

Other lengths: consult us.

Rating (A)	Dimension X (mm)	Shaft length (mm)	Reference
630 ... 800	350 ... 450	200	1401 1520
630 ... 800	350 ... 570	320	1401 1532
1250 ... 1800	370 ... 570	320	1401 1532



acces_144_b_1_cat



acces_202_a_1_x_cat

Current-reducing resistor for undervoltage trip coil

Use

Reduces, by limiting the current, the effects on the undervoltage coils used in continuous processes or processes exposed to high ambient temperatures.

Voltage	Reference
110 VAC	3999 3112
230 VAC	3999 3230
400 VAC	3999 3400
110 VDC	3999 4110

Alternative tripping coils

Coils Characteristics: see "SIDERMAT" page 304.

Shunt trip coil

Voltage	Replacement tripping coil Reference	Original coil ⁽¹⁾ Reference
24 VAC	3990 1024	3991 1024
48 VAC	3990 1048	3991 1048
110 VAC	3990 1110	3991 1110
230 VAC	3990 1220	included
400 VAC	3990 1380	3991 1380
12 VDC	3990 2012	3991 2012
24 VDC	3990 2024	3991 2024
48 VDC	3990 2048	3991 2048
110 / 200 VDC	3990 2220	3991 2220

Undervoltage trip coil

Voltage	Replacement tripping coil Reference	Original coil ⁽¹⁾ Reference
24 VAC	3990 3024	3991 3024
48 VAC	3990 3048	3991 3048
110 VAC	3990 3110	3991 3110
230 VAC	3990 3220	3991 3220
400 VAC	3990 3380	3991 3380
12 VDC	3990 4012	3991 4012
24 VDC	3990 4024	3991 4024
48 VDC	3990 4048	3991 4048
110 VDC	3990 4110	3991 4110
220 VDC	3990 4220	3991 4220

(1) To be ordered at same time as switch (factory fitted).

Shunt trip coil.



access_049_a_1_cat

Undervoltage trip coil



access_050_a_1_cat

Use

Omnipolar breaking remotely controlled by shunt trip or undervoltage voltage release coil.

Note: the shunt trip coil must not be supplied for more than 5 s. A 230 VAC shunt trip coil is fitted to the standard switch body.

To modify this coil, the reference opposite must be added to the switch reference (use "original coil" reference).

Examples for ordering

- Combined SIDERMAT with shunt trip coil 230 VAC - 1 reference:
Combined SIDERMAT 630 A, 3 pole, front operation: 3520 3063.
- Combined SIDERMAT fitted with a non standard coil - 2 references:
Combined SIDERMAT 630 A, 3 pole, front operation fitted with a 110 VAC undervoltage trip coil: 3520 3063 + 3991 3110.

Auxiliary contacts

References

NO/NC position contact		
Rating (A)	Position AC	Reference
630 ... 1800	1 st	3999 0051
630 ... 1800	2 nd	3999 0052
NO/NC low level position contact		
Rating (A)	Position AC	Reference
630 ... 1800	1 st	3999 0111
630 ... 1800	2 nd	3999 0112
NO/NC contact, signalling coil tripping		
Rating (A)	Position AC	Reference
630 ... 1800	1	3999 0031

Characteristics

NO/NC position contact					
Rating (A)	Current nominal (A)	Operating current I _e (A)			
		250 VAC AC-13	400 VAC AC-13	24 VDC DC-13	48 VDC DC-13
630 ... 1800	16	12	8	14	6
NO/NC contact, signalling coil tripping					
Rating (A)	Current nominal (A)	Operating current I _e (A)			
		250 VAC AC-13	400 VAC AC-13	24 VDC DC-13	48 VDC DC-13
630 ... 1800	16	12	8	12	2



access_048_a_1_cat

Use

Pre-break and signalling of positions and I:
1 to 2 NO/NC auxiliary contacts

Coil tripping

1 to 2 NO/NC auxiliary contacts

Connection to the control circuit
By 6.35 mm fast-on terminal.

Characteristics

NO/NC auxiliary contact: IP2.

Electrical characteristics
30 000 operations.

SIDERMAT combination

Visible breaking and tripping fuse switches
from 630 to 1800 A

Accessories (continued)

Fuse blown indication

Use

For DIN fuse cartridges with striker.

Electrical principle

A NO/ NC auxiliary contacts detects that the fuse has blown.

Connection to the control circuit

By 6.35 mm fast-on terminal.

Electrical characteristics

30 000 operations.

NO/NC changeover contact

Rating (A)	No. of poles	Position AC	Reference
630 ... 1800	3/4 P	1 st	included

Characteristics

Rating (A)	Nominal current (A)	Operating current I _e (A)			
		250 VAC AC-13	400 VAC AC-13	24 VDC DC-13	48 VDC DC-13
630 ... 1800	16	12	8	12	2

Terminal shrouds

Use

Top or bottom protection against direct contact with terminals or connection parts.

Advantages

Perforations allowing remote thermographic inspection without removal.

Rating (A)	No. of poles	Position	Reference
630	3 P	top	3998 3063
630	4 P	top	3998 4063



access_212_a_2_cat

Terminal screens

Use

Top or bottom protection against direct contact with terminals or connection parts.

Rating (A)	No. of poles	Position	Reference
800 ... 1600	3 P	top	2998 3120
800 ... 1600	4 P	top	2998 4120
1800	3 P	top	2998 3180
1800	4 P	top	2998 4180
800 ... 1800	3/4 P	bottom	included

Inter phase barrier

Use

Safety isolation between the terminals, essential for use at 690 VAC or in a polluted or dusty atmosphere.

Rating (A)	No. of poles	Reference
1250 ... 1800	3 P	2998 0003
1250 ... 1800	4 P	2998 0004



access_036_a_1_cat

Handle key interlocking accessories

Use

Locking in position 0 of the front operation handle:

- using a padlock (not supplied) and the factory integrated padlocking function of the handle.
- using RONIS 1104 A lock (key BC 3318) to be mounted directly on the padlockable handle,
- locking using RONIS EL11AP lock (not supplied).

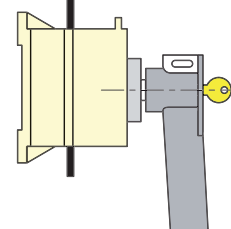
Locking using RONIS EL 1104 A lock (supplied)

Rating (A)	Operation	Reference
630 ... 1800	front direct	3999 8104

Locking using RONIS EL11AP lock (not supplied)

Rating (A)	Operation	Reference
630 ... 1250	front direct	3999 7007
1600 ... 1800	front direct	3999 6117
630 ... 1800	external front	1499 7701

Lock RONIS 1104A



access_010_b_1_x_cat

Other specific accessories

- Customised protection screens (for specific dimensions or high ambient temperatures).
- Connection accessories.
- Mounting plates for standard systems.
- Special construction available for specific environments.

Characteristics according to IEC 60947-3

630 to 1800 A

Thermal current I_{th} (40°C)	630 A	800 A	1250 A	1600 A	1800 A
Fuse size	3	4	4	2 x 4	2 x 4
Rated insulation voltage U_i (V)	1000	1000	1000	1000	1000
Rated impulse withstand voltage U_{imp} (kV)	12	12	12	12	12

Rated operational currents I_e (A)

Rated voltage	Utilisation category	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾
400 VAC	AC-22 A / AC-22 B	630/630	800/800	1250/1250	1600/1600	1600/1800
400 VAC	AC-23 A / AC-23 B	630/630	630/630	1250/1250	1600/1600	1600/1600
690 VAC ⁽²⁾	AC-21 A / AC-21 B	630/630	800/800	1250/1250	1600/1600	
690 VAC ⁽²⁾	AC-22 A / AC-22 B	500/630	630/800	1000/1000	1250/1250	
690 VAC ⁽²⁾	AC-23 A / AC-23 B	400/500	500/500	800/800	1000/1000	
220 VDC	DC-21 A / DC-21 B	630/630	800/800	1250/1250	1600/1600	
220 VDC	DC-22 A / DC-22 B	630/630	800/800	1250/1250	1600/1600	
220 VDC	DC-23 A / DC-23 B	500/630	630/800	1250/1250	1250/1250	
440 VDC	DC-20 A / DC-20 B	630/630	800/800	1250/1250	1600/1600	
440 VDC	DC-21 A / DC-21 B	630/630	800/800	1250/1250	1600/1600	
440 VDC	DC-22 A / DC-22 B	630/630 ⁽³⁾	800/800 ⁽³⁾	1250/1250 ⁽⁴⁾	1600/1600 ⁽⁴⁾	
440 VDC	DC-23 A / DC-23 B	500/630 ⁽³⁾	630/800 ⁽³⁾	1250/1250 ⁽⁴⁾	1250/1250 ⁽⁴⁾	

Motor power output (kW)

At 400 VAC without pre-break in AC-23 ⁽¹⁾⁽⁵⁾	355/355	355/355	710/710	900/900	900/900
At 690 VAC without pre-break in AC-23 ⁽¹⁾⁽⁵⁾	400/475	475/475	750/750	900/900	
At 400 VAC without pre-break in AC ⁽¹⁾⁽⁵⁾	355/355	450/450	710/710	900/900	900/900
At 690 VAC without pre-break in AC ⁽¹⁾⁽⁵⁾	475/600	600/750	900/900	1100/1100	

Reactive power (kvar)

At 400 VAC ⁽⁵⁾	290	365	575		
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Fuse protected short-circuit withstand (kA rms prospective)

Prospective short-circuit (kA rms) ⁽⁶⁾	100	100	100	120	120
Associated fuse rating (A) ⁽⁶⁾	630	800	1250	2 x 800	2 x 900

Short-circuit capacity

Rated peak withstand current (kA peak) ⁽⁶⁾	55	80	100	120	120
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Connection

Minimum Cu cable section (mm ²)	2 x 150	2 x 185			4 x 240
Minimum Cu busbar section (mm ²)	2 x 30 x 5	2 x 40 x 5	2 x 60 x 5	2 x 80 x 5	
Maximum Cu cable section (mm ²)	2 x 300	2 x 300	4 x 185	6 x 240	8 x 240
Maximum Cu busbar width (mm)	50	63	100	100	100
Tightening torque min (Nm)		20	20	40	

Mechanical characteristics

Durability (number of operating cycles)	5000	5000	5000	3000	3000
Weight of 3 P switch (kg)	20	25	27	54	59
Weight of 4 P switch (kg)	24	30	32	70	75

(1) Category with index A = frequent operation - Category with index B = infrequent operation.

(2) With terminal shrouds or phase barrier.

(3) Poles cannot be juxtaposed.

(4) 4-pole device with 2 pole in series by polarity.

(5) The power value is given for information only, the current values vary from one manufacturer to another.

(6) For a rated operational voltage U_e = 400 VAC.

SIDERMAT combination

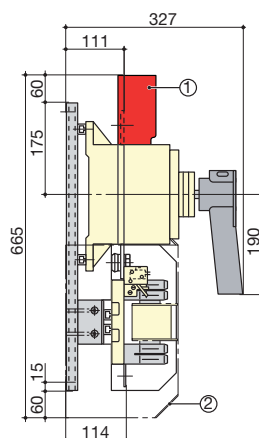
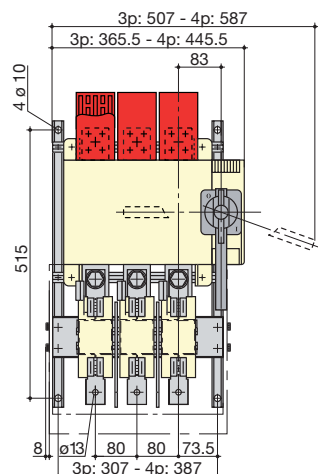
Visible breaking and tripping fuse switches

from 630 to 1800 A

Dimensions

SIDERMAT combination 630 A

Direct front operation

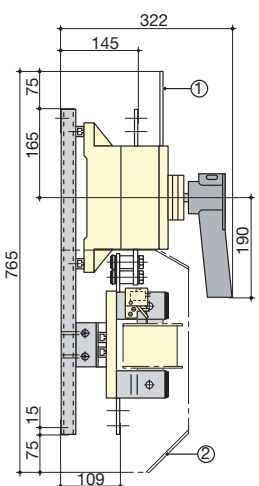
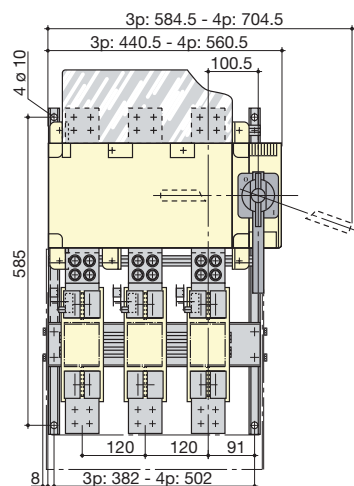


1. Terminal shrouds top.
2. Terminal screens bottom

sdmat_006_c_1_x_cat

SIDERMAT combination 800 to 1250 A

Direct front operation

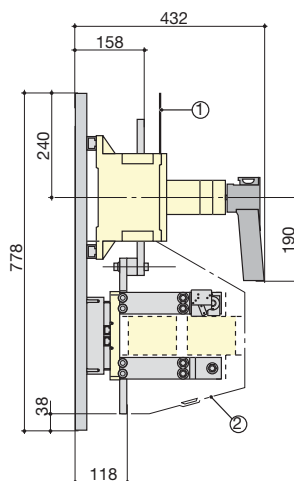
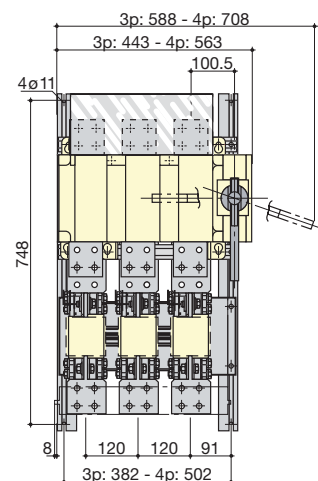


1. Terminal screens top
2. Terminal screens bottom

sdmat_005_a_1_x_cat

SIDERMAT combination 1600 A

Direct front operation

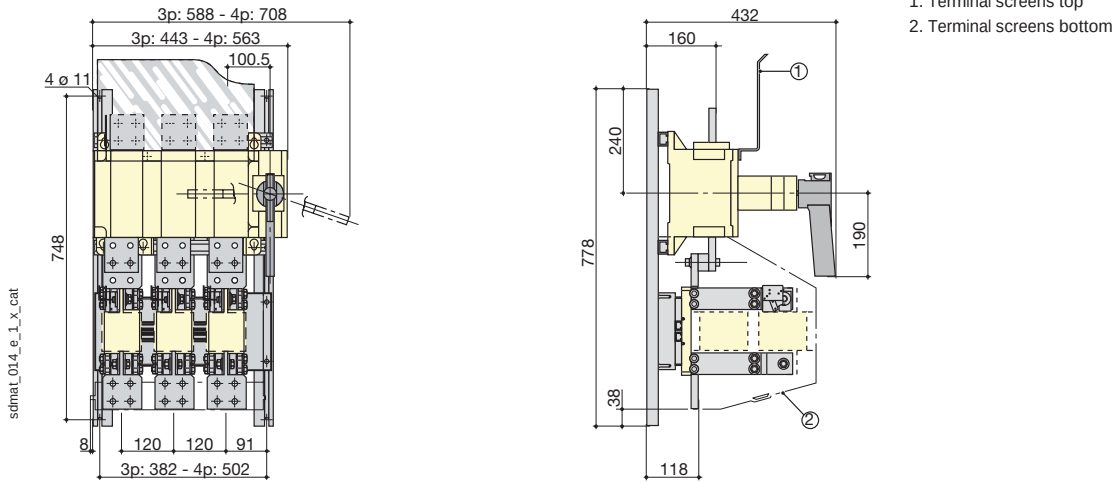


1. Terminal screens top
2. Terminal screens bottom

sdmat_013_a_1_x_cat

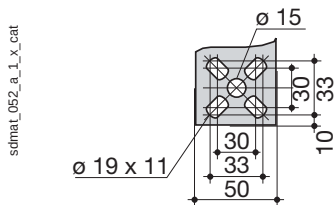
SIDERMAT combination 1800 A

Direct front operation

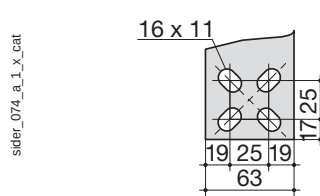


Connection terminals

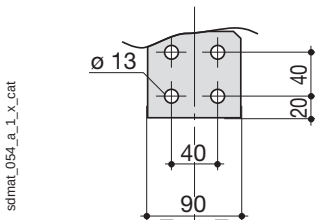
SIDERMAT combination - 630 A



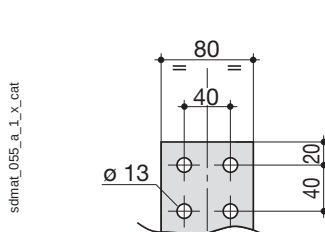
SIDERMAT combination 800 to 1250 A



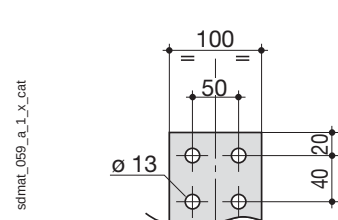
SIDERMAT combination 1600 to 1800 A - bottom



SIDERMAT combination 1600 A - top



SIDERMAT combination 1800 A - top





RM and RMS

Fuse disconnect switches

for industrial and high speed (uR) cylindrical fuses up to 125 A



The solution for

- > Small outputs

Strong points

- > Improved safety
- > High breaking capacity
- > Specific format and accessory
- > Label holder

Large range

- > Pre-break, please consult us

Compliance with standards

- > IEC 60269-2,-1
- > IEC 60269-1
- > IEC 60269-2
- > NF EN 60269-1
- > NF C 63-210
- > NF C 63211
- > VDE 0636-10
- > DIN 43620
- > CSA 265615
- > UL E307648



Function

RM and RMS are modular fuse disconnect switches for cylindrical fuses. They provide safety disconnection and protection against overloads and short-circuits in any low voltage electrical circuit.

- RM: Non-signalling fuse disconnect switches for fuses without strikers.
- RMS: Fuse disconnect switches with pre-break auxiliary contact, position and blown indication.

Advantages

Improved safety

- Omnipolar and simultaneous breaking.
- High dielectric strength. IP2X protection.

Specific format and accessory

- Modular 45-mm cut-out.
- Interlocking with accessory possible.

High breaking capacity

Protection against overloads and short-circuits thanks to high breaking capacity fuses (100 kA rms).

References

RM - Non-signalling device

Basic device Fuse size	32 A ⁽¹⁾ 10 x 38		50 A ⁽²⁾ 14 x 51		100 A ⁽²⁾ 22 x 58	
	To be ordered in multiples of	Reference	To be ordered in multiples of	Reference	To be ordered in multiples of	Reference
No. of poles						
1 P	12	5701 0015	6	5702 5001	6	5703 5001
1 P + N (1 module)	12	5601 5005				
1 P + N (2 modules)	6	5701 0017	3	5702 5005	3	5703 5005
1 P LED signalling	12	5701 0011	6	5702 0011	6	5703 0011
2 P	6	5701 0020	3	5702 5002	3	5703 5002
3 P	4	5701 0018	2	5702 5003	2	5703 5003
3 P + N	3	5701 0019	1	5702 5004	1	5703 5004
4 P			1	5702 5006	1	5703 5006
N	12	5701 0016	6	5702 5000	6	5703 5000

(1) Devices are cURus and CSA-certified, except 5601 5005.

(2) Devices are cURus-certified.

RMS - Device with 1 signalling auxiliary contact (AC) ⁽¹⁾

Basic device Fuse size	50 A ⁽²⁾ 14 x 51		100 A ⁽²⁾ 22 x 58	
	To be ordered in multiples of	Reference	To be ordered in multiples of	Reference
No. of poles				
1 P	6	5702 5011	6	5703 5011
2 P	3	5702 5012	3	5703 5012
3 P	2	5702 5013	2	5703 5013
3 P + N	1	5702 5014	1	5703 5014
4 P	1	5702 5016	1	5703 5016

(1) The signalling auxiliary contact provides the pre-break, the fuse presence and also blown fuse signal.

(2) Devices are cURus-certified.

Accessories

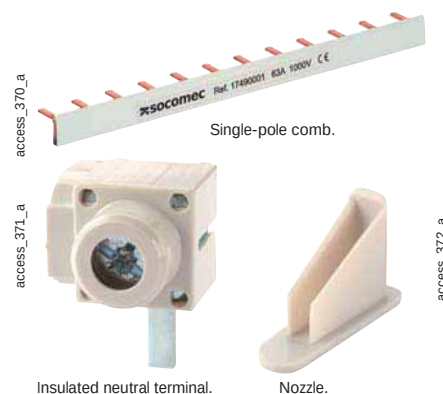
Connection accessories for RM 32 A 10 x 38

Comb bridging connection

Designation	Cross-section (mm²)	Reference
Unipolar comb with 12 modules	10	1749 0001
Unipolar comb with 13 modules	10	1749 0011
Unipolar comb with 57 modules	10	1749 0021
Unipolar comb with 12 modules	16	1749 0031
Unipolar comb with 13 modules	16	1749 0041
Unipolar comb with 57 modules	16	1749 0051
Nozzle		1749 8001

Connection terminals

Designation	Reference
Insulated neutral terminal for a 6 to 25-mm² cable, side input	1749 9001
Insulated neutral terminal for a 6 to 50-mm² cable, side input	1749 9002
Fully insulated power feed terminal for a 6 to 25-mm² cable, side input	1749 9003
Right/left insulated terminal, 6 x 25 mm²	1749 9004



Something to think about



10x38 RMs equipped with 0.5A gG fuses provide effective protection for voltage inputs and auxiliary power supplies for all our electronic devices (DIRIS, COUNTIS, ISOM, RESYS differential relays, etc...)

RM and RMS

Fuse disconnect switches

for industrial and high speed (uR) cylindrical fuses up to 125 A

Accessories (continued)

Auxiliary contact

Use

1 or 2 NO/NC auxiliary contacts:

- Pre-break, fuse presence and fuse blown signalling for RMS 50 and 100.
- Fuse blown signalling for RM 50 and 100.

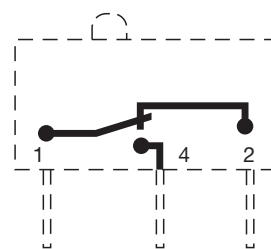
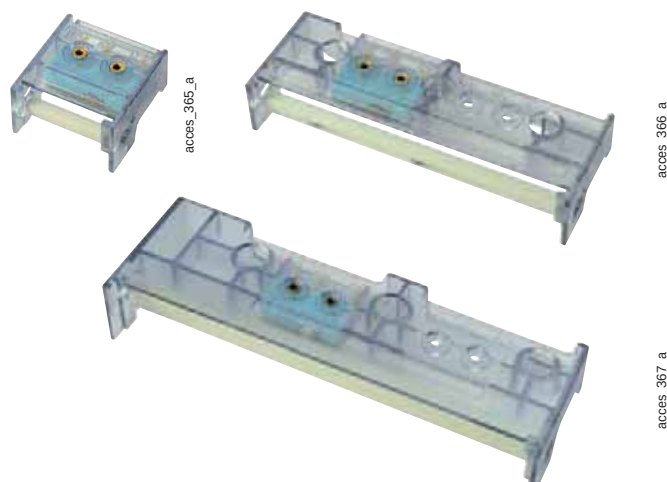
Connection

By 6.35 mm fast-on terminal.

Characteristics Rating (A)	Contact type	Operating current I_e (A) 250 VAC AC-13
50 ... 100	NO/NC contact	2.5
50 ... 100	Two-level NO/NC contact	0.1

References NO/NC contact Rating (A)	Contact	Reference
50	1 P with 1 AC	5702 9901
50	3 P with 1 AC	5702 9903
50	3 P with 2 AC	5702 9030
100	1 P with 1 AC	5703 9901
100	3 P with 1 AC	5703 9903
100	3 P with 2 AC	5703 9030

Low level NO/NC auxiliary contact Rating (A)	Contact	Reference
50	1 P with 1 AC	5702 9911
50	3 P with 1 AC	5702 9913
100	1 P with 1 AC	5703 9911
100	3 P with 1 AC	5703 9913

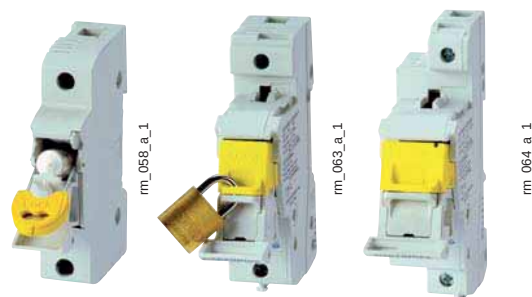


Key handle interlocking system

Use

Padlocking of the handle (padlock not supplied).

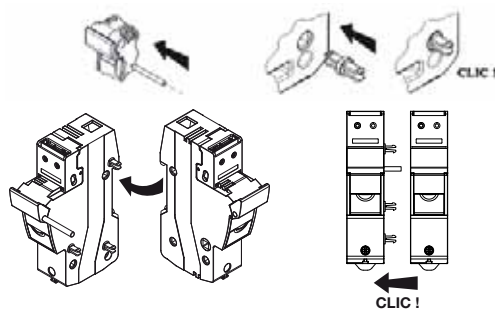
For RM and RMS Rating (A)	Quantity (units)	Reference
32	5	5701 9040
50	5	5702 9040
100	5	5703 9040



Coupling system for RM

For RM and RMS Rating (A)	Quantity (units)	Reference
32	12	5704 0003 ⁽¹⁾
50 ... 100	12	5702 9020 ⁽¹⁾

(1) One coupling device allows to link two RM/RMS. Also sold in bags containing separate components (bags of 100 pieces) for assembling larger quantities. Contact us



Reinforced insulation kit

Rating (A)	Reference
32	5701 9010 ⁽¹⁾

(1) 1 reference = 1 set of 10 couplings.



Characteristics according to IEC 60269-2

32 to 100 A

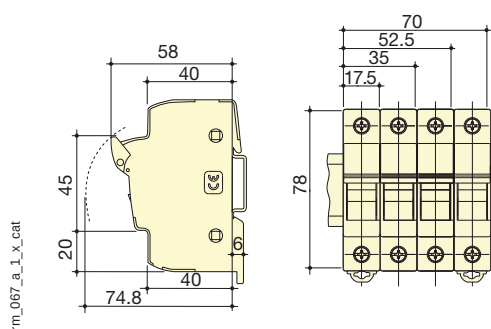
Thermal current I_{th} (20°C)	32 A	50 A	100 A
Fuse size	10 x 38	14 x 51	22 x 58
Rated insulation voltage U_i (V)	690	690	690
Fuse rating (A)			
at 400 VAC	32	50	125
at 500 VAC	32	50	125
at 690 VAC		50	125
gG fuse protected short-circuit withstand			
Prospective short-circuit current (kA rms.) ⁽¹⁾	100	100	100
Design current derating coefficient for N poles side by side			
N = 1 ... 3	1	1	1
N = 4 ... 6	0.8	0.8	0.8
N = 7 ... 9	0.7	0.7	0.7
N ≥ 10	0.6	0.6	0.6
Design current derating coefficient depending on the temperature			
20°C	1	1	1
30°C	0.95	0.95	0.95
40°C	0.90	0.90	0.90
50°C	0.80	0.80	0.80
60°C	0.70	0.70	0.70
70°C	0.60	0.60	0.60
Connection			
Minimum Cu cable cross-section (mm ²), for rigid or flexible cables	0.75	0.75	0.75
Maximum Cu cable cross-section (mm ²), rigid/flexible cables	25/16	35/25	50/35
Maximum Cu cable cross-section (mm ²), rigid/flexible cables ⁽²⁾	16/10		
Tightening torque	2.5	3	5
Dimensional data			
Weight of 1 P / N (kg)	0.057 / 0.06	0.1	0.155
Weight of 1 P + N (kg)	0.117	0.215	0.327
Weight of 3 P + N (kg)	0.229	0.415	0.632

(1) For a rated operational voltage $U_o = 400$ VAC.

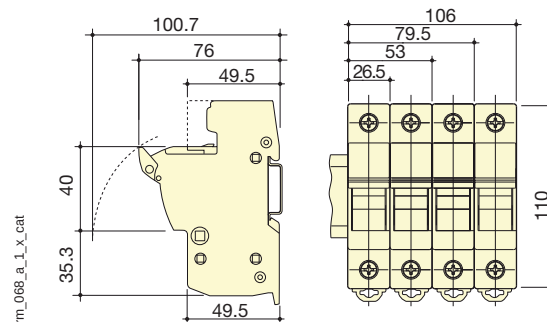
(2) Connection for RM32 1 P + N (1 module).

Dimensions

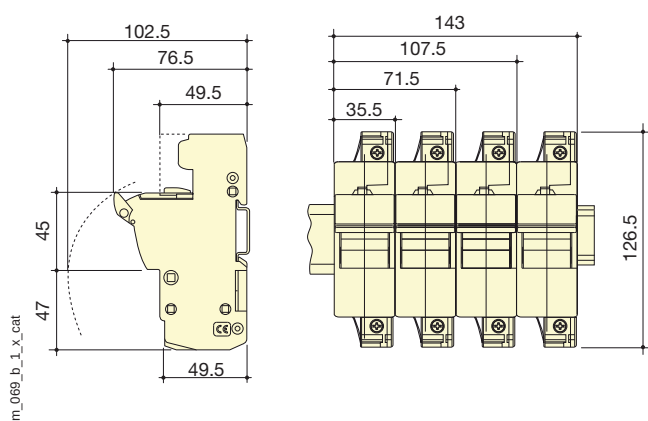
RM 32 A



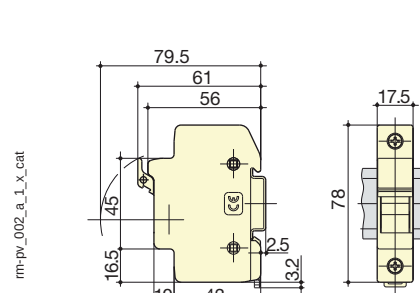
RM / RMS 50 A unipolar and multipolar



RM / RMS 100 A unipolar and multipolar



RM 32 A Ref.: 5601 5005





RM CC

Modular fuse holders for industrial class CC fuses

Fuse protection

new



The solution for

- > Distribution boards
- > Motor and Control circuits
- > Transformers protection
- > Measuring devices and multi-function meter protection

Strong points

- > Improved safety
- > High breaking capacity
- > Specific format and accessories
- > Label holder

Compliance with standards

- > UL 4248-4



Function

RM CC are modular DIN rail mounted fuse holders for UL Class CC fuses. They are available with and without LED indication in 1, 2 and 3-pole versions. RM CC fuse holders are IP20 protected from touch by fingers and provide safe breaking and isolation of electrical circuits up to 600 V / 30 A.

Advantages

Improved safety

- Omnipolar and simultaneous disconnection.
- High dielectric strength. Protection IP2X.

High breaking capacity

Protection against overloads and short-circuits thanks to high breaking capacity fuses (200 kA rms).

Specific format and accessories

- Modular 45 mm cut-out design.
- Padlocking accessory available.

Label holder

- RM CC are equipped with a label holder for an easy circuit identification.

References

RM CC

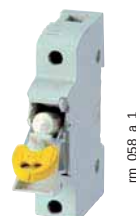
Basic device Fuse size	30 A Class CC		30 A with LED Class CC	
	To be ordered in multiples of	Reference	To be ordered in multiples of	Reference
No. of poles				
1 P	12	5705 0001	12	5705 0011
2 P	6	5705 0002	6	5705 0012
3 P	4	5705 0003	4	5705 0013

Accessories*

Key handle interlocking system

Use
Padlocking of the handle (padlock not supplied).

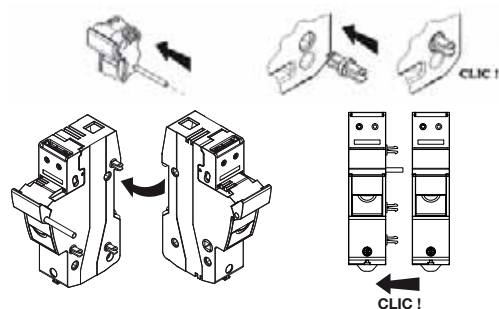
Rating (A)	Quantity (units)	Reference
30	5	5701 9040



Coupling system

Rating (A)	Quantity (units)	Reference
30	12	5704 0003 ⁽¹⁾

(1) One coupling to attach two RM/CC.
Also sold in bags containing separate components (bags of 100 pieces) for assembling larger quantities. Please contact us.



rm_030_a_1_x_cat

Reinforced insulation kit

Rating (A)	Reference
30	5701 9010 ⁽¹⁾

(1) 1 reference = 1 set of 10 insulation kits



access_361_a

* Non UL.

Characteristics

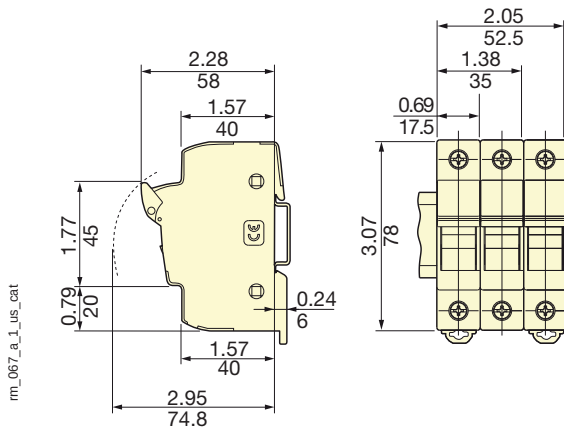
Characteristics according to UL 4248-4

Rated operational current (A)		30 A
Fuse size		class CC
Rated operating voltage (V)		600
Dielectric strength (V)		2200
LED working voltage ⁽¹⁾		120 ... 600 VAC
Rated power dissipation (W/P)		3
Protection degree		IP20
Class CC fuse protected short-circuit withstand		
Prospective short-circuit current (kA rms.)		200
Design current derating coefficient for N poles side by side		
N = 1 ... 3		1
N = 4 ... 6		0.8
N = 7 ... 9		0.7
N ≥ 10		0.6
Connection		
Wire type (solid / stranded Cu)		60 / 75°C
1 wire	Minimum Cu cable cross-section solid / stranded	0.75 mm ² / 18 AWG
	Maximum Cu cable cross-section solid / stranded	16 mm ² / 8 AWG
2 wires	Minimum Cu cable cross-section solid / stranded	0.75 mm ² / 18 AWG
	Maximum Cu cable cross-section solid	10 mm ² / 8 AWG
	Maximum Cu cable cross-section stranded	6 mm ² / 10 AWG
Wire strip (mm / in)		10 / 0.39
Maximum tightening torque		2.5 Nm / 22 lb.in
Fixing		DIN rail 35 mm DIN 46277/1-3 (EN50022)
Mechanical characteristics		
Weight of 1 P (kg / lb)		0.057 / 0.126
Weight of 2 P (kg / lb)		0.114 / 0.251
Weight of 3 P (kg / lb)		0.170 / 0.375

(1) For fuse holders with LED indicator.

Dimensions (in / mm)

30 A





Fuse bases

Fuse protection

for NH industrial and high-speed (uR) fuses from 160 to 2500 A



Base
Size 1



Base
IP2X

Function

SOCOMECS fuse bases are unipolar or multipolar supports for knife-edge fuses.

Advantages

High level of electrical safety

- High dielectric strength.
- IP2X protection (standard or optional depending on models).

High breaking capacity

Protection against overloads and short-circuits thanks to high breaking capacity fuses (100 kA rms).

Fuse blown indicator

When used with striker fuses, the fuse blown indication is possible thanks to an auxiliary contact.

Various mounting options

DIN rail or back plate mounting (depending on models).

The solution for

- > Motor feeders
- > Protection of industrial cabinet



Strong points

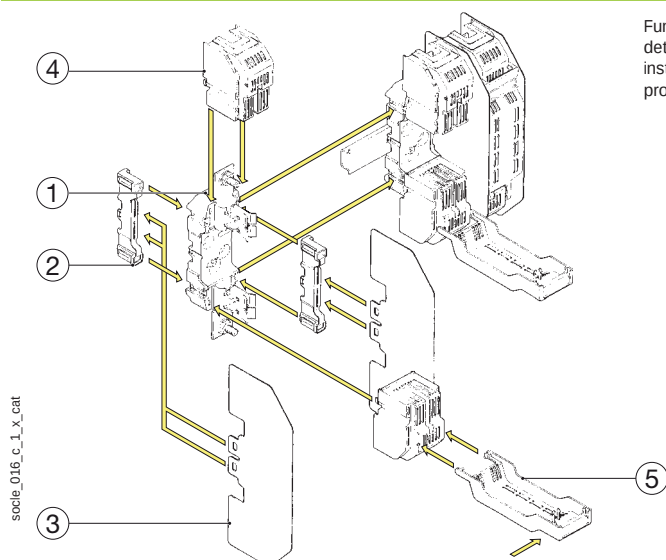
- > High level of electrical safety
- > Fuse blown indicator
- > Various mounting options

Compliance with standards

- > IEC 60269-1
- > IEC 60269-2
- > IEC 60269-2,-1
- > NF EN 60269-1
- > NF C 63211
- > VDE 0636-10
- > DIN 43620



Functional diagram



Functional diagram (for further details see the installation instructions supplied with the product)

1. Fuse bases
2. Connecting block:
 - block for assembling unipolar bases T00, T0, T1, T2 and T3
 - support for interphase barriers T00, T0, T1, T2 and T3
3. Phase separation shield
4. Terminal shrouds (necessary for mounting fuse covers)
5. Fuse cover (provides IP2 protection for any brand of fuse)

IP20 Kit:

- unipolar = 2 connecting blocks + 2 phase separation shields + 2 terminal shrouds + 1 fuse cover
- tripolar = 2 connecting blocks (for the ends) + 2 phase separation shields for the ends + 6 terminal shrouds + 3 fuse covers.

References

Fuse bases for fuses without a striker from 160 to 630 A (U = 690 V)

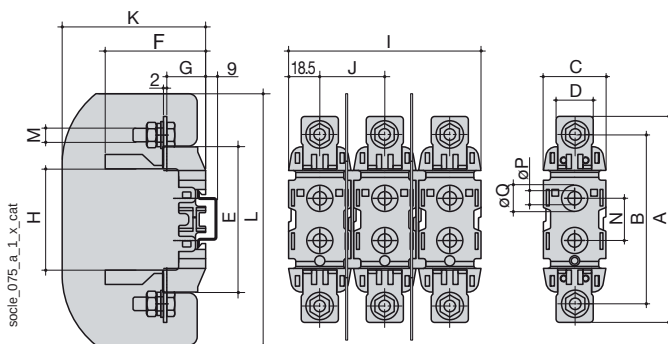
Rating Fuse size		160 A 00	160 A 0	250 A 1	400 A 2	630 A 3
Back plate mounted device						
No. of poles	To be ordered in multiples of	Reference	Reference	Reference	Reference	Reference
1 P	3	6500 1010	6501 1010	6501 1011	6501 1012	6501 1013
3 P	1	6500 1030	6501 1030	6501 1031	6501 1032	6501 1033
DIN rail-mounted device						
No. of poles	To be ordered in multiples of	Reference	Reference	Reference	Reference	Reference
1 P	3	6500 1110	6501 1110	6501 1111	6501 1112	6501 1113
3 P	1	6500 1130	6501 1130	6501 1131	6501 1132	6501 1133
Options: IP20 kit						
No. of poles		Reference	Reference	Reference	Reference	Reference
1 P ⁽¹⁾		6510 1010	6511 1010	6511 1011	6511 1012	6511 1013
3 P ⁽²⁾		6510 1030	6511 1030	6511 1031	6511 1032	6511 1033
Accessories						
Description of accessories	To be ordered in multiples of	Reference	Reference	Reference	Reference	Reference
Connecting block - set of 1 piece	2	6500 0033	6500 0030	6500 0031	6500 0031	6500 0032
Phase separation shield - set of 1 piece	2	6500 0001	6500 0002	6500 0003	6500 0003	6500 0004
Terminal shrouds - set of 1 piece	6	6500 0010	6500 0011	6500 0012	6500 0013	6500 0014
Fuse cover - set of 1 piece	3	6500 0020	6500 0021	6500 0022	6500 0022	6500 0023

(1) IP20 unipolar kit comprises - 2 connecting blocks, 2 phase separation shields, 2 terminal shrouds and 1 fuse cover.

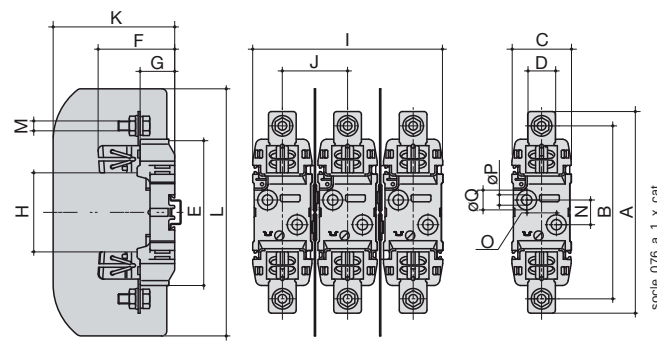
(2) IP20 tripolar kit comprises - 2 connecting blocks for the ends, 2 phase separation shields for the ends, 6 terminal shrouds and 3 fuse covers.

Dimensions

160 A fuse base, size 00



160 to 630 A fuse base, sizes 0, 1, 2 and 3



Rating (A)	Fuse size	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
160	00	122	100	37	22	86	59.5	23	57	114	38.5	85	146	M8	25	-	8	15
160	0	170	150	47	24	122	63	29	74	144	48.5	91.5	185	8	25	-	7.5	15
250	1	200	175	60	28	148	77.5	35	80	192	66	123	250	10	25	30	10.5	20.5
400	2	225	200	60	32	148	88	35	80	192	66	123	250	12	25	30	10.5	20.5
630	3	240	210	60	38	148	97	35	80	224	82	143	270	12	25	30	10.5	20.5

Fuse bases

Fuse protection

for NH industrial and high-speed (uR) fuses from 160 to 2500 A

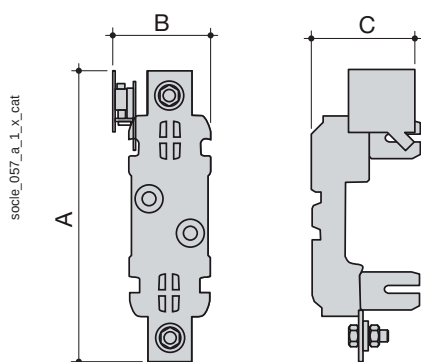
References

Unipolar fuse bases for fuses with a striker from 160 to 630 A (U = 690 V)

Rating Fuse size	160 A 0	250 A 1	400 A 2	630 A 3
Back plate mounted device without AC				
No. of poles	Reference	Reference	Reference	Reference
1 P	6501 1010	6501 1011	6501 1012	6501 1013
DIN rail-mounted device without AC				
No. of poles	Reference	Reference	Reference	Reference
1 P	6501 1110	6501 1111	6501 1112	6501 1113
Accessories				
Presence and fuse blown signalling AC (DDMM)				
No. of poles	Reference	Reference	Reference	Reference
1 P	6500 0040	6500 0041	6500 0042	6500 0043
Characteristics				
NO/NC contact				
Nominal current I _n (A) 250 VAC	16	16	16	16

Dimensions

160 to 630 A fuse base, sizes 0, 1, 2 and 3



Rating (A)	Fuse size	A	B	C
160	0	193	65.5	90
250	1	215	76	98
400	2	227	76	102
630	3	235	76	102

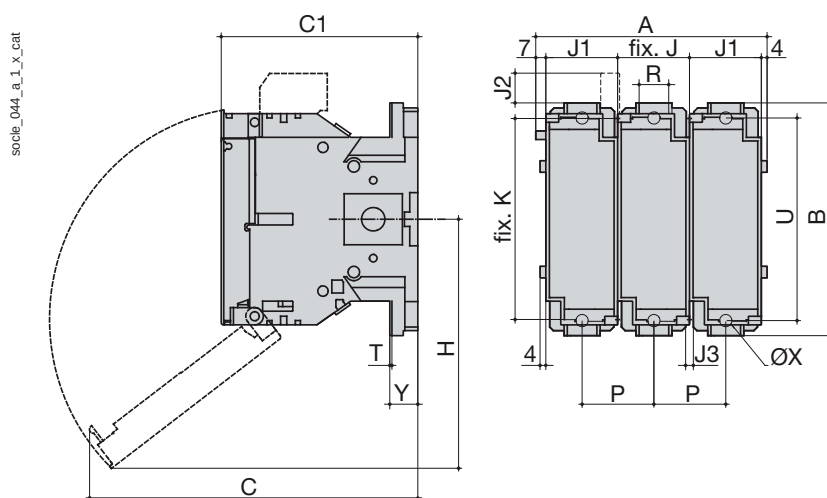
References

Multipolar fuse bases for fuses with a striker from 160 to 400 A (U = 690 V)

Rating Fuse size	160 A 0	250 A 1	400 A 2
Back plate mounted device with presence and fuse blown signalling AC (DDMM)			
No. of poles	Reference	Reference	Reference
2 P	6301 2016	6301 2024	6301 2039
3 P	6301 3016	6301 3024	6301 3039
4 P	6301 4016	6301 4024	6301 4039
Auxiliary contacts for fuse blown indication			
AC position	Reference	Reference	Reference
1 st AC	included	included	included
2 nd	3994 1901	3994 1901	3994 1901
Terminal shrouds (1 piece)			
No. of poles	Reference	Reference	Reference
2 P	3998 2016	3998 2025	3998 2025
3 P	3998 3016	3998 3025	3998 3025
4 P	3998 4016	3998 4025	3998 4025

Dimensions

160 to 400 A fuse base, size 0



Rating (A)	Fuse size	A 2 p.	A 3 p.	A 4 p.	B	C	C1	H	J	J1	J2	J3	K	P	R	T	U	ØX	Y
160	0	111	161	211	162	229	136.5	174	50	60	20.5	5.4	140	50	20	2.5	141	8.5	19.5
250	1	131	191	251	195	251	146	185	60	60	7.5	6.4	162	60	32	2.5	166	11	19.5
400	2	143	209	275	205	260	149	200	66	66	2.5	6.4	172	66	50	3	175	11	20

Fuse bases

Fuse protection

for NH industrial and high-speed (uR) fuses from 160 to 2500 A

References

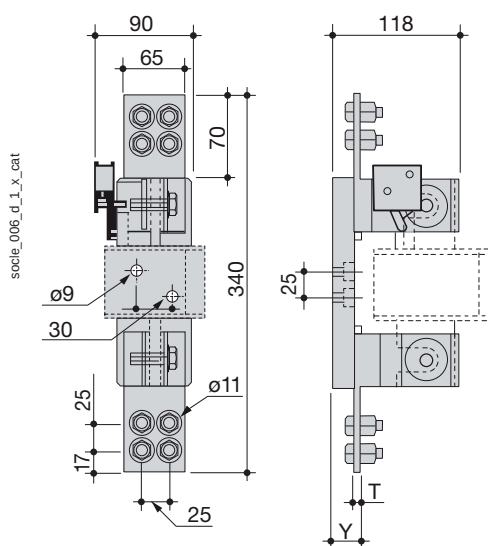
Fuse bases for fuses with or without a striker from 1000 to 2500 A (U = 690 V)

Rating (A) Fuse size	1 000 A 4	1 250 A 4	2500 A 2 x 4	2 500 A 2 x 4 (S)	2 500 A 6 (for neutral)
Device without presence and fuse blown signalling (DDMM)					
No. of poles	Reference	Reference	Reference	Reference	Reference
1 P	6431 0004	6431 0005	6431 0006		6431 0007 ⁽¹⁾
Device with presence and fuse blown signalling (DDMM)					
No. of poles	Reference	Reference	Reference	Reference	Reference
1 P	7304 0001	7305 0001	7306 0001	6433 0005	

(1) Without solid neutral link.

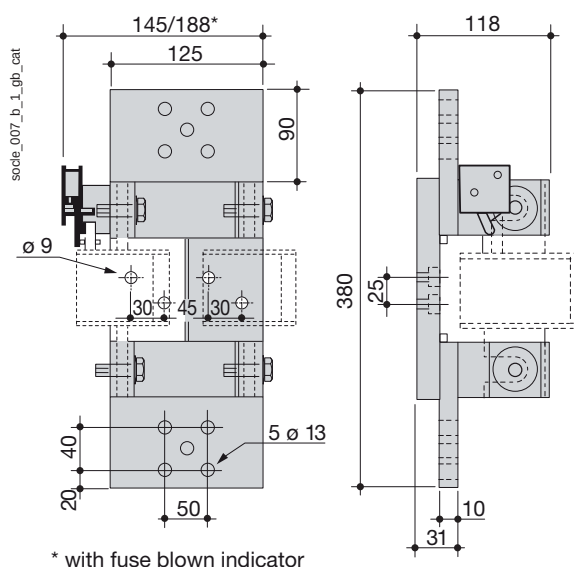
Dimensions

1000 to 1250 A fuse base, size 4

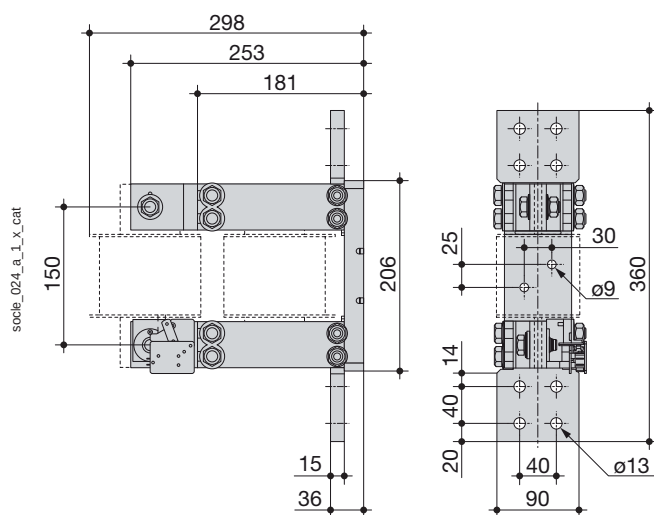


Rating (A)	Y (mm)	T (mm)
1000	25	4
1250	30	9

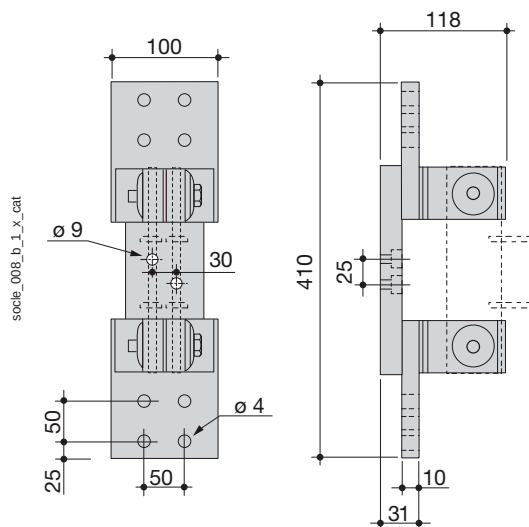
2500 A fuse base, size 2 X 4



2500 A fuse base, 2 x 4 (S)



2500 A fuse base, size 6 (for neutral)



References

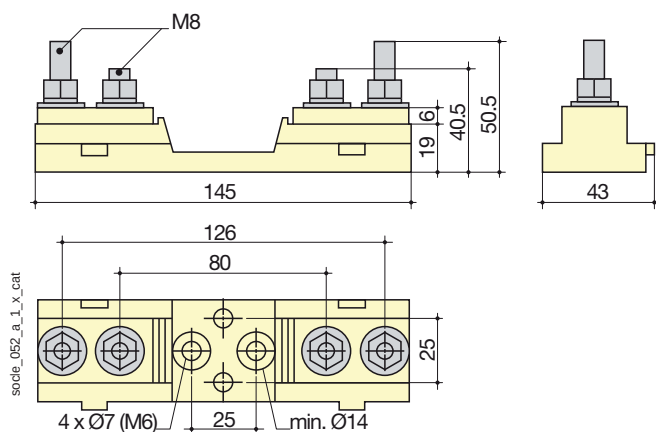
Unipolar fuse bases for UR fuses

		1000 VAC	1400 VAC
L shaped bracket /80 (distance between centres 80)			
Thermal current I_{th} at 40°C	Type of fuse	Reference	Reference
400	0000 ... 00 bolted connection	170H 1007	
Knife-edge fuses /80 (distance between centres 80)			
Thermal current I_{th} at 40°C	Type of fuse	Reference	Reference
1250 ⁽¹⁾	1* ... 3	170H 3004	
Knife-edge fuses /110 (distance between centres 110)			
Thermal current I_{th} at 40°C	Type of fuse	Reference	Reference
1250 ⁽¹⁾	1* ... 3		170H 3006

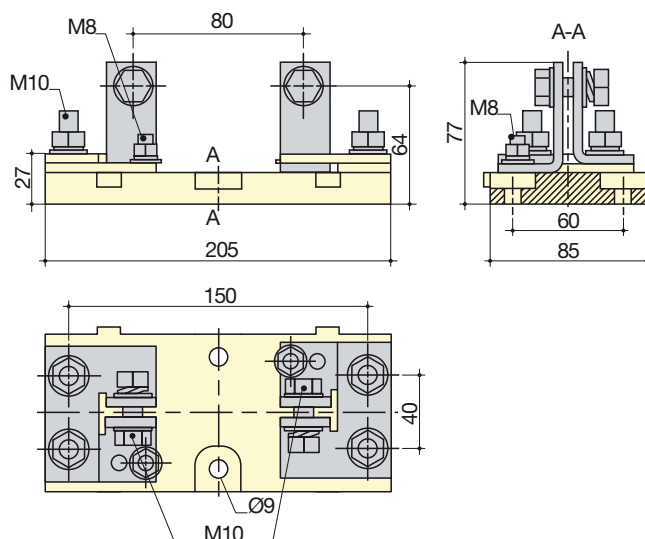
(1) For currents > 1250 A, please consult us.

Dimensions

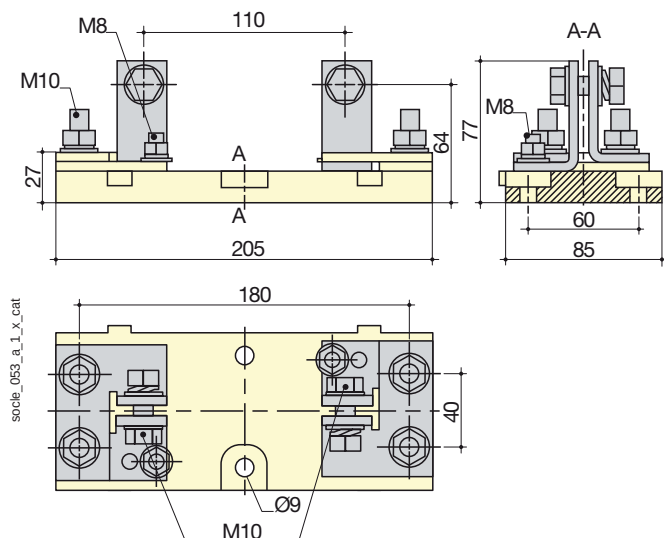
Bracket /80 - 400 A - 1000 VAC Ref.: 170H 1007



Knife-edge /80 - 1250 A - 1000 VAC Ref.: 170H 3004



Knife-edge /110 - 1250 A - 1400 VAC - Ref: 170H 3006

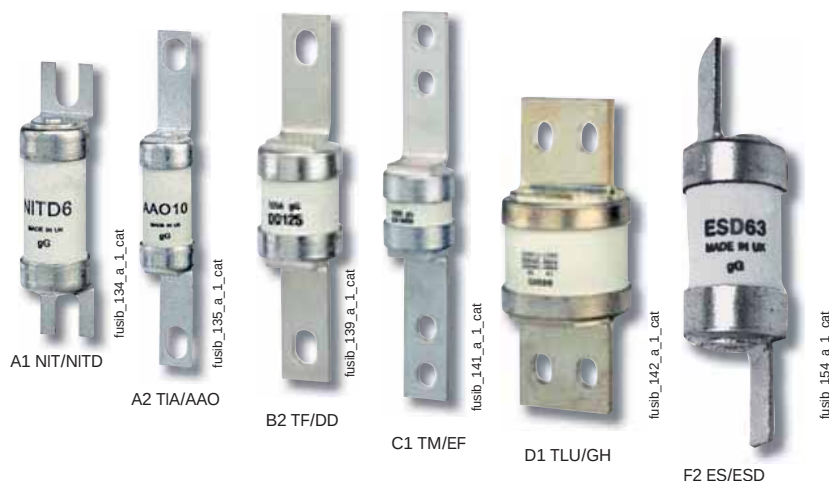




BS88 industrial fuselinks

Fuse protection
from 2 to 1250 A

Fuse protection



The solution for

- > Motor protection, cable and device protection



Strong points

- > High level performance
- > High reliability
- > Safety

Conformity to standards⁽¹⁾

- > IEC 60269-1
- > IEC 60269-2
- > IEC 60269-2-1
- > NF EN 60269-1
- > NF C 63-210
- > NF C 63211
- > VDE 0636-10
- > DIN 43620



(1) Product reference on request.

Available on request

- > EDF application: T2 fuses, in accordance with standard HN 63 - S20.
- > 690 V knife-edge fuses
- > UL and CSA fuses for North American markets

Function

SOCOMEK industrial fuses protect installations and people against overcurrents for any low voltage electrical circuit.

Advantages

High level performance

- High breaking capacity 120 kA at 500 V, 80 kA at 690 V.
- High short-circuit limitation capacity.
- Simple, reliable discrimination.

High reliability

- Absolute protection over time guaranteed by the simplicity of manufacture and function (Joule effect).

Safety

- The energy given off whilst eliminating the fault is contained within the cartridge.

References

Distribution industrial fuselinks (type gG)

Rating (A)	Voltage (VAC)	F1 ⁽¹⁾ NS / NSD	Voltage (VAC)	F2 ⁽²⁾ ES / ESD	Voltage (VAC)	A1 ⁽¹⁾ NIT / NITD	Voltage (VAC)	A2 ⁽¹⁾ TIA / AAO	Voltage (VAC)	A3 ⁽¹⁾ TIS / BAO
		Reference		Reference		Reference		Reference		Reference
2	550	6F10 0002	550	6F20 0002	550	6A10 0002	550	6A20 0002		
4	550	6F10 0004	550	6F20 0004	550	6A10 0004	550	6A20 0004		
6	550	6F10 0006	550	6F20 0006	550	6A10 0006	550	6A20 0006		
10	550	6F10 0010	550	6F20 0010	550	6A10 0010	550	6A20 0010		
16	550	6F10 0016	550	6F20 0016	550	6A10 0016	550	6A20 0016		
20	550	6F10 0020	550	6F20 0020	550	6A10 0020	550	6A20 0020		
25	550	6F10 0025	550	6F20 0025	550	6A10 0025	550	6A20 0025		
32	550	6F10 0032	550	6F20 0032	550	6A10 0032	550	6A20 0032		
40			550	6F20 0040					550	6A30 0040
50			550	6F20 0050					550	6A30 0050
63			550	6F20 0063					550	6A30 0063

Rating (A)	Voltage (VAC)	A3 ⁽¹⁾ OS / OSD	Voltage (VAC)	A4 ⁽¹⁾ TCP / CEO	Voltage (VAC)	A4 ⁽¹⁾ TFP / DEO	Voltage (VAC)	B1 ⁽¹⁾ TBC / AD	Voltage (VAC)	B1 ⁽¹⁾ TBC / BD
		Reference		Reference		Reference		Reference		Reference
2							550	6B10 0002		
4							550	6B10 0004		
6							550	6B10 0006		
10							550	6B10 0010		
16							550	6B10 0016		
20							550	6B10 0020		
25							550	6B10 0025		
32			550	6A40 0032			550	6B10 0032		
40			550	6A40 0040					550	6B10 0040
50			550	6A40 0050					550	6B10 0050
63			550	6A40 0063					550	6B10 0063
80	550	6A30 0080	550	6A40 0080						
100	550	6A30 0100	550	6A40 0100						
125					415	6A40 0125				
160					415	6A40 0160				
200					415	6A40 0200				

(1) Offset blade type fuselinks

(2) Offset bolted tag type fuselinks

(3) Centre bolted tag type fuselinks.

Note: pack quantity 3 pieces for each product.

Rating (A)	Voltage (VAC)	B1 ⁽¹⁾ TC / CD	Voltage (VAC)	B2 ⁽¹⁾ TF / DD	Voltage (VAC)	C1 ⁽¹⁾ TKM / EFS	Voltage (VAC)	B3 ⁽¹⁾ TKF / ED	Voltage (VAC)	B4 ⁽¹⁾ TMF / ED
		Reference		Reference		Reference		Reference		Reference
80	550	6B10 0080								
100	550	6B10 0100								
125			415	6B20 0125	415	6C10 0125				
160			415	6B20 0160	415	6C10 0160				
200			415	6B20 0200	415	6C10 0200				
250					415	6C10 0250	415	6B30 0250		
315					415	6C10 0315	415	6B30 0315		
355									415	6B40 0355
400									415	6B40 0400

BS88 industrial fuselinks

Fuse protection

from 2 to 1250 A

References (continued)

Distribution industrial fuselinks (type gG)

Rating (A)	Voltage (VAC)	C1 ⁽¹⁾ TM / EF	Voltage (VAC)	C2 ⁽¹⁾ TTM / FF	Voltage (VAC)	C3 ⁽¹⁾ TLM / GF	Voltage (VAC)	D1 ⁽¹⁾ TLU / GH	Voltage (VAC)	D1 ⁽¹⁾ TXU / GH
		Reference		Reference		Reference		Reference		Reference
355	415	6C10 0355								
400	415	6C10 0400								
450			550	6C20 0450						
500			550	6C20 0500						
560			550	6C20 0560						
630			550	6C20 0630						
710					550	6C30 0710	550	6D10 0710		
800					550	6C30 0800	550	6D10 0800		
1000									550	6D10 1000
1250									550	6D10 1250

(1) Centre bolted tag type fuselinks.

Note: pack quantity 3 pieces for each product.

Motor rated industrial fuselinks (type gM)

Rating (A)	Voltage (VAC)	F1 ⁽¹⁾ NS / NSD	Voltage (VAC)	F2 ⁽¹⁾	Voltage (VAC)	A1 ⁽²⁾ NIT / NITD	Voltage (VAC)	A2 ⁽²⁾ TIA / AAO	Voltage (VAC)	A3 ⁽²⁾ TIS / BAO
		Reference		Reference		Reference		Reference		Reference
20M25	415	6F1M 0025			550	6A1M 0025				
20M32	415	6F1M 0032			550	6A1M 0032				
32M36	415	6F1M 0036								
32M40	415	6F1M 0040			550	6A1M 0040	550	6A2M 0040		
32M50	415	6F1M 0050			550	6A1M 0050	550	6A2M 0050		
32M63	415	6F1M 0063			550	6A1M 0063	550	6A2M 0063		
63M80			415	6F2M 0080					550	6A3M 0080
63M100			415	6F2M 0100					550	6A3M 0100

Rating (A)	Voltage (VAC)	B2 ⁽³⁾ TF / DD	Voltage (VAC)	B3 ⁽³⁾	Voltage (VAC)	B4 ⁽³⁾ TMF / ED	Voltage (VAC)	C1 ⁽³⁾ TM / EF
		Reference		Reference		Reference		Reference
200M250	415	6B2M 0250						
200M315	415	6B2M 0315						
315M400			415	6B3M 0400				
400M500					550	6B4M 0500	550	6C1M 0500

(1) Offset blade type fuselinks

(2) Offset bolted tag type fuselinks

(3) Centre bolted tag type fuselinks.

Note: pack quantity 3 pieces for each product.

Accessories

Fuse holders for offset blade type fuselinks

References

Rating (A)	Size	Voltage (VAC)	Color	Output connection	Type	Pack qty	Reference
32	F1	550	black	front/rear	32NNSF	10	5F10 0032
32	F1	550	black	front/rear	32NNSFBS	10	5F10 0132
32	F1	550	black	rear/rear	32NNSBS	10	5F10 0232
32	F1	550	white	front/rear	32NNSFW	10	5F10 1032
32	F1	550	white	front/rear	32NNSFBSW	10	5F10 1132
32	F1	550	white	rear/rear	32NNSBSW	10	5F10 1232
63	F2	550	black	front/rear	63ENSF	5	5F20 0063
63	F2	550	black	front/rear	63ENSFBS	5	5F20 0163
63	F2	550	black	rear/rear	63ENSBS	5	5F20 0263
63	F2	550	white	front/rear	63ENSFW	5	5F20 1063
63	F2	550	white	front/rear	63ENSFBSW	5	5F20 1163
63	F2	550	white	rear/rear	63ENSBSW	5	5F20 1263



Voltage: 550 VAC.

fusib_144_a_1_cat

Accessories

Rating (A)	Size	Output connection	Type	Pack qty	Reference
32	F1	busbar connecting systems	32BCSNNS	1	5F10 0001
63	F2	busbar connecting systems	63BCSENS	1	5F20 0001
32	F1	solid neutral links	32NNL	1	5F10 0002
63	F2	solid neutral links	63ENL	1	5F20 0002

Fuse holders for offset bolted tag type fuselinks

References

Rating (A)	Size	Voltage (VAC)	Color	Output connection	Type	Pack qty	Reference
32	A1	660	black	front/front	CM32FC	10	5A10 0032
32	A1	660	white	front/front	CM32FCW	10	5A10 1032
32	A2	660	black	front/front	CM32F	10	5A20 0032
32	A2	660	white	front/front	CM32FW	10	5A20 1032
63	A3	660	black	front/front	CM63F	5	5A30 0063
63	A3	660	white	front/front	CM63FW	5	5A30 1063
100	as A3	660	black	front/front	CM100F	5	5A30 0100
100	as A3	660	white	front/front	CM100FW	5	5A30 1100



Voltage: 660 VAC.
Output connection: front / front.

fusib_143_a_1_cat

Accessories

Rating (A)	Size	Output connection	Type	Pack qty	Reference
32	A1	rear connection studs	32BSC	10	5A10 0001
32	A2	rear connection studs	32BS	10	5A20 0001
63 ... 100	A3	rear connection studs	63 / 100BS	5	5A30 0001
32	A1 - A2	lockable safety carrier	32LSC	3	5A20 0002
63 ... 100	A3	lockable safety carrier	63 / 100LSC	3	5A30 0002
32 ... 100	A1 - A3	ganging link pack	GLP	1	5A30 0003
32 ... 100	A1 - A3	neon indicator (90 - 660 VAC)	NI	3	5A30 0004
32 ... 100	A1 - A3	security clip	CMSC	10	5A30 0005

BS88 industrial fuselinks

Fuse protection

from 2 to 1250 A

Characteristics

Distribution industrial fuselinks (type gG)

Fuse cut off current

Rating (A)	F1 NS / NSD 50 / 80 kA	F2 ES / ESD 50 / 80 kA	A1 NIT / NITD 50 / 80 kA	A2 TIA / AAO 50 / 80 kA	A3 TIS / BAO 50 / 80 kA	A3 OS / OSD 50 / 80 kA	A4 TCP / CEO 50 / 80 kA
2	0.5 / 0.6	0.5 / 0.6	0.5 / 0.6	0.5 / 0.6			
4	0.9 / 1.0	0.9 / 1.0	0.7 / 0.8	1.0 / 1.1			
6	1.4 / 1.6	1.4 / 1.6	1.0 / 1.1	1.5 / 1.8			
10	2.4 / 2.6	2.4 / 2.6	1.7 / 2.0	2.4 / 2.8			
16	2.5 / 2.9	2.5 / 2.9	2.5 / 3.0	2.6 / 3.0			
20	3.2 / 3.8	3.2 / 3.8	2.5 / 3.0	3.4 / 4.0			
25	3.5 / 4.0	3.5 / 4.0	3.5 / 4.0	3.8 / 4.1			
32	4.1 / 4.9	4.1 / 4.9	3.5 / 4.0	4.2 / 5.0			4.4 / 5.0
40		5.0 / 5.9			5.1 / 6.0		5.0 / 6.0
50		5.2 / 6.0			7.0 / 8.0		6.6 / 7.8
63		5.8 / 6.6			9.0 / 10.0		8.9 / 10.0
80						9.5 / 11.0	9.5 / 11.0
100						12.0 / 14.0	12.0 / 14.0

Fuse cut off current

Rating (A)	A4 TFP / DEO 50 / 80 kA	B1 TBC / AD 50 / 80 kA	B1 TBC / BD 50 / 80 kA	B1 TC / CD 50 / 80 kA	B2 TF / DD 50 / 80 kA	CI TKF / ED 50 / 80 kA	B3 TKF / ED 50 / 80 kA
2		0.4 / 0.5					
4		1.0 / 1.1					
6		1.4 / 1.6					
10		1.8 / 2.0					
16		2.0 / 2.2					
20		2.6 / 3.0					
25		3.6 / 4.0					
32		4.4 / 5.0					
40			5.0 / 6.0				
50			6.6 / 7.8				
63			8.9 / 10.0				
80				9.5 / 11.0			
100				12.0 / 14.0			
125	12.0 / 14.0				12.0 / 14.0	12.0 / 14.0	
160	17.0 / 19.0				17.0 / 19.0	17.0 / 19.0	
200	19.0 / 24.0				19.0 / 24.0	19.0 / 24.0	
250						23.0 / 28.0	23.0 / 28.0
315						27.0 / 30.0	27.0 / 30.0

Fuse cut off current

Rating (A)	B4 TMF / ED 50 / 80 kA	C1 TM / EF 50 / 80 kA	C2 TTM / FF 50 / 80 kA	C3 TLM / GF 50 / 80 kA	D1 TLU / GH 50 / 80 kA	D1 TXU / GH 50 / 80 kA
355	30.0 / 34.0	30.0 / 34.0				
400	30.0 / 34.0	30.0 / 34.0				
450			40.0 / 48.0			
500			42.0 / 50.0			
560			46.0 / 54.0			
630			51.0 / 60.0			
710				55.0 / 64.0	55.0 / 64.0	
800				55.0 / 64.0	55.0 / 64.0	
1000						69.0 / 79.0
1250						90.0 / 105.0

Motor rated industrial fuselinks (type gM)

Fuse cut off current

Rating (A)	F1 NS / NSD 50 / 80 kA	F2 50 / 80 kA	A1 NIT / NITD 50 / 80 kA	A2 TIA / AAO 50 / 80 kA	A3 TIS / BAO 50 / 80 kA	A3 OS / OSD 50 / 80 kA	A4 TCP / CEO 50 / 80 kA
20M25	3.4 / 4.0		4.6 / 5.5				
20M32	4.0 / 5.0		4.6 / 5.5				
32M36	4.5 / 5.1						
32M40	4.8 / 5.5		5.0 / 6.0	5.0 / 6.0			
32M50	5.3 / 6.2		6.5 / 7.5	6.6 / 7.8			
32M63	5.9 / 6.9		7.5 / 10.0	8.5 / 9.0			
63M80		9.0 / 10.0			9.5 / 12.0		
63M100		10.1 / 10.3			12.0 / 13.0		
100M125						13.0 / 15.0	13.0 / 15.0
100M160						17.0 / 20.0	17.0 / 20.0
100M200							20.0 / 23.0

Fuse cut off current

Rating (A)	A4 TFP / DEO 50 / 80 kA	B1 TC / CD 50 / 80 kA	B2 TF / DD 50 / 80 kA	B3 50 / 80 kA	B4 TMF / ED 50 / 80 kA	C1 TM / EF 50 / 80 kA
100M125		13.0 / 15.0				
100M160		17.0 / 20.0				
100M200		20.0 / 23.0				
200M250	25.0 / 29.0		25.0 / 29.0			
200M315	27.0 / 31.0		27.0 / 31.0			
315M400				34.0 / 40.0		
400M500					42.0 / 50.0	42.0 / 50.0



Industrial fuses

NFC-DIN industrial fuselinks gG and aM curves
from 0.16 to 1250 A



fush_116_a_1_cat

gG fuse
from 0.5 to 125 A



fush_103_c_1_cat

aM type fuse
from 6 to 1250 A



fush_114_b_1_cat

gG fuse
from 6 to 1250 A

The solution for

- > Motor protection
- > Cable and device protection



Strong points

- > High level performances
- > High reliability
- > Improved safety

Conformity to standards

- > IEC 60269-1
- > DIN EN 60269-1
- > NF EN 60269-1
- > IEC 60269-2
- > NF EN 60269-2



Function

SOCOMEc industrial fuses protect installations and people from overcurrents for any low voltage electrical circuit.

Advantages

High level performances

- High breaking capacity - 120 kA at 400/500 V, 80 kA at 690 V.
- High short-circuit limitation capacity.
- Simple and reliable discrimination.

Improved safety

The energy released whilst eliminating the fault (fuse blowing) is contained within the cartridge (no degassing).

High reliability

- Absolute protection over time guaranteed by the simplicity of manufacture and function (Joule effect).
- No downgrading of fuse characteristics over time.

References

gG type fuses (in multiples of 10)

Rating (A)	10 x 38 without striker		14 x 51 without striker		14 x 51 with striker		22 x 58 without striker		22 x 58 with striker	
	Voltage (VAC)	Reference	Voltage (VAC)	Reference	Voltage (VAC)	Reference	Voltage (VAC)	Reference	Voltage (VAC)	Reference
0.5	500	6012 0000								
1	500	6012 0001	690	6022 0001						
2	500	6012 0002	690	6022 0002	500	6052 0002	690	6032 0002		
4	500	6012 0004	690	6022 0004	500	6052 0004	690	6032 0004	690	6062 0004
6	500	6012 0006	690	6022 0006	500	6052 0006	690	6032 0006	690	6062 0006
8	500	6012 0008	690	6022 0008	500	6052 0008	690	6032 0008	690	6062 0008
10	500	6012 0010	690	6022 0010	500	6052 0010	690	6032 0010	690	6062 0010
12	500	6012 0012	690	6022 0012	500	6052 0012	690	6032 0012	690	6062 0012
16	500	6012 0016	690	6022 0016	500	6052 0016	690	6032 0016	690	6062 0016
20	500	6012 0020	690	6022 0020	500	6052 0020	690	6032 0020	690	6062 0020
25	500	6012 0025	690	6022 0025	500	6052 0025	690	6032 0025	690	6062 0025
32	400	6012 0032	500	6022 0032	500	6052 0032	690	6032 0032	690	6062 0032
40			500	6022 0040	500	6052 0040	690	6032 0040	690	6062 0040
50			400	6022 0050	400	6052 0050	690	6032 0050	690	6062 0050
63							690	6032 0063	690	6062 0063
80							500	6032 0080	500	6062 0080
100							500	6032 0100	500	6062 0100
125							400	6032 0125	400	6062 0125

Description of accessories

	Reference		Reference		Reference		Reference		Reference
Solid cylindrical link	6019 0000		6029 0000		6029 0000		6039 0000		6039 0000

aM type fuses (in multiples of 10)

Rating (A)	10 x 38 without striker		14 x 51 without striker		14 x 51 with striker		22 x 58 without striker		22 x 58 with striker	
	Voltage (VAC)	Reference	Voltage (VAC)	Reference	Voltage (VAC)	Reference	Voltage (VAC)	Reference	Voltage (VAC)	Reference
0.16	500	6013 0007								
0.25	500	6013 0005	690	6023 0005						
0.5	500	6013 0000	690	6023 0000						
1	500	6013 0001	690	6023 0001						
2	500	6013 0002	690	6023 0002	500	6053 0002	690	6033 0002		
4	500	6013 0004	690	6023 0004	500	6053 0004	690	6033 0004	690	6063 0004
6	500	6013 0006	690	6023 0006	500	6053 0006	690	6033 0006	690	6063 0006
8	500	6013 0008	690	6023 0008	500	6053 0008	690	6033 0008	690	6063 0008
10	500	6013 0010	690	6023 0010	500	6053 0010	690	6033 0010	690	6063 0010
12	500	6013 0012	690	6023 0012	500	6053 0012	690	6033 0012	690	6063 0012
16	500	6013 0016	690	6023 0016	500	6053 0016	690	6033 0016	690	6063 0016
20	400	6013 0020	690	6023 0020	500	6053 0020	690	6033 0020	690	6063 0020
25	400	6013 0025	690	6023 0025	500	6053 0025	690	6033 0025	690	6063 0025
32			500	6023 0032	500	6053 0032	690	6033 0032	690	6063 0032
40			500	6023 0040	500	6053 0040	690	6033 0040	690	6063 0040
50			400	6023 0050	400	6053 0050	690	6033 0050	690	6063 0050
63							690	6033 0063	690	6063 0063
80							500	6033 0080	500	6063 0080
100							500	6033 0100	400	6063 0100
125							400	6033 0125	400	6063 0125

Description of accessories

	Reference		Reference		Reference		Reference		Reference
Solid cylindrical link	6019 0000		6029 0000		6029 0000		6039 0000		6039 0000

Industrial fuses

NFC-DIN industrial fuselinks gG and aM curves

from 0.16 to 1250 A

References (continued)

Knife-edge fuses (NH), gG type

Rating (A)	000/00C without striker (in multiples of 3)		00 without striker (in multiples of 3)		0 without striker (in multiples of 3)		0 with striker (in multiples of 3)		1 without striker (in multiples of 3)		1 with striker (in multiples of 3)	
	Voltage (VAC)	Reference	Voltage (VAC)	Reference	Voltage (VAC)	Reference	Voltage (VAC)	Reference	Voltage (VAC)	Reference	Voltage (VAC)	Reference
6	500	6600 0006										
10	500	6600 0010										
16	500	6600 0016			500	6702 0016						
20	500	6600 0020			500	6702 0020						
25	500	6600 0025			500	6702 0025						
32	500	6600 0032			500	6702 0032	690	6852 0032				
40	500	6600 0040			500	6702 0040	690	6852 0040				
50	500	6600 0050			500	6702 0050	690	6852 0050				
63	500	6600 0063			500	6702 0063	690	6852 0063	500	6712 0063		
80	500	6600 0080			500	6702 0080	690	6852 0080	500	6712 0080	690	6862 0080
100	500	6600 0100			500	6702 0100	690	6852 0100	500	6712 0100	690	6862 0100
125			500	6692 0125	500	6702 0125	500	6852 0125	500	6712 0125	690	6862 0125
160			500	6692 0160	500	6702 0160	500	6852 0160	500	6712 0160	690	6862 0160
200					500	6702 0200	500	6852 0200	500	6712 0200	690	6862 0200
250									500	6712 0250	500	6862 0250
315									400	6712 0315	500	6862 0315

Description of accessories

	Reference		Reference		Reference		Reference		Reference		Reference
Neutral bar	6420 0000		6420 0000		6421 0000		6421 0000		6421 0001		6421 0001

Rating (A)	2 without striker (in multiples of 3)		2 with striker (in multiples of 3)		3 without striker (to this unit)		3 with striker (to this unit)		4 without striker (to this unit)		4 with striker (to this unit)	
	Voltage (VAC)	Reference	Voltage (VAC)	Reference	Voltage (VAC)	Reference	Voltage (VAC)	Reference	Voltage (VAC)	Reference	Voltage (VAC)	Reference
100	500	6722 0100										
125	500	6722 0125	690	6872 0125								
160	500	6722 0160	690	6872 0160								
200	500	6722 0200	690	6872 0200								
250	500	6722 0250	690	6872 0250								
315	500	6722 0315	690	6872 0315	500	6732 0315	690	6882 0315	500	6746 0315	500	6896 0315
400	500	6722 0400	500	6872 0400	500	6732 0400	690	6882 0400	500	6746 0400	500	6896 0400
500	500	6722 0500	500	6872 0500	500	6732 0500	690	6882 0500	500	6746 0500	500	6896 0500
630					500	6732 0630	500	6882 0630	500	6746 0630	500	6896 0630
800					500	6732 0800			500	6746 0800	500	6896 0800
900									500	6746 0900	500	6896 0900
1000									500	6746 1000	500	6896 1000
1250									500	6746 1200	500	6896 1200

Description of accessories

	Reference		Reference		Reference		Reference		Reference		Reference
Neutral bar	6421 0002		6421 0002		6421 0003		6421 0003		6441 0005		6441 0005

Knife-edge fuses (NH), aM type

Rating (A)	000/00C without striker (in multiples of 3)		00 without striker (in multiples of 3)		0 without striker (in multiples of 3)		0 with striker (in multiples of 3)		1 without striker (in multiples of 3)		1 with striker (in multiples of 3)	
	Voltage (VAC)	Reference	Voltage (VAC)	Reference	Voltage (VAC)	Reference	Voltage (VAC)	Reference	Voltage (VAC)	Reference	Voltage (VAC)	Reference
6	500	6601 0006										
10	500	6601 0010										
16	500	6601 0016			500	6703 0016						
20	500	6601 0020			500	6703 0020						
25	500	6601 0025			500	6703 0025						
32	500	6601 0032			500	6703 0032	690	6853 0032				
40	500	6601 0040			500	6703 0040	690	6853 0040				
50	500	6601 0050			500	6703 0050	690	6853 0050				
63	500	6601 0063			500	6703 0063	690	6853 0063				
80	500	6601 0080			500	6703 0080	690	6853 0080			690	6863 0080
100			500	6693 0100	500	6703 0100	690	6853 0100	500	6713 0100	690	6863 0100
125			500	6693 0125	500	6703 0125	690	6853 0125	500	6713 0125	690	6863 0125
160			500	6693 0160	500	6703 0160	690	6853 0160	500	6713 0160	690	6863 0160
200					500	6703 0200	500	6853 0200	500	6713 0200	690	6863 0200
250									500	6713 0250	690	6863 0250
315									500	6713 0315	500	6863 0315

Description of accessories

	Reference		Reference		Reference		Reference		Reference		Reference
Neutral bar	6420 0000		6420 0000		6421 0000		6421 0000		6421 0001		6421 0001

Rating (A)	2 without striker (in multiples of 3)		2 with striker (in multiples of 3)		3 without striker (to this unit)		3 with striker (to this unit)		4 without striker (to this unit)		4 with striker (to this unit)	
	Voltage (VAC)	Reference	Voltage (VAC)	Reference	Voltage (VAC)	Reference	Voltage (VAC)	Reference	Voltage (VAC)	Reference	Voltage (VAC)	Reference
100	500	6723 0100										
125	500	6723 0125										
160	500	6723 0160	690	6873 0160								
200	500	6723 0200	690	6873 0200								
250	500	6723 0250	690	6873 0250								
315	500	6723 0315	690	6873 0315	500	6733 0315	690	6883 0315	500	6747 0315	500	6897 0315
400	500	6723 0400	690	6873 0400	500	6733 0400	690	6883 0400	500	6747 0400	500	6897 0400
500	500	6723 0500	500	6873 0500	500	6733 0500	690	6883 0500	500	6747 0500	500	6897 0500
630					500	6733 0630	500	6883 0630	500	6747 0630	500	6897 0630
800									500	6747 0800	500	6897 0800
1000									500	6747 1000	500	6897 1000
1250									500	6747 1200	500	6897 1200

Description of accessories

	Reference		Reference		Reference		Reference		Reference		Reference
Neutral bar	6421 0002		6421 0002		6421 0003		6421 0003		6441 0005		6441 0005

Industrial fuses

NFC-DIN industrial fuselinks gG and aM curves
from 0.16 to 1250 A

Accessories

Solid cylindrical link

Use

Solid link to be used in conjunction with the neutral pole of cylindrical fused disconnecting switches.

3 sizes: 10 x 38, 14 x 51, 22 x 58.

Rating (A)	Size	To be ordered in multiples of	Reference
32	10 x 38	10	6019 0000
50	14 x 51	10	6029 0000
100	22 x 58	10	6039 0000



fusib_123_a_1_cat

Solid links

Use

Solid link to be used in conjunction with fuse bases or knife-edge fused disconnecting switches, generally fitted on the neutral pole.
6 sizes: 000/00C/00-0-1-2-3-4.

Rating (A)	Size	Tightening	Reference
160	000/00C/00	elastic	6420 0000
160	0	elastic	6421 0000
315	1	elastic	6421 0001
400	2	elastic	6421 0002
630	3	elastic	6421 0003
1250	4	blocked	6441 0005



fusib_124_a_1_cat

Operating handle

Use

For inserting and extracting knife-edge fuses, sizes 000 to 4.

Type	Reference
Operating handle	6401 0011

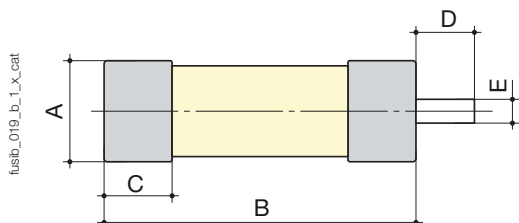


fusib_122_a_1_cat

Dimensions

Cylindrical fuses (NF)

Without striker - with striker

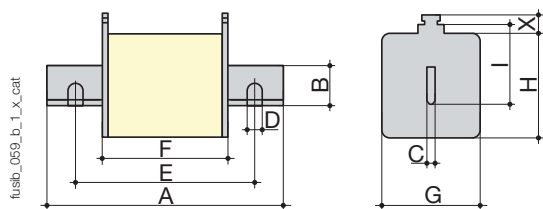


Standard dimensions (mm) as per IEC 60269-2-1

Size	A	B	C	D	E
10 x 38	10.3	38	10.5		
14 x 51	14.3	51	13.8	7.5	3.8
22 x 58	22.2	58	16.2	7.5	3.8

Knife-edge fuses (NH)

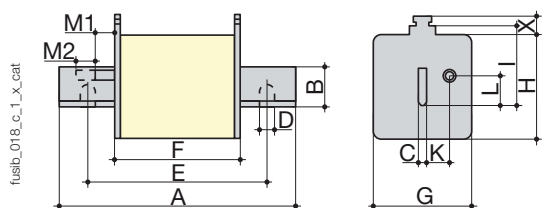
without striker



Standard dimensions (mm) as per IEC 60269-2-1

Size	A maxi	B mini	C	D	E mini	F maxi	G maxi	H maxi	I	X mini
000/00C	80	15	6			54	21	41	35	11
00	80	15	6			54	30	48	35	11
0	127.5	15	6			68	40	48	35	11
1	137.5	20	6			75	52	53	40	11
2	152.5	25	6			75	60	61	48	11
3	152.5	32	6			75	75	76	60	11
4	203	49	8	16	150	90	105	110	87	11

With striker



Standard dimensions (mm) as per IEC 60269-2-1

Size	A maxi	B mini	C	D	E	F maxi	G maxi	H maxi	I	K	L	M1	M2 mini	X mini
0	127.5	15	6			68	45	48	35	11.5	14	25	13	11
1	137.5	20	6			75	52	53	40	13	14.5	25.5	13	11
2	152.5	25	6			75	60	61	48	16	14.5	25.5	13	11
3	152.5	32	6			75	75	76	60	21	14.5	25.5	13	11
4	203	49	8	16	150	90	105	110	87	24.5	14.5	35	13	11

Industrial fuses

NFC-DIN industrial fuselinks gG and aM curves
from 0.16 to 1250 A

Curves characteristic of NF and NH gG type fuses

Cut-off current diagram

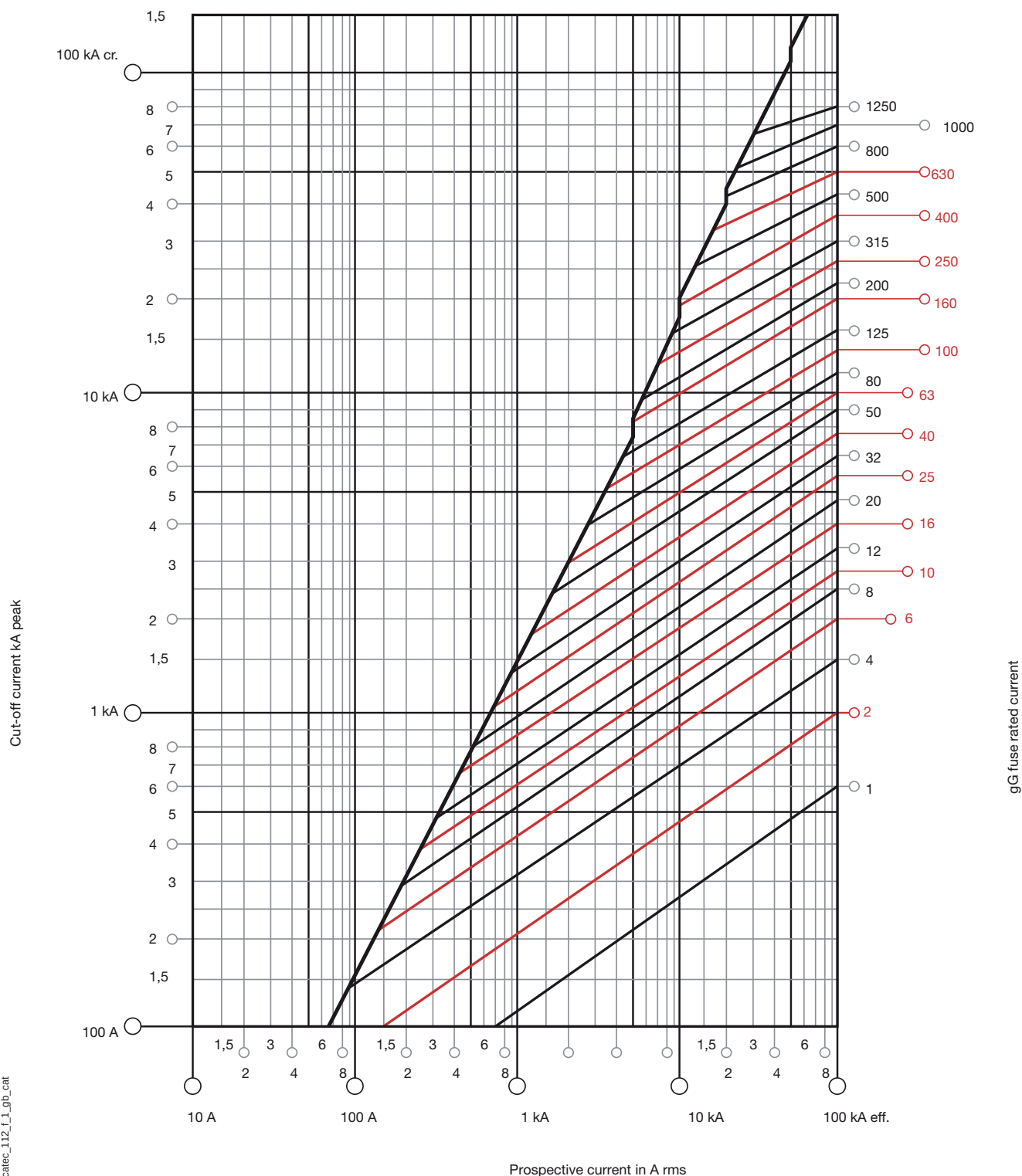
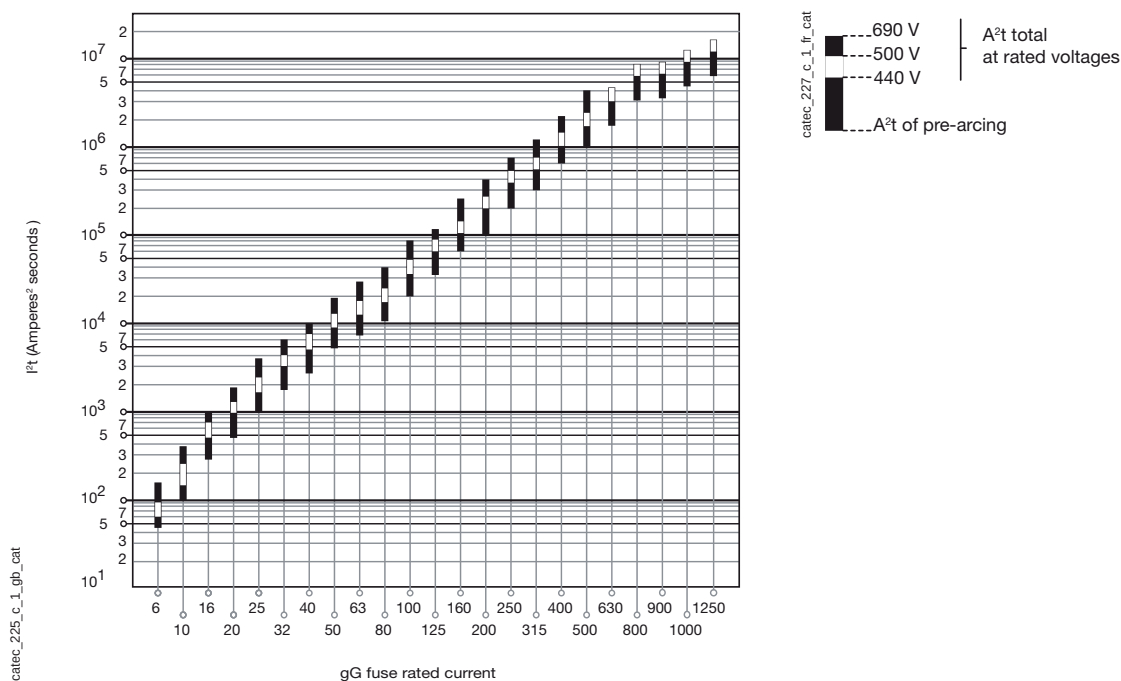
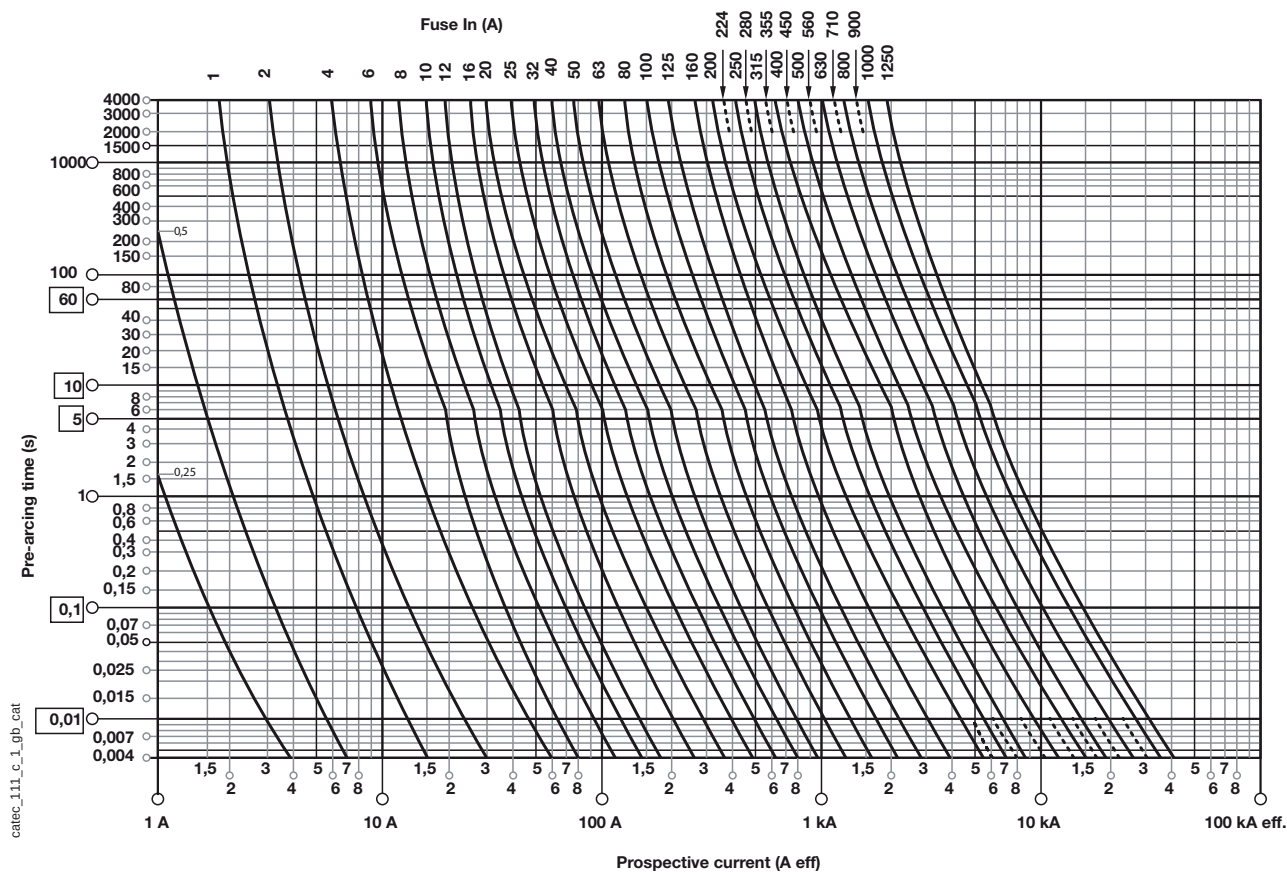


Diagram of thermal constraint limitation



Time/current operation characteristics

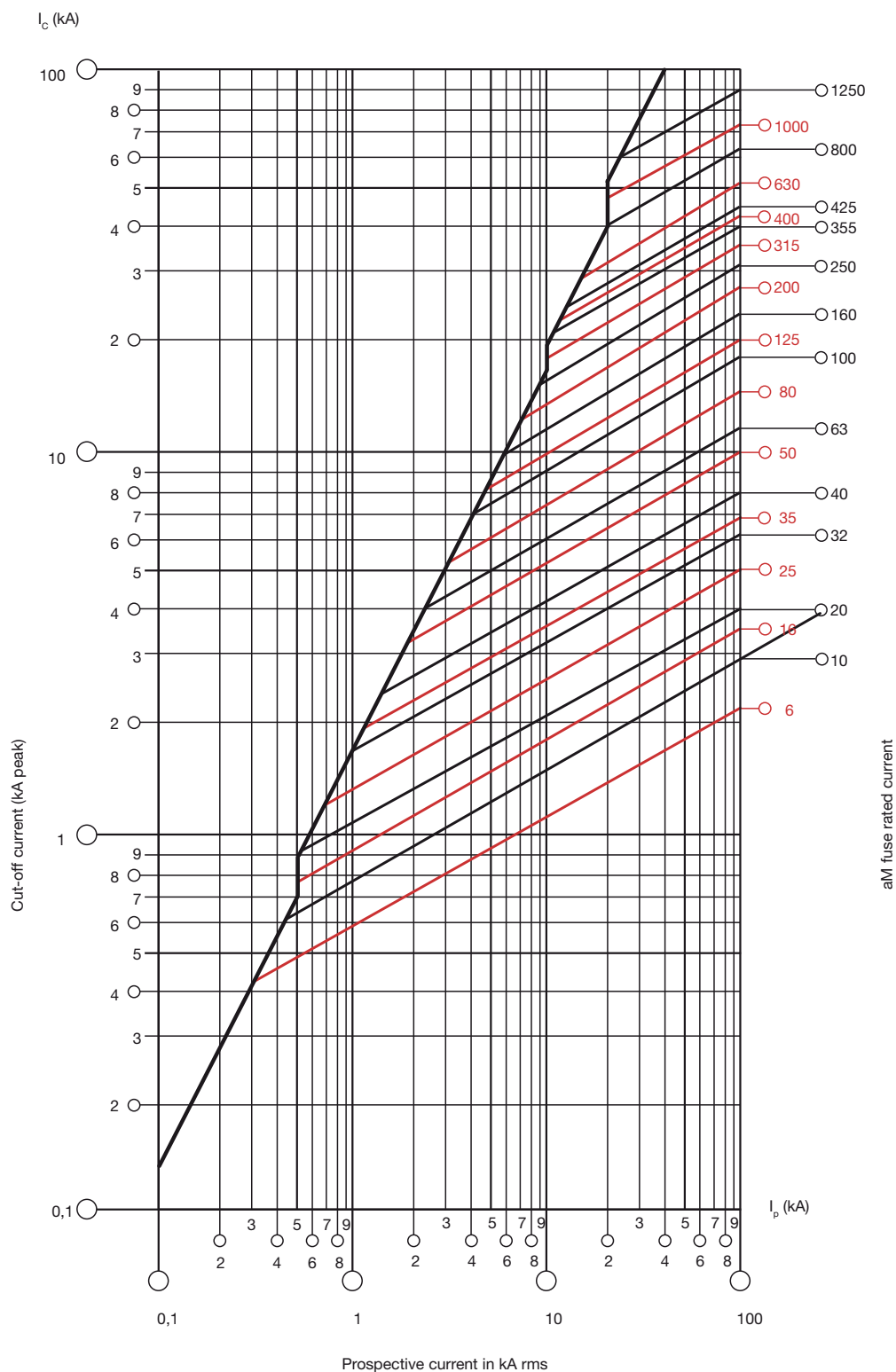


Industrial fuses

NFC-DIN industrial fuselinks gG and aM curves
from 0.16 to 1250 A

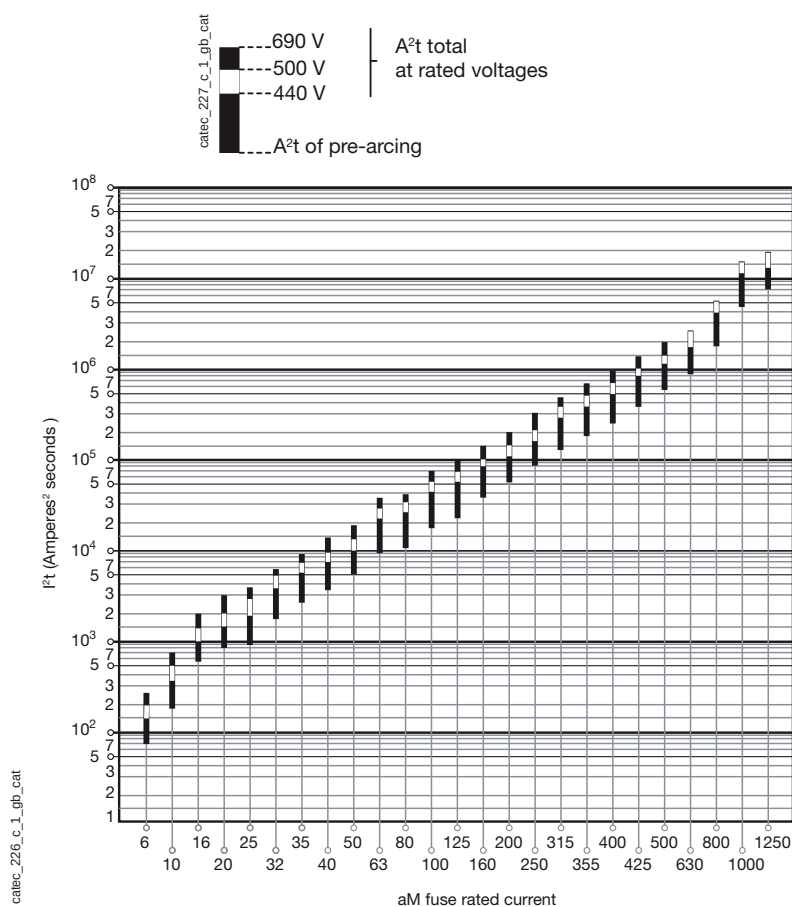
Curves characteristic of NF and NH aM type fuses

Cut-off current diagram



cathec_114.g_1_gb_cat

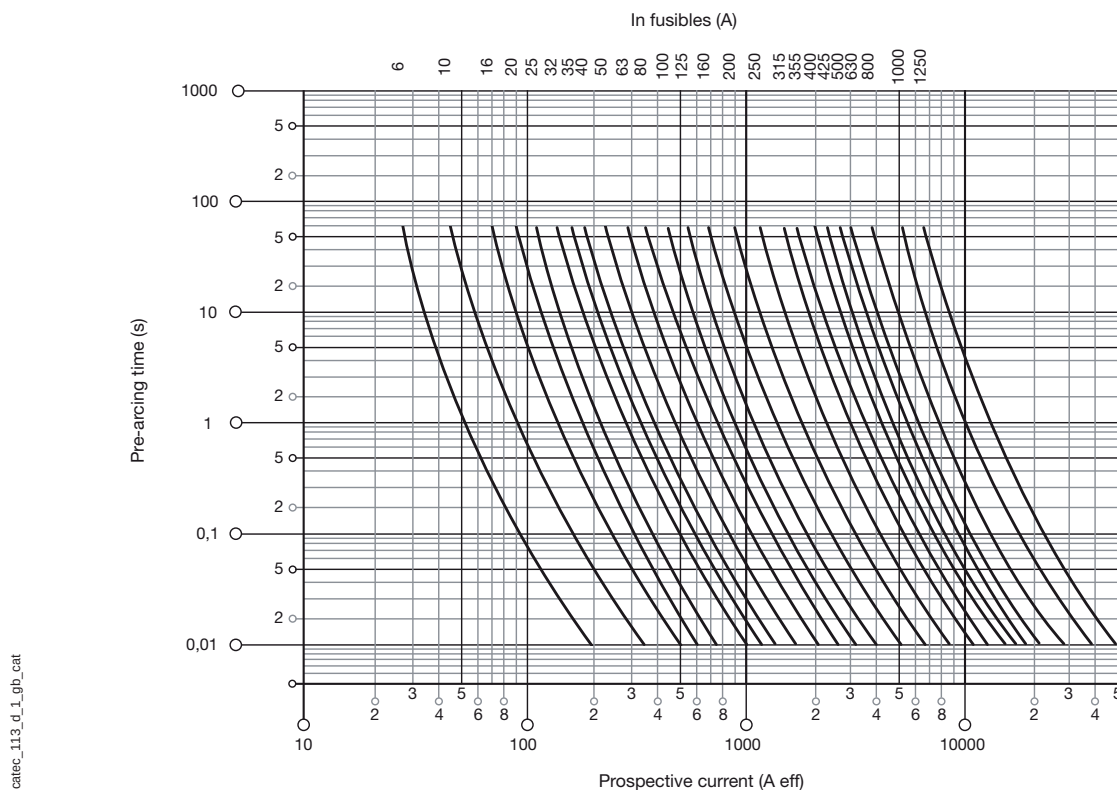
Diagram of thermal constraint limitation



Dissipated power without striker (W)

Rated operational currents I_n (A)	Fuse size						
	000	00	0/0S	1	2	3	4
6	0.33		0.42				
10	0.52		0.67				
16	0.81		0.98				
20	0.92		1.04				
25	1.08		1.17				
32	1.42		1.67				
35	1.58		1.72				
40	1.68		1.91				
50		2.28	2.51				
63		2.9	3.35	3.2			
80		4.19	4.93	4.6			
100		5.09	5.72	5.7			
125		6.29	7.30	6.98	7.6		
160		7.73	9.50	9.2	9.7		
200			12.3	13.7	13.9		
224				14.0	14.0		
250				15.3	17.0		
315					26.0	20.6	18.8
355					25.2	23.9	
400					29.3	26.5	23.5
425						28.3	
500						35.8	34
630						56.9	49
800							70
1000							80
1250							108

Time/current operation characteristics





High-speed fuses (uR)

gR and aR curves
from 5 to 2000 A



uR type fuse
with or without striker



DIN 43620 type fuse,
solid knife-edge



DIN 43653 (T/80) type fuse,
bracket



K/50/80/110 type fuse
Notched



EK/76/86/91 type fuse
Notched



BK/50/75/80 type fuse
Threaded hole



BT/60 type fuse
Threaded hole

The solution for

- > Protection of power semiconductors (variable speed drives, inverters, etc.)



Strong points

- > High level performance
- > High reliability
- > Improved safety
- > Fuse blown indicator

Extended range

- > Compatible range of devices (FUSERBLOC, load break switches, fuse bases)
- > Other uR fuse models available on request

Function

High speed fuses (uR) protect power semiconductors and DC circuits.

Advantages

High level performance

- Very high breaking capacity up to 300 kA.
- Very high limitation of short-circuit currents (and therefore significant reduction in thermal and mechanical stress).
- Good resistance to cyclic loads.

High reliability

- Absolute protection over time guaranteed by the simplicity of manufacture and function (Joule effect).
- No downgrading of fuse characteristics over time.

Improved safety

The energy released whilst eliminating the fault (fuse blowing) is contained within the cartridge (no degassing).

Fuse blown indicator

An auxiliary contact can be adapted to signal that a fuse has operated.

Compliance with standards⁽¹⁾

- > IEC 60269-1
- > NF EN 60269-1
- > IEC 60269-4
- > NF EN 60269-4
- > DIN EN 60269-4



(1) Product references on request.

References

690 VAC uR fuses - size 14 x 51

I _n rms value (A)	Pre-arcing I ² t when cold (A ² s)	Operating I ² t at 690 V rms (A ² s)	Losses at I _n (W)	Protection	To be ordered in multiples of	14 x 51 uR without striker Reference	14 x 51 uR with striker Reference
5	1.6	11	1.5	aR	10	170N 1405	
10	3.6	38.5	4	aR	10	170N 1410	170L 1410
15	8.6	70	5.5	aR	10	170N 1415	170L 1415
20	26	230	6	aR	10	170N 1420	170L 1420
25	46.5	375	7	aR	10	170N 1425	170L 1425
32	68	600	7.6	aR	10	170N 1432	170L 1432
40	84	750	8	aR	10	170N 1440	170L 1440
50	200	1800	9	aR	10	170N 1450	170L 1450

Accessories

	Reference	Reference
Recommended fuse combination switch (see page 254)	FUSERBLOC	FUSERBLOC
Recommended fuse holder (see page 324)	RM 50	RMS 50

690 VAC uR fuses - size 22 x 58

I _n rms value (A)	Pre-arcing I ² t when cold (A ² s)	Operating I ² t at 690 V rms (A ² s)	Losses at I _n (W)	Protection	To be ordered in multiples of	22 x 58 uR without striker Reference	22 x 58 uR with striker Reference
20	19	260	5	aR	10	170N 2220	170L 2220
25	34	410	6	aR	10	170N 2225	170L 2225
32	53.5	605	8	aR	10	170N 2232	170L 2232
40	68	750	9	aR	10	170N 2240	170L 2240
50	135	1600	9.5	aR	10	170N 2250	170L 2250
63	280	3080	11	aR	10	170N 2263	170L 2263
80	600	6600	13.5	aR	10	170N 2280	170L 2280
100 ⁽¹⁾	1100	12500	16	aR	10	170N 2299	170L 2299

(1) Voltage: 600 VAC (IEC) / 700 VAC (UL)

Accessories

	Reference	Reference
Recommended fuse combination switch (see page 254)	FUSERBLOC	FUSERBLOC
Recommended fuse holder (see page 324)	RM 100	RMS 100

High-speed fuses (uR)

gR and aR curves

from 5 to 2000 A

References (continued)

690 VAC uR fuses - size 000

I _n rms value (A)	Pre-arcing I ² t when cold (A ² s)	Operating I ² t at 660 V rms (A ² s)	Losses at I _n (W)	Protection	DIN 43653 (T/80) Brackets ⁽¹⁾ Reference	DIN 43620 Solid knife-edge ⁽³⁾ Reference
10	3.8	25.5	3	gR	170M 1408	170M 1558
16	7.2	48	5.5	gR	170M 1409	170M 1559
20	11.5	78	7	gR	170M 1410	170M 1560
25	19	130	9	gR	170M 1411	170M 1561
32	40	270	10	gR	170M 1412	170M 1562
40	69	460	12	gR	170M 1413	170M 1563
50	115	770	15	gR	170M 1414	170M 1564
63	215	1450	16	gR	170M 1415	170M 1565
80	380	2550	19	aR	170M 1416	170M 1566
100	695	4650	24	aR	170M 1417	170M 1567
125	1200	8500	28	aR	170M 1418	170M 1568
160	2300	16 000	32	aR	170M 1419	170M 1569
200	4200	28 000	37	aR	170M 1420	170M 1570
250	7750	51 500	42	aR	170M 1421	170M 1571
315	12 000	80 500	52	aR	170M 1422	170M 1572

(1) UL / CSA. - (2) With indicator. - (3) UL.

Accessories

	Reference	Reference
Fuse blown auxiliary contact	170H 0236	170H 0236
Recommended fuse base	170H 1007	6500 1010 ⁽¹⁾
Recommended fuse combination switch (see page 254)		FUSERBLOC

(1) Single-pole fuse base 160 A, size 00 (see page 332).

690 VAC uR fuses - size 00

I _n rms value (A)	Pre-arcing I ² t when cold (A ² s)	Operating I ² t at 660 V rms (A ² s)	Losses at I _n (W)	Protection	DIN 43653 (T/80) Brackets Reference	BT/60 Threaded hole Reference
25	19	130	6	gR	170M 2658	170M 2758
32	28.5	195	7	gR	170M 2659	170M 2759
40	50	360	9	gR	170M 2660	170M 2760
50	95	640	10	gR	170M 2661	170M 2761
63	170	1200	12	gR	170M 2662	170M 2762
80	310	2100	15	gR	170M 2663	170M 2763
100	620	4150	20	aR	170M 2664 ⁽¹⁾	170M 2764
125	1000	6950	25	aR	170M 2665 ⁽¹⁾	170M 2765
160	1900	13 000	30	aR	170M 2666 ⁽¹⁾	170M 2766
200	3400	23 000	35	aR	170M 2667 ⁽¹⁾	170M 2767
250	6250	42 000	45	aR	170M 2668 ⁽¹⁾	170M 2768
315	10 000	68 500	55	aR	170M 2669 ⁽¹⁾	170M 2769
350	13 500	91 500	60	aR	170M 2670 ⁽¹⁾	170M 2770
400	18 000	125 000	70	aR	170M 2671 ⁽¹⁾	170M 2771

(1) UL.

Accessories

	Reference	Reference
Fuse blown auxiliary contact	170H 0235	170H 0235
Recommended fuse base	170H 1007	(1)

(1) Direct mounting on busbar.

690 VAC uR fuses - size 0

I _n rms value (A)	Pre-arcing I ² t when cold (A ² s)	Operating I ² t at 660 V rms (A ² s)	Losses at I _n (W)	Protection	DIN 43620 Solid knife-edge Reference
16	3.8	25.5	5	aR	170M 7908
20	7.2	48	6	aR	170M 7909
25	11.5	78	7	aR	170M 7910
32	23.5	160	8	aR	170M 7911
40	40	270	9	aR	170M 7912
50	77	515	11	aR	170M 7913
63	115	770	14	aR	170M 7914
80	185	1250	18	aR	170M 7915
100	360	2450	21	aR	170M 7916
125	550	3700	26	aR	170M 7917
160	1100	7500	30	aR	170M 7918
200	2200	15 000	35	aR	170M 7919

Accessories

	Reference
Fuse blown auxiliary contact	170H 0236
Recommended fuse base	6501 1010 ⁽¹⁾
Recommended fuse combination switch (see page 254)	FUSERBLOC

(1) Single-pole fuse base 160 A, size 0 (see page 332).

690 VAC uR fuses - size 1*

I _n rms value (A)	Pre-arcing I ² t when cold (A ² s)	Operating I ² t at 660 V rms (A ² s)	Losses at I _n (W)	Protection	K/80 Notched Reference	K/110 Notched Reference	EK/76 Notched Reference	BK/50 Threaded hole Reference
40	40	270	9	aR	170M 3108 ⁽¹⁾	170M 3258 ⁽¹⁾	170M 3358 ⁽¹⁾	170M 3458 ⁽¹⁾
50	77	515	11	aR	170M 3109 ⁽¹⁾	170M 3259 ⁽¹⁾	170M 3359 ⁽¹⁾	170M 3459 ⁽¹⁾
63	115	770	14	aR	170M 3110 ⁽¹⁾	170M 3260 ⁽¹⁾	170M 3360 ⁽¹⁾	170M 3460 ⁽¹⁾
80	185	1250	18	aR	170M 3111 ⁽¹⁾	170M 3261 ⁽¹⁾	170M 3361 ⁽¹⁾	170M 3461 ⁽¹⁾
100	360	2450	21	aR	170M 3112 ⁽¹⁾	170M 3262 ⁽¹⁾	170M 3362 ⁽¹⁾	170M 3462 ⁽¹⁾
125	550	3700	26	aR	170M 3113 ⁽¹⁾	170M 3263 ⁽¹⁾	170M 3363 ⁽¹⁾	170M 3463 ⁽¹⁾
160	1100	7500	30	aR	170M 3114 ⁽¹⁾	170M 3264 ⁽¹⁾	170M 3364 ⁽¹⁾	170M 3464 ⁽¹⁾
200	2200	15 000	35	aR	170M 3115 ⁽¹⁾	170M 3265 ⁽¹⁾	170M 3365 ⁽¹⁾	170M 3465 ⁽¹⁾
250	4200	28 500	40	aR	170M 3116 ⁽¹⁾	170M 3266 ⁽¹⁾	170M 3366 ⁽¹⁾	170M 3466 ⁽¹⁾
315	7000	46 500	50	aR	170M 3117 ⁽¹⁾	170M 3267 ⁽¹⁾	170M 3367 ⁽¹⁾	170M 3467 ⁽¹⁾
350	10 000	68 500	55	aR	170M 3118 ⁽¹⁾	170M 3268 ⁽¹⁾	170M 3368 ⁽¹⁾	170M 3468 ⁽¹⁾
400	15 000	105 000	60	aR	170M 3119 ⁽¹⁾	170M 3269 ⁽¹⁾	170M 3369 ⁽¹⁾	170M 3469 ⁽¹⁾
450	21 000	140 000	65	aR	170M 3120 ⁽¹⁾	170M 3270 ⁽¹⁾	170M 3370 ⁽¹⁾	170M 3470 ⁽¹⁾
500	27 000	180 000	70	aR	170M 3121 ⁽¹⁾	170M 3271 ⁽¹⁾	170M 3371 ⁽¹⁾	170M 3471 ⁽¹⁾
550	34 000	230 000	75	aR	170M 3122 ⁽¹⁾	170M 3272 ⁽¹⁾		170M 3472 ⁽¹⁾
630	48 500	325 000	80	aR	170M 3123 ⁽¹⁾	170M 3273 ⁽¹⁾		170M 3473 ⁽¹⁾

(1) UL / CSA.

Accessories

	Reference	Reference	Reference	Reference
Fuse blown auxiliary contact	170H 0069	170H 0069	170H 0069	170H 0069
Recommended fuse base	170H 3004	170H 3006	170A 0601 ⁽¹⁾	⁽²⁾
Recommended load break switches (see page 254)		FUSERBLOC		

(1) I_{max} = 200 A.

(2) Direct mounting on busbar.

High-speed fuses (uR)

gR and aR curves

from 5 to 2000 A

References (continued)

690 VAC uR fuses - size 1

I _n rms value (A)	Pre-arcing I ² t when cold (A ² s)	Operating I ² t at 660 V rms (A ² s)	Losses at I _n (W)	Protection	K/80 Notched Reference	K/110 Notched Reference	DIN 43620 Solid knife-edge Reference	EK/86 Notched Reference	BK/50 Threaded hole Reference
40	40	285	4	aR			170M 3808 ⁽¹⁾		
50	78	550	4.5	aR			170M 3809 ⁽¹⁾		
63	120	850	6.5	aR			170M 3810 ⁽¹⁾		
80	185	1350	8.5	aR			170M 3811 ⁽¹⁾		
100	360	2600	10	aR			170M 3812 ⁽¹⁾		
125	550	3900	11	aR			170M 3813 ⁽¹⁾		
160	1150	8250	12	aR			170M 3814 ⁽¹⁾		
200	1650	11 500	45	aR	170M 4108 ⁽²⁾	170M 4258 ⁽²⁾		170M 4358 ⁽²⁾	170M 4458 ⁽²⁾
200	2300	16 500	12.5	aR			170M 3815 ⁽¹⁾		
250	3100	21 000	55	aR	170M 4109 ⁽²⁾	170M 4259 ⁽²⁾		170M 4359 ⁽²⁾	170M 4459 ⁽²⁾
250	4350	31 000	16	aR			170M 3816 ⁽¹⁾		
315	6200	42 000	58	aR	170M 4110 ⁽²⁾	170M 4260 ⁽²⁾		170M 4360 ⁽²⁾	170M 4460 ⁽²⁾
315	7300	52 000	20	aR			170M 3817 ⁽¹⁾		
350	10 000	73 000	21.5	aR			170M 3818 ⁽¹⁾		
350	8500	59 000	60	aR	170M 4111 ⁽²⁾	170M 4261 ⁽²⁾		170M 4361 ⁽²⁾	170M 4461 ⁽²⁾
400	13 500	91 500	65	aR	170M 4112 ⁽²⁾	170M 4262 ⁽²⁾		170M 4362 ⁽²⁾	170M 4462 ⁽²⁾
400	16 000	115 000	23	aR			170M 3819 ⁽¹⁾		
450	17 000	120 000	70	aR	170M 4113 ⁽²⁾	170M 4263 ⁽²⁾		170M 4363 ⁽²⁾	170M 4463 ⁽²⁾
500	25 000	170 000	72	aR	170M 4114 ⁽²⁾	170M 4264 ⁽²⁾		170M 4364 ⁽²⁾	170M 4464 ⁽²⁾
550	34 000	230 000	75	aR	170M 4115 ⁽²⁾	170M 4265 ⁽²⁾		170M 4365 ⁽²⁾	170M 4465 ⁽²⁾
630	52 000	350 000	80	aR	170M 4116 ⁽²⁾	170M 4266 ⁽²⁾		170M 4366 ⁽²⁾	170M 4466 ⁽²⁾
700	69 500	465 000	85	aR	170M 4117 ⁽²⁾	170M 4267 ⁽²⁾		170M 4367 ⁽²⁾	170M 4467 ⁽²⁾
800	105 000	725 000	95	aR	170M 4118 ⁽²⁾	170M 4268 ⁽²⁾		170M 4368 ⁽²⁾	170M 4468 ⁽²⁾
900	155 000	850 000	100	aR	170M 4119 ⁽²⁾	170M 4269 ⁽²⁾			170M 4469 ⁽²⁾

(1) UL. - (2) UL / CSA. - (3) For DIN 43620 only. For others I²t at 660 V

Accessories

	Reference	Reference	Reference	Reference	Reference
Fuse blown auxiliary contact	170H 0069	170H 0069	170H 0236	170H 0069	170H 0069
Recommended fuse base	170H 3004	170H 3006	6501 1011 ⁽¹⁾	170A 0611 ⁽²⁾	⁽³⁾
Recommended load break switches (see page 254)		FUSERBLOC	FUSERBLOC		

(1) Single-pole fuse base 250 A, size 1 (see page 332).

(2) I_{max} = 250 A.

(3) Direct mounting on busbar.

690 VAC uR fuses - size 2

I _n rms value (A)	Pre-arcing I ² t when cold (A ² s)	Operating I ² t at 660 V rms (A ² s)	Losses at I _n (W)	Protection	K/80 Notched Reference	K/110 Notched Reference	DIN 43620 Solid knife-edge Reference	EK/91 Notched Reference	BK/50 Threaded hole Reference
200	1200	8200	50	aR			170M 5804 ⁽¹⁾		
250	2450	16 500	55	aR			170M 5805 ⁽¹⁾		
315	4950	33 000	60	aR			170M 5806 ⁽¹⁾		
350	7000	46 500	60	aR			170M 5807 ⁽¹⁾		
400	11 000	74 000	65	aR	170M 5108 ⁽²⁾	170M 5258 ⁽²⁾		170M 5358 ⁽²⁾	170M 5458 ⁽²⁾
450	15 500	105 000	70	aR	170M 5109 ⁽²⁾	170M 5259 ⁽²⁾		170M 5359 ⁽²⁾	170M 5459 ⁽²⁾
500	21 500	145 000	75	aR	170M 5110 ⁽²⁾	170M 5260 ⁽²⁾		170M 5360 ⁽²⁾	170M 5460 ⁽²⁾
550	28 000	190 000	80	aR	170M 5111 ⁽²⁾	170M 5261 ⁽²⁾		170M 5361 ⁽²⁾	170M 5461 ⁽²⁾
630	41 000	275 000	90	aR	170M 5112 ⁽²⁾	170M 5262 ⁽²⁾		170M 5362 ⁽²⁾	170M 5462 ⁽²⁾
700	60 500	405 000	95	aR	170M 5113 ⁽²⁾	170M 5263 ⁽²⁾		170M 5363 ⁽²⁾	170M 5463 ⁽²⁾
800	86 000	575 000	105	aR	170M 5114 ⁽²⁾	170M 5264 ⁽²⁾		170M 5364 ⁽²⁾	170M 5464 ⁽²⁾
900	125 000	840 000	110	aR	170M 5115 ⁽²⁾	170M 5265 ⁽²⁾		170M 5365 ⁽²⁾	170M 5465 ⁽²⁾
1000 ⁽³⁾	180 000	1250 000	115	aR	170M 5116 ⁽²⁾	170M 5266 ⁽²⁾		170M 5366 ⁽²⁾	170M 5466 ⁽²⁾
1100 ⁽³⁾	245 000	1600 000	120	aR	170M 5117 ⁽²⁾	170M 5267 ⁽²⁾			170M 5467 ⁽²⁾
1250	365 000	2400 000	130	aR	170M 5118 ⁽²⁾	170M 5268 ⁽²⁾			170M 5468 ⁽²⁾
400	11 000	79 000	65	aR			170M 5808 ⁽¹⁾		
450	16 000	115 000	70	aR			170M 5809 ⁽¹⁾		
500	21 500	155 000	75	aR			170M 5810 ⁽¹⁾		
550	29 000	215 000	80	aR			170M 5811 ⁽¹⁾		
630	41 000	295 000	90	aR			170M 5812 ⁽¹⁾		
700	60 500	430 000	95	aR			170M 5813 ⁽¹⁾		

(1) UL. - (2) UL / CSA. - (3) 1100 A and 1250 A, at 600 V, I²t at 600 V

Accessories

	Reference	Reference	Reference	Reference	Reference
Fuse blown auxiliary contact	170H 0069	170H 0069	170H 0235	170H 0069	170H 0069
Recommended fuse base	170H 3004	170H 3006	6501 1012 ⁽¹⁾	170A 0621 ⁽²⁾	⁽³⁾
Recommended fuse combination switch (see page 254)		FUSERBLOC	FUSERBLOC		FUSERBLOC

(1) Single-pole fuse base 400 A, size 2 (see page 332).

(2) I_{max} = 400 A.

(3) Direct mounting on busbar.

690 VAC uR fuses - size 3

I _n rms value (A)	Pre-arcing I ² t when cold (A ² s)	Operating I ² t at 660 V rms (A ² s)	Losses at I _n (W)	Protection	K/80 Notched ⁽¹⁾ Reference	K/110 Notched ⁽¹⁾ Reference	DIN 43620 Solid knife-edge ⁽²⁾ Reference	EK/91 Notched ⁽¹⁾ Reference	BK/50 Threaded hole ⁽¹⁾ Reference
500	14 000	95 000	95	aR	170M 6108	170M 6258	170M 6808	170M 6358	170M 6458
550	19 500	135 000	100	aR	170M 6109	170M 6259	170M 6809	170M 6359	170M 6459
630	31 000	210 000	105	aR	170M 6110	170M 6260	170M 6810	170M 6360	170M 6460
700	44 500	300 000	110	aR	170M 6111	170M 6261	170M 6811	170M 6361	170M 6461
800	69 500	465 000	115	aR	170M 6112	170M 6262	170M 6812	170M 6362	170M 6462
900	100 000	670 000	120	aR	170M 6113	170M 6263	170M 6813	170M 6363	170M 6463
1000	140 000	945 000	125	aR	170M 6114	170M 6264	170M 6814	170M 6364	170M 6464
1100	190 000	1300 000	130	aR	170M 6115	170M 6265		170M 6365	170M 6465
1250	290 000	1950 000	140	aR	170M 6116	170M 6266	170M 8554	170M 6366	170M 6466
1400	370 000	2450 000	155	aR	170M 6117	170M 6267		170M 6367	170M 6467
1500	460 000	3100 000	160	aR	170M 6118	170M 6268		170M 6368	170M 6468
1600	580 000	3900 000	160	aR	170M 6119	170M 6269			170M 6469
1800 ⁽⁵⁾	880 000	5250 000	165	aR	170M 6120 ⁽³⁾	170M 6270 ⁽³⁾			170M 6470 ⁽³⁾
2000 ⁽⁶⁾	1150 000	6350 000	175	aR	170M 6121 ⁽⁴⁾	170M 6271 ⁽⁴⁾			170M 6471 ⁽⁴⁾

(1) UL / CSA.

(2) UL- and CCC up to 1000 A.

(3) Rated voltage 600 VAC.

(4) Rated voltage 550 VAC.

(5) At 600 V, I²t at 600 V

(6) At 550 V, I²t at 550 V

Accessories

	Reference	Reference	Reference	Reference	Reference
Fuse blown auxiliary contact	170H 0069	170H 0069	170H 0236	170H 0069	170H 0069
Recommended fuse base	170H 3004	170H 3006	6501 1013 ⁽¹⁾	170A 0632 ⁽²⁾	⁽³⁾
Recommended fuse combination switch (see page 254)		FUSERBLOC	FUSERBLOC		FUSERBLOC

(1) Single-pole fuse base 630 A, size 3 (see page 332).

(2) I_{max} = 710 A.

(3) Direct mounting on busbar.

1000 VAC uR fuses - size 00

I _n rms value (A)	Pre-arcing I ² t when cold (A ² s)	Operating I ² t at 660 V rms (A ² s)	Losses at I _n (W)	Protection	DIN 43620 Solid knife-edge Reference
10	3.8	23	5	aR	170M 2672
20	15	110	8.5	aR	170M 2673
25	28.5	210	9.5	aR	170M 2674
32	53	390	11	aR	170M 2675
35	69	500	12	aR	170M 2676
40	105	760	13	aR	170M 2677
50	215	1550	14	aR	170M 2678
63	380	2750	16	aR	170M 2679
80	815	5900	18	aR	170M 2680
100	1550	11500	21	aR	170M 2681
125	3000	22000	23	aR	170M 2682
160	6250	45000	26	aR	170M 2683
200	12000	86500	31	aR	170M 2684

Accessories

	Reference
Fuse blown auxiliary contact	170H 0236
Recommended fuse base	6500 1010 ⁽¹⁾
Recommended fuse combination switch (see page 254)	FUSERBLOC

(1) Single-pole fuse base 160 A, size 00 (see page 332).

High-speed fuses (uR)

gR and aR curves

from 5 to 2000 A

References (continued)

1250 VAC uR fuses - size 1*

I _n rms value (A)	Pre-arcing I ² t when cold (A ² s)	Operating I ² t at 660 V rms (A ² s)	Losses at I _n (W)	Protection	K/110 Notched ⁽¹⁾ Reference	BK/75 Threaded hole ⁽¹⁾ Reference	BK/80 Threaded hole ⁽¹⁾ Reference
50	135	1100	15	aR	170M 3238	170M 3388	170M 3438
63	215	1750	20	aR	170M 3239	170M 3389	170M 3439
80	420	3350	25	aR	170M 3240	170M 3390	170M 3440
100	750	5950	30	aR	170M 3241	170M 3391	170M 3441
125	1450	11 500	35	aR	170M 3242	170M 3392	170M 3442
160	2600	21 000	40	aR	170M 3243	170M 3393	170M 3443
200	5150	41 000	45	aR	170M 3244	170M 3394	170M 3444
250	9200	73 000	55	aR	170M 3245	170M 3395	170M 3445
315	18 500	150 000	60	aR	170M 3246	170M 3396	170M 3446
350	27 000	220 000	65	aR	170M 3247	170M 3397	170M 3447
400	53 000	335 000	70	aR	170M 3248		170M 3448

(1) UL.

Accessories

	Reference	Reference	Reference
Fuse blown auxiliary contact	170H 0069	170H 0069	170H 0069
Recommended fuse base	170H 3006	(1)	(1)

(1) Direct mounting on busbar.

1250 VAC uR fuses - size 1

I _n rms value (A)	Pre-arcing I ² t when cold (A ² s)	Operating I ² t at 660 V rms (A ² s)	Losses at I _n (W)	Protection	K/110 Notched ⁽¹⁾ Reference	BK/75 Threaded hole ⁽¹⁾ Reference	BK/80 Threaded hole ⁽¹⁾ Reference
160	1900	15 500	45	aR	170M 4238	170M 4388	170M 4438
200	3800	30 000	50	aR	170M 4239	170M 4389	170M 4439
250	7750	61 500	60	aR	170M 4240	170M 4390	170M 4440
315	15 000	120 000	65	aR	170M 4241	170M 4391	170M 4441
350	20 000	165 000	70	aR	170M 4242	170M 4392	170M 4442
400	29 500	235 000	75	aR	170M 4243	170M 4393	170M 4443
450	42 000	335 000	80	aR	170M 4244	170M 4394	170M 4444
500	69 500	435 000	85	aR	170M 4245	170M 4395 ⁽²⁾⁽⁶⁾	170M 4445
550	95 000	590 000	95	aR	170M 4246	170M 4396 ⁽³⁾⁽⁷⁾	170M 4446
630	130 000	600 000 ⁽⁴⁾	100	aR	170M 4247 ⁽²⁾⁽⁵⁾	170M 4397 ⁽³⁾⁽⁸⁾	170M 4447 ⁽²⁾⁽⁹⁾

(1) UL.

(2) Rated voltage 1100 VAC.

(3) Rated voltage 1000 VAC.

(4) I²t operation at 1000 V eff. (A²s).

(5) At 690 V, I²t at 690 V

(6) At 1100 V, I²t at 1250 V

(7) At 1000 V, I²t at 1250 V

(8) At 1000 V, I²t at 1100 V (I²t = 660 000)

(9) At 1100 V, I²t at 1000 V (I²t = 660 000)

Accessories

	Reference	Reference	Reference
Fuse blown auxiliary contact	170H 0069	170H 0069	170H 0069
Recommended fuse base	170H 3006	(1)	(1)

(1) Direct mounting on busbar.

1250 VAC uR fuses - size 2

I _n rms value (A)	Pre-arcing I ² t when cold (A ² s)	Operating I ² t at 660 V rms (A ² s)	Losses at I _n (W)	Protection	K/110 Notched ⁽¹⁾ Reference	BK/75 Threaded hole ⁽¹⁾ Reference	BK/80 Threaded hole ⁽¹⁾ Reference
250	6500	51 500	65	aR	170M 5238	170M 5388	170M 5438
280	9350	74 500	70	aR	170M 5239	170M 5389	170M 5439
315	13 000	105 000	75	aR	170M 5240	170M 5390	170M 5440
350	16 500	135 000	80	aR	170M 5241	170M 5391	170M 5441
400	23 000	180 000	85	aR	170M 5242	170M 5392	170M 5442
450	34 000	270 000	90	aR	170M 5243	170M 5393	170M 5443
500	48 000	380 000	95	aR	170M 5244	170M 5394	170M 5444
550	62 000	495 000	100	aR	170M 5245	170M 5395	170M 5445
630	115 000	730 000	110	aR	170M 5246	170M 5396 ⁽³⁾	170M 5446
700	160 000	1050 000	115	aR	170M 5247	170M 5397 ⁽⁴⁾	170M 5447 ⁽⁶⁾
800	245 000	1550 000	120	aR	170M 5248	170M 5398 ⁽⁵⁾	170M 5448 ⁽⁵⁾
900	360 000	1750 000	125	aR	170M 5249 ⁽²⁾		
1000	480 000	2350 000	135	aR	170M 5250 ⁽²⁾		

(1) UL.

(2) At 1100 V, I²t at 1000 V

(3) At 1100 V, I²t at 1000 V (I²t = 575 000)

(4) At 1000 V, I²t at 1000 V (I²t = 795 000)

(5) At 1000 V, I²t at 1000 V (I²t = 1200 000)

(6) At 1100 V, I²t at 1000 V (I²t = 795 000)

Accessories

	Reference	Reference	Reference
Fuse blown auxiliary contact	170H 0069	170H 0069	170H 0069
Recommended fuse base	170H 3006	(1)	(1)

(1) Direct mounting on busbar.

1250 VAC uR fuses - size 3

I _n rms value (A)	Pre-arcing I ² t when cold (A ² s)	Operating I ² t at 660 V rms (A ² s)	Losses at I _n (W)	Protection	K/110 Notched ⁽¹⁾ Reference	BK/75 Threaded hole ⁽¹⁾ Reference	BK/80 Threaded hole ⁽¹⁾ Reference
315	9500	77 500	85	aR	170M 6238	170M 6338	170M 6538
350	13 500	110 000	90	aR	170M 6239	170M 6339	170M 6539
400	19 500	160 000	95	aR	170M 6240	170M 6340	170M 6540
450	31 000	245 000	100	aR	170M 6241	170M 6341	170M 6541
500	39 000	310 000	105	aR	170M 6242	170M 6342	170M 6542
550	55 000	435 000	110	aR	170M 6243	170M 6343	170M 6543
630	83 500	665 000	115	aR	170M 6244	170M 6344	170M 6544
700	115 000	940 000	120	aR	170M 6245	170M 6345	170M 6545
800	205 000	1300 000	125	aR	170M 6246	170M 6346 ⁽²⁾	170M 6546
900	305 000	1900 000	130	aR	170M 6247	170M 6347 ⁽³⁾	170M 6547 ⁽²⁾
1000	450 000	2750 000	135	aR	170M 6248	170M 6348 ⁽³⁾	170M 6548 ⁽²⁾
1100	575 000	3600 000	140	aR	170M 6249	170M 6349 ⁽³⁾	170M 6549 ⁽³⁾
1250	810 000	3950 000 ⁽⁴⁾	145	aR	170M 6250 ⁽²⁾		
1400	1250 000	6000 000 ⁽⁴⁾	150	aR	170M 6251 ⁽²⁾		

(1) UL.

(2) At 1100 V, I²t at 1000 V

(3) At 1100 V, I²t at 1250 V (I²t = 995 000)

(4) At 1000 V, I²t at 1000 V (I²t = 1500 000)

(5) At 1000 V, I²t at 1000 V (I²t = 2150 000)

(6) At 1000 V, I²t at 1000 V (I²t = 2800 000)

Accessories

	Reference	Reference	Reference
Fuse blown auxiliary contact	170H 0069	170H 0069	170H 0069
Recommended fuse base	170H 3006	(1)	(1)

(1) Direct mounting on busbar.

High-speed fuses (uR)

gR and aR curves

from 5 to 2000 A

Accessories

Fuse blown auxiliary contact

Connection

6.3 x 0.8 mm fast-on terminals.

Electronic principle

An auxiliary contact detects if a fuse has blown.

Electrical characteristics

Voltage (VAC)	Nominal current (A)
250	2

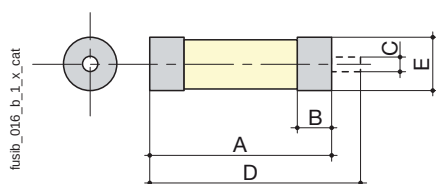


fusib_051_a_1_cat

Dimensions

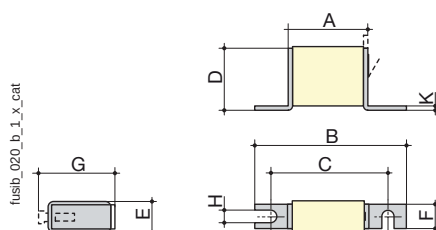
uR 690 VAC fuses

14 x 51 and 22 x 58



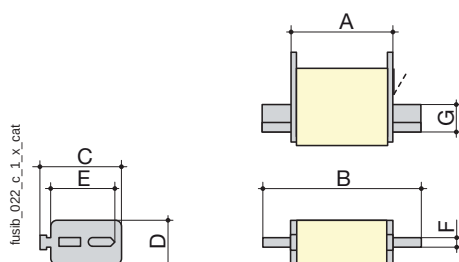
Size	A	B	C	D	E
14 x 51	51	11	4	59	Ø 14.3
22 x 58	58	15	4	66	Ø 22.2

DIN 43653 and T/80



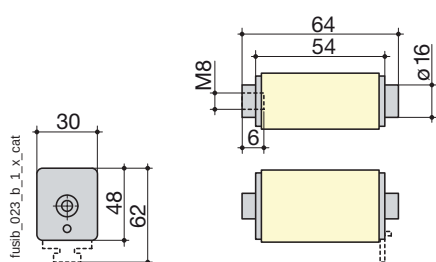
Size	A	B	C	D	E	F	G	H	K
000	54	100	78	40	21	20	51	8	2
00	54	100	78	51	30	28	67	10	2

DIN 43620



Size	A	B	C	D	E	F	G
000	54	79	48	21	35	6	15
00	46	79	60	30	35	6	15
0	68	125	60	35	35	6	15
1	71	135	58	45	40	6	20
2	72	150	71	55	48	6	26
3	72	150	88	76	60	6	33

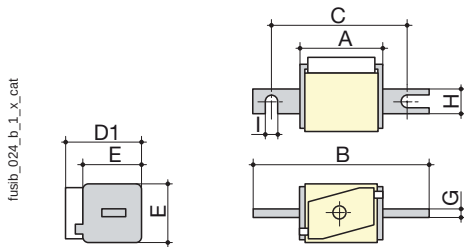
BT/60



Dimensions (continued)

uR 690 VAC fuses (continued)

K/80 and K/110



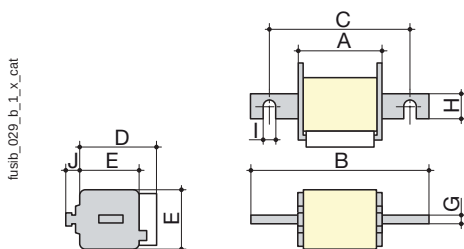
K/80

Size	A	B	C	D1	E	G	H	I
1*	50	104	78	59	45	6	22	11
1	50	108	78	69	53	6	25	11
2	50	108	78	77	61	6	25	11
3	51	109	78	92	76	6	30	11

K/110

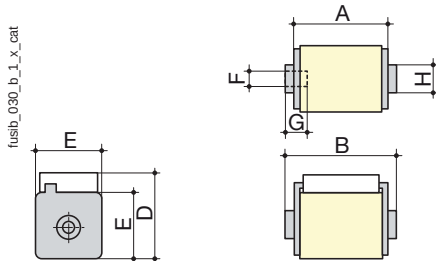
Size	A	B	C	D1	E	G	H	I
1*	50	134	108	59	45	6	22	11
1	50	138	108	69	53	6	25	11
2	50	138	108	77	61	6	25	11
3	51	139	108	92	76	6	30	11

EK/76 - EK/86 - EK/91



Size	A	B	C	D	E	G	H	I	J
1*	50	102	76	59	45	6	18	9	13
1	50	111	86	69	53	6	25	11	11
2	50	126	91	77	61	6	30	13	12
3	51	126	91	92	76	6	36	13	13

BK/50

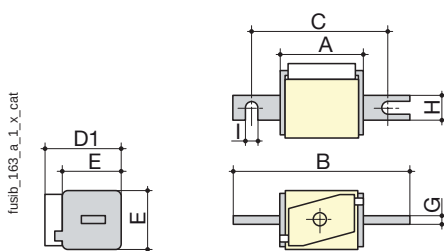


Size	A	B	D	E	F	G	H
1*	50	51	59	45	M8	5	Ø 17
1	50	51	59	53	M8	8	Ø 20
2	50	51 ⁽¹⁾	77	61	M10	10	Ø 24
3	51	53 ⁽²⁾	92	76	M12	10	Ø 30

(1) B = 65 mm for rating 1100 to 1250 A.
(2) B = 65 mm for rating 1600 to 2000 A.

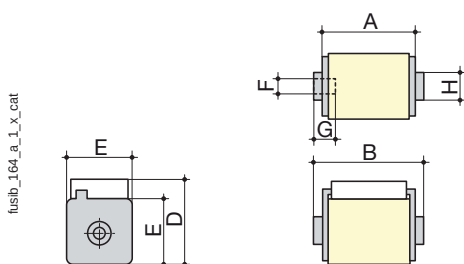
uR 1250 VAC fuses

K/110



Size	A	B	C	D1	E	G	H	I
1*	80	138	108	59	45	6	20	11
1	80	138	108	69	53	6	25	11
2	80	138	108	77	61	6	25	11
3	81	139	108	92	76	6	30	11

BK/75 and BK/80



BK/75

Size	A	B	D	T	F	G	H
1*	74	75	59	45	M8	5	Ø 17
1	74	75	69	53	M8	8	Ø 20
2	74	75	77	61	M10	10	Ø 24
3	74	76	92	76	M12	10	Ø 30

BK/80

Size	A	B	D	T	F	G	H
1*	80	81	59	45	M8	5	Ø 17
1	80	81	69	53	M8	8	Ø 20
2	80	81	77	61	M10	10	Ø 24
3	81	83	92	76	M12	10	Ø 30



RM PV

Fused disconnect switches

for cylindrical photovoltaic fuses 10 x 38 and 14 x 51



RM PV 10 x 38
32 A



RM PV 14 x 51
50 A

The solution for

- > Small systems up to large PV farms



Strong points

- > Improved safety
- > Product designed for photovoltaic applications
- > Specific format and accessories

Compliance with standards

- > IEC 60269
- > NF EN 60269-1
- > VDE 0636-10
- > DIN 43620
- > UL 4248-18 file E470731
- > CSA 265615



Function

RM PVs are modular unipolar fuse disconnect switches for gPV type cylindrical fuses. They provide safety disconnection and protection against overcurrents caused by the reverse current in DC electrical PV circuits.

RM PVs are fuse disconnect switches with or without light signalling for fuses without strikers.

Advantages

Improved safety

- Rated voltage of 1000 VDC.
- Self-extinguishing thermoplastic materials.
- IP2X protection.

Specific format and accessories

- Modular 45-mm cut-out.
- Interlocking possible with accessory.

Product designed for photovoltaic applications

Protection against reverse currents by using gPV fuses dedicated to photovoltaic applications.

References

No. of poles	32 A 10 x 38		50 A 14 x 51	
	To be ordered in multiples of	Reference	To be ordered in multiples of	Reference
1 P	12	57PV 0001 ⁽¹⁾	6	56PV 1401
1 P with signalling	12	57PV 0L01 ⁽¹⁾		

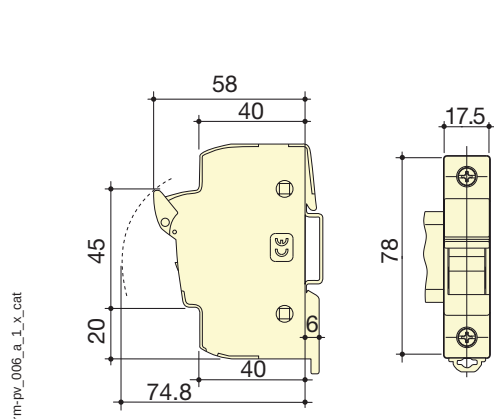
(1) UL and CSA-certified.

Characteristics according to IEC 60269-2

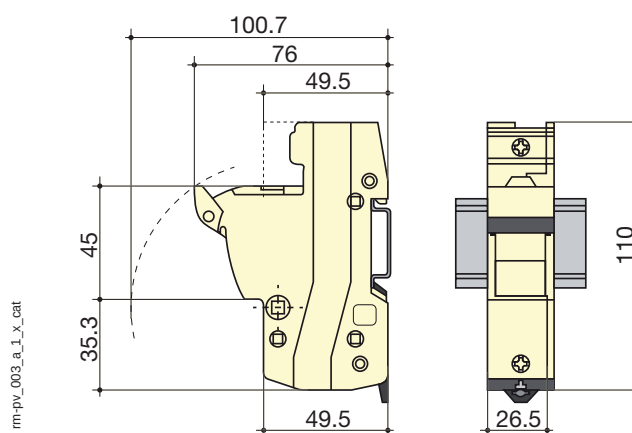
Thermal current I_{th}	32 A	50 A
Fuse size	10 x 38	14 x 51
Rated insulation voltage U_i (V)	1000	1000
Fuse rating		
Fuse rating (A)	1 ... 20	25 ... 32
Power		
Rated dissipated power (W)	3	5
Derating factor of design current for N poles side by side		
N = 1 ... 3	1	1
N = 4 ... 6	0.8	0.8
N = 7 ... 9	0.7	0.7
N ≥ 10	0.6	0.6
Connection		
Minimum Cu cable cross-section (mm ²)	0.75	1.5
Maximum Cu rigid cable cross-section (mm ²)	10	35
Tightening torques (Nm)	2.5	3
Dimensional data		
Weight of 1 P (kg)	0.057	0.15

Dimensions

RM PV 10 x 38



RM PV 14 x 51





PV fuse bases

Fuse bases for PV applications

for NH gPV fuses from 32 to 600 A, up to 1500 VDC



socle-pv_002_a_1_cat

Base
size 1, 1000 VDC



socle-pv_004_a_1_cat

Base
size 3L, 1500 VDC

The solution for

- > Small installations up to large PV farms



Strong points

- > Improved safety
- > Product dedicated to PV applications
- > Fuse blown indication
- > Different fixing types

Conformity to standards

- > IEC 60269
- > NF EN 60269-1
- > VDE 0636-10
- > DIN 43620



Function

SOCOMEC fuse bases provide fixed, unipolar or multipolar support for knife edge fuses dedicated to PV applications.

Advantages

Improved safety

- Rated voltage of 1000 or 1500 VDC.
- Self-extinguishing thermoplastic material.
- Kit IP2X (depending on models).

Product dedicated to PV applications

Protection against reverse currents thanks to gPV fuses dedicated to PV applications.

Fuse blown indication

Possibility to collect the fuse blown indication (Please see section PV fuses).

Different fixing types

DIN rail or back plate mounting available (depending on models).

References

Back plate mounted device

Rating Fuse size No. of poles	200 A NH1 / 1000 VDC Reference	250 A NH2 / 1000 VDC Reference	400 A NH3 / 1000 VDC Reference	600 A 3L / 1500 VDC Reference
1 P	65PV 1011	65PV 1002	65PV 1003	65PV 1113

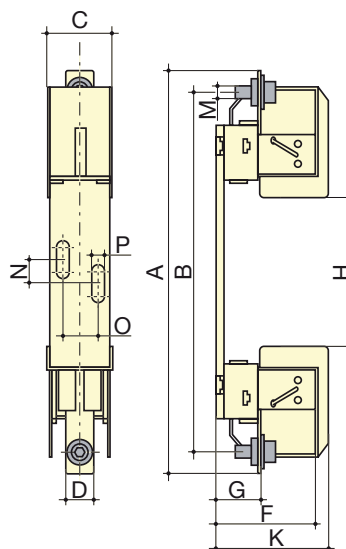
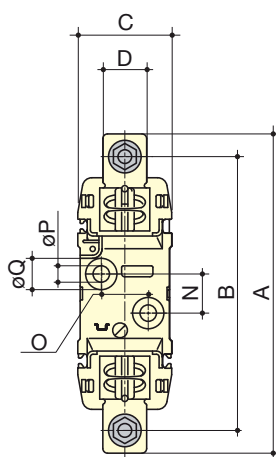
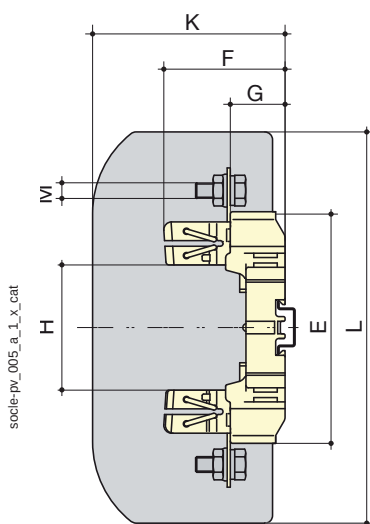
Accessories for NH1 fuses	Reference	Reference	Reference
Connecting block - set of 1 piece	6500 0031	6500 0031	6500 0032
Phase separation shield - set of 1 piece	6500 0003	6500 0003	6500 0004
Terminal shrouds - set of 1 piece	6500 0012	6500 0013	6500 0014
Fuse cover - set of 1 piece	6500 0022	6500 0022	6500 0023
Kit IP20 1 P	6511 1011 ⁽¹⁾	6511 1012	6511 1013

(1) IP20 single-pole kit consisting of 2 connecting blocks, 2 phase separation shields, 2 terminal shrouds and 1 fuse cover.

Dimensions

200 to 160 A - NH1, NH2 & NH3 size / 1000 VDC

600 A - 3L size / 1500 VDC



socle-pv_001_a_1_x_cat

Rating (A)	Fuse size	A	B	C	D	E	F	G	H	K	L	M	N	O	P	Q
200	NH1	200	175	60	28	148	77.5	35	80	123	250	M10	25	30	10.5	20.5
250	NH2	225	200	60	32	148	88	35	80	123	250	M12	25	30	10.5	20.5
400	NH3	240	210	60	38	148	97	35	80	143	270	M12	25	30	10.5	20.5
600	3L	307	270	68	40	-	103	38	140	-	-	M12	25	30	10.5	-



Photovoltaic fuses

gPV curve

from 1 to 600 A, up to 1500 VDC



Function

SOCOMEC's gPV fuses protect photovoltaic installations against overcurrents caused by reverse currents that can occur in PV applications.

Advantages

High breaking capacity

Up to 50 kA to 1000 VDC,
30 kA to 1500 VDC.

Product dedicated to photovoltaic installations

Operating ranges adapted to low overcurrents specific to photovoltaic systems.

High reliability

- Absolute protection over time guaranteed by the simplicity of manufacture and function (Joule effect).
- No downgrading of fuse characteristics over time.

Improved safety

The energy released whilst eliminating the fault (fuse blowing) is contained within the cartridge (no degassing).

The solution for

- > Photovoltaic protection



Strong points

- > High breaking capacity up to 1500 VDC
- > Product dedicated to photovoltaic installations
- > High reliability
- > Improved safety

Large range

- > Associated range of switches and fuse bases, dedicated combs and connection accessories

Compliance with standards

- > IEC 60269-6
- > IEC 60269-1
- > IEC 60269-2



What you need to know

Characteristics used

- I_{SC} : short circuit current of the string.
- $I_{SC\ MAX}$: short circuit current of the string related to maximum sunlight density.
- I_{RM} : maximum admitted reverse current.
- I_n : fuse rating or fuse rated current (at 25°C in a RM fuse base).
- N_c : number of strings in parallel.
- U_g : fuse maximum operating voltage.
- $U_{OC\ MAX}$: maximum open circuit voltage in the lowest temperature conditions.

When to protect

A PV string requires an overcurrent protection when its own maximum admissible reverse current characteristic (I_{rm}) is less than the current generated by the rest of the installation (current generated by the other "Nc-1" strings).

How to protect

Protection against overcurrents has to be applied to both polarities, regardless of whether the DC installation is earthed or not.

How to choose the right fuse protection

Voltage

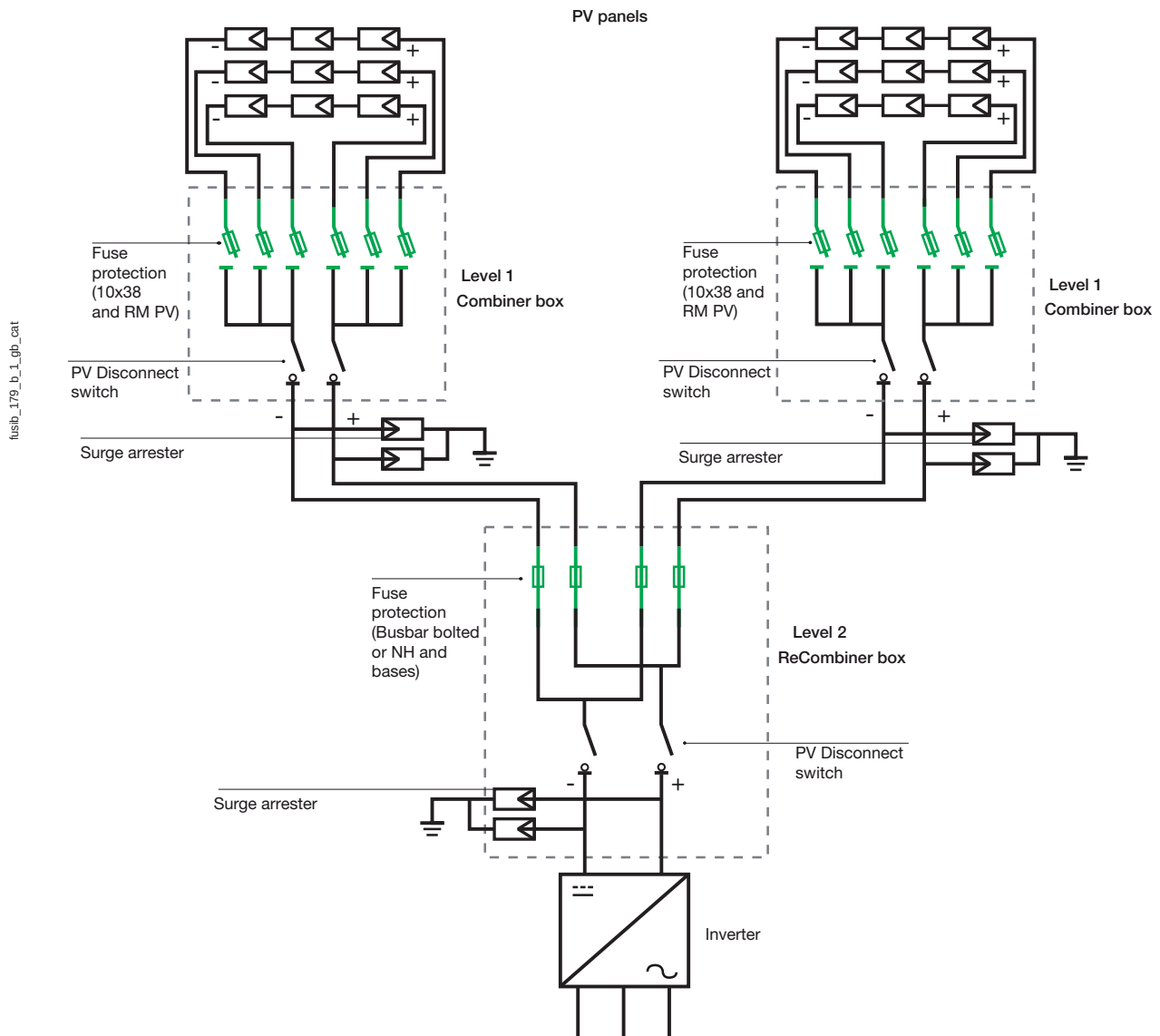
$$U_e > U_{OC\ MAX}$$

In the absence of complementary information use $U_{OC\ MAX} = 1.2 U_{OC}$

Fuse rating determination

Determination of the fuse rated current consists of choosing a protection capable of:

- Supporting without fusing the normal overload current during the periods of maximum sunlight density at the ambient temperature of the enclosure in which the fuse is installed, $I_n > I_{SC\ MAX}$
In the absence of complementary information use $I_{SC\ MAX} = 1.4 I_{SC}$
- Melting and reliably clearing the fault before the PV modules are damaged by the reverse current. $I_n < I_{RM}$



Photovoltaic fuses

gPV curve

from 1 to 600 A, up to 1500 VDC

References

Rated voltage 1000 VDC

Rating (A)	Fuse size	Dissipated power		Breaking capacity	Reference
		W @ In	W @ 0.8 In		
gPV cylindrical fuses					
1	10 x 38	0.76	0.43	30 kA	60PV 0001
2	10 x 38	1.54	0.84	30 kA	60PV 0002
3	10 x 38	1.35	0.74	30 kA	60PV 0003
4	10 x 38	1.84	1.08	30 kA	60PV 0004
6	10 x 38	2.50	1.40	30 kA	60PV 0006
8	10 x 38	2.57	1.47	30 kA	60PV 0008
10	10 x 38	2.58	1.51	30 kA	60PV 0010
12	10 x 38	2.61	1.42	30 kA	60PV 0012
15	10 x 38	2.44	1.08	30 kA	60PV 0015
16	10 x 38	2.70	1.56	30 kA	60PV 0016
20	10 x 38	2.99	1.75	30 kA	60PV 0020
25	14 x 51	5.1	2.7	10 kA	60PV 0C25
32	14 x 51	6.2	3.3	10 kA	60PV 0C32
gPV knife edge fuse					
32	NH1	8.5	4.3	50 kA	60PV 0032
40	NH1	9	4.6	50 kA	60PV 0040
50	NH1	10.5	5.4	50 kA	60PV 0050
63	NH1	12	6.1	50 kA	60PV 0063
80	NH1	15.5	7.9	50 kA	60PV 0080
100	NH1	16.5	8.4	50 kA	60PV 0100
125	NH1	17.5	8.9	50 kA	60PV 0125
160	NH1	24	12.2	50 kA	60PV 0160
200	NH1	25	13	50 kA	60PV 1200
250	NH2	35	23	50 kA	60PV 1250
315	NH3	44	27	50 kA	60PV 1315
400	NH3	50	30	50 kA	60PV 1400
500	3 L	85	50	50 kA	60PV 0500
600	3 L	118	92	50 kA	60PV 0600

Rated voltage 1500 VDC

Rating (A)	Fuse size	Dissipated power			Breaking capacity	Reference
		W @ In	W @ 0.7 In	W @ 0.8 In		
gPV cylindrical fuses						
2	10x85	3.42	1.28		10	61PV 0002
4	10x85	2.91	1.16		10	61PV 0004
6	10x85	2.65	1.1		10	61PV 0006
8	10x85	2.79	1.16		10	61PV 0008
10	10x85	4.38	1.81		10	61PV 0010
12	10x85	4.43	1.83		10	61PV 0012
16	10x85	4.13	1.75		10	61PV 0016
20 ⁽¹⁾	10x85	5.14	2.13		10	61PV 0020 ⁽¹⁾
25 ⁽¹⁾	10x85	5.48	2.28		10	61PV 0025 ⁽¹⁾
gPV knife edge fuse						
200	1XL	61		31	30	61PV 0200
400	3L	91		49	30	61PV 0400

(1) Rated voltage 1200 VDC.

Accessories

Accessories	Size NH1 Reference	Size NH2 Reference	Size NH3 Reference	Size 1XL Reference	Size 3L Reference
Fuse blown auxiliary contact	56PV 9901	56PV 9901	56PV 9901	56PV 9901	56PV 9901
Fuse base recommended	65PV 1011	65PV 1002	65PV 1003	-	65PV 1113

Adjustment due to ambient temperature

$$I_{nf} = I_{scgen} / K_t$$

I_{nf} - gPV fuse rated current.

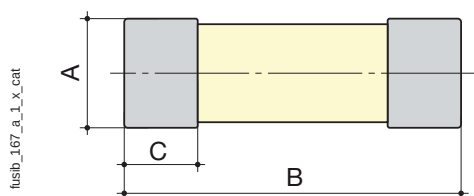
I_{scgen} - short-circuit current of PV generator in STC conditions.

K_t - derating factor.

Max. ambient temperature (°C)	Kt: derating factor
20	1
40	0.92
45	0.90
50	0.87
55	0.85
60	0.82
65	0.79
70	0.76

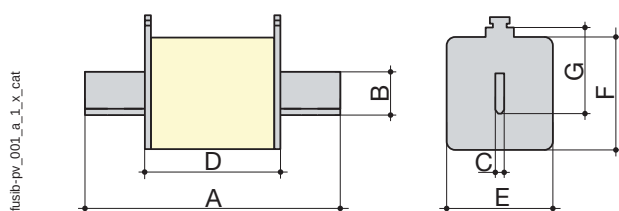
Standard dimensions (mm) as per IEC 60269-2

gPV cylindrical fuses



Fuse size	Striker	A	B	C
10 x 38	Without	10.3	38	10.5
14 x 51	Without	14.3	51.5	10.10
10 x 85	Without	10.3	85	10.5

gPV knife edge fuse

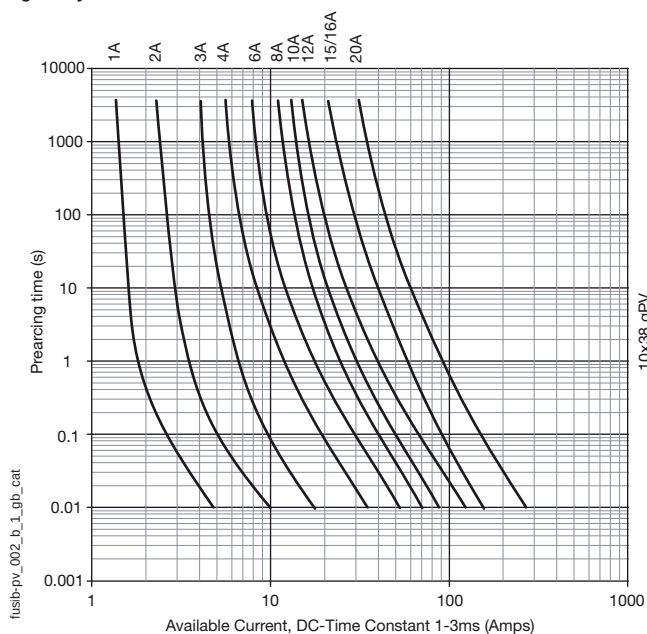


Fuse size	Striker	A max	B	C	D max	T max	F max	G
NH1	Without	137	20	6	68	40	53	40
NH2	Without	152	25	6	75	60	61	48
NH3	Without	152	32	6	75	70	75	60
1XL	Without	190	20	6	128	51	51	40
3L	Without	205	32	6	123	74	74	60

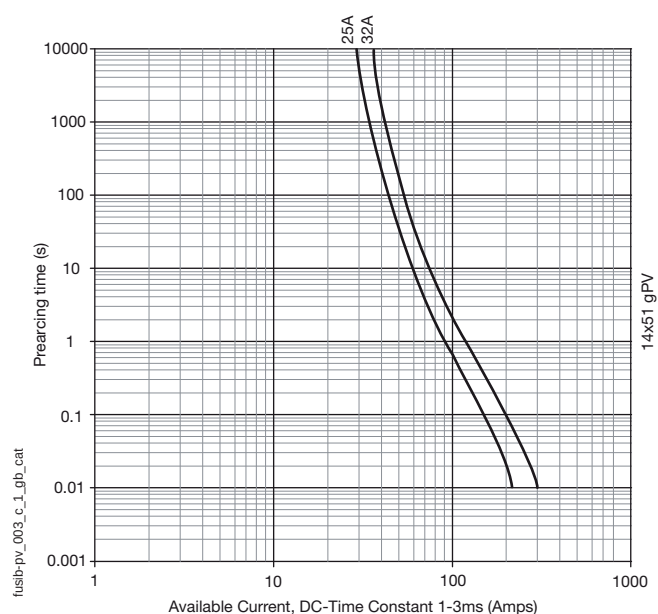
Time/current operation characteristics

Rated voltage 1000 VDC

gPV cylindrical fuses 10x38



gPV cylindrical fuses 14x51



Photovoltaic fuses

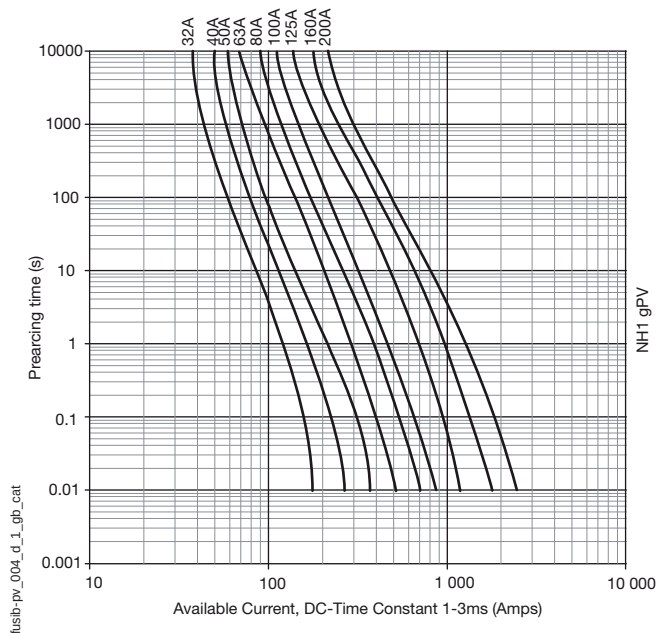
gPV curve

from 1 to 600 A, up to 1500 VDC

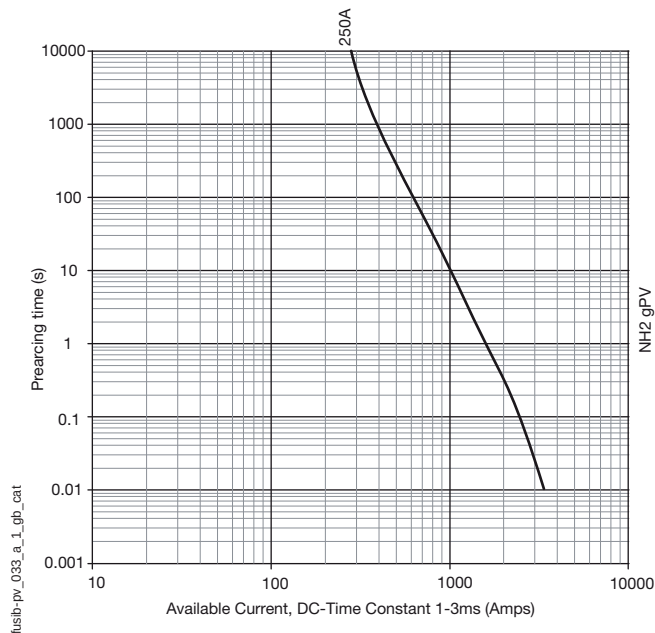
Time/current operation characteristics (continued)

Rated voltage 1000 VDC

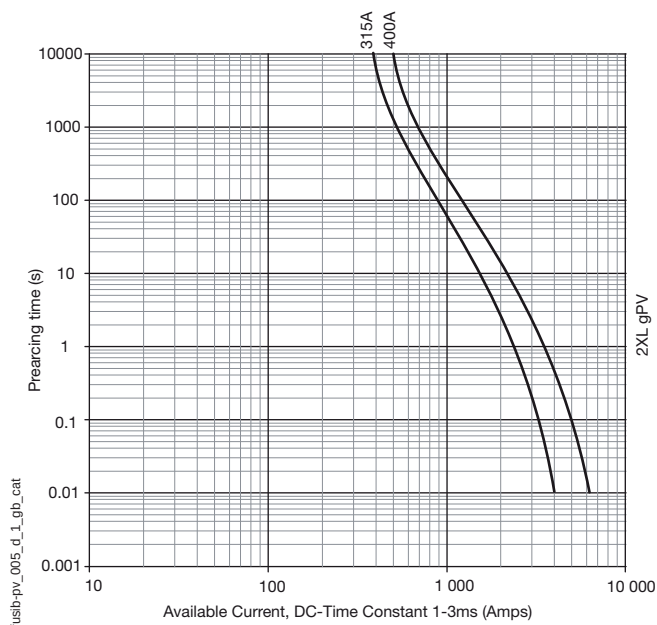
gPV NH1 knife edge fuses



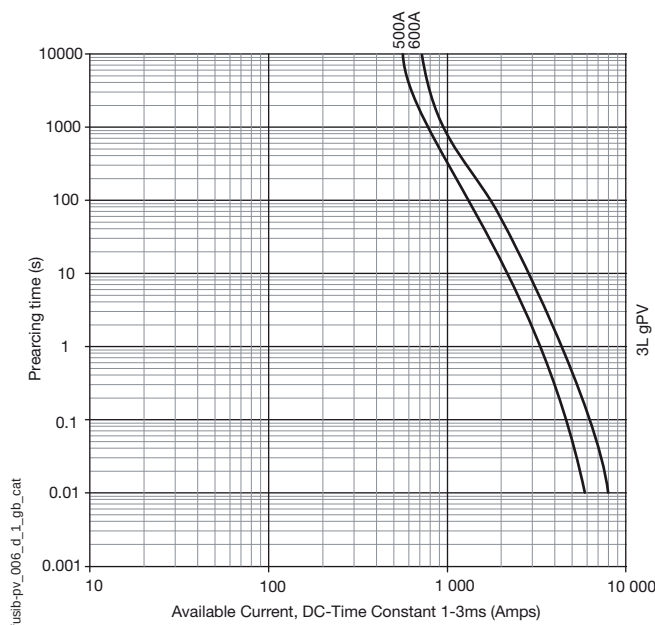
gPV NH2 knife edge fuses



gPV NH3 knife edge fuses

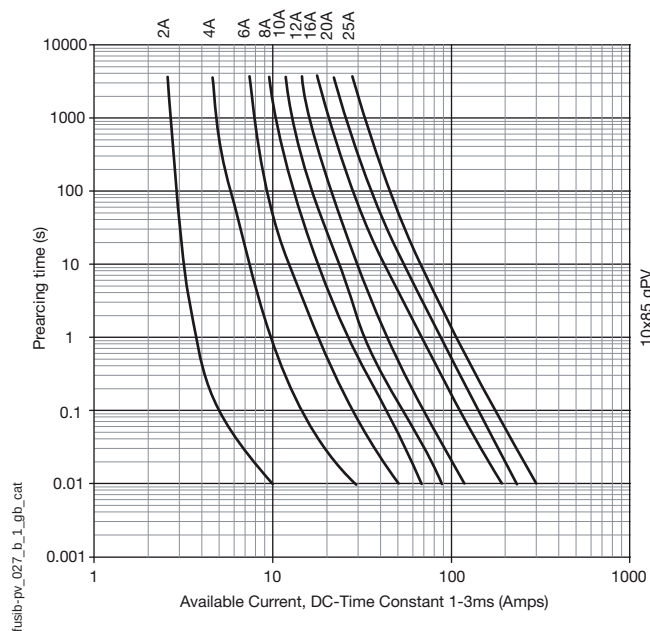


gPV 3L knife edge fuses

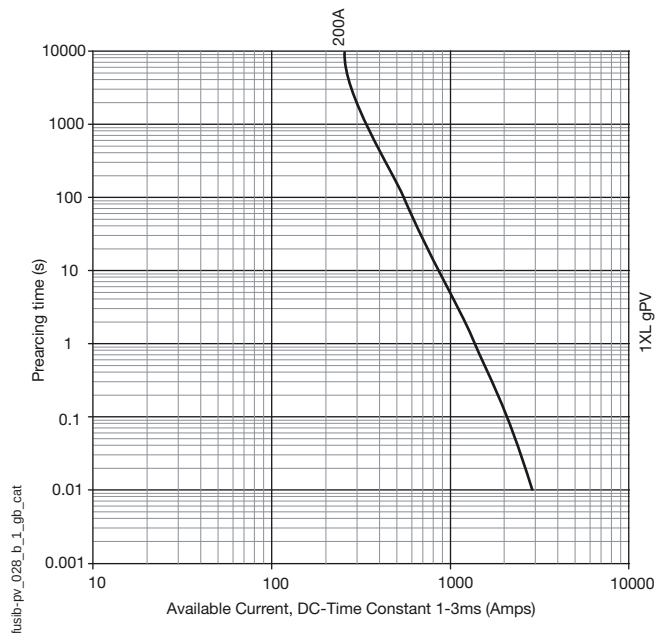


Rated voltage 1500 VDC

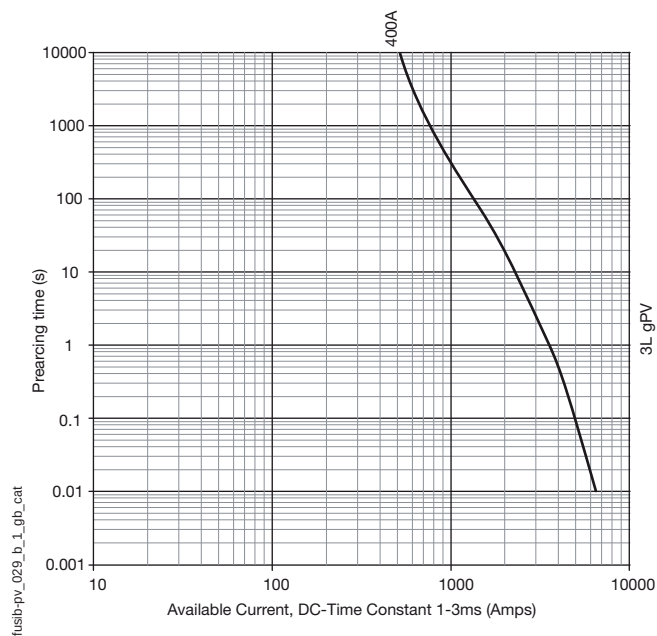
gPV cylindrical fuses 10x85



gPV 1XL knife edge fuses



gPV 3L knife edge fuses





Fuse combination switches

for specific applications

Fuse protection

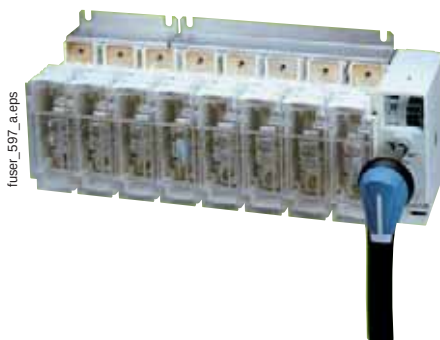
Despite already offering a wide range of fuse combination switches, SOCOMEC also manufactures specific products suitable for all your requirements and dedicated to specific applications. Some of these products can be seen on these two pages, however this list does not include them all. Please contact us for more information.

Conformity to standards

- > IEC 60947-3
- > BS EN 60947-3
- > IEC 60269-2
- > VDE 0660-107



Multipolar *FUSERBLOC*



Thanks to the modular concept of FUSERBLOC it is possible to produce multipolar devices and combine ratings from 50 to 1250 A. This is interesting when several motors need to be operated through a single handle.

Example: protecting three AC motors and a single DC motor.

This simple concept also provides a considerable space saving in electrical cabinets when compared to other solutions.

Central mechanism *FUSERBLOC*



The modular construction of FUSERBLOC allows the assembly of poles in multiple configurations thereby enabling the control mechanism to be fitted in any location, including central.

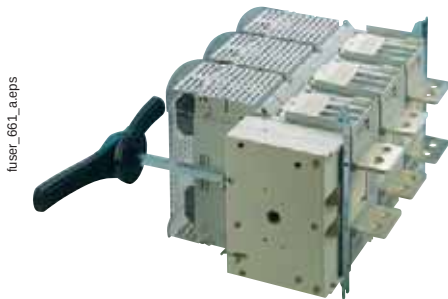
This kind of configuration is very practical for high-density cabinets or if the unit is mounted close to door hinges.

Fused changeover switches



Available from 20 to 400 A, the FUSERBLOC changeover switch range is a great solution for safeguarding of energy supply, protection and disconnection of stand-by pumps and other sensitive loads.

FUSERBLOC rear connection



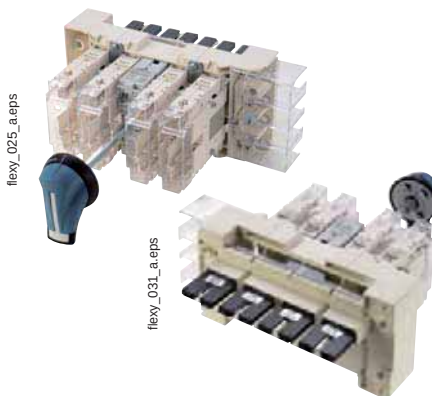
This connection mode simplifies the partitioning of the control areas, the switch body and the power connections, while reducing the required space of the overall solution.

FUSERBLOCs from 32 to 1250 A (DIN and BS fuses) can combine the various connection modes:

- rear/rear
- front/rear
- rear/front.

Please contact us for more information.

Plug-in FUSERBLOC



Connect directly to busbars (60 mm pitch) using contact clamps. Available from 32 to 400 A (DIN and BS fuses).

Plug-in FUSERBLOCs save a considerable amount of space in your distribution or motor control panels. For maintenance purposes, the switch can be easily removed without causing any power interruption.

Can respond up to IIS323 according to UTE 63429.

Please contact us for more information.

FUSERBLOC LMDC

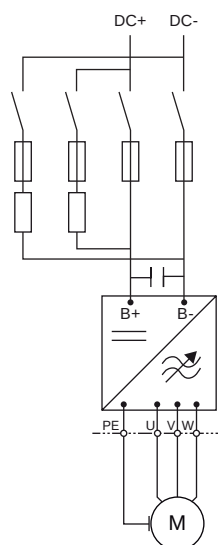


Protect variable speed drives under a common DC bus.

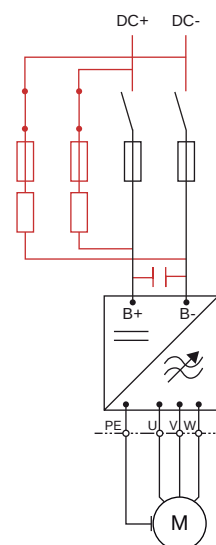
Multifunctional device for performing maintenance work on a branch of the electrical installation while leaving the rest of the equipment energised.

Load break switching, protection and triggering with pre-loading of capacitors, all in a single product.

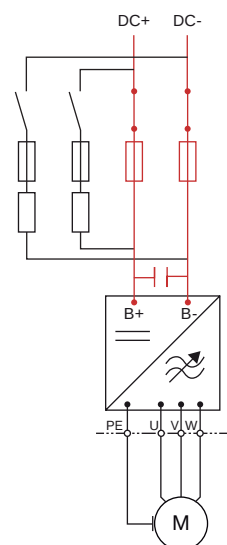
Example: Variable speed drive disconnected from the common DC bus. The inverter capacitors discharge and the direct power up would cause an current draw that could damage the inverter, or even shut down the entire system (voltage drop). This inrush current must be limited.



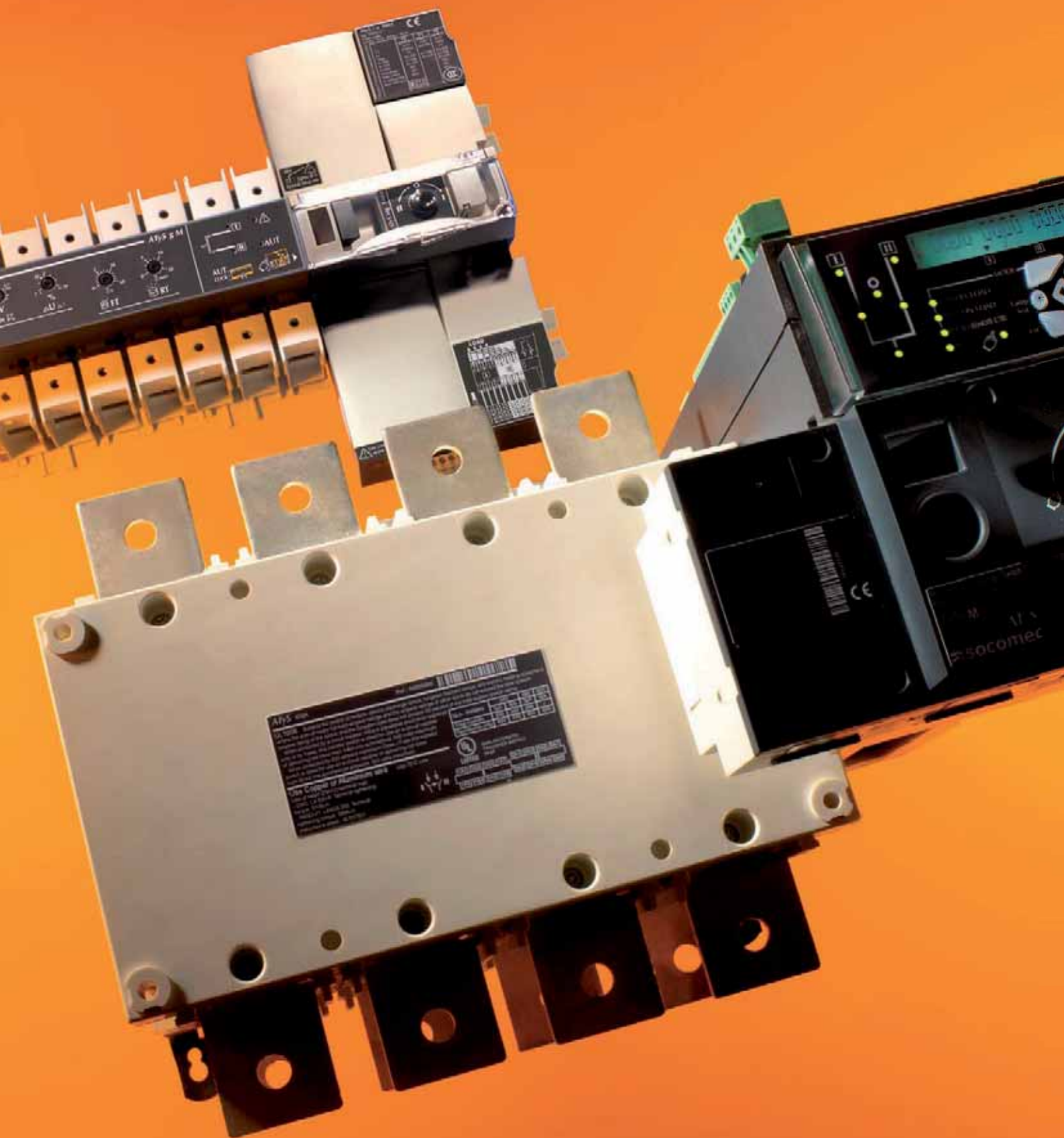
Disconnected variable speed drive and motor



Manual interlocking and capacitors charging through the precharge circuit while limiting the current draw.



Automatic switching over to the main protection circuit, connecting the VSD to the DC bus.



Transfer switches

Security and reliability for your transfer applications	p. 378
Manually operated Transfer Switching Equipment selection guide	p. 380
Remotely operated and Automatic Transfer Switching Equipment selection guide	p. 382

Manual transfer switches



COMO C
25 to 100 A
p. 384



SIRCO M
25 to 125 A
p. 388



SIRCO VM1
63 to 125 A
p. 392



SIRCOVER
125 to 3200 A
p. 396



SIRCOVER Bypass
125 to 3200 A
p. 396



SIRCOVER ATS Bypass
125 to 1600 A
p. 412

Motorised modular transfer switches

ATyS M range p. 416

40 to 160 A



ATyS d M
p. 418



**ATyS t M
ATyS g M**
p. 420



ATyS p M
p. 422

Motorised transfer switches

ATyS S range p. 432

40 to 6300 A



**ATyS S
ATyS d S**
p. 434



**ATyS r
ATyS d**
p. 444



**ATyS t
ATyS g**
p. 446



ATyS p
p. 448



ATyS d H
p. 466

Universal ATS controller

Automatic control of different switching technologies: circuit breakers, contactors, switches.



ATyS C20/ C30/ C40
p. 470

UL product range

UL range p. 472



SIRCOVER UL1008
100 to 1200 A
p. 474



ATyS UL1008
100 to 400 A
p. 484

Enclosed solutions

SOCOMECS offers a range of pre-equipped enclosures in steel or polyester.



Enclosed
SIRCOVER
p. 755



Enclosed
ATyS M
p. 760



Enclosed
ATyS
p. 774

Any particular requirement?

Thanks to our extensive experience we have developed an impressive portfolio of customised solutions (motorised transfer switches with overlapping contacts and cooled poles, specific software, etc.). Please contact us if you have any specific requests.

For all your applications, even the most critical, trust the experts.



Security and reliability for your transfer applications

An undisputed leader in the field of changeover switching, SOCOMEC is continuously innovating to ensure the continuity of electrical distribution.

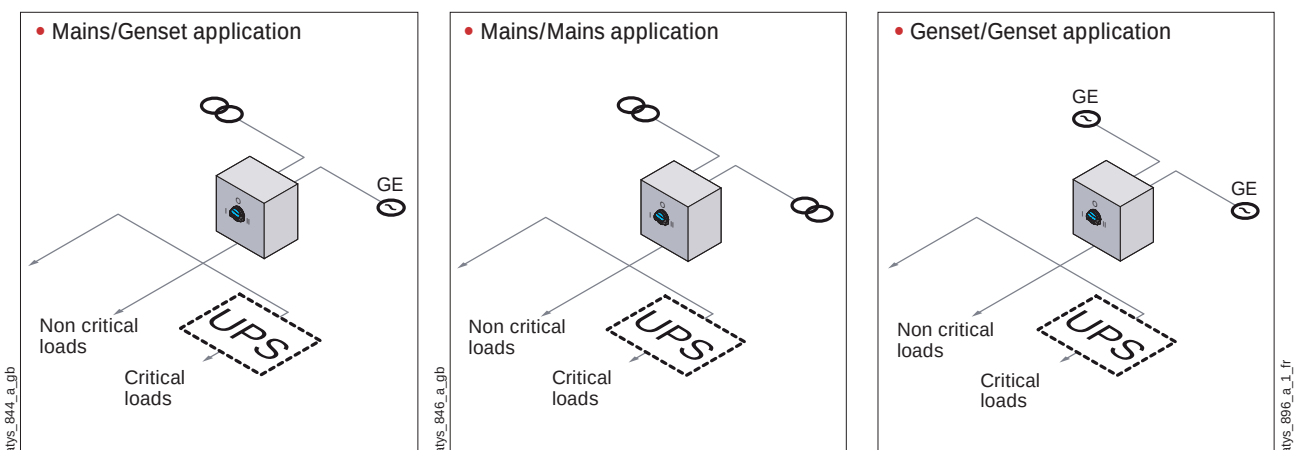
From the COMO C manual transfer switch (25 - 100 A) to the ATyS p automatic transfer switch (up to 3200 A) and the ATyS d H remotely operated transfer switch (up to 6300 A), our range of changeover switches cover most applications as standard.

Products for all switching applications from 25 to 6300 A

SOCOMEC transfer switches can be used not only for normal/emergency source switching, but also to manage the switching of loads or for earthing/earthing solutions.

Your application	Manual changeover switches	Motorised changeover switches	Automatic changeover switches
Changeover switches (network/network - network/genset - genset/genset)	•	•	•
Bypass application	•	•	•
Other AC applications (load switching - grounding/earthing - phase switching)	•		
Photovoltaic applications	•		

Secure switching for all your transfers



Expert Services

- > Study, definition, advice, implementation, maintenance and training...
- > Our Expert Services extend to a complete offer of customised services to make your project a success.



Secure switching compliant with standard IEC 60947-6-1

The standard IEC 60947-6-1 “Low-voltage switchgear and controlgear – Multiple function equipment – Transfer Switching Equipment” is dedicated to changeover switches.

This standard applies to Transfer Switching Equipment (TSE) with interruption of the supply to the load during transfer, the rated voltage of which does not exceed 1000 VAC or 1500 VDC, be it any of the following:

- **MTSE**
According to the standard IEC 60947-6-1, MTSE (Manually operated Transfer Switching Equipment) is manually operated transfer switching equipment. As such, it requires a person to be present to operate the handle.
- **RTSE**
According to the standard IEC 60947-6-1, RTSE (Remotely operated Transfer Switching Equipment) is transfer switching equipment that is controlled remotely. As such, they require an external controller to provide them with commands.
- **ATSE**
According to the standard IEC 60947-6-1, ATSE (Automatic Transfer Switching Equipment) is transfer switching equipment that is controlled automatically. It differs from RTSE in that it has an integrated controller. As such, these devices are self-monitoring in terms of power source availability, and will start up the genset if required and switch automatically to the power source that is present.

This standard also defines categories of use, depending on the needs of the application, which may apply to the TSE:

Type of current	Utilisation category		Type of load
	Application A ⁽¹⁾	Application B ⁽²⁾	
Alternating current	AC-31A	AC-31B	Non-inductive or low-inductive loads
	AC-32A	AC-32B	Mixed resistive and inductive loads, including moderate overvoltages
	AC-33A	AC-33B	Motors or various loads including motors, resistive loads and loads comprising up to 30% incandescent lamps

(1) Application A: Frequent switching.

(2) Application B: Infrequent switching.

UL applications

SOCOMECL 1008 transfer switches are designed for use in “total system optional standby power” applications with a secure transfer of load power between a regular source and a backup source.

“Optional standby systems” are installed to provide a backup power supply for buildings where a power failure could mean disruption, interruptions to operation or damage to products or processes.



Selection guide

Manually operated Transfer Switching Equipment

How many
poles ?



What type of
operations ?

				
	COMO C 25 to 100 A p. 384	SIRCO M 25 to 125 A p. 388	SIRCO VM1 63 to 125 A p. 392	
Number of poles				
3 P	•	•	•	
4 P	•	•	•	
Switch operation				
I-0-II	•	•	•	
I-I+II-II	•	•	•	
Bypass	•			
Indication of breaking				
Positive break indication	•	•	•	
Visible contacts			•	
Operating handle				
Front direct/external operation	•	•	•	
Door mountable switch	•			

(1) Depending on the version. From 125 to 3200 A for SIRCOVER I-0-II; from 125 to 1800 A for SIRCOVER I-I+II-II and from 125 to 1600 A for SIRCOVER Bypass.

What type
of breaking
indication ?

			
	SIRCOVER 125 to 3200 A ⁽¹⁾ p. 396	SIRCOVER ATS Bypass 125 to 1600 A p. 412	SIRCOVER UL1008 100 to 1200 A p. 474
	•	•	•
	•	•	•
	•		•
	•		
	•	•	
	•	•	•
	•	•	•



Selection guide

Remotely operated and Automatic Transfer Switching Equipment ATyS

Which type of power supply?

Which application?

RTSE (Remotely operated)					
40 to 125 A		40 to 160 A	125 to 3200 A		4000 to 6300 A
					
ATyS S p. 434	ATyS d S p. 434	ATyS d M p. 418	ATyS r p. 444	ATyS d p. 444	ATyS d H p. 466

Type of power supply

Power supply 12, 24 or 48 VDC	•						
Single power supply 230 VAC	•			•			
Dual power supply 230 VAC		•	•		•	•	

Connection of remote control interface

D10					•		
D20							

Application

Mains/Mains	• (1)	• (1)	• (1)	• (1)	• (1)	• (1)	
Mains/Genset	• (1)	• (1)	• (1)	• (1)	• (1)	• (1)	
Genset/Genset	• (1)	• (1)	• (1)	• (1)	• (1)	• (1)	

Configuration

Configuration using potentiometers and dip switches							
Configuration using display and keyboard							
Voltage and frequency auto-configuration							

Functions

Contact for product availability				•	•		
Fixed function inputs/outputs (defined by the factory)	•	•	•	•	•	•	
Configurable inputs/outputs							
Voltage and frequency checks							
Phase rotation check							
Unbalanced phase check							
LED indication of source availability					•		
LED position indication							
Programming of genset startup							
Genset connected on switch II	•	•	•	•	•	•	
Genset connected on switch I	•	•	•	•	•	•	
Test On Load							
Test Off Load							
Load shedding							
Display and measurement of powers and energy (when utilising CTs)							

Supervision

Programming of genset startup							
RS485 communication							
Ethernet communication							
Webserver via Ethernet module							
Data logging							

- (1) With an external controller.
(2) Only on two pole versions.
(3) Only available on the version with COM.
(4) Configurable output.

Which application?

Need of supervision?

[illegible]



COMO C

Manually operated Transfer Switching Equipment
from 25 to 100 A



como_179_a_1

COMO C
I-II 4P 63 A



como_178_a_1

COMO C
I-O-II 3P 25 A

The solution for

- > Industry (machine control)



Strong points

- > High number of operations
- > Flexibility
- > Bridging bars

Conformity to standards

- > IEC 60947-3



- > UL 508



Function

COMO C are manual transfer switches with positive break indication. They provide on-load transfer between two sources for any low voltage power circuit, as well as safety isolation. Other applications include source inversion (e.g. to change the direction of a motor) or grounding/earthing.

Advantages

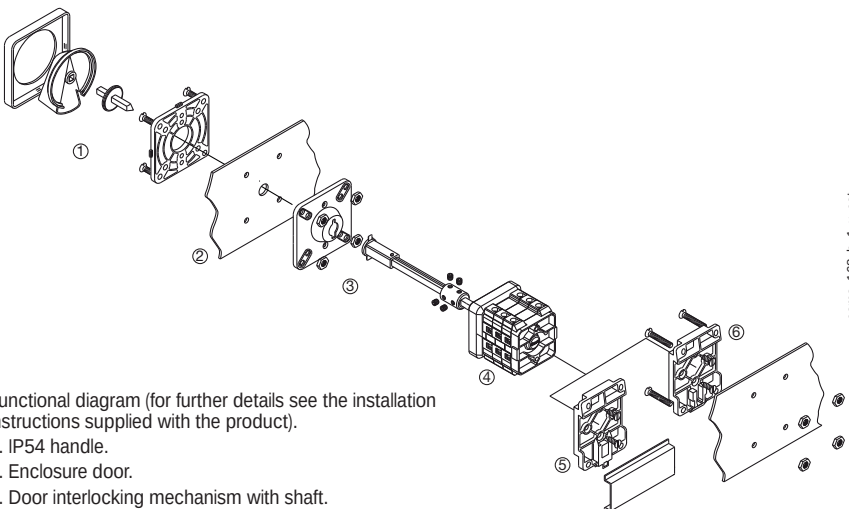
High number of operations
COMO C can perform up to 100 000 operation cycles.

Bridging bars
Bridging bars are supplied factory fitted as standard.

Flexibility

Four types of changeover switches are available as standard (I-II, I-O-II, I-I+II-II & Bypass I-O-II). Other switching options, such as star/delta configurations or a non-standard number of poles, are available on request.

Configurations



como_168_b_1_x_cat

Functional diagram (for further details see the installation instructions supplied with the product).

1. IP54 handle.
2. Enclosure door.
3. Door interlocking mechanism with shaft.
4. Switch body
5. DIN rail mounting device.
6. Back plate mounting device.

References

Rating (A)	No. of poles	Switching type	Switch body	IP54 padlockable handle	IP54 non-padlockable white handle	Shaft and escutcheon for external handle	Back mounting kit	IP65 gasket
25 A	3 P	I - II	4220 3002 ⁽¹⁾	Black/Grey 4259 1042	I - II 4259 2022 I - 0 - II and Bypass 4259 3022 I - I+II - II 4259 4022	200 mm 4259 5042	DIN rail mounting 4259 9001 Back plate mounting 4259 9040	4299 5001 ⁽²⁾
	4 P	I - II	4220 4002 ⁽¹⁾					
	3 P	I - 0 - II	4230 3002 ⁽¹⁾⁽³⁾					
	4 P	I - 0 - II	4230 4002 ⁽¹⁾⁽³⁾					
	3 P	I - I+II - II	4240 3002 ⁽¹⁾					
	4 P	I - I+II - II	4240 4002 ⁽¹⁾					
	3 + 6 P	Bypass I - 0 - II	4250 3002					
	4 + 8 P	Bypass I - 0 - II	4250 4002					
40 A	3 P	I - II	4220 3004 ⁽¹⁾	Red/Yellow 4259 1043	I - II 4259 2042 I - 0 - II and Bypass 4259 3042 I - I+II - II 4259 4042	200 mm 4259 5042	DIN rail mounting 4259 9001 Back plate mounting 4259 9040	4299 5001 ⁽²⁾
	4 P	I - II	4220 4004 ⁽¹⁾					
	3 P	I - 0 - II	4230 3004 ⁽¹⁾⁽³⁾					
	4 P	I - 0 - II	4230 4004 ⁽¹⁾⁽³⁾					
	3 P	I - I+II - II	4240 3004 ⁽¹⁾					
	4 P	I - I+II - II	4240 4004 ⁽¹⁾					
	3 + 6 P	Bypass I - 0 - II	4250 3004					
	4 + 8 P	Bypass I - 0 - II	4250 4004					
63 A	3 P	I - II	4220 3006 ⁽¹⁾	Black/Grey 4259 1082	I - II 4259 2082 I - 0 - II and Bypass 4259 3082 I - I+II - II 4259 4082	200 mm 4259 5082	DIN rail mounting 4259 9001 Back plate mounting 4259 9080	4299 5002 ⁽²⁾
	4 P	I - II	4220 4006 ⁽¹⁾					
	3 P	I - 0 - II	4230 3006 ⁽¹⁾⁽³⁾					
	4 P	I - 0 - II	4230 4006 ⁽¹⁾⁽³⁾					
	3 P	I - I+II - II	4240 3006 ⁽¹⁾					
	4 P	I - I+II - II	4240 4006 ⁽¹⁾					
	3 + 6 P	Bypass I - 0 - II	4250 3006					
	4 + 8 P	Bypass I - 0 - II	4250 4006					
80 A	3 P	I - II	4220 3008 ⁽¹⁾	Red/Yellow 4259 1083	I - II 4259 2082 I - 0 - II and Bypass 4259 3082 I - I+II - II 4259 4082	200 mm 4259 5082	DIN rail mounting 4259 9001 Back plate mounting 4259 9080	4299 5002 ⁽²⁾
	4 P	I - II	4220 4008 ⁽¹⁾					
	3 P	I - 0 - II	4230 3008 ⁽¹⁾⁽³⁾					
	4 P	I - 0 - II	4230 4008 ⁽¹⁾⁽³⁾					
	3 P	I - I+II - II	4240 3008 ⁽¹⁾					
	4 P	I - I+II - II	4240 4008 ⁽¹⁾					
	3 + 6 P	Bypass I - 0 - II	4250 3008					
	4 + 8 P	Bypass I - 0 - II	4250 4008					
100 A	3 P	I - II	4220 3010					
	4 P	I - II	4220 4010					
	3 P	I - 0 - II	4230 3010					
	4 P	I - 0 - II	4230 4010					
	3 P	I - I+II - II	4240 3010					
	4 P	I - I+II - II	4240 4010					
	3 + 6 P	Bypass I - 0 - II	4250 3010					
	4 + 8 P	Bypass I - 0 - II	4250 4010					

(1) Available enclosed (see page 754).

(2) IP65: protection degree according to IEC 60529 standard.

(3) References available with 1 or 2 auxiliary contacts, please consult us.

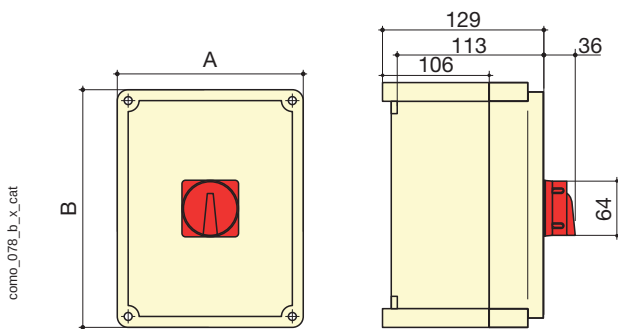
Enclosed solutions

General characteristics



- Adapted to environments subject to chemical, dust, contamination and atmospheric corrosion risks.
- Operation handle: Red/yellow handle
- Protection degree: IP65.
- Colour: RAL 7030.
- Material: glass fibre reinforced polyester.
- Product supplied as a kit, to be assembled.
- Locking system: screw.

Dimensions



* MTSE: Manual Transfer Switching Equipment

References

Rating (A)	No. of poles	Switching type	A (mm)	B (mm)	Reference
25 A	3 P	I - II	135	135	4221 3C02
	4 P	I - II	135	135	4221 4C02
	3 P	I - 0 - II	135	135	4231 3C02
	4 P	I - 0 - II	135	180	4231 4C02
	3 P	I - I+II - II	135	135	4241 3C02
	4 P	I - I+II - II	135	135	4241 4C02
40 A	3 P	I - II	135	135	4221 3C04
	4 P	I - II	135	135	4221 4C04
	3 P	I - 0 - II	135	135	4231 3C04
	4 P	I - 0 - II	135	135	4231 4C04
	3 P	I - I+II - II	135	135	4241 3C04
	4 P	I - I+II - II	135	135	4241 4C04
63 A	3 P	I - II	135	180	4221 3C06
	4 P	I - II	135	180	4221 4C06
	3 P	I - 0 - II	135	180	4231 3C06
	4 P	I - 0 - II	135	180	4231 4C06
	3 P	I - I+II - II	135	180	4241 3C06
	4 P	I - I+II - II	135	180	4241 4C06
80 A	3 P	I - II	135	180	4221 3C08
	4 P	I - II	135	180	4221 4C08 ⁽¹⁾
	3 P	I - 0 - II	135	180	4231 3C08
	4 P	I - 0 - II	135	180	4231 4C08 ⁽¹⁾
	3 P	I - I+II - II	135	180	4241 3C08
	4 P	I - I+II - II	135	180	4241 4C08 ⁽¹⁾

(1) Derated to 70 A for 4 pole.

Characteristics according to IEC 60947-3

25 to 100 A

Thermal current I_{th} (40 °C)		25 A	40 A	63 A	80 A	100 A
Rated insulation voltage U_i (V)		660	660	660	660	660
Rated impulse withstand voltage U_{imp} (kV)		4	4	4	4	4
Rated operational currents I_e (A)						
Rated voltage	Utilisation category	A/B⁽¹⁾	A/B⁽¹⁾	A/B⁽¹⁾	A/B⁽¹⁾	A/B⁽¹⁾
400 VAC	AC-21 A	25/25	40/40	63/63	80/80	100/100
400 VAC	AC-22 A	25/25	40/40	63/63	80/80	100/100
400 VAC	AC-23 A	20/20	32/32	63/63	63/63	63/63
Operational power in AC-23 (kW)						
At 400 VAC without pre-break ⁽¹⁾⁽²⁾		9/9	15/15	22/22	30/30	30/30
Reactive power (kvar)						
At 400 VAC ⁽²⁾		14	18	28	37	
Fuse protected short-circuit withstand (kA rms prospective)						
Prospective short-circuit (kA rms) ⁽³⁾		6	6	8	8	8
Associated fuse rating (A) ⁽³⁾		25	40	63	80	100
Short-circuit capacity						
Closing capacity on short-circuit (kA peak) ⁽³⁾		2	2.6	5.8	5.8	6.5
Connection						
Minimum Cu cable cross-section (mm ²)		2.5	10	16	16	16
Maximum Cu cable cross-section (mm ²)		6	16	50	50	50
Tightening torque min (Nm)		2	2	3.5	3.5	3.5
Mechanical characteristics						
Durability (number of operating cycles)		100 000	100 000	100 000	100 000	100 000
Weight of 3 P switch (kg)		0.25	0.3	0.55	0.63	0.63
Weight of 4 P switch (kg)		0.31	0.4	0.7	0.8	0.8

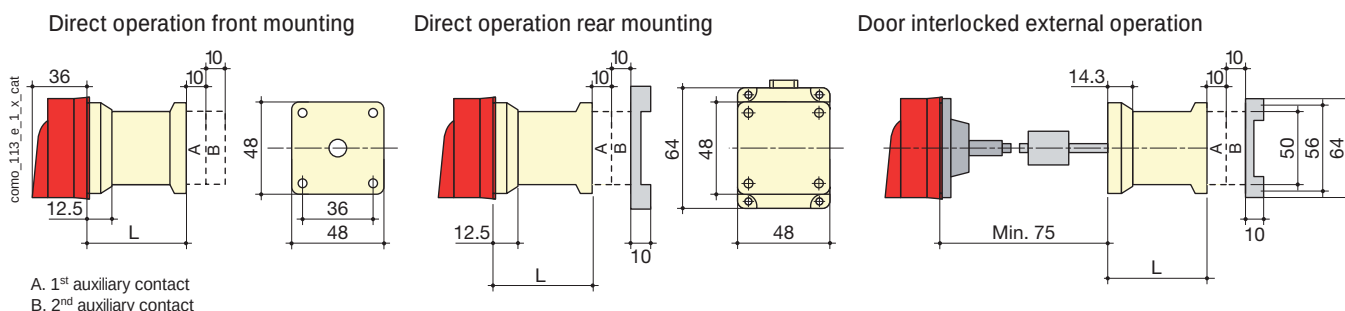
(1) Category with index A = frequent operation - Category with index B = infrequent operation.

(2) The power value is given for information only, the current values vary from one manufacturer to another.

(3) For a rated operational voltage U_o = 400 VAC.

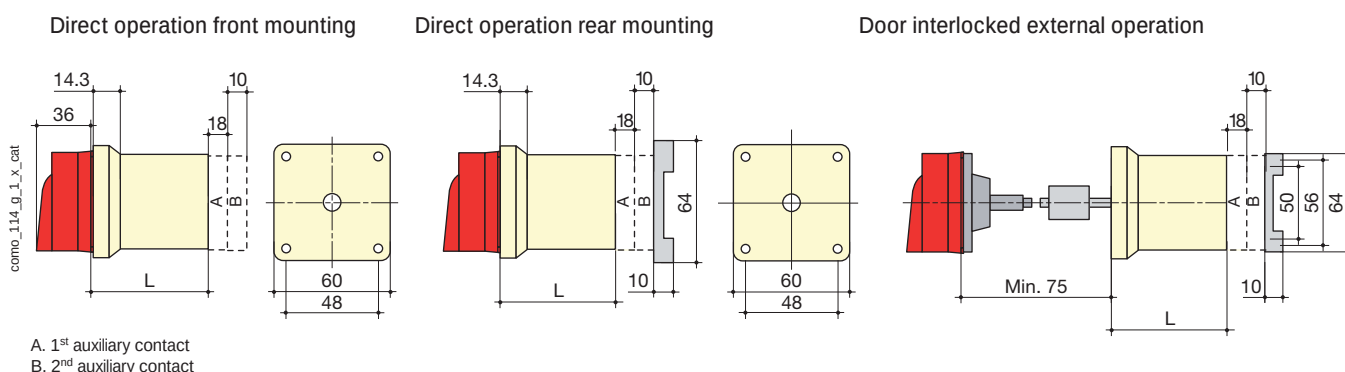
Dimensions

25 A



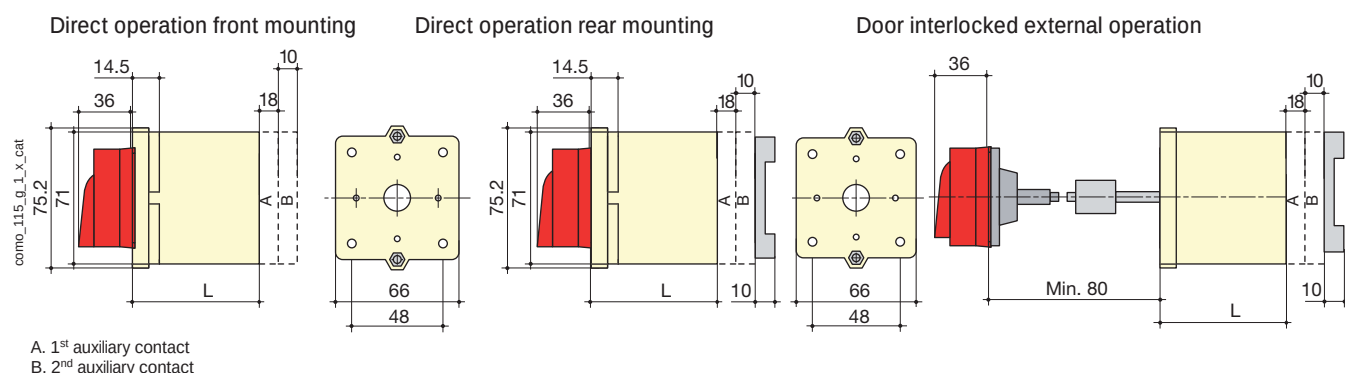
Switching type	L 3p.	L 4p.
I - II	50.5	60.5
I - 0 - II	50.5	60.5
I - I+II - II	50.5	60.5
Bypass I - 0 - II	70.5	80.5

40 A



Switching type	L 3p.	L 4p.
I - II	60.3	72.3
I - 0 - II	60.3	72.3
I - I+II - II	60.3	72.3
Bypass I - 0 - II	84.3	96.3

63 to 100 A



Switching type	L 3p.	L 4p.
I - II	82	99.5
I - 0 - II	82	99.5
I - I+II - II	82	99.5
Bypass I - 0 - II	117	134.5



SIRCO M

Manually operated Transfer Switching Equipment
from 25 to 125 A

Transfer switches



The solution for

- > Healthcare buildings
- > Manufacturing industry



Strong points

- > Secured breaking
- > Modular device
- > Improved on-load switching

Conformity to standards

- > IEC 60947-3



Function

SIRCO M are manually operated 3 or 4 pole modular transfer switches with positive break indication. They provide on-load transfer between two sources for any low voltage power circuit, as well as safety isolation. Other applications include source inversion (e.g. to change the direction of a motor) or grounding/earthing.

Advantages

Secured breaking

SIRCO M transfer switches include contact point technology and double break per pole as standard, enabling safe, optimal operation of LV electrical circuits.

Modular device

Thanks to their modular format, SIRCO M transfer switches can be fixed to a DIN rail, a backplate or a modular panel.

Improved on-load switching

The SIRCO M switch comprises two mechanically interlocked load break switches which are tested in accordance to standard IEC 60947-3. Its AC23 characteristics enable it to perform on-load changeover switching.

What you need to know

- There are two types of operating handles available for the SIRCO M transfer switches:
 - direct front handle
 - external front handle
- The SIRCO M changeover switch is available in 3 and 4 pole, from 25 to 125 A, with pre-break or signalisation auxiliary contacts (accessories).



References

Rating (A) / Frame size	No. of poles	Switch body	Direct handle	External handle with 1 position padlocking	External handle with 3 position padlocking	Shaft extension for external front handle	Auxiliary contact	Terminal shrouds	Bridging kit							
25 A/M1	3 P	2230 3002	Blue 2239 5012 Red 2239 5013	S000 type I - O - II Black IP65 1463 5113⁽¹⁾	S01 type I - O - II Black IP65 1403 2813	S00, S000 type 150 mm 1407 0515	M type 1 contact NO + NC 2299 0001 1 contact 2 NC 2299 0011	1 P 2294 1005⁽²⁾ 3 P 2294 3005⁽²⁾	3 P 2299 3005 4 P 2299 4005							
	4 P	2230 4002				200 mm 1407 0520										
40 A/M1	3 P	2230 3004				320 mm 1407 0532				1 P 2294 1009⁽²⁾ 3 P 2294 3009⁽²⁾	3 P 2299 3009 4 P 2299 4009					
	4 P	2230 4004				S01 type 200 mm 1404 0520										
63 A/M2	3 P	2230 3006		S01 type I - O - II Black IP65 1403 2113⁽¹⁾		320 mm 1404 0532		1 P 2294 1009⁽²⁾ 3 P 2294 3009⁽²⁾	3 P 2299 3009 4 P 2299 4009							
	4 P	2230 4006														
80 A/M2	3 P	2230 3008		S00 type 150 mm 1409 0615 200 mm 1409 0620 320 mm 1409 0632		1 P 2294 1011⁽²⁾ 3 P 2294 3016⁽²⁾										
	4 P	2230 4008														
100 A/M3	3 P	2230 3010	Blue 2239 5022 Red 2239 5023	S00 type I - O - II Black IP65 1473 0113				1 P 2294 1011⁽²⁾ 3 P 2294 3016⁽²⁾								
	4 P	2230 4010														
125 A/M3	3 P	2230 3011														
	4 P	2230 4011														

(1) Defeatable handle.

(2) 3 pole: for upstream and downstream protection, order quantity 2 x 3 pole shrouds. For a 4 pole device, order quantity 2 x 3 pole + 2 x 1 pole shrouds.

Accessories

See "SIRCO M switches" page 26.

Characteristics according to IEC 60947-3

Thermal current I_m (40 °C)	25 A	40 A	63 A	80 A	100 A	125 A
Frame size	M1	M1	M2	M2	M3	M3
Rated insulation voltage U_i (V)	800	800	800	800	800	800
Rated impulse withstand voltage U_{imp} (kV)	8	8	8	8	8	8

Rated operational currents I_e (A)

Rated voltage	Utilisation category	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾
415 VAC	AC-20 A / AC-20 B	25/25	40/40	63/63	80/80	100/100	125/125
415 VAC	AC-21 A / AC-21 B	25/25	40/40	63/63	80/80	100/100	125/125
415 VAC	AC-22 A / AC-22 B	25/25	40/40	63/63	80/80	100/100	125/125
415 VAC	AC-23 A / AC-23 B	25/25	40/40	63/63	80/80	100/100	125/125

Operational power in AC-23 (kW)

At 400 VAC without pre-break in AC-23 (kW) ⁽²⁾	11.3	18	28.4	35.5	45	56.3
---	------	----	------	------	----	------

Fuse protected short-circuit withstand (kA rms prospective)

Prospective short-circuit (kA rms) ⁽³⁾	50	50	50	50	50	25
Associated fuse rating (A) ⁽³⁾	25	40	63	80	100	125

Circuit breaker protected short-circuit withstand with any circuit breaker that ensures tripping in less than 0.3s⁽⁴⁾

Rated short-time withstand current 0.3s I_{cw} (kA rms)	2.3	2.3	2.74	2.74	5	5
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Short-circuit capacity (without protection)

Rated short-time withstand current 1s I_{cw} (kA rms)	1.26	1.26	1.5	1.5	2.75	2.75
Rated short-circuit making capacity I_{cm} (kA peak)	1.8	1.8	2.1	2.1	3.9	3.9

Connection

Minimum Cu cable cross-section (mm ²)	1.5	1.5	2.5	2.5	10	10
Maximum Cu cable cross-section (mm ²)	16	16	35	35	70	70
Tightening torque min / max (Nm)	2 / 2.2	2 / 2.2	3.5 / 3.85	3.5 / 3.85	4 / 4.4	4 / 4.4

Mechanical characteristics

Durability (number of operating cycles)	10 000	10 000	10 000	10 000	10 000	8 000
Weight of a 3 pole device (kg)	0.41	0.41	0.58	0.58	1.1	1.1
Weight of a 4 pole device (kg)	0.51	0.51	0.75	0.75	1.46	1.46

(1) Category with index A = frequent operation - Category with index B = infrequent operation.

(2) The power value is given for information only, the current values vary from one manufacturer to another.

(3) For a rated operational voltage U_e = 400 VAC.

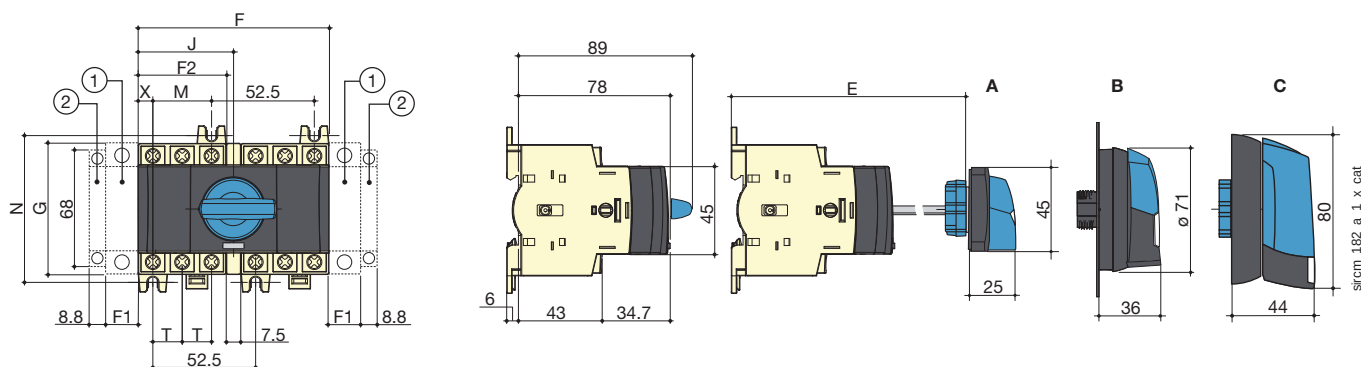
(4) Value for coordination with any circuit breaker that ensures tripping in less than 0.3s. For coordination with specific circuit-breaker references, higher short-circuit current values are available. Please consult us.

Dimensions

25 to 80 A / M1 to M2

Direct front operation for 3/4 pole changeover switches

External front operation for 3/4 pole changeover switches



1. Location for: 1 main pole or 1 auxiliary contact (See accessories page 34).

2. Position for 1 auxiliary contact module only.

Note: Maximum of 4 additional blocks (3 pole changeover can be fitted with either one main pole and one A/C block, or two A/C blocks per side; 4 pole changeover can be fitted with only one A/C block per side).

A. S000 handle

B. S00 handle

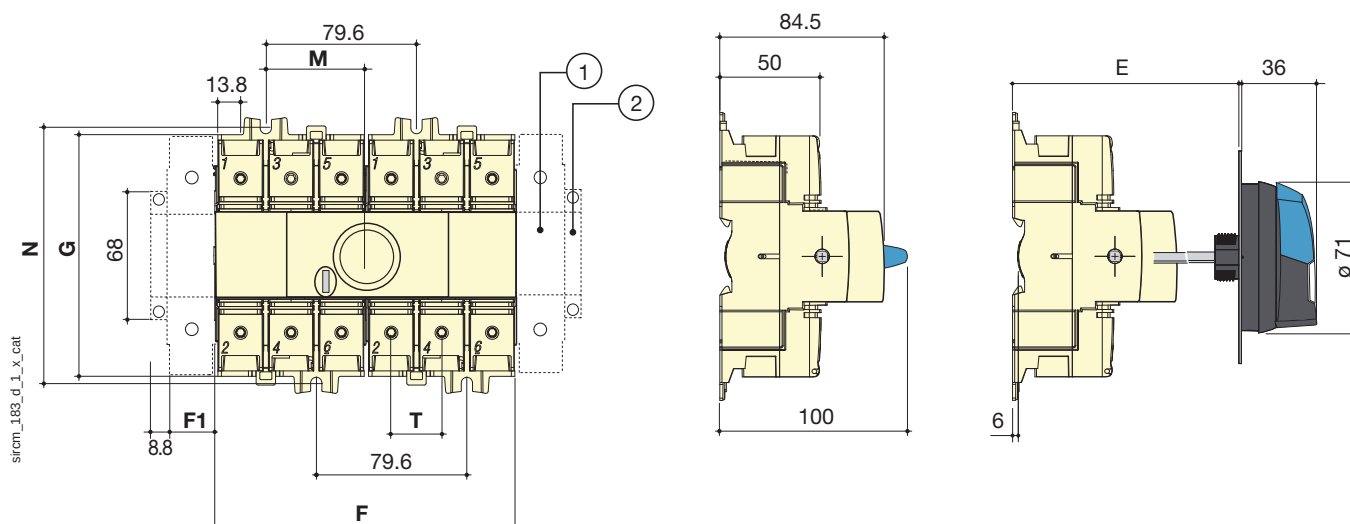
C. S01 handle

Rating (A)	Frame size	Overall dimensions		Switch body					Switch mounting		Connection	
		E min	E max	F	F1	F2	G	J	M	N	T	X
25 ... 40	M1	105	372	97.5	15	45	68	48.75	30	75	15	7.5
63 ... 80	M2	105	372	105	17.5	52.5	76	52.5	35	85	17.5	8.75

100 to 125 A / M3

Direct front operation for 3/4 pole changeover switches

External front operation for 3/4 pole changeover switches



1. Location for: 1 main pole or 1 auxiliary contact (See accessories page 34).

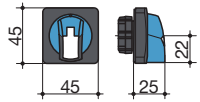
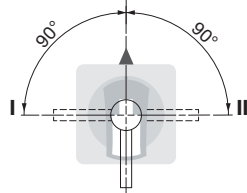
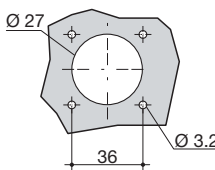
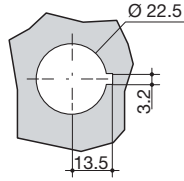
2. Position for 1 auxiliary contact module only.

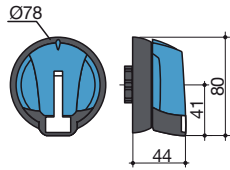
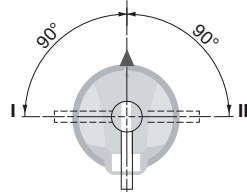
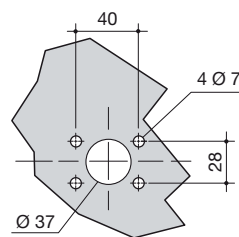
Note: Maximum of 4 additional blocks (3 pole changeover can be fitted with either one main pole and one A/C block, or two A/C blocks per side; 4 pole changeover can be fitted with only one A/C block per side).

Rating (A)	Frame size	Overall dimensions		Switch body			Switch mounting		Connection
		E min	E max	F	F1	G	M	N	T
100 ... 125	M3	105	372	159	26	124.5	52.8	131.5	26

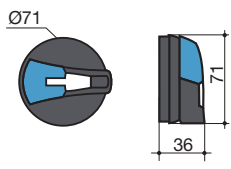
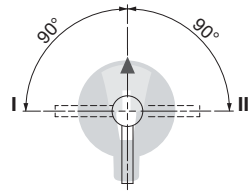
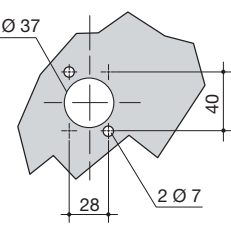
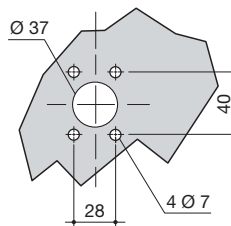
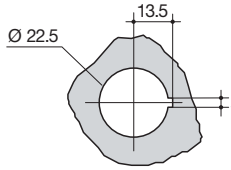
Dimensions for external handles

25 to 80 A / M1 to M2

Handle type	Front operation Direction of operation	Door drilling
S000 type Transfer switches I-0-II and I - I+II - II 		With 4 fixing screws  With fixing nut 

Handle type	Front operation Direction of operation	Door drilling
S01 type Transfer switches I-0-II and I - I+II - II 		IP65 with 4 fixing screws 

25 to 125 A / M1 to M3

Handle type	Front operation Direction of operation	Door drilling
S00 type Transfer switches I-0-II and I - I+II - II 		IP55 with 2 fixing clips  IP65 with 4 fixing screws  With fixing nut 



SIRCO VM1

Manually operated Transfer Switching Equipment
from 63 to 125 A



SIRCO VM1
I-0-II 4-pole 100 A

The solution for

- > Energy production
- > Critical buildings



Strong points

- > Safe isolation
- > Modular product

Conformity to standards

- > IEC 60947-3



Function

SIRCO VM1 are 3 or 4 pole modular manual transfer switches with visible breaking. They provide on-load transfer between two sources for any low voltage power circuit, as well as safety isolation. Other applications include source inversion (e.g. to change the direction of a motor) or grounding/earthing.

Advantages

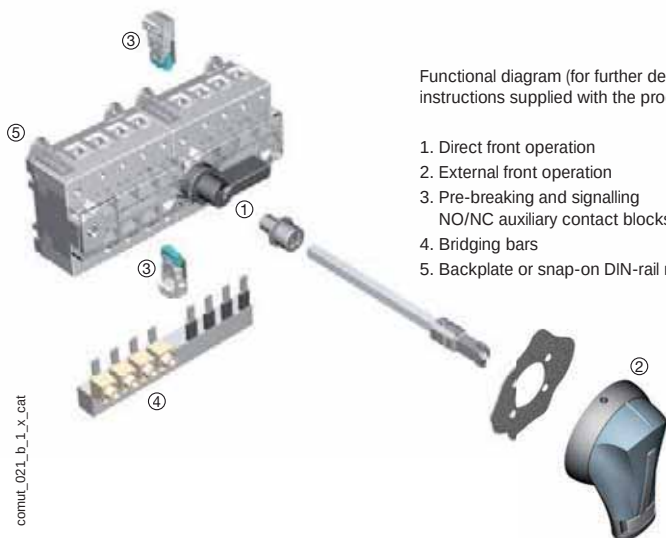
Safe isolation

SIRCO VM1 transfer switches enable completely secure isolation owing positive break indication and double visible breaking. The user can view the status of the device either during preventive checks or before working on the system.

Modular product

SIRCO VM1 transfer switches offer a number of mounting options: DIN rail, back plate or modular panel-mounted.

Configurations



Functional diagram (for further details see the installation instructions supplied with the product).

1. Direct front operation
2. External front operation
3. Pre-breaking and signalling
NO/NC auxiliary contact blocks
4. Bridging bars
5. Backplate or snap-on DIN-rail mounting.

References

VM1 switch I-O-II

Rating (A)	No. of poles	Switch body	Direct handle	External handle	Shaft for external handle	IP20 ⁽²⁾ bridging bar	Auxiliary contact
63 A	3 P	4430 3006 ⁽¹⁾	Black 4439 5012	S1 type Black IP65 1413 2113	200 mm 1402 0820 320 mm 1402 0832	3 P 4499 3006 4 P 4499 4006	1 NO/NC auxiliary contact 4439 0001
	4 P	4430 4006 ⁽¹⁾					
80 A	3 P	4430 3008 ⁽¹⁾					
	4 P	4430 4008 ⁽¹⁾					
100 A	3 P	4430 3010 ⁽¹⁾					
	4 P	4430 4010 ⁽¹⁾					
125 A	3 P	4430 3012					
	4 P	4430 4012					

VM1 switch I - I+II - II

Rating (A)	No. of poles	Switch body	Direct handle	External handle	Shaft for external handle	IP20 ⁽²⁾ bridging bars
63 A	3 P	4440 3006	Black 4449 5012	S1 type Black IP65 1413 2114	200 mm 1403 0820 320 mm 1403 0832	3 P 4499 3006 4 P 4499 4006
	4 P	4440 4006				
80 A	3 P	4440 3008				
	4 P	4440 4008				
100 A	3 P	4440 3010				
	4 P	4440 4010				
125 A	3 P	4440 3012				
	4 P	4440 4012				

(1) Device available enclosed (see "Enclosed transfer switches" page 726).

(2) IP: protection index according to IEC 60529.

Accessories

Direct operation handle

Rating (A)	Switching type	Reference
63 ... 125	I - O - II	4439 5012
63 ... 125	I - I+II - II	4449 5012



acces_111_a_1_cat

External operation handle

Use

Door interlocked external front operation handles include an escutcheon, are padlockable and must be utilised with an extension shaft.

Rating (A)	Switching type	Padlockable	External IP ⁽¹⁾	Reference
63 ... 125	I - O - II	1 position	IP55	1411 2113
63 ... 125	I - O - II	1 position	IP65	1413 2113
63 ... 125	I - O - II	3 positions	IP65	1413 2813
63 ... 125	I - I+II - II	1 position	IP65	1413 2114
63 ... 125	I - I+II - II	3 positions	IP65	1413 2814

(1) IP: protection index according to IEC 60529.



acces_149_a_2_cat

Type S handle adapter

Use

Enables S-type handles to be fitted in place of existing older style SOCOMEC handles. Adapter can also be utilised as a spacer to increase the distance between the panel door and the handle lever. Dimensions: adds 12 mm to the depth of the handle.

Colour	To be ordered in multiples of	External IP ⁽¹⁾	References
Black	1	IP65	1493 0000

(1) IP: protection index according to IEC 60529.



acces_187_a_2_cat

Alternative S-type handle covers

Colour	To be ordered in multiples of	Reference
Light grey	50	1401 0001
Dark grey	50	1401 0011

Use

For single lever type S1 handles.
Other colours available:
consult us.



acces_198_a_1_cat

SIRCO VM1

Manually operated Transfer Switching Equipment
from 63 to 125 A

Accessories (continued)

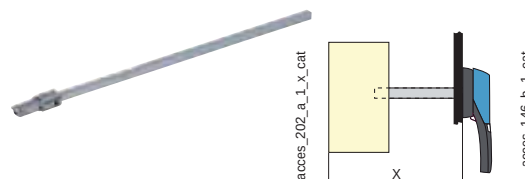
Shaft for external operation

Use

Standard lengths:

- 200 mm,
- 320 mm.

Other lengths available: consult us.



SIRCO VM1 I - 0 - II			
Rating (A)	Side X (mm)	Shaft length (mm)	Reference
63 ... 125	128 ... 290	200 mm	1402 0820
63 ... 125	128 ... 410	320 mm	1402 0832

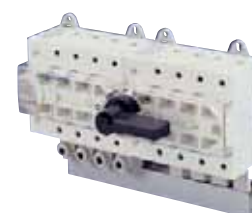
SIRCO VM1 I - I+II - II			
Rating (A)	Side X (mm)	Shaft length (mm)	Reference
63 ... 125	128 ... 290	200 mm	1403 0820
63 ... 125	128 ... 410	320 mm	1403 0832

IP20 bridging bar

Use

For creating a common connection between switches I & II, on the top or bottom side of the SIRCO VM1, to enable, for example, the load to be fed from either incoming source (I or II).

The bridging bar does not reduce the connection capacity of the cage clamp terminals.



Rating (A)	No. of poles	Reference
63 ... 125	3 P	4499 3006
63 ... 125	4 P	4499 4006

NO/NC auxiliary contact

Use

Pre-breaking and signalling of positions I and II: 1 NO/NC auxiliary contact for each position.

Characteristics

- Snaps on and is secured by a screw.
- Connector block with a maximum capacity of up to 2 x 1.5 mm² per terminal.

Rating (A)	Switching type	Contact(s)	Reference
63 ... 125	I - 0 - II	1	4439 0001 ⁽¹⁾

(1) Not available for overlapping contact switch (I-I+II-II).

Enclosed solutions

General characteristics

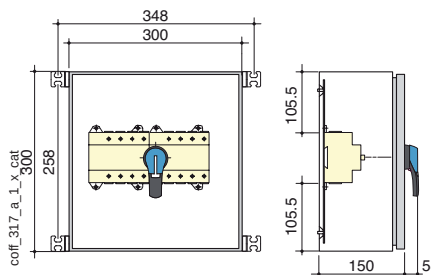


- Operating handle: S-type padlockable black handle.
- Protection degree: IP54 / IK 09.
- Colour: RAL 7035
- Closing plates: top and bottom.
- Material: 1.5 mm thick XC steel.
- Coating: epoxy polyester powder.
- Wall mounting: 4 mounting brackets supplied (not fitted).
- Door: solid with hinges.
- Locking device: 3 mm double bar key (key supplied).
- Miscellaneous: 2 earth connection bolts, double door locking.

References

Rating (A)	No. of poles	Top/bottom connection Reference
63 A	3 P	4413 3006
	4 P	4413 4006
80 A	3 P	4413 3008
	4 P	4413 4008
100 A	3 P	4413 3010
	4 P	4413 4010

Dimensions



Rating (A)	Max. connection cross-section (mm ²)	Weight (kg)
3 x 63 / 4 x 63	50	9
3 x 80 / 4 x 80	50	10
3 x 100 / 4 x 100	50	16

Characteristics according to IEC 60947-3

63 to 125 A

Thermal current I_{th} (40 °C)	63 A	80 A	100 A	125 A
Rated insulation voltage U_i (V)	800	800	800	800
Rated impulse withstand voltage U_{imp} (kV)	8	8	8	8

Rated operational currents I_e (A) according to IEC 60947-3

Rated voltage	Utilisation category	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾
415 VAC	AC-21 A / AC-21 B	63/63	80/80	100/100	125/125
415 VAC	AC-21 A / AC-21 B	63/63	80/80	100/100	125/125
415 VAC	AC-22 A / AC-22 B	63/63	80/80	100/100	125/125
415 VAC	AC-23 A / AC-23 B	63/63	63/63	63/63	63/63
690 VAC ⁽²⁾	AC-20 A / AC-20 B	63/63	80/80	100/100	125/125
690 VAC ⁽²⁾	AC-21 A / AC-21 B	63/63	80/80	80/80	80/80
690 VAC ⁽²⁾	AC-22 A / AC-22 B	40/40	40/40	40/40	40/40
690 VAC ⁽²⁾	AC-23 A / AC-23 B	25/25	25/25	25/25	25/25
220 VDC ⁽³⁾	DC-20 A / DC-20 B	63/63	80/80	100/100	125/125
220 VDC ⁽³⁾	DC-21 A / DC-21 B	63/63	80/80	100/100	125/125
220 VDC ⁽³⁾	DC-22 A / DC-22 B	63/63	80/80	100/100	100/100
220 VDC ⁽³⁾	DC-23 A / DC-23 B	63/63	63/63	63/63	63/63

Operational power in AC-23 (kW)

At 400 VAC without pre-break aux. contact in AC-23 ⁽⁴⁾	30/30	30/30	30/30	30/30
At 690 VAC without pre-break aux. contact in AC-23 ⁽⁴⁾	22/22	22/22	22/22	22/22

Reactive power (kvar)

At 400 VAC ⁽⁴⁾	28	37	45	55
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Current rated as conditional short-circuit with fuse gG DIN

Prospective short-circuit current (kA rms) ⁽⁵⁾	100	100	100	50
Associated fuse rating (A) ⁽⁵⁾	63	80	100	125

Current rated as conditional short-circuit with any brand of circuit breaker that ensures tripping in less than $0.3s^{(6)}$

Current rated as short-time withstand I_{CW} 0.3s (kA rms)	4.5	4.5	4.5	4.5
--	-----	-----	-----	-----

Short-circuit operation (switch only)

Current rated as short-time withstand I_{cw} 1s (kA rms)	2.5	2.5	2.5	2.5
Peak short-circuit breaking capacity I_{cm} (peak kA)	3.55	3.55	3.55	3.55

Connection

Minimum Cu cable cross-section (mm ²)	4	4	4	4
Minimum Cu cable cross-section (mm ²)	50	50	50	50
Min./max. tightening torque (Nm)	6	6	6	6

Mechanical specifications

Durability (number of operating cycles)	10 000	10 000	10 000	10 000
Weight of one 3 P device (kg)	1.2	1.2	1.4	1.4
Weight of one 4 P device (kg)	1.4	1.4	1.6	1.6

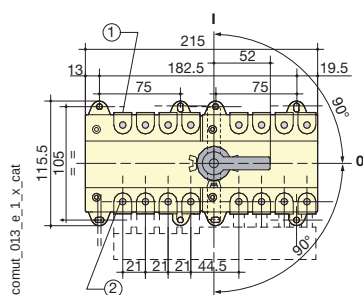
- (1) Category with index A = frequent operation / Category with index B = infrequent operation.
- (2) With terminal shrouds or phase barrier.
- (3) 4-pole device with 2 poles in series per polarity.
- (4) The power value is given for information only, the current values vary from one manufacturer to another.

- (5) For a rated operational voltage $U_e = 400$ VAC.
(6) Value for coordination with any circuit breaker that ensures tripping in less than 0.3s. For coordination with specific circuit-breaker parts, higher short-circuit current values are available. Please contact us.

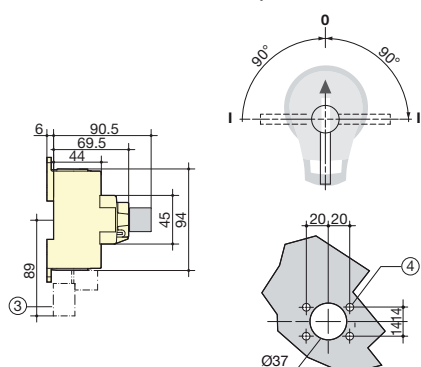
Dimensions

63 to 125 A

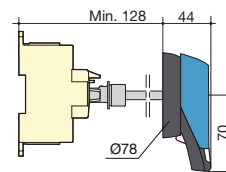
Direct front operation



External front operation



1. Max. connection:
 - Rigid: 50 mm²,
 - Flexible: 35 mm²
2. 5 mm Allen key - Pozidriv no. 1, 4.5 mm-slot
3. Bridging bar
4. Fix with 2 or 4 screws, 7 mm Ø





SIRCORDER

Manually operated Transfer Switching Equipment
from 125 to 3200 A



SIRCORDER
250 A



SIRCORDER Bypass
500 A

The solution for

- > Manufacturing
- > Power distribution



Strong points

- > Complete range
- > Easy to connect
- > Stable positions
- > On-load switching

Conformity to standards

- > IEC 60947-6,-1
- > IEC 60947-3
- > GB 14048-11



Approvals and certifications⁽¹⁾



(1) Product references on request.

Function

SIRCORDER products are manually operated transfer switches with positive break indication. There are 3 ranges in the series:

- SIRCORDER for open transition switching (I-O-II) available in 3 or 4 pole,
- SIRCORDER for overlapping contact switching (I-I+II-II),

For applications where both sources are synchronised and there is to be no interruption to the load supply during transfer - available in 3 or 4 pole.

- SIRCORDER Bypass. This combination of three interlocked load break switches provides 3+6 or 4+8 poles for bypass applications.

They provide on-load transfer between two sources for any low voltage power circuit, as well as safety isolation by double breaking per pole. Other applications include source inversion (e.g. to change the direction of a motor) or grounding/earthing.

Advantages

A complete range

There are 3 SIRCORDER models to meet every need: The standard model I-O-II, the overlapping contact model I-I+II-II and the Bypass model.

Easy to connect

For ratings of 2000 to 3200 A, we offer copper bar connection pieces. This gives you the option of different connection methods - flat, edgewise with top or bottom bridging.

Stable positions

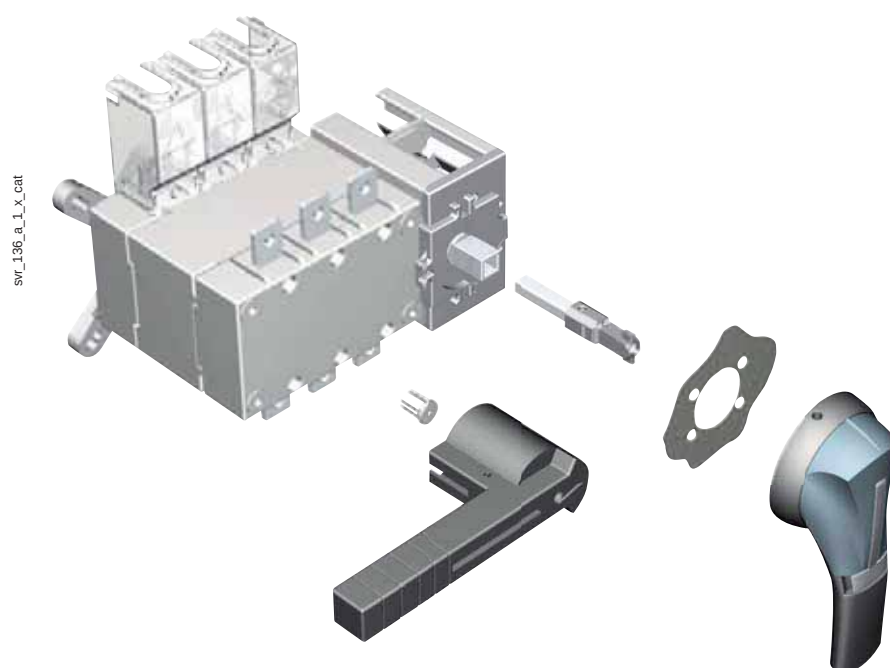
SIRCORDER devices have three stable positions, unaffected by voltage fluctuations and vibrations, protecting your loads from network disturbances.

On-load switching

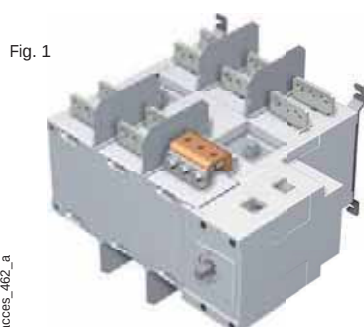
With its AC-23 and AC-33 characteristics, tested according to standards IEC 60947-3 and IEC 60947-6-1, the SIRCORDER enables safe on-load switching for any type of load. With its on-load transfer capabilities, it is not necessary to isolate loads prior to transfer therefore the SIRCORDER offers an economical solution.

What you need to know

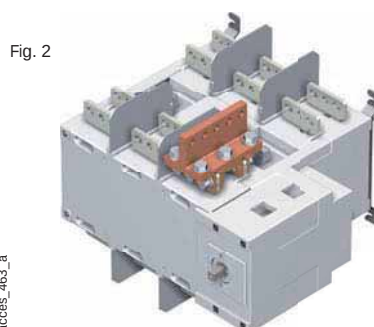
- SIRCOVER (I-0-II) switches have 3 stable positions and are available as 3 or 4 pole models with ratings of 63 to 3200 A. They are available in steel or polyester enclosures (125 to 1600 A).
- SIRCOVER switches with 3 overlapping contact positions (I-I+II-II) are available as 3 or 4 pole models from 125 to 1600 A. They are available in steel enclosures.
- With 3 stable positions (I-0-II), SIRCOVER Bypass devices are a combination of three interlocked switches enabling the use with 3+6 or 4+8 poles from 125 to 1600 A. They are available in steel enclosures.
- All SIRCOVER can be operated with direct front operation or external handles.



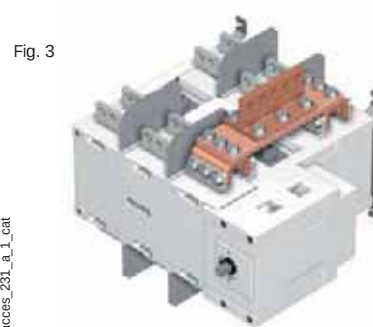
- Connection pieces for copper bars allows the connection between the 2 power terminals of the same pole (Fig. 1 and 2) and the bridging of switch I and switch II on the top or the bottom for ratings 2000, 2500 and 3200 A (Fig. 3).



Top or bottom
flat connection



Top or bottom
edgewise connection



Top or bottom
bridging connection

SIRCOVER

Manually operated Transfer Switching Equipment
from 125 to 3200 A

References

SIRCOVER I-0-II

Rating (A) / Frame size	No. of poles	Switch body	Direct handle	External handle	Shaft for external handle	Bridging bars	Auxiliary contact	Terminal shrouds	Terminal screens
125 A / B3	3 P	41AC 3013	J2 type Blue 1122 1111 Red 1123 1111	S2 type Black IP55 1421 2113 Black IP65 1423 2113 ⁽⁴⁾	200 mm 1400 1020 320 mm 1400 1032 ⁽⁴⁾	3 P 4109 3019 4 P 4109 4019	1 st /2 nd NO/NC contact 4109 0021 ⁽²⁾	3 P 2694 3014 ⁽³⁾⁽⁴⁾ 4 P 2694 4014 ⁽³⁾⁽⁴⁾	3 P 1509 3012 4 P 1509 4012
160 A / B3	4 P	41AC 4013							
200 A / B3	3 P	41AC 3020							
250 A / B4	4 P	41AC 4020							
315 A / B4	3 P	41AC 3025				4109 3025			
400 A / B4	4 P	41AC 4025				4109 4025			
500 A / B5	3 P	41AC 3031				3 P 4109 3039 4 P 4109 4039			
630 A / B5	4 P	41AC 4031				4109 3050			
800 A / B6	3 P	41AC 3040				4109 4050			
1000 A / B6	4 P	41AC 4040				4109 3063			
1250 A / B6	3 P	41AC 3050				4109 4063			
1600 A / B7	4 P	41AC 4050				3 P 4109 3080 3 P 4109 4080			
2000 A / B8	3 P	41AC 3100	C1 type Black 2799 7052	S4 type Black IP65 1443 3113	200 mm 1401 1520 320 mm 1401 1532 ⁽⁴⁾	4109 3120	1 st and 2 nd NO/NC contact included	3 P 2694 3051 ⁽³⁾⁽⁴⁾ 4 P 2694 4051 ⁽³⁾⁽⁴⁾	3 P 1509 3063 4 P 1509 4063
2500 A / B8	4 P	41AC 4100				4109 4120			
3200 A / B8	3 P	41AC 3120				4109 3160			
	4 P	41AC 4160				4109 4160			
3200 A / B8	3 P	41AC 3200	S5 type Black 2799 7042	S5 type Black IP65 1453 8113	200 mm 2799 3015 320 mm 2799 3018 ⁽⁴⁾ 450 mm 2799 3019	(5)	1 st and 2 nd NO/NC contact included		included
3200 A / B8	4 P	41AC 4200							
3200 A / B8	3 P	41AC 3250							
3200 A / B8	4 P	41AC 4250							
3200 A / B8	3 P	41AC 3320							
3200 A / B8	4 P	41AC 4320							

(1) Standard.

(2) 2 contacts supplied: one for position I and one for position II.

(3) To fully shroud the front and rear at the top and bottom, order quantity 4.

(4) To shroud front switch top and bottom, order quantity 2.

(5) See "Copper bar connection pieces" page 401.

Also available

SIRCOVER I-I+II-II

From 125 to 1600 A: with these manual changeover switches you can transfer a normal source to a backup source without any interruption. All you have to do is ensure that both sources are synchronised.

References: 46AC XYYY

X = number of poles	Y = rating (A)	
3 : 3 poles	013 : 125	050 : 500
4 : 4 poles	016 : 160	063 : 630
	020 : 200	080 : 800
	025 : 250	100 : 1000
	031 : 315	120 : 1250
	040 : 400	160 : 1600

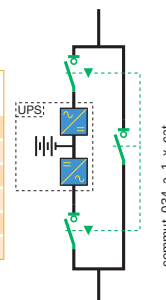
SIRCOVER Bypass

From 125 to 1600 A: with these manual changeover switches you can isolate then switch a backup power supply, such as a UPS, using 3 interlocking load break switches assembled into one very compact device.

There are two bypass models, one with open transition switching and the other with contact overlapping.

References: 4ZAC XYYY

Z = switching type	X = number of poles	Y = rating (A)	
1 : I-0-II	7 : 3+6 poles	013 : 125	050 : 500
6 : I-I+II-II	9 : 4+8 poles	016 : 160	063 : 630
		020 : 200	080 : 800
		025 : 250	100 : 1000
		031 : 315	120 : 1250
		040 : 400	160 : 1600



Accessories

Direct operation handle

SIRCOVER I-0-II and I-I+II-II				
Rating (A)	Frame size	Handle colour	Handle type	Reference
125 ... 630	B3 ... B5	Blue	J2	1122 1111
125 ... 630	B3 ... B5	Red	J2	1123 1111
800 ... 1600	B6 ... B7	Black	C1	2799 7052
2000 ... 3200	B8	Black	S5	2799 7042 ⁽¹⁾

SIRCOVER Bypass				
Rating (A)	Frame size	Handle colour	Handle type	Reference
125 ... 200	B3	Blue	J2	1122 1111
250 ... 630	B4 ... B5	Black	C1	2799 7052
800 ... 1600	B6 ... B7	Black	C2	2799 7012 ⁽¹⁾

(1) Double lever handle.



External operation handle

Use

Door interlocked external front operation handles include an escutcheon, are padlockable and must be utilised with an extension shaft.

SIRCOVER I-0-II and I-I+II-II					
Rating (A)	Frame size	Switching type	External IP ⁽¹⁾	Handle type	Reference
125 ... 630	B3 ... B5	I - 0 - II	IP55	S2	1421 2113
125 ... 630	B3 ... B5	I - 0 - II	IP65	S2	1423 2113
125 ... 630	B3 ... B5	I - I+II - II	IP65	S2	1423 2114
800 ... 1600	B6 ... B7	I - 0 - II	IP65	S4	1443 3113 ⁽²⁾
800 ... 1600	B6 ... B7	I - I+II - II	IP65	S4	1443 3114 ⁽²⁾
2000 ... 3200	B8	I - 0 - II	IP65	S5	1453 8113 ⁽²⁾

(1) IP: protection index according to IEC 60529.

(2) Double lever handle.

SIRCOVER Bypass					
Rating (A)	Frame size	Switching type	External IP ⁽¹⁾	Handle type	Reference
125 ... 200	B3	I - 0 - II	IP55	S2	1421 2113
125 ... 200	B3	I - 0 - II	IP65	S2	1423 2113
250 ... 630	B4 ... B5	I - 0 - II	IP65	S3	1433 3113
800 ... 1600	B6 ... B7	I - 0 - II	IP65	V2	4199 7146

(1) IP: protection index according to IEC 60529.



Alternative S type handle cover colours

Use

For single lever handles S2, S3 and for double lever handle S4.

Other colours available: consult us.

Colour	To be ordered in multiples of	Handle type	Reference
Light grey	50	S2, S3	1401 0001
Dark grey	50	S2, S3	1401 0011
Light grey	50	S4	1401 0031
Dark grey	50	S4	1401 0041



S type handle adapter

Use

Enables S type handles to be fitted in place of existing older style SOCOMEC handles. Adapter can also be utilised as a spacer to increase the distance between the panel door and the handle lever.

Dimensions

Add 12 mm to the handle depth.

Colour	To be ordered in multiples of	External IP ⁽¹⁾	Reference
Black	1	IP65	1493 0000

(1) IP: protection index according to IEC 60529.



Accessories (continued)

Shaft guide for external operation

Use

For use with S type handles, to guide the shaft extension into the external handle.

This accessory enables the handle to engage the extension shaft with a misalignment of up to 15 mm.

Recommended for a shaft length over 320 mm.

Designation	Reference
Shaft guide	1429 0000



access_260_a_2_cat

Shaft for external operation

Use

Standard lengths:

- 200 mm,

- 320 mm,

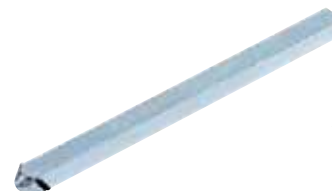
- 450 mm.

Other lengths available: consult us.

SIRCOVER I-0-II and I-I+II-II				
Rating (A)	Frame size	Length (mm)	Side X (mm)	Reference
125 ... 400	B3 ... B4	200	210 ... 310	1400 1020
125 ... 400	B3 ... B4	320	210 ... 430	1400 1032
500 ... 630	B5	200	280 ... 390	1400 1020
500 ... 630	B5	320	280 ... 510	1400 1032
800 ... 1600	B6 ... B7	200	425 ... 577	1401 1520
800 ... 1600	B6 ... B7	320	425 ... 697	1401 1532
2000 ... 3200	B8	200	653 ... 803	2799 3015
2000 ... 3200	B8	320	653 ... 923	2799 3018
2000 ... 3200	B8	450	653 ... 1053	2799 3019

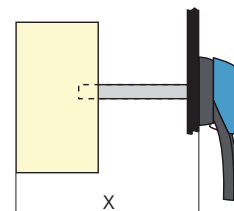


access_369_a_1_cat



access_144_b_1_cat

SIRCOVER Bypass				
Rating (A)	Frame size	Length (mm)	Side X (mm)	Reference
125 ... 200	B3	200	320 ... 450	1400 1020
125 ... 200	B3	320	320 ... 570	1400 1032
250 ... 400	B4	200	298 ... 420	1401 1520
250 ... 400	B4	320	298 ... 540	1401 1532
500 ... 630	B5	200	417 ... 539	1401 1520
500 ... 630	B5	320	417 ... 659	1401 1532
800 ... 1600	B6 ... B7	200	550 ... 680	2799 3015
800 ... 1600	B6 ... B7	320	550 ... 800	2799 3018
800 ... 1600	B6 ... B7	450	550 ... 930	2799 3019



access_202_a_1_X_cat

Bridging bars

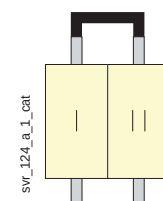
Use

For creating a common connection between switches I & II, on the top or bottom side of the SIRCOVER, to enable, for example, the load to be fed from either incoming source (I or II).

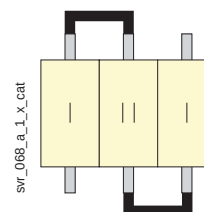
For SIRCOVER Bypass, two sets of bridging bars are required (3/6 pole or 4/8 pole switch).

Rating (A)	Frame size	No. of poles	Diameter (mm)	Reference
125 ... 200	B3	3 P	20 x 2.5	4109 3019
125 ... 200	B3	4 P	20 x 2.5	4109 4019
250	B4	3 P	25 x 2.5	4109 3025
250	B4	4 P	25 x 2.5	4109 4025
315 ... 400	B4	3 P	32 x 5	4109 3039
315 ... 400	B4	4 P	32 x 5	4109 4039
500	B5	3 P	32 x 5	4109 3050
500	B5	4 P	32 x 5	4109 4050
630	B5	3 P	50 x 5	4109 3063
630	B5	4 P	50 x 5	4109 4063
800 ... 1000	B6	3 P	50 x 6	4109 3080
800 ... 1000	B6	4 P	50 x 6	4109 4080
1250	B6	3 P	60 x 8	4109 3120
1250	B6	4 P	60 x 8	4109 4120
1600	B7	3 P	90 x 10	4109 3160
1600	B7	4 P	90 x 10	4109 4160

SIRCOVER I-0-II and SIRCOVER I-I+II-II



SIRCOVER Bypass



Copper bar connection pieces

Use

For ratings 2000 to 3200 A.

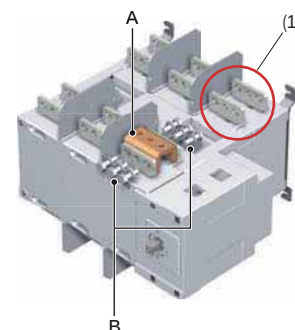
Enables:

- Flat connection: the connection pieces provide a link between the two power terminals of the same pole (Fig. 1).
- Edgewise connection: the connection pieces provide a link between the two power terminals of the same pole and an edgewise bar connection terminal.
- Top or bottom bridging between two poles (Fig. 3).

Once installed, the power terminal is connection ready.

For 3200 A rating, connection pieces (part A) are supplied as standard. Bolt sets must be ordered separately.

Fig. 1



(1) Single pole connection: 1 pole (top or bottom) comprises two power terminals which are to be linked with the copper connection kit.

Fig. 2

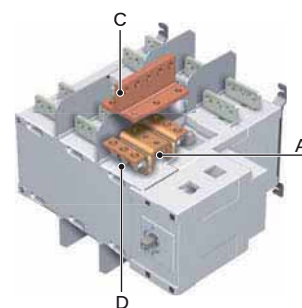
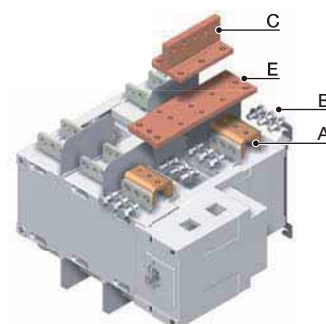


Fig. 3



	Reference	2000 - 2500 A			3200 A		
		Fig. 1	Fig. 2	Fig. 3	Fig. 1	Fig. 2	Fig. 3
		Connection	Connection	Bridging connection I - II	Connection	Connection	Bridging connection I - II
Connection - part A	2619 1200	1	1	2 ⁽²⁾	included	included	included
Bolt kit 35 mm - part B	2699 1201	1 ⁽¹⁾		2 ⁽²⁾	1 ⁽¹⁾		2 ⁽²⁾
Bolt kit 45 mm - part B	2699 1200	1 ⁽¹⁾			1 ⁽¹⁾		
T + Bolt kit - part C	2629 1200		1	1		1	1
Bracket + Bolt kit - part D	2639 1200		1			1	
Bar + Bolt kit - part E	4109 0320			1			1

(1) Choose the bolt length according to the thickness of the bars being connected; if bar thickness is greater than 20 mm, 45 mm bolts are required.

(2) For bridging connections, quantity 2 pieces are required for creating the link between the two power terminals of the same pole for switch bodies I and II.

The quantities of the applicable pieces then need to be multiplied by the number of connection points (power terminals) in order to determine the total quantity required of each part.

Example: for a 4 pole 2500 A SIRCOVER with upstream edgewise connection (Fig. 2) and downstream bridging (Fig. 3), the following quantities will be required:

Part	Upstream edgewise quantity	Downstream bridging quantity	Total quantity
A	8	8	16
B	0	8	8
C	8	4	12
D	8	0	8
E	0	4	4

Auxiliary contact

Use

Pre-breaking and signalling of positions I and II: 1 to 2 NO/NC auxiliary contacts in each position.

Low level AC: consult us.

Connection to the control circuit

By 6.35 mm fast-on terminal.

Electrical characteristics
30,000 operations.

Characteristics

Rating (A)	Frame size	Nominal current (A)	Operating current I _e (A)			
			250 VAC AC-13	400 VAC AC-13	24 VDC DC-13	48 VDC DC-13
125 ... 3200	B3... B8	16	12	8	14	6

NO/NC changeover contact

Rating (A)	Frame size	Contact(s)	Reference
125 ... 1600	B3 ... B7	1 st / 2 nd	4109 0021
2000 ... 3200	B8	1 st / 2 nd	included



access_457_a_1_x_cat

access_457_a_1_x_cat

access_230_c_1_x_cat

svr_058_a_1_cat

access_065_a_1_cat

SIRCOVER

Manually operated Transfer Switching Equipment
from 125 to 3200 A

Accessories (continued)

Terminal shrouds

Use

Protection against direct contact with terminals or connecting parts.

Advantage

Perforations allow remote thermographic inspection without the need to remove the shrouds.

Rating (A)	Frame size	No. of poles	Position	Reference
125 ... 200	B3	3 P	top / bottom / front (I) / rear (II)	2694 3014 ⁽¹⁾⁽²⁾
125 ... 200	B3	4 P	top / bottom / front (I) / rear (II)	2694 4014 ⁽¹⁾⁽²⁾
250 ... 400	B4	3 P	top / bottom / front (I) / rear (II)	2694 3021 ⁽¹⁾⁽²⁾
250 ... 400	B4	4 P	top / bottom / front (I) / rear (II)	2694 4021 ⁽¹⁾⁽²⁾
500 ... 630	B5	3 P	top / bottom / front (I) / rear (II)	2694 3051 ⁽¹⁾⁽²⁾
500 ... 630	B5	4 P	top / bottom / front (I) / rear (II)	2694 4051 ⁽¹⁾⁽²⁾



acces_206_a_2_cat

- (1) For complete shrouding at front, rear, top and bottom, order 4 x for a SIRCOVER and 6 x for a SIRCOVER Bypass; if equipped with bridging bars order 3 x for a SIRCOVER and 4 x for a SIRCOVER Bypass.
(2) For top and bottom shrouding for the front only, order 2 x for a SIRCOVER and a SIRCOVER Bypass.

Terminal screens

Use

Upstream and downstream protection against direct contact with terminals or connection parts. For upstream and downstream protection, order quantity 1.

Rating (A)	Frame size	No. of poles	Position	Reference
125 ... 200	B3	3 P	top / bottom	1509 3012
125 ... 200	B3	4 P	top / bottom	1509 4012
250 ... 400	B4	3 P	top / bottom	1509 3025
250 ... 400	B4	4 P	top / bottom	1509 4025
500 ... 630	B5	3 P	top / bottom	1509 3063
500 ... 630	B5	4 P	top / bottom	1509 4063
800 ... 1250	B6	3 P	top / bottom	1509 3080
800 ... 1250	B6	4 P	top / bottom	1509 4080
1600	B7	3 P	top / bottom	1509 3160
1600	B7	4 P	top / bottom	1509 4160
2000 ... 3200	B8	3 / 4 P	top / bottom	included



acces_207_a_2_cat

Inter-phase barrier

Use

Safe isolation between the terminals, essential for use at 690 VAC or in a polluted or dusty atmosphere.

Rating (A)	Frame size	No. of poles	Reference
125 ... 200	B3	2 P	2998 0033
125 ... 200	B3	3 P	2998 0034
250 ... 400	B4	2 P	2998 0023
250 ... 400	B4	3 P	2998 0024
500 ... 630	B5	2 P	2998 0013
500 ... 630	B5	3 P	2998 0014
800 ... 3200	B6 ... B8	2/3 P	included

Key handle interlocking system

Padlocking in position I, 0 or II				
SIRCOVER Rating (A) / Frame size	SIRCOVER Bypass Rating (A) / Frame size	Operation	Figure	Reference
125 ... 630 / B3 ... B5	125 ... 200 / B3	external	1	1423 2813

Locking using RONIS EL11AP lock in position 0 (not included)				
SIRCOVER Rating (A) / Frame size	SIRCOVER Bypass Rating (A) / Frame size	Operation	Figure	Reference
125 ... 630 / B3 ... B5	125 ... 200 / B3	direct	2	4109 1006 ⁽¹⁾
	250 ... 630 / B4 ... B5	direct	3	consult us
800 ... 1600 / B6 ... B7	800 ... 1600 / B6 ... B7	direct	3	4109 1004 ⁽²⁾
2000 ... 3200 / B8		direct	3	4109 2007 ⁽²⁾
125 ... 630 / B3 ... B5	125 ... 630 / B3 ... B5	external	4	1499 7701 ⁽²⁾
2000 ... 3200 / B8	800 ... 1600 / B6 ... B7	external	4	2799 7002 ⁽²⁾

(1) Specific handle included.

(2) This locking facility can be configured by the user in the 3 positions.

Locking using RONIS EL11AP lock in position I, 0, II (not included)				
SIRCOVER Rating (A) / Frame size	SIRCOVER Bypass Rating (A) / Frame size	Operation	Figure	Reference
125 ... 630 / B3 ... B5	125 ... 200 / B3	direct	2	4109 1002 ⁽¹⁾
	250 ... 630 / B4 ... B5	direct	3	consult us
800 ... 1600 / B6 ... B7	800 ... 1600 / B6 ... B7	direct	3	4109 1004 ⁽²⁾
2000 ... 3200 / B8		direct	3	4109 2007 ⁽²⁾
125 ... 630 / B3 ... B5	125 ... 630 / B3 ... B5	external	4	1499 7701 ⁽²⁾
2000 ... 3200	800 ... 1600 / B6 ... B7	external	4	2799 7002 ⁽²⁾

(1) Specific handle included.

(2) This locking facility can be configured by the user in the 3 positions.

Locking using 230 VAC undervoltage coil in position 0 (factory fitted)				
SIRCOVER Rating (A) / Frame size	SIRCOVER Bypass Rating (A) / Frame size	Operation	Figure	Reference
800 ... 3200 / B6 ... B8	800 ... 1600 / B6 ... B7	direct	3	consult us

Locking using Type K CASTELL lock (not supplied)				
SIRCOVER Rating (A) / Frame size	SIRCOVER Bypass Rating (A) / Frame size	Operation	Figure	Reference
125 ... 1600 / B3 ... B7	125 ... 630 / B3 ... B5	external	4	1499 7702
2000 ... 3200 / B8	800 ... 1600 / B6 ... B7	external	4	2799 7003

Use

- Padlocked (padlock not included). This device is factory mounted in the direct or external operation handle and allows the use of up to 3 padlocks.
- Locking:
 - using lock (not supplied),
 - using undervoltage coil.
- The interlocking positions are either determined as standard or configured by the user by removing the pre-form tabs.
- Padlocking and locking can be combined.

Fig. 1

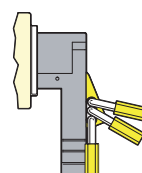


Fig. 2

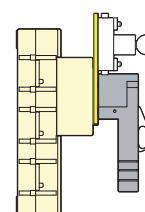
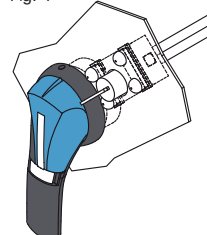


Fig. 3



Fig. 4



Other specific accessories



- Customised protection screens (for specific dimensions or high ambient temperatures).
- Connection accessories.
- Low level auxiliary contacts.

Polyester enclosed solution

General characteristics

- Adapted to chemical attack, dust hazard, contamination hazard and atmospheric corrosion.
- Operating handle: S type black handle padlockable in position 0.
- Protection degree: IP55 / IK 10.
- Colour: RAL 7030 (rating < 400 A), RAL 9002 (rating ≥ 400 A).
- Cable gland plate: none.
- Material: glass fibre reinforced polyester.
- Coating: none.
- Wall mounting: 4 mounting brackets supplied (not fitted).
- Locking device: screw (rating < 400 A), 3 mm double bar key (rating ≥ 400 A), key supplied.
- Miscellaneous: high resistance to chemicals, self-extinguishable at 960°C, 3 bolted earth connection points.

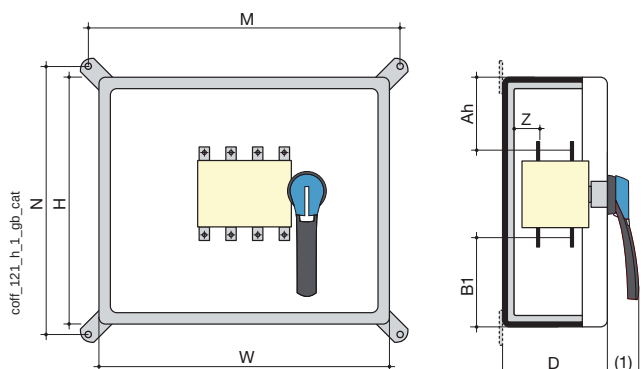
References

Rating (A)	No. of poles	Top/bottom connection I - O - II Reference
125	3 P	4215 3012
125	4 P	4215 4012
160	3 P	4215 3016
160	4 P	4215 4016
250	3 P	4215 3025
250	4 P	4215 4025
400	3 P	4215 3040
400	4 P	4215 4040
630	3 P	4215 3063
630	4 P	4215 4063



coff_299_a_1_cat

Dimensions



(1) 125 ... 630 A: 45 mm

Rating (A)	No. of poles	H x W x D (mm)	Max. connection cross-section (mm²)	M (mm)	N (mm)	Z (mm)	Top/bottom connection		
							Ah (mm)	B1 (mm)	Weight (kg)
125	3 P	540 x 270 x 233	50	272	542	28	210	210	9
125	4 P	540 x 360 x 233	50	362	542	28	210	210	10
160	3 P	540 x 270 x 233	95	272	542	28	210	210	9
160	4 P	540 x 360 x 233	95	362	542	28	210	210	10
250	3 P	540 x 360 x 233	150	362	542	29	205	205	11
250	4 P	540 x 360 x 233	150	362	542	29	205	205	12
400	3 P	800 x 600 x 300	240	620	796	29	330	330	30
400	4 P	800 x 600 x 300	240	620	796	29	330	330	31
630	3 P	800 x 600 x 300	2 x 300	620	796	45	297	297	38
630	4 P	800 x 600 x 300	2 x 300	620	796	45	297	297	40

Steel enclosed solution

General characteristics

- Adapted to mechanical risk and dust hazard.
- Operating handle: S type black handle padlockable in position 0.
- Protection degree: IP54
- Colour: RAL 7035 up to 630 A, or RAL 7035 apart from casing and door RAL 9001.
- Cable gland plates: top and bottom.
- Material: XC steel, thickness 1.5 mm.
- Coating: epoxy polyester powder (≤ 630 A), polyester powder (≥ 800 A).
- Mounting: 4 wall mounting brackets - not fitted.
- Door: solid with hinges.
- Locking device: 3mm double bar key (≤ 630 A), 8mm spanner key (≥ 800 A), key supplied.
- Miscellaneous: multiple earth connection points, double door locking.

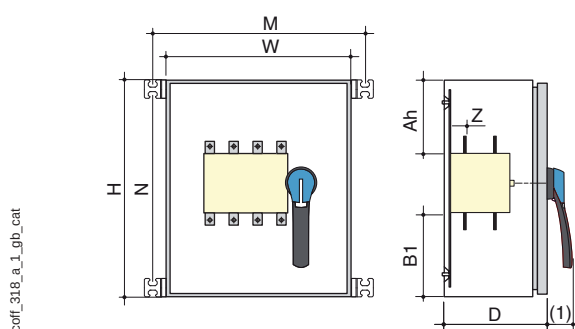
References

Rating (A)	No. of poles	Top/bottom connection I - O - II Reference
125	3 P	4212 3012
125	4 P	4212 4012
160	3 P	4212 3016
160	4 P	4212 4016
250	3 P	4212 3025
250	4 P	4212 4025
400	3 P	4212 3040
400	4 P	4212 4040
500	3 P	4212 3050
500	4 P	4212 4050
630	3 P	4212 3063
630	4 P	4212 4063
800	3 P	4212 3080
800	4 P	4212 4080
1250	3 P	4212 3120
1250	4 P	4212 4120
1600	3 P	4212 3160
1600	4 P	4212 4160



conf_298_b

Dimensions



(1) 125 ... 630 A: 58 mm
800 ... 1 600 A: 74 mm.

Rating (A)	No. of poles	H x W x D (mm)	Max. connection cross-section (mm ²)	M (mm)	N (mm)	Z (mm)	Top/bottom connection		
							Ah (mm)	B1 (mm)	Weight (kg)
125	3/4 P	500 x 400 x 250	50	448	458	28	190	190	23
160	3/4 P	500 x 400 x 250	95	448	458	28	190	190	23
250	3/4 P	500 x 400 x 250	150	448	458	29.3	185	185	23
400	3/4 P	800 x 600 x 300	240	758	552	29.3	330	330	45
500	3/4 P	800 x 600 x 300	240	648	658	45	298	298	55
630	3/4 P	800 x 600 x 300	2 x 300	648	658	45	290	290	55
800	3/4 P	1200 x 700 x 500	2 x 300	740	1152	24	465	465	78
1,250	3/4 P	1200 x 700 x 500	4 x 185	740	1152	24	465	465	88
1,600	3/4 P	1200 x 700 x 500	4 x 300	740	1152		470	470	94

Characteristics according to IEC 60947-3 and IEC 60947-6-1

125 to 630 A

Thermal current I^{th} at 40°C	125 A	160 A	200 A	250 A	315 A	400 A	500 A	630 A
Frame size	B3	B3	B3	B4	B4	B4	B5	B5
Rated insulation voltage U_i (V)	800	800	800	1000	1000	1000	1000	1000
Rated impulse withstand voltage U_{imp} (kV)	8	8	8	12	12	12	12	12

Rated operational currents I_e (A) according to IEC 60947-6-1

Rated voltage	Utilisation category	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾
415 VAC	AC-31 B	125	160	200	250	315	400	500	630
415 VAC	AC-32 B				200	315	400	500	500
415 VAC	AC-33 B				200	200	200	400	400

Rated operational currents I_e (A) according to IEC 60947-3

Rated voltage	Utilisation category	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾
415 VAC	AC-21 A / AC-21 B	125/125	160/160	200/200	250/250	315/315	400/400	500/500	630/630
415 VAC	AC-22 A / AC-22 B	125/125	160/160	200/200	250/250	315/315	400/400	500/500	630/630
415 VAC	AC-23 A / AC-23 B	125/125	160/160	200/200	200/200	315/315	400/400	500/500	500/630
500 VAC	AC-21 A / AC-21 B	125/125	160/160	200/200	250/250	315/315	400/400	500/500	630/630
500 VAC	AC-22 A / AC-22 B	125/125	160/160	200/200	200/250	200/315	200/400	500/500	500/500
500 VAC	AC-23 A / AC-23 B	80/80	80/80	80/80	200/200	200/200	200/200	400/400	400/400
690 VAC ⁽³⁾	AC-21 A / AC-21 B	125/125	160/160	200/200	200/200	200/200	200/200	500/500	500/500
690 VAC ⁽³⁾	AC-22 A / AC-22 B	125/125	125/125	125/125	160/160	160/160	160/160	400/400	400/400
690 VAC ⁽³⁾	AC-23 A / AC-23 B	63/80	63/80	63/80	125/125	125/125	125/125	400/400	400/400
220 VDC	DC-21 A / DC-21 B	125/125	160/160	200/200	250/250	250/250	250/250	500/500	630/630
220 VDC	DC-22 A / DC-22 B	125/125	160/160	200/200	250/250	250/250	250/250	500/500	630/630
220 VDC	DC-23 A / DC-23 B	125/125	125/125	125/125	200/200	200/200	200/200	500/500	630/630
440 VDC ⁽²⁾	DC-21 A / DC-21 B	125/125	125/125	125/125	200/200	200/200	200/200	500/500	630/630
440 VDC ⁽²⁾	DC-22 A / DC-22 B	125/125	125/125	125/125	200/200	200/200	200/200	500/500	630/630
440 VDC ⁽²⁾	DC-23 A / DC-23 B	125/125	125/125	125/125	200/200	200/200	200/200	500/500	630/630

Operation power in AC-23 (kW)⁽⁴⁾

At 415 VAC without AC pre-break	58/58	75/75	100/100	100/100	145/145	190/190	235/235	235/280
At 690 VAC without AC pre-break	50/62	50/62	50/62	90/90	90/90	90/90	310/310	310/310

Reactive power (kvar)⁽⁴⁾

At 415 VAC (kvar)	60/60	75/75	100/100	125/125	150/150	200/200	250/250	250/300
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Fuse protected short-circuit withstand as per IEC 60947-3 (kA rms prospective)

Prospective short-circuit current with gG DIN fuses at 415 VAC (kA rms)	100	100	50	50	50	50	50	50
Prospective short-circuit current with gG DIN fuses at 690 VAC (kA rms)				50	50	50	50	50
Associated fuse rating (A)	125	160	200	250	315	400	500	630

Short-circuit withstand without protection as per IEC 60947-3

Rated short-time withstand current 0.3s I_{cw} at 415 VAC (kA rms)	12	12	12	15 ⁽⁵⁾	15 ⁽⁵⁾	15 ⁽⁵⁾	17 ⁽⁵⁾	17 ⁽⁵⁾
Rated short-time withstand current 1s I_{cw} at 415 VAC (kA rms)	7	7	7	8 ⁽⁵⁾	8 ⁽⁵⁾	8 ⁽⁵⁾	11 ⁽⁵⁾	10 ⁽⁵⁾
Rated peak withstand current at 415 VAC (kA peak)	20	20	20	30	30	30	45	45

Short-circuit withstand without protection as per IEC 60947-6-1

Rated short-time withstand current 30 ms I_{cw} at 415 VAC (kA rms)	10	10	10	10	10	10		
Rated short-time withstand current 60 ms I_{cw} at 415 VAC (kA rms)							10	12.6

Connection

Minimum Cu cable cross-section as per IEC 60947-1 (mm²)	35	35	50	95	120	185	2 x 95	2 x 120
Recommended Cu busbar cross-section (mm²)							2 x 32 x 5	2 x 40 x 5
Maximum Cu cable cross-section (mm²)	50	95	120	150	240	240	2 x 185	2 x 300
Maximum Cu busbar width (mm)	25	25	25	32	32	32	50	50
Min./max. tightening torque (Nm)	9/13	9/13	9/13	20/26	20/26	20/26	20/26	20/26

Mechanical specifications

Durability (number of operating cycles)	10,000	10,000	10,000	8,000	8,000	8,000	5,000	5,000
Weight 3 P (kg)	2.9	2.9	2.9	3.8	3.9	3.9	8.6	9.1
Weight 4 P (kg)	4.1	4.1	4.1	4.6	4.9	4.9	10.4	11.1

(1) Category with index A = frequent operation - Category with index B = infrequent operation.

(2) 3-pole device with 2 pole in series for the "+" an 1 pole for the "-".

4-pole device with 2 poles in series by polarity.

(3) Interphase barriers must be installed on the products.

(4) The power value is given for information only, the current values vary from one manufacturer to another.

(5) Values given at 690 VAC.

800 to 3200 A

Thermal current I^h at 40°C	800 A	1000 A	1250 A	1600 A	2000 A	2500 A	3200 A
Frame size	B6	B6	B6	B7	B8	B8	B8
Rated insulation voltage U_i (V)	1000	1000	1000	1000	1000	1000	1000
Rated impulse withstand voltage U_{imp} (kV)	12	12	12	12	12	12	12

Rated operational currents I_e (A) according to IEC 60947-6-1

Rated voltage	Utilisation category	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾
415 VAC	AC-31 B	800	1000	1250	1600	2000	2500	3200
415 VAC	AC-32 B	800	1000	1250	1250	2000	2000	2000
415 VAC	AC-33 B	800	1000	1000	1000	1250	1250	1250

Rated operational currents I_e (A) according to IEC 60947-3

Rated voltage	Utilisation category	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾
415 VAC	AC-21 A / AC-21 B	800/800	1000/1000	1250/1250	1600/1600	-/2000	-/2500	-/3200
415 VAC	AC-22 A / AC-22 B	800/800	1000/1000	1250/1250	1600/1600	-/2000	-/2500	-/3200
415 VAC	AC-23 A / AC-23 B	800/800	1000/1000	1250/1250	1250/1250	-/1600	-/1600	-/1600
500 VAC	AC-21 A / AC-21 B	800/800	1000/1000	1250/1250	1600/1600	-/2000	-/2000	-/2000
500 VAC	AC-22 A / AC-22 B	630/630	800/800	1000/1000	1600/1600			
500 VAC	AC-23 A / AC-23 B	630/630	800/800	800/800	1000/1000			
690 VAC ⁽³⁾	AC-21 A / AC-21 B	800/800	1000/1000	1250/1250	1600/1600	-/2000	-/2000	-/2000
690 VAC ⁽³⁾	AC-22 A / AC-22 B	630/630	800/800	1000/1000	1000/1000			
690 VAC ⁽³⁾	AC-23 A / AC-23 B	630/630	630/630	800/800	800/800			
220 VDC	DC-21 A / DC-21 B	800/800	1000/1000	1250/1250	1250/1250			
220 VDC	DC-22 A / DC-22 B	800/800	1000/1000	1250/1250	1250/1250			
220 VDC	DC-23 A / DC-23 B	800/800	1000/1000	1250/1250	1250/1250			
440 VDC ⁽²⁾	DC-21 A / DC-21 B	800/800	1000/1000	1250/1250	1250/1250			
440 VDC ⁽²⁾	DC-22 A / DC-22 B	800/800	1000/1000	1250/1250	1250/1250			
440 VDC ⁽²⁾	DC-23 A / DC-23 B	800/800	1000/1000	1250/1250	1250/1250			

Operation power in AC-23 (kW)⁽⁴⁾

At 415 VAC without AC pre-break	375/375	450/450	560/560	560/560	-/710	-/710	-/710
At 690 VAC without AC pre-break	475/475	475/475	620/620	620/620			

Reactive power (kvar)⁽⁴⁾

At 415 VAC (kvar)	400/400	500/500	650/650	650/650	-/850	-/850	-/850
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Fuse protected short-circuit withstand as per IEC 60947-3 (kA rms prospective)

Prospective short-circuit current with gG DIN fuses at 415 VAC (kA rms)	50	50	100	100			
Prospective short-circuit current with gG DIN fuses at 690 VAC (kA rms)	50	50	50				
Associated fuse rating (A)	800	1000	1250	2x800			

Short-circuit withstand without protection as per IEC 60947-3

Rated short-time withstand current 0.3s I_{cw} at 415 VAC (kA rms)	64	64	64	78	78	78	78
Rated short-time withstand current 1s I_{cw} at 415 VAC (kA rms)	35	35	35	50	50	50	50
Rated peak withstand current at 415 VAC (kA peak)	55	55	80	110	120	120	120

Short-circuit withstand without protection as per IEC 60947-6-1

Rated short-time withstand current 30 ms I_{cw} at 415 VAC (kA rms)							
Rated short-time withstand current 60 ms I_{cw} at 415 VAC (kA rms)	20	20	25	32	50	50	50

Connection

Minimum Cu cable cross-section as per IEC 60947-1 (mm ²)	2 x 185						
Recommended Cu busbar cross-section (mm ²)	2 x 50 x 5	2 x 63 x 5	2 x 60 x 7	2 x 100 x 5	3 x 100 x 5	2 x 100 x 10	3 x 10 x 100
Maximum Cu cable cross-section (mm ²)	4 x 185	4 x 185	4 x 185	6 x 185			
Maximum Cu busbar width (mm)	63	63	63	100	100	100	100
Min./max. tightening torque (Nm)	20/26	20/26	20/26	40/45	40/45	40/45	40/45

Mechanical specifications

Durability (number of operating cycles)	4,000	4,000	4,000	3,000	3,000	3,000	3,000
Weight 3 P (kg)	20.5	21.0	21.6	25.7	42.0	42.0	52.3
Weight 4 P (kg)	24.8	25.6	26.2	32.0	52.9	52.9	66.6

(1) Category with index A = frequent operation - Category with index B = infrequent operation.

(2) 3-pole device with 2 pole in series for the "+" an 1 pole for the "-".

4-pole device with 2 poles in series by polarity.

(3) Interphase barriers must be installed on the products.

(4) The power value is given for information only, the current values vary from one manufacturer to another.

(5) Values given at 690 VAC.

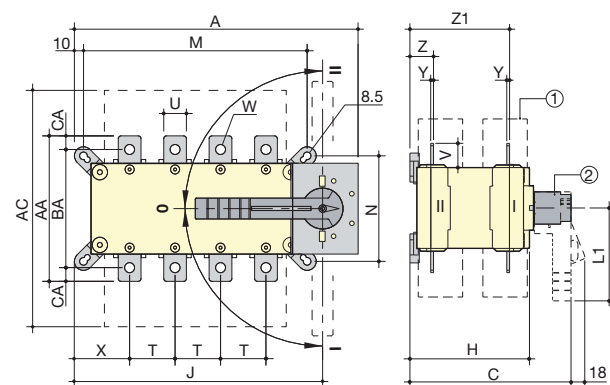
SIRCOVER

Manually operated Transfer Switching Equipment
from 125 to 3200 A

Dimensions

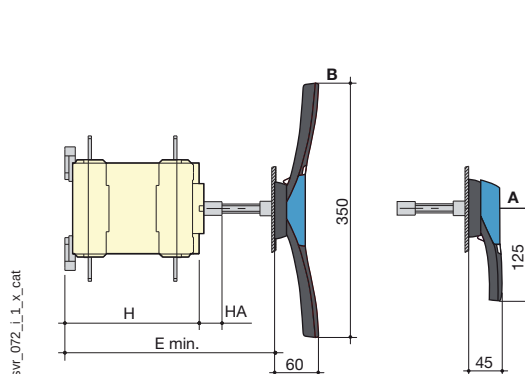
SIRCOVER 125 to 1600 A / B3 to B7

Direct front operation



A. S2 type handle for external operation: 125 to 630 A
B. S4 type handle for external operation: 800 to 1600 A

External front operation

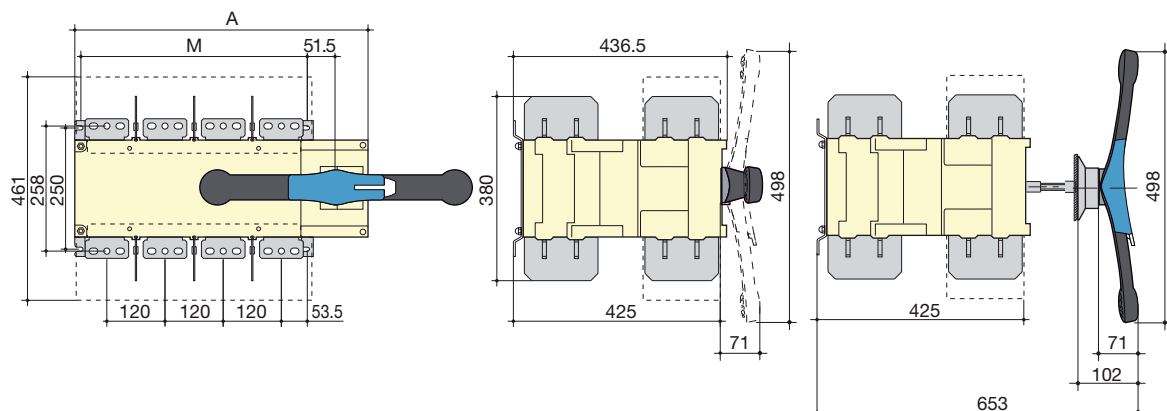


1. Terminal shrouds
2. Direct operation handle:
- 125 to 630 A: L1 = 140 mm,
- 800 to 1600 A: L1 = 210 mm.

Rating (A) / Frame size	Overall dimensions				Terminal shrouds	Switch body				Switch mounting			Connection											
	A 3p.	A 4p.	C	E min		AC	H	HA	J 3p.	J 4p.	M 3p.	M 4p.	N	T	U	V	W	X 3p.	X 4p.	Y	Z	Z1	AA	BA
125 / B3	221	251	218	208 ... 436	235	148	25	182	212	156	186	101	36	20	25	8.5	56	50	3.5	28	124	135	115	10
160 / B3	221	251	218	208 ... 436	235	148	25	182	212	156	186	101	36	20	25	8.5	56	50	3.5	28	124	135	115	10
200 / B3	221	251	218	208 ... 436	235	148	25	182	212	156	186	101	36	20	25	8.5	56	50	3.5	28	124	135	115	10
250 / B4	262	312	218	208 ... 436	280	148	25	223	273	196	246	116	50	25	30	11	61	61	3.5	30	124	160	130	15
315 / B4	262	312	218	208 ... 436	280	148	25	223	273	196	246	116	50	35	35	11	61	61	3.5	30	124	170	140	15
400 / B4	262	312	218	208 ... 436	280	148	25	223	273	196	246	116	50	35	35	11	61	61	3.5	30	124	170	140	15
500 / B5	319	379	295	285 ... 513	401	225	25	272	332	246	306	176	65	32	37	13	70.5	65.5	5	43	180	235	205	15
630 / B5	319	379	295	285 ... 513	400	225	25	272	332	246	306	176	65	45	50	13	70.5	65.5	5	43	180	260	220	20
800 / B6	386	466	375	425 ... 577	459	298	29	306.5	386.5	255	336	250	80	50	60.5	15	48	48	7	66.5	253.5	321		26.5
1000 / B6	386	466	375	425 ... 577	459	298	29	306.5	386.5	255	336	250	80	50	60.5	15	48	48	7	66.5	253.5	321		26.5
1250 / B6	386	466	375	425 ... 577	459	298	29	306.5	386.5	255	336	250	80	60	65	16x11	48	48	7	66.5	255.5	330		29.5
1600/B7	478	598	375	425 ... 577	461	298	29	388.5	518.5	347	467	250	120	90	43.5	12.5x5	54	54	8	66.5	255.5	288		15

SIRCOVER 2000 to 3200 A / B8

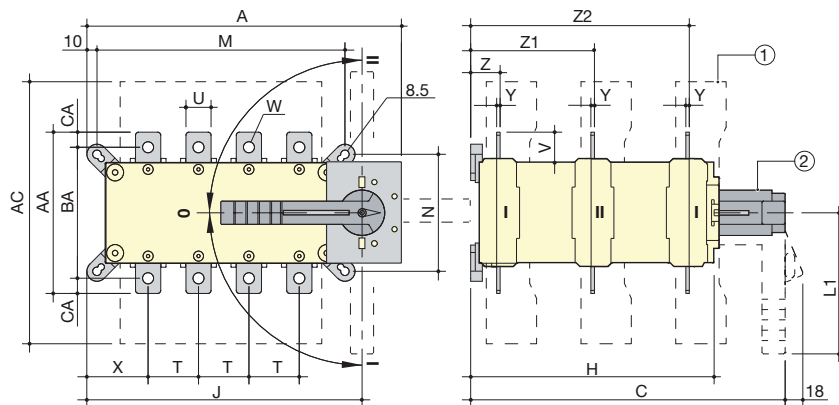
Direct front operation



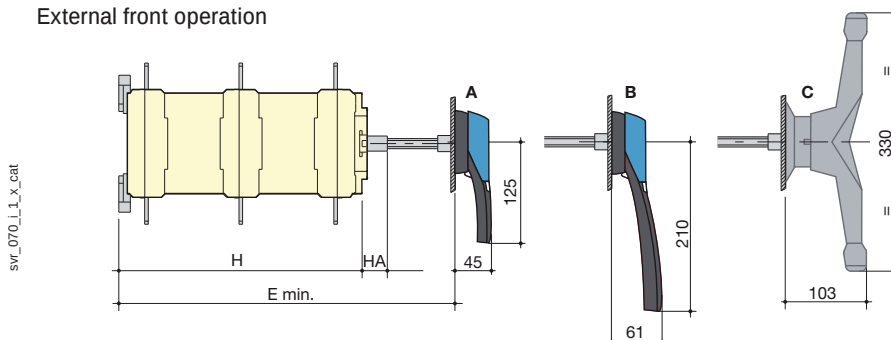
Rating (A) / Frame size	Overall dimensions		Switch mounting	
	A 3p.	A 4p.	M 3p.	M 4p.
2000 ... 3200 / B8	478	598	347	467

SIRCOVER Bypass 125 to 1600 A / B3 to B7

Direct front operation



External front operation



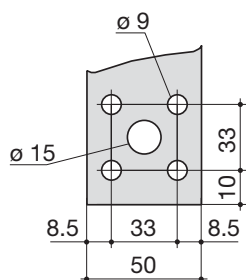
A. S2 type handle for external operation: 125 to 200 A
B. S3 type handle for external operation: 250 to 630 A
C. External double lever handle: 800 to 1600 A

1. Terminal shrouds
2. Direct operation handle:
- 125 to 200 A: L1 = 140 mm,
- 250 to 630 A: L1 = 210 mm,
- 800 to 1600 A: L1 = diameter 330 mm.

Rating (A) / Frame size	Overall dimensions				Terminal shrouds	Switch body				Switch mounting			Connection												
	A 3+6p.	A 4+8p.	C	E min		AC	H	HA	J 3+6p.	J 4+8p.	M 3+6p.	M 4+8p.	N	T	U	V	W	X 3+6p.	X 4+8p.	Y	Z	Z1	Z2	AA	BA
125 / B3	221	251	313	320	235	243	25	182	212	156	186	101	36	20	25	8.5	56	50	3.5	28	124	219	135	115	10
160 / B3	221	251	313	320	235	243	25	182	212	156	186	101	36	20	25	8.5	56	50	3.5	28	124	219	135	115	10
200 / B3	221	251	313	320	235	243	25	182	212	156	186	101	36	20	25	8.5	56	50	3.5	28	124	219	135	115	10
250 / B4	262	312	313	298	280	243	25	223	273	196	246	116	50	25	30	11	61	61	3.5	30	124	219	160	130	10
400 / B4	262	312	313	298	280	243	25	223	273	196	246	116	50	35	35	11	61	61	3.5	30	124	219	170	140	15
500 / B5	319	379	432	417	401	362	25	272	332	246	306	176	65	32	37	13	70.5	65.5	5	43	180	317	235	205	15
630 / B5	319	379	432	417	400	362	25	272	332	246	306	176	65	45	50	13	70.5	65.5	5	43	180	317	260	220	20
800 / B6	386	466	560	550	459	479	29	306.5	386.5	255	335	250	80	50	60.5	15	48	48	7	66.5	253.5	439.5	321		26.5
1250 / B6	386	466	560	550	459	479	29	306.5	386.5	255	335	250	80	60	65	16x11	48	48	7	66.5	253.5	439.5	320		29.25
1600/B7	478	598	560	550	461	479	29	388.5	518.5	347	467	250	120	90	43.5	12.5x5	54	54	8	66.5	253.5	439.5	288		15

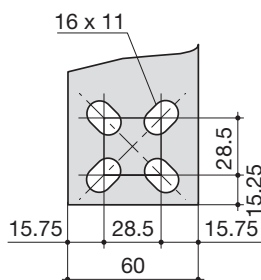
Connection terminals

SIRCOVER and
SIRCOVER Bypass 800 A / B6



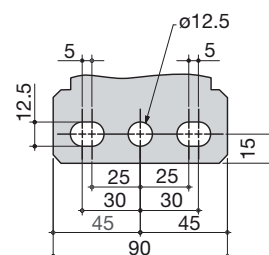
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SIRCOVER and
SIRCOVER Bypass 1250 A / B6



svr_078_b_1_x_cat

SIRCOVER 1600 to 3200 A / B7 to B8
SIRCOVER Bypass 1600 A / B7



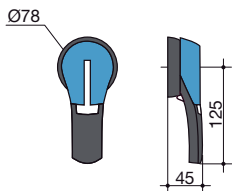
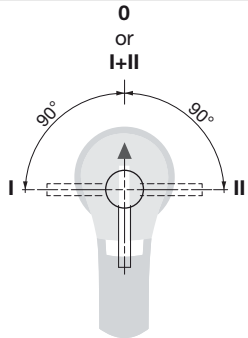
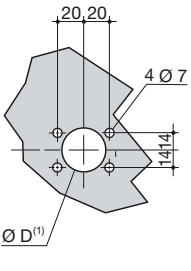
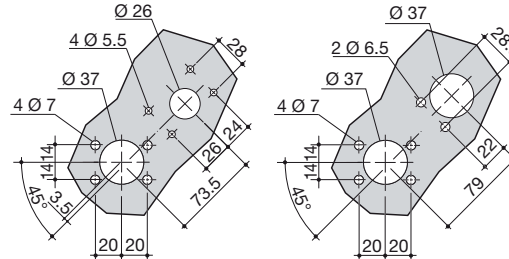
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SIRCOVER

Manually operated Transfer Switching Equipment
from 125 to 3200 A

Dimensions for external handles

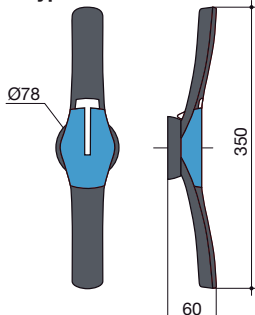
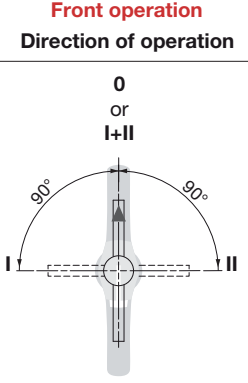
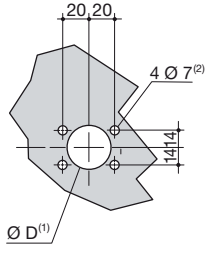
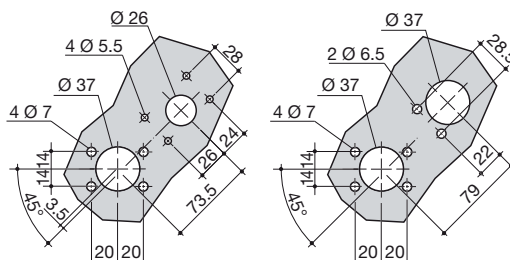
SIRCOVER 125 to 630 A / B3 to B5

Handle type	Front operation Direction of operation	Door drilling	
S2 type	0 or I+II	With lock RONIS EL11AP	With lock CASTELL K
			

(1) Ø31 to Ø37: rear screw mounting,
Ø37: front clip mounting.

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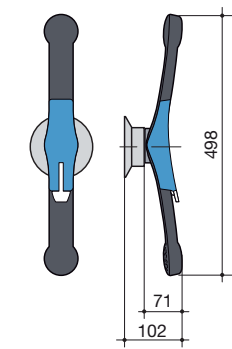
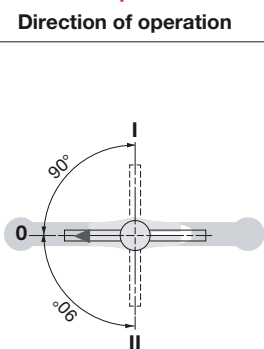
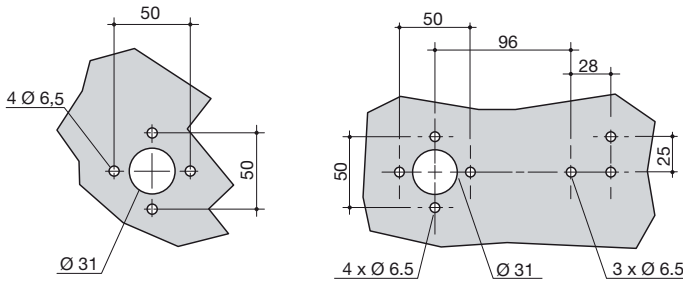
SIRCOVER 800 to 1600 A / B6 to B7

Handle type	Front operation Direction of operation	Door drilling	
S4 type	0 or I+II	With lock RONIS EL11AP	With lock CASTELL K
			

(1) Ø31 to Ø37: rear screw mounting,
Ø37: front clip mounting.
(2) Ø6 to Ø7: clip mounting

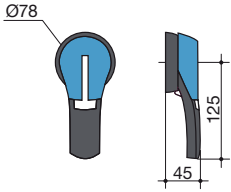
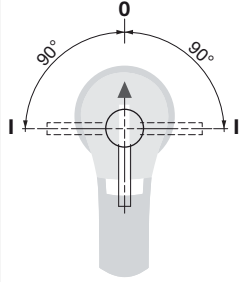
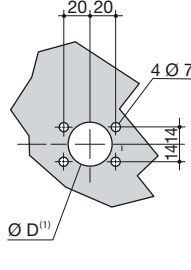
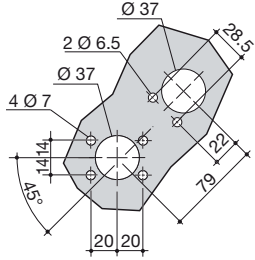
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SIRCOVER 2000 to 3200 A / B8

Handle type	Front operation Direction of operation	Door drilling	
S5 type with V Escutcheon	0	With lock CASTELL K	
			

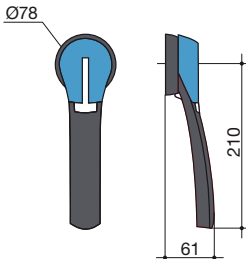
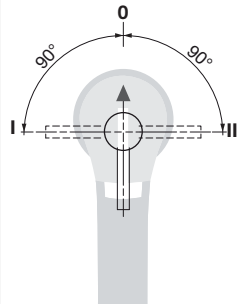
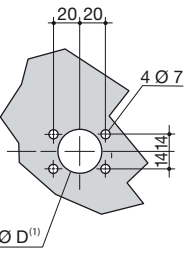
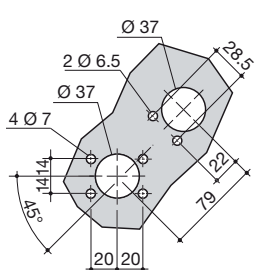
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SIRCOVER Bypass 125 to 200 A / B3

Handle type	Front operation Direction of operation	Door drilling	
S2 type		With lock RONIS EL11AP	With lock CASTELL K
			

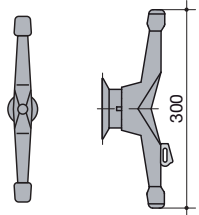
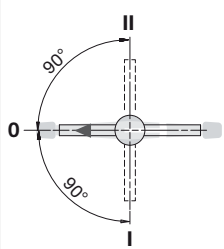
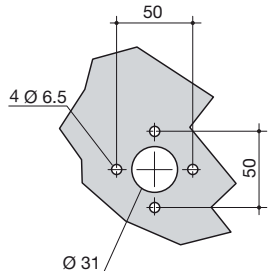
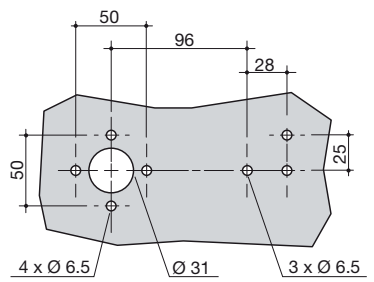
(1) Ø31 to Ø37: rear screw mounting,
Ø37: front clip mounting.

SIRCOVER Bypass 250 to 630 A / B4 to B5

Handle type	Front operation Direction of operation	Door drilling	
S3 type		With lock RONIS EL11AP	With lock CASTELL K
			

(1) Ø31 to Ø37: rear screw mounting,
Ø37: front clip mounting.

SIRCOVER Bypass 800 to 1600 A / B6 to B7

Handle type	Front operation Direction of operation	Door drilling	
C type		With lock CASTELL K	
			



SIRCOVER ATS Bypass

Manually operated Transfer Switching Equipment
from 125 to 1600 A



SIRCOVER ATS Bypass
I-O-II 12+4P

The solution for

- > Industry
- > Healthcare buildings



Strong points

- > Stable positions
- > On-load switching
- > Secured breaking
- > A complete solution

Conformity to standards

- > IEC 60947-3



Function

SIRCOVER ATS Bypass switches are manual 12 + 4 pole transfer switches with positive break indication. They are designed to isolate ATS type electrical equipment (automatic transfer switch) or UPS, with minimum interruption to the load supply. Integrating a SOCOMEC transfer switch into the installation enables source selection when in Bypass (see operating principle below).

Advantages

Stable positions

SIRCOVER ATS Bypass switches have 3 stable positions which are not affected by voltage fluctuations or vibrations.

On-load switching

Thanks to its AC-22 characteristics, tested in accordance with standard IEC 60947-3, the SIRCOVER ATS Bypass enables on-load switching.

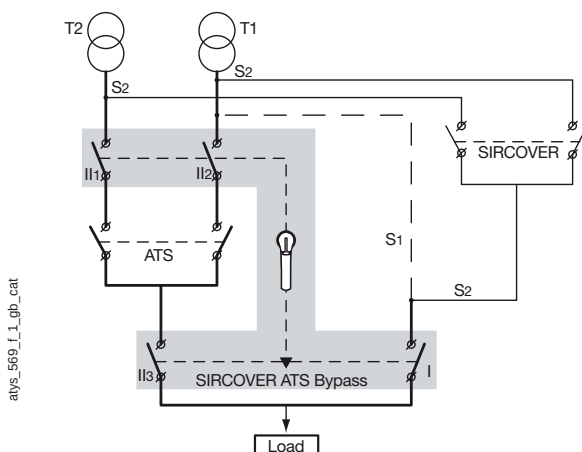
Secured breaking

Simultaneous upstream and downstream isolation with positive break indication.

A complete solution

The SIRCOVER ATS Bypass is a single product offering a genuine solution incorporating both an equipment isolation function and a switching function.

Operating principle



In the Bypass position:

- S1 - Single Line Bypass (without SIRCOVER):
The load is supplied directly by one of the two power sources (transformer T1 for example).
- S2 - Double Line Bypass (with SIRCOVER):
The supply source can be selected.

References

Rating (A)/ Frame size	No. of poles	Switch body	Direct handle	External handle	Shaft for external handle	Bridging bars	Auxiliary contact	Terminal shrouds	Terminal screens
125 A/B3	12 + 4 P	4100 9813	S3 type Black IP65 I - O - II 1433 3113	S3 type Black IP65 I - O - II 1433 3113	200 mm 1401 1520 320 mm 1401 1532 400 mm 1401 1540	4 P 4109 4019	1 st contact NO/NC included 2 nd contact NO/NC 4109 0021 ⁽¹⁾	4 P 2694 4014 ⁽²⁾⁽³⁾	4 P 1509 4012 ⁽⁴⁾
160 A/B3	12 + 4 P	4100 9816				4 P 4109 4025		4 P 2694 4021 ⁽²⁾⁽³⁾	4 P 1509 4025 ⁽⁴⁾
250 A/B4	12 + 4 P	4100 9825				4 P 4109 4039			
400 A/B4	12 + 4 P	4100 9840				4 P 4109 4063		4 P 2694 4051 ⁽²⁾⁽³⁾	4 P 1509 4063 ⁽⁴⁾
630 A/B5	12 + 4 P	4100 9863	Black 2799 7062	Black IP65 I - O - II 2799 7147	Included with the external handle	4 P 4109 4080		consult us	4 P 1509 4080 ⁽⁴⁾
800 A/B6	12 + 4 P	4100 9880				4 P 4109 4160			
1000 A/B6	12 + 4 P	4100 9881							
1250 A/B7	12 + 4 P	4100 9882							
1600 A/B7	12 + 4 P	4100 9886							

(1) 2 contacts supplied: one for position I and one for position II.

(2) To fully shroud the front and rear at the, top and bottom, order quantity 8.

(3) To shroud only the front at the top and bottom, order quantity 4.

(4) For complete front protection, order the reference twice.

Accessories

Key handle interlocking system

Locking in position 0 with RONIS EL11AP (lock not supplied)

Rating (A)	Frame size	Operation	Figure	Reference
125 ... 630	B3 ... B5	direct	1	4109 1006 ⁽¹⁾
125 ... 630	B3 ... B5	external	3	1499 7701
800 ... 1600	B6 ... B7	direct and external	2	consult us

(1) Specific handle included.

Locking in positions I, O, II with RONIS EL11AP (lock not supplied)

Rating (A)	Frame size	Operation	Figure	Reference
125 ... 630	B3 ... B5	direct	1	4109 1002 ⁽¹⁾
800 ... 1600	B6 ... B7	direct	2	consult us

(1) Specific handle included.

Locking with CASTELL K type lock (lock not supplied)

Rating (A)	Frame size	Operation	Figure	Reference
125 ... 630	B3 ... B5	external	3	1499 7702
800 ... 1600	B6 ... B7	external		consult us

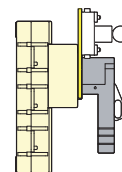


Fig. 1



Fig. 2

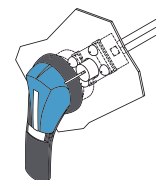


Fig. 3

acces_001_a_1_x_cat

acces_132_a_1_x_cat

acces_158_a_1_x_cat

Characteristics according to IEC 60947-3

125 to 1600 A

Thermal current I_{th} at 40°C	125 A	160 A	250 A	400 A	630 A	800 A	1000 A	1250 A	1600 A
Frame size	B3	B3	B4	B4	B5	B6	B6	B7	B7
Rated insulation voltage U_i (V)	800	800	800	800	1000	1000	1000	1000	1000
Rated impulse withstand voltage U_{imp} (kV)	8	8	8	8	12	12	12	12	12

Rated operational currents I_e (A)

Rated voltage	Utilisation category	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾
415 VAC	AC-20 A / AC-20 B	125/125	160/160	250/250	400/400	630/630	800/800	1000/1000	1250/1250	1600/1600
415 VAC	AC-21 A / AC-21 B	125/125	160/160	250/250	400/400	630/630	800/800	1000/1000	1250/1250	1600/1600
415 VAC	AC-22 A / AC-22 B	125/125	160/160	250/250	400/400	630/630	800/800	1000/1000	1250/1250	1600/1600
415 VAC	AC-23 A / AC-23 B	125/125	160/160	250/250	400/400	630/630	800/800	1000/1000	1250/1250	1600/1600
690 VAC ⁽²⁾	AC-20 A / AC-20 B	125/125	160/160	250/250	400/400	630/630	800/800	1000/1000	1250/1250	1600/1600
690 VAC ⁽²⁾	AC-21 A / AC-21 B	125/125	160/160	200/250	200/250	500/500	800/800	800/800	800/800	1000/1000
690 VAC ⁽²⁾	AC-22 A / AC-22 B	125/125	125/125	125/160	125/160	315/315	800/800	800/800	800/800	1000/1000
690 VAC ⁽²⁾	AC-23 A / AC-23 B	63/80	63/80	100/125	100/125	160/200	200/250	200/250	200/250	500/500
220 VDC	DC-20 A / DC-20 B	125/125	160/160	250/250	400/400	630/630	800/800	1000/1000	1250/1250	1600/1600
220 VDC	DC-21 A / DC-21 B	125/125	160/160	250/250	250/250	630/630	800/800	1000/1000	1250/1250	1250/1250
220 VDC	DC-22 A / DC-22 B	125/125	160/160	250/250	250/250	500/500	800/800	1000/1000	1250/1250	1250/1250
220 VDC	DC-23 A / DC-23 B	125/125	125/125	200/200	200/200	500/500	800/800	1000/1000	1250/1250	1250/1250
440 VDC	DC-20 A / DC-20 B	125/125	160/160	250/250	400/400	630/630	800/800	1000 ⁽⁴⁾ /1000 ⁽⁴⁾	1250/1250	1600/1600
440 VDC	DC-21 A / DC-21 B	125 ⁽³⁾ /125 ⁽³⁾	125 ⁽³⁾ /125 ⁽³⁾	200 ⁽³⁾ /200 ⁽³⁾	200 ⁽³⁾ /200 ⁽³⁾	500 ⁽³⁾ /500 ⁽³⁾	800 ⁽⁴⁾ /800 ⁽⁴⁾	1000 ⁽⁴⁾ /1000 ⁽⁴⁾	1250 ⁽⁴⁾ /1250 ⁽⁴⁾	1250 ⁽⁴⁾ /1250 ⁽⁴⁾
440 VDC	DC-22 A / DC-22 B	125 ⁽³⁾ /125 ⁽³⁾	125 ⁽³⁾ /125 ⁽³⁾	200 ⁽³⁾ /200 ⁽³⁾	200 ⁽³⁾ /200 ⁽³⁾	500 ⁽³⁾ /500 ⁽³⁾	800 ⁽⁴⁾ /800 ⁽⁴⁾	1000 ⁽⁴⁾ /1000 ⁽⁴⁾	1250 ⁽⁴⁾ /1250 ⁽⁴⁾	1250 ⁽⁴⁾ /1250 ⁽⁴⁾
440 VDC	DC-23 A / DC-23 B	125 ⁽⁴⁾ /125 ⁽⁴⁾	125 ⁽⁴⁾ /125 ⁽⁴⁾	200 ⁽⁴⁾ /200 ⁽⁴⁾	200 ⁽⁴⁾ /200 ⁽⁴⁾	500 ⁽⁴⁾ /500 ⁽⁴⁾	800 ⁽⁴⁾ /800 ⁽⁴⁾	1000 ⁽⁴⁾ /1000 ⁽⁴⁾	1250 ⁽⁴⁾ /1250 ⁽⁴⁾	1250 ⁽⁴⁾ /1250 ⁽⁴⁾

Operational power in AC-23 (kW)

At 400 VAC without pre-break in AC ⁽¹⁾⁽⁵⁾	63/63	80/80	132/132	132/132	280/280	450/450	710/710	710/710	710/710
At 690 VAC without pre-break in AC ⁽¹⁾⁽⁵⁾	55/75	55/75	90/110	90/110	150/185	185/220	185/220	185/220	475/475

Reactive power (kvar)

At 400 VAC ⁽⁵⁾	55	75	115	185	290	365	575	575	
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Fuse protected short-circuit withstand (kA rms prospective)

Prospective short-circuit (kA rms) ⁽⁶⁾	100	100	50	18	70	50	100	100	100
Associated fuse rating (A) ⁽⁶⁾	125	160	250	400	630	800	1000	1250	2 x 800

Circuit breaker protected short-circuit withstand with any circuit breaker that ensures tripping in less than 0.3s⁽⁷⁾

Rated short-time withstand current 0.3s I_{cw} (kA rms)	15	15	17	17	25	50	65	65	100
---	----	----	----	----	----	----	----	----	-----

Short-circuit capacity (without protection)

Rated short-time withstand current 1s I_{cw} (kA rms)	8	8	9	9	14	27	36	36	50
Rated short-circuit making capacity								75	75

Connection

Minimum Cu cable cross-section (mm ²)	35	50	95	185	2 x 150	2 x 185			
Minimum Cu busbar cross-section (mm ²)					2 x 30 x 5	2 x 40 x 5	2 x 60 x 5	2 x 60 x 5	2 x 80 x 5
Maximum Cu cable cross-section (mm ²)		50	95	150	240	2 x 300	2 x 300	2 x 300	4 x 185
Maximum Cu busbar width (mm)	25	25	32	32	50	63	63	63	100
Tightening torque min (Nm)	9	9	20	20	20	20	20	20	40

Mechanical characteristics

Durability (number of operating cycles)	10000	10000	10000	10000	5000	3000	3000	3000	3000
Weight of 3 P switch (kg)	8.3	8.3	10	10.3	20.7	44.3	45.4	46.4	54.7
Weight of 4 P switch (kg)	10.6	10.6	11.7	12.4	24.8	53	54.4	55.8	67.3

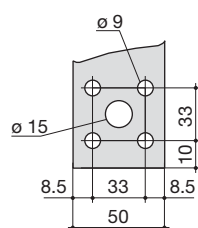
- (1) Category with index A = frequent operation
Category with index B = infrequent operation.
(2) With terminal shrouds.
(3) 3-pole device with 2 poles in series for the "+" and 1 pole for the "-".

- (4) 4-pole device with 2 poles in series per polarity.
(5) The power value is given for information only, the current values vary from one manufacturer to another.
(6) For a rated operational voltage $U_e = 400$ VAC.

- (7) Value for coordination with any circuit breaker that ensures tripping in less than 0.3s. For coordination with specific circuit-breaker references, higher short-circuit current values are available. Please consult us.

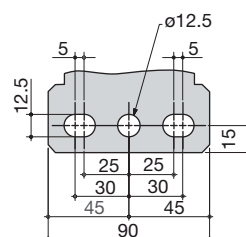
Connection terminals

800 to 1000 A / B6



svr_077_a_1_x_cat

1250 to 1600 A / B7

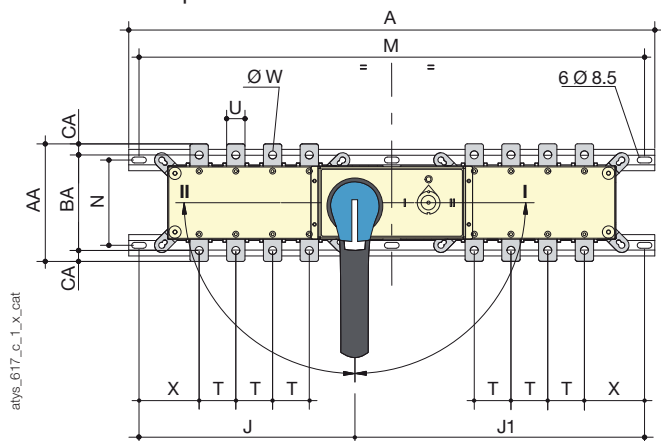


svr_098_a_1_x_cat

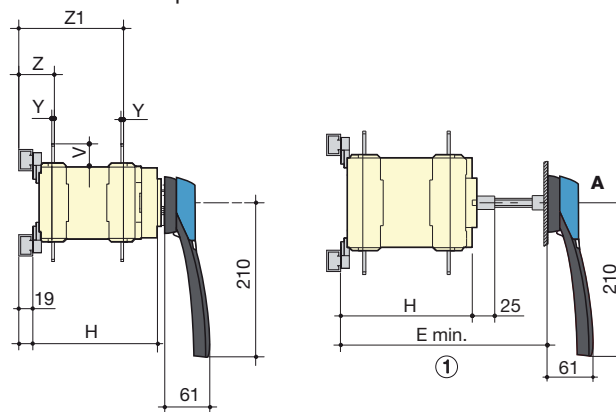
Dimensions

125 to 630 A / B3 to B5

Direct front operation



External front operation

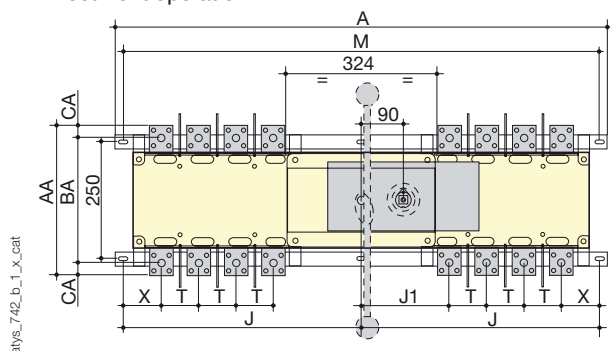


A. S3 type handle for external front operation: 125 to 630 A.
1. Max length with shaft extension: E min + 50 mm.

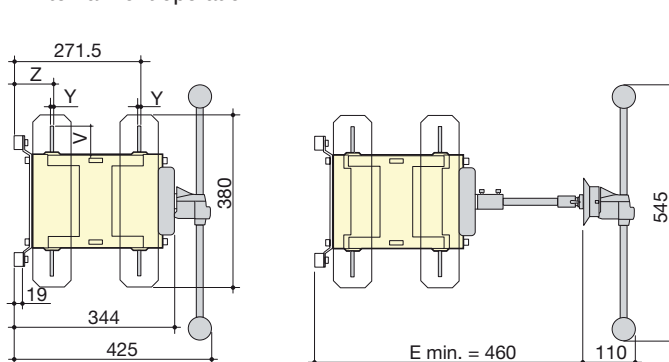
Rating (A)/ Frame size	Overall dimensions		Switch body			Switch mounting			Connection									
	A 8p.	E min	H	J 8p.	J1 8p.	M 8p.	N	T	U	V	W	X 8p.	Y	Z	Z1	AA	BA	CA
125/B3	610	260±1	193	238	338	576	101	36	20	25	8.5	76	3.5	47	143	135	115	10
160/B3	610	260±1	193	238	338	576	101	36	20	25	8.5	76	3.5	47	143	135	115	10
250/B4	725	260±1	193	295	396	691	116	50	25	30	11	83.5	3.5	49	143	160	130	10
400/B4	725	260±1	193	295	396	691	116	50	35	35	11	83.5	3.5	49	143	170	140	15
630/B5	850	337±1	270	358	458	816	176	65	45	50	13	91.5	5	62	199	235	220	20

800 to 1600 A / B6 to B7

Direct front operation



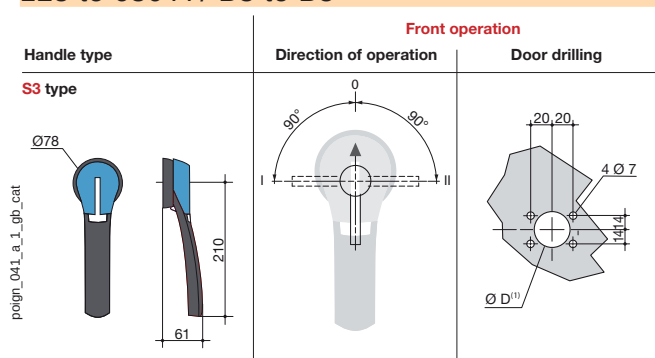
External front operation



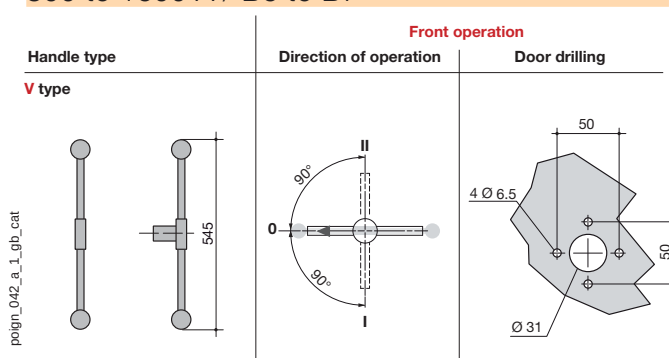
Rating (A)/ Frame size	Overall dimensions	Switch body		Switch mounting	Connection							
	A 8p.	J 8p.	J1 8p.	M 8p.	T	V	X 8p.	Y	Z	AA	BA	CA
800/B6	1 055	510.5	189	1 021	80	60.5	81.5	7	84.5	321	268	26.5
1000/B6	1 055	510.5	189	1 021	80	60.5	81.5	7	84.5	321	268	26.5
1250/B7	1 320	643	195	1 286	120	44	88	8	85.5	288	258	15
1600/B7	1 320	643	195	1 286	120	44	88	8	85.5	288	258	15

Dimensions for external handles

125 to 630 A / B3 to B5



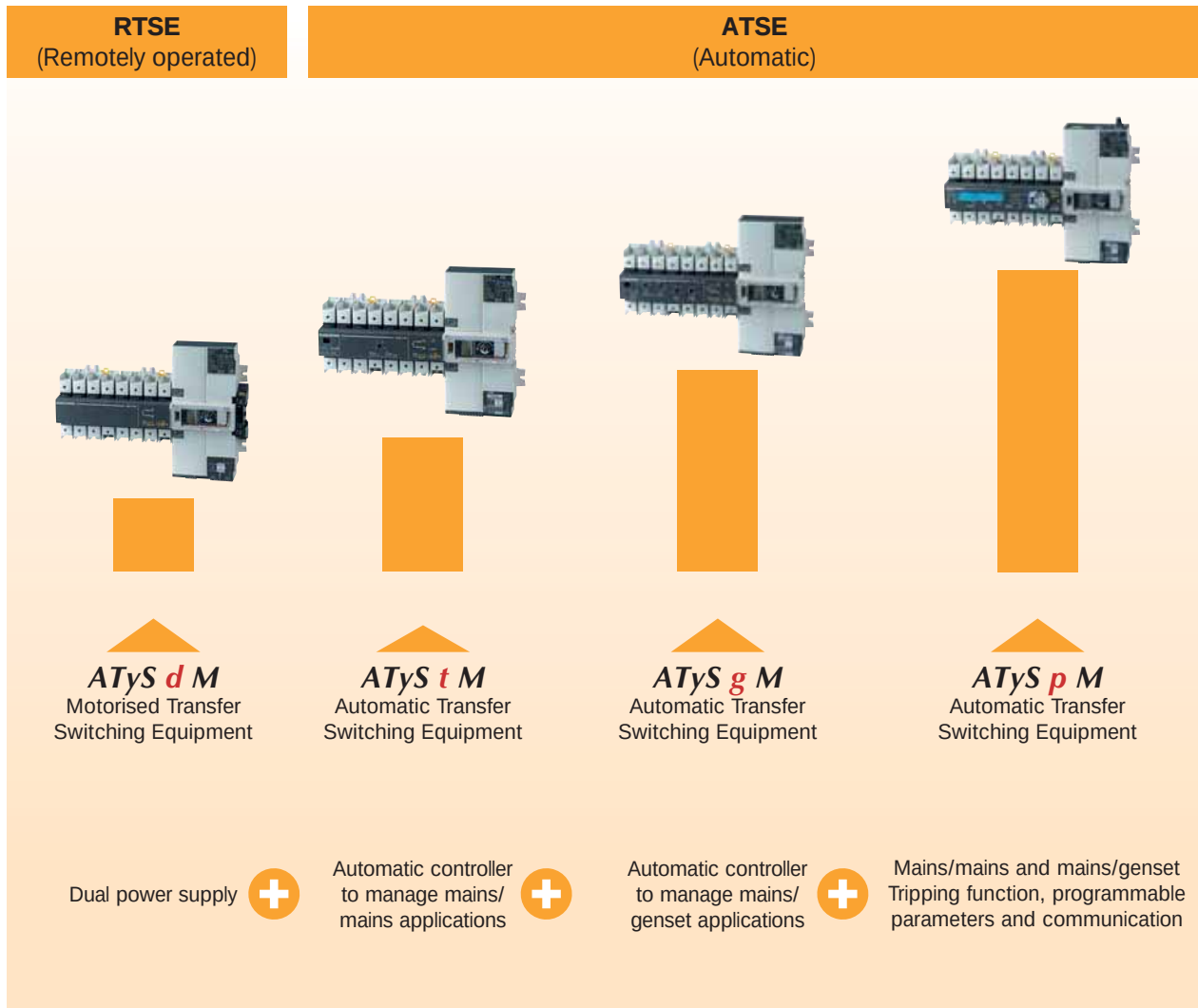
800 to 1600 A / B6 to B7





The *ATyS M* range: safe and reliable solutions

A complete range of automatic and remotely operated transfer switches from 40 to 160 A



The advantages



Secure operation

- Electrical and mechanical interlocking for optimum safety.
- Positive break indication with two mechanical switch position indicators for clear and secure use.
- Padlocking in the 0 position enables the lockout function on each product.
- Padlocking in 3 positions can also be configured prior to installation.
- Permanent indication of product availability thanks to the Watchdog relay, which constantly monitors the product operating conditions (ATyS g M and ATyS p M).



High performance

- On-load making and isolation for using a single product with any load type, including inductive loads (AC-33).
- Immunity to control voltage fluctuations thanks to stable positions and power supply only required during switching.
- Excellent dynamic withstand for improved safety when closing on a short-circuit.
- Extremely low electrical blackout time (ATyS d M < 90ms) guaranteed thanks to the electromagnetic actuator technology used with rotary self-cleaning contacts.



A fully compact solution

- All-in-one solution, with minimum risk of incorrect mounting or wiring.
- Highly reliable thanks to the compliance with IEC 60947-6-1, the standard governing transfer switching equipment.
- Simplified ordering process: a single reference for the complete solution.



Intuitive use

- Manual emergency control: The product can be operated quickly and safely using an emergency handle.
- Simple selection of operating mode (Auto/Manual) using an integrated selector.



Rapid commissioning

- ATyS d M: No configuration required.
- ATyS t M and ATyS g M: Configuration in just a few minutes using a screwdriver.
- ATyS p M: Simplified configuration (EASY CONFIG software and LCD screen on the device).



Easy to install

- Two switching devices mounted side-by-side for easy access to cabling with installation in a standard 18 module enclosure (product has a very low depth).
- Quick and easy mounting on a DIN rail or back plate.
- Simplified wiring thanks to the cage clamp terminals and dedicated bridging bars that allows a common outgoing connection whilst retaining the cage terminal connections.

Performance

IEC 60947-6-1 / GB 14048-11

- > AC 32B - up to 160 A
- > AC 33B - up to 125 A
- > AC 33iB - up to 160 A

IEC 60947-3

- > AC 23B - up to 160 A

Expert Services

- > Study, definition, advice, implementation, maintenance and training...
- > Our Expert Services team offers customised support to make your project a success.





ATyS *d M*

Remotely operated Transfer Switching Equipment
from 40 to 160 A

Transfer switches



ATyS d M
I-O-II 4P

The solution for

- > Applications with a normal/emergency external controller
- > Building Management System (BMS)



Strong points

- > Secure
- > Superior electrical performance
- > High-speed transfer
- > Immune to voltage fluctuations

Conformity to standards

- > IEC 60947-6,-1
- > IEC 60947-3
- > GB 14048.11



Approvals and certifications



Function

ATyS d M devices are 2 pole or 4 pole transfer switches that are remotely controlled using volt-free contacts from an external controller. They are modular products with positive break indication. They are intended for use in low voltage power supply systems where a brief interruption of the load supply is acceptable during transfer.

Advantages

Secure

ATyS M have both electrical and mechanical interlocks for optimum security. They also feature a positive break indicator, confirming switch position with dual mechanical indicators for increased safety.

Superior electrical performance

ATyS M devices are compliant with IEC 60947-6-1, the standard governing transfer switches. Their AC-33B properties of up to 125 A mean you can use the same product for resistive and inductive loads.

High-speed transfer

ATyS d M devices are based on a coil solution with rotating contacts, therefore ensuring an extremely short black-out duration (< 90ms).

Immune to voltage fluctuations

The power supply of the ATyS d M is only active during transfer. As the product is based on stable positions, it is not affected by network voltage fluctuations.

Operating modes



ATySm_014_c

Easy selection of AUT/MAN mode



ATySm_015_c_1_cat

Manual emergency operation



ATySm_016_c_1_cat

Padlocking facility

What you need to know

Electrical control

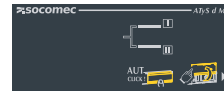
The positions are controlled by dry contacts on any external automated system (e.g. ATyS C30).
These positions are stable even in case of loss of input supply.

Control logic

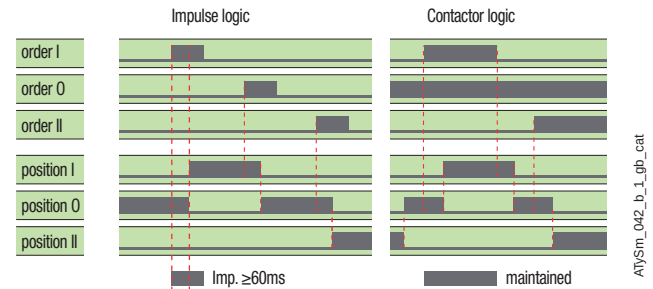
Two types of control logic are offered:

- **Pulse logic**
 - A switching command of at least 60 ms is necessary to initiate operation.
 - Commands I and II have priority over command 0.
 - The first command received (I or II) has priority as long as it remains present.
- **Contactor logic**
 - Command 0 must be maintained.
 - If command I or II disappears, the device returns to position 0, so long as the power supply is available.

Single-phase interface



Three-phase interface



Power supply

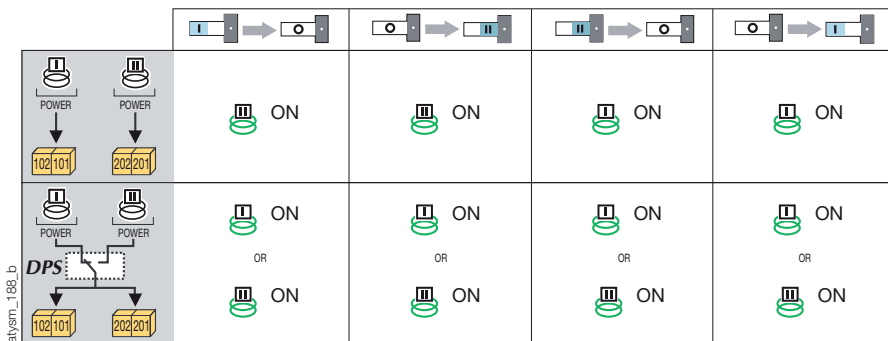
The ATyS d M is equipped with two independent 230 VAC power inputs (176-288 VAC), 50/60 Hz (45/65 Hz).

These two supplies can be connected individually; one to switch I and the other to switch II:

- Power supply 101-102 must be available to reach position I
- Power supply 201-202 must be available to reach position II.

The use of a dual power supply (DPS) or an external supply module secures the command of the 3 positions irrespective of the power supply source.

In this case, both the supply inputs must be connected in parallel.



References

ATyS d M

Rating (A)	No. of poles	ATyS d M	Bridging bars	Voltage sensing and power supply tap	Terminal shrouds	Auxiliary contact block
40 A	2 P	9323 2004	2 P 1309 2006 4 P 1309 4006	2 pieces 1399 4006	2 pieces 2294 4016 ⁽¹⁾	1 st unit included 2 nd unit Separate common points 1309 0001 ⁽²⁾ Linked common points 1309 0011 ⁽²⁾
	4 P	9323 4004				
63 A	2 P	9323 2006				
	4 P	9323 4006				
80 A	2 P	9323 2008				
	4 P	9323 4008				
100 A	2 P	9323 2010				
	4 P	9323 4010				
125 A	2 P	9323 2012	1309 2016			
	4 P	9323 4012				
160 A	2 P	9323 2016	1309 2016			
	4 P	9323 4016	1309 4016			

(1) For the three-phase version, for complete upstream and downstream protection, please order 2x; for the single-phase version please order the part just 1x.
(2) 1 NO/NC contact block for positions I, 0 and II.



ATyS *t* M - ATyS *g* M

Automatic Transfer Switching Equipment from 40 to 160 A



The solution for

- > High-rise buildings
- > Data centers
- > Healthcare buildings



Strong points

- > Fast commissioning
- > ATyS *d* M with an integrated controller for dedicated mains/mains or mains/genset functions
- > Secure programming

Conformity to standards

- > IEC 60947-6,-1
- > IEC 60947-3
- > GB 14048.11



Approvals and certifications⁽¹⁾



(1) Product references on request.

Function

ATyS *t* M and ATyS *g* M are modular automatic transfer switches with positive break indication. ATyS *t* M are 4 pole (three-phase) devices and ATyS *g* M are 2 or 4 pole (single or three-phase) devices.

They have all the functions of the ATyS *d* M together with an integrated controller, giving them automatic features dedicated to mains/mains (ATyS *t* M) and mains/genset (ATyS *g* M) applications. They are intended for use in low voltage power supply systems where a brief interruption of the load supply is acceptable during transfer.

Advantages

Quick start

ATyS *t* M and *g* M transfer switches offer significant time saving during commissioning (the process takes 2 to 3 minutes). Thanks to the design that allows commissioning through just one potentiometer (4 on the ATyS *g* M) and four DIP switches, a screwdriver is all that is required to configure the parameters.

ATyS *g* M: dedicated to mains/genset applications

In addition to its single-phase and three-phase voltage & frequency monitoring for both incoming sources, the product's integrated controller also features functions that are specific to mains/genset applications (genset control, test on load, etc.).

ATyS *t* M: dedicated to three-phase mains/mains applications

The ATyS *t* M integrated controller has been designed to provide all the functions necessary for these applications (operation with or without priority, preferred source selection) together with the monitoring of the voltage and frequency of both sources for three-phase networks.

Secure programming

To ensure that the correct configuration is maintained an optional sealable cover can be fitted in order to avoid any unintentional modifications to the programming.

What you need to know

The ATyS t M and ATyS g M are automatic transfer switching equipment that include a fully integrated ATS controller. These products are self powered from incoming supplies: 230 VAC (176-288 VAC), 50/60 Hz (45/65Hz).

References

ATyS t M

Rating (A)	No. of poles	Network (VAC)	ATyS t M	Bridging bars	Voltage sensing and power supply tap	Terminal shrouds	Auxiliary contact block	Sealable cover
40 A	4 P	230/400	9344 4004	4 P 1309 4006	2 pieces 1399 4006	2 pieces 2294 4016⁽¹⁾	1 unit Separate common points 1309 0001⁽²⁾ Linked common points 1309 0011⁽²⁾	1359 0000
63 A	4 P	230/400	9344 4006					
80 A	4 P	230/400	9344 4008					
100 A	4 P	230/400	9344 4010					
125 A	4 P	230/400	9344 4012	1309 4016				
160 A	4 P	230/400	9344 4016					

(1) For complete upstream and downstream protection please order quantity 2.

(2) 1 NO/NC contact block for positions I, 0 and II.

ATyS g M

Rating (A)	No. of poles	Network (VAC) ⁽³⁾	ATyS g M	Bridging bars	Voltage sensing and power supply tap	Terminal shrouds	Auxiliary contact block	Sealable cover
40 A	2 P	230	9353 2004	2 P 1309 2006 4 P 1309 4006	2 pieces 1399 4006	2 pieces 2294 4016⁽¹⁾	1 unit Separate common points 1309 0001⁽²⁾ Linked common points 1309 0011⁽²⁾	2 P 1359 2000 4 P 1359 0000
	4 P	230/400	9354 4004					
63 A	2 P	230	9353 2006					
	4 P	230/400	9354 4006					
80 A	2 P	230	9353 2008					
	4 P	230/400	9354 4008					
100 A	2 P	230	9353 2010					
	4 P	230/400	9354 4010					
125 A	2 P	230	9353 2012					
	4 P	230/400	9354 4012					
160 A	2 P	230	9353 2016	1309 2016				
	4 P	230/400	9354 4016	1309 4016				

(1) 4 pole version - for complete upstream and downstream protection please order quantity 2; for 2 pole version order quantity 1.

(2) 1 NO/NC contact block for positions I, 0 and II.

(3) For 127/230VAC networks, please contact your supplier.



ATyS *p* M

Automatic Transfer Switching Equipment
from 40 to 160 A



ATyS *p* M
I-O-II 4P

The solution for

- > High-rise buildings
- > Data centres
- > Healthcare buildings
- > Banks and insurance companies
- > Transport (airports, tunnels, etc.)



Strong points

- > Flexible programming
- > Trip function
- > Communication and configuration
- > Remote control interface

Conformity to standards

- > IEC 60947-6, -1
- > IEC 60947-3
- > GB 14048.11



Approvals and certifications



Function

ATyS *p* M are single-phase or three-phase modular automatic transfer switches with positive break indication.

Functions include ATyS *t* M and ATyS *g* M capability, with additional programmable parameters and a tripping function. A product model with communication is available. They are intended for use in low voltage power supply systems where a brief interruption of the load supply is acceptable during transfer.

Advantages

Flexible programming

ATyS *p* M time delays and inputs/outputs are completely configurable, hence enabling the easy monitoring of specific applications (load shedding, test...) and the definition of an operating cycle specifically adapted to your application.

Trip function

ATyS *p* M features a function for returning to the 0 position in case of the loss of both power supply sources (tripping). This protects the load from issues due to source instability.

Communication and configuration

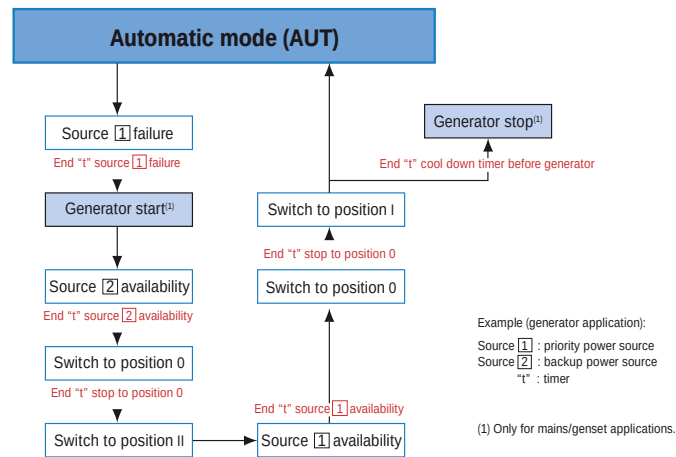
A specific version of ATyS *p* M is available with integrated Modbus communication. This gives access to most product data (status, voltages, frequencies...). A user friendly configuration software is also available free (Easyconfig) to configure, view and save all the parameters in the ATyS *p* M.

Remote control interface

Specifically designed for installations where the product is enclosed, the remote interface displays product status on the front panel (D10) or displays and controls with access to programming (D20).

What you need to know

The ATyS p M are automatic transfer switching equipment that include a fully integrated ATS controller. These products are self powered from incoming supplies: 230 VAC (160-305 VAC), 50/60 Hz (45/65Hz). Automatic products are all equipped with a sequence logic. Here is an example of the sequence logic in case of loss and return of the preferred source.



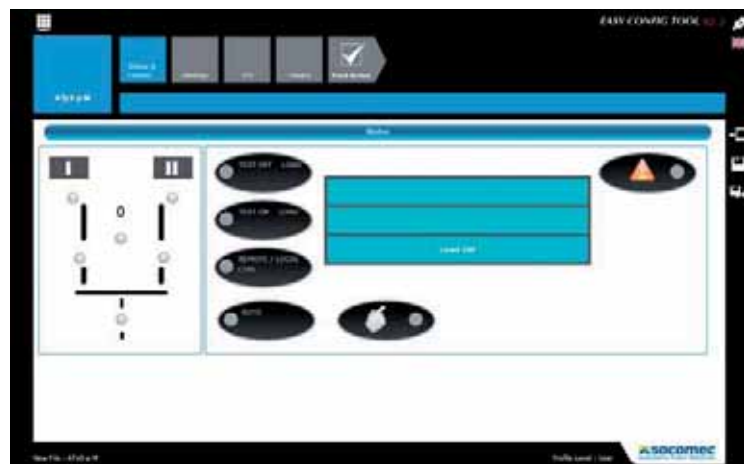
atys_028_h_1_gb_cat

Easyconfig

Easyconfig software is the ideal solution to save time and simplify complex configuration.

You can configure the following parameters:

- application type,
- voltage and frequency thresholds,
- timers,
- inputs/outputs...



atys_049_b_gb

ATyS p M

Rating (A)	No. of poles	Network (VAC) ⁽³⁾	ATyS p M	ATyS p M + com	Bridging bars	Voltage sensing and power supply tap	Terminal shrouds	Auxiliary contact block	Remote interface
40 A	4 P	230/400	9364 4004	9384 4004	4 P 1309 4006	2 pieces 1399 4006	2 pieces 2294 4016 ⁽¹⁾	1 piece	D10 9599 2010 D20 9599 2020
63 A	4 P	230/400	9364 4006	9384 4006				Separate common points	
80 A	4 P	230/400	9364 4008	9384 4008				1309 0001 ⁽²⁾	
100 A	4 P	230/400	9364 4010	9384 4010				Linked common points	
125 A	4 P	230/400	9364 4012	9384 4012	1309 4016			1309 0011 ⁽²⁾	
160 A	4 P	230/400	9364 4016	9384 4016					

(1) For complete upstream and downstream protection please order quantity 2.

(2) 1 NO/NC contact block for positions I, 0 and II.

(3) For 127/230VAC networks, please contact us.



ATyS M range

ATyS *d* M, ATyS *t* M, ATyS *g* M, ATyS *p* M
from 40 to 160 A

Transfer switches

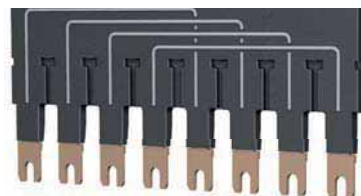
Accessories

Bridging bars

Use

Used to bridge the outgoing common connection between switch I and switch II. The bridging bar does not reduce the connection capacity of the cage terminals.

Rating (A)	No. of poles	Reference
40 ... 125	2 P	1309 2006
160	2 P	1309 2016
40 ... 125	4 P	1309 4006
160	4 P	1309 4016



atysm_025_a

Voltage sensing and power supply tap

Use

It allows connection of $2 \times \leq 1.5 \text{ mm}^2$ voltage sensing or power cables.

The single-pole voltage sensing tap can be mounted in any of the terminals (incoming) without reducing their connecting capacity.

Rating (A)	Pack	Reference
40 ... 160	2 pieces	1399 4006



atysm_026_a

Terminal shrouds

Use

Protection against direct contact with terminals or connecting parts.

Advantages of the terminal shrouds

Perforations allow remote thermographic inspection without the need to remove the shrouds. Possibility of sealing.

Mounting

For complete upstream and downstream protection of 4 pole products, please order quantity 2; for 2 pole products please order quantity 1.

Rating (A)	Position	Reference
40 ... 160	top / bottom	2294 4016⁽¹⁾

(1) Reference composed of 2 pieces.



atysm_027_a

Auxiliary contact

Use

A maximum of two auxiliary contact blocks can be fitted to each product. Each auxiliary contact block integrates 3 NO/NC auxiliary contacts (I, O, II).

The ATyS d M is delivered as standard with 1 block with separate common points.

Characteristics:

250 VAC / 5 A maximum.

24 VDC / 2 A maximum.

Rating (A)	Type	Reference
40 ... 160	Separate common points	1309 0001
40 ... 160	Linked common points	1309 0011



access_353_a



access_359_a

Sealable cover

Use

Prevents access to the ATyS t M and ATyS g M configuration panels.

Rating (A)	No. of poles	Reference
40 ... 160	2 P	1359 2000
40 ... 160	4 P	1359 0000



atysm_313_a

Polycarbonate enclosure

Use

Dedicated to the installation of a three-phase ATyS M, it enables easy integration of a compact transfer switch solution.

Rating (A)	H x W x D (mm)	Reference
40 ... 160	385 x 385 x 193	1309 9006



atysm_036_b_1_cat

Extension unit

Use

Combined with the polycarbonate enclosure, the extension unit provides additional space in order to connect 70 mm² cables to the ATyS M with ease.

Rating (A)	Reference
40 ... 160	1309 9007



atysm_039_a_1_x_cat

Residential enclosure

Use

Dedicated to the implementation of a single-phase ATyS M, the plastic enclosure provides a compact IP41 transfer switch solution with easy integration.

Rating (A)	H x W x D (mm)	Reference
40 ... 160	410 x 305 x 150	1309 9056



atysm_196_a_1_cat

Double power supply - DPS

Use

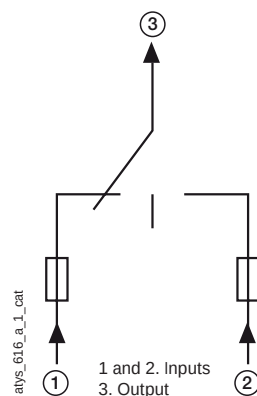
Allows an ATyS d M to be supplied by two 230 VAC 50/60 Hz networks.

Input

- The input is considered as "active" from 200 VAC.
- Maximum voltage: 288 VAC.
- Internal protection: each input is fuse protected (3.15 A).
- Connection on terminals: max. 6 mm².
- Modular product: the width of 4 modules.

Description of accessories	Reference
DPS	1599 4001

Input 1	Input 2	Output
230 VAC	0 VAC	230 VAC (input 1)
0 VAC	230 VAC	230 VAC (input 2)
230 VAC	230 VAC	230 VAC (input 1)
0 VAC	0 VAC	0 VAC



atys_612_a_2_cat

ATyS M range

ATyS **d** M, ATyS **t** M, ATyS **g** M, ATyS **p** M

from 40 to 160 A

Accessories (continued)

Auto-transformer

Use

For use with ATyS M in 400 VAC three-phase applications that have no distributed neutral.

The ATyS M includes integrated sensing and power supply circuits, therefore a neutral connection is required for 400 VAC three-phase applications. When no neutral connection is available this autotransformer (400/230 VAC, 400 VA) provides the 230 VAC required for the ATyS to function.

Rating (A)	Reference
40 ... 160	1599 4121



trafo_165_b_1

Remote interfaces for ATyS p M

Use

To remotely display source availability and position indication on the front of a panel when the ATyS M is enclosed.

The remote interface is powered directly from the ATyS M via the RJ45 connection cable.

Maximum cable length: 3 m.

D10

To display source availability and position indication on the front panel of an enclosure.

Protection degree: IP21.

D20

In addition to the functions of the D10, the D20 displays measurements and enables control and configuration from the front of the display panel.

Protection degree: IP21.

Door mounting

2 holes Ø 22.5.

ATyS M connection via RJ45 cable, not isolated.

Cable not provided.



atys_564_c_1_cat

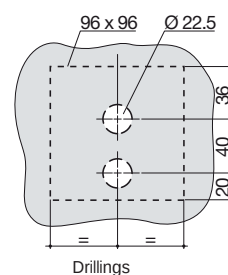


atys_565_c_1_cat



atys_597_a_1_cat

RJ45 to connect to ATyS p M



Drillings

atys_161_a_1_x_cat

Description of accessories	Reference
D10	9599 2010
D20	9599 2020

Connecting cable for remote interfaces

Use

To connect between a remote interface (type D10 or D20) and a control product (ATyS p M).

Characteristics:

RJ45 8 wire straight-through, non isolated cable. Length 3 m.

Type	Length	Reference
RJ45 cable	3 m	1599 2009



acces_209_a_2_cat

Cage-terminal interface

Use

The power connection terminals allow conversion of the cage clamp terminals into bolt-on type connection terminals, enabling connection of up to two 35 mm² cables or one 70 mm² cable. Compatible with aluminium terminals. Each power connection terminal is provided with separation screens.

Rating (A)	Reference
40 ... 160	1399 4017⁽¹⁾

(1) For complete conversion, order quantity 3.



acces_252_a_1_cat

Polycarbonate enclosed solution

General characteristics

- From 40 to 160 A.
- 230 VAC [176 VAC-288 VAC] 50 Hz network or 60 Hz [45 Hz-65 Hz]
- Protection degree: IP 55, IK08.
- Colour: RAL 7035.
- Material: transparent cover, enclosure base: polycarbonate.
- Mounting: 4 holes on the rear of the enclosure.
- Flame resistant to 650°C.

References

ATyS d M single-phase model (2 P)

Rating (A)	Reference
40	1823 2004
63	1823 2006
80	1823 2008
100	1823 2010
125	1823 2012
160	1823 2016

ATyS g M single-phase model (2 P)

Rating (A)	Reference
40	1854 2004
63	1854 2006
80	1854 2008
100	1854 2010
125	1854 2012
160	1854 2016



atysm_251_a_1_cat

Accessories

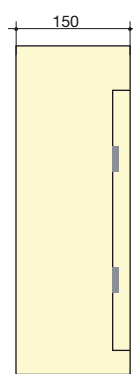
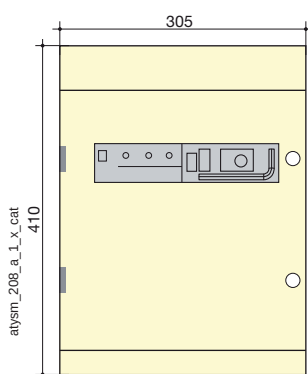
Customer fit

Description	Reference
Auxiliary contact	1309 0001
Voltage sensing and power supply tap (2 per reference)	1399 4006

For model ATyS d M only

Description	Reference
ATyS C30 relay driver	1599 3030
ATyS C40 relay driver	1599 3040
Dual power supply	1599 4001

Dimensions



- Weight: 5.5 kg.
- Connection: recommended cable size (Cu): 25 to 70 mm² according to rating (max. cable size: 70 mm²).

ATyS M range

ATyS **d** M, ATyS **t** M, ATyS **g** M, ATyS **p** M

from 40 to 160 A

Solutions with steel enclosure

General characteristics

- Adapted to mechanical risk and dust hazard.
- Integrated bridging bar.
- Protection degree: IP3x or IP54.
- Colour: RAL 7035.
- Cable gland plates: top and bottom.
- Material: 1.2 mm thick steel.
- Coating: epoxy polyester powder.
- Mounting: 4 wall mounting brackets - not fitted.
- Door: hinged, cut-out 327.4x47.6 mm.
- Door lock: 3 mm double bar (key included).

References

ATyS d M models

Rating (A)	No. of poles	IP 3X Reference	IP 54 Reference
40	4 P	1823 4004	1823 4005
63	4 P	1823 4006	1823 4007
80	4 P	1823 4008	1823 4009
100	4 P	1823 4010	1823 4011
125	4 P	1823 4012	1823 4013
160	4 P	1823 4016	1823 4017

ATyS g M models

Rating (A)	No. of poles	IP 3X Reference	IP 54 Reference
40	4 P	1854 4004	1854 4005
63	4 P	1854 4006	1854 4007
80	4 P	1854 4008	1854 4009
100	4 P	1854 4010	1854 4011
125	4 P	1854 4012	1854 4013
160	4 P	1854 4016	1854 4017

ATyS p M + COM RS485 models

Rating (A)	No. of poles	IP 3X Reference	IP 54 Reference
40	4 P	1884 4004	1884 4005
63	4 P	1884 4006	1884 4007
80	4 P	1884 4008	1884 4009
100	4 P	1884 4010	1884 4011
125	4 P	1884 4012	1884 4013
160	4 P	1884 4016	1884 4017



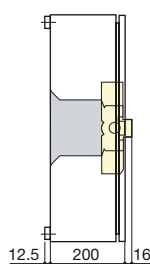
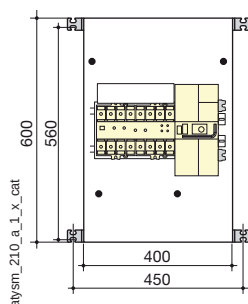
conf_366_b

Accessories

Customer fit

Description	Reference
Solid neutral	1309 9008
IP54 kit	1399 4016

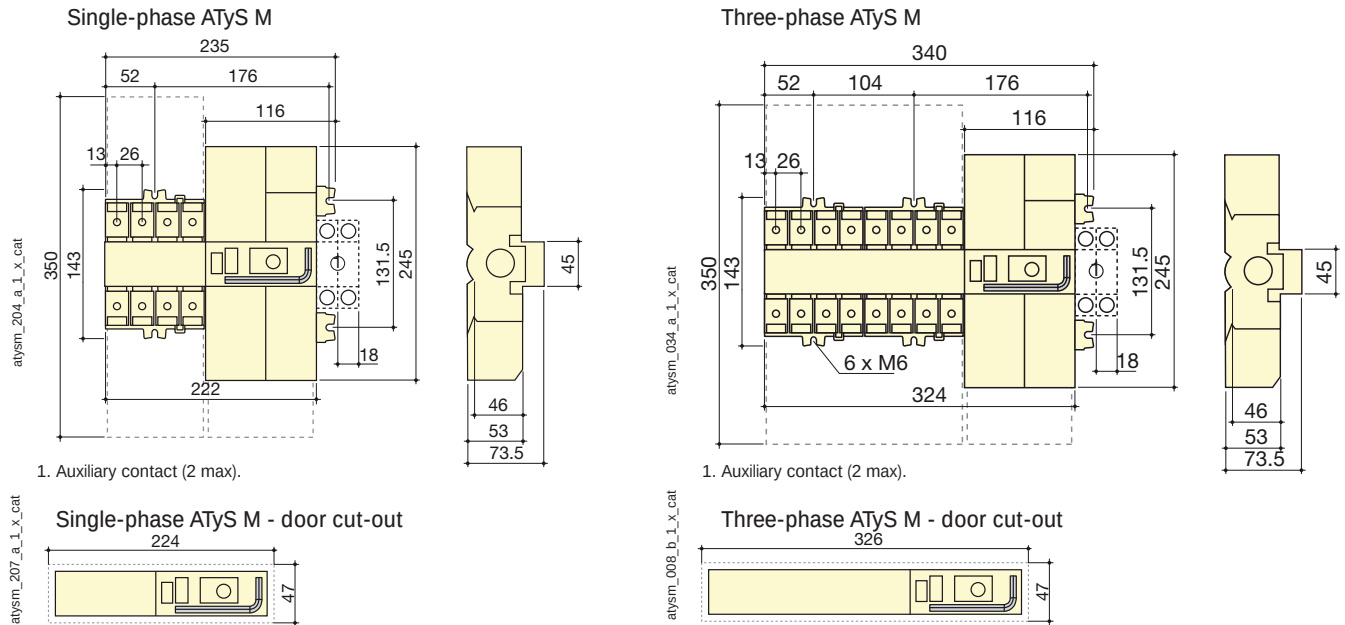
Dimensions



- Weight (without accessories): 15 kg.
- Connection (without cage/terminal interface): min. Cu 10 mm², max. 70 mm².

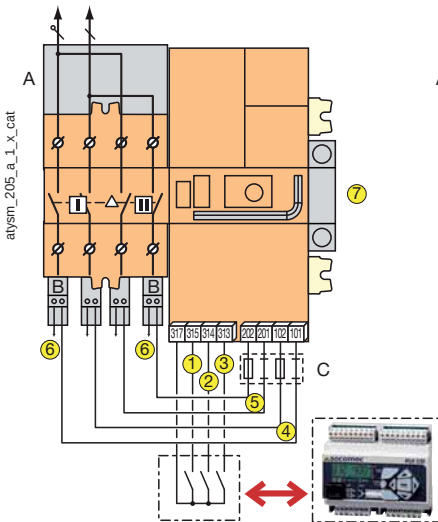
Dimensions

ATyS M 40 to 160 A

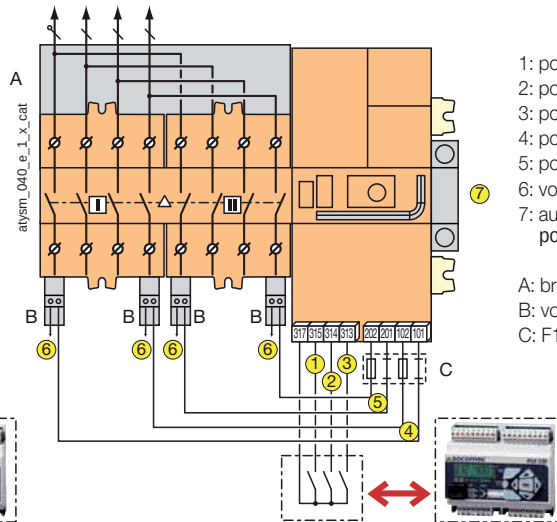


Terminals and connections

Single-phase ATyS d M



Three-phase ATyS d M



- 1: position I control
- 2: position II control
- 3: position 0 control C
- 4: power supply I (230 VAC)
- 5: power supply II (230 VAC)
- 6: voltage tap
- 7: auxiliary contact block - 1 NO/NC per position I, 0, II (factory fitted)

A: bridging bar (accessory)
 B: voltage sensing tap (accessory)
 C: F1 / F2 = fuse 10 A gG

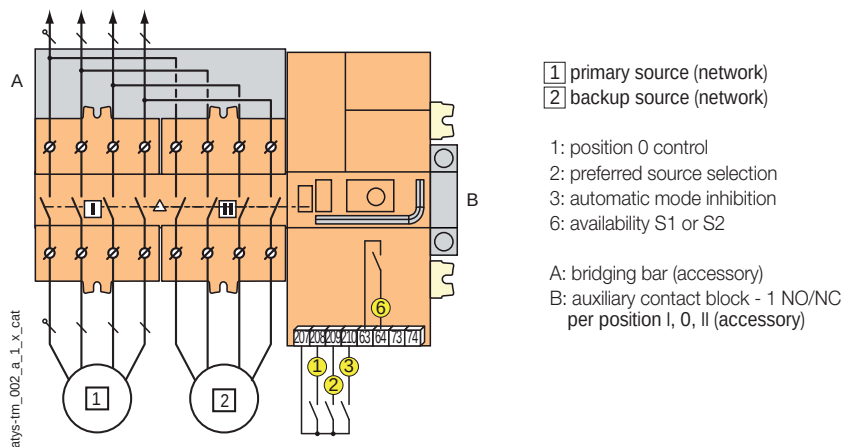
ATyS M range

ATyS **d** M, ATyS **t** M, ATyS **g** M, ATyS **p** M

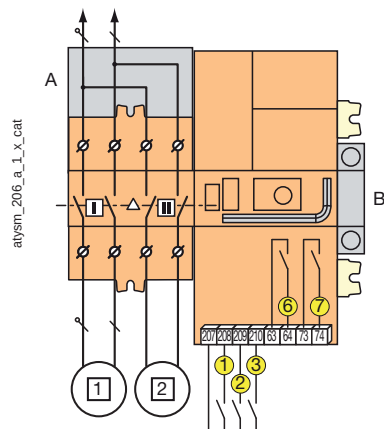
from 40 to 160 A

Terminals and connections (continued)

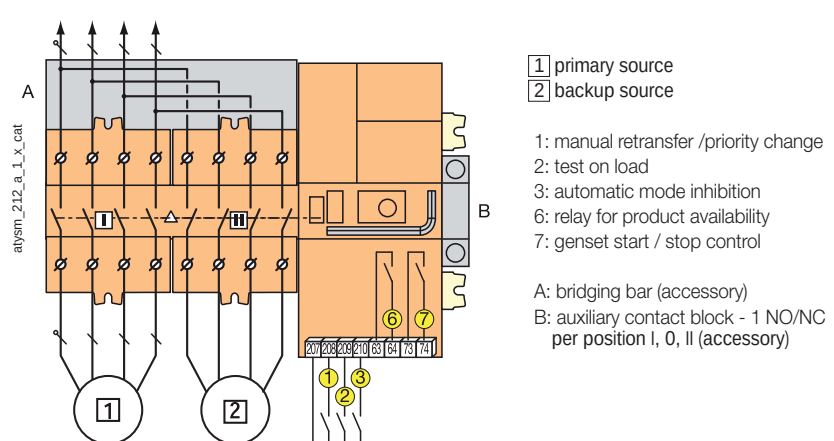
Three-phase ATyS t M



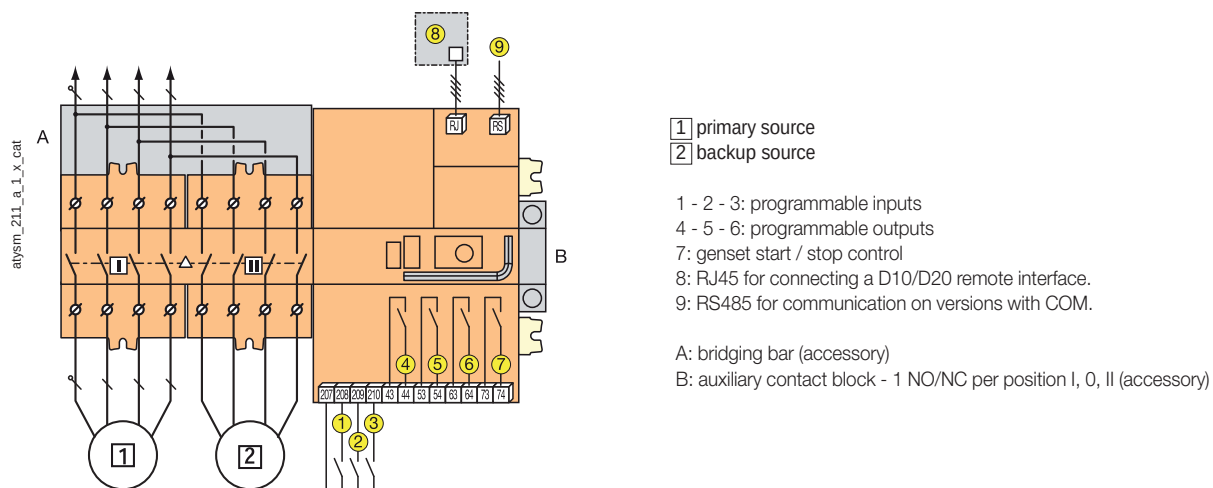
Single-phase ATyS g M



Three-phase ATyS g M



Three-phase ATyS p M



Characteristics according to IEC 60947-3 and IEC 60947-6-1

40 to 160 A

Thermal current I_{th} at 40°C	40 A	63 A	80 A	100 A	125 A	160 A
Rated insulation voltage U_i (V) (power circuit)	800	800	800	800	800	800
Rated impulse withstand voltage U_{imp} (kV) (power circuit)	6	6	6	6	6	6
Rated insulation voltage U_i (V) (control circuit)	300	300	300	300	300	300
Rated impulse withstand voltage U_{imp} (kV) (control circuit) - ATyS d M	4	4	4	4	4	4
Rated impulse withstand voltage U_{imp} (kV) (control circuit) - ATyS t M, g M and p M	2.5	2.5	2.5	2.5	2.5	2.5

Rated operational currents I_e (A) according to IEC 60947-6-1

Rated voltage	Utilisation category	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾
415 VAC	AC-31 A / AC-31 B	40/40	63/63	80/80	100/100	100/125	100/160
415 VAC	AC-32 A / AC-32 B	40/40	63/63	80/80	100/100	100/125	100/160
415 VAC	AC-33 A / AC-33 B	-/40	-/63	-/80	-/100	-/125	-/125

Rated operational currents I_e (A) according to IEC 60947-3

Rated voltage	Utilisation category	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾
415 VAC	AC-20 A / AC-20 B	40/40	63/63	80/80	100/100	125/125	160/160
415 VAC	AC-21 A / AC-21 B	40/40	63/63	80/80	100/100	125/125	160/160
415 VAC	AC-22 A / AC-22 B	40/40	63/63	80/80	100/100	125/125	160/160
415 VAC	AC-23 A / AC-23 B	40/40	63/63	80/80	100/100	125/125	125/160
690 VAC	AC-21 A / AC-21 B	40/40	63/63	80/80	100/100	125/125	160/160
690 VAC	AC-22 A / AC-22 B	40/40	63/63	80/80	80/80	100/125	100/125
690 VAC	AC-23 A / AC-23 B	40/40	63/63	63/63	80/80	80/80	80/80

Current rated as conditional short-circuit with fuse gG DIN

Conditional short-circuit current (kA rms)	50	50	50	50	50	40
Associated fuse rating (A)	40	63	80	100	125	160

Current rated as conditional short-circuit with any brand of circuit breaker that ensures tripping in less than 0.3s ⁽⁴⁾

Current rated as short-time withstand I_{cw} 0.3s (kA rms)	7	7	7	7	7	7
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Short-circuit operation (switch only)

Current rated as short-time withstand I_{cw} 1s (kA rms) ⁽²⁾	4	4	4	4	4	4
Rated peak withstand current (kA peak) ⁽²⁾	17	17	17	17	17	17

Connection

Min. connection cross-section	10	10	10	10	10	10
Minimum Cu cable cross-section (mm ²)	70	70	70	70	70	70
Tightening torque (Nm)	5	5	5	5	5	5

Switching time⁽⁵⁾

I - 0 or II - 0, following a command (ms)	45	45	45	45	45	45
Transfer time I - II or II - I, following a command (ms)	180	180	180	180	180	180
I-0 or II-0, after outage (s)	1.2	1.2	1.2	1.2	1.2	1.2
I-II or II-I transfer time, after outage (s)	1.4	1.4	1.4	1.4	1.4	1.4
Contact transfer time ("black-out") I-II min. (ms) ⁽³⁾	150	150	150	150	150	150

Power supply

Min./max. supply (VAC) (ATyS d M, t M and g M)	176/288	176/288	176/288	176/288	176/288	176/288
Min./max. supply (VAC) (ATyS p M)	160/305	160/305	160/305	160/305	160/305	160/305

Control supply power demand

Rated power (VA)	6	6	6	6	6	6
Max. intensity at 230 VAC (A) - ATyS d M, t M and g M	30	30	30	30	30	30
Max. intensity at 230 VAC (A) - ATyS p M	20	20	20	20	20	20

Mechanical specifications

Durability (number of operating cycles)	10,000	10,000	10,000	10,000	10,000	10,000
Weight of single-phase models - non-packaged (kg)	2.8	2.8	2.8	2.8	2.8	2.8
Weight of single-phase models - including packaging (kg)	3.5	3.5	3.5	3.5	3.5	3.5
Weight of three-phase models - non-packaged (kg)	3.5	3.5	3.5	3.5	3.5	3.5
Weight of three-phase models - including packaging (kg)	4.2	4.2	4.2	4.2	4.2	4.2

(1) Category with index A = frequent operation / Category with index B = infrequent operation.

(2) For a rated operational voltage U_e = 400 VAC.

(3) 5% tolerance.

(4) Value for coordination with any circuit breaker that ensures tripping in less than 0.3s.

For coordination with specific circuit-breaker references, higher short-circuit current values are available. Please contact us.

(5) At rated voltage - excluding time delays, where applicable.



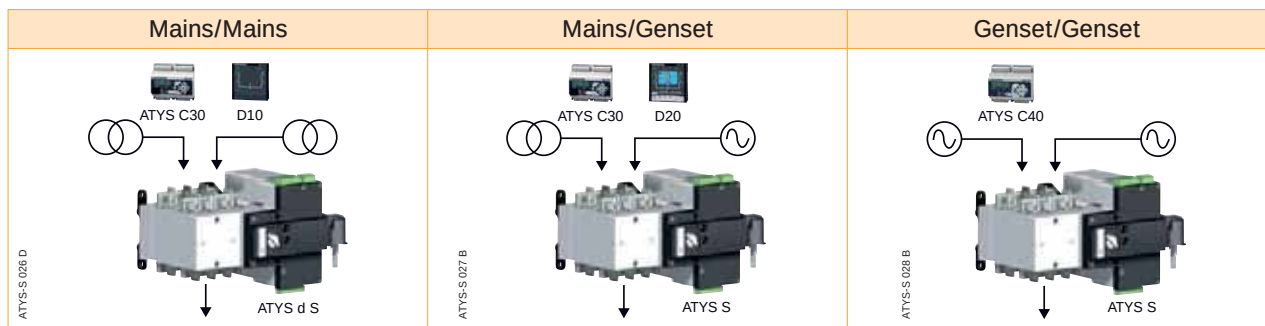
The *ATyS* S range: a robust solution

Transfer switches

A range of transfer switches from 40 to 125 A



Three application types



The advantages



Safe and reliable

- An extended lifetime thanks to a switching principle based on stable positions.
- Positive break indication.
- Mechanical position interlocking.
- Stable power supply to the loads because the ATyS S does not require power supply for the position to be maintained.
- Various power supply voltages are available: 12 or 24/48 VDC and 230 VAC or 2 x 230 VAC.



Easy to use

- Manual emergency control:
The product can be controlled quickly and safely using an emergency handle (motor installed or removed).
- Simple selection of the operating mode (Auto/Manual/Padlocked) using an integrated selector.



Total integration

- Integrated and tested solution: components factory assembled and wired.
- Reliable product: compliance with IEC 60947-6-1, the standard governing transfer switches.



Easy maintenance

- Self-cleaning sliding contacts.
- Easy replacement of the motor unit, even during on load operation.



Cost-saving

- Low power consumption thanks to a switching principle based on stable positions: power is only required during transfer.
- Easy and fast installation: only four fixing points, three connectors and the power cables to connect.
- Shorter bridging bars that are consequently more economical than any other solution on the market.

Compact design

- > Combining two switches mounted back-to-back and being only 197 mm wide, the ATyS S offers significant space saving when compared with a side-by-side solution.

Expert Services

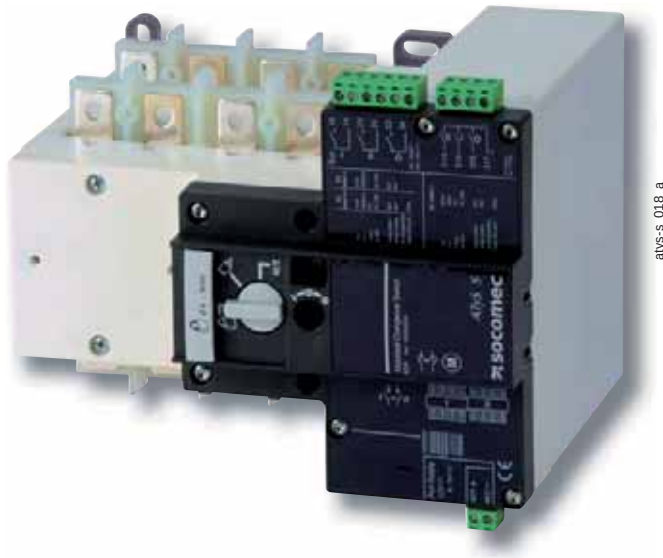
- > Study, definition, advice, implementation, maintenance and training...
- > Our Expert Services team offers customised support to make your project a success.





ATyS S - ATyS d S

Remotely operated Transfer Switching Equipment
from 40 to 125 A



atyS-S_018_a

Function

ATyS S products are 4 pole remotely operated transfer switches with positive break indication. They enable the on-load transfer of two three-phase supplies via remote volt-free contacts, from either an external automatic controller, using pulse logic, or a switch. They are intended for use in low voltage power supply systems where a brief interruption of the load supply is acceptable during transfer.

Advantages

Extensive power supply range

The ATyS S is available in four supply versions, each with a broad range (+/-30%).

The four versions are:

- 12 VDC power supply.
- 24/48 VDC power supply.
- 230 VAC single power supply.
- 2 x 230 VAC dual power supply.

Safety and reliability

ATyS S products use stable position technology, ensuring constant pressure on the contacts and preventing premature faults. In addition, they do not require a power supply to maintain position, thus protecting their loads from voltage fluctuations.

Easy integration

ATyS S products can be easily installed inside enclosures. Their design, and in particular their compact size, enables integration within most 200 mm deep enclosures.

Simplified maintenance

Maintenance can be carried out easily under load, with manual operation still available.

The control and motorisation section can be replaced simply by removing 4 screws, with no work required on the installation cabling.

ATyS d S: Dual power supply

In addition to the functions offered by the ATyS S, the ATyS d S incorporates supply redundancy without the need for additional wiring. This is obtained by integrating a double supply (2 independent supplies) directly within the product.

The solution for

- > Genset < 90 kVA
- > Heating systems
- > Climate control
- > Ventilation systems
- > Telecommunications



Strong points

- > Extensive power supply range
- > Safety and reliability
- > Easy integration
- > Simplified maintenance
- > ATyS d S: Dual power supply

Conformity to standards

- > IEC 60947-6-1
- > IEC 60947-3
- > GB 14048-11



Approvals and certifications



References

ATyS S

Rating (A)	No. of poles	Power supply	ATyS S	Bridging bars	Terminal shrouds	Voltage tap	Terminal retainer	DIN rail
40 A	4 P	24/48 VDC	9506 4004	4 P 9509 4013	Source side 2 pieces 9594 4012 Load side 2 pieces 9594 9012		2 pieces 9599 4003	4 modules 9599 4002
	4 P	12 VDC	9505 4004					
	4 P	230 VAC	9503 4004			9599 4001		
63 A	4 P	24/48 VDC	9506 4006					
	4 P	12 VDC	9505 4006			9599 4001		
	4 P	230 VAC	9503 4006					
80 A	4 P	24/48 VDC	9506 4008					
	4 P	12 VDC	9505 4008			9599 4001		
	4 P	230 VAC	9503 4008					
100 A	4 P	24/48 VDC	9506 4010					
	4 P	12 VDC	9505 4010			9599 4001		
	4 P	230 VAC	9503 4010					
125 A	4 P	24/48 VDC	9506 4012					
	4 P	12 VDC	9505 4012			9599 4001		
	4 P	230 VAC	9503 4012					

ATyS d S

Rating (A)	No. of poles	Power supply	ATyS d S	Bridging bars	Terminal shrouds	Voltage tap	Terminal retainer	DIN rail
40 A	4 P	2 x 230 VAC	9513 4004	4 P 9509 4013	Source side 2 pieces 9594 4012 Load side 2 pieces 9594 9012	9599 4001	2 pieces 9599 4003	4 modules 9599 4002
63 A	4 P	2 x 230 VAC	9513 4006					
80 A	4 P	2 x 230 VAC	9513 4008					
100 A	4 P	2 x 230 VAC	9513 4010					
125 A	4 P	2 x 230 VAC	9513 4012					

ATyS S - ATyS d S

Remotely operated Transfer Switching Equipment

from 40 to 125 A

Accessories

Bridging bars

Use

For bridging power terminals on the top or bottom side of the switch.

Rating (A)	No. of poles	Reference
40 ... 125	4 P	9509 4013



acces_395_a_2_cat

Voltage tap

Use

Enables the required power supply for ATyS S 230 VAC and ATyS d S products to be tapped directly from the product's incoming power terminals. Can also be utilised in applications without neutral, to provide 400 VAC to the autotransformer.

Rating (A)	Reference
40 ... 125	9599 4001



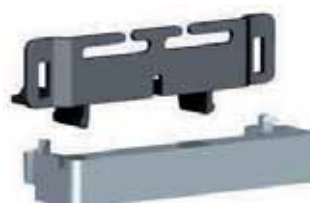
atys-s_022_a

Terminal retainer

Use

These clips have a dual function: - to prevent direct access to the power supply and control terminals and - to secure these connector terminals.

Rating (A)	Pack	Reference
40 ... 125	2 pieces	9599 4003



atys-s_021_a

Terminal shrouds

Use

IP2X protection against direct contact with terminals or connecting parts.

Terminal shrouds for the source side		
Rating (A)	Pack	Reference
40 ... 125	2 pieces	9594 4012
Terminal shrouds for the load side		
Rating (A)	Pack	Reference
40 ... 125	2 pieces	9594 4012



atys-s_020_a



atys-s_020_a

Autotransformer 400/230 VAC

Use

For applications without neutral, this autotransformer provides the 230 VAC required to power these ATyS products.

Dimensions

75x80x72 mm

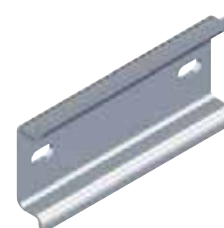
Rating (A)	Reference
40 ... 125	9599 4004

DIN rail

Use

This 4-module DIN rail can be installed directly on the front of the ATyS S and can be utilised, for example, for the installation of a surge protection device.

Rating (A)	Reference
40 ... 125	9599 4002



acces_417_a_1_cat

Spares

Motorisation unit

Use

The motorisation module of the ATyS S can be easily replaced in case of problems, even when the load is supplied.

Rating (A)	ATyS S 12 VDC	ATyS S 24/48 VDC	ATyS S 230 VAC	ATyS d S 2x230 VAC
40	9505 5004	9506 5004	9503 5004	9513 5004
63	9505 5006	9506 5006	9503 5006	9513 5006
80	9505 5008	9506 5008	9503 5008	9513 5008
100	9505 5010	9506 5010	9503 5010	9513 5010
125	9505 5012	9506 5012	9503 5012	9513 5012



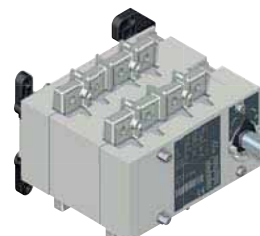
access_415_a_1_cat

Switching unit

Use

References to be used for replacing the switching module of ATyS S products.

Rating (A)	Reference
40	9509 1004
63	9509 1006
80	9509 1008
100	9509 1010
125	9509 1012



access_414_a_1_cat

Manual emergency operation handle

Use

This handle can be used on the product whether the motor unit is mounted or not.

Rating (A)	Reference
40 ... 125	9599 5012



poign_058_a_1_x_cat

Connector kit

Use

This kit, including all the connector types for the different products, can be ordered in case of loss or breaking of one connector.

Rating (A)	Reference
40 ... 125	9509 0002



access_416_a_1_cat

ATyS S - ATyS d S

Remotely operated Transfer Switching Equipment

from 40 to 125 A

Enclosed solutions

General characteristics



cofl_418_a

ATyS S and ATyS d S

- Adapted to mechanical risk and dust hazard.
- Protection degree: IP3X (IP54 optional)
- Colour: RAL 7035, epoxy polyester powder.
- Wall mounting: 4 fixing lugs supplied loose.
- Connection of cables: top or bottom.
- Locking system: 3 mm double-bar Lock (key supplied)
- Power network 230/400 VAC +/-30%, 50/60 Hz.
- Two power supplies: 12 VDC and 2 x 230 VAC.
- Manual emergency operation handle provided with the enclosure.
- Bridging bars provided fitted on the product.

References

Rating (A)	No. of poles	ATyS S 12 VDC	ATyS d S 2 x 230 VAC
40	4 P	3505 4004	3513 4004
63	4 P	3505 4006	3513 4006
80	4 P	3505 4008	3513 4008
100	4 P	3505 4010	3513 4010
125	4 P	3505 4012	3513 4012

Accessories

Factory fitted

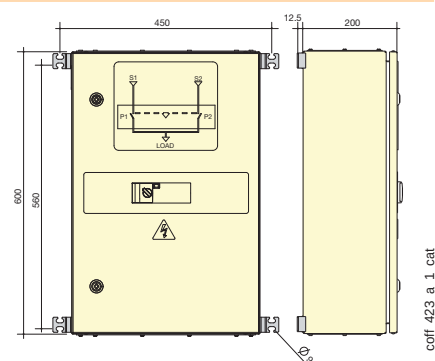
Description	Reference
LEDs indicating if voltage is present	9599 0005
LEDs for position indication	9599 0006
TESTS/AUTO modes selection (with C30 option)	9599 0007
Priority selection (with C30 option)	9599 0008
Surge arresters for enclosure (SURGYS D40)	9599 0010
Three-phase kit without neutral	9599 0012
Kit for auxiliary output (3Ph+N) 16A	9599 0016
Copper bar connection kit	9599 0019
IP54 kit	9599 0020
IPXXB protection screen (door open)	9599 0021
Battery charger	9599 0024
Kit for voltage sensing on terminals	9599 0028
Auxiliary kit for control on terminals	9599 0029
Kit for ATyS C30 control/command	9599 0030

Customer fit

Description	Reference
Copper bar connection kit	9599 0018
IP54 kit	9599 0020
IPXXB protection screen (door open)	9599 0021

Dimensions

Rating (A)	Connection cross-section (mm²)	H (mm)	L (mm)	P (mm)	Weight (kg)
40	10	600	400	200	25
63	16	600	400	200	25
80	25	600	400	200	25
100	35	600	400	200	25
125	50	600	400	200	25



cofl_423_a_1_cat

Characteristics according to IEC 60947-3 and IEC 60947-6-1

40 to 125 A

Thermal current I_{th} at 40°C	40 A	63 A	80 A	100 A	125 A
Rated insulation voltage U_i (V) (power circuit)	800	800	800	800	800
Rated impulse withstand voltage U_{imp} (kV) (power circuit)	6	6	6	6	6
Rated insulation voltage U_i (V) (operation circuit)	300	300	300	300	300
Rated impulse withstand voltage U_{imp} (kV) (operation circuit)	4	4	4	4	4

Rated operational currents I_e (A) according to IEC 60947-6-1

Rated voltage	Utilisation category	A/B	A/B	A/B	A/B	A/B
415 VAC	AC-31 B	40	63	80	100	125
415 VAC	AC-32 B	40	63	80	80	80

Rated operational currents I_e (A) according to IEC 60947-3

Rated voltage	Utilisation category	A/B	A/B	A/B	A/B	A/B
415 VAC	AC-20 A / AC-20 B	40/40	63/63	80/80	100/100	125/125
415 VAC	AC-21 A / AC-21 B	40/40	63/63	80/80	100/100	100/125
415 VAC	AC-22 A / AC-22 B	40/40	63/63	80/80	100/100	100/100
415 VAC	AC-23 A / AC-23 B	-/40	-/63	-/63	-/63	-/63

Fuse protected short-circuit withstand (kA rms prospective)

Prospective short-circuit current (kA rms)	50	50	50	25	15
Associated fuse rating (A)	40	63	80	100	125

Circuit breaker protected short-circuit withstand with any circuit breaker that ensures tripping in less than 0.3s⁽³⁾

Rated short-time withstand current 0.3s I_{cw} (kA rms)	3.5	3.5	3.5	3.5	3.5
---	-----	-----	-----	-----	-----

Short-circuit capacity as per IEC 60947-6-1

Rated short-time withstand current 0.03 s. (kA)	5	5	5	5	-
Rated short-circuit making capacity I_{cm} (kA peak)	7.65	7.65	7.65	7.65	-

Short-circuit capacity as per IEC 60947-3 (without protection)

Rated short-time withstand current 1 s. I_{cw} (kA rms)	2.5	2.5	2.5	2.5	2.5
Rated peak withstand current (kA peak)	12	12	12	12	12

Connection

Maximum Cu cable cross-section (mm²)	50	50	50	50	50
Tightening torque mini / maxi (Nm)	1.2/3	1.2/3	1.2/3	1.2/3	1.2/3

Switching time (Standard setting)

I - 0 or II - 0 (ms)	500	500	500	500	500
I - II or II - I (ms)	1000	1000	1000	1000	1000
Duration of "electrical blackout" I - II (ms) minimum	500	500	500	500	500

Power supply

Power supply 12 VDC min / max (VDC)	9/15	9/15	9/15	9/15	9/15
Power supply 24/48 VDC min / max (VDC)	17/62	17/62	17/62	17/62	17/62
Power supply 230 VAC min / max (VAC)	160/310	160/310	160/310	160/310	160/310

Control supply power demand

Power supply 12 VDC inrush / nominal (VA)	200/40	200/40	200/40	200/40	200/40
Power supply 24/48 VDC inrush / nominal (VA)	200/40	200/40	200/40	200/40	200/40
Supply 230 VAC inrush / nominal (VA)	200/40	200/40	200/40	200/40	200/40

Mechanical characteristics

Durability (number of operating cycles)	25 000	25 000	25 000	25 000	25 000
Weight ATyS S and ATyS d S 4 P (kg)	3	3	3	3	3

(1) Value for coordination with any circuit breaker that ensures tripping in less than 0.3s. For coordination with specific circuit-breaker references, higher short-circuit current values are available. Please consult us.

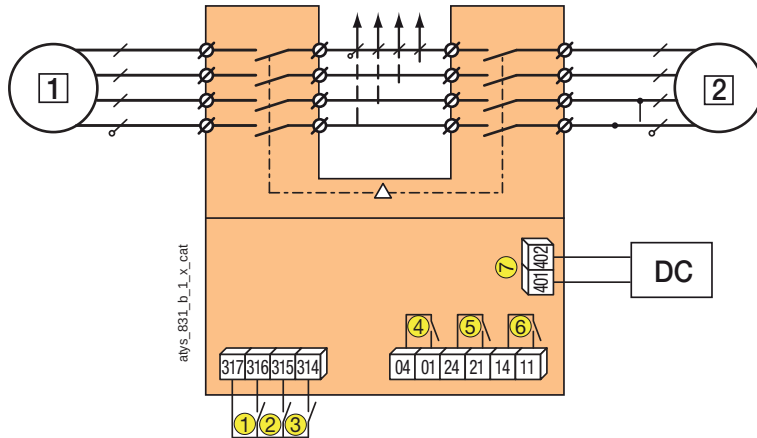
ATyS S - ATyS d S

Remotely operated Transfer Switching Equipment

from 40 to 125 A

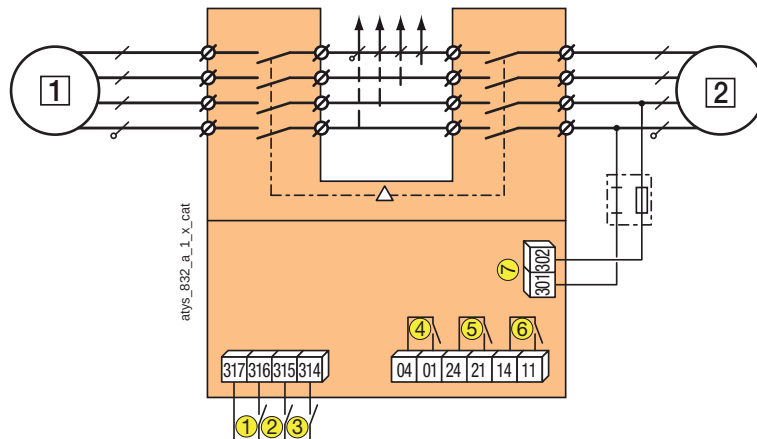
Terminals and connections

ATyS S DC version



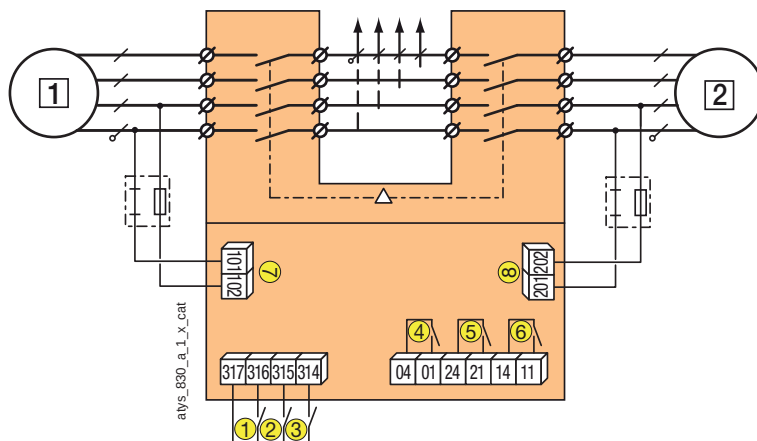
- 1 preferred source
- 2 alternate source
- 1: position 0 control
- 2: position I control
- 3: position II control
- 4: auxiliary contact, closed when the switch is in position 0
- 5: auxiliary contact, closed when the switch is in position II
- 6: auxiliary contact, closed when the switch is in position I
- 7: power supply 12 VDC (9-15 VDC) or 24 VDC / 48 VDC (17-62 VDC) depending on the version.

ATyS S: 230 VAC

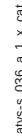


- 1 preferred source
- 2 alternate source
- 1: position 0 control
- 2: position I control
- 3: position II control
- 4: auxiliary contact, closed when the switch is in position 0
- 5: auxiliary contact, closed when the switch is in position II
- 6: auxiliary contact, closed when the switch is in position I
- 7: power supply kit: 230 VAC (160-310 VAC)

ATyS d S: 2 x 230 VAC



- 1 preferred source
- 2 alternate source
- 1: position 0 control
- 2: position I control
- 3: position II control
- 4: auxiliary contact, closed when the switch is in position 0
- 5: auxiliary contact, closed when the switch is in position II
- 6: auxiliary contact, closed when the switch is in position I
- 7: power supply kit I: 230 VAC (160-310 VAC)
- 8: power supply kit II: 230 VAC (160-310 VAC)



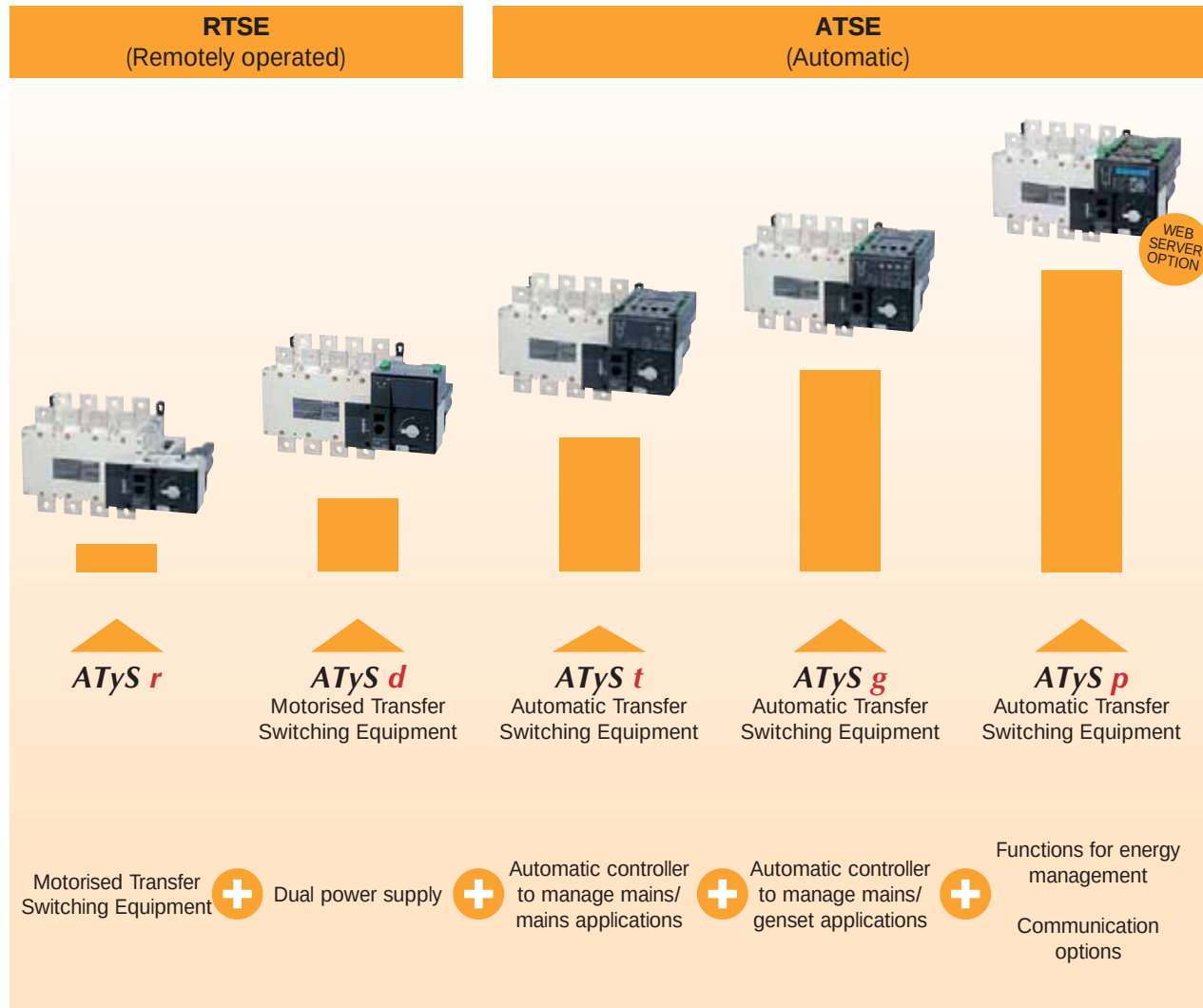


The *ATyS* range: intuitive, reliable and robust solutions

Transfer switches

A complete range of automatic and remotely operated transfer switches from 125 to 3200 A

To meet the increasing demands of its users, the A*TyS* range is constantly evolving to offer new functions. Five product versions are available to find the right solution perfectly adapted to your application.



The ATyS range: intuitive, reliable and robust solutions

The advantages



Safe operation

- Permanent indication of product availability (Watchdog relay).
- Positive break indication.
- Mechanical position interlocking.
- Padlocked mode to secure maintenance operations (lockout).
- Secure access to the product configuration.



Intuitive use

- Manual emergency control:
The product can be controlled quickly and safely using an emergency handle (motor installed or removed).
- User friendly selection of the operating mode (Auto/Manual) using an integrated selector.

Improved on load characteristics

IEC 60947-6-1/GB 14048-11

- AC 31B - up to 3200 A
- AC 32B - up to 2000 A
- AC 33B - up to 1250 A

IEC 60947-3

- AC 23B - up to 1250 A



Robust integrated solution

A single product with all the functions:

- Integrated and tested solution: components factory assembled and wired.
- Greater reliability: compliance with IEC 60947-6-1, the standard governing transfer switches.

Proven SOCOMEC technology:

- Combination of two "back-to-back" (load break switch) PC class switches.
- Switching based on stable positions guaranteeing constant pressure on the contacts at all times.
- SIRCO contact technology used in numerous products for over 40 years.



Rapid commissioning

- ATyS and ATyS d: no configuration required.
- ATyS t and ATyS g: configuration in just a few minutes using a screwdriver.
- ATyS p: simplified configuration (EASY CONFIG software and LCD display on the device).
- ATyS t, g, p: auto-configuration of the network parameters.



Easy maintenance

- Self-cleaning sliding contacts.
- Easy replacement of the motor and the electronic unit, even on-load.

Expert Services

- > Study, definition, advice, implementation, maintenance and training...
- > Our Expert Services team offers customised support to make your project a success.

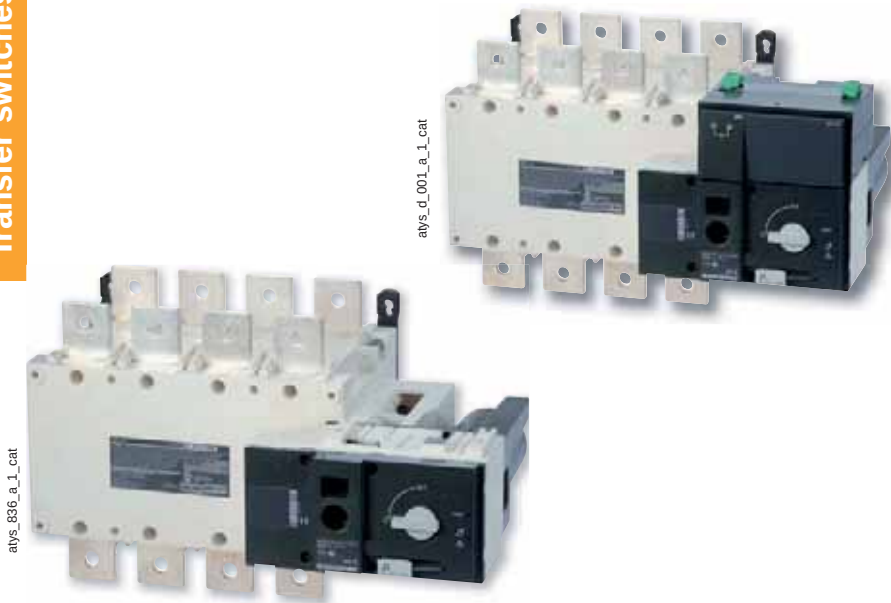




ATyS *r* - ATyS *d*

Remotely operated Transfer Switching Equipment
from 125 to 3200 A

Transfer switches



The solution for

- > Applications with an external ATS/AMF controller
- > Building Management Systems (BMS)



Strong points

- > Watchdog relay to check product availability
- > Integrated auxiliary contacts
- > Extended power supply range
- > ATyS d: integrated dual power supply

Conformity to standards

- > IEC 60947-6-1
- > IEC 60947-3
- > GB 14048.11



External automatic controller

- > The ATyS r and ATyS d are compatible with our ATyS C30 external controllers (for mains/mains and mains/genset applications) and ATyS C40 controllers (for genset/genset applications).

Function

ATyS r and ATyS d are 3 or 4 pole remotely operated motorised transfer switches with positive break indication.

They enable the on-load transfer of two three-phase power supplies via remote volt-free contacts, from either an external automatic controller, using pulse logic, or a switch.

They are intended for use in low voltage power systems where interruption of the load supply is acceptable during transfer.

Advantages

Watchdog relay to check product availability

ATyS r and ATyS d products are equipped with a Watchdog relay which constantly monitors your product, thereby securing the installation.

This relay informs in real time the user of the product's availability, i.e. whether it is operational and ready for source switching.

Integrated auxiliary contacts

As part of the product monitoring function, the ATyS r and ATyS d enable the transmission of information relating to their position. This is possible thanks to the standard integration of an auxiliary contact for each position.

Extended power supply range

ATyS r and ATyS d products offer greater availability thanks to their extensive power supply range of 208 to 277 VAC $\pm$ 20%.

ATyS d: integrated dual power supply

In addition to the functions offered by the ATyS r, the ATyS d incorporates supply redundancy without the need for additional wiring. This is obtained by integrating a double supply (2 independent power supplies) directly within the product.

References

ATyS r - ATyS d

Rating (A) / Frame size	No. of poles	ATyS r	ATyS d	Bridging bars	Terminal shrouds	Terminal screens	Auxiliary contact	3 position padlocking	Auto transformer
125 A / B3	3 P	9523 3012	9533 3012	3 P 4109 3019 4 P 4109 4019	3 P 2694 3014⁽²⁾ 4 P 2694 4014⁽²⁾	3 P 1509 3012 4 P 1509 4012	1599 0502	9599 0003⁽³⁾	400/230 VAC 1599 4064
	4 P	9523 4012	9533 4012						
160 A / B3	3 P	9523 3016	9533 3016						
	4 P	9523 4016	9533 4016						
200 A / B3	3 P	9523 3020	9533 3020						
	4 P	9523 4020	9533 4020						
250 A / B4	3 P	9523 3025	9533 3025	3 P 4109 3025 4 P 4109 4025	3 P 2694 3021⁽²⁾ 4 P 2694 4021⁽²⁾	3 P 1509 3025 4 P 1509 4025			
	4 P	9523 4025	9533 4025						
315 A / B4	3 P	9523 3031	9533 3031	3 P 4109 3039 4 P 4109 4039					
	4 P	9523 4031	9533 4031						
400 A / B4	3 P	9523 3040	9533 3040						
	4 P	9523 4040	9533 4040						
500 A / B5	3 P	9523 3050	9533 3050	3 P 4109 3050 4 P 4109 4050	3 P 2694 3051⁽²⁾ 4 P 2694 4051⁽²⁾	3 P 1509 3063 4 P 1509 4063			
	4 P	9523 4050	9533 4050						
630 A / B5	3 P	9523 3063	9533 3063	3 P 4109 3063 4 P 4109 4063					
	4 P	9523 4063	9533 4063						
800 A / B6	3 P	9523 3080	9533 3080	3 P 4109 3080 4 P 4109 4080	3 P 2694 3080 4 P 2694 4080	3 P 1509 3080 4 P 1509 4080	1599 0532	9599 0004⁽³⁾	
	4 P	9523 4080	9533 4080						
1000 A / B6	3 P	9523 3100	9533 3100						
	4 P	9523 4100	9533 4100						
1250 A / B6	3 P	9523 3120	9533 3120	3 P 4109 3120 4 P 4109 4120					
	4 P	9523 4120	9533 4120						
1600 A / B7	3 P	9523 3160	9533 3160	3 P 4109 3160 4 P 4109 4160					
	4 P	9523 4160	9533 4160						
2000 A / B8	3 P	9523 3200	9533 3200	(1)			3 P 2694 3200 4 P 2694 4200	3 P 1509 3200 4 P 1509 4200	included
	4 P	9523 4200	9533 4200						
2500 A / B8	3 P	9523 3250	9533 3250						
	4 P	9523 4250	9533 4250						
3200 A / B8	3 P	9523 3320	9533 3320						
	4 P	9523 4320	9533 4320						

(1) See "Copper bar connection pieces" page 453.

(2) To fully shroud front, rear, top and bottom 4 references required.
To shroud front switch top and bottom 2 references required.

(3) Factory mounting only.

Technical information

- > Accessories: see page 452.
- > Characteristics: see page 460.
- > Terminals and connections: see page 462.
- > Dimensions: see page 464.



ATyS *t* - ATyS *g*

Automatic transfer switching equipment
from 125 to 3200 A

Transfer switches



The solution for

- > Mains/mains applications (ATyS t)
- > Mains/genset applications (ATyS g)



Strong points

- > Rapid commissioning
- > ATyS d with integrated controller for functions dedicated to mains/mains or mains/genset applications

Conformity to standards

- > IEC 60947-6-1
- > IEC 60947-3
- > GB 14048.11



Function

ATyS t and ATyS g are 3 or 4 pole automatic transfer switches, with positive break indication. They incorporate all the functions offered by the ATyS d, as well as functions intended for mains/mains applications (ATyS t) and mains/genset applications (ATyS g).

In automatic mode they enable the monitoring of, and the onload changeover between, two power supply sources, in accordance with the parameters configured via two potentiometers and four DIP switches.

They are intended for use in low voltage power supply systems where a brief interruption of the load supply is acceptable during transfer.

Advantages

Rapid commissioning

ATyS t and g switches offer significant time saving during commissioning (process takes 2 to 3 minutes). Owing to the design that allows commissioning through just two potentiometers (4 on the ATyS g) and four DIP switches, a screwdriver is all that is required to configure the parameters.

For added simplicity, they also offer an autoconfiguration function which enables automatic adjustment of the rated voltage and frequency.

ATyS t: specifically designed for mains/mains applications

The ATyS t's integrated controller has been designed to provide only the functions required for these applications (operation with or without priority, preferred source selection) together with the monitoring of the voltage and frequency of both sources, for three-phase and single-phase networks.

ATyS g: specifically designed for mains/genset applications

The ATyS g's integrated controller has been designed to provide specific functions for these applications (genset startup, on-load or off-load tests...) together with the monitoring of the voltage and frequency of both sources for three-phase and single-phase networks.

The generator supply must be connected to switch II, located at the rear.

References

ATyS t - ATyS g

Rating (A) / Frame size	No. of poles	ATyS t	ATyS g	Bridging bars	Voltage sensing and power supply tap	Terminal shrouds	Terminal screens	Auxiliary contact		
125 A / B3	3 P	9543 3012	9553 3012	3 P 4109 3019 4 P 4109 4019	3 P 1559 3012 4 P 1559 4012⁽¹⁾	3 P 2694 3014⁽²⁾ 4 P 2694 4014⁽²⁾	3 P 1509 3012 4 P 1509 4012	1599 0502		
	4 P	9543 4012	9553 4012							
160 A / B3	3 P	9543 3016	9553 3016							
	4 P	9543 4016	9553 4016							
200 A / B3	3 P	9543 3020	9553 3020							
	4 P	9543 4020	9553 4020							
250 A / B4	3 P	9543 3025	9553 3025	3 P 4109 3025 4 P 4109 4025	3 P 1559 3025 4 P 1559 4025	3 P 2694 3021⁽²⁾ 4 P 2694 4021⁽²⁾	3 P 1509 3025 4 P 1509 4025			
	4 P	9543 4025	9553 4025							
315 A / B4	3 P	9543 3031	9553 3031	3 P 4109 3039 4 P 4109 4039	3 P 1559 4025 4 P 1559 4040	3 P 2694 3021⁽²⁾ 4 P 2694 4021⁽²⁾	3 P 1509 3025 4 P 1509 4025			
	4 P	9543 4031	9553 4031							
400 A / B4	3 P	9543 3040	9553 3040	4 P 4109 4039	3 P 1559 3040 4 P 1559 4040					
	4 P	9543 4040	9553 4040							
500 A / B5	3 P	9543 3050	9553 3050	3 P 4109 3050 4 P 4109 4050	3 P 1559 3063 4 P 1559 4063	3 P 2694 3051⁽²⁾ 4 P 2694 4051⁽²⁾	3 P 1509 3063 4 P 1509 4063			
	4 P	9543 4050	9553 4050							
630 A / B5	3 P	9543 3063	9553 3063	3 P 4109 3063 4 P 4109 4063						
	4 P	9543 4063	9553 4063							
800 A / B6	3 P	9543 3080	9553 3080	3 P 4109 3080 4 P 4109 4080	3 P 1559 3080 4 P 1559 4080	3 P 1509 3080 4 P 1509 4080				
	4 P	9543 4080	9553 4080							
1000 A / B6	3 P	9543 3100	9553 3100	4 P 4109 4080						
	4 P	9543 4100	9553 4100							
1250 A / B6	3 P	9543 3120	9553 3120	3 P 4109 3120 4 P 4109 4120	3 P 1559 3120 4 P 1559 4120					
	4 P	9543 4120	9553 4120							
1600 A / B7	3 P	9543 3160	9553 3160	3 P 4109 3160 4 P 4109 4160	3 P 1559 3160 4 P 1559 4160	3 P 1509 3160 4 P 1509 4160	1599 0532			
	4 P	9543 4160	9553 4160							
2000 A / B8	3 P	9543 3200	9553 3200	(1)	3 P 1559 3200 4 P 1559 4200	3 P 1509 3200 4 P 1509 4200		d'origine		
	4 P	9543 4200	9553 4200							
2500 A / B8	3 P	9543 3250	9553 3250							
	4 P	9543 4250	9553 4250							
3200 A / B8	3 P	9543 3320	9553 3320							
	4 P	9543 4320	9553 4320							

(1) See "Copper bar connection pieces" page 453.

(2) To fully shroud front, rear, top and bottom 4 references required.
To shroud front switch top and bottom 2 references required.

Technical information

- > Accessories: see page 452.
- > Characteristics: see page 460.
- > Terminals and connections: see page 462.
- > Dimensions: see page 464.



ATyS *p*

Automatic Transfer Switching Equipment
from 125 to 3200 A

Transfer switches

atyS-p_001_b



The solution for

- > Applications requiring power management and communication.



Strong points

- > Optional communication modules
- > Recording of events
- > Configuration software
- > Power measurements
- > Possibility to set periodic genset startup

Conformity to standards

- > IEC 60947-6-1
- > IEC 60947-3
- > GB 14048.11



Webserver

The Webserver function comprises HTML pages embedded in the Ethernet communication module.

These pages can be accessed via an internet browser, simply by entering the IP address.

The webserver offers the following functionalities:

- > Display of source status and switch position
- > Display of the main measurements
- > Extraction of the latest logged events
- > Display of the product configuration

Function

ATyS p are 3 or 4 pole automatic transfer switches with positive break indication. They incorporate all the functions offered by the ATyS t and g, as well as functions designed for power management and communication.

In automatic mode they enable the monitoring of, and the on-load changeover between, two power supply sources, in accordance with the parameters configured through LCD display, or via communication.

They are intended for use in low voltage power supply systems where a brief interruption of the load supply is acceptable during transfer.

Advantages

Recording of events

ATyS p switches enable effective monitoring of your installation thanks to timestamped event recording.

Events can be retrieved and read via communication.

Optional communication modules

The ATyS p offers communication functions through the addition of optional modules, such as RS485 Modbus or Ethernet with embedded Webserver.

Configuration software

Software (Easyconfig) is available enabling the ATyS p parameters to be easily configured and the existing configuration to be saved and sent to other units.

Power measurements

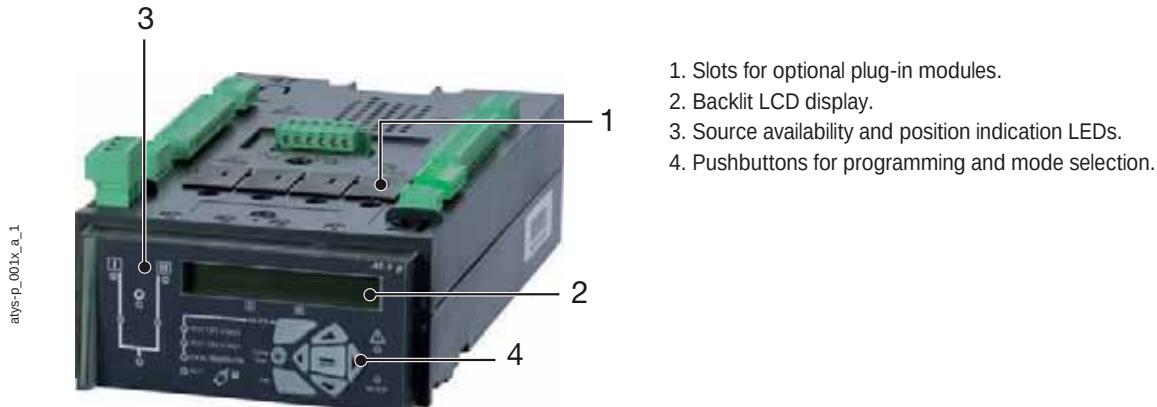
ATyS p products are particularly suited to energy management and monitoring.

In addition to their integrated power and energy measurement functions (with a 2% accuracy level), programmable inputs/outputs can be utilised to control load shedding based on a load level or tariff.

Possibility to set periodic genset startup

ATyS p switches offer additional functions for maintenance. They include a programmable genset starting function which allows the starting dates and operating times to be configured.

Front panel



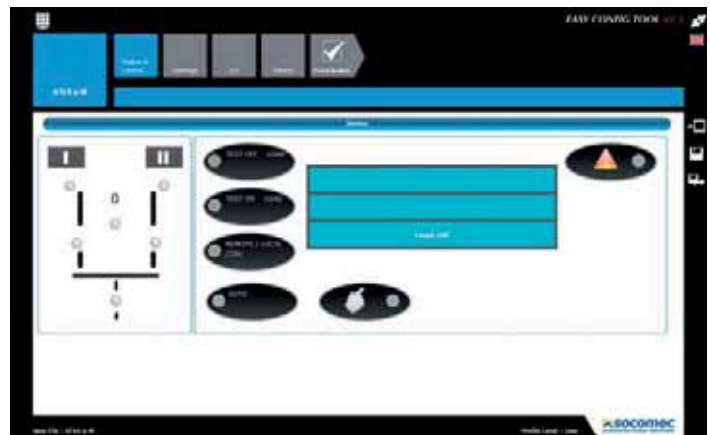
Communication and configuration

Easyconfig

Easyconfig software is the ideal solution to save time and simplify complex configuration.

Allows configuration of the following parameters:

- application type,
- voltage/frequency thresholds,
- timers,
- inputs/outputs...



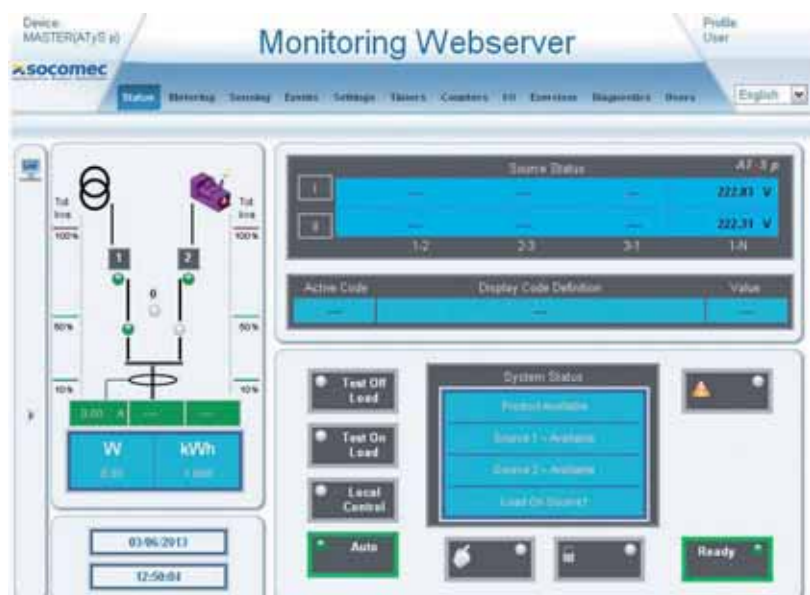
Webserver

Thanks to optional modules, ATyS p can communicate in Modbus and Ethernet protocols.

The Ethernet communication module includes the Webserver function for access to the ATySp via an internet browser.

The Webserver function enables:

- display of source status and switch position,
- display of voltage measurements,
- display of parameters,
- access to the list of logged events.



References

ATyS p

Rating (A) / Frame size	No. of poles	ATyS p	Bridging bars	Voltage sensing and power supply tap	Terminal shrouds	Terminal screens	Optional modules	Auxiliary contact
125 A / B3	3 P	9573 3012	3 P 4109 3019 4 P 4109 4019	3 P 1559 3012 4 P 1559 4012	3 P 2694 3014 ⁽²⁾ 4 P 2694 4014 ⁽²⁾	3 P 1509 3012 4 P 1509 4012	RS485 MODBUS communication 4825 0092 2 inputs / 2 outputs 1599 2001 Ethernet communication 4825 0203 Ethernet communication + RS485 MODBUS gateway 4825 0204 Analogue outputs 4825 0093 Pulse outputs 4825 0090	1599 0502
	4 P	9573 4012						
160 A / B3	3 P	9573 3016						
	4 P	9573 4016						
200 A / B3	3 P	9573 3020						
	4 P	9573 4020						
250 A / B4	3 P	9573 3025	4109 3025	3 P 1559 3025 4 P 1559 4025	3 P 2694 3021 ⁽²⁾ 4 P 2694 4021 ⁽²⁾	3 P 1509 3025 4 P 1509 4025		
	4 P	9573 4025	4109 4025					
315 A / B4	3 P	9573 3031	3 P 4109 3039 4 P 4109 4039					3 P 1559 3040 4 P 1559 4040
	4 P	9573 4031						
400 A / B4	3 P	9573 3040						
	4 P	9573 4040						
500 A / B5	3 P	9573 3050	4109 3050	3 P 1559 3063 4 P 1559 4063	3 P 2694 3051 ⁽²⁾ 4 P 2694 4051 ⁽²⁾	3 P 1509 3063 4 P 1509 4063		
	4 P	9573 4050	4109 4050					
630 A / B5	3 P	9573 3063	4109 3063					
	4 P	9573 4063	4109 4063					
800 A / B6	3 P	9573 3080	3 P 4109 3080 4 P 4109 4080	3 P 1559 3080 4 P 1559 4080		3 P 1509 3080 4 P 1509 4080	1599 0532	
	4 P	9573 4080						
1000 A / B6	3 P	9573 3100						
	4 P	9573 4100						
1250 A / B6	3 P	9573 3120	4109 3120	3 P 1559 3120 4 P 1559 4120		1509 3160		
	4 P	9573 4120	4109 4120					
1600 A / B7	3 P	9573 3160	4109 3160	3 P 1559 3160 4 P 1559 4160		1509 4160		
	4 P	9573 4160	4109 4160					
2000 A / B8	3 P	9573 3200	(1)	3 P 1559 3200 4 P 1559 4200		3 P 1509 3200 4 P 1509 4200	included	
	4 P	9573 4200						
2500 A / B8	3 P	9573 3250						
	4 P	9573 4250						
3200 A / B8	3 P	9573 3320						
	4 P	9573 4320						

(1) See "Copper bar connection pieces" page 453.

(2) To fully shroud front, rear, top and bottom 4 references required.

To shroud front switch top and bottom 2 references required.

ATyS p

Rating (A) / Frame size	No. of poles	ATyS p	DC power supply	3 position padlocking	Key handle interlocking system	Door protective surround	Mounting spacers	Remote control interface
125 A / B3	3 P	9573 3012	12 VDC/230 VAC 1599 5012 24 VDC/230 VAC 1599 5112 48 VDC/230 VAC 1599 5212	9599 0003⁽¹⁾	Using lock RONIS EL11AP in position 0 9599 1006⁽¹⁾	1539 0012	1 set of 2 spacers 1509 0001	D20 9599 2020 + RJ45 cable connection 1599 2009
	4 P	9573 4012						
160 A / B3	3 P	9573 3016						
	4 P	9573 4016						
200 A / B3	3 P	9573 3020						
	4 P	9573 4020						
250 A / B4	3 P	9573 3025						
	4 P	9573 4025						
315 A / B4	3 P	9573 3031						
	4 P	9573 4031						
400 A / B4	3 P	9573 3040						
	4 P	9573 4040						
500 A / B5	3 P	9573 3050						
	4 P	9573 4050						
630 A / B5	3 P	9573 3063						
	4 P	9573 4063						
800 A / B6	3 P	9573 3080						
	4 P	9573 4080						
1000 A / B6	3 P	9573 3100						
	4 P	9573 4100						
1250 A / B6	3 P	9573 3120						
	4 P	9573 4120						
1600 A / B7	3 P	9573 3160						
	4 P	9573 4160						
2000 A / B8	3 P	9573 3200						
	4 P	9573 4200						
2500 A / B8	3 P	9573 3250						
	4 P	9573 4250						
3200 A / B8	3 P	9573 3320						
	4 P	9573 4320						
				9599 0004⁽¹⁾	Using lock RONIS EL11AP in position 0 9599 1004⁽¹⁾	1539 0080		

(1) Factory mounting only.



ATyS range

ATyS *r*, ATyS *d*, ATyS *t*, ATyS *g*, ATyS *p*
from 125 to 3200 A

Accessories

Terminal shrouds

Use

IP2X protection against direct contact with terminals or connecting parts.

Advantages

Perforations allow remote thermographic inspection without the need to remove the shrouds.

Rating (A)	Frame size	No. of poles	Position	Reference
125 ... 200	B3	3 P	top / bottom / front (I) / rear (II)	2694 3014 ⁽¹⁾⁽²⁾
125 ... 200	B3	4 P	top / bottom / front (I) / rear (II)	2694 4014 ⁽¹⁾⁽²⁾
250 ... 400	B4	3 P	top / bottom / front (I) / rear (II)	2694 3021 ⁽¹⁾⁽²⁾
250 ... 400	B4	4 P	top / bottom / front (I) / rear (II)	2694 4021 ⁽¹⁾⁽²⁾
500 ... 630	B5	3 P	top / bottom / front (I) / rear (II)	2694 3051 ⁽¹⁾⁽²⁾
500 ... 630	B5	4 P	top / bottom / front (I) / rear (II)	2694 4051 ⁽¹⁾⁽²⁾

(1) For complete shrouding at front, rear, top and bottom, order quantity 4; if equipped with bridging bars order quantity 3.
(2) For top and bottom shrouding for the front only, order quantity 2.



acces_206_a_2_cat

Terminal screens

Use

Upstream and downstream protection against direct contact with terminals or connection parts.

For upstream and downstream protection, order quantity 1.

Rating (A)	Frame size	No. of poles	Position	Reference
125 ... 200	B3	3 P	top / bottom	1509 3012
125 ... 200	B3	4 P	top / bottom	1509 4012
250 ... 400	B4	3 P	top / bottom	1509 3025
250 ... 400	B4	4 P	top / bottom	1509 4025
500 ... 630	B5	3 P	top / bottom	1509 3063
500 ... 630	B5	4 P	top / bottom	1509 4063
800 ... 1250	B6	3 P	top / bottom	1509 3080
800 ... 1250	B6	4 P	top / bottom	1509 4080
1600	B7	3 P	top / bottom	1509 3160
1600	B7	4 P	top / bottom	1509 4160
2000 ... 3200	B8	3 P	top / bottom	1509 3200
2000 ... 3200	B8	4 P	top / bottom	1509 4200



acces_207_a_2_cat

Bridging bars

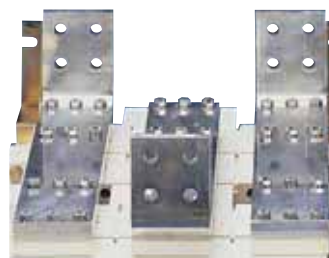
Use

For bridging power terminals on the upstream or downstream side of the switch.
One reference required per ATyS.

Rating (A)	Frame size	No. of poles	Section (mm)	Reference
125 ... 200	B3	3 P	20 x 2.5	4109 3019
125 ... 200	B3	4 P	20 x 2.5	4109 4019
250	B4	3 P	25 x 2.5	4109 3025
250	B4	4 P	25 x 2.5	4109 4025
315 ... 400	B4	3 P	32 x 5	4109 3039
315 ... 400	B4	4 P	32 x 5	4109 4039
500	B5	3 P	32 x 5	4109 3050
500	B5	4 P	32 x 5	4109 4050
630	B5	3 P	50 x 5	4109 3063
630	B5	4 P	50 x 5	4109 4063
800 ... 1000	B6	3 P	50 x 6	4109 3080
800 ... 1000	B6	4 P	50 x 6	4109 4080
1250	B6	3 P	60 x 8	4109 3120
1250	B6	4 P	60 x 8	4109 4120
1600	B7	3 P	90 x 10	4109 3160
1600	B7	4 P	90 x 10	4109 4160



acces_205_a_2_cat



acces_041_a_1_cat

Copper bar connection pieces

Use

For ratings 2000 to 3200 A.

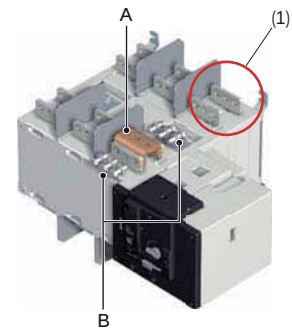
Enables:

- Flat connection: the connection pieces provide a link between the two power terminals of the same pole (Fig. 1).
- Edgewise connection: the connection pieces provide a link between the two power terminals of the same pole and an edgewise bar connection terminal.
- Top or bottom bridging between two poles (Fig. 3).

Once installed, the power terminal is connection ready.

For 3200 A rating, connection pieces (part A) are supplied as standard. Bolt sets must be ordered separately.

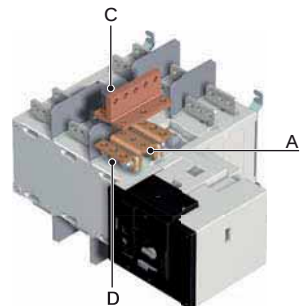
Fig. 1



access_459_a_1_x_cat

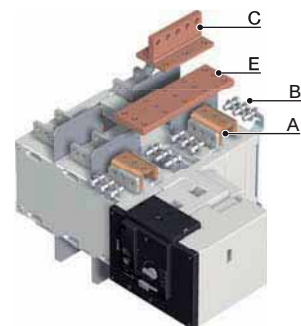
(1) Single pole connection: 1 pole (top or bottom) comprises two power terminals which are to be linked with the copper connection kit.

Fig. 2



access_460_a_1_x_cat

Fig. 3



access_461_a_1_x_cat

	Reference	2000 – 2500 A			3200 A		
		Fig. 1	Fig. 2	Fig. 3	Fig. 1	Fig. 2	Fig. 3
		Connection	Bridging connection I - II		Connection	Bridging connection I - II	
Connection - part A	2619 1200	1	1	2 ⁽²⁾	included	included	included
Bolt kit 35 mm - part B	2699 1201	1 ⁽¹⁾		2 ⁽²⁾	1 ⁽¹⁾		2 ⁽²⁾
Bolt kit 45 mm - part B	2699 1200	1 ⁽¹⁾			1 ⁽¹⁾		
T + Bolt kit - part C	2629 1200		1	1		1	1
Bracket + bolt kit - part D	2639 1200		1			1	
Bar + bolt kit - part E	4109 0320			1			1

(1) Choose the bolt length according to the thickness of the bars being connected; if bar thickness is greater than 20 mm, 45 mm bolts are required.

(2) For bridging connections, quantity 2 pieces are required for creating the link between the two power terminals of the same pole for switch bodies I and II.

The quantities of the applicable pieces then need to be multiplied by the number of connection points (power terminals) in order to determine the total quantity required of each part.

Example: For a 4 pole 2500 A SIRCOVER with upstream edgewise connection (Fig. 2) and downstream bridging (Fig. 3), the following quantities will be required:

Part	Upstream edgewise quantity	Downstream bridging quantity	Total quantity
A	8	8	16
B	0	8	8
C	8	4	12
D	8	0	8
E	0	4	4

Solid neutral

Use

The solid neutral kit provides connection between the incoming and outgoing neutrals with no disconnection during transfer.

Rating (A)	Frame size	Reference
125 ... 200	B3	9509 0012
200 ... 315	B4	9509 0025
400	B4	9509 0040
500 ... 630	B5	9509 0063
800 ... 1000	B6	9509 0080
1250	B6	9509 0120
1600	B7	9509 0160

ATyS range

ATyS *r*, ATyS *d*, ATyS *t*, ATyS *g*, ATyS *p*

from 125 to 3200 A

Accessories (continued)

Autotransformer

Use

For applications without neutral, this autotransformer provides the 230 VAC required to power these ATyS products.

Rating (A)	Frame size	Reference
125 ... 3200	B3 ... B8	1599 4064

DC power supply

Use

Allows an ATyS to be supplied from a 12 or 24 VDC source. To be positioned as close as possible to the DC power supply source.

Rating (A)	Frame size	Operating voltage	Reference
125 ... 1600	B3 ... B7	12 VDC / 230 VAC	1599 5012
125 ... 1600	B3 ... B7	24 VDC / 230 VAC	1599 5112
125 ... 1600	B3 ... B7	48 VDC / 230 VAC	1599 5212

Voltage tapping and power supply kit

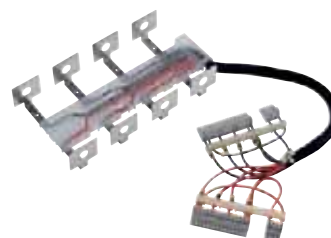
Use

For power supply and voltage measurement (4 wire, three-phase) for the ATyS *t*, *g* and *p*. Routing of the conductors is controlled, which means that no specific protective device is necessary for these connections.

The kit can be fitted on the top or bottom of the switch.

Note: the 3-pole version does not integrate the power supply.

125 to 630 A kit



atys_606_a_1_cat

800 to 3200 A kit



atys_603_a_2_cat

For ATyS *t*, *g* and ATyS *p* - 3 pole

Rating (A)	Frame size	Reference
125 ... 200	B3	1559 3012
250	B4	1559 3025
315 ... 400	B4	1559 3040
500 ... 630	B5	1559 3063
800 ... 1000	B6	1559 3080
1250	B6	1559 3120
1600	B7	1559 3160
2000 ... 3200	B8	1559 3200

For ATyS *t*, *g* and ATyS *p* - 4 pole

Rating (A)	Frame size	Reference
125 ... 200	B3	1559 4012
250	B4	1559 4025
315 ... 400	B4	1559 4040
500 ... 630	B5	1559 4063
800 ... 1000	B6	1559 4080
1250	B6	1559 4120
1600	B7	1559 4160
2000 ... 3200	B8	1559 4200

Voltage relay

Use

The DS is a voltage relay for monitoring a single power supply.

If it detects a fault in the source, the default relay contact closes.

Rating (A)	Reference
DS	192X 0056



atys_762_a_1_cat

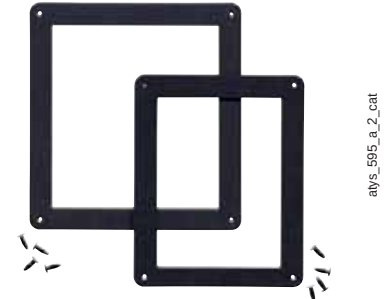
Door protective surround

Use

Door surround to provide a clean and safe finish to the panel's cut-out.

For ATyS		
Rating (A)	Frame size	Reference
125 ... 630	B3 ... B5	1529 0012
800 ... 3200	B6 ... B8	1529 0080

For ATyS d, t, g and p		
Rating (A)	Frame size	Reference
125 ... 630	B3 ... B5	1539 0012
800 ... 3200	B6 ... B8	1539 0080



atys_595_a_2_cat

Auxiliary contact

Use

Pre-break and signalling of positions I and II: each reference provides 1 NO/NC auxiliary contact for positions I and II. Possibility to install up to 2 auxiliary contacts for each position.

Low level AC: contact us. ATyS are supplied with 1 NO aux contact for all three positions as standard.

Rating (A)	Frame size	Nominal current (A)	Operating current I _e (A)			
			250 VAC AC-13	400 VAC AC-13	24 VDC DC-13	48 VDC DC-13
125 ... 3200	B3 ... B8	16	12	8	14	6

Rating (A)	Frame size	Type of mounting	Reference
125 ... 630	B3 ... B5	Customer fit	1599 0502
800 ... 1600	B6 ... B7	Customer fit	1599 0532
2000 ... 3200	B8	-	2 AC per position fitted as standard



800 to 1600 A

access_396_a

If additional auxiliary contacts are required please consult us.



125 to 630 A

access_397_a

Mounting spacers

Use

Increases the distance between the rear power terminals and the backplate by 1 cm.

This accessory may also be used to replace the original mounting spacers.

Rating (A)	Frame size	Description of accessories	Reference
125 ... 630	B3 ... B5	1 set of 2 spacers	1509 0001



atys_009_a_2_cat

3 position padlocking (I - 0 - II)

Use

Enables the product to be padlocked in positions 0, I and II (factory fitted).

Rating (A)	Frame size	Reference
125 ... 630	B3 ... B5	9599 0003
800 ... 3200	B6 ... B8	9599 0004



atys_867_a

Key handle interlocking system

Use

With the product in manual mode, it enables locking in position 0 using a RONIS EL11AP lock (factory fitted).

As standard, locking in position 0.
 With the 3 position padlocking accessory: key interlocking in I, 0 & II.

Rating (A)	Frame size	Reference
125 ... 630	B3 ... B5	9599 1006
800 ... 3200	B6 ... B8	9599 1004



atys_868_a

ATyS range

ATyS *r*, ATyS *d*, ATyS *t*, ATyS *g*, ATyS *p*

from 125 to 3200 A

Accessories (continued)

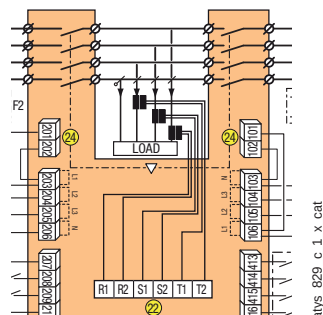
Current transformer

Use - for ATyS p only

Used with ATyS p units, these current transformers enable information to be obtained on the load current.

References

See page 584.



trafo_025_a_2_cat



trafo_077_b_1_cat

Plug-in optional modules

Use - for ATyS p only

Number of modules per device

A maximum of four modules can be fitted to each ATyS p, unless you are using either Ethernet communication module. In this case, you can connect up to 2 modules as well as the Ethernet communication module.



atys_016_c_1_cat



diris_447_a_1_cat

RS485 JBUS / MODBUS® communication

- RS485 link with JBUS / MODBUS® protocol (speed up to 38400 bauds).



diris_449_a_1_cat

2 inputs - 2 outputs

- 2 inputs and 2 outputs (programmable) on each module.



diris_777_a_1_cat

Ethernet communication

- Ethernet link with MODBUS/TCP or JBUS/MODBUS RTU over TCP.
- Embedded Ethernet Webserver software.



diris_776_a_1_cat

Ethernet communication with RS485 JBUS/MODBUS gateway

- Ethernet link with MODBUS/TCP or JBUS/MODBUS RTU over TCP.
- Connect 1 to 247 RS485 JBUS/MODBUS slaves.
- Embedded Ethernet Webserver software.



diris_448_a_1_cat

Analogue outputs

- Allocate outputs to: 3I, In, 3V, 3U, F, $\pm \Sigma P$, $\pm \Sigma Q$, ΣS .



diris_445_a_1_cat

Pulse outputs

- 2 configurable pulse outputs (type, weight and duration) on $\pm kWh$, $\pm kvarh$ and $kVAh$.

Description of accessories	Reference
RS485 MODBUS communication	4825 0092
2 inputs - 2 outputs	1599 2001
Ethernet communication (embedded Ethernet Webserver software)	4825 0203
Ethernet communication + RS485 JBUS/MODBUS gateway (embedded Ethernet Webserver software)	4825 0204
Analogue outputs	4825 0093
Pulse outputs	4825 0090

Remote interfaces

Use

To remotely display source availability and position indication typically used on the front of a panel when the product is enclosed. Interfaces are powered from the ATyS transfer switch via the RJ45 connection cable.

Maximum cable length: 3 m.

D10 - for ATyS d, ATyS t and ATyS g

To display source availability and position indication on the front panel of an enclosure. Protection degree: IP21

D20 - for ATyS p

In addition to the functions of the D10, the D20 displays measurements and enables control and configuration from the front of a panel.

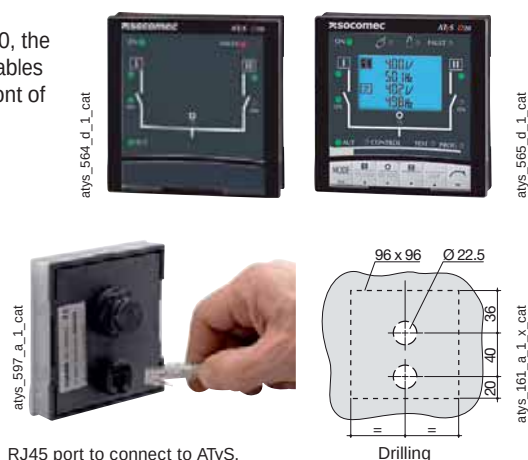
Protection degree: IP21

Door mounting

2 holes Ø 22.5.

ATyS transfer switch via RJ45 cable, not isolated. Cable available as an accessory.

Description of accessories	Reference
D10	9599 2010
D20	9599 2020



RJ45 port to connect to ATyS.

Connecting cable for remote interfaces

Use

To connect between a remote interface (type D10 or D20) and a control product (ATyS d, t, g or p).

Characteristics

RJ45 8 straight-through, non insulated cables, length 3 m.

For ATyS d, t, g and p		
Type	Length	Reference
RJ45 cable	3 m	1599 2009



Sealable cover

Use - for ATyS t and g

Prevents access to the configuration of ATyS t and g devices (seals supplied).

Rating (A)	Frame size	Reference
125 ... 3200	B3 ... B8	9599 0000



Auto/Manual key selector

Use

Replaces the standard Auto/Manual selector knob with a key selector.

Rating (A)	Frame size	Reference
125 ... 3200	B3 ... B8	9599 1007



Double power supply - DPS

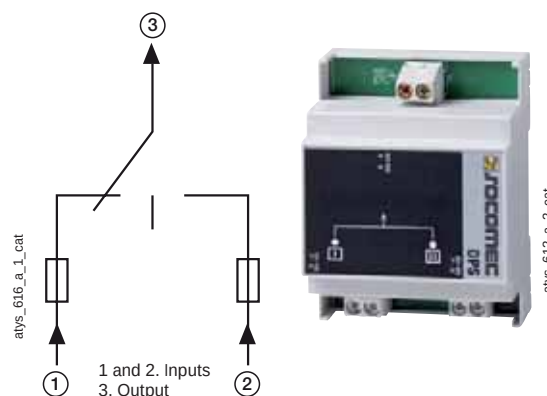
Use

Allows an ATyS r to be supplied by two 230 VAC, 50/60 Hz networks.

Input

- The input is considered "active" from 200 VAC.
- Maximum voltage: 288 VAC.
- Internal protection: each input is fuse protected (3.15 A).
- Connection on terminals: max. 6 mm².
- Modular device: 4 module width.

Description of accessories	Reference
DPS	1599 4001



ATyS range

ATyS *r*, ATyS *d*, ATyS *t*, ATyS *g*, ATyS *p*

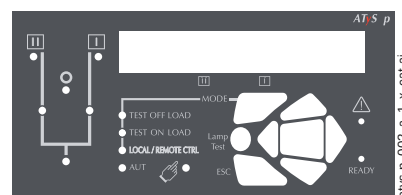
from 125 to 3200 A

Spares

ATyS p front panel

This front panel is used, for the ATyS p only, if source 2 is connected to unit I and source 1 is connected to unit II. Positions I and II are reversed on the front panel.

Product model	Reference
ATyS p	9599 1008



atys-p_002_a_1_x_cat.ai

Electronic module

The electrical components of the ATyS d, t, g and p are easy to replace in case there is a problem, even when on-load.

Product model	Reference
ATyS d	9539 2001
ATyS t	9549 2001
ATyS g	9559 2001
ATyS p	9579 2001



atys-p_001_b

Motorisation module

The motor units of the ATyS r, d, t, g and p are easy to replace in case there is a problem, even when on-load.

Rating (A)	Reference
125 ... 200	9509 5020
250 ... 400	9509 5040
500 ... 630	9509 5063
800 ... 1250	9509 5120
1600	9509 5160
2000 ... 3200	9509 5320



atys_371_a

Switching module

If you need to replace just the switching part on an ATyS r, d, t, g or p, order SIRCOVER items. Please refer to page 396.



svr_151_a

Enclosed solutions

General characteristics

ATyS d and ATyS p

- Adapted to mechanical risk and dust hazard.
- IP rating: IP54.
- Colour: RAL 7035.
- Connecting the cables: upstream or downstream up to 250 A then downstream only.
- The auxiliary contacts are wired to terminal blocks.
- Material: 2 mm-thick XC steel.
- Coating: epoxy varnish.
- Mounting: 4 wall mounting brackets, not mounted ≤ 400 A, floor standing feet > 630 A
- Door: solid with hinges.
- Door lock: 3 mm double-bar lock (key included)

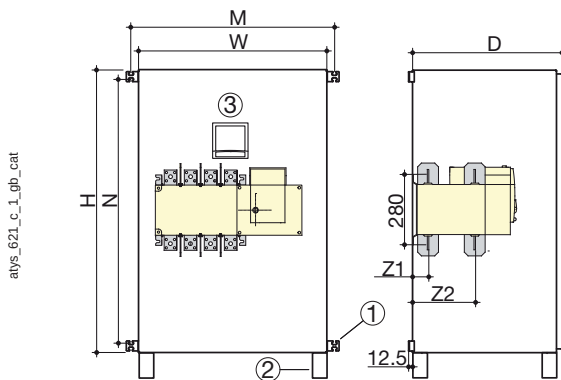
References

Rating (A)	No. of poles	ATyS d Reference	ATyS p Reference
125	4 P	1723 4012	1763 4012
160	4 P	1723 4016	1763 4016
250	4 P	1723 4025	1763 4025
400	4 P	1723 4040	1763 4040
630	4 P	1723 4063	1763 4063
800	4 P	1723 4080	1763 4080
1000	4 P	1723 4100	1763 4100
1250	4 P	1723 4120	1763 4120
1600	4 P	1723 4160	1763 4160
2000	4 P	1723 4200	1763 4200
2500	4 P	1723 4250	1763 4250
3200	4 P	1723 4320	1763 4320



coff_306_b_1

Dimensions



- (1) Wall mounting brackets supplied up to 400 A.
 (2) Floor standing feet from 630 A (add 200 mm for to H dimension feet).
 (3) D10 or D20 interfaces (optional).

Rating (A)	Max. Cu cable cross-section (mm ²)	H (mm)	W (mm)	D (mm)	M (mm)	N (mm)	Z1 (mm)	Z2 (mm)	Weight (kg)
125	50	650	400	300	448	608	38	134	25
160	70	650	400	300	448	608	38	134	25
250	120	1000	650	475	698	958	39.5	134.5	45
400	240	1000	650	475	698	958	39.5	134.5	50
630	2 x 185	1000	650	475			53	190	70
800	2 x 240	1200	800	660			66.5	253.5	135
1000	4 x 150	1200	800	660			66.5	253.5	140
1250	4 x 185	1600	1000	830			66.5	253.5	270
1600	4 x 240	1600	1000	830			67.5	253.5	375
2000	8 x 150	2000	1000	1000					400
2500	8 x 185	2000	1000	1000					400
3200	8 x 240	2000	1000	1000					400

ATyS range

ATyS *r*, ATyS *d*, ATyS *t*, ATyS *g*, ATyS *p*

from 125 to 3200 A

Characteristics according to IEC 60947-3 and IEC 60947-6-1

125 to 630 A

Thermal current I_{th} to 40°C	125 A	160 A	200 A	250 A	315 A	400 A	500 A	630 A
Frame size	B3	B3	B3	B4	B4	B4	B5	B5
Rated insulation voltage U_i (V) (power circuit)	800	800	800	1000	1000	1000	1000	1000
Rated impulse withstand voltage U_{imp} (kV) (power circuit)	8	8	8	12	12	12	12	12
Rated insulation voltage U_i (V) (control circuit)	300	300	300	300	300	300	300	300
Rated impulse withstand voltage U_{imp} (kV) (control circuit)	4	4	4	4	4	4	4	4

Rated operational currents I_e (A) according to IEC 60947-3

Rated voltage	Utilisation category	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾
415 VAC	AC-21 A / AC-21 B	125/125	160/160	200/200	250/250	315/315	400/400	500/500	630/630
415 VAC	AC-22 A / AC-22 B	125/125	160/160	200/200	250/250	315/315	400/400	500/500	630/630
415 VAC	AC-23 A / AC-23 B	125/125	160/160	200/200	200/200	315/315	400/400	500/500	500 / 630
500 VAC	AC-21 A / AC-21 B	125/125	160/160	200/200	250/250	315/315	400/400	500/500	630/630
500 VAC	AC-22 A / AC-22 B	125/125	160/160	200/200	200/250	200/315	200/400	500/500	500/500
500 VAC	AC-23 A / AC-23 B	80/80	80/80	80/80	200/200	200/200	200/200	400/400	400/400
690 VAC ⁽³⁾	AC-21 A / AC-21 B	125/125	160/160	200/200	200/200	200/200	200/200	500/500	500/500
690 VAC ⁽³⁾	AC-22 A / AC-22 B	125/125	125/125	125/125	160/160	160/160	160/160	400/400	400/400
690 VAC ⁽³⁾	AC-23 A / AC-23 B	63/80	63/80	63/80	125/125	125/125	125/125	400/400	400/400
220 VDC	DC-21 A / DC-21 B	125/125	160/160	200/200	250/250	250/250	250/250	500/500	630/630
220 VDC	DC-22 A / DC-22 B	125/125	160/160	200/200	250/250	250/250	250/250	500/500	630/630
220 VDC	DC-23 A / DC-23 B	125/125	125/125	125/125	200/200	200/200	200/200	500/500	630/630
440 VDC ⁽²⁾	DC-21 A / DC-21 B	125/125	125/125	125/125	200/200	200/200	200/200	500/500	630/630
440 VDC ⁽²⁾	DC-22 A / DC-22 B	125/125	125/125	125/125	200/200	200/200	200/200	500/500	630/630
440 VDC ⁽²⁾	DC-23 A / DC-23 B	125/125	125/125	125/125	200/200	200/200	200/200	500/500	630/630

Rated operational currents I_e (A) according to IEC 60947-6-1

Rated voltage	Utilisation category								
415 VAC	AC-31 B	125	160	200	250	315	400	500	630
415 VAC	AC-32 B				200	315	400	500	500
415 VAC	AC-33 B				200	200	200	400	400

Current rated as conditional short-circuit with fuse gG DIN, according to IEC 60947-3

Prospective fuse protected short-circuit withstand at 415 VAC(6)	100	100	50	50	50	50	50	50	50
Prospective fuse protected short-circuit withstand at 690 VAC(kA rms)				50	50	50	50	50	50
Associated fuse rating (A)	125	160	200	250	315	400	500	630	630

Short-circuit withstand without protection as per IEC 60947-3

Rated short-time withstand current 0.3s I_{cw} at 415 VAC (kA rms)	12	12	12	15 ⁽⁴⁾	15 ⁽⁴⁾	15 ⁽⁴⁾	17 ⁽⁴⁾	17 ⁽⁴⁾	17 ⁽⁴⁾
Rated short-time withstand current 1s I_{cw} at 415 VAC (kA rms)	7	7	7	8 ⁽⁴⁾	8 ⁽⁴⁾	8 ⁽⁴⁾	11 ⁽⁴⁾	10 ⁽⁴⁾	10 ⁽⁴⁾
Rated peak withstand current at 415 VAC (kA peak)	20	20	20	30	30	30	45	45	45

Short-circuit withstand without protection as per IEC 60947-6-1

Rated short-time withstand current 30 ms I_{cw} at 415 VAC (kA rms)	10	10	10	10	10	10			
Rated short-time withstand current 60 ms I_{cw} at 415 VAC (kA rms)							10	12.6	

Connection

Minimum Cu cable cross-section as per IEC 60947-1 (mm²)	35	35	50	95	120	185	2 x 95	2 x 120	
Recommended Cu busbar cross-section (mm²)							2 x 32 x 5	2 x 40 x 5	
Maximum Cu cable cross-section (mm²)	50	95	120	150	240	240	2 x 185	2 x 300	
Maximum Cu busbar width (mm)	25	25	25	32	32	32	50	50	
Min./max. tightening torque (Nm)	9/13	9/13	9/13	20/26	20/26	20/26	40/45	40/45	

Switching time (rated voltage, after receiving command)

Transfer time I-II or II-I (s)	0.85	0.85	0.85	0.9	0.9	0.9	0.95	0.95	
I-0 or II-0 (s)	0.55	0.55	0.55	0.5	0.5	0.5	0.55	0.55	
Contact transfer time ("black-out" I-II) minimum (s)	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	

Power supply

Min./max. power (VAC)	166/332	166/332	166/332	166/332	166/332	166/332	166/332	166/332	166/332
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Control supply power demand

Demand/rated power (VA) - ATyS <i>r</i> , ATyS <i>d</i>	184/92	184/92	184/92	276/115	276/115	276/115	276/150	276/150	
Demand/rated power (VA) - ATyS <i>t</i> , <i>g</i> , <i>p</i>	206/114	206/114	206/114	298/137	298/137	298/137	298/172	298/172	

Mechanical specifications

Durability (number of operating cycles)	10,000	10,000	10,000	8,000	8,000	8,000	5,000	5,000	
Weight ATyS <i>r</i> 3 P / 4 P (kg)	5.7/ 6.9	5.7/ 6.9	5.7/ 6.9	6.6/ 7.4	6.7/ 7.8	6.7/ 7.8	11.4/ 13.3	11.9/ 14.0	
Weight ATyS <i>d</i> 3 P / 4 P (kg)	6.3/ 7.5	6.3/ 7.5	6.3/ 7.5	7.2/ 8.0	7.3/ 8.4	7.3/ 8.4	12.0/ 13.9	12.5/ 14.6	
Weight ATyS <i>t</i> , <i>g</i> , <i>p</i> 3 P / 4 P (kg)	6.8/ 8.0	6.8/ 8.0	6.8/ 8.0	7.7/ 8.5	7.8/ 8.9	7.8/ 8.9	12.5/ 14.4	13.0/ 15.1	

(1) Category with index A = frequent operation - Category with index B = infrequent operation. (3) Interphase barriers must be installed on the products.

(2) 3-pole device with 2 pole in series for the "+" an 1 pole for the "-". (4) Values given at 690 VAC.

4-pole device with 2 poles in series by polarity.

800 to 3200 A

Thermal current I_{th} at 40°C	800 A	1000 A	1250 A	1600 A	2000 A	2500 A	3200 A
Frame size	B6	B6	B6	B7	B8	B8	B8
Rated insulation voltage U_i (V) (power circuit)	1000	1000	1000	1000	1000	1000	1000
Rated impulse withstand voltage U_{imp} (kV) (power circuit)	12	12	12	12	12	12	12
Rated insulation voltage U_i (V) (control circuit)	300	300	300	300	300	300	300
Rated impulse withstand voltage U_{imp} (kV) (control circuit)	4	4	4	4	4	4	4
Rated operational currents I_e (A) according to IEC 60947-3							
Rated voltage	Utilisation category	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾	A/B ⁽¹⁾
415 VAC	AC-21 A / AC-21 B	800/800	1000/1000	1250/1250	1600/1600	-/2000	-/3200
415 VAC	AC-22 A / AC-22 B	800/800	1000/1000	1250/1250	1600/1600	-/2000	-/3200
415 VAC	AC-23 A / AC-23 B	800/800	1000/1000	1250/1250	1250/1250	-/1600	-/1600
500 VAC	AC-21 A / AC-21 B	800/800	1000/1000	1250/1250	1600/1600	-/2000	-/2000
500 VAC	AC-22 A / AC-22 B	630/630	800/800	1000/1000	1600/1600		
500 VAC	AC-23 A / AC-23 B	630/630	630/630	800/800	1000/1000		
690 VAC ⁽³⁾	AC-21 A / AC-21 B	800/800	1000/1000	1250/1250	1600/1600	-/2000	-/2000
690 VAC ⁽³⁾	AC-22 A / AC-22 B	630/630	800/800	1000/1000	1000/1000		
690 VAC ⁽³⁾	AC-23 A / AC-23 B	630/630	630/630	800/800	800/800		
220 VDC	DC-21 A / DC-21 B	800/800	1000/1000	1250/1250	1250/1250		
220 VDC	DC-22 A / DC-22 B	800/800	1000/1000	1250/1250	1250/1250		
220 VDC	DC-23 A / DC-23 B	800/800	1000/1000	1250/1250	1250/1250		
440 VDC ⁽²⁾	DC-21 A / DC-21 B	800/800	1000/1000	1250/1250	1250/1250		
440 VDC ⁽²⁾	DC-22 A / DC-22 B	800/800	1000/1000	1250/1250	1250/1250		
440 VDC ⁽²⁾	DC-23 A / DC-23 B	800/800	1000/1000	1250/1250	1250/1250		
Rated operational currents I_e (A) according to IEC 60947-6-1							
Rated voltage	Utilisation category						
415 VAC	AC-31 B	800	1000	1250	1600	2000	2500
415 VAC	AC-32 B	800	1000	1250	1250	2000	2000
415 VAC	AC-33 B	800	1000	1000	1000	1250	1250
Current rated as conditional short-circuit with fuse gG DIN, according to IEC 60947-3							
Prospective fuse protected short-circuit withstand at 415 VAC (kA rms)		50	50	100	100		
Prospective fuse protected short-circuit withstand at 690 VAC (kA rms)		50	50	50			
Associated fuse rating (A)		800	1000	1250	2x800		
Short-circuit withstand without protection as per IEC 60947-3							
Rated short-time withstand current 0.3s I_{cw} at 415 VAC (kA rms)		64	64	64	78	78	78
Rated short-time withstand current 1s I_{cw} at 415 VAC (kA rms)		35	35	35	50	50	50
Rated peak withstand current at 415 VAC (kA peak)		55	55	80	110	120	120
Short-circuit withstand without protection as per IEC 60947-6-1							
Rated short-time withstand current 30 ms I_{cw} at 415 VAC (kA rms)							
Rated short-time withstand current 60 ms I_{cw} at 415 VAC (kA rms)		20	20	25	32	50	50
Connection							
Minimum Cu cable cross-section as per IEC 60947-1 (mm ²)		2 x 185					
Recommended Cu busbar cross-section (mm ²)		2 x 50 x 5	2 x 63 x 5	2 x 60 x 7	2 x 100 x 5	3 x 100 x 5	2 x 100 x 10
Maximum Cu cable cross-section (mm ²)		4 x 185	4 x 185	4 x 185	6 x 185		
Maximum Cu busbar width (mm)		63	63	63	100	100	100
Min./max. tightening torque (Nm)		9/13	9/13	20/26	40/45	40/45	40/45
Switching time (rated voltage, after receiving command)							
Transfer time I-II or II-I (s)		2.8	2.8	2.8	2.9	2.8	2.8
I-0 or II-0 (s)		1.4	1.4	1.4	1.4	1.8	1.8
Contact transfer time ("black-out" I-II) minimum (s)		1.4	1.4	1.4	1.5	1	1
Power supply							
Min./max. power (VA)		166/332	166/332	166/332	166/332	166/332	166/332
Control supply power demand							
Demand/rated power (VA) - ATyS r, ATyS d		460/184	460/184	460/184	460/230	812/322	812/322
Demand/rated power (VA) - ATyS t, g, p		482/206	482/206	482/206	482/252	834/344	834/344
Mechanical specifications							
Durability (number of operating cycles)		4,000	4,000	4,000	3,000	3,000	3,000
Weight ATyS r 3 P / 4 P (kg)		27.9/ 32.2	28.4/ 32.9	28.9/ 33.6	33.1/ 39.4	50.7/ 61.6	61.0/ 75.3
Weight ATyS d 3 P / 4 P (kg)		28.5/ 32.8	29.0/ 33.5	29.5/ 34.2	33.7/ 40.0	51.3/ 62.2	61.6/ 75.9
Weight ATyS t, g, p 3 P / 4 P (kg)		29.0/ 33.3	29.5/ 34.0	30.0/ 34.7	34.2/ 40.5	51.8/ 62.7	62.1/ 76.4

(1) Category with index A = frequent operation - Category with index B = infrequent operation. (3) Interphase barriers must be installed on the products.

(2) 3-pole device with 2 pole in series for the "+" an 1 pole for the "-".

(4) Values given at 690 VAC.

4-pole device with 2 poles in series by polarity.

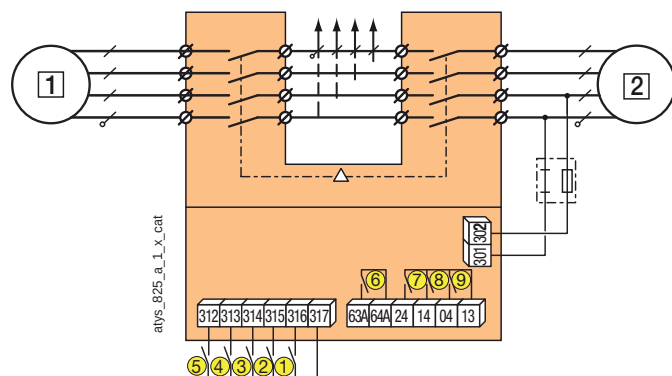
ATyS range

ATyS *r*, ATyS *d*, ATyS *t*, ATyS *g*, ATyS *p*

from 125 to 3200 A

Connections and terminals

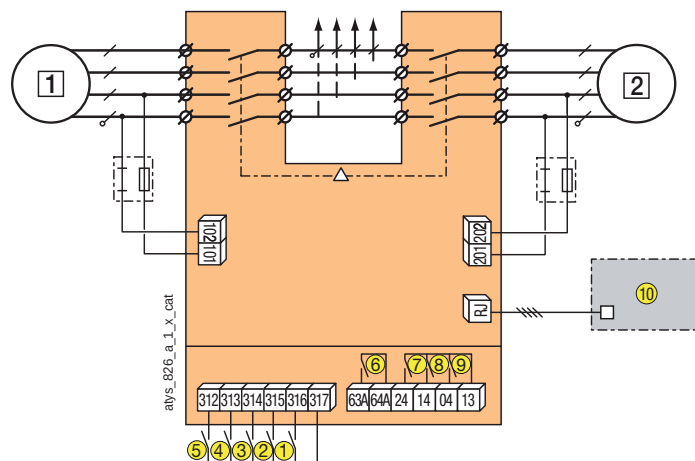
ATyS *r*



- 1 primary source (network or genset)
- 2 backup source (mains network or genset)

- 1: position 0 control (contact or logic if closed)
- 2: position I control
- 3: position II control
- 4: primary control position 0
- 5: closing this contact allows position control commands
- 6: product availability relay
- 7: auxiliary contact - closed when the switch is in position II
- 8: auxiliary contact - closed when the switch is in position I
- 9: auxiliary contact - closed when the switch is in position 0

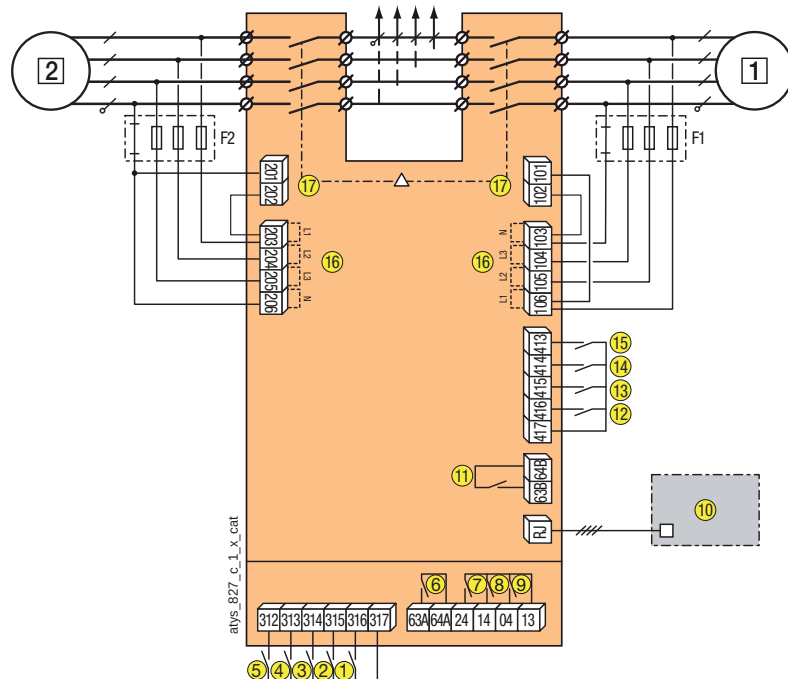
ATyS *d*



- 1 primary source (mains network or genset)
- 2 backup source (mains network or genset)

- 1: position 0 control (contact or logic if closed)
- 2: position I control
- 3: position II control
- 4: primary control position 0
- 5: closing this contact allows position control commands
- 6: product availability relay
- 7: auxiliary contact - closed when the switch is in position II
- 8: auxiliary contact - closed when the switch is in position I
- 9: auxiliary contact - closed when the switch is in position 0
- 10: D10 remote interface

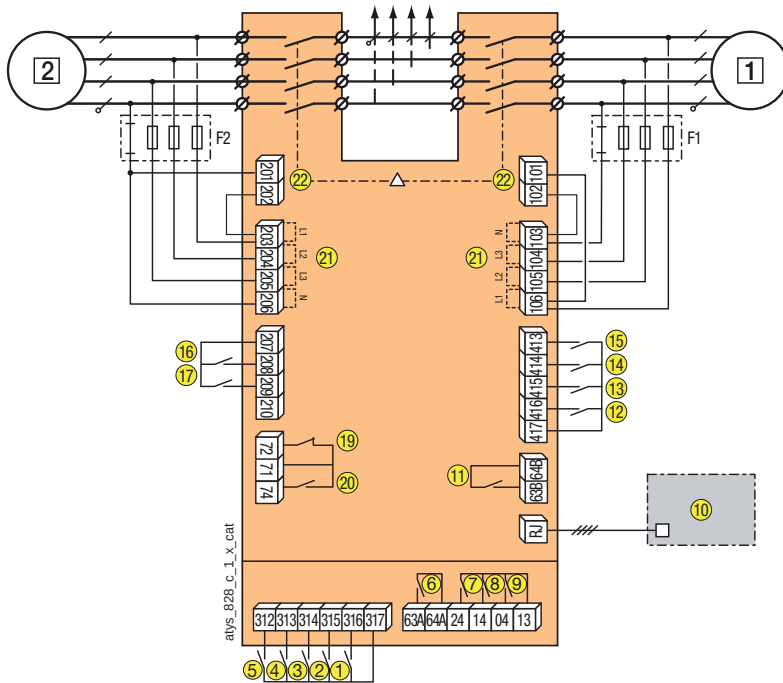
ATyS *t*



- 1 primary source (mains network)
- 2 backup source (mains)

- 1: position 0 control (contact or logic if closed)
- 2: position I control
- 3: position II control
- 4: primary control position 0
- 5: closing this contact allows position control commands
- 6: Motor unit availability relay
- 7: auxiliary contact - closed when the switch is in position II
- 8: auxiliary contact - closed when the switch is in position I
- 9: auxiliary contact - closed when the switch is in position 0
- 10: D10 remote interface
- 11: Electrical unit availability relay
- 12: automatic operation inhibited
- 13: confirm manual retransfer
- 14: preferred source selection
- 15: function with or without priority
- 16: voltage inputs
- 17: power inputs

ATyS g



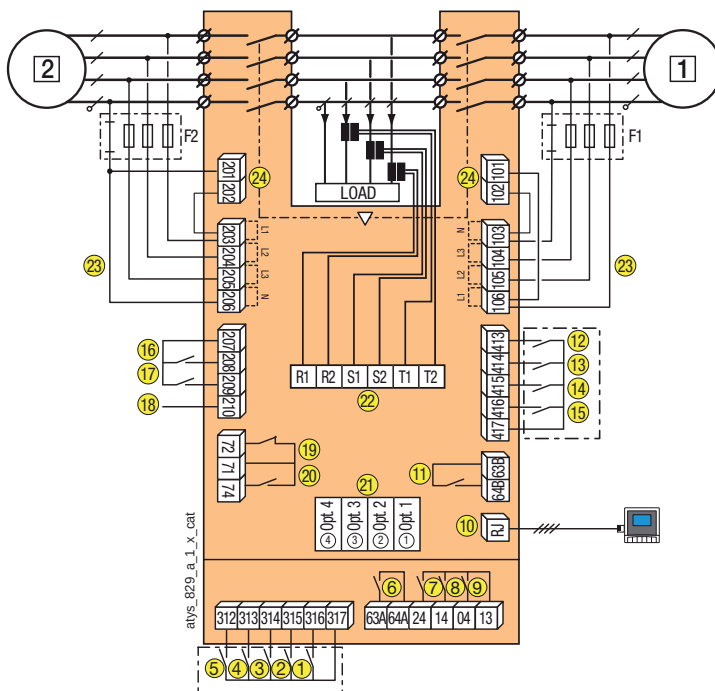
- 1 primary source (mains network)
- 2 backup source (genset or network)
- 1: position 0 control (contact or logic if closed)
- 2: position I control
- 3: position II control
- 4: primary control position 0
- 5: closing this contact allows position control commands
- 6: Motor unit availability relay
- 7: auxiliary contact - closed when the switch is in position II
- 8: auxiliary contact - closed when the switch is in position I
- 9: auxiliary contact - closed when the switch is in position 0
- 10: D10 remote interface
- 11: Electrical unit availability relay
- 12: automatic operation inhibited
- 13: confirm manual retransfer
- 14: bypass for time delay 2AT
- 15: M/G: priority test on load.
M/M: with or without priority.
- 16: remote test without load
- 17: M/G: test on load
M/M: preferred source selection
- 19-20: genset start and stop commands

Order	71/72 (19)	71/74 (20)
Genset start-up	Closed contact	Open contact
Genset stop	Open contact	Closed contact

21 : voltage inputs

22: power inputs

ATyS p



- 1 primary source (network or genset)
- 2 backup source (network or genset)
- 1: position 0 control (contact or logic if closed)
- 2: position I control
- 3: control position II
- 4: primary control position 0
- 5: closing this contact allows position control commands
- 6: Motor unit availability relay
- 7: auxiliary contact - closed when the switch is in position II
- 8: auxiliary contact - closed when the switch is in position I
- 9: auxiliary contact - closed when the switch is in position 0
- 10: D20 remote interface
- 11: Electrical unit availability relay
- 12-17: programmable inputs
- 18: auxiliary power supply for optional modules
- 19-20: genset start and stop commands

Order	71/72 (19)	71/74 (20)
Genset start-up	Closed contact	Open contact
Genset stop	Open contact	Closed contact

21 : 4 slots for optional modules

22: TI measurement connection

23 : voltage inputs

24: power inputs

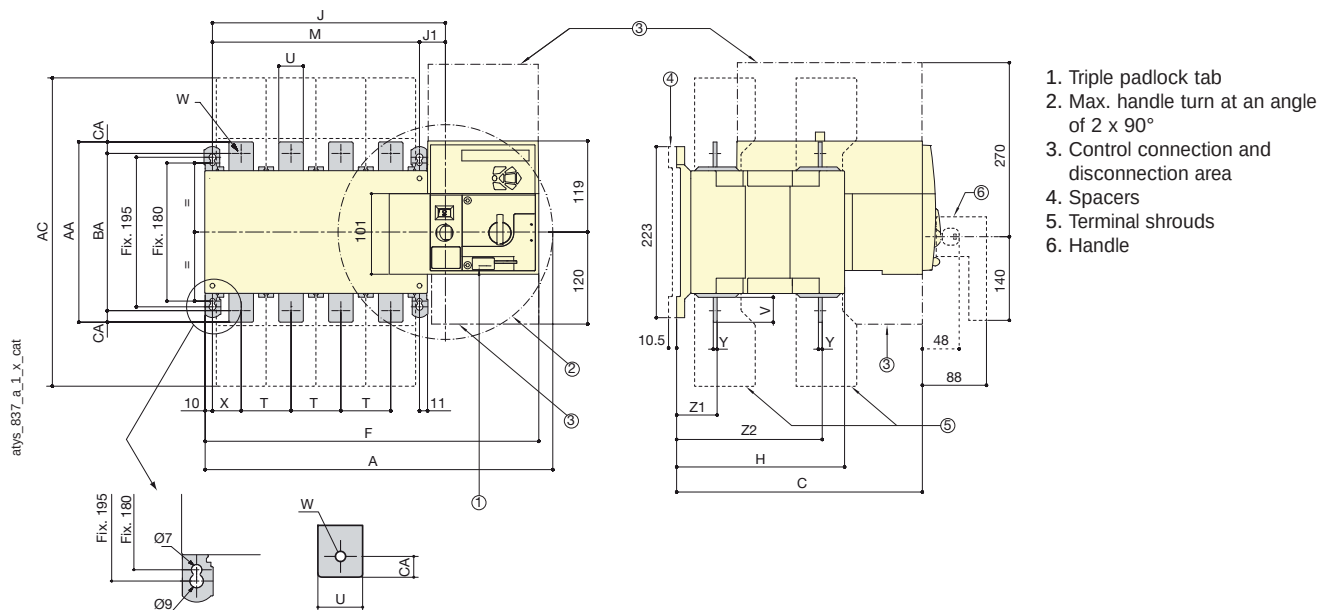
ATyS range

ATyS *r*, ATyS *d*, ATyS *t*, ATyS *g*, ATyS *p*

from 125 to 3200 A

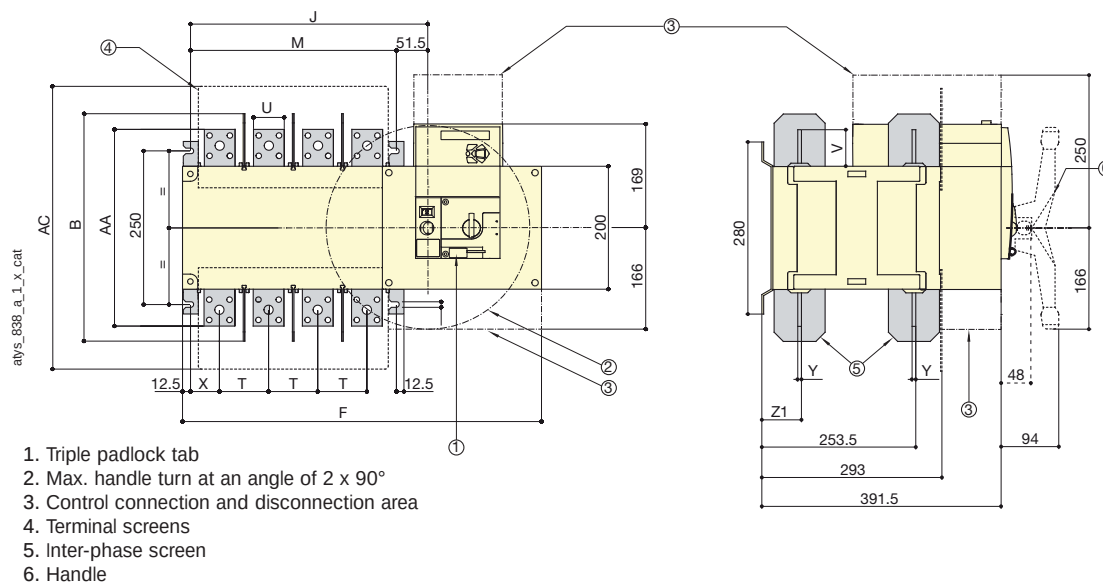
Dimensions

125 to 630 A / B3 to B5



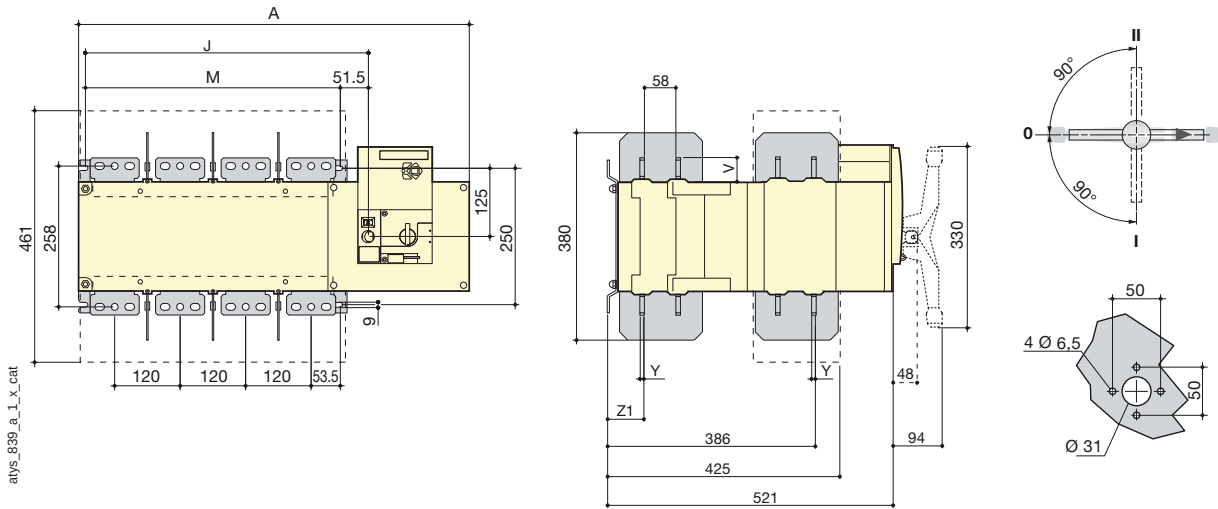
Rating (A) / Frame size	Overall dimensions			Terminal shrouds	Switch body						Switch mounting		Connection													
	A 3p.	A 4p.	C		AC	F 3p.	F 4p.	H	J 3p.	J 4p.	J1	M 3p.	M 4p.	T	U	V	W	X 3p.	X 4p.	Y	Z1	Z2	AA	BA	AC	
125 / B3	304	334	244	233	286.5	317	151	154	184	34	120	150	36	20	25	9	28	22	3.5	38	134	135	115	10		
160 / B3	304	334	244	233	286.5	317	151	154	184	34	120	150	36	20	25	9	28	22	3.5	38	134	135	115	10		
200 / B3	304	334	244	233	286.5	317	151	154	184	34	120	150	36	20	25	9	28	22	3.5	38	134	135	115	10		
250 / B4	345	395	244	288	328	378	152	195	245	35	160	210	50	25	30	11	33	33	3.5	39.5	133.5	160	130	15		
315 / B4	345	395	244	288	328	378	152	195	245	35	160	210	50	35	35	11	33	33	3.5	39.5	133.5	170	140	15		
400 / B4	345	395	244	288	328	378	152	195	245	35	160	210	50	35	35	11	33	33	3.5	39.5	133.5	170	140	15		
500 / B5	394	454	320.5	402	377	437	221	244	304	34	210	270	65	32	50	14	42.5	37.5	5	53	190	260	220	15		
630 / B5	394	454	320.5	402	377	437	221	244	304	34	210	270	65	45	50	13	42.5	37.5	5	53	190	260	220	20		

800 to 1600 A / B6 to B7



Rating (A) / Frame size	Overall dimensions		Terminal shrouds		Switch body				Switch mounting		Connection									
	B	AC	F 3p.	F 4p.	J 3p.	J 4p.	M 3p.	M 4p.	T	U	V	X	Y	Z1	AA					
800 / B6	370	461	504	584	306.5	386.5	255	335	80	50	60.5	47.5	7	66.5	321					
1000 / B6	370	461	504	584	306.5	386.5	255	335	80	50	60.5	47.5	7	66.5	321					
1250 / B6	370	461	504	584	306.5	386.5	255	335	80	60	65	47.5	7	66.5	330					
1600 / B7	380	531	596	716	398.5	518.5	347	467	120	90	44	53	8	67.5	288					

2000 to 3200 A / B8

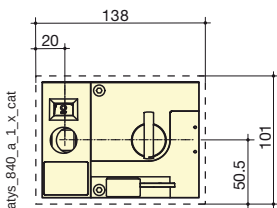


Rating (A)	Overall dimensions B	Terminal shrouds AC	Switch body				Switch mounting		Connection							
			A 3p.	A 4p.	J 3p.	J 4p.	M 3p.	M 4p.	T	U	V	X	Y	Z1	AA	
2000 ... 3200	380	531	596	716	399	519	347	467	120	90	44	53	8	67.5	288	

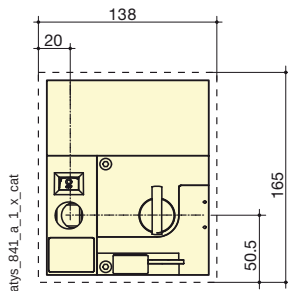
Door cutout

125 to 630 A / B3 to B5

ATyS r

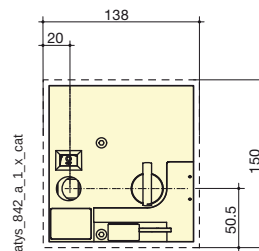


ATyS d, t, g, p

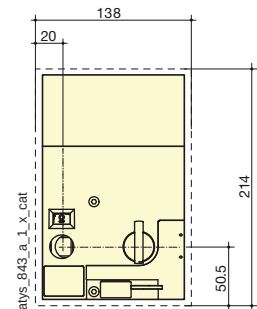


800 to 1600 A / B6 to B7

ATyS r

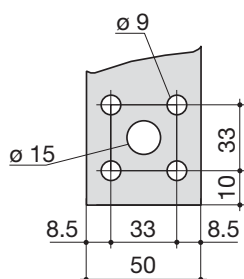


ATyS d, t, g, p

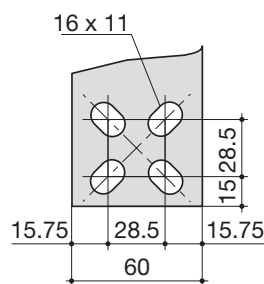


Connection terminals

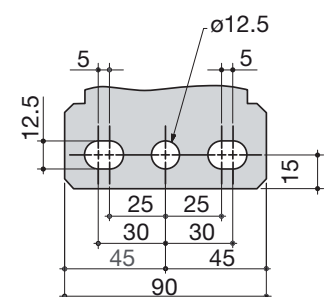
800 to 1000 A / B6



1250 A / B6



1600 to 3200 A / B7 to B8





ATyS d H

Remotely operated Transfer Switching Equipment
from 4000 to 6300 A



The solution for

- > Data centre
- > Telecommunications
- > Industries



Strong points

- > Ready for installation in the enclosure of your choice
- > High-performance switching
- > Safe on-load transfer: I-O-II

Conformity to standards

- > IEC 60947-6-1
- > GB 14048-11



Approvals and certifications



Enclosed solution

- > Please contact your SOCOMECEC office

External automatic controller

- > The ATyS d H is an RTSE which is compatible with most building management systems. It may also be supplied as an ATSE by including an ATyS C20/C30/C40 controller with a door mounted external display.

Function

The ATyS d H is a three-phase transfer switch, 3 and 4 poles, designed for low voltage high power applications that require high-performance and fast reliable switching. The open transition transfer is performed on-load in line with IEC 60947-6-1 and GB 14048-11 standards (Class PC) with minimal power supply interruption to the load during transfer.

The ATyS d H is remote transfer switching equipment (RTSE) with an integrated dual power supply (DPS) that accepts remote orders through volt-free contacts.

Advantages

Ready for installation in the enclosure of your choice

The ATyS d H has been designed to facilitate installation as it is available as a fixed or completely withdrawable type of transfer switch. It is composed of two switches that are mounted one above the other with easily accessible power connections located at the rear. Furthermore the ATyS d H does not need any external bridging bars as the load side is connected within the product. This enables to save time during installation.

High-performance switching

The ATyS d H offers high withstand short circuit current ratings of 143 kA I_{cm} (making) and 65 kA for 0.1 sec I_{cw} (withstand). Further to its high short circuit withstand, the ATyS d H performance in terms of load switching capacity is AC-33iB ($6 \times I_n \cos \phi 0.5$) without derating.

Safe on-load transfer: I-O-II

The ATyS d H includes two mechanically interlocked switches to ensure fast switching whilst providing a neutral (Off - 0) position. This ensures that the main and alternative power supplies do not overlap.

References

ATyS d H

Rating (A)	Type	Number of poles	ATyS d H IEC Reference	ATyS d H CCC Reference	Control relay Reference
4000 A	Fixed	3 P	9533 3400	9533 3400 CN	ATyS C20 1599 3020 ATyS C30 1599 3030 ATyS C40 1599 3040
		4 P	9533 4400	9533 4400 CN	
	Withdrawable	3 P	9533 3401	9533 3401 CN	
		4 P	9533 4401	9533 4401 CN	
5000 A	Fixed	3 P	9533 3500	9533 3500 CN	
		4 P	9533 4500	9533 4500 CN	
	Withdrawable	3 P	9533 3501	9533 3501 CN	
		4 P	9533 4501	9533 4501 CN	
6300 A	Fixed	3 P	9533 3630	9533 3630 CN	
		4 P	9533 4630	9533 4630 CN	
	Withdrawable	3 P	9533 3631	9533 3631 CN	
		4 P	9533 4631	9533 4631 CN	

Characteristics according to IEC 60947-6-1

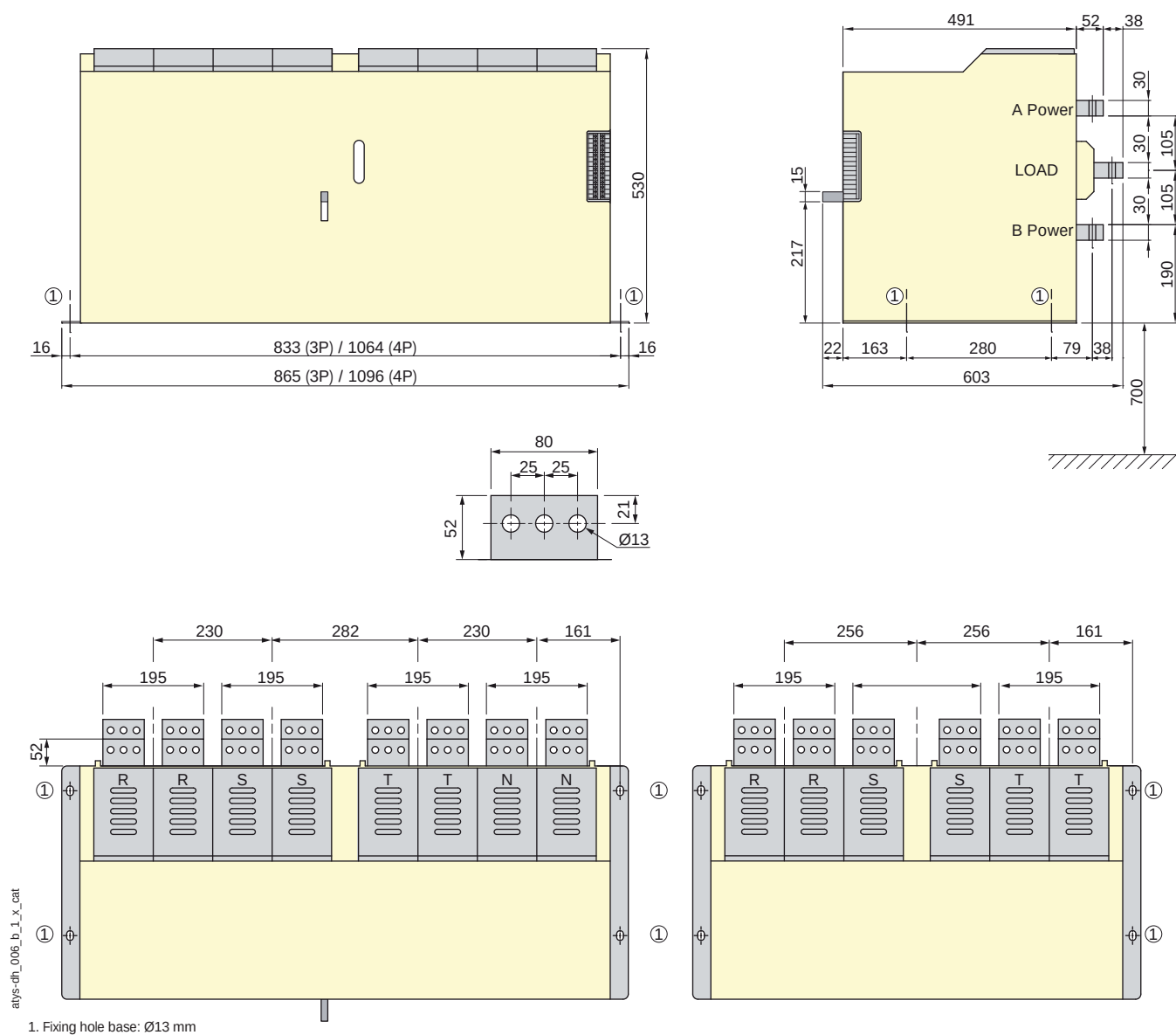
4000 to 6300 A

Thermal current I _{th} at 40°C	4000 A	5000 A	6300 A
Rated operating voltage U _e (V)	660		
Rated insulation voltage U _i (V)	660		
Rated impulse withstand voltage U _{imp} (kV)	12		
Rated short-circuit withstand at 660 VAC			
Rated short-time withstand current 0.1s I _{cw} (kA rms)	65		
Rated peak withstand current (kA peak)	143		
Rated operational current I _e (A), at 660 VAC - AC32B	4000	5000	6300
Rated operational current I _e (A), at 660 VAC - AC33iB (6xln cos Ø 0.5)	4000	5000	6300
Connection			
Rear connection with busbar	•	•	•
Switching time			
I to 0 (ms)	≤ 150		
0 to I and 0 to II (ms)	≤ 90		
II to 0 (ms)	≤ 200		
I-0-II / II-0-I (s)	1.2		
Operating frequency	10 operations per hour		
Power supply			
VAC power supply (powered directly on terminals S1 and S2)	230		
Main coil operating current (peak during transfers)	65 A ⁽¹⁾		
Mechanical characteristics			
Durability (number of operating cycles)	3000		
Weight (kg) - Fixed 3/4P model	200 / 250	200 / 250	200 / 250
Weight (kg) - Plug-in 3/4P model	300 / 400	300 / 400	300 / 400

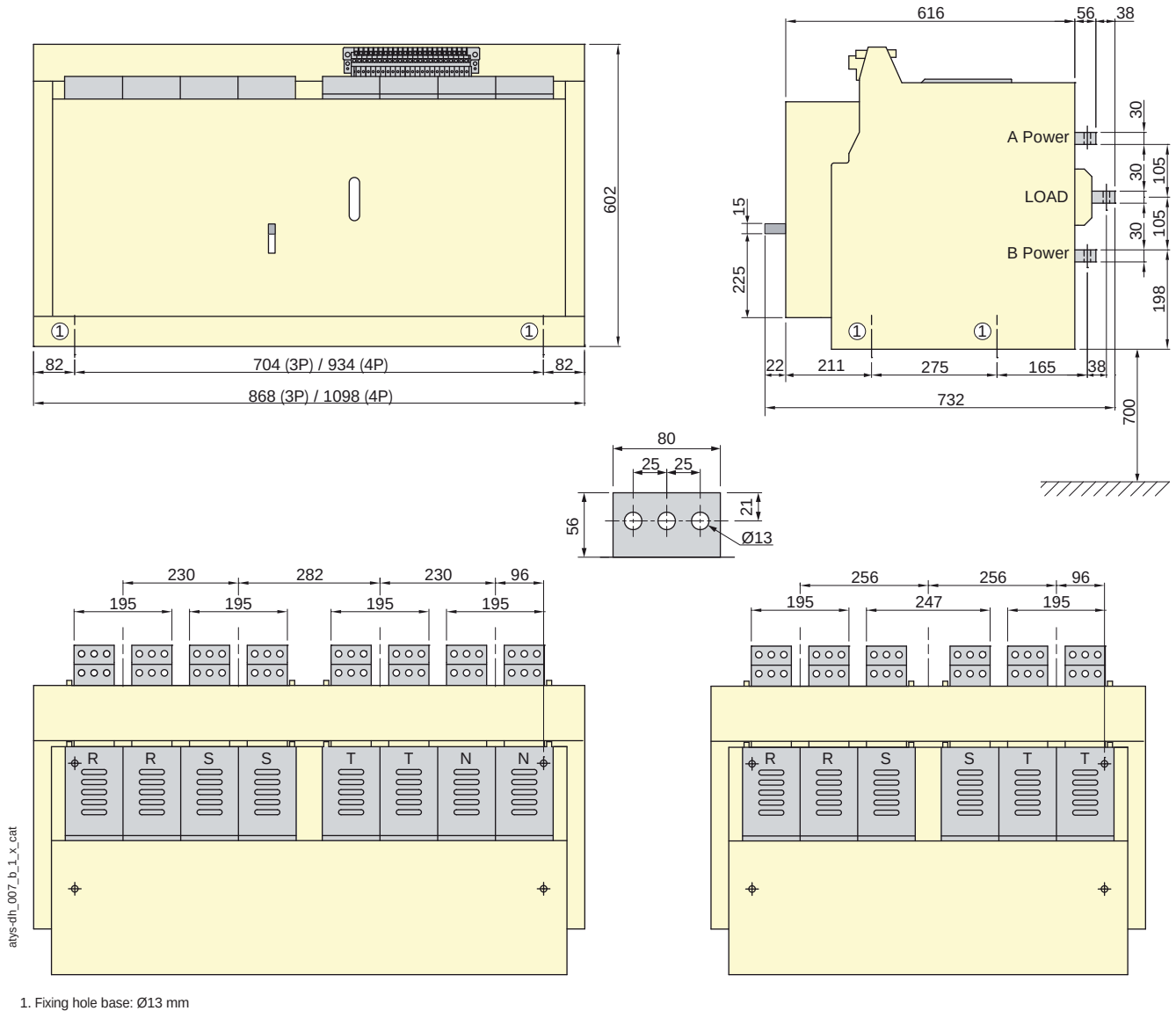
(1) Instantaneous value. For a complete operation, power should be available during 0.5 s.

Dimensions

Dimensions for fixed models



Dimensions for drawout models





ATyS C20/C30/C40

Control relays



ATyS C20 controller

ATYS_451_A



ATyS C30 controller

ATYS_448_B



ATyS C40 controller

ATYS_599_C

The solution for

- > Power and control separation
- > Genset/Genset applications



Strong points

- > Auxiliary power supply
- > Modular device
- > Extended compatibility of use

Conformity to standards

- > IEC 61010-1
- > IEC 61000-4-x
- > IEC 60068-2-x



Function

ATyS C20/C30/C40 are modular control relays. They ensure the automatic control of remotely controlled transfer switches, ATyS, ATyS S and ATyS M, as well as contactors, circuit breakers or other motorised switches.

General characteristics

ATyS C20/C30

- Inputs for auxiliary contact position information.
- 3U measurement on network 1 and 1U on network 2.
- 2 programmable inputs for the following functions: test on/off load, manual retransfer, start/stop transfer cycle.
- Up to 2 programmable outputs for the following functions: source availability information and circuit breaker control.
- 1 relay output for genset control.
- D10 or D20 remote interfaces are available for transferring data or control to the front panel (only on C30 version).

ATyS C40

- Dual genset controller with a redundant genset application cycle (basic cycle).
- 1U and F measurement on each source - genset 1 & genset 2.
- 3 programmable inputs for the following functions: test on/off load, manual retransfer, start/stop transfer cycle.
- 1 programmable output for the following functions : source availability information and circuit breaker control.
- 2 genset control contacts (Gen1 & Gen2).

Advantages

Auxiliary power supply

Two versions of the ATyS C30 are available. One version with an AC supply via the measurement inputs and another with a DC auxiliary supply.

Modular device

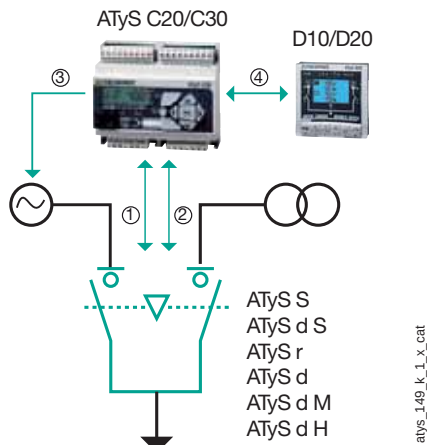
The ATyS C20, C30 and C40 are modular products (6 modules, 105 mm wide) which can be DIN-rail mounted.

Extended compatibility of use

The product is used with Socomec transfer switches, or those using identical technology. It is also compatible with contactor and circuit breaker technologies.

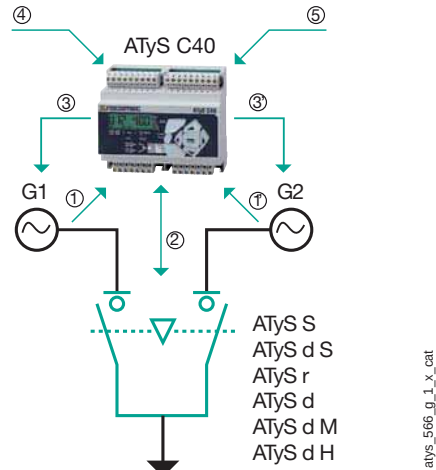
Configurations

ATyS C20/C30:
Mains/mains and mains/genset applications



1. Measurement and power supply
2. Control and position information feedback
3. Genset start / stop control
4. ATyS display/interface connection (only on C30 version)

ATyS C40:
Genset/genset applications



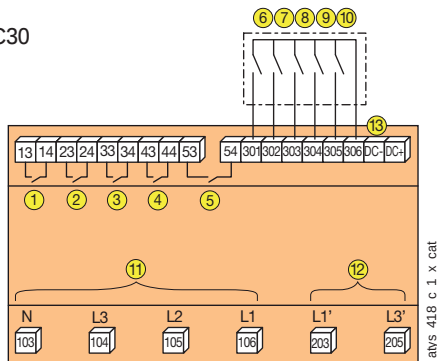
- 1 and 1'. 1U and F measurement for each genset
2. Control and position information feedback
- 3 and 3'. Genset "start/stop" control
4. External "start/stop" command for basic cycle
5. DC power supply

Electrical characteristics

Supplied from measurement circuit	110 ... 400 VAC
DC power supply	9 ... 30 VDC
Measurement range	110 ... 400 VAC / $\pm 10\%$
Frequency	50/60 Hz
Accuracy	$\pm 1\%$

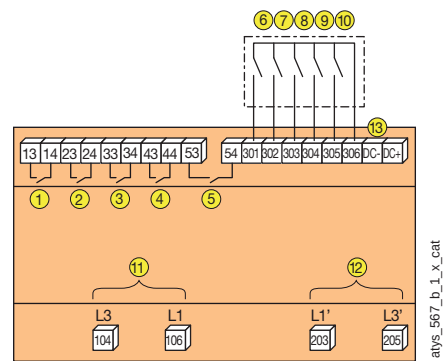
Terminals

ATyS C20/C30



1. Genset start / stop control
2. Position 1: power control
3. Position 2: power control
4. O1: programmable output
5. O2: programmable output
6. AC1: auxiliary contact position 1
7. AC0: auxiliary contact position 0
8. AC2: auxiliary contact position 2
9. I1: programmable input
10. I2: programmable input
11. Source 1 : 3 U network measurement and power supply
12. Source 2 : 1 U network measurement and power supply
13. DC power supply 9-30 VDC (version 1599 3031)

ATyS C40



1. Genset G1 start / stop control
2. Position 1: power control
3. Position 2: power control
4. O1: programmable output
5. Genset G2 start / stop control
6. AC1: auxiliary contact position 1
7. I3: programmable input
8. AC2: auxiliary contact position 2
9. I1: programmable input
10. I2: programmable input
11. Genset G1: 1U measurement
12. Genset G2: 1U measurement
13. DC power supply 9-30 VDC

References

Type	ATyS C20 Reference	ATyS C30 Reference	ATyS C40 Reference
Supplied from measurement circuit	1599 3020	1599 3030	
DC power supply		1599 3031	1599 3040



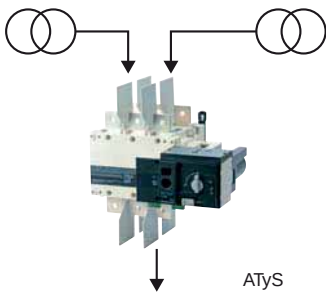
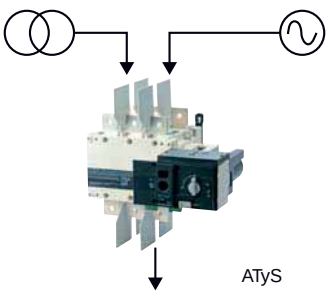
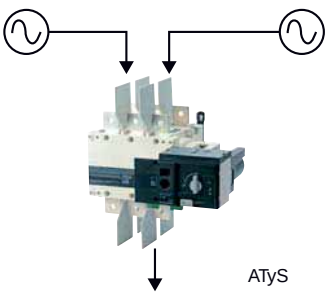
The UL product range

A range of manual or remotely operated transfer switches up to 1200 A

MTSE (Manual)	RTSE (Remotely operated)
	
	
SIRCOVER UL1008 Manual Transfer Switching Equipment	ATyS UL1008 Motorised Transfer Switching Equipment

Typical applications

The ATyS UL 1008 range provides safe transfer for mains/genset and genset/genset applications.

Mains/Mains	Mains/Genset	Genset/Genset
 atys-ul_005_b_1_cat ATyS	 atys-ul_006_b_1_cat ATyS	 atys-ul_007_b_1_cat ATyS

Function

ATYS and SIRCOVER UL 1008 transfer switching equipment ensure:

- Maintenance free transfer switching equipment with a robust and reliable design.
- Power control and safety between a normal and an alternate source.
- Integrated and robust switch disconnection.
- A stable OFF position with integrated padlocking to facilitate safe downstream maintenance.
- Positive break indication with clear visible position indication I - 0 - II.
- An inherent failsafe mechanical interlock prevents asynchronous paralleling of the two sources.
- Stable positions (I - 0 - II) non-affected by typical vibration and shock.
- Constant pressure on the contacts non affected by network voltage perturbation.
- Quick, easy and extremely safe manual operation.

Further to the above the ATyS also includes:

- A simple and secure motorisation remote controls interface.
- Integrated switch position auxiliary contacts.
- An active "product availability" status feedback.
- Compatibility with virtually any make of ATS, AMF and Genset controller provided with volt-free contacts.

Power supply continuity for most electrically controlled total system optional standby power applications.

SOCOMECL UL products

The ATYS UL is a full load break transfer switch where the main switching components are from proven technology devices (SIRCOVER - Manual Transfer Switches) also fulfilling requirements in UL 98 and IEC 60947-3 standards. The transfer is done in open transition with a minimum supply interruption during transfer ensuring full compliance with UL 1008 and IEC 60947-6-1 international TSE standards.

As a stand-alone product, the ATyS is a non-automatic power transfer switch (an electrically operated transfer switch that is not self-acting), generally used in applications where the load is non-emergency, does not require automatic transfer and where operating persons can be made available to initiate the transfer.

The electrical control of the ATyS UL may be direct through push-buttons and dry contacts fitted onto the enclosure door or through a dedicated local or remote ATS controller.

Your preferred brand of ATS controller, genset / AMF controller or power / building management system, may easily be paired with the ATyS to provide a complete automatic transfer switch to suit your needs.

ATyS have three stable positions (I-0-II) which can be selected remotely, via volt-free contacts, or directly, through use of the emergency operation handle; emergency operation requires no supply to be present. The OFF position provides disconnection of both supplies ensuring downstream isolation for safe maintenance.

UL Applications

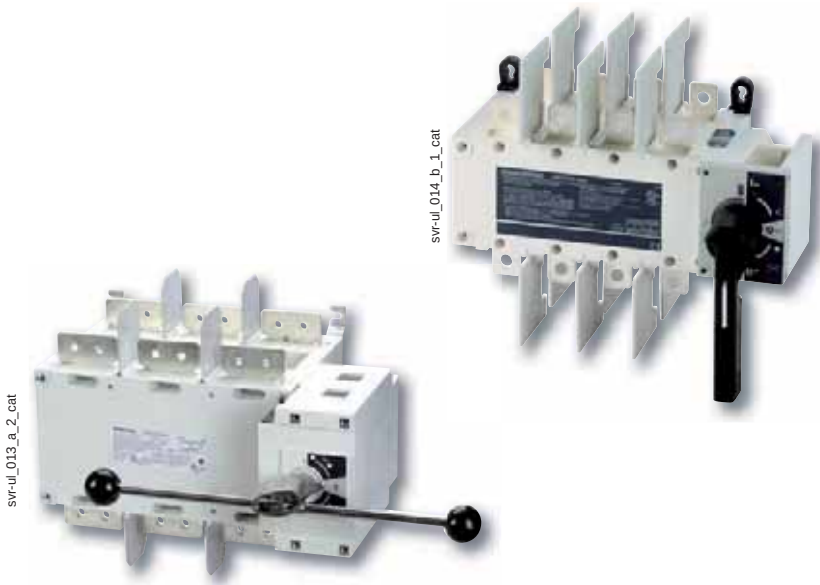
ATYS UL 1008 transfer switches are rated from 100 to 400 A and designed for use in total system optional standby power applications for the safe transfer of a load supply between a normal and an alternate source.

Optional standby systems are those systems installed to provide an alternate source of power for structures for which a power outage could cause discomfort or interruption or damage to products or processes.



SIRCOVER UL1008

Manually operated Transfer Switching Equipment
from 100 to 1200 A



The solution for

- > Manufacturing industry
- > Power distribution
- > Domestic



Strong points

- > Stable positions
- > Compact design
- > On-load switching
- > Reliability

Conformity to standards

- > UL 1008, Guide WPYV, file 317092
- > UL 98, Guide WHTY, file 201138
- > CSA 22.2#4, Class 4651-02



UL 98 and CSA from 600-1200 A with 100-400 A on request with a specific reference.

Function

SIRCOVER UL1008/98 are heavy duty manual transfer switches. They ensure switching transfer of sources or transfer of two low voltage circuits on load as well as their safe disconnection.

These switches are extremely durable and are tested and approved for use in the most demanding applications, such as resistive load or total system applications.

Advantages

Stable positions

SIRCOVERs have three stable positions which are not affected by voltage drops or vibrations, thus protecting your load against network interference.

Compact design

The SIRCOVER are based on a back-to-back switching technology, providing a compact solution.

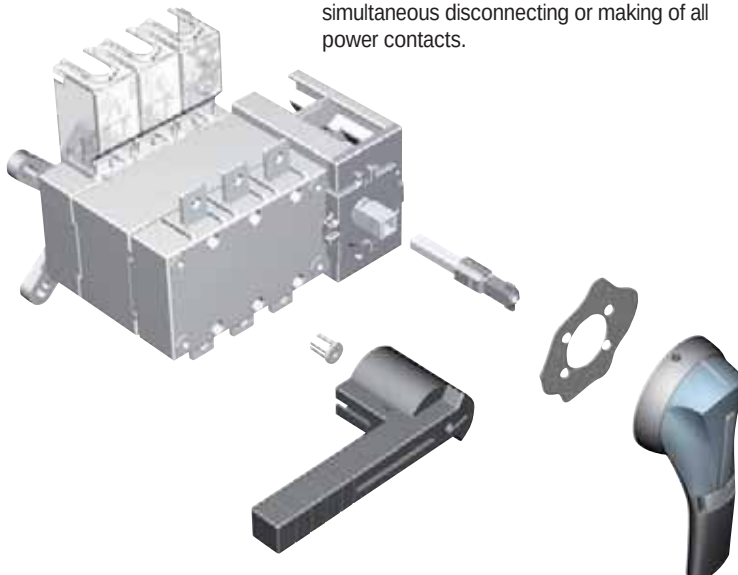
On-load switching

The SIRCOVER UL enables secure and reliable switching, without the need for pre-breaking upstream.

Reliability

The SIRCOVER has double breaking per pole achieved through its sliding bar contacts system.

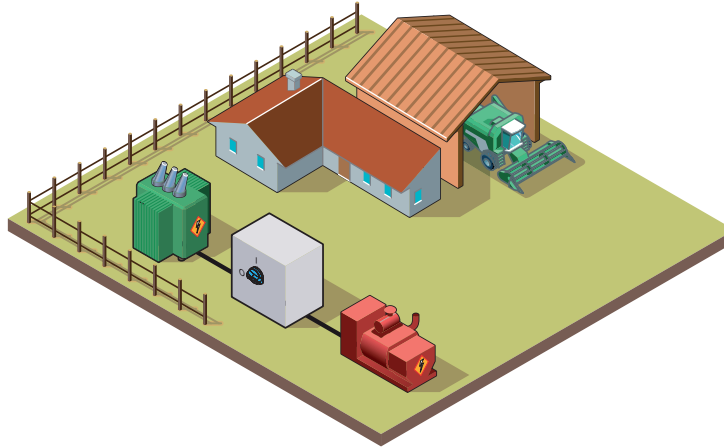
The quick opening and rapid closure provides simultaneous disconnecting or making of all power contacts.



Typical application

The SIRCOVER UL 1008 range provides safe transfer and disconnection at all levels within your LV installation.
They can be used for changing motor phase for rotation control or equipment grounding as well.

Normal power supply to genset transfer
The source transfer will be operated safely even under on-load or over-load conditions



svr-ul_017_a

SOCOMEc solution up to 1200 A



UL 1008 Manual Transfer Switch
From 100 to 400 A for resistive and total systems applications.
UL 98 versions on request

svr-ul_014_b_2_cat



UL 1008 and UL 98 Manual Transfer Switch
From 600 to 1200 A for resistive and total systems applications.
Has UL 98/CSA 22.2#4 certification

svr-ul_013_a_2_cat

IEC solution up to 3200 A

The SIRCOVER UL 1008 is part of a large range that includes an IEC products of standalone or enclosed manual transfer switches and manual bypass switches with overlapping options.
Contact us for further information on our complete range.



SIRCOVER UL1008

Manually operated Transfer Switching Equipment
from 100 to 1200 A

References

SIRCOVER UL 1008

Rating (A)	No. of poles	Switch body	Direct handle	External handle	Shaft for external handle	Bridging bars	Auxiliary contacts	Terminal screens						
100 A	2 P	4150 2012	Black 4199 4012	S2 type Black I - O - II 4, 4X 142D 2113	S2 type 200 mm 7.9 inches 1400 1020	2P 4159 2021 3P 4159 3021 4P 4159 4021	Contact NO/NC 4159 0021 Low level 4159 0022	2P & 3P 4158 3021 4P 4158 4021						
	3 P	4150 3012												
	4 P	4150 4012												
200 A	2 P	4150 2022		S2 type Black I - O - II 4, 4X 142D 2813^(A)	320 mm 12.6 inches 1400 1032 400 mm 15.7 inches 1400 1040									
	3 P	4150 3022												
	4 P	4150 4022												
260 A	2 P	4150 2026												
	3 P	4150 3026												
	4 P	4150 4026												
400 A	2 P	4150 2042						S3 type Black I - O - II 4, 4X 143D 3113		S3, S4 type 200 mm 7.9 inches 1401 1520 320 mm 12.6 inches 1401 1532 400 mm 15.7 inches 1401 1540	2P 4159 2041 3P 4159 3041 4P 4159 4041		2P & 3P 4158 3041 4P 4158 4041	
	3 P	4150 3042												
	4 P	4150 4042												
600 A	3 P	4150 3060	Black 4199 7012			3 P 4159 3063 4 P 4159 4063		3 P 1609 3063 4 P 1609 4063						
	4 P	4150 4060												
800 A	3 P	4150 3080	Black 4199 7062	S4 type Black I - O - II 4, 4X 144D 3813^(A)		3 P 4159 3080 4 P 4159 4080			3 P 1609 3080 4 P 1609 4080					
	4 P	4150 4080												
1200 A	3 P	4150 3120												
	4 P	4150 4120												

(1) Padlockable in all 3 positions.

Accessories

Direct handle

Rating (A)	Type	Colour	Handle type	Reference
100 ... 400	B3	Black	1 lever	4199 4012
600	C2	Black	2 lever	4199 7012
800 ... 1200	V1	Metal	2 lever	4199 7062



External handle

Rating (A)	Handle type	Colour	Nema type	Lockable in 3 positions	Reference
100 ... 200	S2	Black	4, 4X	no	142D 2113
100 ... 200	S2	Red/Yellow	4, 4X	no	142E 2113
100 ... 200	S2	Black	1, 3R, 12	no	142F 2113
100 ... 200	S2	Red/Yellow	1, 3R, 12	no	142G 2113
100 ... 200	S2	Black	4, 4X	yes	142D 2813
100 ... 200	S2	Red/Yellow	4, 4X	yes	142E 2813
100 ... 200	S2	Black	1, 3R, 12	yes	142F 2813
100 ... 200	S2	Red/Yellow	1, 3R, 12	yes	142G 2813
260 ... 600	S3	Black	4, 4X	no	143D 3113
260 ... 600	S3	Red/Yellow	4, 4X	no	143E 3113
260 ... 600	S3	Black	1, 3R, 12	no	143F 3113
260 ... 600	S3	Red/Yellow	1, 3R, 12	no	143G 3113
260 ... 600	S3	Black	4, 4X	yes	143D 3813
260 ... 600	S3	Red/Yellow	4, 4X	yes	143E 3813
260 ... 600	S3	Black	1, 3R, 12	yes	143F 3813
260 ... 600	S3	Red/Yellow	1, 3R, 12	yes	143G 3813
800 ... 1200	S4	Black	4, 4X	no	144D 3113
800 ... 1200	S4	Black	1, 3R, 12	no	144E 3113
800 ... 1200	S4	Black	1, 3R, 12	no	144F 3113
800 ... 1200	S4	Red/Yellow	1, 3R, 12	no	144G 3113
800 ... 1200	S4	Black	4, 4X	yes	144D 3813
800 ... 1200	S4	Red/Yellow	4, 4X	yes	144E 3813
800 ... 1200	S4	Black	1, 3R, 12	yes	144F 3813
800 ... 1200	S4	Red/Yellow	1, 3R, 12	yes	144G 3813
800 ... 1200	S5	Black	1, 3R, 12 ⁽¹⁾	no	1453 8113
800 ... 1200	S5	Red/Yellow	1, 3R, 12 ⁽¹⁾	no	1454 8113
800 ... 1200	V1	Black	1, 3R, 12 ⁽¹⁾	no	4199 7149

(1) For 4, 4X please consult us.

Use

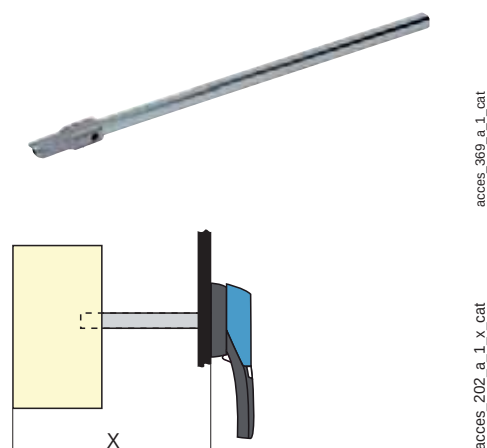
The handle interlocking function prevents the user from opening the door of the enclosure when the switch is in the "ON" position. Opening the door when the switch is in the "ON" position is possible by defeating the interlocking function (not S5 and V handles) with the use of a tool (authorised persons only).

The interlocking function is restored when the door is re-closed.



Shaft for external handle

Rating (A)	Handle type	Length		Dimension		Reference
		(in)	(mm)	(in)	(mm)	
100 ... 200	S2	7.9	200	10 ... 14.3	254 ... 362	1400 1020
100 ... 200	S2	12.6	320	10 ... 19	254 ... 482	1400 1032
100 ... 200	S2	15.7	400	10 ... 22.1	254 ... 562	1400 1040
260 ... 400	S3	7.9	200	12 ... 18.4	305 ... 467	1401 1520
260 ... 400	S3	12.6	320	12 ... 23.1	305 ... 587	1401 1532
260 ... 400	S3	15.7	400	12 ... 26.3	305 ... 667	1401 1540
260 ... 400	S3	7.9	200	20 ... 23.4	508 ... 594	1401 1520
260 ... 400	S3	12.6	320	20 ... 28.1	508 ... 714	1401 1532
260 ... 400	S3	15.7	400	20 ... 31.3	508 ... 794	1401 1540
800 ... 1200	S4	7.9	200	20 ... 23.4	508 ... 594	1401 1520
800 ... 1200	S4	12.6	320	20 ... 28.1	508 ... 714	1401 1532
800 ... 1200	S4	15.7	400	20 ... 31.3	508 ... 794	1401 1540
800 ... 1200	V1 / S5	12.6	320	20 ... 28.1	508 ... 714	4199 3018
800 ... 1200	V1 / S5	15.7	400	20 ... 31.3	508 ... 794	4199 3019



SIRCOVER UL1008

Manually operated Transfer Switching Equipment
from 100 to 1200 A

Accessories (continued)

Bridging bars

Use

Creation of a common point, above or below the switch, between positions I and II.

Rating (A)	No. bridging bar	Reference
100 ... 200	2	4159 2021
100 ... 200	3	4159 3021
100 ... 200	4	4159 4021
260 ... 400	2	4159 2041
260 ... 400	3	4159 3041
260 ... 400	4	4159 4041
600	3	4159 3063
600	4	4159 4063
800 ... 1200	3	4159 3080
800 ... 1200	4	4159 4080



acces_205_a_1_cat

Terminal protection screen

Use

Top or bottom protection against direct contact with terminals or connecting parts.

Rating (A)	No. of poles	Reference
100 ... 200	2P / 3P	4158 3021
100 ... 200	4 P	4158 4021
260 ... 400	2P / 3P	4158 3041
260 ... 400	4 P	4158 4041
600	6 P	1609 3063
600	4 P	1609 4063
800 ... 1200	3 P	1609 3080
800 ... 1200	4 P	1609 4080



acces_207_a_1_cat

Auxiliary contacts

Use

Pre-break and signalisation of positions .

For low level ACs and other ACs contact us.

Electrical characteristics

A300.

NO/NC auxiliary contact

Rating (A)	Contact (s)	Reference
100 ... 400	NO/NC on position 1 and 2	4159 0021
100 ... 400	Low level NO/NC on position 1 and 2	4159 0022
600 ... 1200	NO/NC on position 1 and 2	included



acces_065_a_1_cat

acces_065_a_1_cat

Terminal lugs

Use

Connection of bare copper cables onto the terminals (without lugs).

Rating (A)	Wires range	No wires per lug	Lugs per kit	Wires	Reference
100 ... 200	6 - 300MCM	1	2	Cu / Al	3954 2020
100 ... 200	6 - 300MCM	1	3	Cu / Al	3954 3020
100 ... 200	6 - 300MCM	1	4	Cu / Al	3954 4020
260 ... 400	4 - 600MCM	1	2	Cu / Al	3954 2040
260 ... 400	4 - 600MCM	1	3	Cu / Al	3954 3040
260 ... 400	4 - 600MCM	1	4	Cu / Al	3954 4040
600	2x (#2 - 600MCM)	2	3	Cu / Al	3954 3060
600	2x (#2 - 600MCM)	2	4	Cu / Al	3954 4060
800 ... 1200 ⁽¹⁾	2x 2x(#2 - 600MCM)	2	6	Cu / Al	3954 3120
800 ... 1200 ⁽¹⁾	2x 2x(#2 - 600MCM)	2	8	Cu / Al	3954 4120

(1) To be used to connect 4 wires on one terminal. In such a case, 2 lugs are placed side-by-side on one terminal. Please refer to dimensions diagram



ul_032_a

Characteristics

Characteristics according to UL 1008

General use rating (A)	100 A	200 A	260 A	400 A	600 A	800 A	1200 A
Operation voltage 2 P / 3-4 P	240 / 600	240 / 600	240 / 600	240 / 600	- / 600	- / 600	- / 600
Short circuit rating with circuit breaker (kA) / Short-circuit capacity (ms)	10 / 25	10 / 25	14 / 50	14 / 50	35 / 50	35 / 50	35 / 50
Short circuit rating at 600 VAC (kA)	100	100	65	65	100	100	100
Type of fuse	J	J	J	J	L	L	L
Max. fuse rating (A)	200	400	600	600	800	1000	1600

Short circuit rating at 600 VAC with "Specific Circuit Breaker" (kA)

Square D JJ breaker 250 A 2 poles 240 VAC / 3-4 poles 480 VAC	65	65	-	-	-	-	-
Schneider Electric NSX-F 160 A 3-4 poles 480 VAC	35	-	-	-	-	-	-

Rated operational current 1 ph

240 VAC "Total system" (A)	100	200	260	400	-	-	-
240 VAC resistive load (A)	100	200	260	400	-	-	-

Rated operational current 3 ph

240 VAC "Total System" (A)	100	200	260	400	400	700	700
240 VAC resistive load (A)	100	200	260	400	600	800	1200
480 VAC "Total System" (A)	100	100	260	400	350	600	600
480 VAC resistive load (A)	100	200	260	400	600	800	1200
600 VAC "Total System" (A)	100	100	200	200	-	-	-
600 VAC resistive load (A)	100	200	260	400	400	800	1200

Mechanical endurance

Endurance (number of operating cycles)	6050	6050	6050	4050	3050	3050	3050
--	------	------	------	------	------	------	------

Connection terminals

Min. connection section / AWG	#6	#6	#4 / 2 x 1 / 0	#4 / 2 x 1 / 0	2 x #2	2 x #2	4 x #2
Max. connection section / AWG	300MCM	300MCM	600MCM / 2 x 250MCM	600MCM / 2 x 250MCM	2 x 600MCM	2 x 600MCM	4 x 600MCM

Characteristics according to UL 98/CSA 22.2#4

General use rating at 600 VAC and 250 VDC (A)	Specific reference upon request				600 A	800 A	1200 A
Short circuit rating at 600 VAC (kA)	-	-	-	-	200	100	100
Type of fuse	-	-	-	-	J	L	L
Max. fuse rating (A)	-	-	-	-	600	800	1200

Max. motor, hp / FLA 3 ph motor max.

220-240 VAC	-	-	-	-	200 / 480	-	-
440-480 VAC	-	-	-	-	400 / 477	-	-
600 VAC	-	-	-	-	500 / 472	-	-

Mechanical characteristics

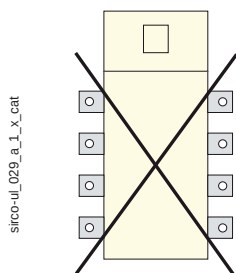
Endurance (number of operating cycles)	-	-	-	-	5000	3500	2500
Operating torque (lbs.in/Nm)	-	-	-	-	327.5/37	442.5/50	442.5/50

Auxiliary contacts

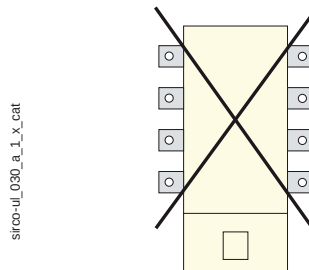
Electrical characteristics	A300	A300	A300	A300	A300	A300	A300
----------------------------	------	------	------	------	------	------	------

Mounting orientation

100 to 400 A



600 to 1200 A

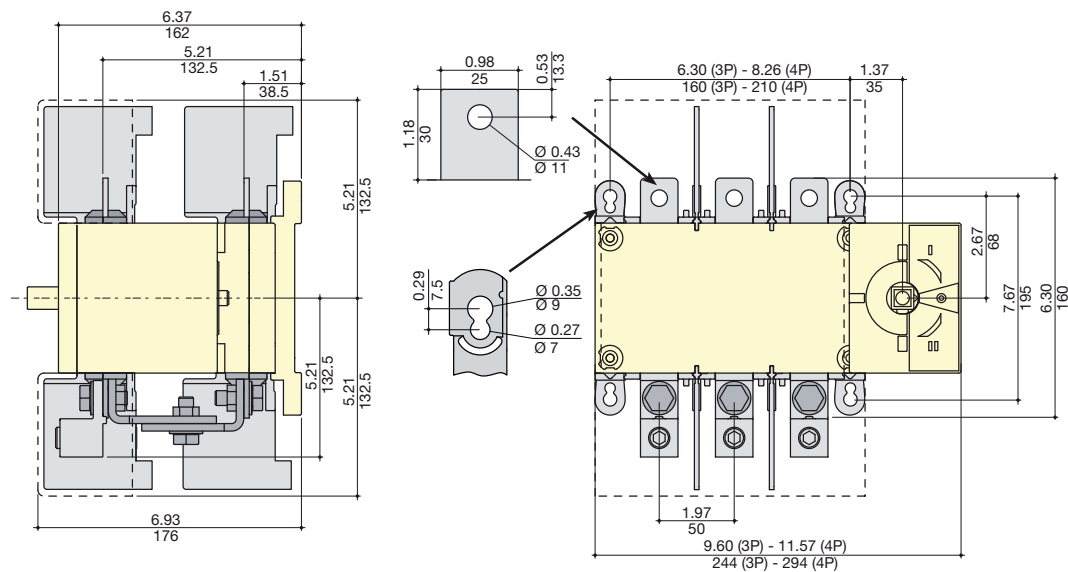


SIRCOVER UL1008

Manually operated Transfer Switching Equipment
from 100 to 1200 A

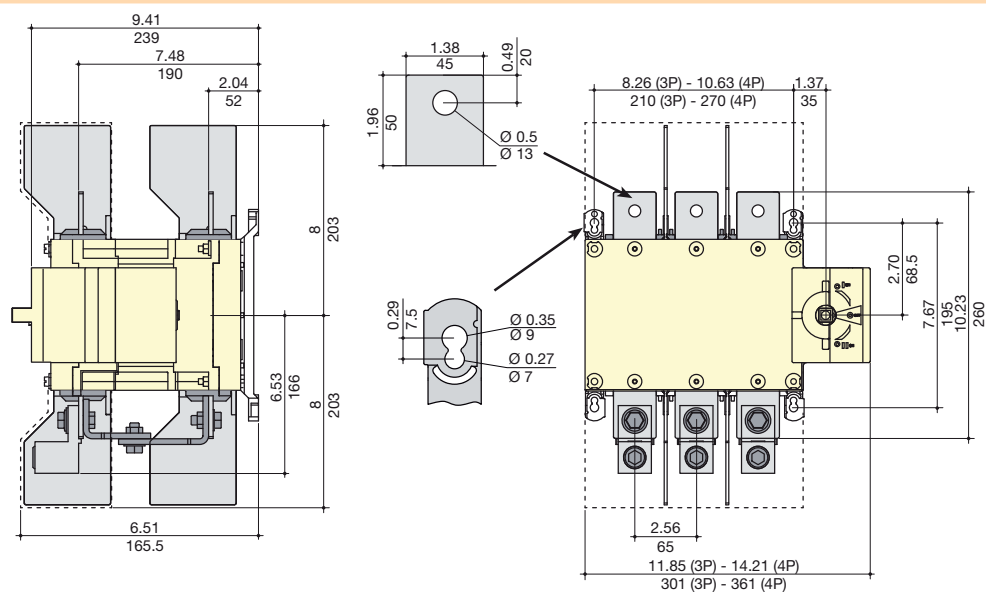
Dimensions (in/mm)

100 to 200 A



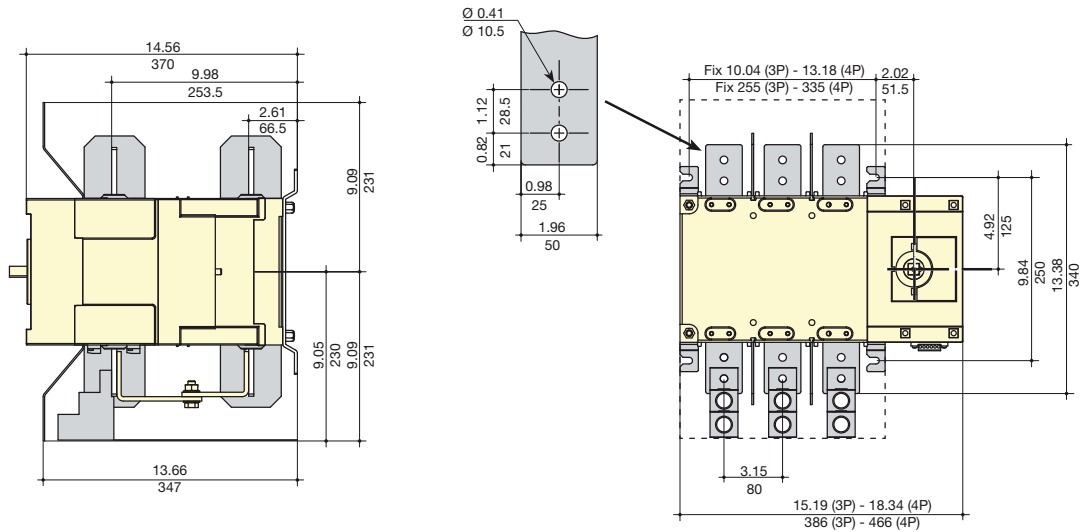
svr-ul_015_c_1_x_cat

260 to 400 A



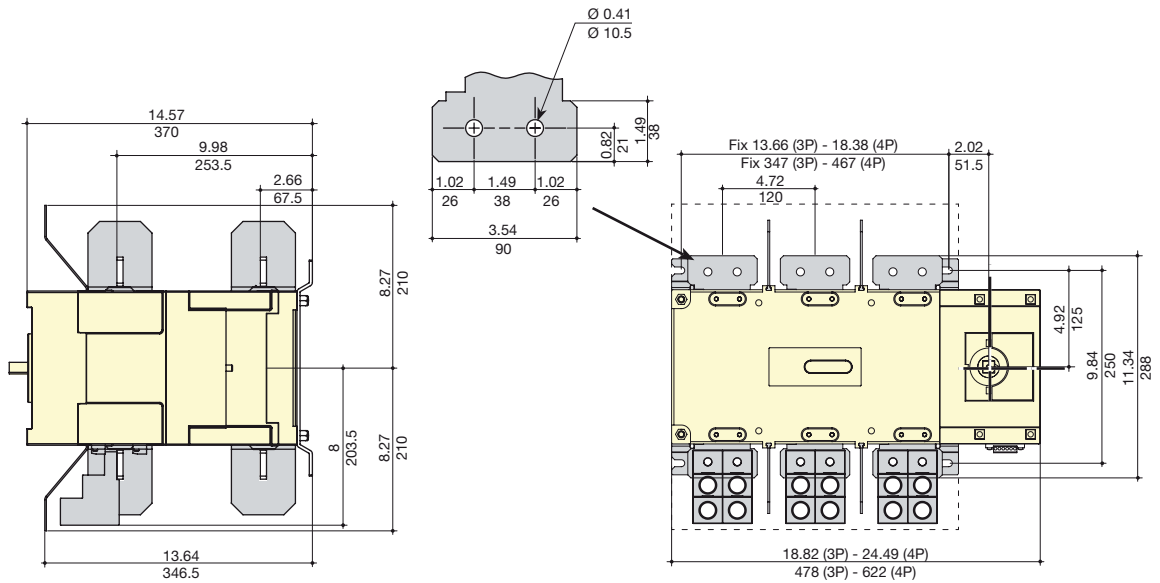
svr-ul_016_a_x_cat

600 A



svr-ul_003_a_x_cat

800 to 1200 A



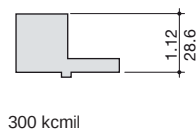
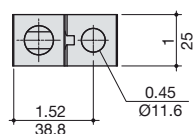
svr-ul_004_c_1_x_cat

SIRCOVER UL1008

Manually operated Transfer Switching Equipment
from 100 to 1200 A

Terminal lugs (in/mm)

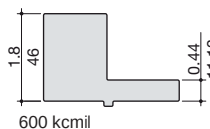
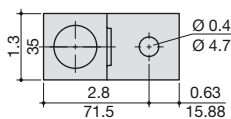
100 to 200 A



300 kcmil

siroco_115_b_1_us_cat

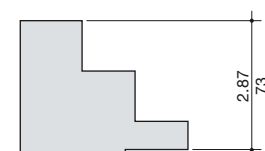
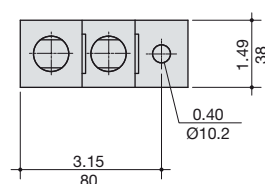
260 to 400 A



600 kcmil

siroco-ul_010_a_1_us_cat

600 to 1200 A



2 x 600 kcmil

siroco_116_b_1_us_cat

External handles dimensions (in/mm)

100 and 200 A

Handle type	Front operation Direction of operation	Door drilling
S2 type 		

poign_067_a_1_us_cat

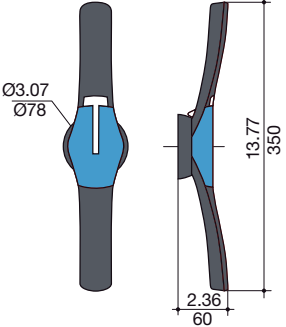
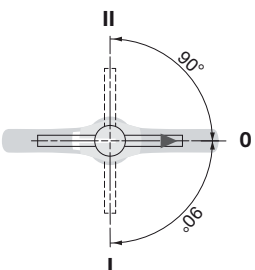
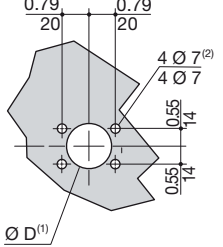
260 and 600 A

Handle type	Front operation Direction of operation	Door drilling
S3 type 		

poign_064_a_1_fr_cat

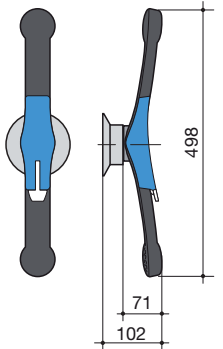
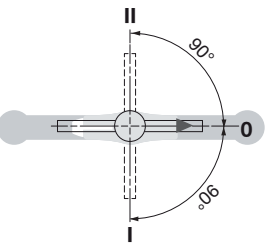
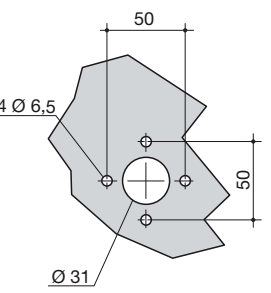
External handles dimensions (in/mm) (continued)

800 to 1200 A

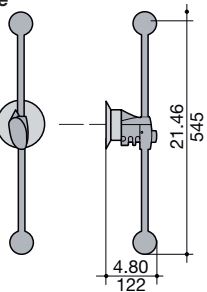
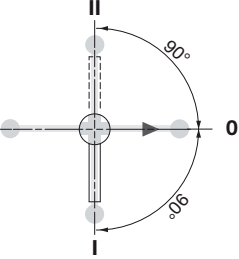
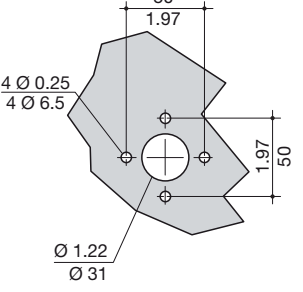
Handle type	Front operation Direction of operation	Door drilling
S4 type 		

polign_065_a_1_gb_cat

800 to 1200 A

Handle type	Front operation Direction of operation	Door drilling
S5 type with V Escutcheon 		

polign_047_a_1_gb_cat

Handle type	Front operation Direction of operation	Door drilling
V1 type 		

polign_066_a_1_us_cat



ATyS UL1008

Remotely operated Transfer Switching Equipment
from 100 to 400 A



The solution for

- > Commercial
- > Light Industry
- > Residential applications



Strong points

- > Robust and reliable design
- > Compatible with virtually any ATS controller
- > On-load manual operation
- > Maintenance free

Conformity to standards

- > UL 1008, Guide WPYV, file 317092



Product reference on request.

Your choice of ATS controls

- > Your preferred brand of ATS controller, genset/AMF controller or power/building management system, may easily be paired with the ATyS to provide a complete automatic transfer switch that perfectly suits your needs.

Function

ATyS non-automatic transfer switches are designed for use in total system optional standby applications for the safe transfer between a normal and an alternate power source.

The changeover is done in open transition and with minimum supply interruption during transfer ensuring full compliance with UL 1008 and IEC 60947-6-1. The ATyS is a full on-load disconnecter where the main components are based on proven technology also fulfilling requirements in UL 98 and IEC 60947-3 standards.

Advantages

Robust and reliable design

ATyS is a remotely operated transfer switch tested in full compliance with UL 1008. The design integrates a failsafe mechanical interlock to ensure that the main source is never inadvertently connected to the alternate. The stable position design ensures that the switch is unaffected by vibration or network voltage perturbation. The ATyS also includes a removable handle for emergency manual operation. This is extremely safe and easy to use.

Maintenance free

The self-cleaning contacts of the ATyS allow the power section to be maintenance free. For safe downstream maintenance the ATyS includes a facility for isolation and padlocking in the zero position.

In the unlikely event of a motorisation failure, the ATyS is designed in a way that the motorisation can be replaced easily and very quickly. Furthermore, the ATyS remains manually operational with or without the motorisation in place.

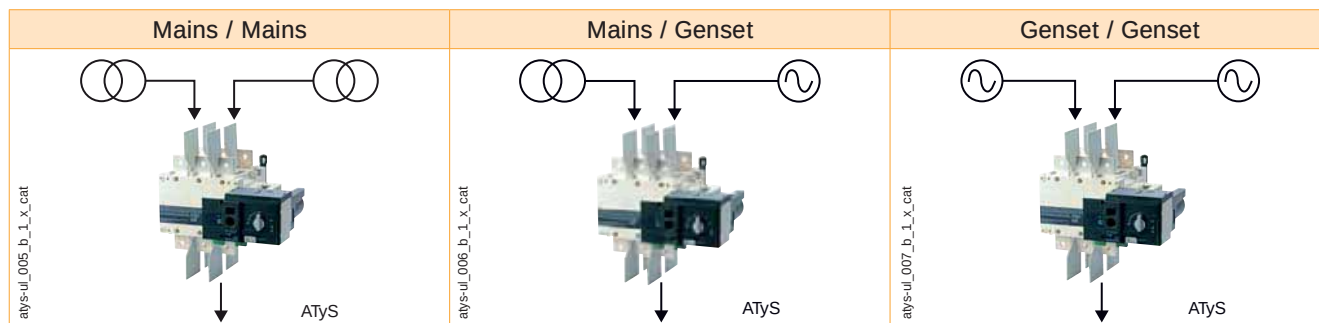
Compatible with virtually any ATS controls

The ATyS is directly compatible with virtually any transfer switching control solution that provides volt free contacts. This allows the ATyS to be combined with most ATS controls available on the market and then used in automatic transfer switch applications.



Typical applications

The ATyS UL 1008 range provides safe transfer for mains/mains, mains/genset and genset/genset applications.

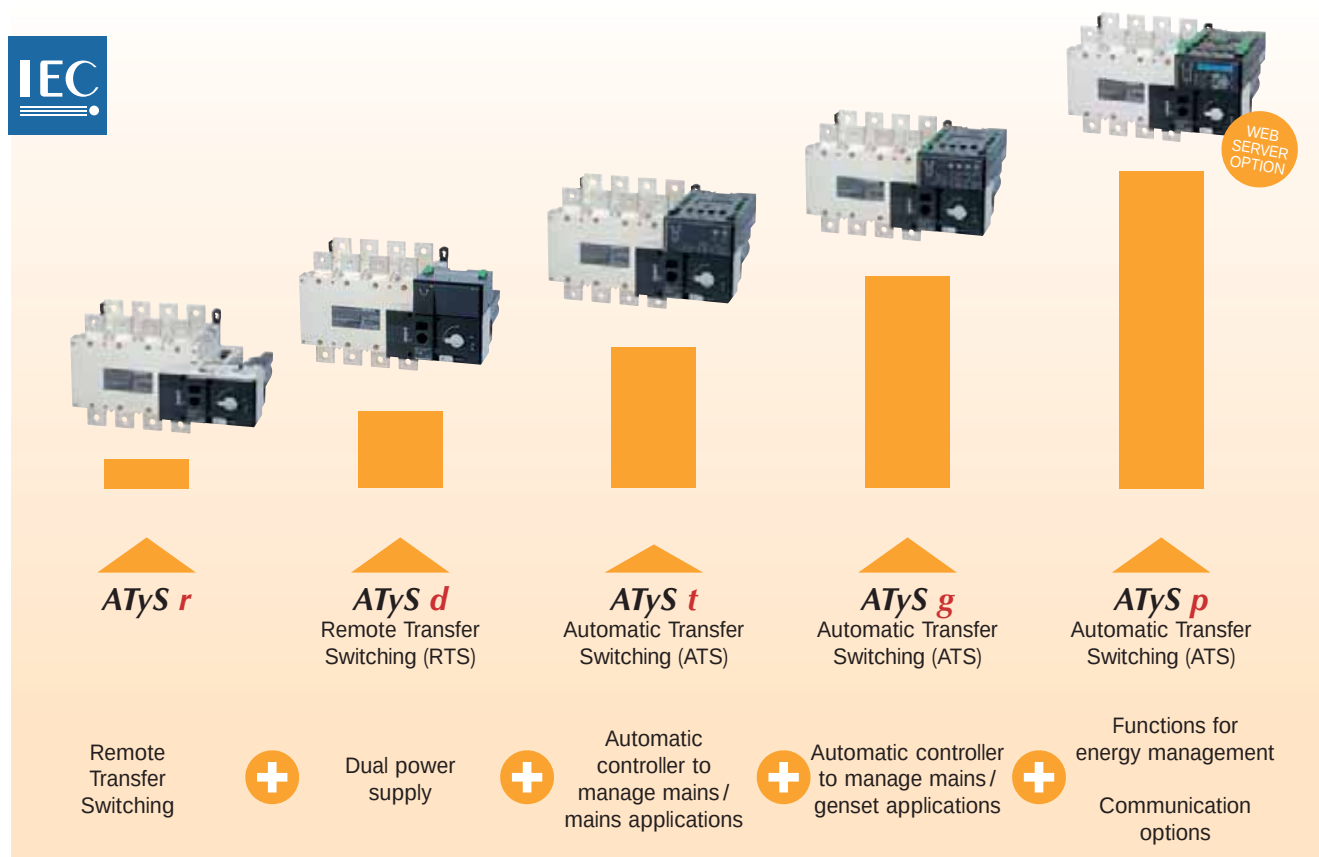


Part of a globally recognized range

The ATyS UL 1008 is part of a large family of products including a complete range of remotely operated and fully automatic transfer switches that comply to IEC and GB standards.

The ATyS range is a world renowned product family trusted by some of the largest manufacturers in the genset industry.

The key to success has been through reliable power availability provided by products that are safe and easy to use.



Please don't hesitate to contact SOCOMEC with any questions regarding the IEC ATyS range of products above rated from 125 to 3200 A.

ATyS UL1008

Remotely operated Transfer Switching Equipment
from 100 to 400 A

References

ATYS UL 1008

Rating (A)	No. of poles	ATyS	Bridging bars	Terminal screens	Auxiliary contact	Lug kits			
100 A	2 P	9723 2010	2 P 4159 2021 3 P 4159 3021 4 P 4159 4021	2/3 P 4158 3021 4 P 4158 4021	NO / NC 4159 0021	2 P 3954 2020 ⁽¹⁾ 3 P 3954 3020 ⁽¹⁾ 4 P 3954 4020 ⁽¹⁾			
	3 P	9723 3010							
	4 P	9723 4010							
200 A	2 P	9723 2020				2 P 4159 2041 3 P 4159 3041 4 P 4159 4041	2/3 P 4158 3021 4 P 4158 4021	Low level 4159 0022	2 P 3954 2040 ⁽²⁾ 3 P 3954 3040 ⁽²⁾ 4 P 3954 4040 ⁽²⁾
	3 P	9723 3020							
	4 P	9723 4020							
260 A	2 P	9723 2026	2 P 4159 2041 3 P 4159 3041 4 P 4159 4041	2/3 P 4158 3021 4 P 4158 4021	Low level 4159 0022				2 P 3954 2040 ⁽²⁾ 3 P 3954 3040 ⁽²⁾ 4 P 3954 4040 ⁽²⁾
	3 P	9723 3026							
	4 P	9723 4026							
400 A	2 P	9723 2040				2 P 4159 2041 3 P 4159 3041 4 P 4159 4041	2/3 P 4158 3021 4 P 4158 4021	Low level 4159 0022	2 P 3954 2040 ⁽²⁾ 3 P 3954 3040 ⁽²⁾ 4 P 3954 4040 ⁽²⁾
	3 P	9723 3040							
	4 P	9723 4040							

(1) 1x #6-300MCM.

(2) 1x #6-600MCM.

Accessories

Terminal screens

Use

Top and bottom protection against direct contact with terminals or connection parts.

For upstream and downstream protection, order quantity 1.

Rating (A)	No. of poles	Position	Reference
100 ... 200	2/3 P	top / bottom	4158 3021
100 ... 200	4 P	top / bottom	4158 4021
260 ... 400	2/3 P	top / bottom	4158 3041
260 ... 400	4 P	top / bottom	4158 4041



acces_207_a_2_cat

Bridging bars

Use

For bridging power terminals on the top or bottom side of the switch.
When ordering one reference is required per switch.

Rating (A)	No. bridging bar	Reference
100 ... 200	2	4159 2021
100 ... 200	3	4159 3021
100 ... 200	4	4159 4021
260 ... 400	2	4159 2041
260 ... 400	3	4159 3041
260 ... 400	4	4159 4041



4159 4021

acces_205_a_2_cat

Accessories (continued)

Auxiliary contacts

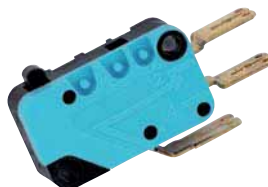
Use

Pre-break and signalling of positions I and II: each reference provides 1 NO/NC auxiliary contact for positions I and II.

ATyS are supplied with 1 NO auxiliary contact for all three positions as standard.

Rating (A)	Designation	Reference
100 ... 400	NO / NC	4159 0021
100 ... 400	Low level NO / NC	4159 0022

A maximum of 2 Aux contacts per position may be added.



acces_065_a_1_cat



acces_065_a_1_cat

Spares

Motorisation module

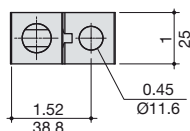
Rating (A)	No. of poles	Frame size	Used for ATyS Reference	Motorisation module Reference
100 A	2, 3, 4 P	B4	9723 2010 - 9723 3010 - 9723 4010	9709 5010
200 A	2, 3, 4 P		9723 2020 - 9723 3020 - 9723 4020	9709 5020
260 A	2, 3, 4 P	B5	9723 2026 - 9723 3026 - 9723 4026	9709 5026
400 A	2, 3, 4 P		9723 2040 - 9723 3040 - 9723 4040	9709 5040



atys_871_a_1_cat.eps

Terminals lugs (in/mm)

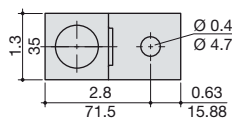
100 to 200 A



srco_115_b_1_us_cat



260 to 400 A



srco-ul_010_a_1_us_cat



Rating (A)	Wires range	Lugs per kit	Wires	Reference
100 ... 200	6 - 300MCM	2	Cu / Al	3954 2020
100 ... 200	6 - 300MCM	3	Cu / Al	3954 3020
100 ... 200	6 - 300MCM	4	Cu / Al	3954 4020
260 ... 400	4 - 600MCM	2	Cu / Al	3954 2040
260 ... 400	4 - 600MCM	3	Cu / Al	3954 3040
260 ... 400	4 - 600MCM	4	Cu / Al	3954 4040

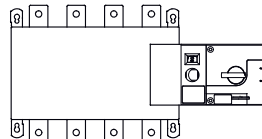


ul_032_a

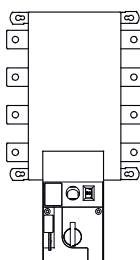
Mounting orientation

100 to 400 A

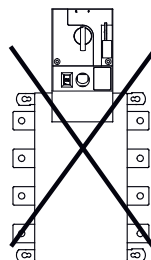
atys-ul_013 ... 014_a_1_x_cat



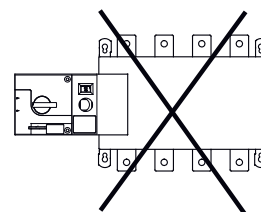
Recommended



OK



Not allowed



Not allowed

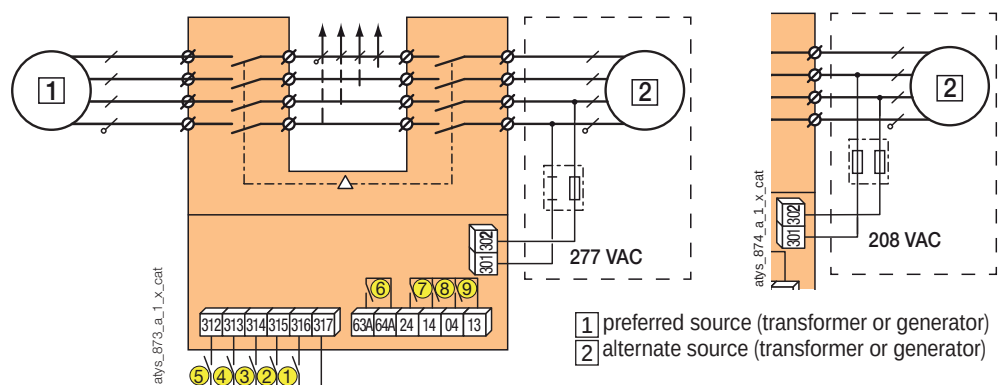
Characteristics according to UL 1008 (Optional standby)

100 to 400 A

Frame size	B4		B5	
General use rating (A)	100 A	200 A	260 A	400 A
Operation voltage 2 P / 3-4 P	240 / 600	240 / 600	240 / 600	240 / 600
Short-circuit rating with any breaker (kA) / Short-circuit capacity (ms)	10 / 25	10 / 25	14 / 50	14 / 50
Short-circuit rating at 600 VAC (kA) with fuses	100	100	65	65
Type of fuse	J	J	J	J
Max. fuse rating (A)	200	400	600	600
Short-circuit rating with specific breaker (kA)				
Square D JJ breaker 250 A 2 poles 240 VAC / 3-4 poles 480 VAC	65	65	-	-
Schneider Electric NSX-F 160 A 3-4 poles 480 VAC	35	-	-	-
Rated operational current 1 ph				
240 VAC “Total system” (A)	100	200	260	400
240 VAC resistive load (A)	100	200	260	400
Rated operational current 3 ph				
240 VAC “Total system” (A)	100	200	260	400
240 VAC resistive load (A)	100	200	260	400
480 VAC “Total system” (A)	100	100	260	400
480 VAC resistive load (A)	100	200	260	400
600 VAC “Total system” (A)	100	100	200	200
600 VAC resistive load (A)	100	200	260	400
Mechanical endurance				
Endurance (number of operating cycles)	6050	6050	6050	4050
Connection terminals				
Min. connection section / AWG	#6	#6	#4 / 2 x 1/0	#4 / 2 x 1/0
Max. connection section / AWG	300MCM	300MCM	600MCM / 2x 250MCM	600MCM / 2x 250MCM
Power Supply				
Supply voltage VAC 50/60 Hz	208-277 VAC			
Switching time				
I to II or II to I (s)	1.3			
I to 0 or 0 to II (s)	0.85			
Duration of electrical blackout (s)	0.6			

Terminals and connections

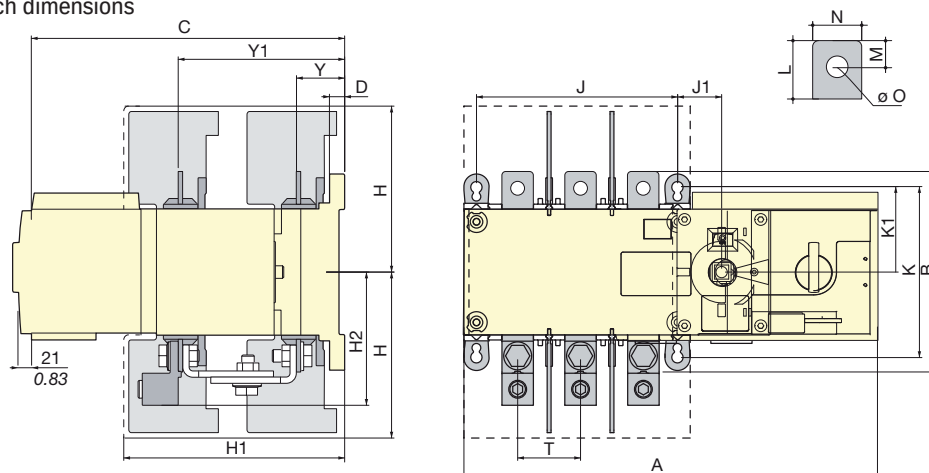
Typical wiring for 480/277 VAC and 208/120 VAC networks



Dimensions (in/mm)

100 to 400 A

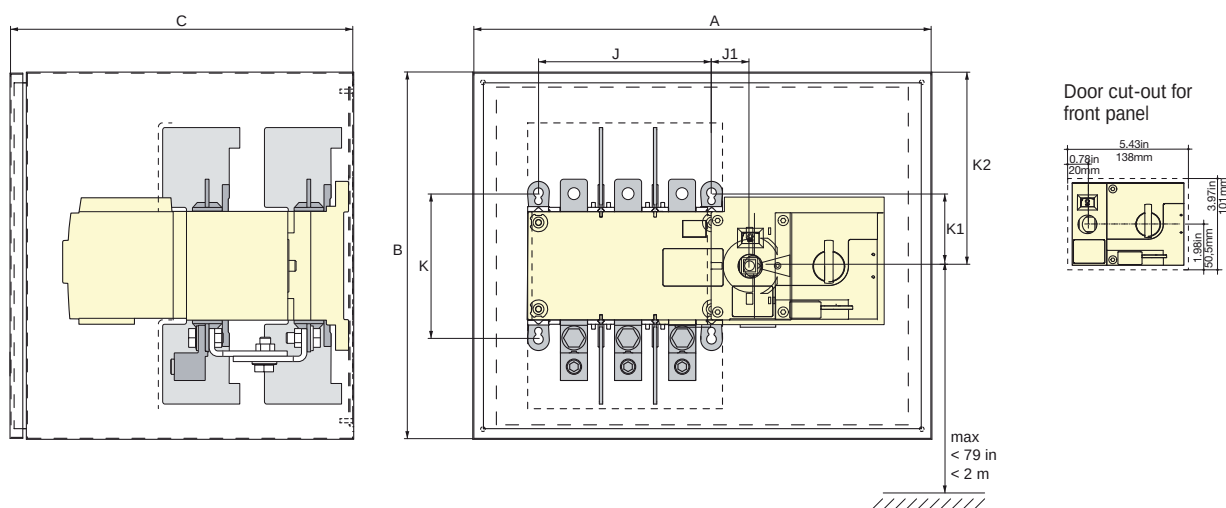
Transfer switch dimensions



Rating (A)	Reference	No. of poles	A		B		C		D		H		H1		H2		Y		Y1	
			in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
100 - 200	9723 2010 - 9723 2020	2 P	12.91	328	6.30	160	9.60	244	0.41	10.5	5.08	129	6.93	176	4.21	107	1.51	38.5	5.21	132.5
	9723 3010 - 9723 3020	3 P																		
	9723 4010 - 9723 4020	4 P	14.88	378																
260 - 400	9723 2026 - 9723 2040	2 P	14.84	377	10.23	260	12.62	320.5	0.41	10.5	8	203	6.51	165.5	6.53	166	2.04	52	7.48	190
	9723 3026 - 9723 3040	3 P																		
	9723 4026 - 9723 4040	4 P	17.20	437																

Rating (A)	Reference	No. of poles	J		J1		K		K1		L		M		N		O		T	
			in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
100 - 200	9723 2010 - 9723 2020	2 P	6.30	160	1.37	35	7.67	195	3.84	97.5	1.18	30	0.53	13.3	0.98	25	0.43	11	2	50
	9723 3010 - 9723 3020	3 P																		
	9723 4010 - 9723 4020	4 P	8.26	210																
260 - 400	9723 2026 - 9723 2040	2 P	8.26	210	1.37	35	7.67	195	3.84	97.5	1.96	50	0.49	20	1.38	45	0.51	13	2.6	65
	9723 3026 - 9723 3040	3 P																		
	9723 4026 - 9723 4040	4 P	10.63	270																

Minimum recommended enclosure dimensions



Rating (A)	Reference	No. of poles	A		B		C		J		J1		K		K1		K2	
			in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
100 - 200	9723 2010 - 9723 2020	2 P	24	610	24	610	12	305	6.30	160	1.37	35	7.67	195	2.67	68	12	305
	9723 3010 - 9723 3020	3 P							8.26	210								
	9723 4010 - 9723 4020	4 P																
260 - 400	9723 2026 - 9723 2040	2 P	32	813	32	813	16	406	8.26	210	1.37	35	7.67	195	3.84	97.5	15	381
	9723 3026 - 9723 3040	3 P																
	9723 4026 - 9723 4040	4 P							10.63	270								



Energy measurement & management

Why choose SOCOMEC?	p. 492
Measurement and monitoring system for electrical installations selection guide	p. 494
Active energy meters and pulse concentrators selection guide	p. 498
Multifunction meters selection guide	p. 500
Current transformers selection guide	p. 502
Energy monitoring and management software selection guide	p. 614

Multi-circuit metering & measurement

The DIRIS Digiware range p. 504



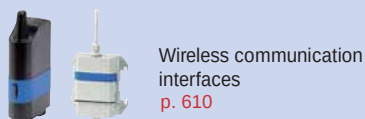
Wireless metering & measurement



Single-circuit metering, measurement & analysis



Gateways, dataloggers and interfaces



Software suite

Embedded web server
WEBVIEW



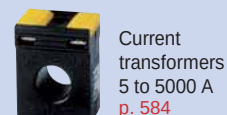
Energy management
software **HYPERVIEW**



Cloud energy management
software **N'VIEW**



Measurement devices

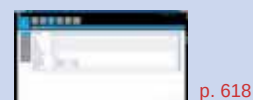


Indicators & transducers



Software tools

Management software for
COUNTIS and **DIRIS**





Why choose SOCOMEC?

Metering, monitoring
& power quality

Innovative and high performance solutions manufactured by specialists in electrical energy management

A leader in Energy & Power Management

- With the COUNTIS E, DIRIS A and associated current sensor ranges, SOCOMEC has developed one of the most advanced multifunction measurement ranges on the market, dedicated to improving your energy performance.

A monitoring device specialist

- The DIRIS G communication gateways and DATALOG H dataloggers centralise measurement data via hard-wired or radio link.
- Webserver solutions embedded in the DIRIS A and DIRIS G products enable the real-time monitoring of electrical parameters and alert users in case of anomaly.

Experts in energy performance analysis

- Energy management software analyses multi-utility energy data in order to reduce energy consumption.
- HYPERVIEW offers a wide range of tools for raising user awareness of energy consumption, creating reports and for dashboard display.

Metering

DIRIS Digiware Multi-circuit Power Monitoring Devices



COUNTIS E Single-circuit Energy meters



Measurement

DIRIS Digiware Multi-circuit Power Monitoring Devices



DIRIS A Single-circuit Multifunction meters



DIRIS B Wireless Power Monitoring Device



Power Factor Correction

COSYS PFC Power Factor Correction without harmonic protection



Power Factor Correction with harmonic protection
COSYS PFC



An independent partner working closely with our customers



Ranges that combine performance and quality

The DIRIS A and DIRIS Digiware ranges are compliant with the latest IEC 61557-12 standard dedicated to multi-measurement devices (PMD*). The COUNTIS E range complies with the requirements of the latest MID** directive (B+D module).

* Performance Measuring and Monitoring Devices.

** MID: Measuring Instruments Directive.

Customised support and partner proximity

Our manufacturer's expertise naturally extends to a complete offer of services. From the required preliminary assessment of your installation via in-depth analysis and application of the data, through to software adaptation and training, the experts at SOCOMEC provide customers with support in improving their energy efficiency and reaching energy performance targets.

Data centralisation

DIRIS G communication gateways



DATALOG H Dataloggers



Monitoring

WEBVIEW web server



WEBVIEW is embedded in the DIRIS G communication gateway.



Analysis

HYPERVIEW software



HYPERVIEW is hosted on a local server.

N'VIEW software



N'VIEW is hosted on a Cloud server.





Selection guide

Measurement and monitoring system for electrical installations

DIRIS Digiware

Build your own system

Control and power supply interface
(24 VDC)



DIRIS Digiware D
with display

or



DIRIS Digiware C
without screen

+

Voltage measurement
module



DIRIS Digiware U-x

Current measurement modules

+



DIRIS Digiware I-3x
3 current
sensor inputs



DIRIS Digiware I-4x
4 current
sensor inputs



DIRIS Digiware I-6x
6 current
sensor inputs

+

Current sensors



TE
Solid



TR
Split-core



TF
Flexible

Dedicated website



Find the right solution for your needs in just a few clicks
<http://www.diris-digiware.com>

Control and power supply interface

Application	Centralisation and display of data		Data centralisation	Repeater
				
DIRIS Digiware	D-40 p. 506	D-50 p. 506	C-31 p. 506	C-32 p. 506
Function				
Centralising measurement points:	•	•	•	•
High-resolution LCD display (configuration, selection and visualisation display of circuits)	•	•		
Repeater				•
Power supply				
24 VDC	•	•	•	•
Communication				
RS485 Modbus	output	input	•	
Digiware Bus	•	•	•	•
Ethernet Modbus TCP		•		

Voltage measurement module

Application	Metering	Monitoring	Analysis
			
DIRIS Digiware U	U-10 p. 510	U-20 p. 510	U-30 p. 510
Multi-measurement			
U12, U23, U31, V1, V2, V3, f	•	•	•
U system, V system			•
Ph/N unbalance			•
Ph/Ph unbalance			•
Quality analysis			
THDv1, THDv2, THDv3, THDu12, THDu23, THDu31		•	•
Individual harmonics U & V (up to rank 63)			•
Voltage dips, cutoffs and surges (EN50160)			•
Alarms			
On threshold			•
History of average values			
45 days (max)			•
Format			
Width/number of modules	18 mm / 1	18 mm / 1	18 mm / 1

Selection guide

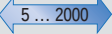
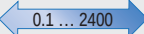
Measurement and monitoring system for electrical installations

DIRIS Digiware

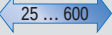
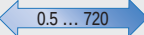
Current measurement modules

Application	Metering		Monitoring	Analysis	Monitoring	Analysis	Metering	
								
DIRIS Digiware I	I-30 p. 512	I-31 p. 512	I-33 p. 512	I-35 p. 512	I-43 p. 512	I-45 p. 512	I-60 p. 512	I-61 p. 512
Number of current inputs	3	3	3	3	4	4	6	6
Metering								
± kWh, ± kvarh, kVAh	•	•	•	•	•	•	•	•
Load curves		•		•		•		•
Multi-tariff		•		•		•		•
Multi-measurement								
I1, I2, I3, In, ΣP, ΣQ, ΣS, ΣPF	•	•	•	•	•	•	•	•
P, Q, S, PF per phase			•	•	•	•		
Predictive power				•		•		
Current unbalance (Inba, Idir, Iinv, Ihom, Inb)				•		•		
Phi, cos Phi, tan Phi				•		•		
Quality								
THDi1, THDi2, THDi3, THDin			•	•	•	•		
Individual harmonics I (up to level 63)				•		•		
Overcurrents				•		•		
Alarms								
On threshold				•		•		
Inputs/outputs					2/2	2/2		
History of average values								
45 days (max)				•		•		
Format								
Width/number of modules	18 mm / 1	18 mm / 1	18 mm / 1	18 mm / 1	27 mm / 1.5	27 mm / 1.5	36 mm / 2	36 mm / 2

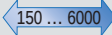
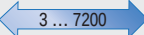
Current sensors

Suitable for new installations match the pitch of protective devices	Solid-core current sensors						
							
	TE-18 p. 522	TE-25 p. 522	TE-35 p. 522	TE-45 p. 522	TE-55 p. 522	TE-90 p. 522	
Nominal current I_n (A) 	5 ... 20	25 ... 63	40 ... 160	63 ... 250	160 ... 630	400 ... 1000	600 ... 2000
Actual coverage range (A) 	0.1 ... 24	0.5 ... 75.6	0.8 ... 192	1.26 ... 300	3.2 ... 756	8 ... 1200	12 ... 2400
Aperture (mm)	Ø 8.4	Ø 8.4	13.5 x 13.5	21 x 21	31 x 31	41 x 41	64 x 64
Dimensions (mm)	28 x 20 x 45	28 x 20 x 45	25 x 32.5 x 65	35 x 32.5 x 71	45 x 32.5 x 86	55 x 32.5 x 100	90 x 126 x 24.6
Connection	RJ12	RJ12	RJ12	RJ12	RJ12	RJ12	RJ12

For demands greater than 2000 A, the 5 A / RJ12 adapter guarantees the compatibility of the TCs.

Suitable for existing installations	Split-core current sensors			
				
	TR-10 p. 526	TR-16 p. 526	TR-24 p. 526	TR-36 p. 526
Nominal current I_n (A) 	25 ... 75	32 ... 100	63 ... 200	200 ... 600
Actual coverage range (A) 	0.5 ... 90	0.64 ... 120	1.26 ... 240	4 ... 720
Aperture (mm)	Ø 10	Ø 16	Ø 24	Ø 36
Dimensions (mm)	25 x 39 x 71	30 x 42 x 74	45 x 44 x 95	57 x 42 x 111
Connection	RJ12	RJ12	RJ12	RJ12

For demands greater than 600 A, the 5 A / RJ12 adapter guarantees the compatibility of the TCs.

Suitable for existing installations with space restrictions or with a high-intensity current	Flexible current sensors		
			
	TF-55 p. 528	TF-120 p. 528	TF-300 p. 528
Nominal current I_n (A) 	150 ... 600	500 ... 2000	1600 ... 6000
Actual coverage range (A) 	3 ... 720	10 ... 2400	32 ... 7200
Aperture (mm)	Ø 55	Ø 120	Ø 300
Connection	RJ12	RJ12	RJ12



Selection guide

Active energy meters and pulse concentrators

COUNTIS E

Single-circuit metering,
measurement &
analysis

Which type
of network?

Which load
current?

Network - Input current	Single-phase Direct up to 32 A	Single-phase Direct up to 40 A	Single-phase Direct up to 63 A	Single-phase Direct up to 80 A	Three-phase Direct up to 63 A	Three-phase Direct up to 80 A			
		new 		new 		new 			
Active energy meters: <i>COUNTIS E</i>	<i>E00/E02</i> <i>p. 530</i>	<i>E03/E04</i> <i>p. 530</i>	<i>E05/E06</i> <i>p. 530</i>	<i>E10/E11/E12</i> <i>p. 532</i>	<i>E13/E14</i> <i>p. 532</i>	<i>E15/E16</i> <i>p. 532</i>	<i>E17/E18</i> <i>p. 532</i>	<i>E20/E21/E22</i> <i>p. 534</i>	<i>E23/E24</i> <i>p. 534</i>

Main specifications

MID: EN 50470 module B + D certification	• (E02)	• (E04)	• (E06)	• (E12)	• (E14)	• (E16)	• (E18)	• (E22)	• (E24)
RS485 Modbus		•			•				•
M-Bus			•			•			
Ethernet Modbus TCP/RTU							•		
Width	1 module	1 module	1 module	3 modules	2 modules	2 modules	2 modules	4 modules	4 modules
Input voltage	230 VAC	230 VAC	230 VAC	230 VAC	230 VAC	230 VAC	230 VAC	230 ... 400 VAC	230 ... 400 VAC

Functions

Total/partial energy kWh	•/-	•/•	•/•	•/• (E10, E11)	•/•	•/•	•/•	•/•	•/•
Active power / Reactive power		•/•	•/•	•/-	•/•	•/•	•/•	•/• (E22)	•/•
Dual tariff for kWh		•	•	• (E11, E12)	•	•	•	• (E21/E22)	•
Total/partial energy kvarh		•/•	•/•		•/•	•/•	•/•	• (E22)	•/•
kVA		via COM	via COM		•	•	•	• (E22)	•
Load curve									
Measurement (I, V, P, Q, S, F and PF)		•	•		•	•	•	• (E22)	•
CT connection indication									
Bidirectional (energy consumption and production)		•	•		•	•	•	• (E22)	•
Integrated web server							•		
Compatibility web server DIRIS G		•			•				•

Accuracy

Active energy (IEC 62053-21)	class 1	class 1	class 1	class 1	class 1	class 1	class 1	class 1	class 1
Reactive energy (according to IEC 62053-23)		class 2	class 2		class 2	class 2	class 2	class 2 (E22)	class 2
Active energy (EN 50470)	class B (E02)	class B (E04)	class B (E06)	class B (E12)	class B (E14)	class B (E16)	class B (E18)	class B (E22)	class B (E24)

Characteristics

Metrological LED	•	•	•	•	•	•	•	•	•
Pulse output	100 Wh	100 Wh	100 Wh	100 Wh	100 Wh	100 Wh		100 Wh	100 Wh
Sealing cover (MID version only)	• (E02)	• (E04)	• (E06)	• (E12)	• (E14)	• (E16)	• (E18)	• (E22)	• (E24)
Phase/neutral inversion protection								•	

Pulse concentrator	COUNTIS ECi2 p. 542	COUNTIS ECi3 p. 542
Case	4 modules	4 modules
Logical inputs	7	7
Analogue inputs		2
ON/OFF output (alarm)	1	1
Partial, total, daily, weekly or monthly kWh or other types of data (liters, m³...)	•	•
Load curve from 8 to 30 minutes	•	•
RS485 Modbus	•	•

Which accuracy?

MID certification?

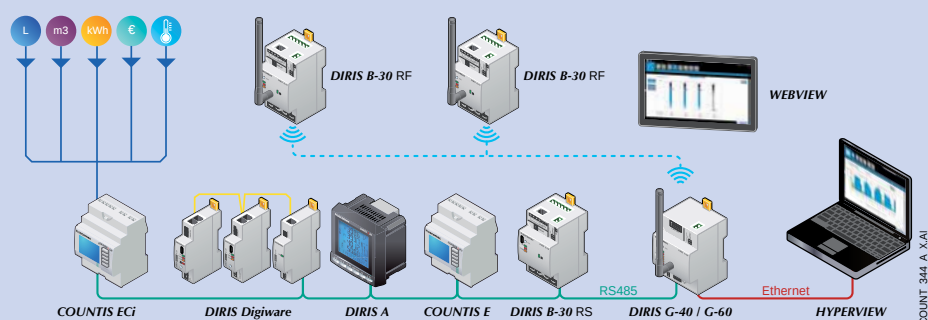
Communication or pulse output?

View data on the web server?

Three-phase Direct up to 80 A		Three-phase Direct up to 100 A			3 x Single-phase Direct up to 100 A	Three-phase CT/5 A		
								
E25/E26 p. 534	E27/E28 p. 534	E30/E31/E32 p. 536	E33/E34 p. 536	E35/E36 p. 536	E63 p. 540	E40/E41/E42 p. 538	E43/E44 p. 538	E45/E46 p. 538
• (E26)	• (E28)	• (E32)	• (E34)	• (E36)		• (E42)	• (E44)	• (E44)
4 modules	4 modules	7 modules	7 modules	7 modules	7 modules	4 modules	4 modules	4 modules
230 ... 400 VAC	230 ... 400 VAC	230 ... 400 VAC	230 ... 400 VAC	230 ... 400 VAC	230 ... 400 VAC	230 ... 400 VAC	230 ... 400 VAC	230 ... 400 VAC
•/•	•/•	•/• (E31)	•/via COM (E34)	•/via COM (E36)	•/•	•/•	•/via COM (E44)	•/via COM (E46)
•/•	•/•	•/-	•/via COM	•/via COM	•/via COM	•/-	•/via COM	•/via COM
•	•	• (E31/E32)	up to 4 via com	up to 4 via com	up to 4 via com		up to 4 via com	up to 4 via com
•/•	•/•		via COM	via COM	via COM		via COM	via COM
•	•		via COM	via COM	via COM		via COM	via COM
			via COM	via COM	via COM		via COM	via COM
•	•		via COM	via COM	via COM		via COM	via COM
•	•		• (E33)	• (E35)		•	• (E43)	• (E45)
class 1	class 1	class 1	class 1	class 1	class 1	class 0,5s	class 0,5s	class 0,5s
class 2	class 2					class 2	class 2	class 2
class B (E26)	class B (E28)	class B (E32)	class B (E34)	class B (E36)		class C (E42)	class C (E44)	class C (E46)
•	•	•	•	•	•	•	•	•
100 Wh	100 Wh					configurable		
• (E26)	• (E28)	• (E32)	• (E34)	• (E36)		• (E42)	• (E44)	• (E46)

COUNTIS ECI pulse concentrator

Enables pulses from water, gas, compressed air, electricity meters or even analogue sensors (light, temperature, wind etc.) to be registered and stored. All data can be centralised and managed by an energy efficiency software via RS485 communication.





Selection guide

Multifunction meters

DIRIS A

Single-circuit metering,
measurement &
analysis

Which
application?



Which
functions?

Application	Multifunction metering (PMD)			
				
	DIRIS A10 p. 552	DIRIS A14 p. 556	DIRIS A20 p. 560	
Multi-measurement				
Currents, voltages (ph/ph and ph/n), active / reactive / apparent powers, power factor, frequency	•	•	•	
4 th CT for neutral current measurement				
Voltage/current unbalance				
Currents, voltages, frequency (average values)	(max. average value for currents)	(max. average value for currents)	(max. average value for currents)	
Max. power demand	•	•	•	
Temperatures	Internal			
Tangent phi		• cos phi		
Hour meter	•		•	
Memorisation of min / max instantaneous values		•		
Metering				
MID: EN 50470 module B + D certification		•		
kWh (+/-), kvarh (+/-)	kWh (+), kvarh (+)	•	kWh (+), kvarh (+)	
Logical input(s) for pulse meter(s)				
Multi-tariff meters	•	•		
Pulse output(s)	1 as standard		with optional module	
Active energy accuracy / IEC 62053-21 class 1				
Active energy accuracy / IEC 62053-22 class 0.5 s	•	•	•	
Active energy accuracy / IEC 62053-22 class 0.2 s				
Active energy (EN 50470)		Class C		
Reactive energy accuracy / IEC 62053-23 class 2	•	•	•	
Compatibility with IEC 61557-12	•	•	•	
Power management				
Load curves (period 5, 8, 10, 15, 20 and 30 minutes)		•		
Predictive power				
Power quality				
THD voltages, currents and neutral currents	Row 51	Row 63	Row 51	
Individual harmonics				
EN 50160				
Sag, swell and outages, overcurrent				
RMS 1/2 period curve backup for events				
Management of fault currents				
Plug-in modules				
	• 1 digital input as standard • 1 digital output as standard • Modbus as standard for 1 reference		• 1 digital output • Modbus RS485 communication • 3 In / 1 out + alarm	

Which dimensions?

Which communication protocol?

Which options?

	Power monitoring (PMD)		Power monitoring & events analysis (PMD)	Power monitoring & residual current monitoring (PMD+RCM)
				
	DIRIS A40 p. 564	DIRIS A41 p. 564	DIRIS A60 p. 570	DIRIS A80 p. 576
	•	•	•	•
		•		•
			•	•
	•	•	•	•
	•	•	•	•
	by temperature sensor PT100	by temperature sensor PT100	by temperature sensor PT100	
			•	•
	•	•	•	•
	optional	optional	•	•
	•	•	•	•
	up to 6 with optional module	up to 6 with optional module	up to 6 with optional module	
	up to 6 with optional module	up to 6 with optional module	up to 6 with optional module	
	•	•	•	•
	•	•	•	•
	•	•	•	•
	optional	optional	•	•
	•	•	•	•
	Row 63	Row 63	Row 63	Row 63
	Row 63	Row 63	Row 63	Row 63
			•	•
			•	•
			•	•
				•
	• 2 pulse outputs • Modbus RS485 communication • PROFIBUS DP communication • Ethernet communication (available with Modbus gateway) • 2 analogue outputs • 2 inputs / 2 outputs • Memory • Temperature inputs		• Memory fitted as standard • 2 pulse outputs • Modbus RS485 communication • Ethernet communication (available with Modbus gateway) • 2 analogue outputs • 2 inputs / 2 outputs • Temperature inputs	
			• Modbus RS485 communication • Ethernet communication (available with Modbus gateway)	



Selection guide

Current transformers

Type	TRB 60	TRB 70	TRB 135	TCA 14	TCA 21	TCA 22	TCB 17-20	TCB 26-30	TCB 28-30	TCB 26-40	TCB 32-40	TCB 44-50
Dimensions	Primary wound			Cable-through			Bar or cable-through					
Class	0.5	0.5	0.5	1	0.5/1	1	1	0.5/1	0.5/1	1	0.5/1	0.5/1
0.2S version			(1)			(2)		T2CB 26-30			T2CB 32-40	
	p. 585			p. 587			p. 588					

Rating (A)

0.5												
5	5											
10	...											
15	20											
20		5										
25		...										
30		40										
40												
50												
60			25	*								
75			...	25								
80			150	...								
100				150	40							
125					...							
150					150							
160												
200					60							
250					...							
300					300							
400						100						
500						...						
600						600						
750												
800												
1000												
1200												
1250												
1500												
1600												
2000												
2500												
3000												
4000												
5000												

Dimensions

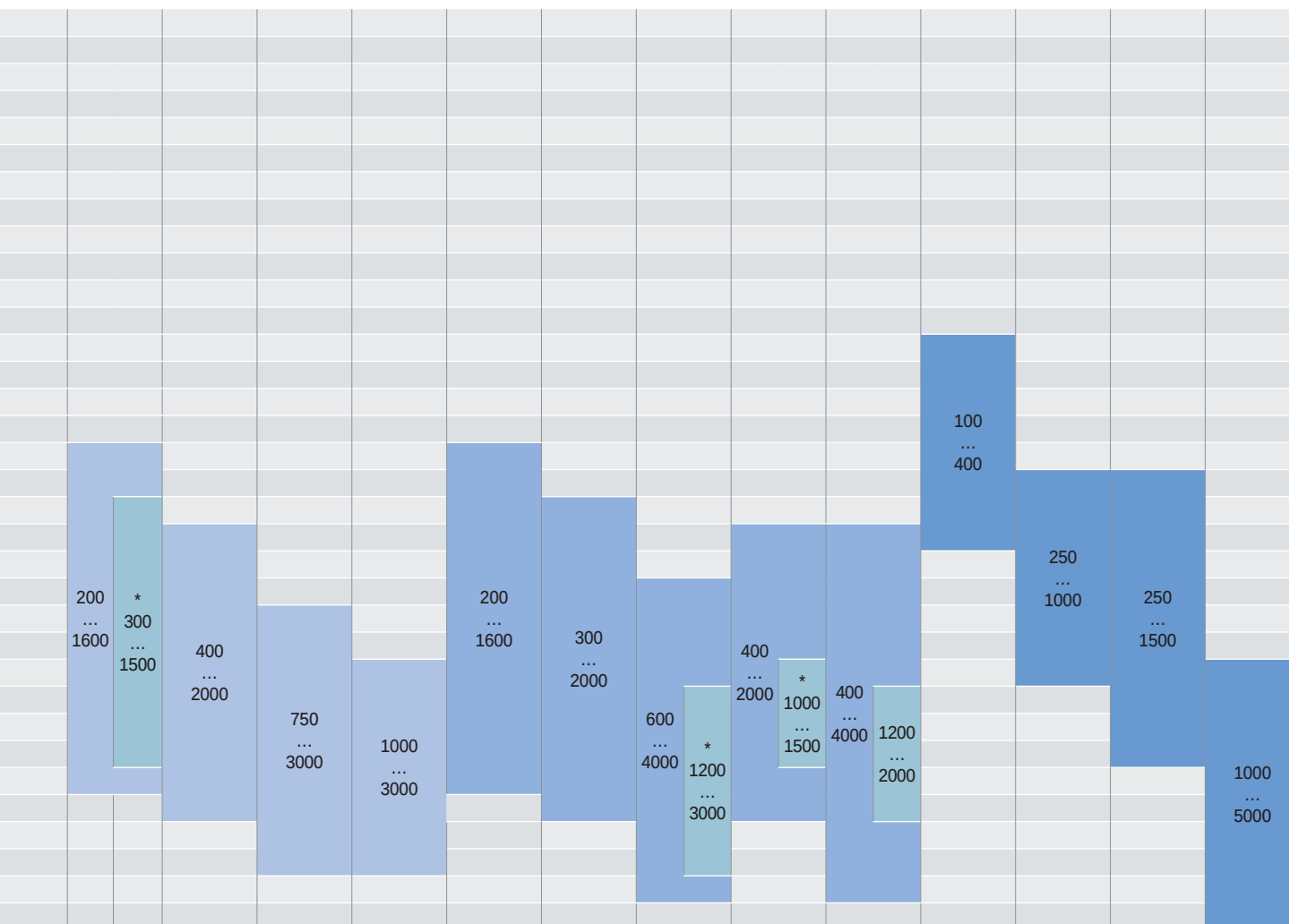
Height	75.5	85.5	85	65	65	65	65	61	70	75.5	88.5	98.5
Width	61	71	135	45	45	49.5	49.5	75.5	49.9	61	71	86
Depth	35	45	60	30	30	35	50	48	68	48	58	58
Cable (Ø mm)				14	21	22.5	17.5	26	28	26	32	44
Bar 1							20x5	30x10	30x10	32x18	40x10	50x12
Bar 2								20x10 (x2)		40x12	30x5 (x2)	40x10 (x2)
Bar 3												

* Class 1.

(1) Please see T2RB 115 for a primary wound 0.2S version. Dimensions are different from TRB 135.

(2) Please see T2CA 225 for a cable-through 0.2S version. Dimensions are different from TCA 22.

	TCB 44-63	TCB 55-80	TCD 85-100	TCB 100-125	TBA 60	TBA 80	TBA 100	TBA 103	TBA 127	TO 23	TO 58	TO 812	TO 816
	Bar or cable-through				Bar-through				Split-core				
	0.5	0.5	0.5	0.5	0.5/1	0.5	0.5	0.5	0.5	1/3	0.5/1	0.5/1	0.5
	T2CB 44-63						T2BA 100	T2BA 103	T2BA 127				
	p. 589				p. 592				p. 596				



105.5	123.5	184.8	184.8	129	117	167	150	175	106	158	198	243
96	120	172	172	88	96	129	99	100	93	125	155	195
58	58	52	52	48	68	78	58	55	58	58	58	79
44	55	85	100									
63x10	80x10	100x10	123x30	60x30	84x34	100x55	103x41	128x38	33x23	85x55	125x85	165x85
50x10 (x2)	60x30	80x10 (x3)	100x10 (x3)									
	60x10 (x2)											



DIRIS Digiware

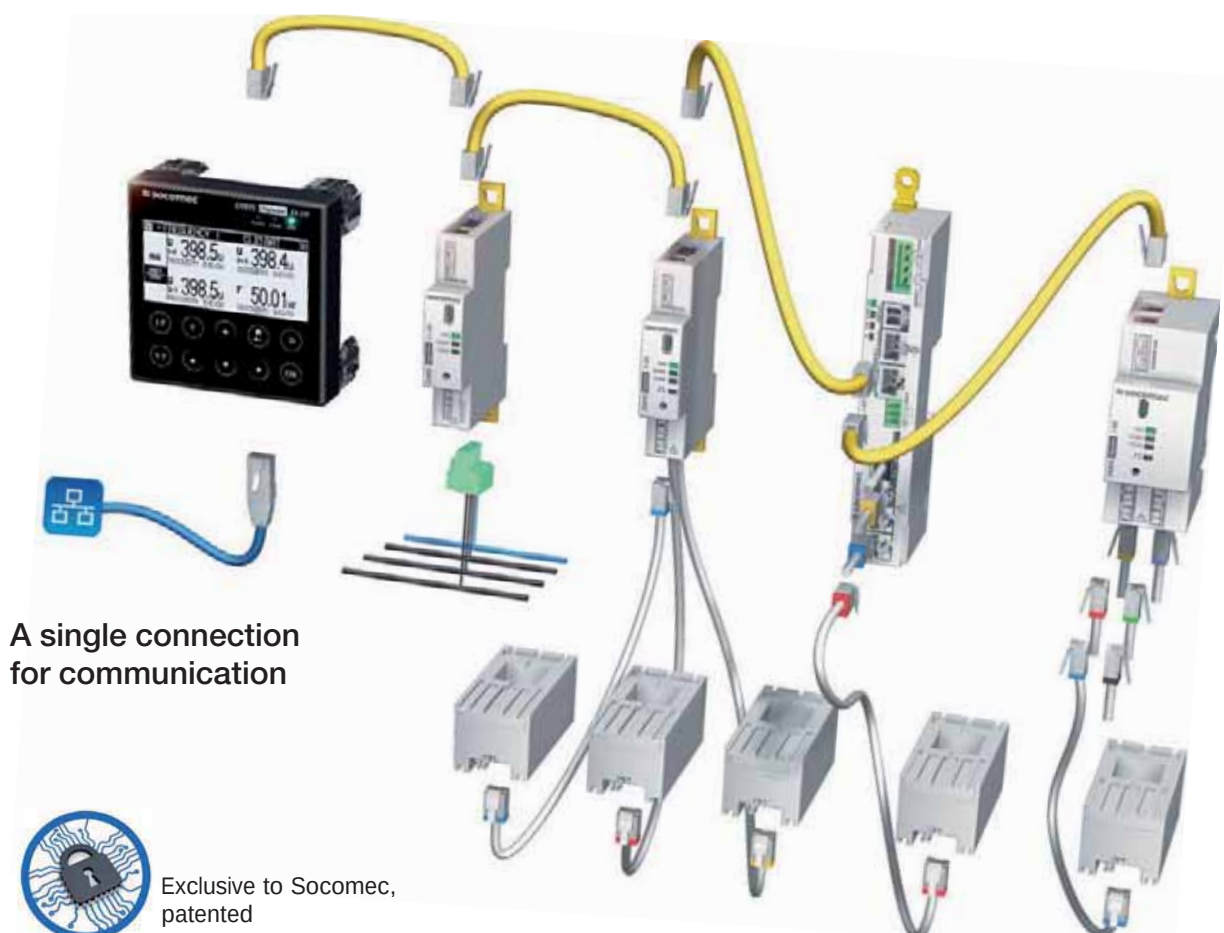
Measurement and monitoring system for electrical installations

Multi-circuit metering
& measurement

The DIRIS Digiware system

Multiple current acquisition modules connected to the voltage acquisition module and the display.

- A single centralised control unit
- A single voltage measurement module (U)
- Current measurement modules (I)
- Current sensors



DIRIS Digiware wins a trophy!



The SOCOMEC DIRIS Digiware energy measuring and monitoring solution came first in the 20th edition of the Mesure magazine's Prize for Technology and was the overall winner in the energy efficiency category.

Advantages of the system



Flexible

Shared functions

- Common display.
- A single voltage reference for the entire system.
- Single auxiliary power supply.

Installation of components close to the load

- Modules and sensors can be installed at the closest point to the loads to be measured.
- Elimination of hazardous voltage on panel doors.

Compact design

- U and I modules of variable size (1 to 2 modules).
- System suited to integration in existing or space-constrained installations.

Wide choice of current sensors

- Solid, split-core or rogowski coil.
- Various sizes and formats.
- Numerous accessories allow the system to be installed in all panels configurations.



Multi-circuit

Ability to monitor several loads via a single current measurement module thanks to independent current inputs.



Accurate

Accuracy of measurements guaranteed according to IEC standard 61557-12:

- Class 0.5 from 2 % to 120 % of rated current for the global measurement chain (associated with TE / TF current sensors).
- Class 0.2 for the meter alone.



Cost effective

- Implementation in a quarter of the time vs existing technologies.
- Save space in panels.
- Common voltage measurement functions, display and communication.
- Up to 30% return on investment.



Plug & Play

RJ12 current sensor connection

- Fast: automatic detection of ratings and verification of current flow direction.
- Reliable: identification of cables by colour-coding and wiring control by the system.
- Safe: disconnection of the current sensor secondary under load.

RJ45 interconnection of modules (Digiware Bus)

- Fast: a single connection, no tool required.
- Intelligent: allows communication and interaction between various modules.
- Reliable: ensures auxiliary power supply to modules without the risk of disconnection.

Auto-configuration of parameters

- Network type.
- Load type.
- Addressing of modules connected to the Bus.



APPLI_638_A



DIRIS Digiware **D** and **C**

Control and power supply interfaces



DIRIS Digiware D-40/D-50
Centralisation and display of data



DIRIS Digiware C-31
Centralisation

The solution for

- > Industry
- > Building
- > Infrastructure
- > Data center



Strong points

- > Centralising and displaying measurement data
- > A single power supply for the entire system
- > A single RS485 or Ethernet output for the entire system

Conformity to standards

- > IEC 61557-12



- > ISO 14025



- > UL



Configuration
with EasyConfig,
see page 618.

Function

DIRIS Digiware D-40 and D-50

DIRIS Digiware D remote screens give you:

- a local view of the data issued by the DIRIS Digiware U and I modules,
- a power supply to the DIRIS Digiware modules,
- access to this data over Ethernet (D-50) or RS485 (D-40)

Via an RS485 connection, the DIRIS Digiware D-50 screen also acts as a gateway, centralizing all information issued by DIRIS A, DIRIS B and COUNTIS E and making this information available on Ethernet.

DIRIS Digiware screens are 24 VDC powered.

DIRIS Digiware C-31

For applications without a local display

DIRIS Digiware C-31 interfaces centralise all the system data.

Through their RS485 Modbus output, they make all this information available to energy efficiency software (DIRIS G communication gateways are available to communicate via Ethernet - Modbus TCP).

DIRIS Digiware C-31 interfaces and C-32 repeaters are 24 VDC powered.

Advantages

DIRIS Digiware D-40 and D-50

- High-resolution graphic screen.
- Made safe by a 24 VDC supply: elimination of hazardous voltage on cabinet doors.
- IP65 front panel.
- Ergonomic and easy to use with 10 direct access buttons for:
 - Measurement information
 - Selecting outputs
 - Configuration equipment.
- Centralising measurement points:
 - Selecting the circuit
 - Displaying data.

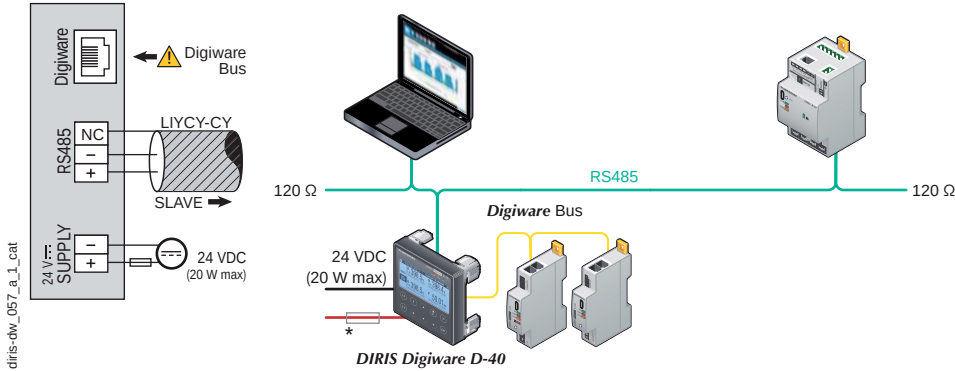
DIRIS Digiware C-31

Compact: Centralise your measurement data on 1 module without a local screen, for a complete system

- Single 24V power supply (no dangerous voltage on Digiware modules for an uninterruptible connection),
- A single RS485 communication.

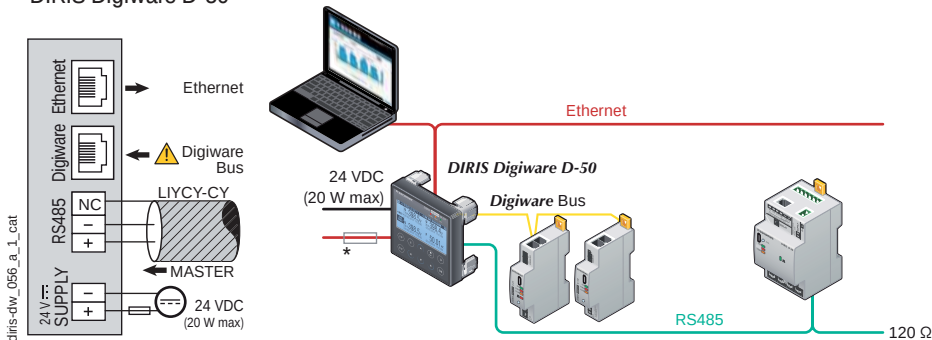
Connections

DIRIS Digiware D-40



(*) 1A / 24 VDC fuse protection is recommended if the 24 VDC power supply is not provided by Socomec.

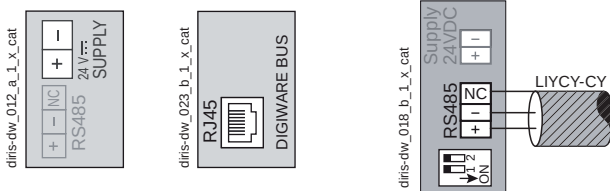
DIRIS Digiware D-50



(*) 1A / 24 VDC fuse protection is recommended if the 24 VDC power supply is not provided by Socomec.

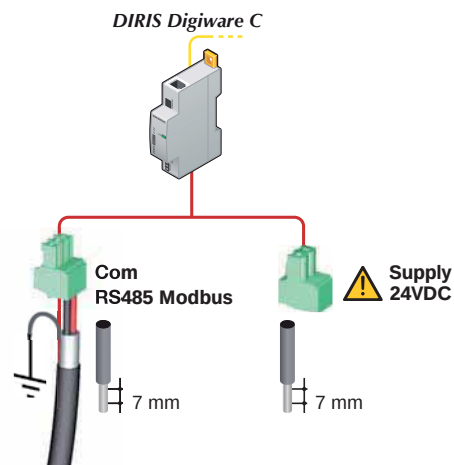
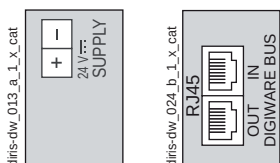
DIRIS Digiware C-31

Power supply Digiware Bus Communication



DIRIS Digiware C-32

Power supply Digiware Bus

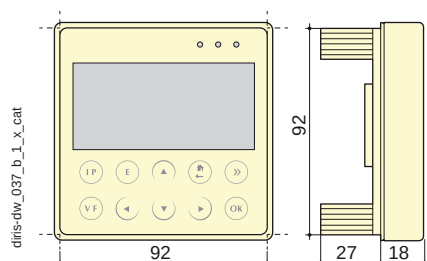


DIRIS Digiware D and C

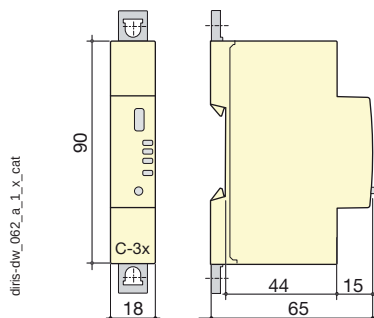
Control and power supply interfaces

Dimensions

DIRIS Digiware D-40/D-50



DIRIS Digiware C-31



Configuration

Equipment consumption

Product	Power delivered (W)	Power consumed (W)
Power supply		
P15 100-240 VAC / 24 VDC	15	
Cables		
50 metre package		1.5
System interfaces		
DIRIS Digiware D-x0		2
DIRIS Digiware C-31		0.8
Module voltage		
DIRIS Digiware U-xx		0.72
Current modules		
DIRIS Digiware I-3x		0.52
DIRIS Digiware I-4x		1.125
DIRIS Digiware I-6x		0.7
Repeater		
DIRIS Digiware C-32		1.5

Calculation rules for the max. number of products on the Digiware Bus

The total power consumed by the equipment connected to the Digiware Bus must not exceed the power from the 24 VDC supply.

The power supply must not exceed 20 W/70°C or 27 W/40°C.

Size with P15 power supply (ref: 4829 0120) delivering 15 W

For example, it is possible to use

- 1 DIRIS Digiware D-50 display (2W)
- 1 DIRIS Digiware voltage module U-xx (0.72 W)
- 50 metres of cable (1.5 W)

and

- 20 DIRIS Digiware current modules I-3x ($20 \times 0.52 = 10.4$ W)
- ⇒ Total power = 14.62 W

or

- 9 DIRIS Digiware current modules I-4x ($9 \times 1.125 = 10.125$ W)
- ⇒ Total power = 14.345 W.

Size with a 24 VDC power supply delivering a maximum of 20 W

For example, it is possible to use

- 1 DIRIS Digiware D-50 display (2W)
- 1 DIRIS Digiware voltage module U-xx (0.72 W)
- 50 metres of cable (1.5 W)

and

- 30 DIRIS Digiware current modules I-3x ($30 \times 0.52 = 15.6$ W)
- ⇒ Total power = 19.82 W

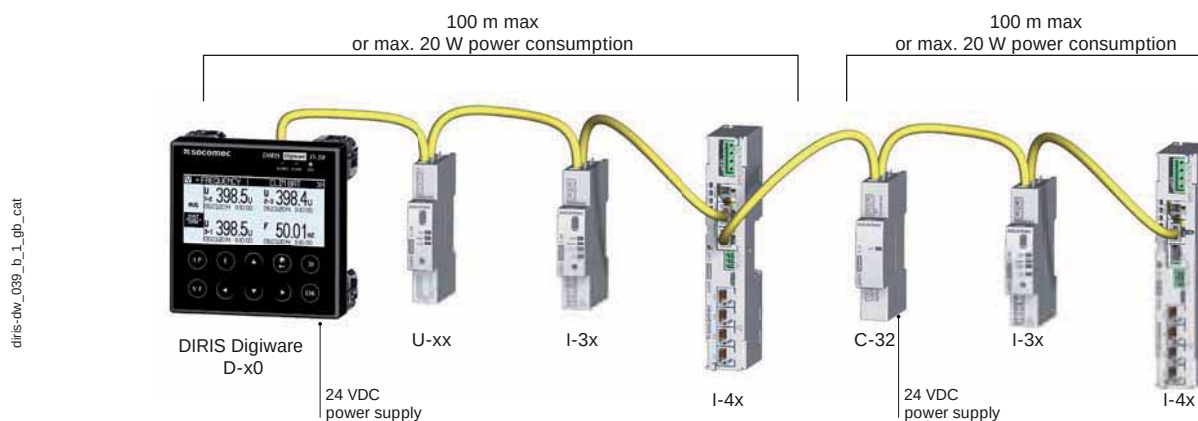
or

- 14 DIRIS Digiware current modules I-4x ($14 \times 1.125 = 15.72$ W)
- ⇒ Total power = 19.97 W.

Repeater

Whenever the power consumption is higher than 20 W or the distance is greater than 100 m, a DIRIS Digiware C-32 repeater is required.

In a DIRIS Digiware system, a maximum of 2 repeaters may be used.



Specifications

Electrical characteristics

DIRIS Digiware C-31	
Input voltage	24 VDC $\pm$ 20 % - 20 W max
Connection	Removable screw terminal block, 2 positions, stranded or solid 0.2-2.5 mm ² cable
P15 power supply	Specifications 100-240 VAC/ 24 VDC - 0.63 A - 15 W Modular format - Dimensions (H x L): 90 x 25 mm

Communication specifications

Digiware Bus	
Function	Connection between DIRIS Digiware modules
Cable type	Specific Socomec cable with RJ45 connections

RS485	
Connection type	2 to 3 half duplex wires
Protocol	Modbus RTU
Baudrate	1200 ... 115200 bauds
Function	Data configuration and reading
Location	Single-point on DIRIS Digiware C

Mechanical specifications

Casing type	DIN-rail mounting module and base
Casing protection index	IP20 / IK06
Front panel protection index	IP40 on the nose in modular assembly / IK06

Environmental specifications

Ambient operating temperature	-10 ... +70°C
Storage temperature	-25 ... +70°C
Operating humidity	55 °C / 97% HR
Operating altitude	< 2000 m

DIRIS Digiware D-40/D-50 features

Mechanical specifications	
Type of screen	Capacitive touch-screen technology, 10 keys
Screen resolution	350 x 160 pixels
Front panel protection index	IP65

Communication	
Ethernet RJ45 10/100 Mbs	Modbus TCP gateway function (D50)
RJ45 Digiware	Control and power supply interface function
RS485 2-3 wires	Modbus RTU communication function (D50 input / D40 output)
USB	Upgrade and configuration via type B micro USB connector

Electrical characteristics	
Power supply	24 VDC $\pm$ 10% / -20%
Power consumption	2 VA

Environmental specifications	
Storage temperature	-20 ... +70°C
Operating temperature	-10 ... +55°C
Humidity	95% at 40°C
Installation category, degree of pollution	CAT III, 2

Ports	D-40	D-50
Inputs	Digiware	Digiware RS485
Outputs	RS485	Ethernet

References

DIRIS Digiware		Reference
D-40	Multipoint display, RS485 output	4829 0199
D-50	Multipoint display, Ethernet output	4829 0201
C-31	System interface	4829 0101
C-32	Repeater	4829 0103
Power supply		Reference
P15	Power supply 100-240 VAC/ 24 VDC 15 W	4829 0120

Accessories		
Description of accessories	To be ordered in multiples of	Reference
Fuse circuit breakers to protect voltage inputs (type RM) 1 pole + neutral	4	5601 0017
gG 10x38 0.5 A fuses	10	6012 0000

Digiware connection cables		Reference
RJ45 cables for Digiware Bus	Length 0.10 m	4829 0181
	Length 0.20 m	4829 0188
	Length 0.50 m	4829 0182
	Length 1 m	4829 0183
	Length 2 m	4829 0184
	Length 5 m	4829 0186
	Length 10 m	4829 0187
Reel 50 m + 100 connectors		4829 0185
Digiware bus terminating resistor (supplied with C and D devices)		4829 0180
USB configuration cable		4829 0050
Single-point display		Reference
DIRIS D-30 ⁽¹⁾	Single-point display for DIRIS Digiware I-4x	4829 0200

(1) DIRIS D-30 display characteristics see page 521.

Expert Services

Require integration onto your network?

No problem for our "Expert Services" team. They will fully integrate all your SOCOMEC devices, audit your system, commission selected equipment and train your staff on its use.

For further information, please contact your nearest SOCOMEC branch.



DIRIS Digiware U

Voltage measurement module



diris-dw_005_a_cat

DIRIS Digiware U-10/U-20/ U-30



Configuration
with EasyConfig,
see page 618.

Function

The DIRIS Digiware U module measures voltage for the entire system. This pools together all voltage measurements.

The Digiware RJ45 Bus allows you to pass voltage measurements as well as power supply and communication to all connected products.

Advantages

- 1 single voltage measurement point for the entire system.
- Single point of protection for voltage measuring.
- A complete, dedicated solution:
 - metering,
 - monitoring voltage,
 - quality analysis of the supplied voltage.
- No hazardous voltage on cabinet doors.
- Adapted to all types of network: single-phase, three-phase.

The solution for

- > Industry
- > Building
- > Infrastructure
- > Data center



Strong points

- > 1 single voltage measurement point for the entire system
- > Plug & Play
- > Compact



RJ45 (Digiware Bus) cables are available.

Conformity to standards

- > IEC 61557-12



- > ISO 14025



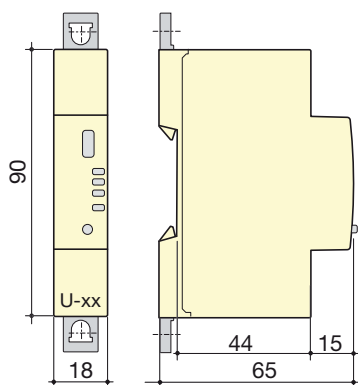
- > UL



Application	Voltage measurement module		
	Metering	Monitoring	Analysis
			
DIRIS Digiware U	U-10	U-20	U-30
Multi-measurement			
U12, U23, U31, V1, V2, V3, f	•	•	•
U system, V system			•
Ph/N unbalance			•
Ph/Ph unbalance			•
Quality analysis			
THDv1, THDv2, THDv3, THDu12, THDu23, THDu31		•	•
Individual harmonics U & V (up to rank 63)			•
Voltage dips, cutoffs and surges (EN 50160)			•
Alarms			
On threshold			•
History of average values			
45 days (max)			•
Format			
Width/number of modules	18 mm / 1	18 mm / 1	18 mm / 1

Dimensions

DIRIS Digiware U



diris-dw_059_a_1_x_cat

Specifications

Measuring characteristics

Voltage measurement - DIRIS Digiware U	
Characteristics of the network measured	50-300 VAC (Ph/N) - 87-520 VAC (Ph/Ph) - CAT III
Frequency range	45 ... 65 Hz
Frequency accuracy	Class 0.02
Network type	Single-phase/ Two-phase / Two-phase with neutral / Three-phase / Three-phase with neutral
Measurement by voltage transformer	Primary: 400 000 VAC Secondary: 60, 100, 110, 173, 190 VAC
Input consumption	≤ 0.1 VA
Permanent overload	300 VAC Ph/N
Accuracy of voltage measurement	Class 0.2
Connection	Removable screw terminal block, 4 positions, stranded or solid 0.2 ... 2.5 mm ² cable

Communication specifications

USB	
Protocol	Modbus RTU on USB
Function	Configuration of DIRIS Digiware U and I modules
Location	On each DIRIS Digiware U and I measurement module
Connection	Type B micro USB connector

References

Digiware connection cables		Reference
RJ45 cables for Digiware Bus	Length 0.10 m	4829 0181
	Length 0.20 m	4829 0188
	Length 0.50 m	4829 0182
	Length 1 m	4829 0183
	Length 2 m	4829 0184
	Length 5 m	4829 0186
	Length 10 m	4829 0187
Reel 50 m + 100 connectors		4829 0185
Digiware bus terminating resistor (supplied with C and D devices)		4829 0180
USB configuration cable		4829 0050

DIRIS Digiware		Reference
U-10	Metering	4829 0105
U-20	Monitoring	4829 0106
U-30	Analysis	4829 0102

Accessories		
Description of accessories	To be ordered in multiples of	Reference
Fuse holder to protect voltage inputs (type RM) 3 pole	4	5601 0018
gG 10x38 0.5 A fuses	10	6012 0000



DIRIS Digiware I

Current measurement modules



DIRIS Digiware I-3x



DIRIS Digiware I-4x



DIRIS Digiware I-6x



Configuration
with EasyConfig,
see page 618.

Function

DIRIS Digiware I modules measure consumption and monitor the system at the closest point to the loads. The flexibility of these modules allows you to allocate the loads to be measured or monitored through independent current inputs.

For example:

- 1 three-phase load,
- 3 single-phase loads.

The RJ45 and RJ12 connections allow you to connect modules very quickly and to automatically configure connected current sensors:

- communication address,
- load type,
- sensor type and ratio,
- automatic rating and verification of current travel direction.

Wiring errors are also prevented and installation is simplified.

Advantages

- RJ45 and RJ12 rapid connection.
- Available with 3, 4 or 6 inputs.
- Single-output or multi-output for maximum optimisation of the number of products.
- Compact format: 1 or 2 modules sized for integration at the closest point to the loads.
- A complete, dedicated solution:
 - metering,
 - monitoring,
 - quality analysis.
- Compliant with standard IEC 61557-12, guaranteeing the quality and accuracy of the system:
 - class 0.5 for the 2 - 120% rated current global measurement chain In (with TE/TF current sensors).

The solution for

- > Industry
- > Building
- > Infrastructure
- > Data center



Strong points

- > Multi-circuit
- > Plug and Play
- > Compact
- > High-precision measurement chain

Conformity to standards

- > IEC 61557-12



- > ISO 14025



- > UL

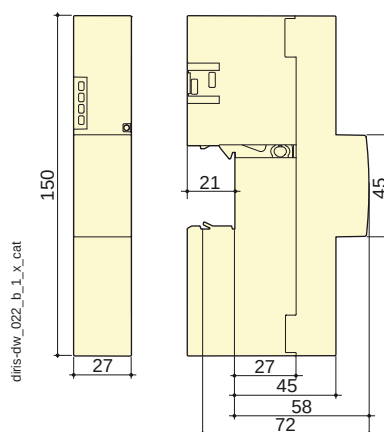
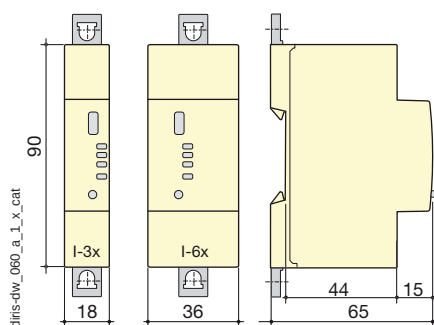


Application	Current measurement modules							
	Metering		Monitoring	Analysis	Monitoring	Analysis	Metering	
								
DIRIS Digiware I	I-30	I-31	I-33	I-35	I-43	I-45	I-60	I-61
Number of current inputs	3	3	3	3	4	4	6	6
Metering								
± kWh, ± kvarh, kVAh	•	•	•	•	•	•	•	•
Load curves		•		•		•		•
Multi-tariff		•		•		•		•
Multi-measurement								
I1, I2, I3, In, ΣP, ΣQ, ΣS, ΣPF	•	•	•	•	•	•	•	•
P, Q, S, PF per phase			•	•	•	•		
Predictive power				•		•		
Current unbalance (Inba, Idir, linv, Ihom, Inb)				•		•		
Phi, cos Phi, tan Phi				•		•		
Quality								
THDi1, THDi2, THDi3, THDin			•	•	•	•		
Individual harmonics I (up to level 63)				•		•		
Overcurrents				•		•		
Alarms								
On threshold				•		•		
Inputs/outputs					2/2	2/2		
History of average values								
45 days (max)				•		•		
Format								
Width/number of modules	18 mm / 1	18 mm / 1	18 mm / 1	18 mm / 1	27 mm / 1.5	27 mm / 1.5	36 mm / 2	36 mm / 2

Dimensions

DIRIS Digiware I-3x / I-6x

DIRIS Digiware I-4x



Connections

Associated current sensors

Various types of current sensors are connected to the DIRIS Digiware: closed (TE), split core (TR) or flexible (TF). This range of sensors can be adapted to all types of new or existing installations.. A rapid RJ12 connection makes wiring easy and reliable and prevents wiring errors. The DIRIS Digiware system automatically recognises the sensor size and type. This guarantees the overall accuracy of the DIRIS Digiware + current sensor measurement chain.

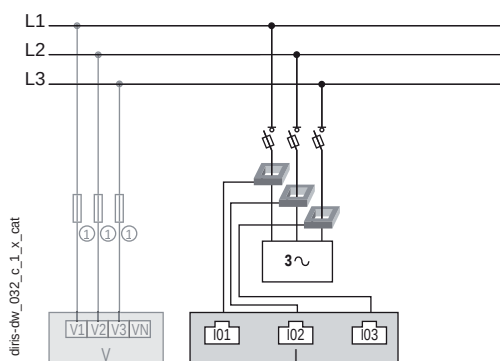
For more information: see page 522.

Network and connection examples

I3x

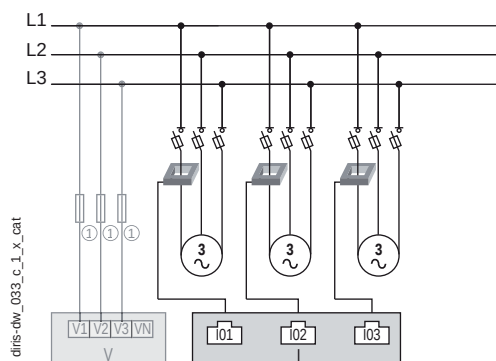
Three-phase

3P - 3CT (1 three-phase load)



Three-phase

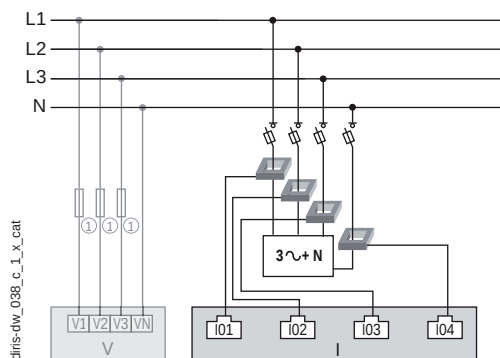
3P - 1CT (3 balanced, three-phase loads)



I4x

Three phase + neutral

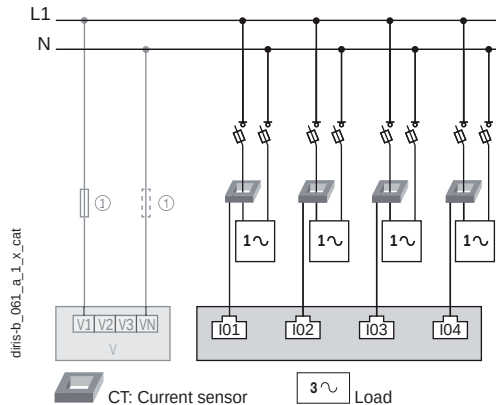
3P+N - 4CT (1 three-phase load + Neutral measured)



1. 0.5 A gG / 0.5 A class CC fuses.

Single-phase

1P+N-1CT (4 single-phase loads)



CT: Current sensor 3~ Load

Accessories

Digiware plug-in connector

With the Digiware plug-in connector you can disconnect a Digiware module from the Bus while ensuring the DIRIS Digiware system continues to run downstream. This accessory is particularly useful in applications with retractable drawers or critical applications such as in data centres.

Specifications

Measuring characteristics

Current measurement - DIRIS Digiware I	
Number of current inputs	I-3x: 3 / I-45: 4 / I-6x: 6
Associated current sensors	Solid TE, split-core TR, flexible TF current sensors
Accuracy of current measurement	0.2 DIRIS Digiware class only Class 0.5 with TE or TF sensors Class 1 with TR sensors
Connection	Specific Socomec cable with RJ12 connectors
Inputs - DIRIS Digiware I-45	
Number of inputs	2
Type / Power supply	Non-insulated input, internal polarisation 12 VDC max, 1mA
Input functions	Logic status, pulse meter, multi-tariff
Connection	Removable screw terminal block, stranded or solid 0.14-1.5 mm ² cable

Outputs - DIRIS Digiware I-45	
Number of outputs	2
Relay type	230 VAC ±15 % - 1 A
Function	Configurable alarm (current, power, etc.) when threshold is exceeded or remote controlled status
Connection	Removable screw terminal block, stranded or solid 0.2-2.5 mm ² cable

Communication specifications

USB	
Protocol	Modbus RTU on USB
Function	Configuration of DIRIS Digiware U and I modules
Location	On each DIRIS Digiware U and I measurement module
Connection	Type B micro USB connector

References

DIRIS Digiware		Reference
I-30	Metering - 3 current inputs	4829 0110
I-31	Metering + load curve - 3 current inputs	4829 0111
I-33	Monitoring - 3 current inputs	4829 0128
I-35	Analysis - 3 current inputs	4829 0130
I-43	Monitoring - 2 inputs/ 2 outputs - 4 current inputs	4829 0129
I-45	Analysis - 2 inputs/ 2 outputs - 4 current inputs	4829 0131
I-60	Metering - 6 current inputs	4829 0112
I-61	Metering + load curve - 6 current inputs	4829 0113
Accessories		Reference
Digiware x 5 plug-in connector		4829 0605

Digiware connection cables		Reference
RJ45 cables for Digiware Bus	Length 0.10 m	4829 0181
	Length 0.20 m	4829 0188
	Length 0.50 m	4829 0182
	Length 1 m	4829 0183
	Length 2 m	4829 0184
	Length 5 m	4829 0186
	Length 10 m	4829 0187
	Reel 50 m + 100 connectors	4829 0185
Digiware bus terminating resistor (supplied with C and D devices)		4829 0180
USB configuration cable		4829 0050

(1) DIRIS D-30 display characteristics see page 521.

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DIRIS B-30

Wireless power monitoring devices

Measurement
& wireless metering



Configuration
with EasyConfig,
see page 618.



DIRIS B-30
Radio frequency (wireless)



DIRIS B-30
RS485

Function

The DIRIS B-30 is a power monitoring device in a modular format that communicates wirelessly or via RS485. The 4 RJ12 independent current inputs of the device allow it to manage several types and number of circuits: for example, 4 single-phase loads or 1 three-phase load + 1 single-phase load.

The DIRIS B-30 is connected to current sensors⁽¹⁾ (RJ12 connection) that are suitable for all types of installation: solid TE, split-core TR, and flexible TF current sensors.

(1) See page 522.

Advantages

Plug & Play

A rapid RJ12 connection makes wiring easy and reliable and prevents wiring errors. Automatically addressing and configuring the product (communication address, load type, type and ratio of current sensor) allow you to simplify implementation and to save time.

Class 0.5 in accordance with IEC 61557-12

- Class 0.2 for the meter alone.
- Class 0.5 from 2% to 120% of nominal current for the global measurement chain (associated with TE/TF current sensors).

Multi-circuit

- 4 current measurement inputs allow you to configure multiple circuits in order to optimise the number of measurement devices per installation.

Communication

- The DIRIS B-30 can be connected to:
 - a remote DIRIS D-30 screen for displaying measurement and metering data.
 - a DIRIS G⁽¹⁾ gateway for centralisation and communication of data wirelessly or via RS485 and Ethernet.
 - optional modules to communicate in BACnet IP, BACnet MSTP and PROFIBUS DP protocol. Digital or analogue input/output modules can also be connected.

(1) See page 604.

The solution for

- > Industry
- > Building
- > Infrastructure
- > Local authority



Strong points

- > Plug & Play
- > Global accuracy class 0.5 in accordance with IEC 61557-12
- > Multi-circuit
- > Communication

Conformity to standards

- > IEC 61557-12
- > EN 50160
- > ISO 14025
- > UL⁽¹⁾



(1) Please contact us.

Selection guide

DIRIS B-30	
DIRIS B-30 RS	RS485 MODBUS communication
DIRIS B-30 RF	Wireless RF communication
Optional modules	
DIRIS O-iod	2 digital inputs / 2 digital outputs
DIRIS O-ioa	2 analogue inputs / 2 analogue outputs
DIRIS O-it	3 temperature inputs
DIRIS O-m	Additional RS485 communication
DIRIS O-p	PROFIBUS communication
DIRIS O-b/ip	BACnet IP communication
DIRIS O-b/mstp	BACnet MSTP communication

Functions

Multi-measurement

- Currents
 - I1, I2, I3, In, Isystem
- Voltages & frequency
 - V1, V2, V3, VN, Vsystem, U12, U23, U31, Usystem, f
- Power
 - P1, P2, P3, ΣP, Q1, Q2, Q3, ΣQ, S1, S2, S3, ΣS
 - Predictive power ΣP, ΣQ, ΣS
- Power factor
 - PF1, PF2, PF3, ΣPF
- Cos φ & tanφ
 - Instantaneous values per phase

Metering

- Active energy: +/- kWh
- Reactive energy: +/- kvarh
- Apparent energy: kVAh
- Multi-tariff (8 max.)

Quality

- Voltage Unbalance
 - Vdir, Vinv, Vhom, Udir, Uinv, Unba, Vnba, Vnb, Unb
- Current unbalance
 - Idir, Iinv, Ihom, Inba, Inb
- Total harmonic distortion
 - Currents THDi1, THDi2, THDi3, THDiN
 - Phase-to-neutral voltage THDv1, THDv2, THDv3
 - Phase-to-phase voltage THDu12, THDu23, THDu31
- Individual harmonics up to rank 63
 - Currents: I1h, I2h, I3h, INh
 - Phase-to-neutral voltage: V1h, V2h, V3h
 - Phase-to-phase voltage: U12h, U23h, U31h
- Active (according to EN 50160)
 - Dips, interruptions, swells

Load curves and history logs (130 days max.)

- Active, reactive and apparent power
- Currents, voltages and frequency

Alarms

- Alarms for all electrical values, events and input status changes, possibility of boolean combination

Communication

- DIRIS B-30 RF: Radio frequency Communication (wireless)
- DIRIS B-30 RS: RS485 Modbus,
- Optional modules: RS485, BACnet IP, BACnet MSTP, PROFIBUS DPV1

Inputs

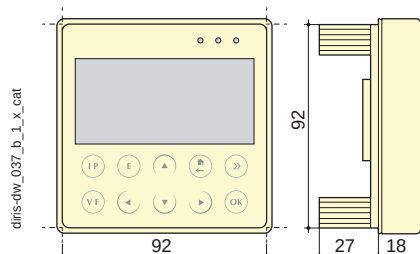
- 2 digital inputs
 - Supply by the DIRIS B-30 or external supply
 - Function: logic status, circuit breaker status, pulse meter or synchronisation pulse

DIRIS B-30 display

DIRIS D-30



Dimensions



Connection

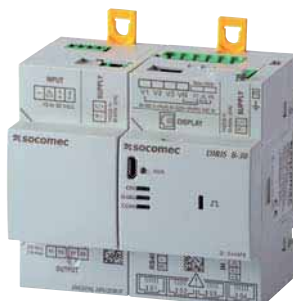


Optional modules

DIRIS O



Optional module **DIRIS B-30**



Optional modules (4 max.)*

- Digital inputs/outputs
- Analogue inputs/outputs
- Temperature inputs
- Communication protocols

* maximum 4 optional modules with maximum 1 temperature module and 1 communication module (Modbus, PROFIBUS, BACnet IP or BACnet MSTP).



DIRIS O-iod

- 2 digital inputs centralises the metering pulses or the input status changes of the auxiliary contacts.
- 2 digital outputs can be connected to configurable alarms warning of exceeded thresholds (power, current, etc.) or can be piloted remotely.



DIRIS O-ioa

- 2 inputs (4-20 mA) centralise analogue sensors (pressure, humidity, temperature, etc.)
- 2 outputs (4-20 mA) report the measurements (power, currents, etc.) to PLCs.



DIRIS O-it

- 3 temperature inputs to be connected to PT100 or PT1000 sensors.
- Ambient air temperature:



DIRIS O-m

- Provides a second RS485 Modbus communication port to the DIRIS B-30 for simultaneous sending of information via RS485 to two supervision stations.



DIRIS O-p

- Adds a PROFIBUS DPV1 communication port to the DIRIS B-30.



DIRIS O-b/ip

- Adds a BACnet IP communication port to the DIRIS B-30.



DIRIS O-b/mstp

- Adds a BACnet MSTP communication port to the DIRIS B-30.

Accessories

Remote radio antenna

- Mounted outside the enclosure of the DIRIS B-30 monitoring device to increase the transmission distance.

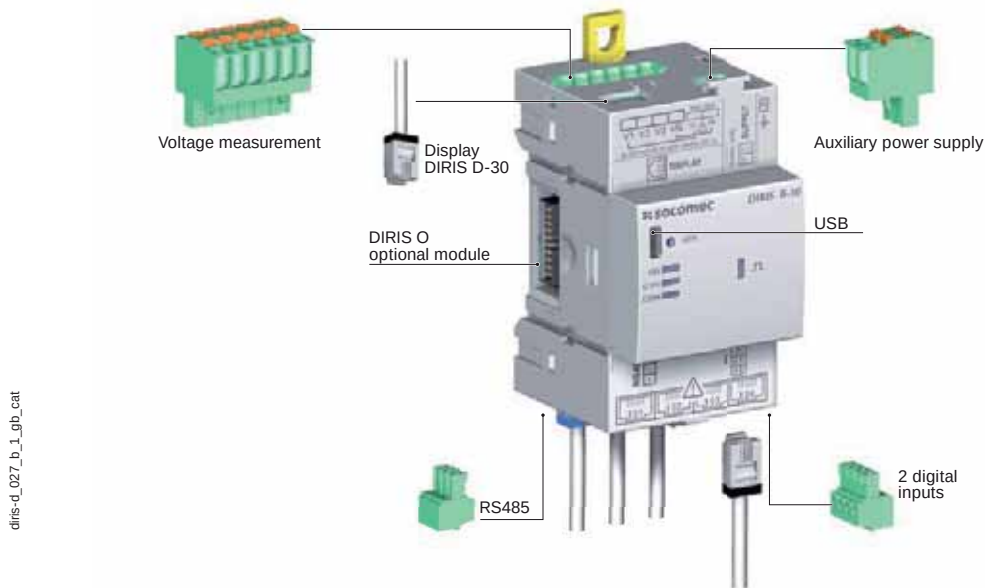
DIRIS B-30 sealing cover

- Prevents access to the cabling of the monitoring device.

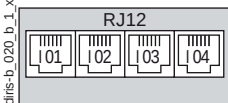
USB configuration cable (2 m)

- Advanced configuration of DIRIS B-30 gateways can be achieved using the EASY CONFIG software via Ethernet or direct USB connection.

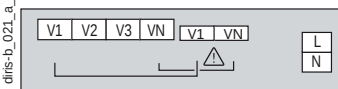
DIRIS B-30 terminals



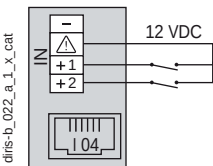
Current measurement



Voltage measurement and auxiliary power supply

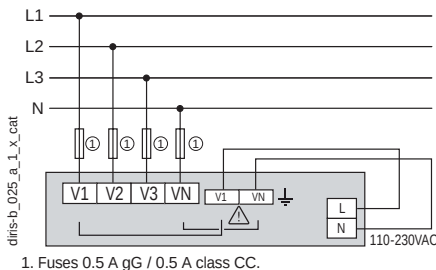


2 inputs supplied by the product

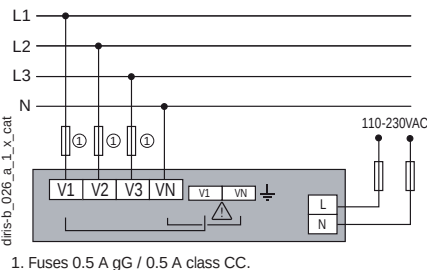


Self supply

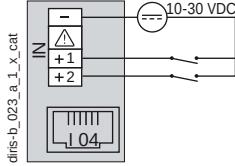
Easy connection of the power supply from the measurement terminal (specific terminals)



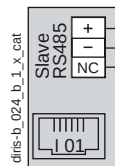
Separate power supply



2 inputs with external power supply



RS485

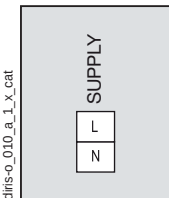


RJ9 for DIRIS D-30 (self-supply and data)

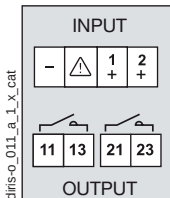


Terminals of optional DIRIS O modules

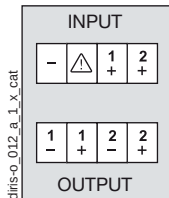
Optional module power supply



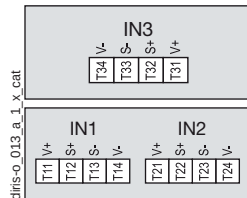
DIRIS O-iod



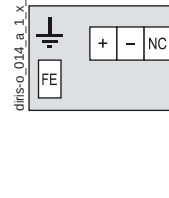
DIRIS O-ioa



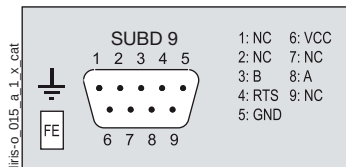
DIRIS O-it



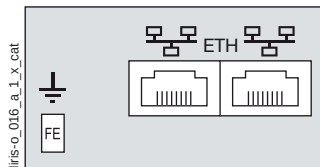
DIRIS O-m RS485



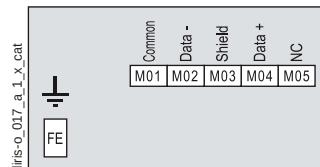
DIRIS O-p



DIRIS O-b/ip



DIRIS O-b/mstp

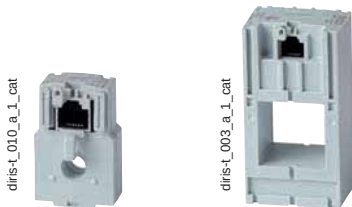


Connections

Associated current sensors

Various types of current sensors can be connected to the DIRIS Digiware: Solid TE, split-core TR, flexible TF current sensors. This range of sensors can be adapted to all types of new or existing installations. A rapid RJ12 connection makes wiring easy and reliable and prevents wiring errors. The DIRIS B-30 automatically recognises the sensor size and type. This guarantees the overall accuracy of the DIRIS B-30 + current sensor measurement chain. For more information: see page 522.

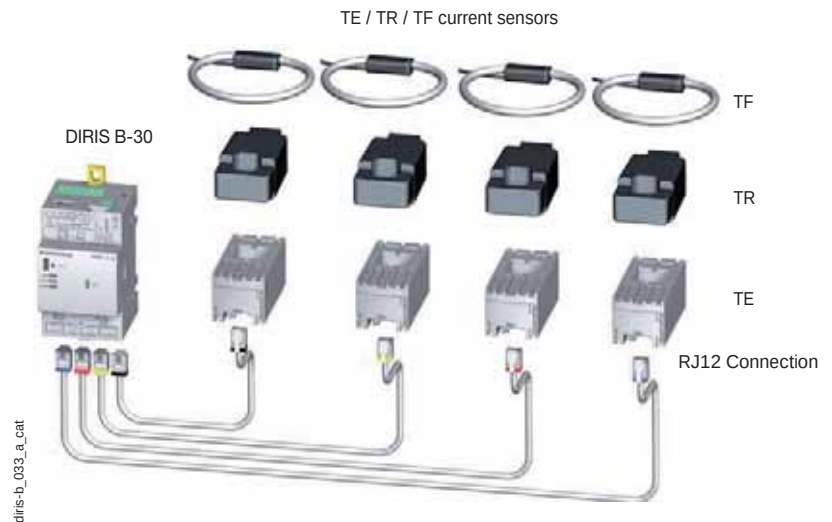
TE solid current sensors



TR Split-core current sensors



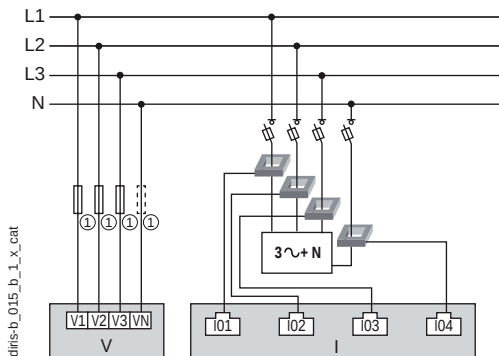
TF Flexible current sensors



Network and connection examples

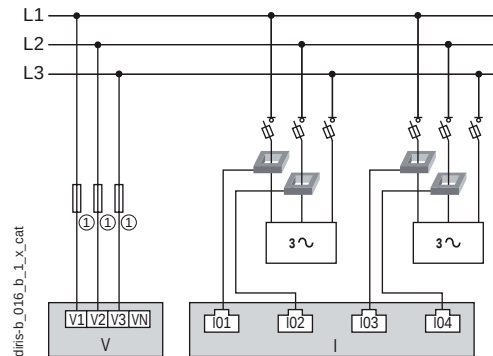
Three phase + neutral

3P+N - 4CTs (measurement for 1 three-phase load + Neutral)



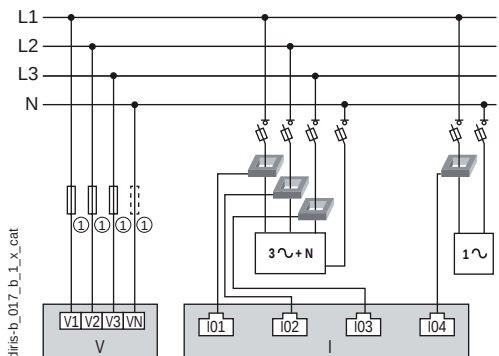
Three-phase

3P - 2CTs (2 three-phase loads without neutral)



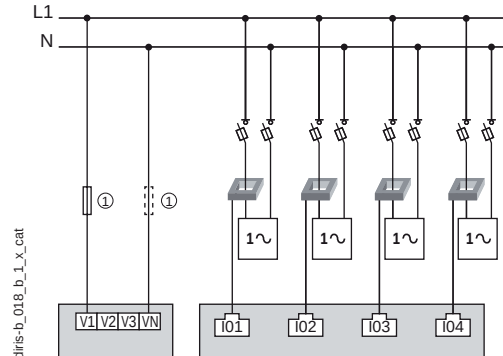
Three-phase

3P+N - 3CTs & 1P+N - 1CT (1 three-phase load & 1 single-phase load)



Single-phase

1P+N-1CT (4 single-phase loads)



1. Fuses 0.5 A gG / 0.5 A class CC.
In case of self-supply, a fuse must be added on the neutral.



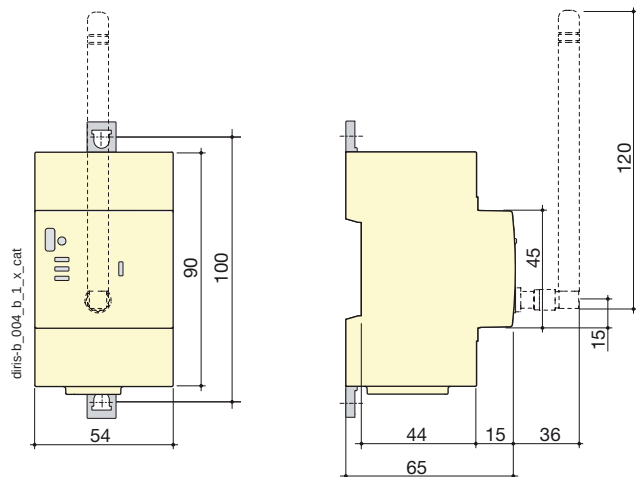
CT: Current sensors



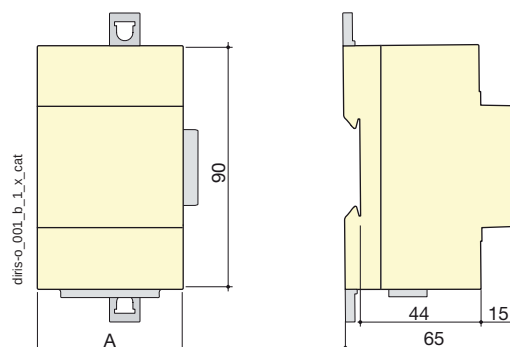
Load

Dimensions (mm)

DIRIS B-30



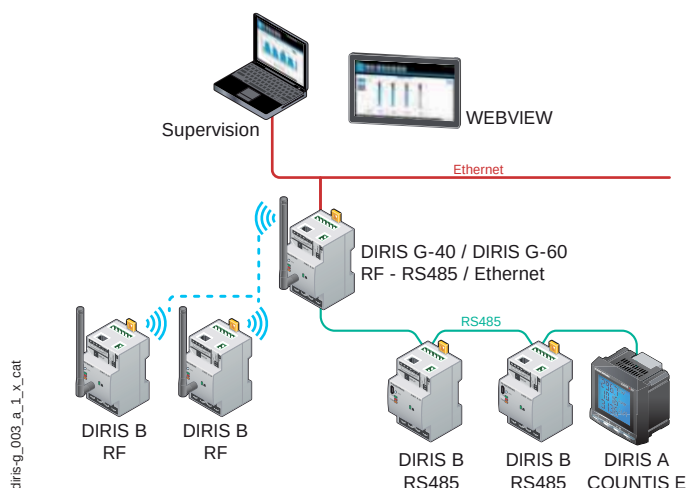
DIRIS O optional modules



DIRIS O optional modules	A
DIRIS O-iod - DIRIS O-iaa - DIRIS O-it	45 mm
DIRIS O-m - DIRIS O-p - DIRIS O-b/ip - DIRIS O-b/mstp	54 mm

Communication architecture

Example of communication architecture with DIRIS G gateway and WEBVIEW embedded WEB server
For more information about DIRIS G, see page 604.



References

DIRIS B-30 monitoring devices		Reference
DIRIS B-30	RS485 - Modbus - 230VAC	4829 0000
DIRIS B-30	RF - Modbus - 230 VAC	4829 0002
DIRIS O optional modules		Reference
DIRIS O-iod	2 digital inputs / 2 digital outputs	4829 0030
DIRIS O-iaa	2 analogue inputs/2 analogue outputs 4-20 mA	4829 0031
DIRIS O-it	3 temperature inputs PT 100 / PT 1000	4829 0032
DIRIS O-m	RS485 Modbus communication	4829 0033
DIRIS O-p	PROFIBUS communication	4829 0034
DIRIS O-b/ip	BACnet IP communication	4829 0035
DIRIS O-b/mstp	BACnet MSTP communication	4829 0036
Accessories		Reference
DIRIS D-30 - Single-point display		4829 0200
RJ9 cable for DIRIS D-30 display - 1.5 m		4829 0280
RJ9 cable for DIRIS D-30 display - 3 m		4829 0281
Wireless remote antenna, 868 MHz - 210 mm height		4854 0126
Cable for remote antenna - SMA connector - 3 meter length		4854 0127
DIRIS B-30 sealing cover for I/O terminals		4829 0049
USB configuration cable		4829 0050

DIRIS B-30 characteristics

Electrical characteristics

Auxiliary power supply	
AC voltage	110-230VAC $\pm 15\%$ (Ph/N ou Ph/Ph) Cat III
Frequency	50/60 Hz
Consumption	< 2VA without display < 6VA with display
Connection	Removable spring-cage terminal, 2 x 2 positions, 0.5 ... 2.5 mm ² solid cable or 0.25 ... 1.5 mm ² stranded cable with ferrule

Measurement characteristics

Energy and power measurement	
Accuracy	Class 0.2 DIRIS B-30 alone
Active energy and active power	Class 0.5 with TE or TF current sensors Class 1 with TR current sensors
Reactive energy accuracy	Class 2 with TE, TR or TF current sensors

Power factor measurement	
Accuracy	Class 0.5 with TE or TF current sensors Class 1 with TR current sensors

Voltage measurement	
Network characteristics measured	50-300VAC (Ph/N) - 87-520VAC (Ph/Ph) - CAT III
Frequency range	45 ... 65Hz
Frequency accuracy	Class 0.02
Network type	Single-phase / Two-phase / Two-phase with neutral / Three-phase / Three-phase with neutral
Measurement by voltage transformer	Primary: 400 000 VAC Secondary: 60, 100, 110, 173, 190 VAC
Input consumption	≤ 0.1 VA
Permanent overload	300VAC Ph/N
Voltage measurement accuracy	Class 0.2
Connection	Removable spring-cage terminal, 2 x 6 positions, 0.5 ... 2.5 mm ² solid cable or 0.25 ... 1.5 mm ² stranded cable with ferrule

Current measurement	
Number of current inputs	4
Associated current sensors	Solid TE, split-core TR, flexible TF current sensors
Accuracy	Class 0.2 DIRIS B-30 alone Class 0.5 with TE or TF current sensors Class 1 with TR current sensors
Connection	RJ12 connectors with specific SOCOMEC cable

Input characteristics

Number	2
Type / Power supply	Optocoupler internal polarisation (12 VDC $\pm 10\%$) or external polarisation (10-30 VDC $\pm 10\%$)
Input function	Logic status, pulse meter or synchronisation pulse status (input 1)

Communication characteristics

DIRIS B-30 RS485	
Link	RS485
Connection type	2 ... 3 half duplex wires
Protocol	Modbus RTU
Speed	1200 ... 115200 bauds
USB	DIRIS B-30 RS485 configuration

DIRIS B-30 RF	
Link	Wireless radio frequency
Frequency band	868 MHz (low frequency: 868.1 MHz and high frequency: 869.5875 MHz)
Speed	38400 bauds
USB	DIRIS B-30 RF configuration

Environment characteristics

Operating temperature	-10 ... +70 °C
Storage temperature	-25 ... +85 °C
Operating humidity	55 °C / 97% relative humidity
Operating altitude	2000 m
Vibration	1G from 10 Hz to 100Hz

DIRIS D-30 display characteristics

Mechanical characteristics	
Screen type	Capacitive touch-screen technology, 10 keys
Screen resolution	350 x 160 pixels
Single product connection	
RJ9	Self-supply and data
Micro-USB	Updating
Degree of protection	IP65 (front face)
Environment	
Storage temperature (°C)	-20 ... +70°C
Operating temperature (°C)	-20 ... +70°C
Humidity	95 % to 40°C
Installation category	CAT III
Degree of pollution	2

DIRIS O optional modules characteristics

Power supply ⁽¹⁾	
AC voltage	110-230 VAC $\pm 15\%$
Frequency	50/60 Hz

(1) No power supply on DIRIS O-it.

DIRIS O-iod - 2 digital inputs/2 digital outputs	
Number of inputs	2 per optional modules - max. 4 optional modules
Type	Optocoupler internal polarisation (12 VDC $\pm 10\%$) or external polarisation (10-30 VDC $\pm 10\%$)
Function	Logic status or pulse meter
Number of outputs	2 per optional modules - max. 4 optional modules
Type	Relay / 230VAC $\pm 15\%$ - 1 A
Function	Configurable alarm (current, power,...) on threshold overruns or remote controlled status
Inputs/Outputs connection	Removable screw terminal, 4 positions, 0.14 to 1.5 mm ² stranded or solid cable

DIRIS O-iaa - 2 analogue inputs/2 analogue outputs	
Number of inputs	2 per optional modules - max. 4 optional modules
Type	4-20 mA
Function	Connection of analogue sensors (pressure, humidity, temperature...)
Number of outputs	2 per optional modules - max. 4 optional modules
Type	4-20 mA
Function	Transmission of measurement image (current, power...) to PLCs

DIRIS O-it - 3 temperature inputs	
Number of inputs	3 external inputs + 1 measurement for ambient temperature
Dynamic	-20 °C to 150 °C
Type	PT100 or PT1000
Function inputs 1, 2 and 3	Temperature measurement

DIRIS O-m - RS485 communication	
Link	RS485 2 ... 3 half duplex wires
Protocol	Modbus RTU
Speed	1200 ... 115200 bauds
Connection	Removable screw terminal, 3 positions, 0.14 to 1.5 mm ² stranded or solid cable

DIRIS O-p - PROFIBUS communication	
Protocol	PROFIBUS DPV1

DIRIS O-b/ip - BACnet IP communication	
Protocol	BACnet IP
Speed	10 ... 100 Mbit/s

DIRIS O-b/mstp - BACnet MSTP communication	
Protocol	BACnet MSTP
Speed	9600 ... 76800 bauds



TE sensors

Solid current sensors

used with DIRIS Digiware and DIRIS B-30

Current sensors

new



TE solid sensors

Function

TE smart current sensors measure the load currents of an electrical system and send the data to meters and measurement hubs via an RJ12 plug-and-play output. Thanks to a wide measurement range, TE current sensors cover the full current range of 5 to 2000 A, with 7 references. TE solid current sensors can be connected to DIRIS Digiware and DIRIS B-30 via a rapid RJ12 connection.

Numerous accessories are available to aid the installation of sensors in any type of cabinet.

Advantages

Plug & Play

- A rapid RJ12 connection makes wiring easy and reliable and prevents wiring errors. This also allows automatic detection of the sensor type and size/transformation ratio.
- The sensors can be installed in both directions.

Installation

- The TE solid sensor range is specially designed for new installations, and has the same pitch as the most common protective devices.

Accuracy as per standard IEC 61557-12

- Class 0.5 for the global measuring chain (measurement hub + TE current sensors) from 2 to 120% of the nominal current I_n .

The solution for

- > Industry
- > Building
- > Infrastructure
- > Data center



Strong points

- > Plug & Play
- > Accuracy as per standard IEC 61557-12
- > Installation

Conformity to standards

- > IEC 61557-12



- > ISO 14025



- > UL



Mounting

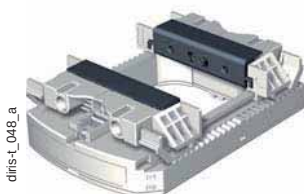
Linear assembly with the protective devices
TE-25 / TE-35 / TE-45 / TE-55 / TE-90



DIN rail mounted



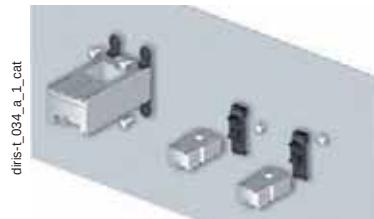
TE-90 clamps



Staggered assembly
TE-18 / TE-35 / TE-45 / TE-55



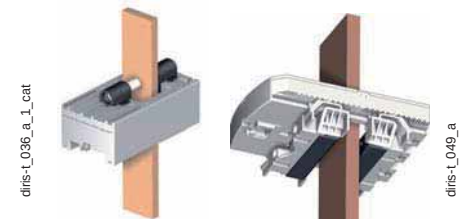
Back-plate mounting



Cable mounting



Bar mounting



Connections

TE / TR / TF current sensors



Mounting accessories

Mounting accessories delivered with TE sensors:

Switch mounting		TE-18	TE-25	TE-35 TE-45 TE-55	TE-90
	DIN rail and back-plate	1 pc			2 pcs
	DIN rail		2 pcs	2 pcs	
	Back-plate		4 pcs	4 pcs	6 pcs
	Busbar			2 pcs	

Compatible accessories

Adapter for CT with 5A secondary

- With this adapter you can use a current transformer with a 5 A output on the DIRIS Digiware and DIRIS B-30. For use with standard 5 A sensors for measuring applications of > 2000 A. The dimensions are the same as the TE-18.

Coupling link

- Associated with the TE range, this accessory is for inter-connecting the sensors when linear or staggered mounted.

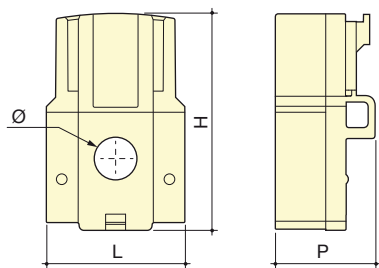
Sealable cover

- Using a sealable cover guarantees the immunity of the sensor connection on TE/TR/TF current sensors.

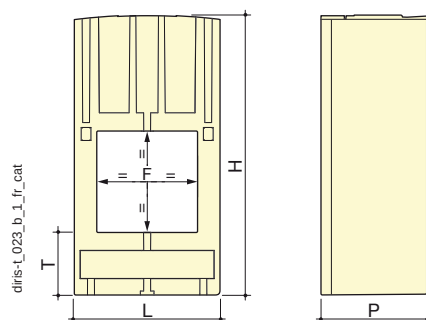
Dimensions (mm)

TE - Solid current sensors

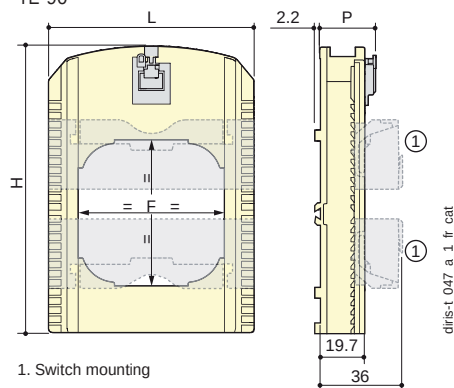
TE-18



TE-25 / TE-35 / TE-45 / TE-55



TE-90



Model	Nominal current range (A)	Actual coverage range (A)	Pitch (mm)	H x W x D (mm)	F (mm)	T (mm)
TE-18	5 ... 20 / 25 ... 63	0.1 ... 24 / 0.5 ... 75	18	45 x 28 x 20	8.6	-
TE-25	40 ... 160	0.8 ... 192	25	65 x 25 x 32.5	13.5 x 13.5	17.5
TE-35	63 ... 250	1.26 ... 300	35	71 x 35 x 32.5	21 x 21	17.5
TE-45	160 ... 630	3.2 ... 756	45	86 x 45 x 32.5	31 x 31	19.5
TE-55	400 ... 1000	8 ... 1200	55	100 x 55 x 32.5	41 x 41	21.5
TE-90	600 ... 2000	12 ... 2400	90	126 x 90 x 24.6	64 x 64	-

Specifications

TE - Solid current sensors

Model	TE-18	TE-18	TE-25	TE-35	TE-45	TE-55	TE-90
Nominal current range I_n (A)	5 ... 20	25 ... 63	40 ... 160	63 ... 250	160 ... 630	400 ... 1000	600 ... 2000
Actual coverage range (A)	0.1 ... 24	0.5 ... 75	0.8 ... 192	1.26 ... 300	3.2 ... 756	8 ... 1200	12 ... 2400
Max. current (A)	24	75.6	192	300	756	1200	2400
Weight (g)	24	24	69	89	140	187	163
Max. voltage (phase/neutral)	300 V						
Rated withstand voltage	3 kV						
Frequency	50/60 Hz						
Intermittent overload	10 x I_n over 1 sec						
Measurement category	CAT III						
Protection degree	IP30 / IK06						
Operating temperature	-10 ... +70°C						
Storage temperature	-25 ... +85°C						
Relative humidity	95% RH non-condensing						
Altitude	< 2000 m						
Connection	Socomec RJ12 cable						

References

Model	Nominal current range (A)	Actual coverage range (A)	Pitch (mm)	Reference
TE-18	5 ... 20	0.1 ... 24	18	4829 0500
TE-18	25 ... 63	0.5 ... 75	18	4829 0501
TE-25	40 ... 160	0.8 ... 192	25	4829 0502
TE-35	63 ... 250	1.26 ... 300	35	4829 0503
TE-45	160 ... 630	3.2 ... 756	45	4829 0504
TE-55	400 ... 1000	8 ... 1200	55	4829 0505
TE-90	600 ... 2000	12 ... 2400	90	4829 0506

Accessories	Reference
Coupling link (20 linear assembly parts and 10 for staggered assembly)	4829 0598
CT/5A adapter (measurements of >2000 A) (max primary current 10000 A/5/A)	4829 0599
Sealable caps (20 pieces)	4829 0600

RJ12 connection cables	Cable length (m)								
	0.1	0.2	0.3	0.5	1	2	5	10	50 m reel + 100 connectors
Number of cables	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference
1	-	-	-	-	-	-	4829 0602	4829 0603	4829 0601
3	4829 0580	4829 0581	4829 0582	4829 0595	4829 0583	4829 0584	-	-	-
4	-	-	-	4829 0596	4829 0588	4829 0589	-	-	-
6	4829 0590	4829 0591	4829 0592	4829 0597	4829 0593	4829 0594	-	-	-



TR sensors

Split-core current sensors

used with DIRIS Digiware and DIRIS B-30



TR split-core current sensors

Function

TR smart current sensors measure the load currents of an electrical system and send the data to meters and measurement hubs via an RJ12 plug-and-play output. Thanks to a wide measurement range, TR current sensors cover the full current range of 25 to 600 A, with 4 references.

TR split-core current sensors can be connected to DIRIS Digiware and DIRIS B-30 via a rapid RJ12 connection.

Advantages

Plug & Play

- A rapid RJ12 connection makes wiring easy and reliable and prevents wiring errors. This also allows automatic detection of the sensor type and size/transformation ratio.
- The sensors can be installed in both directions.

Installation

- The TR split-core sensor range is specially designed for existing installations and site renovations.

Accuracy as per standard IEC 61557-12

- Class 1 for the global measuring chain (measurement hub + TR current sensors) from 2 to 120% of the nominal current I_n .

The solution for

- > Industry
- > Building
- > Infrastructure
- > Data center



Strong points

- > Plug & Play
- > Accuracy as per standard IEC 61557-12
- > Installation

Conformity to standards

- > IEC 61557-12



- > ISO 14025

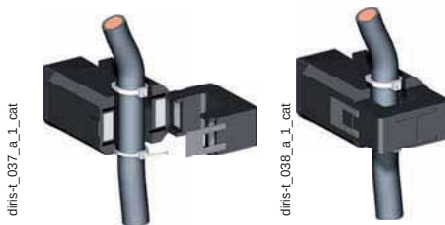


- > UL



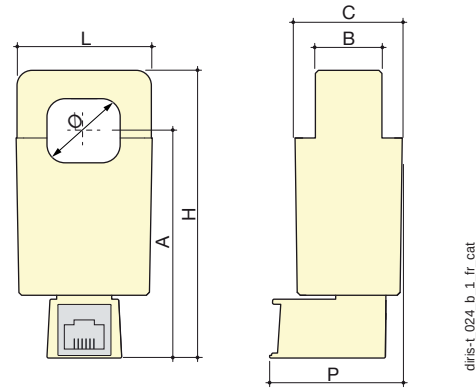
Mounting

Cable mounting



Dimensions

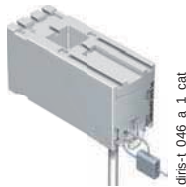
TR-10 / TR-16 / TR-24 / TR-36



Accessories

Sealable cover

- Using a sealable cover guarantees the immunity of the sensor connection on TE/TR/TF current sensors.



Model	Nominal current range (A)	Actual coverage range (A)	H x W x D (mm)	Ø (mm)	A (mm)	B (mm)	C (mm)
TR-10	25 ... 75	0.5 ... 90	71 x 25 x 39	10	58	14.5	26
TR-16	32 ... 100	0.64 ... 120	74 x 30 x 42	16	61	19	31
TR-24	63 ... 200	1.26 ... 200	95 x 45 x 44	24	72	22	34
TR-36	200 ... 600	4 ... 720	111 x 57 x 42	36	82	34	40.5

Specifications

TR - Split-core sensor

Model	TR-10	TR-16	TR-24	TR-36
Nominal current range I_n (A)	25 ... 75	32 ... 100	63 ... 200	200 ... 600
Actual coverage range (A)	0.5 ... 90	0.64 ... 120	1.26 ... 240	4 ... 720
Max. current (A)	90	120	240	720
Weight (g)	74	117	211	311
Max. voltage (phase/neutral)	300 V			
Rated withstand voltage	3 kV			
Frequency	50/60 Hz			
Intermittent overload	10 x I_n for 1s			
Measurement category	CAT III			
Protection degree	IP20 / IK06			
Operating temperature	-10 ... +70°C			
Storage temperature	-25 ... +85°C			
Relative humidity	95% RH non-condensing			
Altitude	< 2000 m			
Connection	Socomec RJ12 cable			

References

Model	Nominal current range (A)	Actual coverage range (A)	Ø (mm)	Reference
TR-10	25 ... 75	0.5 ... 90	10	4829 0551
TR-16	32 ... 100	0.64 ... 120	16	4829 0552
TR-24	63 ... 200	1.26 ... 200	24	4829 0553
TR-36	200 ... 600	4 ... 720	36	4829 0554

Accessories	Reference
Sealable caps (20 pieces)	4829 0600

RJ12 connection cables	Cable length (m)								
	0.1	0.2	0.3	0.5	1	2	5	10	50 m reel + 100 connectors
Number of cables	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference
1	-	-	-	-	-	-	4829 0602	4829 0603	4829 0601
3	4829 0580	4829 0581	4829 0582	4829 0595	4829 0583	4829 0584	-	-	-
4	-	-	-	4829 0596	4829 0588	4829 0589	-	-	-
6	4829 0590	4829 0591	4829 0592	4829 0597	4829 0593	4829 0594	-	-	-



TF sensors

Flexible current sensors

used with DIRIS Digiware and DIRIS B-30



TF Flexible current sensors

The solution for

- > Industry
- > Building
- > Infrastructure
- > Data center



Strong points

- > Plug & Play
- > Accuracy as per standard IEC 61557-12
- > Installation

Conformity to standards

- > IEC 61557-12



- > ISO 14025



- > UL



Function

TF smart current sensors measure the load currents of an electrical system and send the data to meters and measurement hubs via an RJ12 plug-and-play output. Thanks to a wide measurement range, TF current sensors cover the full current range of 150 to 6000 A, with 3 references. TF flexible current sensors can be connected to DIRIS Digiware and DIRIS B-30 via a rapid RJ12 connection.

Advantages

Plug & Play

- A rapid RJ12 connection makes wiring easy and reliable and prevents wiring errors. This also allows automatic detection of the sensor type and size/transformation ratio.
- The sensors can be installed in both directions.

Installation

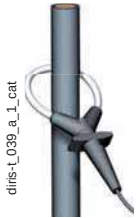
- The TF flexible sensor range is specially designed for existing installations restricted by strict integration constraints or with high-intensity currents.

Accuracy as per standard IEC 61557-12

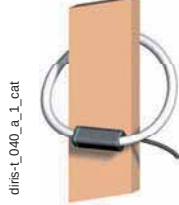
- Class 0.5 for the global measuring chain (measurement hub + TF current sensors) from 2 to 120% of the nominal current I_n .

Mounting

Cable mounting



Bar mounting



Accessories

Sealable cover

- Using a sealable cover guarantees the immunity of the sensor connection on TE/TR/TF current sensors.



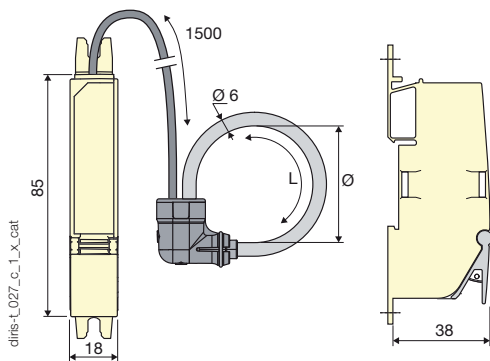
Connections

TE / TR / TF current sensors

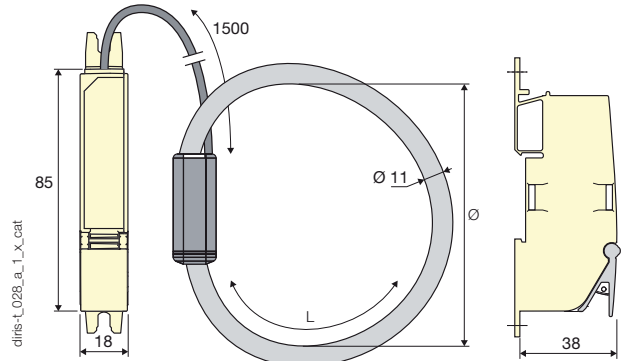


Dimensions

TF-55



TF-120 / TF-300



Model	Nominal current range (A)	Actual coverage range (A)	Ø loop (mm)	L = Loop length (mm)
TF-55	150 ... 600	3 ... 720	55	182
TF-120	500 ... 2000	10 ... 2400	120	376
TF-300	1600 ... 6000	32 ... 7200	300	942

Specifications

Model	TF-55	TF-120	TF-300
Nominal current range I_n (A)	150 ... 600	500 ... 2000	1600 ... 6000
Actual coverage range (A)	3 ... 720	10 ... 2400	32 ... 7200
Weight (g)	114	142	220
Max. voltage (phase/neutral)	600 V		
Rated withstand voltage	3.6 kV		
Frequency	50 / 60 Hz		
Intermittent overload	10 x I_n for 1 s		
Measurement category	CAT III		
Protection degree	IP30 / IK07		
Operating temperature	-10 ... +70°C		
Storage temperature	-25 ... +75°C		
Relative humidity	95% RH non-condensing		
Altitude	< 2000 m		
Connection	Socomec cable or equivalent RJ12 straight, twisted pair, unshielded 300 V cat. III cable. -40 / +85 °C		

References

Model	Nominal current range (A)	Actual coverage range (A)	Ø loop (mm)	Reference
TF-55	150 ... 600	3 ... 720	55	4829 0570
TF-120	500 ... 2000	10 ... 2400	120	4829 0571
TF-300	1600 ... 6000	32 ... 7200	300	4829 0572

Accessories	Reference
Sealable caps (20 pieces)	4829 0600

RJ12 connection cables	Cable length (m)								
	0.1	0.2	0.3	0.5	1	2	5	10	50 m reel + 100 connectors
Number of cables	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference
1	-	-	-	-	-	-	4829 0602	4829 0603	4829 0601
3	4829 0580	4829 0581	4829 0582	4829 0595	4829 0583	4829 0584	-	-	-
4	-	-	-	4829 0596	4829 0588	4829 0589	-	-	-
6	4829 0590	4829 0591	4829 0592	4829 0597	4829 0593	4829 0594	-	-	-



COUNTIS E0x

Active energy meters
single-phase - direct 32/40 A

new



Single-circuit metering,
measurement &
analysis

The solution for

- > Industry
- > Marinas
- > Shopping centers
- > Data center



Strong points

- > Compactness
- > Output (pulses)
- > MID certified B+D module
- > RS485 (MODBUS) and M-Bus communication

MID certification

- > COUNTIS E units comply with the MID directive to guarantee accuracy and reliability when metering, compulsory for energy billing applications.
- > COUNTIS E MID feature tamper-proof components to prevent fraud.



Conformity to standards

- > IEC 62053-21 class 1
- > IEC 62053-31
- > IEC 62052-11
- > EN 50470-1
- > EN 50470-3



Function

The COUNTIS E0x is a modular active electrical energy meter displaying the total energy consumed (kWh), allowing direct connection up to 32/40 A.

COUNTIS E02, E04 and E06 are also MID-certified.

Advantages

Compactness

Only 1 module wide.

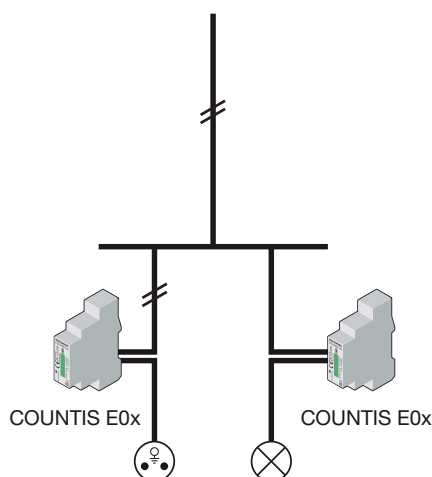
Output (pulses)

The pulse output enables the kWh consumption to be reported to a remote system (PC/BMS) so that it can be analysed for billing, energy saving or energy cost management purposes.

MID certified B+D module

COUNTIS E units comply with the MID directive to guarantee accuracy and reliability when metering, compulsory for energy billing applications. "Module B+D" certification guarantees that the design and manufacturing process of products are approved by an accredited laboratory.

Functional diagram

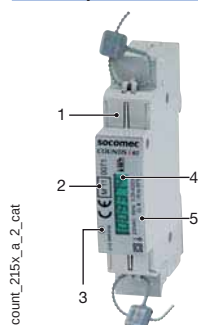


Common characteristics

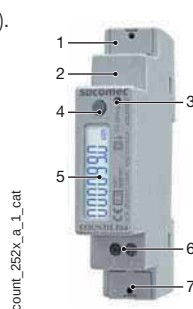
- Compact dimensions.
- Measurement accuracy: 1%.
- Displayed on backlit screen.

Models	Model-related specifications
E00	Pulse output
E02	Pulse output + MID
E03	Dual tariff + Pulse output + RS485 MODBUS communication
E04	Dual tariff + Pulse output + RS485 MODBUS communication + MID
E05	Dual tariff + Pulse output + M-Bus communication
E06	Dual tariff + Pulse output + M-Bus communication + MID

Front panel

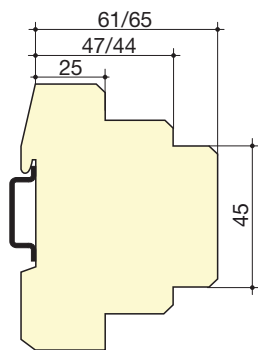
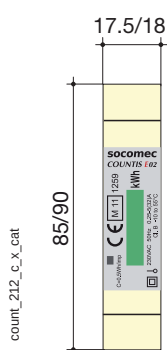


1. Terminal shrouds (COUNTIS E02/E04/E06).
2. MID marking (COUNTIS E02/E04/E06).
3. Metrological LED (2000 pulses/kWh for E00/E02 and 5000 pulses/kWh for E03/E04/E05/E06).
4. kWh display.
5. Serial number (COUNTIS E02).



1. Neutral terminal
2. M-Bus/MODBUS connection
3. Metrological LED
4. Navigation button.
5. Backlit LCD display
6. Pulse output
7. Current and voltage terminals

Case



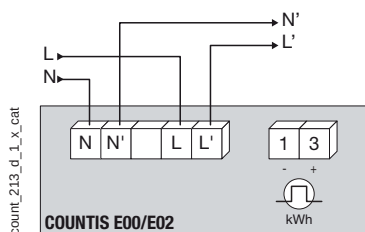
	COUNTIS E00/E02	COUNTIS E03 ... E06
Type	modular	modular
Number of modules	1	1
Dimensions W x H x D (mm)	17.5 x 85 x 61	18 x 90 x 65
Case degree of protection	IP 20	IP 20
Front degree of protection	IP 50	IP 50
Display type	5 + 1 digits LCD	7 digit LCD with backlighting
Rigid cable cross-section	10 mm ²	1.5 ... 6 mm ²
Flexible cable cross-section	6 mm ²	1.5 ... 6 mm ²
Weight	150 g	100 g E03/04 80 g E05/06

Electrical characteristics

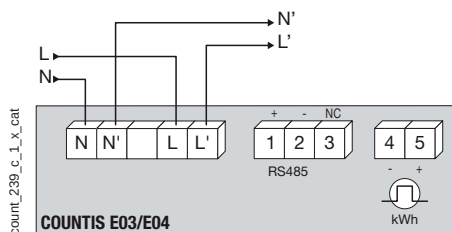
Current measurement (TRMS)	COUNTIS E00/E02	COUNTIS E03 ... 06
Type	direct input	
Input consumption	< 2 VA	< 0.5 VA
Permanent overload	32 A	40 A
Intermittent overload	30 I _{max} over 10 ms	
Minimum current measured	20 mA	
Voltage measurements (TRMS)		
Range of measurement	196 ... 264 VAC	184 ... 276 VAC
Input consumption	8 VA	Max. 1.5 VA for E03/04 Max. 1 VA for E05/06
Permanent overload	264 VAC	280 VAC
Energy accuracy		
Active (according to IEC 62053-21)	Class 1	
Active (according to EN 50470)	Class B	
Power supply		
Self-powered	yes	

Output (pulses)	COUNTIS E00/E02	COUNTIS E03 ... 06
Number	1	
Type of optocoupler	Max. 15 VDC	27 VDC - 27 mA (IEC 62053-31)
Fixed pulse weight	100 Wh	
Pulse duration	100 ms	
Operating conditions		
Operating temperature	-10 ... +55°C	-25 ... +55°C
Storage temperature	-20 ... +70°C	-40 ... +75°C
Relative humidity	95%	80%
Communication		
Link	COUNTIS E03/E04 RS485	COUNTIS E05/E06 Wired
Type	2 ... 3 half duplex wires	2 half duplex
Protocol	MODBUS in RTU mode	M-Bus
Speed	2400 ... 38400 bauds	300, 2400, 9600 bps

Terminals and connections

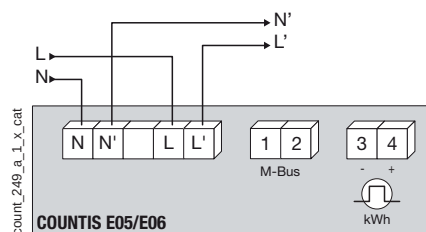


N - L: network input.



N' - L': network output.

1 - 3: pulse output.



References

Type	COUNTIS E00 Reference	COUNTIS E02 Reference	COUNTIS E03 Reference	COUNTIS E04 Reference	COUNTIS E05 Reference	COUNTIS E06 Reference
Direct 32 A	4850 3019					
Direct 32 A - MID		4850 3020				
Direct 40 A - Dual tariff + RS485 MODBUS communication			4850 3039			
Direct 40 A - Dual tariff + RS485 MODBUS communication + MID				4850 3040		
Direct 40 A - Dual tariff + M-Bus communication					4850 3041	
Direct 40 A - Dual tariff + M-Bus communication + MID						4850 3042



COUNTIS E1x

Active-energy meters

single phase - direct 63/80 A

new

count_253_a_1_cat



COUNTIS E14 - MID

count_216_a_1_cat



COUNTIS E12 - MID

The solution for

- > Marinas
- > Shopping centers
- > Data centers



Strong points

- > RS485 (MODBUS), M-Bus communication, Ethernet or pulse outputs
- > Multi-tariff
- > MID certified B+D module

MID certification

- > COUNTIS E units comply with the MID directive to guarantee accuracy and reliability when metering, compulsory for energy billing applications.
- > COUNTIS E MID feature tamper-proof components to prevent fraud.



Conformity to standards

- > IEC 62053-21 class 1
- > IEC 62053-31
- > IEC 62052-11
- > EN 50470-1
- > EN 50470-3



Function

The COUNTIS E1x is a modular active electrical energy meter displaying the energy and power consumed (kWh and kW). It is designed for single-phase load metering and is used for direct connections of up to 63 or 80 A (depending on the model).

Common characteristics

- Measurement accuracy: 1%.
- Displayed on backlit screen.

Advantages

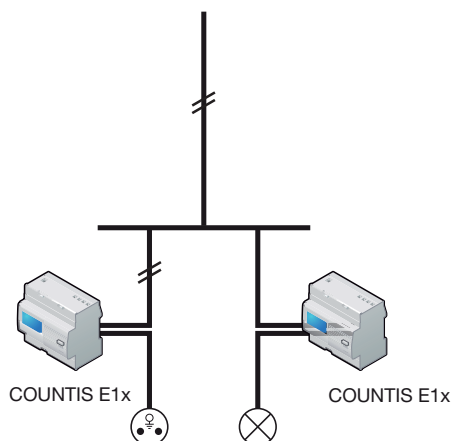
RS485 (MODBUS), M-Bus communication, Ethernet or pulse outputs

To easily centralise your consumption, COUNTIS E1x devices have either one pulse output, one RS485 output (MODBUS), M-Bus or Ethernet Modbus TCP communication. With RS485 communication models, you can configure your meters remotely.

Multi-tariff

Lets you assign different time slots (every hour, dip times) or different sources (normal, back-up) to your energy readings to monitor your energy consumption in more detail.

Functional diagram

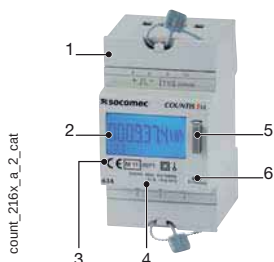


MID certified B+D module

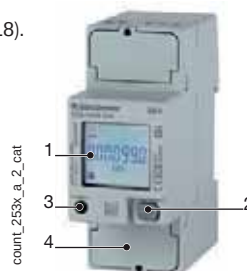
COUNTIS E units comply with the MID directive to guarantee accuracy and reliability when metering, compulsory for energy billing applications. "Module B+D" certification guarantees that the design and manufacturing process of products are approved by an accredited laboratory.

Models	Model-related specifications
E10	Pulse output
E11	Dual tariff (2 partial indices) + pulse output
E12	Dual tariff + pulse output + MID
E13	Dual tariff + pulse output + MODBUS RS485 communication
E14	Dual tariff + pulse output + MODBUS RS485 communication + MID
E15	Dual tariff + pulse output + M-BUS communication
E16	Dual tariff+ pulse output + M-BUS communication + MID
E17	Dual tariff + Ethernet
E18	Dual tariff + Ethernet + MID

Front panel

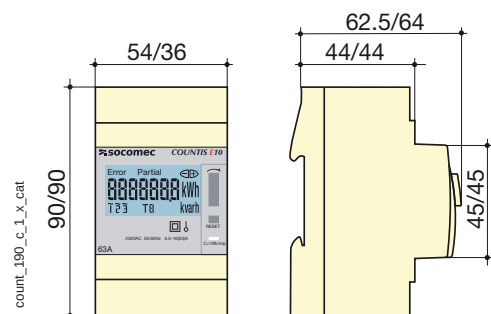


1. Terminal shrouds (COUNTIS E12/E14/E16/E18).
2. Backlit LCD display.
3. MID marking (COUNTIS E12/E14/E16/E18).
4. Serial number.
5. Navigation button.
6. Metrological LED (1000 pulses/kWh).



1. Backlit LCD display.
2. Navigation button.
3. Metrological LED (1000 pulses/kWh).
4. Voltage, current and neutral terminals.

Case



	COUNTIS E10 ... E12	COUNTIS E13 ... E18
Type	modular	modular
Number of modules	3	2
Dimensions W x H x D	54 x 90 x 62.5 mm	36 x 90 x 64 mm
Case degree of protection	IP 20	IP 20
Front degree of protection	IP 51	IP 51
Display type	backlit LCD	backlit LCD
Rigid cable cross-section	1.5 ... 16 mm ²	1.5 ... 35 mm ²
Flexible cable cross-section	1 ... 16 mm ²	1.5 ... 35 mm ²
Weight	170 g	215 g E13/14/17/18 205 g E15/16

Electrical characteristics

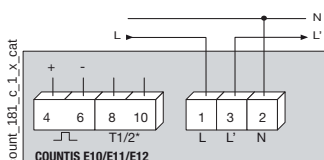
Measurement of currents	COUNTIS E10...E12	COUNTIS E13...E18
Type	single phase - direct 63 A	single phase - direct 80 A
Input consumption	max. 0.8 VA	max. 0.5 VA
Startup current (I_{st})	40 mA	20 mA
Minimum current (I_{min})	0.5 A ⁽¹⁾	0.25 A
Transition current (I_{tr})	1 A ⁽²⁾	0.5 A
Reference current (I_{ref})	10 A ⁽³⁾	5 A
Permanent overload (I_{max})	63 A	80 A
Intermittent overload	1890 A over 10 ms	30 I_{max} over 10 ms
Voltage measurement		
Range of measurement	230 V ± 20%	230 ... 240 V ± 20%
Consumption (VA)	Max. 0.5 VA	3.5 VA max E13/14/17/18 7.5 VA max E15/16
Permanent overload	280 V phase-neutral	290 V phase-neutral
Energy accuracy		
Active (according to IEC 62053-21)	Class 1	Class 1
Active (according to EN 50470)	Class B	Class B
Power supply		
Self-powered	Yes	
Frequency	50/60 Hz	

(1) $I_{min} \leq 0.5 \cdot I_{tr}$ (2) Guaranteed precision class of between I_{tr} and I_{max} .

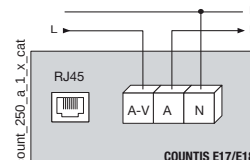
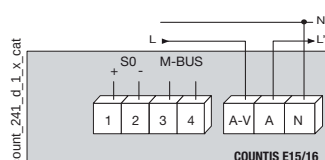
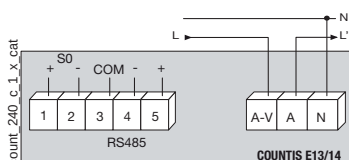
(3) $I_{ref} = I_{tr}$ (base current) = $10 \cdot I_{tr}$ for direct connection COUNTIS devices.

Output (pulses)	COUNTIS E10 ... E12	COUNTIS E13 ... E16	
Optocoupler type (IEC 62053-31)	Class A (20 ... 30 VDC)	27 VDC - 27 mA	
Number	1	1	
Fixed pulse weight	100 Wh		
Pulse duration	100 ms	50 ± 2 ms ON time 30 ± 2 ms min OFF time	
Operating conditions	COUNTIS E10 ... E12	COUNTIS E13 ... E18	
Operating temperature	-10 ... 55°C	-25 ... 55°C	
Storage temperature	-20 ... 70°C	-25 ... 75°C	
Relative humidity	85%	80%	
Communication	COUNTIS E13/14	COUNTIS E15/E16	COUNTIS E17/E18
Link	RS485	Wired	RJ45
Type	2 half duplex 2-3 half duplex (E13/E14)		Full duplex
Protocol	MODBUS® RTU	M-BUS	MODBUS TCP, HTTP, NTP, DHCP
Baudrate	1200 ... 57600 bauds	300 ... 9600 bauds	10/100 Mbps

Connection



* Not available on the COUNTIS E10.



References

Type	COUNTIS E10	COUNTIS E11	COUNTIS E12	COUNTIS E13	COUNTIS E14	COUNTIS E15	COUNTIS E16	COUNTIS E17	COUNTIS E18
Direct 63 A	4850 3000								
Direct 63 A - Dual tariff		4850 3001							
Direct 63 A - Dual tariff + MID			4850 3002						
Direct 80 A - Dual tariff + MODBUS communication via RS485				4850 3043					
Direct 80 A - Dual tariff + MODBUS communication via RS485 + MID					4850 3044				
Direct 80 A - Dual tariff + M-Bus communication						4850 3045			
Direct 80 A - Dual tariff + M-Bus communication + MID							4850 3046		
Direct 80 A - Dual tariff + Ethernet Modbus TCP communication								4850 3047	
Direct 80 A - Dual tariff + Ethernet Modbus TCP communication + MID									4850 3048



COUNTIS E2x

Active-energy meters

three-phase - direct 63/80 A

new



COUNTIS E24 - MID



COUNTIS E20

The solution for

- > Industry
- > Infrastructure
- > Data center



Strong points

- > RS485 (MODBUS), M-BUS, Ethernet or pulse outputs
- > Multi-tariff
- > Detection of connection errors
- > MID certified B+D module

Conformity to standards

- > IEC 62053-21 class 1
- > IEC 62053-31
- > IEC 62052-11
- > EN 50470-1
- > EN 50470-3



Function

The COUNTIS E2x is a modular active electrical energy meter displaying the energy and power consumed (kWh and kW). It is designed for three-phase networks and allows a direct connection of up to 63/80 A.

Common characteristics

- Measurement accuracy: 1%
- Displayed on backlit screen
- Detection of connection errors

Advantages

RS485 (MODBUS), M-BUS, Ethernet communication or pulse outputs

To easily centralise your consumption, COUNTIS E2x devices have either one pulse output, one RS485 (MODBUS), M-BUS or an Ethernet Modbus TCP communication output. With RS485 communication models, you can configure your meters remotely.

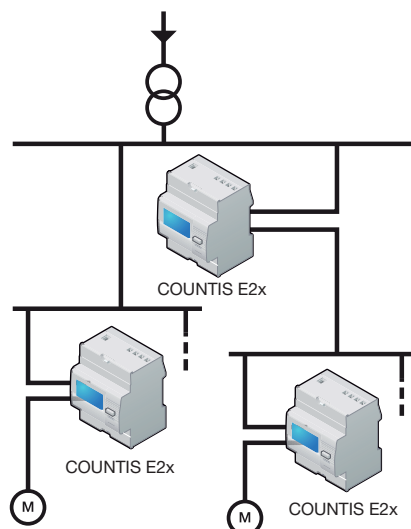
Multi-tariff

Lets you assign different time slots (every hour, dip times) or different sources (normal, back-up) to your energy readings to monitor your energy consumption in more detail.

Guaranteed connection (E20/21)

The product is protected against phase/neutral inversion and detects wiring errors. This makes it easier to start up, ensures the device is functioning properly and reduces the cost of the installation.

Functional diagram



MID certified B+D module

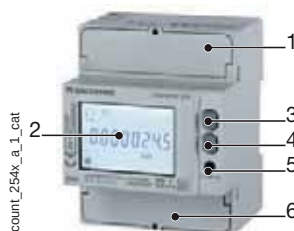
COUNTIS E units comply with the MID directive to guarantee accuracy and reliability when metering, compulsory for energy billing applications. "Module B+D" certification guarantees that the design and manufacturing process of products are approved by an accredited laboratory.

Models	Model-related specifications
E20	Pulse output
E21	Dual tariff (2 partial indices) + pulse output
E22	Dual tariff + pulse output + MID
E23	Dual tariff + pulse output + MODBUS RS485 communication
E24	Dual tariff + pulse output + MODBUS RS485 communication + MID
E25	Dual tariff + pulse output + M-BUS communication
E26	Dual tariff+ pulse output + M-BUS communication + MID
E27	Dual tariff + pulse output + Ethernet
E28	Dual tariff + pulse output + Ethernet + MID

Front panel

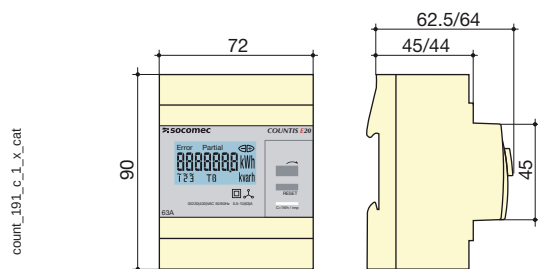


1. Backlit LCD display.
2. Navigation button.
3. Reset button.
4. Metrological LED (1000 pulses/kWh).



1. Neutral terminal
2. Backlit LCD display
3. Navigation button.
4. ENTER key
5. Metrological LED
6. Current and voltage terminals

Case



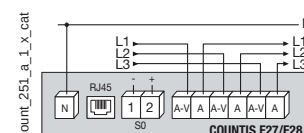
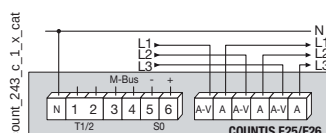
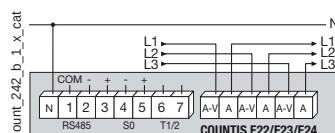
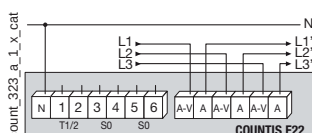
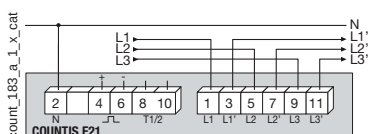
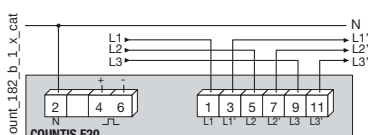
	COUNTIS E20 ... E21	COUNTIS E23 ... E28
Type	modular	modular
Number of modules	4	4
Dimensions W x H x D	72 x 90 x 62.5 mm	72 x 90 x 64 mm
Case degree of protection	IP 20	IP 20
Front degree of protection	IP 51	IP 51
Display type	Backlit LCD	8-digit backlit LCD
Rigid cable cross-section	1.5 ... 16 mm ²	1.5 ... 35 mm ²
Flexible cable cross-section	1 ... 16 mm ²	1.5 ... 35 mm ²
Weight	170 g	440 g

Electrical characteristics

Measurement of currents	COUNTIS E20 ... E21	COUNTIS E22 ... E28
Type	three-phase - direct 63 A	three-phase - direct 80 A
Input consumption	0.8 VA max. per phase	0.5 VA max. per phase
Startup current (I_{st})	40 mA	20 mA
Minimum current (I_{min})	0.5 A ⁽¹⁾	0.25 A
Transition current (I_{tr})	1 A ⁽²⁾	0.5 A
Reference current (I_{ref})	10 A ⁽³⁾	5 A
Permanent overload (I_{max})	63 A	80 A
Intermittent overload	1890 A over 10 ms	30 I_{max} over 10 ms
Voltage measurement		
Range of measurement	230 ... 400 V $\pm 20\%$	230 ... 240 V $\pm 20\%$
Consumption (VA)	Max. 2 VA	7.5 VA max (0.5 W) per phase E22/25/26 / 3.5 VA max (1 W) per phase E23/24/27/28
Permanent overload	280 V phase-neutral / 480 V phase-phase E20/21 290 V phase-neutral / 500 V phase-phase E22 ... E28	
Energy accuracy		
Active (according to IEC 62053-21)	Class 1	Class 1
Active (according to EN 50470)	Class B	Class B
Power supply		
Self-powered	Yes	
Frequency	50/60 Hz	
Output (pulses)	COUNTIS E20 ... E21	COUNTIS E22 ... E28
Optocoupler type (IEC 62053-31)	Class A (20 ... 30 VDC)	250 VAC/DC - 100 mA (E22) 27 VDC - 27 mA (E23 ... E28)
Number	1	2 (E22) 1 (E23 ... E28)
Fixed pulse weight	100 Wh	
Pulse duration	100 ms	50 $\pm$ 2 ms ON time 30 $\pm$ 2 ms min OFF time
Operating conditions	COUNTIS E20-E21	COUNTIS E22-E28
Operating temperature	-10 ... 55°C	-25 ... 55°C
Storage temperature	-20 ... 70°C	-25 ... 75°C
Relative humidity	85%	80%
Communication	COUNTIS E23/24	COUNTIS E25/E26 / COUNTIS E27/E28
Link	RS485	Wired / RJ45
Type	2 half duplex 2 to 3 half duplex (E23/24)	Full duplex
Protocol	MODBUS [®] RTU	M-BUS / MODBUS TCP, HTTP, NTP, DHCP
Baudrate	1200 ... 115200 bauds	300 ... 9600 bauds / 10/100 Mbps

- (1) $I_{min} \leq 0.5 \cdot I_{tr}$ (2) Guaranteed precision class of between I_{tr} and I_{max}
(3) $I_{ref} = I_{tr}$ (base current) = $10 \cdot I_{tr}$ for direct connection COUNTIS devices.

Connection



References

Type	COUNTIS E20 Reference	COUNTIS E21 Reference	COUNTIS E22 Reference	COUNTIS E23 Reference	COUNTIS E24 Reference	COUNTIS E25 Reference	COUNTIS E26 Reference	COUNTIS E27 Reference	COUNTIS E28 Reference
Direct 63 A	4850 3003								
Direct 63 A - Dual tariff		4850 3004							
Direct 80 A - Dual tariff + MID			4850 3049						
Direct 80 A - Dual tariff + MODBUS communication via RS485				4850 3050					
Direct 80 A - Dual tariff + MODBUS communication via RS485 + MID					4850 3051				
Direct 80 A - Dual tariff + M-Bus communication						4850 3052			
Direct 80 A - Dual tariff + M-Bus communication + MID							4850 3053		
Direct 80 A - Dual tariff + Ethernet Modbus TCP communication								4850 3054	
Direct 80 A - Dual tariff + Ethernet Modbus TCP + MID									4850 3055



COUNTIS E3x

Active energy meters

three-phase - direct 100 A



COUNTIS E32 - MID

Single-circuit metering,
measurement &
analysis

Function

The COUNTIS E3x is a modular active electrical energy meter displaying the energy and power consumed (kWh and kW) directly on its backlit LCD display. It is designed for three-phase load metering and is used for direct connections of up to 100 A.

COUNTIS E32, E34 and E36 are MID certified.

Common characteristics

- Measurement accuracy: 1 %
- Backlit LCD display.
- Detects connection errors.

Advantages

RS485 communication (MODBUS or M-BUS) or pulse output

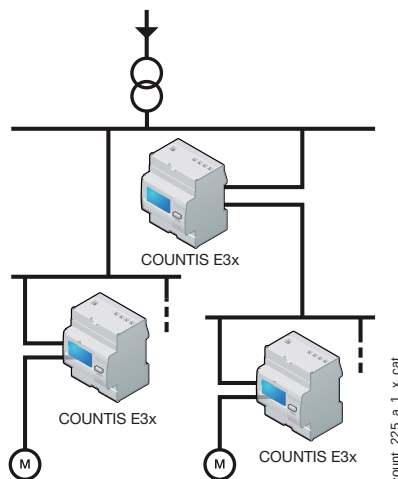
To enable the remote reporting of energy consumption, COUNTIS E3x are provided with either a pulse output or an RS485 communication output, with MODBUS or M-BUS protocol.

In addition to their reporting functions, COUNTIS E3x with RS485 can be configured remotely and enable access to multi-measurement values.

Detection of connection errors

The product is protected against phase/neutral inversion and detects wiring errors. This simplifies the installation and commissioning, thereby reducing associated costs, and ensures that the device operates correctly.

Principle diagram



MID certified B+D module

COUNTIS E products with MID certification provide the guaranteed accuracy required for applications in which sub-billing of the electrical energy consumed is necessary. "Module B+D" certification guarantees that the design and manufacturing process of products are approved by an accredited laboratory.

Bi-directional metering (available only on the E33 and E35)

This function is for metering energy production or energy consumption.

Multi-measurement and load curve

Display of electrical values (I, U, V, P, Q, S, PF) and load curve over a 7 day period via communication.

The solution for

- > Industry
- > Infrastructure
- > Data centre



Strong points

- > RS485 communication (MODBUS or M-BUS) or pulse output
- > Detection of connection errors
- > MID certified B+D module
- > Bi-directional metering
- > Multi-measurement and load curve

MID certification

- > COUNTIS E comply with the MID directive, guaranteeing accuracy and reliability when metering, an indispensable function for energy billing applications.
- > COUNTIS E MID feature tamper-proof components to prevent fraud.



Conformity to standards

- > IEC 62053-21 class 1
- > IEC 62053-31
- > IEC 62053-11
- > EN 50470-1
- > EN 50470-3



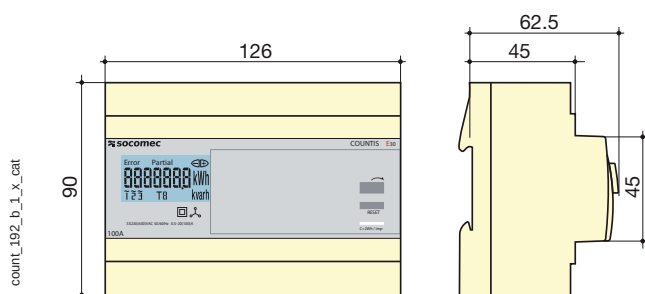
Models	Key characteristics
E30	Pulse output
E31	Dual tariff (2 partial counters) + Pulse output
E32	Dual tariff + MID + Pulse output
E33	Dual tariff + RS485 MODBUS communication
E34	Dual tariff + RS485 MODBUS communication + MID
E35	Dual tariff + M-BUS communication
E36	Dual tariff + M-BUS communication + MID

Front panel



1. Terminal shrouds (COUNTIS E32, E34 and E36).
2. Backlit LCD display.
3. MID marking (COUNTIS E32, E34 and E36).
4. Serial number (COUNTIS E32, E34 and E36).
5. Navigation key.
6. Reset key.
7. Metrological LED.

Case



Type	modular
Number of modules	7
Dimensions W x H x D	126 x 90 x 62.5 mm
Case degree of protection	IP20
Front degree of protection	IP51
Display type	backlit LCD display
Rigid cable cross-section	2.5 ... 35 mm ²
Flexible cable cross-section	2.5 ... 35 mm ²
Weight	490 g

Electrical characteristics

Current measurement

Type	three-phase - direct 100 A
Input consumption	0.5 VA max. per phase
Startup current (I_{st})	80 mA
Minimum current (I_{min})	0.5 A ⁽¹⁾
Transition current (I_{tr})	2 A ⁽²⁾
Reference current (I_{ref})	20 A ⁽³⁾
Permanent overload (I_{max})	100 A
Intermittent overload	3000 A max for 10 ms

Voltage measurement

Range of measurement	230 ... 400 V $\pm$ 20 %
Consumption (VA)	2
Permanent overload	280 V phase-neutral / 480 V phase-phase

Energy accuracy

Active (according to IEC 62053-21)	Class 1
Active (according to EN 50470)	Class B

Power supply

Self-supplied	yes
Frequency	50 / 60 Hz

Output (pulsed) (COUNTIS E30/E31/E32)

Number	1
Type of optocoupler	IEC 62053-31 class A (20 ... 30 VDC)
Fixed pulse weight	100 Wh
Pulse duration	100 ms

Operating conditions

Operating temperature	-10 ... 55 °C
Storage temperature	-20 ... 70 °C
Relative humidity	85 %

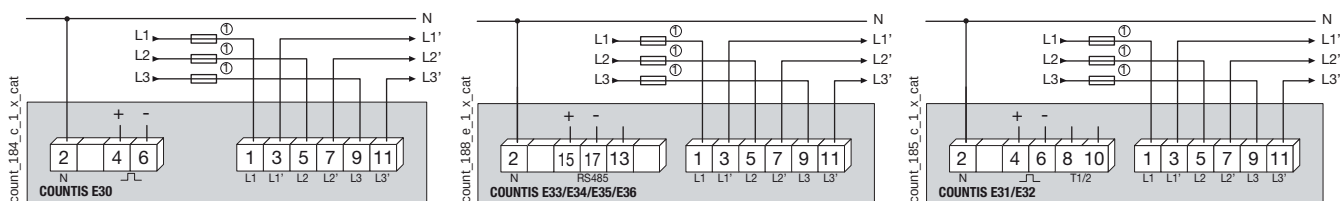
Communication	COUNTIS E33/34	COUNTIS E35/E36
Link	RS485	Connection
Type	2 half duplex wires	2 half duplex wires
Protocol	MODBUS RTU	M-BUS
Speed	4800 ... 38 400 bauds	300 ... 9600 bauds

(1) $I_{min} \leq 0.5 \cdot I_{tr}$

(2) The accuracy class is guaranteed between I_{tr} and I_{max} .

(3) $I_{ref} = I_{tr}$ (base current) = $10 \cdot I_{tr}$ for direct connection COUNTIS.

Connection



1. 100 A gG / Am fuses max.

References

Type	COUNTIS E30 Reference	COUNTIS E31 Reference	COUNTIS E32 Reference	COUNTIS E33 Reference	COUNTIS E34 Reference	COUNTIS E35 Reference	COUNTIS E36 Reference
100 A direct	4850 3005						
100 A direct - Dual tariff		4850 3006					
100 A direct - Dual tariff - MID			4850 3007				
100 A direct - Dual tariff with RS485 MODBUS com. ⁽¹⁾				4850 3012			
100 A direct - Dual tariff with RS485 MODBUS com. - MID ⁽¹⁾					4850 3013		
100 A direct - Dual tariff with M-BUS communication ⁽¹⁾						4850 3025	
100 A direct - Dual tariff with M-BUS communication - MID ⁽¹⁾							4850 3026
Management software for COUNTIS	See page 618						

(1) 4 tariffs through RS485 communication.



COUNTIS E4x

Active energy meters

three-phase - via CT up to 6000 A

Single-circuit metering,
measurement &
analysis



COUNTIS E44 - MID - (3000 A MID - 6000 A not MID)

Function

The COUNTIS E4x is a modular active and reactive electrical energy meter displaying the energies and active power consumed (kWh, kVAh and kW) directly on its backlit LCD display. It is designed for three-phase load metering with connection via CT and is suitable for applications of up to 6000 A (3000 A for MID).

COUNTIS E42, E44 and E46 are MID certified.

Common characteristics

- Measurement accuracy: 1 % / 0,5%(MID).
- Backlit LCD display.
- Detects connection errors.

Advantages

RS485 communication (MODBUS or M-BUS) or pulse output

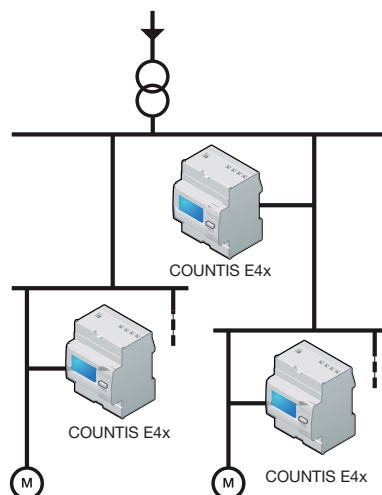
To enable the remote reporting of energy consumption, COUNTIS E4x are provided with either a pulse output or an RS485 communication output, with MODBUS or M-BUS protocol.

In addition to their reporting functions, COUNTIS E4x with RS485 can be configured remotely and enable access to multi-measurement values.

Detection of connection errors

The product is protected against phase/neutral inversion and detects wiring errors. This simplifies the installation and commissioning, thereby reducing associated costs, and ensures that the device operates correctly.

Principle diagram



MID certified B+D module

COUNTIS E products with MID certification provide the guaranteed accuracy required for applications in which sub-billing of the electrical energy consumed is necessary. "Module B+D" certification guarantees that the design and manufacturing process of products are approved by an accredited laboratory.

Bi-directional metering (available on E43 and E45)

This function is for metering energy production or energy consumption.

Multi-measurement and load curve

Display of electrical values (I, U, V, P, Q, S, PF) and load curve over a 7 day period via communication.

The solution for

- > Industry
- > Infrastructure
- > Data centre



Strong points

- > RS485 communication (MODBUS or M-BUS) or pulse output
- > Detection of connection errors
- > MID certified B+D module
- > Bi-directional metering
- > Multi-measurement and load curve

MID certification

- > COUNTIS E comply with the MID directive, guaranteeing accuracy and reliability when metering, an indispensable function for energy billing applications.
- > COUNTIS E MID feature tamper-proof components to prevent fraud.



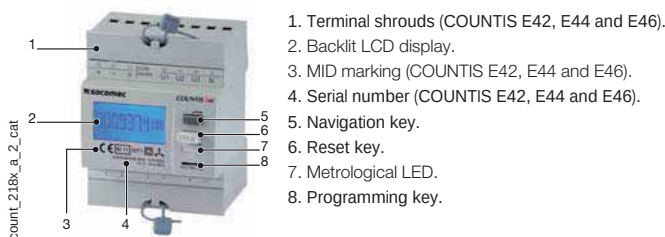
Conformity to standards

- > IEC 62053-21 class 1
- > IEC 62053-23 class 2
- > IEC 62053-31
- > IEC 62053-11
- > EN 50470-1
- > EN 50470-3

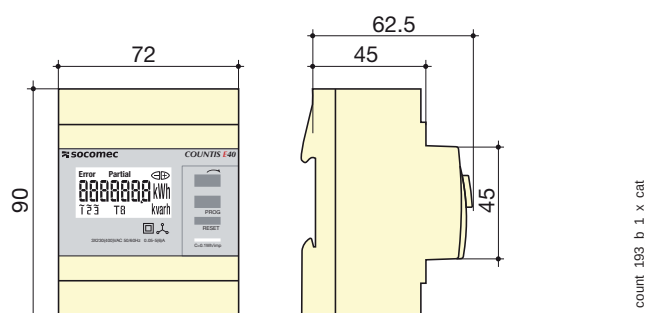


Models	Key functions
E40	Pulse output
E41	Dual tariff (2 partial counters) + Pulse output
E42	Dual tariff + MID + Pulse output
E43	Dual tariff + RS485 MODBUS communication
E44	Dual tariff + RS485 MODBUS communication + MID
E45	Dual tariff + M-BUS communication
E46	Dual tariff + M-BUS communication + MID

Front panel



Case



Type	modular
Number of modules	4
Dimensions W x H x D	73 x 90 x 62.5 mm
Case degree of protection	IP20
Front degree of protection	IP51
Display type	backlit LCD display
Rigid cable cross-section	1.5 ... 10 mm ²
Flexible cable cross-section	1 ... 6 mm ²
Weight	230 g

Electrical characteristics

Current measurement

Type	three-phase on CT/5A up to 6000 A (3000 A for MID products)
Input consumption	0.2 VA per phase
Startup current (I_{st})	10 mA
Minimum current (I_{min})	50 mA ⁽¹⁾
Transition current (I_{tr})	250 mA ⁽²⁾
Reference current (I_{ref})	5 A ⁽³⁾
Permanent overload (I_{max})	6 A
Intermittent overload	120 A for 0.5 s

Voltage measurement

Range of measurement	230 ... 400 V $\pm$ 20 %
Consumption (VA)	2 VA
Permanent overload	280 V phase-neutral / 480 V phase-phase

Energy accuracy

Active (according to IEC 62053-21)	Class 0,5s
Active (according to EN 50470)	Class C (COUNTIS E42/E44/E46)

Power supply

Self-supplied	yes
Frequency	50 / 60 Hz

Output (pulsed) (COUNTIS E40/E41/E42)

Number	1
Type of optocoupler	IEC 62053-31 Class A (20 ... 30 VDC)
Pulse weight	100 Wh, 1 kWh, 10 kWh, 100 kWh
Pulse duration	50 ms, 100 ms, 200 ms, 400 ms, 800 ms, 1000 ms, 1500 ms

Operating conditions

Operating temperature	-10 ... 55 °C
Storage temperature	-20 ... 70 °C
Relative humidity	85 %

Communication	COUNTIS E43/E44	COUNTIS E45/E46
Link	RS485	Connection
Type	2 half duplex wires	2 half duplex wires
Protocol	MODBUS RTU	M-BUS
Speed	4800 ... 38400 bauds	300 ... 9600 bauds

(1) $I_{min} \leq 0.5 \cdot I_{tr}$

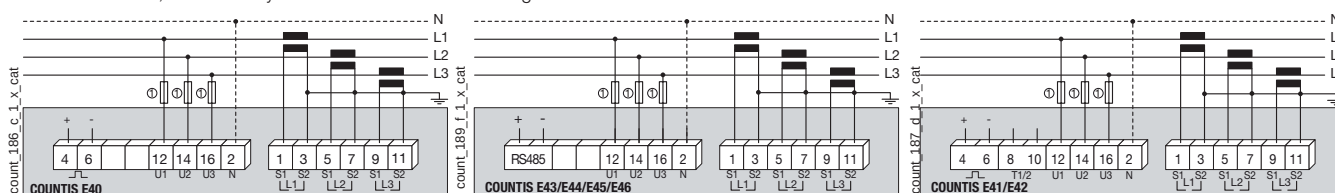
(2) The accuracy class is guaranteed between I_{tr} and I_{max} .

(3) $I_{ref} = I_{B}$ (base current) = $10 \cdot I_{B}$ for direct connection COUNTIS.

Connection

Recommendation:

- For IT earthing systems, it is recommended that the CT secondary is not connected to earth.
- When disconnecting the COUNTIS, the secondary of each current transformer must be short-circuited. This operation can be carried out automatically by a SOCOMEC PTI, an accessory which is included in this catalogue. Please consult us.



References

Type	COUNTIS E40 Reference	COUNTIS E41 Reference	COUNTIS E42 Reference	COUNTIS E43 Reference	COUNTIS E44 Reference	COUNTIS E45 Reference	COUNTIS E46 Reference
Via CT	4850 3008						
Via CT - Dual tariff		4850 3009					
Via CT - Dual tariff - MID			4850 3015				
Via CT - Dual tariff with RS485 MODBUS com. ⁽¹⁾				4850 3017			
Via CT - Dual tariff with RS485 MODBUS com. - MID ⁽¹⁾					4850 3014		
Via CT - Dual tariff with M-BUS com. ⁽¹⁾						4850 3027	
Via CT - Dual tariff with M-BUS com. - MID ⁽¹⁾							4850 3028
Management software for COUNTIS	See page 618.						

(1) 4 tariffs through RS485 communication.



COUNTIS E63

Active energy meters

3 x single-phase - direct 100 A

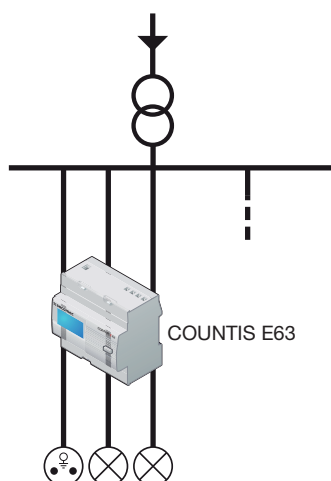


COUNTIS E63

Function

The COUNTIS E63 is a modular active electrical energy meter which provides metering for three single-phase loads, with direct connection of up to 100 A. It directly displays the total and partial energy and power (kWh and kW) consumed by each single-phase load.

Principle diagram



count_205_a_1_x_cat

Advantages

Compact

Due to the integration of three single-phase meters in the same case (7 modules wide), the COUNTIS E63 provides significant space-saving.

Advanced multi-measurement functions

Advanced multi-measurement functions are available via RS485 MODBUS communication:

- Instantaneous currents: I1, I2, I3
- Instantaneous voltages: V1, V2, V3
- Instantaneous power: 3P, 3S
- Instantaneous power factors: 3PF
- Load curves for each of the 3 phases:
Viewing of average positive active power consumption over a programmable period.

Detection of connection errors

The product is protected against phase/neutral inversion and detects wiring errors. This simplifies the installation and commissioning, thereby reducing associated costs, and ensures that the device operates correctly.

The solution for

- > Data centres
- > Infrastructure



Strong points

- > Compact
- > Advanced multi-measurement functions
- > Detection of connection errors

Conformity to standards

- > IEC 62053-21 class 1
- > IEC 62053-31
- > IEC 62053-11



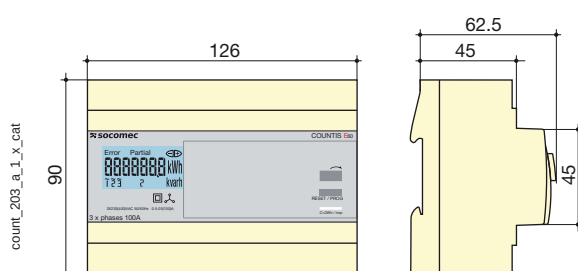
Management software

- > To get the most effective use from your Socomec measurement and metering devices, we offer a range of dedicated software tools. See page 618.

Front panel



Case



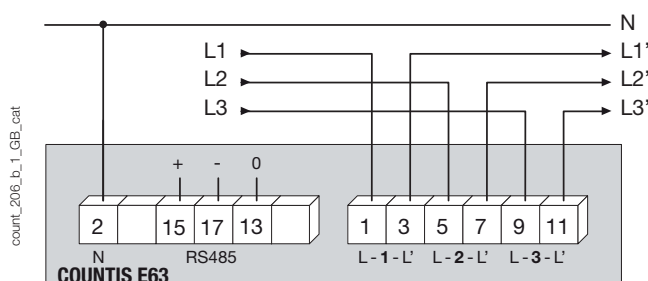
Type	modular
Number of modules	7
Dimensions W x H x D	126 x 90 x 62.5 mm
Case degree of protection	IP20
Front degree of protection	IP51
Display type	backlit LCD display
Rigid cable cross-section	2.5 ... 35 mm ²
Flexible cable cross-section	2.5 ... 35 mm ²
Weight	490 g

Electrical characteristics

Current measurement	
Type	3 x single-phase - direct 100 A
Input consumption	0.5 VA max. per phase
Startup current (I_{st})	80 mA
Minimum current (I_{min})	0.5 A
Transition current (I_{tr})	2 A
Reference current (I_{ref})	20 A
Permanent overload (I_{max})	100 A
Intermittent overload	3000 A max for 10 ms
Voltage measurement	
Range of measurement	230 ... 400 V $\pm$ 20 %
Consumption on inrush (VA)	2
Permanent overload	280 V phase-neutral / 480 V phase-phase
Energy accuracy	
Active (according to IEC 62053-21)	Class 1

Power supply	
Self-supplied	yes
Frequency	50 / 60 Hz
Operating conditions	
Operating temperature	-10 ... 55 °C
Storage temperature	-20 ... 70 °C
Relative humidity	95 %
Communication	
Link	RS485
Type	2 ... 3 half duplex wires
Protocol	MODBUS RTU
MODBUS® speed	4800 ... 38400 bauds

Connection



References

Type	COUNTIS E63 Reference
3 x single phase - 100 A direct with RS485 MODBUS communication	4850 3016



COUNTIS ECix

Multi-utility pulse concentrator

Single-circuit metering,
measurement &
analysis



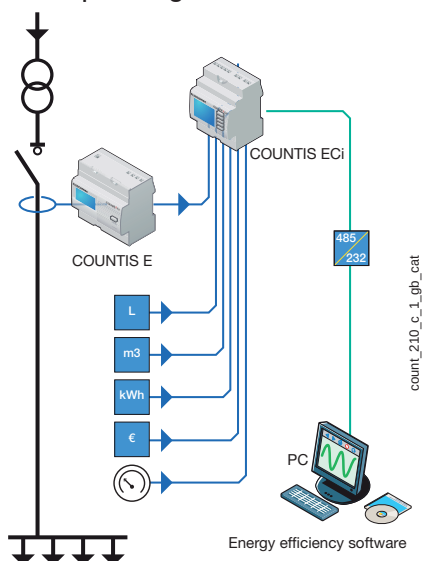
COUNTIS ECi3

Function

The COUNTIS ECix is a multi-utility pulse concentrator which communicates via an RS485 link using MODBUS protocol.

It enables pulses from water, gas, compressed air, electricity meters and, for the COUNTIS ECi3, the output of analogue sensors (light, temperature, wind etc.) to be registered and stored. All data, ie. total and partial meters and load curves (available for all logical and analogue inputs) can be centralised via RS485 communication using MODBUS protocol.

Principle diagram



Advantages

Up to 7 multi-utility meters and 2 analogue sensors

- 7 digital inputs + 2 analogue inputs.
- Total, partial and programmable metering (day, week, month, year).

Load curves

Load curves are available for each of the 7 logical inputs.

A history of average values are available for the 2 analogue inputs (ECi3).

RS485 MODBUS communication

- Centralisation and transmission of pulse and analogue data to a supervision station.
- Remote configuration of COUNTIS ECi device.

Improved customisation

- Selection of the measuring unit: kWh, m³, liters.
- Selection of the currency unit: €, K€, £, \$.

Values can be displayed in the unit of your choice and energy costs can be directly calculated.

The solution for

- > Data centres
- > Industry
- > Infrastructure



Strong points

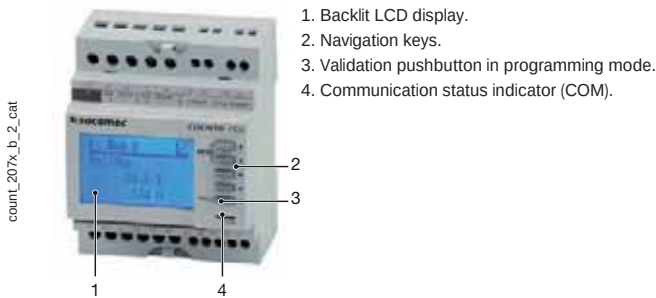
- > Up to 7 multi-utility meters and 2 analogue sensors
- > Load curves
- > RS485 MODBUS communication
- > Improved customisation

Management software

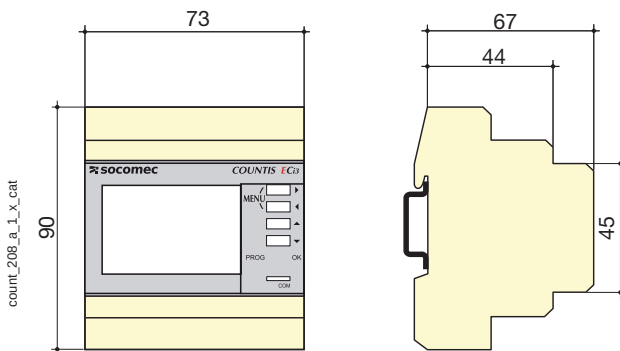
- > To get the most effective use from your Socomec measurement and metering devices, we offer a range of dedicated software tools. See page 618.

Models	Key characteristics
ECi2	7 insulated inputs
ECi3	7 insulated inputs + 2 analogue inputs.

Front panel



Case



Type	modular
Number of modules	4
Dimensions W x H x D	73 x 90 x 67 mm
Case degree of protection	IP20
Front degree of protection	IP51
Display type	backlit LCD display
Terminal blocks type	fixed
Rigid cable cross-section	1 ... 10 mm ²
Flexible cable cross-section	0.5 ... 6 mm ²
Weight	215 g

Characteristics

Auxiliary power supply

Self-supplied	no
Alternating voltage	110 / 400 VAC
Direct voltage	120 / 300 VDC
Tolerance	± 10 %
Frequency	45 / 65 Hz
Consumption	5 VA
Insulation voltage	3.5 kV

Communication

Link	RS485
Type	2 ... 3 half duplex wires
Protocol	MODBUS RTU
MODBUS [®] speed	9600 ... 38400 bauds

Inputs

Number	7
Control voltage (integrated)	10 ... 30 VDC
Minimum signal width	10 ms
Maximum signal width	2 s
Minimum duration between 2 pulses	30 ms
Edge triggering	rising

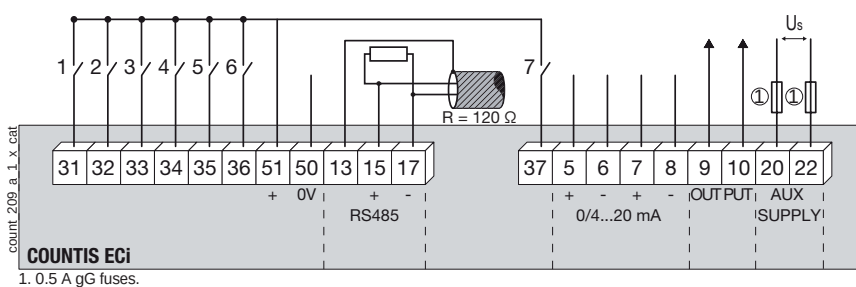
Analogue inputs (ECi3)

Number	2
Current	25 mA
Accuracy	0.5 %
Response time	500 ms
Input resistance	200 Ω
Consumption	0.1 VA

Operating conditions

Operating temperature	-10 ... +55 °C
Storage temperature	-20 ... +70 °C
Relative humidity	95 %

Connection



31: logical input n°1.
32: logical input n°2.
33: logical input n°3.
34: logical input n°4.
35: logical input n°5.
36: logical input n°6.
37: logical input n°7.

13-15-17: RS485 link.
5-6: Analogue input n°1.
7-8: Analogue input n°2.
9-10: output.
20-22: power supply
U=110...400 VAC ± 10 %.

51-50: Inputs internal/
external power supply.

References

Auxiliary power supply U _s	COUNTIS ECi2 Reference	COUNTIS ECi3 Reference
230 / 400 VAC	4853 0000	4853 0001
230 / 400 VAC + 2 analogue inputs		
Description of accessories	Reference	Reference
Panel mounting kit	192J 8015	192J 8015
Management software for COUNTIS	see page 618	



RETROFIT Line

MID active energy meter dedicated to existing installations

Single-circuit metering,
measurement &
analysis



COUNTIS E44R



TCO 36
400 A

Function

Existing sites, having been built before optimised energy consumption was a consideration, are especially in need of a dedicated energy efficient solution.

COUNTIS products with MID certification provide the guaranteed accuracy required for applications in which sub-billing of the electrical energy consumed is necessary.

To meet this requirement, the **RETROFIT Line** allows you to easily add metering points in electrical enclosures which are very restricted in terms of integration.

The RETROFIT Line consists of COUNTIS meters combined with TCO split-core current transformers. Together they allow measuring and metering single and three phase networks up to 600 A, even inside the most confined cabinet spaces.

Advantages

High overall accuracy

A global system measuring accuracy of better than 1% in energy from 10 to 120% of nominal current.

Easy installation

TCO split-core transformers mean the power cables do not need to be disconnected. Operations are quicker and minimise the electrical disconnection time.

Proven products

The COUNTIS products are based on standard SOCOMEC ranges.

Communication to Monitoring

The data from RETROFIT products can be transferred to a central monitoring system.

Guaranteed connections

The product is protected against phase/neutral inversion and detects wiring errors. Commissioning has been simplified to ensure the device operates correctly: installation costs are therefore reduced.

The solution for

- > Light Industry
- > Infrastructure
- > Data centers



Strong points

- > High overall accuracy
- > Easy installation
- > Proven products
- > Communication to a Monitoring system
- > Guaranteed connections

Conformity to standards

COUNTIS:

- > IEC 62053-21
- > IEC 62053-22
- > IEC 62053-23
- > IEC 62053-31
- > EN 50470-3
- > EN 50470-1



Meters

Function

The COUNTIS E4xR is an active electrical energy meter designed for three-phase networks. It is used for connection via TCO up to 600 A. The COUNTIS E42R is a totalising meter allowing direct reading of the power consumed, using a pulse output. It is a dual tariff meter for dual tariff invoicing.

The COUNTIS E44R pack offers MODBUS RTU communication via RS485 and includes 4 tariffs.

COUNTIS E42R and E44R are MID-certified (B + D module).

Technical characteristics⁽¹⁾

	COUNTIS E42R 	COUNTIS E44R 
Current measurement		
Type	TC/1 up to 600 A	TC/1 up to 600 A
Input consumption	0.2 VA per phase	0.2 VA per phase
Overload	24 A / 0.5 s	24 A / 0.5 s
Permanent overload	1.2 A	1.2 A
Minimum current measured	10 mA	10 mA
Voltage measurement		
Range of measurement	230 ... 400 V ± 15 %	230 ... 400 V ± 15 %
Input consumption	2 VA	2 VA
Permanent overload	280 V	280 V
Energy accuracy		
Active (according to EN 50470)	Class C	Class C

(1) Features not mentioned are identical to those of COUNTIS E4x standard products.

Front panel, terminals, case, connection

See the standard COUNTIS E range catalogue pages.

References

Meters	Reference	Current transformers	Reference
COUNTIS E42R	4850 3021	TCO 24 100/1	182T 4910
COUNTIS E44R	4850 3022	TCO 24 250/1	182T 4925
		TCO 36 400/1	182T 4940
		TCO 36 600/1	182T 4960

What are the advantages of a MID meter?

It allows to resell electricity

The MID directive guarantees safe and reliable metering. The meter is tamper-proof and its accuracy is guaranteed thanks to calibration on a metrology bench.

COUNTIS E42R and E44R are MID-certified (B + D module). It is mandatory and this means SOCOMEC is required to supply products which meet the design and manufacturing requirements imposed by this standard.

The specificity of MID product

- Standardised accuracy A, B or C: Socomec MID meters have a guaranteed accuracy class C ± 0.5%.
- Tamper-proof devices: protection cover and seals are provided.
- Mandatory markings: CE + MID front and side marking confirms the compliance to modules B + D.
- Related Certificate: provided by Socomec, it formalizes the accuracy verification of the energy meter at four different current levels.



RETROFIT Line

MID active energy meter dedicated to existing installations

TCO - split-core current transformers

Function

The TCO small split-core current transformers must be only combined with COUNTIS RETROFIT energy meters.

The RETROFIT pack guarantees overall accuracy to within less than 1%.

Technical characteristics



	TCO 24	TCO 36
Internal diameter (mm)	24	36
Overall accuracy class ⁽¹⁾	1	1
Dimensions H x W x D (mm)	74.5 x 45 x 34	91 x 57 x 40.5

(1) Overall accuracy of the COUNTIS RETROFIT + TCO combination: (1) Global accuracy guaranteed when associating COUNTIS Retrofit + split-core CT with load between 10 % to 120 % of I_n.

The advantages of TCO split-core current transformers

Wide current range

The TCOs accept a primary current between 100 and 600 A making it possible to connect at different points in the installation.

A guaranteed overall accuracy

Combined with the COUNTIS RETROFIT products, the TCO guarantees overall accuracy is better than 1%.

Compact

With their compact and open design, the TCOs are easily positioned on existing installations without the need to disconnect/reconnect the cables or modify the installation. Measurement points can therefore be placed in the most confined panels.

Services

Take advantage of the advice offered by an energy specialist

Socomec offers a full range of customised services for your energy efficiency requirements and can help you find the best solution:

- Implementation
- Training
- Electrical facility audit
- Project engineering.

For more details download our Service brochure available on our web site : www.socomec.com or contact your SOCOMEC office.



Zoom



Think about it

COUNTIS Eci

Communicate consumption information whatever the energy (electricity, water, gas...) to a PC or PLC. Please see the COUNTIS Eci catalogue pages.



MULTIS L50

Digital panel meter

three phases - via CT up to 6000 A dimensions 96 x 96 mm

new



MULTIS L50

multi_076_a_1_cat.eps

The solution for

- > Industry
- > Infrastructure



Strong points

- > Large backlit LCD display
- > Direct display of multimeasurement and metering values
- > RS485 MODBUS communication
- > Inputs/Output for control/command ou pulses

Conformity to standards

- > IEC 62053-21 class 1
- > IEC 62053-23 class 2



Function

The MULTIS L50 is a panel mounted digital meter displaying multi-measurement and energy values directly on its large backlit LCD display. It is designed for utilisation on three-phase or single-phase networks with connection via CT and is suitable for applications of up to 6000 A. The product can be configured by the user via the keypad and the display.

Advantages

Easy to use

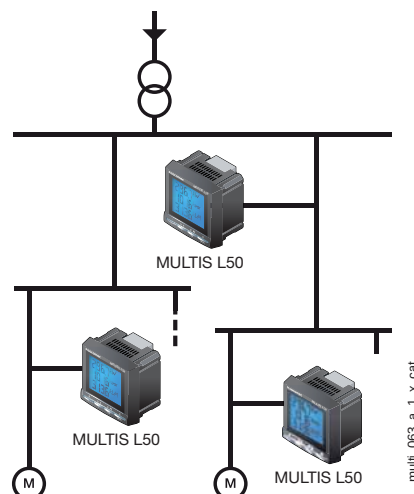
Thanks to its large backlit LCD display and its multiple viewing screens with direct pushbutton access, MULTIS L50 provide clear readings and are easy to use.

They directly display a number of multi-measurement and metering values.

Advanced functionalities

The MULTIS L50 offers input/output functions as standard and has a pulse output or RS485 MODBUS communication output.

Principle diagram



multi_063_a_1_x_cat

Functions

Multi-measurement

- Currents
 - instantaneous: I1, I2, I3, In
 - maximum average: I1, I2, I3, In
- Voltages & frequency
 - instantaneous: V1, V2, V3, U12, U23, U31, F
- Power
 - instantaneous: 3P, ΣP, 3Q, ΣQ, 3S, ΣS
 - maximum average: ΣP, ΣQ, ΣS
 - unbalance: U unb
- Power factors
 - instantaneous: 3PF, Σ

Metering

- Active energy: ± kWh
- Reactive energy: ± kvarh
- Hours: ⌚

Harmonic analysis

- Total harmonic distortion (level 51)
 - Currents: thd I1, thd I2, thd I3
 - Phase-to-neutral voltage: thd V1, thd V2, thd V3
 - Phase-to-phase voltage: thd U12, thd U23, thd U31

Communications⁽¹⁾

RS485 with MODBUS protocol

Output

- Remote command of device
- Pulse report

Inputs

- Remote status device

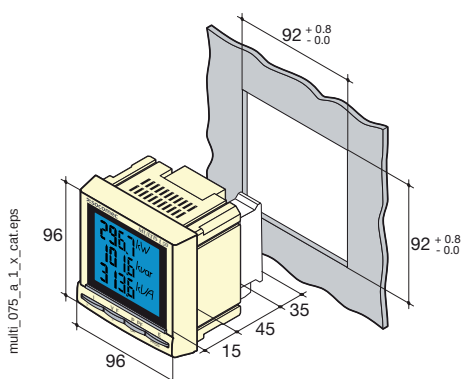
(1) Available as an option (see the following pages).

Front panel



1. Backlit LCD display.
2. Direct access key for currents (instantaneous and max. values), current THD.
3. Direct access key for voltages, frequency and voltage THD.
4. Pushbutton for active, reactive, and apparent power (instantaneous and max. values) and power factor.
5. Direct access key for energies, hour meter and programming menu.

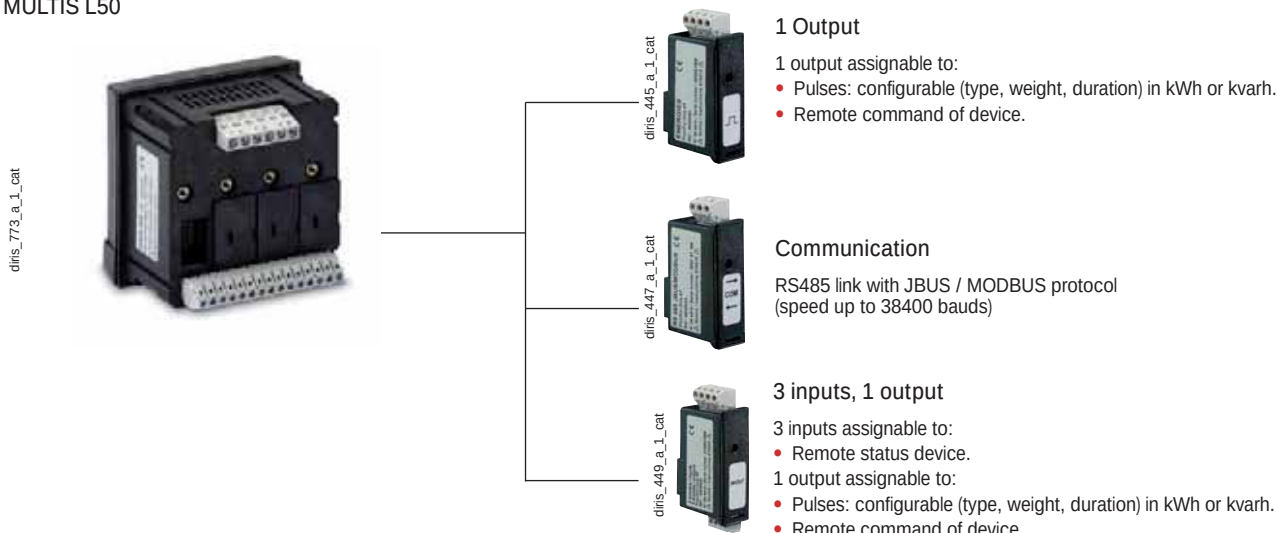
Case



Type	panel mounting
Dimensions W x H x D	96 x 96 x 60 mm
Case degree of protection	IP30
Front degree of protection	IP52
Display type	backlit LCD display
Terminal block type	fixed or plug-in
Voltage and other connection cross-section	0.2 ... 2.5 mm ²
Current connection cross-section	0.5 ... 6 mm ²
Weight	400 g

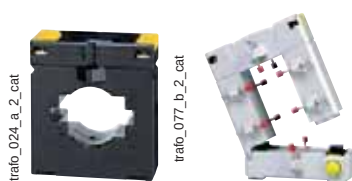
Plug-in modules

MULTIS L50



Accessories

Current transformers
(See page 584)



IP65 protection



Panel mounting kit
for a 144 x 96 mm cut-out



MULTIS L50

Digital panel meter

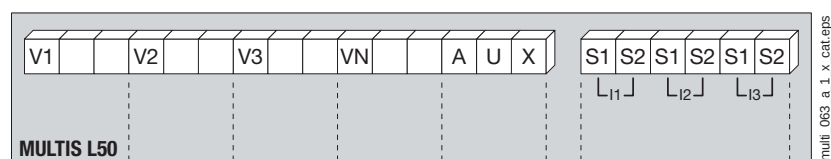
three phases - via CT up to 6000 A dimensions 96 x 96 mm

Electrical characteristics

Current measurement (TRMS)	
Via CT primary	9 999 A
Via CT secondary	5 A
Measurement range	0 ... 11 kA
Input consumption	0.6 VA
Measurement updating period	1 s
Accuracy	1%
Permanent overload	6 A
Intermittent overload	10 I _n for 1 s
Voltage measurements (TRMS)	
Direct measurement between phases	50 ... 500 VAC
Direct measurement between phase and neutral	28 ... 289 VAC
Input consumption	≤ 0.1 VA
Measurement updating period	1 s
Accuracy	1%
Permanent overload	800 VAC
Power measurement	
Measurement updating period	1 s
Accuracy	1%
Power factor measurement	
Measurement updating period	1 s
Accuracy	1%
Frequency measurement	
Measurement range	45 ... 65 Hz
Measurement updating period	1 s
Accuracy	0.1 %

Energy accuracy	
Active (according to IEC 62053-21)	Class 1
Reactive (according to IEC 62053-23)	Class 2
Auxiliary power supply	
Alternating voltage	110 ... 250 VAC
AC tolerance	± 10 %
Direct voltage	120 ... 250 VDC
DC tolerance	± 10%
Frequency	50 / 60 Hz
Consumption	10 VA
Pulse or alarm output	
Number	1
Type	100 VDC - 0.5 A - 10 VA
Max. number of operations	≤ 10 ⁸
Inputs	
Number	3
Power supply	10 ... 30 VDC
Minimum signal width	10 ms
Minimum duration between 2 pulses	18 ms
Type	Phototransistors
Communication	
Link	RS485
Type	2 ... 3 half duplex wires
Protocol	MODBUS RTU
MODBUS® speed	1400 ... 38400 bauds
Operating conditions	
Operating temperature	- 10 ... + 55 °C
Storage temperature	- 20 ... + 85 °C
Relative humidity	95 %

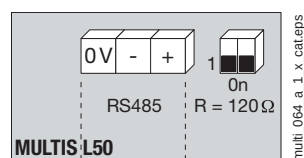
Terminals



S1 - S2: current inputs.

AUX: auxiliary power supply U_s.
V1, V2, V3 & VN: voltage inputs.

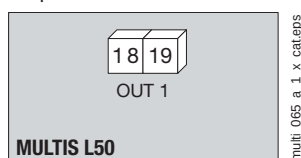
Communication module



RS485 link.

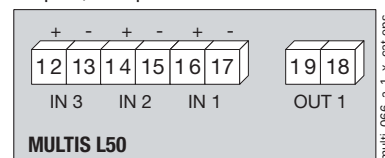
R = 120 Ω: selectable internal resistance for RS485 end of line termination.

Output or alarm module



18 - 19: output n°1

3 inputs, 1 output module



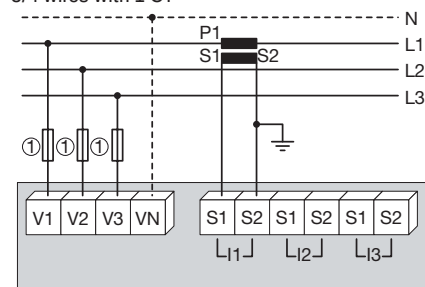
Connection

Recommendation:

- For IT earthing systems, it is recommended that the CT secondary is not connected to earth.
- When disconnecting the DIRIS, the secondary of each current transformer must be short-circuited. This operation can be carried out automatically by a SOCOMEC PTI, an accessory which is included in this catalogue. Please consult us.

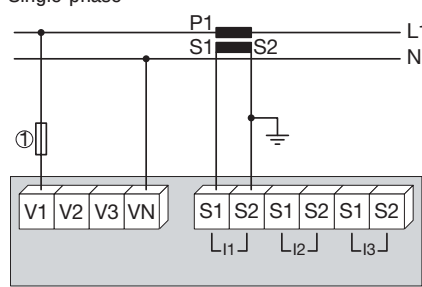
Low voltage balanced network

3/4 wires with 1 CT



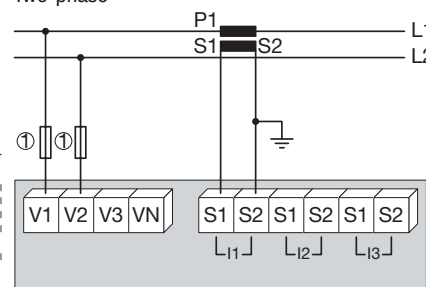
Use of 1 CT reduces by 0.5% the accuracy of the phases, the current of which is worked out by vector calculation.
1. Fuses 0.5 A gG / 0.5 A class CC.

Single-phase



1. Fuses 0.5 A gG / 0.5 A class CC.

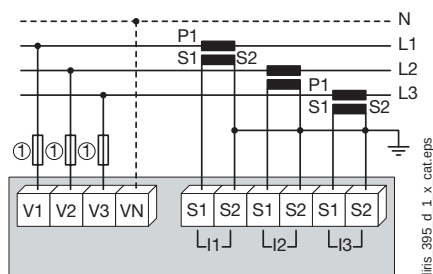
Two-phase



1. Fuses 0.5 A gG / 0.5 A class CC.

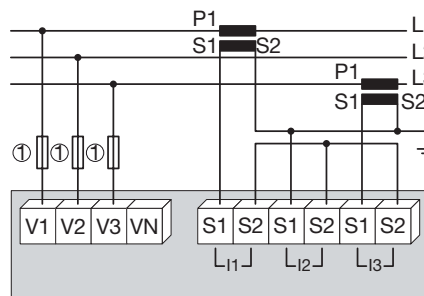
Low voltage unbalanced network

3/4 wires with 3 CTs



1. Fuses 0.5 A gG / 0.5 A class CC.

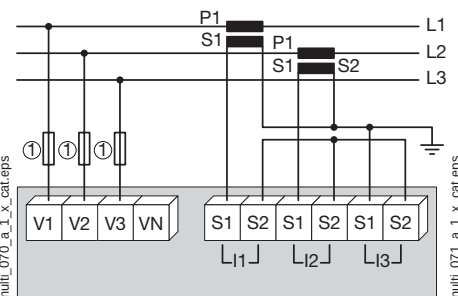
3 wires with 2 CTs



Use of 2 CTs reduces by 0.5% the accuracy of the phases, the current of which is worked out by vector calculation.

1. Fuses 0.5 A gG / 0.5 A class CC.

3 wires with 2 CTs

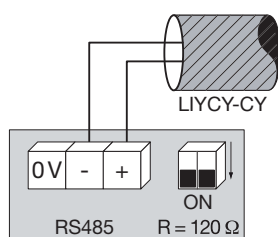


Use of 2 CTs reduces by 0.5% the accuracy of the phases, the current of which is worked out by vector calculation.

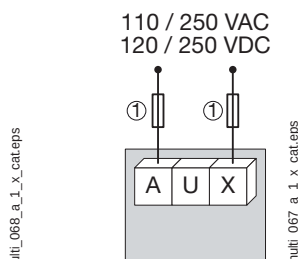
1. Fuses 0.5 A gG / 0.5 A class CC.

Additional information

Communication via RS485 link



AC & DC auxiliary power supply



1. Fuses 0.5 A gG / 0.5 A class CC.

References

Basic device		MULTIS L50
MULTIS L50		Reference
Optional plug-in modules		Reference
1 output		4825 0080
RS485 MODBUS® communication		4825 0082
3 inputs, 1 output		4825 0083
Accessories		
Description of accessories	To be ordered in multiples of	Reference
IP65 protection	1	4825 0089
Panel mounting kit for a 144 x 96 mm cut-out	1	4825 0088
Fuse holder for the protection of voltage inputs (type RM) 3 poles	4	5601 0018
Fuse holder for the protection of the auxiliary supply (type RM) 1 pole + neutral	6	5601 0017
Fuse type gG 10x38 0.5 A	10	6012 0000
Ferrite to be associated with communication modules	1	4899 0011
Current transformer range	1	see page 584

Expert Services

> Study, definition, advice, implementation, maintenance and training... Our experts "Expert Services" offer complete support for the success of your project.





DIRIS A10

Multifunction meters - PMD
modular multifunction meter

Single-circuit metering,
measurement &
analysis



DIRIS A10

diris_791_c_1_cat

The solution for

- > Industry
- > Infrastructures
- > Data centres



Strong points

- > Easy to use
- > Integrated temperature sensor
- > Detects wiring errors
- > Compliant with IEC 61557-12

Conformity to standards

- > IEC 61557-12
- > IEC 62053-22 class 0.5S
- > IEC 62053-23 class 2
- > UL



Function

The DIRIS A10 is a modular multifunction meter for measuring electrical values in low voltage networks.

It allows all electrical parameters to be displayed and utilised for communication and/or output functions.

Advantages

Easy to use

Five direct access pushbuttons enable all measurements to be clearly viewed on its backlit LCD display.

Integrated temperature sensor

It allows variations in temperature to be detected.

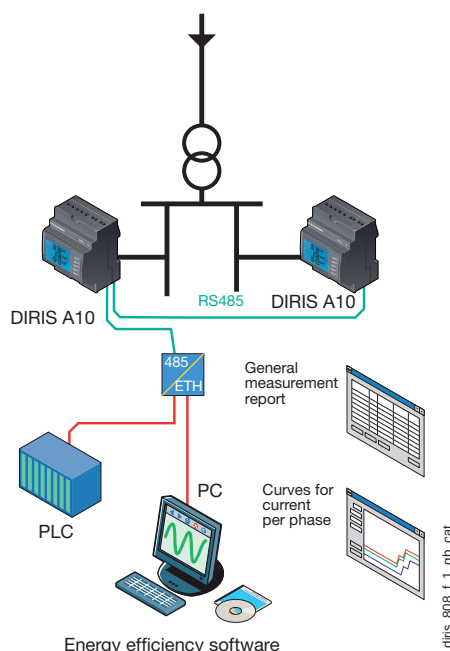
Detects wiring errors

An integrated test function can be utilised to detect incorrect wiring and to automatically correct CT installation errors.

Compliant with IEC 61557-12

IEC 61557-12 is a high-level standard for all PMDs (Performance Monitoring Devices) that are designed to measure and monitor electrical parameters in distribution networks. Compliance with IEC 61557-12 ensures a high level of equipment performance, in terms of metrology, and the mechanical and environmental aspects (EMC, temperature, etc.).

Principle diagram



diris_808_L1_gb_cat

Functions

Multi-measurement

- Currents
 - instantaneous: I1, I2, I3, In
 - maximum average: I1, I2, I3, In
- Voltages & frequency
 - instantaneous: V1, V2, V3, U12, U23, U31, F
- Power
 - instantaneous: 3P, ΣP, 3Q, ΣQ, 3S, ΣS
 - maximum average: ΣP, ΣQ, ΣS
- Power factors
 - instantaneous: 3PF, ΣPF

Metering

- Active energy: + kWh
- Reactive energy: + kVarh
- Hours: ⌚
- Harmonic analysis
 - Total harmonic distortion (level 51)
 - Currents: thd I1, thd I2, thd I3
 - Phase-to-neutral voltage: thd V1, thd V2, thd V3
 - Phase-to-phase voltage: thd U12, thd U23, thd U31

Dual tariff function

Selection of one out of 2 billing tariffs

Events

Alarms on all electrical values

Communications⁽¹⁾

RS485 with MODBUS protocol

Input

- Tariff selection
- Remote device status

Output

- Remote command of device
- Alarm report
- Pulse report

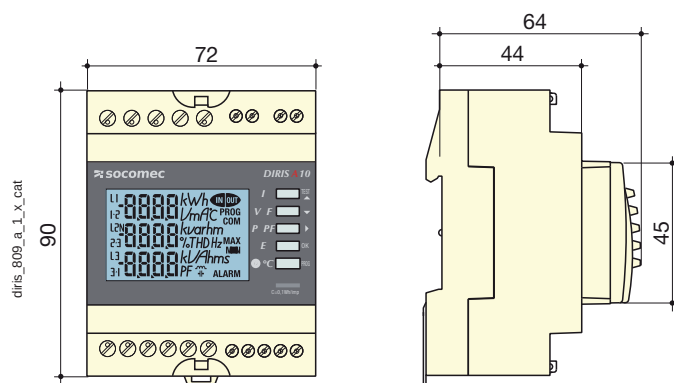
(1) Available on specific version (see the following pages).

Front panel



1. Backlit LCD display.
2. Direct access key for currents (instant and maximum), current THD and test function.
3. Direct access key for voltages, frequency and voltage THD.
4. Direct access key for active, reactive and apparent power (instantaneous and max. values) and power factor.
5. Direct access key for energies.
6. Pushbutton for hour meter, temperature and programming menu access.
7. Metrological LED.

Case



Type	modular
Number of modules	4
Dimensions W x H x D	72 x 90 x 64 mm
Case degree of protection	IP 30
Front degree of protection	IP 52
Display type	backlit LCD display
Voltage and current connection cross-section	4 mm ²
Connection cross-section for AUX supply, input, output and comms.	2.5 mm ²
Weight	205 g (4825 0010) - 215 g (4825 0011)

Electrical characteristics

Current measurement (TRMS)	
Via CT primary	9 999 A
Via CT secondary	5 A
Measurement range	0 ... 11 kA
Input consumption	0.6 VA
Measurement updating period	1 s
Accuracy	0.2 %
Permanent overload	6 A
Intermittent overload	10 I _n for 1 s
Voltage measurements (TRMS)	
Direct measurement between phases	50 ... 500 VAC
Direct measurement between phase and neutral	28 ... 289 VAC
Input consumption	≤ 0.1 VA
Measurement updating period	1 s
Accuracy	0.2 %
Permanent overload	800 VAC
Power measurement	
Measurement updating period	1 s
Accuracy	0.5 %
Power factor measurement	
Measurement updating period	1 s
Accuracy	0.5 %
Frequency measurement	
Measurement range	45 ... 65 Hz
Measurement updating period	1 s
Accuracy	0.1 %

Energy accuracy	
Active (according to IEC 62053-22)	Class 0.5 S
Reactive (according to IEC 62053-23)	Class 2
Auxiliary power supply	
Alternating voltage	110 ... 277 VAC
AC tolerance	± 15 %
Frequency	50 / 60 Hz
Consumption	< 3 VA
Digital output (pulses or on/off)	
Number	1
Type	20 / 30 VDC - 0.5 A - 10 VA
Max. number of operations	≤ 10 ⁸
Input (tariff)	
Number	1
Type	0 VAC: T1 / 200-277 VAC: T2
Communication	
Link	RS485
Type	2 ... 3 half duplex wires
Protocol	MODBUS RTU
MODBUS® speed	2400 ... 38400 bauds
Operating conditions	
Operating temperature	- 10 ... + 55 °C
Storage temperature	- 20 ... + 70 °C
Relative humidity	85 %

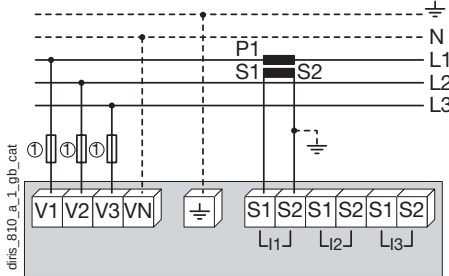
Connection

Recommendation:

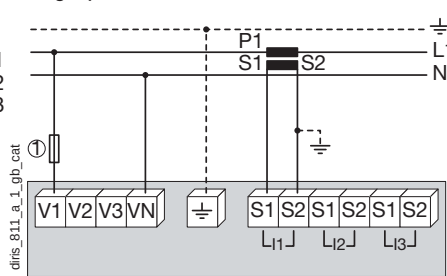
- For IT earthing systems, it is recommended that the CT secondary is not connected to earth.
- When disconnecting the DIRIS, the secondary of each current transformer must be short-circuited. This operation can be carried out automatically by a SOCOMEC PTI, an accessory which is included in this catalogue. Please consult us.
- It is recommended that the earthing point for the DIRIS A10 and the current transformer secondaries are not earthed at the same time.

Low voltage balanced network

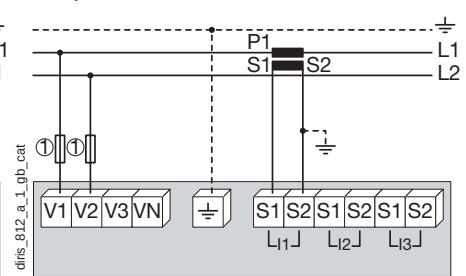
3/4 wires with 1 CT



Single-phase

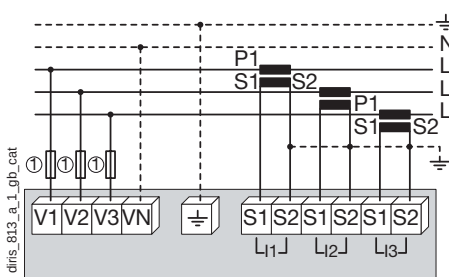


Two-phase

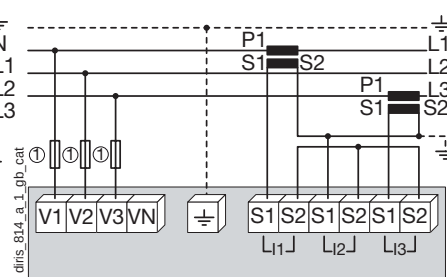


Low voltage unbalanced network

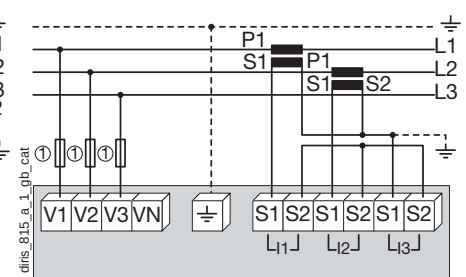
3/4 wires with 3 CTs



3 wires with 2 CTs

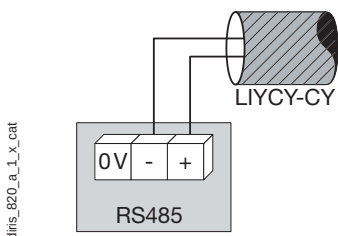


3 wires with 2 CTs

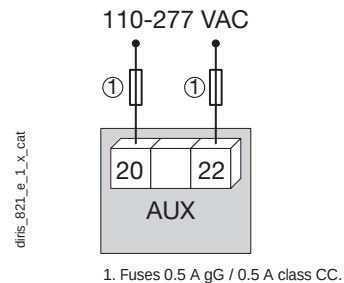


Additional information

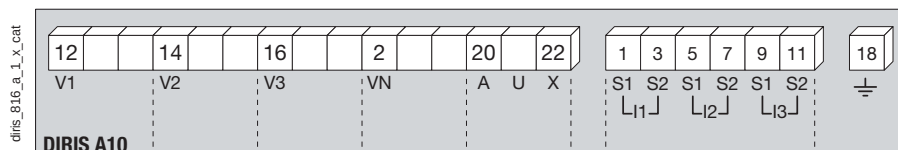
Communication via RS485 link



AC auxiliary power supply



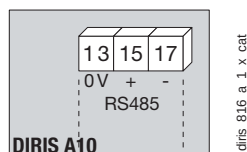
Terminals



AUX: auxiliary power supply U_s .
V1, V2, V3 & VN: voltage inputs.

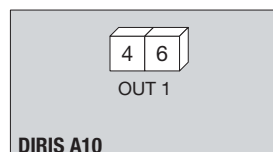
S1 - S2: current inputs.

Communication terminals



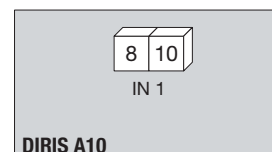
RS485 link.

Pulse or alarm output terminals



4 - 6: output n°1

Input terminals



8 - 10: input n°1

References

Basic device		DIRIS A10
Description		Reference
DIRIS A10 (available in light grey on request)		4825 0010
DIRIS A10 with RS485 MODBUS communication (available in light grey on request)		4825 0011
Description of accessories		Reference
Fuse disconnect switches for the protection of voltage inputs (type RM) 3 poles	To be ordered in multiples of 4	5601 0018
Fuse disconnect switches for the protection of the auxiliary supply (type RM) 1 pole + neutral	6	5601 0017
Fuses type gG 10x38 0.5 A	10	6012 0000
Current transformer range	1	see pages 584
Management software for DIRIS		see pages 618

Expert Services

- > Study, definition, advice, implementation, maintenance and training... Our experts "Expert Services" offer complete support for the success of your project.





DIRIS A14

Multifunction measuring unit - PMD - MID
multi-measurement

new

diris_964_a_1_cat



DIRIS A14 panel mounted

diris_908_a_1_cat



DIRIS A14 DIN rail mounted

Single-circuit metering,
measurement &
analysis

Function

The DIRIS A14 is an MID approved multifunction meter - for measuring electrical values in low voltage networks. It allows all electrical parameters to be displayed and utilised for communication and/or output functions.

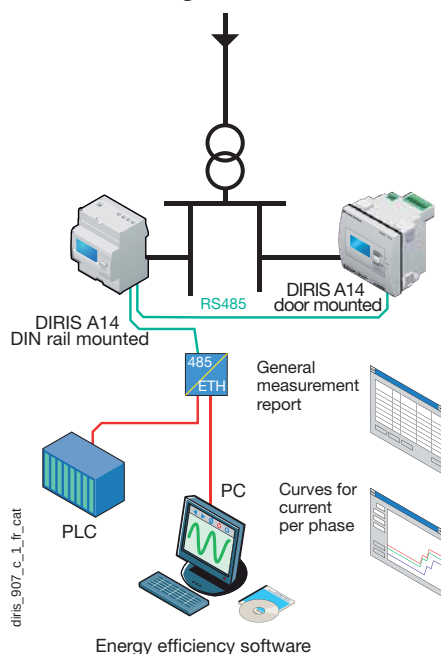
Advantages

Single phase and three phase MID certified DIRIS A14 products with MID certification provide the guaranteed accuracy required for applications in which sub-billing of the electrical energy consumed is necessary, whether on a three-phase or single-phase network. "Module B+D" certification guarantees that the design and manufacturing process of products are approved by an accredited laboratory.

Bi-directional metering (four quadrants)
This function is for metering energy production or energy consumption.

Multi-measurement and load curve
Display of electrical values(I, U, V, ΣP , ΣQ , ΣS , PF) and P+ load curve over a 7 day period via communication.

Functional diagram



IEC 61557-12 measuring method
IEC 61557-12 is a high-level standard covering all PMDs (Performance Monitoring Devices). By using the measuring method of IEC 61557-12 ensures a high level of equipment performance, in terms of metrology.

The solution for

- > Industry
- > Infrastructures
- > Data centers



Strong points

- > Single phase and three phase MID certified
- > Bi-directional metering
- > Multi-measurement and load curves
- > IEC 61557-12 measuring method
- > Detection of connection errors

Compliance with standards

- > IEC 61557-12
- > IEC 62053-23 class 2
- > EN50470-1
- > EN50470-3 class C



Detection of connection errors
The product is protected against phase/neutral inversion and detects wiring errors. The power supply internally derived from the voltage connections ensures realtime MID counting as soon as the mains voltage is present.

Functions

Multi-measurement

- Currents
 - instantaneous: I1, I2, I3, In
 - maximum average: I1, I2, I3, In
- Frequency
- Voltages
 - instantaneous: V1, V2, V3, U12, U23, U31, F
- Powers
 - instantaneous: ΣP , ΣQ , ΣS
 - maximum average: ΣP , ΣQ , ΣS
- Power factor ($\cos \varphi$)
 - instantaneous: $\Sigma \cos \varphi$
 - maximum average: $\Sigma \cos \varphi$

Total and partial metering

- Active energy: + kWh, - kWh
- Reactive energy: + kvarh, - kvarh
- Harmonic analysis (via communication)
 - Total harmonic distortion (rank 63)
 - Currents: thd I1, thd I2, thd I3
 - Phase-to-neutral voltage: thd V1, thd V2, thd V3
 - Phase-to-phase voltage: thd U12, thd U23, thd U31

Multi tariff function (via communication)

Selection of one out of 4 billing tariffs

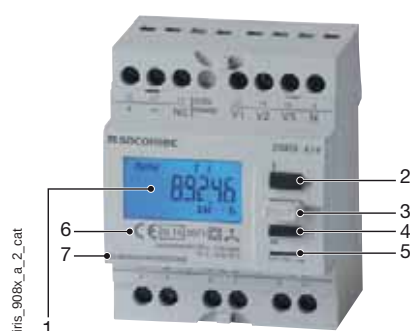
Events (via communication)

- Active energy consumption: day n-1 / week n-1 / month n-1
- Active power load curves: P 10 minutes over 7 days with time-log

Communications

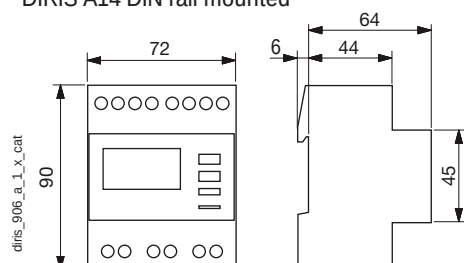
RS485 with MODBUS protocol

Front panel

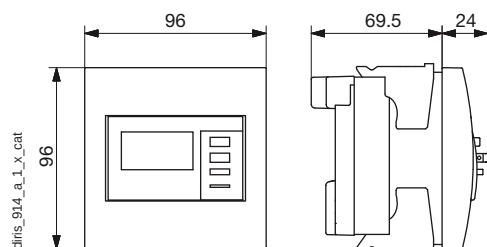


Case

DIRIS A14 DIN rail mounted



DIRIS A14 door mounted



	DIRIS A14 DIN rail mounted	DIRIS A14 door mounted
Type	modular	Recessed
Number of modules	4	-
Dimensions W x H x D	72 x 90 x 64 mm	96 x 96 x 69.5 mm
Case degree of protection	IP20	
Front degree of protection	IP51	
Display type	Backlit LCD	
Rigid cable cross-section	1.5 ... 10 mm ²	
Flexible cable cross-section	1 ... 6 mm ²	
Weight	240 g	450 g

Electrical characteristics

Current measurement (TRMS)	
Via CT primary	10 ... 2500 A
Via CT secondary	5 A
Input consumption	0.6 VA
Startup current (I _{st})	5 mA
Minimum current (I _{min})	50 mA
Transmission current (I _{tr})	250 mA
Reference current (I _{ref})	5 A
Measurement updating period	1 s
Accuracy	0.5%
Permanent overload	6 A
Intermittent overload	120 A for 0.5 s
Voltage measurements (TRMS)	
Direct measurement (four phases)	50 ... 460 VAC
Input consumption	2 VA
Measurement updating period	1 s
Accuracy	0.2%
Permanent overload	480 V (phase-to-phase measurement)
Power measurement	
Measurement updating period	1 s
Accuracy	0.5%
Power factor measurement (cos φ)	
Measurement updating period	1 s
Accuracy	0.01

Energy accuracy	
Active (according to IEC 62053-22)	Class 0.5 S
Reactive (according to IEC 62053-23)	Class 2
Active (according to EN 50470)	Class C
Metrological LED (EA*,EA*)	
Pulse weight	10000 pulses/kWh
Colour	Red
Auxiliary power supply	
Self-powered	Yes
Frequency	50 / 60 Hz
Communication	
Link	RS485
Type	2 to 3 half duplex wires
Protocol	MODBUS® RTU
MODBUS® speed	4800 ... 38400 bauds
Operating conditions	
Operating temperature	-10 ... +55°C
Storage temperature	-20 ... +70°C
Relative humidity	95% non-condensing

DIRIS A14

Multifunction measuring unit - PMD - MID

multi-measurement

Connection

Low voltage balanced network

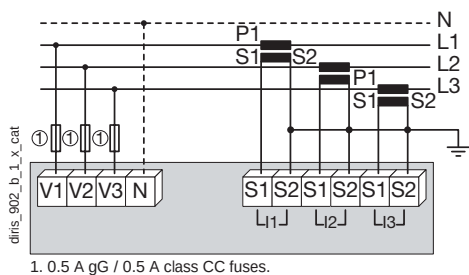
Recommendation:

- For IT earthing systems, it is recommended that the CT secondary is not connected to earth.
- When disconnecting the DIRIS, the secondary of each current transformer must be short-circuited.

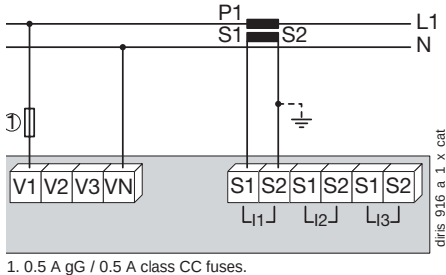
This operation can be carried out automatically by a SOCOMEC PTI, which can be found in the SOCOMEC catalogue: please consult us.

Low voltage unbalanced network

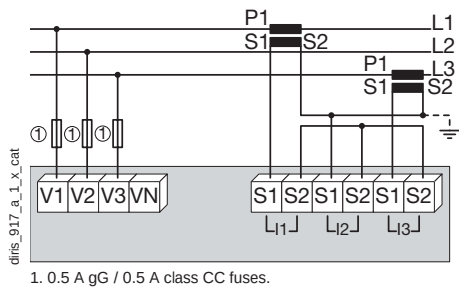
3/4 wires with 3 CTs



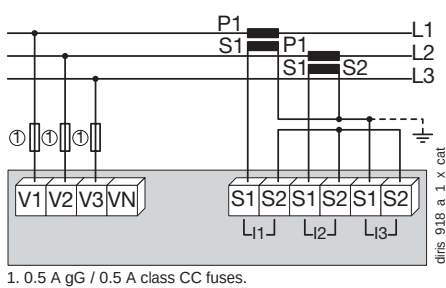
Single-phase



3 wires with 2 CTs

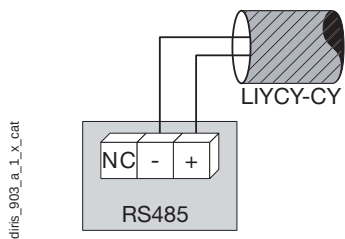


3 wires with 2 CTs



Additional information

Communication via RS485 link



Terminals

Voltage outlets	
V	12
V2	14
V3	16
N	2
ICM (Intelligent Communication Module)	
RS485 "+"	15
RS485 "-"	17
RS485'NC"	13

Current inputs	
I1 S1	1
I1 S2	3
I2 S1	5
I2 S2	7
I3 S1	9
I3 S2	11

References

Basic device	DIRIS A14
Description	Reference
DIRIS A14 MID DIN rail mounted	4825 0020
DIRIS A14 MID door mounted	4825 0021

Expert Services

- > Study, definition, advice, implementation, maintenance and training... Our experts "Expert Services" offer complete support for the success of your project.





DIRIS A20

Multifunction meters - PMD

multi-measurement meter - dimensions 96 x 96 mm

Single-circuit metering,
measurement &
analysis



DIRIS A20

The solution for

- > Industry
- > Infrastructure
- > Data centre



Strong points

- > Easy to use
- > Compliant with IEC 61557-12
- > Detects wiring errors

Conformity to standards

- > IEC 61557-12
- > IEC 62053-22 class 0.5S
- > IEC 62053-23 class 2
- > UL



Management software

- > To get the most effective use from your Socomec measurement and metering devices, we offer a range of dedicated software tools.

See page 618.

Function

DIRIS A20 are panel mounted measurement units which ensure the user has access to all the measurements required for successfully carrying out energy efficiency projects and ensuring the electrical distribution is monitored. All this information can be analysed remotely using an energy management software solution.

Advantages

Easy to use

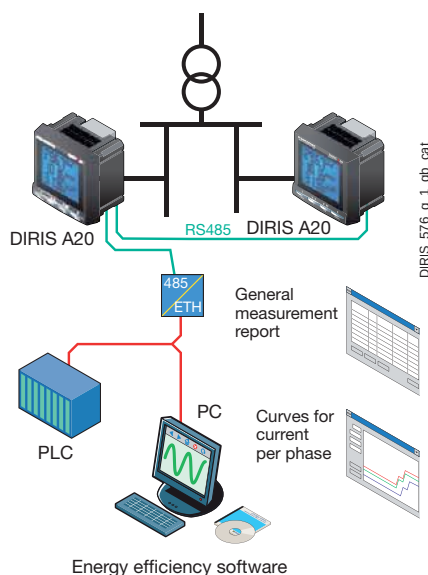
Thanks to its large backlit LCD display and its multiple viewing screens with direct pushbutton access, DIRIS A20 provide clear readings and are easy to use.

They directly display a number of multi-measurement and metering values : + kWh, + kvarh, I, U, V, F, P, Q, S, PF, etc.

Compliant with IEC 61557-12

IEC 61557-12 is a high-level standard for all PMDs (Performance Monitoring Devices) that are designed to measure and monitor electrical parameters in distribution networks. Compliance with IEC 61557-12 ensures a high level of equipment performance, in terms of metrology, and the mechanical and environmental aspects (EMC, temperature, etc.).

Principle diagram



Detects wiring errors

An integrated test function can be utilised to detect incorrect wiring and to automatically correct CT installation errors.

Functions

Multi-measurement

- Currents
 - instantaneous: I1, I2, I3, In
 - maximum average: I1, I2, I3, In
- Voltages & frequency
 - instantaneous: V1, V2, V3, U12, U23, U31, F
- Power
 - instantaneous: 3P, ΣP, 3Q, ΣQ, 3S, ΣS
 - maximum average: ΣP, ΣQ, ΣS
- Power factors
 - instantaneous: 3PF, Σ

Metering

- Active energy: + kWh
- Reactive energy: + kvarh
- Hours: ⌚

Harmonic analysis

- Total harmonic distortion (level 51)
 - Currents: thd I1, thd I2, thd I3
 - Phase-to-neutral voltage: thd V1, thd V2, thd V3
 - Phase-to-phase voltage: thd U12, thd U23, thd U31

Events

Alarms on all electrical values

Communications⁽¹⁾

RS485 with MODBUS protocol

Output

- Remote command of device
- Alarm report
- Pulse report

Inputs

- Remote status device

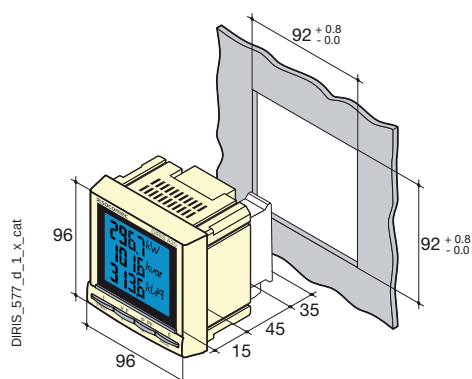
(1) Available as an option (see the following pages).

Front panel



1. Backlit LCD display.
2. Direct access key for currents (instantaneous and max. values), current THD and test function.
3. Direct access key for voltages, frequency and voltage THD.
4. Pushbutton for active, reactive, and apparent power (instantaneous and max. values) and power factor.
5. Direct access key for energies, hour meter and programming menu.

Case



Type	panel mounting
Dimensions W x H x D	96 x 96 x 60 mm
Case degree of protection	IP30
Front degree of protection	IP52
Display type	backlit LCD display
Terminal block type	Fixed or plug-in
Voltage and other connection cross-section	0.2 ... 2.5 mm ²
Current connection cross-section	0.5 ... 6 mm ²
Weight	400 g

Plug-in modules

DIRIS® A20



1 Output

1 output assignable to:

- Pulses: configurable (type, weight, duration) in kWh or kvarh.
- Monitoring: 3I, In, 3V, 3U, F, ΣP, ΣQ, ΣS, ΣPFL/C, THD 3I, THD 3V, THD 3U and timer.
- Remote command of device.



Communication

RS485 link with JBUS / MODBUS protocol (speed up to 38400 bauds)



3 inputs, 1 output

3 inputs assignable to:

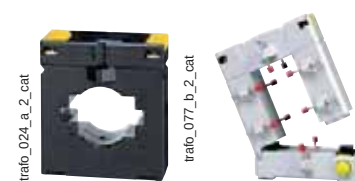
- Remote status device.

1 output assignable to:

- Pulses: configurable (type, weight, duration) in kWh or kvarh.
- Monitoring: 3I, In, 3V, 3U, F, ΣP, ΣQ, ΣS, ΣPFL/C, THD 3I, THD 3V, THD 3U and timer.
- Remote command of device.

Accessories

Current transformers
(See page 584)



IP65 protection



Panel mounting kit
for a 144 x 96 mm cut-out



DIRIS A20

Multifunction meters - PMD

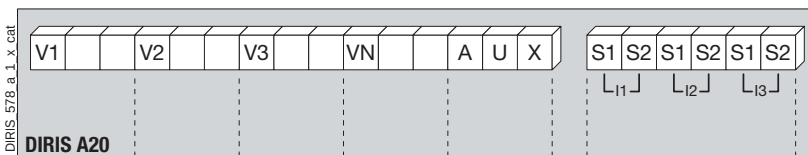
multi-measurement meter - dimensions 96 x 96 mm

Electrical characteristics

Current measurement (TRMS)	
Via CT primary	9 999 A
Via CT secondary	5 A
Measurement range	0 ... 11 kA
Input consumption	0.6 VA
Measurement updating period	1 s
Accuracy	0.2 %
Permanent overload	6 A
Intermittent overload	10 I _n for 1 s
Voltage measurements (TRMS)	
Direct measurement between phases	50 ... 500 VAC
Direct measurement between phase and neutral	28 ... 289 VAC
Input consumption	≤ 0.1 VA
Measurement updating period	1 s
Accuracy	0.2 %
Permanent overload	800 VAC
Power measurement	
Measurement updating period	1 s
Accuracy	0.5 %
Power factor measurement	
Measurement updating period	1 s
Accuracy	0.5 %
Frequency measurement	
Measurement range	45 ... 65 Hz
Measurement updating period	1 s
Accuracy	0.1 %

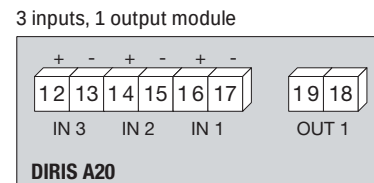
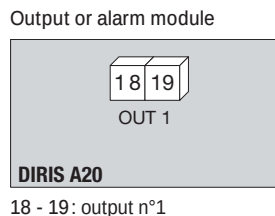
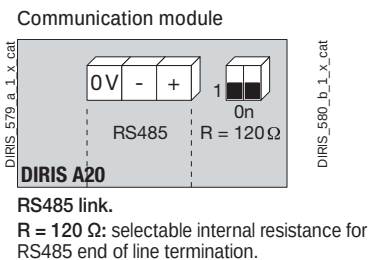
Energy accuracy	
Active (according to IEC 62053-22)	Class 0.5 S
Reactive (according to IEC 62053-23)	Class 2
Auxiliary power supply	
Alternating voltage	110 ... 400 VAC
AC tolerance	± 10 %
Direct voltage	120 ... 350 VDC
DC tolerance	± 20 %
Frequency	50 / 60 Hz
Consumption	10 VA
Pulse or alarm output	
Number	1
Type	100 VDC - 0.5 A - 10 VA
Max. number of operations	≤ 10 ⁸
Inputs	
Number	3
Power supply	10 ... 30 VDC
Minimum signal width	10 ms
Minimum duration between 2 pulses	18 ms
Type	Phototransistors
Communication	
Link	RS485
Type	2 ... 3 half duplex wires
Protocol	MODBUS RTU
MODBUS® speed	1400 ... 38400 bauds
Operating conditions	
Operating temperature	- 10 ... + 55 °C
Storage temperature	- 20 ... + 85 °C
Relative humidity	95 %

Terminals



S1 - S2: current inputs.

AUX: auxiliary power supply U_s.
V1, V2, V3 & VN: voltage inputs.



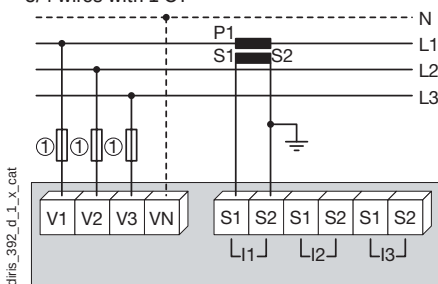
Connection

Recommendation:

- For IT earthing systems, it is recommended that the CT secondary is not connected to earth.
- When disconnecting the DIRIS, the secondary of each current transformer must be short-circuited. This operation can be carried out automatically by a SOCOMEC PTI, an accessory which is included in this catalogue. Please consult us.

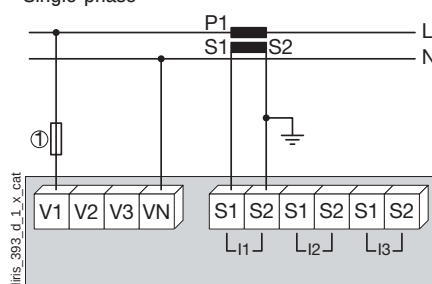
Low voltage balanced network

3/4 wires with 1 CT



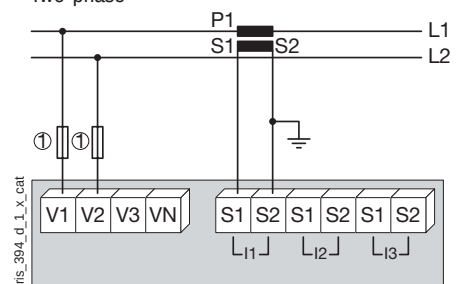
Use of 1 CT reduces by 0.5% the accuracy of the phases, the current of which is worked out by vector calculation.
1. Fuses 0.5 A gG / 0.5 A class CC.

Single-phase



1. Fuses 0.5 A gG / 0.5 A class CC.

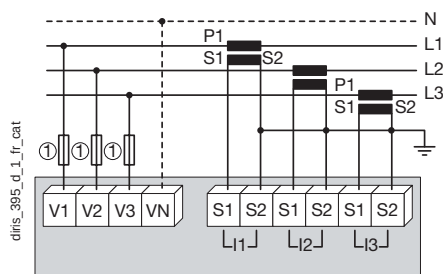
Two-phase



1. Fuses 0.5 A gG / 0.5 A class CC.

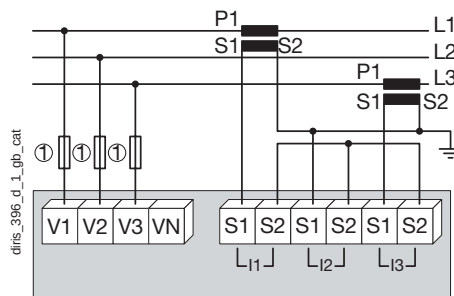
Low voltage unbalanced network

3/4 wires with 3 CTs



1. Fuses 0.5 A gG / 0.5 A class CC.

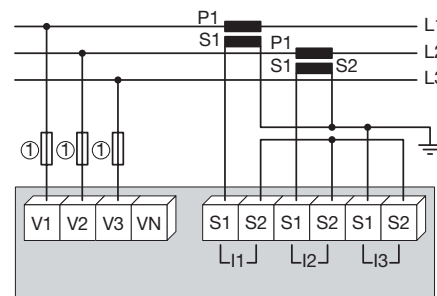
3 wires with 2 CTs



Use of 2 CTs reduces by 0.5% the accuracy of the phases, the current of which is worked out by vector calculation.

1. Fuses 0.5 A gG / 0.5 A class CC.

3 wires with 2 CTs

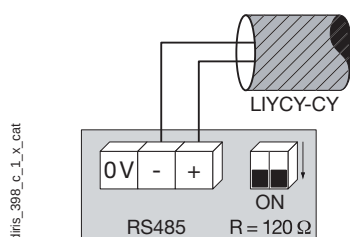


Use of 2 CTs reduces by 0.5% the accuracy of the phases, the current of which is worked out by vector calculation.

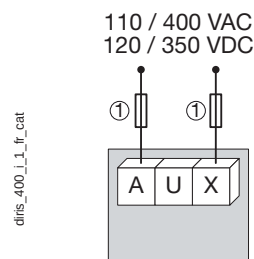
1. Fuses 0.5 A gG / 0.5 A class CC.

Additional information

Communication via RS485 link



AC & DC auxiliary power supply



1. Fuses 0.5 A gG / 0.5 A class CC.

References

Basic device		DIRIS A20
Auxiliary power supply U_s		Reference
110 ... 400 VAC / 120 ... 350 VDC		4825 0200
Optional plug-in modules		Reference
1 output		4825 0080
RS485 MODBUS® communication		4825 0082
3 inputs, 1 output		4825 0083
Accessories		
Description of accessories	To be ordered in multiples of	Reference
IP65 protection	1	4825 0089
Panel mounting kit for a 144 x 96 mm cut-out	1	4825 0088
Fuse disconnect switches for the protection of voltage inputs (type RM) 3 poles	4	5601 0018
Fuse disconnect switches for the protection of the auxiliary supply (type RM) 1 pole + neutral	6	5601 0017
Fuse type gG 10x38 0.5 A	10	6012 0000
Ferrite to be associated with communication modules	1	4899 0011
Current transformer range	1	See page 584
Management software for DIRIS		See page 618

Expert Services

> Study, definition, advice, implementation, maintenance and training... Our experts "Expert Services" offer complete support for the success of your project.





DIRIS A40/A41

Multifunction meters - PMD

multi-measurement meter - dimensions 96 x 96 mm

Single-circuit metering,
measurement &
analysis



DIRIS A41

The solution for

- > Industry
- > Data centres
- > Infrastructures



Strong points

- > Easy to use
- > Detects wiring errors
- > Customisable
- > Webserver function
- > Compliant with IEC 61557-12

Conformity to standards

- > IEC 61557-12
- > IEC 62053-22 class 0.5S
- > IEC 62053-23 class 2
- > UL



Function

DIRIS A40 and A41 are panel mounted measurement units which ensure the user has access to all the measurements required for successfully carrying out energy efficiency projects and ensuring the electrical distribution is monitored.

All this information can be analysed remotely using an energy management software solution.

The DIRIS A41 has a CT current input for measuring the neutral current.

Advantages

Easy to use

Thanks to its large backlit LCD display and its multiple viewing screens with direct pushbutton access, DIRIS A4x provide clear readings and are easy to use.

They directly display a number of multi-measurement and metering values : +/- kWh, +/- kvarh, kVAh, I, U, V, F, P, Q, S, PF, etc.

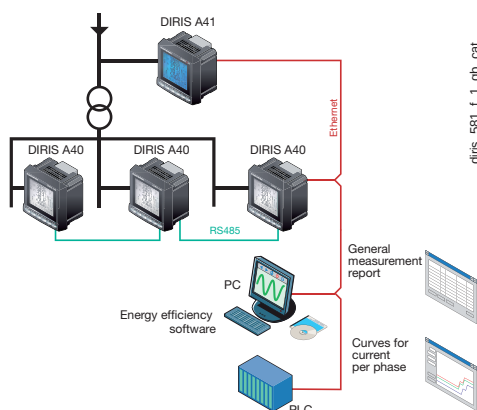
Detects wiring errors

An integrated test function can be utilised to detect incorrect wiring and to automatically correct CT installation errors.

Customisable

Thanks to the wide range of optional modules, the product can be customised or upgraded after installation.

Principle diagram



Webserver function

Optional Ethernet communication modules include a Webserver function for monitoring and exploiting data remotely without additional software.

Compliant with IEC 61557-12

IEC 61557-12 is a high-level standard for all PMDs (Performance Monitoring Devices) that are designed to measure and monitor electrical parameters in distribution networks.

Compliance with IEC 61557-12 ensures a high level of equipment performance, in terms of metrology, and the mechanical and environmental aspects (EMC, temperature, etc.).

Functions

Multi-measurement

- Currents
 - instantaneous: I1, I2, I3, In, Isystem
 - average/maximum average: I1, I2, I3, In
- Voltages & frequency
 - instantaneous: V1, V2, V3, U12, U23, U31, F, Vsystem, Ussystem
 - average/maximum average: V1, V2, V3, U12, U23, U31, F
- Power
 - instantaneous: 3P, ΣP, 3Q, ΣQ, 3S, ΣS
 - maximum average: ΣP, ΣQ, ΣS
 - predictive: (ΣP), (ΣQ), (ΣS)
- Power factors
 - instantaneous: 3PF, ΣPF
 - average/maximum average: ΣPF

Temperatures⁽¹⁾

- internal
- external via 3 PT100 sensors

Metering

- Active energy: +/- kWh
- Reactive energy: +/- kvarh
- Apparent power: kVAh
- Hours: ⌚

Harmonic analysis

- Total harmonic distortion
 - Currents: thd I1, thd I2, thd I3, thd In
 - Phase-to-neutral voltage: thd V1, thd V2, thd V3
 - Phase-to-phase voltage: thd U12, thd U23, thd U31

Individual up to level 63

- Currents: HI1, HI2, HI3, HIn
- Phase-to-neutral voltage: HV1, HV2, HV3,
- Phase-to-phase voltage: HU12, HU23, HU31

Load curves⁽¹⁾

- Active and reactive power: ΣP+/- ; ΣQ+/-
- Voltages & frequency: V1, V2, V3, U12, U23, U31, F

Events⁽¹⁾

- Alarms on all electrical values.

Communications⁽¹⁾

- RS485 MODBUS RTU & PROFIBUS DP
- Ethernet (MODBUS TCP or RTU over TCP and Web server)
- Ethernet with RS485 gateway MODBUS RTU over TCP

Inputs / Outputs⁽¹⁾

- Pulse metering
- Remote control/command
- Alarm report
- Pulse report

Analogue output

- 0/4- 20 mA analogue output

⁽¹⁾ Available as an option (see the following pages).

Front panel



1. Backlit LCD display.
2. Direct access key for currents and test function.
3. Direct access key for voltages and frequency.
4. Direct access key for active, reactive, and apparent powers and power factor.
5. Direct access key for maximum and average current and power values.
6. Direct access key for harmonic values.
7. Direct access key for energies, hour meter and programming menu.

Plug-in modules

DIRIS® A40



diris_773_a

DIRIS® A41*



diris_774_a

* with a factory fitted neutral CT module.



Pulse outputs

2 configurable pulse outputs (type, weight and duration) on $\pm$ kWh, $\pm$ kvarh and kVAh.



Communication MODBUS®

RS485 link with MODBUS® protocol (speed up to 38400 bauds).



PROFIBUS® DP communication

SUB-D9 link with PROFIBUS® DP protocol (speed up to 12 Mbauds).



Ethernet communication

- Ethernet connection with MODBUS TCP or MODBUS RTU over TCP protocol.
- Embedded Webserver function ⁽¹⁾.



Ethernet communication with RS485 MODBUS gateway

- Ethernet connection with MODBUS TCP or MODBUS RTU over TCP protocol.
- Connection of 1 to 247 RS485 MODBUS slaves.
- Embedded Webserver function ⁽¹⁾.



Analogue outputs

A maximum of 2 modules may be connected, providing up to 4 analogue outputs.

Per module 2 outputs assignable to:

3I, In, 3V, 3U, F, $\pm$ Σ P, $\pm$ Σ Q, Σ S, Σ PFL/C, I sys, Vsys, Usys, Ppred, Q pred, Spred, T°C internal, T°C 1, T°C 2, T°C3 and to 30 VDC power supply.



2 inputs - 2 outputs

A maximum of 3 modules may be connected, providing up to 6 inputs and 6 outputs.

Per module 2 outputs assignable to:

- monitoring: 3I, In, 3V, 3U, F, $\pm$ Σ P, $\pm$ Σ Q, Σ S, Σ PFL/C, THD 3I, THD In, THD 3V, THD 3U, Ppred, Qpred, Spred, internal T°C, T°C 1, T°C2, T°C3 and hour meter,
- remote control,
- timed remote control.
- 2 inputs for pulse metering.



Memory

- Storing up to a maximum of 62 days of P+, P-, Q+, Q- with an internal or external synchronisation signal of 5, 8, 10, 15, 20, 30 and 60 minutes.
- Storing of 10 hour-dated last alarms.
- Storing of the last minimum and maximum instantaneous values for 3U, 3V, 3I, In, F, Σ P $\pm$, Σ Q $\pm$, Σ S, THD 3U, THD 3V, THD, 3U, THD, 3V, THD, 3I, THD In.
- Storing of 3U, 3V and F average values based on synchronisation function (maximum 60 days).



Temperature⁽²⁾

Temperature indication:

- internal,
- external sensor PT 100 (T°C 1),
- external sensor PT 100 (T°C 2),
- external sensor PT 100 (T°C 3).

⁽¹⁾ See "Management software for DIRIS" page 618.

⁽²⁾ See "external sensor PT 100" page 600.

DIRIS A40/A41

Multifunction meters - PMD

multi-measurement meter - dimensions 96 x 96 mm

Accessories

Current transformers
(see page 584)



IP65 protection

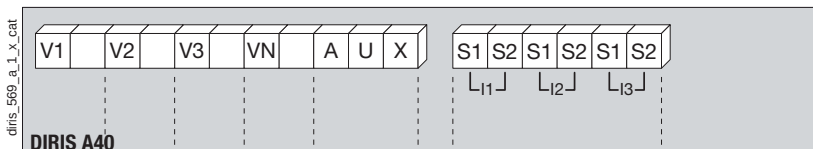


Panel mounting kit for a 144 x 96 mm cut-out



Terminals

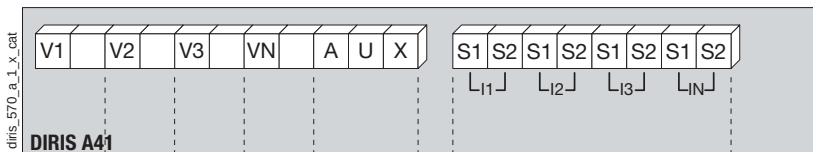
DIRIS A40



S1 - S2: current inputs

AUX: auxiliary power supplies U_s
V1 - V2 - V3 - VN: voltage inputs

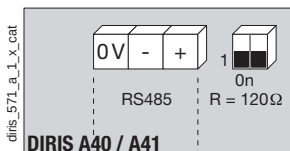
DIRIS A41



S1 - S2: current inputs

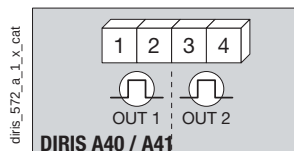
AUX: auxiliary power supplies U_s
V1 - V2 - V3 - VN: voltage inputs

Communication module



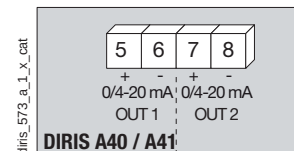
RS485 link.
R = 120 Ω: selectable internal resistance for RS485 end of line termination.

Pulse output module



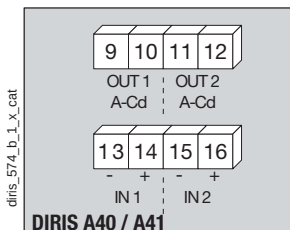
1 - 2: pulse output n°1.
3 - 4: pulse output n°2.

Analogue output module



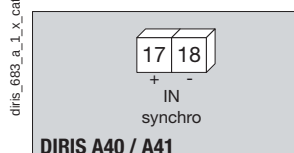
5 - 6: analogue output n°1.
7 - 8: analogue output n°2.

2 inputs / 2 outputs module



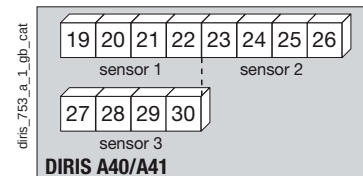
9 - 10: relay output n°1.
11 - 12: relay output n°2.
13 - 14: opto input n°1.
15 - 16: opto input n°2.

Memory module



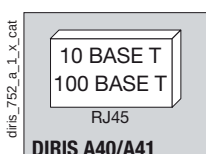
17 - 18: synchronisation input.

Temperature module

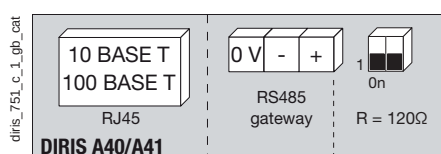


Sensor 1 Sensor 2 Sensor 3
19: red 23: red 27: red
20: red 24: red 28: red
21: white 25: white 29: white
22: white 26: white 30: white

Ethernet Module



Ethernet module + RS485 MODBUS gateway



Electrical characteristics

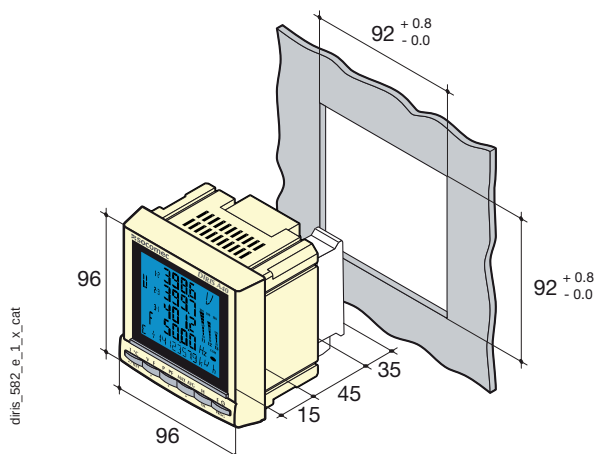
Current measurement on insulated inputs (TRMS)	
Via CT primary	9 999 A
Via CT secondary	1 or 5 A
Measurement range	0 ... 11 kA
Input consumption	≤ 0.1 VA
Measurement updating period	1 s
Accuracy	0.2 %
Permanent overload	6 A
Intermittent overload	10 I _n for 1 s
Voltage measurements (TRMS)	
Direct measurement between phases	50 ... 700 VAC
Direct measurement between phase and neutral	28 ... 404 VAC
VT primary	500 000 VAC
VT secondary	60, 100, 110, 173, 190 VAC
Frequency	50 / 60 Hz
Input consumption	≤ 0.1 VA
Measurement updating period	1 s
Accuracy	0.2 %
Permanent overload	800 VAC
Current-voltage product	
Limitation for 1A CT	10 000 000
Limitation for 5A CT	10 000 000
Power measurement	
Measurement updating period	1 s
Accuracy	0.5 %
Power factor measurement	
Measurement updating period	1 s
Accuracy	0.5 %
Frequency measurement	
Measurement range	45 ... 65 Hz
Measurement updating period	1 s
Accuracy	0.1 %
Energy accuracy	
Active (according to IEC 62053-22)	Class 0.5 S
Reactive (according to IEC 62053-23)	Class 2
Auxiliary power supply	
Alternating voltage	110 ... 400 VAC
AC tolerance	± 10 %
Direct voltage	120 ... 350 VDC / 12 ... 48 VDC
DC tolerance	± 20 % / - 6 ... + 20 %
Frequency	50 / 60 Hz
Consumption	≤ 10 VA

2 inputs / 2 outputs module: Outputs (alarms / control)	
Number of relays	2 ⁽¹⁾
Type	250 VAC - 5 A - 1150 VA
2 inputs / 2 outputs module: Phototransistor inputs	
Number	2 ⁽¹⁾
Power supply	10 ... 30 VDC
Minimum signal width	10 ms
Minimum duration between 2 pulses	18 ms
Type	phototransistors
Pulse output module	
Number of relays	2
Type	100 VDC - 0.5 A - 10 VA
Max. number of operations	≤ 10 ⁸
Analogue output module	
Number of outputs	2 ⁽²⁾
Type	insulated
Range	0 / 4 ... 20 mA
Load resistance	600 Ω
Maximum current	30 mA
MODBUS communication module	
Link	RS485
Type	2 ... 3 half duplex wires
Protocol	MODBUS RTU
MODBUS® speed	4800 ... 38400 bauds
PROFIBUS-DP communication module	
Link	SUB-D9
Protocol	PROFIBUS® DP
PROFIBUS® speed	9.8 kbauds ... 12 Mbauds
Ethernet communication module	
Connection	RJ45
Speed	10 base T / 100 base T
Protocol	MODBUS TCP or MODBUS RTU over TCP
Temperature module (inputs)	
Type	PT100
Connection	2, 3 or 4 wires
Dynamic	- 20 ... 150 °C
Accuracy	±1 digit
Maximum length	300 cm
Operating conditions	
Operating temperature	- 10 ... + 55 °C
Storage temperature	- 20 ... + 85 °C
Relative humidity	95 %

(1) Max. 3 modules / DIRIS.

(2) Max. 2 modules / DIRIS.

Case



Type	panel mounting
Dimensions W x H x D	96 x 96 x 60 mm
Case degree of protection	IP30
Front degree of protection	IP52
Display type	backlit LCD display
Terminal blocks type	fixed or plug-in
Voltage and other connection cross-section	0.2 ... 2.5 mm ²
Current connection cross-section	0.5 ... 6 mm ²
Weight	400 g

DIRIS A40/A41

Multifunction meters - PMD

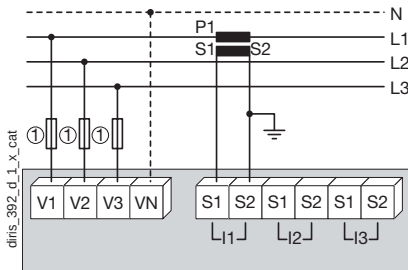
multi-measurement meter - dimensions 96 x 96 mm

Connections

Recommendation: When disconnecting the DIRIS, the secondary of each current transformer must be short-circuited. This operation can be carried out automatically by a SOCOMEC PT1, an accessory which is included in this catalogue. Please consult us.
In TNC neutral systems it is recommended to use the functional earth module.

Low voltage balanced network for DIRIS A40

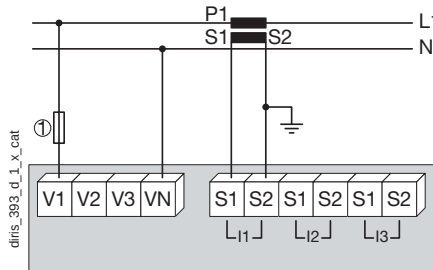
3/4 wires with 1 CT



Use of 1 CT reduces by 0.5% the accuracy of the phases, the current of which is worked out by vector calculation.

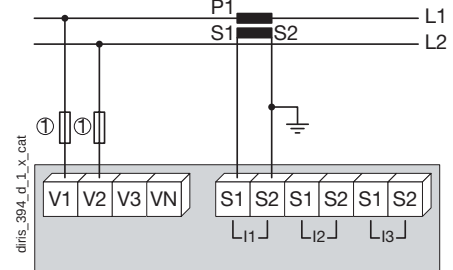
1. Fuses 0.5 A gG / 0.5 A class CC.

Single-phase



1. Fuses 0.5 A gG / 0.5 A class CC.

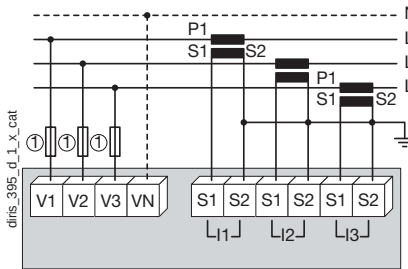
Two-phase



1. Fuses 0.5 A gG / 0.5 A class CC.

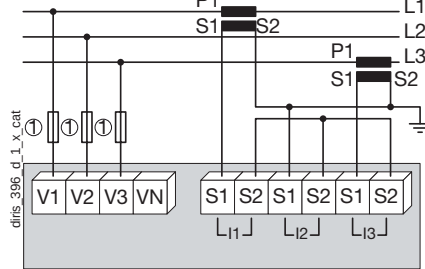
Low voltage unbalanced network for DIRIS A40

3/4 wires with 3 CTs



1. Fuses 0.5 A gG / 0.5 A class CC.

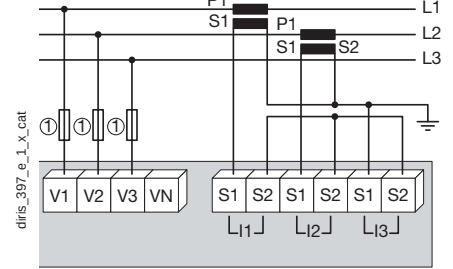
3 wires with 2 CTs



Use of 2 CTs reduces by 0.5% the accuracy of the phases, the current of which is worked out by vector calculation.

1. Fuses 0.5 A gG / 0.5 A class CC.

3 wires with 2 CTs

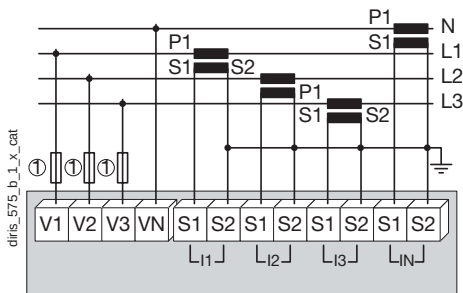


Use of 2 CTs reduces by 0.5% the accuracy of the phases, the current of which is worked out by vector calculation.

1. Fuses 0.5 A gG / 0.5 A class CC.

Low voltage unbalanced network for DIRIS A41

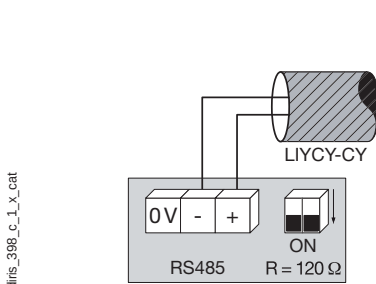
4 wires with 4 CTs



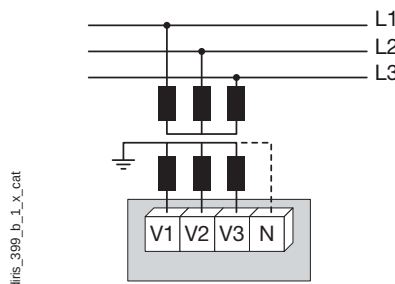
1. Fuses 0.5 A gG / 0.5 A class CC.

Additional information

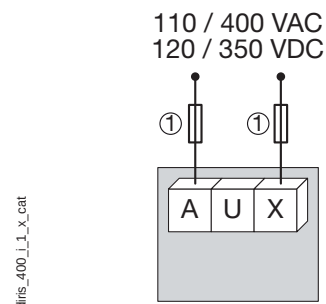
Communication via RS485 link



Connection of voltage transformer for HV networks



AC & DC auxiliary power supply



1. Fuses 0.5 A gG / 0.5 A class CC.

References

Basic device	DIRIS A40		DIRIS A41 with CT on the neutral
Auxiliary power supply U_s	Reference		Reference
110 ... 400 VAC / 120 ... 350 VDC	4825 0201		4825 0202
12 ... 48 VDC	4825 1201		4825 1202
Options			
Plug-in modules⁽¹⁾	Reference		Reference
Pulse outputs	4825 0090		4825 0090
RS485 MODBUS [®] communication	4825 0092		4825 0092
Analogue outputs	4825 0093		4825 0093
2 inputs / 2 outputs	4825 0094		4825 0094
Communication Sub D9 PROFIBUS [®] DP ⁽²⁾	4825 0205		4825 0205
Memory	4825 0097		4825 0097
Embedded Webserver function ⁽²⁾ .	4825 0203		4825 0203
Ethernet communication + RS485 MODBUS gateway (Embedded Webserver function) ⁽²⁾	4825 0204		4825 0204
Temperature inputs	4825 0206		4825 0206

(1) Ease of integration for additional functions (maximum 4 slots on A40 and 3 on A41).

(2) Dimension of the plug-in module: 2 slots.

Accessories				
Description of accessories	To be ordered in multiples of	Reference	To be ordered in multiples of	Reference
IP65 protection	1	4825 0089	1	4825 0089
Panel mounting kit for a 144 x 96 mm cut-out	1	4825 0088	1	4825 0088
Fuse disconnect switches for the protection of voltage inputs (type RM) 3 poles	4	5601 0018	4	5601 0018
Fuse disconnect switches for the protection of the auxiliary supply (type RM) 1 pole + neutral	6	5601 0017	6	5601 0017
Fuse type gG 10 x 38 0.5 A	10	6012 0000	10	6012 0000
Current transformer range	1	see page 584	1	see page 584
Ferrite to be associated with communication modules	1	4899 0011		4899 0011
Temperature sensor PT100 - M6 screw type	1	4825 0208	1	4825 0208
Temperature sensor PT100 - M6 eyelet type	1	4825 0209	1	4825 0209
Management software for DIRIS				see page 618

Expert Services

- > Study, definition, advice, implementation, maintenance and training... Our experts "Expert Services" offer complete support for the success of your project.





DIRIS A60

Multifunction meters - PMD

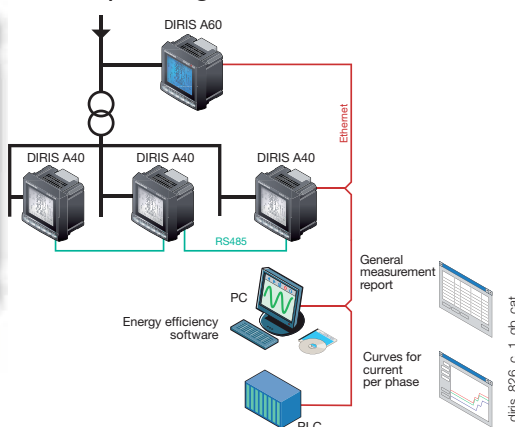
energy monitoring and event analysis - dimensions 96 x 96 mm

Single-circuit metering,
measurement &
analysis



DIRIS A60

Principle diagram



The solution for

- > Industry
- > Infrastructure
- > Data centre



Strong points

- > Easy to use
- > Detects wiring errors
- > Compliant with IEC 61557-12
- > Management softwares
- > Conformity to standard EN 50160

Conformity to standards

- > IEC 61557-12
- > IEC 62053-22 class 0.5S
- > IEC 62053-23 class 2
- > EN 50160



Function

DIRIS A60 is a panel mounted multifunction meter which incorporates all functions of the DIRIS A40 with the addition of enhanced data logging functions, recording curves for quality events. All this information can be analysed remotely using the Analysis software which is available at no charge and can be downloaded from the SOCOMEC website www.socomec.com.

Advantages

Easy to use

Thanks to its large backlit LCD display and its multiple viewing screens with direct key access, the DIRIS A60 provides clear readings and is easy to use.

It directly displays a number of multi-measurement and metering values : +/- kWh, +/- kvarh, kVAh, I, U, V, F, P, Q, S, PF, etc.

Detects wiring errors

An integrated test function can be utilised to detect incorrect wiring and to automatically correct CT installation errors.

Compliant with IEC 61557-12

IEC 61557-12 is a high-level standard for all PMDs (Performance Monitoring Devices) that are designed to measure and monitor electrical parameters in distribution networks.

Compliance with IEC 61557-12 ensures a high level of equipment performance, in terms of metrology, and the mechanical and environmental aspects (EMC, temperature, etc.).

Management softwares

- Optional Ethernet module with Webserver function: For measurement monitoring, data exploitation and the export of load curves remotely without a specific software (web browser access).
- Analysis software: For the analysis of events data in order to improve the reliability of the electrical installation.
- Easy Config software: For quick and easy remote device configuration; configuration files can be copied from and sent to the DIRIS A60, or they can be created without communication and sent at a later time. Multiple devices can be configured from a single file, which is especially useful for OEMs and panel builders.

Conformity to standard EN 50160

EN 50160 is a standard which defines events relating to the quality of electrical networks. The DIRIS A60 captures voltage events in accordance with this standard.

Functions

In addition to the functions of the DIRIS A40, the DIRIS A60 also:

- shows the current and voltage unbalance
- shows the tangent ϕ
- stores the load curves (60 days with an interval of 10 minutes) for the active, reactive and apparent power: ΣP +/-; ΣQ +/-; ΣS
- detects and stores the last 40 events concerning:
 - overvoltage
 - voltage dips
 - cut-offs
 - overcurrent.

For each stored event, the DIRIS A60 records the relevant RMS 10 ms interval curves for the voltages V1, V2, V3, U12, U23, U31 and the currents I1, I2, I3, In, giving a total of 400 curves.

Other functions: Multi-measurement

Currents

- instantaneous: I1, I2, I3, In, Isystem,
- average/maximum average: I1, I2, I3, In,
- unbalance: I unb.
- Voltages & frequency
 - instantaneous: V1, V2, V3, U12, U23, U31, F, Vsystem, Ussystem
 - average/maximum average: V1, V2, V3, U12, U23, U31, F
 - unbalance: U unb.
- Power
 - instantaneous: 3P, ΣP , 3Q, ΣQ , 3S, ΣS
 - maximum average: ΣP , ΣQ , ΣS
 - predictive: ΣP , ΣQ , ΣS .
- Power factor - PF, ΣPF
- Instantaneous total tangent ϕ
- Instantaneous, average and max. average unbalance

Temperatures⁽¹⁾

- internal,
- external via 3 PT100 sensors

Metering

- Active energy: +/- kWh
- Reactive energy: +/- kvarh
- Apparent power: kVAh
- Hours: $\odot$

Harmonic analysis (level 63)

- Total harmonic distortion
 - Currents: thd I1, thd I2, thd I3, thd In
 - Phase-to-neutral voltage: thd V1, thd V2, thd V3
 - Phase-to-phase voltage: thd U12, thd U23, thd U31
- Individual
 - Currents: HI1, HI2, HI3, HIn
 - Phase-to-neutral voltage: HV1, HV2, HV3,
 - Phase to phase voltage: HU12, HU23, HU31

Events⁽¹⁾

- Alarms on all electrical values

Communications⁽¹⁾

- 0/4- 20 mA analogue output
- RS485 MODBUS RTU
- Ethernet (MODBUS TCP or MODBUS RTU over TCP and Webserver)
- Ethernet (MODBUS TCP or MODBUS RTU over TCP and Webserver) with RS485 MODBUS RTU gateway
- Inputs / Outputs⁽¹⁾
 - Pulse metering
 - Remote control/command
 - Alarm report
 - Pulse report

(1) Available as an option (see the following pages).

Front panel



1. Backlit LCD display.
2. Direct access key for currents, temperatures and test function.
3. Direct access key for voltages and frequency.
4. Direct access key for active, reactive, and apparent powers and power factor.
5. Direct access key for maximum and average current, voltage and power values.
6. Direct access key for harmonics values.
7. Direct access key for energies, hour meter and programming menu.

Plug-in modules

DIRIS® A60*



* With integrated memory module.

diris_445_a_1_cat	Pulse outputs
	2 configurable pulse outputs (type, weight and duration) on $\pm$ kWh, $\pm$ kvarh and kVAh.
diris_447_a_1_cat	Communication MODBUS®
	RS485 link with MODBUS® protocol (speed up to 38400 bauds).
diris_777_a_1_cat	Ethernet communication
	- Ethernet connection with MODBUS TCP or MODBUS RTU over TCP protocol. - Embedded Webserver function⁽¹⁾.
diris_776_a_1_cat	Ethernet communication with RS485 MODBUS gateway
	- Ethernet connection with MODBUS TCP or MODBUS RTU over TCP protocol. - Connection of 1 to 247 RS485 MODBUS slaves. - Embedded Webserver function⁽¹⁾.
diris_448_a_1_cat	Analogue outputs
	- A maximum of 2 modules may be connected, providing up to 4 analogue outputs. - Per module 2 outputs assignable to: 3I, In, 3V, 3U, F, $\pm$ ΣP, $\pm$ ΣQ, ΣS, ΣPFL/C, Isys, Vsys, Usys, Ppred, Qpred, Spred, T°C internal, T°C 1, T°C 2, T°C3 and to 30 VDC power supply.
diris_449_a_1_cat	2 inputs - 2 outputs
	- A maximum of 3 modules may be connected, providing up to 6 inputs and 6 outputs. - Per module 2 outputs assignable to: - monitoring: 3I, In, 3V, 3U, F, $\pm$ ΣP, $\pm$ ΣQ, ΣS, ΣPFL/C, THD 3I, THD In, THD 3V, THD 3U, Ppred, Qpred, Spred, T°C internal, T°C 1, T°C2, T°C3 and hour meter, - remote control, - timed remote control, 2 inputs for pulse metering.
diris_747_a_2_cat	Temperature⁽²⁾
	Temperature indication: - Internal - External sensor PT 100 (T°C 1) - External sensor PT 100 (T°C 2) - External sensor PT 100 (T°C 3).

(1) See "Management softwares for DIRIS" p. 618.

(2) See "External sensor PT 100" p. 600.

DIRIS A60

Multifunction meters - PMD

energy monitoring and event analysis - dimensions 96 x 96 mm

Accessories

Current transformers
(see page 584)



Split-core current transformers



IP65 protection

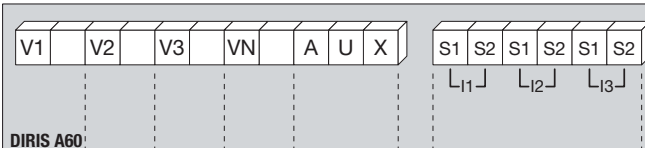


Panel mounting kit
for a 144 x 96 mm cut-out



Terminals

DIRIS A60

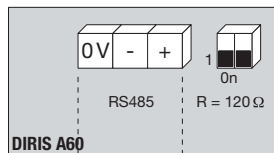


S1 - S2: current inputs

AUX: auxiliary power supplies U_s

V1 - V2 - V3 - VN: voltage inputs

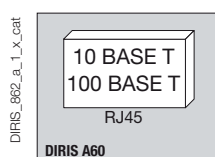
RS485 MODBUS module



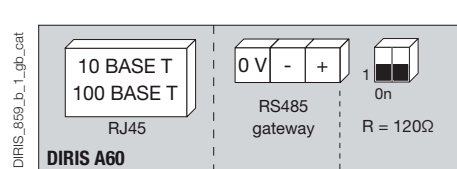
RS485 link.

R = 120 Ω : selectable internal resistance for RS485 end of line termination.

Ethernet module



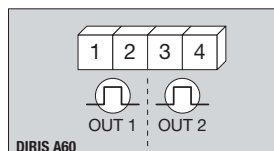
Ethernet module + RS485 MODBUS gateway



RS485 gateway resistor.

R = 120 Ω : selectable internal resistance for RS485 end of line termination.

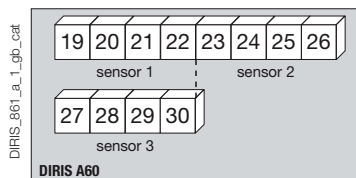
Pulse output module



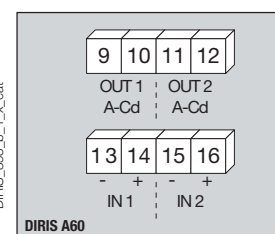
1 - 2: pulse output n°1.

3 - 4: pulse output n°2.

Temperature module



2 inputs / 2 outputs module



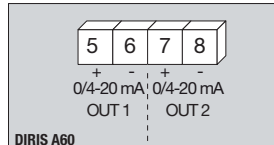
9 - 10: relay output n°1.

11 - 12: relay output n°2.

13 - 14: opto input n°1.

15 - 16: opto input n°2.

Analogue output module



5 - 6: analogue output n°1.

7 - 8: analogue output n°2.

Electrical characteristics

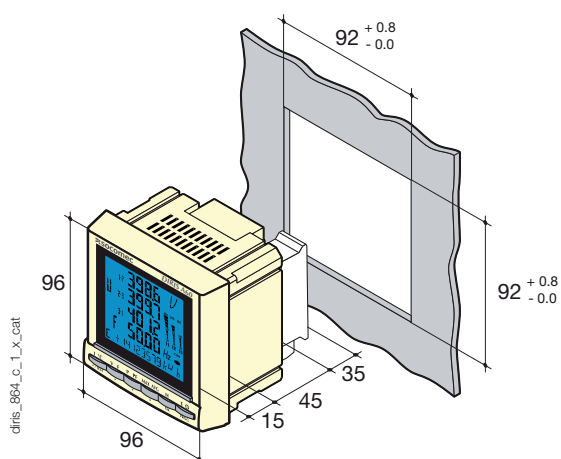
Current measurement on insulated inputs (TRMS)	
Via CT primary	9 999 A
Via CT secondary	1 or 5
Measurement range	0 ... 11 kA
Input consumption	≤ 0.1 VA
Measurement updating period	1 s
Accuracy	0.2 %
Permanent overload	6 A
Intermittent overload	10 I _n for 1 s
Voltage measurements (TRMS)	
Direct measurement between phases	50 ... 700 VAC
Direct measurement between phase and neutral	28 ... 404 VAC
VT primary	500 000 VAC
VT secondary	60, 100, 110, 173, 190 VAC
Frequency	50 / 60 Hz
Input consumption	≤ 0.1 VA
Measurement updating period	1 s
Accuracy	0.2 %
Permanent overload	800 VAC
Current-voltage product	
Limitation for 1A CT	10 000 000
Limitation for 5A CT	10 000 000
Power measurement	
Measurement updating period	1 s
Accuracy	0.5 %
Power factor measurement	
Measurement updating period	1 s
Accuracy	0.5 %
Frequency measurement	
Measurement range	45 ... 65 Hz
Measurement updating period	1 s
Accuracy	0.1 %
Energy accuracy	
Active (according to IEC 62053-22)	Class 0.5 S
Reactive (according to IEC 62053-23)	Class 2
Auxiliary power supply	
Alternating voltage	110 ... 400 VAC
AC tolerance	± 10 %
Direct voltage	120 ... 350 VDC
DC tolerance	± 20 %
Frequency	50 / 60 Hz
Consumption	≤ 10 VA

2 inputs / 2 outputs module: Outputs (alarms / control)	
Number of relays	2 ⁽¹⁾
Type	250 VAC - 5 A - 1150 VA
2 inputs / 2 outputs module: Phototransistor inputs (pulse metering)	
Number	2 ⁽¹⁾
Power supply	10 ... 30 VDC
Minimum signal width	10 ms
Minimum duration between 2 pulses	18 ms
Type	phototransistors
Pulse output module	
Number of relays	2
Type	100 VDC - 0.5 A - 10 VA
Max. number of operations	≤ 10 ⁸
Analogue output module	
Number of outputs	2 ⁽²⁾
Type	insulated
Range	0 / 4 ... 20 mA
Load resistance	600 Ω
Maximum current	30 mA
MODBUS communication module	
Link	RS485
Type	2 ... 3 half duplex wires
Protocol	MODBUS RTU
MODBUS® speed	4800 ... 38400 bauds
Ethernet communication module	
Connection	RJ45
Speed	10 base T / 100 base T
Protocol	MODBUS TCP or MODBUS RTU over TCP
Temperature inputs	
Type	PT100
Connection	2, 3 or 4 wires
Dynamic	- 20 ... 150 °C
Accuracy	± 1 digit
Maximum length	300 cm
Operating conditions	
Operating temperature	- 10 ... + 55 °C
Storage temperature	- 20 ... + 85 °C
Relative humidity	95 %

(1) Max. 3 modules / DIRIS.

(2) Max. 2 modules / DIRIS.

Case



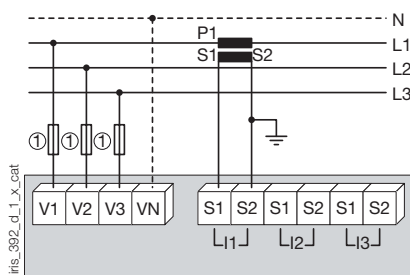
Type	panel mounting
Dimensions W x H x D	96 x 96 x 80 mm
Case degree of protection	IP30
Front degree of protection	IP52
Display type	backlit LCD display
Terminal blocks type	fixed or plug-in
Voltage and other terminals connection cross-section	0.2 ... 2.5 mm ²
Current connection cross-section	0.5 ... 6 mm ²
Weight	450 g

Connection

Low voltage balanced network for DIRIS A60

Recommendation: When disconnecting the DIRIS, the secondary of each current transformer must be short-circuited. This operation can be carried out automatically by a SOCOMEC PTI, which can be found in the SOCOMEC catalogue: please consult us.

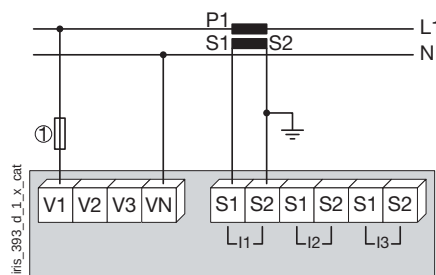
3/4 wires with 1 CT



Use of 1 CT reduces by 0.5% the accuracy of the phases, the current of which is worked out by vector calculation.

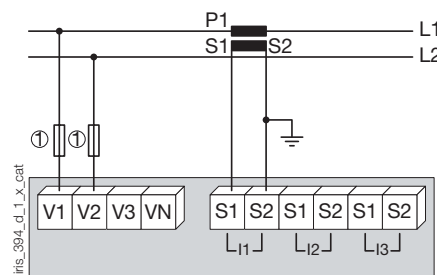
1. Fuses 0.5 A gG / 0.5 A class CC.

Single-phase



1. Fuses 0.5 A gG / 0.5 A class CC.

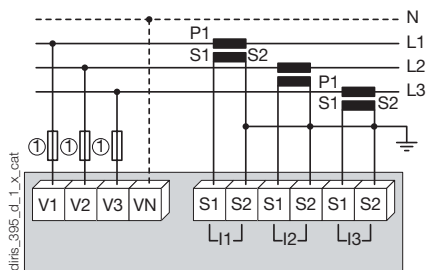
Two-phase



1. Fuses 0.5 A gG / 0.5 A class CC.

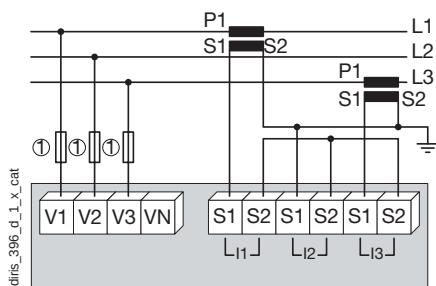
Low voltage unbalanced network for DIRIS A60

3/4 wires with 3 CTs



1. Fuses 0.5 A gG / 0.5 A class CC.

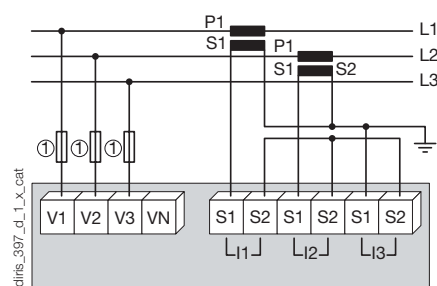
3 wires with 2 CTs



Use of 2 CTs reduces by 0.5% the accuracy of the phases, the current of which is worked out by vector calculation.

1. Fuses 0.5 A gG / 0.5 A class CC.

3 wires with 2 CTs

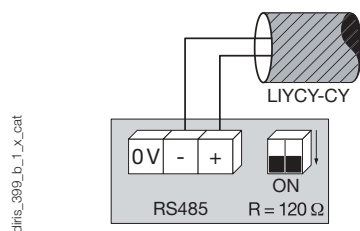


Use of 2 CTs reduces by 0.5% the accuracy of the phases, the current of which is worked out by vector calculation.

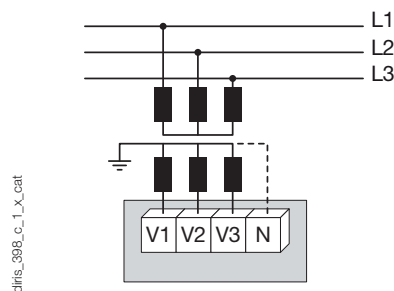
1. Fuses 0.5 A gG / 0.5 A class CC.

Additional information

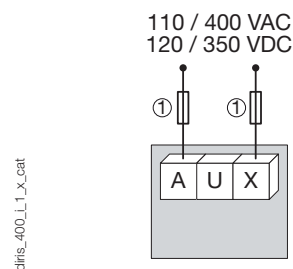
Communication via RS485 link



Connection of voltage transformer for HV networks



AC & DC auxiliary power supply



1. Fuses 0.5 A gG / 0.5 A class CC.

References

Basic device	DIRIS A60
Auxiliary power supply U_s	Reference
110 ... 400 VAC / 120 ... 350 VDC	4825 0207
Options	
Plug-in-modules⁽¹⁾	Reference
Pulse outputs	4825 0090
RS485 MODBUS® communication	4825 0092
Analogue outputs	4825 0093
2 inputs / 2 outputs	4825 0094
Ethernet communication (embedded Ethernet Webserver) ⁽²⁾	4825 0203
Ethernet communication + RS485 MODBUS gateway (embedded Ethernet Webserver) ⁽²⁾	4825 0204
Temperature inputs	4825 0206

(1) Easy integration of additional functions (maximum 3 slots per device).

(2) Dimension of the plug-in module: 2 slots.

Options		
Description of accessories	To be ordered in multiples of	Reference
IP65 protection	1	4825 0089
Panel mounting kit for a 144 x 96 mm cut-out	1	4825 0088
Fuse disconnect switches for the protection of voltage inputs (type RM) 3 poles	4	5601 0018
Fuse disconnect switches for the protection of the auxiliary supply (type RM) 1 pole + neutral	6	5601 0017
Fuse type gG 10 x 38 0.5 A	10	6012 0000
Ferrite to be associated with communication modules	1	4899 0011
Current transformer range	1	see page 584
Temperature sensor PT100 - M6 screw type	1	4825 0208
Temperature sensor PT100 - M6 eyelet type	1	4825 0209
Management softwares for DIRIS		see page 618

Expert Services

- > Study, definition, advice, implementation, maintenance and training...
Our experts "Expert Services" offer complete support for the success of your project.





DIRIS A80

Multifunction meters - PMD + RCM

monitoring energy and fault currents - dimensions 96 x 96 mm

Single-circuit metering,
measurement &
analysis



DIRIS A80

The solution for

- > Industry
- > Infrastructure
- > Health care buildings
- > Data centre

Strong points

- > Compact
- > Patent pending
- > Management softwares
- > Compliant with IEC 61557-12
- > Conformity to standard EN 50160

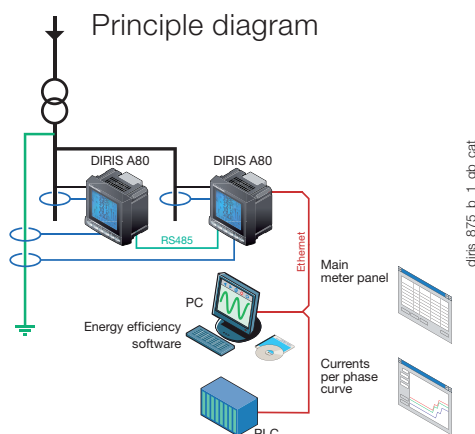
Conformity to standards

- > IEC 62053-22 class 0.5S
- > IEC 62053-23 class 2
- > IEC 61557-12
- > IEC 62020
- > EN 50160



Function

DIRIS A80 is a complete panel mounted multifunction meter which incorporates RCM current monitoring (Residual Current Monitoring), for networks with TN-S and TT neutral systems, and enhanced data logging functions for recording curves for quality and RCM events. The DIRIS A80 supplies all the measurements required for energy efficiency projects while its RCM function provides preventative earth leakage information, essential in critical applications to avoid installation shutdowns.



Advantages

Compact

The DIRIS A80 combines two complementary products within a single 96 x 96 mm panel mounted case, enabling faster installation and utilising less space. The DIRIS A80 comprises:

- a multifunction meter with enhanced event logging functions which records curves for quality events.
- an RCM fault current monitoring device (Residual Current Monitoring).

Conformity to standard EN 50160

- EN 50160 is a standard which defines events relating to the quality of electrical networks. The DIRIS A80 captures voltage events in accordance with this standard.

Patent pending

Automatic adjustment of the leakage current alarm threshold in accordance with the load current to avoid false alarms.

Compliant with IEC 61557-12.

IEC 61557-12 is a high-level standard for all PMDs (Performance Monitoring Devices) that are designed to measure and monitor electrical parameters in distribution networks. Compliance with IEC 61557-12 ensures a high level of equipment performance, in terms of metrology, and the mechanical and environmental aspects (EMC, temperature, etc.).

Management softwares

- Optional Ethernet module with Webserver function: For measurement monitoring, data exploitation and the export of load curves remotely without a specific software (web browser access).
- Analysis software: For the analysis of events data in order to improve the reliability of the electrical installation.
- Easy Config software: For quick and easy remote device configuration; configuration files can be copied from and sent to the DIRIS A80, or they can be created without communication and sent at a later time. Multiple devices can be configured from a single file, which is especially useful for OEMs and panel builders.

Functions

The DIRIS A80 offers the following functions:

- The monitoring of fault currents
- (Residual Current Monitoring)
- Multi-measurement (current, voltage, frequency, power, ...)
- Energy metering
- Harmonic analysis
- Event detection
- Fault currents (RCM)**
 - Measurement of currents $I_{\Delta n}$ ($I_1 + I_2 + I_3 + I_n$) and IPE (protection conductor)
 - Permanent monitoring of $I_{\Delta n}$ and IPE
 - Fault current alarms depending on the load current
 - Record of events $I_{\Delta n}$ and IPE (time, duration and curves stored)
 - Alarm report output

Multi-measurement

- Currents
 - instantaneous: I_1 , I_2 , I_3 , I_n , I_{system} ,
 - average/maximum average: I_1 , I_2 , I_3 , I_n ,
 - unbalance: I_{unb}
- Voltages & frequency
 - instantaneous: V_1 , V_2 , V_3 , U_{12} , U_{23} , U_{31} , F , V_{system} , U_{system}
 - average/maximum average: V_1 , V_2 , V_3 , U_{12} , U_{23} , U_{31} , F
 - unbalance: U_{unb}
- Power
 - instantaneous: $3P$, ΣP , $3Q$, ΣQ , $3S$, ΣS
 - maximum average: ΣP , ΣQ , ΣS
 - predictive: ΣP , ΣQ , ΣS
 - storing of load curves (60 days with an interval of 10 minutes) for the active, reactive and apparent power: ΣP +/-; ΣQ +/-; ΣS

- Power factor PF , ΣPF
- Instantaneous total tangent ϕ
- Instantaneous, average and max. average unbalance
- Metering**
 - Active energy: +/- kWh
 - Reactive energy: +/- kvarh
 - Apparent power: kVAh
 - Hours
- Harmonic analysis (level 63)**
 - Total harmonic distortion
 - Currents: $thd I_1$, $thd I_2$, $thd I_3$, $thd I_n$
 - Phase-to-neutral voltage: $thd V_1$, $thd V_2$, $thd V_3$
 - Phase-to-phase voltage: $thd U_{12}$, $thd U_{23}$, $thd U_{31}$.
 - Individual
 - Currents: HI_1 , HI_2 , HI_3 , HI_n
 - Phase-to-neutral voltage: HV_1 , HV_2 , HV_3
 - Phase-to-phase voltage: HU_{12} , HU_{23} , HU_{31} .

Events

- Alarms on all electrical values
- Detection and storing of the last 60 events:
 - overvoltage
 - voltage dips
 - cut-offs
 - overloads.

For each stored event, the DIRIS A80 records the relevant RMS 10 ms interval curves for the voltages V_1 , V_2 , V_3 , U_{12} , U_{23} , U_{31} , the currents I_1 , I_2 , I_3 and I_n . These curves can be synchronised with the event curves $I_{\Delta n}$ and IPE.

Communications⁽¹⁾

- RS485 MODBUS RTU
 - Ethernet (MODBUS TCP or MODBUS RTU over TCP and Webserver)
 - Ethernet (MODBUS TCP or MODBUS RTU over TCP and Webserver) with RS485 MODBUS RTU gateway
- (1) Available as an option (see the following pages).

Front panel



1. Backlit LCD display.
2. Direct access key for the currents, RCM function and alarm reset.
3. Direct access key for voltages and frequency.
4. Direct access key for active, reactive, and apparent powers and power factor.
5. Direct access key for maximum and average current, voltage and power values.
6. Direct access key for harmonic values and the connection and RCM test functions.
7. Direct access key for energies, hour meter and programming menu.

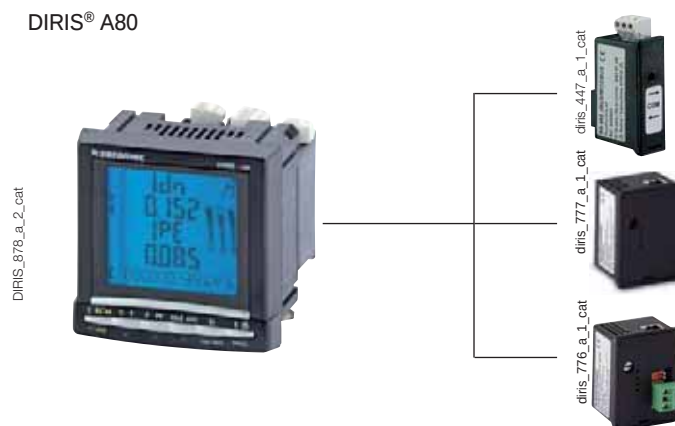
Accessories

Core balance transformer Δ IC
(see page 636)



Plug-in modules

DIRIS® A80



Communication MODBUS®

- RS485 link with MODBUS® protocol (speed up to 38400 bauds).

Ethernet communication

- Ethernet connection with MODBUS TCP or MODBUS RTU over TCP protocol.
- Embedded Webserver function⁽¹⁾.

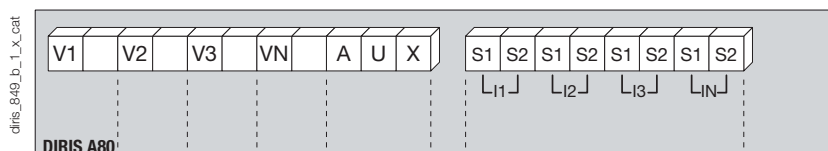
Ethernet communication with RS485 MODBUS gateway

- Ethernet connection with MODBUS TCP or MODBUS RTU over TCP protocol.
- Connection of 1 to 247 RS485 MODBUS slaves.
- Embedded Webserver function⁽¹⁾.

(1) See "Management softwares for DIRIS" page 618.

Terminals

DIRIS A80



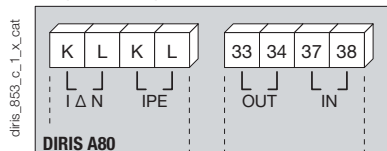
S1 - S2: current inputs

AUX: Auxiliary power supply U_s

V1 - V2 - V3 - VN: voltage inputs

RCM module

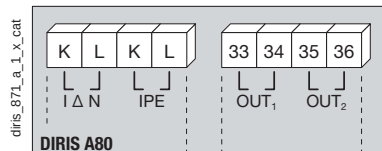
1 input / 1 output



K-L / $I_{\Delta N}$: residual current
K-L / IPE: ground fault current
33-34: relay outputs
37-38: opto inputs

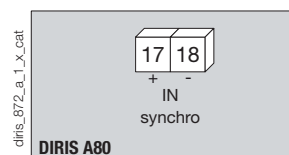
RCM module

2 outputs

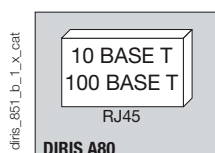


K-L / $I_{\Delta N}$: residual current
K-L / IPE: ground fault current
33-34: relay output n°1
35-36: relay output n°2

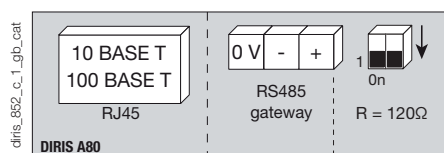
Memory module



Ethernet module



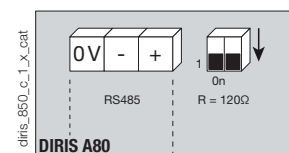
Ethernet module + RS485 MODBUS gateway



RS485 gateway resistor.

R = 120 Ω : selectable internal resistance for RS485 end of line termination.

RS485 MODBUS module



RS485 link

R = 120 Ω : selectable internal resistance for RS485 end of line termination.

DIRIS A80

Multifunction meters - PMD + RCM

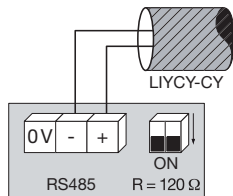
monitoring energy and fault currents - dimensions 96 x 96 mm

Connections

Additional information

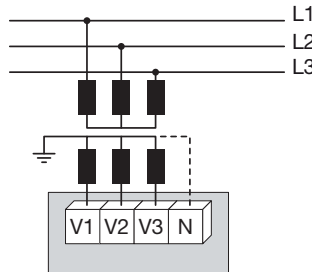
Communication via RS485 link

diris_398_c_1_x_cat



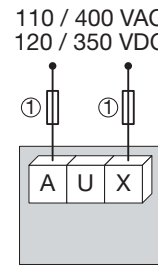
Connection of voltage transformer for HV networks

diris_399_b_1_x_cat



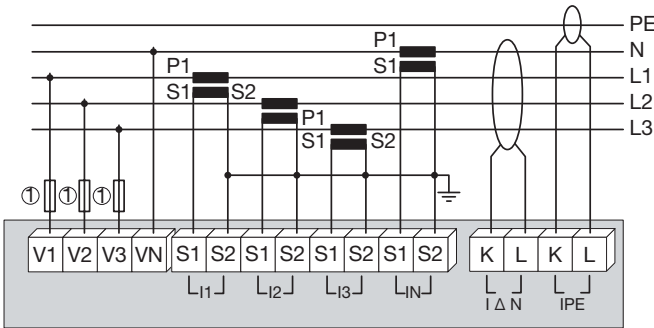
AC & DC auxiliary power supply

diris_400_L_1_gb_cat



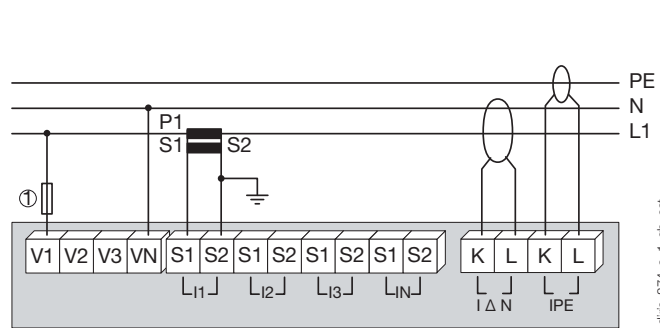
Three-phase + N network with RCM

diris_873_a_1_gb_cat



Single-phase network with RCM

diris_874_a_1_gb_cat



Electrical characteristics

Current measurement on insulated inputs (TRMS)

Via CT primary	9 999 A
Via CT secondary	1 or 5 A
Measurement range	0 ... 11 kA
Input consumption	≤ 0.1 VA
Measurement updating period	1 s
Accuracy	0.2 %
Permanent overload	6 A
Intermittent overload	10 I _n for 1 s

Voltage measurements (TRMS)

Direct measurement between phases	50 ... 700 VAC
Direct measurement between phase and neutral	28 ... 404 VAC
VT primary	500 000 VAC
VT secondary	60, 100, 110, 173, 190 VAC
Frequency	50 / 60 Hz
Input consumption	≤ 0.1 VA
Measurement updating period	1 s
Accuracy	0.2 %
Permanent overload	800 VAC

Current-voltage product

Limitation for 1A CT	10 000 000
Limitation for 5A CT	10 000 000

Power measurement

Measurement updating period	1 s
Accuracy	0.5 %

Power factor measurement

Measurement updating period	1 s
Accuracy	0.5 %

Frequency measurement

Measurement range	45 ... 65 Hz
Measurement updating period	1 s
Measurement updating period	0.1 %

Energy accuracy

Active (according to IEC 62053-22)	Class 0.5 S
Reactive (according to IEC 62053-23)	Class 2

Operating conditions

Operating temperature	- 10 ... + 55 °C
Storage temperature	- 20 ... + 85 °C
Relative humidity	95 %

Auxiliary power supply

Alternating voltage	110 ... 400 VAC
AC tolerance	± 10 %
Direct voltage	120 ... 350 VDC
DC tolerance	± 20 %
Frequency	50 / 60 Hz
Consumption	≤ 10 VA

MODBUS communication module

Link	RS485
Type	2 ... 3 half duplex wires
Protocol	MODBUS® RTU
MODBUS® speed	4800 ... 38400 bauds

Ethernet Communication Module

Connection	RJ45
Speed	10 base T / 100 base T
Protocol	MODBUS TCP or MODBUS RTU over TCP

Fault current monitoring characteristics (I_{Δn} and I_{PE})

Inputs I_{Δn} and I_{PE}

Number of inputs	2
Dedicated core balance transformers	range ΔI _C – transformer ratio 600/1
Measurement of fault current I _{Δn} / I _{PE}	6 mA ... 30 A
Accuracy	1 %

Alarms I_{Δn} and I_{PE}

Thresholds	adjustment depending on the load currents
Time setting	0 to 10 s
Logging	values, dates, durations and curves
Number of events	max. 1000 events

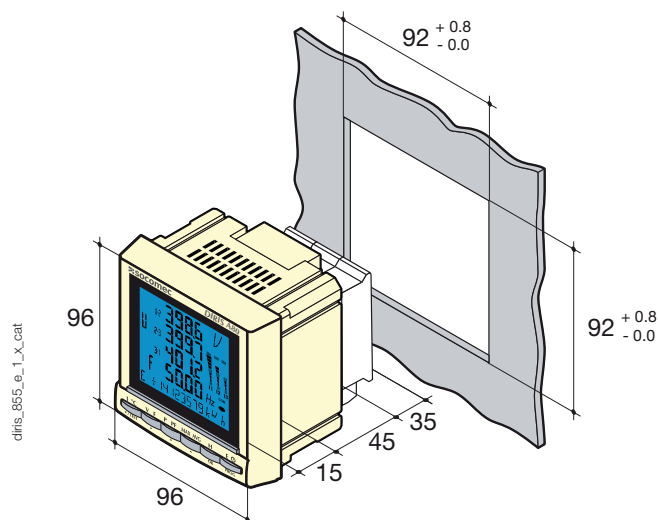
Optocoupler input

Number	specific to the reference
Power supply	5 ... 24 VDC
Minimum signal width	10 ms
Minimum duration between 2 pulses	20 ms
Type	optocoupler

Alarm outputs

Number of relays	specific to the reference
Type	230 VAC – 1 A
Max. N° of operations	10 ⁴

Case



Type	panel mounting
Dimensions W x H x D	96 x 96 x 80 mm
Case degree of protection	IP30
Front degree of protection	IP52
Display type	backlit LCD display
Terminal blocks type	fixed or plug-in
Current connection cross-section	0.5 ... 6 mm ²
Cable cross-section for currents ΔI_n and I_{PE}	0.14 ... 1.5 mm ²
Voltage and other connection cross-section	0.2 ... 2.5 mm ²
Weight	560 g

References

Basic device	DIRIS A80
Type	Reference
With 2 outputs	4825 0213
With 1 input / 1 output	4825 0214
Options	
Plug-in modules	Reference
RS485 MODBUS [®] communication	4825 0092
Ethernet communication (embedded Ethernet Webserver) ⁽¹⁾	4825 0203
Ethernet communication + RS485 MODBUS gateway (embedded Ethernet Webserver) ⁽¹⁾	4825 0204

(1) Dimensions: 2 slots.

Accessories	To be ordered in multiples of	Reference
Description of accessories		
IP65 protection	1	4825 0089
Panel mounting kit for a 144 x 96 mm cut-out	1	4825 0088
Fuse disconnect switches for the protection of voltage inputs (type RM) 3 poles	4	5601 0018
Fuse disconnect switches for the protection of the auxiliary supply (type RM) 1 pole + neutral	6	5601 0017
Fuses type gG 10 x 38 0.5 A	10	6012 0000
Ferrite to be associated with communication modules	1	4899 0011
Current transformer range	1	see page 584

Core balance transformer ΔIC	Toroid diameter (mm)	Reference
Type		
$\Delta IC \varnothing 15$	15	4950 6015
$\Delta IC \varnothing 30$	30	4950 6030
$\Delta IC \varnothing 50$	50	4950 6050
$\Delta IC \varnothing 80$	80	4950 6080
$\Delta IC \varnothing 120$	120	4950 6120
$\Delta IC \varnothing 200$	200	4950 6200
$\Delta IC \varnothing 300$	300	4950 6300
Management softwares for DIRIS		see page 618

Expert Services

- > Study, definition, advice, implementation, maintenance and training... Our experts "Expert Services" offer complete support for the success of your project.





DIRIS Q800

Electrical network analyser

quality analysis of electrical energy and power grids

new



DIRIS Q

diris-q_012_a

Single-circuit metering,
measurement &
analysis

Function

The **DIRIS Q800** is a multifunction network analyser for all energy efficiency projects. It helps to actively ensure the electrical system runs continuously and at optimised rates.

As such, with this system you can:

- Improve the efficiency of your facility.
- Reduce production losses.
- Optimise running costs.
- Reduce maintenance costs.

To achieve these objectives, the DIRIS Q800 does the following:

- Measures electrical parameters and status (via auxiliary contacts).
- Analyses the quality of energy according to class A IEC 61000-4-30.
- Measures differential current.
- GPS synchronisation.

Advantages

Large colour touchscreen

The 192 x 144 mm color touchscreen is tactile, easy to operate and provides intuitive navigation.

Regulatory compliance

By its compliance with IEC 61000-4-30 Class A and IEC 62586-2, you have the assurance of a certified and high quality product.

Multiple communication channels

With its multiple communication options, the DIRIS Q800 can be integrated into any type of communication infrastructure:

- 1 rear Ethernet port for permanent cable connection.
- 1 front Ethernet for local diagnostics.
- 1 Wifi port.
- 1 RS485 port.
- 1 USB port.
- GPS synchronisation.
- Built-in Webserver.
- Protocols: HTTP, HTTPS, FTP, NTP, MODBUS, PQDIF.

The solution for

- > Industry
- > Infrastructure
- > Healthcare buildings
- > Data centers



Strong points

- > Large colour touchscreen
- > High performance and accuracy
- > Regulatory compliance
- > Multiple communication channels

Compliance with standards

- > IEC 61000-4-30 class A
- > IEC 62586-2
- > IEC 62053-22
- > IEC 62053-23
- > EN 50160



Functions

Measurements

- Measures across 4 quadrants
- Voltage by phase, current by phase, frequency.
- Neutral current, differential current.
- Neutral/earth voltage.
- Active, reactive and apparent power.
- Cos phi and power factor.
- THD and spectral analysis up to the 63rd for current voltage.
- Flicker (Pst, Plt).
- Voltage imbalance.
- Remote control signals.

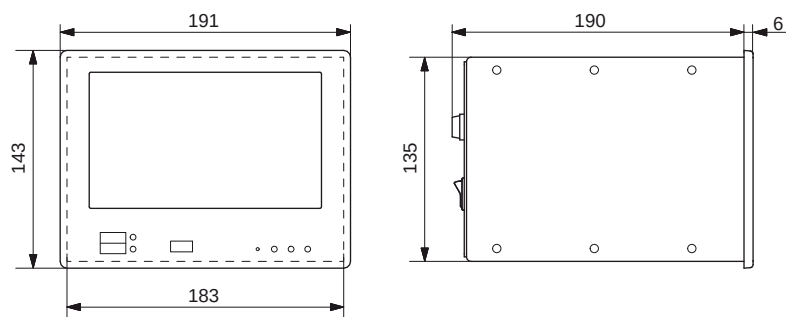
Logging

- EN 50160 events ½ period (10 ms): voltage dips, voltage cutouts, voltage surges.
- Data exported automatically via FTP.
- EN50160 compliant.
- Transients (20 micro seconds).

Inputs/outputs

- 4 digital inputs.
- 4 digital outputs.
- 4 analogue outputs.

Dimensions



Dimensions

Cutout	183 x 135 mm (192 x 144 mm DIN)
Front panel (L x H)	191 x 143 mm
Enclosures (L x H x P)	183 x 135 x 190 mm
Weight	1400 g

Specifications

Auxiliary power supply

Voltage range	85 ... 285 VAC / 65 ... 250 VDC
Frequency	50/60 Hz
Power consumption	Max. 15 VA
Backup battery	Li-ion 2500 mAh

Measurement inputs

Direct voltage measurement input	P-N: max 580 V RMS CAT III L-L: max 1000 V RMS CAT III
U4 direct voltage measurement input	Max 580 V RMS CAT II
Peak input power factor	2
Current inputs	Max 7 A RMS
Current input consumption	0.04 VA
Peak input current factor	3
Voltage input impedance	> 6 MΩ
Frequency range	42.5 to 57.5 Hz/51 to 69 Hz
Voltage reference channel	U1N/U12
Sampling	51.2 kHz @50 Hz

Accuracy

Three-phase voltage	± 0.1%
4 th voltage (neutral/earth)	± 0.2%
Currents	± 0.2%
Power	± 0.2%
Frequency	± 8 mHz
Harmonics	IC. 1 IEC/EN 61000-4-7
Active energy	IC. 0.5S IEC/EN 62053-22
Reactive energy	IC. 1 IEC/EN 62053-23

Communication

Ethernet ports	2 Auto MDIX RJ45 10/100 Base Ethernet
RS485 opto-insulated port (slave)	0.5 UL 2400 to 115200 bps
Passive WIFI antenna	SMA conn.
Active GPS antenna	SMA conn.
Protocols	HTTP, HTTPS, FTP, SFTP, NTP, NMEA, Modbus RTU/TCP
USB port	USB 2.0

Environmental conditions

Operating temperature (max. range)	-25 ... +55°C
Storage temperature	-25 ... +75°C
Humidity	Max. 95 %
Max.altitude	2000 m

Standards and safety

Product conformity	IEC/EN 62586-1, IEC/EN 62586-2
Safety	CAT III power, insulation class 2, 600 V
Degree of pollution	2 (EN 61010-1)
Degree of protection	IP40 front, IP20 rear
Directive	2006/95/EC LV, EN 61010
EMC	2004/108/EC EMC, EN 50081-2, EN 50082-2, EN 61326/A1, EN 55011: 1998+A1: 1999+A2: 2002, EN 61000-6-2/-4-2/-4-3/-4-4/-4-5/-4-6/-4-11

References

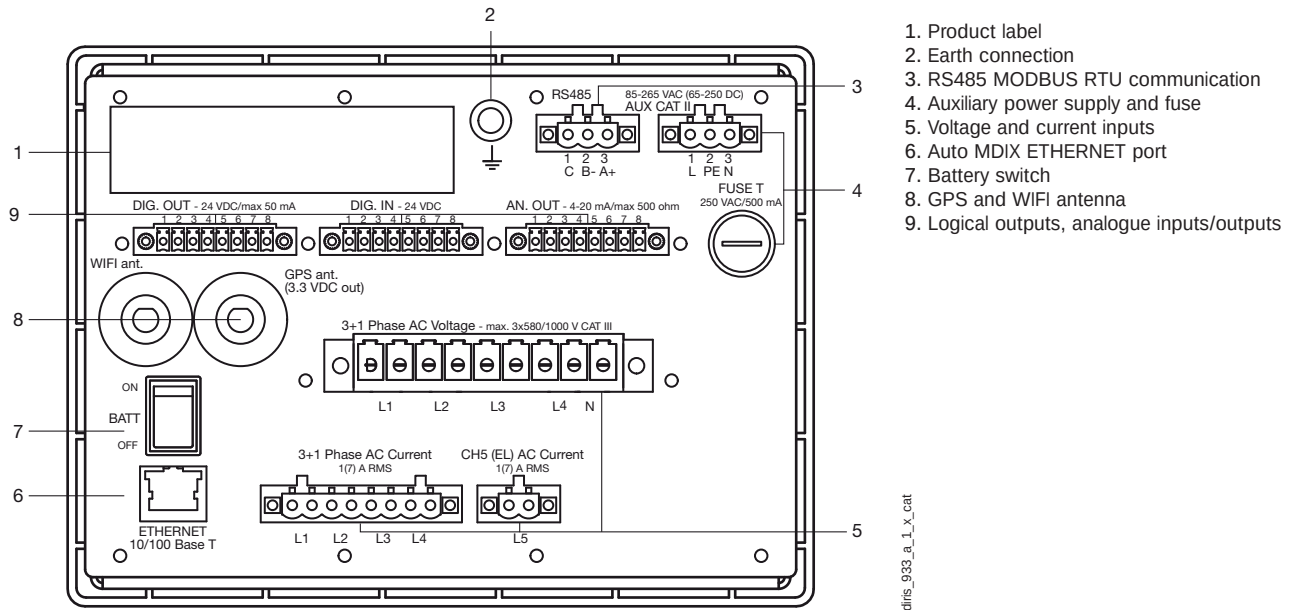
Designation	Reference
DIRIS Q800	4826 0100

DIRIS Q800

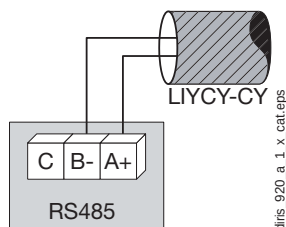
Electrical network analyser

quality analysis of electrical energy and power grids

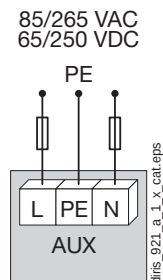
Terminals



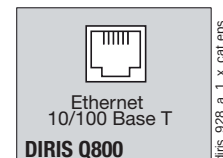
Communication via RS485 link



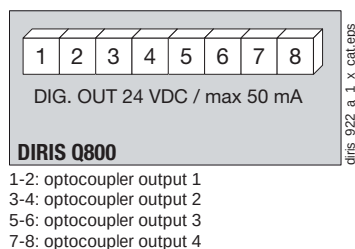
AC and DC auxiliary power supply



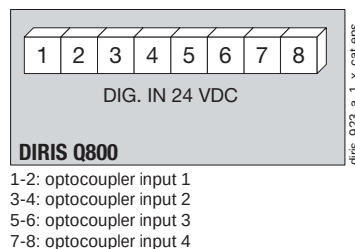
Ethernet communication



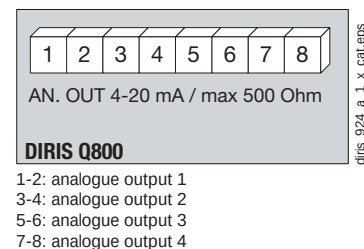
Digital outputs



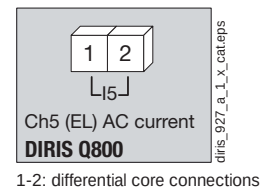
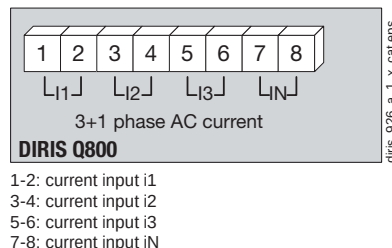
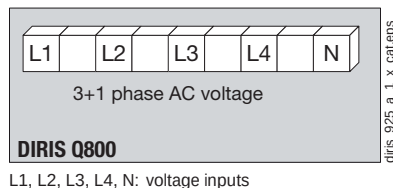
Digital inputs



Analogue outputs

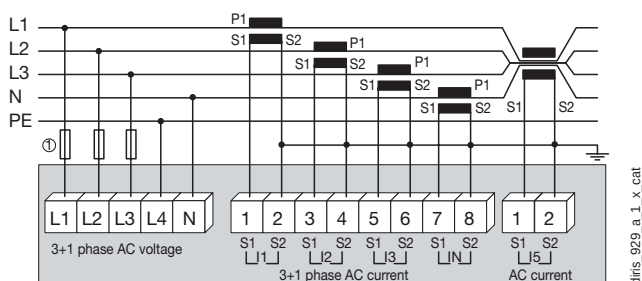


Current and voltage inputs



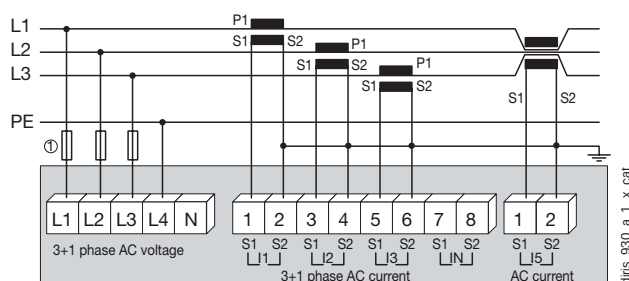
Connections

4 wires with 4 CT + differential measurements (1/5 A)



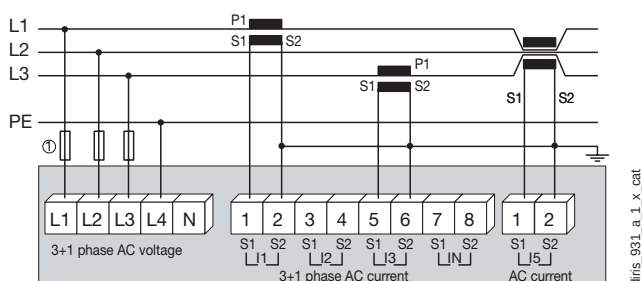
1. 0.5 A gG / 0.5 A class CC fuses.

3 wires with 3 CT + differential measurements (1/5 A)



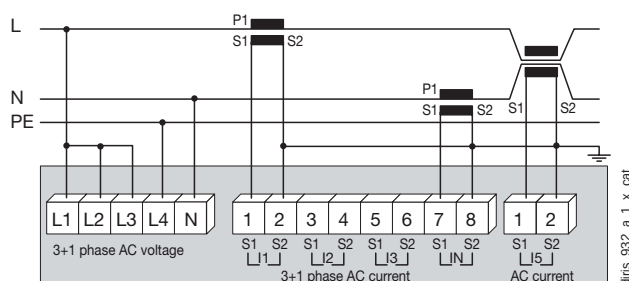
1. 0.5 A gG / 0.5 A class CC fuses.

3 wires with 2 CT + differential measurements



1. 0.5 A gG / 0.5 A class CC fuses.

Single-phase with 2 CT + differential measurements (1/5 A)



1. 0.5 A gG / 0.5 A class CC fuses.

Expert Services

- > Study, definition, advice, implementation, maintenance and training... Our experts "Expert Services" offer complete support for the success of your project.





Current transformers

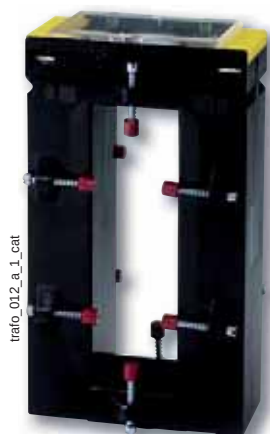
Measurement devices

from 5 to 5000 A



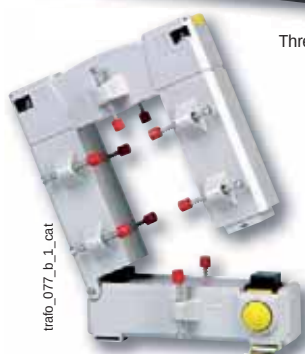
trafo_108_a_1_cat

Three-phase CT



trafo_012_a_1_cat

Bar-through CT



trafo_077_b_1_cat

Split-core transformer



trafo_010_a_1_cat

Cable-through CT

The solution for

- > Industry
- > Office buildings



Strong points

- > An adapted accuracy class
- > A wide range of ratings and dimensions
- > Quick and easy to mount

Conformity to standards

- > IEC 61869-2
- > IEC 61439-1



Available on request

SOCOMEK also offer customised solutions:

- > 1 A secondary
- > Double or triple primary ratio
- > Voltage transformer
- > Summation CTs

Function

SOCOMEK current transformers deliver to the secondary a standard current proportional to the primary current and adapted to the rating of the associated device. They are equipped as standard with removable terminal covers and double terminals allowing the secondary to be short-circuited without any risk.

They are mounted using two screw-on metal brackets or, in certain cases, by a clip-on DIN-rail fastener. The connections are made by screws or by fast-on terminals.

- Accuracy class: 0.2s — 0.5 or 1.
- Dielectric quality: 3 kV — 50 Hz — 1 min.
- Operating frequency: 50 — 60 Hz.
- Permanent overload: 1.2 In.
- Insulation class: E (120 °C).

Advantages

An adapted accuracy class

In order to get the best of your DIRIS multifunction meters and COUNTIS energy meters, we can provide current transformers with the following accuracy classes: 0.2s; 0.5; 1 or 3.

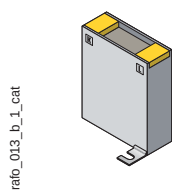
A wide range of ratings and dimensions

Your measurement process can be optimised whatever your needs in terms of ratings, space requirements, conductor sizing or accuracy class. A wide range of combinations are available in our standard range with specific versions available on request (other ratios, tropicalisation and specific frequency, class or burden).

Quick and easy to mount

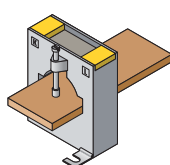
Our current transformers are adapted to any type of mounting: edgewise or flat mounting, DIN-rail or back-plate mounting. Implementation is easy and rapid.

Composition of the range



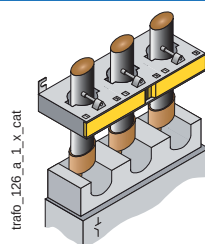
trafo_013_b_1_cat

Primary wound moulded case CT



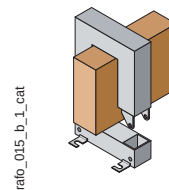
trafo_014_b_1_cat

Bar or cable-through CT



trafo_126_a_1_x_cat

Bar or cable-through three-phase CT



trafo_015_b_1_cat

Bar-through split-core CT

Primary wound moulded case CT

References

Primary	Secondary ⁽¹⁾	TRB 60		TRB 70		T2RB 115		TRB 135	
		Class 0.5	Reference	Class 0.5	Reference	Class 0.2s	Reference	Class 0.5	Reference
5 A	5 A	2.5 VA	192T 0505	10 VA	192T 0521				
10 A	5 A	2.5 VA	192T 0510	10 VA	192T 0522				
15 A	5 A	2.5 VA	192T 0515	10 VA	192T 0523				
20 A	5 A	2.5 VA	192T 0520	10 VA	192T 0524				
25 A	5 A			10 VA	192T 0525	7.5 VA	192U 0402	10 VA	192T 0603
30 A	5 A			5 VA	192T 0530	7.5 VA	192U 0403	10 VA	192T 0607
40 A	5 A			5 VA	192T 0541	7.5 VA	192U 0404	10 VA	192T 0604
50 A	5 A			5 VA	192T 0551	7.5 VA	192U 0405	10 VA	192T 0605
60 A	5 A					7.5 VA	192U 0406	10 VA	192T 0606
75 A	5 A					7.5 VA	192U 0407	10 VA	192T 0608
80 A	5 A					7.5 VA	192U 0408	10 VA	192T 0609
100 A	5 A							10 VA	192T 0610
125 A	5 A					7.5 VA	192U 0412	10 VA	192T 0612
150 A	5 A					7.5 VA	192U 0415	10 VA	192T 0615

(1) Secondary 1 A: on request.

Accessories

Description of accessories	TRB 60 Reference	TRB 70 Reference		TRB 135 Reference
DIN-rail mounting	192T 0003	192T 0005 ⁽¹⁾		
Sealable cover	192T 0105	192T 0103		192T 0101 ⁽²⁾

(1) Not available for 50 A rating

(2) For 125 and 150 A ratings, use reference 192T 0103.

CT Plug-in transducer (CEA-VA)

Power supply	Output	TRB 60 Reference	TRB 70 Reference
Self-supplied	0-20 mA / 0-10 VDC	192Y 0015	192Y 0025 ⁽¹⁾
230 VAC	0-20 mA / 0-10 VDC	192Y 0215	192Y 0225 ⁽¹⁾
24 VDC	0-20 mA / 0-10 VDC	192Y 0115	192Y 0125 ⁽¹⁾

(1) Not available for ratings 40 and 50 A

CT Plug-in transducer (CEA-VA4)

Power supply	Output	TRB 60 Reference	TRB 70 Reference
230 VAC	4-20 mA / 0-10 VDC	192T 0255	192Y 0265 ⁽¹⁾
24 VDC	4-20 mA / 0-10 VDC	192Y 0155	192Y 0165 ⁽¹⁾

(1) Not available for ratings 40 and 50 A

Certificate of performance

Each class 0.2s current transformer is supplied with an individual certificate of performance, attesting to its accuracy.

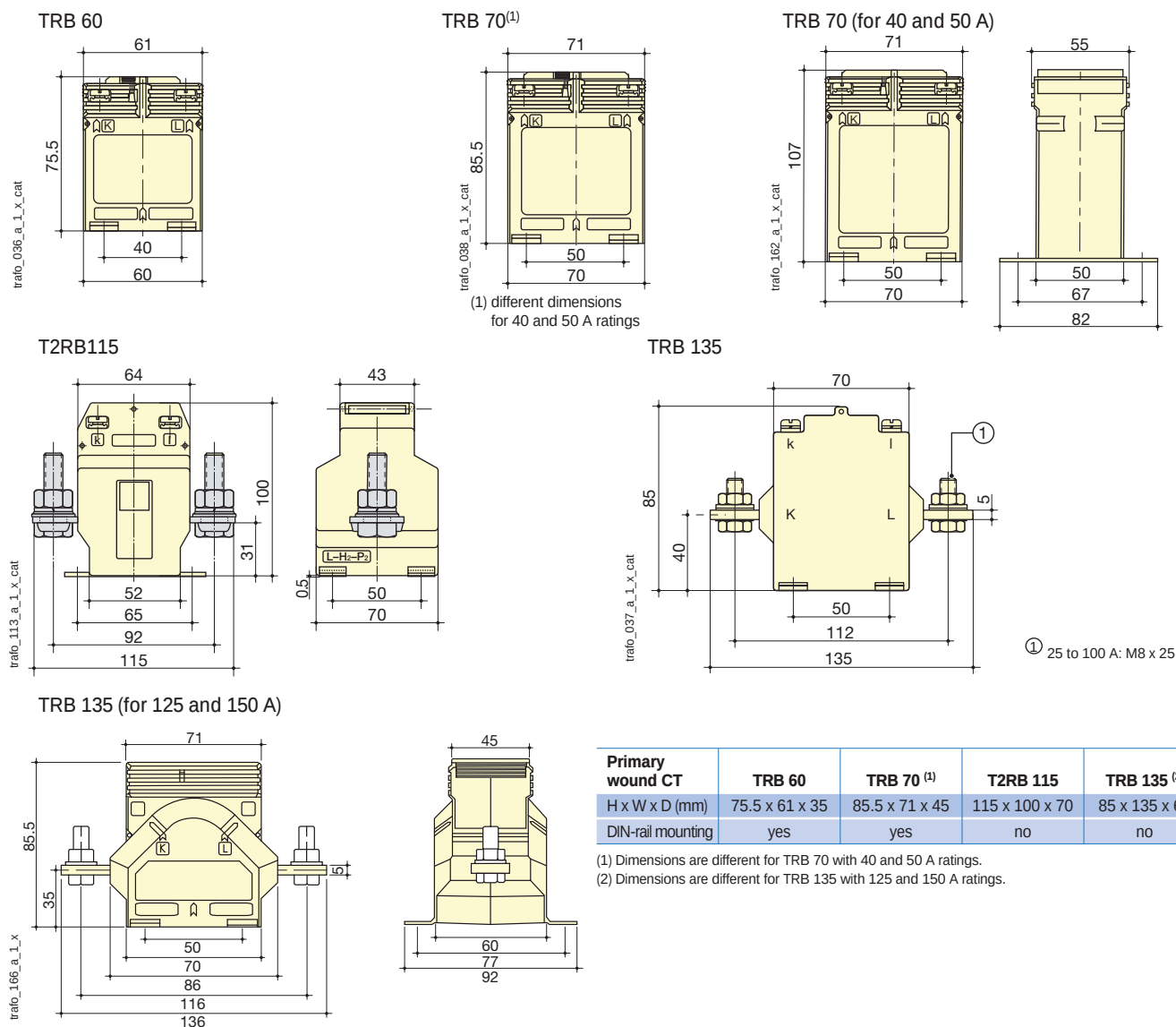
Current transformers

Measurement devices

from 5 to 5000 A

Primary wound moulded case CT (continued)

Dimensions

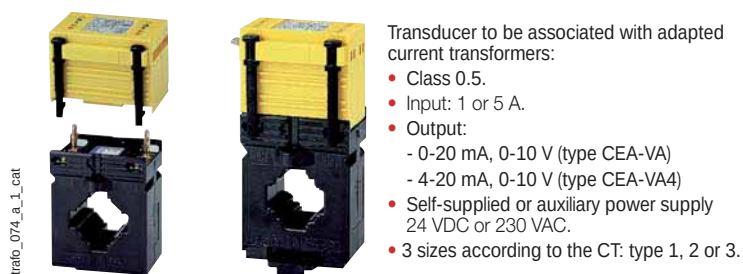


Primary wound CT	TRB 60	TRB 70 ⁽¹⁾	T2RB 115	TRB 135 ⁽²⁾
H x W x D (mm)	75.5 x 61 x 35	85.5 x 71 x 45	115 x 100 x 70	85 x 135 x 60
DIN-rail mounting	yes	yes	no	no

(1) Dimensions are different for TRB 70 with 40 and 50 A ratings.

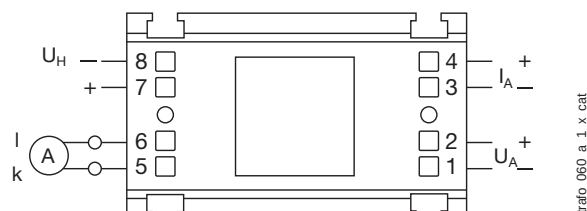
(2) Dimensions are different for TRB 135 with 125 and 150 A ratings.

Associated transducers



Transducer to be associated with adapted current transformers:

- Class 0.5.
- Input: 1 or 5 A.
- Output:
 - 0-20 mA, 0-10 V (type CEA-VA)
 - 4-20 mA, 0-10 V (type CEA-VA4)
- Self-supplied or auxiliary power supply 24 VDC or 230 VAC.
- 3 sizes according to the CT: type 1, 2 or 3.



Dimensions (mm)

Converter	For CT	Height (mm)	Width (mm)	Depth (mm)
Type 1	TRB 60	50.5	60	32.5
Type 2	TRB 70	50	70	43

Cable-through CT

References

		TCA 14		TCA 21			TCA 22		T2CA 225	
Primary	Secondary ⁽¹⁾	Class 1	Reference	Class 1	Class 0.5	Reference	Class 1	Reference	Class 0.2s	Reference
40 A	5 A	1	192T 1404							
50 A	5 A	1	192T 1405							
60 A	5 A	1.5	192T 1406	1 VA		192T 2006				
75 A	5 A	1.5	192T 1407	1.5 VA		192T 2007				
80 A	5 A			1.5 VA		192T 2008				
100 A	5 A	2.5	192T 1410		1.5 VA	192T 2010	1 VA	192T 2022		
125 A	5 A	2.5	192T 1412		1.5 VA	192T 2012				
150 A	5 A	2.5	192T 1415		1.5 VA	192T 2015	1.5 VA	192T 2023	1.5 VA	192U 2215
200 A	5 A				2.5 VA	192T 2020	2.5 VA	192T 2024	2.5 VA	192U 2220
250 A	5 A				2.5 VA	192T 2016	3.75 VA	192T 2025	5 VA	192U 2225
300 A	5 A				2.5 VA	192T 2017	3.75 VA	192T 2030	5 VA	192U 2230
400 A	5 A						5 VA	192T 2034	5 VA	192U 2240
500 A	5 A						5 VA	192T 2035 (2)	10 VA	192U 2250
600 A	5 A						5 VA	192T 2036 (2)	10 VA	192U 2260

(1) Secondary 1 A: on request.

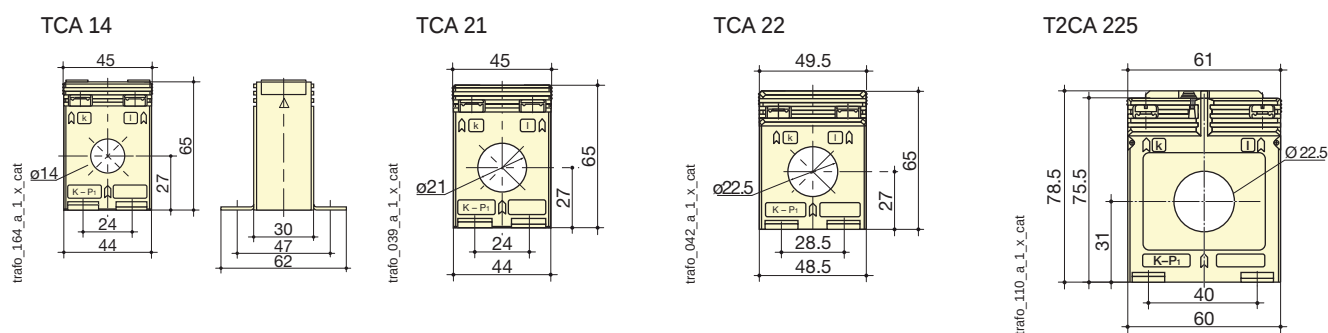
(2) Dimensions of T2CA 225

Accessories

Description of accessories	TCA 14 Reference	TCA 21 Reference	TCA 22 Reference	T2CA 225 Reference
DIN-rail mounting	192T 0006	192T 0006	192T 0007	192T 0003
Guide tube Ø 8.5 mm ⁽¹⁾		192T 0020		
Guide tube Ø 12.5 mm ⁽¹⁾		192T 0021	192T 0023	
Guide tube Ø 16.5 mm ⁽¹⁾			192T 0024	
Sealable cover				192T 0105

(1) For centralising cables within the CT aperture.

Dimensions



Cable-through CT	TCA 14	TCA 21	TCA 22 ⁽¹⁾	T2CA 225
Ø cable (mm)	14	21	22.5	22.5
H x W x D (mm)	65 x 45 x 30	65 x 45 x 30	65 x 49.5 x 35	78.5 x 61 x 35
DIN-rail mounting	yes	yes	yes	yes

(1) Dimensions are different for 600 A: 78.5x61x35.

Current transformers

Measurement devices

from 5 to 5000 A

Bar or cable-through CT

References

Primary	Secondary ⁽¹⁾	TCB 17-20		TCB 26-30			T2CB 26-30		TCB 28-30		
		Class 1	Reference	Class 0.5	Class 1	Reference	Class 0.2s	Reference	Class 0.5	Class 1	Reference
50 A	5 A				1 VA	192T 2305					
60 A	5 A	1 VA	192T 2106		1 VA	192T 2306					
75 A	5 A	1 VA	192T 2107		1.5 VA	192T 2307					
80 A	5 A	1.25 VA	192T 2108		1.5 VA	192T 2308				1.25 VA	192T 2408
100 A	5 A	1.5 VA	192T 2110	1.5 VA		192T 2310				1.5 VA	192T 2410
125 A	5 A	1.5 VA	192T 2112	1.5 VA		192T 2312				2.5 VA	192T 2412
150 A	5 A	2.5 VA	192T 2115	1.5 VA		192T 2315	1.5 VA	192U 2315		2.5 VA	192T 2415
160 A	5 A	2.5 VA	192T 2116								
200 A	5 A	2.5 VA	192T 2120	2.5 VA		192T 2320	2.5 VA	192U 2320	2.5 VA		192T 2420
250 A	5 A	5 VA	192T 2125	5 VA		192T 2325	2.5 VA	192U 2325	2.5 VA		192T 2425
300 A	5 A	5 VA	192T 2130	5 VA		192T 2330	5 VA	192U 2330	2.5 VA		192T 2430
400 A	5 A	5 VA	192T 2140	5 VA		192T 2340	5 VA	192U 2340	5 VA		192T 2440
500 A	5 A			5 VA		192T 2350	5 VA	192U 2350	5 VA		192T 2450
600 A	5 A			5 VA		192T 2360	5 VA	192U 2360			
750 A	5 A			5 VA		192T 2375	5 VA	192U 2375			

(1) Secondary 1 A: on request.

Primary	Secondary ⁽¹⁾	TCB 26-40		TCB 32-40			T2CB 32-40	
		Class 1	Reference	Class 0.5	Class 1	Reference	Class 0.2s	Reference
75 A	5 A				1.5 VA	192T 4007		
100 A	5 A	1.5 VA	192T 3210	1.5 VA		192T 4010		
125 A	5 A	2.5 VA	192T 3212	1.5 VA		192T 4012		
150 A	5 A	2.5 VA	192T 3215	2.5 VA		192T 4015		
160 A	5 A	2.5 VA	192T 3216					
200 A	5 A	2.5 VA	192T 3220	5 VA		192T 4020	2.5 VA	192U 4020
250 A	5 A	2.5 VA	192T 3225	5 VA		192T 4025	5 VA	192U 4025
300 A	5 A	5 VA	192T 3230	10 VA		192T 4030	5 VA	192U 4030
400 A	5 A	5 VA	192T 3240	10 VA		192T 4040	5 VA	192U 4040
500 A	5 A	5 VA	192T 3250	10 VA		192T 4050	5 VA	192U 4050
600 A	5 A	5 VA	192T 3260	10 VA		192T 4060	5 VA	192U 4060
750 A	5 A	10 VA	192T 3275	10 VA		192T 4075	5 VA	192U 4075
800 A	5 A			10 VA		192T 4080		
1000 A	5 A			10 VA		192T 4090		

(1) Secondary 1 A: on request.

Accessories

Description of accessories	TCB 17-20 Reference	TCB 26-30 Reference	TCB 26-40 Reference	TCB 32-40 Reference
DIN-rail mounting	192T 0007	192T 0003	192T 0003	192T 0005
Sealable cover		192T 0105	192T 0105	192T 0103

CT Plug-in transducer (CEA-VA)

Power supply	Output	TCB 26-30 Reference	TCB 26-40 Reference	TCB 32-40 Reference
Self-supplied	0-20 mA / 0-10 VDC	192Y 0015	192Y 0015	192Y 0035
230 VAC	0-20 mA / 0-10 VDC	192Y 0215	192Y 0215	192Y 0235
24 VDC	0-20 mA / 0-10 VDC	192Y 0115	192Y 0115	192Y 0135

CT Plug-in transducer (CEA-VA4)

Power supply	Output	TCB 26-30 Reference	TCB 26-40 Reference	TCB 32-40 Reference
230 VAC	4-20 mA / 0-10 VDC	192T 0255	192T 0255	192Y 0275
24 VDC	4-20 mA / 0-10 VDC	192Y 0155	192Y 0155	192Y 0175

References

Primary	Secondary ⁽¹⁾	TCB 44-50		TCB 44-63		T2CB 44-63	
		Class 0.5	Reference	Class 0.5	Reference	Class 0.2s	Reference
150 A	5 A	1.5 VA	192T 5015				
200 A	5 A	2.5 VA	192T 5020	1.5 VA	192T 6420		
250 A	5 A	5 VA	192T 5025	1.5 VA	192T 6425		
300 A	5 A	5 VA	192T 5030	2.5 VA	192T 6430	5 VA	192U 6430
400 A	5 A	10 VA	192T 5040	5 VA	192T 6440	5 VA	192U 6440
500 A	5 A	10 VA	192T 5050	10 VA	192T 6450	10 VA	192U 6450
600 A	5 A	10 VA	192T 5060	10 VA	192T 6460	10 VA	192U 6460
750 A	5 A	10 VA	192T 5075	10 VA	192T 6475	10 VA	192U 6475
800 A	5 A	15 VA	192T 5080	10 VA	192T 6480		
1000 A	5 A	15 VA	192T 5090	15 VA	192T 6490	10 VA	192U 6490
1200 A	5 A	15 VA	192T 5092	15 VA	192T 6492	10 VA	192U 6492
1250 A	5 A	15 VA	192T 5095	15 VA	192T 6493	10 VA	192U 6493
1500 A	5 A			15 VA	192T 6495	10 VA	192U 6495
1600 A	5 A			15 VA	192T 6494		

(1) Secondary 1 A: on request.

Primary	Secondary ⁽¹⁾	TCB 55-80		TCB 85-100		TCB 100-125	
		Class 0.5	Reference	Class 0.5	Reference	Class 0.5	Reference
400 A	5 A	2.5 VA	192T 8140				
500 A	5 A	5 VA	192T 8150				
600 A	5 A	5 VA	192T 8160				
750 A	5 A	10 VA	192T 8175	2.5 VA	192T 9675		
800 A	5 A	10 VA	192T 8180	5 VA	192T 9680		
1000 A	5 A	15 VA	192T 8190	10 VA	192T 9690	5 VA	192T 9590
1200 A	5 A	15 VA	192T 8192	10 VA	192T 9692	10 VA	192T 9592
1250 A	5 A	15 VA	192T 8193	15 VA	192T 9693	10 VA	192T 9593
1500 A	5 A	15 VA	192T 8195	15 VA	192T 9695	15 VA	192T 9595
1600 A	5 A	15 VA	192T 8194	15 VA	192T 9694		
2000 A	5 A	15 VA	192T 8196	30 VA	192T 9696	30 VA	192T 9596
2500 A	5 A			30 VA	192T 9697	30 VA	192T 9597
3000 A	5 A			30 VA	192T 9698	30 VA	192T 9598

(1) Secondary 1 A: on request.

Accessories

Description of accessories	TCB 44-50 Reference	TCB 44-63 Reference	TCB 55-80 Reference	TCB 85-100 Reference	TCB 100-125 Reference
Sealable cover	192T 0102	192T 0102	192T 0102	192T 0106	192T 0106

CT Plug-in transducer (CEA-VA)

Power supply	Output	TCB 44-50 Reference	TCB 44-63 Reference	TCB 55-80 Reference
Self-supplied	0-20 mA / 0-10 VDC		192Y 0045	192Y 0045
230 VAC	0-20 mA / 0-10 VDC		192Y 0245	192Y 0245
24 VDC	0-20 mA / 0-10 VDC		192Y 0145	192Y 0145

CT Plug-in transducer (CEA-VA4)

Input	Output	TCB 44-50 Reference	TCB 44-63 Reference	TCB 55-80 Reference
230 VAC	4-20 mA / 0-10 VDC		192Y 0285	192Y 0285
24 VDC	4-20 mA / 0-10 VDC		192Y 0185	192Y 0185

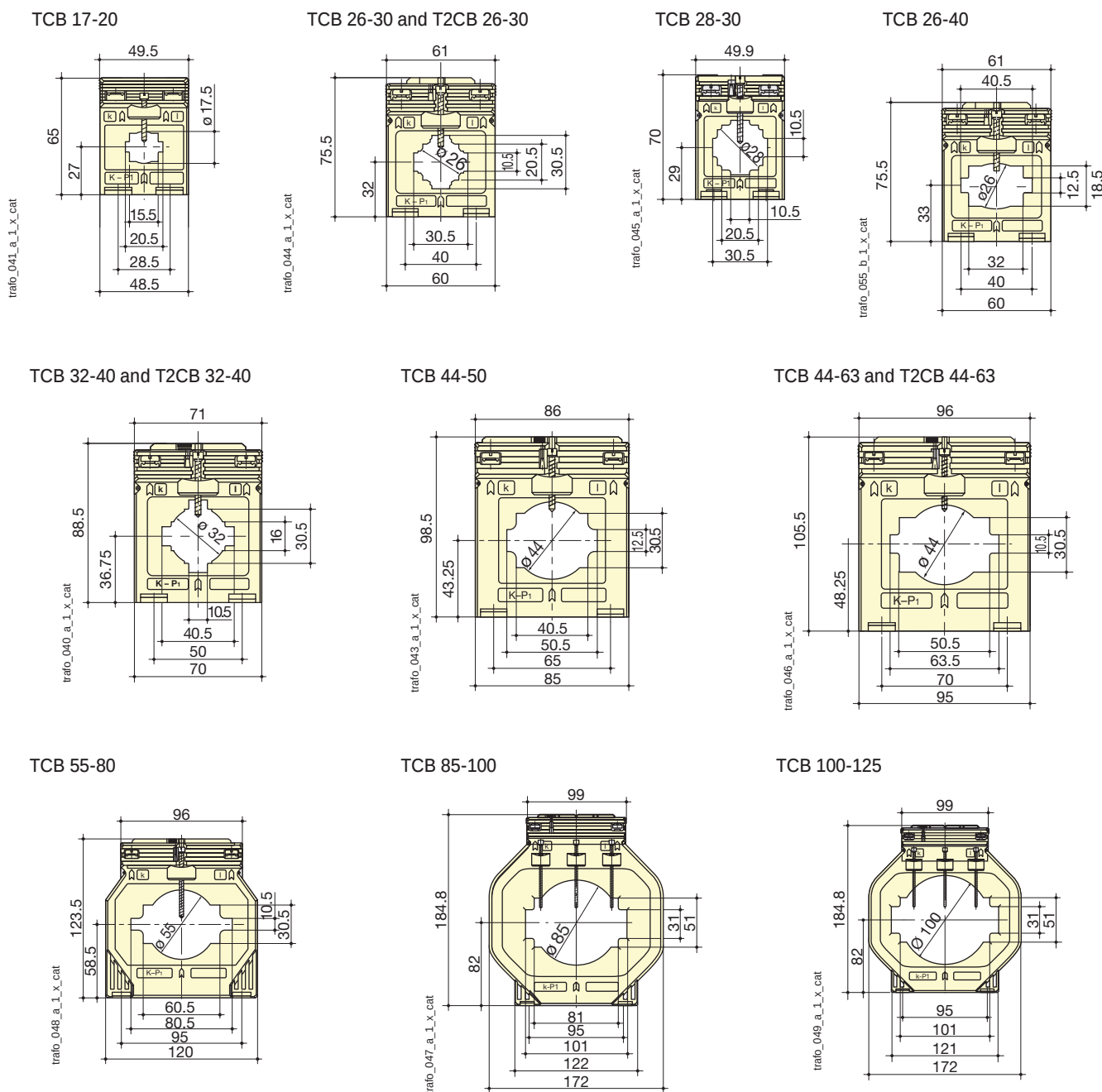
Current transformers

Measurement devices

from 5 to 5000 A

Bar or cable-through CT (continued)

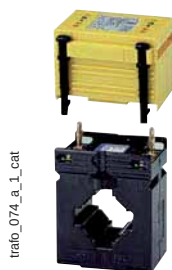
Dimensions



Bar or cable-through CT	TCB 17-20	TCB 26-30	T2CB 26-30	TCB 26-40	TCB 28-30	TCB 32-40	T2CB 32-40
Bar (mm)	20 x 5 (x 1)	30 x 10 (x 1) / 20 x 10 (x 1...2)	30 x 10 (x 1) / 20 x 10 (x 1...2)	40 x 12 (x 1) / 32 x 18 (x 1)	30 x 10 (x 1)	40 x 10 (x 1) / 30 x 5 (x 1...2)	40 x 10 (x 1) / 30 x 5 (x 1...2)
Ø cable (mm)	17.5	26	26	26	28	32	32
H x W x D (mm)	65 x 49.5 x 50	75.5 x 61 x 48	75.5 x 61 x 48	75.5 x 61 x 48	70 x 49.9 x 68	88.5 x 71 x 58	88.5 x 71 x 58
DIN-rail mounting	yes	yes	yes	yes		yes	yes

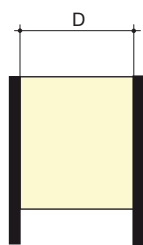
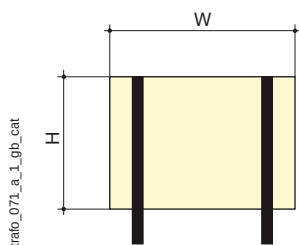
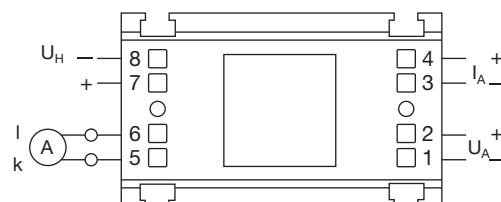
Bar or cable-through CT	TCB 44-50	TCB 44-63	T2CB 44-63	TCB 55-80	TCB 85-100	TCB 100-125
Bar (mm)	50 x 12 (x 1) / 40 x 10 (x 1...2)	63 x 10 (x 1) / 50 x 10 (x 1...2)	63 x 10 (x 1) / 50 x 10 (x 1...2)	80 x 10 (x 1) / 60 x 30 (x 1) / 60 x 10 (x 1...2)	100 x 10 (x 1...2) / 80 x 10 (x 1...3)	123 x 30 (x 1) / 100 x 10 (x 1...3)
Ø cable (mm)	44	44	44	55	85	100
H x W x D (mm)	98.5 x 86 x 58	105.5 x 96 x 58	105.5 x 96 x 58	123.5 x 120 x 58	184.5 x 172 x 52	184.5 x 172 x 52

Associated transducers



Transducer to be associated with adapted current transformers:

- Class 0.5.
- Input: 1 or 5 A
- Output:
 - 0-20 mA, 0-10 V (model CEA-VA),
 - 4-20 mA, 0-10 V (model CEA-VA4),
- Self-supplied or auxiliary power supply 24 VDC or 230 VAC.
- 3 sizes according to the CT: type 1, 2 or 3.



Dimensions (mm)

Converter	For CT	Height (mm)	Width (mm)	Depth (mm)
Type 1	TCB 26-30	50.5	60	32.5
Type 1	TCB 26-40	50.5	60	32.5
Type 2	TCB 32-40	50	70	43
Type 3	TCB 44-63	50.5	95	43
Type 3	TCB 55-80	50.5	95	43

Current transformers

Measurement devices

from 5 to 5000 A

Bar-through CT

References

Primary	Secondary	TBA 60			TBA 80		TBA 100		T2BA 100	
		Class 0.5	Class 1	Reference	Class 0.5	Reference	Class 0.5	Reference	Class 0.2s	Reference
200 A	5 A		2.5 VA	192T 7020						
250 A	5 A	2.5 VA		192T 7025						
300 A	5 A	2.5 VA		192T 7030	2.5 VA	192T 7530				
400 A	5 A	5 VA		192T 7040	5 VA	192T 7540				
500 A	5 A	5 VA		192T 7050	5 VA	192T 7550				
600 A	5 A	10 VA		192T 7060	5 VA	192T 7560	5 VA	192T 8060		
750 A	5 A	10 VA		192T 7075	5 VA	192T 7575	5 VA	192T 8075		
800 A	5 A	10 VA		192T 7080	10 VA	192T 7580	5 VA	192T 8080		
1000 A	5 A	15 VA		192T 7090	15 VA	192T 7590	5 VA	192T 8090		
1200 A	5 A	15 VA		192T 7092	15 VA	192T 7592	10 VA	192T 8092	5 VA	192U 8092
1250 A	5 A	15 VA		192T 7093	15 VA	192T 7593	10 VA	192T 8093	5 VA	192U 8093
1500 A	5 A	15 VA		192T 7095	15 VA	192T 7595	15 VA	192T 8095	5 VA	192U 8095
1600 A	5 A	15 VA		192T 7094	15 VA	192T 7594	15 VA	192T 8094		
2000 A	5 A				15 VA	192T 7596	15 VA	192T 8096	5 VA	192U 8096
2500 A	5 A						30 VA	192T 8097	10 VA	192U 8097
3000 A	5 A						30 VA	192T 8098 ⁽¹⁾	10 VA	192U 8098
4000 A	5 A						30 VA	192T 8099 ⁽¹⁾		

(1) Dimensions are different for TBA 100 with 3000 and 4000 A primary.

Primary	Secondary	TBA 103		T2BA 103		TBA 127		T2BA 127	
		Class 0.5	Reference	Class 0.2s	Reference	Class 0.5	Reference	Class 0.2s	Reference
400 A	5 A	2.5 VA	192T 9340			2.5 VA	192T 9740		
500 A	5 A	2.5 VA	192T 9350			2.5 VA	192T 9750		
600 A	5 A	2.5 VA	192T 9360			2.5 VA	192T 9760		
750 A	5 A	2.5 VA	192T 9375			2.5 VA	192T 9775		
800 A	5 A	5 VA	192T 9380			5 VA	192T 9780		
1000 A	5 A	10 VA	192T 9390	5 VA	192U 9390	10 VA	192T 9790		
1200 A	5 A	10 VA	192T 9392	5 VA	192U 9392	10 VA	192T 9792	5 VA	192U 9792
1250 A	5 A	10 VA	192T 9393	5 VA	192U 9393	10 VA	192T 9793	5 VA	192U 9793
1500 A	5 A	15 VA	192T 9395	5 VA	192U 9395	15 VA	192T 9795	5 VA	192U 9795
1600 A	5 A	10 VA	192T 9394			15 VA	192T 9794		
2000 A	5 A	15 VA	192T 9396			15 VA	192T 9796	5 VA	192U 9796
2500 A	5 A					15 VA	192T 9797		
3000 A	5 A					25 VA	182T 9798 (1)		
4000 A	5 A					30 VA	182T 9799 (1)		

(1) Replacement model TRA 127 for this rating.

Accessories

Description of accessories	TBA 60 Reference	TBA 80 Reference	TBA 100 Reference	T2BA 100 Reference	TBA 103 Reference	T2BA 103 Reference	TBA 127 Reference	T2BA 127 Reference
Sealable cover	192T 0102		192T 0102	192T 0102			192T 0102	192T 0102

CT Plug-in transducer (CEA-VA)

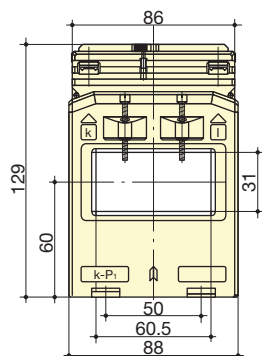
Power supply	Output	TBA 100 Reference
Self-supplied	0-20 mA / 0-10 VDC	192Y 0045
230 VAC	0-20 mA / 0-10 VDC	192Y 0245
24 VDC	0-20 mA / 0-10 VDC	192Y 0145

CT Plug-in transducer (CEA-VA4)

Power supply	Output	TBA 100 Reference
230 VAC	4-20 mA / 0-10 VDC	192Y 0285
24 VDC	4-20 mA / 0-10 VDC	192Y 0185

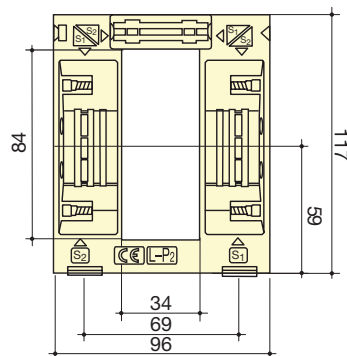
Dimensions

TBA 60



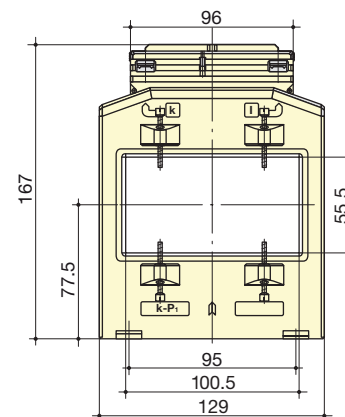
trafo_050_a_1_x_cat

TBA 80
300 to 2000 A



trafo_059_a_1_x_cat

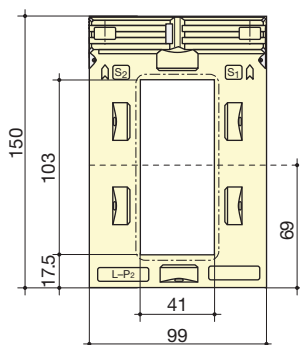
TBA 100 600 to 2500 A⁽¹⁾
T2BA 100 1200 to 3000 A



trafo_082_a_1_x_cat

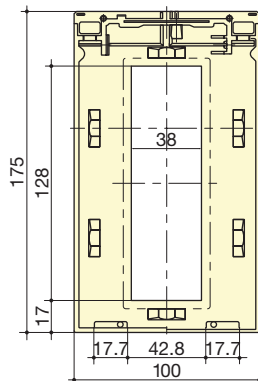
(1) TBA 100, 3000 and 4000 A: 214 x 129 x 78 mm.

TBA 103 and T2BA 103



trafo_054_a_1_x_cat

TBA 127 and T2BA 127



trafo_052_a_1_x_cat

Bar-through CT	TBA 60	TBA 80	TBA 100	T2BA 100	TBA 103	T2BA 103	TBA 127	T2BA 127
Bar (mm)	60 x 30	84 x 34	100 x 55	100 x 55	103 x 41	103 x 41	128 x 38	128 x 38
H x W x D (mm)	129 x 88 x 78	117 x 96 x 68	167 x 129 x 78 ⁽¹⁾	167 x 129 x 78	150 x 99 x 58	150 x 99 x 58	175 x 100 x 55	175 x 100 x 55

(1) TBA 100, 3000 and 4000 A: 214 x 129 x 78 mm.

Current transformers

Measurement devices

from 5 to 5000 A

Three-phase bar or cable-through CT

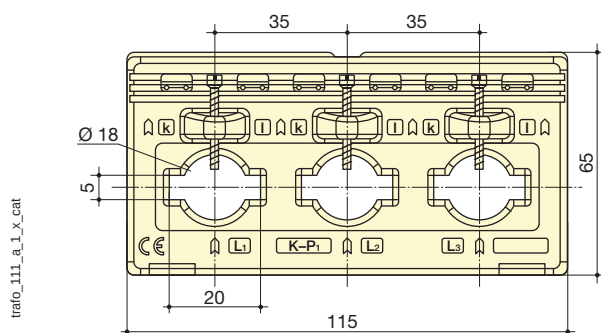
References

Primary	Secondary ⁽¹⁾	TCB3 18-20		TCB3 22-30	
		Class 1	Reference	Class 1	Reference
3 x 100 A	3 x 5 A	1 VA	192T 3310		
3 x 150 A	3 x 5 A	1.25 VA	192T 3315		
3 x 200 A	3 x 5 A	1.5 VA	192T 3320		
3 x 250 A	3 x 5 A	2.5 VA	192T 3325	2.5 VA	192T 3425
3 x 300 A	3 x 5 A			3.75 VA	192T 3430
3 x 400 A	3 x 5 A			5 VA	192T 3440
3 x 500 A	3 x 5 A			5 VA	192T 3450
3 x 600 A	3 x 5 A			5 VA	192T 3460

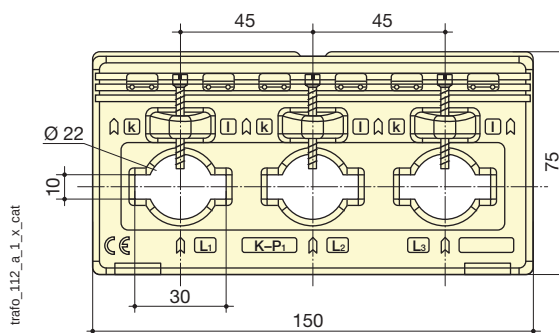
(1) Secondary 1 A: on request.

Dimensions

TCB3 18-20



TCB3 22-30



Three-phase bar or cable-through CT	TCB3 18-20	TCB3 22-30
Ø cable (mm)	18	22
Bar-through	20 x 5	30 x 10
H x W x D (mm)	115 x 65 x 37	150 x 75 x 37
DIN-rail mounting	no	no

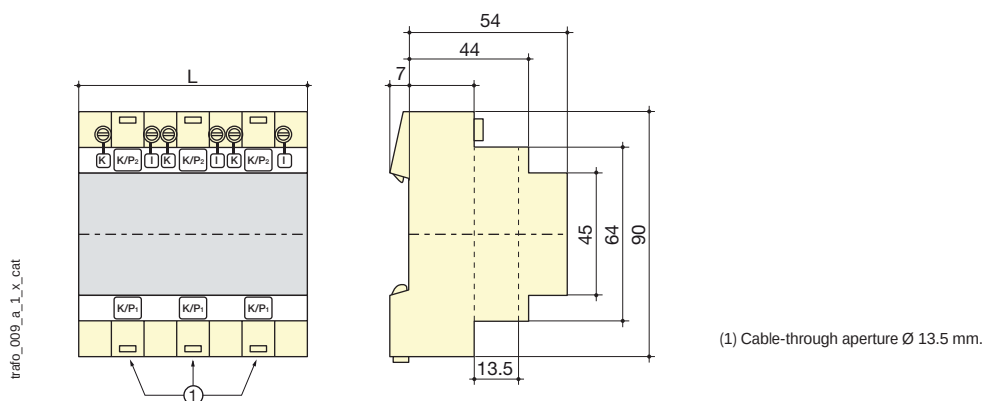
References

Primary	Secondary ⁽¹⁾	TCA 13 — 3P	
		Class 1	Reference
3 x 50 A	5 A	1 VA	192T 1905
3 x 60 A	5 A	1.25 VA	192T 1906
3 x 75 A	5 A	1.5 VA	192T 1907
3 x 80 A	5 A	1.5 VA	192T 1908
3 x 100 A	5 A	2.5 VA	192T 1910
3 x 125 A	5 A	2.5 VA	192T 1912
3 x 150 A	5 A	2.5 VA	192T 1915
3 x 160 A	5 A	2.5 VA	192T 1916

(1) Secondary 1 A: on request.

Dimensions

TCA 13 — 3P



Number of modules	Front degree of protection	Terminal degree of protection	L (mm)	Mounting
6	IP65	IP20	105	35 mm DIN-rail

Current transformers

Measurement devices

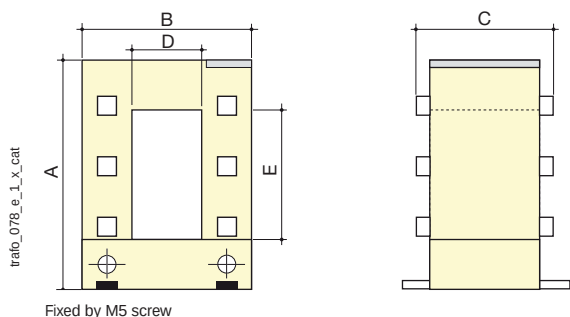
from 5 to 5000 A

Split-core CT

References

Primary	Secondary	TO 23			TO 58			TO 812			TO 816	
		Class 1	Class 3	Reference	Class 0.5	Class 1	Reference	Class 0.5	Class 1	Reference	Class 0.5	Reference
100 A	5 A		1.25 VA	192T 4601								
150 A	5 A		1.5 VA	192T 4602								
200 A	5 A		2.5 VA	192T 4603								
250 A	5 A	1.5 VA		192T 4604		1.5 VA	192T 4625		1.5 VA	192T 4725		
300 A	5 A	3.75 VA		192T 4605		2.5 VA	192T 4630		2.5 VA	192T 4730		
400 A	5 A	5 VA		192T 4606	1 VA		192T 4640		2.5 VA	192T 4740		
500 A	5 A				2.5 VA		192T 4650	2.5 VA		192T 4750		
600 A	5 A				2.5 VA		192T 4660	2.5 VA		192T 4760		
750 A	5 A				2.5 VA		192T 4675	2.5 VA		192T 4775		
800 A	5 A				2.5 VA		192T 4680	2.5 VA		192T 4780		
1000 A	5 A				5 VA		192T 4610	5 VA		192T 4710	10 VA	192T 4810
1250 A	5 A							7.5 VA		192T 4712	10 VA	192T 4812
1500 A	5 A							7.5 VA		192T 4715	10 VA	192T 4815
1600 A	5 A										10 VA	192T 4814
2000 A	5 A										10 VA	192T 4820
2500 A	5 A										10 VA	192T 4825
3000 A	5 A										15 VA	192T 4830
4000 A	5 A										15 VA	192T 4840
5000 A	5 A										15 VA	192T 4850

Dimensions



Dimensions (mm)

Type	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)
TO 23	106	93	58	23	33
TO 58	158	125	58	55	85
TO 812	198	155	58	85	125
TO 816	243	195	79	85	165

Split-core CT	TO 23	TO 58	TO 812	TO 816
H x W x D (mm)	106 x 93 x 58	158 x 125 x 58	198 x 155 x 58	243 x 195 x 75

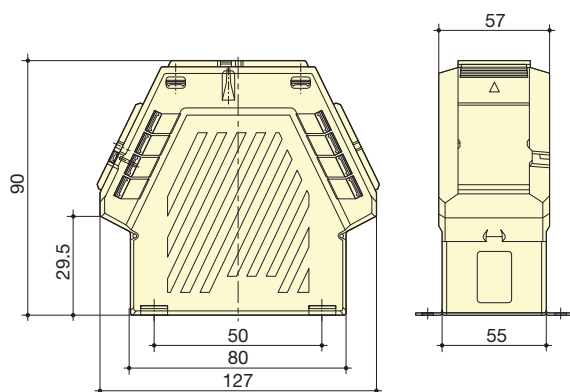
Summation CT

Reference

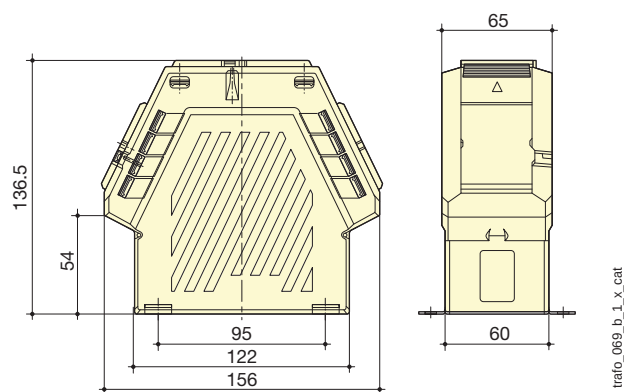
Primary	Secondary	BSA 02 Reference	BSA 03 Reference	BSA 04 Reference
5 + 5/5 A	5 A	192T 0802		
5A + 5+ 5/5	5 A		192T 0803	
5 + 5 + 5 + 5/5 A	5 A			192T 0904

Dimensions

BSA 02 and BSA 03



BSA 04



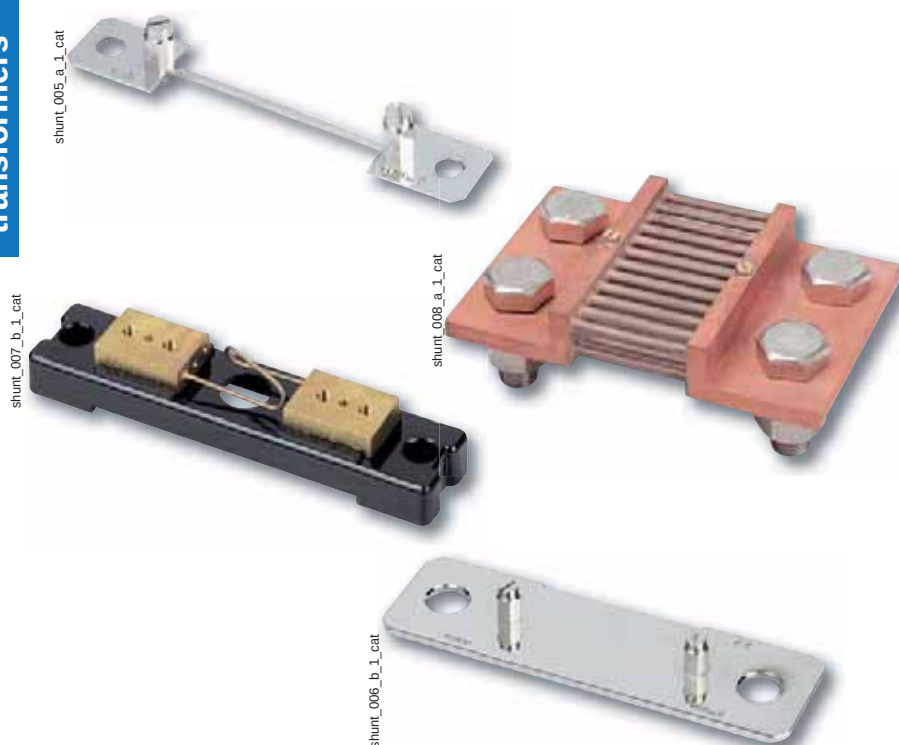
Summation CT	BSA 02	BSA 03	BSA 04
H x W x D (mm)	90 x 127 x 57	90 x 127 x 57	136.5 x 156 x 65
DIN-rail mounting	no	no	no



Measurement shunts

Measurement devices

Current transformers



Composition of the range

- > 20 ratings available from 1 to 6000 A, with 100 mV output
- > Other ratings and secondary voltages are available. Please contact us

Function

SOCOMEc shunts provide indirect measurement of direct current by creating a standardised voltage drop.

Characteristics

- Voltage drop: 100 mV for nominal rating.
- Accuracy class: 0,5.
- Permanent overload: 1.2 In.
- 10 In / 5s rating $\leq$ 500 A
5 In / 5s rating 600 to 1500 A
2 In / 5s rating $\geq$ 2500 A.

References

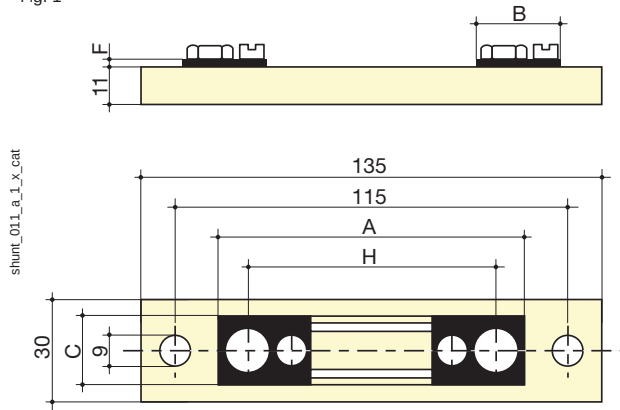
Rating (A) ⁽¹⁾	Secondary voltage drop	DIN series Reference
1 A	100 mV	192S 2101
4 A	100 mV	192S 2104
6 A	100 mV	192S 2106
10 A	100 mV	192S 2110
15 A	100 mV	192S 2112
25 A	100 mV	192S 2114
40 A	100 mV	192S 2116
60 A	100 mV	192S 2118
100 A	100 mV	192S 2120
150 A	100 mV	192S 2125
200 A	100 mV	192S 2220
250 A	100 mV	192S 2235
300 A	100 mV	192S 2230
400 A	100 mV	192S 2240
600 A	100 mV	192S 2250
1000 A	100 mV	192S 2255
1500 A	100 mV	192S 2260
2500 A	100 mV	192S 2165
4000 A	100 mV	192S 2170
6000 A	100 mV	192S 2175

(1) Other rating: please consult us.

Dimensions

DIN Series 1 to 25 A

Fig. 1

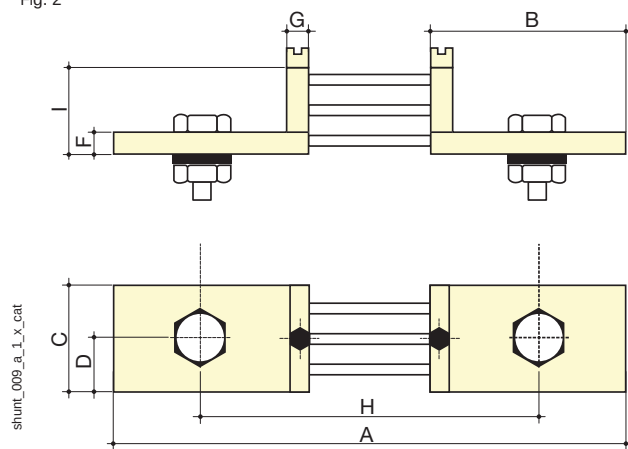


Rating (A) ⁽¹⁾	Figure	A	B	C	D	E	F	G	H	I
1	1	90	28	20			8		78	
4	1	90	28	20			8		78	
6	1	90	28	20			8		78	
10	1	90	28	20			8		78	
15	1	90	28	20			8		78	
25	1	90	28	20			8		78	
40	2	123	33	20			8		103	
60	2	123	33	20			8		103	
100	2	123	33	20			8		103	
150	2	123	33	20			8		103	
200	2	168	55	30	15		10	10	128	30
250	2	168	55	30	15		10	10	128	30
300	2	168	55	40	20		10	10	128	30
400	2	168	55	40	20		10	10	128	30
600	2	168	55	40	20		10	10	128	30
1000	2	188	65	60	30		10	10	138	30
1500	3	188	65	90	21	48	10	10	138	30
2500	3	188	65	120	30	60	10	10	138	30
4000	3	188	65	120	30	60	15	10	138	60
6000	3	188	65	180	30	60	15	10	138	60

(1) Connection: 2 M5 screws x 8 and 2 washers Ø 5.3 mm.

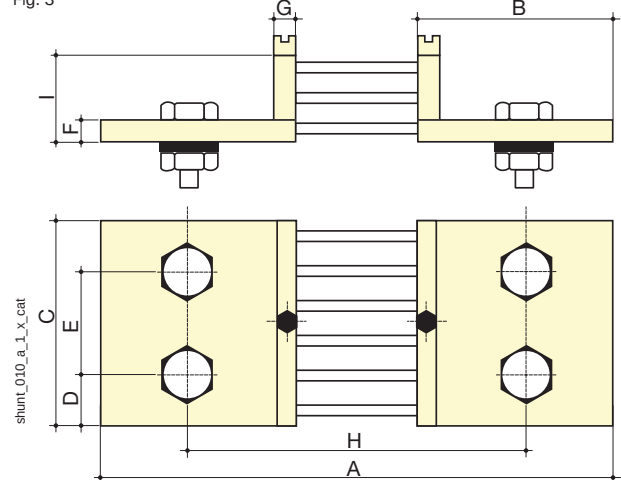
DIN Series 40 to 1000 A

Fig. 2



DIN Series 1500 to 6000 A

Fig. 3





Other products

Measurement devices

PTI: CT automatic short-circuiter



Use

This device provides automatic short-circuiting of the CT: if the measuring circuit is opened.

Conformity to standards

- > NF C 15-100 articles 473.1.4-556.3
- > GAM EG 13.C (military standard)

Other regulations

- > Decree n° 88-1056 from 14-11-88: protection of workers
- > Complies with the Mines and Quarries decree n° 91-986

References

Rating (A)	Trigger voltages	Operating frequency	Max. differential voltage	Reference
5 A	21 VAC	45 ... 400 Hz	600 VAC	4990 0521
5 A	25 VAC	45 ... 400 Hz	600 VAC	4990 0525 ⁽¹⁾

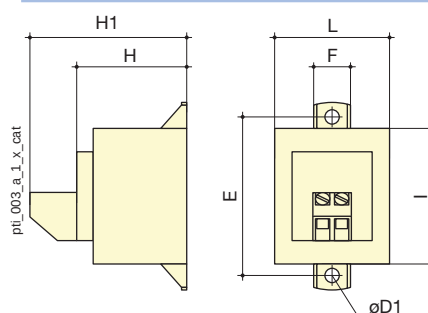
(1) DCN approved (French State Naval Construction Company).

Characteristics

Case degree of protection	IP55
Terminal protection degree	IP20
Connection cross-section	2.5 mm ²
Weight	82 g

Rating (A)	D1	E	F	H	H1	I	L
5	4.2	47	9.6	32	44	41	34.7

Dimensions



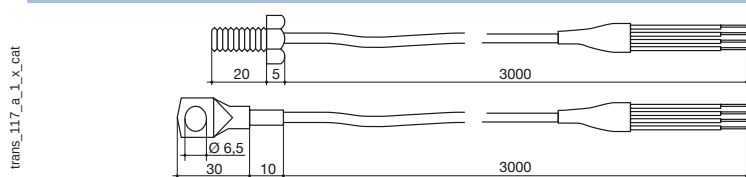
Sensor PT100 - screw type

- Element sensitivity as per standard IEC 751 class A.
- 4 wire mounting.
- 3 meter length output of Teflon isolated cable.
- Tolerance class A:
 - Accuracy at -50 °C: ± 0.14 °C,
 - Accuracy at 0 °C: ± 0.13 °C,
 - Accuracy at +50 °C: ± 0.25 °C,
 - Accuracy at +100 °C: ± 0.26 °C,
 - Accuracy at +150 °C: ± 0.33 °C.

References

Products	Reference
Temperature sensor PT100 - M6 screw type	4825 0208
Temperature sensor PT100 - eyelet type	4825 0209

Dimensions



Transformer with integrated converter (CTA-VA)

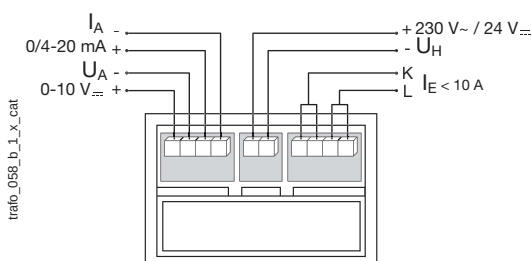


Compact measurement converter with cable-through transformer (Ø 27 mm) or bar transformer (40 x 10 mm).

- Input:
 - Direct Connection 0 to 10 A,
 - CT primary of 40 to 800 A (self-supplied)
 - CT primary of 15 to 800 A (auxiliary supply)

- Output:
 - 0-20 mA, 0-10 V (type CTA-VA)
 - 4-20 mA and 0-10 V (type CTA-VA4).

- Self-supplied or auxiliary power supply 24 VDC or 230 VAC.
- Dimension: 135 x 80 x 50 mm.



References

Primary	0-20 mA / 0-10 VDC Self supplied	0-20 mA / 0-10 VDC 230 VAC	0-20 mA / 0-10 VDC 24 VDC	4-20 mA / 0-10 VDC 230 VAC	4-20 mA / 0-10 VDC 24 VDC
1 A	192Y 0401	192Y 0501	192Y 0801	192Y 0601	on request
5 A	192Y 0402	192Y 0502	192Y 0802	192Y 0602	192Y 0902
10 A		192Y 0503	192Y 0803	192Y 0603	on request
15 A		192Y 0504	192Y 0804	192Y 0604	192Y 0904
20 A		192Y 0505	on request	192Y 0605	192Y 0905
25 A		on request	on request	192Y 0606	192Y 0906
30 A		192Y 0507	192Y 0807	192Y 0607	192Y 0907
40 A	192Y 0408	192Y 0508	on request	192Y 0608	192Y 0908
50 A	192Y 0409	192Y 0509	192Y 0809	192Y 0609	192Y 0909
60 A	192Y 0410	192Y 0510	on request	192Y 0610	192Y 0910
75 A	192Y 0411	192Y 0511	192Y 0811	192Y 0611	192Y 0911
100 A	192Y 0412	192Y 0512	192Y 0812	192Y 0612	192Y 0912
150 A	192Y 0415	on request	192Y 0815	192Y 0615	on request
200 A	192Y 0420	192Y 0520	on request	192Y 0620	on request
250 A	192Y 0425	192Y 0525	192Y 0825	192Y 0625	192Y 0925
300 A	192Y 0430	192Y 0530	192Y 0830	192Y 0630	192Y 0930
400 A	192Y 0440	192Y 0540	192Y 0840	192Y 0640	192Y 0940
500 A	192Y 0450	192Y 0550	192Y 0850	192Y 0650	on request
600 A	192Y 0460	192Y 0560	on request	on request	192Y 0960
750 A	192Y 0475	on request	192Y 0875	192Y 0675	192Y 0975
800 A	192Y 0480	192Y 0580	192Y 0880	192Y 0680	192Y 0980

Voltage transformer BTV 25



Applications

Measurement and conversion of the input value read at the primary of a transformer in a directly proportional voltage signal.
BTV 25 products are voltage transformers.

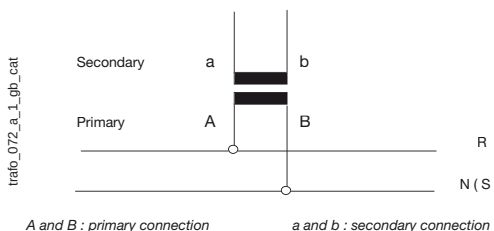
Recommendation

Voltage transformers are used specifically for supplying measurement equipment, therefore it is not recommended to connect other components which could affect accuracy. This is due to the effect of the phase shift error. If the consumption is greater than 25 VA, another transformer must be added.

Characteristics

Accuracy class	1 %
Dielectric quality	3 kV for 1 min.
Operating frequency	50 - 60 Hz
Permanent overload	1.2 U_n

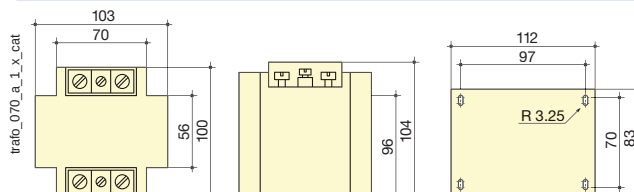
Connection



References

Primary	Secondary	Power	Reference
230 VAC	100 VAC	25 VA	192M 2020
400 VAC	100 VAC	25 VA	192M 2030
440 VAC	100 VAC	25 VA	192M 2044
500 VAC	100 VAC	25 VA	192M 2050
600 VAC	100 VAC	25 VA	192M 2060
660 VAC	100 VAC	25 VA	192M 2066
800 VAC	100 VAC	25 VA	Please consult us

Dimensions





Other electrical measurement devices

Measurement devices

Transducers



They provide conversion of an AC electrical value (A, V, Hz, Cos phi, W, Var) into a DC signal, with standardised current or voltage.

They are available in surface-mount casings (CS range).

These devices are designed for DIN rail or back plate mounting.

Type CS transducers are available in two sizes:

- 75 mm for current, voltage and frequency converters,
- 150 mm for power or three-phase converters.

Consult us.

Modular transducers



Available in:

- 3-DIN module housings (52.5 mm) for current, voltage and frequency converters,
- 6-DIN module housings (105 mm) for current (output 4-20 mA), voltage (output 4-20 mA) converters,
- 9-DIN module housings (157.5 mm) for power or three-phase converters.

Consult us.

Analogue meters



SOCOMEc ferromagnetic ammeters and voltmeters measure the AC current/voltage of any electrical circuit. SOCOMEc vibrating reed or needle type frequency meters have a converter either integrated or in a separate casing and measure the frequency of any electrical circuit.

The wattmeters, varmeters and phase-meters consist of an analogue meter and a separate converter. They are available in 3 types of casing: Rotex round barrel model in 72 or 96, in a DIN 48 to 144 body or a modular casing (3 modules).

With pointer deflections of 90° and 240°, they can be flush-mounted into cubicles, enclosures or other equipment.

Consult us.

Selector switches



Voltmeter and ammeter switches that allow phase selection on a three-phase circuit for voltage and current measurement.

They are available in three different casings:

- for screw mounting,
- with a central $\varnothing$ 22 mm mounting,
- for DIN rail mounting.

Consult us.

Digital meters



They measure all types of electrical values (A, V, Hz, Cos phi, P, Q...).

The range:

- 2 different types of casing: rectangular or square:
 - 2 sizes of rectangular casing,
 - 2 sizes of square casing.
- direct measurement or connection to a current or voltage transformer,
- 2000-point (3.5 digits) or 20000-point (4.5 digits) display,
- possibility of having 2 or 3 different types of measurement in the same square casing (AAA-VVV-AVF...),
- multi-indicator version,
- RMS-value.

Consult us.

Hour counters



Often combined with analogue meters in an electrical panel, hour counters count the total operating time of machines or electrical equipment.

Consult us.



DIRIS G

Wireless and cabled RS485 to Ethernet communication gateways

Communication
interfaces



Configuration
with EasyConfig,
see page 618.



DIRIS G-30
RS485 / Ethernet



DIRIS G-40
RS485 - wireless / Ethernet

The solution for

- > Industry
- > Building
- > Infrastructure
- > Local authority



Strong points

- > WEBVIEW embedded web server
- > Scalable
- > Plug & Play

Compliance with standards

- > IEC 61010



- > ISO 14025



- > UL



Function

With communication gateways DIRIS G all the information from meters and power monitors, communicating by radio frequency or RS485, is centralized and made available on the Ethernet Modbus (TCP).

DIRIS G gateways can retrieve data from meters or Socomec remote measuring points via Ethernet.

The gateway has an embedded WEBVIEW web server, allowing real time monitoring of electrical values and analysis of consumption data. The user can be alerted of any alarms via email.

Advantages

WEBVIEW⁽¹⁾ embedded web server

DIRIS G gateways include an embedded web server. Two versions are available:

- Power Monitoring:
 - Realtime measurements and alerts.
- Power & Energy Monitoring:
 - Realtime measurements and alerts.
 - Trends for selected parameters and energy consumption history and analysis.

Scalable

Several optional modules are available:

- Digital inputs/outputs.
- Analogue inputs/outputs.
- Temperature inputs.

(1) see page 615.

Plug & Play

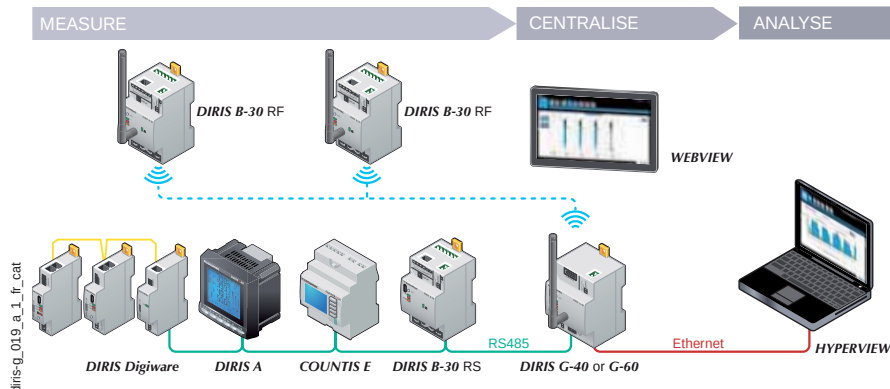
- Connected metering and measurement devices are automatically addressed and detected by the DIRIS G gateway. These integrate the following:
 - Automatic time synchronisation (SNTP) with battery recording
 - Synchronisation of connected devices
 - Warning messages in the event of an alert (e-mail SMTP)
 - Automatic recording and storage of measurements and consumption data
 - Automatic tariff changes (multi-tariff).
- Data exported automatically via FTP server.

Selection guide

	Gateway	DIRIS G-30	DIRIS G-40	DIRIS G-50	DIRIS G-60
Communication	RS485 Modbus	•	•	•	•
	Radio frequency Communication (wireless)		•		•
	Ethernet	•	•	•	•
WEBVIEW embedded web server.	Power Monitoring	•	•	•	•
	Power & Energy Monitoring			•	•

Architecture

Example of communication architecture with DIRIS G gateway and WEBVIEW embedded WEB server



Embedded web server

WEBVIEW⁽¹⁾ embedded web server

- Version Power Monitoring: embedded in DIRIS G-30 and G-40
- Version Power & Energy Monitoring: embedded in DIRIS G-50 and G-60
- 32 devices max (RS485 and wireless indifferently)



(1) For further details see page 615.

DIRIS O optional modules

a maximum of 4 optional modules can be connected to a DIRIS G gateway in order to integrate controls/ commands.

DIRIS O-iod	2 digital inputs / 2 digital outputs
DIRIS O-ioa	2 analogue inputs / 2 analogue outputs
DIRIS O-it	3 temperature inputs
DIRIS O-m	Additional slave RS485 communication

For more information see "DIRIS O optional modules" page 517.



Optional module **DIRIS B-30**

Accessories

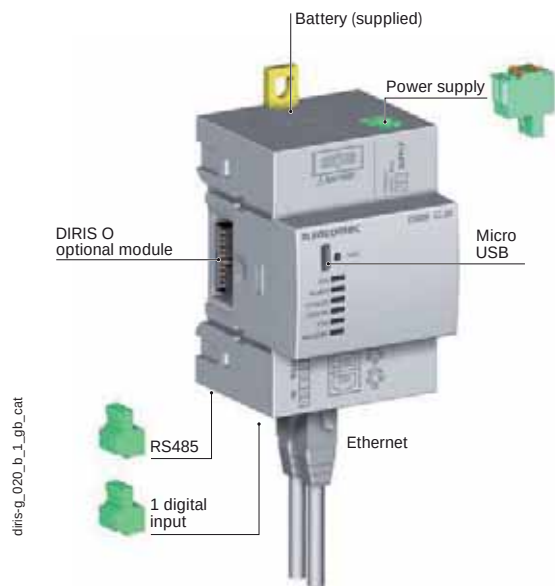
Remote radio antenna

- Allows the antenna to be mounted outside the enclosure to increase the transmission distance up to 300 m if there are no obstacles.

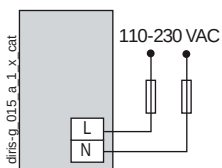
USB configuration cable

- Configuration of DIRIS G gateways can be achieved using EASY CONFIG software via Ethernet or direct USB connection.

DIRIS G terminals

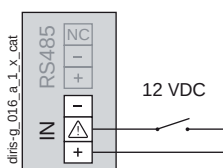


Power supply

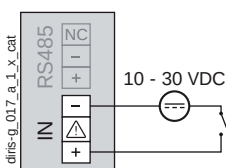


NC: not connected

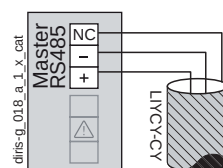
Input powered by the product



Input with external power supply



RS485

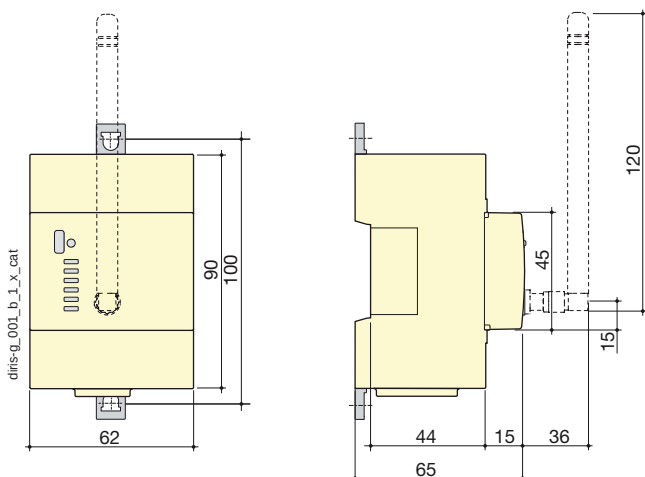


Terminals of DIRIS O optional modules

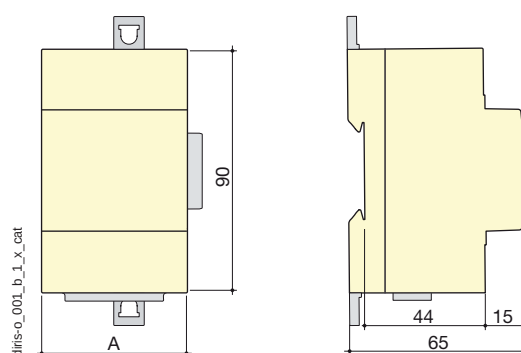
Optional modules are common to the DIRIS B-30 monitoring device.
For a description of the terminals see page 518.

Dimensions (mm)

DIRIS G-30 / G-40 / G-50 / G-60



DIRIS O optional modules



DIRIS O optional modules

DIRIS O-iod - DIRIS O-ioa - DIRIS O-it - DIRIS O-m

A

45 mm

Specifications

Mechanical specifications		Ethernet	
Casing type	DIN-rail mounting module and base	Link	Ethernet 10/100 base-T, 2 RJ45 bases with integrated switch
Case degree of protection	IP20 / IK06	Protocol	Modbus TCP (port 502), Modbus RTU over TCP (port 503), HTTP, SMTP, SNTP, DHCP, FTP (G-50/G-60)
Front degree of protection	IP40 on the nose in modular assembly / IK08	Clock	Internal
Weight	DIRIS G-30, G-50 = 190 g DIRIS G-40, G-60 = 215 g	SNTP protocol	Gateway time updating from an NTP server. Connected PMDs time updating.
Electrical characteristics		SMTP protocol	Sending of alarm emails from the gateway
Power supply		Function	Configuration of the gateway, connected PMDs and meters Access to the WEBVIEW web server, data centralisation
Alternative voltage	110-230 VAC $\pm 15\%$ (Ph/N or Ph/Ph) Cat III	USB	
Frequency	50/60 Hz	Connection type	USB 2 (required installation of Easy Config)
Power consumption	6 VA	Protocol	Modbus RTU on USB
Battery	CR 1220 3 V lithium button cell battery	Function	Configuration of the gateway, connected PMDs and meters
Input		Connection	Type B micro USB connector
Number	1	Memory characteristics	
Type / Power supply	Optocoupler internal polarisation (12 VDC $\pm 10\%$) or external (10-30 VDC $\pm 10\%$)	Consumption history (memory extension for meters and measurement units)	1 year (1 hour period)
Input function	Logic status, pulse meter or synchronisation pulse status	Electrical values	2 months (10 min period)
Communication specifications		Number of events	Alarms 1000 Network quality according to EN 50160: 1000
DIRIS G		Environmental specifications	
Link	RS485	Ambient operating temperature	-10 ... +70°C
Connection type	2 ... 3 half duplex wires	Storage temperature	-25 ... +85°C
Protocol	Modbus RTU	Operating humidity	55°C / 97% HR
Baudrate	2400 ... 115200 bauds		
Function	Communication with PMDs and meters		
DIRIS G-40 and DIRIS G-60			
Link	Radio-frequency (RF)		
Frequency range	868 MHz (low frequency: 868.1 MHz and high: 869.5875 MHz)		
Baudrate	38400 bauds		
Function	Communication with DIRIS B-30 RF		
Scope	300 m (open field)		

References

DIRIS G gateways		Reference
DIRIS G-30	RS485 / Ethernet - WEBVIEW Power Monitoring	4829 0300
DIRIS G-40	RS485-RF / Ethernet - WEBVIEW Power Monitoring	4829 0301
DIRIS G-50	RS485 / Ethernet - WEBVIEW Power & Energy Monitoring	4829 0302
DIRIS G-60	RS485-RF / Ethernet - WEBVIEW Power & Energy Monitoring	4829 0303
DIRIS O optional modules		Reference
DIRIS O-iod	2 digital inputs / 2 digital outputs	4829 0030
DIRIS O-ioa	2x 4-20 mA analogue inputs / 2x 4-20 mA analogue outputs	4829 0031
DIRIS O-it	3 temperature inputs, PT100/PT1000	4829 0032
DIRIS O-m	RS485 modbus slave communication	4829 0033
Accessories		To be ordered in multiples of
Wireless remote antenna, 868 MHz - 210 mm height		4854 0126
Cable for remote antenna - SMA connector - 3 meter length		4854 0127
USB configuration cable		4829 0050
Fuse circuit breakers to protect the auxiliary power supply (type RM) 1 pole + neutral		6 5601 0017
gG 10x38 0.5 A fuses		10 6012 0000



Datalogger

Communication
interfaces

new



The solution for

- > Industry
- > Building
- > Infrastructure
- > Local authority



Strong points

- > Easy to install
- > Reliable collection and transmission
- > Advanced functions

Expert Services

- > Study, definition, advice, commissioning, maintenance and training... Our experts "Expert Services" offer complete support for the success of your project.

Function

DATALOG H60 and H80 dataloggers associated with Socomec wireless interfaces enable you to create a smart energy data communication network in order to:

- Remotely and automatically read multi-fluid energy meters and multi-function meters, isolated or not.
- Pool, secure, store and provide the data to a computer application.
- Connect your meters and multi-function measurement units in a 2G/3G/GPRS network.

Advantages

Easy to install

- Quick installation on DIN rail or door mounting.
- Compact.
- Remote configuration.
- Configuration services (SOCOMECE services).

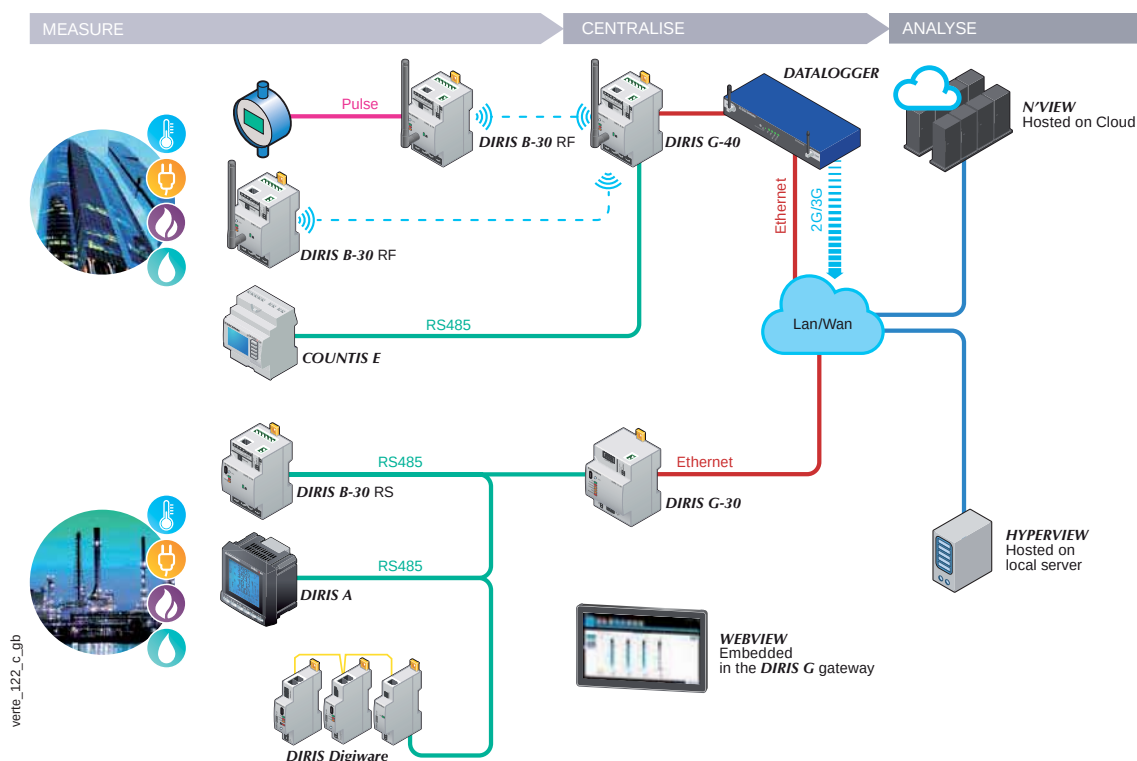
Reliable collection and transmission

- Configurable collection frequency for each energy and multi-function meter.
- Secure, regular transmission (daily, weekly, etc.).
- Multiple communication protocols (Modbus RTU/TCP, Wireless M-Bus, HTTP(s), FTP(s)).
- Collection interfaces: Ethernet - RS232/485 or Wireless.
- Transmission interface: Ethernet or 2G/3G/GPRS.

Advanced functions

- Extended data storage capacity (1 year for index data and 2 months for load curves).
- Auto-detects meters and measuring equipment.
- Sends regular activity reports.
- Event alerts (communication errors, data quality, remote server connection).

The SOCOMEC communicating energy-efficiency solution



Specifications

	DATALOG H60	DATALOG H80
Input/output interfaces		
Input	3 digital or pulse inputs	
Output	1 digital output (relay)	
Serial interfaces		
Input	1 port (Modbus)	
Output	1 port (Modbus or M-Bus)	
Wireless interface		
Wireless M-Bus	868.3 - 868.95 MHz	
Network interface		
Ethernet	1 10/100 Mb port	2 10/100/1000 Mb port
GSM/GPRS	850/900/1800/1900 MHz	850/900/1800/1900 MHz
3G	900/2100 MHz	900/2100 MHz
Protocols		
Data collection	Modbus RTU and TCP/Wireless Mbus	Ethernet/Modbus TCP:
Data transmission	FTP	FTP(s)/ HTTP(s)
Configuration		
Local	Yes	Yes
Distant	by text message	by FTP

References

Datalogger	Reference
DATALOG H60 (power supply included)	4854 0001
DATALOG H80 (without 3G connection)	4854 0010
DATALOG H81 (with 3G connection)	4854 0011
DATALOG H60 accessory description	Reference
5 m remote antenna extension	4854 0105
10 m remote antenna extension	4854 0110
20 m remote antenna extension	4854 0120



Wireless communication interfaces



Wireless M-Bus Modem



ARF868 Modem

Function

Wireless M-Bus Modem

Wireless M-Bus AMR (Automatic Meter Reading) plug-and-play modems automatically collect energy data from water and gas meters. They autonomously read data (index) from water and gas meters. 100% compatible with the Wireless M-Bus standard (EN13757-3 and EN13757-4), device open protocols ensure full interoperability with other Wireless M-Bus products on the market.

Advantages

Wireless M-Bus Modem

Battery life

- Runs on battery for up to 12 years.

Ease of installation

- Factory pre-programmed.
- Quick installation.
- Robust IP65.

Long range

- Up to 1 km. Range can be increased by installing repeaters.

2 pulse inputs

- A single transmitter can handle two meters.
- Compatible with all water and gas meters.

Transmitter

- Wireless transmission of metering data (consumption) every 10 minutes (10s or 12hrs optional).

Repeater

- Wireless M-Bus wireless relay of metering data (consumption).
- Multiple repeaters can be used to extend the range.

Receiver

- Wireless M-Bus metering data (consumption) wireless receiver.
- RS485, RS232 or USB serial port.
- Remote antenna.

ARF868 wireless modem

ARF868 wireless modems convert data from a serial link into a wireless frame to send to a similar device in the frequency range 863-870 MHz. The power and sensitivity allow the data to be transmitted over distances of up to 20 km.

ARF868 wireless modem

Sensitivity, transmission/reception quality

- Power 25 mW or 500 mW at 868 MHz.
- Licence-free frequencies on European bands (863 - 870 MHz) or frequencies subject to license (410 - 470 MHz).

Ease of installation

- Quick installation.
- User-friendly and configuration with intuitive software.
- The product can be configured as a transmitter, receiver or repeater.

Long range

- 1 to 20 km.

Several types of communication

- RS485, RS232 or USB serial port.

The solution for

- > Industry
- > Building
- > Infrastructure
- > Local authority



Strong points

Wireless M-Bus Modem

- > Battery life
- > Ease of installation
- > Long range
- > 2 pulse inputs
- > Transmitter
- > Repeater
- > Receiver

ARF868 wireless modem

- > Sensitivity, transmission/reception quality
- > Ease of installation
- > Long range
- > Several types of communication

Expert Services

- > Study, definition, advice, implementation, maintenance and training... Our experts "Expert Services" offer complete support for the success of your project.

Accessories

- 1-, 3- and 5-metre remote antenna.
- Antenna mount & adaptor.
- Power supply unit + connector (required).
- TNC converter pack.
- Sub D9 connector.
- IP53 and IP67 ingress protection rating.

Specifications

	Modem ARF868 (transmitter/repeater/ receiver model)	Wireless M-Bus transmitter modem: Water/Gas	Wireless M-Bus transmitter modem: Temperature	Wireless M-Bus repeater modem	Wireless M-Bus receiver modem
Scope	Up to 1/4/7/20 km according to model	Up to 1000 m	Up to 1000 m	Up to 1000 m	
Wireless frequencies	863-870 MHz	863-870 MHz	863-870 MHz	863-870 MHz	863-870 MHz
Interfaces					
Inputs	-	2 pulse inputs	2 temperature inputs: - 1 pre-equipped input - 1 free input	-	-
Communication	RS232 - RS485 - USB optional	-	-	-	RS232 - RS485 - USB
Alerts	-	Leak detection - Fraud detection - Battery spent	-	-	-
Storage capability	-	Index bufferisation (consumption history)	-	-	-
Compatibility	-	Sappel Izar, Itron Cyble, Itron Gallus 2000, Elster BK	-	-	-
General characteristics					
Dimensions W x H x D	135 x 75 x 35 mm	210 x 103.1 x 37.2 mm	210 x 103.1 x 37.2 mm	210 x 103.1 x 37.2 mm	210 x 103.1 x 37.2 mm
Operating temperature	-30 ... +70°C	-40 ... +85°C	-40 ... +85°C	-40 ... +85°C	-40 ... +85°C
Power supply	4.5 ... 36 V	3.6V Li-SOCl ₂ battery. Battery life up to 12 years guaranteed	3.6V Li-SOCl ₂ battery. Battery life up to 12 years guaranteed	3.6 V. Power supply block supplied, model with battery optional	4.5 ... 36 VDC
Protection degree	IP53, IP67 (optional)	IP65	IP53	IP65	IP65
Standards	EN300-220 V2010 / EN301-489 / EN 60950				

References

Wireless M-Bus modem

	Reference
Wireless M-Bus Modem - Water	4854 0054
Wireless M-Bus Modem - Gas	4854 0055
Wireless M-Bus Modem - Temperature	4854 0056
Wireless M-Bus receiver modem – RS232	4854 0057
Wireless M-Bus receiver modem – RS485	4854 0058
Wireless M-Bus receiver modem – USB	4854 0059
Wireless M-Bus repeater modem	4854 0060

ARF868 wireless modem

	Reference
Modbus wireless modem, distance 20 km	4854 0050
Modbus wireless modem, distance 7 km	4854 0051
Modbus wireless modem, distance 4 km	4854 0052
Modbus wireless modem, distance 1 km	4854 0053
List of accessories for ARF868 wireless modem	
Power supply (mandatory)	4854 0202
RS232/USB cable (mandatory to configure ARF868 wireless modems)	4854 0400
RS485 connector (mandatory for use with RS485)	4700 9993
0.5 dB remote antenna + 1 m extension	4854 0121
0.1 dB remote antenna + 3 m extension	4854 0122
1.5 dB remote antenna + 5 m extension	4854 0123
Wall bracket for remote antenna	4854 0124
IP53 protection	4854 0300
IP67 protection	4854 0301



Communication accessories

Connecting the RS485 link

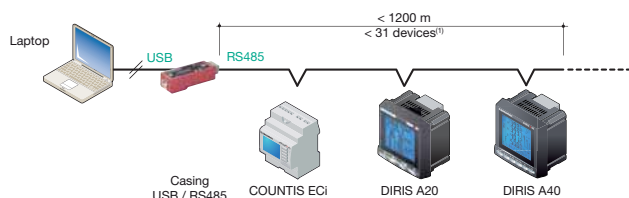
USB / RS485 interface

inter_002_a_2_cat



Function

If the PC is not equipped with a serial port, this interface can be connected via a USB port to obtain an RS485 communication port. Recommended for local use and not for permanent installation.



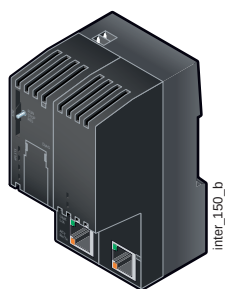
inter_142_g_1_gb_cat

(1) Beyond these characteristics, use an "RS422 / RS485 repeater".

References

Description of accessories	Reference
External USB / RS485 interface unit	4899 0110

Modbus/Profinet communication gateway



inter_150_b

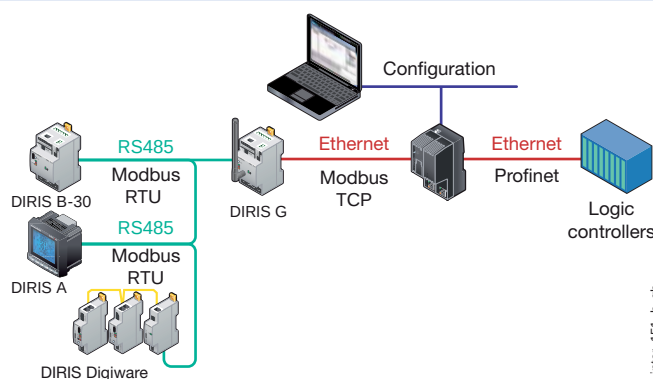
Function

The PROFINET communication gateway enables SOCOMEC communicating products in TCP modbus to be connected to a PROFINET network.

Advantages

Implementation, maintenance and diagnostic with a unique configuration software (Sycon.net), which is downloadable from SOCOMEC website.

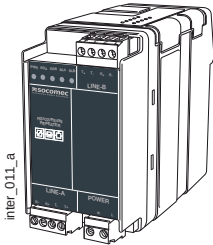
- Several communication ports.
- IP20 DIN-rail mounting.
- Slot for MMC memory card.
- Configuration via USB port using a PC.
- Operation signalling Leds.
- Modbus data conversion up to 512 bytes data with Profinet (Modbus slave).



inter_151_b_gb

Memory	8 MB SDRAM
	4 MB serial Flash
	MMC card (optional) 2 GByte max
Power supply	Voltage 24 V ± 6 V DC - reverse pole protected
	24 V current (typical) 130 mA
	3.2 W power consumption
	Mini-COMBICON, 2-pin connector
Configuration interface	USB
Operating temperature	0 ... + 60 °C
Dimensions W x H x D	100 x 70 x 52 mm (without connector)
Description of accessories	
Profinet / Modbus-TCP interface	4899 0301

RS422 / RS485 repeater



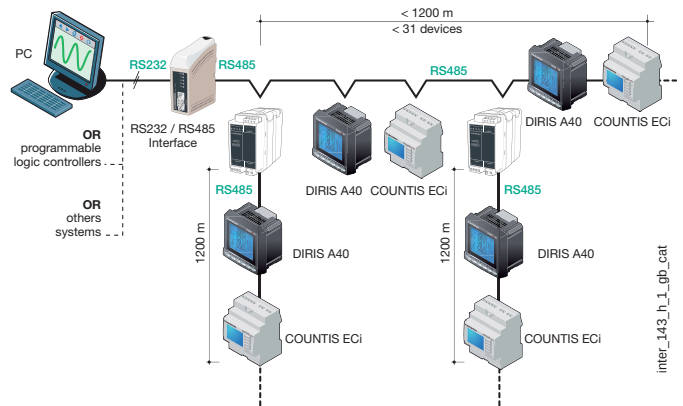
Function

In some applications the maximum distance and/or the maximum number of devices can be exceeded. One solution to this technical restriction is to install an interface which amplifies the signal over a further 1200 m (at 9600 bauds) for 31 devices.

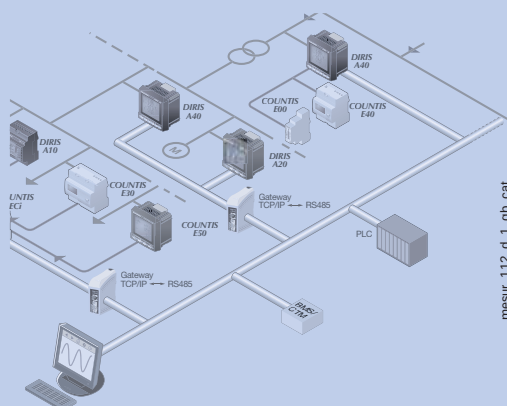
In addition, it allows you to introduce a new branch to the network, thereby making it possible to reduce the length of connection cable required by avoiding back and forth cabling.

References

Auxiliary power supply U_s	Frequency	Reference
95 ... 240 VAC / 110 ... 250 VDC	50 Hz	4899 0120



Other solutions and services



The accessories listed in these pages represent a selection from our range. We can supply many other solutions upon request, such as SHDSL interfaces, fibre optics/RS485, GSM/GPRS and protocol converter interfaces.

Need something integrating into your network?

No problem for our Expert Services team. They will fully integrate all your SOCOMEC devices, audit your system, commission selected equipment and train your staff on its use.

For further information, please contact your nearest SOCOMEC branch.



Selection guide

Energy monitoring and management software

Software suite

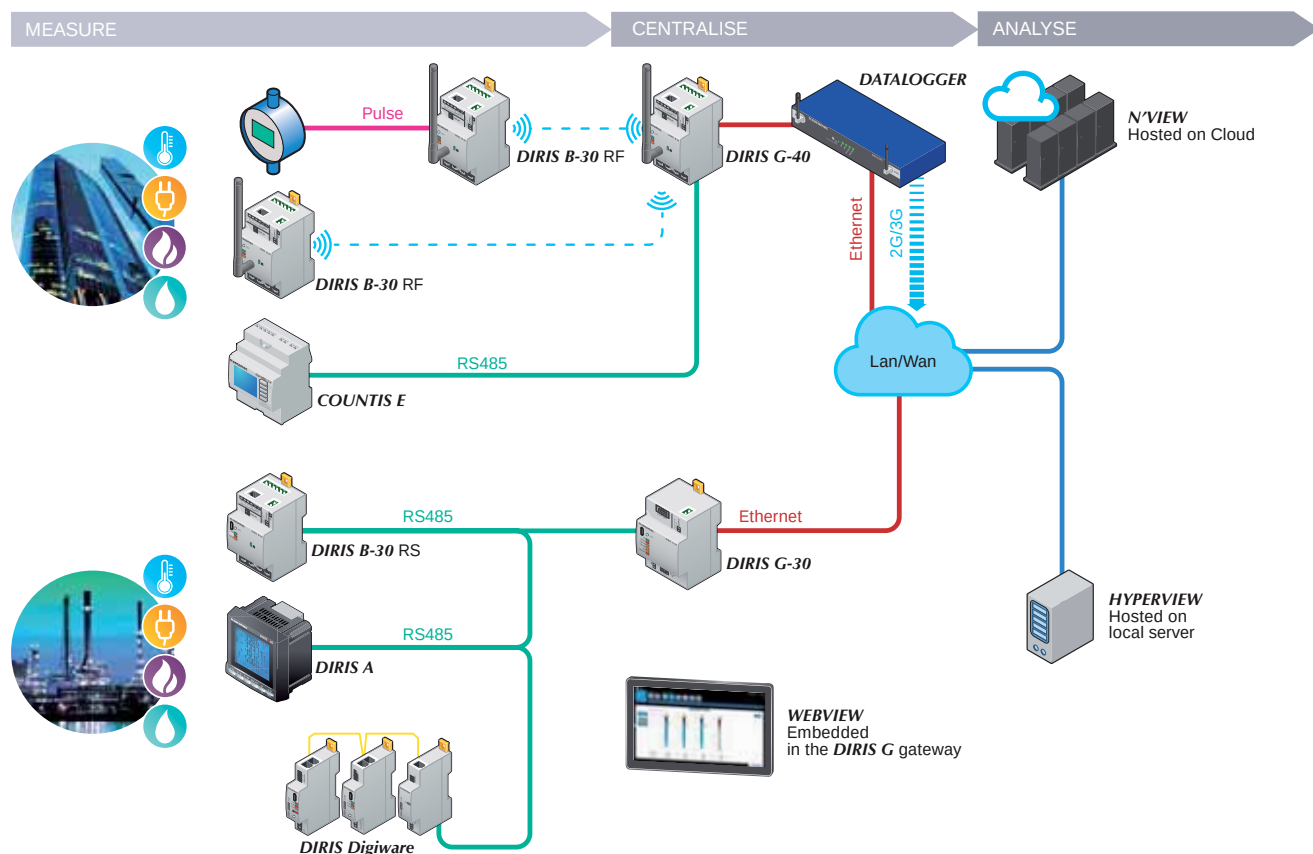
What are the features?

Where is the data stored?

For what size of project?

	WEBVIEW DIRIS G-30/G-40	WEBVIEW DIRIS G-50/G-60	HYPERVIEW	N'VIEW
Functions	Power monitoring	Power & Energy Monitoring	Energy management	Energy management
Data management	Realtime	Realtime Data log	Data log Analysis	Data log Analysis
Hosting	Embedded in the DIRIS G gateway	Embedded in the DIRIS G gateway	Installed on local server	Cloud hosting
Size of installation	Small to medium	Small to medium	Medium to large	Medium to large

Architecture



ver18_122_c_glb

Expert Services

Require integration onto your network?

No problem for our "Expert Services" team. They will fully integrate all your SOCOMEC devices, audit your system, commission selected equipment and train your staff on its use.

For further information, please contact your nearest SOCOMEC branch.



WEBVIEW

Web server embedded in the DIRIS G communication gateway

Software suite



soft_027_a_1_fr_cat

Function

The WEBVIEW web server embedded in DIRIS G gateways enables measurement monitoring up to 32 devices and displays the energy consumptions by usage.

Pre-set alarms defined by the user can sent by e-mail.

User can access WEBVIEW via a web browser on a PC or a tablet.

Advantages

Plug & Play

Automatic detection of connected devices facilitates the WEBVIEW configuration. In order to achieve the consumption distribution, the user is assisted in the metering plan definition.

Easy to use

WEBVIEW centralises all the devices measurements via a unique, clear and easy-to-use interface.

It provides easy and rapid monitoring of the devices by displaying the parameters and events on summary pages.

Various functions

WEBVIEW ensures real time monitoring of all electrical parameters measured thanks to summary pages showing graphs or charts. Time-logged alarms are recorded and displayed by usage, type, nature and criticality. The user receives alarm notification by email.

Energy consumption breakdown is displayed per utility (electricity, water, gas...) and usage (heating, lightning...).

The solution for

- > Industry
- > Building
- > Infrastructure
- > Local authority



Strong points

- > Plug & Play
- > Easy to use
- > Various functions

Functions

2 versions available:

Power Monitoring

Monitor

- Automatic detection of connected devices.
- Summary of the parameters measured on the electrical network and the loads.
- Measurements of voltage, current, power, power factor, harmonic distortion rate (THD) and harmonics per rank.
- Display of average/instantaneous values with min/max limits depending on the devices.
- Total and partial energy consumption per load.
- Input/output status.
- Synchronisation of device clocks.
- Graphical or table representation.

Alarm

- Alarms for overloads, events and input status changes.
- Display of alarm history.
- Sorting by type, nature, criticality or state.
- Alarm displayed on the main page.
- Sending of alarm by email (SMTP).

Power & Energy Monitoring

View

- Historical measurements and consumption (one year of data).
- Distribution of consumption by usage and by utility (water, gas, electricity, etc.).
- Export of consumption data in CSV format.

Power & Energy Monitoring also includes the "Monitoring" and "Alarm" functions.

References

Type		Reference
DIRIS G-30	RS485 / Ethernet - WEBVIEW Power Monitoring	4829 0300
DIRIS G-40	RS485-RF / Ethernet - WEBVIEW Power Monitoring	4829 0301
DIRIS G-50	RS485 / Ethernet - WEBVIEW Power & Energy Monitoring	4829 0302
DIRIS G-60	RS485-RF / Ethernet - WEBVIEW Power & Energy Monitoring	4829 0303



HYPERVIEW

Energy management software

Software suite



soft_030_a_1_cat

The solution for

- > Industry
- > Building
- > Infrastructure
- > Local authority



Strong points

- > Energy cost management
- > Rapid results
- > Advanced analysis functions

Function

HYPERVIEW software is for consolidating all the data collected by measuring and metering devices.

Based on open-ended technologies, it can be easily integrated into the IT environment.

A simple and user friendly web interface enables access to various analysis and power consumption optimisation functions.

Advantages

Energy cost management

The HYPERVIEW software provides summary on energy savings achieved following the implementation of energy efficiency actions. Data about energy contracts and bills are registered into the system in order to reduce the energy costs. Functions for optimising the subscribed power enable the identification of overcosts, and thus the possibility adapt usage and/or the subscription.

Rapid results

HYPERVIEW is an intuitive and user-friendly tool. Data can always be accessed thanks to the web portal displaying analysis reports with dashboards or graphs.

The HYPERVIEW software allows users to subscribe to reports and receive them by regular email.

Advanced analysis functions

Management of SOCOMEC device load curves ensures a precise analysis of consumption and enables the detection of maximums and overflows for active and reactive power.

Thanks to calculated measurement points, consumptions that cannot be measured can be deducted through calculations.

Customised consumption models based on relevant indicators facilitate the implementation of a performance measurement and verification protocol.

Functions

Energy management

Monitor and analyse

- Measurement and consumption history.
- Alerts for overloads, events and input status changes.
- Display and export the data collected.
- Distribution of consumption by area, usage, utility and period.
- Identification of energy saving opportunities.
- Comparison of consumption between different sites and periods.
- Calculation and view of energy costs.

Follow up your results

- Integration of external data (temperature, etc.).
- Definition of energy consumption models.
- Estimation of the results of your energy performance actions.
- Identification of gains and losses by comparing consumption over a reference period.

Communicate

- Display of customised full screen dashboards in key areas.
- Subscribe to reports and receive them by regular email.
- Presentation of the data in a concise manner to communicate and report environmental performance.

References

Type	Reference
HYPERVIEW on Server + software license	contact us

Options	Reference
Graph creation tool	contact us
Electrical powers	contact us
Measurements and verifications	contact us



N'VIEW

Online energy management service

Software suite



soft_043_a_1_fr_cat

Function

The online service, N'VIEW, gives you an intuitive analysis of all your energy consumption.

Compatible with all leading commercial gateways, including SOCOMEC dataloggers, the N'VIEW platform manages multi-utility data collection.

To meet specific needs, the N'VIEW platform can extend its functional coverage by interfacing with existing or upcoming multiple energy applications (energy apps).

Advantages

Easy to use

Cloud-based hosting on a scalable and secure platform ensures the project is easily implemented, and offers great flexibility with an N'VIEW subscription.

Without the usual technical infrastructure problems, the user can concentrate on managing their energy use.

Multi-user access

The N'VIEW service appeals to operational actors directly involved in energy performance, such as Energy Managers and technical users (Facilities Managers). It also provides services to help the management team define the energy strategy, and to help management controllers optimise and allocate energy spending.

The solution for

- > Industry
- > Building
- > Infrastructure
- > Local authority



Strong points

- > Easy to use
- > Multi-user access
- > Various functions

Various functions

The N'VIEW service offers a wide range of features for monitoring measures, analysing energy consumption and managing costs. All these features are part of a continuous improvement plan for energy performance, as defined in standard ISO 50001.

Functions

Energy management

Display

- Display collected data.
- Multiple viewing options (widgets) suitable for the type of data.
- Customisable dashboards.
- Graphic presentation of the scope of analysis (hierarchy, plan of sites and buildings, industrial process diagram).

Analyser

- Analysis and comparison of multi-fluid energy consumption according to multiple criteria (timeframe, site, fluid).
- Analyse energy costs.
- Tariff simulation and comparison.
- Break down your energy bills depending on the provider.
- Set up indicators for measuring energy efficiency.
- Manage external influence factors (temperature, surface, occupancy rate, production).
- Measure and verify according to the IPMVP method.
- Manage and archive customizable queries.

Alert and communicate

- Automatically generated or on-demand, customizable reports.
- Programming multiple alerts (loss of data, thresholds, overrun costs, excess consumption).
- Manage and log alerts.

References

Type	Reference
N'VIEW	Subscribe to the N'VIEW online service contact us



COUNTIS and DIRIS management software tools

Software suite



Easy Config software



Analysis software

Function

To get the most effective use from your Socomec measurement and metering devices, we can provide dedicated software tools:

Easy Config software

The Easy Config software enables quick and easy remote device configuration for DIRIS Digiware, DIRIS B, DIRIS G, DIRIS BCMS 720, COUNTIS E and DIRIS A devices. Configuration files can be copied from and sent to these devices, or they can be created without communication and sent at a later time.

Multiple devices can be configured from a single file which is especially useful for OEMs and panel builders, saving time when having to program many devices with the same configuration.

Analysis software

On the basis of an event log and the displayed curves, the Analysis software allows the analysis and extraction of quality data, as well as fault current monitoring (Residual Current Monitoring).

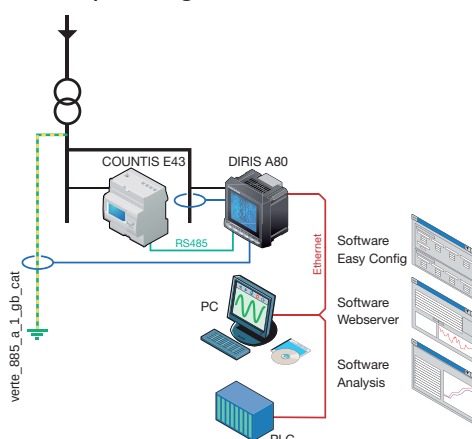
Webserver function

The DIRIS A's optional Ethernet modules integrate HTML pages, enabling the Webserver function to be directly accessed through a standard web browser (Internet Explorer, Firefox...), eliminating the need for software installation.

The Webserver function enables:

- monitoring of electrical values,
- viewing of energy consumption,
- managing alarms,
- configuration of the main parameters of installation
- viewing and extracting load curves (through a .CSV file).

Principle diagram



	Easy Config	Webserver	Analysis	WEBVIEW See page 615	HYPERVIEW See page 616
COUNTIS E with RS485 communication	•	• ⁽¹⁾		•	•
COUNTIS Eci	•	• ⁽¹⁾		•	•
DIRIS A10, A14, A17 and A20 with RS485 communication	•	• ⁽¹⁾		•	•
DIRIS A40 with RS485 communication	•	• ⁽¹⁾		•	•
DIRIS A40 with Ethernet communication module	•	•		•	•
DIRIS A60 and A80 with RS485 communication module	•	• ⁽¹⁾	•	•	•
DIRIS A60 and A80 with Ethernet communication module	•	•	•	•	•
DIRIS B	•			•	•
DIRIS Digiware	•			•	•
DIRIS G	•			•	•
DIRIS BCMS 720	•	•			•

(1) through DIRIS A fitted with an Ethernet communication module with RS485 gateway.

Compatible with:



COUNTIS E



DIRIS A



DIRIS Digiware



DIRIS B30

Easy Config software

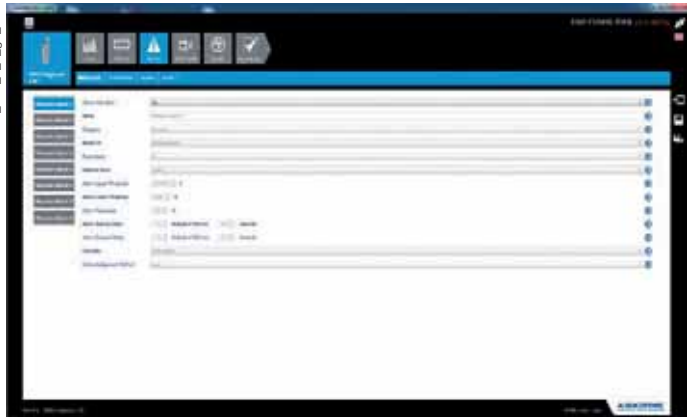


The Easy Config software enables quick and easy remote configuration of DIRIS Digiware, DIRIS B, DIRIS G, DIRIS BCMS 720, COUNTIS E and DIRIS A devices.

It offers the following functions:

- Creating the configuration of devices prior to their connection (configuration template).
- Saving a configuration to a PC.
- Loading the configuration to devices through USB, RS485 or Ethernet.
- Retrieving the configuration of a device through USB, RS485 or Ethernet for saving, copying or modification purposes.

diris_886_a_1_gb_cat



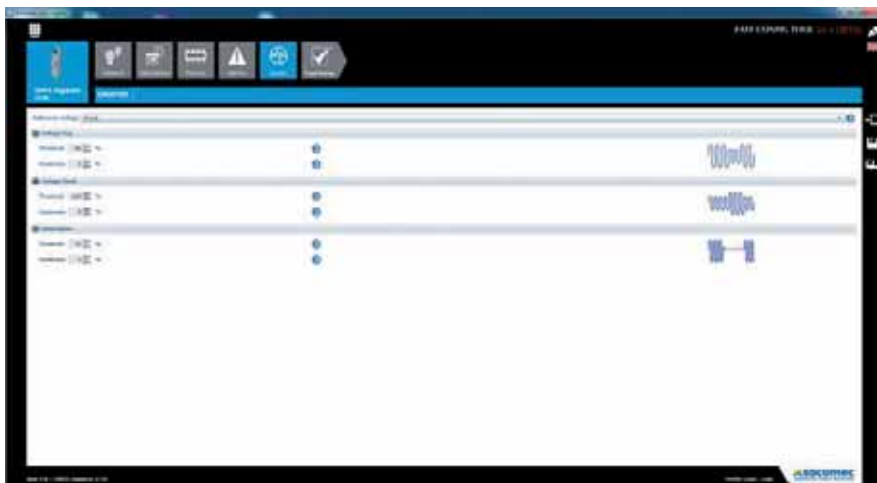
Configuration of loads

diris_883_a_1_gb_cat



Configuration of Quality events

diris_884_b_1_gb_cat



management software tools

Analysis software

Improvement to the reliability of your electrical installation can be achieved with this software through the analysis of displayed event curves generated from the event log.

It offers the following functions:

- A list of voltage dips, cut-offs, overvoltages and overcurrents.
- A list of alarms $I_{\Delta n}$ and I_{PE} for DIRIS A80.
- A display of 10 curves (3V, 3U, 3I, In) linked to the event with a zoom functionality.
- The classification of events according to the EN 50160 standard.
- Exporting of pictures or curve files.

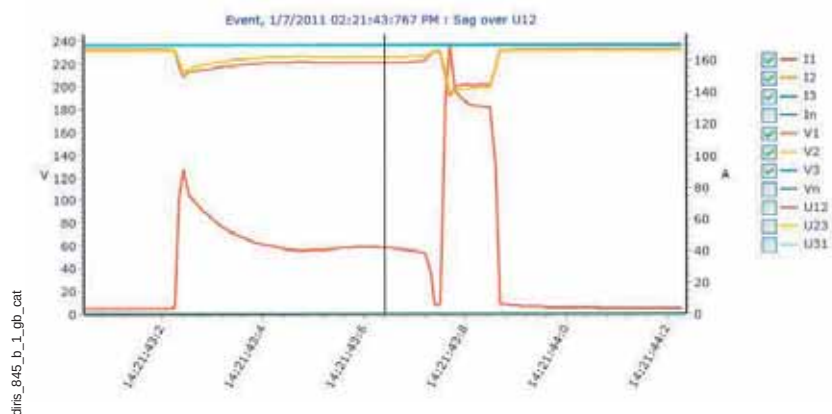
This software can be connected to the DIRIS using either an RS485 MODBUS or Ethernet communication module.

The Analysis software can be downloaded from the SOCOMEC website: www.socomec.com

Event log



Event display and analysis



Webserver function



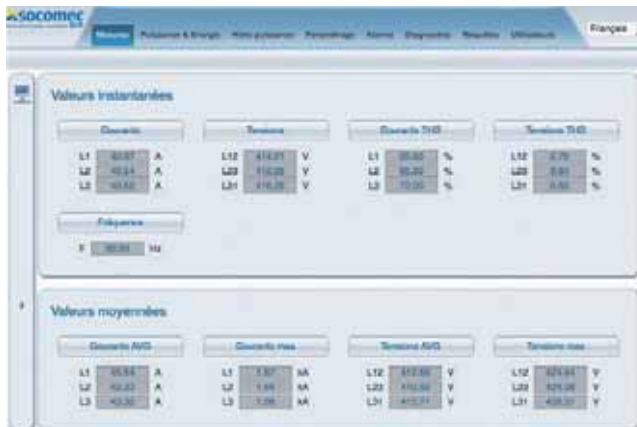
DIRIS A Ethernet communication module with RS485 gateway

The Webserver function comprises HTML pages embedded within the optional Ethernet communication module of the DIRIS A's multifunction meter. These pages can be accessed via an internet browser, simply by entering the DIRIS A IP address.

The Webserver offers the following functions:

- Monitoring of electrical values.
- Viewing of energy consumption.
- Management of alarms.
- Remote configuration of the main parameters for meters within the installation.
- Viewing and extracting load curves (through a .CSV file).

Instantaneous report of measurements



Display for viewing instantaneous and average electrical values.

Power and energy



Display for viewing instantaneous and average power measurements and energy consumption.

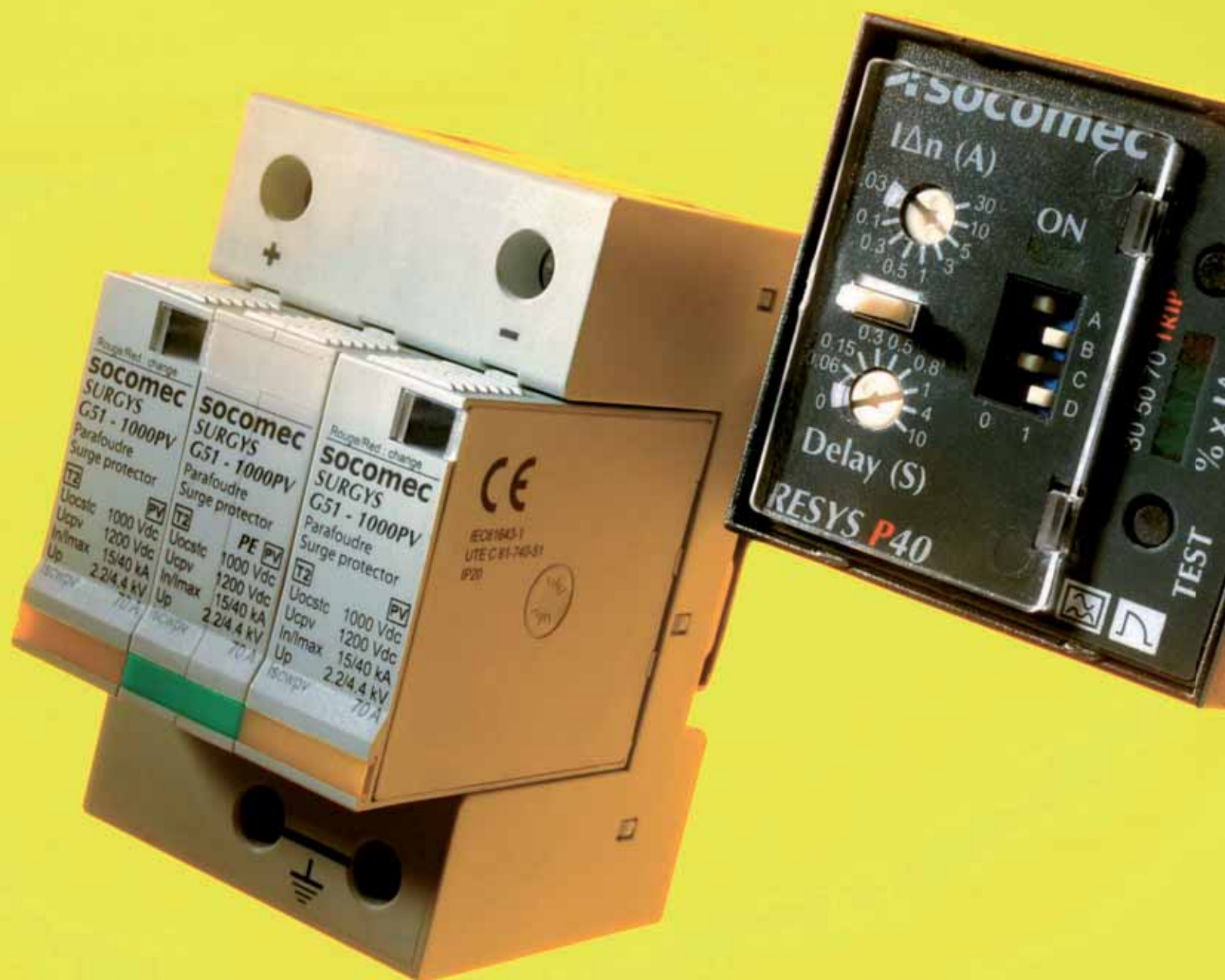
Configuration of the devices



Alarms



The latest alarms are date and time registered. The duration and value for each alarm (low limit value / high limit value), as well as the related output alarm number, are also displayed. Data can be extracted in *.csv format.



Electronic protection

Effective protection for your electrical installation	p. 624
Differential protection selection guide	p. 626
Surge protection selection guide	p. 628

Differential protection



RESYS M40
p. 630



RESYS M40R
p. 632



RESYS P40
p. 634



new
Core balance
transformers type A
p. 636

Protection against overvoltages



SURGYS G51-PV
p. 640



new
SURGYS G140-F
p. 642



SURGYS G100-F
p. 644



new
SURGYS G50-FE
p. 646



new
SURGYS G40-FE
p. 648



SURGYS G70
p. 650



SURGYS D40
p. 652



SURGYS E10
p. 654



SURGYS Low current
p. 656

Expert Services

Our experts are here for you to make your project a success.
See page 8.



Effective protection for your electrical installation

All electrical installations, particularly those which incorporate sensitive loads, must be appropriately monitored and/or protected against indirect contact, earth leakage currents, short circuits and voltage surges.

To secure your installation against these various risks, we offer a range of protection devices which have been grouped under the heading "Electronic protection":

- **RESYS earth leakage relays**
See our selection guide, "Differential protection" p. 626.
- **SURGYS surge arresters**
See our selection guide, "Protection against surges" p. 628.

With many years of experience in the industry and an extensive knowledge of installation standards, SOCOMEC delivers much more than high-performance products. Our services include:

- auditing your low-voltage installation
- defining protection requirements
- seamless product integration into your electrical distribution system
- system commissioning
- training on the use of, and the standards applicable to, the system
- turnkey monitoring solutions.

Contact us now and let us provide you with a solution for your installation.

Important!

Sound knowledge of your electrical network is essential in ensuring the successful outcome of your project. Your choice of electronic protection devices and their location on your installation depends on:

- the type of supply source,
- the length of the conductors,
- the type and nature of the electrical loads connected to the network.

Expert Services

We will help you design your protection solution, guaranteeing perfect integration of the products in your installation.

For further information, please contact your nearest SOCOMEC branch.

Differential protection: a RESYS solution for each application



Motor feeder application.



Industrial site application.



Local battery application.

Earth leakage relays fulfil two key functions:

- Protection against indirect contact in the following earthing schemes:
 - TT (mandatory)
 - TNS and IT on second fault (with long conductor lengths)
 - IT (with multiple earthing points in an LV network).
- Prevention / signalling for TNS or TT earthing arrangements.

In both cases, you need to identify the type of load present on your network to choose the most suitable differential relay.

There are three types of relay:

- Type AC for loads that may cause a pure sinusoidal AC earth leakage current
- Type A for loads that may generate an AC and/or a pulsing DC earth leakage current
- Type B for loads that may generate a DC earth leakage current (including protection types AC & A)

You can combine SOCOMEC toroids and earth leakage relays to suit the needs of each application:

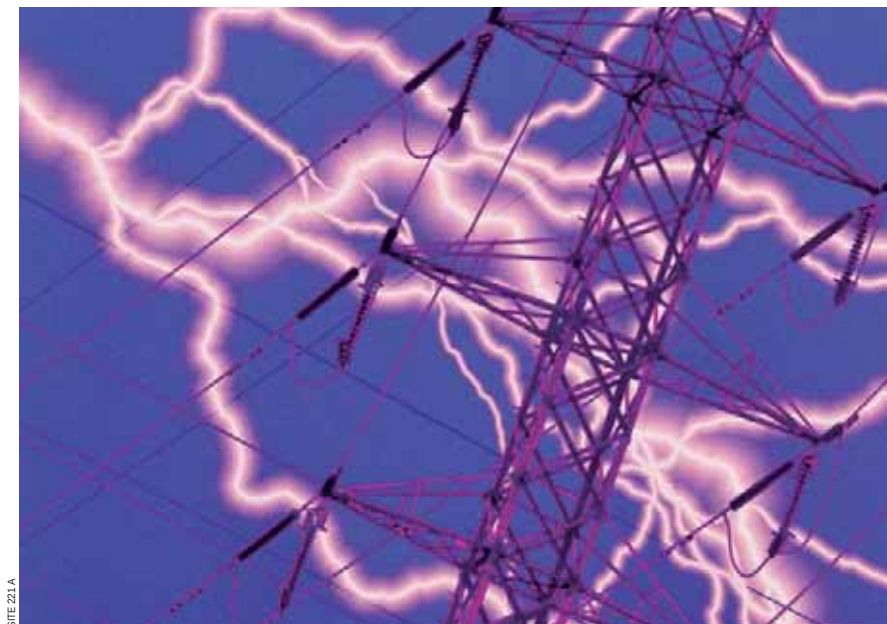
- Interference from variable speed drives, dimmers, etc. through their TRMS measurement: RESYS relay type A or B
- Presence of pulsing components: RESYS relay type A
- Presence of DC circuits: RESYS relay type B.

Due to the mixture of components and loads in industrial applications type AC differential relays do not cover all the necessary requirements, therefore SOCOMEC proposes type A and B differential relays.

What you need to know

To identify the different categories of load present in your installation, visit our website www.socomec.com/en/resys

Protection against overvoltages: SURGYS technology and performance



SITE 221 A

What you need to know

To understand the selection and installation criteria of surge arresters, please see our technical specifications under "Protection against temporary surges".



SOCOMEK SURGYS surge arresters protect your electrical devices against temporary overvoltages from various sources:

- indirect effects of a lightning strike
- operations on an industrial network
- disruptive loads (switched-mode power supplies, inductive loads, etc.).

Surge arresters are selected based on the requirements of applicable standards and installation-specific constraints (e.g. high lightning density, corresponding discharge current (min. I_n), overvoltage limitations).

Designed to meet the requirements of all types of electrical installation SURGYS surge arresters cover electrical distribution, data and control circuits. Different versions are available depending on:

- the type (1, 2, 3 or data/control circuits),
- operating voltage (U_c),
- network configuration (single-phase/three-phase with or without neutral / DC),
- level of discharge current (I_{imp} , I_{max} , I_n),
- protection level (U_p),
- the protection technology (varistors, spark gaps, clipping diodes),
- functions (differential mode, plug-in capacity, remote signalling...).

The benefits of varistor technology

The majority of SURGYS surge protection devices are based on varistor technology.

There are a number of advantages to using varistors, including a high through-flow of discharge current and the absence of follow current. The absence of this follow current is a major benefit as it is responsible for triggering the installation's residual differential protection devices.

In addition, some versions of SURGYS (G40-FE, D40 and E10 in differential mode) use a combination of technologies (varistor/spark gaps or spark gaps/diodes) which can significantly improve the protection level.



Selection Guide

Differential protection

Electronic
protection

Which
requirement?



Which
application?

Applications	Motor load break	
		
Model	RESYS M40 p. 630	RESYS P40 p. 634
Characteristics		
Type of protection DDR	A type	A type
Tripping threshold	30 mA ... 30 A	30 mA ... 30 A
Time setting	0 ... 10 s	0 ... 10 s
Automatic reclosing function		
Pre-alarm function	•	•
Output contact	2	2
Case	DIN modular	Panel mounting
Dimensions (mm)	44	48x48
Accessories		
Core balance transformers		
Circular closed toroids Δ IC	p. 636	•
new Split-core balance transformer Δ IP-R	p. 636	•
Rectangular closed toroids VR	p. 636	•

Which type of protection?

	Isolated sites
	
	RESYS M40R p. 632
	A type
	30 mA ... 30 A
	0 ... 10s
	•
	2
	Modular
	44
	•
	•
	•



Selection guide

Surge protection

SURGYS surge protection devices

Electronic
protection

Which
application?

What type of
mains?

Applications	PV sites	Sites equipped with lightning conductors			
Type of protected mains	PV DC mains	Installation incomers		Main switchboard equipped with sensitive devices	
					
Which model?	G51-PV p. 640	G140-F p. 642	G100-F p. 644	G50-FE p. 646	G40-FE p. 648

Protection

Type	Type 2	Type 1	Types 1 and 2	Types 1 and 2	Types 1 and 2
Mode	MC / MD ⁽¹⁾	MC / MD ⁽¹⁾	MC	MC / MD ⁽¹⁾	MC / MD ⁽¹⁾

Specifications

Nominal voltage U_n	500 - 600 - 800 - 1000 - 1500 VDC ⁽¹⁾	230 / 400 VAC	230 / 400 VAC	230 / 400 VAC	230 / 400 VAC
Neutral system		TT, TN, IT ⁽¹⁾	TN, IT ⁽¹⁾	TT, TN, IT ⁽¹⁾	TT, TN, IT ⁽¹⁾
Tension U_c	600 - 720 - 960 - 1200 - 1500 VDC ⁽¹⁾	440 VAC	440 VAC	440 VAC	255 VAC
Level of protection U_p	2.2 - 2.8 - 2 - 2.2 - 3.2 kV	2.5 kV	2 kV	1.3 kV	1.5 kV
Nominal discharge current I_n	15 kA	25 kA	25 kA	12.5 kA	20 kA
Maximum discharge current I_{max}	40 kA	140 kA	100 kA	50 kA	40 kA
Discharging current I_{imp} (per pole)		25 kA	25 kA	12.5 kA	15 kA
Plug-in modules.	•		•	•	
Remote signalling	⁽¹⁾	•	•	•	•
Admissible short-circuit current I_{sc}	1000 A	50 kA	25 kA	25 kA	50 kA
Recommended disconnectors	not applicable	gG 315 A fuses	gG 315 A fuses	gG 125 A fuses	gG 125 A fuses

MC: Common mode to earth

MD: Differential mode between live conductors.

(1) As per reference.

Which model?

Which level of protection?

Which characteristics?

Sites exposed to frequent lightning strikes or industrial mains subject to operating voltage surges		Sensitive loads or electrical receivers	Strategic facilities subject to lightning strikes		
					
G70 p. 650		D40 p. 652	E10 p. 654	RS-3 p. 656	mA-3/mA-3x2 p. 656
Type 2		Type 2	Types 2 and 3	Low currents	Low currents
MC		MC / MD(*)	MC / MD(*)		
230 / 400 VAC	230 / 400 VAC	230 / 400 VAC ⁽¹⁾	12 V	48 V	150 V
TT, TN, IT ⁽¹⁾	TT, TN, IT ⁽¹⁾	TT, TN, IT ⁽¹⁾			
400 VAC	255 - 400 VAC ⁽¹⁾	255 - 400 VAC ⁽¹⁾	15 V	53 V	170 V
1.8 kV	1.25 - 1.8 kV ⁽¹⁾	0.9 - 1.5 kV ⁽¹⁾	30 V	75 V	220 V
30 kA	20 kA	5 kA	5 kA	5 kA	5 kA
70 kA	40 kA	10 kA	20 kA	20 kA	20 kA
•	•	•	•	•	•
•	•	•			
25 kA	25 kA	25 kA			
gG 100 A fuses	gG 50 A fuses	gG 20 A fuses			



RESYS M40

Type A differential relays
for motor load break

Electronic
protection



resys_083_a_1_cat

Function

RESYS M40 earth leakage relays associated with a remote trip breaking device (automatic power breaking), provide the following functions:

- protection against indirect contact,
- limitation of leakage currents.

They also preventively monitor electrical installations via their (configurable) pre-alarm function or when used as signalling relays.

Advantages

Fully configurable

- 2 relays with configurable function (alarm or pre-alarm at 50% $I_{\Delta n}$).
- Adjustment of $I_{\Delta n}$ from 0.03 to 30 A.
- Time delay 0 to 10 s.
- Positive or negative security configurable by the user.
- Selection of toroid ratio.

Instantaneous display of permanent leakage currents.

The LED bargraph provides a real-time display of fluctuations in leakage currents.

Compact modular design

44 mm in width, the unit allows easy integration into dedicated enclosures. The adjustment buttons are protected by a sealable cover, while the display of available alarms is displayed directly on the front face of the device.

Tripping accuracy by TRMS measurement
Improves immunity to nuisance tripping.

Improved immunity to EMC interferences
The device has new electronics which improve electromagnetic compatibility.

The solution for

- > Processes
- > Manufacturing
- > Oil, gas and petrochemistry
- > Energy production

Strong points

- > Fully configurable
- > Measurement accuracy by TRMS
- > Instantaneous display of permanent leakage currents
- > Compact and modular case with LED bargraph
- > Improved immunity to EMC interferences

Conformity to standards

- > IEC 60755
- > IEC 60947-2
- > IEC 60664
- > IEC 61543 A1



Approvals and certifications⁽¹⁾



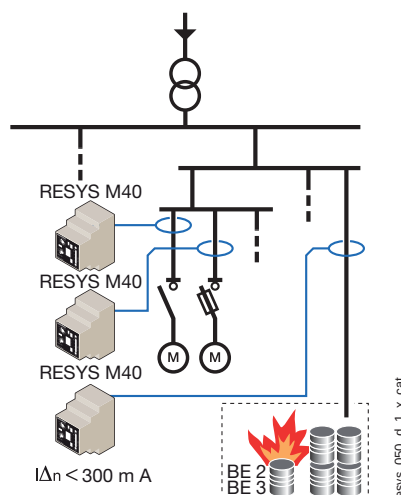
(1) Product reference on request.

Applications

Rapid recognition of an insulation fault increases the availability of the distribution network by preventing accidental power cuts and the resulting loss of production.

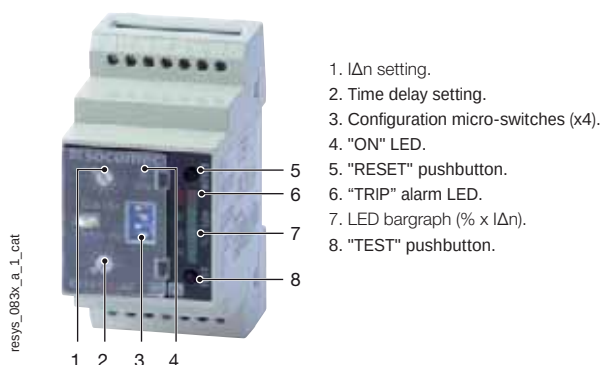
Protection against fire or explosion risks

The use of Residual Differential Devices (with adjustment $I_{\Delta n} \leq 300$ mA) provides protection against the risk of fire or explosion generated by tracking currents to earth, in areas classed as BE2 or BE3 respectively. This protection is mandatory in TT, TN and IT neutral systems.



resys_050_d_1_x_cat

Front panel



General characteristics

- RESYS M40 with 2 configurable relays:
 - either 2 alarm relays,
 - or 1 alarm relay and 1 pre-alarm relay (50 % $I_{\Delta n}$).
- Adjustment sensitivity from 0.03 mA to 30 A.
- Time delay 0 to 10 s.
- Tripping accuracy by TRMS measurement.
- Automatic instantaneous tripping at 30 mA.
- Positive or negative security configurable by the user.
- Selection of toroid ratio.
- Automatic permanent relay-toroid connection test.
- Sealable cover.

Characteristics

Auxiliary power supply U_s

Frequency	47 ... 63 Hz
AC operating zone	0.8 ... 1.15 U_s
DC operating zone	0.8 ... 1.05 U_s
Max. consumption	6 VA (AC) / 5 W (DC)

Insulation (according to IEC 60664-1 standard)

Rated insulation voltage	250 VAC
Rated impulse voltage	2.5 kV (115 VAC) / 4 kV (230/400 VAC)
Degree of pollution	Class 3

Threshold values

$I_{\Delta n}$ setting	0.03 - 0.1 - 0.3 - 0.5 - 1 - 3 - 5 - 10 - 30 A
Accuracy of tripping	- 20 ... - 10 % $I_{\Delta n}$
Domain of mains frequency	15 ... 400 Hz
Time delay setting	0 - 0.06 - 0.15 - 0.30 - 0.50 - 0.80 - 1 - 4 - 10 s
PRE-ALARM relay tripping	50 % $I_{\Delta n}$
Hysteresis of the PRE-ALARM relay	20 % $I_{\Delta n}$

Alarm

Alarm configuration mode	storage / automatic reset
Alarm factory setting	storage
Reset	manual by pushbutton / using terminal

Output contacts

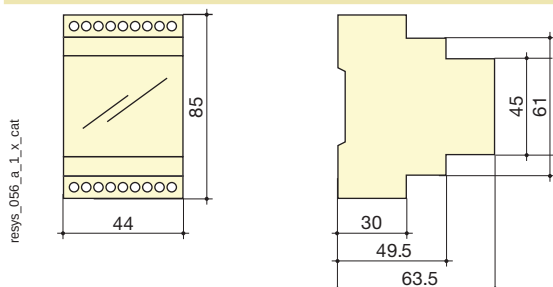
Number of contacts	2
Type of ALARM 1 contact	250 VAC - 8 A - 2000 VA
Type of ALARM 2 or PRE-ALARM contact	250 VAC - 6 A - 1500 VA
ALARM 1 operating mode	positive / negative security ⁽¹⁾
ALARM 2 or PRE-ALARM operating mode	positive security ⁽¹⁾
Factory setting of ALARM 1 operating mode	negative security
Factory setting of ALARM 2 operating mode	positive security

(1) Negative security: relay activated in case of alarm / Positive security: relay not activated in case of alarm.

Operating conditions

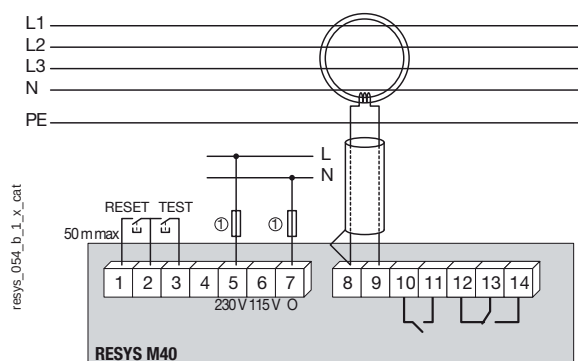
Operating temperature	- 20 ... + 55 °C
Storage temperature	- 30 ... + 70 °C

Case



Type	modular
Number of modules	2.5
Dimensions W x H x D	44 x 85 x 63.5
Case protection index	IP40
Terminal protection index	IP20
Rigid cable cross-section	0.2 ... 4 mm ²
Flexible cable cross-section	0.2 ... 2.5 mm ²
Weight	190 g

Terminals and connections



- 1 - 2 - 3: external push buttons
- 5 - 6 - 7: auxiliary power supplies U_s
- 8 - 9: SOCOMEC differential toroid connections
- 10 - 11: alarm relay 2 or pre-alarm outputs
- 12 - 13 - 14: alarm relay 1 output

Note: The earth conductor must not pass through the toroid.

For single phase applications, only the live and neutral need to be passed through the toroid.

Cabling: for distances > 1 m, use twisted pair cable between the unit and toroid. Do not connect the shield to earth.

1. Fuses 2 A gG.

References

Auxiliary power supply U_s ⁽¹⁾

115 / 230 VAC
400 VAC
12 ... 125 VDC

RESYS M40

Reference

4941 3723 ⁽²⁾
4941 3740 ⁽²⁾
4941 3602 ⁽²⁾

(1) Other rating: Please consult us. (2) References and characteristics of closed, split core and rectangular toroids: see "Core balance transformers type A" page 636.



RESYS M40R

Type A earth leakage relays
with automatic reclosing

Electronic
protection



resys_082_a_1_cat

Function

RESYS M40R earth leakage relays associated with a remote trip breaking device (automatic power breaking and reclosing), provide the following functions:

- protection against indirect contact,
- limitation of leakage currents.
- reclosing of trip breaking device after earth leakage detection and power supply breaking.

The relay recloses the system up to six consecutive times after different time intervals. If the fault is still present after the sequence of six reclosing attempts, the relay is locked in alarm mode and a manual intervention will be required.

Rapid recognition of an insulation fault increases the availability of the distribution network by preventing accidental power cuts and the resulting loss of production. TRMS measurement avoids repeated random tripping and the bargraph allows the display of permanent leakage current.

Advantages

Automatic reclosing

This function provides protection, particularly in isolated sites or for processes requiring a restart in the event of transient faults (continuity of service ensured in the absence of a maintenance team).

Fully configurable

- Adjustment of $I\Delta n$ from 0.03 to 30 A.
- Time delay 0 to 10 s.

Ensures continuity of the power supply for strategic applications or in isolated sites. In the majority of cases, where the fault is not permanent, simply reclosing may resolve the situation.

Tripping accuracy by TRMS measurement. Improves immunity to nuisance tripping.

Instantaneous display of permanent leakage currents

The LED bargraph provides a real-time display of fluctuations in leakage currents.

The solution for

- > Power distribution (Public lighting)
- > Water treatment
- > Processes
- > Telecom, Datacom and broadcasting
- > Farm buildings

Strong points

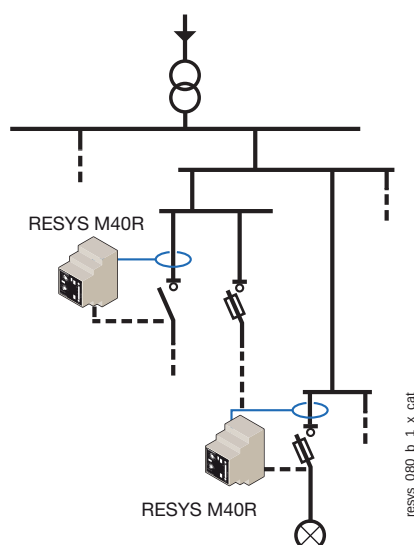
- > Automatic reclosing
- > Fully configurable
- > Continuity of the power supply for strategic applications
- > Tripping accuracy by TRMS measurement
- > Instantaneous display of permanent leakage currents

Conformity to standards

- > IEC 60755
- > IEC 60947-2
- > IEC 60664
- > IEC 61543 A1



Applications

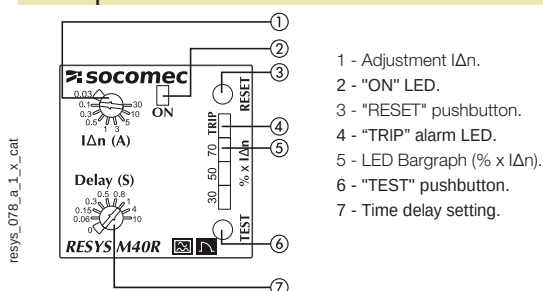


resys_080_b_1_x_cat

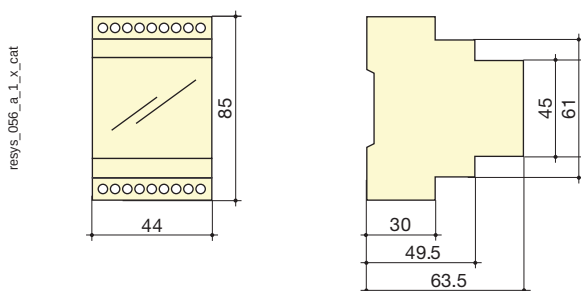
The RESYS M40R relay must be combined with an automatic tripping/reclosing breaking device:

- a motorised switch
- a device fitted with an undervoltage coil
- a contactor.

Front panel



Case



Type	modular
Number of modules	2.5
Dimensions W x H x D	44 x 85 x 63.5 mm
Case protection index	IP40
Terminal protection index	IP20
Rigid cable cross-section	0.2 ... 4 mm ²
Flexible cable cross-section	0.2 ... 2.5 mm ²
Weight	190 g

Characteristics

Auxiliary power supply U_s

Frequency	47 ... 63 Hz
AC operating zone	0.8 ... 1.15 U_s
DC operating zone	0.8 ... 1.05 U_s
Max. consumption	6 VA (AC) / 5 W (DC)

Insulation (according to IEC 60664-1 standard)

Rated insulation voltage	250 VAC
Rated impulse voltage	2.5 kV (115 VAC) / 4 kV (230/400 VAC)
Degree of pollution	Class 3

Threshold values

$I_{\Delta n}$ setting	0.03 - 0.1 - 0.3 - 0.5 - 1 - 3 - 5 - 10 - 30 A
Accuracy of tripping	- 20 ... - 10 % $I_{\Delta n}$
Domain of mains frequency	15 ... 400 Hz
Time delay setting	0 - 0.06 - 0.15 - 0.30 - 0.50 - 0.80 - 1 - 4 - 10 s

Reclosing

Nb of automatic reclosing attempts	6 max
Time delay between two reclosing	7.5 - 15 - 30 - 60 - 120 - 240 s
Reset of automatic reclosing counter (t_{CR})	15 min

Alarm

Alarm configuration mode	automatic reset (6x max, then recording)
Reset	manual by pushbutton / using terminal

Output contacts

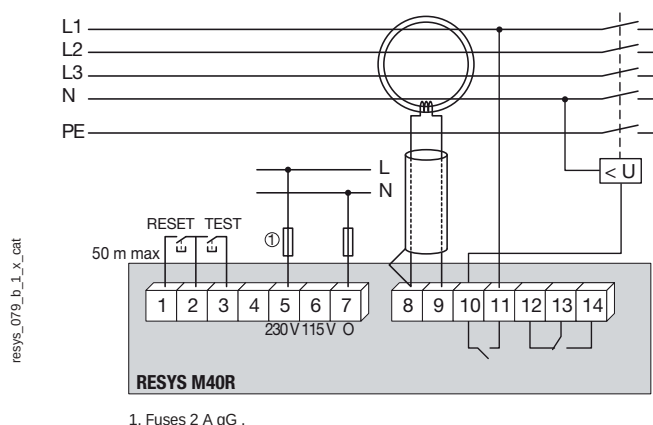
Number of contacts	2
Type of ALARM 1 contact	inverter
Type of ALARM 2 contact	simple
Characteristics contact ALARM 1	250 VAC - 8 A - 2000 VA
Characteristics contact ALARM 2	250 VAC - 6 A - 1500 VA
ALARM 1 operating mode	negative security ⁽¹⁾
ALARM 2 operating mode	positive security ⁽¹⁾

(1) Negative security: relay activated in case of alarm /
Positive security: relay not activated in case of alarm.

Operating conditions

Operating temperature	- 20 ... + 55 °C
Storage temperature	- 30 ... + 70 °C

Terminals and connections



- 1 - 2 - 3: external push buttons
- 5 - 6 - 7: auxiliary power supplies U_s
- 8 - 9: SOCOMEC differential toroid connections
- 10 - 11: alarm relay 2 output
- 12 - 13 - 14: alarm relay 1 output

Note: The earth conductor must not pass through the toroid.
For single phase applications, only the live and neutral need to be passed through the toroid.

Cabling: for distances > 1 m, use twisted pair cable between the unit and toroid.
Do not connect the shield to earth.

References

Auxiliary power supply U_s ⁽¹⁾

115/230 VAC
400 VAC

RESYS M40R

Reference

4941 3724
4941 3741

(1) Other rating: Please consult us.



RESYS P40

Type A earth leakage relays
for motor load break

Electronic
protection



RESYS P40

Function

RESYS P40 earth leakage relays associated with a remote trip breaking device (automatic power breaking), provide the following functions:

- protection against indirect contact,
- limitation of leakage currents.

They also preventively monitor electrical installations via their (configurable) pre-alarm function or when used as signalling relays.

Advantages

Fully configurable

- 2 relays with configurable function (alarm or pre-alarm at 50% $I_{\Delta n}$).
- Adjustment of $I_{\Delta n}$ from 0.03 to 30 A.
- Time delay 0 to 10 s.
- Positive or negative security configurable by the user.
- Selection of toroid ratio.

Instantaneous display of permanent leakage currents.

The LED bargraph provides a real-time display of fluctuations in leakage currents.

Compact sealed case

Compact 48 x 48 mm case is particularly well suited to integration in MCCs with high density withdrawable compartments.

Tripping accuracy by TRMS measurement

Improves immunity to nuisance tripping.

Improved immunity to EMC interferences

The device has new electronics which improve electromagnetic compatibility.

The solution for

- > Process
- > Manufacturing
- > Oil, gas and petrochemistry

Strong points

- > Fully configurable
- > Tripping accuracy by TRMS measurement
- > Instantaneous display of permanent leakage currents
- > Compact sealed case
- > Improved immunity to EMC interferences

Conformity to standards

- > IEC 60755
- > IEC 60947-2
- > IEC 60664
- > IEC 61543 A1



Approvals and certifications⁽¹⁾



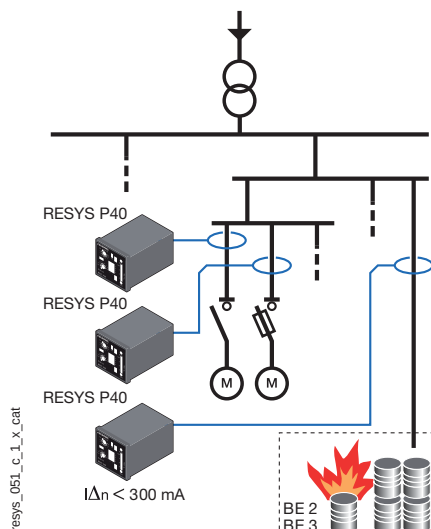
(1) Product reference on request.

Applications

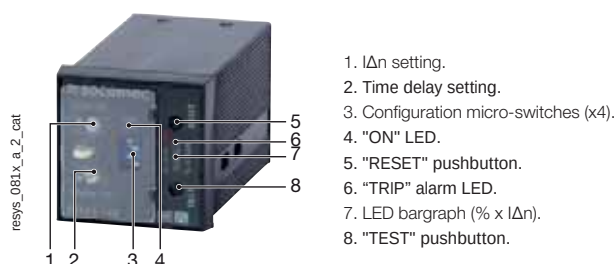
Rapid recognition of an insulation fault increases the availability of the distribution network by preventing accidental power cuts and the resulting loss of production. RESYS P40 are particularly suitable for insertion in electricity control panels with withdrawable compartments.

Protection against fire or explosion risks

The use of Residual Differential Devices (with adjustment $I_{\Delta n} \leq 300$ mA) provides protection against the risk of fire or explosion generated by tracking currents to earth, in areas classed as BE2 or BE3 respectively. This protection is mandatory in TT, TN and IT neutral systems.



Front panel

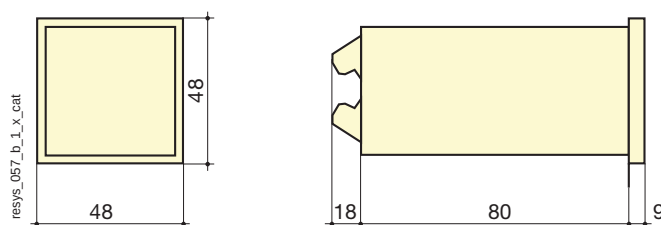


Characteristics

Auxiliary power supply U_s	
Frequency	47 ... 63 Hz
AC operating zone	0.8 ... 1.15 U_s
DC operating zone	0.8 ... 1.05 U_s
Consumption	6 VA (AC) / 5 W (DC)
Insulation (according to IEC 60664-1 standard)	
Rated insulation voltage	250 VAC
Rated impulse voltage	2.5 kV (115 VAC) / 4 kV (230/400 VAC)
Degree of pollution	Class 3
Threshold values	
$I_{\Delta n}$ setting	0.03 - 0.1 - 0.3 - 0.5 - 1 - 3 - 5 - 10 - 30 A
Accuracy of tripping	- 20 ... - 10 % $I_{\Delta n}$
Domain of mains frequency	15 ... 400 Hz
Time delay setting	0 - 0.06 - 0.15 - 0.30 - 0.50 - 0.80 - 1 - 4 - 10 s
PRE-ALARM relay tripping	50 % $I_{\Delta n}$
Hysteresis of the PRE-ALARM relay	20 % $I_{\Delta n}$

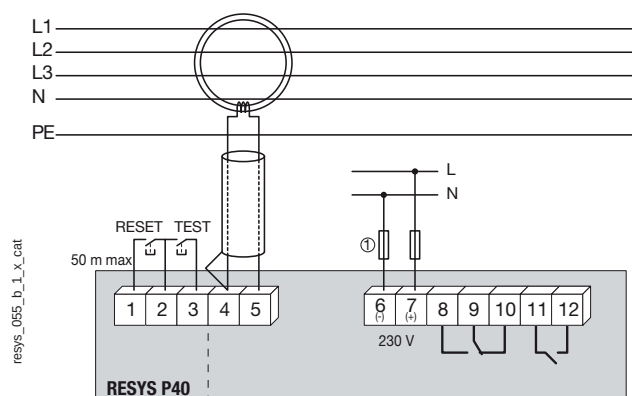
Alarm	
Alarm configuration mode	storage / automatic reset
Alarm factory setting	storage
Reset	manual by pushbutton / using terminal
Output contacts	
Number of contacts	2
Type of ALARM 1 contact	250 VAC - 8 A - 2000 VA
Type of ALARM 2 or PRE-ALARM contact	250 VAC - 6 A - 1500 VA
ALARM 1 operating mode	positive / negative security ⁽¹⁾
ALARM 2 or PRE-ALARM operating mode	positive security ⁽¹⁾
Factory setting of ALARM 1 operating mode	negative security
Factory setting of ALARM 2 operating mode	positive security
(1) Negative security: relay activated in case of alarm / Positive security: relay not activated in case of alarm.	
Operating conditions	
Operating temperature	- 20 ... + 55 °C
Storage temperature	- 30 ... + 70 °C

Case



Type	panel mounting
Dimensions W x H x D	48 x 48 x 107 mm
Case protection index	IP40
Terminal protection index	IP20
Rigid cable cross-section	0.2 ... 4 mm ²
Flexible cable cross-section	0.2 ... 2.5 mm ²
Weight	190 g
Cutout	45 x 45 mm

Terminals and connections



- 1 - 2 - 3: external push buttons
- 4 - 5: SOCOMEC differential toroid connections
- 6 - 7: Auxiliary power supply U_s
- 8 - 9 - 10: alarm relay 1 output
- 11 - 12: alarm relay 2 or pre-alarm outputs

Note: The earth conductor must not pass through the toroid.
For single phase applications, only the live and neutral need to be passed through the toroid.
Cabling: for distances 1 m, use twisted pair cable between the unit and toroid.
Do not connect the shield to earth.

1. Fuses 2 A gG .

References

Auxiliary power supply U_s ⁽¹⁾	RESYS P40 Reference
115 VAC	4942 3711 ⁽²⁾
230 VAC	4942 3723 ⁽²⁾
12 ... 125 VDC	4942 3602 ⁽²⁾
(1) Other rating: Please consult us. (2) References and characteristics of closed, split core and rectangular toroids: see "Core balance transformers type A" page 636.	
Description of accessories	Reference
Soft protection cover IP65	4942 0000



Core balance transformers - type A

Dedicated to RESYS and DIRIS A80

Electronic
protection

new



The solution for

- > Industry
- > Infrastructure
- > Non critical buildings
- > OEM
- > Renewable energy



Strong points

- > A complete product range
- > A wide range of fixing systems (ΔIC & $\Delta IP-R$)
- > A patented cable locator (ΔIC & $\Delta IP-R$)
- > A rapid installation and safe implementation ($\Delta IP-R$)

Conformity to standards

- > IEC 61869-1



Function

The installation of protection or monitoring systems such as earth leakage protection relays involves the use of core balance transformers.

Active conductors pass through the aperture of the core balance transformer, providing the differential summation of vector currents which enables the detection of leakage currents.

The core balance transformers (toroids) proposed by SOCOMEC meet requirements in terms of measurement sensitivity and are suitable for earth leakage protection relays RESYS M40/P40 and DIRIS A80.

Closed (series ΔIC , WR and TFR) or split-core (series $\Delta IP-R$) types, suit all wiring configurations.

Advantages

A complete product range

All dimensions and types are available for compatibility with any bar and cable configurations or diameters.

A wide range of fixing systems (ΔIC & $\Delta IP-R$)

ΔIC & $\Delta IP-R$ core balance transformers can be mounted on DIN-rail, on back-plate or directly on the cable. These products can be adapted into confined spaces with high integration constraints and provide easy and rapid cabling.

A patented cable locator (ΔIC & $\Delta IP-R$)

The SOCOMEC cable locator is a patented innovation. The cable is perfectly centralised in the core balance transformer to ensure accurate measurement and enhanced immunity to network interferences. It also enables direct mounting of the core balance transformer onto the cable.

A rapid installation and safe implementation ($\Delta IP-R$)

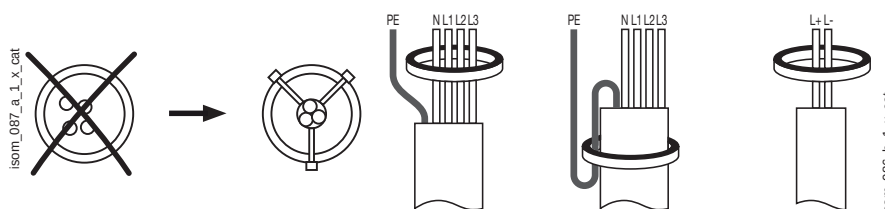
Thanks to an innovative «one click» opening/closing system, without the need of additional accessories, split-core $\Delta IP-R$ toroids have been designed to ensure a fully safe installation.

Implementation

All of the active conductors must be passed through the detection toroid's aperture. The protective conductor must pass on the outside of the toroid or pass once for each direction.

Installation limiting distortions during heavy load switching

Installation of the detection toroids



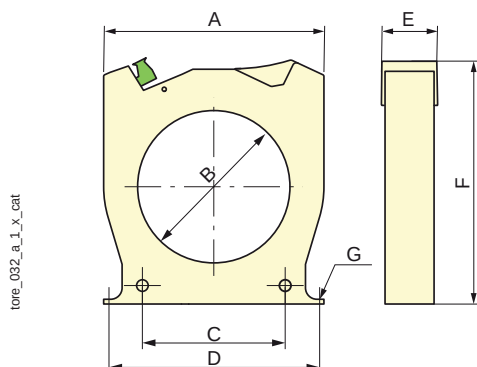
Characteristics

Electrical characteristics	ΔIC	ΔIP-R
Insulation coordination	according to IEC 60664-1	according to IEC 60664-1
Max. operating voltage	720 VAC	720 VAC
Rated impulse voltage	8 kV	8 kV
Assigned withstand voltage	3 kV	3 kV
Degree of pollution	3	3
Winding ratio	600 / 1	600 / 1
Rated primary current	10 A	10 A
Nominal power	20 mVA	50 mVA
Max. accuracy class	3	3
Operating temperature	-40 ... +80 °C	-40 ... +80 °C
Flammability class	UL94V-0	UL94V-0

Electrical characteristics WR & TFR series	
Insulation coordination	according to IEC 60664-1
Insulation voltage	690 VAC
Rated impulse voltage	8 kV
Dielectric quality	6 kV
Degree of pollution	3
Winding ratio	600 / 1
Rated primary current	10 A
Nominal power	50 mVA
Max. accuracy class	5
Operating temperature	-10 ... +55 °C
Flammability class	UL94V-0

Dimensions

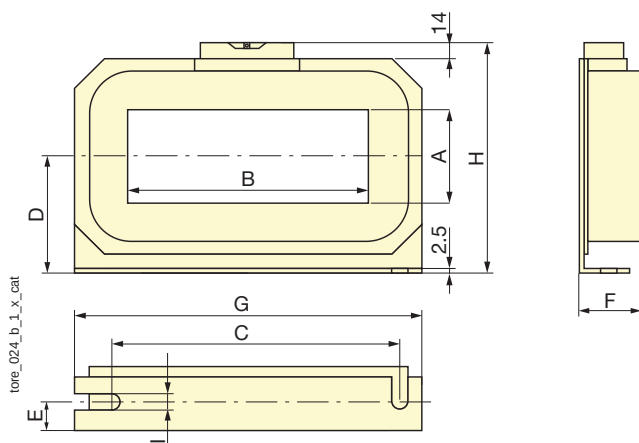
Closed toroids - ΔIC series



Type	A	B	C	D	E	F	G	Weight (kg)
ΔIC Ø 15	53	17.3	27.8	50	26	81	M4	0.10
ΔIC Ø 30	92	30	50	85	26	103.5	M4	0.13
ΔIC Ø 50	102.5	50	50	90	26	125	M5	0.18
ΔIC Ø 80	116	80	75	105	26	142.5	M5	0.22
ΔIC Ø 120	163	120	100	150	26	182.5	M6	0.38
ΔIC Ø 200	253	200	150	175 x 41.2	51	274	M6	0.88
ΔIC Ø 300	370	300	200	250 x 41.5	50	390	M6	1.72

- A. Width
B. Diameter
C. Distance between fixing centres
D. Distance between rear fixing brackets
E. Depth
F. Height
G. Diameter of fixing screws

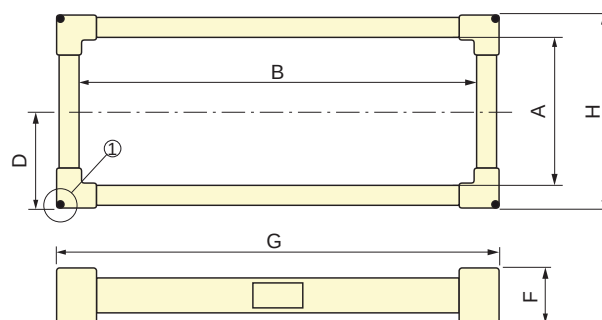
Rectangular closed toroids - WR series



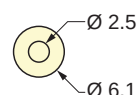
Type	A	B	C	D	E	F	G	H	I	Weight (kg)
WR 70 x 175	70	175	225	85	22	46	261	176	7.5	2.9
WR 115 x 305	115	305	360	116	25	55	402	240	8	6.3
WR 150 x 350	150	350	415	140	28	55	460	285	8	8.2

- A. Height of gateway window
B. Width of gateway window
C. Entraxe de fixation
D. Half-height from the base
E. Position of oblong slot
F. Depth
G. Largeur
H. Height
I. Width of oblong slot

Rectangular closed toroids - TFR series



① Detail for toroid fixation



Type	A	B	D	F	G	H	Weight (kg)
TFR 200 x 500	200	500	140	62	585	285	7.2

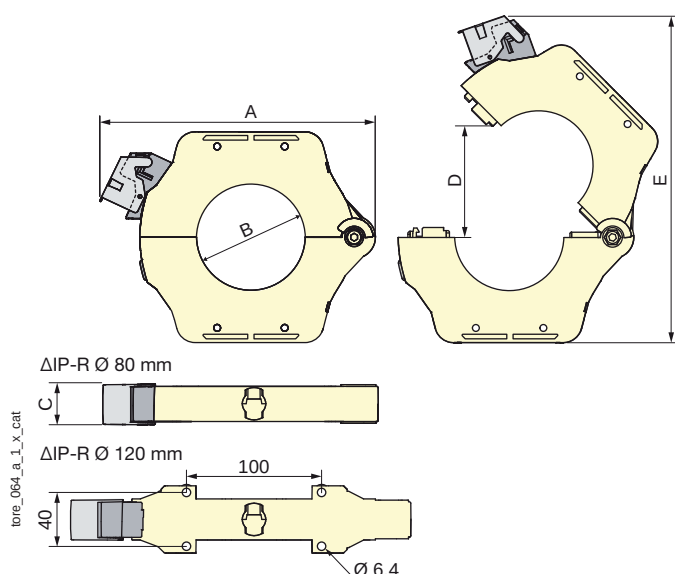
- A. Height of gateway window
B. Width of gateway window
D. Half-height from the base
F. Depth
G. Largeur
H. Height

Core balance transformers - type A

Dedicated to RESYS and DIRIS A80

Dimensions (continued)

Split-core toroids - Δ IP-R



Type	A	B	C	D	E	Weight (kg)
Δ IP-R Ø 80	204	79	30	108	260	0,85
Δ IP-R Ø 120	252	119	30	149	328	1,5

A. Width
B. Diameter
C. Depth

D. Maximum opening.
E. Device height when open

References

Closed toroids type A - Δ IC series

Type	Rated operational current I_n (A)	Toroid diameter (mm)	Reference
Δ IC Ø 15	36	15	4950 6015 ⁽¹⁾
Δ IC Ø 30	65	30	4950 6030 ⁽¹⁾
Δ IC Ø 50	85	50	4950 6050 ⁽¹⁾
Δ IC Ø 80	160	80	4950 6080 ⁽¹⁾
Δ IC Ø 120	250	120	4950 6120 ⁽¹⁾
Δ IC Ø 200	400	200	4950 6200 ⁽¹⁾
Δ IC Ø 300	630	300	4950 6300 ⁽¹⁾

(1) Toroids for RESYS relays M40 / P40 and DIRIS A80.

Rectangular closed toroids type A - WR and TFR series

Type	Toroid diameter (mm)	Reference
WR 70 x 175	70 x 175	4795 0717 ⁽¹⁾
WR 115 x 305	115 x 305	4795 1130 ⁽¹⁾
WR 150 x 350	150 x 350	4795 1535 ⁽¹⁾
TFR 200 x 500	200 x 500	4795 2050 ⁽¹⁾

(1) Toroids for RESYS relays M40 / P40 and DIRIS A80.

Split-core toroids type A - WS series⁽²⁾

Type	Rated operational current I_n (A)	Toroid diameter (mm)	Reference
Δ IP-R Ø 80	160	80	4750 6081 ⁽¹⁾
Δ IP-R Ø 120	250	120	4750 6121 ⁽¹⁾

(1) Toroids for RESYS relays M40 / P40 and DIRIS A80.

(2) DELTA IP-R cores are supplied with a sealable protective cover, plug-in spring terminal block and DIN rail attachment.

Accessories for Δ IC & Δ IP-R toroids

Cable locator

Enables the cables to be centred in the toroid's aperture. Use of this accessory allows the core balance transformer to be directly mounted onto the cables.

Description of accessories	Reference
Cable locator, Ø 30 mm	4950 0011
Cable locator, Ø 50 mm	4950 0012
Cable locator, Ø 80 mm	4950 0013
Cable locator, Ø 120 mm	4950 0014



terre_040_a_1_cat

Mounting bracket

Description of accessories	Reference
Mounting bracket, Ø 30 mm	4950 0001
Mounting bracket, Ø 50 mm	4950 0002
Mounting bracket, Ø 80 mm	4950 0003
Mounting bracket, Ø 120 mm	4950 0003
Mounting bracket, Ø 200 mm	4950 0004
Mounting bracket, Ø 300 mm	4950 0005



terre_038_a_1_cat

Detachable screw terminal

Description of accessories	Reference
Detachable screw terminal	4950 0041



terre_042_a_1_cat

Detachable push-in terminal

Description of accessories	Reference
Detachable push-in terminal	4950 0040



terre_041_a_1_cat

Sealable protection cover

Description of accessories	Reference
Sealable protection cover	4950 0020



terre_043_a_1_cat

DIN-rail clip

For DIN-rail mounting SOCOMEC core balance transformers.

Description of accessories	Reference
DIN-rail clip	4950 0031



terre_037_a_1_cat



SURGYS® G51-PV

Surge arrester - Type 2
for photovoltaic installations

Electronic
protection



SURGYS G51 - 1000 PV

Function

SURGYS G51-PV surge protective device is designed to ensure protection for photovoltaic supply networks against transient overvoltages. It is compliant with test requirements UTE 61-740-51 and EN 50-539-11 as well as with installation requirements UTE C 15-712-1.

Advantages

Monobloc base with plug-in module

The SURGYS is supplied complete and ready for installation. Its Monobloc base is fitted with replaceable plug-in modules which, at the end of their service life, can be easily and quickly replaced without having to disconnect the Monobloc base.

Remote signalling

The remote plug-in signalling contact allows alarm report to a supervision station.

New 1500 VDC version

Adapted to the protection of high power installations.

The solution for

> Solar energy



Strong points

- > Monobloc base with plug-in module
- > Remote signalling
- > New 1500 VDC version

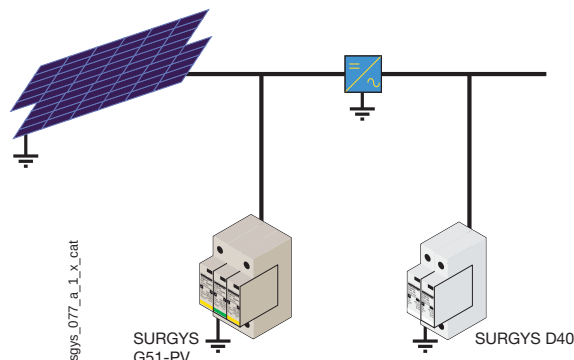
Approvals and certifications

- > Compliant with test guide UTE C61-740-51 and NF EN 50 539-11
- > Compliant with installation guide UTE C15-712-1 (2010)

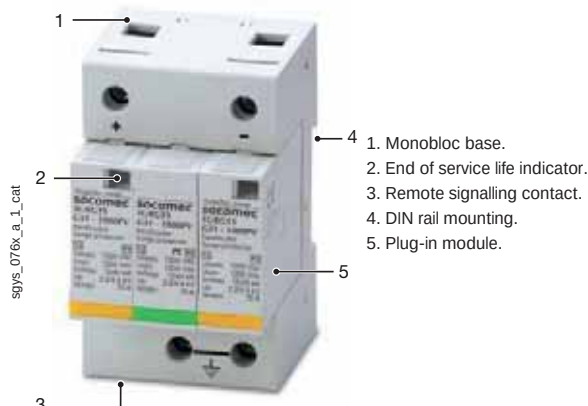
Applications

Main incoming protection in a photovoltaic network:

- SURGYS G51-PV is installed on the DC side, in the combiner box, close to the solar cell strings, for protecting the downstream DC equipment from the indirect effects of lightning.
- SURGYS AC, SURGYS D40 for instance, is installed downstream of the inverter for load protection.

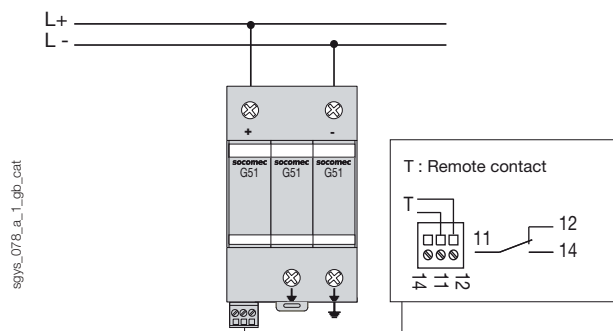


Front panel



Connection

Common mode / differential protection mode



Characteristics

Mains

Mains type	500 VDC / 600 VDC / 800 VDC / 1000 VDC / 1500 VDC
PV voltage U_{ocSTC}	500 VDC / 600 VDC / 800 VDC / 1000 VDC / 1500 VDC
Max. voltage U_{CPV}	600 VDC (version 500 V) / 720 VDC (version 600 V) / 960 VDC (version 800 V) / 1200 VDC (version 1000 V) / 1500 VDC (version 1500 V)

Protection characteristics

Mode of protection	MC ⁽¹⁾ : 500 V / 600 V / 800 V / 1000 V / 1500 V MD ⁽²⁾ : 800 V / 1000 V / 1500 V
Level of protection MC (U_{pMC})	2,2 kV (500 V) / 2,8 kV (600 V) / 2 kV (800 V) / 2,2 kV (1000 V) / 3,2 kV (1500 V)
Level of protection MD (U_{pMD})	- / - / 3,6 kV (800 V) / 4,4 kV (1000 V) / 4,5 kV (1500 V)
Short circuit current (I_{SCWPV})	1000 A
Maximum discharge current (1 shock 8/20 μ s) I_{max}	40 kA
Nominal discharge current (15 shocks 8/20 μ s) I_n	15 kA

Associated characteristics

Residual current I_c	500 / 600 V : < 0.1 mA 800 / 1000 / 1500 V : 0 mA
Response time t_r	< 25 ns
Follow current I_f	none
End of life mode	thermal disconnection
Type of disconnection indicator	mechanical
Number of disconnection indicators	1

Remote signalling contact

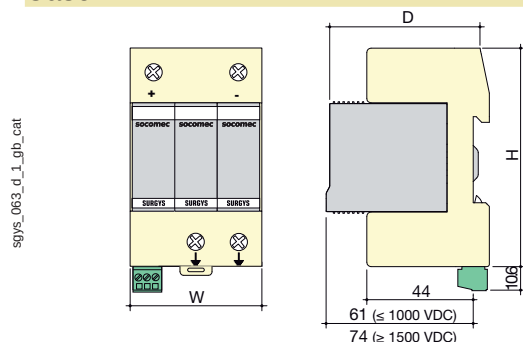
Contact type	NO/NC
AC making capacity	0.5 A
DC making capacity	3 A
AC nominal voltage	250 VAC
DC nominal voltage	30 VDC
Sustained current	2 A
Connection type	plug-in screw terminal
Max. cross-section of terminal connections	1.5 mm ²

Operating conditions

Operating temperature	-40 ... +85 °C
Storage temperature	-40 ... +85 °C

(1) MC: Common mode. (2) MD: Differential mode.

Case



Type	monobloc design
2 modules dimensions W x H x D $\leq$ 800 VDC	36 x 90 x 67 mm
3 modules dimensions W x H x D $\leq$ 1000 VDC	54 x 90 x 67 mm
3 modules dimensions W x H x D $\geq$ 1500 VDC	54 x 90 x 77 mm
Case degree of protection	IP20
Terminal block degree of protection	IP20
Case material	UL94-V0 thermoplastic
Mains connection cross-section	4 ... 25 mm ²
Earth connection cross-section	6 ... 25 mm ²

References

Mains voltage	Description	No. of poles	Mode of protection	Number of modules	SURGYS® G51-PV Reference
500 VDC	without remote signal	2	MC ⁽¹⁾	2	4982 2500
500 VDC	with remote signal	2	MC ⁽¹⁾	2	4982 2501
600 VDC	without remote signal	2	MC ⁽¹⁾	2	4982 2530
600 VDC	with remote signal	2	MC ⁽¹⁾	2	4982 2531
800 VDC	without remote signal	2	MC / MD ⁽²⁾	3	4982 2510
800 VDC	with remote signal	2	MC / MD ⁽²⁾	3	4982 2511
1000 VDC	without remote signal	2	MC / MD ⁽²⁾	3	4982 2520
1000 VDC	with remote signal	2	MC / MD ⁽²⁾	3	4982 2521
1500 VDC	without remote signal	2	MC / MD ⁽²⁾	3	4982 2540
1500 VDC	with remote signal	2	MC / MD ⁽²⁾	3	4982 2541

Description of accessories	Mode of protection	Reference
Spare plug-in module m-G51 for 500 VDC	MC ⁽¹⁾	4982 2509
Spare plug-in module m-G51 for 600 VDC	MC ⁽¹⁾	4982 2539
Spare plug-in module m-G51 for 800 VDC	MC / MD ⁽²⁾	4982 2519
Spare plug-in module m-G51 for 1000 VDC	MC / MD ⁽²⁾	4982 2529
Spare plug-in module m-G51 for 1500 VDC	MC / MD ⁽²⁾	4982 2549

(1) MC: Common mode.

(2) MD: Differential mode.



SURGYS® G140-F

Surge arrester - Types 1 and 2

for installations with lightning conductor and classified sites

Electronic
protection

new



SURGYS G140-F 2 poles

Function

The SURGYS® G140-F surge arrester is designed to ensure the protection of your low voltage distribution installations and your electrical equipment. It acts against industrial operation surges and surges owing to lightning.

This type of surge arrester is particularly recommended where there is a risk of direct impact of lightning strikes.

NEW: Impulse current (I_{imp}) of 25 kA per pole and special products for TT arrangements.

Advantages

Remote signalling

With the remote signalling contact (plug-in) you can upload the alert to a supervisory device.

The solution for

- > Industry
- > All types of building (critical, non-critical)



Strong points

- > Remote signalling

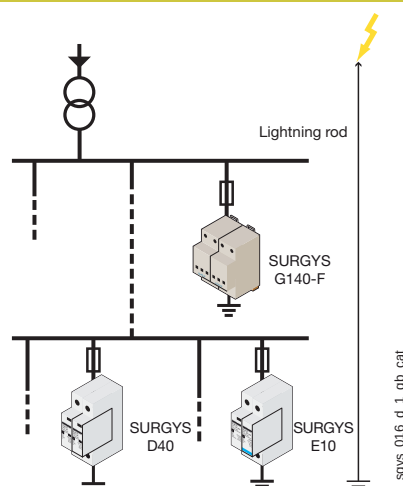
Approvals and certifications

- > IEC 61643-11
- > NF EN 61643-11



Applications

- Located in the main switchboard, upstream of the distribution panels.
- Main electrical switchboard + building protected against lightning either:
 - through lightning conductors,
 - through mesh cages.
- Main switchboard in buildings subject to a high risk of lightning strikes such as classified installations, installations located in areas prone to a high density of lightning strikes, high-rise buildings, presence of antenna towers, chimneys.
- Sites located at high altitude.
- Distribution board of a building with presence of Lightning Protection Systems.



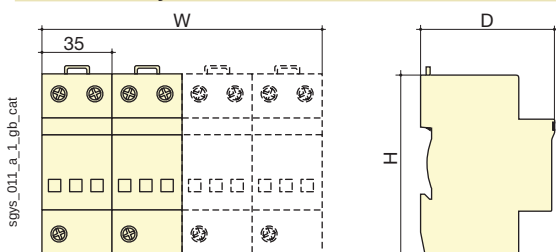
General characteristics

- Surge arrester - Type 1 and 2.
- Designed to withstand discharge currents linked to direct lightning strikes.
- Max. discharge current 140 kA.
- Guaranteed protection in common and differential modes according to reference.
- Thermal disconnection device.
- End of service life indicator.
- Remote signalling contact.
- Absence of follow current.
- Install in parallel or series arrangement.
- Recommended fuse combination switch FUSERBLOC (see page 254).

Front panel



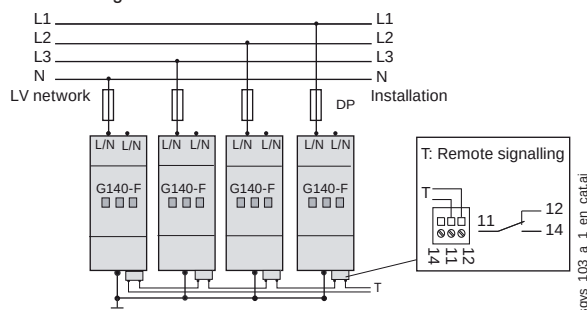
Switch body



Type	monobloc module
Dimensions W x H x D - 2 pole device	72 x 90 x 67 mm
Dimensions W x H x D - 3 pole device	108 x 90 x 67 mm
Dimensions W x H x D - 4 pole device	144 x 90 x 67 mm
Case degree of protection IP20	IP20
Terminal block degree of protection IP20	IP20
Case material	thermoplastic UL94-V0
Mains connection cross-section	6 ... 35 mm ²
Earthing connection cross-section	6 ... 35 mm ²

Connection

Parallel arrangement



Specifications

Mains

Network type	230 / 400 VAC	
Neutral arrangement (see table)	TT, TN, IT	
Connection mode	MC ⁽¹⁾	MC ⁽¹⁾ /MD ⁽²⁾
Nominal voltage U _n	400 VAC	230 VAC
Max. voltage U _c	440 VAC	255 VAC

Protection characteristics

Temporary overvoltage withstand @ 5 sec (U _T)	580 VAC withstand	335 VAC withstand
Temporary overvoltage withstand @ 120 sec (U _T)	770 VAC disconnection	440 VAC disconnection
Temporary overvoltage from a HV mains, between N & PE in a TT arrangement		1200 V / 30 A / 200 ms withstand
Level of protection U _p	1.5 kV	1.5/1.5 kV
Max. current discharge (1 impulse 8/20 μs) I _{max}	140 kA	140 kA
Nominal discharge current (15 impulses 8/20 μs) I _n	25 kA	25 kA
Impulse current (1 shock 10/350 μs) I _{imp}	25 kA (15 kA*)	25 kA (15 kA*)

Associated characteristics

Residual current I _{pe}	< 3 mA
Response time t _r	< 5 ns
Follow current I _f	None
Admissible short-circuit current I _{sc}	50 kA (100 kA*)
Recommended disconnector	gG 315 A (125 A*) fuses
Type of mechanical disconnection indicator	Mechanical
Number of disconnection indicators	3

Remote signalling contact

Number of contacts per pole	1
Contact type	Changeover switch
AC making capacity	0.5 A
DC making capacity	3 A
AC nominal voltage	250 VAC
DC nominal voltage	30 VDC
Sustained current	2 A
Connection type	Screw terminal block
Max. cross-section of terminal connections	1.5 mm ²

Operating conditions

Operating temperature range	-40 ... +85°C
Storage temperature range	-40 ... +85°C

(1) MC: Common mode.

(2) MD: Differential mode.

(*) used in association with gG 125 A fuse

References

No. of poles	No. of adjacent boxes	Neutral arrangements	Protection mode	I total (10/350 μs)	SURGYS® G140-F Reference
2	2	IT	MC ⁽¹⁾	50 kA	4981 1521
3	3	TNC-IT	MC ⁽¹⁾	75 kA	4981 1531
4	4	IT	MC ⁽¹⁾	100 kA	4981 1541
4	4	TT-TNS	MC ⁽¹⁾ / MD ⁽²⁾	100 kA	4981 1542

(1) MC: Common mode.

(2) MD: Differential mode.



SURGYS® G100-F

Surge arrester - Types 1 and 2

for installations with lightning conductor and classified sites



SURGYS G100-F 1 pole

Function

The SURGYS G100-F surge arrester is designed to ensure the protection of your low voltage distribution installations and your electrical equipment. It acts against industrial operation surges and surges owing to lightning. This type of surge arrester is particularly recommended where there is a risk of direct impact of lightning strikes.

Advantages

Recommended where there is a risk of direct impact from lightning strikes
It is recommended for use at the top of the installation, due to its max. impulse current I_{imp} (10/350µs wave) of 25 kA.

Absence of follow current

The multi-varistor technology ensures there is no line follow current and avoids any risk of nuisance tripping of upstream protection devices.

Integrated thermal disconnection device

Guarantees disconnection at surge arrester's end of life.

End of service life indicator

Indicates varistor's end-of-life.

Remote signalling

The remote signalling contact provides disconnection data to a supervision station (BMS).

Plug-in modules for easy maintenance

These modules are quick and easy to replace, without having to uncable the device.

The solution for

- > Industry
- > All types of building (critical, non-critical)



Strong points

- > Recommended where there is a risk of direct impact from lightning strikes
- > Absence of follow current
- > Integrated thermal disconnection device
- > End of service life indicator
- > Remote signalling
- > Easy maintenance

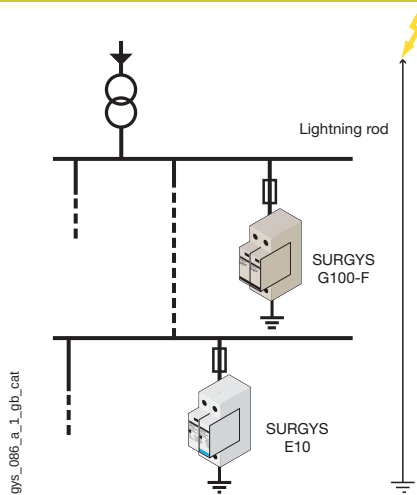
Compliance with standards

- > NF EN 61643-11
- > IEC 61643-11

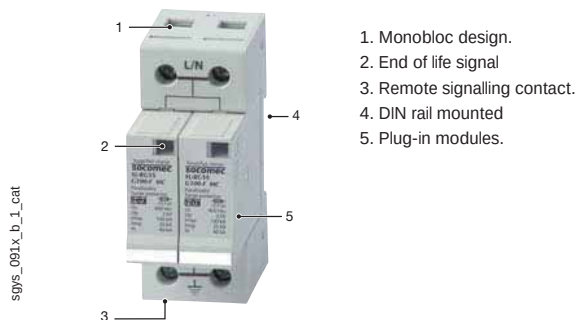


Applications

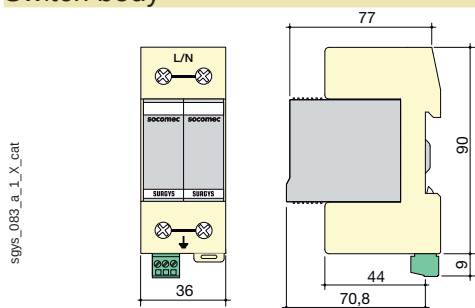
- Located in the main switchboard, upstream of the distribution panels.
- Main electrical switchboard + building protected against lightning either:
 - through lightning conductors
 - through mesh cages.
- Main switchboard in buildings subject to a high risk of lightning strikes such as classified installations, installations located in areas prone to a high density of lightning strikes, high-rise buildings, presence of antenna towers, chimneys.
- Sites located at high altitude.
- Distribution board of a building with presence of Lightning Protection Systems.



Front panel



Switch body



Type	modular
Dimensions W x H x D - 2 pole device	72 x 90 x 77 mm
Dimensions W x H x D - 3 pole device	108 x 90 x 77 mm
Dimensions W x H x D - 4 pole device	144 x 90 x 77 mm
Casing protection index	IP20
Terminal block degree of protection	IP20
Case material	PEI UL94-5VA thermoplastic
Mains connection cross-section	4 ... 25 mm ²
Earthing connection cross-section	4 ... 25 mm ²

Specifications

Mains

Mains type	230 / 400 VAC
Neutral arrangements	As per reference
Nominal voltage U_n	400 VAC
Max. voltage U_c	440 VAC
Temporary surge (TOV) 5 s U_T	580 VAC withstand
Temporary surge (TOV) 120 min U_T	770 VAC disconnection

Protection characteristics

Level of protection U_p	2 kV
Max. current discharge (1 impulse 8/20 μ s) I_{max}	100 kA
Nominal discharge current (15 impulses 8/20 μ s) I_n	25 kA
Residual voltage at I_{imp}	1.5 kV
Impulse current (1 shock 10/350 μ s) I_{imp}	25 kA
Protection mode	Common

Associated characteristics

Residual current I_c	< 1 mA
Response time t_r	< 25 ns
Follow current I_f	None
Admissible short-circuit current I_{sccr}	25 kA
Recommended disconnectors	gG 315 A fuses
Type of disconnection indicator	Mechanical
Number of disconnection indicators	1

Remote signalling contact

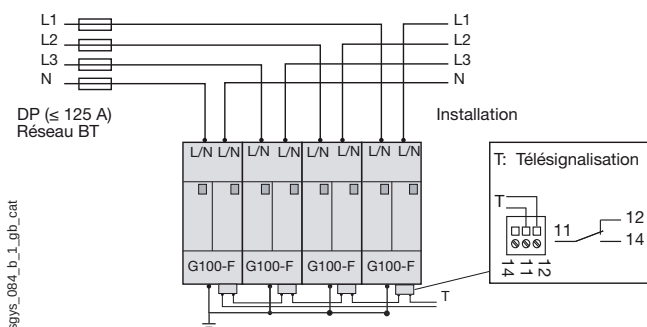
Contact type	NO/NC
AC making capacity	0.5 A
DC making capacity	2 A
AC nominal voltage	250 VAC
DC nominal voltage	30 VDC
Sustained current	2 A
Connection type	Screw terminal block
Max. cross-section of connections to terminals	1.5 mm ²

Operating conditions

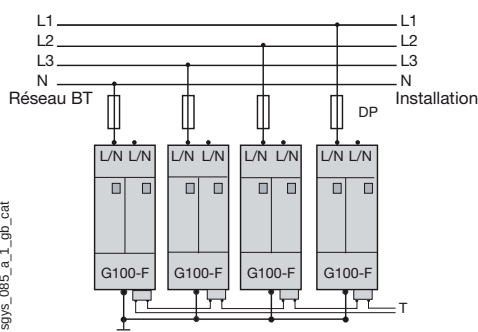
Operating temperature range	-40 ... +85°C
Storage temperature range	-40 ... +85°C

Connection

Series arrangement



Parallel arrangement



References

No. of poles	No. of adjacent boxes	Neutral arrangements	I total (10/350 μ s)	SURGYS® G100-F Reference
2	4	IT	50 kA	4981 1020
3	6	TNC-IT	75 kA	4981 1030
4	8	IT	100 kA	4981 1040

Description of accessories	Reference
Spare plug-in module	4981 1019



SURGYS® G50-FE

Surge arrester - Types 1 and 2

for installations with lightning conductor and classified sites (sensitive equipment)

Electronic
protection

new



SURGYS G50-FE 4 poles

The solution for

- > Industry
- > All types of building (critical, non-critical)



Strong points

- > Recommended where there is a risk of direct impact from lightning strikes
- > Absence of line follow current
- > Integrated thermal disconnection device
- > End of life signal
- > Remote signalling
- > Easy maintenance

Compliance with standards

- > NF EN 61643-11
- > IEC 61643-11



Function

The SURGYS G50-FE surge arrester is designed to ensure the protection of your low voltage distribution installations and your electrical equipment. It acts against industrial operation surges and surges owing to lightning. This type of surge arrester is particularly recommended in case of risk of direct impact of lightning strikes, at the main switchboard level containing electronic devices sensitive to surges.

NEW: version for TT arrangement mains.

Advantages

Recommended where there is a risk of direct impact from lightning strikes

With its max. impulse current I_{imp} (10/350µs surge) of 12.5 kA, it is recommended for use at the top of the installation.

Absence of line follow current

The multi-varistor technology ensures there is no follow current and avoids any risk of nuisance tripping of upstream protection devices.

Integrated thermal disconnection device

Guarantees disconnection at surge arrester's end of life.

End of service life indicator

Indicates varistor's end-of-life.

Remote signalling

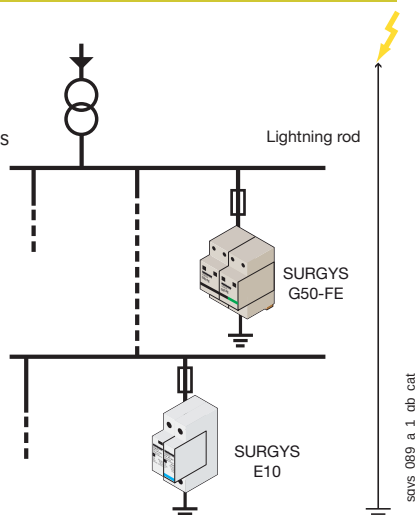
The remote signalling contact provides disconnection data to a supervision station (BMS).

Plug-in modules and monobloc base for easy installation and maintenance

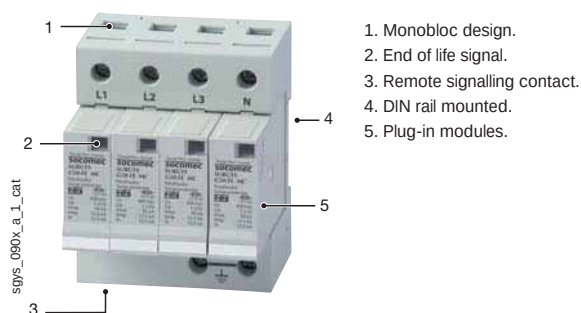
These modules are quick and easy to replace, without having to uncable the device.

Applications

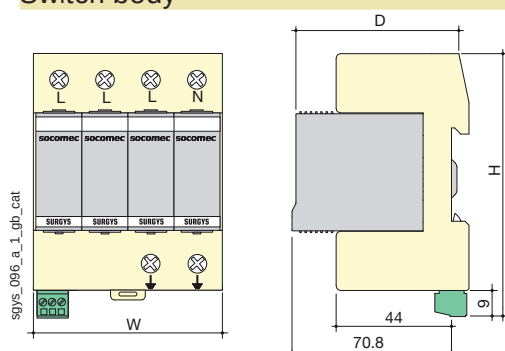
- Main switchboard or main distribution panel of a building, equipped with electronic devices (multi-function measurement devices, PLC, etc.) with presence of lightning conductors or protection through meshed cages.
- Main switchboard equipped with electronics in buildings subjected to high level risk of lightning strikes such as classified installations, installations located in areas prone to high density of lightning strikes, high-rise buildings.
- Main switchboard equipped with PLC, BMS, remote monitoring, technical alarms, modems...
- High-rise building safety main switchboard.
- Lift control panel located at an elevated level within a building.
- Safety inverter units.
- Main switchboard or remote sites containing electronics.



Front panel



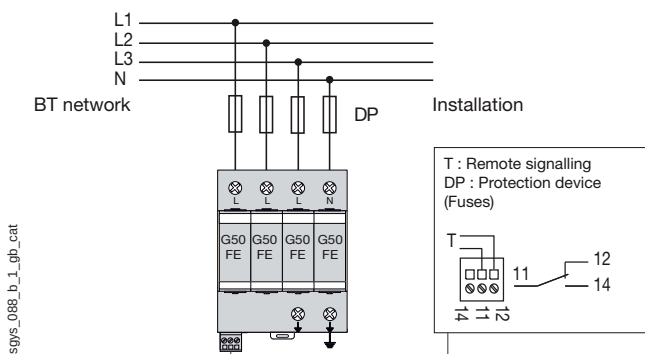
Switch body



Type	plug-in module
Dimensions W x H x D - 2 pole device	36 x 99 x 77 mm
Dimensions W x H x D - 3 pole device	54 x 99 x 77 mm
Dimensions W x H x D - 4 pole device	72 x 99 x 77 mm
Case degree of protection IP20	IP20
Terminal block degree of protection IP20	IP20
Case material	thermoplastic UL94-V0
Mains connection cross-section	5 ... 25 mm ²
Earthing connection cross-section	5 ... 25 mm ²

Connections

Parallel arrangement



Specifications

Mains		
Mains type	230 / 400 VAC	
Neutral arrangement (see table)	TT, TN, IT	
Connection mode	MC ⁽¹⁾	MC ⁽¹⁾ / MD ⁽²⁾
Nominal voltage U _n	400 VAC	230 VAC
Max. voltage U _c	440 VAC	255 VAC
Protection characteristics		
Temporary overvoltage withstand @ 5 sec (U _T)	580 VAC withstand	335 VAC withstand
Temporary overvoltage withstand @ 120 sec (U _T)	770 VAC withstand	440 VAC withstand
Temporary overvoltage from a HV mains, between N & PE in a TT arrangement		1200 V / 30 A / 200 ms withstand
Level of protection U _p	1.7 kV	1.5 / 1.3 kV
Max. current discharge (1 impulse 8/20 µs) I _{max}	50 kA	50 kA
Nominal discharge current (15 impulses 8/20 µs) I _n	12.5 kA	12.5 kA
Impulse current (1 shock 10/350 µs) I _{imp}	12.5 kA	12.5 kA
Associated characteristics		
Residual current I _{pe}	< 3 mA	
Response time t _r	< 5 ns	
Follow current I _f	None	
Admissible short-circuit current I _{sc}	25 kA	
Recommended disconnector	gG 125 A fuses	
Type of mechanical disconnection indicator	Mechanical	
Number of disconnection indicators	1	
Remote signalling contact		
Number of contacts per pole	1	
Contact type	NO/NC	
AC making capacity	0.5 A	
DC making capacity	3 A	
AC nominal voltage	250 VAC	
DC nominal voltage	30 VDC	
Sustained current	2 A	
Connection type	Plug-in screw terminal	
Max. cross-section of terminal connections	1.5 mm ²	
Operating conditions		
Operating temperature range	-40 ... +85°C	
Storage temperature range	-40 ... +85°C	

(1) MC: Common mode.
(2) MD: Differential mode.

References

No. of poles	No. of adjacent boxes	Neutral arrangements	Protection mode	I total (10/350µs)	SURGYS G50-FE Reference
2	2	IT	MC ⁽¹⁾	25 kA	4981 0520
3	3	TNC-IT	MC ⁽¹⁾	37.5 kA	4981 0530
4	4	IT	MC ⁽¹⁾	50 kA	4981 0540
4	4	TT-TNS	MC ⁽¹⁾ / MD ⁽²⁾	50 kA	4981 0541

(1) MC: Common mode. (2) MD: Differential mode.

Description of accessories	Reference
Spare plug-in module	4981 0519



SURGYS® G40-FE

Surge arrester- Type 1 and 2

for installations with lightning conductor and for sensitive loads

Electronic
protection

new



SURGYS G40-FE 2 poles

Function

The SURGYS® G40-FE surge arrester is designed to ensure the protection of your low voltage distribution installations and your electrical equipment. It acts against industrial operation surges and surges owing to lightning.

This type of surge arrester is particularly recommended where there is a risk of direct impact of lightning strikes, especially at the main switchboard level when electronic devices sensitive to surges are installed.

NEW: Versions 4 P compatible with IT and TT arrangements.

Advantages

Recommended where there is a risk of direct impact from lightning strikes

With its max. impulse current I_{imp} (10/350 μ s surge) of 15 kA, it is recommended for use at the top of the installation.

Varistor / gas spark gap technology

This solution guarantees an optimised level of protection (low voltage $U_p=1.5$ kV) and improved coordination between type 1 & type 2.

End of service life indicator

Indicates internal components' end-of-life.

Remote signalling

With the remote signalling contact (plug-in) you can upload the alert to a supervisory device.

Thermal disconnector

The surge arrester's internal disconnection device safeguards the system at the SPD's end-of-life.

The solution for

- > Industry
- > All types of building (critical, non-critical)



Strong points

- > Recommended where there is a risk of direct impact from lightning strikes
- > Varistor / gas spark gap technology
- > End of life signal
- > Remote signalling
- > Thermal disconnector

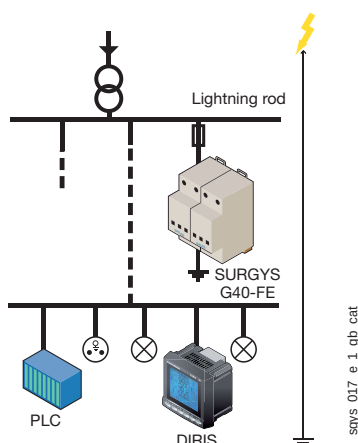
Compliance with standards

- > NF EN 61643-11
- > IEC 61643-11



Applications

- Main switchboard or main distribution panel of a building, equipped with electronic devices (multi-function measurement devices, PLC, etc.) with presence of lightning conductors or protection through meshed cages.
- Main switchboard equipped with electronics in buildings subjected to high level risk of lightning strikes such as classified installations, installations located in areas prone to high density of lightning strikes, high-rise buildings.
- Main switchboard equipped with PLC, BMS, remote monitoring, technical alarms, modems...
- High-rise building safety main switchboard.
- Lift control panel located at an elevated level within a building.
- Safety inverter units.
- Main switchboard or remote sites containing electronics.



Front panel

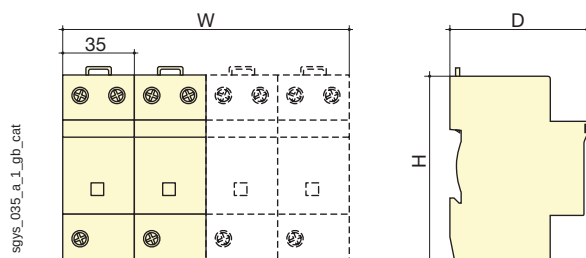


1. End of life signal.
2. Earthing comb bridging connection.
3. Remote signalling contact.
4. DIN rail mounting.

General characteristics

- Surge arrester- Types 1 and 2.
- Designed to withstand discharge currents linked to direct lightning strikes.
- Protection level Up improved at 1.5 kV.
- Guaranteed protection in common mode.
- End of service life indicator.
- Remote signalling contact.
- Absence of follow current.
- Recommended fuse combination switch FUSERBLOC (see page 254).

Switch body



Type	monobloc module
Dimensions W x H x D - 2 pole device	72 x 90 x 67 mm
Dimensions W x H x D - 3 pole device	108 x 90 x 67 mm
Dimensions W x H x D - 4 pole device	144 x 90 x 67 mm
Case degree of protection IP20	IP20
Terminal block degree of protection IP20	IP20
Case material	thermoplastic UL94-V0
Mains connection cross-section	6 ... 35 mm ²
Earthing connection cross-section	6 ... 35 mm ²

Specifications

Mains

Mains type	230 / 400 VAC	
Neutral arrangement (see table)	TT, TN, IT	
Connection mode	MC ⁽¹⁾	MC ⁽¹⁾ / MD ⁽²⁾
Nominal voltage U _n	400 VAC	230 VAC
Max. voltage U _c	440 VAC	255 VAC

Protection characteristics

Temporary overvoltage withstand @ 5 sec (U _T)	580 VAC withstand	335 VAC withstand
Temporary overvoltage withstand @ 120 sec (U _T)	770 VAC disconnection	440 VAC disconnection
Temporary overvoltage from a HV mains, between N & PE in a TT arrangement		1200 V / 30 A / 200 ms withstand
Level of protection U _p	1.5 kV	1.5/1.5 kV
Max. current discharge (1 impulse 8/20 µs) I _{max}	70 kA	70 kA
Nominal discharge current (15 impulses 8/20 µs) I _n	25 kA	25 kA
Residual voltage at limp	1.5 kV	1.5/1.1 kV
Impulse current (1 shock 10/350 µs) I _{imp}	25 kA (15 kA*)	25 kA (15 kA*)

Associated characteristics

Residual current I _{pe}	< 10 µA
Response time t _r	< 100 ns
Follow current I _f	None
Admissible short-circuit current I _{sc}	50 kA (100 kA*)
Recommended disconnector	gG 315 A (125 A*) fuses
Type of mechanical disconnection indicator	Mechanical
Number of disconnection indicators	1

Remote signalling contact

Number of contacts per pole	1
Contact type	Inverter
AC making capacity	0.5 A
DC making capacity	3 A
AC nominal voltage	250 VAC
DC nominal voltage	30 VDC
Sustained current	2 A
Connection type	Plug-in screw terminal
Max. cross-section of terminal connections	1.5 mm ²

Operating conditions

Operating temperature range	-40 ... +85°C
Storage temperature range	-40 ... +85°C

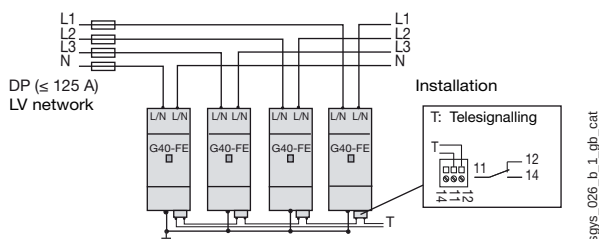
(1) MC: Common mode.

(*) used in association with gG 125 A fuse

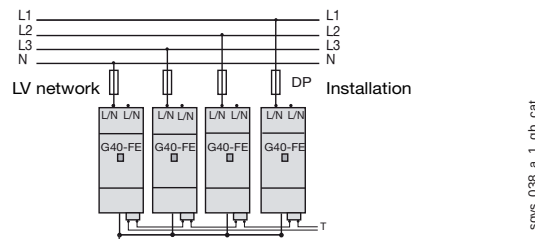
(2) MD: Differential mode.

Connections

Series arrangement



Parallel arrangement



References

No. of poles	No. of adjacent boxes	Neutral arrangements	Protection mode	I total (10/350µs)	SURGYS G40-FE Reference
2	2	IT	MC ⁽¹⁾	50 kA	4981 0422
3	3	TNC-IT	MC ⁽¹⁾	75 kA	4981 0432
4	4	IT	MC ⁽²⁾	100 kA	4981 0442
4	4	TT-TNS	MC ⁽¹⁾ / MD ⁽²⁾	100 kA	4981 0444

(1) MC: Common mode. (2) MD: Differential mode.



SURGYS® G70

Surge arrester - Type 2

for sites frequently struck by lightning

Electronic
protection



sgys_067_a_1_cat

Function

The SURGYS® G70 surge arrester is designed to ensure reinforced protection of single-phase and three-phase networks. It acts against industrial operation surges and surges owing to lightning.

This type of Surge Protective Device is particularly recommended in case of heightened risk of nearby lightning strikes.

Advantages

Monobloc design

Easy to install.

Plug-in module

Quick maintenance on end-of-life modules.

Remote signalling

With the remote signalling contact (plug-in) you can upload the alert to a supervisory device.

End of life signal

Indicates internal components' end-of-life.

The solution for

- > Industry
- > All types of building (critical, non-critical)



Strong points

- > Monobloc design
- > Plug-in module
- > Remote signalling
- > End of life signal

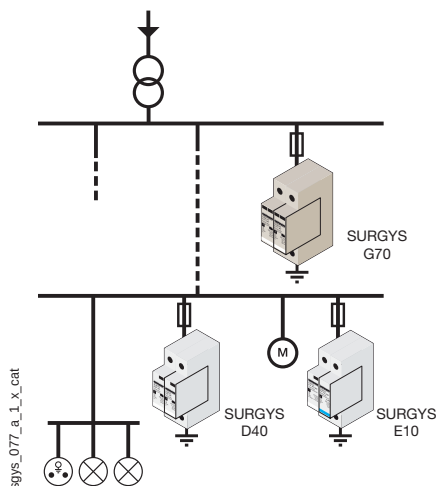
Compliance with standards

- > NF EN 61643-11
- > IEC 61643-11



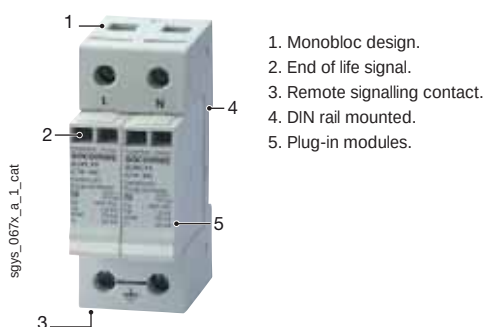
Applications

- Safety and lighting main switchboard.
- Safety main switchboard.
- Main switchboard of high power inverters.
- Distribution boards of remote sites.
- Protection of electrotechnical equipment such as motors, switching devices, control devices...

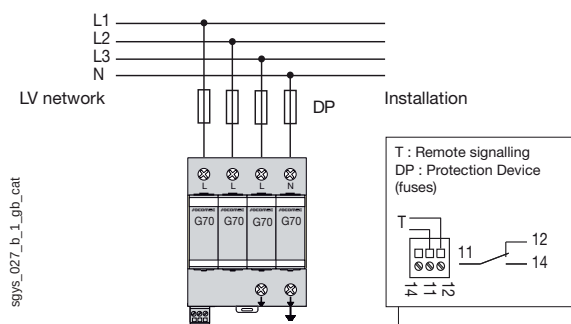


sgys_077_a_1_x_cat

Front panel



Connections



Specifications

Mains	
Mains type	230 / 400 VAC
Neutral arrangements	TN-IT ⁽²⁾
Nominal voltage U_n	400 VAC
Max. voltage U_c	440 VAC
Temporary surge (TOV) 5 s U_T	580 VAC withstand
Temporary surge (TOV) 120 min U_T	770 VAC disconnection
Protection characteristics	
Level of protection U_p	1.8 kV
Max. current discharge (1 impulse 8/20 μ s) I_{max}	70 kA
Nominal discharge current (15 impulses 8/20 μ s) I_n	30 kA
Protection mode	Common
Associated characteristics	
Residual current I_c	< 1 mA
Response time t_r	< 25 ns
Follow current I_f	None
Admissible short-circuit current I_{sccr}	25 kA
Recommended disconnectors	gG 100 A ⁽¹⁾ fuses
Type of disconnection indicator	mechanical
Number of disconnection indicators	2

Remote signalling contact

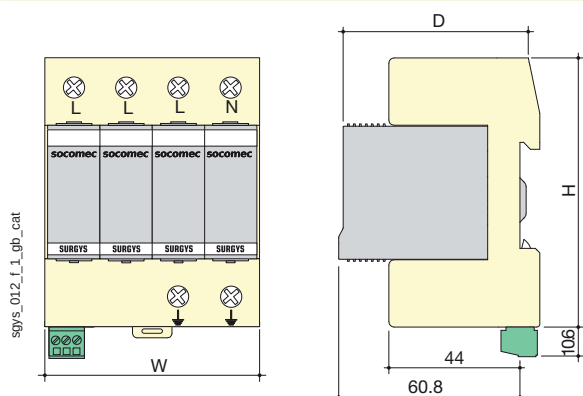
Contact type	NO/NC
AC making capacity	0.5 A
DC making capacity	2 A
AC nominal voltage	250 VAC
DC nominal voltage	30 VDC
Sustained current	2 A
Connection type	through screw block
Max. cross-section of connections to terminals	1.5 mm ²

Operating conditions

Operating temperature range	-40 ... +85°C
Storage temperature range	-40 ... +85°C

- (1) Value compliant with article 534.1.5.3 of the NF C 15100 master templates can be used if a continuity of service backed up by the surge protection channel is desired.
(2) TT arrangement: please contact us.

Switch body



Type	monobloc module
Dimensions W x H x D - 2 pole device	36 x 90 x 67 mm
Dimensions W x H x D - 3 pole device	54 x 90 x 67 mm
Dimensions W x H x D - 4 pole device	72 x 90 x 67 mm
Casing protection index	IP20
Terminal block degree of protection	IP20
Case material	polycarbonate UL94-V0
Mains connection cross-section	4 ... 25 mm ²
Earthing connection cross-section	4 ... 25 mm ² ⁽¹⁾

- (1) Min. cross-section of 10 mm² when lightning conductor present.

References

No. of poles	Number of adjacent modules	SURGYS® G70 Reference
2	2	4982 1720
3	3	4982 1730
4	4	4982 1740
Description of accessories		Reference
Replacement plug-in module m-G70		4982 0719



SURGYS® D40

Surge arrester - Type 2
for distribution boards

Electronic
protection



sgys_069_a_1_cat

SURGYS D40 2 poles

Function

The SURGYS® D40 surge arrester is designed to ensure protection of LV distribution circuits and equipment against transient surges. It acts against industrial operation surges and surges owing to lightning.

Advantages

Monobloc design
Easy to install.

Plug-in module
Quick maintenance on end-of-life modules.

Remote signalling

With the remote signalling contact (plug-in) you can upload the alert to a supervisory device.

End of life indicator

Indicates internal components' end-of-life.

The solution for

- > Industry
- > Infrastructure
- > All types of building (critical, non-critical)
- > OEM



Strong points

- > Monobloc design
- > Plug-in module
- > Remote signalling
- > End of life indicator

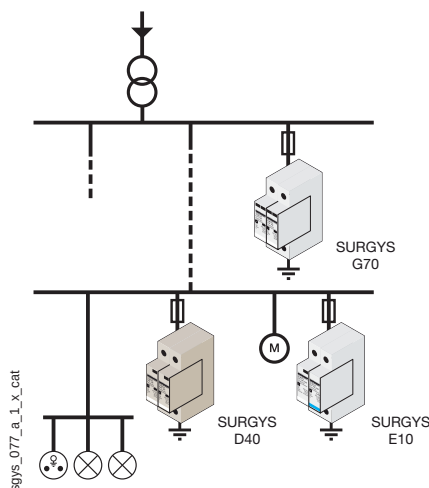
Compliance with standards

- > NF EN 61643-11
- > IEC 61643-11

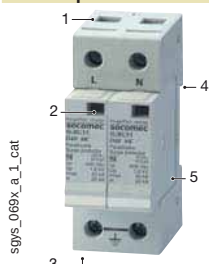


Applications

- Distribution board (downstream of a main switchboard).
- Autonomous power supply units such as generator sets or medium power UPS.
- Machine control panel.

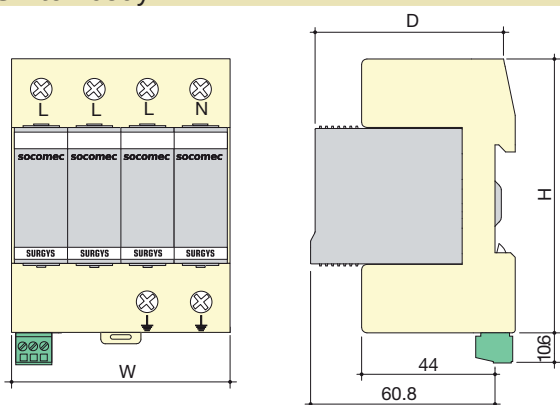


Front panel



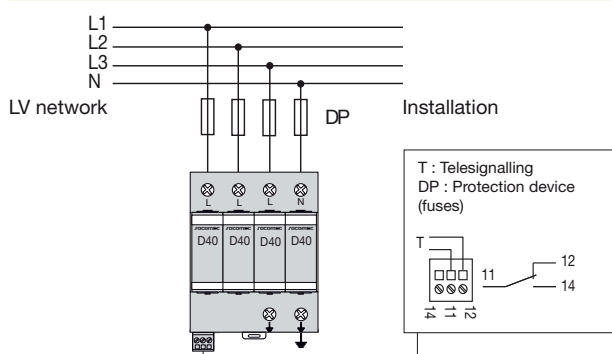
1. Monobloc design.
2. End of life signal.
3. Remote signalling contact.
4. DIN rail mounted.
5. Plug-in module.

Switch body



Type	plug-in module
Dimensions W x H x D - 2 pole device	36 x 90 x 67 mm
Dimensions W x H x D - 3 pole device	54 x 90 x 67 mm
Dimensions W x H x D - 4 pole device	72 x 90 x 67 mm
Case degree of protection IP20	IP20
Terminal block degree of protection IP20	IP20
Case material	thermoplastic UL94-V0
Mains connection cross-section	2.5 ... 25 mm ²
Earthing connection cross-section	2.5 ... 25 mm ²

Connection



Specifications

Mains

Mains type	230 / 400 VAC	
Neutral arrangement (see table)	TT, TN, IT	
Connection mode	MC ⁽¹⁾	MC ⁽¹⁾ / MD ⁽²⁾
Nominal voltage U _n	400 VAC	230 VAC
Max. voltage U _c	440 VAC	255 VAC

Protection characteristics

Temporary overvoltage withstand @ 5 sec (U _T)	580 VAC withstand	335 VAC withstand
Temporary overvoltage withstand @ 120 sec (U _T)	770 VAC disconnection	440 VAC disconnection
Temporary overvoltage from a HV mains, between N & PE in a TT arrangement		1200 V / 30 A / 200ms withstand
Level of protection U _p	1.8 kV	1.5 / 1.25 kV
Max. current discharge (1 impulse 8/20 μs) I _{max}	40 kA	40 kA
Nominal discharge current (15 impulses 8/20 μs) I _n	20 kA	20 kA

Associated characteristics

Residual current I _{pe}	< 1 mA
Response time t _r	< 5 ns
Follow current I _f	None
Admissible short-circuit current I _{scorr}	25 kA
Recommended disconnector	gG 50 A fuses
Type of mechanical disconnection indicator	Mechanical
Number of disconnection indicators	1

Remote signalling contact

Number of contacts per pole	1
Contact type	NO/NC
AC making capacity	0.5 A
DC making capacity	3 A
AC nominal voltage	250 VAC
DC nominal voltage	30 VDC
Sustained current	2 A
Connection type	Screw terminal block
Max. cross-section of terminal connections	1.5 mm ²

Operating conditions

Operating temperature range	-40 ... +85°C
Storage temperature range	-40 ... +85°C

(1) MC: Common mode. (2) MD: Differential mode.

References

No. of poles	No. of adjacent boxes	Neutral arrangements	Protection mode	I total (8/20μs)	SURGYS D40 Reference
2	2	IT	MC ⁽¹⁾	80 kA	4982 1422
3	3	TNC-IT	MC ⁽¹⁾	120 kA	4982 1432
4	4	TNS-IT	MC ⁽²⁾	160 kA	4982 1442
2	2	TT-TN	MC ⁽¹⁾ / MD ⁽²⁾	80 kA	4982 1424
4	4	TT-TNS	MC ⁽¹⁾ / MD ⁽²⁾	160 kA	4982 1444
Description of accessories			Protection mode		Reference
Spare plug-in module m-D40			MC ⁽¹⁾		4982 0419
Spare plug-in module m-D40			MC ⁽¹⁾ / MD ⁽²⁾		4982 0418

(1) MC: Common mode. (2) MD: Differential mode.



SURGYS® E10

Surge arrester - Types 2 and 3
for terminal receivers and sensitive loads



SURGYS E10 - 2 pole MC/MD

The solution for

- > Industry
- > Infrastructure
- > All types of building (critical, non-critical)
- > OEM



Strong points

- > Monobloc design
- > Plug-in module
- > Remote signalling

Compliance with standards

- > NF EN 61643-11
- > IEC 61643-11



Function

SURGYS® E10 surge arresters are designed to ensure protection of installations connected to single-phase, three phase or DC networks against industrial operation surges. They act against transient surges owing to lightning.

Advantages

Monobloc design
Easy to install.

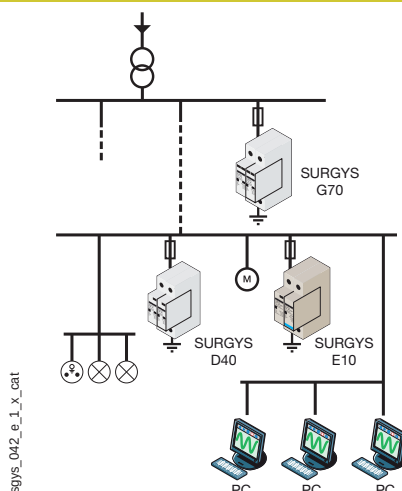
Plug-in module
Quick maintenance on end-of-life modules.

Remote signalling

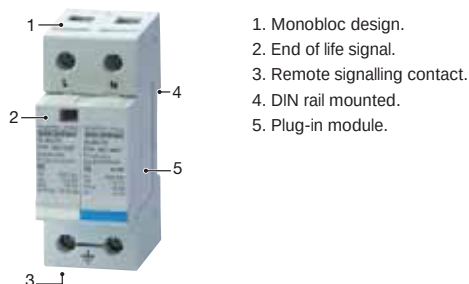
With the remote signalling contact (plug-in) you can upload the alert to a supervisory device.

Applications

- AC or DC distribution board (downstream of a main switchboard).
- Protection of electrotechnical equipment such as motors, switching devices, control devices...



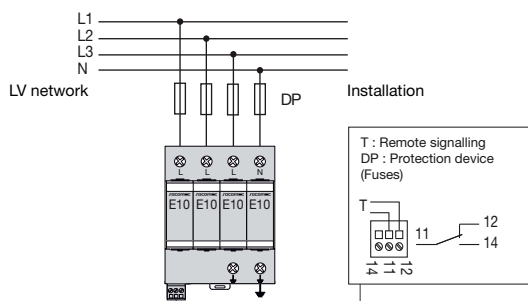
Front panel



sgys_070x_a_1_cat

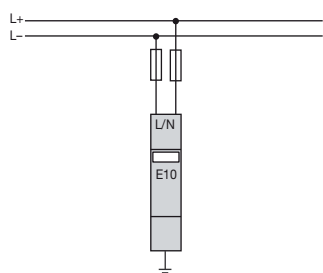
Connection

AC version - Common mode (MC) and differential mode (MC/MD) protection



sgys_071_a_1_gb_cat

DC version



sgys_041_a_1_x_cat

Specifications

Mains

Mains type	230 / 400 VAC	
Neutral arrangement (see table)	TT, TN, IT	
Connection mode	MC ⁽¹⁾	MC ⁽¹⁾ / MD ⁽²⁾
Nominal voltage U_n	400 VAC	230 VAC
Max. voltage U_c	440 VAC	255 VAC

Protection characteristics

Temporary overvoltage withstand @ 5 sec (U_T)	580 VAC withstand	335 VAC withstand
Temporary overvoltage withstand @ 120 sec (U_T)	770 VAC disconnection	440 VAC disconnection
Temporary overvoltage from a HV mains, between N & PE in a TT arrangement		1200 V / 30 A / 200 ms withstand
Level of protection U_P	1.3 kV	1.5 / 0.9 kV
Max. current discharge (1 impulse 8/20 μ s) I_{max}	10 kA	10 kA
Nominal discharge current (15 impulses 8/20 μ s) I_n	5 kA	5 kA

Associated characteristics

Residual current I_{pe}	< 1 mA
Response time t_r	< 5 ns
Follow current I_f	None
Admissible short-circuit current I_{sc}	25 kA
Recommended disconnector	gG 20 A fuses
Type of mechanical disconnection indicator	Mechanical
Number of disconnection indicators	1

Remote signalling contact

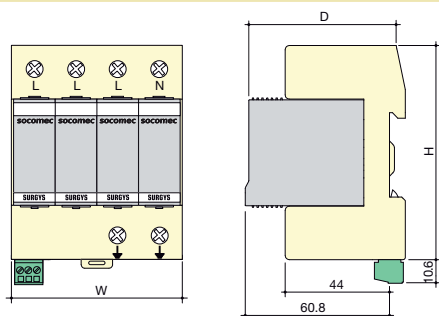
Number of contacts per pole	1
Contact type	NO/NC
AC making capacity	0.5 A
DC making capacity	3 A
AC nominal voltage	250 VAC
DC nominal voltage	30 VDC
Sustained current	2 A
Connection type	Through terminal block
Max. cross-section of terminal connections	1.5 mm ²

Operating conditions

Operating temperature range	-40 ... +85°C
Storage temperature range	-40 ... +85°C

(1) MC: Common mode. (2) MD: Differential mode.

Case



sgys_043_d_1_gb_cat

Type	plug-in module
Dimensions W x H x D - DC version device	17.5 x 90 x 67 mm
Dimensions W x H x D - 2 pole device	36 x 90 x 67 mm
Dimensions W x H x D - 3 pole device	54 x 90 x 67 mm
Dimensions W x H x D - 4 pole device	72 x 90 x 67 mm
Case degree of protection IP20	IP20
Terminal block degree of protection IP20	IP20
Case material	thermoplastic UL94-V0
Mains connection cross-section	2.5 ... 25 mm ²
Earthing connection cross-section	2.5 ... 25 mm ²

References

No. of poles	No. of adjacent boxes	Neutral arrangements	Protection mode	I total (8/20 μ s)	SURGYS E10 Reference
2	2	IT	MC ⁽¹⁾	20 kA	4983 1125
3	3	TNC-IT	MC ⁽¹⁾	30 kA	4983 1135
4	4	TNS-IT	MC ⁽¹⁾	40 kA	4983 1145
2	2	TT-TN	MC ⁽¹⁾ / MD ⁽²⁾	20 kA	4983 1126
4	4	TT-TNS	MC ⁽¹⁾ / MD ⁽²⁾	40 kA	4983 1146
Spare plug-in module for AC application					SURGYS® E10-AC Reference
Mode of protection					
MC ⁽¹⁾ / MD ⁽²⁾					4983 0198
MC ⁽¹⁾					4983 0199

Applications DC	Network voltage	SURGYS® E10-DC Reference
No. of poles		
2	12 VDC	4983 2601
2	24 VDC	4983 2602
2	48 VDC	4983 2604
Spare module for DC application		SURGYS® E10-DC Reference
Network voltage		
12 VDC		4983 9901
24 VDC		4983 9902
48 VDC		4983 9904

(1) MC: Common mode. (2) MD: Differential mode.



SURGYS® RS-3, mA-3, TEL-3

Low current surge arresters

for telecommunication and data networks



sgys_092_a

SURGYS RS-3

sgys_092_a

SURGYS mA-3x2

The solution for

- > Processes
- > Manufacturing
- > Water treatment
- > Telecom, Datacom and broadcasting
- > Data centres



Strong points

- > Versions 1 pair or 2 pairs (model "x2")
- > Plug-in modules
- > Direct earthing
- > Common mode / differential mode protection

Conformity to standards

- > NF EN 61643-21
- > IEC 61643-21



Function

For protection against transient overvoltages of equipment connected to telecommunication and data transmission networks the SURGYS® range includes 3 surge arrester models:

- SURGYS® RS-3.
- SURGYS® mA-3.
- SURGYS® TEL-3.

Advantages

Versions 1 pair or 2 pairs (model "x2").

Ultra-compact design if multi-pair protection is needed.

Plug-in modules

Rapid maintenance for end of service life modules.

End of service life indicator

Indication is achieved through line interruption.

Direct earthing

Earth bonding is made using a DIN rail fixing clip.

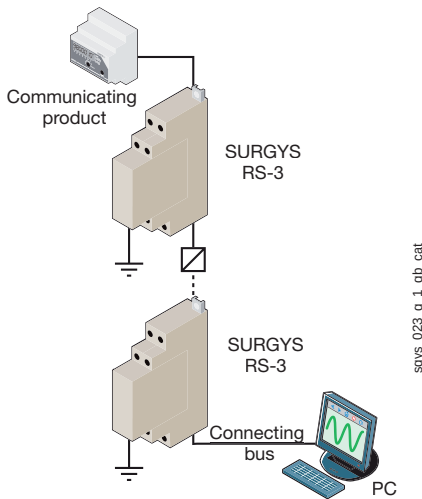
Common mode / differential mode protection

The differential mode offers an improved protection efficiency.

Applications

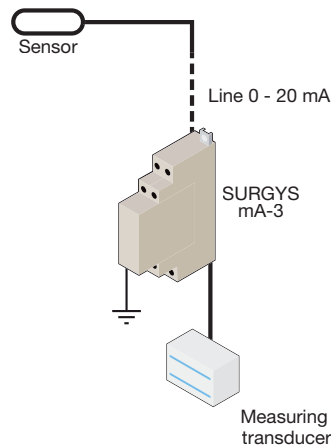
SURGYS® RS-3

- Protection of the RS422/RS485 connections.
- Digital telephone line T2.
- ETHERNET connection (10 baseT).



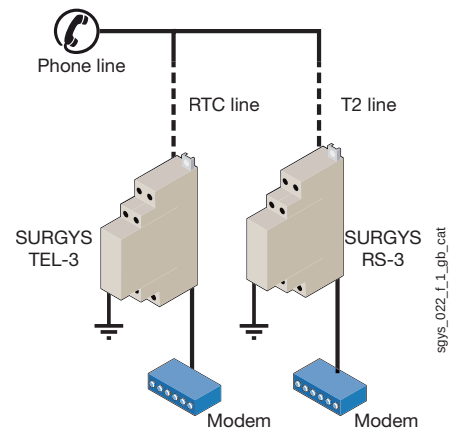
SURGYS® mA-3

- Field bus:
 - Profibus (DP, PA, FMS...),
 - Fieldbus (H1, H2),
 - LONworks,
 - Interbus,...
- Measurement loops, measurement acquisition cards:
 - current loops 0 / 4-20 mA,
 - analog signals 0 to 10 V.
- Regulation, control loops.
- RS232 connections.
- Numeris network (RNIS-T0).
- Specialised telephone connections.

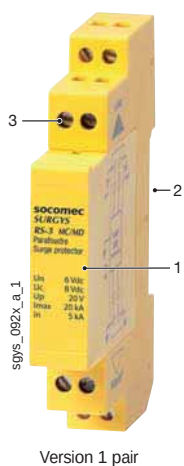


SURGYS® TEL-3

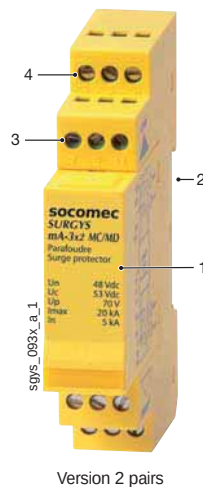
- Analogue telephone line:
 - modem,
 - automatic switch,
 - telephone alarm,
 - DSL.



Front panel



Version 1 pair



Version 2 pairs

1. Plug-in module
2. Mounting on DIN rail ensuring earthing
3. Connection 1 pair
4. Connection 2 pairs

SURGYS® RS-3, mA-3, TEL-3

Low current surge arresters

for telecommunication and data networks

Characteristics

SURGYS®	RS-3	mA-3	TEL-3
Use	RS422/RS485/Telecom T2/Ethernet 10baseT	4-20 mA, field bus	via land line
Nominal line voltage U_n	12 V	48 V	150 V
Maximum voltage U_c	15 V	53 V	170 V
Max operating frequency	20 MHz	20 MHz	2 kHz
Level of protection U_p	30 V	75 V	220 V
Line impedance	50 - 150 Ohms	50 - 150 Ohms	600 Ohms

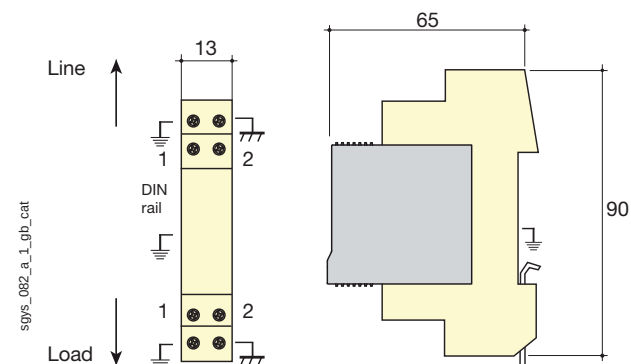
Characteristics	
Protected configuration	2-wire or 4-wire ("x2" version)
Maximum line intensity	300 mA ⁽¹⁾
Maximum discharge current (1 shock 8/20 μ s) I_{max}	20 kA
Nominal discharge current (20 shocks 8/20 μ s) I_n	5 kA
Type of protection	spark-gaps / clamping diode
End of life	earth leakage current

Operating conditions	
Operating temperature	-40 ... +85 °C
Storage temperature	-40 ... +85 °C

(1) Line current of equipment to be protected greater than 200 mA or other direct current application: please consult us

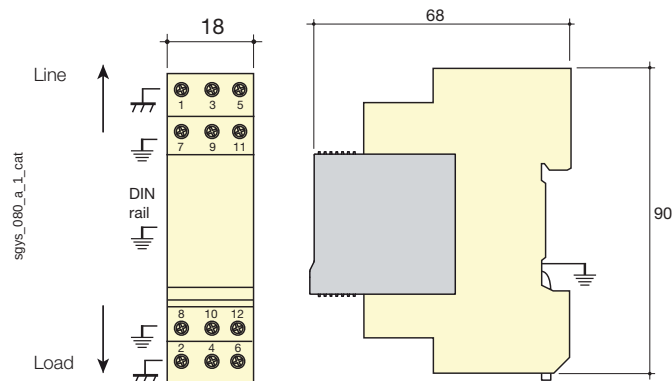
Case

Version 1 pair



Type	modular
Dimensions W x H x D	13 x 90 x 65 mm
Case degree of protection	IP20
Terminal block degree of protection	IP20
Case material	UL94-V0 thermoplastic
Connection cross-section	0.4 ... 1.5 mm ²
Earth connection cross-section	0.4 ... 1.5 mm ²

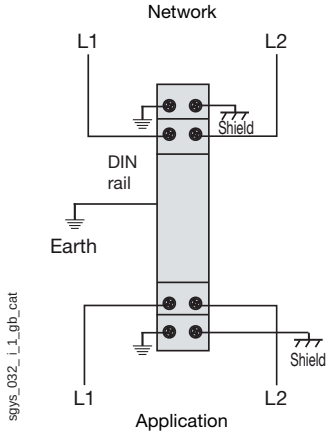
Version 2 pairs



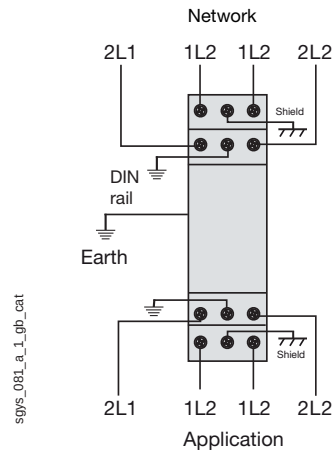
Type	modular
Dimensions W x H x D	18 x 90 x 68 mm
Case degree of protection	IP20
Terminal block degree of protection	IP20
Case material	UL94-V0 thermoplastic
Connection cross-section	0.4 ... 1.5 mm ²
Earth connection cross-section	0.4 ... 1.5 mm ²

Connections

Version 1 pair



Version 2 pairs



References

SURGYS	Versions 1 pair			Versions 2 pairs		
	RS-3 Reference	mA-3 Reference	TEL-3 Reference	RS-3x2 Reference	mA-3x2 Reference	TEL-3x2 Reference
Protection of high speed data and telephone networks	4986 3020			4986 3021		
Protection of measurement-control-regulation circuits and field bus		4987 3420			4987 3421	
Protection of telephone networks			4985 3170			4985 3171

Description of accessories	RS-3 Reference	mA-3 Reference	TEL-3 Reference	RS-3x2 Reference	mA-3x2 Reference	TEL-3x2 Reference
Spare plug-in module m-RS-3	4986 3029					
Spare plug-in module m-mA-3		4987 3429				
Spare plug-in module m-TEL-3			4985 3179			
Spare plug-in module m-RS-3x2				4986 3028		
Spare plug-in module m-mA-3x2					4987 3428	
Spare plug-in module m-TEL-3x2						4985 3178



Enclosures & accessories

Overview of our range p. 662

Enclosures

Polyester insulated enclosures
with screw-lid



COMBIESTER
p. 664

Metal enclosures



CADRYS
enclosures
p. 665

Modular cabinets

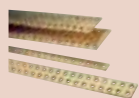


CADRYS Delta
modular
p. 666

Find out more

Special applications
Our team can help
you in the design and
production of special
enclosures or cabinets.
[Contact your local sales
office.](#)

Busbar



Rigid copper
bars
p. 670



Flexible
copper bars
p. 672



Insulated
copper braids
p. 674



new
Edgewise
mounting
busbar
supports
p. 676



Flat mounting
busbar
supports
p. 677



Other
supports
p. 677

Distribution

High power



Power
terminals
p. 698



Cable clamps
and cage
terminals
p. 700



Distribution
blocks
p. 702

Medium power



Distribution
blocks
p. 702

Low power



AUXIGAIN
p. 708

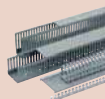
Accessories

Mounting accessories
for equipment installation



Mounting rails
and profiles
p. 710

for cable harnesses



Cable trunking
p. 714



Range overview

All the components to facilitate the use of your electrical equipment

This section brings together the complete SOCOMEC range of components for building switchboards and panels designed for electrical distribution.

These pages have been set out to facilitate your search and selection of the right solution for your requirements.

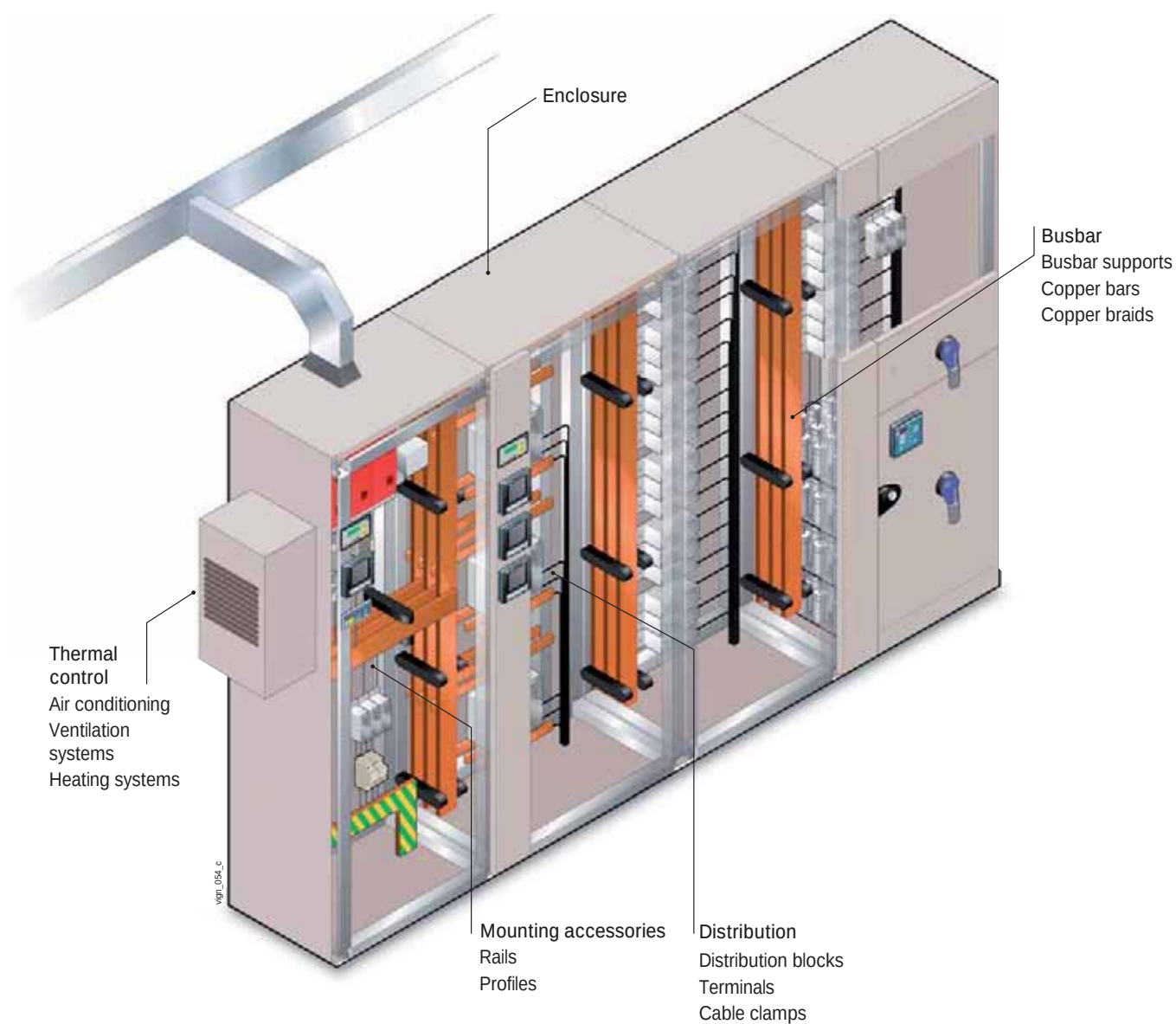
Did you know?

Socomec offers a wide range of pre-equipped units for breaking, protection and switching; these units fully meet requirements in terms of secure usage and installation conditions (see our section on "Integrated products and solutions" page 719).

SOCOMECE works with your Design Office

- **Sizing an enclosure**
Please do not hesitate to contact us if you need help with a customised thermal sizing of your enclosure.
- **Sizing a busbar**
In addition to the practical guide given in the following pages, the Mechanical Systems software allows you to size the busbar for your panel with the greatest of ease: It defines the best bar section and distance between each support for the electrical characteristics of the panel.
p. 676
- **Integration of electrical functions**
In this catalogue, you will find solutions for all of your requirements in terms of LV distribution.
p. 2
- **A specific need?**
Our teams can support you in the design and realisation of special enclosures or panels.
p. 719







COMBIESTER

Enclosures

Enclosures & accessories



combi_001_a_1_cat

COMBIESTER
with transparent cover



combi_003_a_1_cat

COMBIESTER
can be assembled

The solution for

- > Any electrical device



Strong points

- > Safety
- > Wide range
- > Protection degree: IP66 and IK10
- > Flexibility: can be assembled

Conformity to standards

- > IEC 60529
- > NF C 20010-20455
- > IEC 62208
- > IEC 61439-1



Load break switches

- > The SIRCO and SIRCO AC range can be easily fitted in our COMBIESTER enclosures.
- > The SIRCO AC is intended for severe applications 690 VAC - AC23.



Available on request

- > Pre-drilled casing and cover
- > Pre-assembled enclosures
- > Pre-mounted accessories
- > Construction of support frames

Function

COMBIESTERs are modular insulated enclosures. They protect all low voltage electrical equipment against direct contact.

General characteristics

- 960°C self-extinguishable (polyester glasswool loaded); 850°C (polycarbonate); 650°C (polyamide)
- Protection degree IP66, IK10
- Case and cover with opaque colour RAL 7035

Advantages

Safety

These enclosures ensure electrical safety with a double isolation, a good resistance to creepage current, an excellent withstanding to climatic conditions and a high resistance to chemical agents.

Wide range

- Monobloc and modular enclosures.
- 4 dimensions for monobloc enclosures and 15 dimensions for constructible enclosures.
- 2 types of sealable covers: transparent or opaque (polycarbonate).

CADRYs enclosures

Enclosures



CADRYs ST with solid door



CADRYs SP with transparent door



CADRYs SH with solid door

Function

CADRYs wall-mounted enclosures are designed to include automation or control equipment.

General characteristics

- Double bar locking.
- Bottom closing plate with pressed neoprene seal,
- Concealed hinges.
- Earthing screw.
- Door profiles perforated every 25 mm.
- Casing and solid door, polyester epoxy paint RAL 7035.
- Reversible doors.

Advantages

Safety

- These enclosures ensure electrical safety with a degree of protection IP55 (casing edge in channel form, robot positioned polyurethane seal).
- A folded and welded casing provides an improved rigidity and a high resistance to chemicals (carbon steel FE 40 + 70 μ polyester epoxy paint; stainless steel 304 L brushed and polished).

Large range

A wide range is available to meet any requirement:

- 22 models for the SI range.
- 36 models for the ST range.
- 22 models for the SH range.
- 17 models for the SP range.

The solution for

- > Automation equipment
- > Electrical distribution



Strong points

- > Safety
- > Large range

Conformity to standards

- > IEC 61439-1
- > NF C 15-100
- > IEC 62208



Available on request

- > CADRYs enclosures for automation or electrical equipment



Available on request

- > Special paint
- > Specific cutouts (enclosures, plates...)
- > Specific dimensions
- > Enclosures with top and bottom openings



CADRYS *Delta* modular Enclosures



CADRYS Delta



CADRYS Delta
with integrated PC-workspace

The solution for

- > Any customer applications



Strong points

- > Easy implementation
- > Wide range of dimensions
- > Reinforced handling feet
- > Reversible hinge system
- > Hinged rear panel

Conformity to standards

- > IEC 60529
- > IEC 61439-1
- > NF C 15-100
- > NF C 20010
- > IEC 62208



Function

CADRYS Delta enclosures are modular steel enclosures. They are intended to include automation or electrical equipment.

They can be placed side by side, back to back and/or side to back. They can be delivered pre-assembled or, on request, in kit form.

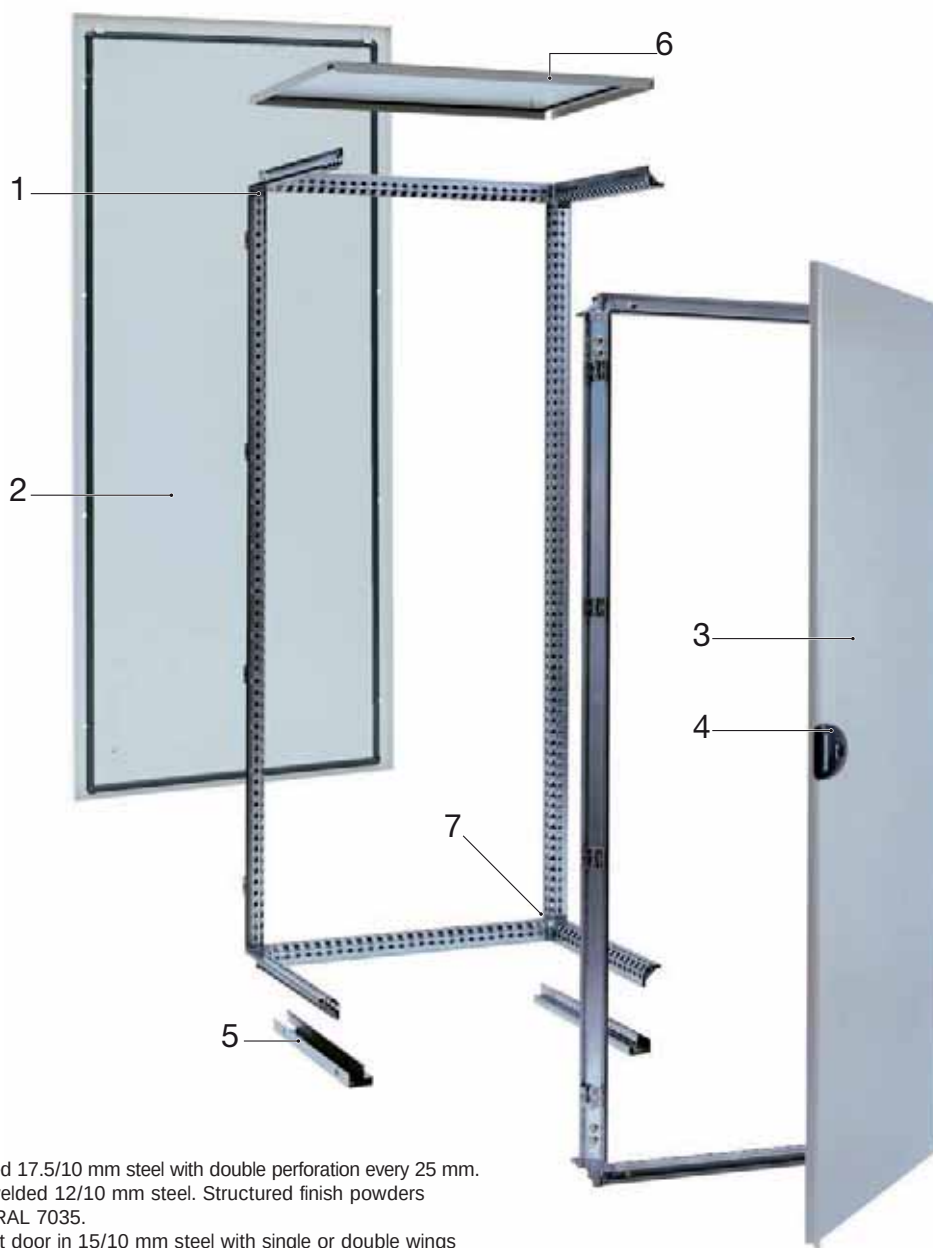
Advantages

- Thanks to its galvanised sheet structure, **CADRYS Delta** ensures the role of a FARADAY cage, thus reducing electromagnetic interferences and ensuring correct earth bonding.
- CADRYS Delta enclosures are provided with 100 mm reinforced handling feet which can be fitted with a bottom panel.
- Single-wing CADRYS Delta enclosures have left/right reversible doors requiring no tools.
- CADRYS Delta are provided as standard with a reversible hinge system for easy access.
- Specific configurations can be proposed as per customer's specifications. (colour, dimension, factory pre-assembly, etc.).

Composition of the range⁽¹⁾

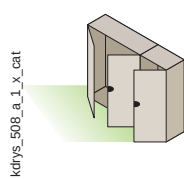
- 4 heights 1600, 1800, 2000, 2200 mm,
- 7 widths 300, 400, 600, 800, 1000, 1200 and 1600 mm,
- 4 depths 400, 500, 600 and 800 mm.
- 96 models available in the following standard presentations:
 - enclosure with transparent front door, dismantlable rear panel,
 - enclosure with solid front and rear doors.
- In its basic version, the enclosure is equipped with a chassis, a front door, a rear panel (or door) and a top panel.
- It is supplied on a handling pallet H 100 mm.

(1) Please consult us.

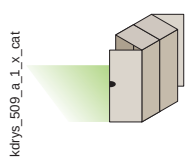


kdrys_471_b_2_x_cat

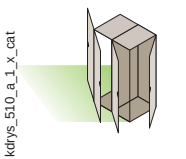
1. Framework in welded 17.5/10 mm steel with double perforation every 25 mm.
2. Casing in folded, welded 12/10 mm steel. Structured finish powders polyester, colours RAL 7035.
3. Solid or transparent door in 15/10 mm steel with single or double wings depending on the width of the enclosure. Single-wing enclosures have left/right reversible doors requiring no tools.
4. CNOMO (option) automatic locking handle with standard interchangeable double bar key lock.
5. Bottom plate of enclosure in 1.5 mm steel with central opening.
6. Removable roof made of 12/10 mm steel with possibility of a bus bar set box.
7. The frame elements are assembled by screwing onto a tripod.



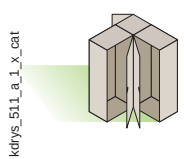
Coupling side by side



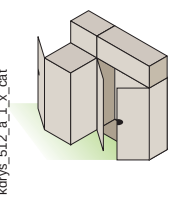
Coupling back to back



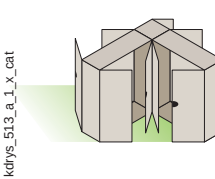
Coupling back to back + side doors



Juxtaposition in an L



Juxtaposition in an L with busbar housings



Juxtaposition in an L with front and rear doors

External options

Tripod

The frame elements are assembled by screwing onto a tripod.



kdrys_304_a_1_cat

Back panel

The back panel can be replaced by a door without the addition or removal of any accessories.

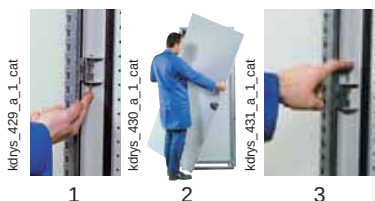


kdrys_432_a_2_cat

Door

The door can be reversed without removing the handle or hinges in 3 easy steps:

1. Remove the hinge pins.
2. Reversing of the door.
3. Replace the hinge pins.



kdrys_429_a_1_cat

1

2

3

Bases

- The bases have 4 removable sides made of folded 1.2 mm steel. The angle pieces are 3 mm steel reinforced by welding.
- They are designed to allow several bases to be stacked so as to obtain the height required.



kdrys_406_a_1_cat

kdrys_407_a_1_cat

Busbar housing

- Fits in between the top panel and the top of the cubicle.
- Takes bars up to 160 mm high.



kdrys_426_a_1_cat

Side panels

- Thanks to a special anchoring system, the side and back panels are easily mounted.
- The side panel can be replaced by a door without the addition or removal of any accessories.



kdrys_433_a_1_cat

kdrys_428_a_1_cat

Handle

- An ergonomic automatic locking handle that does not require the use of a key. This handle cannot be locked with the door open (CNOMO system).
- When the door is reversed, it is not necessary to remove the handle.



kdrys_253_a_2_cat

Juxtaposition

The juxtaposition of cubicles side by side or back to back is achieved using a kit that guarantees IP55 sealing.



kdrys_427_a_1_cat

Internal options

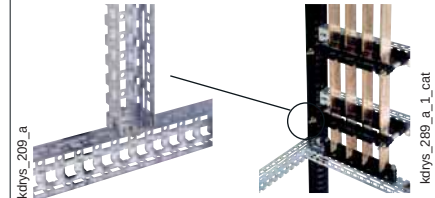
Perforated plate

- The placing of the plates is facilitated by an anchoring system.
- No intermediate pieces are needed to fix them in place.



Mounting profiles

The perforations in these profiles allow the positioning of the nuts every 25 mm or continuously.



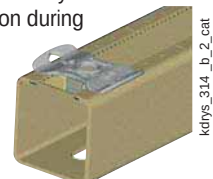
Solid plate

A system of slides and clips facilitate the positioning of the plates and holds them in place during assembly.



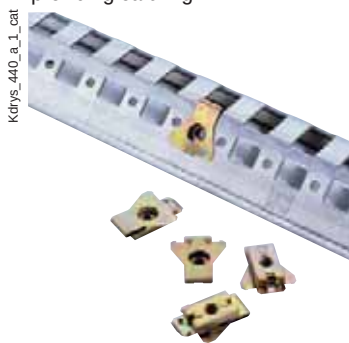
Notched mounting profiles

- These facilitate the positioning of the nuts and provide support during assembly.
- These provide good slip resistance, particularly in the event of vibration during transport.



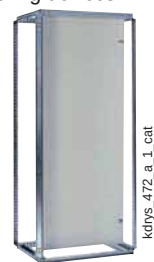
Nuts

The clip-on nuts fit onto the mounting profiles and perforated plates whilst also providing earthing.



Internal door

- This allows the mounting of control auxiliaries and measuring devices protected by a solid or transparent front door.
- It is fixed onto the frame and can be depth-adjusted at a pitch of 25 mm.

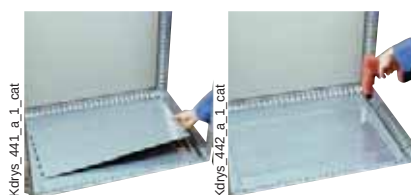


Structural profiles

- In 1.75 mm steel double perforated every 25 mm so as to allow made-to-measure dimensions.
- These profiles allow the direct mounting of SOCOMEC SBC 10 and 20 bar supports.

Gland plate

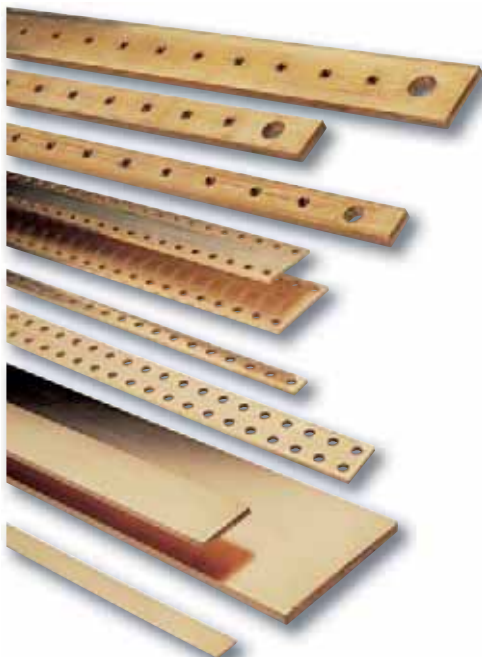
- The closing plate is fixed in place by a knurled nut.
- It is tightened manually with no tools required.





Rigid copper bars

Busbar



Function

The SOCOMEC rigid copper bars are suitable for providing main or distribution connections.

Composition of the range

Solid bars

- Thickness: 4.5 and 10 mm.
- Width: 20 to 160 mm.
- Length: 1750, 2900, 5800 mm.

Pre-punched bars

- Thickness: 5 and 10 mm.
- Width: 25 to 125 mm.
- Length: 1750 mm.

Pre-punched and threaded bars

- Thickness: 5 mm.
- Width: 15 to 32 mm.
- Length: 990 mm.

Solid bars

- Determination of the admissible current I_z (A) for solid bars, in usual use conditions (Temperature ambient 45°C, admissible warming of the bars 35°C, 50 Hz current).

Pre-punched copper bars

- For the pre-punched bars of same dimensions as the solid bars:
pre-punched $I_z = 0.9 I_z$ solid.

Aluminium bars

- For the aluminium bars of same dimensions as the solid bars:
 I_z aluminium = 0.78 I_z solid copper.

Connector for drill-free connection on the busbar

- Bars for thickness 10 mm.

Connection Earth / Neutral

- Corner piece for Earth / Neutral connection, L = 1750 mm.
- Earth bar, L = 470 mm and L = 120 mm.

The solution for

- > Electrical distribution



Amperage per number of bars

Edgewise mounting

Bar section l x e (mm)	Number of bars per phase			
	I	II	III	IIII
20 x 4	240	430	600	750
15 x 5	220	390	540	650
25 x 5	330	590	800	1000
32 x 5	410	700	1000	1250
40 x 5	500	850	1200	1500
50 x 5	600	1050	1450	1850
63 x 5	700	1250	1800	2250
80 x 5	900	1550	2200	2750
100 x 5	1100	1900	2650	3350
125 x 5	1300	2350	3250	4100
30 x 10	600	1050	1450	1800
50 x 10	850	1550	2150	2700
60 x 10	1000	1800	2400	3150
80 x 10	1300	2300	3200	4000
100 x 10	1550	2750	3850	4850
125 x 10	1900	3350	4650	5900
160 x 10	2350	4150	5800	7300

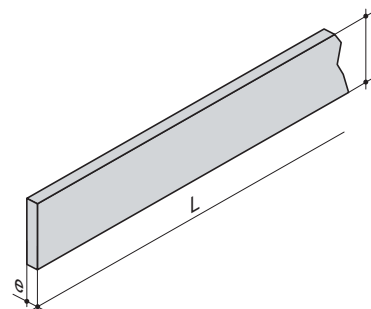
Flat mounting

Bar section l x e (mm)	Number of bars per phase			
	I	II	III	IIII
20 x 4	210	340	460	570
15 x 5	190	310	420	510
25 x 5	280	470	600	750
32 x 5	350	580	750	950
40 x 5	420	700	900	1150
50 x 5	510	850	1100	1400
63 x 5	620	1000	1350	1700
80 x 5	750	1250	1700	2100
100 x 5	900	1500	2050	2550
125 x 5	1100	1850	2500	3050
30 x 10	490	800	1100	1350
50 x 10	750	1200	1650	2050
60 x 10	850	1400	1900	2350
80 x 10	1100	1800	2450	3000
100 x 10	1350	2200	2950	3650
125 x 10	1600	2700	3600	4400
160 x 10	2000	3300	4450	5500

References

Solid bars

I x e (mm)	Weight (kg/ml)	L = 1750 mm To be ordered in multiples of 1 bar	L = 2900 mm To be ordered in multiples of 1 bar	L = 5800 mm To be ordered in multiples of 5 or 10 bars
		Reference	Reference	Reference
20 x 4	0.71	4510 2004	4513 2004	4514 2004 ⁽¹⁾
25 x 5	1.11	4510 2505	4513 2505	4514 2505 ⁽¹⁾
32 x 5	1.42	4510 3205	4513 3205	4514 3205 ⁽¹⁾
40 x 5	1.78	4510 4005	4513 4005	4514 4005 ⁽¹⁾
50 x 5	2.22	4510 5005	4513 5005	4514 5005 ⁽¹⁾
63 x 5	2.80	4510 6305	4513 6305	4514 6305 ⁽¹⁾
80 x 5	3.56	4510 8005	4513 8005	4514 8005 ⁽²⁾
100 x 5	4.45	4510 9005	4513 9005	4514 9005 ⁽²⁾
125 x 5	5.56	4510 9205	4513 9205	4514 9205 ⁽²⁾
30 x 10	2.67	4510 3010	4513 3010	4514 3010 ⁽²⁾
50 x 10	4.45	4510 5010	4513 5010	4514 5010 ⁽²⁾
60 x 10	5.33	4510 6010	4513 6010	4514 9205 ⁽²⁾
80 x 10	7.11	4510 8010	4513 8010	4514 8010 ⁽²⁾
100 x 10	8.89	4510 9010	4513 9010	4514 9010 ⁽²⁾
125 x 10	11.11	4510 9210	4513 9210	4514 9210 ⁽²⁾
160 x 10	14.22	4510 9610	4513 9610	4514 9610 ⁽²⁾



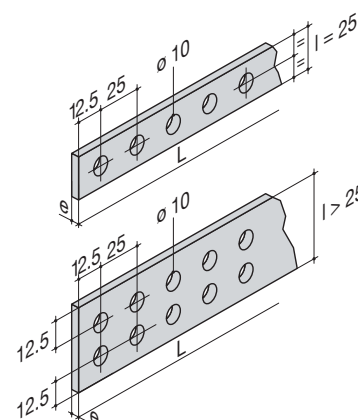
barre_002_a_1_x_cat

(1) To be ordered by multiple 10 bars

(2) To be ordered by multiple 5 bars

Pre-punched bars

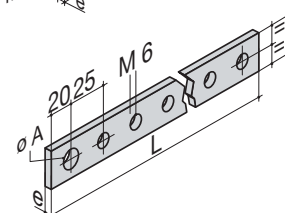
I x e (mm)	W (mm)	Weight (kg/ml)	No. of rows	To be ordered in multiples of	Reference
25 x 5	1750	1.11	1	5	4511 2505
50 x 5	1750	2.22	2	5	4511 5005
63 x 5	1750	2.80	2	5	4511 6305
80 x 5	1750	3.56	2	5	4511 8005
100 x 5	1750	4.45	2	5	4511 9005
125 x 5	1750	5.56	2	5	4511 9205
50 x 10	1750	4.45	2	5	4511 5010
60 x 10	1750	5.33	2	5	4511 6010
80 x 10	1750	7.11	2	5	4511 8010
100 x 10	1750	8.89	2	5	4511 9010
125 x 10	1750	10.70	2	5	4511 9210



barre_003_a_1_x_cat

Pre-punched and threaded bars

I x e (mm)	W (mm)	Weight (kg/ml)	Ø A (mm)	To be ordered in multiples of	Reference
15 x 5	990	0.67 kg	8.2	5	4512 1505
20 x 5	990	0.89 kg	10.2	5	4512 2005
32 x 5	990	1.42 kg	12.2	5	4512 3205



barre_004_a_1_x_cat

Accessories

Drill-free connection accessories

Use

- Allows the drill-free connection of flexible bars or cables onto a busbar.
- Connection across 2 bars, 10 mm thick, placed side by side, 10 mm apart.
- Compatible with busbar supports in the SBC range.
- For terminals or flexible bars with widths greater than 40 mm, use 2 connection accessories.
- Secured with M10 screws, tightening torque 45Nm.
- To make a connection: 1 securing clamp and 1 screw adapted to the height of the bars are required.

Type	Bar (mm)	To be ordered in multiples of	Reference
Securing clamp M10	all	12	5119 4423
Screw M10	30	100	5119 4503
Screw M10	50	100	5119 4505
Screw M10	60	100	5119 4506
Screw M10	80	100	5119 4508
Screw M10	100	100	5119 4510
Screw M10	125	100	5119 4512



barre_020_a_1_x_cat



Insulated flexible copper bars

Busbar



Function

SOCOMEK insulated flexible copper bars are mainly used for providing the power connections between busbars and the disconnection devices within an electrical panel.

The insulated layered copper allows the flexible copper bar to be easily formed to provide a customised solution.

Advantages

Easy to install

- Compact version.
- High level of flexibility enabling easy manipulation of the busbar.
- Reduced installation time with the elimination of terminal lugs and their crimping.

Increased safety by the elimination of crimped connections

- Better behaviour under short-circuit conditions.
- Decreased number of heating points.
- More reliable connections.

Characteristics

- Width of 9 to 100 mm.
- Copper layer thickness from 0.8 to 1 mm.
- Length of 2 m.

Conductor

- Layers of electrolytic copper Cu/ETP, final annealing state.

Insulator

- High temperature co-extruded vinyl compound on the copper strips (insulation thickness: 1.5 to 2 mm).
- Self-extinguishing: NFC 32200 and UL 94 V0.
- Continuous temperature withstand: 105 °C.
- Shore hardness A: 89 +/- 2.
- Module 100 % elongation: 16 Mpa.
- Resistance to elongation: < 15 % mini.
- Breaking stress: 20 Mpa.
- Transversal volume resistivity: 6.1015 Ω.
- Oxygen index: 29.5 %.
- Scratch and tear resistant.

Insulated flexible busbar

- Operating-temperature range: from -40 °C to +105 °C.
- Maximum operating voltage: 1000 VAC / 1500 VDC.
- Alternating voltage withstand (10 minute test):
 - between core and insulation: 16.5 kV,
 - between two insulating elements in contact: 33 kV,
 - Conductivity: 100 IACS,
 - HV < 50,
 - Resistance to traction $R_m > 200 \text{ N/cm}^2$,
 - Stretch before break 35 %,
 - Resistivity: 1.724 micro Ω/cm at 20 °C.

The solution for

- > Electrical distribution



Strong points

- > Easy to install
- > Increased safety by the elimination of crimped connections

Conformity to standards

- > VDE 207 Y16
- > BS 6746
- > NF A 51-050
- > VDE 207 YM4
- > DIN 40050



Available on request

- > Specific lengths
- > Halogen-free
- > Please consult us

References

I x N x e (mm)	L (mm)	Permissible amperage for ΔT (°C) ⁽¹⁾			To be ordered in multiples of	Reference
		40°C (A)	50°C (A)	60°C (A)		
9 x 2 x 0.8	2000	113	129	143	1	4518 0902
9 x 3 x 0.8	2000	140	160	178	1	4518 0903
9 x 4 x 0.8	2000	165	188	209	1	4518 0904
9 x 5 x 0.8	2000	187	214	238	1	4518 0905
9 x 6 x 0.8	2000	208	238	264	1	4518 0906
13 x 3 x 0.5	2000	142	162	180	1	4518 1303
13 x 4 x 0.5	2000	165	189	210	1	4518 1304
13 x 5 x 0.5	2000	186	213	237	1	4518 1305
13 x 6 x 0.5	2000	206	235	261	1	4518 1306
15.5 x 2 x 0.8	2000	167	191	212	1	4518 1502
15.5 x 3 x 0.8	2000	207	237	263	1	4518 1503
15.5 x 4 x 0.8	2000	242	277	308	1	4518 1504
15.5 x 6 x 0.8	2000	304	347	386	1	4518 1506
15.5 x 8 x 0.8	2000	358	409	455	1	4518 1508
15.5 x 10 x 0.8	2000	408	466	519	1	4518 1510
20 x 2 x 1	2000	228	261	290	1	4518 2002
20 x 3 x 1	2000	283	324	360	1	4518 2003
20 x 4 x 1	2000	331	378	421	1	4518 2004
20 x 5 x 1	2000	374	428	476	1	4518 2005
20 x 6 x 1	2000	415	474	527	1	4518 2006
20 x 8 x 1	2000	488	558	621	1	4518 2008
20 x 10 x 1	2000	556	635	705	1	4518 2010
24 x 2 x 1	2000	263	301	335	1	4518 2402
24 x 3 x 1	2000	326	373	414	1	4518 2403
24 x 4 x 1	2000	380	435	483	1	4518 2404
24 x 5 x 1	2000	429	491	546	1	4518 2405
24 x 6 x 1	2000	475	542	603	1	4518 2406
24 x 8 x 1	2000	557	636	708	1	4518 2408
24 x 10 x 1	2000	632	722	803	1	4518 2410
32 x 2 x 1	2000	331	379	421	1	4518 3202
32 x 3 x 1	2000	409	468	520	1	4518 3203
32 x 4 x 1	2000	476	544	605	1	4518 3204
32 x 5 x 1	2000	536	612	681	1	4518 3205
32 x 6 x 1	2000	591	675	751	1	4518 3206
32 x 8 x 1	2000	689	787	876	1	4518 3208
32 x 10 x 1	2000	777	887	987 ⁽¹⁾	1	4518 3210
40 x 2 x 1	2000	398	455	506	1	4518 4002
40 x 3 x 1	2000	490	560	623	1	4518 4003
40 x 4 x 1	2000	569	650	723	1	4518 4004
40 x 5 x 1	2000	639	730	812	1	4518 4005
40 x 6 x 1	2000	703	803	893	1	4518 4006
40 x 8 x 1	2000	815	932	1036	1	4518 4008
40 x 10 x 1	2000	915	1045	1163	1	4518 4010
50 x 3 x 1	2000	589	673	749	1	4518 5003
50 x 4 x 1	2000	682	780	867	1	4518 5004
50 x 5 x 1	2000	764	873	971	1	4518 5005
50 x 6 x 1	2000	838	957	1062	1	4518 5006
50 x 8 x 1	2000	967	1105	1229	1	4518 5008
50 x 10 x 1	2000	1080	1234	1373	1	4518 5010
63 x 3 x 1	2000	715	816	908	1	4518 6303
63 x 4 x 1	2000	825	943	1048	1	4518 6304
63 x 5 x 1	2000	921	1052	1171	1	4518 6305
63 x 6 x 1	2000	1041	1187	1324	1	4518 6306
63 x 8 x 1	2000	1157	1321	1470	1	4518 6308
63 x 10 x 1	2000	1286	1469	1634	1	4518 6310
80 x 3 x 1	2000	874	998	1110	1	4518 8003
80 x 4 x 1	2000	1006	1149	1278	1	4518 8004
80 x 5 x 1	2000	1119	1279	1422	1	4518 8005
80 x 6 x 1	2000	1220	1393	1550	1	4518 8006
80 x 8 x 1	2000	1393	1592	1771	1	4518 8008
80 x 10 x 1	2000	1543	1763	1961	1	4518 8010
100 x 4 x 1	2000	1211	1383	1538	1	4518 9004
100 x 5 x 1	2000	1343	1534	1707	1	4518 9005
100 x 6 x 1	2000	1460	1668	1855	1	4518 9006
100 x 8 x 1	2000	1660	1897	2110	1	4518 9008
100 x 10 x 1	2000	1833	2094	2329	1	4518 9010
100 x 12 x 1	2000	1993	2277	2531	1	4518 9012

(1) For ambient air temperature of 40 °C.

Important: max. busbar temperature = 105 °C.

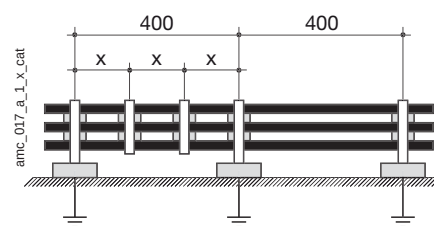
L: length of bar in metres.

I: width of bare busbar in mm.

N: number of copper layers.

e: copper layer thickness in mm.

Implementation



Flexible bars should be mounted on insulated supports with a maximum distance of 400 mm. Bars should also be held together with straps, as shown in the above diagram. The distance between successive straps depends on the electro-dynamic constraints in the event of a short-circuit. The table below gives the recommended distances between straps.

I _{cc} max. (kA rms)	Distance x between straps (mm) ⁽¹⁾
20	350
25	200
35	100
45	70

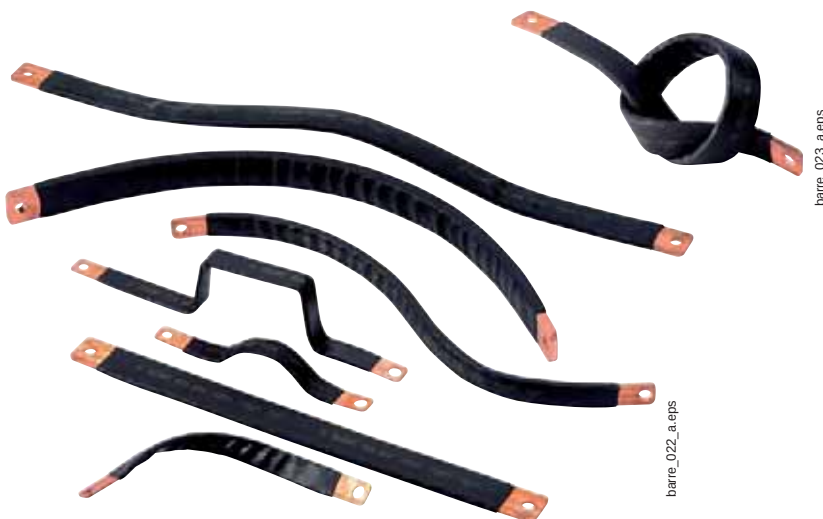
(1) 9 mm straps, load 80 kg.



Insulated copper braids

Busbar

Enclosures
& accessories



The solution for

> Electrical distribution



Strong points

- > Easy to install
- > Wide range of applications
- > Compatibility

Compliance with standards



Customised solutions

- > Tin-plated contact surface
- > For any other length, please contact us

Function

SOCOMEK insulated copper braids are mainly utilised for providing the power connections between distribution busbars and the devices within an electrical panel. Their flexibility is particularly suited to complex and diverse connections in confined spaces.

Technical characteristics

- Electrolytic copper, annealing state
- Operating voltage 1000 VAC - 1500 VDC
- Dielectric strength 20 KV / mm
- Operating temperature: -40°C / +105°C
- Self-extinguishing: UL 94 V0
- Contact surface: Bare copper

Advantages

Easy to install

- Compact design.
- Length and orientation are easily adapted.
- Prewired.

Compatibility

- With SOCOMEK devices.
- With most commercial circuit breakers.

Wide range of applications

- Amperage up to 1000 A.
- Suitable for various connection ranges.
- Lengths from 200 to 800 mm.

Part numbers and dimensions

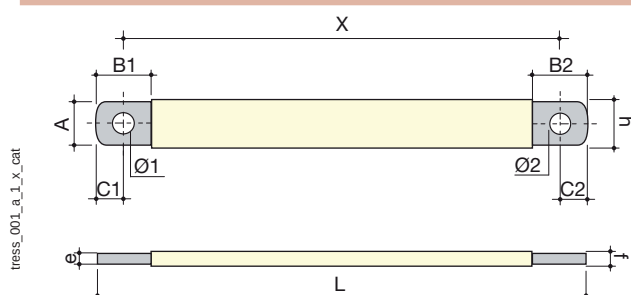
Current rating at ambient temperature of 630 to 7000 A			Reference	Section mm ²	Dimensions										Range		Weight (kg)
35°C (A)	Nominal rating 45°C (A)	55°C (A)			A Width (mm)	e Thickness (mm)	X Distance (mm)	L Length (mm)	Ø 1 (mm)	Ø 2 (mm)	C1 (mm)	C2 (mm)	h Width (mm)	f Thickness (mm)	B1 (mm)	B2 (mm)	
180	160	140	4516 1620	25	20	1.5	200	220	8.5	10.5	8	12	22	3.5	25	30	0.08
180	160	140	4516 1625	25	20	1.5	250	270	8.5	10.5	8	12	22	3.5	25	30	0.09
180	160	140	4516 1630	25	20	1.5	300	320	8.5	10.5	8	12	22	3.5	25	30	0.11
180	160	140	4516 1635	25	20	1.5	350	370	8.5	10.5	8	12	22	3.5	25	30	0.12
180	160	140	4516 1640	25	20	1.5	400	420	8.5	10.5	8	12	22	3.5	25	30	0.14
180	160	140	4516 1650	25	20	1.5	500	520	8.5	10.5	8	12	22	3.5	25	30	0.17
280	250	220	4516 2520	50	20	3	200	220	8.5	10.5	8	12	22	5	25	30	0.14
280	250	220	4516 2525	50	20	3	250	270	8.5	10.5	8	12	22	5	25	30	0.16
280	250	220	4516 2530	50	20	3	300	320	8.5	10.5	8	12	22	5	25	30	0.19
280	250	220	4516 2535	50	20	3	350	370	8.5	10.5	8	12	22	5	25	30	0.22
280	250	220	4516 2540	50	20	3	400	420	8.5	10.5	8	12	22	5	25	30	0.25
280	250	220	4516 2550	50	20	3	500	520	8.5	10.5	8	12	22	5	25	30	0.30
440	400	320	4516 4020	120	32	5	200	222	10.5	10.5	10	12	34	7	25	30	0.30
440	400	320	4516 4025	120	32	5	250	272	10.5	10.5	10	12	34	7	25	30	0.36
440	400	320	4516 4030	120	32	5	300	322	10.5	10.5	10	12	34	7	25	30	0.43
440	400	320	4516 4035	120	32	5	350	372	10.5	10.5	10	12	34	7	25	30	0.49
440	400	320	4516 4040	120	32	5	400	422	10.5	10.5	10	12	34	7	25	30	0.56
440	400	320	4516 4050	120	32	5	500	522	10.5	10.5	10	12	34	7	25	30	0.69
440	400	320	4516 4060	120	32	5	600	622	10.5	10.5	10	12	34	7	25	30	0.82
440	400	320	4516 4080	120	32	5	800	822	10.5	10.5	10	12	34	7	25	30	1.07
690	630	560	4516 6325	240	32	10	250	274	12.5	10.5	12	12	34	12	35	30	0.71
690	630	560	4516 6330	240	32	10	300	324	12.5	10.5	12	12	34	12	35	30	0.84
690	630	560	4516 6335	240	32	10	350	374	12.5	10.5	12	12	34	12	35	30	0.96
690	630	560	4516 6340	240	32	10	400	424	12.5	10.5	12	12	34	12	35	30	1.09
690	630	560	4516 6350	240	32	10	500	524	12.5	10.5	12	12	34	12	35	30	1.35
690	630	560	4516 6360	240	32	10	600	624	12.5	10.5	12	12	34	12	35	30	1.60
690	630	560	4516 6380	240	32	10	800	824	12.5	10.5	12	12	34	12	35	30	2.10

Compatibility with devices

Manufacturer	Range	160 A Ref. 4516 16xx	250 A Ref. 4516 25xx	400 A Ref. 4516 40xx	630 A Ref. 4516 63xx
Socomec	SIRCO	SIRCO 125/160	SIRCO 200/250	SIRCO 315/400	SIRCO 500/630
	INOSYS	INOSYS 160	INOSYS 250/315	INOSYS 400	INOSYS 500/630
	SIDER ND	SIDER ND 125	SIDER ND 200	SIDER ND 250/315/400	SIDER ND 500
	SIDERMAT	-	SIDERMAT 250	SIDERMAT 400	SIDERMAT 630
	FUSERBLOC	FUSERBLOC 100/125/160	FUSERBLOC 250	FUSERBLOC 400	FUSERBLOC 630
Schneider Electric (Square D)	NSX	NSX 100/160	NSX 250	NSX 400	NSX 630
	NSF/NSJ	NSF 150	NSF 250	NSJ 400	NSJ 600
HAGER	Series h3	h3 125/160	h3 250	h3 630	h3 630
Moeller / Eaton / Cutler Hammer	NZM	NZM 1	NZM 2	NZM 3	NZM 3
	Series G	EG/JG Frame	JG Frame	LG Frame	LG Frame
ABB	Tmax	Tmax T1/T2	Tmax T3/T4*	Tmax T5	Tmax T5
Siemens	Series 3VL		3VL400	3VL400	3VL400X
	Series 3VT		3VT2	3VT3	3VT3
	Series 3VA	3VA2	3VA2		
Legrand	DPX	DRX250/DPX250 (ER)	DRX250/DPX250 (ER)	DPX630	DPX630
Bticino	MEGATIKER	M160/250E	M250E	M400/630E	M630E

* Connection T4 320 A 2 x 250 A

Dimensions



Parallel systems

Putting braids in parallel increases the temperature of the air near the braid, which forms a reduction coefficient

Correction factor	
	Current
	2 x current x 0.8
	3 x current x 0.65

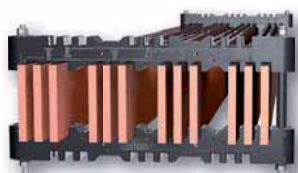


Busbar supports

Busbar

Enclosures
& accessories

new



Fixed interphase, SB C 15

sb_214_a_1_cat.psd

sb_103_a_1_cat



Insulators

sb_195_a_1_cat



Adjustable interphase

sb_084_a_1_cat



Stair type support

Function

SOCOMEK insulating busbar supports enable the fixing of copper or aluminium busbars.

Characteristics

Insulators

- Polyester without halogen.
- UL94 VO self-extinguishing.
- Colour red RAL 3002.
- Operating temperature from -40 to +130°C.
- Deformation under load temperature (ASTM D643): > 200°C.
- Dielectric constant (ASTM D150): 4/5.
- Arc resistance (ASTM D495): > 180 s.
- Water absorption (ASTM D570): < 0.3%.

Busbar supports

- High dielectric strength.
- High mechanical resistance.
- Amagnetism of assembly parts.
- High resistance to damp heat (supplied "with a conformal coating").

Stair type supports

- Thermoplastic material.
- VO self-extinguishing.
- Insulating voltage: 1000 V.

The solution for

- > Electrical distribution



Compliance with standards

- > IEC 61439-1
- > IEC 60865-1



Approvals and certifications⁽¹⁾

- > ASEFA/LCIE



(1) Product references on request.

Available on request

- > Please contact us

Software tool for size selection

Mechanical Systems is a software that can be utilised to size bar sets. It defines the configuration of the busbar system, including bar section and distance between supports, according to the required electrical characteristics of the panel in compliance with standard IEC 61439-1. The software runs on Windows® 95, 98, 2000, NT or XP.

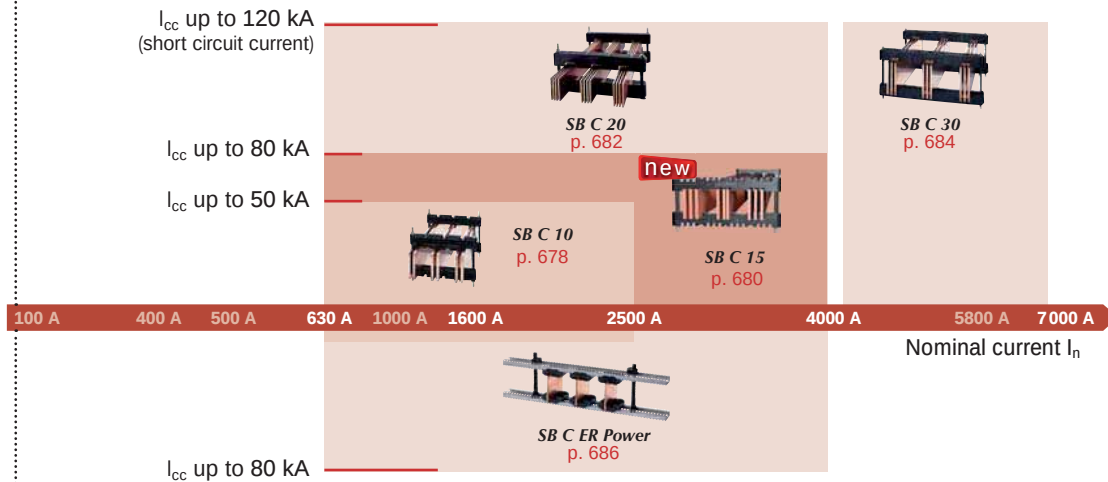


sb_201_b_1_fr_cat.eps

Selection guide

Edgewise mounting

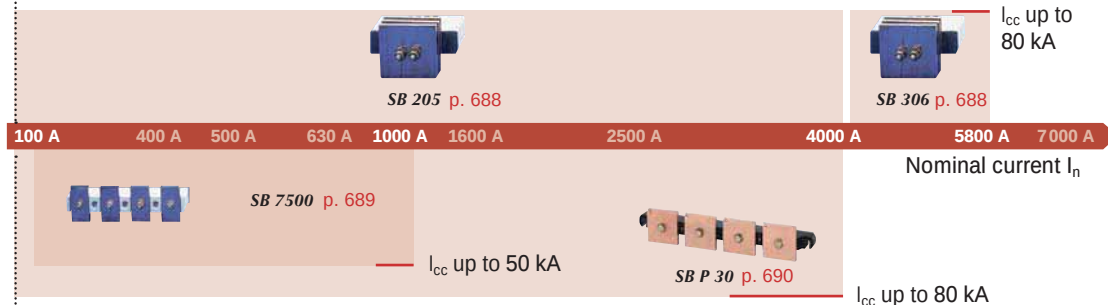
• Busbar supports with fixed interphase



• Busbar supports with adjustable interphase

Flat mounting

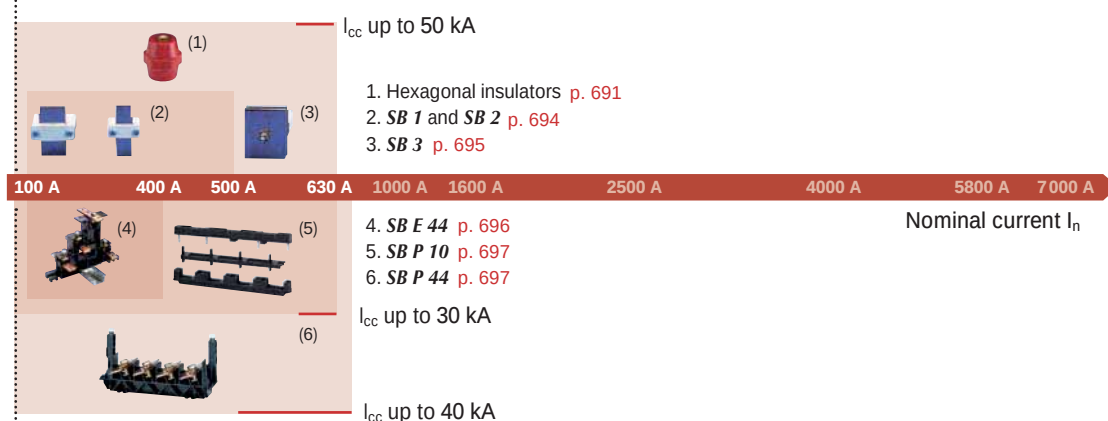
• Unipolar busbar supports



• Multipolar busbar supports

Other supports

• Unipolar busbar supports



• Tetrapolar busbar supports

Busbar supports

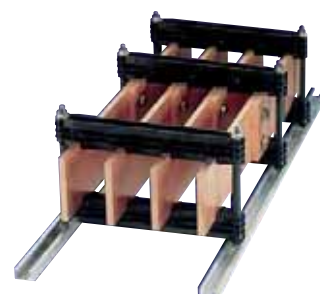
Busbar

■ SB C 10 multipolar edgewise mounting busbar supports with fixed interphase

References

2 bars of 5 mm or 1 bar of 10 mm

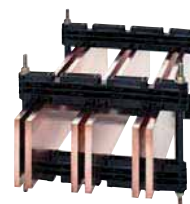
No. of poles	Insulation voltage (VAC)	Number of bars max x bar thickness (mm)	B (mm)	R bar height (mm)	Pack qty	Reference
3	1000	2 x 5 / 1 x 10	160	25	1	5024 6304
3	1000	2 x 5 / 1 x 10	160	40	1	5024 6309
3	1000	2 x 5 / 1 x 10	190	50	1	5024 6310
3	1000	2 x 5 / 1 x 10	190	60	1	5024 6312
3	1000	2 x 5 / 1 x 10	190	63	1	5024 6313
3	1000	2 x 5 / 1 x 10	220	80	1	5024 6317
4	1000	2 x 5 / 1 x 10	160	25	1	5024 6504
4	1000	2 x 5 / 1 x 10	160	40	1	5024 6509
4	1000	2 x 5 / 1 x 10	190	50	1	5024 6510
4	1000	2 x 5 / 1 x 10	190	60	1	5024 6512
4	1000	2 x 5 / 1 x 10	190	63	1	5024 6513
4	1000	2 x 5 / 1 x 10	220	80	1	5024 6517
4	1000	2 x 5 / 1 x 10	220	100	1	5024 6518



sb_061_b_2_cat

1 or 2 bars of 10 mm

No. of poles	Insulation voltage (VAC)	Number of bars max x bar thickness (mm)	B (mm)	R bar height (mm)	Pack qty	Reference
3	800	1 x 10 / 2 x 10	160	25	1	5024 6404
3	800	1 x 10 / 2 x 10	160	40	1	5024 6409
3	800	1 x 10 / 2 x 10	190	50	1	5024 6410
3	800	1 x 10 / 2 x 10	190	60	1	5024 6412
3	800	1 x 10 / 2 x 10	190	63	1	5024 6413
3	800	1 x 10 / 2 x 10	220	80	1	5024 6417
3	800	1 x 10 / 2 x 10	220	100	1	5024 6418
4	1000	1 x 10 / 2 x 10	160	25	1	5024 6604
4	1000	1 x 10 / 2 x 10	160	40	1	5024 6609
4	1000	1 x 10 / 2 x 10	190	50	1	5024 6610
4	1000	1 x 10 / 2 x 10	190	60	1	5024 6612
4	1000	1 x 10 / 2 x 10	190	63	1	5024 6613
4	1000	1 x 10 / 2 x 10	220	80	1	5024 6617
4	1000	1 x 10 / 2 x 10	220	100	1	5024 6618



sb_174_a_2_cat

Accessories

Use

Adjustable interfix profiles allow you to install the busbar supports at a variable depth.



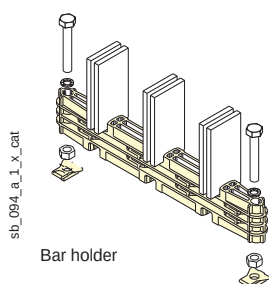
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Adjustable interfix profile.

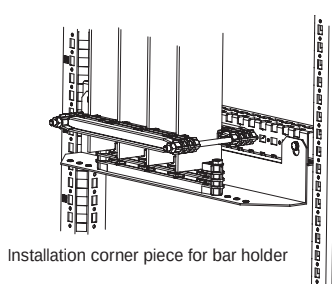
Adjustable interfix profile			
No. of bars	For Depth (mm)	Pack qty	Reference
2 x 5 / 1 x 10	Min. 575 / Max. 675	1	5024 9050
1 x 10 / 2 x 10	Min. 575 / Max. 775	1	5024 9051

Bar holder			
No. of bars	No. of poles	Pack qty	Reference
2 x 5 / 1 x 10	3	1	5024 9031
2 x 5 / 1 x 10	4	1	5024 9041
1 x 10 / 2 x 10	3	1	5024 9034
1 x 10 / 2 x 10	4	1	5024 9044

Installation corner piece			
For enclosure Depth (mm)	No. of poles	Pack qty	Reference
Min. 400	3/4 P	1	5024 9000
Min. 600	3/4 P	1	5024 9001



Bar holder



Installation corner piece for bar holder

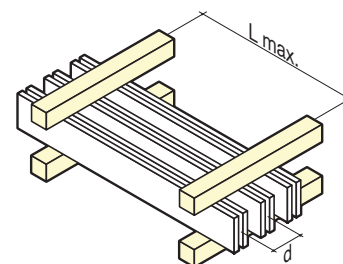
sb_177_a_1_x_cat

Characteristics

Characteristics of 3 and 4 poles with bars of 5 mm for SB C 10

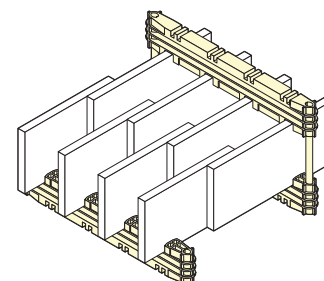
peak I_{sc}	L max. (support bars in mm) for							
	15 kA	24 kA	48 kA	63 kA	82 kA	114 kA		
rms I_{sc}	9 kA	12 kA	23 kA	30 kA	39 kA	52 kA		
Bar x qty							d (mm)	Iz (A) ⁽¹⁾
25 x 5 x 1	775	475	225	175	140	100	60	330
25 x 5 x 2	675	425	200	160	125		60	590
40 x 5 x 1	1000	625	300	225	175	130	60	500
40 x 5 x 2	950	575	275	225	170	125	60	850
50 x 5 x 1	1000	700	350	250	200	130	60	600
50 x 5 x 2	1000	675	325	250	200	145	60	1050
60 x 5 x 1	1000	775	375	300	225	130	60	700
60 x 5 x 2	1000	775	375	300	225	165	60	1200
63 x 5 x 1	1000	800	400	300	225	130	60	700
63 x 5 x 2	1000	800	400	300	225	170	60	1250
80 x 5 x 1	1000	950	475	350	225	125	60	900
80 x 5 x 2	1000	975	475	375	275	200	60	1550
100 x 5 x 1	1000	1000	550	400	225	125	60	1100
100 x 5 x 2	1000	1000	575	425	325	225	60	1900

(1) Admissible busbar nominal current with a temperature inside the panel of between 45°C and 80°C.
For other mounting configurations, please contact us.



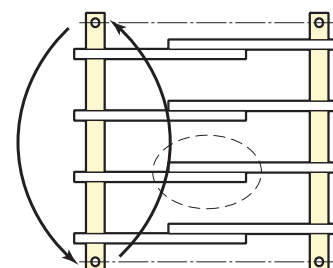
sb_021_b_1_fr_cat

Adhering to the **maximum distance** between two supports ensures that the busbar supports are able to withstand the given short circuit current values. At these limits, distortion of the copper bars may occur. These deformations are permitted by standard IEC 61439-1 so long as they adhere to the insulation distances.



sb_054_b_1_x_cat

Mounting of one or two bars per pole



sb_045_b_1_x_cat

Bars joined by reversing a support

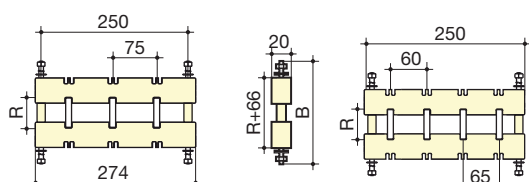
Characteristics of 3 and 4 poles with bars of 10 mm for SB C 10

peak I_{sc}	L max. (support bars in mm) for							
	15 kA	24 kA	48 kA	63 kA	82 kA	114 kA		
rms I_{sc}	9 kA	12 kA	23 kA	30 kA	39 kA	52 kA		
Bar x qty							d (mm)	Iz (A) ⁽¹⁾
25 x 10 x 1	1000	1000	500	375	275	200	65	850
25 x 10 x 2	1000	1000	525	400	300	200	90	850
40 x 10 x 1	1000	1000	650	475	375	250	65	700
40 x 10 x 2	1000	1000	700	525	400	275	90	1250
50 x 10 x 1	1000	1000	725	550	425	300	65	850
50 x 10 x 2	1000	1000	800	600	475	325	90	1550
60 x 10 x 1	1000	1000	800	625	475	325	65	1000
60 x 10 x 2	1000	1000	900	675	525	350	90	1800
63 x 10 x 1	1000	1000	825	625	475	350	65	1050
63 x 10 x 2	1000	1000	925	700	550	350	90	1850
80 x 10 x 1	1000	1000	975	725	550	400	65	1300
80 x 10 x 2	1000	1000	1000	850	650	350	90	2300
100 x 10 x 1	1000	1000	1000	850	650	400	65	1550
100 x 10 x 2	1000	1000	1000	975	675	350	90	2750

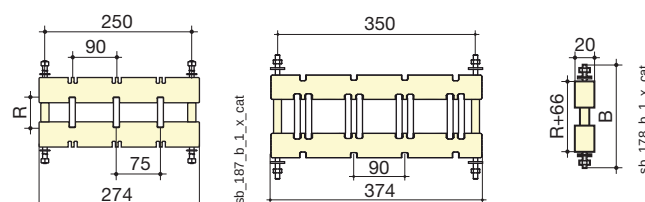
(1) Admissible busbar nominal current with a temperature inside the panel of between 45°C and 80°C.
For other mounting configurations, please contact us.

Dimensions

2 bars of 5 mm or 1 bar of 10 mm



1 or 2 bars of 10 mm



Fixed interphase:

- 3 poles 2 x 5, 1 x 10: 75 mm.
- 4 poles thickness bar 5 mm: 60 mm, thickness bar 10 mm: 65 mm.

Fixed interphase:

- 3 poles 1 bar of 10 mm: 75 mm, 2 bars of 10 mm per pole: 90 mm.
- 4 poles 1 or 2 bars of 10 mm: 90 mm.

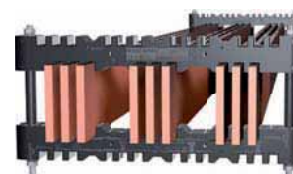
Busbar supports

Busbar

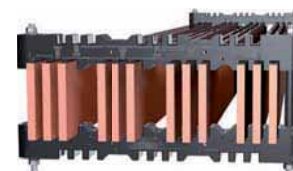
■ SB C 15 multipolar edgewise mounting busbar supports with fixed interphase

References

No. of poles	Insulation voltage (VAC)	Number of bars max x bar thickness (mm)	B (mm)	R bar height (mm)	Pack qty	Reference
3/4 P	1000	3 x 10	160	32	1	5024 4306
3/4 P	1000	3 x 10	160	40	1	5024 4309
3/4 P	1000	3 x 10	190	50	1	5024 4310
3/4 P	1000	3 x 10	190	60	1	5024 4312
3/4 P	1000	3 x 10	220	80	1	5024 4317
3/4 P	1000	3 x 10	220	100	1	5024 4318
3/4 P	1000	3 x 10	245	125	1	5024 4321
3/4 P	1000	3 x 10	280	160	1	5024 4324



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sb_214_a_1_cat.psd

The deciding details

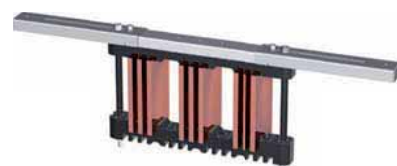
- > SB C 15 busbar supports permit the installation of 3 or 4 poles with the same support.

Accessories

Use

Adjustable interfixed profiles allow you to install the busbar supports at a variable depth.

Adjustable interfixed profile		
For Depth (mm)	To be ordered in multiples of	Reference
Min. 575 / Max. 775	1	5024 9052



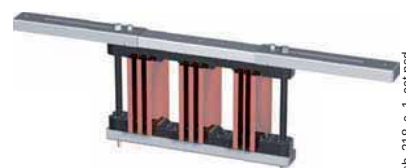
sb_217_a_1_cat.psd

Adjustable interfixed profile.

Use

Use reinforced profiles when installing high-load busbars. E.g. 3 x 125 x 10.

Adjustable floating profile		
For Depth (mm)	To be ordered in multiples of	Reference
Min. 575 / Max. 775	1	5024 9053

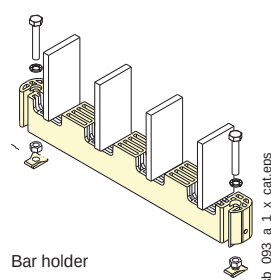


sb_218_a_1_cat.psd

Adjustable floating profile.

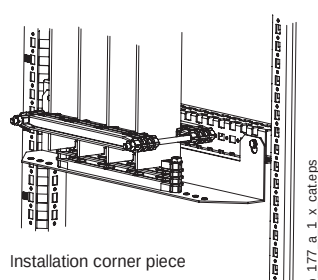
Bar holder		
No. of poles	To be ordered in multiples of	Reference
3 P	1	5024 9032
4 P	1	5024 9042

Installation corner piece		
For Depth (mm)	To be ordered in multiples of	Reference
Min. 400	1	5024 9000
Min. 600	1	5024 9001



Bar holder

sb_093_a_1_x_cat.eps



Installation corner piece

sb_177_a_1_x_cat.eps

Connection accessories

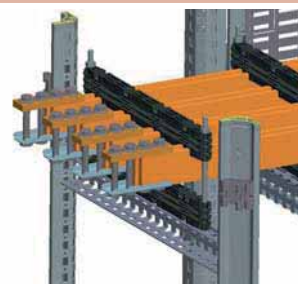
Use

Allows you to fix a horizontal busbar or connect a horizontal and a vertical busbar without having to drill the bars.

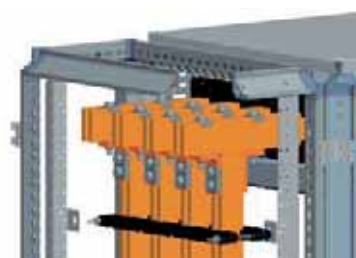
Amperage	No. of bars/ pole	To be ordered in multiples of	Horizontal connection Reference	90° connection Reference
1600 A	2	1	5119 4411	5119 4401
3200 A	2	1	5119 4412	5119 4402
5000 A	3	1	5119 4413	5119 4403

Screws

Type of screw	Bar height (mm)	To be ordered in multiples of	Reference
H M10 L80	60	1	5119 4505
H M10 L90	60	1	5119 4506
H M10 L110	80	1	5119 4508
H M10 L130	100	1	5119 4510
H M10 L150	125	1	5119 4512
H M10 L180	160	1	5119 4513



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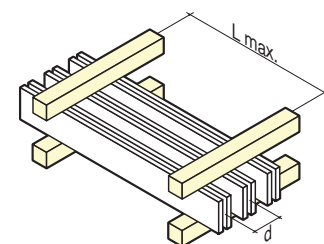
kdrys_538_a_1_cat.eps

Characteristics

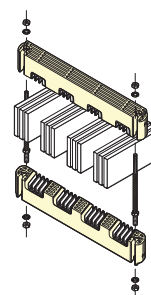
Characteristics of 3 and 4 poles with bars of 10 mm for SB C 15

peak Isc rms Isc	L max. (support bars in mm) for						D (mm)	Iz (A) ⁽¹⁾
	63 kA 30 kA	82 kA 39 kA	114 kA 52 kA	152 kA 69 kA	165 kA 75 kA	176 kA 80 kA		
Bar x qty								
32 x 10 x 1	1000	875	450	225	200	200	90	610
32 x 10 x 2	1000	875	450	225	200	200	90	1050
32 x 10 x 3	1000	925	450	225	200	200	90	1500
40 x 10 x 1	1000	875	450	225	200	200	90	700
40 x 10 x 2	1000	875	450	225	200	200	90	1250
40 x 10 x 3	1000	925	450	225	225	200	90	1800
50 x 10 x 1	1000	875	475	225	200	200	90	850
50 x 10 x 2	1000	875	475	225	200	200	90	1550
50 x 10 x 3	1000	925	475	250	225	200	90	2150
60 x 10 x 1	1000	900	475	250	200	200	90	1000
60 x 10 x 2	1000	900	475	250	200	200	90	1800
60 x 10 x 3	1000	950	500	275	225	225	90	2500
80 x 10 x 1	1000	1000	525	275	225	200	90	1300
80 x 10 x 2	1000	1000	525	275	225	200	90	2300
80 x 10 x 3	1000	1000	525	275	225	225	90	3200
100 x 10 x 1	1000	1000	550	300	250	225	90	1550
100 x 10 x 2	1000	1000	550	300	250	225	90	2750
100 x 10 x 3	1000	1000	575	300	250	225	90	3250
125 x 10 x 1	1000	1000	600	325	275	225	90	1900
125 x 10 x 2	1000	1000	600	325	275	225	90	3350
125 x 10 x 3	1000	1000	625	350	300	250	90	4650
160 x 10 x 1	1000	1000	625	350	300	250	90	2350
160 x 10 x 2	1000	1000	625	350	300	250	90	4150
160 x 10 x 3	1000	1000	650	375	325	275	90	5800

(1) Admissible busbar nominal current with a temperature inside the panel of between 45°C and 80°C.
For other mounting configurations, please contact us.

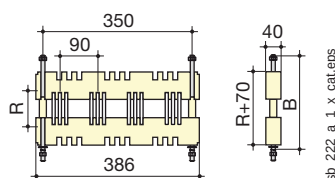
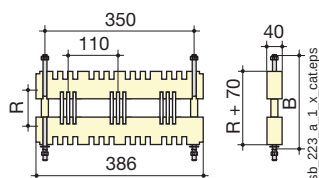


Adhering to the **maximum distance** between two supports ensures that the busbar supports are able to withstand the given short circuit current values. At these limits, distortion of the copper bars may occur. These deformations are permitted by standard IEC 61439-1 so long as they adhere to the insulation distances.



Mounting of one to three bars per pole

Dimensions



Busbar supports

Busbar

■ SB C 20 multipolar edgewise mounting busbar supports with fixed interphase

References

No. of poles	Insulation voltage (VAC)	No. of bars	Thickness of bar (mm)	B (mm)	R bar height (mm)	Pack qty	Reference
3	1,000	1 - 4	5	190	50	1	5024 8310
3	1,000	1 - 4	5	190	60	1	5024 8312
3	1,000	1 - 4	5	190	63	1	5024 8313
3	1,000	1 - 4	5	220	80	1	5024 8317
3	1,000	1 - 4	5	220	100	1	5024 8318
3	1,000	1 - 4	5	245	120	1	5024 8320
3	1,000	1 - 4	5	245	125	1	5024 8321
3	1,000	1 - 4	5	280	160	1	5024 8324
3	1,000	1 - 2	10	190	50	1	5024 7310
3	1,000	1 - 2	10	190	60	1	5024 7312
3	1,000	1 - 2	10	190	63	1	5024 7313
3	1,000	1 - 2	10	220	80	1	5024 7317
3	1,000	1 - 2	10	220	100	1	5024 7318
3	1,000	1 - 2	10	245	120	1	5024 7320
3	1,000	1 - 2	10	245	125	1	5024 7321
3	1,000	1 - 2	10	280	160	1	5024 7324
4	1,000	1 - 4	5	190	50	1	5024 8410
4	1,000	1 - 4	5	190	60	1	5024 8412
4	1,000	1 - 4	5	190	63	1	5024 8413
4	1,000	1 - 4	5	220	80	1	5024 8417
4	1,000	1 - 4	5	220	100	1	5024 8418
4	1,000	1 - 4	5	245	120	1	5024 8420
4	1,000	1 - 4	5	245	125	1	5024 8421
4	1,000	1 - 4	5	280	160	1	5024 8424
4	1,000	1 - 2	10	190	50	1	5024 7410
4	1,000	1 - 2	10	190	60	1	5024 7412
4	1,000	1 - 2	10	190	63	1	5024 7413
4	1,000	1 - 2	10	220	80	1	5024 7417
4	1,000	1 - 2	10	220	100	1	5024 7418
4	1,000	1 - 2	10	245	120	1	5024 7420
4	1,000	1 - 2	10	245	125	1	5024 7421
4	1,000	1 - 2	10	280	160	1	5024 7424



sb_077_a_1_cat

Our advantages

- > The key details :
SB C 20 busbar supports have threaded holes which allow a protective screen to be attached.
The supports are fixed in place using threaded rods and M8 nuts.



Threaded rods and nuts, M8



SB C 20 Tapped holes

Accessories

Use

Adjustable interfixed profiles allow you to install the busbar supports at a variable depth.

Adjustable interfixed profile		
For depth (mm)	To be ordered in multiples of	Reference
Min. 575 / Max. 775	1	5024 9052

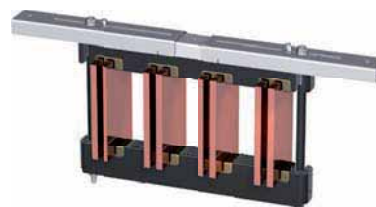
Use

Use reinforced profiles when installing high-load busbars. E.g. 2 x 160 x 10.

Adjustable floating profile		
For depth (mm)	To be ordered in multiples of	Reference
Min. 575 / Max. 775	1	5024 9053

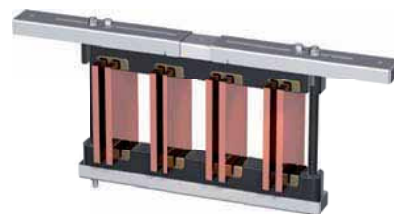
Bar holder		
No. of poles	To be ordered in multiples of	Reference
3 P	1	5024 9032
4 P	1	5024 9042

Installation corner piece		
For enclosure Depth (mm)	To be ordered in multiples of	Reference
Min. 400	1	5024 9000
Min. 600	1	5024 9001



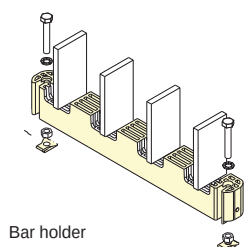
sb_219_a_1_cat.psd

Adjustable interfixed profile.



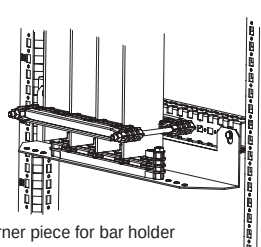
sb_220_a_1_cat.psd

Adjustable floating profile.



sb_093_a_1_x_cat

Bar holder



sb_177_a_1_x_cat

Installation corner piece for bar holder

Characteristics

Characteristics of 3 and 4 poles with bars of 5 mm for SB C 20

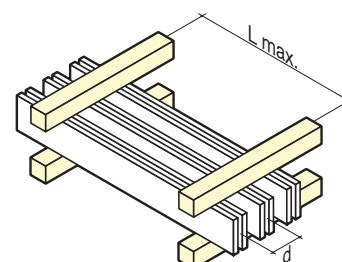
peak I_{sc}	L max. (support bars in mm) for								d (mm)	Iz (A) ⁽¹⁾
	63 kA	82 kA	114 kA	152 kA	165 kA	187 kA	220 kA	264 kA		
rms I_{sc}	30 kA	39 kA	52 kA	69 kA	75 kA	85 kA	100 kA	120 kA		
Bar x qty										
50 x 5 x 1	625	475	350	250	225	200	175	150	90	600
50 x 5 x 2	525	400	300	225	200	175	155	130	90	1,050
50 x 5 x 3	600	450	325	250	225	200	175	145	90	1,450
50 x 5 x 4	675	525	375	275	250	225	175	160	90	1,850
60 x 5 x 1	675	525	375	275	250	225	200	165	90	700
60 x 5 x 2	600	450	325	250	225	200	175	145	90	1,200
60 x 5 x 3	675	525	375	275	250	225	175	165	90	1,700
60 x 5 x 4	750	575	400	300	275	250	200	175	90	2,150
63 x 5 x 1	700	550	375	275	250	225	200	170	90	700
63 x 5 x 2	625	475	350	250	225	200	175	150	90	1,250
63 x 5 x 3	700	525	375	275	250	225	200	170	90	1,800
63 x 5 x 4	775	600	425	325	275	250	200	175	90	2,250
80 x 5 x 1	800	625	450	325	300	250	225	175	90	900
80 x 5 x 2	725	550	400	300	275	250	200	175	90	1,550
80 x 5 x 3	800	625	450	325	300	275	225	175	90	2,200
80 x 5 x 4	875	675	475	350	325	300	250	200	90	2,750
100 x 5 x 1	900	700	500	375	350	300	250	200	90	1,100
100 x 5 x 2	850	650	475	350	325	275	225	200	90	1,900
100 x 5 x 3	925	700	500	375	350	300	250	200	90	2,650
100 x 5 x 4	975	750	525	400	375	325	275	225	90	3,350
125 x 5 x 1	1000	800	575	425	400	350	300	250	90	1,300
125 x 5 x 2	975	750	550	400	375	325	275	225	90	2,350
125 x 5 x 3	1000	800	575	425	400	350	300	250	90	3,250
125 x 5 x 4	1000	825	575	425	400	350	300	250	90	4,100

(1) Admissible busbar nominal current with a temperature inside the panel of between 45°C and 80°C.
For other mounting configurations, please contact us.

Characteristics of 3 and 4 poles with bars of 10 mm for SB C 20

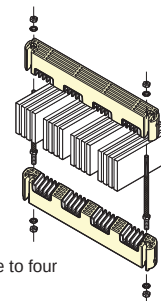
peak I_{sc}	L max. (support bars in mm) for								d (mm)	Iz (A) ⁽¹⁾
	63 kA	82 kA	114 kA	152 kA	165 kA	187 kA	220 kA	264 kA		
rms I_{sc}	30 kA	39 kA	52 kA	69 kA	75 kA	85 kA	100 kA	120 kA		
Bar x qty										
50 x 10 x 1	1000	925	675	500	450	400	350	275	90	850
50 x 10 x 2	1000	850	600	450	400	350	300	250	90	1550
60 x 10 x 1	1000	1000	725	550	500	450	375	300	90	1000
60 x 10 x 2	1000	925	675	500	450	400	350	275	90	1800
63 x 10 x 1	1000	1000	750	550	525	450	375	325	90	1050
63 x 10 x 2	1000	950	675	500	475	400	350	275	90	1890
80 x 10 x 1	1000	1000	850	625	575	525	425	350	90	1300
80 x 10 x 2	1000	1000	775	575	525	475	400	325	90	2300
100 x 10 x 1	1000	1000	950	700	650	575	475	400	90	1550
100 x 10 x 2	1000	1000	850	625	575	525	425	350	90	2750
125 x 10 x 1	1000	1000	1000	800	725	650	550	450	90	1900
125 x 10 x 2	1000	1000	925	675	625	550	475	400	90	3350
160 x 10 x 1	1000	1000	1000	900	825	725	625	500	90	2350
160 x 10 x 2	1000	1000	950	700	650	575	475	400	90	4150

(1) Admissible busbar nominal current with a temperature inside the panel of between 45°C and 80°C.
For other mounting configurations, please contact us.



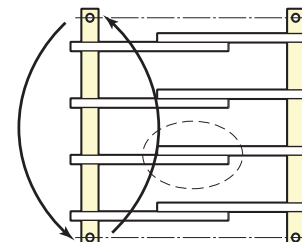
sb_021_b_1_x_cat

Adhering to the **maximum distance** between two supports ensures that the busbar supports are able to withstand the given short circuit current values. At these limits, distortion of the copper bars may occur. These deformations are permitted by standard IEC 61439-1 so long as they adhere to the insulation distances.



sb_063_a_1_x_cat

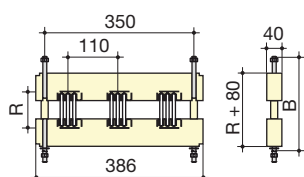
Assembly of one to four bars per pole



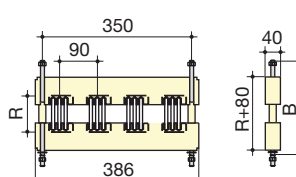
sb_045_b_1_x_cat

Bars joined by reversing a support

Dimensions



sb_066_c_1_x_cat



sb_067_c_1_x_cat

Fixed interphase:

- 3 poles: 110 mm
- 4 poles: 90 mm

Busbar supports

Busbar

■ SB C 30 multipolar edgewise mounting busbar supports with fixed interphase

References

No. of poles	Insulation voltage (VAC)	No. of bars	Thickness of bar (mm)	B (mm)	R bar height (mm)	Pack qty	Reference
3	1,000	1 - 3	10	190	50	1	5024 5310
3	1,000	1 - 3	10	190	60	1	5024 5312
3	1,000	1 - 3	10	190	63	1	5024 5313
3	1,000	1 - 3	10	190	70	1	5024 5315
3	1,000	1 - 3	10	220	80	1	5024 5317
3	1,000	1 - 3	10	220	100	1	5024 5318
3	1,000	1 - 3	10	245	120	1	5024 5320
3	1,000	1 - 3	10	245	125	1	5024 5321
3	1,000	1 - 3	10	280	160	1	5024 5324
3	1,000	1 - 3	10	325	200	1	5024 5325
4	1,000	1 - 3	10	190	50	1	5024 5510
4	1,000	1 - 3	10	190	60	1	5024 5512
4	1,000	1 - 3	10	190	63	1	5024 5513
4	1,000	1 - 3	10	190	70	1	5024 5515
4	1,000	1 - 3	10	220	80	1	5024 5517
4	1,000	1 - 3	10	220	100	1	5024 5518
4	1,000	1 - 3	10	245	120	1	5024 5520
4	1,000	1 - 3	10	245	125	1	5024 5521
4	1,000	1 - 3	10	280	160	1	5024 5524
4	1,000	1 - 3	10	325	200	1	5024 5525



sb_173_a_2_cat

Accessories

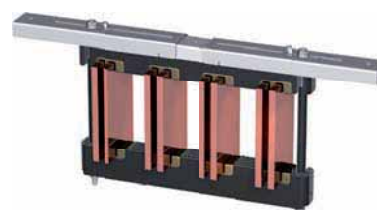
Use

Adjustable interfixed profiles allow you to install the busbar supports at a variable depth.

Adjustable interfixed profile		
For depth (mm)	To be ordered in multiples of	Reference
Min. 575 / Max. 775	1	5024 9054

Use

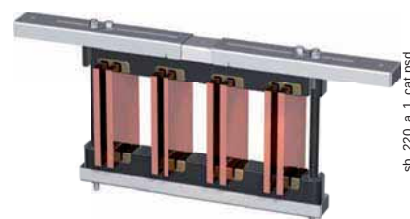
Use reinforced profiles when installing high-load busbars. E.g. 3 x 125 x 10.



sb_219_a_1_cat.psd

Adjustable interfixed profile.

Adjustable floating profile		
For depth (mm)	To be ordered in multiples of	Reference
Min. 575 / Max. 775	1	5024 9055

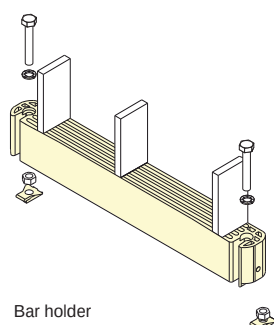


sb_220_a_1_cat.psd

Adjustable floating profile.

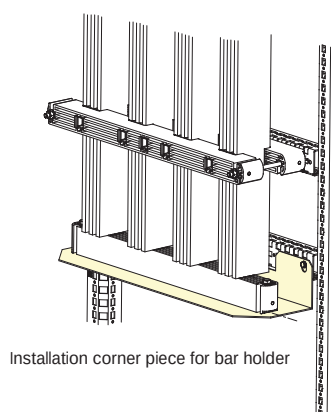
Bar holder		
No. of poles	To be ordered in multiples of	Reference
3/4 P	1	5024 9033

Installation corner piece		
For depth (mm)	To be ordered in multiples of	Reference
Min. 600	1	5024 9001



Bar holder

sb_122_b_1_x_cat



Installation corner piece for bar holder

sb_180_a_1_x_cat

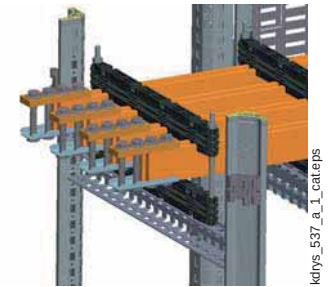
Connection accessories

Use

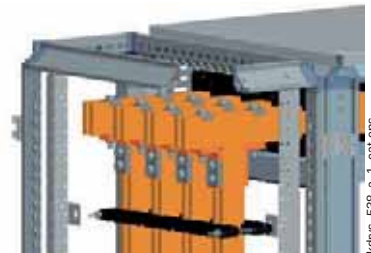
Allows you to fix a horizontal busbar or connect a horizontal and a vertical busbar without having to drill the bars.

Amperage	No. of bars/ pole	To be ordered in multiples of	Horizontal connection Reference	90° connection Reference
1600 A	2	1	5119 4411	5119 4401
3200 A	2	1	5119 4412	5119 4402
5000 A	3	1	5119 4413	5119 4403

Screws			
Type of screw	Bar height	To be ordered in multiples of	Reference
H M10 L80	60	1	5119 4505
H M10 L90	60	1	5119 4506
H M10 L110	80	1	5119 4508
H M10 L130	100	1	5119 4510
H M10 L150	125	1	5119 4512
H M10 L180	160	1	5119 4513



kdrys_537_a_1_cat.eps



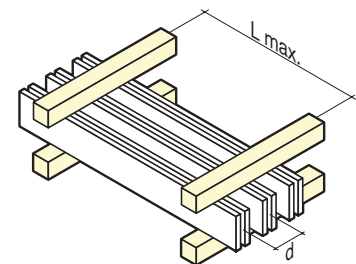
kdrys_538_a_1_cat.eps

Characteristics

Characteristics of 3 and 4 poles with bars of 10 mm for SB C 30

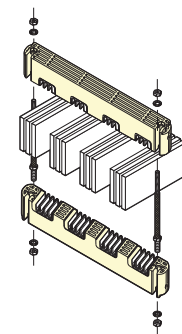
peak I_{sc}	L max. (support bars in mm) for								d (mm)	Iz (A) (1)
	63 kA	82 kA	114 kA	152 kA	165 kA	187 kA	220 kA	264 kA		
rms I_{sc}	30 kA	39 kA	52 kA	69 kA	75 kA	85 kA	100 kA	120 kA		
Bar x qty										
50 x 10 x 1	1000	1000	800	600	550	475	400	350	130	850
50 x 10 x 2	1000	900	650	475	450	400	325	275	130	1,550
50 x 10 x 3	725	550	400	300	275	225	200	175	130	2,150
60 x 10 x 1	1000	1000	875	650	600	525	450	375	130	1,000
60 x 10 x 2	1000	1000	725	525	500	425	375	300	130	1,800
60 x 10 x 3	825	625	450	325	300	275	225	175	130	2,500
63 x 10 x 1	1000	1000	900	675	600	550	450	375	130	1,050
63 x 10 x 2	1000	1000	725	550	500	450	375	300	130	1,850
63 x 10 x 3	850	650	450	350	325	275	225	200	130	2,600
80 x 10 x 1	1000	1000	1000	750	675	600	500	425	130	1,300
80 x 10 x 2	1000	1000	825	625	575	500	425	350	130	2,300
80 x 10 x 3	1000	750	550	400	375	325	275	225	130	3,200
100 x 10 x 1	1000	1000	1000	825	750	675	575	475	130	1,550
100 x 10 x 2	1000	1000	925	675	625	550	475	400	130	2,750
100 x 10 x 3	1000	900	650	475	425	375	325	275	130	3,250
125 x 10 x 1	1000	1000	1000	925	850	750	625	525	130	1,900
125 x 10 x 2	1000	1000	1000	750	675	600	500	425	130	3,350
125 x 10 x 3	1000	1000	750	550	525	450	375	325	130	4,650
160 x 10 x 1	1000	1000	1000	1000	925	825	700	575	130	2,350
160 x 10 x 2	1000	1000	1000	750	700	625	525	425	130	4,150
160 x 10 x 3	1000	1000	900	675	625	550	475	375	130	5,800
200 x 10 x 1	1000	1000	1000	1000	1000	900	750	625	130	2,850
200 x 10 x 2	1000	1000	925	700	625	550	475	400	130	5,050
200 x 10 x 3	1000	1000	725	525	500	425	375	300	130	7,000

(1) Admissible busbar nominal current with a temperature inside the panel of between 45°C and 80°C.
For other mounting configurations, please contact us.



sb_021_b_1_x_cat

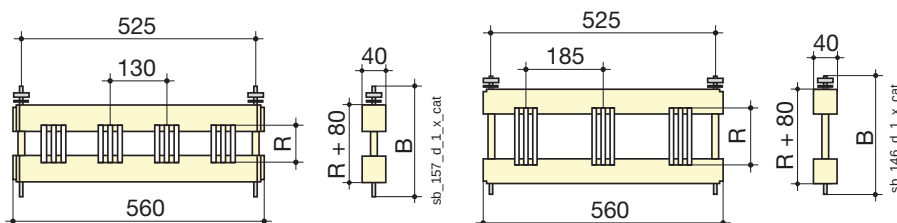
Adhering to the **maximum distance** between two supports ensures that the busbar supports are able to withstand the given short circuit current values. At these limits, distortion of the copper bars may occur. These deformations are permitted by standard IEC 61439-1 so long as they adhere to the insulation distances.



sb_162_a_1_x_cat

Mounting of one to three bars per pole

Dimensions



Fixed interphase:
 • 3 poles: 185 mm
 • 4 poles: 130 mm

Busbar supports

Busbar

SB C ER P multipolar edgewise mounting busbar supports with adjustable interphase

References

Insert

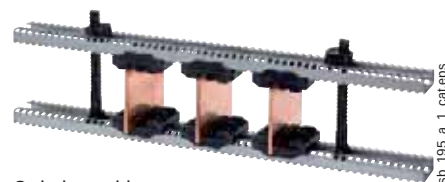
Designation	Thickness of bar (mm)	No. of bars	No. of poles	Quantity	To be ordered in multiples of	Reference
Insert for 5 mm bars	5	3	3	6 ⁽¹⁾	8	5025 5105
Insert for 5 mm bars	5	3	4	8 ⁽¹⁾	8	5025 5105
Insert for 10 mm bars	10	2	3	6 ⁽¹⁾	4	5025 5110
Insert for 10 mm bars	10	2	4	8 ⁽¹⁾	4	5025 5110
Insert for 10 mm bars	10	3	3	6 ⁽¹⁾	1	5025 5111
Insert for 10 mm bars	10	3	4	8 ⁽¹⁾	1	5025 5111

Mounting accessories

Designation	Length (mm)	Quantity	To be ordered in multiples of	Reference
Stud kit (bar height 25 to 200 mm)	3	2 ⁽¹⁾	4	5025 5100
380 mm profile	380	2 ⁽¹⁾	4	5025 5124
480 mm profile	480	2 ⁽¹⁾	4	5025 5125
580 mm profile	580	2 ⁽¹⁾	4	5025 5126
780 mm profile	780	2 ⁽¹⁾	4	5025 5128
2 m profile	2000		4	5025 5120
Profile for Prisma enclosure ⁽²⁾	525	1 ⁽¹⁾	1	5025 5130

(1) Quantity required for 1 busbar support inserts.

(2) Kit of 2 profiles and 4 brackets.



Ordering guide

- For three poles, order: 6 x insets, 2 x studs, 2 x profiles.
- For four poles, order: 8 x insets, 2 x studs, 2 x profiles.

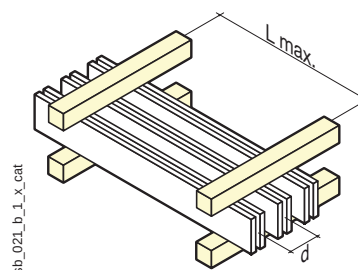
Characteristics

5 mm inserts for up to 3 bars and 10 mm inserts for up to 2 bars

peak I_{sc}	L max. (support bars in mm) for					d min. (mm)	Iz (A) ⁽¹⁾
	82 kA	114 kA	152 kA	165 kA	187 kA		
rms I_{sc}	39 kA	52 kA	69 kA	75 kA	85 kA		
Bar x qty							
50 x 5 x 1	275					75	600
50 x 5 x 2	250	175	140	130	115	75	1050
50 x 5 x 3	300	200	165	150	135	75	1450
63 x 5 x 1	325	225				75	700
63 x 5 x 2	300	225	165	155	135	75	1250
63 x 5 x 3	350	250	175	175	160	75	1800
80 x 5 x 1	375	250	200			75	900
80 x 5 x 2	375	250	200	175	160	75	1550
80 x 5 x 3	425	300	225	200	175	75	2200
100 x 5 x 1	425	300	225	200	175	75	1100
100 x 5 x 2	425	300	225	200	175	75	1900
100 x 5 x 3	500	350	275	250	200	75	2650
125 x 5 x 1	500	350	250	250	200	75	1300
125 x 5 x 2	525	375	275	250	225	75	2350
125 x 5 x 3	600	425	325	275	225	75	3250
80 x 10 x 1	750	525	300	250	200	75	1300
80 x 10 x 2	775	525	300	250	175	75	2300
100 x 10 x 1	850	575	300	250	200	75	1550
100 x 10 x 2	900	550	300	250	200	75	2750
125 x 10 x 1	1000	600	325	275	225	75	1900
125 x 10 x 2	1000	600	325	275	225	75	3350
160 x 10 x 1	1000	675	375	325	250	75	2350
160 x 10 x 2	1000	675	375	325	250	75	4150

(1) Admissible busbar nominal current with a temperature inside the panel of between 45°C and 80°C.

For other mounting configurations, please contact us.



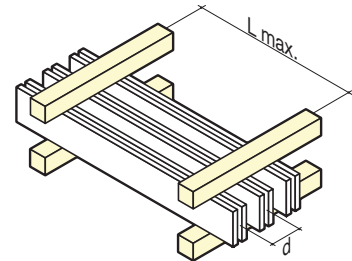
Adhering to the maximum distance between two supports ensures that the busbar supports are able to withstand the given short circuit current values. At these limits, distortion of the copper bars may occur. These deformations are permitted by standard IEC 61439-1 so long as they adhere to the insulation distances.

Characteristics (continued)

10 mm insert / 3 bars

peak I_{sc}	L max. (bar supports in mm)							
	63 kA	82 kA	114 kA	152 kA	165 kA	187 kA		
rms I_{sc}	30 kA	39 kA	52 kA	69 kA	75 kA	85 kA		
Bar x qty							D (mm)	Iz (A) ⁽¹⁾
50 x 10 x 1	1000	575	300	175	150	100	75	850
50 x 10 x 2	1000	575	300	175	150	100	75	1550
50 x 10 x 3	1000	575	300	175	150	100	75	2150
63 x 10 x 1	1000	575	300	175	150	100	75	1050
63 x 10 x 2	1000	575	300	175	150	100	75	1850
63 x 10 x 3	1000	575	300	175	150	100	75	2600
80 x 10 x 1	1000	575	300	175	150	100	75	1300
80 x 10 x 2	1000	575	300	175	150	100	75	2300
80 x 10 x 3	1000	575	300	175	150	100	75	3200
100 x 10 x 1	1000	650	350	175	150	100	75	1550
100 x 10 x 2	1000	650	350	175	150	100	75	2750
100 x 10 x 3	1000	675	400	200	175	125	75	3250
125 x 10 x 1	1000	675	425	200	175	125	75	1900
125 x 10 x 2	1000	675	425	200	175	125	75	3350
125 x 10 x 3	1000	700	450	225	200	150	75	4650

(1) Admissible busbar nominal current with a temperature inside the panel of between 45°C and 80°C.
For other mounting configurations, please contact us.



Adhering to the maximum distance between two supports ensures that the busbar supports are able to withstand the given short circuit current values. At these limits, distortion of the copper bars may occur. These deformations are permitted by standard IEC 61439-1 so long as they adhere to the insulation distances.

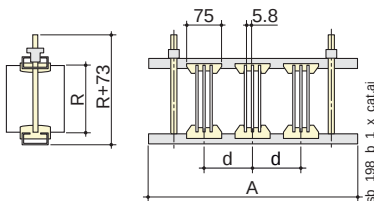
sb_021_b_1_x_cat.eps

Dimensions

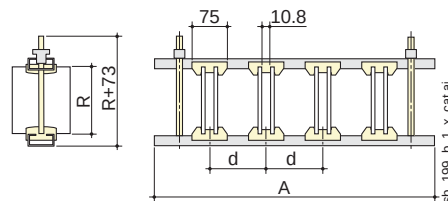
Mounting

- 1 to 3 bars of 5 mm thickness, per phase.
- 1 to 3 bars of 10 mm thickness, per phase.
- Interphase distance: min. 75 mm and max. 200 mm.
- Use 2 studs positioned symmetrically on the extremity of the poles or between the outermost poles.

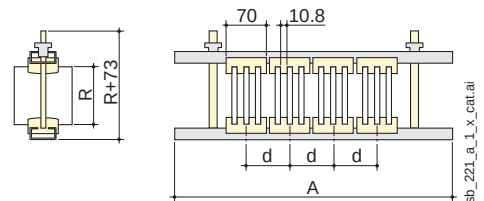
A (mm)	Enclosure (mm)
380	400
480	500
580	600
780	800



5 mm insert / 3 bars



10 mm insert / 2 bars



10 mm insert / 3 bars

sb_221_a_1_x_cat.ai

Busbar supports

Busbar

SB 205 - SB 306 unipolar flat mounting busbar supports

References

Support	Insulation voltage (VAC)	No. of bars	Bar width (mm)	To be ordered in multiples of	Reference
SB 205	1,000	1 - 3	100	6	5022 5110
SB 306	1,000	1 - 3	160	6	5023 6110

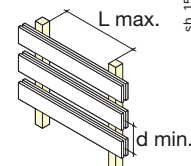
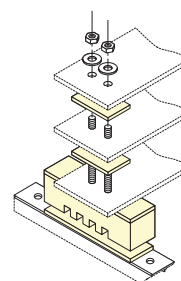


sb_117_a_1_cat.eps

Characteristics

Support	Bar x qty	L max. (support bars in mm) for						d min. (mm)	Iz (A) ⁽¹⁾
		peak I _{sc}	48 kA	63 kA	82 kA	114 kA	152 kA		
		rms I _{sc}	23 kA	30 kA	39 kA	52 kA	69 kA		
SB 205	100 x 10 x 1	1000	1000	1000	1000	1000	1000	125	1550
SB 205	100 x 10 x 2	1000	1000	1000	1000	1000	1000	125	2750
SB 205	100 x 10 x 3	1000	1000	1000	1000	1000	1000	125	3850
SB 306	160 x 10 x 1	1000	1000	1000	1000	1000	1000	175	2350
SB 306	160 x 10 x 2	1000	1000	1000	1000	1000	1000	175	4150
SB 306	160 x 10 x 3	1000	1000	1000	1000	1000	1000	175	5800

(1) Admissible busbar nominal current with a temperature inside the panel of between 45°C and 80°C.
For other mounting configurations, please contact us.

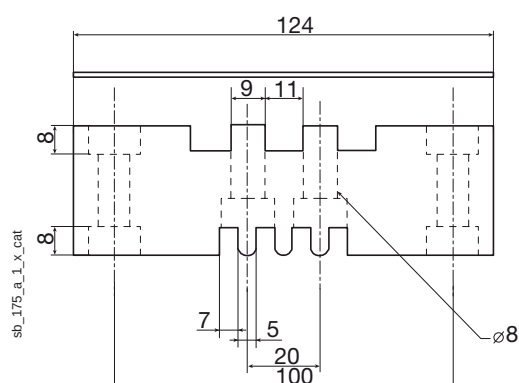
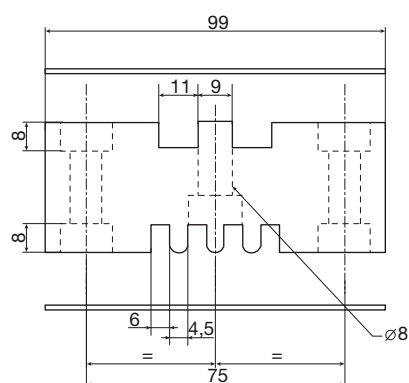


sb_152_a_1_x_cat

Mounting

- SB 205: 1 to 3 bars of max. recommended width 100 mm.
- SB 306: 1 to 3 bars of max. recommended width 160 mm.

Dimensions



sb_175_a_1_x_cat

sb_176_a_1_x_cat

■ SB 7500 multipolar flat mounting busbar supports with fixed interphase

References

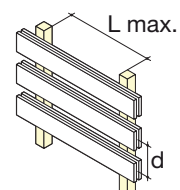
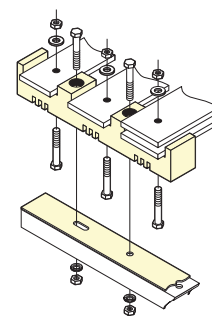
No. of poles	Insulation voltage (VAC)	Bar width (mm)	Pack qty	Reference
3	1,000	40 -50	1	5027 5310
4	1,000	40 -50	1	5027 5410



sb_136_a_3_cat.eps

Characteristics

peak I_{sc}	L max. (support bars in mm) for							
	24 kA	48 kA	63 kA	82 kA	114 kA	152 kA		
rms I_{sc}	12 kA	23 kA	30 kA	39 kA	52 kA	69 kA		
Bar x qty							d (mm)	Iz (A)
50 x 5 x 1	1000	1000	950	725	525	450	75	600
50 x 5 x 2	1000	1000	1000	1000	975	850	75	1,050

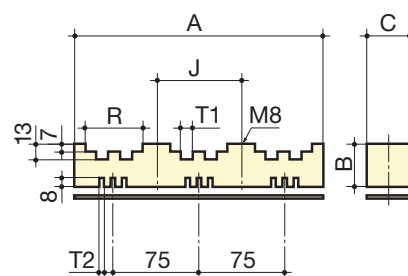


sb_153_b_1_x_cat

Mounting: SB 7500: 1 to 2 bars of max. width 50 mm per pole. Fixed interphase of 75 mm.

Dimensions

No. of poles	A	B	C	J	R	T ₁	T ₂
3	220	38	35	75	52.5	11	6
4	295	38	35	75	52.5	11	6



sb_149_a_1_x_cat

Busbar supports

Busbar

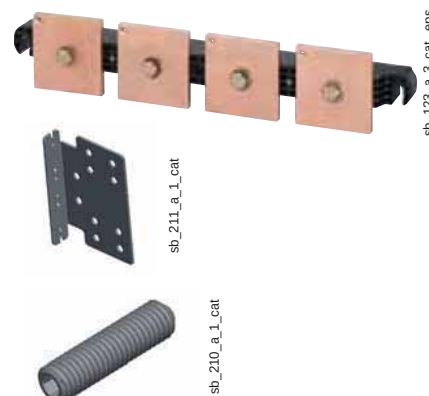
SB P 30 multipolar flat mounting busbar supports with fixed interphase

References

No. of poles	Insulation voltage (VAC)	Bar width (mm)	Pack qty	Reference
3	1000	50 -100	1	5023 0310
4	1000	50 -80	1	5023 0410

Mounting bracket Accessories	To be ordered in multiples of	Reference
2 mounting brackets for SB P 30	1	5024 9002

Bar fixing screws Accessories	To be ordered in multiples of	Reference
Grub screws for mounting 1 bar	25	5119 4601
Grub screws for mounting 2 bars back-to-back	25	5119 4602
Grub screws for mounting 3 back-to-back bars	25	5119 4603

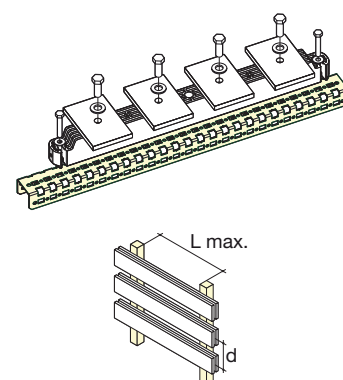


Characteristics

d = 123 mm

peak I _{sc}	L max. (support bars in mm) for									
	63 kA	84 kA	110 kA	143 kA	165 kA	176 kA	187 kA	220 kA		
rms I _{sc}	30 kA	40 kA	50 kA	65 kA	75 kA	80 kA	85 kA	100 kA		
Bar x qty									d (mm)	lz (A)
50 x 5 x 1	1000	950	525	300	225	200	175	130	123	600
63 x 5 x 1	1000	925	525	300	225	200	175	130	123	700
80 x 5 x 1	1000	900	500	300	225	175	175	125	123	900
80 x 5 x 2	1000	900	500	300	225	175	175	125	123	1,550
50 x 10 x 1	1000	950	525	300	225	200	175	130	123	850
50 x 10 x 2	1000	975	525	300	225	200	175	135	123	1,550
63 x 10 x 1	1000	925	525	300	225	200	175	130	123	1,050
63 x 10 x 2	1000	950	525	300	225	200	175	130	123	1,850
80 x 10 x 1	1000	900	500	300	225	175	175	125	123	1,300
80 x 10 x 2	1000	925	500	300	225	200	175	125	123	2,300
80 x 10 x 3	1000	950	525	300	225	200	175	130	123	3,200

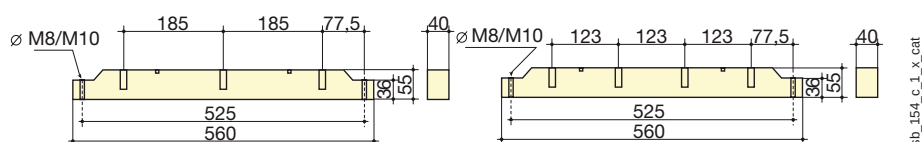
peak I _{sc}	L max. (support bars in mm) for									
	63 kA	84 kA	110 kA	143 kA	165 kA	176 kA	187 kA	220 kA		
rms I _{sc}	30 kA	40 kA	50 kA	65 kA	75 kA	80 kA	85 kA	100 kA		
Bar x qty									d (mm)	lz (A)
50 x 5 x 1	1000	1000	800	475	350	300	275	200	185	
63 x 5 x 1	1000	1000	800	475	350	300	275	200	185	
80 x 5 x 1	1000	1000	800	475	350	300	275	200	185	
80 x 5 x 2	1000	1000	800	475	350	300	275	200	185	
100 x 5 x 1	1000	1000	775	450	325	300	250	175	185	1100
100 x 5 x 2	1000	1000	775	450	325	300	250	175	185	1900
100 x 5 x 3	1000	1000	775	450	350	300	250	175	185	2650
50 x 10 x 1	1000	1000	800	475	350	300	275	200	185	
50 x 10 x 2	1000	1000	800	475	350	300	275	200	185	
63 x 10 x 1	1000	1000	800	475	350	300	275	200	185	
63 x 10 x 2	1000	1000	800	475	350	300	275	200	185	
80 x 10 x 1	1000	1000	800	475	350	300	275	200	185	
80 x 10 x 2	1000	1000	800	475	350	300	275	200	185	
80 x 10 x 3	1000	1000	800	475	350	300	275	200	185	
100 x 10 x 1	1000	1000	775	450	325	300	250	175	185	1550
100 x 10 x 2	1000	1000	775	450	350	300	250	175	185	2750
100 x 10 x 3	1000	1000	775	450	350	300	275	175	185	3850



Mounting

- 3 poles: 1 to 3 bars of max. width 100 mm per pole, fixed interphase of 185 mm
- 4 poles: 1 to 3 bars of max. width 80 mm per pole, fixed interphase of 123 mm

Dimensions



■ Hexagonal insulators unipolar flat mounting busbar supports

Female to female hexagonal insulator

References

Height H (mm)	Threading M	Depth		Diameter E (mm)	Pack qty	Reference
		D (mm)	Pu (mm)			
20	M4	8	5.5	19	1	5031 2004
20	M6	8	5.5	19	1	5031 2006
25	M6	10	7	21	1	5031 2506
30	M6	10	7	33	1	5031 3006
30	M8	12	9	33	1	5031 3008
35	M6	12	9	33	1	5031 3506
35	M8	12	9	33	1	5031 3508
35	M10	12	9	33	1	5031 3510
40	M8	15	12	40	1	5031 4008
40	M10	15	12	40	1	5031 4010
45	M8	15	12	41	1	5031 4508
45	M10	15	12	41	1	5031 4510
50	M8	20	17	46	1	5031 5008
50	M10	20	17	46	1	5031 5010
50	M12	20	17	46	1	5031 5012
60	M10	20	17	50	1	5031 6010
65	M10	20	17	55	1	5031 6510
70	M12	25	21	55	1	5031 7012

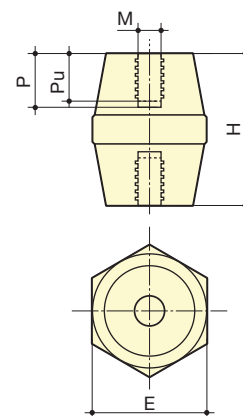


sb_104_a_2_cat

Characteristics

Height H (mm)	Threading	Voltage Nominal (V) AC/DC	Insulation voltage (VAC) 50 Hz 1 min	Peak	Mechanical characteristics (daN) Flexion	Traction	Tightening torque max. (Nm)
20 (1)	M4	500	3000	5500	70	170	9
20	M6	500	3000	5500	100	190	8
25	M6	500	3000	5500	170	370	12
30	M6	1000	6000	11000	200	650	22
30	M8	1000	6000	11000	360	800	40
35	M6	1400	9000	16000	230	720	25
35	M8	1400	9000	16000	380	900	42
35	M10	1400	9000	16000	320	800	44
40	M8	2000	12000	21500	620	1200	50
40	M10	2000	12000	21500	620	1100	60
45	M8	2000	12000	21500	550	1200	55
45	M10	2000	12000	21500	550	1100	65
50	M8	2000	12000	21500	650	1800	60
50	M10	2000	12000	21500	650	1700	70
50	M12	2000	12000	21500	660	13000	130
60	M10	2400	12000	27000	560	1600	85
65	M10	2400	12000	27000	750	1600	90
70	M12	2400	12000	27000	750	1500	135

(1) Admissible busbar nominal current with a temperature inside the panel of between 45°C and 80°C.
For other mounting configurations, please contact us.



sb_105_c_1_x_cat

Busbar supports

Busbar

■ *Hexagonal insulators* unipolar flat mounting busbar supports (continued)

Male to female hexagonal insulator

References

Height H (mm)	Threading M	Depth		Diameter E (mm)	Length W (mm)	Pack qty	Reference
		D (mm)	Pu (mm)				
16	M4	6	5	14	26	1	5038 1604
16	M5	6	5	14	26	1	5038 1605
25	M5	10	7	20	35	1	5038 2505
25	M6	10	7	20	35	1	5038 2506
35	M8	12	9	32	50	1	5038 3508
35	M10	12	9	32	65	1	5038 3510
50	M8	15	17	46	75	1	5038 5008
50	M10	20	17	46	80	1	5038 5010
60	M10	20	17	50	85	1	5038 6010



sb_106_a_2_cat

Male to male hexagonal insulator

References

Height H (mm)	Threading M	Depth		Diameter E (mm)	Length W (mm)	Pack qty	Reference
		D (mm)	Pu (mm)				
16	M4	6	5	14	26	1	5038 1604
16	M5	6	5	14	26	1	5038 1605
25	M5	10	7	20	35	1	5038 2505
25	M6	10	7	20	35	1	5038 2506
35	M8	12	9	32	50	1	5038 3508
35	M10	12	9	32	65	1	5038 3510
50	M8	15	17	46	75	1	5038 5008
50	M10	20	17	46	80	1	5038 5010
60	M10	20	17	50	85	1	5038 6010

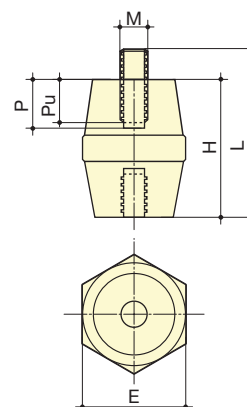


sb_107_a_2_cat

Male to female and male to male hexagonal insulator

Characteristics

Height H (mm)	Threading	Voltage Nominal (V) AC/DC	Insulating voltage		Mechanical characteristics (daN)		Tightening torque max. (Nm)
			(VAC) 50 Hz 1 min	Peak	Flexion	Traction	
16	M4	500	3000	5500	100	150	3
16	M5	500	3000	5500	100	150	6
25	M5	500	3000	11000	180	400	6
25	M6	500	3000	11000	180	400	12
35	M8	1400	9000	16000	380	900	42
35	M10	1400	9000	16000	320	800	44
50	M8	2000	12000	21500	650	1800	60
50	M10	2000	12000	21500	650	1700	70
60	M10	2400	12000	27000	560	1600	85



sb_058_d_1_x_cat

Grub screw

References

Length (mm)	Thread	To be ordered in multiples of	Reference
20	M6	20	5032 2006
20	M8	20	5032 2008
25	M6	20	5032 2506
25	M8	20	5032 2508
30	M6	20	5032 3006
30	M8	20	5032 3008
40	M8	20	5032 4008
40	M10	20	5032 4010
50	M12	20	5032 5012



sb_121_a_2_cat

Define your exact busbar

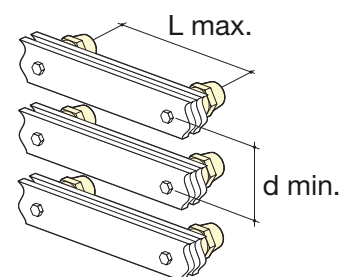
- > For your busbar, fitted with hexagonal insulators, to be mechanically resistant to a short-circuit, it must correspond to the table below.

Values according to IEC 61439-1.

General characteristics

Height H (mm)	Threading	Bar x qty	L max. (support bars in mm) for						d min. (mm)	Iz (A) ⁽¹⁾
			peak I _{sc}	24 kA	48 kA	63 kA	82 kA	114 kA		
			rms I _{sc}	12 kA	23 kA	30 kA	39 kA	52 kA		
20	M4	15 x 5 x 1	400	100					45	220
20	M4	20 x 5 x 1	400	100					45	280
25	M6	15 x 5 x 1	550	135					45	220
25	M6	20 x 5 x 1	525	135					45	280
25	M6	25 x 5 x 1	575	145					50	330
30	M6	15 x 5 x 1	675	165					45	220
30	M6	20 x 5 x 1	650	165					45	280
30	M6	25 x 5 x 1	725	175	105				50	330
30	M8	15 x 5 x 1	850	250	155				45	220
30	M8	20 x 5 x 1	1000	250	155				45	280
30	M8	25 x 5 x 1	1000	275	170	100			50	330
35	M6	15 x 5 x 1	700	175	100				45	220
35	M6	20 x 5 x 1	675	170	100				45	280
35	M6	25 x 5 x 1	750	175	110				50	330
35	M8	15 x 5 x 1	850	275	160				45	220
35	M8	20 x 5 x 1	1000	275	160				45	280
35	M8	25 x 5 x 1	1000	300	175	105			50	330
35	M8	32 x 5 x 1	1000	325	175	110			55	410
35	M10	20 x 5 x 1	850	200	125				45	280
35	M10	25 x 5 x 1	950	225	135				50	330
35	M10	32 x 5 x 1	1000	250	150				55	410
40	M8	20 x 5 x 1	1000	325	175	110			45	280
40	M8	25 x 5 x 1	1000	350	200	125			50	330
40	M8	32 x 5 x 1	1000	375	225	135			55	410
40	M10	20 x 5 x 1	1000	325	175	110			45	280
40	M10	25 x 5 x 1	1000	350	200	125			50	330
40	M10	32 x 5 x 1	1000	375	225	135			55	410
45	M8	25 x 5 x 1	1000	425	250	150			50	330
45	M8	32 x 5 x 1	1000	475	175	160			55	410
45	M8	50 x 5 x 1	1000	625	350	200	110		75	600
45	M10	25 x 5 x 1	1000	425	250	145			50	330
45	M10	32 x 5 x 1	1000	450	250	160			55	410
45	M10	50 x 5 x 1	1000	600	350	200	110		75	600
50	M8	25 x 5 x 1	1000	450	250	155			50	330
50	M8	32 x 5 x 1	1000	475	275	170			55	410
50	M8	50 x 5 x 1	1000	650	375	225	115		75	600
50	M10	32 x 5 x 1	1000	525	300	175			55	410
50	M10	50 x 5 x 1	1000	700	400	225	125		75	600
60	M10	50 x 5 x 1	1000	700	400	225	125		75	600
65	M10	50 x 5 x 1	1000	775	450	250	135		75	600

(1) Admissible busbar nominal current with a temperature inside the panel of between 45°C and 80°C.
For other mounting configurations, please contact us.



sb_164_a_1_x_cat

Busbar supports

Busbar

■ SB 1 - SB 2 multipolar flat mounting busbar supports

References

Support	Insulation voltage (VAC)	No. of bars	Bar width (mm)	To be ordered in multiples of	Reference
SB 1	690	1	20 -25	6	5021 0110
SB 2	690	1	32 -40	6	5022 0110



sb_108_a_2_cat.eps

Ordering guide

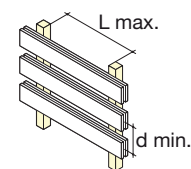
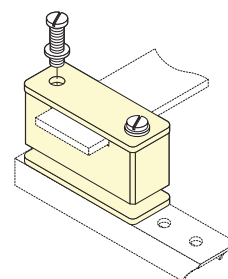
SB 1: bar of max. width 25 mm

SB 2: bar of max. width 40 mm

Characteristics

Support	Bar x qty	L max. (support bars in mm) for						d min. (mm)	Iz (A) ⁽¹⁾
		peak I _{sc}	24 kA	48 kA	63 kA	82 kA	114 kA		
		rms I _{sc}	12 kA	23 kA	30 kA	39 kA	52 kA		
SB 1	20 x 3 x 1	650	325	250	175	135	50	210	
SB 1	20 x 5 x 1	850	425	325	250	175	50	280	
SB 1	25 x 5 x 1	1000	525	400	300	200	50	330	
SB 2	32 x 5 x 1	1000	750	575	450	300	70	410	
SB 2	40 x 5 x 1	1000	950	700	550	400	70	500	

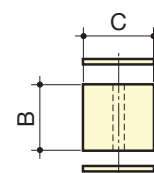
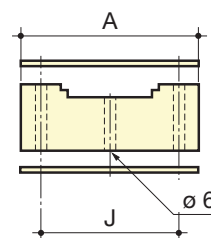
(1) Admissible busbar nominal current with a temperature inside the panel of between 45°C and 80°C.
For other mounting configurations, please contact us.



sb_150_a_1_x_cat

Dimensions

Support	A	B	C	J
SB 1	50	23	20	34
SB 2	68	23	23.5	50



sb_014_c_1_x_cat

SB 3 multipolar flat mounting busbar supports

References

Support	Insulation voltage (VAC)	No. of bars	Bar width (mm)	To be ordered in multiples of	Reference
SB 3 without screws	690	1 - 2	32 - 63	6	5023 0111
SB 3 with screws ⁽¹⁾	690	1 - 2	32 - 63	6	5023 0110

(1) SB3 bare and with screws.



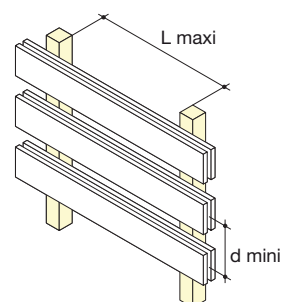
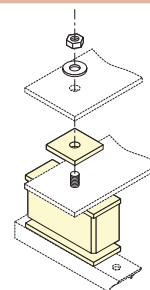
Ordering guide

SB 3: 1 to 2 bars of max. recommended width 63 mm.

Characteristics

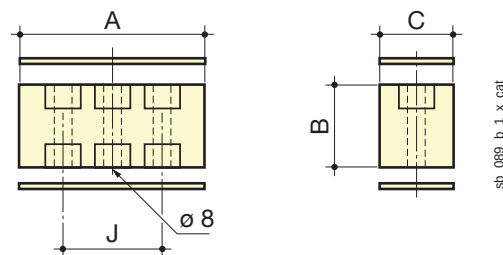
peak I_{sc}	L max. (support bars in mm) for						
	24 kA	48 kA	63 kA	82 kA	114 kA		
rms I_{sc}	12 kA	23 kA	30 kA	39 kA	52 kA		
Bar x qty						d min. (mm)	Iz (A) ⁽¹⁾
32 x 5 x 2	1000	1000	925	700	500	70	580
40 x 5 x 2	1000	1000	1000	1000	1000	70	700
50 x 5 x 2	1000	1000	1000	925	675	75	850
63 x 5 x 2	1000	1000	1000	1000	1000	85	1000

(1) Admissible busbar nominal current with a temperature inside the panel of between 45°C and 80°C.
For other mounting configurations, please contact us.



Dimensions

Support	A	B	C	J
SB 3 without screws	65	32	28	36
SB 3 with screws	65	32	28	36



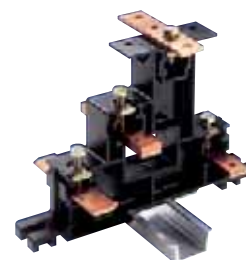
Busbar supports

Busbar

SB E 44 tetrapolar stair type supports

References

No. of poles	Pack qty	Reference
4	1	5028 0410
Accessories	Pack qty	Reference
270 mm long protection screen kit	1	5028 0411
420 mm long protection screen kit	1	5028 0412
620 mm long protection screen kit	1	5028 0413
Set of 20 protection screen adaption spacers	1	5028 0415



sb_038_a_3_cat.eps

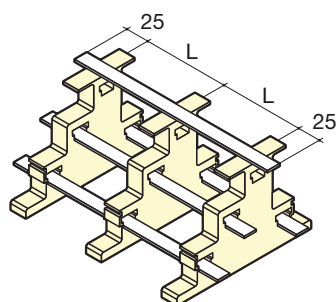
Characteristics

Support	Bar x qty	L max. (support bars in mm) for							Iz (A) ⁽¹⁾
		peak I _{sc}	10 kA	15 kA	24 kA	38 kA	48 kA	63 kA	
		rms I _{sc}	6 kA	9 kA	12 kA	19 kA	23 kA	30 kA	
Type 1	15 x 3 x 1	950		625	400	250	175		160
Type 1	15 x 5 x 1	1000		825	500	300	175		220
Type 1	15 x 6 x 1	1000		900	550	300	200		250
Type 1	15 x 8 x 1	1000		1000	650	300	200		290
Type 1	20 x 3 x 1	1000		825	525	300	175		210
Type 1	20 x 5 x 1	1000		1000	675	300	175		280
Type 1	20 x 6 x 1	1000		1000	750	300	175		310
Type 1	20 x 8 x 1	1000		1000	775	300	175		370
Type 1	32 x 5 x 1	1000		1000	675	250	170		410
Type 1	32 x 6 x 1	1000		1000	675	250	170		460
Type 2	15 x 3 x 1	950		625	400	250	200	150	160
Type 2	15 x 5 x 1	1000		825	500	325	250	175	220
Type 2	15 x 6 x 1	1000		900	550	350	275	200	250
Type 2	15 x 8 x 1	1000		1000	650	400	325	225	290
Type 2	20 x 3 x 1	1000		825	525	325	250	200	210
Type 2	20 x 5 x 1	1000		1000	675	425	325	225	280
Type 2	20 x 6 x 1	1000		1000	750	450	375	225	310
Type 2	20 x 8 x 1	1000		1000	850	525	375	225	370
Type 2	32 x 5 x 1	1000		1000	1000	525	325	175	410
Type 2	32 x 6 x 1	1000		1000	1000	525	325	175	460

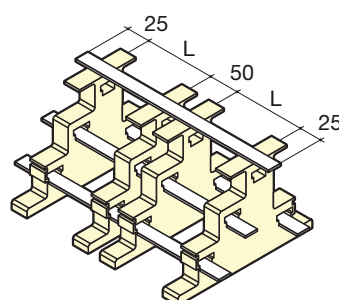
(1) Admissible busbar nominal current with a temperature inside the panel of between 45°C and 80°C.

For other mounting configurations, please contact us. **N.B.:** Iz indicated is for a solid (undrilled) busbar.

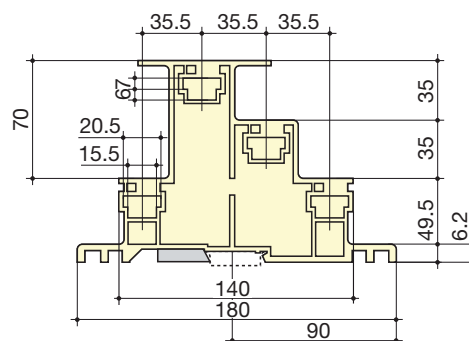
Dimensions



sb_041_b_1_x_cat



sb_047_a_1_x_cat



sb_036_e_1_x_cat

Type 1: Busbars including 3 (or more) equally spaced SB E 44 supports.

Type 2: Busbars with 3 (or more) SB E 44 supports with doubled intermediary supports.

Mounting with elliptical holes: 150 to 170 mm.

■ **SB P 10** tetrapolar flat mounting busbar supports with fixed interphase

References

No. of poles	Insulation voltage (VAC)	Bar width (mm)	Pack qty	Reference
4	690	12 -30	1	5026 0460

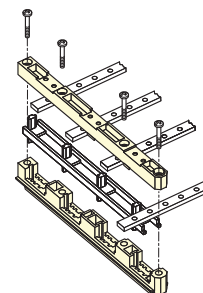
SB P 10: 1 bar of 5 or 10 mm thickness with a width of 12, 20, 25 or 30 mm.



sb_130_a_3_cat.eps

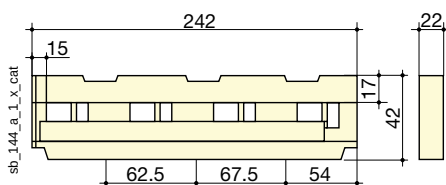
Characteristics

peak I_{sc}	L max. (support bars in mm) for					d min. (mm)	Iz (A)
	10 kA	15 kA	24 kA	48 kA	63 kA		
rms I_{sc}	6 kA	9 kA	12 kA	23 kA	30 kA		
Bar x qty							
12 x 5 x 1	1000	475	175			60	180
20 x 5 x 1	1000	1000	650	165		60	280
25 x 5 x 1	1000	1000	650	160		60	338
30 x 5 x 1	1000	1000	850	200	120	60	390
25 x 10 x 1	1000	1000	1000	250	150	60	508
30 x 10 x 1	1000	1000	1000	350	200	60	580



sb_159_a_1_x_cat

Dimensions



sb_144_a_1_x_cat

■ **SB P 44** tetrapolar flat mounting busbar support with fixed interphase, for mounting angled bars

References

No. of poles	Insulation voltage (VAC)	Bar width (mm)	Pack qty	Reference
4	1,000	20 -32	1	5026 0450

SB P 44: 1 bar of 5 or 10 mm thickness with a width of 20, 25, 30 or 32 mm.

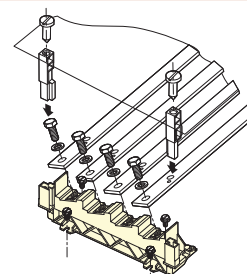
Please note: protection cover not supplied.



sb_170_a_3_cat.eps

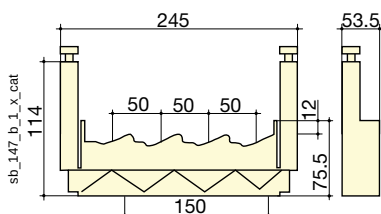
Characteristics

peak I_{sc}	L max. (support bars in mm) for						d min. (mm)	Iz (A)
	10 kA	15 kA	24 kA	48 kA	63 kA	82 kA		
rms I_{sc}	6 kA	9 kA	12 kA	23 kA	30 kA	39 kA		
Bar x qty								
20 x 5 x 1	1000	1000	800	350	200	125	50	280
25 x 5 x 1	1000	1000	1000	350	200	125	50	330
32 x 5 x 1	1000	1000	1000	350	200	120	50	390
25 x 10 x 1	1000	1000	1000	350	200	125	50	500
30 x 10 x 1	1000	1000	1000	350	200	120	50	580
32 x 10 x 1	1000	1000	1000	350	200	120	50	610



sb_165_b_1_x_cat

Dimensions



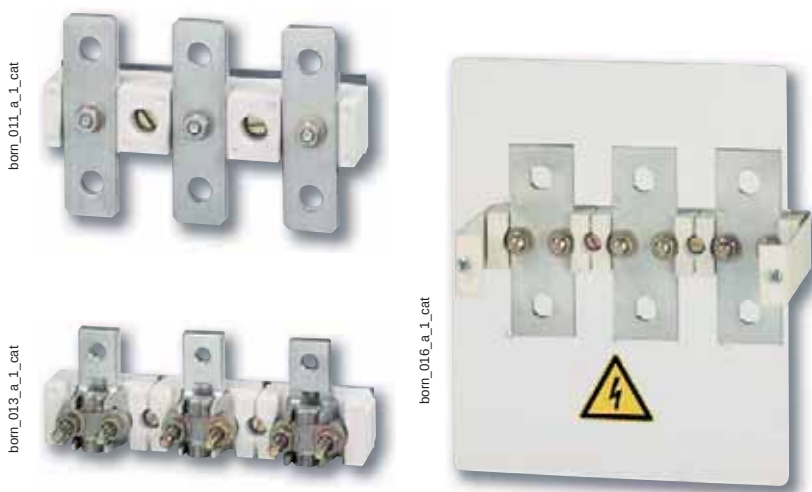
sb_147_b_1_x_cat



Power terminals

Distribution

Enclosures & accessories



The solution for

- > Electrical distribution



Conformity to standards

- > IEC 61439-1
- > DIN 46206



Function

SOCOME power terminals provide connections for power circuits. They consist of connection plates fixed onto insulating brackets.

Characteristics

General characteristics

- Tin-plated aluminium plates.
- High dielectric strength.
- High mechanical resistance.
- High resistance to damp heat (supplied "tropicalised").

Composition of the range

- 5 terminal models from 250 to 630 A, with 3 and 4 poles.
- 2 methods of connection:
 - by lugs,
 - by cable clamps.
- Accessories: Inter-phase screen, front cover to protect against unintentional contact.

Type 1

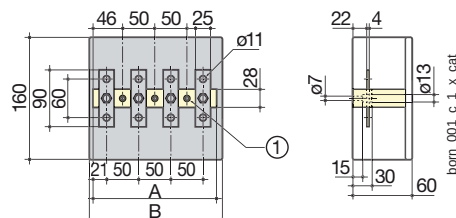
References

$I_{max}(A)$	Top connections by	Bottom connections by	No. of poles	A (mm)	B (mm)	Reference
250	lugs	lugs	3 P	142	151	4501 0003 ⁽¹⁾
250	lugs	lugs	4 P	192	201	4501 0004 ⁽¹⁾

(1) Terminals supplied without terminal shroud.

Accessories	Reference
Type	
Protective cover for 3 pole terminals	4501 1003
Protective cover for 4 pole terminals	4501 1004

Dimensions



1. M6 screws mounting.

Type 2

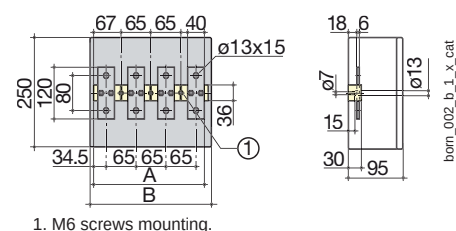
References

I _{max} (A)	Top connections by	Bottom connections by	No. of poles	A (mm)	B (mm)	Reference
630	lugs	lugs	3 P	197	206	4502 0003 ⁽¹⁾
630	lugs	lugs	4 P	262	271	4502 0004 ⁽¹⁾

(1) Terminals supplied without terminal shroud.

Accessories		Reference
Type		
Protective cover for 3 pole terminals		4502 1003
Protective cover for 4 pole terminals		4502 1004
Inter-phase screen		4500 0107

Dimensions



Type 3

References

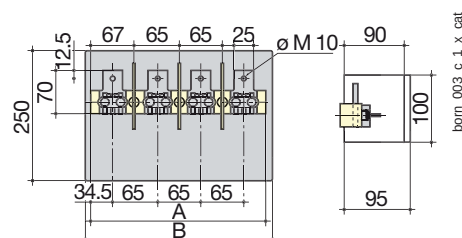
I _{max} (A)	Top connections by	Bottom connections by	No. of poles	A (mm)	B (mm)	Reference
400	lugs	cable clamps ⁽¹⁾	3 P	197	206	4503 0003 ⁽²⁾
400	lugs	cable clamps ⁽¹⁾	4 P	262	271	4503 0004 ⁽²⁾

(1) 185 mm² cable clamps included.

(2) Terminals supplied without terminal shroud.

Accessories		Reference
Type		
Protective cover for 3 pole terminals		4502 1003
Protective cover for 4 pole terminals		4502 1004
Inter-phase screen		4500 0106

Dimensions



Type 4

References

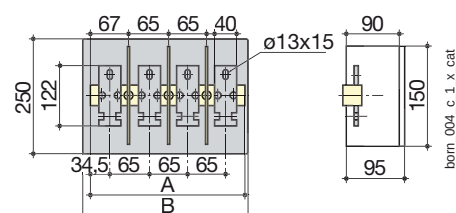
I _{max} (A)	Top connections by	Bottom connections by	No. of poles	A (mm)	B (mm)	Reference
500	lugs	cable clamps ⁽¹⁾	3 P	197	206	4504 0003 ⁽²⁾
500	lugs	cable clamps ⁽¹⁾	4 P	262	271	4504 0004 ⁽²⁾

(1) 240 mm² cable clamps non included.

(2) Terminals supplied without terminal shroud.

Accessories		Reference
Type		
Protective cover for 3 pole terminals		4502 1003
Protective cover for 4 pole terminals		4502 1004
Inter-phase screen		4500 0107

Dimensions



Type 5

References

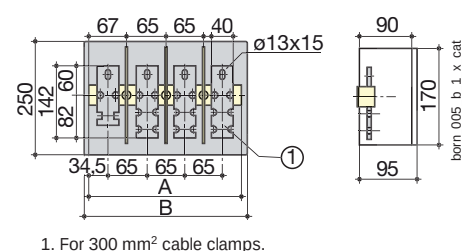
I _{max} (A)	Connections by	Connections by	No. of poles	A (mm)	B (mm)	Reference
630	lugs	cable clamps ⁽¹⁾	3 P	197	206	4505 0003 ⁽²⁾
630	lugs	cable clamps ⁽¹⁾	4 P	262	271	4505 0004 ⁽²⁾

(1) 300 mm² cable clamps non included.

(2) Terminals supplied without terminal shroud.

Accessories		Reference
Type		
Protective cover for 3 pole terminals		4502 1003
Protective cover for 4 pole terminals		4502 1004
Inter-phase screen		4500 0108

Dimensions

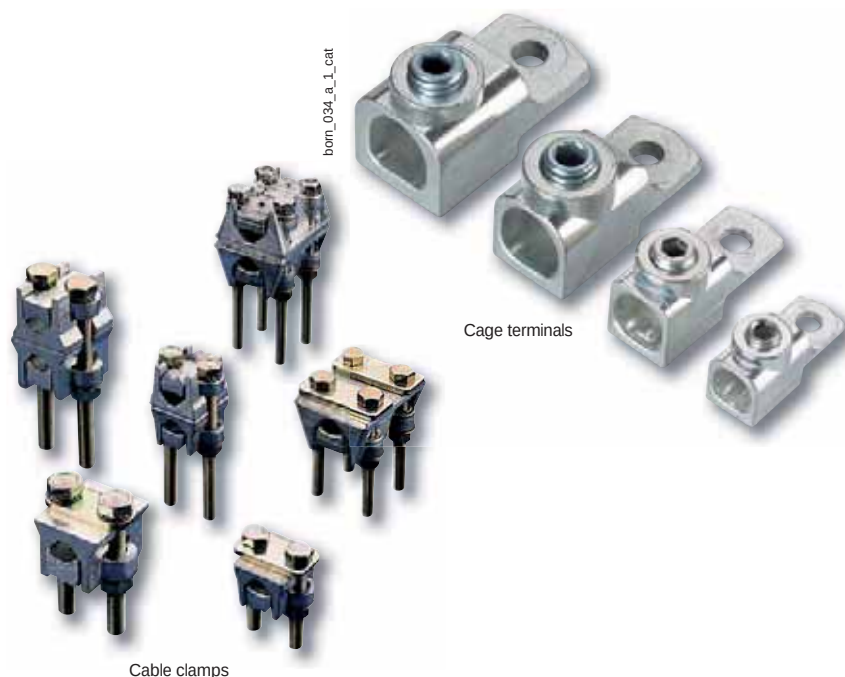




Cable clamps and cage terminals

Distribution

serie_001_a_1_cat



The solution for

- > Electrical distribution



Conformity to standards

Cable clamps:

- > IEC 61439-1
- > DIN 46206



Cage terminals

- > IEC 60947-1
(if mounted to
SOCOMECE devices)
- > NF C 63-060
- > NF C 63-062

Function

SOCOMECE power cable clamps ensure the connection of copper or aluminium cables onto plates or onto bars.

Available in aluminium or tin-plated brass, they provide increased mechanical resistance and high resistance to humidity (supplied "tropicalised").

SOCOMECE cage terminals are connection devices fixed onto the connection plates of SOCOMECE switches, changeover switches and fuse switches. They enable a direct terminal-free connection to the rigid copper and aluminium conductors and integration under the IP2 protective cover.

Characteristics

Cable clamps

- 3 cross-section ranges from 35 to 300 mm²
- 2 cable clamp models with bracket mounting: single-double.

Cage terminals

- Ratings: From 160 to 630 A.
- Number of poles: 3 and 4.
- Material: tin-plated aluminium.

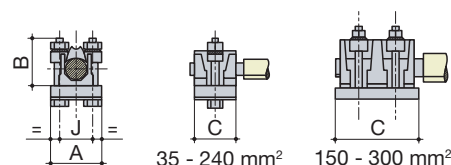
Single cable clamps

References

Tightening capacity (mm ²)	Ø maxi cabling (mm)	Corresponding power terminals	Reference
35 ... 185	17	Type 4	4500 0013
95 ... 240	20	Type 4	4500 0022
150 ... 300	25	Type 5	4500 0028

Tightening capacity (mm ²)	A	B	C	J
35 ... 185	42	48	35	26
95 ... 240	54	50	45	31.5
150 ... 300	53	50	60	33

Dimensions



access_038_a_1_x_cat

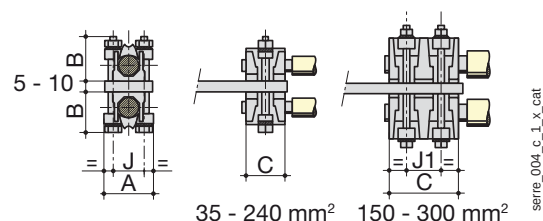
Double cable clamps

References

Tightening capacity (mm ²)	Ø maxi cabling (mm)	Corresponding power terminals	Reference
35 ... 185	17	Type 4	4500 0031
95 ... 240	20	Type 4	4500 0032
150 ... 300	25	Type 5	4500 0034

Dimensions

Tightening capacity (mm ²)	A	B	C	J	J ₁
35 ... 185	42	48	35	26	
95 ... 240	54	50	45	31.5	
150 ... 300	53	50	60	33	33



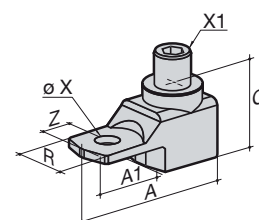
Single cage terminals

References

Tightening capacity (mm ²)	Rating Switch (A)	No. of poles	Tightening torque (Nm)	Flexible bar width (mm)	Reference
16 ... 95	160	3 P	14	13	5400 3016
16 ... 95	160	4 P	14	13	5400 4016
16 ... 185	250	3 P	25	18	5400 3025
16 ... 185	250	4 P	25	18	5400 4025
50 ... 240	400	3 P	45	20	5400 3040
50 ... 240	400	4 P	45	20	5400 4040
70 ... 300	630	3 P	45	24	5400 3063
70 ... 300	630	4 P	45	24	5400 4063

Dimensions

Rating of switch (A)	A	A ₁	C	E	R	T	ØX	X ₁	Z
160	47.5	22.5	25	12	20	3.5	8.5	M12	10
250	62	31.5	31.5	16.5	25	2.5	10.5	M16	14
400	71.5	32	38	9	32	5	10.5	M20	15
630	76.5	37	38	9	40	5	12.5	M20	15



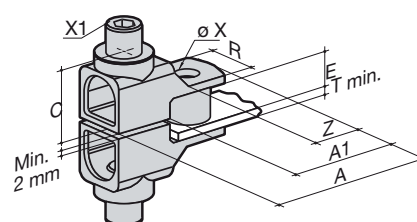
Double cage terminals

References

Tightening capacity (mm ²)	Rating Switch (A)	No. of poles	Tightening torque (Nm)	Flexible bar width (mm)	Reference
16 ... 95	160	3 P	14	13	5400 3216
16 ... 95	160	4 P	14	13	5400 4216
16 ... 185	250	3 P	25	18	5400 3225
16 ... 185	250	4 P	25	18	5400 4225
50 ... 240	400	3 P	45	20	5400 3240
50 ... 240	400	4 P	45	20	5400 4240
70 ... 300	630	3 P	45	24	5400 3263
70 ... 300	630	4 P	45	24	5400 4263

Dimensions

Rating of switch (A)	A	A ₁	C	E	R	T	ØX	X ₁	Z
160	47.5	22.5	25	12	20	3.5	8.5	M12	10
250	62	31.5	31.5	16.5	25	2.5	10.5	M16	14
400	71.5	32	38	9	32	5	10.5	M20	15
630	76.5	37	38	9	40	5	12.5	M20	15





Distribution blocks

Distribution



Distribution blocks for
SOCOMEC disconnection devices



Unipolar distribution blocks



Multipolar distribution
blocks

The solution for

- > Electrical distribution



Conformity to standards

- > IEC 61439-1
- > NF C 20455



Function

SOCOMEC distribution blocks allow easy connection of conductors. They are installed downstream of a load break switch, a changeover switch or a fuse-combination switch.

Characteristics

General characteristics

- Insulation voltage:
 - ferrules terminal distribution block: 500 V,
 - modular row terminal distribution block: 690 V,
 - wire-terminal distribution block: 1000 V.
- Impulse voltage:
 - ferrules terminal distribution block: 6 kV,
 - modular row terminal distribution block: 6 kV,
 - wire-terminal distribution block: 8 kV.
- Self-extinguishing: 960 °C.

Composition of the range

- 7 ratings from 80 to 360 A in 1, 2, 3 and 4 poles.
- 2 connection modes:
 - direct or ferrules,
 - cable lugs.

Direct or cable connection

Bridge multipolar distribution block

References

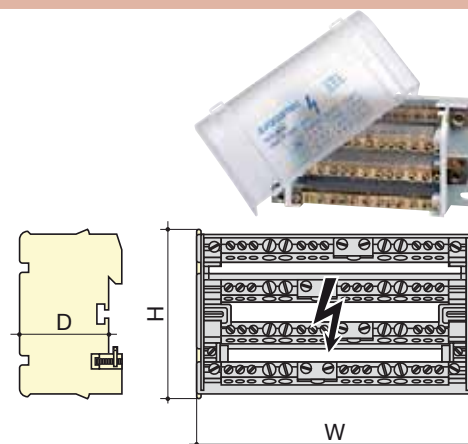
Rating (A)	No. of poles	No of feeders per section (mm ²)	Dimensions H x W x D (mm)	I _{cc} (kA rms) ⁽¹⁾	Reference
125	3/4 P	2x25 + 7x10	85 x 88 x 48	3	5420 4108
125	3/4 P	2x25 + 2x16 + 9x10	85 x 129 x 48	4.2	5420 4112
160	3/4 P	1x35 + 3x25 + 8x16 ⁽²⁾	90 x 160.5 x 50	6.2	5420 4016

(1) Short circuit withstand (rms value) 1 second.

(2) Maximum section of flexible cable.

Dimensions

Rating (A)	H (mm)	W (mm)	D (mm)
125	98	74.5	45
175	80	71.5	42.5



repar_027_a_2_cat

repar_009_a_1_gb_cat

Direct or cable connection distribution blocks which can be clipped onto a symmetric DIN rail.

Monoblock multipolar distribution block

References

Rating (A)	No. of poles	Dimensions H x W x D (mm)	Reference
125	4 P	98 x 74.5 x 45	5410 4112
175	3 P	80 x 71.5 x 42.5	5410 3017



repar_039_a_1_cat

Unipolar distribution blocks

References

Rating (A)	Switch mounting N (mm)	I _{cc} (kA rms)	Reference
80	56.5	1.9	5410 1008
125	65	4.4	5410 1012
175	60.5	11	5410 1017
250	86	21	5410 1025
400	86	21	5410 1040

Description of accessories

Connection for rating 250 A⁽¹⁾

Connection for rating 400 A⁽¹⁾

Reference

5410 **0025**

5410 **0040**

(1) Linking part enabling direct assembly on the connecting lugs of the switching device.



repar_008_a_2_cat

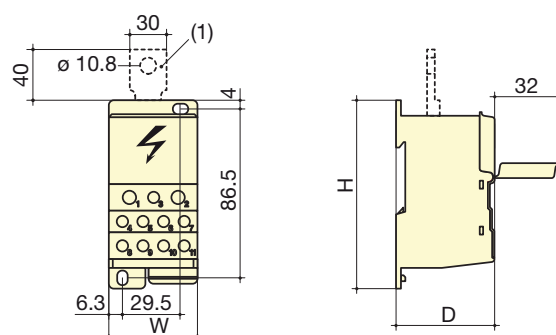
Dimensions

Rating (A)	Dimensions H x W x D (mm)	I _{cc} (kA rms) ⁽¹⁾
80	66 x 27 x 47	1.9
125	74.5 x 27 x 46.5	4.4
175	71 x 45 x 43.5	11
250	96 x 45 x 50	21
400	96 x 45 x 50	21

(1) Short circuit withstand (rms value) 1 second.

Connections

Rating (A)	Power supply section (mm ²)	No of phases per section (mm ²)
80	< 16	4 x 6 + 2 x 16
125	< 35	6 x 2.5 to 16
175	16 ... 70	10 x 2.5 to 16
250	35 ... 120	2 x 25 + 5 x 16 + 4 x 10
400	95 ... 185	2 x 25 + 5 x 16 + 4 x 10
125	Phase: 5 x 1 to 6 + 2 x 1.5 to 10 / Neutral: 6 x 1.5 to 10 + 4 x 1.5 to 6	
175	6 x 2.5 to 16	



repar_010_c_1_gb_cat

Direct or cable connection distribution blocks, IP20 which can be clipped onto a symmetric DIN rail.

Earth bar

References

Mounting by	No of feeders per section (mm ²)	Material	W (mm)	To be ordered in multiples of	Reference
2 self M4	10 x 16 + 2 x 35	brass	120	10	5414 0120
2 self M6	41 x 16 + 2 x 35	brass	470	10	5414 0470



barre_006_a_2_cat

Distribution blocks

Distribution

Row distribution blocks

Row distribution block with IP20 connectors

References

Rating (A)	Length	With connector leads ⁽²⁾	Icc (kA rms)	Reference
250 ⁽²⁾	1 row	yes	10	5420 2426
250 ⁽²⁾	1 row	no	10	5421 2426

(1) Delivered with 6 mm² connector leads, L = 120 mm, 12 black connectors, 12 blue connectors.

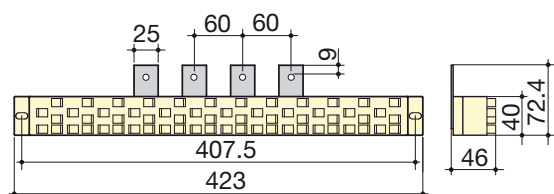
(2) Preferably the terminations will be distributed over the entire number of terminals.

Dimensions

Cables and connectors					
Rating (A)	Type	Length (mm)	Colour	To be ordered in multiples of	Reference
40	6 mm ² cable	120	Blue	10	5421 1006
40	6 mm ² cable	120	Black	10	5421 1016
40	6 mm ² cable	320	Blue	10	5421 1106
40	6 mm ² cable	320	Black	10	5421 1116
63	10 mm ² cable	320	Blue	10	5421 1101
63	10 mm ² cable	320	Black	10	5421 1111
	1.5 - 2.5 mm ² connector			20	5421 0025
	4 - 6 mm ² connector			20	5421 0125



repair_028_a_2_cat



repair_028_a_1_x_cat

Terminal connections

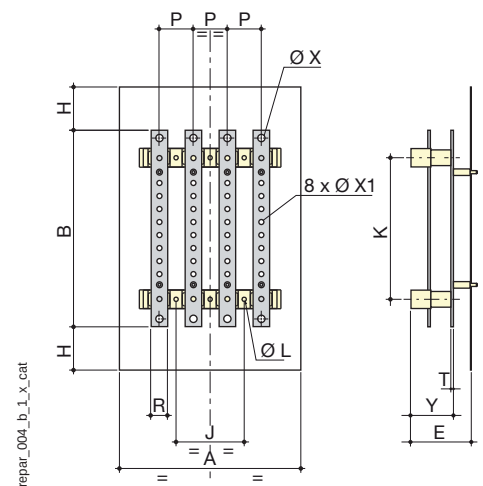
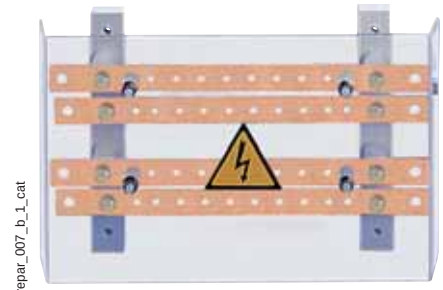
Multipolar distribution blocks

References

Rating (A)	No. of poles	Icc (kA rms)	No of feeders per section (mm ²)	Reference
160	3 P	10	2 x 95 + 8 x 25	5412 3016
160	4 P	10	2 x 95 + 8 x 25	5412 4016
250	3 P	15	2 x 150 + 8 x 50	5412 3025
250	4 P	15	2 x 150 + 8 x 50	5412 4025
400	3 P	21	2 x 240 + 8 x 95	5412 3040
400	4 P	21	2 x 240 + 8 x 95	5412 4040
630	3 P	21	2 x 300 + 8 x 150	5412 3063
630	4 P	21	2 x 300 + 8 x 150	5412 4063

Dimensions

Rating (A)	No. of poles	A	B	E	H	J	K	ØL	P	R	T	ØX	ØX1	Y
160	3 P	154	286	73	46.5	122	207	6.5	36	20	4	9	6	54
160	4 P	190	286	73	46.5	158	207	6.5	36	20	4	9	6	54
250	3 P	210	307	83	57.5	50	222	7	50	25	4	11	8	56
250	4 P	260	307	83	57.5	100	222	7	50	25	4	11	8	56
400	3 P	281	375	116	82.5	65	270	8	65	32	5	14.5	8.5	82
400	4 P	346	375	116	82.5	130	270	8	65	32	5	14.5	8.5	82
630	3 P	271	438	117	90.5	65	333	8	65	40	6	14.5	10.5	83
630	4 P	346	438	117	90.5	130	333	8	65	40	6	14.5	10.5	83



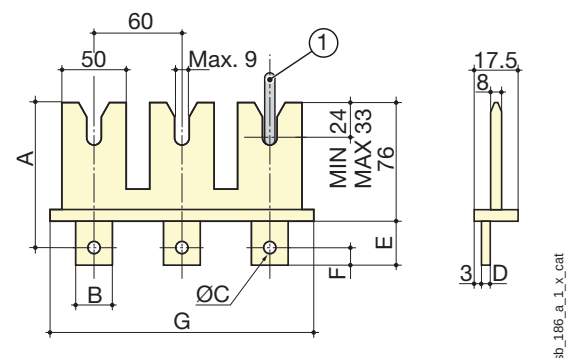
Terminal connections distribution blocks with front protection cover against direct contact.

Plug-in unit for 5 to 6.3 mm bars

References

Rating (A)	No. of poles	Reference
125/160	3 P	3699 3P16
125/160	4 P	3699 3P16
250/400	3 P	3699 3P39
250/400	4 P	3699 6P39
630/800	3 P	3699 3P80
630/800	4 P	3699 6P80

Rating (A)	No. of poles	A	B	C	D	E	F	G
125/160	3 P	99	20	M8	3	23	10	186
125/160	4 P	99	20	M8	3	23	10	248
250/400	3 P	101.5	25	M10	4	28	12.5	186
250/400	4 P	101.5	25	M10	4	28	12.5	248
630/800	3 P	101.5	25	M10	4	28	12.5	186
630/800	4 P	101.5	25	M10	4	28	12.5	248



1. Dropper busbar with a thickness of 5 to 6.3 mm.

Distribution blocks

Distribution

Terminal connections (continued)

Stair type multipolar distribution blocks

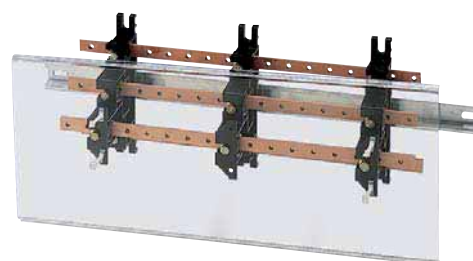
References

Rating (A)	L (mm)	No. of poles	Icc (kA rms)	No. of supports	Distribution block	Protection cover
					Reference	Reference
160	270	4 P	25	2	5028 0421	5028 0411
160	420	4 P	17	2	5028 0451	5028 0412
160	620	4 P	20	3	5028 0471	5028 0413
250	270	4 P	30	2	5028 0423	5028 0411
250	420	4 P	22	2	5028 0453	5028 0412
250	620	4 P	18	3	5028 0473	5028 0413
400	270	4 P	24	2	5028 0425	5028 0411
400	420	4 P	21	2	5028 0455	5028 0412
400	620	4 P	13	3	5028 0475	5028 0413

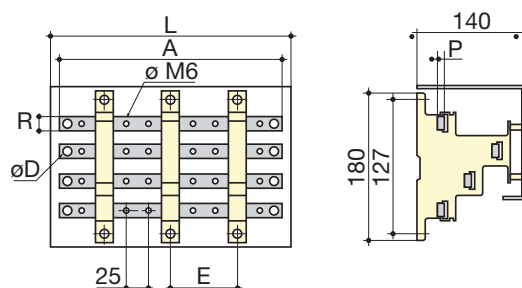
Dimensions

Type	Pack qty	Reference
Spacer for protective cover	1	5028 0415

Rating (A)	Nb of terminations	A	ØD	E	L	P	R
160	9	250	8	150	270	5	15
160	15	400	8	300	420	5	15
160	21	600	8	250	620	5	15
250	9	250	10	150	270	5	20
250	15	400	10	300	420	5	20
250	21	600	10	250	620	5	20
400	8	225	12	150	270	5	32
400	14	375	12	300	420	5	32
400	20	620	12	250	620	5	32



repar_012_b_1_cat



repar_040_a_1_x_cat

Stair type distribution blocks with threaded holes. Can be clipped onto a symmetric DIN rail.
Factory assembled and supplied without protection cover

Disconnectable solid neutral links

References

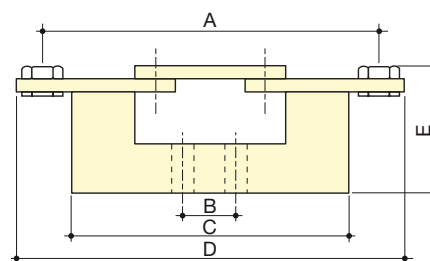
Rating (A)	Connection type	Reference
160	Terminal connections	NB16 0000
250	Terminal connections	NB25 0000
400	Terminal connections	NB40 0000
630	Terminal connections	NB63 0000



repar_030_a_2_cat

Dimensions

Rating (A)	A	B	C	D	E	Width max. (mm)
160	100	25	85	117	45	32
250	150	25	120	173	45	32
400	176	25	150	200	65	55
630	210	25	160	240	65	75



shunt_012_a_1_x_cat

SIRCO multipolar distribution blocks

References

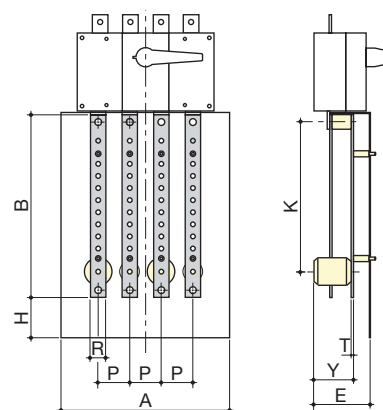
Rating (A)	No. of poles	Icc (kA rms)	No of feeders per section (mm ²)	Reference
160	3 P	10	1 x 95 + 8 x 25	5411 3016
160	4 P	10	1 x 95 + 8 x 25	5411 4016
250	3 P	15	1 x 150 + 8 x 50	5411 3025
250	4 P	15	1 x 150 + 8 x 50	5411 4025
400	3 P	21	1 x 240 + 8 x 95	5411 3040
400	4 P	21	1 x 240 + 8 x 95	5411 4040
630	3 P	21	1 x 300 + 8 x 150	5411 3063
630	4 P	21	1 x 300 + 8 x 150	5411 4063

Dimensions

Rating (A)	No. of poles	A	B	E	H	K	P	R	T	Y
160	3 P	154	286	73	46.5	261.5	36	20	4	54
160	4 P	190	286	73	46.5	261.4	36	20	4	54
250	3 P	210	307	83	57.5	279	50	25	4	56
250	4 P	260	307	83	57.5	279	50	25	4	56
400	3 P	281	375	116	82.5	340	65	32	5	82
400	4 P	346	375	116	82.5	340	65	32	5	82
630	3 P	271	438	117	90.5	410.5	65	40	6	83
630	4 P	346	438	117	90.5	410.5	65	40	6	83



repar_020_b_1_cat



repar_003_c_1_x_cat

Terminal connections distribution blocks with front protection cover against direct contact (breaking device not supplied).

Multipolar distribution blocks for FUSERBLOC and SIRCO VM2

References

Rating (A)	Fuse size	No. of poles	Device	No of feeders per section (mm ²)	Reference
100/125/160	22x58/00	3 P	FUSERBLOC	10x16 + 2x35 + 3xM6	5413 3016
100/125/160	22x58/00	4 P	FUSERBLOC	10x16 + 2x35 + 3xM6	5413 4016
160	0	3 P	FUSERBLOC	10x16 + 2x35 + 3xM6	5413 3017
160	0	4 P	FUSERBLOC	10x16 + 2x35 + 3xM6	5413 4017
250	1	3 P	FUSERBLOC	11 x M8	5413 3025
250	1	4 P	FUSERBLOC	11 x M8	5413 4025
400	2	3 P	FUSERBLOC	11 x M8	5413 3040 ⁽¹⁾
400	2	4 P	FUSERBLOC	11 x M8	5413 4040 ⁽¹⁾
160/200		3 P	SIRCO VM2	10x16 + 2x35 + 3xM6	5413 3020
160/200		4 P	SIRCO VM2	10x16 + 2x35 + 3xM6	5413 4020

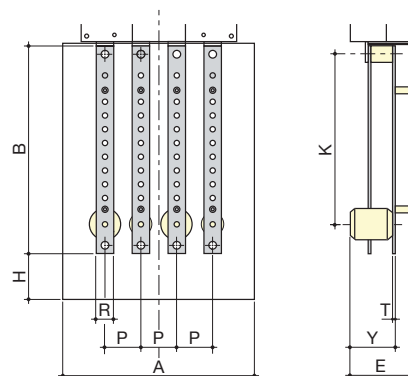
(1) External distribution block only compatible with Fuserbloc rating 400 A and reference 3xxx xx39.

Dimensions

Rating (A)	No. of poles	Device	A	B	E	H	K	P	R	T	Y
100/125/160	3 P	FUSERBLOC	110	260	61	20	233	36	20	4	39
100/125/160	4 P	FUSERBLOC	145	260	61	20	233	36	20	4	39
160	3 P	FUSERBLOC	150	260	61	20	233	50	20	4	39
160	4 P	FUSERBLOC	200	260	61	20	233	50	20	4	39
250	3 P	FUSERBLOC	185	340	67	15	300	60	32	5	45
250	4 P	FUSERBLOC	245	340	67	15	300	60	32	5	45
400	3 P	FUSERBLOC	210	340	67	15	300	66	32	5	45
400	4 P	FUSERBLOC	275	340	67	15	300	66	32	5	45
160/200	3 P	SIRCO VM2	142	260	61	20	233	27.5	20	4	39
160/200	4 P	SIRCO VM2	142	260	61	20	233	27.5	20	4	39



repar_013_a_2_cat



repar_041_a_1_x_cat

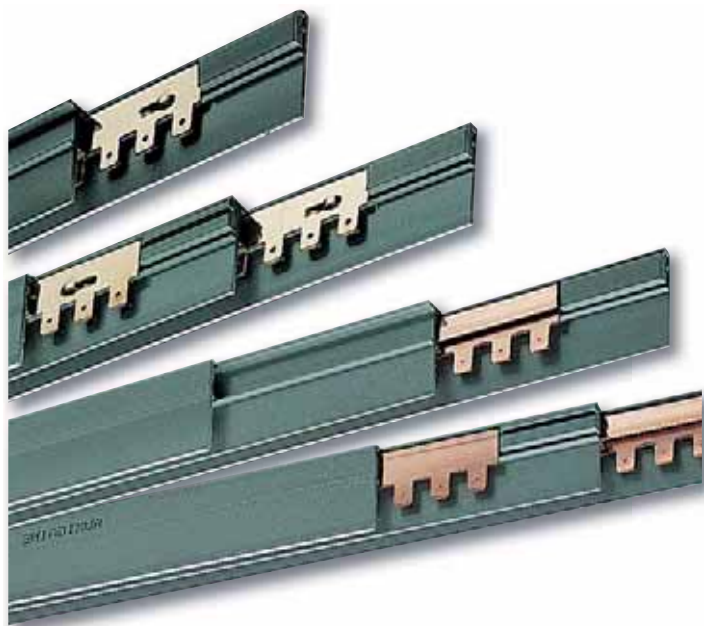


AUXIGAIN

Distribution

Enclosures
& accessories

auxig_008_a_1_cat



The solution for

> Any electrical device



Conformity to standards

> IEC 60439-1
> EN 60439-1
> NF C 20-040
> NF C 20010
> VDE 0110



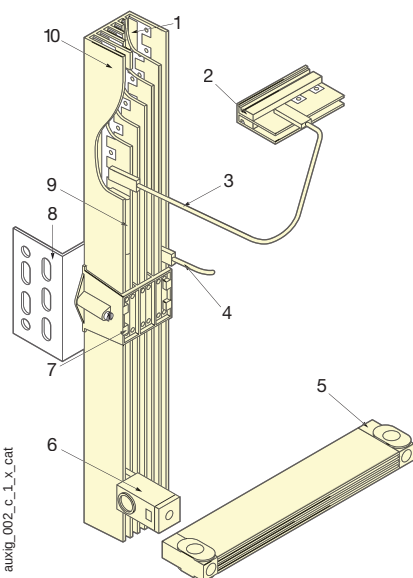
Function

The AUXIGAIN ensure low power distribution in low voltage electrical circuits. It incorporates a unipolar or multipolar busbar for plugging in 6,3 mm fast-on terminal lugs.

General characteristics

- 83 connections per linear meter.
- Modular composition (1 to 6 poles).
- "Tropicalised" as a standard.
- Self-extinguishing at 960 °C as per HN 60 E 11.
- Max. operating voltage: 660 VAC.
- Max. current per terminal lug (40 °C): 32 A; cable 6 mm².
- Short-circuit withstand: 7,4 kA during 60 ms.
- Protection degree IP20.
- 4 ratings from 32 to 100 A, with 1 pole or 2 poles.
- Material : brass (32 to 50 A) and copper (63 to 100 A).
- 2 types of coating: Uncoated or tin-plated.

Configurations



1. Conductor.
2. Insulating end stop.
3. Link.
4. Link.
5. End stop.
6. Power supply and connection device.
7. Sheath fixing.
8. Sheath fixing.
9. Insulating seal.
10. Insulating sheath.

auxig_002_c_1_x_cat

References

Rating (A)	Type	Length (m)	To be ordered in multiples of	Reference
32	2 non-coated brass conductors	1,90	10	173G 0302
50	1 non-coated brass conductor	1,90	10	173G 0101
50	2 non-coated brass conductors	1,90	10	173G 0102
63	2 copper-coated conductors	1,90	10	173G 0412
100	2 non-coated copper conductors	1,90	10	173G 0202
100	1 copper-coated conductor	1,90	10	173G 0211
100	2 copper-coated conductors	1,90	10	173G 0212

Accessories

Power supply and connection device

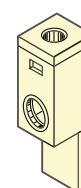
Use

- For connecting cables with cross-sections from 10 to 25 mm².
- Ensure the electrical connection between AUXIGAINÉ via an insulated cable from 10 to 25 mm² (cable not supplied).

Characteristics

Operational current: $I_e = 125$ A

Type	To be ordered in multiples of	Reference
Power supply and connection device	10	173G 9263



auxig_005_a_1_x_cat

Sheath fixing

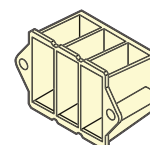
Use

For fixing up to 3 AUXIGAINÉ, that is 6 conductors. A sheath fixing should be used every 500 mm.

Material

Self-extinguishable polyamide.

Type	To be ordered in multiples of	Reference
Sheath fixing	50	173G 7003



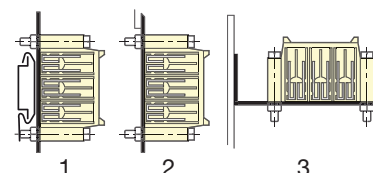
auxig_010_a_1_x_cat

Sheath fixing support

Use

For attaching the sheath fixing support to the symmetrical rail (1), to a flat support (2) or to the bracket (3).

Mounting	Figure n°	To be ordered in multiples of	Reference
Symmetrical rail	1	10	173G 7185
Flat support	2	10	173G 7180
90° bracket	3	10	173G 7090



auxig_001_d_1_x_cat

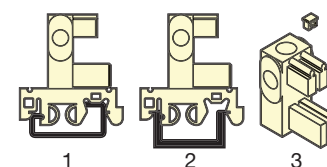
Extremity fixing

Use

Can be clipped in parallel or perpendicular position to the symmetrical and asymmetrical rail or can be mounted on a sheet metal support. The end support is for stopping and fixing the AUXIGAINÉ.

To be attached at the extremity of the product.

Mounting	Figure n°	To be ordered in multiples of	Reference
Symmetrical and asymmetrical rail	1 and 2	10	173G 8003
Sheet metal panel	3	10	173G 8002



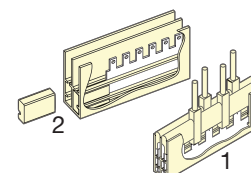
auxig_009_c_1_x_cat

Seal and end stop

Use

- Seal: ensures the AUXIGAINÉ IP20 protection between connections.
- End stop: ensures insulation and maintains the conductor in case it needs to be cut.

Type	Figure n°	To be ordered in multiples of	Reference
Insulating seal (L = 1m)	1	10	173G 8005
Insulating end stop	2	1	173G 8001



auxig_011_b_1_x_cat



Mounting rails and profiles

Mounting accessories



elcha_039_a_1_cat

The solution for

> Any electrical device



Conformity to standards

> EN 60715

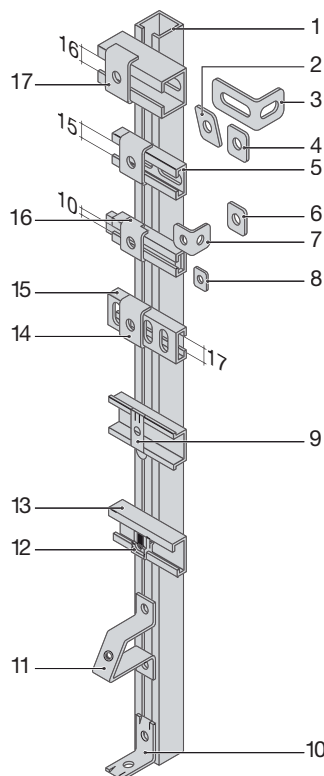
Function

SOCOMEK frame parts come in steel, 304 L stainless steel or aluminium (profiles and accessories) and allow the fixing of any electrical equipment.

Configurations

Composition of the range:

1. Profile C 20 x 14 - 30 x 15 - 35 x 35
2. Diamond shaped nut 33 x 11 - 34 x 20
3. Bracket 45 x 60 x 25
- 2 oblong holes: 35 x 9 ou 25 x 9
4. Rectangular nut 28 x 35
5. Profile C 30 x 15
6. Square nut 25 x 25
7. Bracket 25 x 25 x 19
8. Square nut 15.5 x 15.5
9. Fixomega
10. Bracket 36 x 36 x 23
11. Terminal block support
12. Fixocap
13. Asymmetrical profile
14. Straddle bracket 30 x 15
15. Cable support rail
16. Straddle bracket 20 x 14
17. Straddle bracket 35 x 35



elcha_003_c_1_x_cat

Profile C

W x H x e (mm)	Perforations (mm)	Perforation centres (mm)	Material	Profiles length (m)	To be ordered in multiples of	Reference
20 x 14 x 1.5	8.2 x 40	50	Steel z-b ⁽¹⁾	3	30 m	5000 0120
30 x 15 x 1.5	8.2 x 40	50	Steel z-b ⁽¹⁾	3	30 m	5000 0121
35 x 35 x 2	8.2 x 40	50	Steel z-b ⁽¹⁾	2	12 m	5000 0132
35 x 35 x 2	8.2 x 40	50	Steel z-b ⁽¹⁾	3	18 m	5000 0122
30 x 15 x 1.5	6.3 x 18	50	Stainless steel	2	10 m	5000 1021
20 x 15 x 2	without		Aluminium	2	10 m	SA12 4202
20 x 15 x 2	without		Aluminium	3	15 m	SA13 4202
20 x 15 x 2	without		Aluminium	6	30 m	SA10 4202
29 x 19 x 2.5	without		Aluminium	2	10 m	SA12 4201
29 x 19 x 2.5	without		Aluminium	3	15 m	SA13 4201
29 x 19 x 2.5	without		Aluminium	6	30 m	SA10 4201

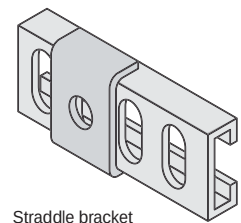
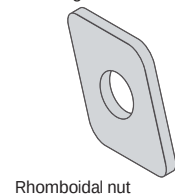
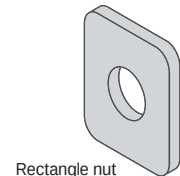
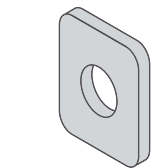
(1) White zinc-coated.



Accessories

Screws

Type	Insert M	Dimensions H x W (mm)	For profiles	To be ordered in multiples of	Reference
Square nut	M3	15.5 x 15.5	20 x 14	100	5000 0023
Square nut	M4	15.5 x 15.5	20 x 14	100	5000 0024
Square nut	M5	15.5 x 15.5	20 x 14	100	5000 0025
Square nut	M6	15.5 x 15.5	20 x 14	100	5000 0026
Square nut	M8	15.5 x 15.5	20 x 14	100	5000 0028
Square nut	M8	25 x 25	30 x 15	100	5000 0029
Rectangle nut	M8	35 x 28	35 x 35	100	5000 0037
Rectangle nut	M10	35 x 28	35 x 35	100	5000 0039
Rhomboidal nut	M3	33 x 11	30 x 15	100	5000 0033
Rhomboidal nut	M4	33 x 11	30 x 15	100	5000 0034
Rhomboidal nut	M5	33 x 11	30 x 15	100	5000 0035
Rhomboidal nut	M6	34 x 20	35 x 35	100	5000 0036
Rhomboidal nut	M8	34 x 20	35 x 35	100	5000 0038
Straddle bracket	Ø 8.2		20 x 14	100	5000 0010
Straddle bracket	Ø 8.2		30 x 15	100	5000 0011
Straddle bracket	Ø 8.2		35 x 35	100	5000 0012



Foam

Type	l x e (mm)	To be ordered in multiples of	Reference
Roll of 60 meter foam ⁽¹⁾	20 x 12	1	5000 0057
Roll of 60 meter foam ⁽¹⁾	25 x 12	1	5000 0058

(1) Enables to maintain nuts for symmetrical profiles.



Mounting rails and profiles

Mounting accessories

Symmetrical DIN rail

W x H x e (mm)	Perforations (mm)	Perforation centres (mm)	Material	Profiles length (m)	To be ordered in multiples of	Reference
35 x 7.5 x 1	Without		Steel z-b ⁽¹⁾	2	30 m	5000 0302
35 x 7.5 x 1	6.3 x 18	25	Steel z-b ⁽¹⁾	2	30 m	5000 0042
35 x 7.5 x 1	Without		Stainless steel	2	10 m	5000 1302

(1) White zinc-coated.



elcha_040_a_1_cat

Symmetrical DIN rail

W x H x e (mm)	Perforations (mm)	Perforation centres (mm)	Material	Profiles length (m)	To be ordered in multiples of	Reference
35 x 15 x 1.5	Without		Steel z-b ⁽¹⁾	2	30 m	5000 0301
35 x 15 x 1.5	Without		Steel z-b ⁽¹⁾	3	30 m	5000 0331
35 x 15 x 2.3	Without		Steel z-b ⁽¹⁾	2	20 m	5000 0017
35 x 15 x 2.3	Without		Steel z-b ⁽¹⁾	3	30 m	5000 0027
35 x 15 x 1.5	6.3 x 18	25	Steel z-b ⁽¹⁾	2	30 m	5000 0043
35 x 15 x 1.5	6.3 x 18	25	Steel z-b ⁽¹⁾	3	30 m	5000 0343
35 x 15 x 2.5	Without		Aluminium	2	12 m	SA12 4217
35 x 15 x 2.5	Without		Aluminium	3	18 m	SA13 4217
35 x 15 x 2.5	Without		Aluminium	6	36 m	SA10 4217

(1) White zinc-coated.



elcha_043_a_1_cat

Assymetrical G-section DIN rail

W x H x e (mm)	Perforations (mm)	Perforation centres (mm)	Material	Profiles length (m)	To be ordered in multiples of	Reference
32 x 15 x 1.5	Without		Steel z-b ⁽¹⁾	2	30 m	5000 0307
32 x 15 x 1.5	Without		Steel z-b ⁽¹⁾	3	30 m	5000 0308
32 x 15 x 1.5	6.3 x 18	25	Steel z-b ⁽¹⁾	2	30 m	5000 0044
32 x 15.5 x 1.5	Without		Aluminium	2	8 m	SA12 4210
32 x 15.5 x 1.5	Without		Aluminium	3	12 m	SA13 4210
32 x 15.5 x 1.5	Without		Aluminium	6	24 m	SA10 4210

(1) White zinc-coated.



elcha_041_a_1_cat

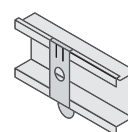
Accessories

Fixomega / Fixocap

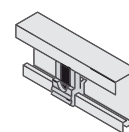
Type	Insert M	To be ordered in multiples of	Reference
Fixomega ⁽¹⁾	M4	100	5000 0041
Fixomega ⁽¹⁾	M5	100	5000 0051
Fixocap ⁽²⁾	M3/M5	100	5800 0003
White Fixocap ⁽²⁾	M4 / M6	100	5800 0005
Black Fixocap ⁽²⁾	M3/M5	100	5800 0004
Grey Fixocap ⁽²⁾	M4 / M6	100	5800 0006

(1) Clip-on nut for symmetrical profiles.

(2) Clip-on nut for asymmetrical profiles.



Fixomega

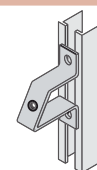


Fixocap

elcha_019_b_1_x_cat

Support for inclined mounting

Type	Number of holes	Ø hole (mm)	Insert M	To be ordered in multiples of	Reference
Support for inclined mounting	2	7	M5	10	5000 0100



elcha_022_a_1_x_cat

Cable support rail

W x H x e (mm)	Perforations (mm)	Perforation centres (mm)	Material	Profiles length (m)	To be ordered in multiples of	Reference
30 x 15 x 1	8.2 x 14.5	16.7	Galvanised steel	3	15 m	5000 4325
50 x 12 x 1	8.2 x 14.5	16.7	Galvanised steel	2	20 m	5000 4326



elcha_033_a_1_cat

L profile

W x H x e (mm)	Ø perforations (mm)	Perforation centres (mm)	Material	Profiles length (m)	To be ordered in multiples of	Reference
30 x 30 x 2.5	8.2	25	Steel z-b ⁽¹⁾	2	10 m	5254 6401
30 x 50 x 2.5	8.2	25	Steel z-b ⁽¹⁾	2	10 m	5254 6501
30 x 30 x 2.5	8.5 x 45	55	Steel z-b ⁽¹⁾	2	10 m	5000 0003
40 x 40 x 2.5	8.5 x 45	55	Steel z-b ⁽¹⁾	2	10 m	5000 0004

(1) White zinc-coated.

U profile

W x H x e (mm)	Ø perforations (mm)	Perforation centres (mm)	Material	Profiles length (m)	To be ordered in multiples of	Reference
50 x 30 x 2.5	8.2	25	Steel z-b ⁽¹⁾	2	10 m	5254 6701
30 x 20 x 3	9	25	Aluminium	3	3 m	5254 6901

(1) White zinc-coated.

Z profile

W x H x e (mm)	Ø perforations (mm)	Perforation centres (mm)	Material	Profiles length (m)	To be ordered in multiples of	Reference
30 x 30 x 2.5	8.2	25	Steel z-b ⁽¹⁾	2	10 m	5254 6601

(1) White zinc-coated.

Rising U

W x H x e (mm)	Ø perforations (mm)	Perforation centres (mm)	Material	Profiles length (m)	To be ordered in multiples of	Reference
30 x 50 x 2.5	8.2 x 45	55	Steel z-b ⁽¹⁾	2	8 m	5000 0005

(1) White zinc-coated.

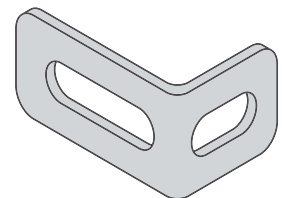
Accessories

Bracket

Use
For steel profile.

Characteristics
Bichromate zinc-coated steel.

H x W x D (mm)	Number of holes	Ø hole (mm)	Insert M	To be ordered in multiples of	Reference
25 x 25 x 19	2	7		25	5000 0045
25 x 25 x 19	1	6	M6	25	5000 0046
36 x 36 x 23	2	8		25	5000 0047
45 x 60 x 25	2	9x25 / 9x35		25	5254 6101
44 x 75 x 32	5	5 / 6		1 (Set of 6)	5119 5045



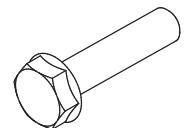
elcha_021_a_1_x_cat

Screws

Use
For steel profile.

Characteristics
Bichromate zinc-coated steel.
Integrated washer

Thread	L (mm)	Class	To be ordered in multiples of	Reference
M6	10	8.8	100	5000 0066
M8	12	8.8	100	5000 0068
M8	16	8.8	100	5000 0069



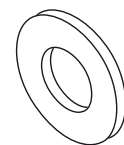
elcha_038_a_1_x_cat

Washer

Use
For steel profile.

Characteristics
Bichromate zinc-coated steel.

Ø x e (mm)	Ø hole (mm)	To be ordered in multiples of	Reference
16 x 1.5	6.5	100	5000 0015
19 x 1.5	6.5	100	5000 0018
22 x 1.5	8.5	100	5000 0016



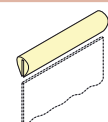
amc_035_a_1_x_cat

PVC border

Use
PVC border for sheet metal.

Characteristics
Colour: Ligth grey

Steel thickness (mm)	To be ordered in multiples of	Reference
2	25 m	7739 0025

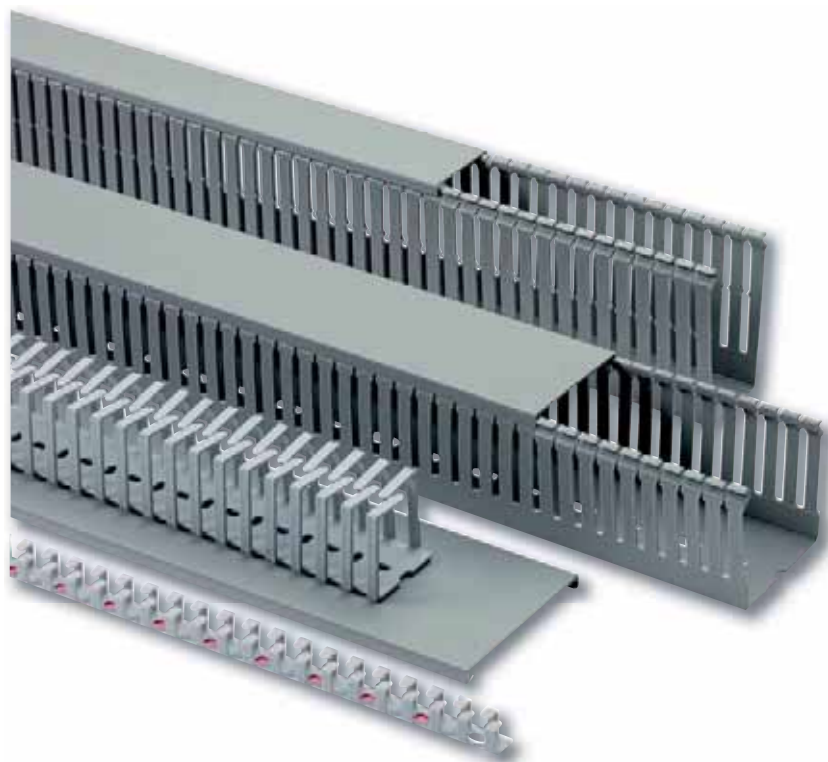


amc_036_a_1_x_cat



Cable trunking

Mounting accessories



The solution for

- > Power distribution



Strong points

- > Easy to install
- > Electrical safety
- > 3 models available

Conformity to standards

- > IEC 61439-1
- > NF C 68-102
- > DIN 43659



Function

SOCOMECA cable trunking are designed for conducting, fixing and protecting cables.

Advantages

Easy to install

- High mechanical resistance. Can be mounted without base support. Fixing distance of 600 mm.
- Clean break tabs.
- Suitable for flexible cables up to 1x10 mm² in 12x8 cable trunks.
- Pre-cut in the lower part: optimised inspection tee.

Electrical safety

- Self-extinguishable PVC class 1 (UL94-V0).
- Incandescent wire self-extinguishable at 960 °C.
- Dielectric constant 3.4 kV.
- Dielectric strength 250 kV/cm.

3 models available

- Rigid trunking (grey RAL 7030),
 - 25 dimensions from 15 x 17 to 200 x 100 mm.
 - 2 slot widths: 8 mm and 12 mm strips, 4 mm and 6 mm strips,
 - lockable cover,
- Flexible adhesive cable trunk (grey colour RAL 7035):
 - 4 dimensions from 13 x 15 to 40 x 44 mm,
 - 1 slot width: 6 mm.
- Halogen-free trunking:
 - to limit scrapped material, the trunking consists in 2000 mm clampable sections.
 - It is injection moulded to ensure a better finishing than products manufactured via extrusion processes.
 - Material: PPO-Noryl class 2.
 - Colour: grey RAL7035.
 - Resistance: - 25 to + 85 °C.

References

Flexible conduit trunking

W x H x L (mm)	Internal cross-section (mm ²)	To be ordered in multiples of	Reference
13 x 15 x 500	120	50	5715 1315
20 x 24 x 500	360	50	5715 2024
29 x 33 x 500	780	50	5715 2933
40 x 44 x 500	1510	50	5715 4044

Rigid trunking

W x H x L (mm)	Internal cross-section (mm ²)	Pack ⁽¹⁾	8 mm slot Reference	4 mm slot Reference
25 x 40 x 2000	760	60		5712 2540
40 x 40 x 2000	1 310	40		5712 4040
60 x 40 x 2000	1 960	28		5712 6040
80 x 40 x 2000	2 655	24		5712 8040
25 x 60 x 2000	1 200	40		5712 2560
40 x 60 x 2000	1 960	36		5712 4060
60 x 60 x 2000	3 080	24		5712 6060
80 x 60 x 2000	4 175	24		5712 8060
100 x 60 x 2000	5 295	20		5712 9060
120 x 60 x 2000	6 390	16		5712 9260 ⁽²⁾
25 x 80 x 2000	1 540	32		5712 2580
40 x 80 x 2000	2 680	24		5712 4080
60 x 80 x 2000	4 200	24		5712 6080
80 x 80 x 2000	5 695	16		5712 8080
100 x 80 x 2000	7 215	16		5712 9080
120 x 80 x 2000	8 710	12		5712 9280 ⁽²⁾
40 x 100 x 2000	3 350	16	5711 4090	
60 x 100 x 2000	5 320	16	5711 6090	
80 x 100 x 2000	7 215	16	5711 8090 ⁽²⁾	
100 x 100 x 2000	9 135	16	5711 9090 ⁽²⁾	
150 x 100 x 2000	13 670	8	5711 9590 ⁽²⁾	
200 x 100 x 2000	18 370	8	5711 9990 ⁽²⁾	

(1) Rigid trunking are delivered with covers.

(2) Grooved ducts.

Rigid halogen-free trunking

W x H x L (mm)	Internal cross-section (mm ²)	Pack ⁽¹⁾	Reference
25 x 25 x 2000	440	84	5719 2525
25 x 37.5 x 2000	770	64	5719 2537
25 x 50 x 2000	1030	52	5719 2550
37.5 x 37.5 x 2000	1220	32	5719 3737
37.5 x 50 x 2000	1640	48	5719 3750
37.5 x 75 x 2000	2400	32	5719 3775
50 x 50 x 2000	2100	24	5719 5050
50 x 75 x 2000	3250	24	5719 5075
75 x 50 x 2000	3200	24	5719 7550
75 x 75 x 2000	4800	16	5719 7575
100 x 50 x 2000	4400	16	5719 9050
100 x 75 x 2000	6700	16	5719 9075
125 x 75 x 2000	7000	12	5719 9275

(1) Rigid trunking are delivered with covers.

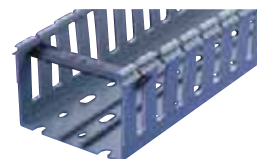
Accessories

Cable ties

Use

For maintaining the cables into the trunk.

Width (mm)	To be ordered in multiples of	Reference
40 ... 120	400	5719 0714



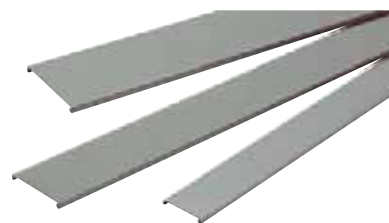
goulo_008_a_1_cat

Covers

Use

For closing the trunk and maintaining the cables.

Width (mm)	Length (mm)	To be ordered in multiples of	For rigid trunk Reference	For halogen-free trunk Reference
25	2 000	1	5713 0025	5713 1025
37.5	2 000	1		5713 1037
40	2 000	1	5713 0040	
50	2 000	1		5713 1050
60	2 000	1	5713 0060	
75	2 000	1		5713 1075
80	2 000	1	5713 0080	
100	2 000	1	5713 0100	5713 1100
120	2 000	1	5713 0120	
125	2 000	1		5713 1125
150	2 000	1	5713 0150	
200	2 000	1	5713 0200	



goulo_031_a_1_cat

Rapid cable sheath

Use

Flexible sheath that maintains cables into ducts.

Characteristics

Rapid and easy operations to add or remove cables using a specific tool.

Diameter (mm)	To be ordered in multiples of	Reference
8	100 m	5716 0800
15	50 m	5716 1500
20	30 m	5716 2000
25	20 m	5716 2500



goulo_021_a_1_cat

Tool for rapid sheath		
Diameter (mm)	To be ordered in multiples of	Reference
8	1	5716 0810
15	1	5716 1510
20	1	5716 2010
25	1	5716 2510



goulo_020_a_1_cat

Spiral cable tidy

Use

Flexible sheath that maintains cables into ducts.

Diameter (mm)	Band width (mm)	To be ordered in multiples of	Reference
3	5	50 m	5716 0003
6	8	25 m	5716 0006
12	12	25 m	5716 0012



goulo_011_a_1_cat

Cable rivets

Use

Ensures the fixing of trunking systems onto the perforated supports.

A dedicated tool facilitates the installation of rivets.

Diameter (mm)	To be ordered in multiples of	Reference
4.5	200	5719 0204
6.5	200	5719 0206
6.5 mm rivet dedicated tool (black)	1	5719 0421
4.5 mm rivet dedicated tool (green)	1	5719 0422



access_273_a

Label holder

Use

- For rigid trunk.
- Enables the identification of devices in the control cabinet.

Type	To be ordered in multiples of	Reference
Label holder	250	5719 0610



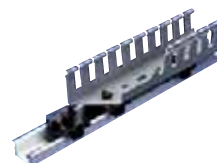
goulo_014_a_1_cat

Support

Use

Ensures the fixing of trunking systems onto symmetrical and asymmetrical DIN-rails.

Type	To be ordered in multiples of	Reference
Support	100	5719 0010

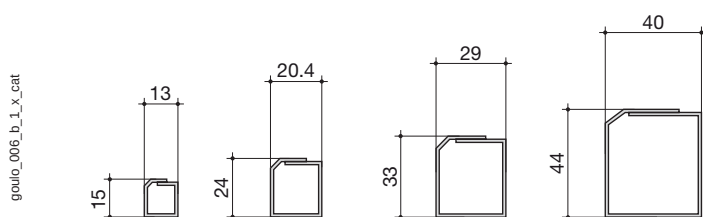


goulo_016_a_1_cat

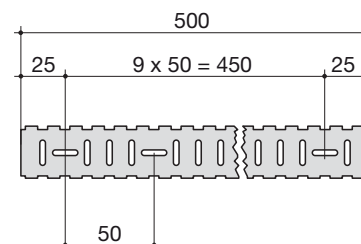
Dimensions

Flexible conduit trunking

Cross-section

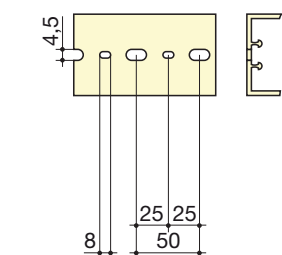


Back perforation



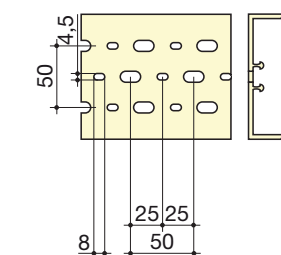
Rigid trunking

Back perforation



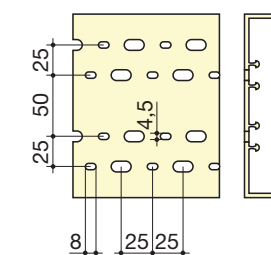
Widths 15/25/40/60 mm

goulo_005_a_1_x_cat



Widths 80/100 mm

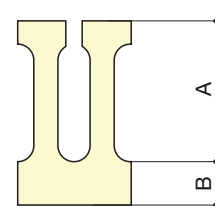
goulo_027_a_1_x_cat



Widths 120/150 mm

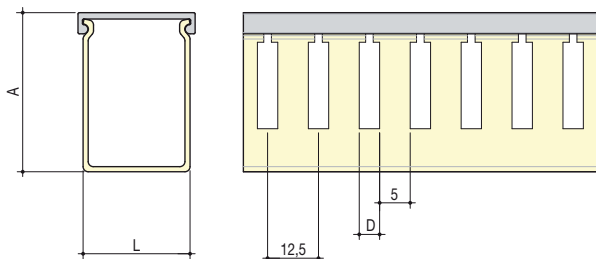
goulo_028_a_1_x_cat

Side cutout



goulo_004_a_1_x_cat

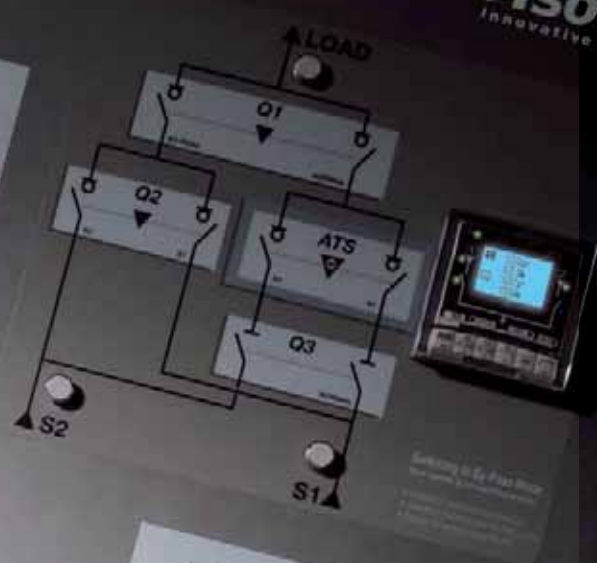
Rigid halogen-free trunking



goulo_033_a_1_x_cat

4 mm slot			8 mm slot		
Height (mm)	A	B	Height (mm)	A	B
17	6	4	17	6	4
40	18	12	40	18	12
60	40	11	60	40	11
80	52	16	80	52	16

By-pass Double Line



Integrated products & solutions

Equipped enclosures and cabinets to suit all your applications [p. 720](#)

Enclosed switches

Load break switches



SIRCO & SIRCO M
Polyester
16 to 500 A
(3/4 P)
[p. 726](#)

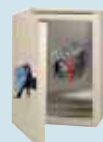


SIRCO & SIRCO M
Steel
20 to 1250 A
(3/4 P)
[p. 729](#)

Fuse combination switches



FUSERBLOC
Polyester
50 to 400 A
(3/4 P)
[p. 731](#)



FUSERBLOC
Steel
25 to 800 A
(3/4 P)
[p. 733](#)

Safety enclosures

Overview of our range [p. 734](#)

Normal atmospheres



Polyester enclosure
50 to 1600 A
(3/4/6 P)
[p. 736](#)



Steel enclosure
50 to 1600 A
(3/4/6 P)
[p. 740](#)

Explosive atmospheres



Steel - Dust enclosure
50 to 630 A
(3/4/6P)
[p. 748](#)

Enclosed transfer switches

Overview of our range [p. 752](#)

Manual operation



Polyester enclosure
25 to 630 A
(3/4 P)
[p. 754](#)



Steel enclosure
63 to 3200 A
(3/4 P)
[p. 756](#)

Motorised operation



RTSE / ATSE
40 to 3200 A
(2/3/4 P)
[p. 760](#)



ATyS Bypass solution

ATSE
40 to 3200 A
(4 P)
[p. 774](#)

Specific applications



Photovoltaic enclosures
[p. 722](#)



Solutions for medical locations
[p. 724](#)

Find out more

Custom design and production of distribution panels



SOCOMECC designs and manufactures specific products to meet customer specifications and technical requirements in accordance with standard IEC 61439.

We will help you find the best solution for your application.
[Contact your local sales office.](#)

Equipped enclosures and cabinets to suit all your applications

Specialist in load-break and changeover switching, as well as protection, metering and measurement equipment, SOCOMEC designs and produces standard and customised integrated solutions.

With our dual expertise (in products and solutions) we can offer you the electrical equipment you need for your systems, all under manufacturer's guarantee.

Based on decades of extensive experience, our standard integrated solutions bring you:

- Fast implementation backed up by a review of system limitations,
 - Ease-of-use, without any risk of non-compliance with industry standards.
- Our solutions guarantee:
- The safety and protection of persons and goods,
 - Operating continuity,
 - Compliance with standards on products, assemblies and installations

What you need to know!

SOCOMEK has an entire department at your service, dedicated to the design and production of specialist equipment.

This department is on hand to support you throughout your projects, including:

- drawing up the spec sheets,
- costings,
- planning,
- design and production,
- qualification and certification,
- support during installation and startup,
- training.

Contact your local SOCOMEC branch to see what our experience can offer!



PV enclosures



PV enclosures house the PV combiner box that consolidates the output of the various solar strings, while protecting against overcurrents and overvoltages, to enable their connection to solar inverters. Their design (Class II) also provides a maximum level of safety for users against direct contact.

With the SOCOMEC range of PV enclosures you have the solution and a manufacturer's guarantee for all your solar needs (solar fields, buildings and residential systems).

Solutions for medical facilities



The availability of a reliable electrical power supply is vital to ensure continuity of care. There is no excuse today for power failures that can lead to critical situations.

Medical IT cabinets ensure the availability of electrical power in medical facilities (in accordance with standard NFC 15-211).

The SOCOMEC medical IT cabinet range comes in three models and provides the solution for all your medical facility's needs, backed up by a manufacturer's guarantee.

Equipped enclosures and cabinets to suit all your applications

Equipment enclosures



SITE 301 A

Our switchgear enclosures incorporate load-break switches with or without fuses, and have been developed, qualified and certified for industrial electrical distribution and service sector networks. They provide on-load

breaking and isolation functions, and assure the removal from power supply service for all types of loads. They can also be used as a general switch for equipment in various applications.

Safety enclosures



SITE 550 A

Safety enclosures are designed to be installed near a motor or a machine to separate them from the power supply. These include manually operated, load-break switches that can be padlocked in the OFF position with a visible and reliable display of the switchgear's open position. During preventive maintenance or inspection work, these enclosures ensure operator safety against the accidental startup of electrical machines.

For use in an explosive atmosphere (gas/dust), use our ATEX model to prevent any explosion during the unit's opening/closing phases, which generate electrical arcs.

Switching enclosures



SITE 375 A

Switching enclosures ensure the availability of electrical power in critical facilities (high-rises, public buildings, hospitals, IT or telecommunications centres, airports, industrial sites, etc.), and can be operated manually or automatically to switch between a normal power source and a backup source (genset or auxiliary transformer) to cover in the event of failure. (fig. 1)

For sites that require a power availability rate close to 100%, our ATyS Bypass solution offers dual redundancy during normal operation, service and maintenance work. With its capacity to resume Normal/Bypass channels, the ATyS Bypass solution allows the continued, seamless and safe use of your systems.

In industry, our switches can provide:

- removal of the load from service by the earthing connection (fig. 2)
- load redundancy (e.g. between motors) (fig. 3)

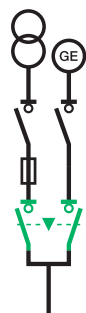


Fig. 1

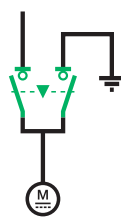


Fig. 2



Fig. 3



Photovoltaic enclosures

The photovoltaic market sets high standards in terms of security and quality. After an experimental decade, we now find ourselves at an industrial stage calling for a high level of professionalism. This comes in the standardisation of components, their implementation and installation rules.

The only way to ensure the best delivery, security and lifetime of the system is to bring in the skills of a specialist. Mastering photovoltaic technology has enabled SOCOMEC to demonstrate its capacity to find solutions for optimising electrical systems while taking the environment into account.

What you need to know!

For more information, please refer to our "Photovoltaic technical specifications" on our website, www.socomec.com



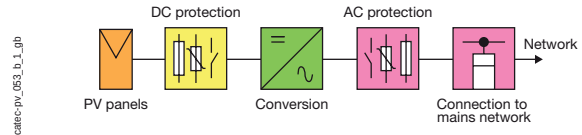
We can offer you complete solutions compliant with standard IEC 61439. Please contact us for more details.



Main architectures

Centralised inverter systems

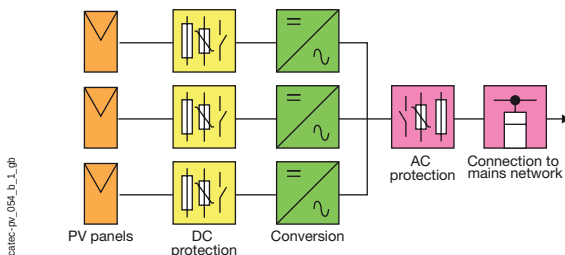
- This architecture is primarily for domestic use requiring less than 10 kWp power.
- Just one fault can jeopardise production.



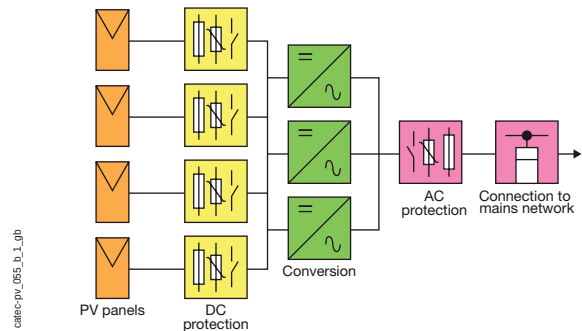
Multi-inverter installations

This architecture is designed for high-power industrial systems ranging from a few hundred kW to many MWp. In case of a fault or maintenance, the loss of production is limited to that machine.

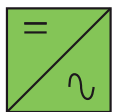
- Multi-inverter systems with individual control
With this architecture we can reduce the power of PV inverters, by splitting all the PV generators and inverters over multiple lines.



- Multi-inverter systems with centralised control
Connecting PV generators in parallel to all the inverters allows a high level of flexibility in terms of maintenance and managing the operating time of the machines. This method also ensures the inverters are used at their optimum power depending on the sunlight.



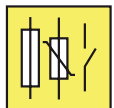
Key functions



Inverter

DC/AC conversion

- Converting the continuous electric energy produced by photovoltaic panels into alternative electrical energy.
- Automatic disconnection (loss of insulation, mains power, etc.).



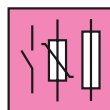
DC side, upstream of the inverter

- Switching and isolation.
- Short-circuit and overvoltage protection (fusing).
- Double insulation (class 2).
- System monitoring.
- Arc-fault detection.
- Switch tripping.



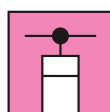
Photovoltaic generator

- PV panels.



AC side, downstream of the inverter

- Switching and isolation.
- Short-circuit and overvoltage protection (fusing).
- Differential control and protection.



Network coupling

- Metering.
- Switching and isolation.
- LV/HV conversion, depending on the installation's power.



Solutions for medical locations

SOCOMECS "Medical IT cabinet" solutions

The availability of a reliable electrical power supply is vital to ensure the continuity of care. Our solutions for medical locations guarantee:

- The continuity of the power supply within medical locations
- Patient safety with specific power distribution (hospital isolated power system).

With this equipment we can meet the requirements of IEC 60364-7-710, NFC 15-211 and Harmonisation Document HD 60364-7-710.

"Medical IT" cabinets guarantee a high-level of availability and high-quality electrical distribution in operating rooms.

They provide the following benefits:

- the continuity and availability of the power supply for critical rooms class 0 (or level 1, no cut-off tolerated),
- detection of insulation faults,
- scalability through the implementation of additional outgoing circuits,
- easy to maintain.

The document HD 60364-7-710 stipulates that the medical IT transformer be installed as close as possible to the medical locations. All our solutions are supplied with standard protection devices. We can offer you complete solutions compliant with standard IEC 61439. Please contact us for more details.



Electrical architecture of the solution

The standard NFC 15-211 requires a medical IT scheme for group 2 locations and at least one transformer for each operating room or each medical site

- Transformer for medical IT scheme
- Permanent insulation monitoring + alarm reports



SOCOMEC oil-free TRM transformers are LV/LV transformers that separate the general distribution network from the medical room power supply provided by the IT scheme. As such, they can isolate and compartmentalise the electrical disturbances across the entire installation.

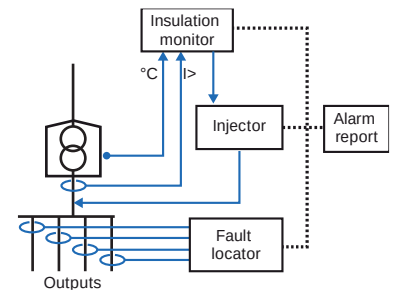
The medical IT scheme is required by the installation standards NFC 15-211, HD 60364-7-710 for group 2 locations.



The permanent insulation controller HMD 420 is a combined device for monitoring:

- The insulation level of the medical IT scheme
- The load current of single-phase transformer for medical IT schemes (up to 50 A)
- The temperature of the medical IT transformers.

It also integrates an additional signal for detecting insulation faults and it synchronises with fault locators DLD260-12 or DLD200-6.



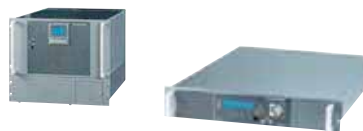
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The document HD 60364-7-710 stipulates that group 2 medical locations be powered by 2 separate sources

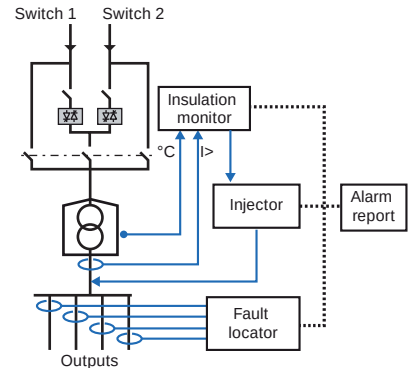
- Automatic transfer switch
- Static transfer system



ATyS M are automatic transfer switches that provide automatic switching to a main power supply. They have been developed, tested and approved according to criteria defined by the international product standards IEC 60947-3 and IEC 60947-6-1.



Static transfer switches ensure a power supply redundancy between two independent sources while delivering continuous service to critical applications by choosing the best power supply quality. Loads are transferred without interruption.



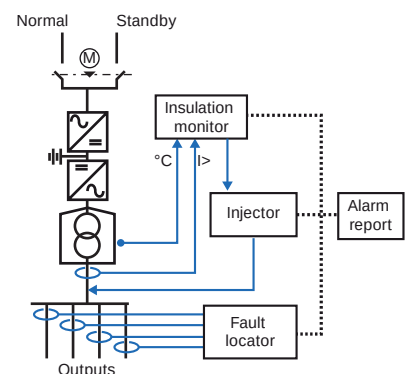
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The installation standard NFC 15-211 requires that group 2 locations are powered without interruption

- Uninterruptible Power Supplies



MODULYS Uninterruptible Power Supplies (UPSs) (and NETYS RT, depending on the application) ensure continuity of power. Double conversion technology ensures the ultimate protection for loads. The rack design meets all needs to extend power and/or redundancy.



conf_482_b_1_gp_catal



Enclosed load break switches

Load break switches

SIRCO and SIRCO M from 16 to 1250 A

coff_337_a_1_cat



SIRCO M
in polycarbonate enclosure



coff_292_a_1_cat



SIRCO
in polyester enclosure

coff_295_a_1_cat



SIRCO
steel enclosure
with front operation

Function

SIRCO M and SIRCO enclosures incorporate three or four pole manually operated load break switches which make and break on load and provide isolation for any low voltage electrical circuit. The enclosure provides protection against contact with live parts as well as environmental factors such as dust, water and other hazards.

Advantages

- This enclosure range is provided with SIRCO (M) load break switches which are adapted for use with highly inductive loads (AC23).
- The range is available in several variations depending on the rating, number of poles and enclosure type.

The solution for

- > OEM
- > Industries
- > Commercial buildings
- > Electrical distribution



Strong points

- > Maintenance safety
- > Robust product
- > Compact

Compliance with standards

- > IEC 60947-3
- > IEC 60364
- > EN 60947-3
- > EN 61439
- > EN 60204-1
- > UL 508
(depending on model)



Other products

- > Customised solutions available on request

Enclosed load break switches

Load break switches

SIRCO and SIRCO M from 16 to 1250 A

SIRCO M in polycarbonate enclosure

Front operation



General characteristics

- Equipped with a 3-pole SIRCO M.
- 1 removable neutral terminal and 1 removable earth terminal.
- Possibility of adding 1 additional pole.
- Possibility of adding 1 M-type auxiliary contact module.
- IP65 protection.

References

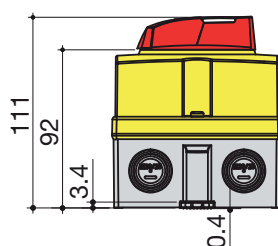
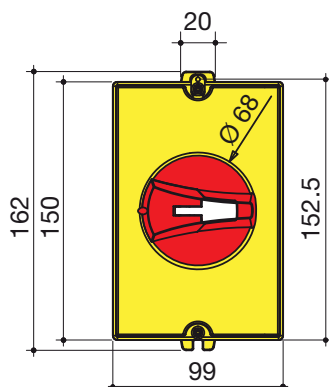
Equipped enclosures				
Rating (A)	No. of poles	Handle colour	Enclosure colour	Reference
16	3 P	Black	Grey	2215 3300
16	3 P	Red	Yellow	2215 3400
20	3 P	Black	Grey	2215 3301
20	3 P	Red	Yellow	2215 3401
25	3 P	Black	Grey	2215 3302
25	3 P	Red	Yellow	2215 3402
32	3 P	Black	Grey	2215 3303
32	3 P	Red	Yellow	2215 3403
40	3 P	Black	Grey	2215 3304
40	3 P	Red	Yellow	2215 3404
63	3 P	Black	Grey	2215 3306
63	3 P	Red	Yellow	2215 3406
80	3 P	Black	Grey	2215 3308
80	3 P	Red	Yellow	2215 3408
100	3 P	Black	Grey	2215 3309 ⁽¹⁾
100	3 P	Red	Yellow	2215 3409 ⁽¹⁾

Empty enclosures				
Rating (A)	No. of poles	Handle colour	Enclosure colour	Reference
16 ... 40	3 P	Black	Grey	2215 9305
16 ... 40	3 P	Red	Yellow	2215 9405
63 ... 80	3 P	Black	Grey	2215 9309
63 ... 80	3 P	Red	Yellow	2215 9409

(1) Excluding UL.

Dimensions

SIRCO M 16 to 40 A

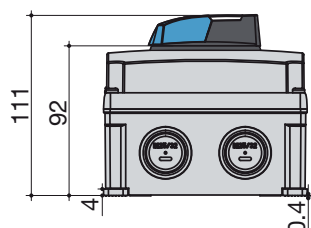
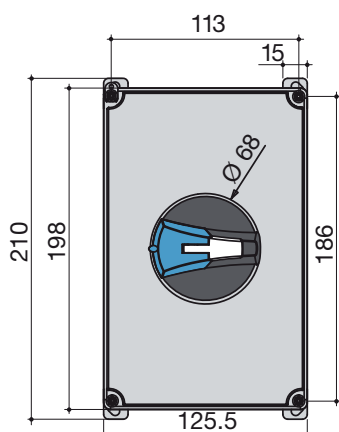


sircm_130_c_1_cat

For enclosure 162 x 99 mm

- 4 pre-drilled M16 holes (on the side).
- 4 pre-drilled M20 / M25 holes (top and bottom).
- 4 pre-drilled M20 holes (rear).

SIRCO M 63 to 100 A



sircm_131_b_1_cat

For enclosure 210 x 125.5 mm

- 4 pre-drilled M16 holes (on the side).
- 4 pre-drilled M25 / M32 holes (top and bottom).
- 2 pre-drilled M25 / M32 holes (rear).

Enclosed load break switches

Load break switches

SIRCO and SIRCO M from 16 to 1250 A

SIRCO in polyester enclosure

Front operation

coff_292_a_2_cat



References

Rating (A)	No. of poles	Top/Bottom connection Reference ⁽¹⁾	Bottom/Bottom connection Reference ⁽¹⁾
125	3 P	3115 3012	3125 3012
125	4 P	3115 4012	3125 4012
160	3 P	3115 3016	3125 3016
160	4 P	3115 4016	3125 4016
250	3 P	3115 3025	3125 3025
250	4 P	3115 4025	3125 4025
400	3 P	3115 3040	3125 3040
400	4 P	3115 4040	3125 4040
500	3 P	3115 3050	3125 3050
500	4 P	3115 4050	3125 4050

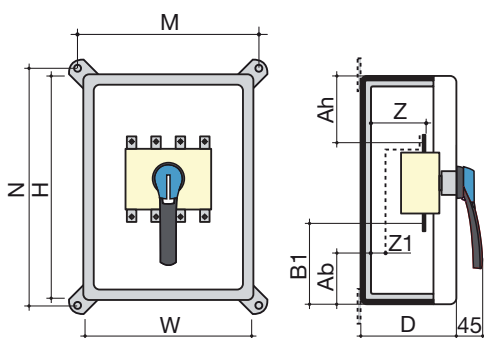
(1) For a fuse switch version, please contact us.

General characteristics

- Suitable for environments prone to chemical attack, dust hazards, risk of contamination and atmospheric corrosion.
- Operating handle: S-type black padlockable handle.
- Degree of protection: IP55.
- Colour: RAL 7030.
- Cable gland plate: none.
- Material: glass fibre reinforced polyester.
- Coating: none.
- Wall-mounted: 4 mounting brackets, supplied not fitted.
- Locking system: screws

Dimensions

coff_114_d_1_gh_cat



Rating (A)	H x W x D (mm)	Cable cross-section max. (mm ²)	M (mm)	N (mm)	Z (mm)	Z1 (mm)	Top/Bottom connection			Bottom/Bottom connection		
							Ah (mm)	B1 (mm)	Weight (kg)	Ab (mm)	B1 (mm)	Weight (kg)
125	360 x 270 x 171	50	271	361	33		120	126	5			
125	360 x 270 x 201	50	271	361	62	28				166	205	6
160	360 x 270 x 171	95	271	361	33		120	126	5			
160	360 x 270 x 201	95	271	361	62	28				166	205	6
250	540 x 360 x 171	150	361	541	35		200	210	8			
250	540 x 360 x 201	150	361	541	55	25				279	360	10
400	720 x 540 x 201	240	541	721	42		258	258	18	316	433	23
500	720 x 540 x 201	240	541	721	51	38	258	258	18	316	433	24

Enclosed load break switches

Load break switches

SIRCO and SIRCO M from 16 to 1250 A

SIRCO steel enclosure with front operation

■ Front operation

coil_295_a_1_cat



General characteristics

- Adapted to mechanical risk and dust hazard.
- Operation handle: S-type black padlockable handle.
- Protection degree: IP55 / IK 10.
- Colour: RAL 7032.
- Cable gland plate: top and bottom.
- Material: XC steel, thickness 1.5 to 2 mm.
- Coating: epoxy polyester powder.
- Wall mounting: 4 holes in the back of the enclosure.
- Door: solid with hinges.
- Locking system: 3 mm double-bar key (key supplied).
- Miscellaneous: 2 earth connection points, disconnectable solid neutral link for 3+N, extension boxes for top and/or bottom connections available, IP20 incoming terminal shrouds.
- Please consult us.

Enclosed fuse switches

Fuse combination switches

enclosed FUSERBLOC from 25 to 800 A



The solution for

- > OEM
- > Industries
- > Data centres
- > Power distribution
- > Solar applications



Strong points

- > Safe operations
- > Robust
- > Compact

Conformity to standards

- > IEC 60947-3
- > IEC 60364
- > EN 60947-3
- > EN 61439
- > EN 60204-1



Available on request

- > Adapted or customised solutions available on request.

Function

FUSERBLOC enclosures assure on-load making or breaking and provide safety isolation. When combined with fuses, they also protect against overcurrents for any low voltage electrical circuit.

Advantages

FUSERBLOC are manually operated multipole fuse combination switch disconnectors. They provide:

- Positive break indication.
- Double breaking per phase (top and bottom of fuse).

Suitable for use in a variety of applications FUSERBLOC can be fitted with different types of fuses (gG, aM, uR) with high breaking capacity, enabling them to be utilised in a variety of applications.

FUSERBLOC in polyester enclosure

Front operation



General characteristics

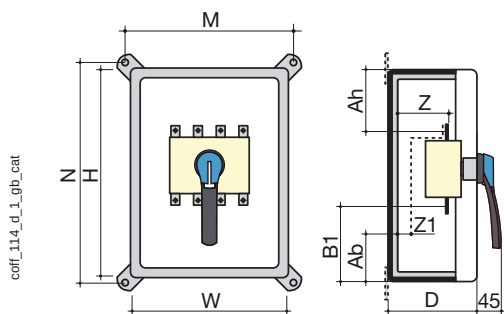
- Adapted to environments subject to chemical, dust, contamination and atmospheric corrosion risks.
- Operation handle: S-type black padlockable handle.
- Protection degree: IP55 / IK 10.
- Colour: RAL 7030.
- Closing plate: N/A.
- Material: glass fibre reinforced polyester.
- Coating: N/A.
- Wall mounting: 4 fixing lugs supplied, not mounted.
- Locking system: screw.

References

Rating (A)	Fuses NFC and DIN ⁽¹⁾	Top/Bottom connection Reference	Bottom/Bottom connection Reference
3 x 50	14 x 51	3117 3005	3117 3005
4 x 50	14 x 51	3117 4005	3117 4005
3 x 100	22 x 58	3117 3010	3127 3010
4 x 100	22 x 58	3117 4010	3127 4010
3 x 160	0	3117 3016	3127 3016
4 x 160	0	3117 4016	3127 4016
3 x 250	1	3117 3025	3127 3025
4 x 250	1	3117 4025	3127 4025
3 x 400	2	3117 3040	3127 3040
4 x 400	2	3117 4040	3127 4040

(1) Fuses supplied separately; please see the fuse section of this catalogue or consult us.

Dimensions



Rating (A)	H x W x D (mm)	Connection cross-section (mm ²)	M (mm)	N (mm)	Z (mm)	Z1 (mm)	Top/Bottom connection			Bottom/Bottom connection		
							Ah (mm)	B1 (mm)	Weight (kg)	Ab (mm)	B1 (mm)	Weight (kg)
3 x 50 / 4 x 50	270 x 270 x 171	25	271	271	24		86	86	⁽¹⁾	90	90	3
3 x 100 / 4 x 100	360 x 270 x 171	95	271	361	20		108	107	4			
3 x 100 / 4 x 100	540 x 270 x 201	95	⁽¹⁾	⁽¹⁾	⁽¹⁾	⁽¹⁾	⁽¹⁾	⁽¹⁾	⁽¹⁾	⁽¹⁾	⁽¹⁾	⁽¹⁾
3 x 160	540 x 270 x 171	95	271	541	20		220	180	6			
3 x 160	540 x 270 x 201	95	271	541	60	25				220	320	8
4 x 160	540 x 360 x 171	95	361	541	20		220	180	7			
4 x 160	540 x 360 x 201	95	361	541	60	25				220	320	10
3 x 250 / 4 x 250 ⁽¹⁾												
3 x 400 / 4 x 400 ⁽¹⁾												

(1) Please consult us.

Enclosed fuse switches

Fuse combination switches

enclosed FUSERBLOC from 25 to 800 A

FUSERBLOC in polyester enclosure

Side operation

coff_320_a_1_cat



General characteristics

- Adapted to environments subject to chemical, dust, contamination and atmospheric corrosion risks.
- Operation handle: S-type black padlockable handle.
- Protection degree: IP55 / IK 10.
- Colour: RAL 7030.
- Closing plate: N/A.
- Material: glass fibre reinforced polyester.
- Coating: N/A.
- Wall mounting: 4 fixing lugs supplied, not mounted.
- Locking system: screw.

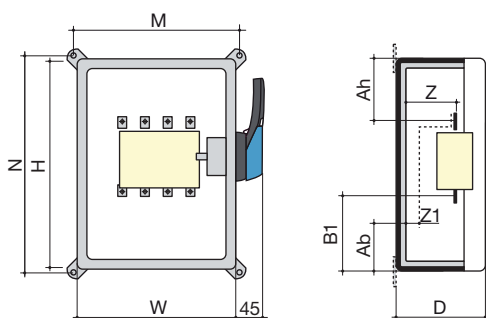
References

Rating (A)	Fuses NFC and DIN ⁽¹⁾	Top/Bottom connection Reference	Bottom/Bottom connection Reference
3 x 50	14 x 51	3167 3005	3167 3005
4 x 50	14 x 51	3167 4005	3167 4005
3 x 100	22 x 58	3167 3010	3167 3010
4 x 100	22 x 58	3167 4010	3167 4010
3 x 160	0	3167 3016	3177 3016
4 x 160	0	3167 4016	3177 4016
3 x 250	1	3167 3025	3177 3025
4 x 250	1	3167 4025	3177 4025
3 x 400	2	3167 3040	3177 3040
4 x 400	2	3167 4040	3177 4040

(1) Fuses supplied separately; please see the fuse section of this catalogue or consult us.

Dimensions

coff_119_f_1_gp_cat



Rating (A)	H x W x D (mm)	Connection cross-section (mm ²)	M (mm)	N (mm)	Z (mm)	Z1 (mm)	Top/Bottom connection			Bottom/Bottom connection		
							Ah (mm)	B1 (mm)	Weight (kg)	Ab (mm)	B1 (mm)	Weight (kg)
3 x 50 / 4 x 50	270 x 270 x 171	25	271	271	24		84	88	4	84	88	4
3 x 100 / 4 x 100	360 x 270 x 171	95	271	361	20		108	108	5	108	108	5
3 x 160	540 x 270 x 171	95	271	541			260	140	6			
4 x 160	540 x 360 x 171	95	361	541	20		260	140	7			
3 x 160 / 4 x 160	540 x 360 x 201	95	361	541	52	24				200	289	8
3 x 250	720 x 360 x 201	240	361	721	20		328	228	15			
4 x 250	720 x 360 x 201	240	361	721	20		338	218	(1)			
3 x 250 / 4 x 250	720 x 360 x 201	240	361	721	51	29				255	453	18
3 x 400 / 4 x 400	720 x 540 x 201	240	541	721	25		323	223	18			
3 x 400	720 x 540 x 201	240	541	721	25	40				450	403	23
4 x 400	754 x 750 x 312	240	801	618	25	40				436	484	(1)

(1) Please consult us.

FUSERBLOC in steel enclosure

■ Front operation

coff_284_a_2_cat



General characteristics

- Adapted to mechanical risk and dust hazard.
- Operation handle: S-type black padlockable handle.
- Protection degree: IP55 / IK 10.
- Colour: polyester powder RAL 7035.
- Closing plate: bottom (range ≤ 63 A), top and bottom (range > 100 A).
- Material: XC steel, thickness 1.5 or 2 mm.
- Coating: polyester powder.
- Wall mounting: 4 holes in the back of the enclosure.
- Solid door with hinges.
- Locking system: 3 mm double-bar key (key supplied).
- Miscellaneous: 2 earth connection points, disconnectable solid neutral link for 3P+N, extension boxes for top and/or bottom connections available, IP20 incoming terminal shrouds.

References

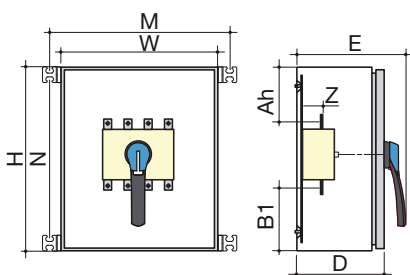
Rating (A)	Fuses NFC and DIN ⁽¹⁾	Top/Bottom connection Reference
3 x CD 25	10 x 38	3033 3002
4 x CD 25	10 x 38	3033 4002
3+N x CD 25	10 x 38	3033 5002
3 x CD 32	14 x 51	3033 3003
4 x CD 32	14 x 51	3033 4003
3+N x CD 32	14 x 51	3033 5003
3 x 63	00C	3033 3006
4 x 63	00C	3033 4006
3+N x 63	00C	3033 5006
3 x 100	22 x 58	3033 3010
4 x 100	22 x 58	3033 4010
3+N x 100	22 x 58	3033 5010
3 x 160	00	3033 3016
4 x 160	00	3033 4016
3+N x 160	00	3033 5016
3 x 250	1	3033 3025
4 x 250	1	3033 4025
3+N x 250	1	3033 5025
3 x 400	2	3033 3040
4 x 400	2	3033 4040
3+N x 400	2	3033 5040
3 x 630	3	3033 3063
4 x 630	3	3033 4063
3+N x 630	3	3033 5063
3 x 800	3	3033 3080
4 x 800	3	3033 4080
3+N x 800	3	3033 5080

(1) Fuses supplied separately; please see the fuse section of this catalogue or consult us.

Accessories

- For auxiliary contacts: (see page 269).
- Terminal shrouds (see page 269).

coff_248_f_1_gh_cat



Dimensions

Rating (A)	H x W x D (mm) ⁽¹⁾	Max. connection cross-section (mm ²)	E (mm)	M (mm)	N (mm)	Z (mm)	Top/Bottom connection		Weight (kg)
CD 25	300 x 300 x 150	16	208	348	259	28.5	Ah (mm)	B1 (mm)	(1)
CD 32	300 x 300 x 150	16	208	348	259	28.5	115	87	(1)
63	300 x 300 x 150	25	208	348	259	23.8	101.5	101.5	(1)
100	400 x 300 x 200	95	259	348	359	20	109.5	149.5	(1)
160	400 x 300 x 200	95	259	348	359	20	109.5	149.5	(1)
250	600 x 600 x 300	240	359	648	559	22	187	247	(1)
400	600 x 600 x 300	240	359	648	559	22	184	244	(1)
630	800 x 600 x 300	2 x 300	374	648	759	59	264	276	(1)
800	800 x 600 x 300	2 x 300	374	648	759	59	264	276	(1)

(1) Weight (kg): Please consult us.



Safety enclosures

Socomec safety enclosures are designed for installation near a motor or a machine in order to isolate it from the power supply.

All the safety enclosures are equipped with load break switches with front or side manual controls which are lockable in the open position, and with visible, reliable indication of the contacts' open position. They make and break under load conditions and provide safety isolation for any low voltage circuit.

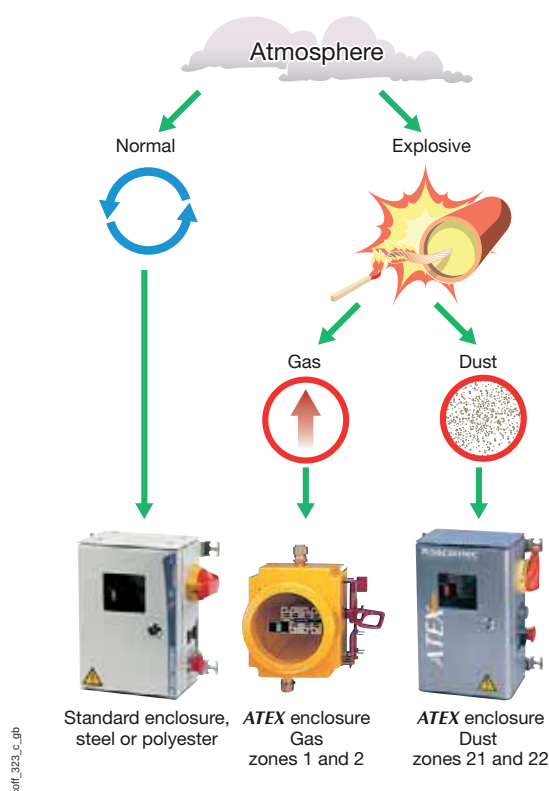
During maintenance or inspection operations, the safety enclosures guarantee the operator's protection against the accidental startup of electrical machines.

For use in explosive atmospheres, **ATEX dust** (standard) and **ATEX gas** (to order) enclosures are available to prevent explosions caused by electrical arcs generated when opening or closing the circuits protected by the device.



Which ambient atmosphere?

The operating environment is an essential parameter when choosing an enclosure. Our range of enclosures offers you solutions for the most varied of atmospheres, including the most severe.

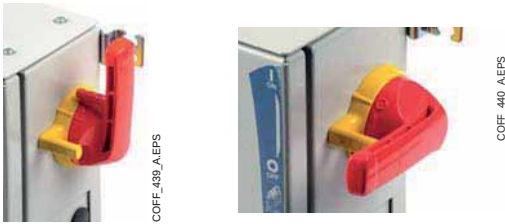


Environment	Steel enclosure	Polyester enclosure	Stainless steel enclosures ⁽¹⁾	ATEX enclosures
Chemical aggression		•	•	
Mechanical risks	•		•	•
Dust risks	•			•
Contamination risks		•	•	
Atmospheric corrosion		•	•	
Risk of explosion				•

(1) Made to order.

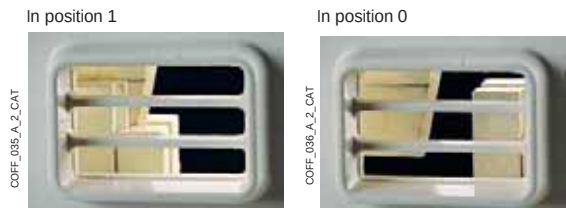
Safety functions

Positive break indication



Clear indication of the open or closed position of the switch via the handle and its easy-to-read marking.

Visible breaking



In accordance with NF C 15 – 100, “an isolating device is considered as having visible breaking if the separation of the contacts is directly visible”. All the devices used in the safety enclosures have visible breaking.

Padlocking



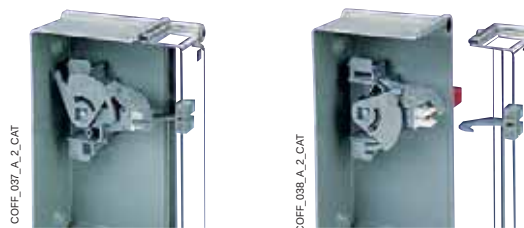
When working on the machine during the lockout phase, qualified personnel may perform triple handle padlocking in the open position. The ergonomic handle can accommodate up to three locks.

Mechanical flag indicator (optional)

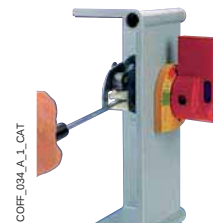


Flush with the viewing window and directly linked to the operating mechanism, this gives clear, at-a-glance indication of contact position, providing easier visualisation of the breaking.

Double locking



In accordance with standard 60204-1, devices located outside a closed electrical service area must be equipped with the means to allow them to be secured in the OFF position (disconnected state). Qualified personnel may use the ergonomic handle to perform triple handle padlocking.



It is possible to close the breaking device when the enclosure door is open by using a tool to inhibit the double lock, thus allowing tests to be carried out by qualified staff.

Overview of our range

For normal atmosphere

Polyester

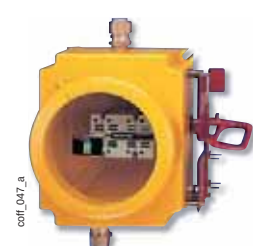


Steel



For explosive atmosphere

Steel





Safety enclosures

Normal atmospheres

polyester enclosures from 50 to 1600 A



Polyester enclosure
with front operation handle



Polyester enclosure
with side operation handle

The solution for

- > Steel works
- > Cement works
- > Automotive
- > Mining industries
- > Food processing
- > Chemical industry



Strong points

- > Safety of operations
- > Inductive load breaking (AC23)
- > Robust design
- > Easy implementation

Conformity to standards

- > IEC 60364
- > IEC 60947-3
- > IEC 60204-1
- > IEC 61439-2



Specific requests

- > SOCOMEC can offer customised solutions to meet your specific requirements. Please contact your Socomec office for further information.

Function

Safety enclosures equipped with SOCOMEC switches provide emergency breaking, breaking for mechanical maintenance and safety isolation in the vicinity of any low voltage final circuit.

Advantages

Safety of operations

- Visible contacts and positive break indication with the possibility to add a mechanical indicator.
- Double locked door when the switch is in the OFF position.
- Triple locking of the handle in the OFF position.

Inductive load breaking (AC23)

Safety enclosures are designed for use with inductive loads and are able to make and break on load (AC23).

Robust design

Products have been designed for severe industrial conditions with chemical, pollution or atmospheric corrosion risks (Polyester enclosure: good resistance to chemicals, self-extinguishable at 960°C, etc.)

General characteristics

Breaking device:

All safety enclosures are equipped with SIDER load break switches and visible, reliable indication of the contacts open position. They make and break under load conditions and provide safety isolation for any low voltage circuit.

Enclosure:

Enclosures are made of glass fibre reinforced polyester and are of the following types:

- COMBIESTER from 50 to 500 A (RAL7035)
- MINIPOL from 630 to 800 A (RAL7035)

Covers on COMBIESTER enclosures are hinged and equipped with a screw locking system.

Doors on MINIPOL enclosures can be locked using a 3 mm double bar key.

These enclosures have good resistance to chemical agents and are self-extinguishing at 960 °C.

These enclosures provide a protection degree of IP55. Wall mounting is achieved using 4 fixing lugs, supplied loose.

Visible breaking:

The contacts are visible through:

- The transparent cover of COMBIESTER enclosures.
- A door-mounted triplex glass window on MINIPOL enclosures. This enables the operator to confirm the position of the contacts either during a preventative check or before an operation. This enables the operator to confirm the position of the contacts either during a preventative check or before an operation.

Double locking:

This function is achieved through a simple and robust mechanism using an extension shaft. Activation with the door open remains possible by authorised personnel.

Operation handle:

Polyester safety enclosures are available with front or side operation handles. The handle is red and made of an insulating material (emergency breaking). The handle can be locked in the OFF position using three padlocks.

Connection:

Polyester safety enclosures are available in two versions:

- TB version (top entry and bottom cable exit)
- BB version (bottom cable entry/exit). Connection is achieved by running cables to the top for 50 A and 80 A ratings. For higher ratings, a copper bottom-bottom busbar enables easy connection of incoming cables.

Miscellaneous:

- An earthing bar for connection is available in the enclosure.
- Live part protection screen.

Safety enclosures

Normal atmospheres

polyester enclosures from 50 to 1600 A

References

Front operation



Rating (A)	No. of poles	Front operation ⁽¹⁾⁽²⁾	
		Top/Bottom connection	Bottom/Bottom connection
Reference	Reference		
125	3 P	3215 3012	3225 3012
125	4 P	3215 4012	3225 4012
125	6 P	3215 6012	3225 6012
200	3 P	3215 3020	3225 3020
200	4 P	3215 4020	3225 4020
200	6 P	3215 6020	3225 6020
400	3 P	3215 3040	3225 3040
400	4 P	3215 4040	3225 4040
400	6 P	3215 6040	3225 6040
500	3 P	3215 3050	3225 3050
500	4 P	3215 4050	3225 4050
630	3 P	3215 3063	3225 3063
630	4 P	3215 4063	3225 4063
800	3 P	3215 3080	3225 3080
800	4 P	3215 4080	3225 4080
1250	3 P	3215 3120	3225 3120
1250	4 P	3215 4120	3225 4120
1600	3 P	3215 3160	3225 3160
1600	4 P	3215 4160	3225 4160

Side operation



Rating (A)	No. of poles	Side operation ⁽¹⁾⁽²⁾	
		Top/Bottom connection	Bottom/Bottom connection
Reference	Reference		
50	3 P	3265 3005	3265 3005
50	4 P	3265 4005	3265 4005
50	6 P	3265 6005	3265 6005
80	3 P	3265 3008	3265 3008
80	4 P	3265 4008	3265 4008
80	6 P	3265 6008	3265 6008
125	3 P	3265 3012	3275 3012
125	4 P	3265 4012	3275 4012
125	6 P	3265 6012	3275 6012
200	3 P	3265 3020	3275 3020
200	4 P	3265 4020	3275 4020
200	6 P	3265 6020	3275 6020
400	3 P	3265 3040	3275 3040
400	4 P	3265 4040	3275 4040
500	3 P	3265 3050	3275 3050
500	4 P	3265 4050	3275 4050
630	3 P	3265 3063	3275 3063
630	4 P	3265 4063	3275 4063
800	3 P	3265 3080	3275 3080
800	4 P	3265 4080	3275 4080
1250	3 P	3265 3120	3275 3120
1250	4 P	3265 4120	3275 4120
1600	3 P	3265 3160	3275 3160
1600	4 P	3265 4160	3275 4160

(1) For the mechanical indicator option, replace the second digit of the enclosure reference number with the letter V.
For example: 3V15 3012.

(2) Stainless steel enclosures, specific locking systems, terminal pre-wired/non pre-wired control auxiliary contacts, ventilation and humidity evacuation systems or cable glands are available upon request. Please consult us.

Accessories

Auxiliary contacts

Use

For pre-breaking and signalling of positions 0 and I of the load break switch.

Mounting

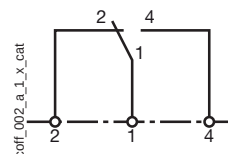
- On the double locking system.
- Possibility of factory mounting on enclosure (please provide enclosure reference when ordering).

Contact(s)	AC	Factory fitted AC	Factory fitted low level auxiliary
1 st NO/NC changeover AC front operation ≥ 125 A	2799 0001	2799 1001 ⁽¹⁾	
2 nd NO/NC changeover AC front operation ≥ 125 A	2799 0002	2799 1002 ⁽¹⁾	
2 NO/NC changeover AC side operation	2999 0012	2999 1012	
2 NO/NC changeover AC wired side operation	3290 6002	3290 6102 ⁽¹⁾	3290 6012 ⁽¹⁾

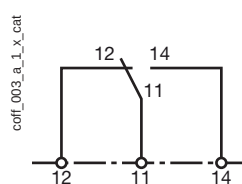
(1) Please provide the reference number of the enclosure to be equipped.



1st NO / NC AC for pre-break



2nd NO / NC AC for pre-break



Key handle interlocking system

Use

Kit allowing a RONIS EL11AP or Serv Trayvou XOP10 lock to be fitted for a SIDER 50 to 1600 A, with side operation within a steel or polyester enclosure.

Type	Locking in position 0	
	Reference	Factory option Reference
Locking using RONIS EL 11AP lock (not included)	3290 7005	3290 7006 ⁽¹⁾
Locking using XOP10 lock (not included)	3290 7015	
Lock RONISEL11AP	4409 8511	
Serv Trayvou XOP10 lock	4409 8601	

(1) Please provide the reference number of the enclosure to be equipped.



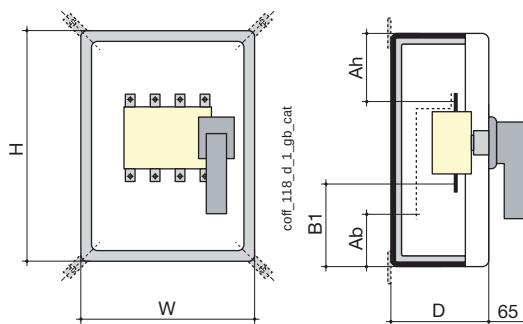
Rated operational currents I_e (A)

Rated voltage	Utilisation category	50 A	80 A	125 A	200 A	400 A	500 A	630 A	800 A	1250 A	1600 A
400 VAC	AC-21	50	80	125	200	400	500	630	800	1250	1600
400 VAC	AC-22	50	63	125	200	400	400	630	800	1250	1250
400 VAC	AC-23	50	63	125	200	400	400	630	630	1000	1000
690 VAC	AC-21	40	63	100	160	400	400	630	800	1000	1250
690 VAC	AC-22	25	40	63	100	200	200	315	315	400	400
690 VAC	AC-23	-	10	16	-	80	80	100	125	200	200

Motor power output (kW)	25	30	63	100	220	220	355	355	560	560
400 VAC without pre-break AC	-	7.5	11	-	75	75	90	110	185	185
690 VAC without pre-break AC	25	30	63	100	220	220	355	450	710	710
690 VAC without pre-break AC	22	33	55	90	185	185	295	295	400	400

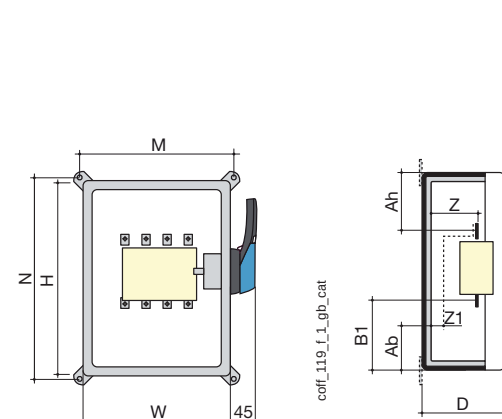
Dimensions

Front operation



Rating (A)	No. of poles	H x W x D (mm)	Connection cross-section (mm²)	Top/Bottom connection			Bottom/Bottom connection		
				Ah (mm)	B1 (mm)	Weight (kg)	Ab (mm)	B1 (mm)	Weight (kg)
125	3/4 P	360 x 270 x 171	50	135	110	6	-	-	-
125	3/4 P	360 x 270 x 201	50	-	-	-	167	205	6
125	6 P	360 x 540 x 171	50	135	110	8	167	205	9
200	3 P	360 x 270 x 201	95	-	-	-	145	190	8
200	3 P	540 x 270 x 201	95	260	150	7	-	-	-
200	4 P	360 x 360 x 201	95	-	-	-	145	190	8
200	4 P	540 x 360 x 201	95	257	153	9	-	-	-
200	6 P	360 x 540 x 201	95	257	153	13	145	190	15
400	3/4 P	720 x 540 x 214	185	258	257	19	330	395	24
500	3/4 P	720 x 540 x 214	185	258	257	20	330	390	26
630	3/4 P	800 x 600 x 300	2 x 300	270	270	26	330	400	36
800	3/4 P	800 x 600 x 300	2 x 300	266	267	27	330	394	40
1250	3/4 P	Please consult us	4 x 185	365	365	42	515	594	60
1600	3/4 P	Please consult us	4 x 300	360	360	47	500	580	65

Side operation



Rating (A)	No. of poles	H x W x D (mm)	Connection cross-section (mm²)	Top/Bottom connection			Bottom/Bottom connection		
				Ah (mm)	B1 (mm)	Weight (kg)	Ab (mm)	B1 (mm)	Weight (kg)
50	3/4 P	270 x 180 x 171	16	84	116	3	-	116	3
50	6 P	270 x 360 x 201	16	84	116	5	-	116	5
80	3/4 P	270 x 180 x 171	35	73	106	3	-	106	3
80	6 P	270 x 360 x 201	35	73	106	5	-	106	5
125	3/4 P	360 x 270 x 171	50	135	110	6	167	205	6
125	6 P	360 x 540 x 171	50	135	110	9	167	205	9
200	3 P	360 x 270 x 171	95	-	-	-	145	190	7
200	3 P	540 x 270 x 171	95	260	150	8	-	-	-
200	4 P	360 x 360 x 171	95	-	-	-	145	190	8
200	4 P	540 x 360 x 171	95	257	153	9	-	-	-
200	6 P	540 x 540 x 171	95	260	150	12	145	190	11
400	3/4 P	720 x 540 x 201	185	300	215	19	370	437	24
500	3/4 P	720 x 540 x 201	185	300	215	21	230	432	26
630	3/4 P	800 x 600 x 300	2 x 300	270	270	26	390	438	36
800	3/4 P	800 x 600 x 300	2 x 300	266	267	27	370	434	40
1250	3/4 P	Please consult us	4 x 185	365	365	42	570	622	60
1600	3/4 P	Please consult us	4 x 300	360	360	47	550	608	65



Safety enclosures

Normal atmospheres

steel enclosure from 50 to 1600 A



The solution for

- > Iron and steel industry
- > Cement plants
- > Paper mills
- > Sawmills
- > Hydraulic power packs
- > Automotive
- > Mining



Strong points

- > Operator safety
- > Quick and easy implementation
- > Operating continuity
- > Inductive load breaking (AC23)

Compliance with standards

- > IEC 60364
- > IEC 60947-3
- > IEC 60204-1
- > IEC 61439-2



Specific requirements

- > SOCOMEC can offer you customised solutions to meet your specific requirements. Contact your Socomec office for further information.

Function

Safety enclosures equipped with SOCOMEC switches provide emergency breaking, breaking for mechanical maintenance and safety isolation in the vicinity of any low voltage final circuit.

Advantages

Operator safety

- Protects operators against accidental start-up of machines.
- Ease of operation without risk of error for unqualified operators.
- Maximum security for all types of simple mechanical and electrical maintenance operations.

Quick and easy implementation

The space available within the enclosure and the dimension of the closing plates facilitate connection.

Durability

The product is designed for harsh industrial environments with mechanical risks or non-explosive dust risks.

Operating continuity

- Local disconnection: only the targeted machine is switched off, the rest of the installation can continue operating.
- Reduced costs related to production downtime.

Inductive load breaking (AC23)

Safety enclosures are designed for use with inductive loads and are able to make and break on load (AC23).

General characteristics

Enclosure

The robustness of the safety enclosure is ensured by its 2 mm thick sheet steel construction. Corrosion protection is provided by a 70 µm thick polyester powder coating (RAL 7035 ≤ 160 A, RAL 7032 and 9001 for other sizes). The door is hinge-mounted (120° opening) and is secured with a key lock (8 mm square key). The enclosure has an IP65 degree of protection for sizes ≤ 160 A and IP55 for other sizes.

Switching device

Safety enclosures are equipped with visible break SOCOMEC load break switches. They make and break under load and provide safety isolation for any low voltage electric circuit. Separation of the contacts is visible through the triplex window, located on the enclosure door, providing guaranteed isolation to the operator. A mechanical indicator, linked directly to the operation of the contacts, is also provided to give clear position indication.



Operating handle

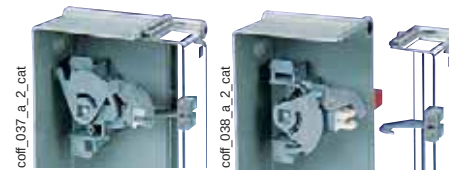
The safety enclosure is equipped with an unpainted metal operating handle which is used for both normal and emergency cut-off operations. The handle can be locked with up to 3 padlocks with a diameter of between 4 and 8 mm.

As an alternative to the standard metallic handle, a red plastic handle with a metal padlocking lever (≤ 160 A), or a red metallic handle, can be factory fitted on request.

Double locking

Double locking prevents the opening of the enclosure door with the switch in its closed position and the closing of the switch when the door is open; with the use of a tool authorised personnel can bypass this system when the door is open for maintenance purposes.

The locking system comprises a single guard moulded from zamak (aluminium alloy) with a simple and robust mechanism driven directly by the handle's operating shaft.



Auxiliary control

A removable plate, located below the enclosure's operating handle, is supplied for the installation of auxiliary controls.

Several wiring combinations are available as pre-installed or customer-fit options for enclosures ≤ 160A; for ratings ≥ 200A please contact us.

Connections

Two removable (top and bottom) gland plates facilitate cable entry and connections.

Cables connect directly onto switch power terminals for enclosures ≤ 160A; for ≥ 200A incoming cables connect to descending copper bars.

Miscellaneous

A reversible grounding point enables the termination of earth connections inside and/or outside of the enclosure.

All active parts are covered to avoid direct contact.

Safety enclosures

Normal atmospheres

steel enclosure from 50 to 1600 A

References

Safety enclosure with bottom/bottom connection⁽¹⁾, side operation⁽²⁾



Rating (A)	Motor power output (kW) ⁽³⁾		No. of poles	Bottom/Bottom
	400 V	690 V		Reference
50 A	25	-	3 P	3273 3005
			4 P	3273 4005
			6 P	3273 6005
80 A	30	8	3 P	3273 3008
			4 P	3273 4008
			6 P	3273 6008
125 A	55	75	3 P	3273 3012
			4 P	3273 4012
			6 P	3V71 6012
160 A	75	75	3 P	3273 3016
			4 P	3273 4016
200 A	100	75	3 P	Consult us
			4 P	
			6 P	
400 A	220	75	3 P	
			4 P	
500 A	220	75	3 P	
			4 P	
630 A	355	90	3 P	
			4 P	
800 A	355	110	3 P	
			4 P	
1250 A	560	185	3 P	
			4 P	
1600 A	560	185	3 P	
			4 P	

(1) For top/bottom connection please contact us.

(2) For front operation please contact us.

(3) Without pre-break option.

Accessories

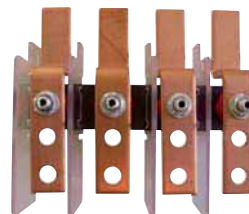
Terminal connection kit for 125 and 160 A enclosures

Use

Power terminal connection kit for 125 and 160 A safety enclosures. Allows you to connect up to 2 x 35 mm² cables or 1 x 70 mm² cable per pole. Supplied with terminal separation screens and cables for connection to the switch (for onsite installation).

Designation	No. poles	Customer fit	Factory fitted ⁽¹⁾
		Reference	Reference
Enclosure terminal block	3 P	3290 1015	3290 1016
Enclosure terminal block	4 P	Contact us	Contact us

(1) Specify the reference of the enclosure to be fitted.



Accessories (continued)

Auxiliary contacts

Use

For pre-breaking and signalling of positions O and I of the load break switch.

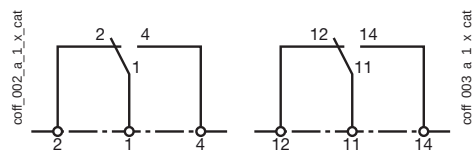
Mounting

- On the double-locking system.
- Possibility of factory mounting within the enclosure (please provide enclosure reference when ordering).



1st NO/NC AC for pre-break

2nd NO/NC AC for pre-break



Description	Rating (A)	Customer fit ⁽¹⁾	Factory fitted ⁽¹⁾
		Reference	Reference
2 AC for pre-break and signalling O and I	50 ... 1600	2999 0012	2999 1012
2 AC low level for pre-break and signalling O and I	50 ... 1600	2999 0112	-
2 AC for pre-break and signalling O and I, wired	50 ... 160	3290 6003	3290 6103
2 AC low level for pre-break and signalling O and I, wired	50 ... 160	3290 6113	3290 6013
2 AC for pre-break and signalling O and I, wired	200 ... 1600	3290 6002	3290 6102

(1) Mounting not compatible with a command and control interface.

Auxiliary control interface from 50 to 160 A

Use

For machine control.

Mounting

- Pushbuttons are wired to terminal block, with 2 onsite connection points.
- 2 NO/NC auxiliary contacts for pre-break are provided with one utilised in all control options; the 2nd contact is not pre-wired and is available for use.
- The removable interface plate is mounted on the right side of the enclosure below the operating handle.
- Factory installation or customer fit options are available.



Control diagrams ⁽¹⁾	Auxiliary control ⁽²⁾	Button allocation	Customer fit ⁽³⁾	Factory fitted ⁽³⁾⁽⁴⁾
Start/Stop	2 pushbuttons, 22 mm Ø (1 green/1 red): Identification labels "Start" and "Stop"	 coff_470_a_1_cat	3290 2110	3290 2111
Start/Stop and Local/Remote	2 pushbuttons, 22 mm Ø (1 green/1 red): Identification labels "Start" and "Stop" 1 selector with 2 positions: Identification label "Local-Remote"	 coff_473_a_1_cat	3290 2112	3290 2113
Forward/Reverse	3 pushbuttons, 22 mm Ø (2 green/1 red): Identification labels "Start", "Stop" and "Reverse"	 coff_472_a_1_cat	3290 2114	3290 2115
Forward/Reverse and Local/Remote	3 pushbuttons, 22 mm Ø (2 green/1 red): Identification labels "Start", "Stop" and "Reverse" 1 selector with 2 positions: Identification label "Local-Remote"	 coff_471_a_1_cat	3290 2116 ⁽⁵⁾	3290 2117 ⁽⁵⁾

(1) See "Command diagrams" page 745.

(2) Labels are identified in English and French languages.

(3) Mounting not compatible with an auxiliary.

(4) Specify the reference of the enclosure to be fitted.

(5) The mounting of a latch locking mechanism is not compatible with this control/command interface with 50 and 80 A ratings.

Safety enclosures

Normal atmospheres

steel enclosure from 50 to 1600 A

Accessories (continued)

Traffolyte labels

Use

Personalise your enclosure. Information to be provided at time of order when factory fit option is requested.

Examples of label types	Customer fit	Factory fitted ⁽¹⁾
Set of 10 embossed labels, size 80 x 30 mm with black lettering on a white background. Text according to your requirements. Mounted with plastic rivets.	Contact us	Contact us
Pushbutton label, white lettering on a red background	Contact us	Contact us
Pushbutton label, black lettering on a white background	Contact us	Contact us
Pushbutton label, white lettering on a black background	Contact us	Contact us

(1) Specify the reference of the enclosure to be fitted.



coff_215_a

Key handle interlocking system

Use

When enabled, the lock prevents handle operation.

Type of lock	Reference
Ronis EL11AP	4409 8511
Serv Trayvou NXOP10	4409 8601

Assembly kit for lock EL11AP (lock not included)	Customer fit ⁽¹⁾	Factory fitted ⁽¹⁾⁽²⁾
Rating (A)	Reference	Reference
50 ... 160	3290 7007	3290 7008
> 160	3290 7005	3290 7006

Assembly kit for lock NXOP10 (lock not included)	Customer fit ⁽¹⁾	Factory fitted ⁽¹⁾⁽²⁾
Rating (A)	Reference	Reference
50 ... 160	3290 7009	3290 7008
> 160	3290 7015	3290 7006

(1) Mounting not compatible with a control/command interface. Please contact us for more details.

(2) Specify the reference of the enclosure to be fitted.



coff_205_c_1_cat

Post mounting

Use

For mounting the safety enclosure to a round or square post.

Rating (A)	Reference
50 ... 80	3290 7252
125 ... 160	3290 7254
> 160	Contact us



coff_463_a_1_cat

Enclosure canopy

Use

To protect your enclosure against extreme weather.

Rating (A)	Reference
50 ... 80	3290 7212
125 ... 160	3290 7214
> 160 A	Contact us



coff_464_a_1_cat

Operating handle

Use

For switch operation. Factory assembly only.

Rating (A)	Type of handle	Reference ⁽¹⁾
50 ... 160	S type handle, red with metal padlocking lever	3261 0090
50 ... 160	Red steel handle	3261 0092
200 ... 500	Red steel handle	3211 0500
630 ... 1600	Red steel handle	3211 1250

(1) Specify the reference of the enclosure to be fitted.



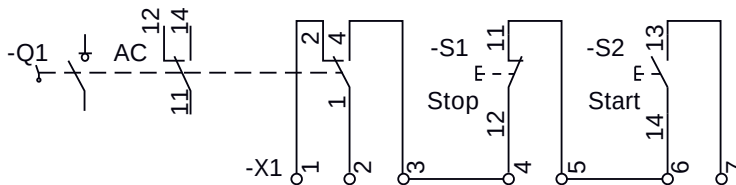
coff_181_a_1_cat



accos_436_a_1_cat

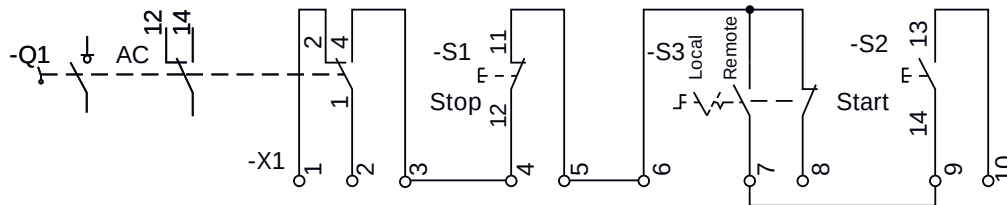
Control diagrams

Start/Stop



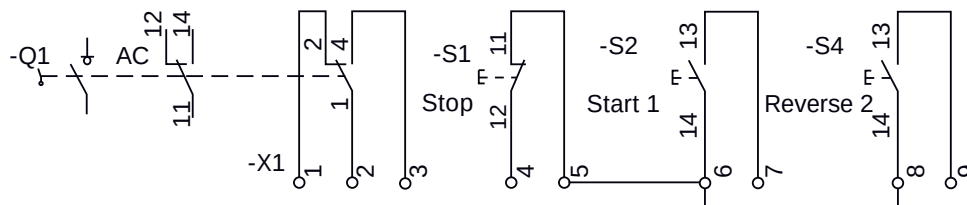
coff_465_b_1_gb_cat.ai

Start/Stop and Local/Remote



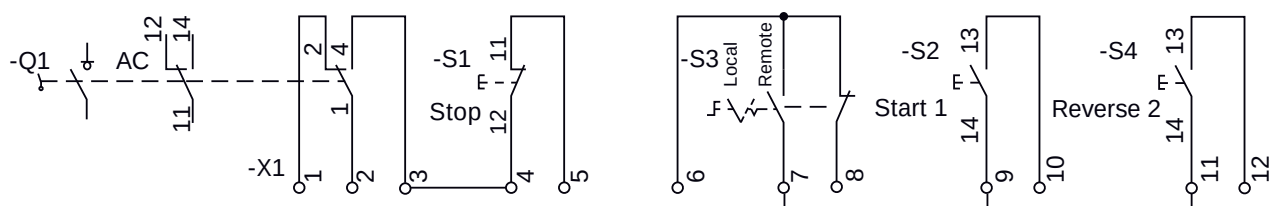
coff_466_b_1_gb_cat.ai

Forward/Reverse



coff_467_b_1_gb_cat.ai

Forward/Reverse and Local/Remote



coff_468_b_1_gb_cat.ai

Safety enclosures

Normal atmospheres

steel enclosure from 50 to 1600 A

Characteristics

Characteristics according to IEC 60947-3

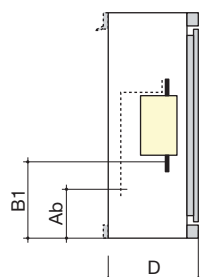
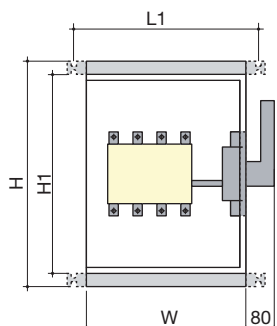
Rating (A)		50 A	80 A	125 A	160 A	200 A	400 A	500 A	630 A	800 A	1250 A	1600 A
Rated operating current I_e (A)												
Rated voltage	Utilisation category	(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)	(A)
400 VAC	AC-21A	50	80	125	160	200	400	500	630	800	1250	1600
400 VAC	AC-22A	50	63	125	160	200	400	400	630	800	1250	1250
400 VAC	AC-23A	32	40	125	125	200	400	400	630	630	1000	1000
690 VAC	AC-21A	40	63	125	160	160	400	400	630	800	1000	1250
690 VAC	AC-22A	25	63	80	100	100	200	200	315	315	400	400
690 VAC	AC-23A	-	10	80	80	80	80	80	100	125	200	200
Motor power output (kW)												
At 400 VAC without pre-break AC		22	30	55	75	90	220	220	355	355	560	650
At 690 VAC without pre-break AC		-	8	75	75	75	75	75	90	110	160	180
At 400 VAC with pre-break AC		22	37	55	75	90	220	250	355	450	650	850
At 690 VAC with pre-break AC		37	55	110	132	132	390	390	580	780	1100	1300

Characteristics according to IEC 61439-1

Rating (A)	50 A	80 A	125 A	160 A	200 A	400 A	500 A	630 A	800 A	1250 A	1600 A
Operating current max, I_e (A) 400V	50	80	125	160	200	400	500	630	800	1250	1600
Operating current max, I_e (A) 690V	50	80	125	160	200	400	500	630	800	1250	1600
Mechanical specifications											
Connection											
Minimum copper cable cross-section (mm ²)	6	16	10	10	70	185	240	2 x 150	2 x 185	-	-
Maximum copper cable cross-section (mm ²)	16	35	70	70	95	240	240	2 x 300	3 x 300	4 x 185	6 x 240
Min./max. tightening torque (Nm)	2	2	4/4.4	4/4.4	8.3/13	20/26	20/26	20/26	20/26	20/26	40/45

Dimensions

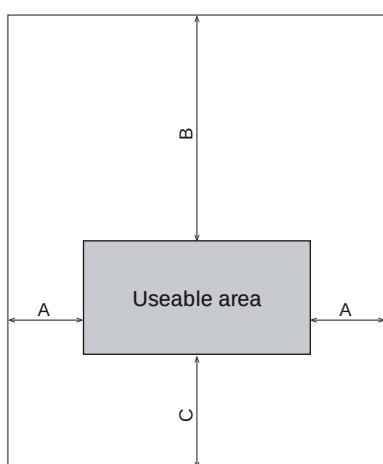
50 to 1600 A



coff_117_e_1_glb_cat

Rating (A)	No. poles	H x W x D (mm)	Mounting		Connection		Weight (kg)
			H1 (mm)	L1 (mm)	Ab (mm)	B1 (mm)	
50	3 P	310 x 215 x 150	258	263	-	168	9
	4 P	310 x 215 x 150	258	263	-	168	9.5
	6 P	300 x 400 x 200	252	448	-	160	10
80	3 P	310 x 215 x 150	258	263	-	168	9
	4 P	310 x 215 x 150	258	263	-	168	9.5
	6 P	300 x 400 x 200	252	448	-	140	10
125	3 P	400 x 275 x 165	348	323	-	200	17
	4 P	400 x 300 x 165	348	348	-	200	18
	6 P	400 x 400 x 200	460	448	240	275	21
160	3 P	400 x 275 x 165	348	323	-	200	17
	4 P	400 x 300 x 165	348	348	-	200	18
200	3 P	400 x 300 x 200	352	348	180	220	21
	4 P	500 x 400 x 200	452	448	250	295	22
	6 P	600 x 500 x 200	552	548	300	345	27
400	3 P	700 x 400 x 250	652	448	345	405	35
	4 P	700 x 400 x 250	652	448	345	405	35
500	3 P	700 x 400 x 250	652	448	340	400	39
	4 P	700 x 400 x 250	652	448	340	400	39
630	3 P	900 x 500 x 300	852	548	455	540	55
	4 P	900 x 500 x 300	852	548	455	540	55
800	3 P	900 x 500 x 300	852	548	445	530	85
	4 P	900 x 500 x 300	852	548	445	530	85
1250	3 P	1200 x 600 x 400	1152	640	670	770	90
	4 P	1200 x 700 x 400	1152	740	670	770	100
1600	3 P	1200 x 600 x 400	1152	640	650	790	100
	4 P	1200 x 700 x 400	1152	740	650	790	110

Closing plate



coff_462_a_1_glb_cat

The useable area can be drilled for gland installation.

Rating (A)	A (mm)	B (mm)	C (mm)
50 ... 80	20	60	30
125 ... 160	20	60	30



Safety enclosures

Explosive atmosphere (ATEX)

steel enclosures from 50 to 630 A



Steel enclosures from 50 to 630 A

Function

SOCOMECA ATEX enclosures incorporate three or four pole manually operated SIDER (ND) load break switches which make and break on load, providing emergency breaking and maintenance isolation for any low voltage electrical circuit which is in an area where there is a risk of explosion due to dust.

Advantages

Safety of operations

- Visible contacts and positive break indication through the operating handle and a factory fitted mechanical flag indicator, provide guaranteed position indication of the contacts.
- Double locked door when switch is in the OFF position.
- Triple locking of the handle in the open position.

Inductive load breaking (AC23)

ATEX enclosures are designed for use with inductive loads and are able to make and break on load (AC23).

Robust design

Product has been specifically designed for industrial environments with the risk of explosion due to dust (galvanised steel, thickness 2 mm, triplex glass, S type handle with metal padlocking lever...)

Protection degree IP65

Protection degree of ATEX enclosures is IP65.

The solution for

- > Steel works
- > Cement works
- > Mining industries



Strong points

- > Safety of operations
- > Inductive load breaking (AC23)
- > Robust design
- > Protection degree IP65

Conformity to standards

- > Directive 94/9/CE
- > IEC 60204-1
- > IEC 61439-2
- > IEC 60947-3
- > IEC 60364
- > NF C 15-100



Other regulations

- > Decree 29.07.92: Machine safety
- > Decree n° 88-1056 from 14.11.88: protection of workers
- > Decree n°96-1010 from 19.11.96
- > Decree 11.01.93: machine compliance



Specific requests

- > SOCOMEC can offer customised solutions to meet your specific requirements. Please contact your Socomec office for further information.

General characteristics

Breaking device:

- All safety enclosures are equipped with load break switches that provide visible, reliable indication of the contacts open position.
- SIDER for 50 A, 80 A and 630 A ratings
- SIDER ND 80 A (6 P) to 400 A ratings
- They make and break under load conditions and provide safety isolation for any low voltage circuit. They are factory fitted with a mechanical flag indicator (SIDER) which provides guaranteed position indication of the contacts.

Enclosure:

- Enclosures are made of a 2 mm thick galvanised steel. They are welded and deburred.
- The anti-corrosion protection is achieved using an epoxy polyester powder which polymerises in the oven at 180°. Paint coating is 60 µm minimum and colour is metallic gray.
- The chrome-plated zamak door is assembled on an invisible hinge and is locked using an 8 mm square key.
- Wall mounting is achieved using 4 fixing lugs (factory mounted).

Visible breaking:

- The contacts are visible through a triplex window, located on the enclosure door. This enables the operator to confirm the position of the contacts either during a preventative check or before an operation.

Double locking:

- This function is achieved through a simple and robust mechanism using an extension shaft. Activation with the door open remains possible by authorised personnel.

Operation handle:

- ATEX enclosures are provided with a red S type operation handle. It is made of an insulating material and includes a metal padlocking lever. The handle can be locked in the OFF position using three padlocks.

Connection:

- Steel safety enclosures are available with bottom cable entry and exit.
- Enclosures are fitted with a top roof and bottom closing plate.
- Connection is achieved by running cables to the top terminal for 50 A and 80 A ratings. For higher ratings, a copper bottom-bottom busbar enables easy connection of incoming cables.

Miscellaneous:

- Two earthing bars for connection are available in the enclosure.
- Live part protection screen.

Safety enclosures

Explosive atmosphere (ATEX)

steel enclosures from 50 to 630 A

References



conf_280_b_1_cat

Rating (A)	No. of poles	Bottom/Bottom connection Reference
50	3 P	3V41 3005
50	4 P	3V41 4005
80	3 P	3V41 3008
80	4 P	3V41 4008
80	6 P	3V41 6008
125	3 P	3V51 3012
125	4 P	3V51 4012
160	6 P	3V51 6020
200	3 P	3V51 3020
200	4 P	3V51 4020
400	3 P	3V51 3040
400	4 P	3V51 4040
630	3 P	3V51 3063
630	4 P	3V51 4063

Accessories

ATEX cable gland

Black polyamide

Diameter (mm)	Min. cable diameter (mm)	Max. cable diameter (mm)	Cable gland Reference	Locknut Reference
12	4	7	3240 1012	3240 3012
16	5.5	10	3240 1017	3240 3016
20	5.5	13	3240 1020	3240 3020
25	8	17.5	3240 1025	3240 3025
32	12	21	3240 1032	3240 3032
40	17	28	3240 1040	3240 3040
50	22	35	3240 1050	3240 3050



conf_283_a_1_cat

Brass

Diameter (mm)	Min. cable diameter (mm)	Max. cable diameter (mm)	Cable gland Reference	Locknut Reference
12	3	6.5	3240 2012	3240 4012
16	4.5	10	3240 2016	3240 4016
20	6	13	3240 2020	3240 4020
25	10	18	3240 2025	3240 4025
32	16	24.5	3240 2032	3240 4032
40	22	32	3240 2040	3240 4040

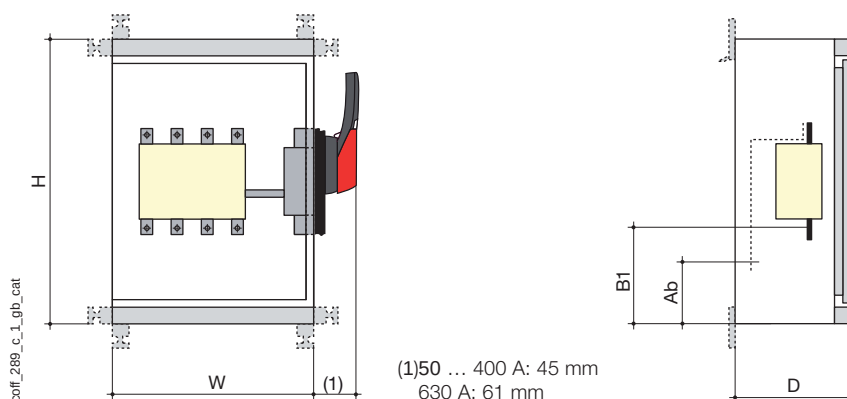


conf_329_a_1_cat

Characteristics

Rating (A)		50 A	80 A	80 A	125 A	160 A	200 A	400 A	630 A
Rated operational currents I_e (A)									
Rated voltage	Utilisation category	3/4 P	3/4 P	6 P	3/4 P	6 P	3/4 P	3/4 P	3/4 P
415 VAC	AC-21 A/B	50/50	63/63	-/80	125/125	-/160	200/200	/315	-/500
415 VAC	AC-22 A/B	50/50	63/63	-/80	125/125	-/160	200/200	/315	-/500
415 VAC	AC-23 A/B	25/25	40/40	-/80	125/125	-/160	200/200	/315	-/-
Motor power output (kW)									
400/500 VAC without pre-break AC		11/-	18.5/15	40/-	60/-	80/-	100/-	160/-	270/-
400/500 VAC with pre-break AC		25/-	30/25	40/-	60/-	80/-	100/-	160/-	-/-

Dimensions



Rating (A)	No. of poles	H x W x D (mm)	Cross-section (mm ²)	Bottom/Bottom connection		Weight (kg)
				Ab (mm)	B1 (mm)	
50	3/4 P	350 x 225 x 150	16	288	198	8.2
80	3/4 P	350 x 225 x 150	35	288	198	8.4
80	6 P	500 x 425 x 200	35	288	198	25
125	3/4 P	500 x 425 x 200	120	225	-	15
160	6 P	500 x 425 x 200	120	242	275	25
200	3/4 P	500 x 425 x 200	120	242	275	21.5
400	3/4 P	700 x 500 x 250	2 x 150	340	385	34.5
630	3/4 P	700 x 500 x 300	2 x 300	262	313	47

Enclosed transfer switches

The switching market is a highly demanding market in terms of safety and quality.

Changeover switches are essential devices used to guarantee a continuous power supply for critical installations (high-rise buildings, healthcare buildings, data centres, banks, etc.).

SOCOMEK's expertise in switching technology enables it to optimise your electrical installations, thereby guaranteeing continuous electrical power.

To ensure optimal functional safety, all SOCOMEK enclosed changeover switches are compliant with standards IEC 60947-3/ IEC 60947-6-1 and standard IEC 61439 governing switchgear.

From the small 25 A manual changeover unit to the 3200 A ATyS bypass unit, SOCOMEK offers a complete range covering all your needs.

Glossary for IEC 60947-6-1

Terms:

- MTSE (Manual Transfer Switching Equipment).
- RTSE (Remote Transfer Switching Equipment).
- ATSE (Automatic Transfer Switching Equipment).

Changeover switches in the SOCOMEK range are type PC. The range is designed to establish and support short circuits.

Typical applications



SITE 403 A



SITE 409 A



SITE 403 A

Source transfer

Solution enabling manual or automatic switching between two sources, either transformer or generator (fig. 1).

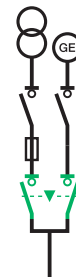


Fig. 1

Earthing

Earthing of equipment such as motors or electrical lines whilst isolating them from their power supply in a fail-safe way (fig. 2).

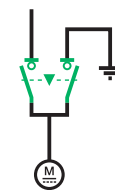


Fig.2

Load switching

Switching of the power supply from one load to another in order to guarantee redundancy and balancing of the operating time for the two loads (fig. 3).



Fig. 3

Inversion of phases on motors

inversion of the succession of phases supplying a motor in order to modify the direction of rotation (fig. 4).



Fig.4

Overview of our range

Manual operation



Solution enabling switching, source inversion and breaking in complete safety on low voltage power circuits.

p. 754

Motorised and automatic switching



Motorised solution:
Source changeover switch controlled remotely by an external controller using pulse logic or maintained contact (contactor).

Automatic solution:
Auto-controlled source changeover switch.

p. 760

ATyS Bypass motorised switching



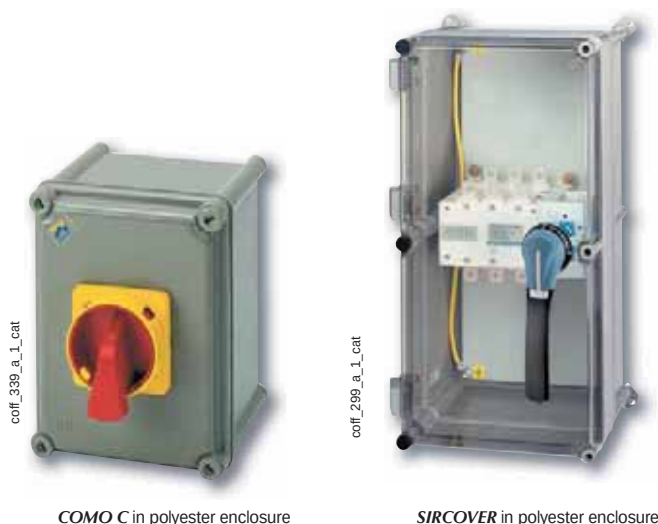
Automatic switching solution enabling switching between two independent sources. Solution enabling the automatic changeover switch to be isolated and a bypass to be created (inspection operations) in complete safety and in a transparent way in terms of the load (no power disconnection).

p. 774

Enclosed transfer switches

Manual operation

MTSE* - Polyester enclosures from 25 to 630 A



The solution for

- > Safe supply of medium critical loads



Strong points

- > Safe operations
- > Utilisation categories AC22 and AC23
- > Robust
- > Compact design

Conformity to standards

- > IEC 60947-6-1
- > IEC 60364
- > IEC 61439
- > EN 60204-1



Function

These manually operated changeover switches are mainly used to provide the following functions:

- Changeover/source inversion.
- Switching.
- Earthing.
- Changeover.
- Safety isolation.

Advantages

- The COMO C and SIRCOVER ranges are multipole changeover switches with positive break indication for safe operations.
- The SIRCOVER range is designed for use in AC22 and AC23 utilisation categories.

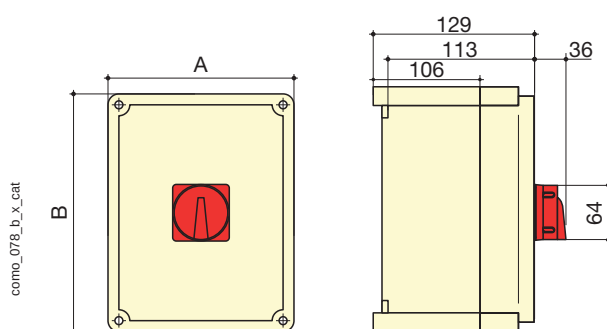
COMO C range

General characteristics



- Adapted to environments subject to chemical, dust, contamination and atmospheric corrosion risks.
- Operation handle: Red/yellow handle
- Protection degree: IP65.
- Colour: RAL 7030.
- Material: glass fibre reinforced polyester.
- Product supplied as a kit, to be assembled.
- Locking system: screw.

Dimensions



References

Rating (A)	No. of poles	Switching type	A (mm)	B (mm)	Reference
25	3 P	I - II	135	135	4221 3C02
25	4 P	I - II	135	135	4221 4C02
25	3 P	I - 0 - II	135	135	4231 3C02
25	4 P	I - 0 - II	135	180	4231 4C02
25	3 P	I - I+II - II	135	135	4241 3C02
25	4 P	I - I+II - II	135	135	4241 4C02
40	3 P	I - II	135	135	4221 3C04
40	4 P	I - II	135	135	4221 4C04
40	3 P	I - 0 - II	135	135	4231 3C04
40	4 P	I - 0 - II	135	135	4231 4C04
40	3 P	I - I+II - II	135	135	4241 3C04
40	4 P	I - I+II - II	135	135	4241 4C04
63	3 P	I - II	135	180	4221 3C06
63	4 P	I - II	135	180	4221 4C06
63	3 P	I - 0 - II	135	180	4231 3C06
63	4 P	I - 0 - II	135	180	4231 4C06
63	3 P	I - I+II - II	135	180	4241 3C06
63	4 P	I - I+II - II	135	180	4241 4C06
80	3 P	I - II	135	180	4221 3C08
80	4 P	I - II	135	180	4221 4C08 ⁽¹⁾
80	3 P	I - 0 - II	135	180	4231 3C08
80	4 P	I - 0 - II	135	180	4231 4C08 ⁽¹⁾
80	3 P	I - I+II - II	135	180	4241 3C08
80	4 P	I - I+II - II	135	180	4241 4C08 ⁽¹⁾

(1) Derated to 70 A for 4 pole.

* MTSE: Manual Transfer Switch Equipment

SIRCOVER range

coff_299_a_1_cat



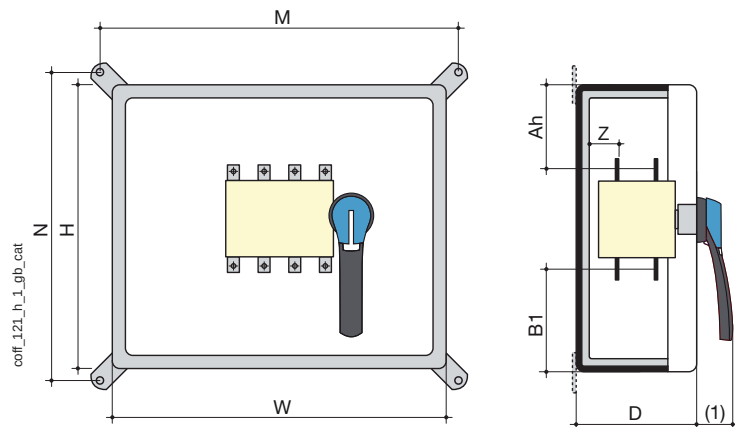
References

Rating (A)	No. of poles	Top/Bottom connection I - O - II Reference
125	3 P	4215 3012
125	4 P	4215 4012
160	3 P	4215 3016
160	4 P	4215 4016
250	3 P	4215 3025
250	4 P	4215 4025
400	3 P	4215 3040
400	4 P	4215 4040
630	3 P	4215 3063
630	4 P	4215 4063

General characteristics

- Adapted to environments subject to chemical, dust, contamination and atmospheric corrosion risks.
- Operation handle: S type black handle, padlockable in position 0.
- Protection degree: IP55 / IK 10.
- Colour: RAL 7030 (range < 400 A), RAL 9002 (range ≥ 400 A).
- Closing plate: N/A.
- Material: glass fibre reinforced polyester.
- Coating: N/A.
- Wall mounting: 4 mounting brackets supplied (not mounted).
- Locking system: square key (ratings < 400 A), 3 mm double bar key (ratings ≥ 400 A), key supplied.
- Miscellaneous: good resistance to creepage currents, high resistance to chemicals, self-extinguishable at 960°C, 2 bolted earth connection points.

Dimensions



(1) 125 ... 630 A: 45 mm

Rating (A)	No. of poles	H x W x D (mm)	Max. connection cross-section (mm²)	M (mm)	N (mm)	Z (mm)	Connection Top/Bottom		
							Ah (mm)	B1 (mm)	Weight (kg)
125	3 P	540 x 270 x 233	50	272	542	28	210	210	9
125	4 P	540 x 360 x 233	50	362	542	28	210	210	10
160	3 P	540 x 270 x 233	95	272	542	28	210	210	9
160	4 P	540 x 360 x 233	95	362	542	28	210	210	10
250	3 P	540 x 360 x 233	150	362	542	29	205	205	11
250	4 P	540 x 360 x 233	150	362	542	29	205	205	12
400	3 P	800 x 600 x 300	240	620	796	29	330	330	30
400	4 P	800 x 600 x 300	240	620	796	29	330	330	31
630	3 P	800 x 600 x 300	2 x 300	620	796	45	297	297	38
630	4 P	800 x 600 x 300	2 x 300	620	796	45	297	297	40

Enclosed transfer switches

Manual operation

MTSE* and Bypass - Steel enclosures from 63 to 3200 A

coff_293_b_1_cat



SIRCO VM1 changeover switches
in steel enclosure

coff_298_b_1_cat



SIRCOVER
in steel enclosure

The solution for

- > Safe supply of medium critical loads



Strong points

- > Visible double breaking (SIRCO VM1)
- > On load operation (AC22/AC23) - SIRCOVER
- > Safety of operations
- > Robust product
- > Compact design

Conformity to standards

- > IEC 60947-6-1
- > IEC 60364
- > IEC 61439
- > EN 60204-1



Specific requests

- > SOCOMEC can provide a wide range of specific requirements. Please consult us.

Function

These manually operated changeover switches are mainly used to provide the following functions:

- Changeover/source inversion.
- Switching.
- Earthing.
- Changeover.
- Safety isolation

Advantages

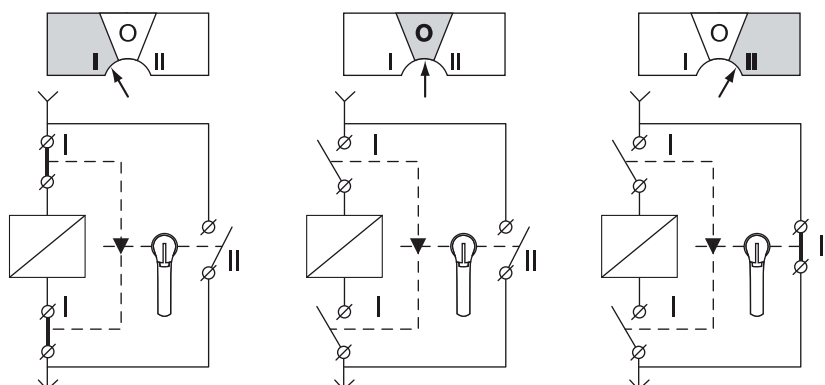
The SIRCO VM1 and SIRCOVER ranges are multipole changeover switches with positive break indication for safe operations.

- The SIRCO VM1 also enables visible double breaking.
- The SIRCOVER range is designed for use in AC22 and AC23 utilisation categories.
- The SIRCO VM1 and SIRCOVER ranges are available in I, 0, II / I, I+II, II / Bypass versions (SIRCOVER only).

What you need to know

SIRCOVER Bypass products are a combination of three interlocked switches enabling the use with 3 + 6 poles or 4 + 8 poles.

They insulate by providing simultaneous safety isolation top and bottom and by passing loads or low voltage circuits mainly during maintenance operations



atys_570_a_1_cat

* MTSE: Manual Transfer Switch Equipment

SIRCO VM1 changeover switches in steel enclosure

■ Front operation

coff_293_b_1_cat



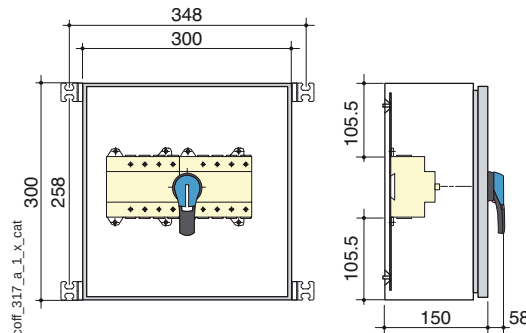
General characteristics

- Adapted to mechanical risk and dust hazard.
- Operation handle: S-type black handle padlockable.
- Protection degree: IP54 / IK 09.
- Colour: epoxy polyester powder RAL 7035.
- Cable gland plate: top and bottom.
- Material: XC steel, thickness 1.5 mm.
- Coating: epoxy polyester powder.
- Wall mounting: 4 mounting brackets supplied (not mounted).
- Door: solid with hinges.
- Locking system: 3 mm double-bar key (key supplied).
- Miscellaneous: 2 earth connection points, double door locking.

References

Rating (A)	No. of poles	Top/Bottom connection
		Reference
63	3 P	4413 3006
63	4 P	4413 4006
80	3 P	4413 3008
80	4 P	4413 4008
100	3 P	4413 3010
100	4 P	4413 4010

Dimensions



Rating (A)	Max. connection section (mm²)	Weight (kg)
3 x 63 / 4 x 63	50	9
3 x 80 / 4 x 80	50	10
3 x 100 / 4 x 100	50	16

Enclosed transfer switches

Manual operation

MTSE and Bypass - Steel enclosures from 63 to 3200 A

SIRCOVER in steel enclosure

Front operation

coff_298_b_2_cat



General characteristics

- Adapted to mechanical risk and dust hazard.
- Operation handle: S-type black handle padlockable in position 0.
- Protection degree: IP54 / IK 09.
- Colour: RAL 7035 (range < 630 A) , RAL 9001 for casing and door, other RAL 7035.
- Cable gland plate: top and bottom.
- Material: XC steel, thickness 1.5 mm.
- Coating: epoxy polyester powder (range < 630 A), polyester powder (range ≥ 630 A).
- Wall mounting: 4 mounting brackets supplied (not mounted).
- Door: solid with hinges.
- Locking system: 3 mm double bar key (ratings < 630 A), 8 mm square key (ratings ≥ 630 A), key supplied.
- Miscellaneous: 2 earth connection points, double door locking.

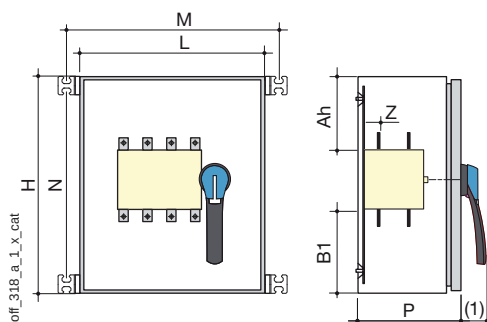
References

Rating (A)	No. of poles	Top/Bottom connection	
		I - 0 - II Reference ⁽¹⁾	I - I+II - II Reference ⁽¹⁾
125	3 P	4212 3012	4116 3012
125	4 P	4212 4012	4116 4012
160	3 P	4212 3016	4116 3016
160	4 P	4212 4016	4116 4016
250	3 P	4212 3025	4116 3025
250	4 P	4212 4025	4116 4025
400	3 P	4212 3040	4116 3040
400	4 P	4212 4040	4116 4040
500	3 P	4212 3050	4116 3050
500	4 P	4212 4050	4116 4050
630	3 P	4212 3063	4116 3063
630	4 P	4212 4063	4116 4063
800	3 P	4212 3080	4116 3080
800	4 P	4212 4080	4116 4080
1250	3 P	4212 3120	4116 3120
1250	4 P	4212 4120	4116 4120
1600	3 P	4212 3160	4116 3160
1600	4 P	4212 4160	4116 4160

(1) Provided without bridging bars.

(2) Provided with bridging bars.

Dimensions



(1) 125 ... 630 A: 58 mm
800 ... 1 600 A: 74 mm.

Rating (A)	No. of poles	H x W x D (mm)	Max. connection cross-section (mm²)	M (mm)	N (mm)	Z (mm)	Top/Bottom connection		
							Ah (mm)	B1 (mm)	Weight (kg)
125	3/4 P	500 x 400 x 250	50	448	458	28	190	190	23
160	3/4 P	500 x 400 x 250	95	448	458	28	190	190	23
250	3/4 P	500 x 400 x 250	150	448	458	29.3	185	185	23
400	3/4 P	800 x 600 x 300	240	758	552	29.3	330	330	45
500	3/4 P	800 x 600 x 300	240	648	658	45	298	298	55
630	3/4 P	800 x 600 x 300	2 x 300	648	658	45	290	290	55
800	3/4 P	1200 x 700 x 500	2 x 300	740	1152	24	465	465	78
1250	3/4 P	1200 x 700 x 500	4 x 185	740	1152	24	465	465	88
1600	3/4 P	1200 x 700 x 500	4 x 300	740	1152	-	470	470	94

SIRCOVER Bypass in steel enclosure

Front operation

conf_298_b_2_cat



General characteristics

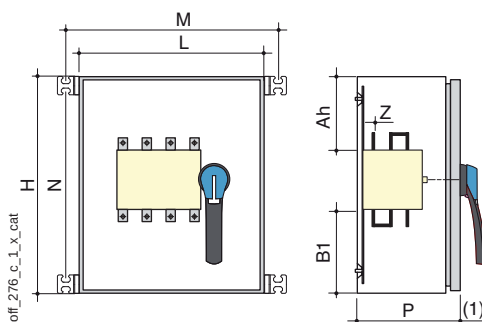
- Adapted to mechanical risk and dust hazard.
- Operation handle: S-type black handle padlockable in position 0.
- Protection degree: IP54 / IK 09.
- Colour: casing and door RAL 9001, locking plates RAL 7035
- Cable gland plate: top and bottom.
- Material: XC steel, 2 mm thick, EZ electrogalvanised steel 25/25.
- Coating: polyester powder.
- Wall mounting: 4 mounting brackets supplied (not mounted).
- Door: solid with hinges.
- Locking system: 3 mm double bar key (ratings < 630 A), 8 mm square key (ratings 630 A), key supplied.
- Miscellaneous: 2 earth connection points, double door locking.

References

Rating (A)	No. of poles	Top/Bottom connection
		I - 0 - II Reference ⁽¹⁾
125	3+6 P	4119 7012
125	4+8 P	4119 9012
160	3+6 P	4119 7016
160	4+8 P	4119 9016
250	3+6 P	4119 7025
250	4+8 P	4119 9025
400	3+6 P	4119 7040
400	4+8 P	4119 9040
500	3+6 P	4119 7050
500	4+8 P	4119 9050
630	3+6 P	4119 7063
630	4+8 P	4119 9063
800	3+6 P	4119 7080
800	4+8 P	4119 9080
1250	3+6 P	4119 7120
1250	4+8 P	4119 9120
1600	3+6 P	4119 7160
1600	4+8 P	4119 9160

(1) Provided with bridging bars.

Dimensions



(1) 125 ... 160 A: 58 mm
250 ... 630 A: 74 mm
800 ... 1600 A: 120 mm

Rating (A)	No. of poles	H x W x D (mm)	Max. connection cross-section (mm²)	M (mm)	N (mm)	Z (mm)	Top/Bottom connection		
							Ah (mm)	B1 (mm)	Weight (kg)
125	3+6 / 4+8 P	500 x 400 x 350	50	448	452	47	192	192	(1)
160	3+6 / 4+8 P	500 x 400 x 350	95	448	452	47	192	192	(1)
250	3+6 / 4+8 P	800 x 600 x 500	150	640	752	48	335	335	(1)
400	3+6 / 4+8 P	800 x 600 x 500	240	640	752	48	330	330	(1)
500	3+6 / 4+8 P	800 x 600 x 550	240	640	752	64	297	297	(1)
630	3+6 / 4+8 P	800 x 600 x 550	2 x 300	640	752	64	290	290	(1)
800	3/4 P	1200 x 700 x 500	2 x 300	740	1152	24	465	465	78
1250	3/4 P	1200 x 700 x 500	4 x 185	740	1152	24	465	465	88
1600	3/4 P	1200 x 700 x 500	4 x 300	740	1152	-	470	470	94

(1) Please consult us.

Enclosed transfer switches

Motorised operation

RTSE* - Remote controlled from 40 to 3200 A



ATyS d M single-phase
in polycarbonate enclosure

alysm_251_a_1_cat



ATyS d three-phase
in steel enclosure

coll_305_b_1_cat

The solution for

- > High-rise buildings
- > Data centers
- > Energy generation.
- > Healthcare buildings
- > Banks and insurance companies
- > Transport (airports, tunnels, etc.)



Strong points

- > Dedicated solution
- > Multiple configurations
- > Robust product
- > Easy integration

Compliance with standards

- > IEC 61439-2
- > IEC 60947-6,-1
- > IEC 60947-3
- > BS 60947-6-1



Function

- RTSE switching enclosures are changeover solutions which can be remotely controlled by volt-free contacts from, for example, an external automatic controller to ensure power availability for critical applications.
- From 40 to 160A, the enclosures are equipped as follows:
 - ATyS S (12 VDC, 2 x 230 VAC) available up to 125 A,
 - ATyS d M (2P/4P) in modular format for optimised integration.
- From 125 to 3200A, the enclosures are equipped with ATyS d (4P), with back-to-back switch configuration, providing a more compact solution and enabling easier connection.

Advantages

Dedicated solution

The RTSE switch is a solution that has been designed and tested to be reliable, safe and easy to use.

Multiple configurations

The RTSE range comes in a choice of a polycarbonate or steel enclosure for network/network, network/genset or genset/genset setups.

* RTSE: Remote Transfer Switching Equipment.

What you need to know

ATyS d M models

Single-phase interface



Three-phase interface



The ATyS d M is equipped with two independent 230 VAC power supply inputs (176-288 VAC), 50/60 Hz (45/65 Hz).

Power supply

- These two supplies can be connected individually; one to switch I and the other to switch II:
 - Power supply I must be available to reach position I
 - Power supply II must be available to reach position II.
- The 0 position is a stable transition position.
- The use of a dual power supply (DPS) or an external supply module ensures the remote operation of all 3 positions regardless of which power supply source is available.
- In this case, both the supply inputs must be connected in parallel.

Electrical control

- The switching operation can be driven by volt-free contacts from an external ATS control relay (e.g. ATyS C30), a PLC/BMS or simply through pushbuttons. The switch positions are stable, with or without a supply present. There are 2 types of control logic to choose from, impulse or contactor, which can be selected through the zero position command (a permanent zero command selects contactor logic).

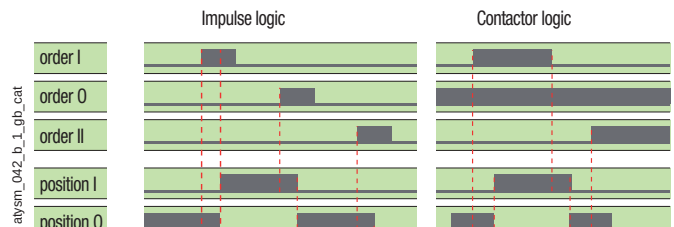
Pulse logic

- A switching command of at least 60 ms is necessary to initiate operation.
- Commands I and II have priority over command 0.
- The first command received (I or II) has priority as long as it remains present.

Contactor logic

(maintained order)

- Order 0 must be maintained (joint connection 317).
- If order I or II disappears the device will return to position 0, as long as the power supply is available.



ATyS S and d S models

Power supply

- The ATyS S is equipped with a single 12 VDC power supply input.
- The ATyS d S is equipped with an integrated 230 VAC dual power supply.

Electrical control

- The switching operation can be driven by volt-free contacts from an external ATS control relay (e.g. ATyS C30), a PLC/BMS or simply through pushbuttons. The switch positions are stable, with or without a supply present. There are 2 types of control logic to choose from, impulse or contactor, which can be selected through the zero position command (a permanent zero command selects contactor logic).

ATyS d models

Operation

ATyS d



The ATyS d is equipped as standard with a dual power supply (DPS).

It allows the product to be electrically operated into any of its 3 positions with either of the 2 supplies present.

Electrical control

General information

- The switching commands can be driven by a volt-free contact, in impulse or contactor mode.
- The first command received has priority as long as it remains present. A 0 command always has priority, except when controls are inhibited.

Pulse logic

- The transfer order requires a volt-free pulse of at least 100 ms in duration.
- When the command disappears, the product remains in position. The pulse can be of infinite duration without causing any disturbance.

Contactor logic

(maintained order)

- The switching command is performed by a maintained volt-free contact.
- If command I or II disappears, the device returns to position 0, so long as the power supply is available.
- A 0 command drives the device into position zero, irrespective of the status of position I and II commands.



Enclosed transfer switches

Motorised operation

RTSE - Remote controlled from 40 to 3200 A

ATyS d M single-phase in polycarbonate enclosure



a1ysm_251_a_1_cat

General characteristics

- From 40 to 160 A.
- Network 230 VAC (176-288 VAC) 50/60 Hz (45-65 Hz).
- Degree of protection: IP 55, IK08.
- Colour: RAL 7035.
- Material: transparent cover, enclosure base: polycarbonate.
- Mounting: 4 holes on the rear of the enclosure.
- Flame resistant to 650°C.

References

ATyS d M single-phase model (2 P)

Rating (A)	Reference
40	1823 2004
63	1823 2006
80	1823 2008
100	1823 2010
125	1823 2012
160	1823 2016

Accessories

Customer fit



Auxiliary contact



Voltage sensing tap

Description	Reference
Auxiliary contact	1309 0001
Voltage sensing and power supply tap (2 for each part)	1399 4006



ATyS C30 relay driver



ATyS C40 relay driver

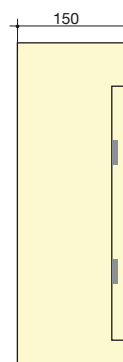
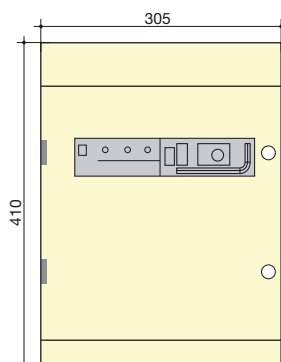


DPS

Factory fitted

Description	Reference
ATyS C30 relay driver	1599 3030
ATyS C40 relay driver	1599 3040
Dual power supply	1599 4001

Dimensions



- Weight: 5.5 kg.
- Connection: recommended cable size (Cu): 25 to 70 mm² according to rating (max. cable size: 70 mm²).

a1ysm_208_a_1_x_cat

Enclosed transfer switches

Motorised operation

RTSE - Remote controlled from 40 to 3200 A

ATyS d M three-phase in steel enclosure



General characteristics

- From 40 to 160 A.
- Network 230/400 VAC $\pm 20\%$ as standard.
- For applications 4 poles/3 poles optional.
- Bridging bar built-in.
- Degree of protection: IP3X and IP54 versions available.
- Colour: RAL 7035.
- Cable gland plates: top and bottom.
- Materials: Steel, thickness 1.2 mm.
- Coating: epoxy polyester powder.
- Mounting: 4 wall-mounting brackets supplied loose (not fitted).
- Door: hinged, cut-out 327.4 x 47.6 mm.
- Locking device: 3 mm double bar (key included).

References

Version ATyS g M - Network 230/400 VAC

Rating (A)	No. of poles	IP 3X Reference	IP 54 Reference
40	4 P	1823 4004	1823 4005
63	4 P	1823 4006	1823 4007
80	4 P	1823 4008	1823 4009
100	4 P	1823 4010	1823 4011
125	4 P	1823 4012	1823 4013
160	4 P	1823 4016	1823 4017

Accessories

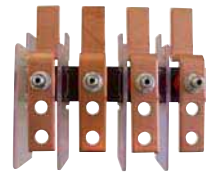
- Power connection terminals with max. cable cross-section of 70 mm² (1 x 70 mm² or 2 x 35 mm²).



Auxiliary contact



Voltage sensing tap

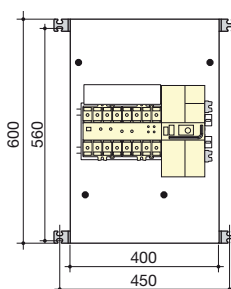


Cage-terminal interface

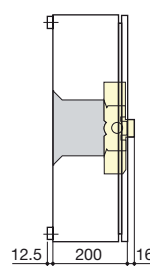
Customer fit

Description	Reference
Auxiliary contact	1309 0001
Voltage sensing and power supply tap (2 for each part)	1399 4006
Solid neutral	1309 9008
Kit IP54	1399 4016
Cage-terminal interface	1399 4017

Dimensions



alysm_210_a_1_x_cat



- Weight (without accessories): 15 kg.
- Connection (without power connection terminals accessory): min. Cu 6 mm², max. 70 mm².

Enclosed transfer switches

Motorised operation

RTSE - Remote controlled from 40 to 3200 A

ATyS S and ATyS d S in steel enclosure



General characteristics

- ATyS S and d S from 40 to 125 A.
- Suitable for environments subject to mechanical risk and dust hazards.
- Degree of protection IP3X (IP54 optional).
- Colour: RAL 7035, epoxy polyester powder.
- Mounting: 4 wall-mounting brackets supplied loose (not fitted).
- Material: steel, thickness 1.2 mm.
- Closing plate: top and bottom.
- Connection of cables: top or bottom.
- Locking device: 3 mm double bar (key included).
- Network 230/400 VAC, 50/60Hz $\pm$ 30%.
- Two power supply versions: 12 VDC (ATyS S) and 2 x 230 VAC (ATyS d S).
- Manual emergency operating handle provided with the enclosure.
- Connection kit.
- Position and source availability LEDs (factory-fit option).
- Priority source and mode selection (factory-fit option - for use with ATyS C30 option).
- Kit for three-phase networks without neutral (factory-fit option).
- Battery charger kit (factory-fit option).

References

Standard product - ATyS S power supply 12 VDC

Rating (A)	No. of poles	Reference
40	4 P	3505 4004
63	4 P	3505 4006
80	4 P	3505 4008
100	4 P	3505 4010
125	4 P	3505 4012

Standard product - ATyS d S power supply 230 VAC (x 2)

Rating (A)	No. of poles	Reference
40	4 P	3513 4004
63	4 P	3513 4006
80	4 P	3513 4008
100	4 P	3513 4010
125	4 P	3513 4012

Accessories

Factory fitted

Description	Reference
Source (voltage) present LEDs	9599 0005
Position LEDs	9599 0006
TEST/AUTO mode selection (with ATyS C30 option)	9599 0007
Priority source selection (with ATyS C30 option)	9599 0008
Surge protection device (SURGYS D40)	9599 0010
Three-phase without neutral	9599 0012
(3Ph+N) 16A auxiliary supply protection kit	9599 0016
Connection kit	9599 0019
Kit IP54	9599 0020
IPXXB protection screen (open door)	9599 0021
Battery charger	9599 0024
Kit for voltage sensing on terminals	9599 0028
Auxiliary contacts prewired to connection terminal	9599 0029
Control/command kit ATyS C30	9599 0030

Customer fit

Description	Reference
Connection kit	9599 0018
Kit IP54	9599 0020
IPXXB protection screen (open door)	9599 0021

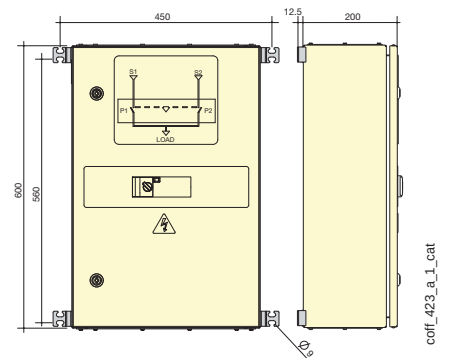
Enclosed transfer switches

Motorised operation

RTSE - Remote controlled from 40 to 3200 A

Dimensions

Rating (A)	Cable cross-section (mm ²)	H (mm)	W (mm)	D (mm)	Weight (kg)
40	10	600	400	200	25
63	16	600	400	200	25
80	25	600	400	200	25
100	35	600	400	200	25
125	50	600	400	200	25



Characteristics according to IEC 61439-1

Operating voltage	40 A	63 A	80 A	100 A	125 A
Power supply voltage ATyS S (DC)	12 V (9-15 V)				
Power supply voltage ATyS d S (AC)	230 V ± 30% (160-310 V) 50/60 Hz				
Network operating voltage	415 V (50/60 Hz)				
Rated current					
Permissible current (A) at ambient temperature 35°C	40	63	80	100	125
Permissible current (A) at ambient temperature 60°C	40	63	80	100	112
Ambient temperature					
Storage	-25°C / 70°C				
Operation	-25°C / 60°C				

Enclosed transfer switches

Motorised operation

RTSE - Remote controlled from 40 to 3200 A

ATyS d three-phase in steel enclosure



conf_3015_b_1_cat

General characteristics

- ATyS d from 125 to 3200 A.
- Suitable for environments subject to mechanical risk and dust hazards.
- Degree of protection: IP54.
- Colour: RAL 7035.
- Closing plates: top and bottom.
- Cabling: top or bottom from 125 to 250 A, bottom/bottom from 400 to 3200 A.
- The auxiliary contacts are wired to terminal blocks.
- Material: XC steel, thickness 2 mm.
- Coating: epoxy polyester powder.
- Mounting: 4 wall-mounting brackets supplied loose (ratings $\leq$ 400 A); Floor-standing feet (ratings $>$ 630 A).
- Door: solid with hinges.
- Locking device: 3 mm double bar (key included).

References

Standard device - 230 VAC

Rating (A)	No. of poles	Reference
125	4 P	1723 4012
160	4 P	1723 4016
250	4 P	1723 4025
400	4 P	1723 4040
630	4 P	1723 4063
800	4 P	1723 4080
1000	4 P	1723 4100
1250	4 P	1723 4120
1600	4 P	1723 4160
2000	4 P	1723 4200
2500	4 P	1723 4250
3200	4 P	1723 4320

Accessories

Customer fit

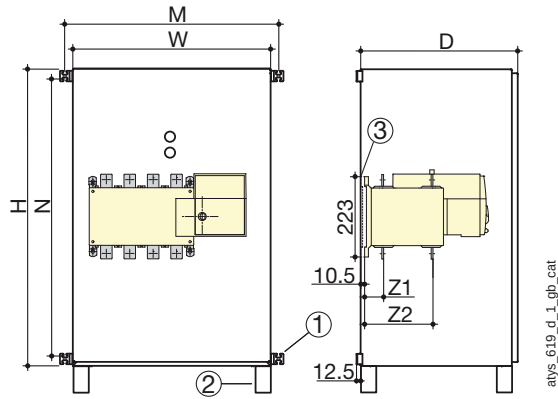
Description: Solid neutral	Reference
125 ... 160 A	1599 1006
250 A	1599 1025
400 A	1599 1040
630 A	1599 1063
800 A	1599 1080
1000 A	1599 1100
1250 A	1599 1120
1600 A	1599 1160

Enclosed transfer switches

Motorised operation

RTSE - Remote controlled from 40 to 3200 A

Dimensions



- (1) Wall-mounting brackets supplied loose - up to 400 A.
- (2) Floor-standing feet from 630 A (add 200 mm to dimension H).
- (3) Height adjustment.

Rating (A)	Recommended Cu cable cross-section (mm ²)	H (mm)	W (mm)	D (mm)	M (mm)	N (mm)	Z1 (mm)	Z2 (mm)	Weight (kg)
125	50	650	400	300	448	608	38	134	25
160	70	650	400	300	448	608	38	134	25
250	120	1000	650	475	698	958	39.5	134.5	45
400	240	1000	650	475	698	958	39.5	134.5	50
630	2 x 185	1000	650	475			53	190	70
800	2 x 240	1200	800	660			66.5	253.5	135
1000	4 x 150	1200	800	660			66.5	253.5	140
1250	4 x 185	1600	1000	830			66.5	253.5	270
1600	4 x 240	1600	1000	830			67.5	253.5	375
2000	8 x 150	2000	1000	1000					400
2500	8 x 185	2000	1000	1000					400
3200	8 x 240	2000	1000	1000					400



Enclosed transfer switches

Motorised operation

ATSE* - Automatic equipment from 40 to 3200 A

conf_366_b_1_cat



ATyS g M and ATyS p M three-phase
in steel enclosure

conf_305_b_1_cat



ATyS p three-phase
in steel enclosure

The solution for

- > High-rise buildings
- > Data centers
- > Energy generation
- > Healthcare buildings
- > Banks and insurance companies
- > Transport (airports, tunnels, etc.)



Strong points

- > Dedicated solution
- > Multiple configurations
- > Robust product
- > Easy integration

Compliance with standards

- > IEC 61439-2
- > IEC 60947-6,-1
- > IEC 60947-3
- > BS 60947-6-1



Function

- ATSE switching enclosures are autonomous solutions which monitor the incoming supplies and automatically transfer to ensure power availability for critical applications.
- From 40 to 160 A, enclosures are equipped with ATyS g M (2 P/4 P - simplified control system) or ATyS p M (4 P - advanced control system) in modular format for optimised integration.
- From 125 to 3200 A, enclosures are equipped with ATyS p (4 P - advanced control system) with back-to-back switch configuration, providing a more compact device and enabling easier connection.

Advantages

Dedicated solution

ATSE solutions have been designed and tested with ease-of-use in mind.

Multiple configurations

The ATSE range is available in polycarbonate or steel enclosures.

* ATSE: Automatic Transfer Switching Equipment

Enclosed transfer switches

Motorised operation

ATSE - Automatic equipment from 40 to 3200 A

What you need to know - ATSE model

ATyS g M and ATyS p M models

Power supply

- ATyS M devices are self-powered from the incoming sources: 230 VAC (176-288 VAC for ATyS g M and 160-305 VAC for ATyS p M), 50/60 Hz (45-65 Hz).
- For three-phase two versions are available:
 - 230 / 400 VAC with neutral conductor: product is powered between phase and neutral,
 - 127 / 230 VAC with or without neutral conductor: product is power supplied between phases.
- For single-phase one version is available:
 - 230 VAC: product is powered between phase and neutral.
- The neutral conductor can be connected to the left or right side of the device.
- Neutral position is automatically detected.

Configuration

ATyS g M

Single-phase interface



Three-phase interface



ATyS p M

Three-phase interface



- Common points between the three-phase and single-phase versions:
 - 2 potentiometers (priority source loss and return time delays)
 - 2 dip switches (pause for 2 seconds in position 0 during transfer I<->II and Transformer/Transformer or Transformer/Genset configuration)
- 4 LEDs (Availability of sources 1 & 2, automatic mode and fault).
- 3 external control inputs (automatic mode inhibit, remote test on load (priority source selection for Transformer/Transformer) and manual retransfer from the backup source to the normal source).
- 1 NO bi-stable output relay for generator start/stop command (30 VDC / 2 A).
- 1 NC relay for product availability (230 VAC / 0.5 A).
- Specific to the three-phase ATyS M:
 - 2 additional potentiometers (nominal voltage and voltage/frequency thresholds)
 - 2 additional dip switches (50 or 60 Hz and 3P/1P network)
- Specific to the single-phase ATyS M:
 - PROG button: nominal voltage and frequency Auto-configuration
- Applications: Transformer/Genset and Transformer/Transformer - with or without priority.
- Independently adjustable over/undervoltage and over/under frequency settings, configurable via the HMI.
- HMI: Display + keypad (device configuration, viewing source availability and measurements, test & control mode access).
- LEDs (indicators for - Product powered, Source availability, Switch position, Automatic mode, Test/Control mode & fault).
- 3 programmable inputs.
- 3 programmable volt-free outputs.
- 1 configurable bi-stable output relay for generator start/stop command (30 VDC / 2 A).
- Connection for an ATyS D10 or D20 remote interface .
- RS485 MODBUS communication.

ATyS p models

Operation

ATyS p



ATyS p are equipped with 2 integrated power supplies (same as ATyS d): one is fed from source 1 and the other from source 2.

With either of the two incoming sources present, the ATyS p can be electrically operated into any of its three positions.

Characteristics

- Single-phase or three-phase control on sources I and II.
- Independently adjustable over/undervoltage and over/under frequency thresholds: $\pm 30\%$ of the nominal value.
- Adjustable hysteresis linked to the threshold values.
- Control of phase rotation.
- Measurements (3U and frequency on networks 1 and 2; ATyS Normal/Emergency source cycle delay)
- Display + keypad (adjustment of all measurement parameters; adjustment of timers 1FT, 2AT, 0DT, 1RT and 2CT; view electrical values in real-time; test and position control functions).
- LEDs (Product powered; Source Availability; Switch position; "AUT" mode; TEST/CONTROL mode and Fault).
- 1 configurable bi-stable output relay for genset start/stop command (30 VDC, 5 A, AC1).
- 1 NO fault relay activated if the position ordered is not reached (30 VDC, 5 A, AC1).

Enclosed transfer switches

Motorised operation

ATSE - Automatic equipment from 40 to 3200 A

ATyS g M single-phase in polycarbonate enclosure



atysm_251_b_1_cat

General characteristics

- From 40 to 160 A.
- Network 230 VAC [176-288 VAC] / 50 Hz/60 Hz [45 Hz-65 Hz].
- Degree of protection: IP 55, IK08.
- Colour: RAL 7035.
- Material: transparent cover, enclosure base: polycarbonate.
- Mounting: 4 holes on the rear of the enclosure.
- Flame resistant to 650°C.

References

ATyS g M version

Rating (A)	No. of poles	Reference
40	2 P	1854 2004
63	2 P	1854 2006
80	2 P	1854 2008
100	2 P	1854 2010
125	2 P	1854 2012
160	2 P	1854 2016

Accessories



Auxiliary contact

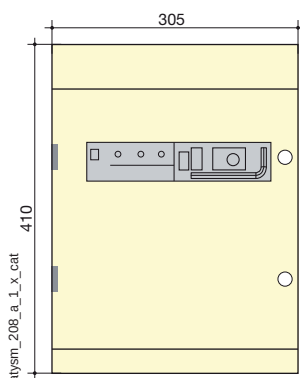


Voltage sensing tap

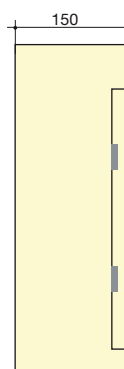
Customer fit

Description	Reference
Auxiliary contact	1309 0001
Voltage sensing and power supply tap (2 for each part)	1399 4006
Sealable cover	1359 2000

Dimensions



atysm_208_a_1_x_cat



- Weight: 5.5 kg.
- Connection: recommended cable size (Cu): 25 to 70 mm² according to rating (max. cable size: 70 mm²).

Enclosed transfer switches

Motorised operation

ATSE - Automatic equipment from 40 to 3200 A

ATyS g M and ATyS p M three-phase in steel enclosure



General characteristics

- From 40 to 160 A.
- Network 230/400 VAC +/-20% as standard 50 Hz/60 Hz [45 Hz-65 Hz].
- Network 127/230 VAC on request for ATyS g M and ATyS p M 50 Hz/60 Hz [45 Hz-65 Hz].
- Standard for 4 pole and optional for 3 pole versions.
- Bridging bars fitted as standard.
- Degree of protection: IP3X and IP54 versions available.
- Colour RAL 7035.
- Cable gland plates: top and bottom.
- Material: Steel, thickness 1.2 mm.
- Coating: epoxy polyester powder.
- Mounting: 4 wall-mounted brackets supplied - not fitted.
- Door: hinged, cut-out 327.4 x 47.6 mm.
- Locking device: 3 mm double bar (key included).
- Integrated RS485 MODBUS communication - ATyS p M version only.

References

ATyS g M - Network 230/400 VAC

Rating (A)	No. of poles	IP 3X Reference ⁽¹⁾	IP 54 Reference ⁽¹⁾
40	4 P	1854 4004	1854 4005
63	4 P	1854 4006	1854 4007
80	4 P	1854 4008	1854 4009
100	4 P	1854 4010	1854 4011
125	4 P	1854 4012	1854 4013
160	4 P	1854 4016	1854 4017

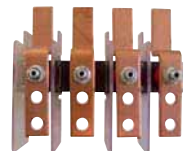
(1) Network 127/230 VAC, on request.

ATyS p M - network 230/400 VAC

Rating (A)	No. of poles	IP 3X Reference ⁽¹⁾	IP 54 Reference ⁽¹⁾
40	4 P	1884 4004	1884 4005
63	4 P	1884 4006	1884 4007
80	4 P	1884 4008	1884 4009
100	4 P	1884 4010	1884 4011
125	4 P	1884 4012	1884 4013
160	4 P	1884 4016	1884 4017

(1) Network 127/230 VAC, on request.

Accessories



Cage-terminal interface

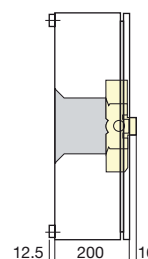
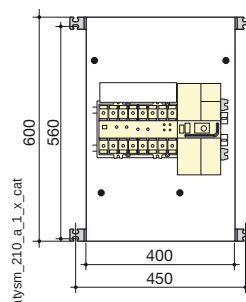
Customer fit

Description	Reference
Auxiliary contact	1309 0001
Voltage sensing and power supply tap (2 per reference).	1399 4006
Solid neutral	1309 9008
Sealable cover	1359 0000 ⁽¹⁾
Kit IP54	1399 4016
Cage-terminal interface	1399 4017 ⁽²⁾

(1) For ATyS g M only.

(2) To convert incoming and outgoing terminals, order quantity 3 sets.

Dimensions



- Weight (without accessories): 15 kg.
- Connection (without cage/terminal interface): min. Cu 6 mm², max. 70 mm².

Enclosed transfer switches

Motorised operation

ATSE - Automatic equipment from 40 to 3200 A

ATyS p three-phase in steel enclosure



coff_306_b_1_cat

General characteristics

- Suitable for environments subject to mechanical risk and dust hazards.
- Degree of protection: IP54.
- Colour: RAL 7035.
- Connections: Top and bottom up to 250 A - bottom connections only for 400 to 3200 A.
- Auxiliary contacts are wired to a terminal block for easy access.
- Material: XC steel, thickness 2 mm.
- Coating: epoxy polyester powder.
- Mounting: ≤ 400 A - 4 wall-mounting brackets, supplied loose; ≥ 630 A - floor-standing feet.
- Door: solid with hinges.
- Locking device: 3 mm double bar (key included)

References

Standard device - 230 VAC

Rating (A)	No. of poles	Reference
125	4 P	1763 4012
160	4 P	1763 4016
250	4 P	1763 4025
400	4 P	1763 4040
630	4 P	1763 4063
800	4 P	1763 4080
1000	4 P	1763 4100
1250	4 P	1763 4120
1600	4 P	1763 4160
2000	4 P	1763 4200
2500	4 P	1763 4250
3200	4 P	1763 4320

Accessories

Customer fit

Description	Reference
Solid neutral 125 ...160 A	1599 1006
Solid neutral 250 A	1599 1025
Solid neutral 400 A	1599 1040
Solid neutral 630 A	1599 1063
Solid neutral 800 A	1599 1080
Solid neutral 1000 A	1599 1100
Solid neutral 1250 A	1599 1120
Solid neutral 1600 A	1599 1160
ATyS D10	9599 2010
ATyS D20	9599 2020
RJ45 connection cable	1599 2009 ⁽¹⁾
RS485 MODBUS communication module	1599 2000
2 input / 2 output module	1599 2001

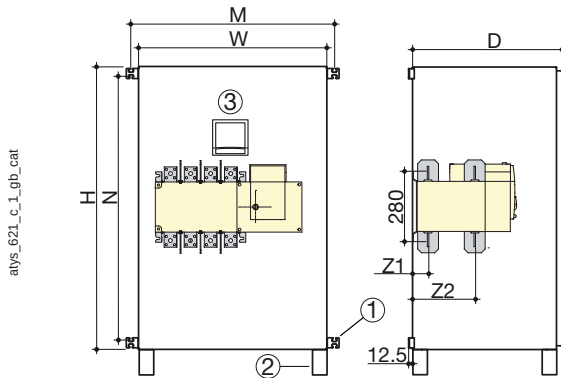
(1) Required to connect an ATyS D10 or D20.

Enclosed transfer switches

Motorised operation

ATSE - Automatic equipment from 40 to 3200 A

Dimensions



- (1) Wall-mounting brackets supplied loose - up to 400 A.
- (2) Height adjustable feet from 630 A (add 200 mm for feet, to H dimension).
- (3) ATyS D10 or D20 interfaces (optional).

Rating (A)	Recommended Cu cable cross-section (mm ²)	H (mm)	W (mm)	D (mm)	M (mm)	N (mm)	Z1 (mm)	Z2 (mm)	Weight (kg)
125	50	650	400	300	448	608	38	134	25
160	70	650	400	300	448	608	38	134	25
250	120	1000	650	475	698	958	39.5	134.5	45
400	240	1000	650	475	698	958	39.5	134.5	50
630	2 x 185	1000	650	475			53	190	70
800	2 x 240	1200	800	660			66.5	253.5	135
1000	4 x 150	1200	800	660			66.5	253.5	140
1250	4 x 185	1600	1000	830			66.5	253.5	270
1600	4 x 240	1600	1000	830			67.5	253.5	375
2000	8 x 150	2000	1000	1000					400
2500	8 x 185	2000	1000	1000					400
3200	8 x 240	2000	1000	1000					400

Enclosed transfer switch solutions

ATyS Bypass “no-break” solution

ATSE* - Automatic equipment from 40 to 3200 A



tablo_036_a_1_cat



tablo_035_a_1_cat

The solution for

- > Data centres
- > Power production
- > Healthcare buildings
- > High-rise buildings
- > Banking and Insurance
- > Transportation



Strong points

- > No-break load transfer in Bypass mode
- > Solution certified by a manufacturer
- > Optional accessories available

Conformity to standards

- > IEC 61439-2
- > IEC 60947-6-1
- > IEC 60947-3
- > BS 60947-6-1



Function

- Automatic transfer between two sources to ensure continuity of supply to critical loads such as sprinklers, fire lifts, water pumps...
- Guaranteed continuity of the power supply during maintenance and test operations.
- Complete isolation of the Automatic Transfer Switch ensuring maintenance safety.
- The association of an AtyS along with a remote interface D20, enables configuration, exploitation and visualisation of the data shown on the front of the equipment (timer settings, hysteresis, start/stop of the genset...).

General characteristics

- From 40 to 3200 A - 4 poles.
- 230/400 VAC $\pm$ 20%, 50/60 Hz, self-powered from incoming sources.
- Normal/Emergency logic control sequence.
- Voltage and frequency checking of networks I and II.
- Control of phase rotation.
- 1 configurable output relay for generator start/stop command.
- Position I, 0, II control by external dry contact.
- Manual emergency operation.
- Auxiliary contacts.
- MODBUS communication (factory fitted).
- AUTO / MANU selector.
- Equipment protection degree: IP41 as standard - Other IP upon request.
- Hinged door.
- Wall mounting brackets supplied up to 160 A.
- Floor standing feet from 250 to 3200 A.
- Easy extraction of AtyS from 160 A.
- Phase identification.
- Mimic panel (3 LEDs; source availability (1 and 2) and load; 16 LED mimic panel optional).
- Integral protection against direct contact on each functional unit.
- Steel enclosure.
- Colour: RAL 7035.

Expert Services

Study, definition, advice, implementation, maintenance and training...

Our Expert Services team offers customised support to make your project a success.



* ATSE: Automatic Transfer Switch Equipment

Enclosed transfer switch solutions

ATyS Bypass "no-break" solution

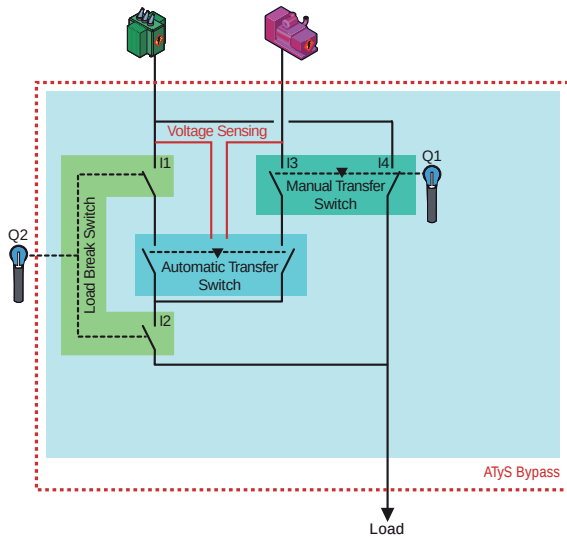
ATSE - Automatic equipment from 40 to 3200 A

2 versions

ATyS Bypass Single Line

- It consists of 2 functions: an automatic transfer switch and a single Bypass line connected to the preferred supply source.

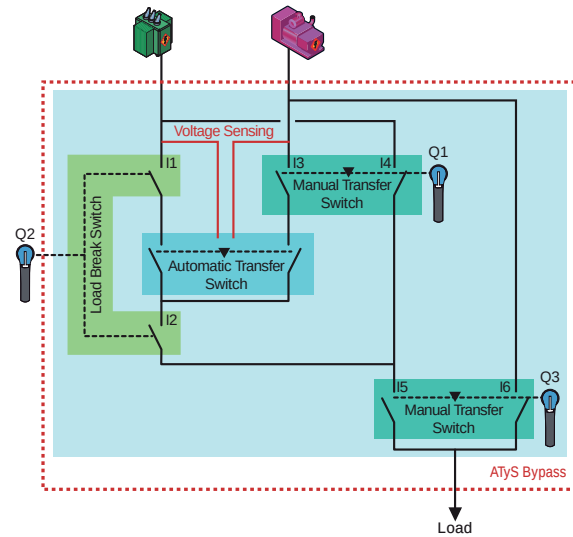
ATyS Bypass - SINGLE LINE



ATyS Bypass Double Line

- It consists of 3 functions: an automatic transfer switch, an ATyS Bypass and a facility for selecting between supply sources when in Bypass.

ATyS Bypass - DOUBLE LINE



Use

Normal Position:

- The load is supplied by the supply defined as the preferred source. In case of primary source failure, the ATyS automatically transfers the load to the alternate source when available.

Bypass position:

- Manually switch Q1 to bypass mode without interrupting supply to the load. Then open switch Q2 to completely isolate the ATyS for inspection.

Test Position:

- From the Bypass position, switch Q2 can be closed to supply the ATyS and achieve operational checks, without jeopardizing the supply to the load. Transfer to the normal position can then be achieved.

References

Standard product - 230 VAC for ATyS p M

Rating (A)	No. of poles	Single Line Reference	Double Line Reference
40	4 P	1785 4004	1786 4004
63	4 P	1785 4006	1786 4006
80	4 P	1785 4008	1786 4008
100	4 P	1785 4010	1786 4010
125	4 P	1785 4012	1786 4012

Standard product- 230 VAC for ATyS p

Rating (A)	No. of poles	Single Line Reference	Double Line Reference
160	4 P	1785 4016	1786 4016
250	4 P	1785 4025	1786 4025
400	4 P	1785 4040	1786 4040
630	4 P	1785 4063	1786 4063
800	4 P	1785 4080	1786 4080
1000	4 P	1785 4100	1786 4100
1250	4 P	1785 4120	1786 4120
1600	4 P	1785 4160	1786 4160
2000	4 P	1785 4200	1786 4200
2500	4 P	1785 4250	1786 4250
3200	4 P	1785 4320	1786 4320

Enclosed transfer switch solutions

ATyS Bypass "no-break" solution

ATSE - Automatic equipment from 40 to 3200 A

Accessories

Customer fit

Description	Reference
2 inputs / 2 outputs module (ATyS p only)	1599 2001 ⁽¹⁾

(1) Up to 3 can be fitted.

Extension cabinet

Use

From 1250A to 3200 A, the standard enclosed ATyS Bypass is supplied with connections to allow for Bottom/Bottom or Bottom/Top cable entry.

In order to facilitate the wiring, we propose the use of an extension cabinet, which can be mounted to the side of the standard ATyS Bypass enclosure, when utilising all other types of connections (TT/TB/BT). The extension cabinet also enables any necessary future adaptation.

Rating (A)	Reference
1250 ... 2000	1599 9004
2500 ... 3200	1599 9005



kdrys_504_a_2_cat

Protection against overvoltages

Use

In order to ensure protection of the equipment against overvoltages, type 1 and 2 surge protection is available.

For more information, please see page 628.

Rating (A)	Reference
40 ... 125	1599 9016
250 ... 400	1599 9017
630 ... 3200	1599 9018



sgys_069_a_1_cat

Multifunction meter

Use

Multifunction meters are now available for the display and monitoring of all the electrical parameters.

For more information, please see page 500.



dris_750_a_1_cat

Engine Exerciser

Use

The enclosed ATyS Bypass up to 125 A can be supplied with a genset exerciser (configure generator Start/Stop times, enable/disable routines, etc.).

Description	Reference
Engine Exerciser	1599 9006



access_276_a_1_cat

Tinned Busbars

Use

Tinned busbar option for severe environmental conditions.

Rating (A)	Reference
250	1599 9007
400	1599 9008
630	1599 9009
800	1599 9010
1000	1599 9011
1250 ... 1600	1599 9013
2000	1599 9014
2500 ... 3200	1599 9015

Enclosed transfer switch solutions

ATyS Bypass "no-break" solution

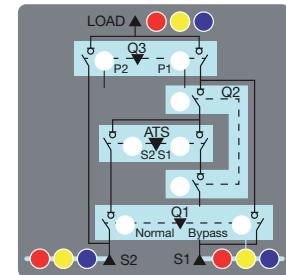
ATSE - Automatic equipment from 40 to 3200 A

Signalling

Use

To get a global overview of the system status, an optional 17 LED mimic panel is available (voltage availability per phase and device positions).

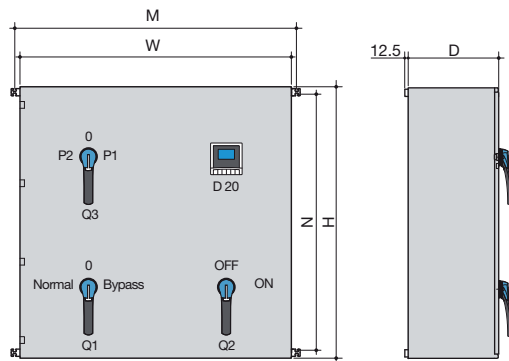
Rating (A)	Mimic panel	
	Single Line Reference	Double Line Reference
40 ... 3200	1599 9033	1599 9034



access_275_b_1_x_cat

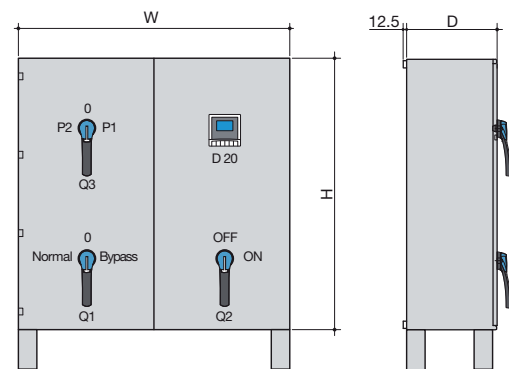
Dimensions

40 to 160 A



atys_749_d_1_gb_cat

≥ 250 A



atys_759_d_1_gb_cat

Wall mounting - Bottom

Rating (A)	Recommended connection cross-section (mm²)	H (mm)	W (mm)	D (mm)	M (mm)	N (mm)	Weight (kg)
40	10	800	800	300	848	752	80
63	16	800	800	300	848	752	80
80	25	800	800	300	848	752	80
100	35	1000	800	300	848	752	80
125	50	1000	800	300	848	752	80
160	70	1000	800	400	848	752	160

Floor fixing - Bottom

Rating (A)	Recommended connection cross-section (mm²)	H (mm)	W (mm)	D (mm)	Weight (kg)
250	120	1200 ⁽¹⁾	1000	550	180
400	240	1200 ⁽¹⁾	1000	550	200
630	2 x 185	1600 ⁽¹⁾	1200	600	600
800	2 x 240	1800 ⁽¹⁾	1600	800	1000
1000	4 x 150	1800 ⁽¹⁾	1600	800	1000
1250	4 x 185	2000 ⁽¹⁾	2000	1000	2000
1600	4 x 240	2000 ⁽¹⁾	2000	1000	2000
2000	8 x 150	2000 ⁽¹⁾	2200	1000	2500
2500	8 x 185	2000 ⁽¹⁾	2200	1000	2500
3200	8 x 240	2000 ⁽¹⁾	2200	1000	2500

(1) Add 100 mm for feet.

Connection (input / output)

- From 40 to 125 A (B/B or T/B or T/T or B/T),
- From 160 to 400 A (B/B or B/T),
- 630 A (B/B),
- ≥ 800 A (Consult us).

References list

References	Pages
SA13 421x	712
111x xxxx	47, 49, 134, 135
112x xxxx	134, 135, 398, 399
114x xxxx	47, 49
1309 0001	419, 420, 423, 430, 433, 762, 763, 770, 771
1309 0011	419, 420, 423, 430
1309 2xxx	419, 420, 430
1309 4xxx	419, 420, 423, 430
1309 9006	431
1309 9007	431
1309 9008	434, 763, 771
1309 9056	431
1359 0000	420, 430, 771
1359 2000	420, 430, 770
1399 4006	35, 419, 420, 423, 430, 433, 762, 763, 770, 771
1399 4016	434, 763, 771
1399 4017	432, 763, 771
1400 1020	46 to 48, 50, 69, 134 to 136, 154, 186, 198 to 200, 239, 266, 267, 285, 286, 289, 301, 398, 400, 476, 477
1400 1025	50
1400 1032	46 to 48, 50, 68, 69, 134 to 136, 152 to 154, 184 to 186, 198 to 200, 238, 239, 256, 257, 260, 261, 266, 285, 286, 289, 299, 301, 303, 398, 400, 476, 477
1400 1040	69, 134 to 136, 154, 186, 198 to 200, 239, 289, 476, 477
1400 1050	46, 47, 50, 266, 289
1400 1075	50
1400 1220	266, 267, 286, 289, 301, 302
1400 1232	257, 261, 266, 286, 289, 301 to 303
1400 1240	289
1400 1250	266, 289
1401 000x	50, 70, 81, 96, 137, 155, 201, 240, 265, 289, 308, 318, 395, 399
1401 001x	50, 70, 81, 96, 137, 155, 201, 240, 265, 289, 308, 318, 395, 399
1401 003x	50, 81, 137, 201, 265, 289, 308, 399
1401 004x	50, 81, 137, 201, 265, 289, 308, 399
1401 0520	266, 267, 285, 289
1401 0532	256, 260, 266, 285, 289
1401 0540	266, 285, 289
1401 06xx	32, 127, 128
1401 1520	46 to 48, 50, 79, 81, 95, 96, 134, 136, 198 to 200, 305, 306, 308, 318, 398, 400, 413, 476, 477

References	Pages
1401 1532	46 to 48, 50, 79, 81, 95, 96, 134, 136, 198 to 200, 305, 306, 308, 317, 318, 398, 400, 413, 476, 477
1401 1540	46, 47, 50, 79, 81, 136, 198 to 200, 413, 476, 477
1402 xxxx	395, 396
1403 0xxx	395, 396
1403 1520	95, 96, 305, 307, 308
1403 2111	31
1403 2113	31, 389
1403 2114	31
1403 2813	31, 389
1403 2814	31
1404 052x	32, 223, 231, 389
1404 053x	32, 223, 231, 389
1404 0540	32, 223, 231
1404 1520	79, 81
1404 2111	31
1405 xxxx	285, 289
1407 xxxx	28, 32, 221, 223, 230, 231, 389
1409 xxxx	29, 32, 127, 128, 389
140D 2111	223, 231
140D 2911	223
140E 2111	223, 231
140E 2911	223
140F xxxx	223, 231
140G xxxx	223, 231
1411 2111	31, 127, 128, 264, 265, 299
1411 2113	395
1413 2111	31, 127, 128, 256, 260, 264
1413 2113	256, 260, 395
1413 2114	395
1413 2115	256, 260, 264
1413 2311	264
1413 28xx	395
1414 2111	31, 127, 128, 256, 260, 264, 265, 299
1414 2113	256, 260
1414 2115	256, 260, 264
1415 2111	31, 264, 299
1417 2111	31, 256, 260, 264
1418 2111	31, 256, 260, 264, 299
1419 0000	32, 224, 232, 290
141A xxxx	31
141B xxxx	31
141D 21xx	285, 288
141D 2911	265, 288
141E 21xx	288
141E 2911	265, 288
141F 2111	285, 288
141G 2111	288
141H 6111	285, 288
141H 6911	288
141I 6111	285, 288
141I 6911	288
1421 2111	46 to 49, 68, 69, 134, 135, 152 to 154, 264, 265, 299, 301, 303
1421 2113	256, 398, 399
1422 2113	257
1423 2111	46, 47, 49, 68, 69, 134, 135, 152 to 154, 256, 257, 260, 261, 264

References	Pages
1423 2113	260, 261, 398, 399
1423 2114	399
1423 2115	256, 257, 260, 261, 264
1423 2311	264
1423 2813	403
1424 2111	46 to 49, 69, 134, 135, 154, 256, 257, 260, 261, 264, 265, 299, 301, 303
1424 2113	256, 257, 260, 261
1424 2115	256, 257, 260, 261, 264
1425 2111	257, 264, 299, 301, 303
1427 2111	256, 261, 264
1428 2111	256, 257, 260, 261, 264, 299, 301, 303
1429 0000	32, 51, 69, 80, 136, 154, 239, 266, 290, 400
1429 7xxx	265
142D 2111	184 to 186, 198 to 200, 239, 286, 288
142D 2113	476, 477
142D 2115	288
142D 2813	476, 477
142D 2911	265, 288
142E 2111	186, 198 to 200, 239, 288
142E 2113	477
142E 2115	288
142E 2813	477
142E 2911	265, 288
142F 2111	186, 198 to 200, 239, 286, 288
142F 2113	477
142F 28xx	477
142G 2111	198 to 200, 288
142G 2113	477
142G 28xx	477
142H 6111	286, 288
142H 6911	288
142I 6111	286, 288
142I 6911	288
1431 xxxx	95, 96, 305, 306, 308, 317, 318
1432 xxxx	95, 96, 305, 306, 308, 317, 318
1433 3111	257, 261, 264, 301, 303
1433 3113	399, 413
1434 3111	257, 261, 264, 301, 303
1435 xxxx	95, 96, 305, 307, 308
1436 xxxx	95, 96, 305, 307, 308
1437 3111	79, 80, 257, 259, 261, 263, 264, 301, 303
1437 7911	264, 302
1438 3111	79, 80, 257, 261, 264, 301, 303
143D 3111	198 to 200, 286, 288
143D 3113	476, 477
143D 3813	477
143D 3911	265, 288
143E 3111	198 to 200, 288
143E 3113	477
143E 38xx	477
143E 3911	265, 288
143F 3111	286, 288
143F 3113	477
143F 38xx	477
143G 3111	288
143G 3113	477
143G 38xx	477

References	Pages
1443 3111	46 to 49, 79, 80, 134, 135, 257, 261, 264, 302, 303
1443 3113	398, 399
1443 3114	399
1444 3111	46 to 49, 79, 80, 134, 135, 261, 264, 302, 303
144D 3111	198, 200
144D 3113	477
144D 3813	476, 477
144D 3911	265
144E 3111	198, 200
144E 3113	477
144E 38xx	477
144E 3911	265
144F xxxx	477
144G xxxx	477
1453 8111	47, 49
1453 8113	398, 399, 477
1454 8111	47, 49
1454 8113	477
1461 5111	118
1463 5111	30, 118
1463 5113	30, 389
1463 5114	30
1464 5111	30, 118
1471 0111	30
1471 1111	28, 30
1473 0111	30
1473 0113	28, 30, 389
1473 0114	28, 30
1473 1111	28, 30, 221, 223
1473 1113	28, 30, 223, 389
1473 1114	28, 30, 223
1474 0111	30
1474 1111	28, 30, 221, 223
147A xxxx	28, 30
147B xxxx	28, 30
147D 0111	176, 177
147D 1xxx	221, 223, 230
147E xxxx	221, 223, 230
147R 0111	176, 177
1481 1111	28, 31
1483 xxxx	28, 31, 221, 223, 231
1484 xxxx	28, 31, 221, 223, 231
148A xxxx	28, 31
148B xxxx	28, 31
148D xxxx	221, 223, 230, 231
148E xxxx	221, 223, 230, 231
1491 0111	29, 31, 127, 128
1493 0000	50, 81, 96, 137, 201, 265, 289, 308, 395, 399
1493 0111	29, 31, 127, 128, 285, 288
1494 0111	29, 31, 127, 128, 288
1499 7701	55, 83, 99, 271, 311, 320, 403, 413
1499 7702	55, 83, 271, 311, 403, 413
1499 7703	55, 271
149A xxxx	29, 31
149B xxxx	29, 31
149D 0111	285, 288
149E 0111	288
14A1 xxxx	68, 69, 152 to 154
14A3 xxxx	68, 69, 152 to 154
14A4 2111	69, 154

References	Pages
14AD 2111	184 to 186, 239
14AE xxxx	186, 239
14AF xxxx	186, 239
1509 0001	108, 167, 451, 467
1509 3012	48, 53, 105, 106, 398, 402, 445, 447, 450, 464
1509 302x	48, 53, 105, 106, 137, 398, 402, 445, 447, 450, 464
1509 306x	48, 53, 105, 106, 137, 398, 402, 445, 447, 450, 464
1509 308x	48, 53, 105, 106, 398, 402, 445, 447, 450, 464
1509 31xx	48, 53, 105, 106, 398, 402, 445, 447, 450, 464
1509 3200	105, 106, 445, 447, 450, 464
1509 4012	48, 53, 105, 106, 398, 402, 413, 445, 447, 450, 464
1509 4025	48, 53, 105, 106, 165, 166, 398, 402, 413, 445, 447, 450, 464
1509 406x	48, 53, 105, 106, 137, 165, 166, 398, 402, 413, 445, 447, 450, 464
1509 408x	48, 53, 105, 106, 137, 165, 166, 398, 402, 413, 445, 447, 450, 464
1509 4160	48, 53, 105, 106, 1 65, 166, 398, 402, 445, 447, 450, 464
1509 4200	47, 53, 105, 106, 165, 166, 445, 447, 450, 464
152x xxxx	108, 167, 467
153x xxxx	451, 467
155x xxxx	447, 450, 466
1599 0xxx	445, 447, 450, 467
1599 1xxx	766, 772
1599 2000	772
1599 2001	450, 468, 772, 776
1599 2009	432, 451, 469, 772
1599 3020	467, 471
1599 3030	433, 467, 471, 762
1599 3031	471
1599 3040	433, 467, 471, 762
1599 4001	108, 167, 431, 433, 469, 762
1599 4064	106, 445, 466
1599 4121	432
1599 50xx	107, 451, 466
1599 51xx	107, 451, 466
1599 5212	451, 466
1599 900x	776
1599 901x	776
1599 903x	777
16xx xxxx	476, 478
170A 0601	357
170A 061x	358
170A 062x	358
170A 0632	359
170H 0069	357 to 361
170H 0235	356, 358
170H 0236	356 to 359

References	Pages
170H 1007	337, 356
170H 3004	337, 357 to 359
170H 3006	337, 357 to 361
170L xxxx	355
170M 1xxx	356
170M 265x	356
170M 266x	356
170M 2670	356
170M 2671	356
170M 2672	359
170M 2673	359
170M 2674	359
170M 2675	359
170M 2676	359
170M 2677	359
170M 2678	359
170M 2679	359
170M 268x	359
170M 27xx	356
170M 31xx	357
170M 323x	360
170M 324x	360
170M 325x	357
170M 326x	357
170M 327x	357
170M 335x	357
170M 336x	357
170M 337x	357
170M 338x	360
170M 339x	360
170M 343x	360
170M 344x	360
170M 345x	357
170M 346x	357
170M 347x	357
170M 38xx	358
170M 41xx	358
170M 423x	360
170M 424x	360
170M 425x	358
170M 426x	358
170M 435x	358
170M 436x	358
170M 438x	360
170M 439x	360
170M 443x	360
170M 444x	360
170M 445x	358
170M 446x	358
170M 51xx	358
170M 523x	361
170M 524x	361
170M 5250	361
170M 5258	358
170M 5259	358
170M 526x	358
170M 535x	358
170M 536x	358
170M 538x	361
170M 539x	361
170M 543x	361
170M 544x	361
170M 545x	358
170M 546x	358
170M 58xx	358
170M 61xx	359

References	Pages
170M 623x	361
170M 624x	361
170M 6250	361
170M 6251	361
170M 6258	359
170M 6259	359
170M 626x	359
170M 627x	359
170M 633x	361
170M 634x	361
170M 635x	359
170M 636x	359
170M 64xx	359
170M 65xx	361
170M 68xx	359
170M 7xxx	357
170M 8554	359
170N xxxx	355
172x xxxx	471, 766
173x xxxx	709
174x xxxx	325
176x xxxx	471, 772
178x xxxx	775
1823 2xxx	433, 762
1823 4xxx	434, 763
182T 4xxx	545
182T 9xxx	592
1854 2xxx	433, 770
1854 4xxx	434, 771
188x xxxx	434, 771
192J 8015	543
192J 9120	551
192M xxxx	601
192S xxxx	598
192T 0003	585, 587, 588
192T 0005	585, 588
192T 0006	587
192T 0007	587, 588
192T 002x	587
192T 0101	585
192T 0102	589, 592
192T 0103	585, 588
192T 0105	585, 587, 588
192T 0106	589
192T 0255	585, 588
192T 05xx	585
192T 06xx	585
192T 08xx	597
192T 09xx	597
192T 14xx	587
192T 19xx	595
192T 20xx	587
192T 21xx	588
192T 23xx	588
192T 24xx	588
192T 32xx	588
192T 33xx	594
192T 34xx	594
192T 40xx	588
192T 46xx	596
192T 47xx	596
192T 48xx	596
192T 5xxx	589
192T 6xxx	589
192T 7xxx	592
192T 80xx	592

References	Pages
192T 81xx	589
192T 93xx	592
192T 95xx	589
192T 96xx	589
192T 97xx	592
192U 0xxx	585
192U 22xx	587
192U 23xx	588
192U 4xxx	588
192U 6xxx	589
192U 8xxx	592
192U 9xxx	592
192X 0056	466
192Y 0015	585, 588
192Y 0025	585
192Y 0035	588
192Y 0045	589, 592
192Y 0115	585, 588
192Y 0125	585
192Y 0135	588
192Y 0145	589, 592
192Y 0155	585, 588
192Y 0165	585
192Y 0175	588
192Y 0185	589, 592
192Y 0215	585, 588
192Y 0225	585
192Y 0235	588
192Y 0245	589, 592
192Y 0265	585
192Y 0275	588
192Y 0285	589, 592
192Y 04xx	601
192Y 05xx	601
192Y 06xx	601
192Y 08xx	601
192Y 09xx	601
199x xxxx	107, 165
19Px xxxx	165
2107 0515	119
2107 0516	116, 119
2107 0517	176, 177
2107 052x	119
2107 053x	119
2119 0001	116, 120, 176
2119 001x	116, 118, 176
2119 1xxx	116, 118, 176
2119 3xxx	116, 118, 177
2129 0001	117, 120
2129 01xx	117, 118
213x xxxx	117, 118
219x xxxx	119, 177
21PV 2102	116, 124, 176, 181
21PV 2162	116, 124
21PV 22xx	117, 125
21PV 23xx	117, 125
21PV 31xx	116, 124
21PV 32xx	117, 125
21PV 33xx	117, 125
21PV 3722	116, 124
21PV 38xx	117, 125
21PV 39xx	117, 125
21PV 4144	176, 181
21PV 4754	116, 124
21PV 48xx	117, 125
21PV 49xx	117, 125

References list

References	Pages	References	Pages	References	Pages	References	Pages
21PV 5102	116, 124, 176, 181	2609 110x	134, 135, 138, 165	2799 1xxx	738	3211 xxxx	745
21PV 52xx	117, 125	2609 1160	165	2799 3015	46, 47, 50, 398, 400	3215 xxxx	738
21PV 53xx	117, 125	2609 1200	134, 135, 138, 165	2799 3018	46 to 48, 50, 134, 136, 398, 400	322x xxxx	738
21PV 6xxx	116, 124	2609 2xxx	165	2799 3019	46, 47, 50, 134, 136, 398, 400	324x xxxx	750
21PV 8144	176, 181	2609 4xxx	165	2799 7002	55, 403	3261 xxxx	745
21PV 8154	116, 124	261x xxxx	54, 106, 401, 465	2799 7003	55, 403	3265 xxxx	738
2200 1000	28, 33, 221, 224	262x xxxx	54, 106, 401, 465	2799 7007	83	3273 xxxx	742
2200 1001	28, 33, 221, 224	263x xxxx	54, 106, 401, 465	2799 7012	46, 48, 49, 79, 80, 134, 135, 399	3275 xxxx	738
2200 1002	28, 33, 221, 224	2694 3014	46, 48, 52, 105, 398, 402, 445, 447, 450, 464	2799 7013	46, 48, 49, 79, 80, 134, 135	3290 1xxx	742
2200 1003	28, 33, 221, 222, 224	2694 302x	46 to 48, 52, 105, 398, 402, 402, 445, 447, 450, 464	2799 7042	47, 49, 398, 399	3290 2xxx	743
2200 1004	28, 33, 221, 224	2694 305x	46 to 48, 52, 105, 398, 402, 445, 447, 450, 464	2799 7043	47, 49	3290 6002	738, 743
2200 1006	28, 33, 221, 222, 224	2694 4014	46, 48, 52, 105, 398, 402, 413, 445, 447, 450, 464	2799 7052	48, 49, 79, 80, 398, 399	3290 6003	743
2200 1008	28, 33, 221, 224	2694 402x	46 to 48, 52, 105, 165, 166, 398, 402, 413, 445, 447, 450, 464	2799 7053	48, 49, 79, 80	3290 6012	738
2200 1010	28, 33, 230, 232	2694 405x	46 to 48, 52, 105, 165, 166, 398, 402, 413, 445, 447, 450, 464	2799 7062	413	3290 6013	743
2200 1011	28, 33	2698 3012	46, 53	2799 7070	79, 80	3290 6102	738, 743
2200 300x	28, 29, 221	2698 302x	46, 47, 53, 137	2799 7072	46, 47, 49	3290 6103	743
2200 3010	28, 29, 230	2698 305x	46, 47, 53, 137	2799 713x	46, 49	3290 611x	743
2200 3011	28, 29	2698 308x	46, 47, 53	2799 7145	48, 49, 134, 135, 198 to 200	3290 7005	739, 744
2200 3012	29	2698 31xx	46, 47, 53	2799 7147	413	3290 7006	739, 744
2200 3016	29	2698 32xx	46, 47, 53	2799 7155	46, 47, 49	3290 7007	744
2200 31xx	29	2698 4012	46, 53	27DC 4xxx	198	3290 7008	744
2200 4xxx	29	2698 402x	46, 47, 53, 137	27DC 8xxx	198, 199	3290 7009	744
2200 500x	29, 33, 222, 224	2698 405x	46, 47, 53, 137	27PV 2xxx	198, 202	3290 7015	739, 744
2200 5011	29, 33, 230, 232	2698 408x	46, 47, 53, 137	27PV 3xxx	135, 199, 202	3290 72xx	744
2200 900x	29, 33, 222, 224	2698 412x	46, 47, 53, 137	27PV 403x	134, 198, 202	3500 xxxx	95
2200 9011	29, 33, 230, 232	2698 4199	137	27PV 4060	198, 202	3505 3xxx	95
2201 1xxx	230, 232	2698 4200	46, 47, 53, 137	27PV 408x	202	3505 400x	436, 764
2201 3xxx	230	2699 003x	46, 47, 51, 137	27PV 41xx	202	3505 401x	436, 764
2205 xxxx	28, 29, 221	2699 006x	48, 51, 137	27PV 42xx	202	3505 402x	95
2209 0016	129	2699 0101	82	27PV 5xxx	198, 202	3505 404x	95
2209 2016	127, 129	2699 014x	51	27PV 6026	135, 199, 202	3505 406x	95
2209 6009	34, 225	2699 03xx	51, 137	27PV 6032	135	3505 408x	95
2209 6011	34	2699 1200	54, 106, 401, 465	27PV 6039	135, 199, 202	3505 41xx	95
2214 3503	222	2699 1201	401, 465	27PV 802x	134	351x xxxx	436, 764
2215 xxxx	729	2699 5xxx	46, 49	27PV 8032	134	352x xxxx	317
222x xxxx	222	2699 6xxx	55	27PV 8039	134, 198, 202	3615 2005	262, 299
223x xxxx	389	2699 9xxx	55	27PV 8060	198, 199, 202	3615 2006	262
2269 6009	34, 225	26Ax xxxx	47	27PV 808x	202	3615 2010	262
2269 6011	34	26PV 2xxx	134	27PV 81xx	202	3615 2011	262, 299
2294 100x	29, 33, 221, 222, 224, 389	26PV 4xxx	134	290x xxxx	79	3615 2012	262
2294 1011	29, 33, 230, 232, 389	26PV 5xxx	134	2998 0003	79, 83, 95, 98, 305 to 307, 317, 320	3615 2015	263, 300
2294 3005	29, 33, 222, 224, 389	26PV 8xxx	134, 135	2998 0004	83, 95, 98, 305 to 307, 317, 320	3615 2016	263, 300
2294 3009	29, 33, 221, 222, 224, 389	2709 0027	135, 138, 202	2998 0013	51, 402	3615 202x	263, 300
2294 3016	29, 33, 230, 232, 389	2709 0045	134, 135, 138, 202	2998 0014	51, 165, 166, 402	3615 203x	263, 300
2294 4016	29, 33, 129, 419, 420, 423, 430	2709 0046	202	2998 0023	51, 402	3615 3005	262, 299
2299 0xxx	29, 34, 127, 129, 221, 222, 225, 230, 232, 389	2709 006x	202	2998 0024	51, 165, 166, 402	3615 3006	262
2299 30xx	389	2709 008x	202	2998 003x	51, 402	3615 3010	262
2299 3309	29, 35	2709 01xx	202	2998 3080	83	3615 3011	262, 299
2299 3409	29, 35, 221, 225	2709 1xxx	202	2998 3120	79, 83, 95, 98, 317, 320	3615 3012	262
2299 3609	29, 35	272x xxxx	204	2998 3180	317, 320	3615 3015	263, 300
2299 4xxx	389	2798 xxxx	201	2998 4080	83	3615 3016	263, 300
2299 5012	28, 30, 221, 223	2799 0001	79, 82, 738	2998 4120	83, 95, 98, 317, 320	3615 302x	263, 300
2299 5013	28, 30	2799 0002	79, 82, 738	2998 4180	317, 320	3615 303x	263, 300
2299 5022	29, 30, 127	2799 0005	82	2999 0012	738, 743	3615 6005	262, 299
2299 5032	28, 30, 230, 231	2799 001x	79, 82	2999 0112	743	3615 6006	262
2299 5042	29, 30, 127	2799 002x	201	2999 1012	738, 743	3615 6010	262
2299 6009	34, 225	2799 0111	82	2999 8707	55	3615 6011	262, 299
2299 6011	34	2799 012x	201	30xx xxxx	733	3615 6012	262
2299 9xxx	35			3115 xxxx	730	3615 6015	263, 300
22Px xxxx	127			3117 xxxx	731	3615 6016	263, 300
2600 xxxx	46			3125 xxxx	730	3615 602x	263, 300
2601 xxxx	48			3127 xxxx	731	3615 603x	263, 300
2609 0025	134, 138, 165			316x xxxx	732	3625 200x	258
2609 008x	134, 135, 138, 165			317x xxxx	732	3625 2010	258
						3625 2014	258
						3625 2015	258

References	Pages
3625 2016	258
3625 2019	259
3625 202x	259
3625 203x	259
3625 300x	258
3625 3010	258
3625 3014	258
3625 3015	258
3625 3016	258
3625 3019	259
3625 302x	259
3625 303x	259
3625 600x	258
3625 6010	258
3625 6014	258
3625 6015	258
3625 6016	258
3625 6019	259
3625 602x	259
3625 603x	259
3629 4012	258, 262, 264
3629 4013	264
3629 7900	258, 262, 264, 299
3629 7901	258, 259, 262 to 264, 299, 300, 302
3629 7903	258, 262, 271
3629 7910	264, 285, 286, 288
3629 7913	258, 259, 262, 263, 271
3629 9xxx	267
363x xxxx	260, 262
364x xxxx	256, 258
3650 xxxx	306
3655 xxxx	307
366x xxxx	305
367x xxxx	260
3680 300x	256
3680 308x	302
3680 31xx	302
3680 4xxx	256
3680 6xxx	302
369x xxxx	704
36Ux xxxx	302
371x xxxx	285
3729 40xx	285, 288
3729 4532	285, 287
3729 7540	285 to 287
3729 7544	286, 287
3729 755x	286, 287
3729 8xxx	291
3729 900x	287
3729 901x	291
3729 902x	291
3729 904x	291
3729 906x	291
3729 908x	291
3729 99xx	287
379x xxxx	291
3811 2063	261, 263, 300, 301
3811 208x	261, 263
3811 21xx	261, 263
3811 3063	261, 263, 300, 301
3811 308x	261, 263
3811 31xx	261, 263
3811 6063	261, 263, 300, 301
3811 608x	261, 263
3811 61xx	261, 263

References	Pages
3819 9120	270, 286
3821 xxxx	257, 259
3829 7923	271
3829 9120	270, 286
3829 9308	257, 261, 267
3829 9310	256, 260, 267
3829 9312	257, 261, 267
3829 9320	256, 257, 261, 267
3829 9325	257, 261, 267
3829 933x	257, 261, 267
3831 2005	260, 299
3831 2006	260
3831 2010	260
3831 2011	260, 299
3831 2012	260
3831 2015	261, 301
3831 2016	261, 301
3831 202x	261, 301
3831 2038	261
3831 2039	301
3831 3005	260, 299
3831 3006	260
3831 3010	260
3831 3011	260, 299
3831 3012	260
3831 3015	261, 301
3831 3016	261, 301
3831 302x	261, 301
3831 3038	261
3831 3039	301
3831 6005	260, 299
3831 6006	260
3831 6010	260
3831 6011	260, 299
3831 6012	260
3831 6015	261, 301
3831 6016	261, 301
3831 602x	261, 301
3831 6038	261
3831 6039	301
3841 200x	256
3841 2010	256
3841 2014	256
3841 2015	256
3841 2016	256
3841 2019	257
3841 202x	257
3841 203x	257
3841 300x	256
3841 3010	256
3841 3014	256
3841 3015	256
3841 3016	256
3841 3019	257
3841 302x	257
3841 303x	257
3841 600x	256
3841 6010	256
3841 6014	256
3841 6015	256
3841 6016	256
3841 6019	257
3841 602x	257
3841 603x	257
3850 xxxx	286
3851 xxxx	286

References	Pages
3859 6011	286, 288
3861 2004	285
3861 2005	285
3861 2006	286
3861 201x	286
3861 202x	286
3861 3004	285
3861 3005	285
3861 3006	286
3861 301x	286
3861 302x	286
3861 6004	285
3861 6005	285
3861 6006	286
3861 601x	286
3861 602x	286
3870 300x	260
3870 3010	260
3870 3011	260
3870 3012	260
3870 3015	261
3870 3016	261
3870 302x	261
3870 303x	261
3870 600x	260
3870 6010	260
3870 6011	260
3870 6012	260
3870 6015	261
3870 6016	261
3870 602x	261
3870 603x	261
3880 300x	256
3880 3010	256
3880 3014	256
3880 3015	256
3880 3016	256
3880 3019	257
3880 302x	257
3880 303x	257
3880 600x	256
3880 6010	256
3880 6014	256
3880 6015	256
3880 6016	256
3880 6019	257
3880 602x	257
3880 603x	257
3890 2xxx	302, 303
3890 3xxx	302, 303
3890 8xxx	300, 301
3890 9xxx	300, 301
3894 xxxx	270
3898 2020	286, 291
3898 2040	257, 261, 269, 286, 291
3898 2080	257, 259, 261, 263, 269, 286, 291, 302, 303
3898 2120	257, 259, 261, 263, 269, 302, 303
3898 3020	286, 291
3898 3040	257, 261, 269, 286, 291
3898 3080	257, 259, 261, 263, 269, 286, 291, 302, 303
3898 3120	257, 259, 261, 263, 269, 302, 303
3898 4020	286, 291

References	Pages
3898 4040	257, 261, 269
3898 4080	257, 259, 261, 263, 269, 286, 291
3898 4120	257, 259, 261, 263, 269
3898 6040	286, 291
3899 0400	266
3899 1xxx	270, 286
3899 2U63	303
3899 31xx	270, 286
3899 33xx	270, 286
3899 3U63	303
3899 6011	259, 263, 264, 300, 302
3899 7011	259, 263, 264, 302
3899 7911	259, 263
3899 8xxx	301
3899 9xxx	301
38U1 202x	303
38U1 203x	303
38U1 205x	302, 303
38U1 206x	302, 303
38U1 208x	302, 303
38U1 21xx	302, 303
38U1 302x	303
38U1 303x	303
38U1 305x	302, 303
38U1 306x	302, 303
38U1 308x	302, 303
38U1 31xx	302, 303
3954 0039	189
3954 2020	189, 204, 291, 478, 486, 487
3954 2025	189, 204
3954 2040	189, 204, 291, 478, 486, 487
3954 2041	204, 291
3954 206x	204, 291
3954 3020	189, 291, 478, 486, 487
3954 3025	189
3954 3040	189, 291, 478, 486, 487
3954 3041	291
3954 3060	204, 291, 478
3954 3120	478
3954 4020	189, 291, 478, 486, 487
3954 4025	189
3954 4040	189, 291, 478, 486, 487
3954 4041	291
3954 4060	291, 478
3954 4120	478
3954 6020	189
3990 1xxx	97, 309, 319
3990 2012	309, 319
3990 202x	97, 309, 319
3990 204x	97, 309, 319
3990 22xx	97, 309, 319
3990 2839	302, 303
3990 30xx	97, 309, 319
3990 31xx	97, 309, 319
3990 32xx	97, 309, 319
3990 33xx	97, 309, 319
3990 3839	302, 303
3990 4xxx	97, 309, 319
3990 7xxx	300, 301
3990 8xxx	300, 301
3990 9xxx	300, 301
3991 xxxx	97, 309, 319
3993 xxxx	97
3994 0xxx	270
3994 13xx	306, 307, 310

References list

References	Pages	References	Pages	References	Pages	References	Pages
3994 14xx	306, 307, 310	3V4x xxxx	750	4439 5xxx	395	4829 018x	509, 511, 515
3994 1901	270, 335	3V5x xxxx	750	444x xxxx	395	4829 0199	509
3994 1902	270, 310	3V71 6012	742	449x xxxx	395, 396	4829 0200	509, 520
3998 2016	256 to 263, 269, 335	4100 xxxx	413	4500 001x	700	4829 0201	509
3998 2025	257, 259, 261, 263, 269, 302, 303, 335	4109 0021	398, 401, 413	4500 002x	700	4829 028x	520
3998 3016	256 to 263, 269, 335	4109 0320	401, 465	4500 003x	701	4829 03xx	607, 615
3998 3025	257, 259, 261, 263, 269, 302, 303, 335	4109 1002	403, 413	4500 01xx	699	4829 050x	525
3998 3040	95, 98, 305 to 307, 310	4109 1004	403	4501 xxxx	698	4829 055x	527
3998 3063	95, 98, 302, 305 to 307, 310, 317, 320	4109 1006	403, 413	4502 xxxx	699	4829 057x	529
3998 3120	302, 305 to 307, 310	4109 2007	403	4503 xxxx	699	4829 058x	525, 527, 529
3998 4016	256 to 263, 269, 335	4109 3xxx	398, 400, 445, 447, 450, 464	4504 xxxx	699	4829 0590	525, 527, 529
3998 4025	257, 259, 261, 263, 269, 335	4109 401x	398, 400, 413, 445, 447, 450, 464	4505 xxxx	699	4829 0591	525, 527, 529
3998 4040	95, 98, 305 to 307, 310	4109 402x	398, 400, 413, 445, 447, 450, 464	4510 xxxx	671	4829 0592	525, 527, 529
3998 4063	95, 98, 302, 305 to 307, 310, 317, 320	4109 403x	398, 400, 413, 445, 447, 450, 464	4511 xxxx	671	4829 0593	525, 527, 529
3998 4120	302, 305 to 307, 310	4109 4050	398, 400, 445, 447, 450, 464	4512 xxxx	671	4829 0594	525, 527, 529
3999 0001	258, 262, 268	4109 406x	398, 400, 413, 445, 447, 450, 464	4513 xxxx	671	4829 0595	525, 527, 529
3999 0002	258, 262, 268	4109 408x	398, 400, 413, 445, 447, 450, 464	4514 xxxx	671	4829 0596	525, 527, 529
3999 0003	269	4109 4120	398, 400, 445, 447, 450, 464	4516 xxxx	675	4829 0597	525, 527, 529
3999 0021	258, 259, 262, 263, 268, 299, 300, 302	4109 4160	398, 400, 413, 445, 447, 450, 464	4518 xxxx	673	4829 0598	525
3999 0022	258, 259, 262, 263, 268, 299, 300	4109 8507	55	4700 9993	611	4829 0599	525
3999 0031	95, 98, 305 to 307, 309, 317, 319	4116 xxxx	758	475x xxxx	638	4829 0600	525, 527, 529
3999 0041	269	4119 xxxx	759	479x xxxx	638	4829 0601	525, 527, 529
3999 005x	95, 98, 305 to 307, 309, 317, 319	4150 xxxx	476	4825 001x	555	4829 0602	525, 527, 529
3999 0103	269	4158 3xxx	201, 476, 478, 486	4825 002x	559	4829 0603	525, 527, 529
3999 011x	98, 309, 319	4158 4021	476, 478, 486	4825 0080	551, 563	4829 0605	515
3999 014x	269	4158 4041	201, 476, 478, 486	4825 0082	551, 563	4850 3000	533
3999 02xx	269	4159 0021	201, 478, 486, 487	4825 0083	551, 563	4850 3001	533
3999 0600	268	4159 0022	201, 476, 478, 486, 487	4825 0088	551, 563, 569, 575, 579	4850 3002	533
3999 070x	29, 34, 82, 127, 129, 256, 257, 259 to 261, 263, 268, 285, 286, 290, 299 to 303	4159 2xxx	476, 478, 486	4825 0089	551, 563, 569, 575, 579	4850 3003	535
3999 0710	268, 290	4159 302x	476, 478, 486	4825 0090	450, 468, 569, 575	4850 3004	535
3999 2839	303	4159 304x	476, 478, 486	4825 0092	450, 468, 569, 575, 579	4850 3005	541
3999 31xx	97, 310, 318	4159 306x	476, 478	4825 0093	450, 468, 569, 575	4850 3006	541
3999 32xx	97, 310, 318	4159 308x	476, 478	4825 0094	569, 575	4850 3007	541
3999 34xx	97, 310, 318	4159 402x	476, 478, 486	4825 0097	569	4850 3008	539
3999 3839	303	4159 404x	476, 478, 486	4825 0200	563	4850 3009	539
3999 4110	97, 310, 318	4159 406x	476, 478	4825 0201	569	4850 3012	541
3999 6012	95, 96, 302, 305 to 308	4199 3018	134 to 136, 198 to 200, 477	4825 0202	569	4850 3013	541
3999 6013	95, 308	4199 3019	136, 200, 477	4825 0203	450, 468, 569, 575, 579	4850 3014	539
3999 6107	99	4199 4012	476, 477	4825 0204	450, 468, 569, 575, 579	4850 3015	539
3999 6117	311, 320	4199 5012	48, 49	4825 0205	569	4850 3016	543
3999 6201	305, 306, 308	4199 70xx	476, 477	4825 0206	569, 575	4850 3017	539
3999 6203	95, 96, 317, 318	4199 7146	399	4825 0207	575	4850 3019	531
3999 7007	99, 320	4199 7149	477	4825 0208	569, 575, 600	4850 3020	531
3999 701x	301	41Ax xxxx	398	4825 0209	569, 575, 600	4850 3021	545
3999 702x	301	4212 xxxx	405, 758	4825 021x	579	4850 3022	545
3999 703x	301	4215 xxxx	404, 755	4825 1xxx	569	4850 3025	541
3999 80xx	301	4220 xxxx	385	4826 0100	581	4850 3026	541
3999 8104	99, 311, 320	4221 xxxx	386, 754	4829 000x	520	4850 3027	539
3999 82xx	263, 269	4230 xxxx	385	4829 0030	520, 607	4850 3028	539
3999 83xx	263, 269	4231 xxxx	386, 754	4829 0031	520, 607	4850 303x	531
3999 84xx	263, 269	4240 xxxx	385	4829 0032	520, 607	4850 3040	531
3999 8906	262, 269	4241 xxxx	386, 754	4829 0033	520, 607	4850 3041	531
3999 8912	262, 263, 269	425x xxxx	385	4829 0034	520	4850 3042	531
3999 9xxx	301	429x xxxx	385	4829 0035	520	4850 3043	533
3999 Uxxx	290	440x xxxx	739, 744	4829 0036	520	4850 3044	533
		441x xxxx	396, 757	4829 004x	520	4850 3045	533
		4430 xxxx	395	4829 0050	509, 511, 515, 520, 607	4850 3046	533
		4439 0001	395, 396	4829 0101	509	4850 3047	533
				4829 0102	511	4850 3048	533
				4829 0103	509	4850 3049	535
				4829 0105	511	4850 305x	535
				4829 0106	511	4853 xxxx	543
				4829 011x	515	4854 000x	609
				4829 0120	509	4854 001x	609
				4829 0128	515	4854 005x	611
				4829 0129	515	4854 006x	611
				4829 013x	515	4854 010x	609

References	Pages	References	Pages	References	Pages	References	Pages
4854 011x	609	5000 03xx	712	5400 4016	53, 258, 259, 262, 263, 271, 701	6029 0000	267, 345, 348
4854 0120	609	5000 1021	711			6032 xxxx	345
4854 0121	611	5000 13xx	712	5400 402x	53, 99, 259, 263, 271, 311, 701	6033 xxxx	345
4854 0122	611	5000 4xxx	712			6039 0000	267, 345, 348
4854 0123	611	5021 xxxx	694	5400 404x	53, 99, 259, 263, 271, 311, 701	605x xxxx	345
4854 0124	611	5022 0xxx	694			606x xxxx	345
4854 0126	520, 607	5022 5110	688	5400 4063	53, 99, 311, 701	60Px xxxx	370
4854 0127	520, 607	5023 01xx	695	5400 42xx	701	61xx xxxx	370
4854 02xx	611	5023 03xx	690	5410 xxxx	702	63xx xxxx	335
4854 03xx	611	5023 04xx	690	5411 xxxx	52, 706	6401 0011	348
4854 04xx	611	5023 6110	688	5412 xxxx	704	642x xxxx	267, 346 to 348
4899 0011	551, 563, 569, 575, 579	5024 4xxx	680	5413 xxxx	706	643x xxxx	336
4899 0110	612	5024 5xxx	684	5414 xxxx	702	6441 0005	267, 346 to 348
4899 0120	613	5024 6xxx	678	5420 2426	703	6500 0001	333
4899 0301	612	5024 7xxx	682	5420 4xxx	702	6500 0002	333
4941 36xx	631	5024 8xxx	682	5421 xxxx	703	6500 0003	333, 367
4941 3723	631	5024 9000	678, 680, 682	5601 0017	509, 551, 555, 563, 569, 575, 579, 607	6500 0004	333, 367
4941 3724	633	5024 9001	678, 680, 682, 684			6500 0010	333
4941 3740	631	5024 9002	690	5601 0018	511, 551, 555, 563, 569, 575, 579	6500 0011	333
4941 3741	633	5024 9031	678			6500 0012	333, 367
4942 xxxx	635	5024 9032	680, 682	5601 5005	325	6500 0013	333, 367
4950 0xxx	639	5024 9033	684	56PV 1401	365	6500 0014	333, 367
4950 6xxx	579, 638	5024 9034	678	56PV 9901	370	6500 0020	333
4981 04xx	649	5024 9041	678	5701 0xxx	325	6500 0021	333
4981 05xx	647	5024 9042	680, 682	5701 9xxx	326, 329	6500 0022	333, 367
4981 10xx	645	5024 9044	678	5702 0xxx	325	6500 0023	333, 367
4981 15xx	643	5024 9050	678	5702 5xxx	325	6500 0030	333
4982 04xx	653	5024 9051	678	5702 9xxx	326	6500 0031	333, 367
4982 0719	651	5024 9052	680, 682	5703 0xxx	325	6500 0032	333, 367
4982 14xx	653	5024 9053	680, 682	5703 5xxx	325	6500 0033	333
4982 17xx	651	5024 9054	684	5703 9xxx	326	6500 004x	334
4982 2xxx	641	5024 9055	684	5704 0003	326, 329	6500 1010	333, 356, 359
4983 xxxx	655	5025 xxxx	686	5705 xxxx	329	6500 103x	333
4985 xxxx	659	5026 xxxx	697	5711 xxxx	715	6500 11xx	333
4986 xxxx	659	5027 xxxx	689	5712 xxxx	715	6501 1010	333, 334, 357
4987 xxxx	659	5028 0410	696	5713 xxxx	716	6501 1011	333, 334, 358
499x xxxx	600	5028 0411	696, 705	5715 xxxx	715	6501 1012	333, 334, 358
5000 000x	713	5028 0412	696, 705	5716 xxxx	716	6501 1013	333, 334, 359
5000 0010	711	5028 0413	696, 705	5719 0010	717	6501 103x	333
5000 0011	711	5028 0415	696, 705	5719 02xx	716	6501 111x	333, 334
5000 0012	711	5028 042x	705	5719 04xx	716	6501 113x	333
5000 0015	713	5028 045x	705	5719 0610	717	6510 xxxx	333
5000 0016	713	5028 047x	705	5719 0714	716	6511 1010	333
5000 0017	712	5031 xxxx	691	5719 2xxx	715	6511 1011	333, 367
5000 0018	713	5032 xxxx	692	5719 3xxx	715	6511 1012	333, 367
5000 0023	711	5038 xxxx	692	5719 5xxx	715	6511 1013	333, 367
5000 0024	711	5119 440x	681, 685	5719 7xxx	715	6511 103x	333
5000 0025	711	5119 441x	681, 685	5719 9xxx	715	65Px xxxx	367, 370
5000 0026	711	5119 442x	671	57Px xxxx	365	6600 xxxx	346
5000 0027	712	5119 4503	671	58xx xxxx	712	6601 xxxx	347
5000 0028	711	5119 4505	671, 681, 685	5Axx xxxx	341	6692 xxxx	346
5000 0029	711	5119 4506	671, 681, 685	5Fxx xxxx	341	6693 xxxx	347
5000 003x	711	5119 4508	671, 681, 685			6702 xxxx	346
5000 0041	35, 712	5119 4510	671, 681, 685	6012 0000	345, 509, 511, 551, 555, 563, 569, 575, 579, 607	6703 xxxx	347
5000 0042	712	5119 4512	671, 681, 685			6712 xxxx	346
5000 0043	712	5119 4513	681, 685	6012 0001	345	6713 xxxx	347
5000 0044	712	5119 46xx	690	6012 0002	345	6722 xxxx	346
5000 0045	713	5119 5xxx	713	6012 0004	345	6723 xxxx	347
5000 0046	713	52xx xxxx	713	6012 0006	345	6732 xxxx	346
5000 0047	713			6012 0008	345	6733 xxxx	347
5000 0051	35, 712	5400 3016	53, 258, 259, 262, 263, 271, 701	6012 001x	345	6746 xxxx	346
5000 0057	711			6012 002x	345	6747 xxxx	347
5000 0058	711	5400 302x	53, 99, 259, 263, 271, 311, 701	6012 003x	345	6852 xxxx	346
5000 006x	713	5400 304x	53, 99, 259, 263, 271, 311, 701	6013 xxxx	345	6853 xxxx	347
5000 0100	712			6019 0000	345, 348	6862 xxxx	346
5000 012x	711	5400 3063	53, 99, 311, 701	6022 xxxx	345	6863 xxxx	347
5000 013x	711	5400 32xx	701	6023 xxxx	345	6872 xxxx	346

References list

References	Pages	References	Pages	References	Pages	References	Pages
6873 xxxx	347	8409 0031	185, 188	86Ax xxxx	68	9533 44xx	467
6882 xxxx	346	8409 0040	153, 155, 184, 188	86P0 3xxx	153	9533 45xx	467
6883 xxxx	347	8409 0041	184, 185, 188	86P0 4xxx	152	9533 46xx	467
6896 xxxx	346	8409 0063	153, 155, 184, 185, 188	86P1 xxxx	152	9539 2001	470
6897 xxxx	347	8499 0001	68, 70, 152, 153, 155, 185, 187, 238, 240	86P2 xxxx	153	9543 xxxx	447
6A10 xxxx	339			87Ax xxxx	238	9549 2001	470
6A1M xxxx	340	8499 0002	70, 155, 187, 240	87P0 2xxx	184	9553 xxxx	447
6A20 xxxx	339	8499 0003	70, 155, 187, 240	87P0 3xxx	185	9559 2001	470
6A2M xxxx	340	8499 2xxx	71, 156	87P2 xxxx	185	9573 xxxx	450, 451
6A30 xxxx	339	8499 3222	157, 188	932x xxxx	419	9579 2001	470
6A3M xxxx	340	8499 323x	72, 157, 188, 238, 242	934x xxxx	420	9594 xxxx	433, 434
6A4x xxxx	339	8499 324x	72, 157, 188, 238, 242	935x xxxx	420	9599 0000	469
6B1x xxxx	339	8499 3322	157, 188	936x xxxx	423	9599 0003	107, 166, 445, 451, 467
6B20 xxxx	339	8499 333x	72, 157, 188, 238, 242	938x xxxx	423	9599 0004	107, 166, 445, 451, 467
6B2M xxxx	340	8499 334x	72, 157, 188, 238, 242	9503 4xxx	433	9599 0005	436, 764
6B30 xxxx	339	8499 421x	68, 72, 157	9503 5xxx	435	9599 0006	436, 764
6B3M 0400	340	8499 4221	157	9505 4xxx	433	9599 0007	436, 764
6B40 xxxx	339	8499 431x	68, 72, 157	9505 5xxx	435	9599 0008	436, 764
6B4M 0500	340	8499 4321	157	9506 4xxx	433	9599 001x	436, 764
6C10 01xx	339	8499 5xxx	69, 154	9506 5xxx	435	9599 002x	436, 764
6C10 02xx	339	8499 61xx	72, 158, 189, 242	9509 000x	435	9599 003x	436, 764
6C10 031x	339	8499 62xx	72, 157, 188, 242	9509 001x	465	9599 1004	107, 166, 451, 467
6C10 035x	340	8499 700x	68, 71, 152, 153, 156, 185, 187, 238, 241	9509 002x	465	9599 1006	107, 166, 451, 467
6C10 04xx	340			9509 004x	465	9599 1007	469
6C1M xxxx	340	8499 7011	71, 156, 187, 241	9509 006x	465	9599 1008	470
6C2x xxxx	340	8499 7023	68, 71, 152, 153, 156, 187, 241	9509 008x	465	9599 2010	423, 432, 469, 772
6C3x xxxx	340			9509 01xx	465	9599 2020	423, 432, 451, 469, 772
6Dxx xxxx	340	8499 8104	68, 71, 152, 153, 156, 185, 187, 238, 241	9509 1xxx	435	9599 4001	433, 434
6F10 xxxx	339	8499 8111	71, 156, 187, 241	9509 4013	433, 434	9599 4002	433, 434
6F1M xxxx	340	8499 812x	68, 71, 152, 153, 156, 185, 187, 238, 241	9509 5xxx	470	9599 4003	433, 434
6F20 xxxx	339			9513 4xxx	433	9599 4004	434
6F2M xxxx	340	8499 82xx	68, 71, 152, 153, 156, 185, 187, 238, 241	9513 5xxx	435	9599 5012	435
73xx xxxx	336			952x xxxx	445	970x xxxx	487
7421 2118	68, 69, 152 to 154	8499 9xxx	73, 158, 189, 242	9533 30xx	445	972x xxxx	486, 487, 489
742D 2118	184 to 186, 238, 239	84Ax xxxx	68	9533 31xx	445	99xx xxxx	105
742F 2118	68, 69, 152 to 154, 186, 239	84P0 3xxx	153	9533 32xx	445	Nxxx xxxx	705
742G 2118	69, 154, 186, 239	84P0 4xxx	152	9533 33xx	445	SA10 420x	711
74A1 2118	68, 69, 152 to 154	84P1 xxxx	152	9533 34xx	467	SA10 421x	712
74AD 2118	184 to 186, 238, 239	84P2 xxxx	153	9533 35xx	467	SA12 420x	711
74AF 2118	68, 69, 152 to 154, 186, 239	85Ax xxxx	238	9533 36xx	467	SA12 421x	712
74AG 2118	69, 154, 186, 239	85P0 2xxx	184	9533 40xx	445	SA13 420x	711
7739 0025	713	85P0 3xxx	185	9533 41xx	445		
7769 9999	271, 311	85P2 xxxx	185	9533 42xx	445		
8409 0016	153, 155, 184, 185, 188			9533 43xx	445		

Notes

Notes

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