CATALOGUE

A complete range for metering, monitoring & power quality

2019
2020

When **energy** matters

socomec
Innovative Power Solutions


socomec
WEBVIEW
DIRIS Digiware D-70
ALARM COM ON
+FREQUENCY
CLIM BAT ID:6CAB0B
INST
AVG MAX
U 1-2 398.5v
05.03.2014 11:10:00
U 2-3 398.4v
05.03.2014 11:10:00
U 3-1 398.5v
05.03.2014 11:10:00
F 50.01 HZ
05.03.2014 11:10:00
IP
E
OK
socomec
U-30
ON
ALARM
COM
DIRIS Digiware
V1
V2
V3
VN
socomec
S-130
ID : DA9C99
P1
P2
I01
I02
I03
socomec
S-130

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Ensuring the energy performance of electrical installations, wherever it is critical.

Since its foundation more than 95 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.

SYDIV 514 B

1
independent manufacturer

3,500 m²
of test platforms

One of the leading independent power testing labs in Europe

10 %
of turnover invested in R&D

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

105,000
on-site interventions per year

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

MADE IN EUROPE

ENERGY SPECIALIST SINCE 1922

THE GLOBAL COMPACT
WE SUPPORT

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Your energy, our expertise

Power conversion

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 switching

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 switching applications,
- continuity of the power supply to electrical facilities via manual remotely operated or automatic transfer switching equipment.
- protection of persons and assets via fuse-based and other specialist solutions.


APPLI 575A

Power monitoring

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.


APPLI 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,
- performance assessment of the electrical installation throughout the life cycle of the products via analysis of data transmitted by connected devices.


APPLI 760A

Adapted solutions

to meet your energy objectives

SMART BUILDINGS

Reducing your energy bills and energy dependency


DIRIS Digiware AC & DC multi-circuit measurement system


ENERGY MANAGEMENT software packages


ATyS automatic and remotely operated transfer switches

SUNSYS PCS² Power Conversion System and Storage

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 CENTRES

Assuring your business continuity and visitor safety

COUNTIS E energy meter and multi-utility pulse concentrator

ATyS M automatic and remotely operated modular transfer switches


MASTERYS BC+ UPS


EMERGENCY CPSS, secure power supply for emergency systems

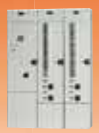
ENERGY MANAGEMENT software packages

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 AC & DC multi-circuit measurement system

RENEWABLE ENERGY

Guaranteeing the performance, security and durability of your photovoltaic facilities


SUNSYS PCS² Power Conversion System and Storage


INOSYS LBS DC load break switches with tripping function


DIRIS Digiware DC multi-circuit measurement system

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HEAVY INDUSTRY


FUSERBLOC fuse combination switches


Safety enclosure with switch disconnector for standard and explosive environments


DIRIS Q800 network analyser

POWER PLANTS

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


SHARYS IP rectifier


UPS and other customised products


DIRIS Digiware AC & DC multi-circuit measurement system

TRANSPORT

Securing the continuity of your installations


ATyS Bypass 'zero outage' solution


MASTERYS IP+ Rail UPS


DIRIS A multifunction meter (PMD)

DATA CENTRES

Meeting the challenge of the availability and performance of your energy


Modular and scalable UPS system


ATYS automatic and remotely operated transfer switches


DIRIS Digiware AC & DC multi-circuit measurement system


MASTERYS GP4 UPS


DIRIS Q800 network analyser

MEDICAL FACILITIES

Assuring patient safety and the energy performance of your hospital


Green Power 2.0 UPS


ATyS automatic and remotely operated transfer switches


DIRIS Digiware AC & DC multi-circuit measurement system


MASTERYS GP4 UPS


MEDSYS medical IT cabinet

INDUSTRY

Ensuring the competitiveness of your site


MASTERYS IP+ UPS for harsh industrial environments

ENERGY MANAGEMENT software packages


Components for distribution enclosure with FUSERBLOC fuse-combination switches


DIRIS Digiware AC & DC multi-circuit measurement system


SIRCO load break switches

EXPERT SERVICES

We offer a wide range of value-added services ensuring the reliability of your equipment throughout its design life. Ask for personalised support -

Expert Services your partner

enabling available, safe and efficient energy

SOCOMEC 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.

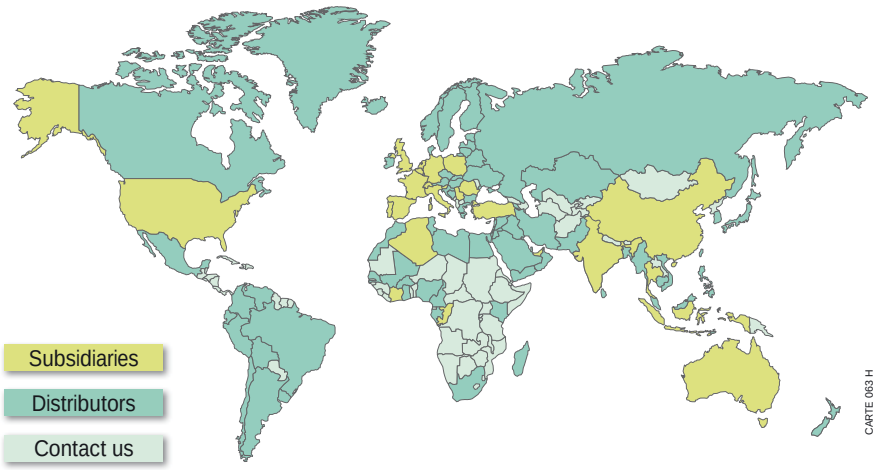
APPLI 724 A

Key figures

Nearly 400 Socomec experts supported by 200 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

- 65,000 service operations per year (mainly preventive visits).
- 98% Service Level Agreement compliance rate.

Technical hotline network

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

Certified expertise

- 5,000 hours of technical training deployed per year (product, methodology and safety).


APPLI 571 A


SITE 588 A


CORPO 269 A

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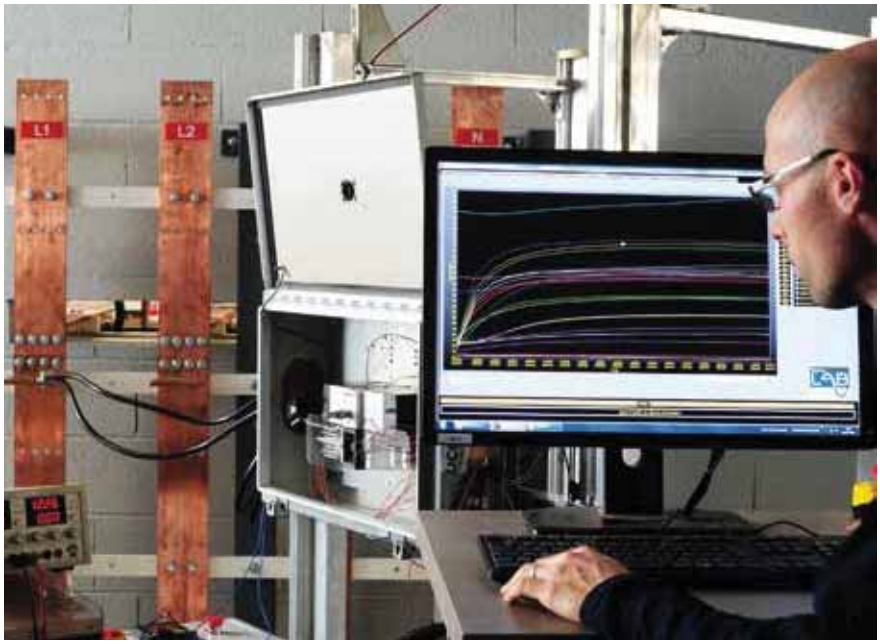
A cutting-edge laboratory

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.



CORPO 441 A

Proven expertise

Tesla Lab is an independant laboratory specialised in testing of LV switchgear, 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 a 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: vibration,
- 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

IEC/EN 61439 READY

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…).

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Integrated technologies

Groundbreaking technologies for greater simplicity and performance

PreciSense

Products that are setting new standards in measurement accuracy

The PreciSense technology ensures 100% reliable accuracy across the global measurement chain.

Be guaranteed of the accuracy of your measurements:
- For the global measurement chain.
- For reliable measurements.
- For relevant corrective actions.

PreciSense offers the best accuracy on the market regardless of the type of current sensors used (solid core, split core, flexible or embedded in the DIRIS Digiware S module).

Discover the video

VirtualMonitor

The simple and cost-saving solution for monitoring your protective devices

The VirtualMonitor technology enables an advanced monitoring of protective devices at all levels within the electrical installation.

Virtual Monitor:
- Detects the position and status of the protective device.
- Detects if the breaker has tripped.
- Counts the number of operations and trips.

VirtualMonitor technology monitors the status of protective devices:
- On your entire electrical installation (without additional space).
- Remotely and in real-time.
- Without additional hardware or wiring (without adding auxiliary contacts).

Discover the video

AutoCorrect

Software elimination of wiring errors

The AutoCorrect technology ensures that the measurement is properly wired at all times, thus avoiding on-site interventions.

AutoCorrect ensures the operation of the proper measuring system thanks to simple and rapid detection of wiring errors:
- Automatic wiring control (voltage/current phase association).
- Correction of errors with a single click.
- Feature available off-load.

Error correction's are carried out without any physical modification to the wiring.

Discover the video

SYDW_419_A

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PreciSense, VirtualMonitor and AutoCorrect technologies are embedded in Socomec's power monitoring solutions.

Power metering and monitoring system for AC electrical installations

- DIRIS Digiware S with its 3 integrated sensors and DIRIS Digiware I associated with iTR sensors.

Multifunction meters

- DIRIS A-40 with iTR sensors.

Selection guide

Measurement and monitoring system for electrical installations

DIRIS Digiware

Build your own AC system

Control and power supply interface (24 VDC)

DIRIS Digiware D
with display

or

DIRIS Digiware C
without screen

+

Voltage acquisition module

DIRIS Digiware U-x

+

Current acquisition module with integrated sensors

DIRIS Digiware S

+

Current acquisition modules

DIRIS Digiware I-3x
3 inputs

DIRIS Digiware I-4x
4 inputs

DIRIS Digiware I-6x
6 inputs

+

Current sensors

TE
Solid

TR/iTR
Split-core

TF
Flexible

+

Digital and analogue input/output modules

DIRIS Digiware IO-xx

Find the best DIRIS Digiware configuration!

The Socomec Meter Selector is your digital assistant, helping you find the best DIRIS Digiware configuration for your power monitoring projects, and all in just a few clicks!

- Fill in information regarding your project.
- Download the system diagram and bill of material.
- All your projects are archived in your personal account.

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Control and power supply interface

Application	Centralisation and display of data			Data centralisation	Repeater
					
DIRIS Digiware	***D-40*** *p. 30*	***D-50*** *p. 30*	***D-70*** *p. 30*	***C-31*** *p. 30*	***C-32*** *p. 30*
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	input	•	
Bus Digiware	•	•	•	•	•
Ethernet		Modbus TCP BACnet IP SNMP	Modbus TCP BACnet IP SNMP		
Embedded web server			•		

Voltage acquisition module

Application	Metering	Monitoring	Analysis
			
DIRIS Digiware U	***U-10*** *p. 36*	***U-20*** *p. 36*	***U-30*** *p. 36*
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		•	•
Crest factors V1, V2, V3, U12, U23, U31			•
Individual harmonics U & V (up to 63rd)			•
Voltage dips, interruptions and swells (EN50160)			•
Alarms			
On threshold			•
History			
Average values			•
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 acquisition modules

Application	Metering		Monitoring	Analysis	Monitoring	Analysis	Metering	
								
DIRIS Digiware I	***I-30*** p. 42	***I-31*** p. 42	***I-33*** p. 42	***I-35*** p. 42	***I-43*** p. 42	***I-45*** p. 42	***I-60*** p. 42	***I-61*** p. 42
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 63rd)				•		•		
Crest factors I1, I2, I3, In				•		•		
Overcurrents				•		•		
Alarms								
On threshold				•		•		
Inputs/outputs					2/2	2/2		
History								
Average values				•		•		
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 acquisition module with integrated sensors

Application	Metering	Analysis	Monitoring
			
DIRIS Digiware S	***S-130*** *p. 38*	***S-135*** *p. 38*	***S-Datacenter*** *p. 38*
Number of current inputs	3	3	3
Basic current I_b	10 A	10 A	10 A
Maximum current I_{max}	63 A	63 A	63 A
Load type accepted	1P + N 2P / 2P + N 3P / 3P + N	1P + N 2P / 2P + N 3P / 3P + N	1P + N
Metering			
± kWh, ± kvarh, kVAh	•	•	•
Multi-tariff (max 8)		•	
Load curves		•	•
Multi-measurement			
I1, I2, I3, In, ΣP, ΣQ, ΣS, ΣPF	•	•	•
P, Q, S, PF per phase		•	•
Predictive power		•	
Current unbalance (Inba, Inb, Idir, Iinv, Ihom)		•	
Phi, cos Phi, tan Phi		•	•
Quality			
THDi1, THDi2, THDi3, THDin		•	•
Individual harmonics I (up to 63rd)		•	
Crest factors U, V, I		•	
K factor		•	
Overcurrents		•	
Alarms			
Thresholds and combinations		•	•
Load level			•
Wiring errors		•	•
Protective device		•	•
Trends			
Average values		•	•
Format			
Width	54 mm	54 mm	54 mm

Current sensors

Suitable for new installations match the pitch of protective devices

	Solid-core current sensors						
							
	TE-18 *p. 46*		***TE-25*** *p. 46*	***TE-35*** *p. 46*	***TE-45*** *p. 46*	***TE-55*** *p. 46*	***TE-90*** *p. 46*
Nominal current I_n (A) 5 … 2000	5 … 20	25 … 63	40 … 160	63 … 250	160 … 630	400 … 1000	600 … 2000
Real range covered (A) 0.1 … 2400	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/iTR-10 *p. 50*	***TR/iTR-14*** *p. 50*	***TR/iTR-21*** *p. 50*	***TR/iTR-32*** *p. 50*
Nominal current I_n (A) 25 … 600	25 … 63	40 … 160	63 … 250	160 … 600
Real range covered (A) 0.5 … 720	0.5 ... 90	0.64 ... 120	1.26 ... 200	4 ... 720
Aperture (mm)	Ø 10	Ø 14	Ø 21	Ø 32
Dimensions (mm)	26 x 44 x 28	29 x 67 x 28	37 x 65 x 43	53 x 86 x 47
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-80 *p. 52*	***TF-120*** *p. 52*	***TF-200*** *p. 52*	***TF-300*** *p. 52*	***TF-600*** *p. 52*
Nominal current I_n (A) 150 … 6000	150 … 600	400 ... 2000	600 … 4000	1600 … 6000	1600 … 6000
Real range covered (A) 3 … 7200	3 … 720	8 ... 2400	12 ... 4800	32 … 7200	32 … 7200
Aperture (mm)	Ø 80	Ø 120	Ø 200	Ø 300	Ø 600
Connection	RJ12	RJ12	RJ12	RJ12	RJ12

Input/output modules

Application	Metering / monitoring / control	
		
DIRIS Digiware IO	***IO-10*** *p. 66*	***IO-20*** *p. 66*
Number of digital inputs/outputs	4/2	
Number of analogue inputs		2
Format		
Width/number of modules	18 mm/1	18 mm/1

Selection guide

Measurement and monitoring system for DC electrical installations

DIRIS Digiware

Build your own DC system

Control and power supply interface (24 VDC)

DIRIS Digiware D-x
with display

or

DIRIS Digiware C
without screen

\+

Direct voltage acquisition module

DIRIS Digiware Udc

\+

DC voltage adaptors

DIRIS Digiware U500dc/U1000dc/U1500dc

\+

DC current acquisition module

DIRIS Digiware Idc
3 current sensor inputs

\+

DC current sensors

Solid-core sensors
50 … 5000 A

Split-core sensors
50 … 2000 A

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Control and power supply interface

Application	Centralisation and display of data			Data centralisation	Repeater
					
DIRIS Digiware	***D-40*** *p. 30*	***D-50*** *p. 30*	***D-70*** *p. 30*	***C-31*** *p. 30*	***C-32*** *p. 30*
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	input	•	
Digiware Bus	•	•	•	•	•
Ethernet		Modbus TCP BACnet IP SNMP	Modbus TCP BACnet IP SNMP		
Embedded web server			•		

Direct voltage acquisition module (DC)

Application	**DC voltage measurement**	
		
DIRIS Digiware Udc	**U-31dc** *p. 54*	**U-32dc** *p. 54*
Nominal voltage range	24 … 48 VDC	60 … 150 VDC
Measuring range (min-max)	19,2 … 60 VDC	48 … 180 VDC
Multi-measurement		
DC voltage (VDC)	•	•
Power quality		
V ripple (voltage ripple)	•	•
V_{rms}	•	•
Alarms		
Thresholds and combinations	•	•
Trends		
Average values	•	•
Format		
Width/number of modules	18 mm / 1	

Application	**DC voltage adaptors**		
			
DIRIS Digiware Udc	U500dc *p. 54*	U1000dc *p. 54*	U1500dc *p. 54*
Max. voltage range	200 … 600 VDC	400 … 1200 VDC	1200 … 1650 VDC
Association			
U-32dc	•	•	•
Format			
Width/number of modules	54 mm / 3		

Direct current acquisition module (DC)

Application	Direct current (DC) measurement modules	
		
DIRIS Digiware Idc	***I-30dc*** *p. 58*	***I-35dc*** *p. 58*
Number of current inputs		
	3	3
Metering		
± kWh	•	•
Load curves		•
Multi-measurement		
DC current (I DC)	•	•
DC power (P DC)	•	•
Predictive power		•
Measurement of current quality		
I ripple (current ripple)		•
I rms		•
Alarms		
Thresholds and combinations		•
Trends		
Average values		•
Format		
Width/number of modules	18 mm / 1	

DC current sensors

DC current sensors measure the load currents of a DC electrical installation and transmit the information to DIRIS Digiware Idc modules via a quick RJ12 connection with color-coded cables for an easy identification of circuits.

The range comprises solid-core and split-core sensors, from 50 to 5000 A in various sizes, suitable for new or retrofit applications.

- Easy connection to prevent wiring errors.
- Up to 3 sensors on each DIRIS Digiware Idc measurement module.

Selection guide

Multifunction meters

DIRIS A

Which application? ▶ Which functions?



	Functions	DIRIS A-10 *p. 76*	DIRIS A-14 DIN *p. 80*	DIRIS A-14 96 x 96 *p. 80*
		CURRENT TRANSFORMERS		
General characteristics	Remote display			
	Number of loads	1	1	1
	Mounting	DIN	DIN or 96*96	DIN or 96*96
	Power supply	AC	AC	AC
	All In One	•	•	•
	Optional modules			
	Ethernet (Modbus TCP / Bacnet IP)	o / -	o / -	o / -
	RS485 (Modbus / Bacnet MSTP)	• / -	• / -	• / -
	Profibus DPV1			
	Webserver / File export	o / -	o / o	o / o
	Max. number of inputs (digital / analogue)	1 / -		
	Max. number of outputs (digital / analogue)	1 / -		
Manage energy consumptions	4-quadrant energy metering	•	•	•
	Load curves (local memory)		•	•
	Rebilling of energy (MID approved)		•	•
	Multi-tariff management	2	4	4
Monitor the electrical installation	Instantaneous, average, min and max values	•	•	•
	Voltage unbalance measurement			
	Neutral current (measured / calculated)	- / •	- / •	- / •
Check the power quality	Harmonic analysis (THD / Individual)	• / -	• / -	• / -
	Dip and swell detection			
	Overcurrent detection			
	1/2 cycle RMS curves on events			
Manage the loads	Operating hours	•		
	Number of operations (info / alarm)			
	Protective device monitoring (on / off / tripped)	•		
	Predictive power analysis and load shedding			

•: *integrated in the product.* *o: optional via DIRIS-G or modules.*

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Which dimensions? → Which communication protocol? → Which options?

								
	DIRIS A-20 *p. 84*	**DIRIS A-30/A-41** *p. 88*	**DIRIS A-60** *p. 98*	**DIRIS B-10** *p. 104*	**DIRIS B-30** *p. 104*	**DIRIS A-40** Modbus *p. 94*	**DIRIS A-40** Modbus + Profibus *p. 94*	**DIRIS A-40** Modbus + Ethernet *p. 94*
	CURRENT TRANSFORMERS			**SMART SENSORS**				
				•	•			
	1	1	1	1 to 4	1 to 4	1		
	96 x 96	96 x 96	96 x 96	DIN	DIN	96 x 96		
	AC	AC/DC	AC/DC	AC	AC	AC/DC		
						•		
	•	•	•	•	•			
	o/-	o/-	o/-	•/o	•/o	-/-	-/-	•/•
	•/-	•/-	o/-	•/o	•/o	•/-	•/-	•/-
		o		o	o	-	•	-
	o/o	Via DIRIS G		o/o	o/o	o/o	o/o	•/•
	3/-	6/4	6/4	2/2		3/-		
	1/-	6/4	6/4	2/2		2/-		
	•	•	•	•	•	•		
		o	•		•	•		
				8	8	4		
	•	•	•	•	•	•		
		•	•	•	•	•		
	-/•	• (with A-41)	•	•/•	•/•	-/•		
	•/-	•/•	•/•	•/-	•/•	•/•		
			•		•	•		
			•		•	•		
			•					
	•	•	•	•	•	•		
	•/-	•/-	•/-	•/-	•/•	•/•		
	•	•	•	•	•	•		
		•	•		•	•		

Selection guide

Active energy meters and pulse concentrators

COUNTIS E

Which type of network? ▶ Which load current?

Network - Input current	Single-phase Direct up to 40 A			Single-phase Direct up to 80 A				Three-phase Direct up to 80 A	
									
Active energy meters: *COUNTIS E*	***E00/E02*** p. 112	***E03/E04*** p. 112	***E05/E06*** p. 112	***E11/E12*** p. 114	***E13/E14*** p. 114	***E15/E16*** p. 114	***E17/E18*** p. 114	***E21/E22*** p. 116	***E23/E24*** p. 116
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	2 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	•/•	•/•	•/•	•/•	•/•	•/•	•/•	•/•	•/•
Active power / Reactive power	•/•	•/•	•/•	•/•	•/•	•/•	•/•	•/•	•/•
Dual tariff for kWh		•	•	•	•	•	•	•	•
Total/partial energy kvarh	•/•	•/•	•/•	•/•	•/•	•/•	•/•	•/•	•/•
kVA		via COM	via COM		•	•	•	•	•
Load curve									
Measurement (I, V, P, Q, S, F and PF)	•	•	•	•	•	•	•	•	•
CT connection indication									
Birectional (energy consumption and production)	•	•	•	•	•	•	•	•	•
Integrated web server							•		
Compatibility with Webview		•			•		•		•
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	class 2	class 2	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. 124	 ***COUNTIS ECi3*** p. 124
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, m^3…)	•	•
Load curve from 8 to 30 minutes	•	•
RS485 Modbus	•	•

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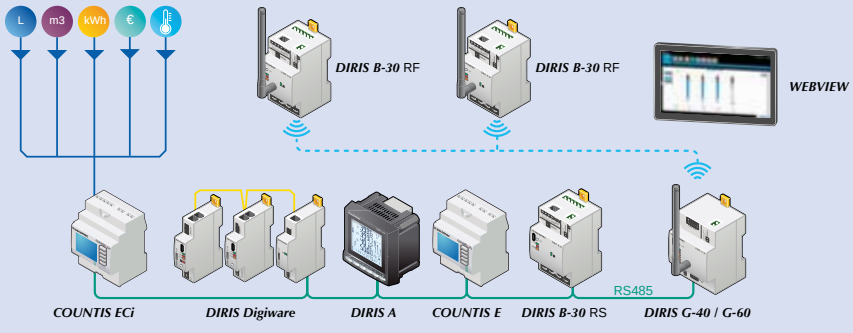
Which accuracy? → MID certification? → Communication or pulse output? → View data on the web server?

	Three-phase Direct up to 80 A		Three-phase Direct up to 100 A			Three-phase CT/5 A					
											
	E25/E26 p. 116	*E27/E28* p. 116	*E30/E31/E32* p. 118	*E33/E34* p. 118	*E35/E36* p. 118	*E41/E42* p. 120	*E43/E44* p. 120	*E45/E46* p. 120	*E47/E48* p. 120	*E50* p. 118	*E53* p. 118
	• (E26)	• (E28)	• (E32)	• (E34)	• (E36)	• (E42)	• (E44)	• (E46)	• (E48)		
				•			•				•
	•				•			•			
		•							•		
	4 modules	4 modules	7 modules	7 modules	7 modules	4 modules	4 modules	4 modules	4 modules	96x96	96x96
	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	86 … 520 VAC	86 … 520 VAC
	•/•	•/•	•/• (E31)	•/ via COM (E34)	•/ via COM (E36)	•/•	•/•	•/•	•/•	•/•	•/•
	•/•	•/•	•/-	•/ 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	•	•	•	•	•	•
						•	•	•	•	•	•
	•	•		• (E33)	• (E35)	•	•	•	•		
		•							•		
		•		•			•		•		•
	class 1	class 1	class 1	class 1	class 1	class 1	class 1	class 1	class 1	class 1	class 1
	class 2	class 2				class 2	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)	class C (E48)		
	•	•	•	•	•	•	•	•	•		
	100 Wh	100 Wh				configurable	configurable	configurable	configurable		
	• (E26)	• (E28)	• (E32)	• (E34)	• (E36)	• (E42)	• (E44)	• (E46)	• (E428		
			•	•	•				•	•	•

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

Software solutions for energy monitoring and analysis

What are the features? → For what size of project? → Where is the data stored?

	WEBVIEW-S	WEBVIEW-M		WEBVIEW-L	N'VIEW
					
Hosting of the application(1)	**DIRIS A-40 Ethernet** *p. 156*	**DIRIS G** *p. 156*	**DIRIS Digiware D-70** *p. 156*	**DATALOG H80/H81** *p. 156*	**Cloud** *p. 158*
Data collection					
Maximum number of connected measurement devices	1	32	32	100 (WEBVIEW-L100) 200 (WEBVIEW-L200)	Unlimited
Import of data from files					•
Interfacing to third-party applications				via connector	via connector
Export of data in CSV format	•	DIRIS G-50/G-60	•	•	•
Real time monitoring					
U/V voltages and currents I	•	•	•	•	n/a(2)
Powers P, Q, S, Power factor	•	•	•	•	n/a(2)
Quality monitoring THDi, THDu, THDv, K factor, Harmonic analysis up to 63rd	•	•	•	•	n/a(2)
Energy metering Ea+, Ea-, Er+, Er-, Es	•	•	•	•	n/a(2)
Pulse counting	•	•	•	•	n/a(2)
Input/Output monitoring	•	•	•	•	n/a(2)
Measurement history U, V, I, P, Q, S,	•	DIRIS G-50/G-60	•	•	n/a(2)
Energy analysis					
Energy consumption analysis	•	DIRIS G-50/G-60	•	•	•
Multi-parameter analysis				•	•
Compare time periods					•
Active energy analysis					•
Power demand analysis					•
Cost analysis					•
Energy performance indicators					•
Linear regression					•
Measurement and verification (IPMVP method)					•
Predictive energy consumption					•
Alarm management					
Product alarms	•	•	•	•	
Software alarms					•
Alarms history	•	•	•	•	•
Transmission of alarms	e-mail	e-mail	e-mail	e-mail	e-mail and SMS
Reporting management					
Creation of customised reports					•
Automatic dispatch of reports by e-mail					•
Creation of customised dashboards					•
Site mapping					Via Google Maps
Customisable user interface			Photoview	Photoview	Synoptic App
Hierarchy management		DIRIS G-50/G-60	•	•	•
Conformity to standards					
Energy Server Standard - IEC 62974-1		•	•	•	

(1) For more information on the hardware please refer to the appropriate catalogue pages.
(2) N'VIEW is a software solution intended for energy management purposes only.

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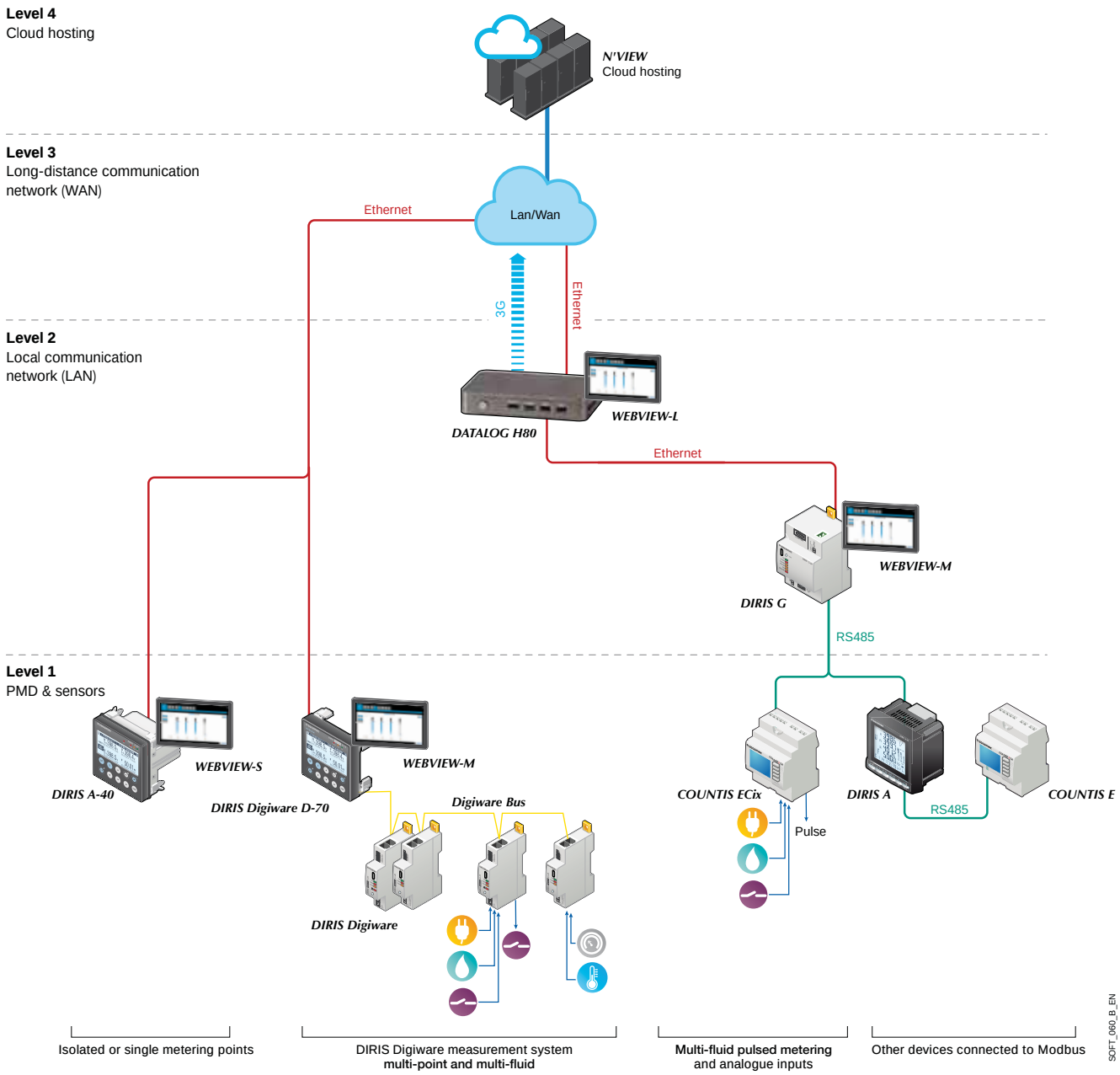
Architecture



Expert Services

Require integration onto your network?

No problem for our Expert Services team. They work out all the details of the measurement schedule, the complete integration of all devices in your energy management system, the configuration of your software application, the training of your teams and details of operational support. For further information, please contact your nearest Socomec office.

DIRIS Digiware D and *C*

Control and power supply interfaces

DIRIS Digiware D-40/D-50/D-70
Centralisation and display of data

DIRIS Digiware C-31
Centralisation

Configuration with EasyConfig,

Function

DIRIS Digiware D-40, D-50 and D-70

DIRIS Digiware D remote displays allow:

- a local view of the data from DIRIS Digiware modules
- a power supply to the DIRIS Digiware modules,
- access to this data over Ethernet (D-50/D-70) or RS485 (D-40).

DIRIS Digiware D-50 and D-70 displays also act as a gateway, centralising measurements from DIRIS Digiware, DIRIS A, DIRIS B and COUNTIS E devices and making them available over Ethernet.

With the DIRIS Digiware D-70 display, data can be visualized on WEBVIEW-M, the "Power & Energy monitoring" embedded web server.

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.

An RS485 Modbus output allows them to provide all this information to energy efficiency software (DIRIS G communication gateways are available for communication via Ethernet - Modbus TCP).

DIRIS Digiware C-31 interfaces and C-32 repeaters are 24 VDC powered.

Advantages

DIRIS Digiware D

- High-resolution graphic screen
- Embedded web server (DIRIS Digiware D-70)
- Multi-protocols (Modbus, BACnet, SNMP)
- 24 VDC SELV (Safety Extra Low Voltage) power supply elimination of hazardous voltage on cabinet doors.
- Ergonomic and easy to use with 10 direct access buttons for:
  - measurement information,
  - output selection,
  - equipment configuration.
- Centralising measurement points:
  - circuit selection,
  - displaying data.

DIRIS Digiware C-31

Compact: Centralise your measurement data on 1 module without a local screen, for a complete system:

- single 24 V power supply (no dangerous voltage on DIRIS Digiware modules for a connection with no interruption),
- a single RS485 communication.

The solution for

> Industry
> Building
> Infrastructure
> Data centers

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
> WEBVIEW-M embedded web server

Compliance with standards

> IEC 61557-12
> ISO 14025
> UL

Create your project

> Find the best DIRIS Digiware configuration: www.meter-selector.com

METER SELECTOR DIGITAL TOOL AVAILABLE

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Application	Control and power supply interface			
			new 	new 
DIRIS Digiware	***C-31***	***D-40***	***D-50***	***D-70***
Digiware input	•	•	•	•
RS485 input			•	•
RS485 Modbus output	•	•		
Ethernet output			Modbus BACnet IP SNMP v1, v2, v3	Modbus BACnet IP SNMP v1, v2, v3
WEBVIEW-M web server				•

Functions

WEBVIEW-M
Embedded web server in the DIRIS Digiware D-70 display

WEBVIEW allows the display and remote monitoring of all the electric parameters measured by up to 32 devices. They are displayed in the form of overview screens, graphs or tables for clear and user-friendly analysis.

Access to Webview is made by a web browser on a PC or tablet and offers multiple features such as the automatic export of data via FTPS or e-mail notification in the presence of alarms (SMTP).

The Photoview application is available via the Webview interface embedded in the DIRIS Digiware D-70 display. It allows the display of electrical quantities on a customised background picture such as a cabinet, a wiring diagram or the map of a site.

Accessories

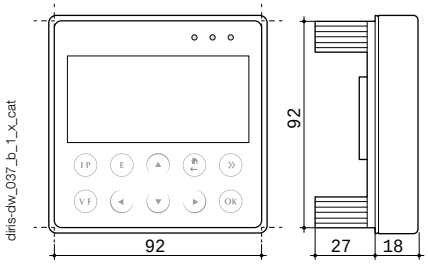
DIN rail mounting kit

Only compatible with DIRIS Digiware D-50v2 and D-70v2 displays, the accessory allows you to install the system display on a din rail.

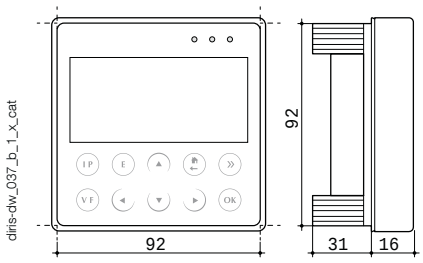
This kit is not included with the displays and must be ordered separately.

Dimensions (mm)

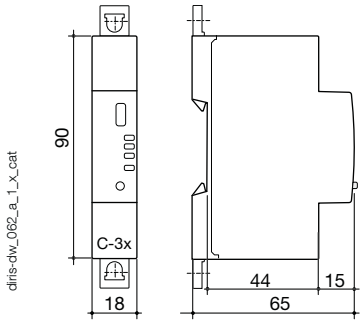
DIRIS Digiware D-40



DIRIS Digiware D-50 / D-70



DIRIS Digiware C-31



Configuration

Equipment consumption

Product	Power delivered (W)	Power consumed (W)
Power supply		
P15 100-240 VAC / 24 VDC	15	
P30 100-240 VAC / 24 VDC	20	
Cables		
50 metre package		1.5
System interfaces		
DIRIS Digiware D-40		2
DIRIS Digiware D-50 / D-70		2.5
DIRIS Digiware C-31		0.8
Module voltage		
DIRIS Digiware U-xx		0.72
DIRIS Digiware U-3xdc		0.6
Current modules		
DIRIS Digiware I-3x		0.52
DIRIS Digiware I-4x		1.125
DIRIS Digiware I-6x		0.7
DIRIS Digiware I-3xdc (+ 3 DC current sensors)		2
DIRIS Digiware S-xx		0.35
Input/output modules		
DIRIS Digiware IO-10/IO-20		0.5
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-40 display (2 W)
- 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 x 0.52 = 10.4 W)
  ⇨ **Total power = 14.62 W**

or
- 9 DIRIS Digiware current modules I-4x (9 x 1.125 = 10.125 W)
  ⇨ **Total power = 14.345 W.**

Size with a 24 VDC power supply delivering a maximum of 20 W (Power supply P30 ref: 4729 0603)

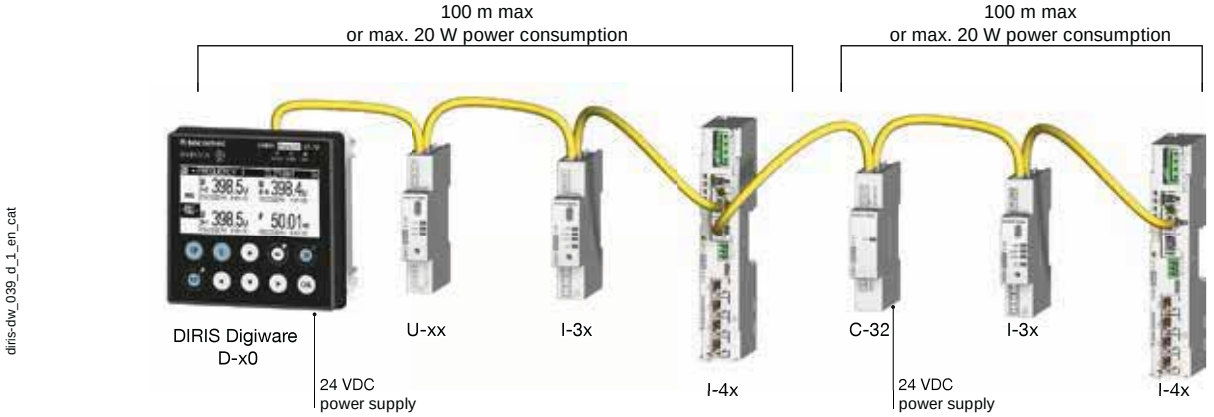
For example, it is possible to use
- 1 DIRIS Digiware D-40 display (2 W)
- 1 DIRIS Digiware voltage module U-xx (0.72 W)
- 50 metres of cable (1.5 W)

and
- 30 DIRIS Digiware current modules I-3x (30 x 0.52 = 15.6 W)
  ⇨ **Total power = 19.82 W**

or
- 14 DIRIS Digiware current modules I-4x (14 x 1.125 = 15.72)
  ⇨ **Total power = 19.97 W.**

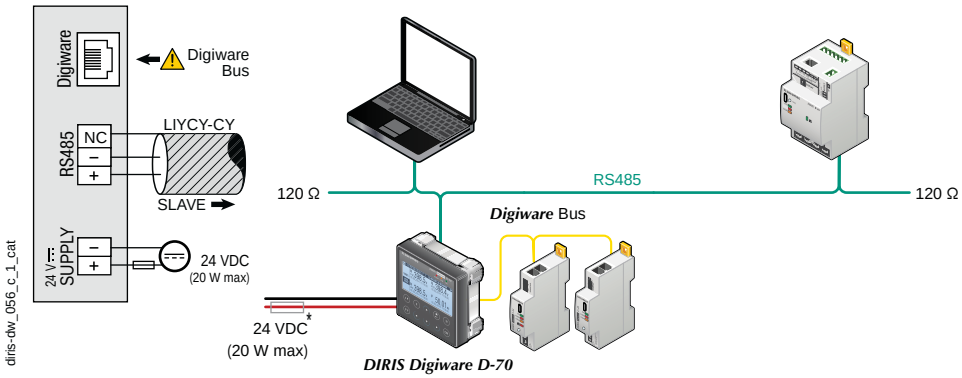
Repeater

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.



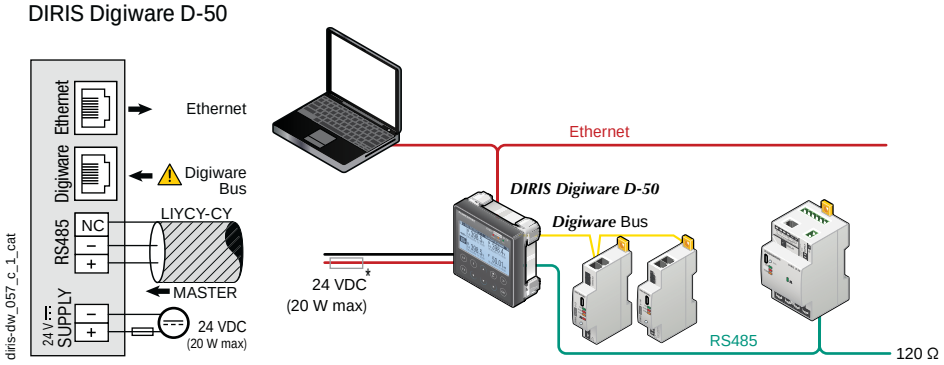
Connections

DIRIS Digiware D-40



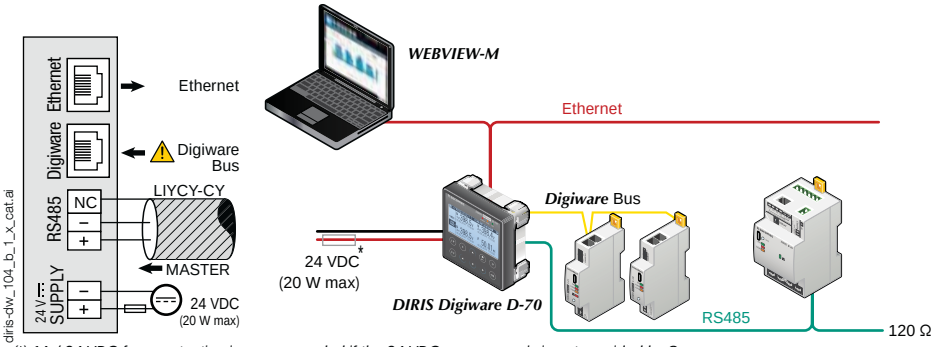
(*) 1A / 24 VDC fuse protection is recommended if the 24 VDC power supply is not provided by Socomec.

DIRIS Digiware D-50



(*) 1A / 24 VDC fuse protection is recommended if the 24 VDC power supply is not provided by Socomec.

DIRIS Digiware D-70



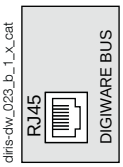
(*) 1A / 24 VDC fuse protection is recommended if the 24 VDC power supply is not provided by Socomec.

Connections (continued)

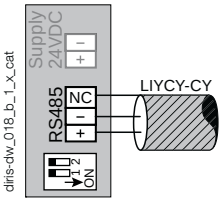
DIRIS Digiware C-31

Power supply

Digiware bus

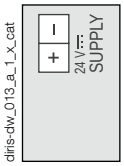


Communication

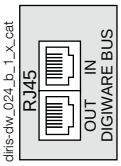


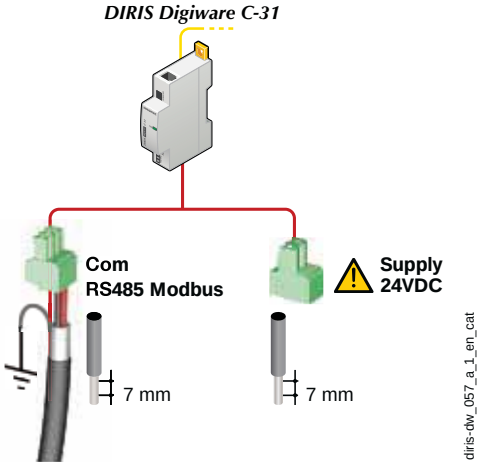
DIRIS Digiware C-32

Power supply



Digiware bus





Technical characteristics

Electrical characteristics

DIRIS Digiware C-31	
Input voltage	24 VDC ± 20 % - 20 W max
Connection	Removable screw terminal block, 2 positions, stranded or solid 0.2-2.5 mm² cable
P15 power supply	Characteristics: 100-240 VAC/ 24 VDC - 0.63 A - 15 W Modular format - Dimensions (H x L): 90 x 36 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 to 115 200 bauds
Function	Data configuration and reading
Location	Single-point on DIRIS Digiware C

Mechanical features

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 to +70°C
Storage temperature	-25 to +70°C
Operating humidity	55 °C / 97% HR
Operating altitude	< 2000 m

DIRIS Digiware D-40/D-50/D-70 features

Mechanical characteristics	
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	Gateway function (D-50/D-70): Modbus TCP BACnet IP SNMP v1, v2, v3
RJ45 Digiware	Control and power supply interface function
RS485 2-3 wires	Modbus RTU communication function - output for D-40 - input for D-50 / D-70
USB	Upgrade and configuration via type B micro USB connector
Electrical characteristics	
Power supply	24 VDC +10 % / -20%
Power consumption	2.5 VA
Battery lifetime	10 years
Environmental specifications	
Storage temperature	-20 to +70°C
Operating temperature	-10 to +55°C
Humidity	95% at 40°C
Installation category, degree of pollution	CAT III, 2

Ports	**D-40**	**D-50/D-70**
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 **0204**
D-70	Multipoint display, Ethernet output + embedded web server	4829 **0203**
C-31	System interface - no display, RS485 output	4829 **0101**
C-32	Repeater	4829 **0103**
Power supply		**Reference**
P15	Power supply 100-240 VAC/ 24 VDC 15 W	4829 **0120**
P30	Power supply 100-240 VAC/ 24 VDC 20 W	4729 **0603**
Digiware connection cables		**Reference**
RJ45 cables for Digiware Bus	Length 0.06 m	4829 **0189**
	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**
	50 m reel + 100 connectors	4829 **0185**
Termination for Digiware Bus (supplied with interfaces C and D)		4829 **0180**
USB configuration cable		4829 **0050**
Single-point display		**Reference**
DIRIS D-30(1)	Single-point display for DIRIS Digiware I-4x and DIRIS B	4829 **0200**
Accessories	**To be ordered in multiples of**	**Reference**
Fuse holder to protect voltage inputs (type RM) 1 pole + neutral	4	5701 **0017**
gG 10x38 0.5 A fuses	10	6012 **0000**
DIN rail mounting kit for D-50 and D-70 v2 displays	1	4829 **0230**

(1) DIRIS D-30 display characteristics, see page "DIRIS B".

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 acquisition module

DIRIS Digiware U-10/U-20/ U-30

Configuration with EasyConfig, see page 160.

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

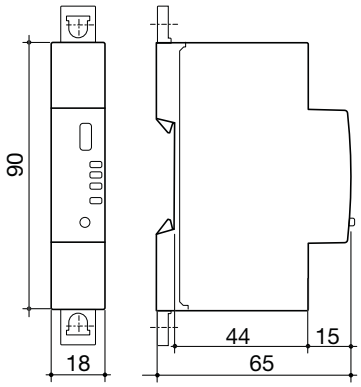
Create your project

> Find the best DIRIS Digiware configuration: www.meter-selector.com

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 63rd)			•
Voltage dips, swells and interruptions (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 (mm)

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 mm² 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 0.06 m	4829 **0189**
	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**
Replacement reference: 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	5701 **0018**
gG 10x38 0.5 A fuses	10	6012 **0000**

DIRIS Digiware S

Current acquisition module with integrated sensors

DIRIS Digiware S

Configuration with EasyConfig,

Function

DIRIS Digiware S current acquisition modules have 3 integrated current sensors for the measurement of electrical circuits up to 63 A.

Positioned directly above or below the protective devices, they are associated with the DIRIS Digiware U voltage measurement module to measure consumption, and to monitor the electrical installation and the quality of the power supply.

Advantages

Plug & Play

- Save wiring time: the current sensors are integrated in the module.
- Quick RJ45 connection between modules.
- Positioning possible upstream or downstream of the protective device.

Multi-circuit

Multiple DIRIS Digiware S modules can be used within the measurement system enabling the monitoring of a large number of loads.

Compact

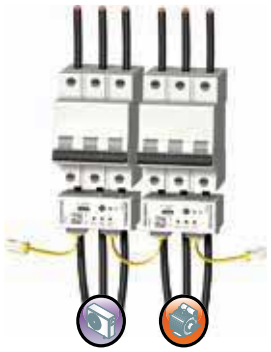
- A measurement module offering the best compactness/performance ratio of the market.
- Matches the pitch of the protective device.

Accurate

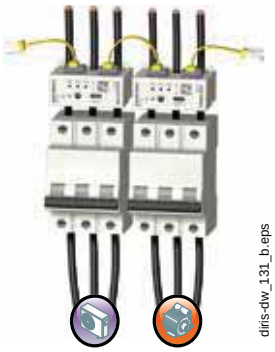
- Class 0.5 for active energy in accordance with the IEC 61557-12 standard, allowing accurate measurements over a wide range of currents.

Functional diagram

Downstream



Upstream



The DIRIS Digiware S measurement module can be mounted upstream or downstream of the protective device solving issues of space constraints.

The solution for

Distribution boards in:

> Data center
> Building
> Industry

Strong points

> Plug & Play
> Multi-circuit
> Compact

RJ45 (Digiware Bus) cables are available.

Integrated technologies

PreciSense AutoCorrect VirtualMonitor

For more information see our website www.socomec.com

Compliance with standards

> IEC 61557-12

> ISO 14025

> UL 257746

socomec Innovative Power Solutions

Application	Current measurement module with integrated sensors		
	Metering	**Analysis**	**Monitoring**
			
DIRIS Digiware S	***S-130***	***S-135***	***S-Datacenter***
Number of current inputs	3	3	3
Basic current I_b	10 A	10 A	10 A
Maximum current I_{max}	63 A	63 A	63 A
Load type accepted	1P + N 2P / 2P + N 3P / 3P + N	1P + N 2P / 2P + N 3P / 3P + N	1P + N
Metering			
± kWh, ± kvarh, kVAh	•	•	•
Multi-tariff (max 8)		•	
Load curves		•	•
Multi-measurement			
I1, I2, I3, In, ΣP, ΣQ, ΣS, ΣPF	•	•	•
P, Q, S, PF per phase		•	•
Predictive power		•	
Current unbalance (Inba, Inb, Idir, Iinv, Ihom)		•	
Phi, cos Phi, tan Phi		•	•
Quality			
THDi1, THDi2, THDi3, THDin		•	•
Individual harmonics I (up to 63rd)		•	
Crest factors U, V, I		•	
K factor		•	
Overcurrents		•	
Alarms			
Thresholds and combinations		•	•
Load level			•
Wiring errors		•	•
Protective device		•	•
Trends			
Average values		•	•
Format			
Width	54 mm	54 mm	54 mm

Mounting accessories

Temporary MCB insert
(for use during panel assembly)

diris-dw_137_a.eps

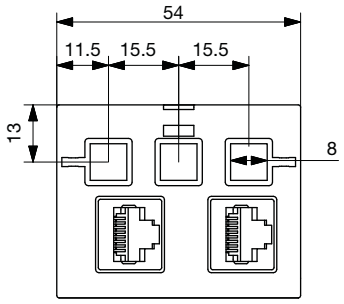
DIN rail and back plate mounting

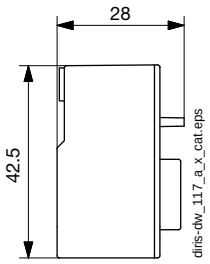
diris-dw_138_a.eps

Cable tie tether

diris-dw_139_a.eps

Dimensions (mm)

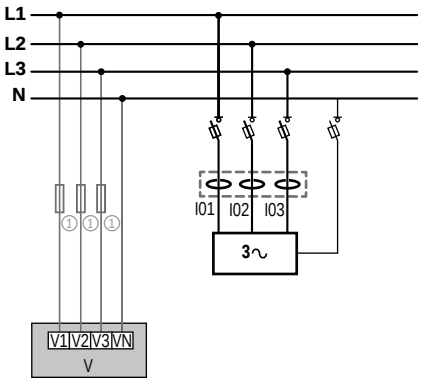




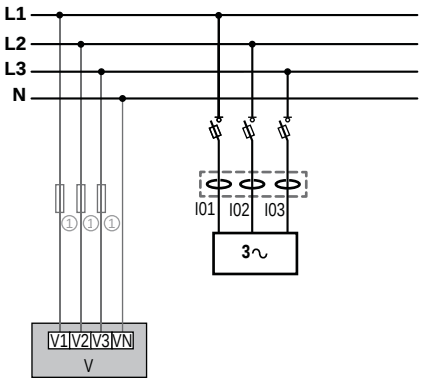
Connections

Current is measured by the integrated inputs I01, I02 and I03 on the DIRIS Digiware S module.

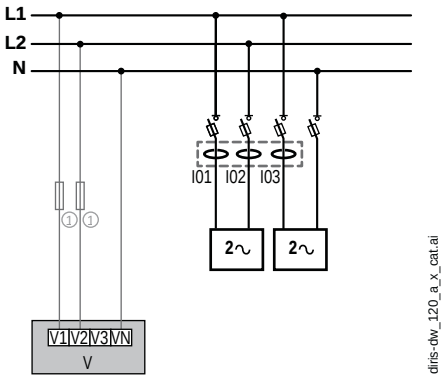
3P+N - 3CT



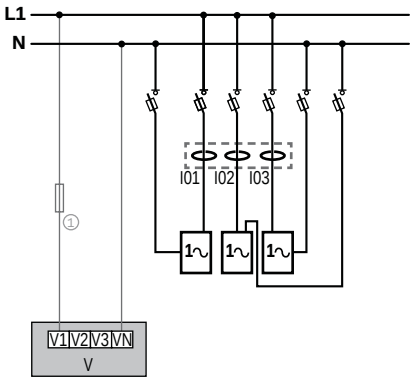
3P - 3 CT



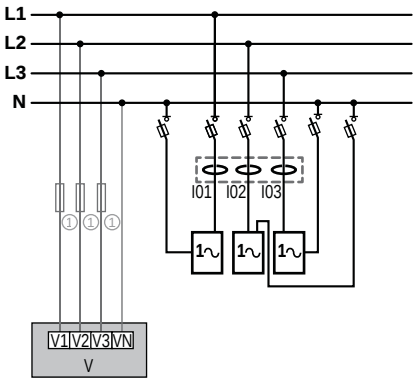
2P+N - 2CT & 2P+N - 1CT



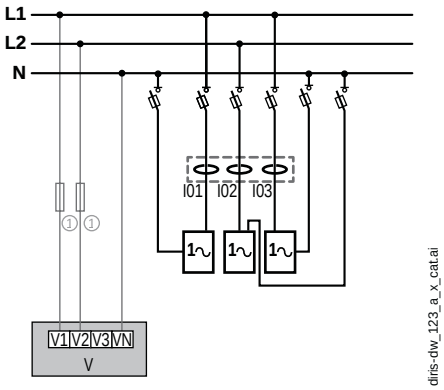
1P+N - 1 CT (3x)



3P+N - 1CT (3x)



2P+N - 1CT (3x)



DIRIS Digiware S | 3 Load | Fuses : 0.5 A gG / BS 88 2 A gG / 0.5 A class CC

Technical characteristics

Measurement characteristics

Measurement of current	
Number of current inputs	3
Associated current sensors	Integrated in the product
Basic current Ib	10 A
Maximum current I_{max}	63 A
Current measurement accuracy	Class 0.5 IEC 61557-12
Measurement of energy	
Accuracy of active energy	Class 0.5 IEC 61557-12
Accuracy of reactive energy	Class 1 IEC 61557-12

Mechanical characteristics

Casing type	DIN rail or back plate mounting
Casing protection index	IP20 / IK08
Weight	63 g
Module power consumption	0.35 VA

Communication specifications

Digiware BUS	
Function	Connection between DIRIS Digiware S, U, I modules and system interfaces
Cable type	Specific Socomec cable with RJ45 connections
USB	
Protocol	MODBUS RTU on USB
Function	Configuration of DIRIS Digiware modules
Location	On each DIRIS Digiware module
Connection	Type B micro USB connector

Environmental specifications

Ambient operating temperature	-10 … +55°C
Storage temperature	-25 … +70°C
Operating humidity	40°C / 95% RH
Operating altitude	< 2000 m

References

DIRIS Digiware S		Reference
S-130	Metering - 3 integrated current inputs	4829 **0160**
S-135	Analysis - 3 integrated current inputs	4829 **0161**
S-Datacenter	Single-phase monitoring - 3 integrated current inputs	4829 **0162**
Accessories		**Reference**
DIN rail and back plate mounting clip (x10)		4829 **0195**
Temporary MCB insert (x10)		4829 **0196**

Digiware connection cables		Reference
RJ45 cables for Digiware Bus	Length 0.06 m(1)	4829 **0189**
	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**
	50 m reel + 100 connectors	4829 **0185**
Termination for Digiware Bus (supplied with interfaces C and D)		4829 **0180**
USB configuration cable		4829 **0050**

(1) The RJ45 6 cm cables can be used on 3-pole or 4-pole protective devices.

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For further information, please contact your nearest SOCOMEC branch.

DIRIS Digiware I

Current acquisition modules

DIRIS Digiware I-3x

DIRIS Digiware I-4x

DIRIS Digiware I-6x

Configuration with EasyConfig, see page 160.

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

Integrated technologies

PreciSense AutoCorrect VirtualMonitor

For more information, see page 12.

Conformity to standards

> IEC 61557-12

> ISO 14025

> UL

Create your project

> Find the best DIRIS Digiware configuration: www.meter-selector.com

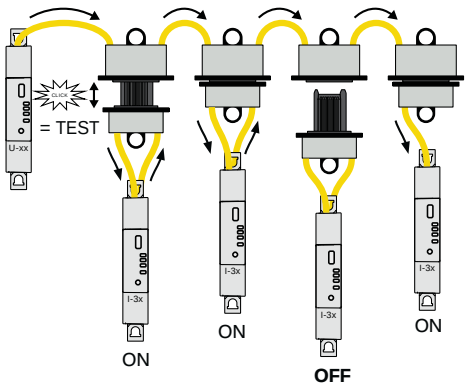
METER SELECTOR DIGITAL TOOL AVAILABLE

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, Iinv, Ihom, Inb)				•		•		
Phi, cos Phi, tan Phi				•		•		
Quality								
THDi1, THDi2, THDi3, THDin			•	•	•	•		
Individual harmonics I (up to 63rd)				•		•		
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

Accessories

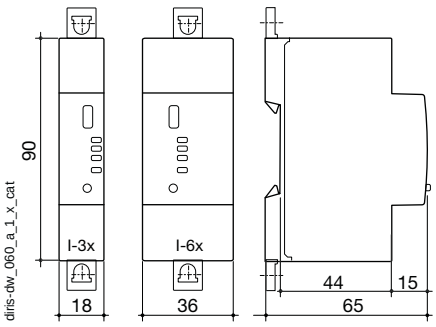
Digiware plug-in connector

With the Digiware plug-in connector you can disconnect a DIRIS Digiware module form 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.

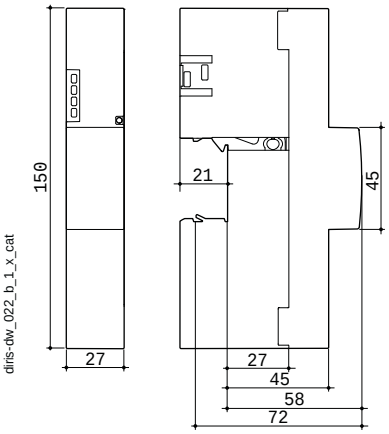


Dimensions (mm)

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.

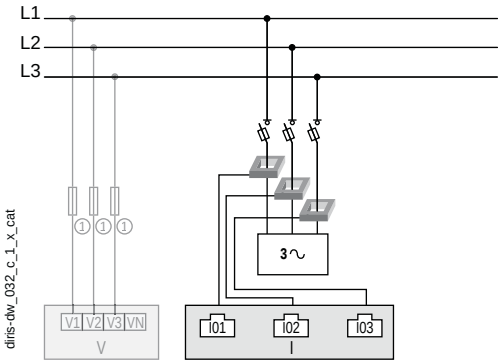
For more information: see page 46.

Network and connection examples

I3x

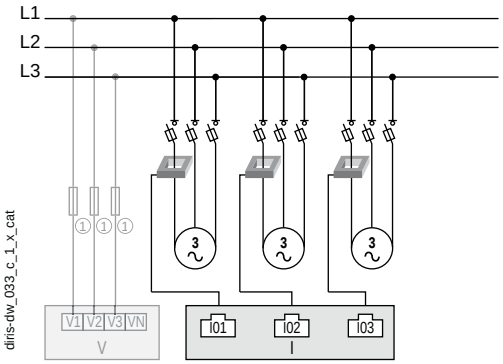
Three-phase

3P - 3CT (1 three-phase load)



Three-phase

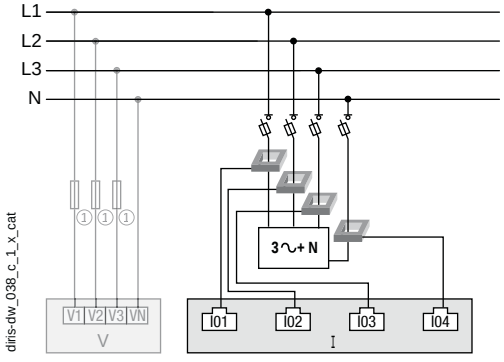
3P - 1CT (3 balanced, three-phase loads)



I4x

Three phase + neutral

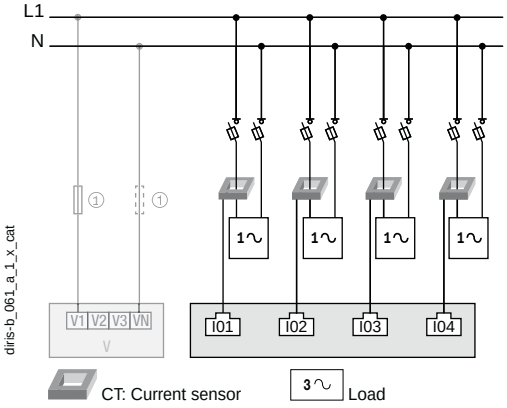
3P+N - 4CT (1 three-phase load + Neutral measured)



1. 0.5 A gG / 0.5 A class CC fuses.

Single-phase

1P+N-1CT (4 single-phase loads)



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 mm² 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 mm² 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 0.06 m	4829 **0189**
	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 30.

Expert Services

Require integration onto your network?

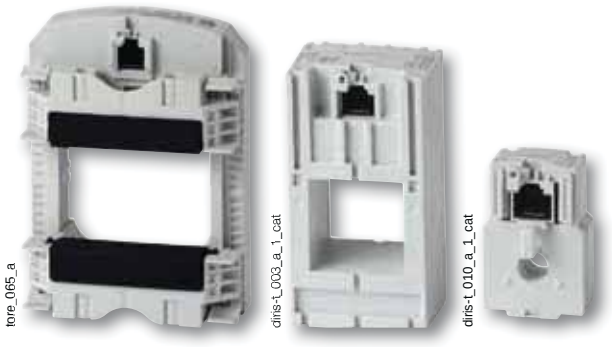
No problem for our "Expert Services" team. They will fully integrate all your SOCOMEC devices, **audit** your system, **commission** selected equipment and **train** your staff on its use.

For further information, please contact your nearest SOCOMEC branch.

TE sensors

Solid current sensors

used with DIRIS Digiware, DIRIS A-40 and DIRIS B



***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.

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 In.

Installation

- The TE solid sensor range is specially designed for new installations, and has the same pitch as the most common protective devices.

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

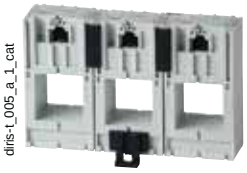
Create your project

> Find the best DIRIS Digiware configuration: www.meter-selector.com

METER SELECTOR DIGITAL TOOL AVAILABLE

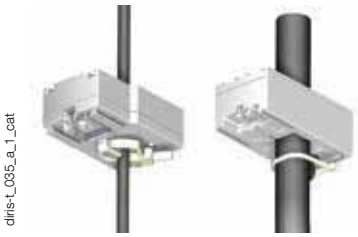
Mounting

Linear assembly with the protective devices
TE-25 / TE-35 / TE-45 / TE-55 / TE-90



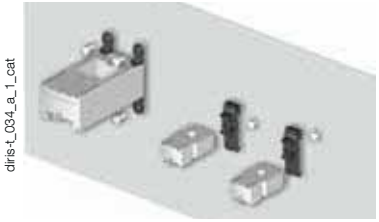
Staggered assembly
TE-18 / TE-35 / TE-45 / TE-55

Cable mounting

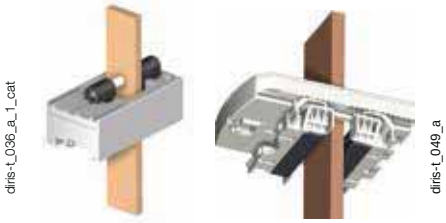


DIN rail mounted

Back-plate mounting



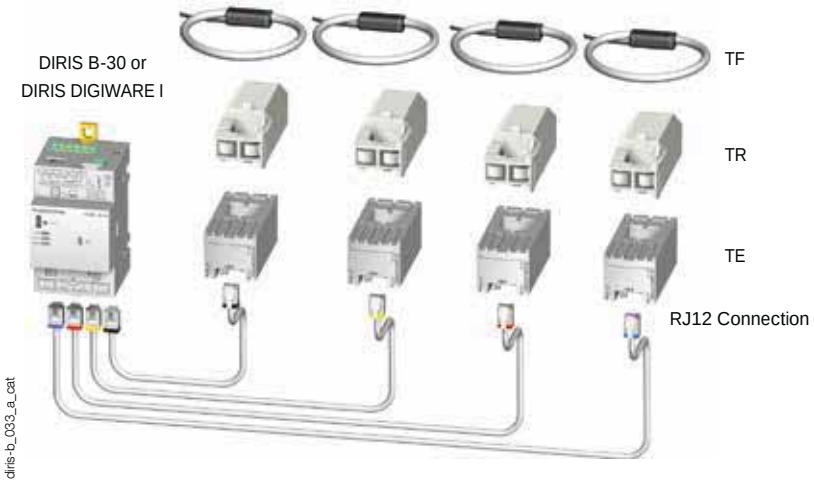
Bar mounting



TE-90 clamps

Connections

TE / TR / TF current sensors



TE sensors

Solid current sensors

used with DIRIS Digiware, DIRIS A-40 and DIRIS B

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	

diris-t_042_a - 043_a - 044_a - 045_a

Compatible accessories

Adapter for CT with 5A secondary

diris-t_041_a_1_cat

- With this adapter you can use a current transformer with a 5 A output on DIRIS Digiware I, DIRIS B and DIRIS A-40.
  For use with standard 5 A CTs 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.

diris-t_020_a_1_cat

Sealable cover

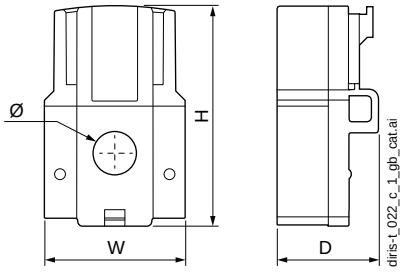
- Using a sealable cover guarantees the immunity of the sensor connection on TE/TR/TF current sensors.

diris-t_046_a_1_cat

Dimensions (mm)

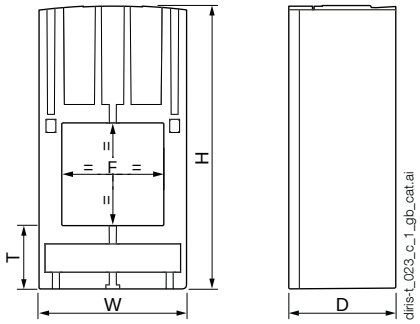
TE - Solid current sensors

TE-18



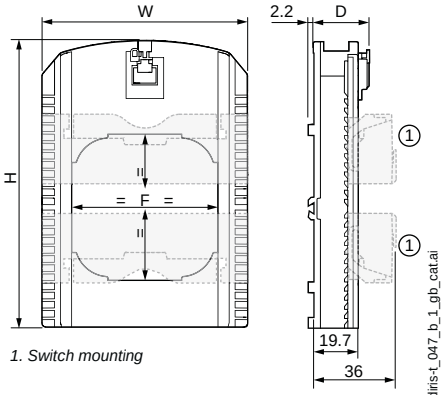
diris-t_022_c_1_gb_cat.ai

TE-25 / TE-35 / TE-45 / TE-55



diris-t_023_c_1_gb_cat.ai

TE-90



1. Switch mounting

diris-t_047_b_1_gb_cat.ai

Model	Nominal current range (A)	Real range covered (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	-

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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
Real range covered (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)	Real range covered (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**
5 A CT adapter (measurements of >2000 A) (max primary current 10000 A for 5 A CT)	4829 **0599**
Sealable caps (20 pieces)	4829 **0600**

	Cable length (m)								
RJ12 connection cables	**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/iTR sensors

Split-core AC current sensors

used with DIRIS Digiware, DIRIS A-40 and DIRIS B

***TR** Split-core current sensors*

Function

The **split-core current sensors** in the **TR** and **iTR** ranges enable the current of an electrical installation to be measured. Used with power monitoring device DIRIS Digiware, DIRIS A-40, DIRIS B, they make it possible to perform measurements between 25 and 600 A, with guaranteed accuracy. The RJ12 connection provides quick connections, and the integrated intelligence prevents any configuration errors.

The sensors in the iTR range revolutionise the world of measurement and provide access to VirtualMonitor status monitoring technologies and to AutoCorrect automatic configuration.

Advantages of the TR and iTR ranges

Smart sensors

- Sensors with an extended operational range.
- Automatic detection of rating.
- Secured disconnection of load.
- Quick connection via RJ12 and identification of cable by colour code.

Accurate

- Measurement precision guaranteed in acc. with standard IEC 61557-12 : class 0.5 (iTR) or 1 (TR) for the global measuring chain from 2 to 120% of In.

Unique advantages of the iTR range

VirtualMonitor technology

VirtualMonitor provides monitoring of protective devices:

- Across the entire electrical installation.
- Remotely and in real-time.
- Without additional hardware or wiring (no auxiliary contacts needed).

AutoCorrect technology

AutoCorrect guarantees that your measurement system is working correctly:

- Automatic wiring control (current voltage phase association).
- Correction of errors.
- Feature available off load.

The solution for

> Retrofit applications
> Industry
> Building
> Infrastructure
> Data centers

Strong points

> Smart sensors
> PreciSense technology: Accurate.
> Easy installation and configuration.

Integrated technologies(1)

PreciSense AutoCorrect VirtualMonitor

(1) AutoCorrect and VirtualMonitor are only available with iTR sensors.

For more information see our website www.socomec.com

Compliance with standards

> IEC 61557-12
> ISO 14025
> UL

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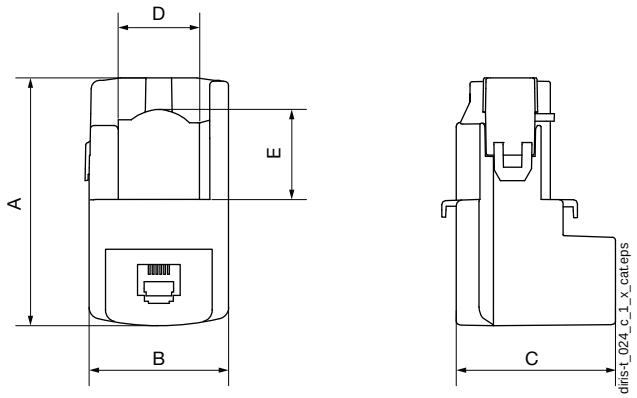
Installation

Cable mounting

Dimensions (mm)

TR-10 / TR-14 / TR-21 / TR-32



Model	Nominal current range (A)	Real range covered (A)	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	Ø (mm)
TR/iTR-10	25 ... 63	0.5 ... 75.6	44	26	28	-	-	10
TR/iTR-14	40 ... 160	0.8 ... 192	67	29	28	14	15	14
TR/iTR-21	63 ... 250	1.26 ... 300	65	37	43	21	23	21
TR/iTR-32	160 ... 600	3.2 ... 720	86	53	47	32	33	32

Technical characteristics

Model	TR-10	iTR-10	TR-14	iTR-14	TR-21	iTR-21	TR-32	iTR-32
Nominal current range I_n (A)	25 ... 63		40 ... 160		63 ... 250		160 ... 600	
Real range covered (A)	0.5 ... 75.6		0.8 ... 192		1.26 ... 300		3.2 ... 720	
Max. current (A)	75.6		192		300		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 1 s							
Measurement category	CAT III							
Global class used with Diris Digiware/A-40/B-10/B-30	Class 1	Class 0.5	Class 1	Class 0.5	Class 1	Class 0.5	Class 1	Class 0.5
Protection degree	IP20 / IK07							
Operating temperature range	-10 to +70°C						-10°...+55°C	
Storage temperature range	-25 to +85°C							
Relative humidity	95% RH non-condensing							
Altitude	< 2000 m							
Connection	Socomec RJ12 cable							

References

Model	Nominal current range (A)	Real range covered (A)	Ø (mm)	Reference
TR-10	25 ... 63	0.5 ... 75	10	4829 **0555**
TR-14	40 ... 160	0.8 ... 192	14	4829 **0556**
TR-21	63 ... 250	1.26 ... 300	21	4829 **0557**
TR-32	160 ... 600	3.2 ... 720	32	4829 **0558**

Model	Nominal current range (A)	Real range covered (A)	Ø (mm)	Reference
iTR-10	25 ... 63	0.5 ... 75	10	4829 **0655**
iTR-14	40 ... 160	0.8 ... 192	14	4829 **0656**
iTR-21	63 ... 250	1.26 ... 300	21	4829 **0657**
iTR-32	160 ... 600	3.2 ... 720	32	4829 **0658**

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 TF current sensors

used with DIRIS Digiware, DIRIS A-40 and DIRIS B

TF *Flexible current sensors*

Function

TF flexible current sensors measure the load currents of an electrical circuit and send the data to meters and Power Monitoring Devices or current modules via an RJ12 plug-and-play connection. Thanks to a wide measurement range, TF current sensors cover a wide current range from 150 to 6000 A, with only 5 references. TF flexible current sensors can be used with DIRIS Digiware I modules, DIRIS A-40 and DIRIS B.

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 rating.
- The sensors can be installed in both directions.

Accuracy according to IEC 61557-12

- Class 0.5 for the global measuring chain (PMD + TF current sensors) from 2 to 120% of the nominal current I_n.
- Accuracy is guaranteed regardless of the position of the conductor in the loop.

Safe locking mechanism

- The locking system prevents the loop from opening, guaranteeing continuous functioning and accuracy even under harsh conditions.

Installation

- The TF flexible sensor range is specially designed for existing installations with strict integration constraints or with high-intensity currents.

Simplified installation

- The Rogowski integrator is directly integrated to the RJ12 cable enabling a quick and compact integration (no DIN rail assembly required) inside electrical panels.
- The integrator is self supplied by the PMD through the RJ12 cable and does not need any external power supply.

The solution for

> Industry
> Building
> Infrastructure
> Data centers

Strong points

> Plug & Play
> Accuracy according to IEC 61557-12
> Installation
> Simplified installation

Integrated technologies

PreciSense

For more information see our website www.socomec.com

Compliance with standards

> IEC 61557-12
> ISO 14025
> UL

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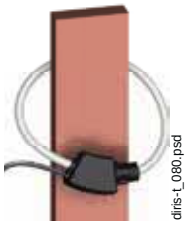
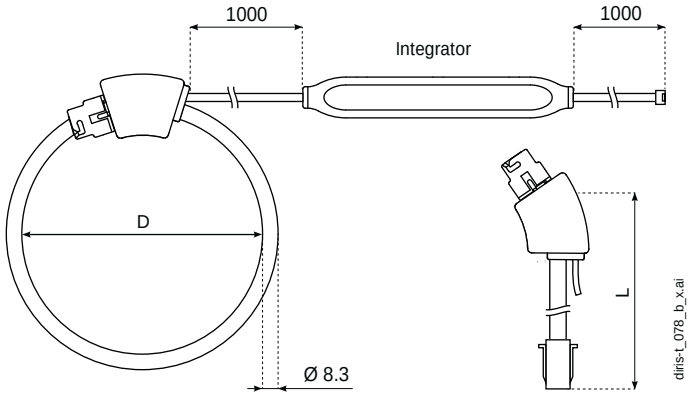
Installation

Cable mounting

Bar mounting



Dimensions (mm)



Model	Nominal current range (A)	Real range covered (A)	D = Ø loop (mm)	L = Loop length (mm)
TF-55	150 ... 600	3 ... 720	55	173
TF-80	150 ... 600	3 ... 720	80	251
TF-120	400 ... 2000	8 ... 2400	120	377
TF-200	600 ... 4000	12 ... 4800	200	628
TF-300	1600 ... 6000	32 ... 7200	300	942
TF-600	1600 ... 6000	32 ... 7200	600	1885
Integrator dimensions: 128 x 19 x 15 mm				

Technical characteristics

Model	TF-55	TF-80	TF-120	TF-200	TF-300	TF-600
Nominal current range I_n (A)	150 ... 600	150 ... 600	400 ... 2000	600 ... 4000	1600 ... 6000	1600 ... 6000
Real range covered (A)	3 ... 720	3 ... 720	8 ... 2400	12 ... 4800	32 ... 7200	32 ... 7200
Weight (g)	114	130	142	164	193	274
Max. voltage (phase/neutral)	600 V					
Rated withstand voltage	3.6 kV					
Accuracy class	0.5 in association with DIRIS Digiware I, DIRIS A-40, DIRIS B based on IEC 61557-12					
Frequency	50 / 60 Hz					
Intermittent overload	10 x In for 1 s					
Measurement category	CAT III					
Protection degree	IP30 / IK07					
Operating temperature	-10 to +70°C					
Storage temperature	-25 to +85°C					
Relative humidity	95% RH non-condensing					
Altitude	< 2000 m					
Connection	Socomec cable or equivalent RJ12 straight, twisted pair, unshielded, 600 V, -10 ... +70 °C					

References

Model	Nominal current range (A)	Real range covered (A)	D = Ø loop (mm)	L = Loop length (mm)	Reference
TF-55	150 ... 600	3 ... 720	55	173	4829 **0570**
TF-80	150 ... 600	3 ... 720	80	251	4829 **0574**
TF-120	400 ... 2000	8 ... 2400	120	377	4829 **0575**
TF-200	600 ... 4000	12 ... 4800	200	628	4829 **0576**
TF-300	1600 ... 6000	32 ... 7200	300	942	4829 **0577**
TF-600	1600 ... 6000	32 ... 7200	600	1885	4829 **0578**
Accessories					**Reference**
Female/female connector for extension of the RJ12 connection between PMD and TF sensor.					4829 **0670**

	Cable length (m)								
RJ12 connection cables	**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**			

DIRIS Digiware Udc

DC voltage acquisition module

DIRIS Digiware U-31dc/U-32dc

DIRIS Digiware U500dc/U1000dc/U1500dc adaptor

Configuration with EasyConfig, see page 160.

Function

The **DIRIS Digiware U-3xdc** module measures DC voltage for the entire system.
It measures up to 180 VDC with a direct connection and is therefore compatible with typical nominal voltages (24 VDC, 48 VDC…).

The voltage adaptors make the system compatible with all voltage levels up to 1650 VDC to respond to the needs of all applications.

The RJ45 Digiware Bus transmits voltage measurements along with power supply and communication to all connected products.

Advantages

Single voltage measurement

- 1 single voltage measurement point for the entire system.
- Single point of protection for the voltage measurement.
- No hazardous voltage on panel doors.

Flexible

- The voltage adaptors make the measurement system compatible with all DC electrical networks.

Plug & Play

- Easy to configure from DIRIS Digiware D interfaces or from the Easy Config configuration software.

The solution for

> Data centre
> Telecommunication
> Renewable power
> Transportation

Strong points

> Centralisation of voltage measurement
> Flexible
> Plug & Play

RJ45 (Digiware Bus) cables are available.

Compliance with standards

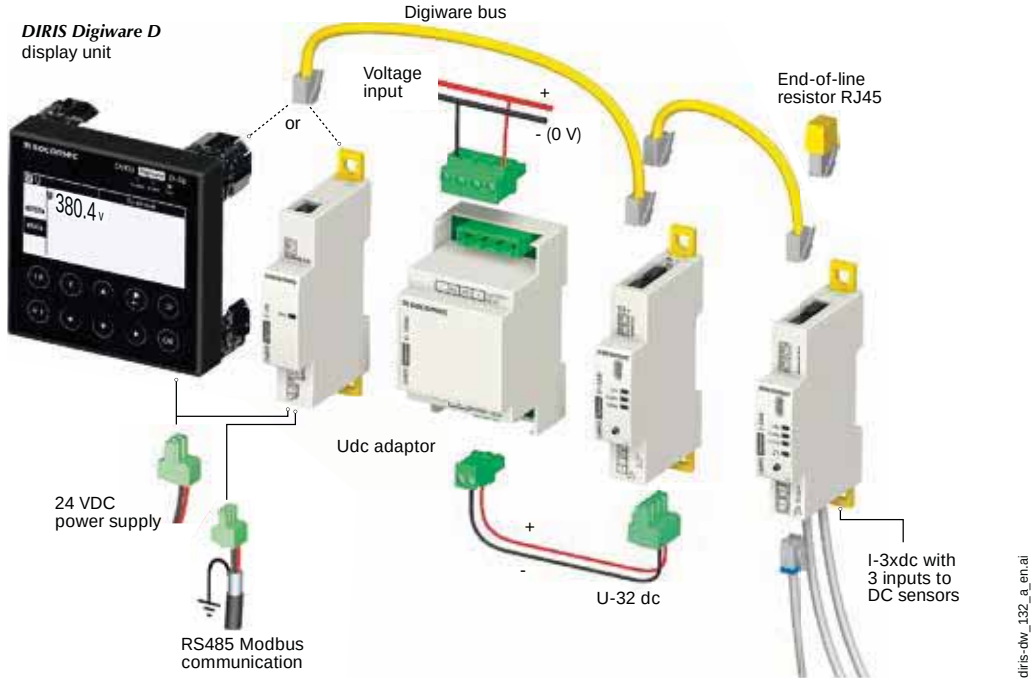
> IEC 61557-12
> ISO 14025
> UL E257746

Application	DC voltage measurement	
		
DIRIS Digiware Udc	**U-31dc**	**U-32dc**
Nominal voltage range	24 … 48 VDC	60 … 150 VDC
Measuring range (min-max)	19.2 … 60 VDC	48 … 180 VDC
Multi-measurement		
DC voltage (VDC)	•	•
Power quality		
V ripple (voltage ripple)	•	•
V_{rms}	•	•
Alarms		
Thresholds and combinations	•	•
Trends		
Average values	•	•
Format		
Width/number of modules	18 mm / 1	

Application	DC voltage adaptors		
			
DIRIS Digiware Udc	U500dc	U1000dc	U1500dc
Max. voltage range	200 … 600 VDC	400 … 1200 VDC	1200 … 1650 VDC
Association			
U-32dc	•	•	•
Format			
Width/number of modules	54 mm / 3		

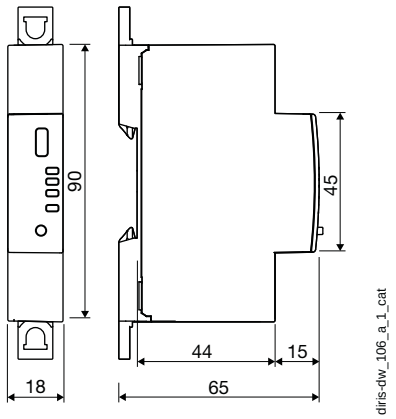
Connections

Connecting DIRIS Digiware DC adaptors

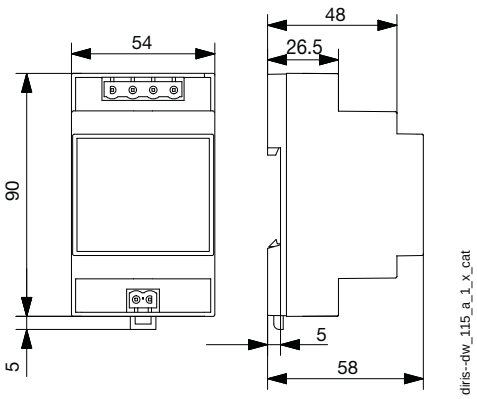


Dimensions (mm)

DIRIS Digiware U-3xdc



DIRIS Digiware adaptors
U500dc / U1000dc / U1500dc



Technical characteristics

Measurement characteristics

DC voltage measurement - DIRIS Digiware U	
Features of the network measured (min-max)	Without adaptors: U-31dc : 19.2 - 60 VDC U-32dc : 48 - 180 VDC
	With adaptor: U-32dc + adaptor U500dc : 200 - 600 VDC U-32dc + adaptor U1000dc : 400 - 1200 VDC U-32dc + adaptor U1500dc : 1200 - 1650 VDC
Voltage measurement accuracy without adaptor	Class 0.5 IEC 61557-12
Voltage measurement accuracy with adaptor	Class 1 IEC 61557-12
Connection without adaptor	Removable screw terminal block, 2 positions, stranded or solid 0.2 - 2.5 mm² cable
Connection with adaptor	Adaptor input: removable screw terminal block, 2 positions, stranded or solid 0.2 … 2.5 mm² cable Adaptor output: removable screw terminal block, 2 positions, stranded or solid 0.2 … 2.5 mm² cable
Module power consumption	0.6 VA

Mechanical features

Casing type	DIN-rail mounting module and base
Casing protection index	IP20 / IK06
Front panel protection index	IP40 front face in modular assembly / IK06
Weight	64 g

Environmental specifications

Ambient operating temperature	-10 to +70°C
Storage temperature	-25 to +70°C
Operating humidity	55 °C / 97% HR
Operating altitude	< 2000 m

Communication specifications

USB	
Protocol	Modbus RTU on USB
Function	Configuration of DIRIS Digiware modules
Location	On each DIRIS Digiware measurement module
Connection	Type B micro USB connector
Digiware bus	
Function	Connection between DIRIS Digiware modules
Cable type	Specific Socomec cable with RJ45 connections

References

Digiware connection cables		Reference
RJ45 cables for Digiware Bus	Length 0.06 m	4829 **0189**
	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**
	50 m reel + 100 connectors	4829 **0185**
Termination for Digiware Bus (supplied with interfaces C and D)		4829 **0180**
USB configuration cable		4829 **0050**

DIRIS Digiware		Reference
U-31dc	Voltage measurement 19.2 … 60 VDC	4829 **0150**
U-32dc	Voltage measurement 48 … 180 VDC	4829 **0151**
U500dc	Voltage adaptor 200 … 600 VDC	4829 **0153**
U1000dc	Voltage adaptor 400 … 1200 VDC	4829 **0154**
U1500dc	Voltage adaptor 1200 … 1650 VDC	4829 **0155**

DIRIS Digiware Idc

Direct current acquisition module

DIRIS Digiware I-30dc/I-35dc

Configuration with EasyConfig, see page 160.

Function

DIRIS Digiware Idc modules measure consumption and monitor the DC electrical installation. Several Idc modules can be used within the same system, allowing the measurement of a large number of DC circuits. They are associated with DIRIS Digiware Udc voltage measurement modules.

Direct current is measured using external sensors connected by RJ12-Molex cables, available in multiple lengths. These cables are colour coded (brown, orange, white) to easily identify circuits.

The associated DIRIS Digiware D screen and the embedded webserver Webview can display electrical measurements from both DIRIS Digiware AC and DC systems simultaneously.

Advantages

Multi-circuit

- Measurement of up to 3 DC circuits per Idc module.
- Multiple Idc modules can be included. This allows the measurement of a large number of DC loads simultaneously.

Flexible

- Adapted to suit metering and quality analysis of the direct current.
- A complete range of solid core and split core DC current sensors from 50 to 5000 A.

Plug & Play

- Quick RJ45 connection between modules and RJ12-Molex to current sensors.
- Easy to configure from DIRIS Digiware D interfaces or from the Easy Config software.

Compact

One module wide to address space constraints inside electrical panels.

The solution for

> Data centre
> Telecommunication
> Renewable power
> Transportation

Strong points

> Multi-circuit
> Plug & Play
> Flexible
> Compact

RJ45 (Digiware Bus) cables are available.

Compliance with standards

> IEC 61557-12

> ISO 14025

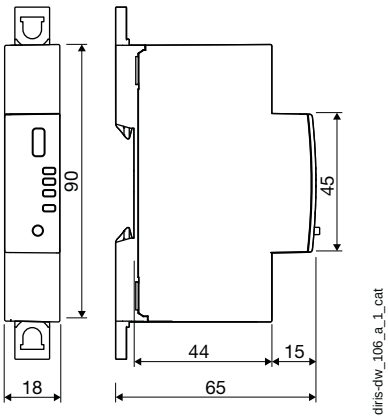
> UL E257746

socomec Innovative Power Solutions

Application	Direct current (DC) measurement modules	
		
DIRIS Digiware Idc	*I-30dc*	*I-35dc*
Number of current inputs		
	3	3
Metering		
± kWh	•	•
Load curves		•
Multi-measurement		
DC current (I DC)	•	•
DC power (P DC)	•	•
Predictive power		•
Measurement of current quality		
I ripple (current ripple)		•
I rms		•
Alarms		
Thresholds and combinations		•
Trends		
Average values		•
Format		
Width/number of modules	18 mm / 1	

Dimensions (mm)

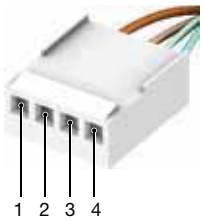
DIRIS Digiware Idc



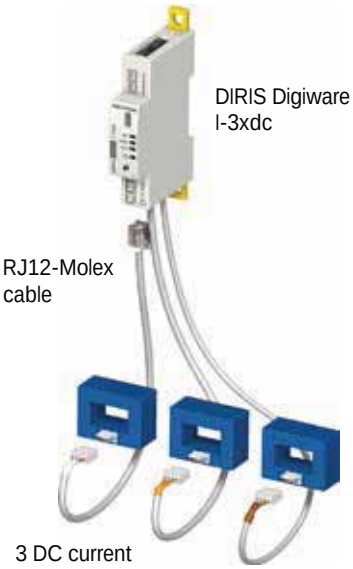
Connections

DC current is measured by external sensors connected to the DIRIS Digiware I-3xdc modules via RJ12-Molex cables. Connection of the current sensors is quick and error-free. A wide range of current sensors is available from Socomec to suit all installations and applications including split-core current sensors for retrofit applications.

- Open-loop Hall effect sensors
- Solid core or split core.
- Power supply voltage: ± 15 V.
- Power supply current: ± 25 mA depending on sensor.
- Output voltage: ± 4 V.
- 4-point male Molex terminal strip.
- Measuring range: 16 to 6000 A.
- Category III overvoltage.



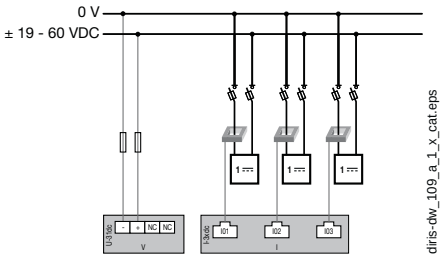
- PIN 1: + 15 V (+ Vc)
- PIN 2: - 15 V (- Vc)
- PIN 3: sensor input (M)
- PIN 4: 0 V sensor (0)



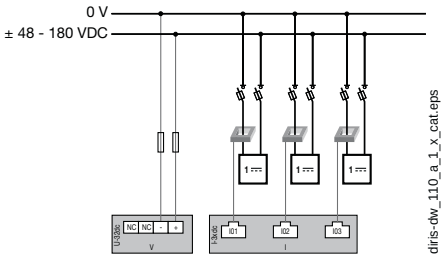
Network and connection examples

Measurement of 3 DC loads

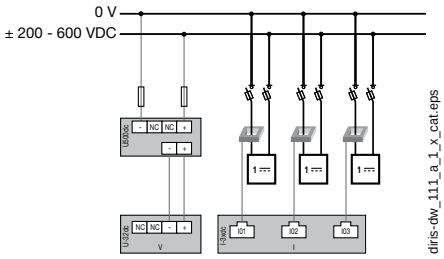
DIRIS Digiware U-31dc
Voltage (VDC): 19 - 60 V



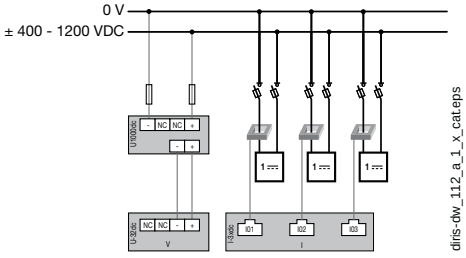
DIRIS Digiware U-32dc
Voltage (VDC): 48 - 180 V



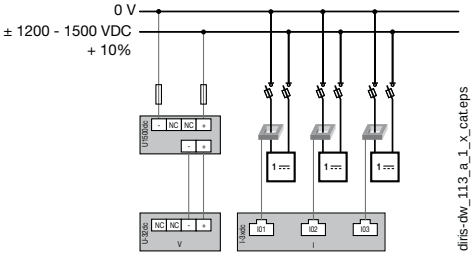
DIRIS Digiware U-32dc + adaptor U500dc
Voltage (VDC): 200 - 600 V



DIRIS Digiware U-32dc + adaptor U1000dc
Voltage (VDC): 400 - 1200 V



DIRIS Digiware U-32dc + adaptor U1500dc
VDC voltage: 1200 - 1500 V +10%



1. Fuse: 2A gPV

DC current sensor

DC load

Technical characteristics

Measurement characteristics

DC current measurement - DIRIS Digiware Idc	
Number of current inputs	3
Associated current sensors	Open-loop Hall effect
Accuracy of current measurement	Class 0.5
Precision measurement of power and energy	With U-31dc/U-32dc only: class 1 With U-32dc + adaptor: class 2
Connection	Specific Socomec cable with RJ12-Molex connectors
Power consumption of module	2 VA

Mechanical features

Casing type	DIN-rail mounting module and base
Casing protection index	IP20 / IK06
Front panel protection index	IP40 front face in modular assembly / IK06
Weight	69 g

Environmental specifications

Ambient operating temperature	-10 to +70°C
Storage temperature	-25 to +70°C
Operating humidity	55 °C / 97% HR
Operating altitude	< 2000 m

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
Digiware bus	
Function	Connection between DIRIS Digiware modules
Cable type	Specific Socomec cable with RJ45 connections

References

DIRIS Digiware I-3xdc		Reference
I-30dc	Metering - 3 current inputs	4829 **0156**
I-35dc	Analysis - 3 current inputs	4829 **0157**

RJ12-Molex cables		
Number of cables	**Length of cables**	**Reference**
3	0.3 m	4829 **0782**
3	0.5 m	4829 **0783**
3	1 m	4829 **0784**
3	2 m	4829 **0785**
1	5 m	4829 **0786**

Digiware connection cables		Reference
RJ45 cables for Digiware Bus	Length 0.06 m	4829 **0189**
	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**
	50 m reel + 100 connectors	4829 **0185**
Termination for Digiware Bus (supplied with interfaces C and D)		4829 **0180**
USB configuration cable		4829 **0050**

Expert Services

Do you require services for your metering system?
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.

DC current sensors

Associated with DIRIS Digiware DC

Solid-core sensors 50 … 600 A

Split-core sensors 50 … 500 A

Solid-core sensors 850 ... 5000 A

Split-core sensors 800 … 2000 A

The solution for

> Data centre
> Telecommunication
> Renewable power
> Transportation

Strong points

> Plug & Play
> Wide selection of ratings
> Simplified installation

Compliance with standards

> IEC 61010-1

> UL

Function

The DC current sensors measure the DC load currents of an electrical installation and transmit information to the DIRIS Digiware Idc measurement modules via an RJ12 to Molex cable on the sensor side.

The range comprises solid-core and split-core sensors ranging from 50 to 5000 A in various sizes allowing them to be used in new or existing electrical installations.
Up to 3 different DC sensors can be connected to the same DIRIS Digiware Idc module.

Advantages

Plug & Play

- A quick RJ12 connection makes wiring easy and reliable.
- Fast configuration of the sensor's rating.

Flexible

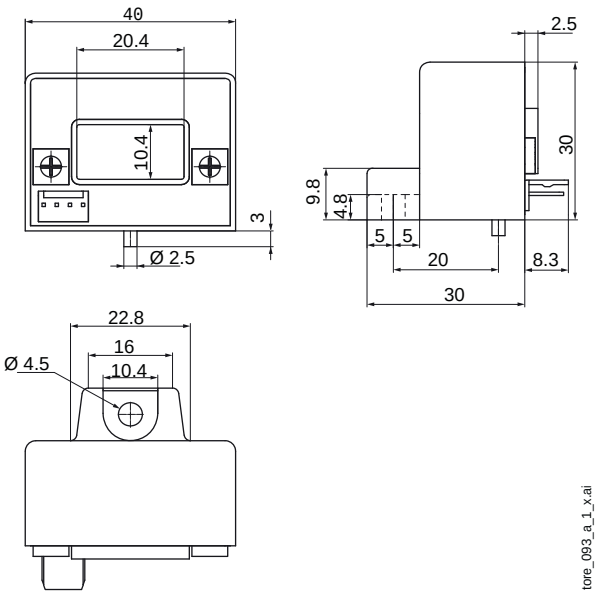
- A complete range of solid-core and split-core sensors from 50 to 5000 A designed for new or existing electrical installations.

Installation

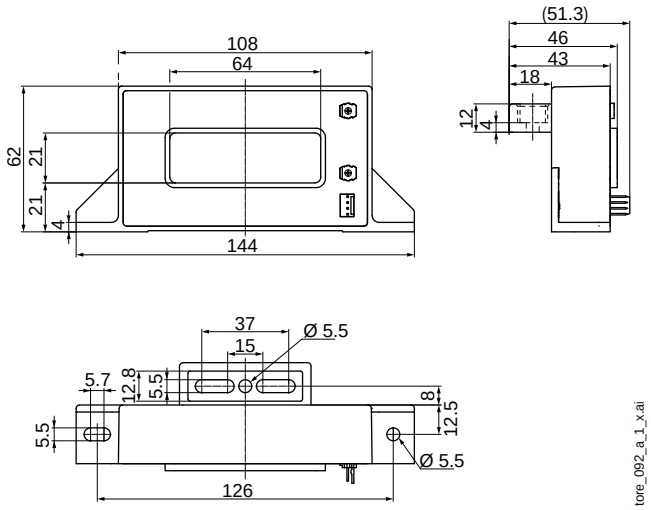
- Easy to install.
- Ideal for installations with limited space available.
- Only 4 different frame sizes cover a wide measurement range.
- Colour-coded cables for ease of identification, and to prevent wiring errors.

Dimensions (mm)

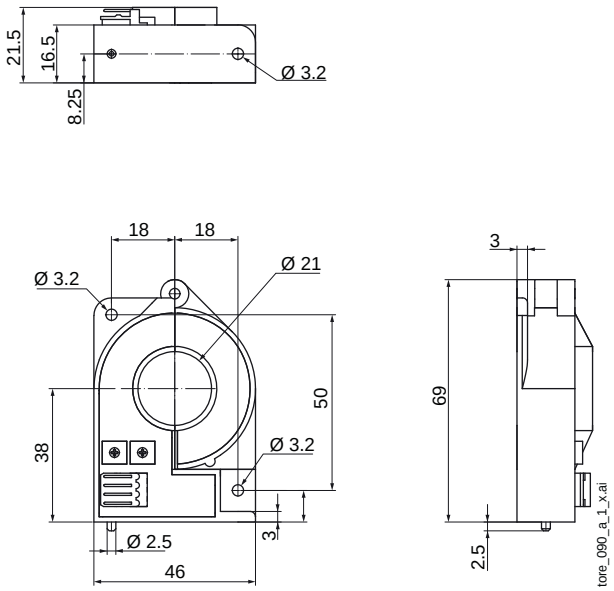
Solid-core sensors 50 ... 600 A (frame size 1)



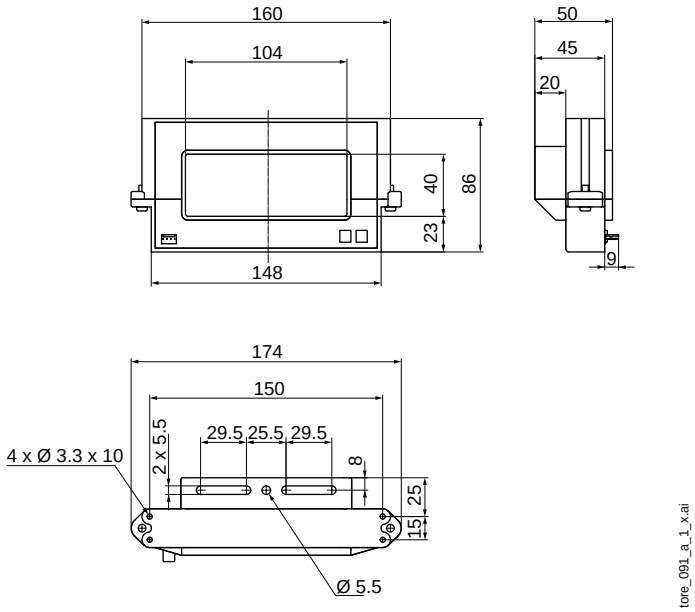
Solid-core sensors 850 ... 5000 A (frame size 2)



Split-core sensors 50 ... 500 A (frame size 1)



Split-core sensors 800 ... 2000 A (frame size 2)

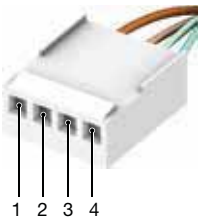


DC current sensors
Associated with DIRIS Digiware DC

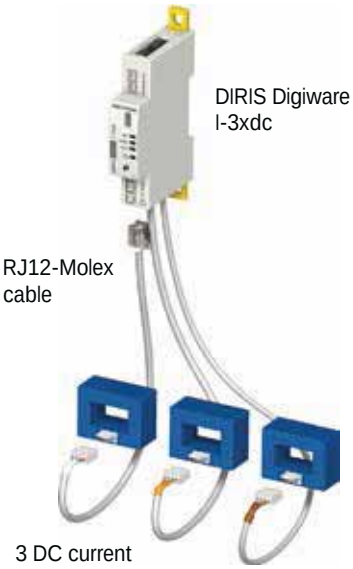
Connections

DC current is measured by external sensors connected to the DIRIS Digiware I-3xdc modules via RJ12-Molex cables. Connection of the current sensors is quick and error-free. A wide range of current sensors is available from Socomec to suit all installations and applications including split-core current sensors for retrofit applications.
The DC current sensors have the following technical characteristics:

- Open-loop Hall effect sensors
- Solid-core or split-core.
- Power supply voltage: ± 15 V.
- Power supply current: ± 25 mA depending on the sensor.
- Output voltage: ± 4 V.
- 4-point male Molex terminal strip.
- Measurement range: 16 to 6000 A.
- Category III overvoltage.



- PIN 1: + 15 V (+ Vc)
- PIN 2: - 15 V (- Vc)
- PIN 3: sensor input (M)
- PIN 4: 0 V sensor (0)



Technical characteristics

Type of current sensor	Open-loop Hall effect
Connection	Specific Socomec cable with RJ12-Molex connectors
Accuracy of current measurement	Solid-core sensors: 50 ... 600 A: < 1% Solid-core sensors: 850 ... 5000 A: < 1% Split-core sensors: 50 ... 500 A: < 2% Split-core sensors: 800 ... 2000 A: < 2%

Weight	Solid-core sensors 50 … 600 A	60 g
	Solid-core sensors 850 … 5000 A	450 g
	Split-core sensors 50 … 500 A	80 g
	Split-core sensors 800 … 2000 A	590 g
Operating temperature	Solid-core sensors 50 … 600 A	-10 ... +80°C
	Solid-core sensors 850 … 5000 A	-25 ... +85°C
	Split-core sensors 50 … 500 A	-10 ... +70°C
	Split-core sensors 800 … 2000 A	-10 ... +70°C
Storage temperature	Solid-core sensors 50 … 600 A	-25 ... +80°C
	Solid-core sensors 850 … 5000 A	-25 ... +85°C
	Split-core sensors 50 ... 500 A	-20 ... +85°C
	Split-core sensors 800 … 2000 A	-25 ... +85°C

References

DC current sensors	Reference
Solid-core sensors (frame size 1)	
50 A	4829 **0700**
100 A	4829 **0701**
200 A	4829 **0702**
300 A	4829 **0703**
400 A	4829 **0704**
500 A	4829 **0705**
600 A	4829 **0706**
Solid-core sensors (frame size 2)	
850 A	4829 **0707**
1000 A	4829 **0708**
1500 A	4829 **0709**
2000 A	4829 **0710**
2500 A	4829 **0711**
5000 A	4829 **0712**
Split-core sensors (frame size 1)	
50 A	4829 **0750**
100 A	4829 **0751**
200 A	4829 **0752**
300 A	4829 **0753**
400 A	4829 **0754**
500 A	4829 **0755**
Split-core sensors (frame size 2)	
800 A	4829 **0756**
1000 A	4829 **0757**
1500 A	4829 **0758**
2000 A	4829 **0759**

RJ12-MOLEX cables		
Number of cables	**Length of cables**	**Reference**
3	0.3 m	4829 **0782**
3	0.5 m	4829 **0783**
3	1 m	4829 **0784**
3	2 m	4829 **0785**
1	5 m	4829 **0786**

Multi-circuit metering & measurement

DIRIS Digiware IO

Digital and analogue input/output modules

DIRIS Digiware IO-10
4 digital inputs/2 digital outputs

DIRIS Digiware IO-20
2 analogue inputs

Configuration with EasyConfig, see page 160.

Function

DIRIS Digiware IO modules enrich the measurement system with multiple features:

- DIRIS Digiware IO-10 modules have 4 digital inputs and 2 digital outputs.
  The 4 digital inputs can be used to monitor the status of third-party devices (position of protective devices, trip counter) or to collect pulses from multi-fluid meters.
  The 2 digital outputs allow the remote control of third-party equipment signal.
  Alarms can be configured and assigned to the digital outputs.
- Thanks to their 2 analogue inputs, DIRIS Digiware IO-20 modules can collect data from analogue sensors (pressure, humidity, temperature...).

All the information reported by the IO-10 and IO-20 modules can be viewed on DIRIS Digiware D-xx displays and on Webview, the web server embedded in DIRIS G gateways and in the DIRIS Digiware D-70 display unit.

Advantages

Plug & Play
The IO modules can be easily added anywhere within the measurement system thanks to a quick RJ45 connection.

Multifunction
The combination of voltage measuring modules, current measuring modules, and input/output modules makes DIRIS Digiware a complete and versatile system.

Integrated
All the reported information is accessible from the displays, from WEBVIEW or any other centralised management software.

Compact
The modular format allows the quick connection of a large number of IO-10 and IO-20 modules.

The solution for

> Industry
> Building
> Data center

Strong points

> Plug & Play
> Multifunction
> Integrated
> Compact

Compliance with standards

> IEC 61557-12
> IEC 61010

> ISO 14025

> UL

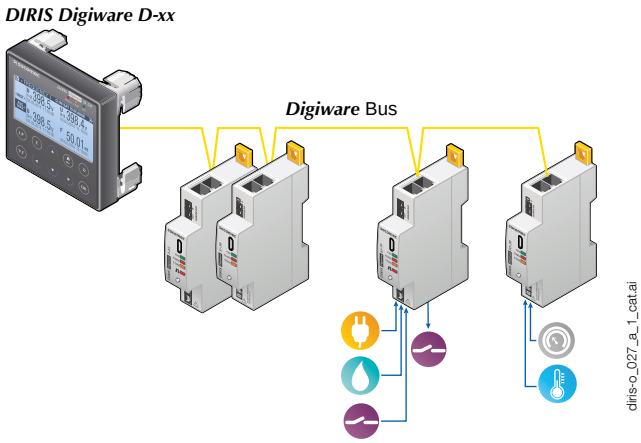
Create your project

> Find the best DIRIS Digiware configuration:
www.meter-selector.com

METER SELECTOR
DIGITAL TOOL AVAILABLE

socomec
Innovative Power Solutions

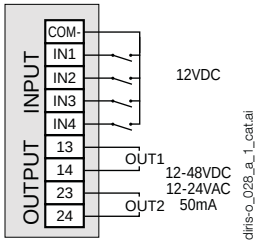
Application diagram



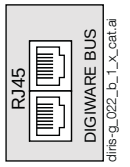
Connections

DIRIS Digiware IO-10

Digital inputs/outputs



Digiware Bus



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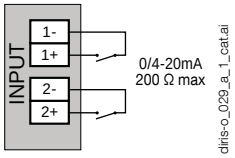
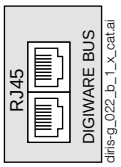
DIRIS Digiware IO-20

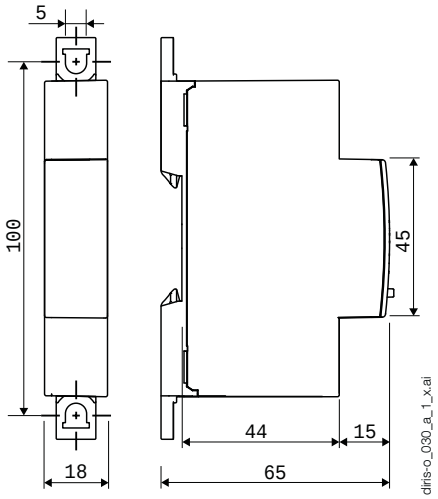
Analogue inputs



Digiware Bus



Dimensions (mm)



Technical characteristics

Measuring characteristics

Digital inputs/outputs- DIRIS Digiware IO-10	
Number of inputs	4
Type/power supply	Insulated input, internal polarisation 12 VDC max., 3 mA
Input function	- Status of third-party devices - Monitoring of protective devices (ON/OFF, Trip) - Pulse counter
Number of outputs	2
Type	Insulated output, 48 VDC max., 50 mA and 24 VAC max.
Output function	- Remote control of devices - Alarm signal linked to the inputs (exceeding threshold, status...)
Input/output connection	Removable screw terminal block, 9 positions (5 dedicated to inputs, 4 dedicated to outputs) Stranded or solid 0.14 to 1.5 mm² cable
Analogue inputs - DIRIS Digiware IO-20	
Number of inputs	2
Type/power supply	0/4-20 mA, 200 Ω max
Accuracy	0.5% full scale
Function	Connection of analogue sensors (pressure, humidity, temperature...) with choice of interpolation (linear or quadratic)
Input connection	Removable screw terminal block 2x2 positions, Stranded or solid 0.14 to 1.5 mm² cable

References

Digiware connection cables		**Reference**
RJ45 cables for Digiware Bus	Length 0.06 m	4829 **0189**
	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**
	50 m reel + 100 connectors	4829 **0185**
Termination for Digiware Bus (supplied with interfaces C and D)		4829 **0180**
USB configuration cable		4829 **0050**

DIRIS Digiware input/output modules		**Reference**
IO-10	4 digital inputs/2 outputs module	4829 **0140**
IO-20	2 analogue input module	4829 **0145**

DIRIS Q800

Electrical network analyser

quality analysis of electrical energy and power grids

diris-q_012_a

DIRIS Q

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 62053-24
> EN 50160

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.

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 and voltage.
- Flicker (Pst, Plt).
- Voltage imbalance.
- Remote control signals.

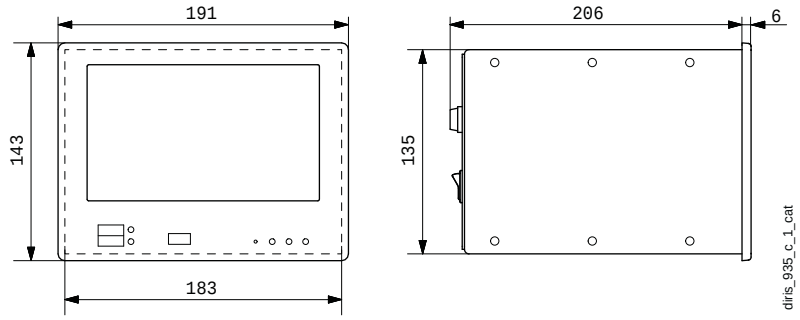
Logging

- EN 50160 events ½ period (10 ms): voltage dips, voltage interruptions, voltage swells.
- Data exported automatically via FTP.
- EN50160 compliant.
- Transients (20 micro seconds).

Inputs/outputs

- 4 digital inputs.
- 4 digital outputs.
- 4 analogue outputs.

Dimensions (mm)



Dimensions	
Cutout	192 x 144 DIN / 186 x 138 mm
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

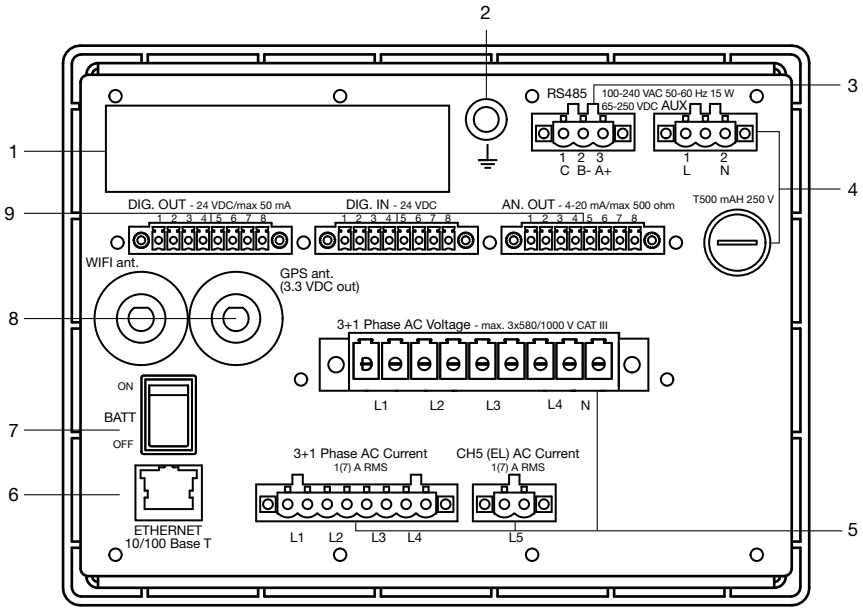
Auxiliary power supply	
Voltage range	100 ... 240 VAC / 65 … 250 VDC
Frequency	50/60 Hz
Power consumption	Max. 15 VA
Backup battery	Li-ion 2500 mAh (>15 min autonomy)
Measurement inputs	
Direct voltage measurement input	P-N: max 580 V RMS CAT III L-L: max 1000 V RMS CAT III
U4 direct voltage measurement input	Max 580 V RMS CAT II
Voltage input crest factor	2
Current inputs	Max 7 A RMS
Current input consumption	0.04 VA
Current input crest 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%
4th voltage (neutral/earth)	± 0.2%
Currents	± 0.2%
Power	± 0.2%
Frequency	± 10 mHz
Harmonics	Class. 1 IEC/EN 61000-4-7
Active energy	Class. 0.5S IEC/EN 62053-22
Reactive energy	Class. 1 IEC/EN 62053-24

Communication	
Ethernet ports	2 Auto MDIX RJ45 10/100 Base Ethernet
RS485 opto-insulated port (slave)	0.5 UL 4800 to 115200 bps
Passive WIFI antenna	RP-SMA female
Active GPS antenna	SMA female
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 comformity	IEC/EN 62586-2
Safety	EN 61010-2-030
Degree of pollution	2 (EN 61010-1)
Degree of protection	IP40 front, IP20 rear
Directive	RED §3.1a Health EN 62311 :2008 RED § 3.1b EMC

References

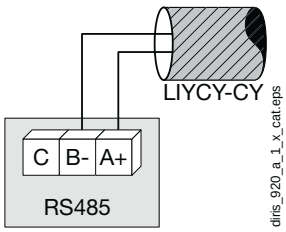
Designation	Reference
DIRIS Q800	4826 **0100**

Terminals

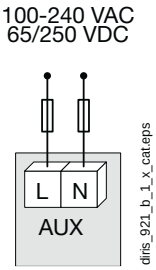


1. Product label
2. Earth connection
3. RS485 MODBUS RTU communication
4. Auxiliary power supply and fuse
5. Voltage and current inputs
6. Auto MDIX ETHERNET port
7. Battery switch
8. GPS and WIFI antenna
9. Logical outputs, analogue inputs/outputs

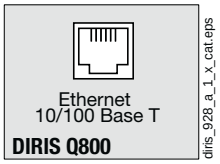
Communication via RS485 link



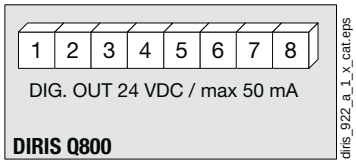
AC and DC auxiliary power supply



Ethernet communication

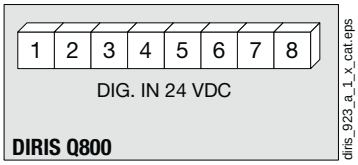


Digital outputs



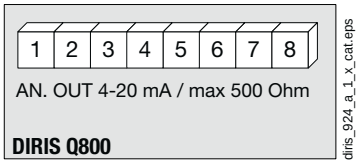
1-2: optocoupler output 1
3-4: optocoupler output 2
5-6: optocoupler output 3
7-8: optocoupler output 4

Digital inputs



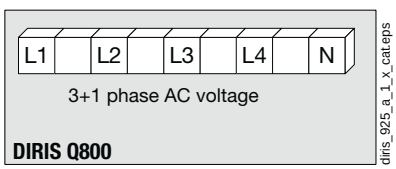
1-2: optocoupler input 1
3-4: optocoupler input 2
5-6: optocoupler input 3
7-8: optocoupler input 4

Analogue outputs

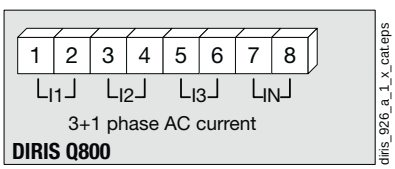


1-2: analogue output 1
3-4: analogue output 2
5-6: analogue output 3
7-8: analogue output 4

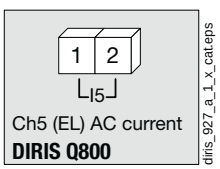
Current and voltage inputs



L1, L2, L3, L4, N: voltage inputs



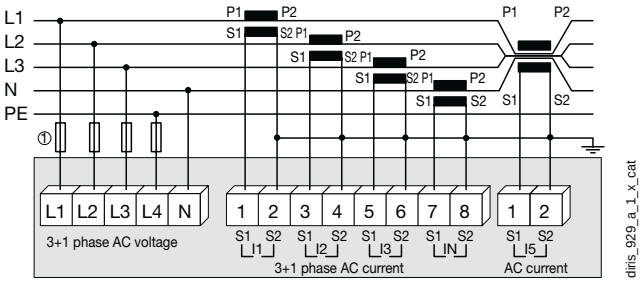
1-2: current input i1
3-4: current input i2
5-6: current input i3
7-8: current input iN



1-2: differential core connections

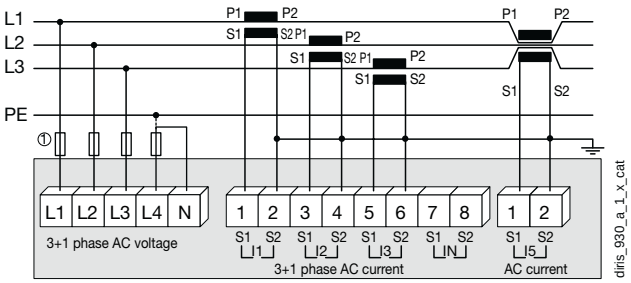
Connections

4 wires with 4 CT + differential measurements (1/5 A)



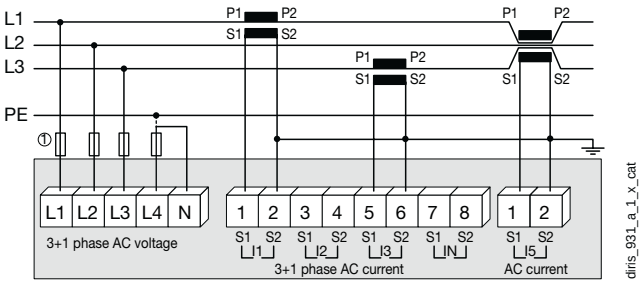
1. 0.5 A gG / 0.5 A class CC fuses.

3 wires with 3 CT + differential measurements (1/5 A)



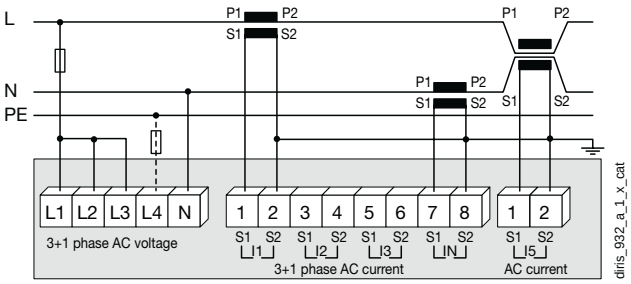
1. 0.5 A gG / 0.5 A class CC fuses.

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.

MULTIS L50

Digital panel meter

three phases - via CT up to 6000 A dimensions 96 x 96 mm

multi_076_a_1_cat.eps

MULTIS L50

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

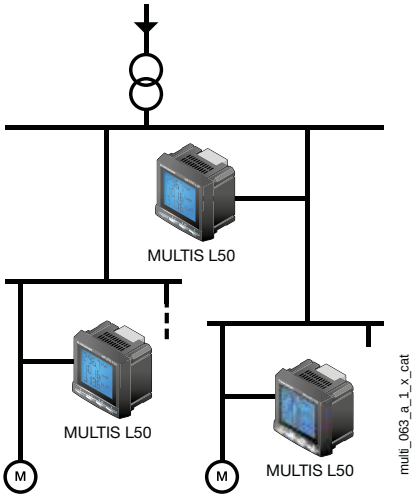
Easy to use

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

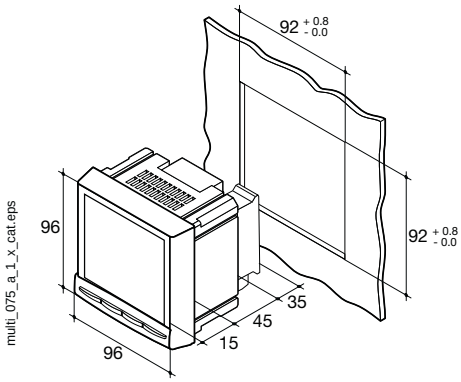
Inputs
- Remote status device

(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

1 Output

1 output assignable to:
- Pulses: configurable (type, weight, duration) in kWh or kvarh.
- 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.
- Remote command of device.

Accessories

Current transformers
(see page 126)

IP65 protection

Panel mounting kit
for a 144 x 96 mm cut-out

MULTIS L50

Digital panel meter

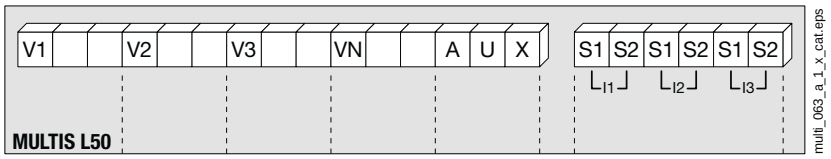
three phases - via CT up to 6000 A dimensions 96 x 96 mm

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 %

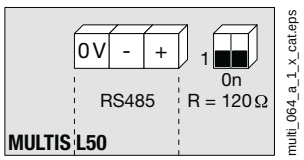
Terminals



S1 - S2: current inputs.

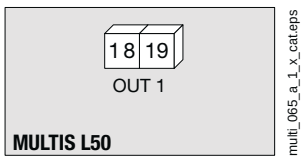
AUX: auxiliary power supply U_s.
V1, V2, V3 & VN: voltage inputs.

Communication module



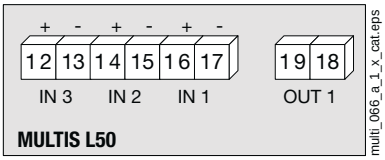
RS485 link.
R = 120 Ω: selectable internal resistance for RS485 end of line termination.

Output or alarm module



18 - 19: output n°1

3 inputs, 1 output module



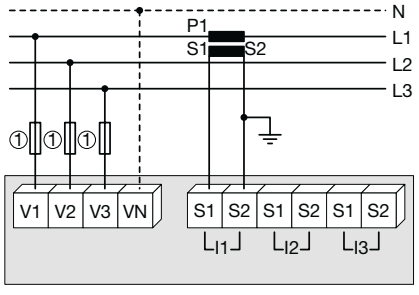
Connection

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

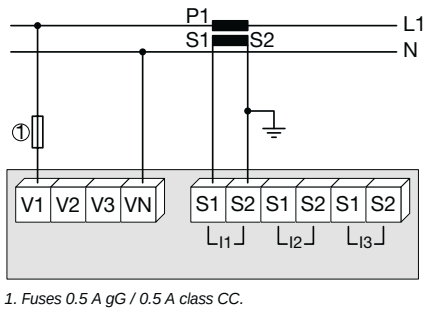
3/4 wires with 1 CT



Use of 1 CT reduces by 0.5% the accuracy of the phases, the current of which is worked out by vector calculation.

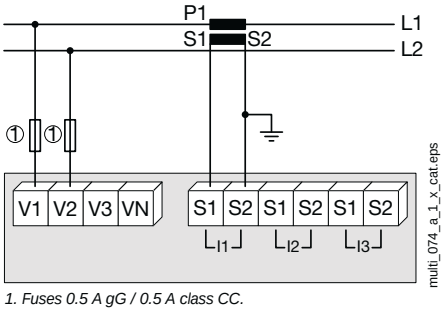
1. Fuses 0.5 A gG / 0.5 A class CC.

Single-phase



1. Fuses 0.5 A gG / 0.5 A class CC.

Two-phase

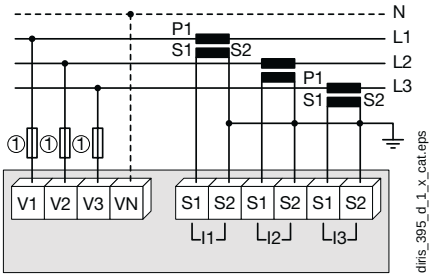


1. Fuses 0.5 A gG / 0.5 A class CC.

socomec Innovative Power Solutions

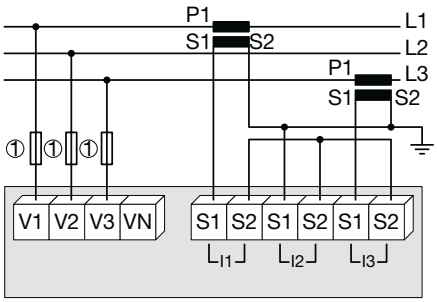
Low voltage unbalanced network

3/4 wires with 3 CTs



1. Fuses 0.5 A gG / 0.5 A class CC.

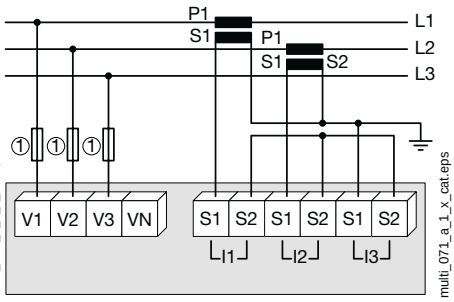
3 wires with 2 CTs



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

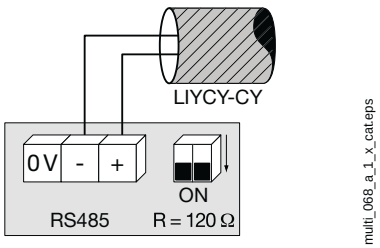


Use of 2 CTs reduces by 0.5% the accuracy of the phases, the current of which is worked out by vector calculation.

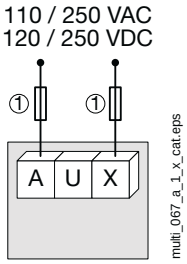
1. Fuses 0.5 A gG / 0.5 A class CC.

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 Reference**
MULTIS L50		192J **9120**
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 126

Expert Services

> Study, definition, advice, implementation, maintenance and training… Our experts “Expert Services” offer complete support for the success of your project.

DIRIS A-10

Multifunction meters - PMD

modular multifunction meter

Single-circuit metering, measurement & analysis

DIRIS A-10

The solution for

> Industry
> Infrastructures
> Tertiary

Strong points

> Easy to use
> Integrated temperature sensor
> Detects wiring errors
> Compliant with IEC 61557-12

Conformity to standards

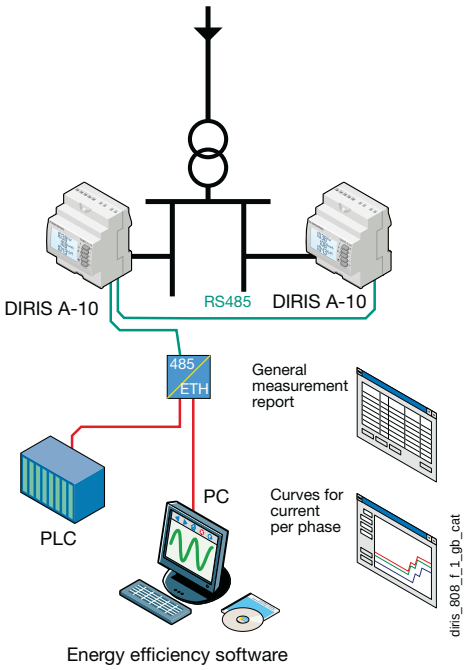
> IEC 61557-12
> IEC 62053-22 class 0.5S
> IEC 62053-23 class 2
> UL

Function

The DIRIS A-10 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.

Principle diagram



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.).

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).

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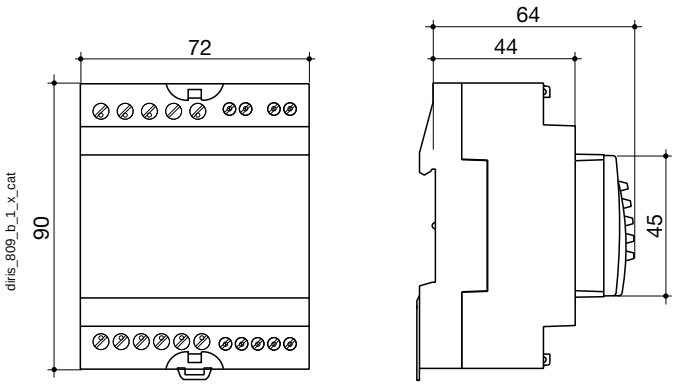
Front panel

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 %
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 %

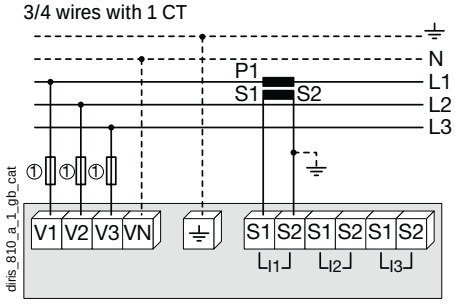
Energy accuracy	
Active (according to IEC 62053-22)	Class 0.5 S
Reactive (according to IEC 62053-23)	Class 2
Auxiliary power supply	
Alternating voltage	110 … 277 VAC
AC tolerance	± 15 %
Frequency	50 / 60 Hz
Consumption	< 3 VA
Digital output (pulses or on/off)	
Number	1
Type	20 / 30 VDC - 0.5 A - 10 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 A-10 and the current transformer secondaries are not earthed at the same time.

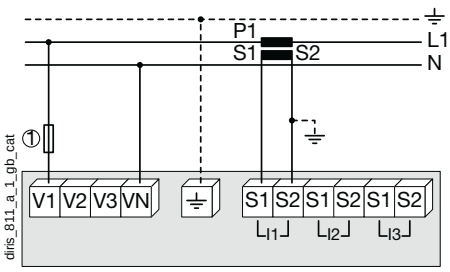
Low voltage balanced network

3/4 wires with 1 CT



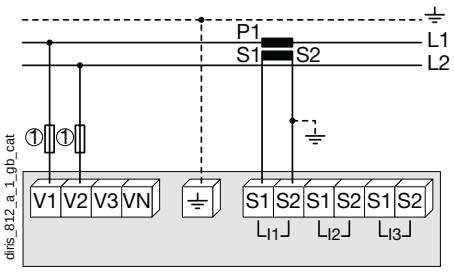
1. Fuses 0.5 A gG / 0.5 A class CC.

Single-phase



1. Fuses 0.5 A gG / 0.5 A class CC.

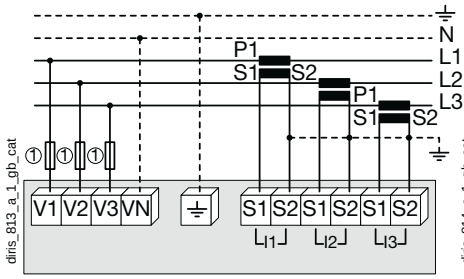
Two-phase



1. Fuses 0.5 A gG / 0.5 A class CC.

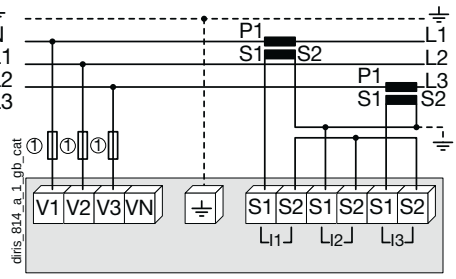
Low voltage unbalanced network

3/4 wires with 3 CTs



1. Fuses 0.5 A gG / 0.5 A class CC.

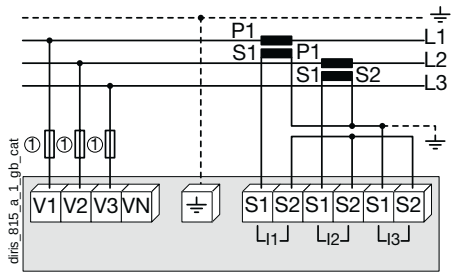
3 wires with 2 CTs



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

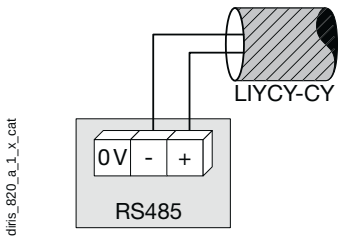


Use of 2 CTs reduces by 0.5% the accuracy of the phases, the current of which is worked out by vector calculation.

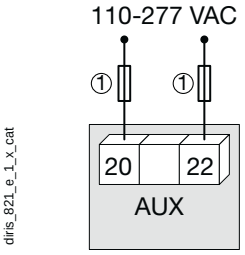
1. Fuses 0.5 A gG / 0.5 A class CC.

Additional information

Communication via RS485 link

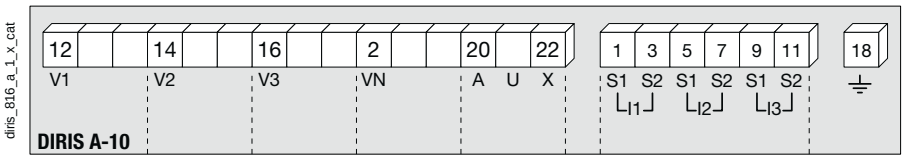


AC auxiliary power supply



1. Fuses 0.5 A gG / 0.5 A class CC.

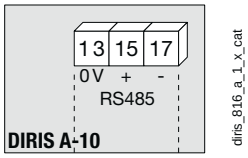
Terminals



AUX: auxiliary power supply U_s.
V1, V2, V3 & VN: voltage inputs.

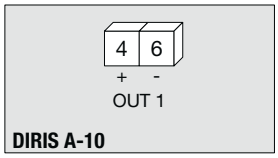
S1 - S2: current inputs.

Communication terminals



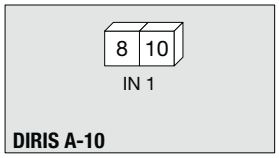
RS485 link.

Pulse or alarm output terminals



4 - 6: output n°1

Input terminals



8 - 10: input n°1

References

Basic device **Description**		**DIRIS A-10** **Reference**
DIRIS A-10		4825 **0400**
DIRIS A-10 with RS485 MODBUS communication		4825 **0401**
Description of accessories	**To be ordered in multiples of**	**Reference**
Fuse disconnect switches for the protection of voltage inputs (type RM) 3 poles	4	5701 **0018**
Fuse disconnect switches for the protection of the auxiliary supply (type RM) 1 pole + neutral	6	5701 **0017**
Fuses type gG 10x38 0.5 A	10	6012 **0000**
Current transformer range	1	See page 46
Management software for DIRIS		See page 160

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

DIRIS A14 panel mounted

DIRIS A14 DIN rail mounted

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.

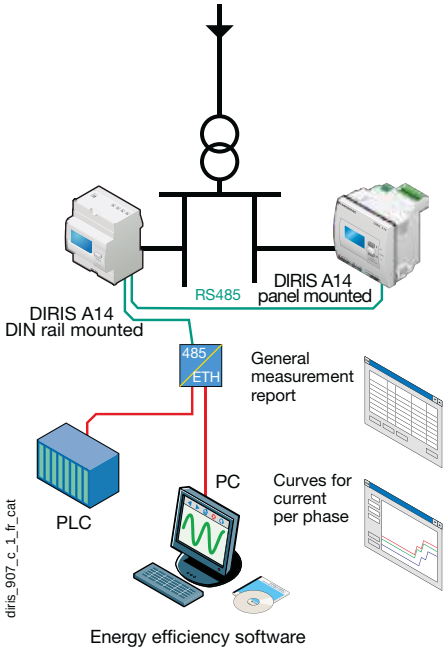
Bi-directional metering (four quadrants)

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.

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.

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

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 φ)
  - instantaneous: Σ cos φ
  - maximum average: Σ cos φ

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

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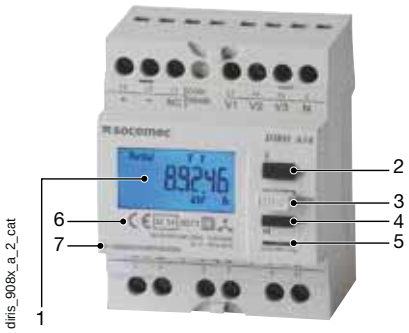
Front panel



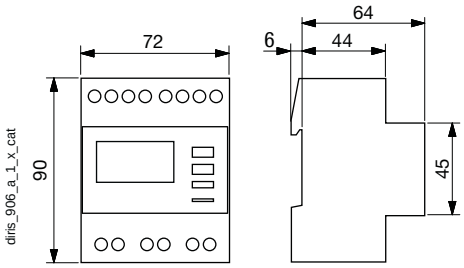
diris_908x_a_2_cat

1. Backlit LCD display
2. Direct access for energies and validation key
3. Programming key
4. Navigation key for measurements
5. Metrological LED
6. MID marking
7. Serial Number

diris_964x_a_2_cat

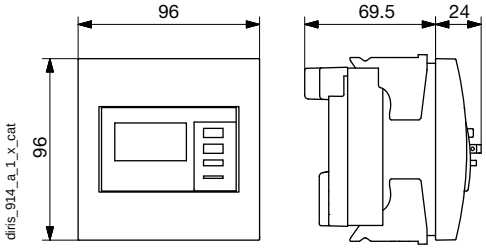
Case

DIRIS A14 DIN rail mounted



diris_906_a_1_x_cat

DIRIS A14 door mounted



diris_914_a_1_x_cat

	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 mm²	
Flexible cable cross-section	1 … 6 mm²	
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 (Ist)	5 mA
Minimum current (Imin)	50 mA
Transmission current (Itr)	250 mA
Reference current (Iref)	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

Connection

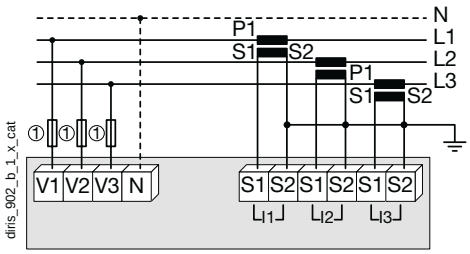
Low voltage balanced network

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.

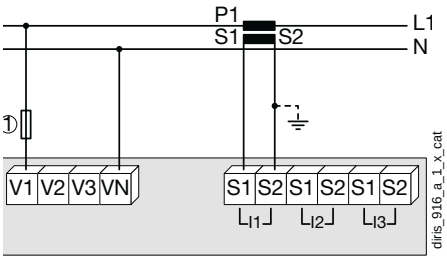
Low voltage unbalanced network

3/4 wires with 3 CTs



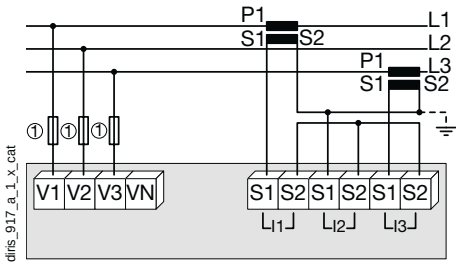
1. 0.5 A gG / 0.5 A class CC fuses.

Single-phase



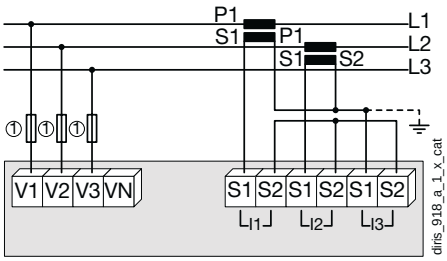
1. 0.5 A gG / 0.5 A class CC fuses.

3 wires with 2 CTs



1. 0.5 A gG / 0.5 A class CC fuses.

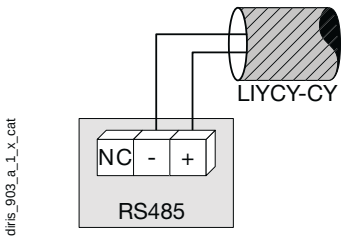
3 wires with 2 CTs



1. 0.5 A gG / 0.5 A class CC fuses.

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 Description	DIRIS A14 Reference
DIRIS A14 MID DIN rail mounted	4825 **0020**
DIRIS A14 MID panel 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 A-20

Multifunction power monitoring device - PMD

Multi-measurement

DAM_diris_981_a_front.eps

DIRIS A-20

Function

DIRIS A-20 units are performance metering and monitoring devices that provide the user with all of the measurements needed to complete energy efficient projects successfully and to provide assured monitoring of electrical distribution.

All of this information can be used and analysed remotely with the help of energy efficiency software programs.

Advantages

User-friendly operation

With its large backlit multiple-display screen with 4 hot keys, the DIRIS A-20 is easy to use.

Compliant with IEC 61557-12

Reference standard for PMDs (Performance metering & monitoring devices), IEC 61557-12 guarantees performance levels and satisfactory performance from the PMDs under the environmental conditions typical of industrial and tertiary applications.

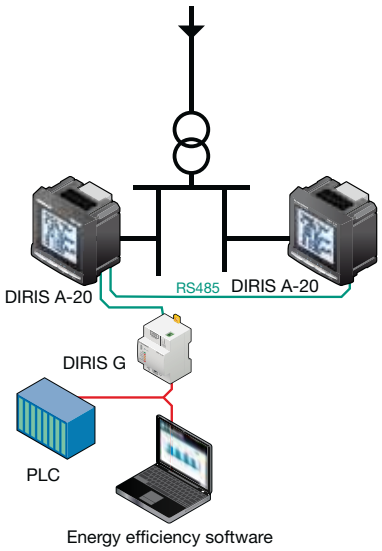
Detects wiring errors

The DIRIS A-20 is equipped with an error correction function for CT connection.

Customisable

Additional communication and input/output modules can extend the basic functional scope of this product. Equipped with additional modules, the DIRIS A-20 can provide the user with flexibility and expandability throughout the service life of the product.

Functional diagram



DIRIS_576_i_1_en_cat

The solution for

- Industry
- Infrastructure
- Building

Strong points

- User-friendly operation
- Compliant with IEC 61557-12
- Detects wiring errors
- Customisable

Compliance with standards

- IEC 61557-12
- IEC 62053-22 class 0.5S
- IEC 62053-23 class 2
- UL

Related software

- To use Socomec PMDs effectively, we can offer you several dedicated software tools.
See page 160.

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
- Powers
  - 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 (rank 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 parameters

Communications (1)

RS485 with MODBUS protocol

Output

- Equipment control
- Alarm report
- Pulse report

Input

- Information report from a dry external contact

(1) Available as an option (see the following pages).

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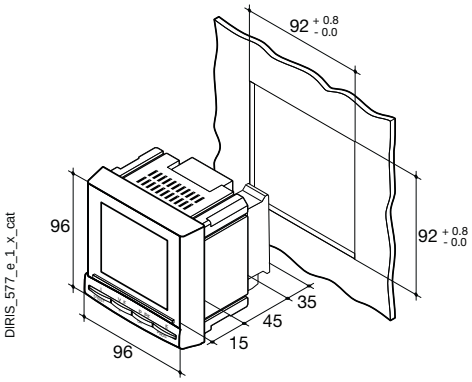
Front panel

1. Backlit LCD display
2. Pushbutton for currents (instantaneous and maximum), THD currents and the connection correction function.
3. Pushbutton for voltages, frequency and THD voltages.
4. Pushbutton for power (instantaneous and maximum), active, reactive and effective, power factor.
5. Pushbutton for energy sources and timer counter.

Case



Type	Plug-in
Dimensions L x H x P	96 x 96 x 60 mm
Case degree of protection	IP30
Front degree of protection	IP52
Display type	Backlit LCD
Type of terminal strips	Fixed or removable
Section for connection of voltages and other terminals	0.2 … 2.5 mm^2
Section for connection of currents	0.5 … 6 mm^2
Weight	400 g

Plug-in optional modules

DIRIS® A-20

1 output

1 output that can be configured for:
- pulses: configurable (type, weight, duration) to kWh or kVarh.
- Monitoring: 3I, In, 3V, 3U, F, ΣP, ΣQ, ΣS, ΣPFL/C, THD 3I, THD 3V, THD 3U and timer meter.
- Equipment control

Communication

RS485 link with MODBUS protocol (speed up to 38 400 baud).

3 inputs , 1 output

3 inputs can be configured into:
- Information report from an external contact.

1 output that can be configured for:
- pulses: configurable (type, weight, duration) to kWh or kVarh.
- Monitoring: 3I, In, 3V, 3U, F, ΣP, ΣQ, ΣS, ΣPFL/C, THD 3I, THD 3V, THD 3U and timer meter.
- Equipment control

Accessories

Current transformer (see page 46)

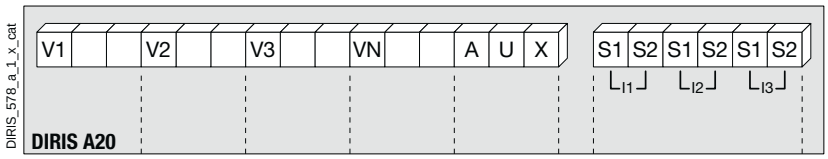
IP65 protection

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 over 1 sec
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%
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 (in acc. with CEI 62053-23)	Class 2
Auxiliary power supply	
Alternative voltage	110 … 400 VAC
AC tolerance	± 10%
DC voltage	120 … 289 VDC
DC tolerance	± 20%
Frequency	50 / 60 Hz
Power consumption	10 VA
Pulse or alarm output	
Number	1
Type	100 VDC - 0,5 A - 10 VA
Max. number of manoeuvres	≤ 10^8
Inputs	
Number	3
Power supply	10 … 30 VDC
Minimum width of signal	10 ms
Minimum length between 2 pulses	18 ms
Type	Optical couplers
Communication	
Link	RS485
Type	2 to 3 half duplex wires
Protocol	MODBUS® in RTU mode
MODBUS® speed	1400 … 38400 baud
Operating conditions	
Operating temperature range	- 10 … + 55°C
Storage temperature	- 20 … + 85°C
Relative humidity	95%

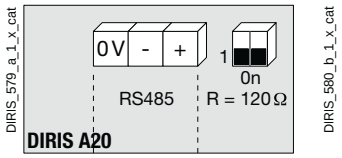
Terminals



S1 - S2 : current inputs.

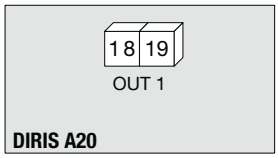
AUX : auxiliary power supply U_s.
V1, V2, V3 & VN : voltage inputs.

Module communication



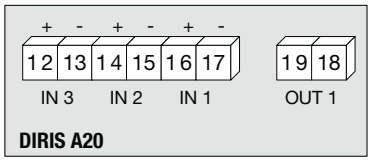
RS485 link.
R = 120 Ω : internal resistance for the RS485 link.

Output or alarm module



18 - 19 : output n°1

Module with 3 inputs, 1 output



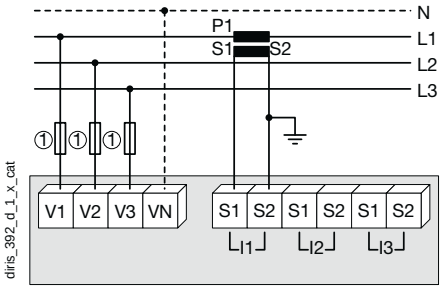
Connection

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.

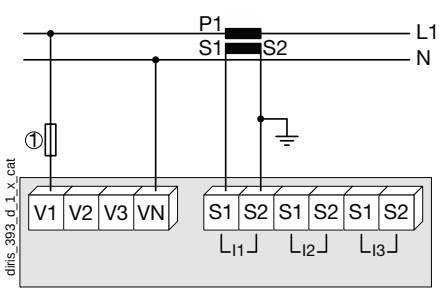
3/4 wires with 1 CT



The 1CT solution reduces by 0.5% the accuracy of the phase for which the current is deduced by a vector calculation.

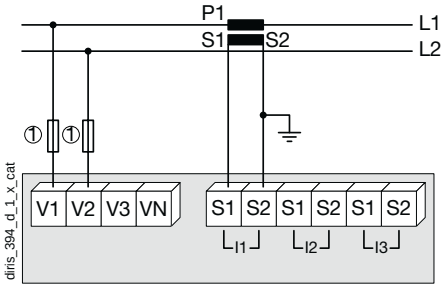
1. 0.5 A gG / 0.5 A class CC fuses.

Single-phase



1. 0.5 A gG / 0.5 A class CC fuses.

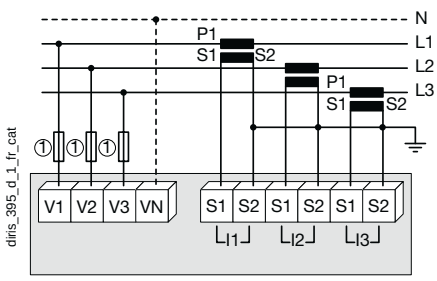
Two-phase



1. 0.5 A gG / 0.5 A class CC fuses.

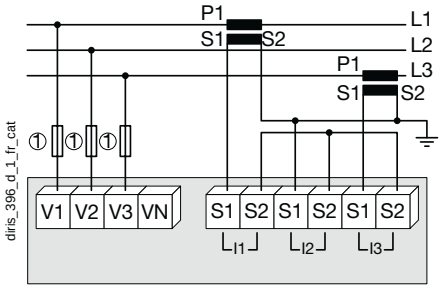
Low voltage unbalanced network

3/4 wires with 3 CTs



1. 0.5 A gG / 0.5 A class CC fuses.

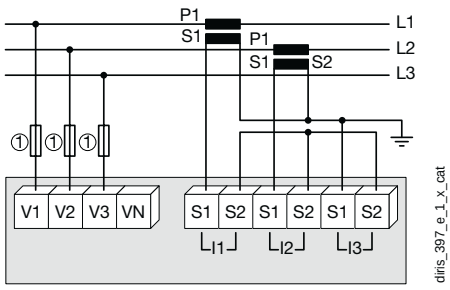
3 wires with 2 CTs



The 2CT solution reduces by 0.5% the accuracy of the phase for which the current is deduced by a vector calculation.

1. 0.5 A gG / 0.5 A class CC fuses.

3 wires with 2 CTs

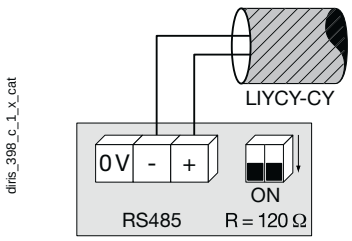


The 2CT solution reduces by 0.5% the accuracy of the phase for which the current is deduced by a vector calculation.

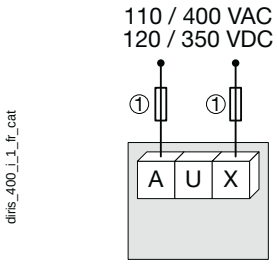
1. 0.5 A gG / 0.5 A class CC fuses.

Additional information

Communication via RS485 link



AC and DC auxiliary power supply



1. 0.5 A gG / 0.5 A class CC fuses.

References

Basic device **Auxiliary power supply U_s**		**DIRIS A-20** **Reference**
110 … 400 VAC / 120 … 350 VDC		4825 **0402**
Options **Plug-in modules**		 **Reference**
On/Off 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**
Protection IP65	1	4825 **0089**
Plug-in kit for cutout 144 x 96 mm	1	4825 **0088**
Fuse holders to protect voltage inputs (type RM) 3 pole	4	5601 **0018**
Fuse holders to protect the auxiliary power supply (type RM) 1 pole + neutral	6	5601 **0017**
gG 10x38 0.5 A fuses	10	6012 **0000**
Ferrite for use with communication modules	1	4899 **0011**
Current transformer range	1	See page 46
Software associated with DIRIS		See page 160

Expert Services

> Study, definition , advice, implementation , maintenance and training ... Our experts "Expert Services" offer complete support for the success of your project.

Single-circuit metering, measurement & analysis

DIRIS A-30/A-41

Multifunction power monitoring device - PMD

Energy monitoring

diris_984_front.psd

DIRIS A-30

The solution for

> Industry
> Building
> Infrastructures

Strong points

> User-friendly operation
> Detects wiring errors.
> Customisable
> Compliant with IEC 61557-12

Compliance with standards

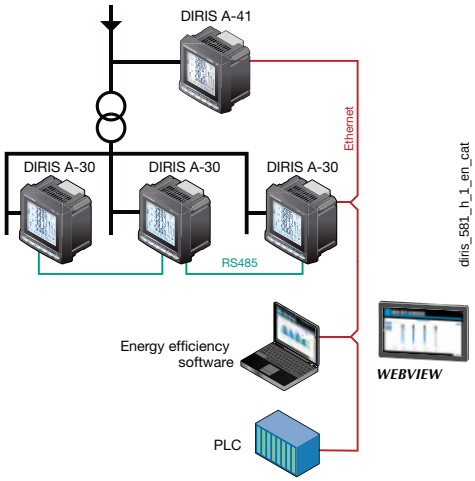
> IEC 61557-12
> IEC 62053-22 class 0.5 S
> IEC 62053-23 class 2
> UL

Function

The DIRIS A-30 and A-41 are power monitoring devices that provide the user with all of the measurements needed to complete energy efficiency projects and to assure the monitoring of electrical distribution.

All the information can be used and analysed remotely using energy efficiency software packages.

Functional diagram



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Advantages

User-friendly operation

With its large backlit multiple-display screen with 6 hot keys, the DIRIS A-30 is easy to use.

Detects wiring errors.

The DIRIS A-30 is provided with a correction function for TC wiring errors.

Customisable

The DIRIS A-30 can be equipped with additional modules that give the user flexibility throughout the service life of the product. Communication modules and additional digital or analogue inputs/outputs can be used to increase its range of functionality.

Compliant with IEC 61557-12

Reference standard for PMDs (Performance metering & monitoring devices), IEC 61557-12 guarantees performance levels and satisfactory performance from the PMDs under the environmental conditions typical of industrial and tertiary applications.

Functions

Multi-measurement
- Currents
  - instantaneous: I1, I2, I3, In, Isystem
  - average/max average: I1, I2, I3, In
- Voltages & frequency
  - instantaneous: V1, V2, V3, U12, U23, U31, F, Vsystem, Usystem
  - average/max average: V1, V2, V3, U12, U23, U31, F
- Powers
  - instantaneous: 3P, ΣP, 3Q, ΣQ, 3S, ΣS
  - max average: ΣP, ΣQ, ΣS
  - predictive: (ΣP), (ΣQ), (ΣS)
- Power factors
  - instantaneous: 3PF, ΣPF
  - average/max average: ΣPF
- Kfactor
- Temperatures (1)
  - internal
  - external via 3 PT100 probes

Metering
- Active energy: +/- kWh
- Reactive energy: +/- kvarh
- Effective power: kVAh
- Hours:

Harmonic analysis
- Level of 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 harmonics up to 63rd
- Currents: HI1, HI2, HI3, HIn
- Phase-to-neutral voltage: HV1, HV2, HV3,
- Phase-to-phase voltages: HU12, HU23, HU31

Load curve (1)
- Active & reactive power: ΣP+/- ; ΣQ+/-
- Voltages & frequency: V1, V2, V3, U12, U23, U31, F

Events (1)
- Alarms on all electrical parameters.

Communications (1)
- RS485 (Modbus)
- Ethernet (Modbus/TCP or Modbus RTU)
- Ethernet with RS485 Modbus RTU gateway over TCP
- Profibus DP Sub-D9

Inputs/ Outputs (1)
- Pulse counting
- Checking / control of equipment
- Alarm report
- Pulse report

Analogue output
- Analogue 0/4- 20 mA

(1) Available as an option (see following pages).

socomec Innovative Power Solutions

Front panel

1. Backlit LCD display
2. Pushbutton for currents and for connection correction function
3. Pushbutton for voltages and frequency..
4. Pushbutton for active, reactive and effective powers and for power factor.
5. Pushbutton for maximum and average values for currents and power levels.
6. Pushbutton for harmonics.
7. Pushbutton for electrical energy meters, timers and impulse counters

Plug-in modules

DIRIS® A-30

DIRIS® A-41*

** With current measurement module for Neutral as standard.*

Pulse outputs

2 configurable pulse outputs (type, weight and run) on ±kWh, ±kvarh and kVAh.

MODBUS® communication

RS485 link with MODBUS® protocol (speed up to 38400 baud).

PROFIBUS® DP communication

SUB-D9 link with PROFIBUS® DP protocol (speed up to 12 Mbaud).

Analogue outputs

You can connect a maximum of 2 modules, i.e. 4 analogue outputs.
2 outputs can be allocated to:
3I, In, 3V, 3U, F, ±ΣP, ±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.

2 inputs - 2 outputs

You can connect a maximum of 3 modules, i.e. 6 inputs / 6 outputs.
2 outputs can be allocated to:
- monitoring: 3I, In, 3V, 3U, F, ±ΣP, ±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 of time counter,
- remote control,
- timed remote control,
- 2 inputs for pulse counting.

Storage capability

- Memory function up to max. 62 days for P+, P-, Q+, Q- with a TOP for internal or external synchronisation of 5, 8, 10, 15, 20, 30 and 60 minutes.
- Memory function for the last 10 timed and dated alarms.
- Memory function for the last min and max instantaneous values for 3U, 3V, 3I, In, F, ΣP±, ΣQ±, ΣS, THD 3U, THD 3V, THD, 3U, THD, 3V, THD, 3I, THD In.
- Memory function of average values 3U, 3V et F as a function of synchronisation (maximum 60 days).

Ethernet communication

- Ethernet link with MODBUS/TCP or MODBUS RTU over TCP.

Ethernet communication with RS485 MODBUS gateway

- Ethernet link with MODBUS/TCP or MODBUS RTU over TCP.
- Connect 1 to 247 RS485 MODBUS slaves.

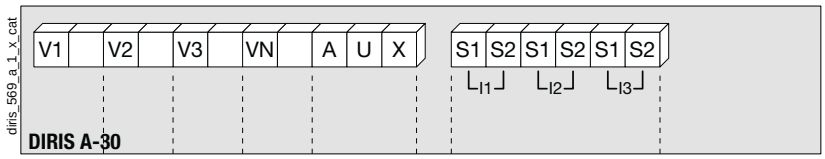
Accessories

Current transformer

IP65 protection

Terminals

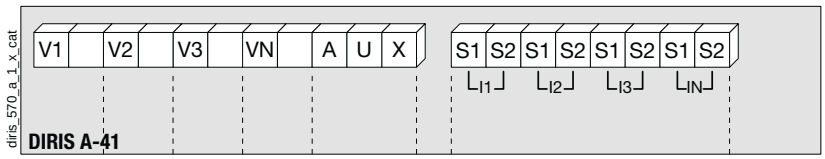
DIRIS A-30



S1 - S2: current inputs

AUX: auxiliary power supplies U_s
V1 - V2 - V3 - VN: voltage inputs

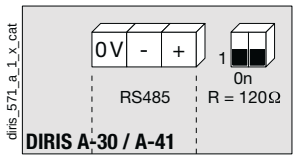
DIRIS A-41



S1 - S2: current inputs

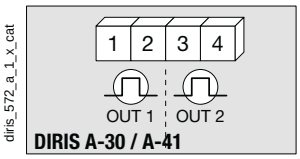
AUX: auxiliary power supplies U_s
V1 - V2 - V3 - VN: voltage inputs

Communication module



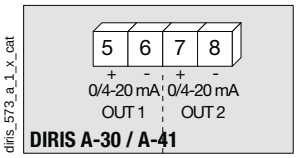
RS485 link.
R = 120 Ω : internal resistance for the RS485 link.

Pulse output module



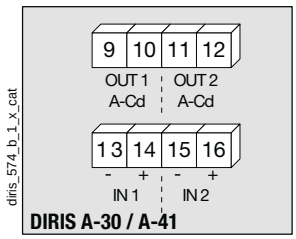
1 - 2: pulse output n°1.
3 - 4: relay output n°2.

Analogue output module



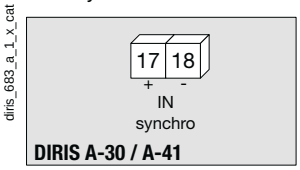
5 - 6: analogue output n°1.
7 - 8: analogue output n°2.

2 input / 2 output module



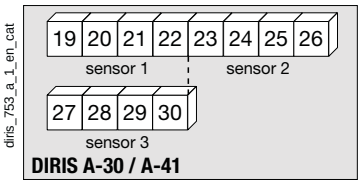
9 - 10: relay output n°1.
11 - 12: relay output n°2.
13 - 14: optical input n°1.
15 - 16: optical input n°2.

Memory module



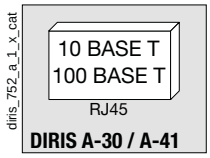
17 - 18: synchronisation input.

Temperature module

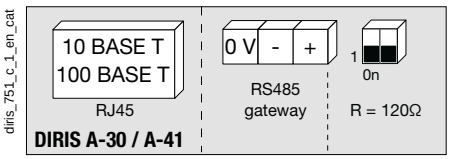


Probe 1	Probe 2	Probe 3
19: red	**23:** red	**27:** red
20: red	**24:** red	**28:** red
21: white	**25:** white	**29:** white
22: white	**26:** white	**30:** white

Ethernet module



Ethernet module + RS485 MODBUS gateway



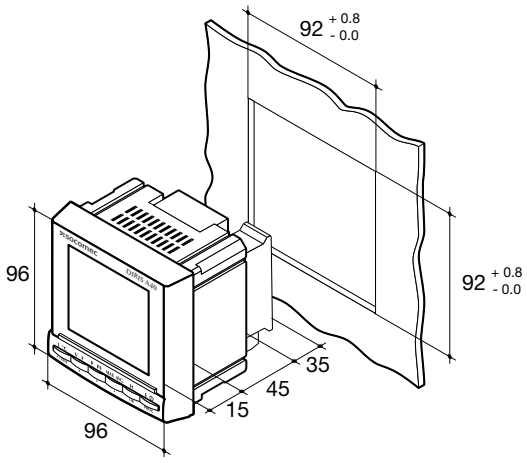
Electrical characteristics

Measurement of currents 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 to 1039 VAC
Direct measurement between phase and neutral	28 to 600 VAC
VT primary measurement	500,000 VAC
VT secondary measurement	60, 100, 110, 173, 190 VAC
Frequency	50 / 60 Hz
Input consumption	≤ 0,1 VA
Measurement updating period	1 s
Accuracy	0.2%
Current - voltage product	
Limitation for TC 1 A	10,000,000
Limitation for TC 5 A	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	
Alternative voltage	110 …400 VAC
AC tolerance	± 10 %
Direct current	120 … 350 VDC / 12 … 48 VDC
DC tolerance	± 20 % / - 6 … + 20 %
Frequency	50 / 60 Hz
Power consumption	≤ 10 VA

Module 2 inputs - 2 outputs: outputs (alarms / control)	
Number of relays	2(1)
Type	250 VAC - 5 A - 1150 VA
Module 2 inputs - 2 outputs: optical coupler inputs	
Number	2(1)
Power supply	10 … 30 VDC
Minimum width of signal	10 ms
Minimum length between 2 pulses	18 ms
Type	Optical couplers
Pulse output module	
Number of relays	2
Type	100 VDC - 0.5 A - 10 VA
Max. number of manoeuvres	≤ 10^8
Analogue output module	
Number of outputs	2(2)
Type	Insulated
Scale	0 / 4 … 20 mA
Load resistance	600 Ω
Maximum current	30 mA
MODBUS communication module	
Link	RS485
Type	2 to 3 half duplex wires
Protocol	MODBUS® RTU
MODBUS® speed	4800 to 38400 baud
PROFIBUS DP communication module	
Link	SUB-D9
Protocol	PROFIBUS® DP
PROFIBUS® speed	9.8 kbaud … 12 Mbaud
Ethernet communication module	
Connection technology	RJ45
Baud rate	10 base T / 100 base T
Protocol	MODBUS TCP or MODBUS RTU on TCP
Temperature module (inputs)	
Type	PT100
Connection	2, 3 or 4 wires
Dynamic	- 20°C ... 150°C
Accuracy	± 1 digit
Maximum length	300 cm
Operating conditions	
Operating temperature range	-10 to +55°C
Storage temperature	-20 to 85°C
Relative humidity	95%

(1) Max. 3 modules / DIRIS.
(2) Max. 2 modules / DIRIS.

Case



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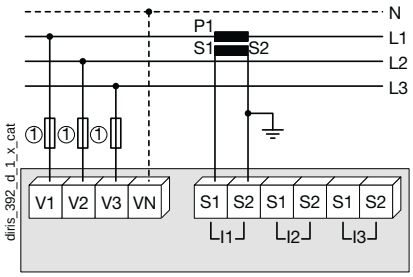
Type	Panel mounting
Dimensions W x H x D	96 x 96 x 60 mm
Case degree of protection	IP30
Front degree of protection	IP52
Display type	Backlit LCD display
Type of terminal strips	Fixed or detachable
Section of connection for voltages and other terminals	0,2 … 2.5 mm^2
Section of connection for currents	0.5 … 6 mm^2
Weight	400 g

Connections

Balanced low-voltage network for DIRIS A-30

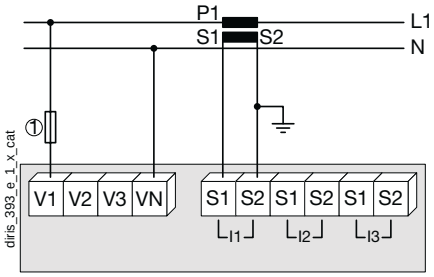
Recommendation: When disconnecting the DIRIS, the secondary of each current transformer must be short-circuited. This operation can be carried out automatically by a SOCOMEC PTI, which can be found in the SOCOMEC catalogue: please consult us.
In TNC mode, it is advisable to connect the DIRIS A-30/A-41 to earth using the functional earth module.

3/4 wires with 1 CT



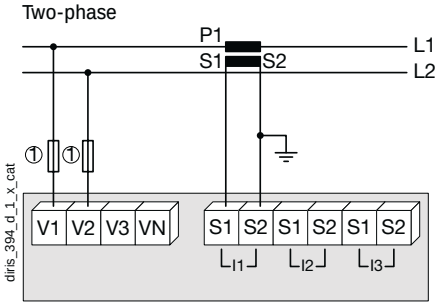
The use of 1 TC reduces by 0.5% the accuracy of the phases, the current for which is worked out by vector calculation.
1. 0.5 A gG / 0.5 A class CC fuses.

Single-phase



1. 0.5 A gG / 0.5 A class CC fuses.

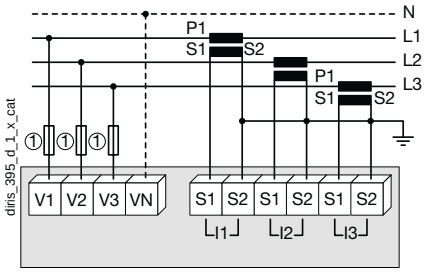
Two-phase



1. 0.5 A gG / 0.5 A class CC fuses.

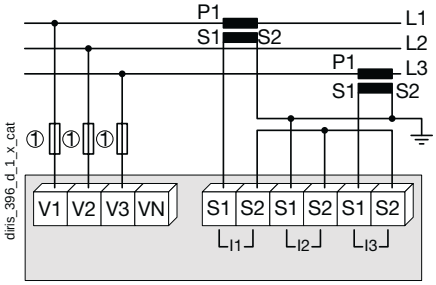
Balanced low-voltage network for DIRIS A-30

3/4 wires with 3 CTs



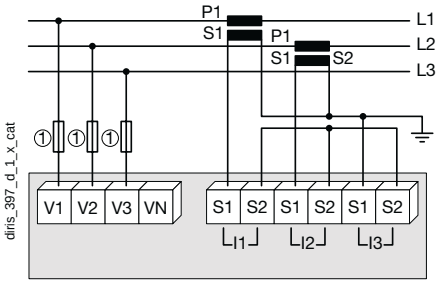
1. 0.5 A gG / 0.5 A class CC fuses.

3 wires with 2 CTs



The use of 2 TC reduces by 0.5% the accuracy of the phase, the current for which is worked out by vector calculation.
1. 0.5 A gG / 0.5 A class CC fuses.

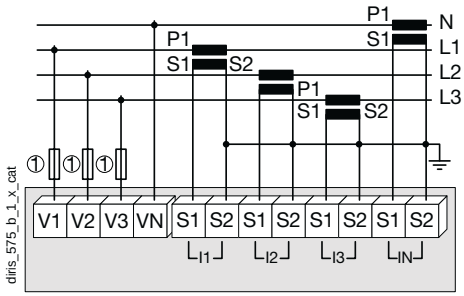
3 wires with 2 CTs



The use of 2 TC reduces by 0.5% the accuracy of the phase, the current for which is worked out by vector calculation.
1. 0.5 A gG / 0.5 A class CC fuses.

Balanced low-voltage network for DIRIS A-41

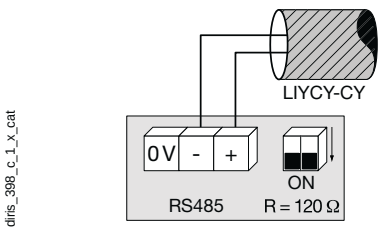
4 wires with 4 CTs



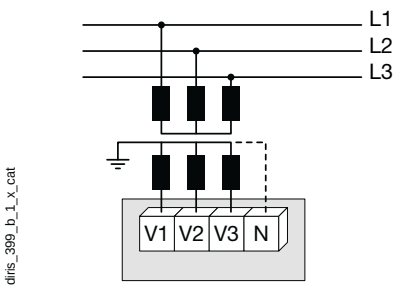
1. 0.5 A gG / 0.5 A class CC fuses.

Additional information

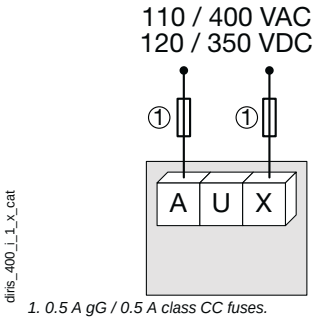
Communication via RS485 link



Connection of potential transformer for HV networks



AC and DC auxiliary power supply



1. 0.5 A gG / 0.5 A class CC fuses.

References

Basic device Auxiliary power supply U_s	DIRIS A-30 Reference		DIRIS A-41 With TC on the neutral Reference
110 ... 400 VAC / 120 ... 350 VDC	4825 **0403**		4825 **0404**
12 ... 48 VDC	4825 **0405**		4825 **0406**

Options Plug-in modules[1]	Reference		Reference
Pulse outputs	4825 **0090**		4825 **0090**
RS485 MODBUS® communication	4825 **0092**		4825 **0092**
PROFIBUS® DP communication	4825 **0205**		4825 **0205**
Analogue outputs	4825 **0093**		4825 **0093**
2 inputs - 2 outputs	4825 **0094**		4825 **0094**
Storage capability	4825 **0097**		4825 **0097**
Ethernet communication[2]	4825 **0203**		4825 **0203**
Ethernet communication + RS485 gateway[2]	4825 **0204**		4825 **0204**
Temperature inputs.	4825 **0206**		4825 **0206**

(1) Ease of integration of additional functions (maximum 4 slots on A-30 and 3 on A-41).
(2) Dimensions: 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**
Integration kit for 144 x 96 mm cutout	1	4825 **0088**	1	4825 **0088**
Fuse holders to protect voltage inputs (type RM) 3 pole	4	5701 **0018**	4	5701 **0018**
Fuse holders to protect the auxiliary power supply (type RM) 1 pole + neutral	6	5701 **0017**	6	5701 **0017**
gG 10x38 0.5 A fuses	10	6012 **0000**	10	6012 **0000**
Range of current transformers	1	See “TE sensors” pages	1	See “TE sensors” pages
Ferrite for use with communication modules	1	4899 **0011**		4899 **0011**
PT100 temperature probe, M6 screw	1	4825 **0208**	1	4825 **0208**
PT100 temperature probe, M6 lug	1	4825 **0209**	1	4825 **0209**
Associated DIRIS software	See “Management software tools” pages			

Expert Services

> Study, definition , advice, implementation , maintenance and training… Our experts "Expert Services" offer complete support for the success of your project.

DIRIS A-40

Multi-function meters

Single-circuit metering & measurement

DIRIS A-40

The solution for

> Industry
> Building
> Infrastructure

Strong points

> Assisted configuration
> Connected to the Cloud
> Compliant with IEC 61557-12
> Smart sensors

Integrated technologies

PreciSense AutoCorrect VirtualMonitor

For more information see our website www.socomec.com

Conformity to standards

> IEC 61557-12
> UL E257746
> EN 50160

Function

The **DIRIS A-40** is a panel-mounted power monitoring device (PMD). It is designed for measuring, monitoring and reporting electrical energy.

The DIRIS A-40 offers a range of functions for measuring voltage, current, power, energy and quality.
It allows the analysis of a single-phase or three-phase load.

Advantages

Assisted configuration

The configuration wizard guides the user step by step. It also detects and corrects configuration errors. This cuts the commissioning time in half and always delivers a reliable result.

Smart sensors

Three current sensor formats (solid-core TE, split-core TR/iTR and Rogowski coil TF) allow integration of the DIRIS A-40 into new and existing electrical installations.

Connected to the Cloud

The range comprises IoT ready connected products that enable data to be exported automatically for remote operation without any limit on time, distance and time in storage.

Compliant with IEC 61557-12

Reference standard for PMDs (Performance metering & monitoring devices), IEC 61557-12 standard guarantees performance levels and satisfactory performance from the PMDs under the environmental conditions typical of industrial and tertiary applications.

Functions

Multi-measurement
- Currents
  - I1, I2, I3, In, Isystem
- Voltages & frequency
  - V1, V2, V3, VN, Vsystem, U12, U23, U31, Usystem, f
- Powers
  - P1, P2, P3, ΣP, Q1, Q2, Q3, ΣQ, S1, S2, S3, ΣS
  - Predictive powers ΣP, ΣQ, ΣS
- Power factor
  - PF1, PF2, PF3, ΣPF
- Cos φ & tangent φ
  - Instantaneous values per phase

Metering
- Active energy: +/- kWh
- Reactive energy: +/- kvarh
- Apparent power: kVAh
- Multi-tariff (8 max.)
- Hour Meter

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, TDDI
  - Phase-to-neutral voltage THDv1, THDv2, THDv3
  - Phase-to-phase voltage THDu12, THDu23, THDu31
- Individual harmonics up to 63rd
  - Currents: HI1, HI2, HI3, HIn
  - Phase-to-neutral voltage: HV1, HV2, HV3
  - Phase-to-phase voltage: HU12, HU23, HU31
- Kfactor & Crest factor
- Events according to EN 50160
  - Voltage dips, outages, interruptions, swells

Monitoring of protection
- Auxiliary contact monitoring
- Report and alarm on trips
- Number of operations

Load curves and historical records (max. 130 days)
- Active, reactive and apparent power
- Currents, voltages and frequency

Alarms
- Alarms for all electrical values, events and input status changes, possibility of logical combination
- Time-stamping of events

Communication
- DIRIS A-40 RS485 Modbus as standard
- DIRIS A-40 Ethernet Modbus
- DIRIS A-40 PROFIBUS DPV1

Inputs
- 3 digital inputs
  - Power supplied from DIRIS A-40 or an external source
  - Function: logic status, status of circuit breaker, counting of pulses or synchronization multifluid metering
- 2 logical outputs
  - Function: Command, energy pulse output, load shedding, alarm

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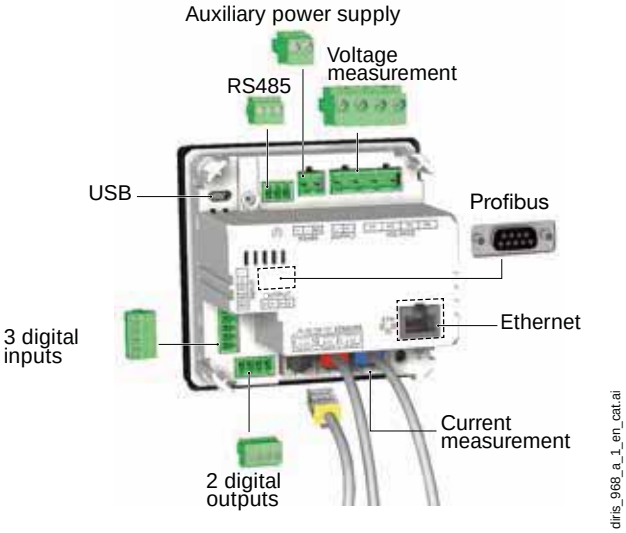
Functions

Monitoring
- Real-time measurement of electrical values.
- View data as graphs or tables.
- Power quality analysis of the utility supply and of loads.

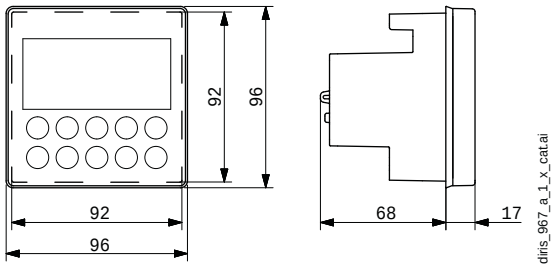
Metering
- Measurement of active, reactive and apparent energies.
- Historical record of measurements.
- Graphic display on monthly, weekly, daily or hourly basis.

Alarming
- Display of alarms.
- History of alarms.

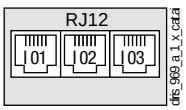
Terminals



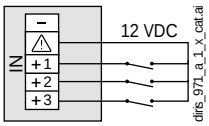
Dimensions (mm)



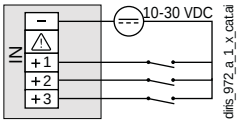
Current measurement



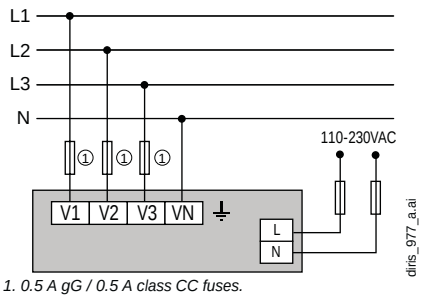
3 inputs supplied by the product



3 inputs with external power supply

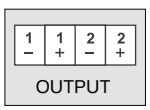


Voltage connections inc auxiliary power supply



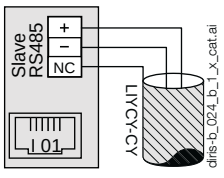
1. 0.5 A gG / 0.5 A class CC fuses.

2 outputs



Earth

RS485



Connections

Associated current sensors

Various types of current sensors can be connected to the DIRIS A-40: solid-core (TE), split-core (TR/iTR) or Rogowski (TF). This range of sensors is suitable for all types of new or existing installations. A quick RJ12 connection makes wiring easy and reliable and prevents wiring errors. The DIRIS A-40 automatically recognizes the sensor size and type. This guarantees the overall accuracy of the DIRIS A-40 + current sensor measurement chain.

For more information: see "TE sensors" pages.

TE solid current sensors

TR/iTR split-core current sensors

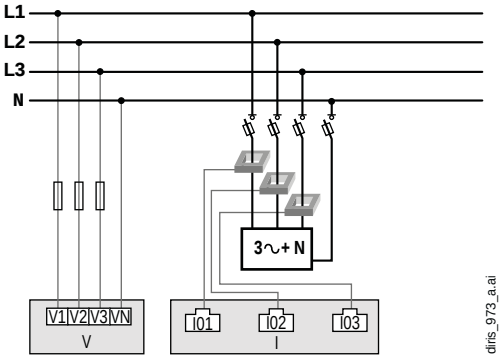
TF Rogowski current sensors

TE / TR/iTR / TF current sensors

Network and connection examples

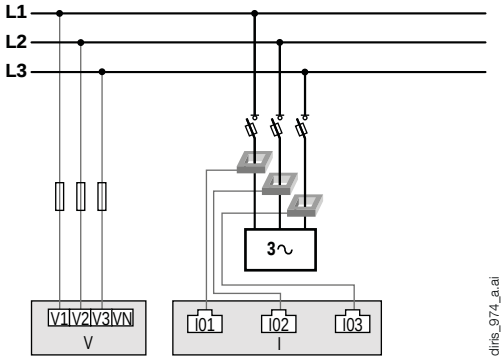
Three phase + Neutral

3P+N - 3 CT (1 three-phase load + calculated Neutral)



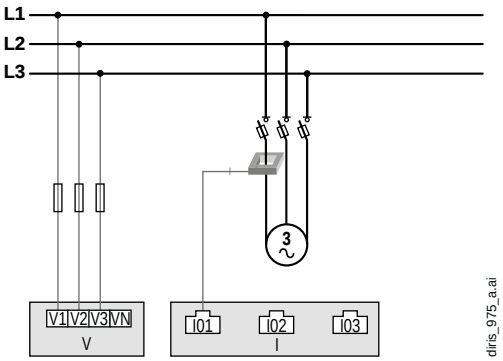
Three-phase

3P - 3CT (1 three-phase load)



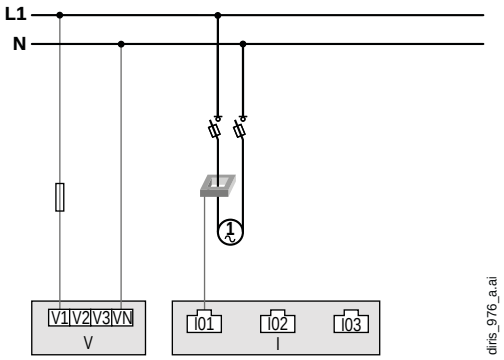
Three-phase

3P - 1CT (1 balanced three-phase load)



Single-phase

1P+N - 1CT (1 single-phase load)



1. 0.5 A gG / 0.5 A class CC fuses.
If self-supplied, a fuse must always be added to the Neutral.

CT: Current sensor

3~ Load

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DIRIS A-40 characteristics

Electrical characteristics

Auxiliary power supply	
Alternative voltage	110/400 VAC or 120/300 VDC - Cat III
Frequency	50/60 Hz
Power consumption	5VA AC / 1,5VA DC (48250500) 8VA AC / 2,5VA DC (48250501 & 48250502)
Connection	Removable spring-cage terminal block, 2x 2 positions, 0.5 - 2.5 mm² solid cable or 0.25 - 1.5 mm² stranded cable with end piece

Measurement characteristics

Power and energy measurement	
Accuracy Active energy and active power	Class 0.2 DIRIS A-40 only Class 0.5 with TE, TF or iTR sensors Class 1 with TR sensors
Accuracy of reactive energy	Class 2 with TE, TR / iTR or TF sensors

Power factor measurement	
Accuracy	Class 0.5 with TE, TF or iTR sensors Class 1 with TR sensors

Voltage measurement	
Characteristics of the network measured	50-300VAC (Ph/N) - 87-520VAC (Ph/Ph) - CAT III
Frequency range	45 to 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
Accuracy of voltage measurement	Class 0.2
Connection	Removable spring-cage terminal block, 4 positions, 0.5 - 2.5 mm² solid cable or 0.25 - 1.5 mm² stranded cable with end piece

Current measurement	
Number of current inputs	3
Associated current sensors	Solid TE, split-core TR/iTR, flexible TF current sensors
Accuracy	0.2 DIRIS A-40 class only Class 0.5 with TE, TF or iTR sensors Class 1 with TR sensors
Connection	Specific Socomec cable with RJ12 connectors

Input characteristics

Number	3
Type / Power supply	Optocoupler with internal (12 VDC ± 10%) or external (12-24 VDC ± 20%) polarisation
Input function	Logic status, status of circuit breaker, synchronization topography, multifluid pulse metering
Connection	Removable screw terminal block, 5 positions, stranded or solid 0.14 - 1.5 mm² cable

Output characteristics

Number	2
Type	Optocoupler 30 Vd.c. max 20mA max - SELV
Output function	Command, energy pulse output, load shedding, alarm
Connection	Removable screw terminal block, 4 positions, stranded or solid 0.14 - 1.5 mm² cable

Communication characteristics

DIRIS A-40 RS485	
Link	RS485
Connection type	2 to 3 half duplex wires
Protocol	Modbus RTU
Baud rate	1200 to 115 200 baud
USB	Configuration of DIRIS A-40

References

DIRIS A-40 monitoring devices		**Reference**
DIRIS A-40	RS485 Modbus - 3 inputs / 2 outputs	4825 **0500**
DIRIS A-40	Ethernet Modbus TCP or BACnet IP - webserver - RS485 Modbus - 3 inputs / 2 outputs	4825 **0501**
DIRIS A-40	Profibus DPV1 - RS485 Modbus - 3 inputs / 2 outputs	4825 **0502**

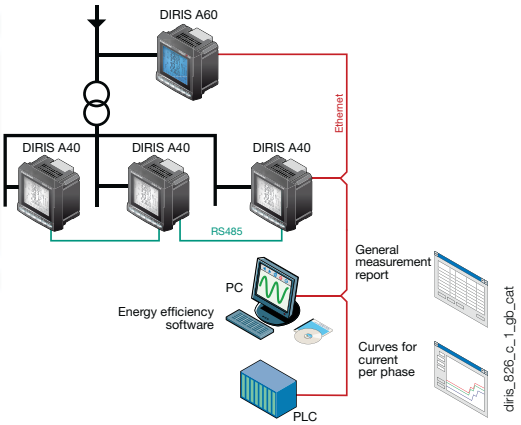
DIRIS A60

Multifunction meters - PMD

energy monitoring and event analysis - dimensions 96 x 96 mm

DIRIS A60

Principle diagram



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.

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

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, Usystem
  - 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:

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).

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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.*

Pulse outputs

- 2 configurable pulse outputs (type, weight and duration) on ± kWh, ±kvarh and kVAh.

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).

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, ± ΣP, ± ΣQ, ΣS, ΣPFL/C, Isys, 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, ± ΣP, ± 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.

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.150.
(2) See "External sensor PT 100" in general catalog.

DIRIS A60

Multifunction meters - PMD

energy monitoring and event analysis - dimensions 96 x 96 mm

Accessories

Current transformers
(see page 128)

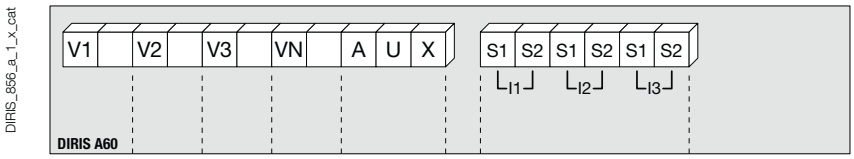
Split-core current transformers

IP65 protection

Panel mounting kit
for a 144 x 96 mm cut-out

Terminals

DIRIS A60

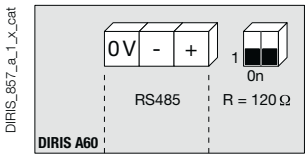


S1 - S2: current inputs

AUX: auxiliary power supplies U_s

V1- V2 - V3 - VN: voltage inputs

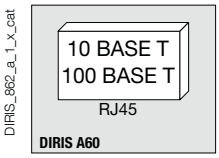
RS485 MODBUS module



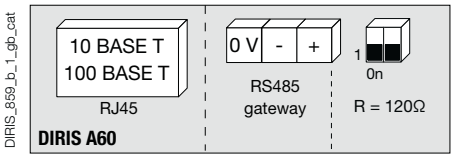
RS485 link.

R = 120 Ω: selectable internal resistance for RS485 end of line termination.

Ethernet module

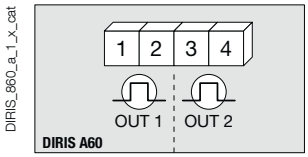


Ethernet module + RS485 MODBUS gateway



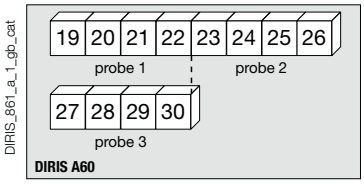
RS485 gateway resistor.
R = 120 Ω: selectable internal resistance for RS485 end of line termination.

Pulse output module

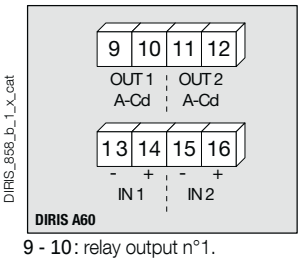


1 - 2: pulse output n°1.
3 - 4: pulse output n°2.

Temperature module

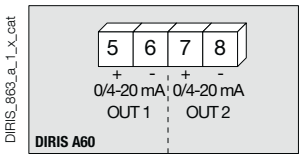


2 inputs / 2 outputs module



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.

socomec
Innovative Power Solutions

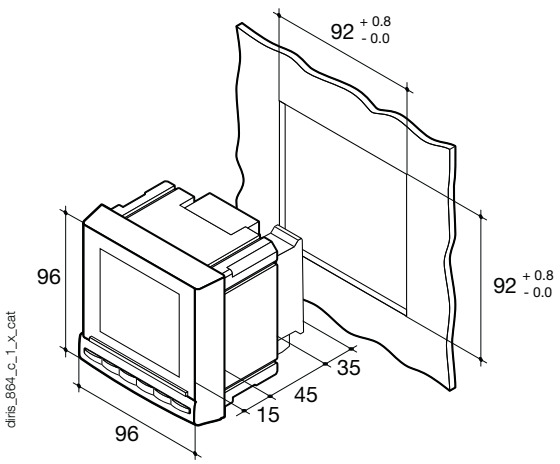
Electrical characteristics

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



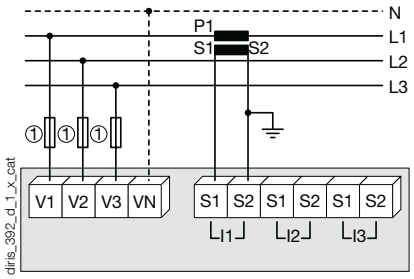
Type	panel mounting
Dimensions W x H x D	96 x 96 x 80 mm
Case degree of protection	IP30
Front degree of protection	IP52
Display type	backlit LCD display
Terminal blocks type	fixed or plug-in
Voltage and other terminals connection cross-section	0.2 … 2.5 mm²
Current connection cross-section	0.5 … 6 mm²
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.

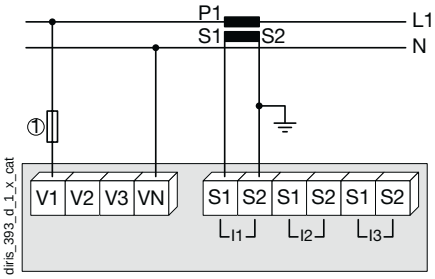
3/4 wires with 1 CT



Use of 1 CT reduces by 0.5% the accuracy of the phases, the current of which is worked out by vector calculation.

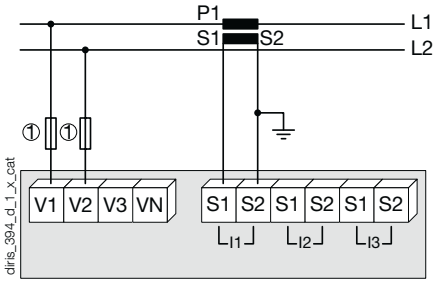
1. Fuses 0.5 A gG / 0.5 A class CC.

Single-phase



1. Fuses 0.5 A gG / 0.5 A class CC.

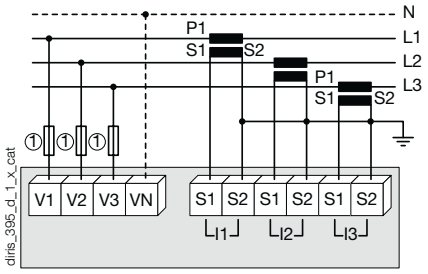
Two-phase



1. Fuses 0.5 A gG / 0.5 A class CC.

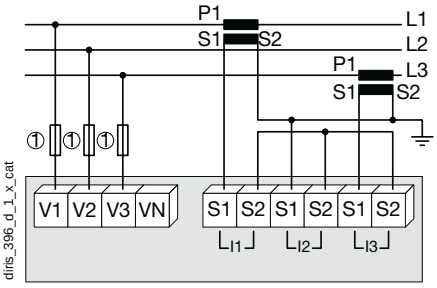
Low voltage unbalanced network for DIRIS A60

3/4 wires with 3 CTs



1. Fuses 0.5 A gG / 0.5 A class CC.

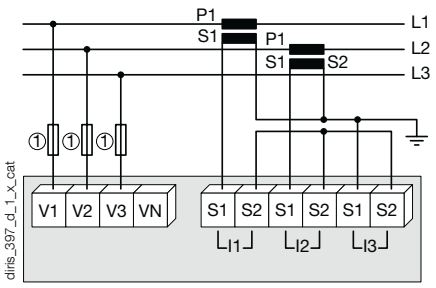
3 wires with 2 CTs



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

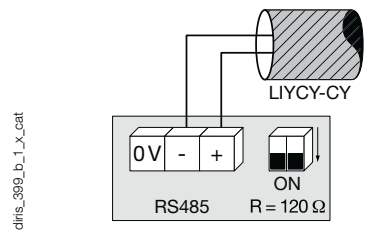


Use of 2 CTs reduces by 0.5% the accuracy of the phases, the current of which is worked out by vector calculation.

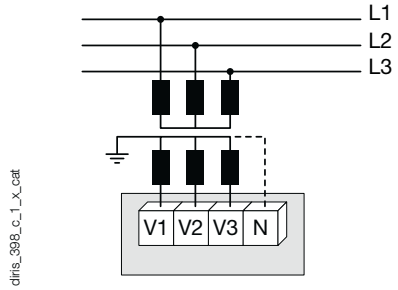
1. Fuses 0.5 A gG / 0.5 A class CC.

Additional information

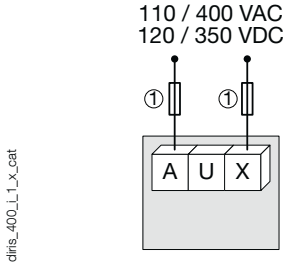
Communication via RS485 link



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 **Auxiliary power supply U_s**	**DIRIS A60** **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 128
Temperature sensor PT100 - M6 screw type	1	4825 **0208**
Temperature sensor PT100 - M6 eyelet type	1	4825 **0209**
Management softwares for DIRIS		See page 150

Expert Services

> Study, definition, advice, implementation, maintenance and training… Our experts “Expert Services” offer complete support for the success of your project.

DIRIS B

Multifunction power monitoring devices

Configuration with EasyConfig,

diris-b_038.psd

DIRIS B-xx
RS485

diris-b_010.psd

DIRIS B-30
Radio frequency (wireless)

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

Integrated technologies

PreciSense AutoCorrect VirtualMonitor

For more information see our website www.socomec.com

Conformity to standards

> UL E257746
> IEC 61557-12
> EN 50160
> ISO 14025

Function

The DIRIS B is a power monitoring device in a modular format that communicates wirelessly (DIRIS B-30 RF only) 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 is connected to current sensors (RJ12 connection) that are suitable for all types of installation: solid TE, split-core TR/iTR, and flexible TF current sensors.

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/iTR/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

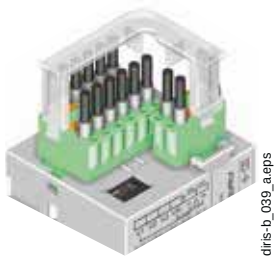
- The DIRIS B can be connected to:
  - a remote DIRIS D-30 screen for displaying measurement and metering data.
  - a DIRIS G gateway for centralisation and communication of data wirelessly or via RS485 and Ethernet.
  - optional modules to communicate in BACnet IP, BACnet MSTP and PROFIBUS DP protocol. Digital or analogue input/output modules can also be connected.

Application	Local metering	Local analysis	Remote analysis
			
DIRIS B	***B-10*** RS485	***B-30*** RS485	***B-30*** RF
Number of current inputs			
	4	4	4
Metering			
± kWh, ± kvarh, kVAh	•	•	•
Load curves		•	•
Multi-tariff	•	•	•
Multi-measurement			
U12, U23, U31, V1, V2, V3, f	•	•	•
U system, V system	•	•	•
I1, I2, I3, In, ΣP, ΣQ, ΣS, ΣPF	•	•	•
P, Q, S, PF per phase	•	•	•
Predictive power	•	•	•
Ph/N unbalance	•	•	•
Ph/Ph unbalance	•	•	•
Current unbalance (Inba, Idir, Iinv, Ihom, Inb)	•	•	•
Phi, cos Phi, tan Phi	•	•	•
Quality analysis			
THDv1, THDv2, THDv3, THDu12, THDu23, THDu31	•	•	•
THDi1, THDi2, THDi3, THDin	•	•	•
Individual harmonics U & V (up to 63rd)		•	•
Individual harmonics I (up to 63rd)		•	•
Crest factor I1, I2, I3, In		•	•
Crest factor V1, V2, V3, U12, U23, U31		•	•
Voltage dips, interruptions, swells (EN 50160)		•	•
Overcurrents		•	•
Alarms			
On threshold		•	•
Inputs/outputs		•	•
History of average values			
45 days (max)		•	•
Communication			
RS485 Modbus	•	•	
868 Mhz radio-frequency			•
2 inputs (status / pulse)	•	•	•

Accessories

DIRIS B sealing cover

- Prevents access to the cabling of the monitoring device.



diris-b_039_a.eps

Remote radio antenna

- Mounted outside the enclosure of the DIRIS B-30 monitoring device to increase the transmission distance.

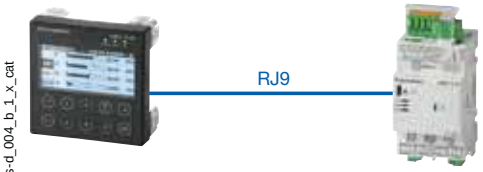
USB configuration cable (2 m)

- Advanced configuration of DIRIS B gateways can be achieved using the EASY CONFIG software via Ethernet or direct USB connection.

DIRIS D-30 display

DIRIS D-30

Connection



Optional modules

DIRIS O

Optional module ***DIRIS B***

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:

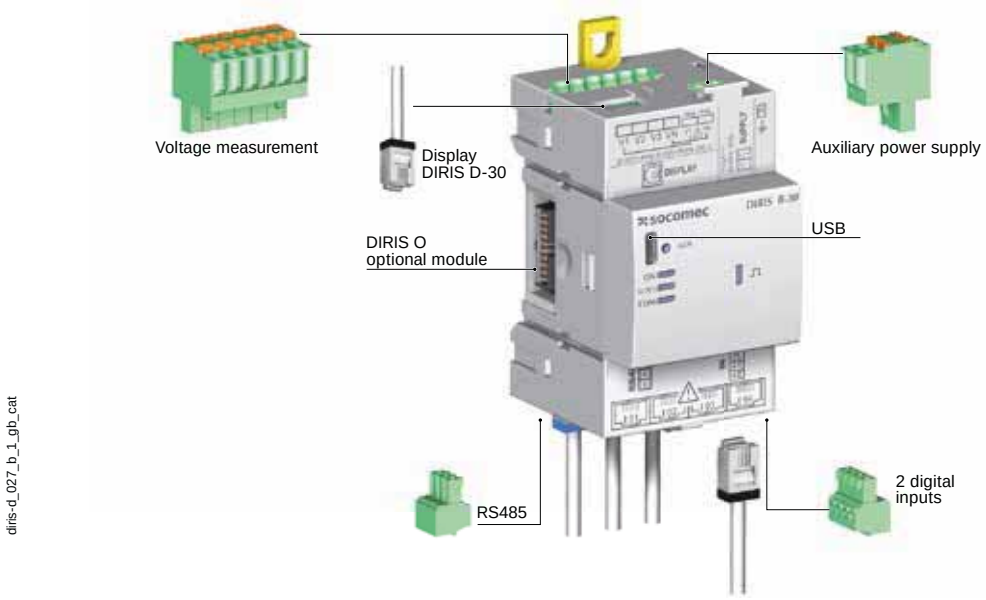
DIRIS O-m
- Provides a second RS485 Modbus communication port to the DIRIS B for simultaneous sending of information via RS485 to two supervision stations.

DIRIS O-p
- Adds a PROFIBUS DPV1 communication port to the DIRIS B.

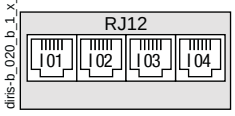
DIRIS O-b/ip
- Adds a BACnet IP communication port to the DIRIS B.

DIRIS O-b/mstp
- Adds a BACnet MSTP communication port to the DIRIS B.

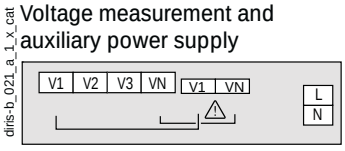
DIRIS B terminals



Current measurement

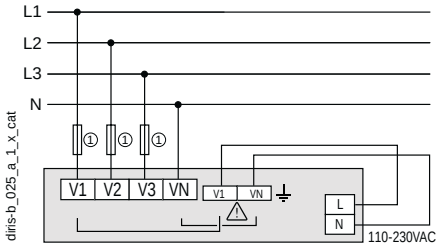


Voltage measurement and auxiliary power supply



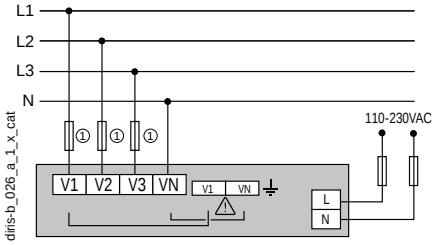
Self supply

Easy connection of the power supply from the measurement terminal (specific terminals)



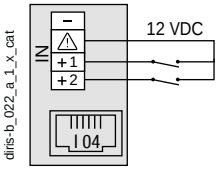
1. Fuses 0.5 A gG / 0.5 A class CC.

Separate power supply

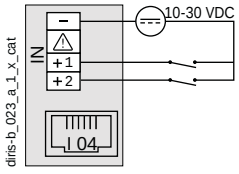


1. Fuses 0.5 A gG / 0.5 A class CC.

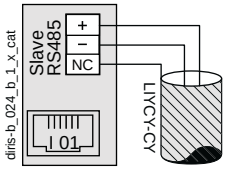
2 inputs supplied by the product



2 inputs with external power supply

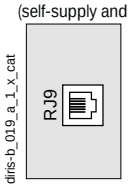


RS485



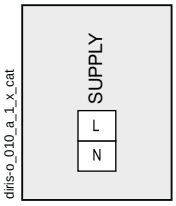
RJ9 for DIRIS D-30

(self-supply and data)

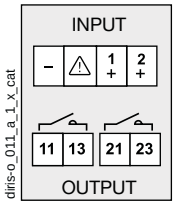


Terminals of optional DIRIS O modules

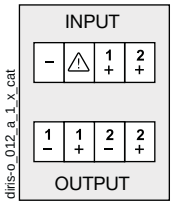
Optional module power supply



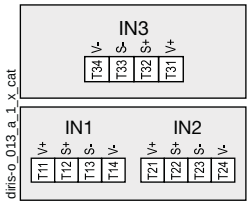
DIRIS O-iod



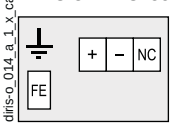
DIRIS O-ioa



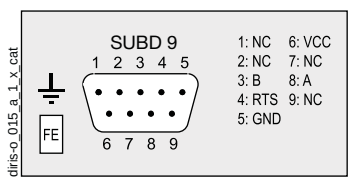
DIRIS O-it



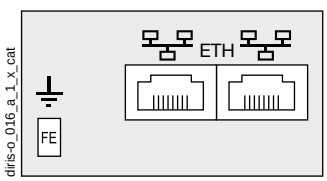
DIRIS O-m RS485



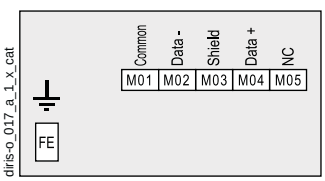
DIRIS O-p



DIRIS O-b/ip



DIRIS O-b/mstp



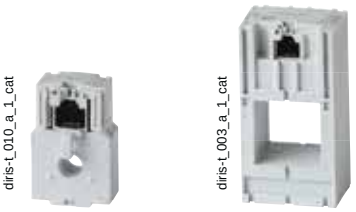
Connections

Associated current sensors

Various types of current sensors can be connected to the DIRIS B: Solid TE , split-core TR/iTR, 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 automatically recognises the type of sensor used and its current rating. This guarantees the overall accuracy of the DIRIS B + current sensor measurement chain.

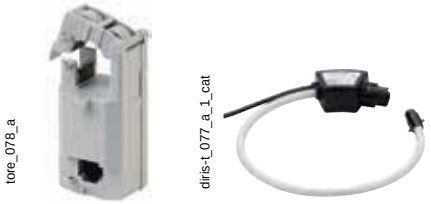
For more information: see "TE sensors" pages.

TE solid current sensors

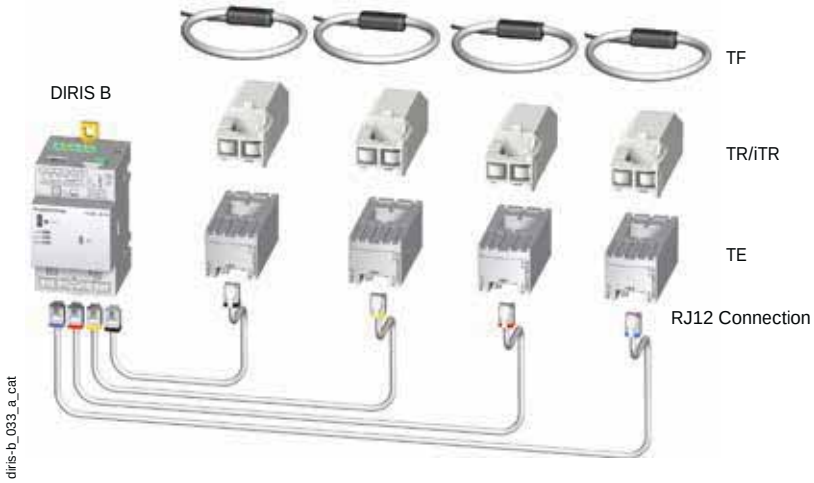


TR/iTR Split-core current sensors

TF Flexible current sensors



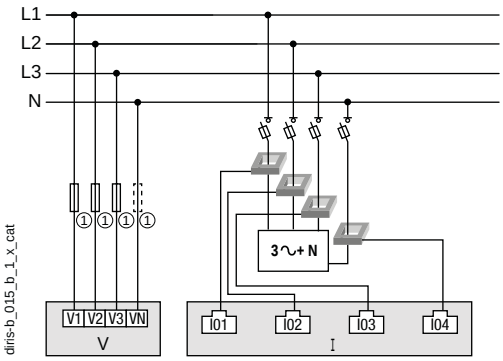
TE / TR / iTR / TF current sensors



Network and connection examples

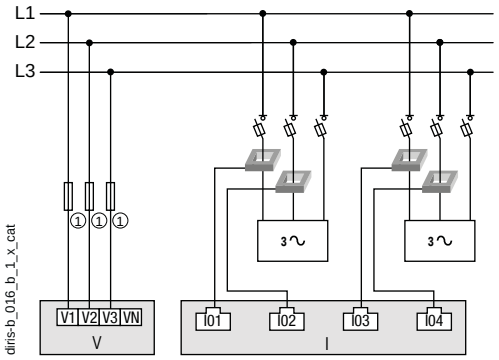
Three phase + neutral

3P+N - 4CTs (measurement for 1 three-phase load + Neutral)



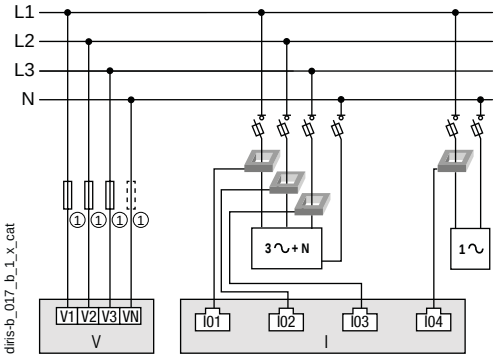
Three-phase

3P - 2CTs (2 three-phase loads without neutral)



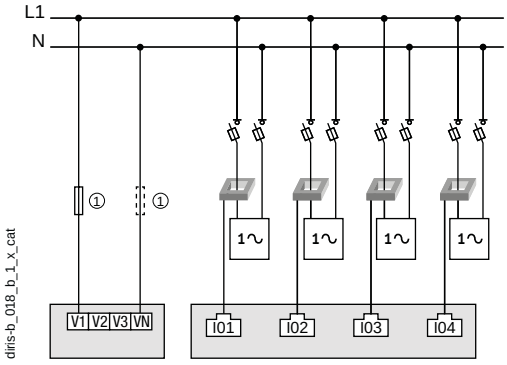
Three-phase

3P+N - 3CTs & 1P+N - 1CT (1 three-phase load & 1 single-phase load)



Single-phase

1P+N-1CT (4 single-phase loads)

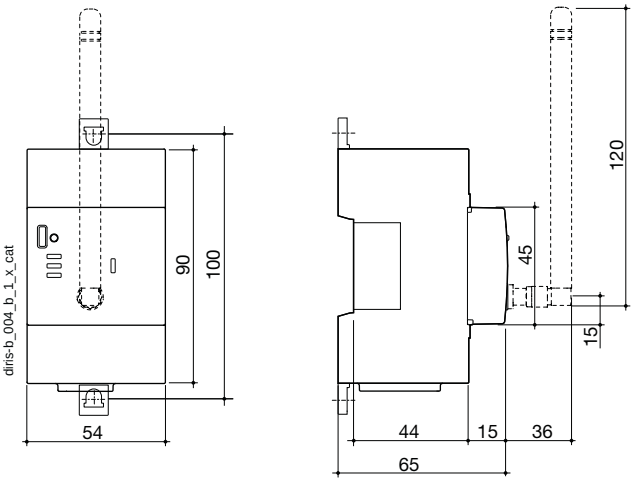


1. Fuses 0.5 A gG / 0.5 A class CC.
In case of self-supply, a fuse must be added on the neutral.

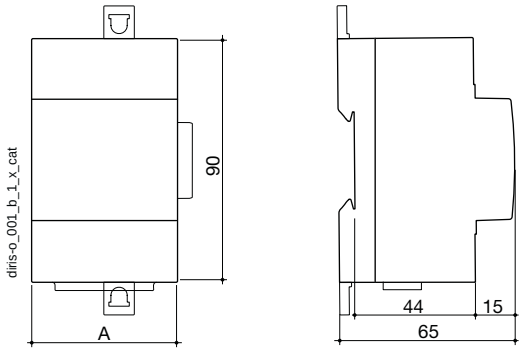
CT: Current sensors 3~ Load

Dimensions (mm)

DIRIS B

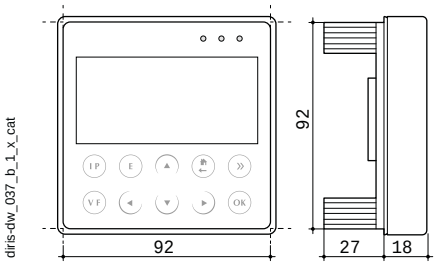


DIRIS O optional modules



DIRIS O optional modules	A
DIRIS O-iod - DIRIS O-ioa - DIRIS O-it	45 mm
DIRIS O-m - DIRIS O-p - DIRIS O-b/ip - DIRIS O-b/mstp	54 mm

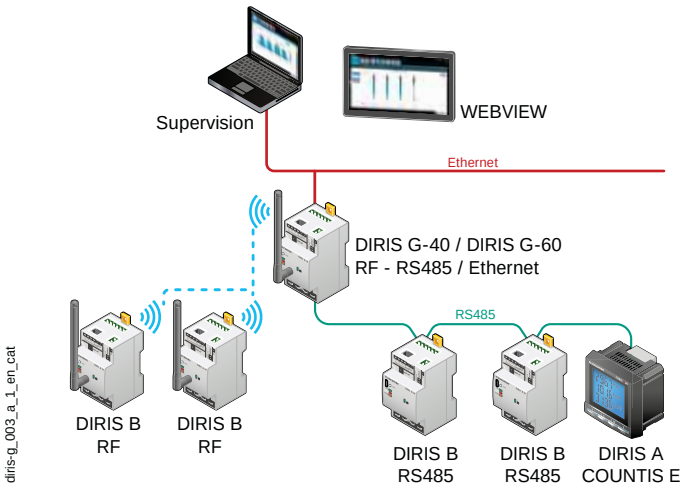
DIRIS D-30



Communication architecture

Example of communication architecture with DIRIS G gateway and WEBVIEW embedded WEB server

For more information about DIRIS G, see “DIRIS G” pages.



DIRIS B characteristics

Electrical characteristics

Auxiliary power supply	
AC voltage	110-230VAC ±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 mm² solid cable or 0.25 … 1.5 mm² stranded cable with ferrule

Measurement characteristics

Energy and power measurement	
Accuracy Active energy and active power	Class 0.2 DIRIS B alone 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 mm² solid cable or 0.25 … 1.5 mm² stranded cable with ferrule
Current measurement	
Number of current inputs	4
Associated current sensors	Solid TE , split-core TR/iTR , flexible TF current sensors
Accuracy	Class 0.2 DIRIS B 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 ± 10 %) or external polarisation (10-30 VDC ± 10%)
Input function	Logic status, pulse meter or synchronisation pulse status (input 1)

Communication characteristics

DIRIS B RS485	
Link	RS485
Connection type	2 … 3 half duplex wires
Protocol	Modbus RTU
Speed	1200 … 115200 bauds
USB	DIRIS B 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 ±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 ± 10 %) or external polarisation (10-30 VDC ± 10%)
Function	Logic status or pulse meter
Number of outputs	2 per optional modules - max. 4 optional modules
Type	Relay / 230VAC ±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 mm² stranded or solid cable
DIRIS O-ioa - 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 mm² 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

References

DIRIS B monitoring devices		Reference
DIRIS B-10	RS485 - Modbus - 230 VAC	4829 **0010**
DIRIS B-30	RS485 - Modbus - 230 VAC	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-ioa	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**

COUNTIS E0x

Active energy meters

single-phase - direct 40 A

COUNTIS E04 - MID

Function

The COUNTIS E0x is a modular energy meter displaying energies (kWh and kVArh) and other measurements directly on its backlit LCD display, allowing direct connection up to 40 A. COUNTIS E02, E04 and E06 are also MID-certified.

Advantages

Compactness

Only 1 module wide.

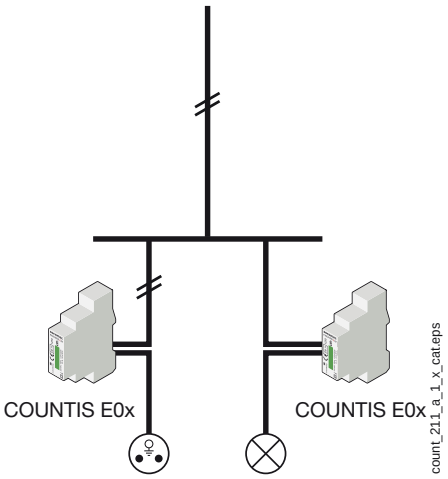
Output (pulses)

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.
- Multi-measurement available on display.

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

The solution for

> Industry
> Marinas
> Shopping centers
> Data center
> Camping
> EV Chargers

Strong points

> Compactness
> Output (pulses)
> MID certified B+D module
> RS485 (MODBUS) and M-Bus communication
> Multi-measurement
> Bi-directional metering

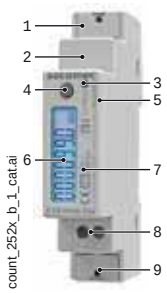
MID certification

> 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

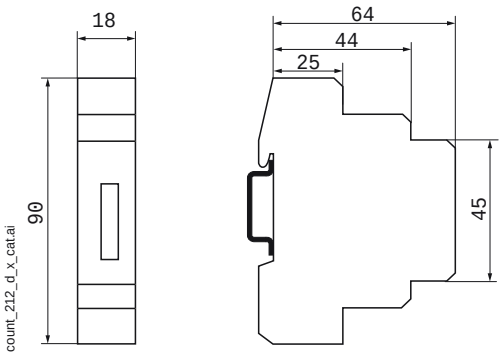
> IEC 62053-21 class 1
> IEC 62053-23 class 2
> IEC 62053-31
> IEC 62052-11
> EN 50470-1
> EN 50470-3

Front panel



1. Neutral terminal and terminal shrouds (COUNTIS E02/E04/E06).
2. M-Bus/MODBUS connection.
3. Metrological LED.
4. Navigation button.
5. Serial number.
6. Backlit LCD display.
7. MID marking (COUNTIS E02/E04/E06).
8. Pulse output.
9. Current and voltage terminals.

Dimensions (mm)



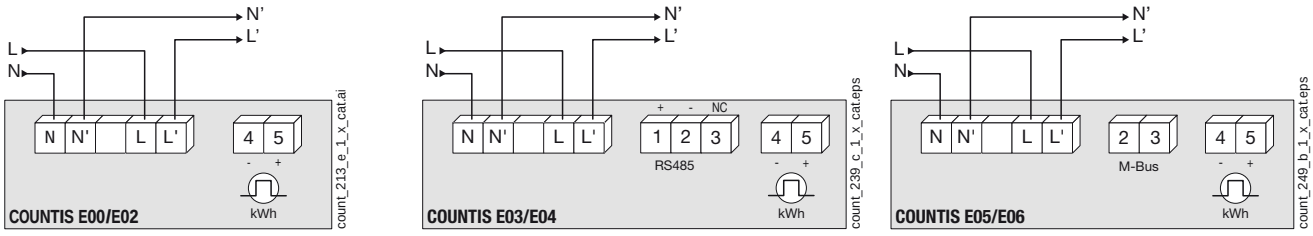
Type	modular
Number of modules	1
Dimensions W x H x D (mm)	18 x 90 x 64
Case degree of protection	IP 20
Front degree of protection	IP 51(1)
Display type	7 digit LCD with backlighting
Rigid cable cross-section	1.5 … 6 mm²
Flexible cable cross-section	1.5 … 6 mm²
Weight	100 g E03/E04 80 g E00/E02/E05/E06

(1) For the installation in a cabinet at least with IP51 protection.

Electrical characteristics

Current measurement (TRMS)		
Type	single phase - direct 40 A	
Input consumption	max 0.5 VA	
Permanent overload	40 A	
Intermittent overload	30 I_{max} over 10 ms	
Startup current (I_{st})	20 mA	
Minimum current (I_{min})	0.25 A	
Transition current (I_{tr})	0.5 A	
Reference current (I_{ref})	5 A	
Voltage measurements (TRMS)		
Range of measurement	184 … 276 VAC	
Input consumption	Max. 1.5 VA for E00/E02/E03/E04 Max. 1 VA for E05/E06	
Permanent overload	280 VAC	
Energy accuracy		
Active (according to IEC 62053-21)	Class 1	
Active (according to EN 50470)	Class B	
Reactive (according to IEC 62053-22)	Class 2	
Power supply		
Self-powered	yes	
Frequency	50/60 Hz	
Output (pulses)		
Number	1	
Type of optocoupler	27 VDC - 27 mA (IEC 62053-31)	
Fixed pulse weight	100 Wh	
Pulse duration	100 ms	
Operating conditions		
Operating temperature	-25 … +55°C	
Storage temperature	-40 … +75°C	
Relative humidity	80%	
Communication	**COUNTIS E03/E04**	**COUNTIS E05/E06**
Link	RS485	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.

References

Type	COUNTIS E00 Reference	COUNTIS E02 Reference	COUNTIS E03 Reference	COUNTIS E04 Reference	COUNTIS E05 Reference	COUNTIS E06 Reference
Direct 40 A	4850 **3058**					
Direct 40 A - MID		4850 **3059**				
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 80 A

count_253.psd

COUNTIS E14 - MID

Function

The COUNTIS E1x is a modular energy meter displaying the energies (kWh, kVArh and kVA) and other measurements directly on its backlit LCD display. It is designed for single-phase load metering and is used for direct connections of up to 80 A.

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 and Ethernet communication models, you can configure your meters remotely.

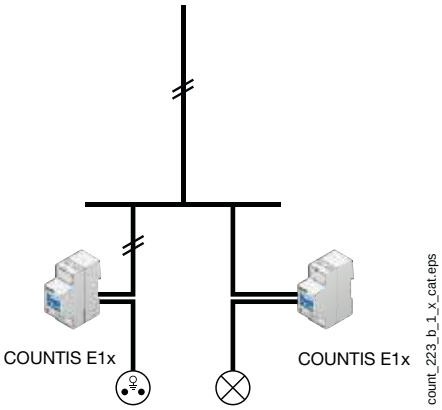
Multi-tariff

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.

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



count_223_b_1_x_cat.eps

Common characteristics

- Measurement accuracy: 1%.
- Displayed on backlit screen.
- Multi-measurement available on display.
- Compact dimensions.

Models	Model-related specifications
E11	Dual tariff + 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

The solution for

- > Marinas
- > Shopping centers
- > Data centers
- > Industry
- > EV Chargers
- > Camping

Strong points

- > Compactness
- > Multi-measurement
- > Bi-directional metering
- > RS485 (MODBUS), M-Bus communication, Ethernet or pulse outputs
- > Multi-tariff
- > MID certified B+D module

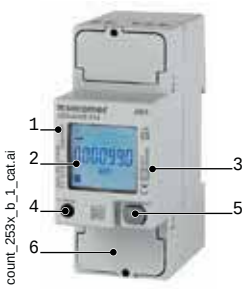
MID certification

- > 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

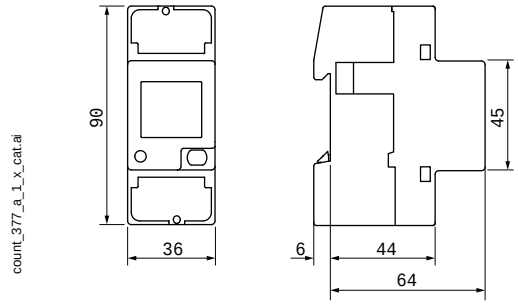
- > IEC 62053-21 class 1
- > IEC 62053-23 class 2
- > IEC 62053-31
- > IEC 62052-11
- > EN 50470-1
- > EN 50470-3

Front panel



1. Serial number.
2. Backlit LCD display.
3. MID marking (COUNTIS E12/E14/E16/E18).
4. Metrological LED.
5. Navigation button.
6. Voltage, current, neutral terminals and terminal shrouds (COUNTIS E12/E14/E16/E18).

Dimensions (mm)



Type	modular
Number of modules	2
Dimensions W x H x D	36 x 90 x 64 mm
Case degree of protection	IP 20
Front degree of protection	IP 51(1)
Display type	backlit LCD
Rigid cable cross-section	1.5 … 35 mm²
Flexible cable cross-section	1.5 … 35 mm²
Weight	215 g E13/E14/E17/E18 205 g E11/E12/E15/E16

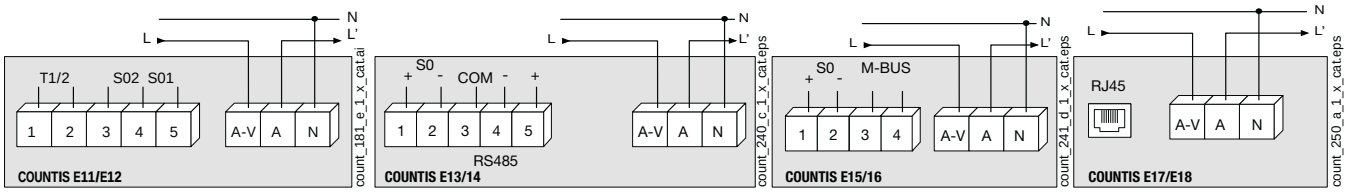
(1) For the installation in a cabinet at least with IP51 protection.

Electrical characteristics

Measurement of currents	
Type	single phase - direct 80 A
Input consumption	max. 0.5 VA
Startup current (I_{st})	20 mA
Minimum current (I_{min})	0.25 A
Transition current (I_{tr})	0.5 A
Reference current (I_{ref})	5 A
Permanent overload (I_{max})	80 A
Intermittent overload	30 I_{max} over 10 ms
Voltage measurement	
Range of measurement	230 … 240 V ± 20%
Consumption (VA)	3.5 VA max E13/E14/E17/E18 7.5 VA max E11/E12/E15/E16
Permanent overload	290 V phase-neutral
Energy accuracy	
Active (according to IEC 62053-21)	Class 1
Active (according to EN 50470)	Class B
Reactive (according to IEC 62053-22)	Class 2
Power supply	
Self-powered	Yes
Frequency	50/60 Hz
Output (pulses)	
Optocoupler type (IEC 62053-31)	250 VAC/DC - 100 mA (E11/E12) 27 VDC - 27 mA (E13/E14/E15/E16)
Number	1
Fixed pulse weight	100 Wh
Pulse duration	50 ± 2 ms ON time 30 ± 2 ms OFF time
Operating conditions	
Operating temperature	-25 … 55°C
Storage temperature	-25 … 75°C
Relative humidity	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 … 115200 bauds	300 … 9600 bauds	10/100 Mbps

Connection



References

Type	COUNTIS E11 Reference	COUNTIS E12 Reference	COUNTIS E13 Reference	COUNTIS E14 Reference	COUNTIS E15 Reference	COUNTIS E16 Reference	COUNTIS E17 Reference	COUNTIS E18 Reference
Direct 80 A - Dual tariff	4850 **3060**							
Direct 80 A - Dual tariff + MID		4850 **3061**						
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 80 A

COUNTIS E24 - MID

Function

The COUNTIS E2x is a modular energy meter displaying the energies (kWh, kVArh and kVA) and other measurements directly on its backlit LCD display. It is designed for three-phase networks and allows a direct connection of up to 80 A.

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 and Ethernet communication models, you can configure your meters remotely.

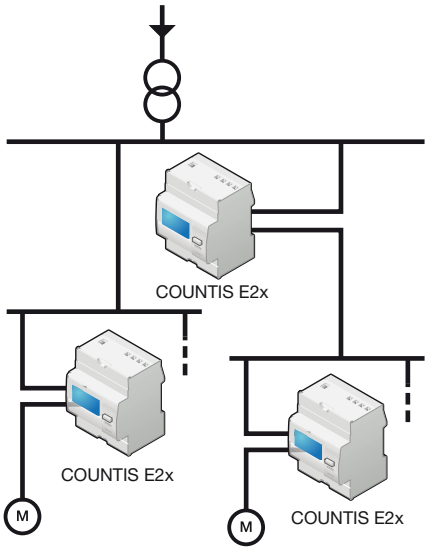
Multi-tariff

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.

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

- Measurement accuracy: 1%.
- Displayed on backlit screen.
- Multi-measurement available on display.

Models	Model-related specifications
E21	Dual tariff + 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

The solution for

- > Industry
- > Infrastructure
- > Data center
- > EV Chargers
- > Shopping centers

Strong points

- > RS485 (MODBUS), M-BUS, Ethernet or pulse outputs
- > Multi-tariff
- > MID certified B+D module
- > Multi-measurement on display
- > Bi-directional metering

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.

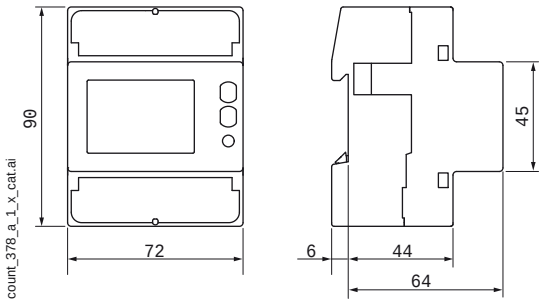
Conformity to standards

- > IEC 62053-21 class 1
- > IEC 62053-23 class 2
- > IEC 62053-31
- > IEC 62052-11
- > EN 50470-1
- > EN 50470-3

Front panel

1. Neutral terminal
2. Backlit LCD display
3. Navigation button.
4. ENTER key
5. Metrological LED
6. Current, voltage terminals and terminal shrouds (COUNTIS E02/E04/E06).

Dimensions (mm)



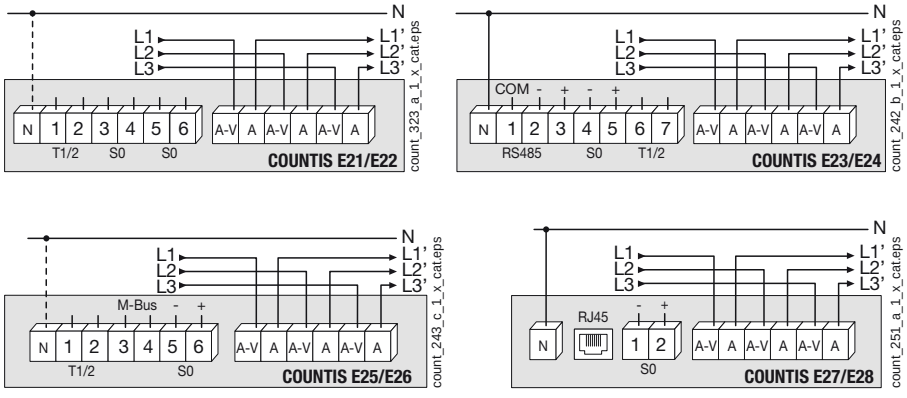
Type	modular
Number of modules	4
Dimensions W x H x D	72 x 90 x 64 mm
Case degree of protection	IP 20
Front degree of protection	IP 51(1)
Display type	8-digit backlit LCD
Rigid cable cross-section	1.5 … 35 mm²
Flexible cable cross-section	1.5 … 35 mm²
Weight	440 g

(1) For the installation in a cabinet at least with IP51 protection.

Electrical characteristics

Measurement of currents			
Type	three-phase - direct 80 A		
Input consumption	0.5 VA max. per phase		
Startup current (I_{st})	20 mA		
Minimum current (I_{min})	0.25 A		
Transition current (I_{tr})	0.5 A		
Reference current (I_{ref})	5 A		
Permanent overload (I_{max})	80 A		
Intermittent overload	30 I_{max} over 10 ms		
Voltage measurement			
Range of measurement	230 ... 240 V ±20%		
Consumption (VA)	7.5 VA max (0,5 W) per phase E21/E22/E25/E26 3.5 VA max (1 W) per phase E23/E24/E27/E28		
Permanent overload	290 V phase-neutral / 500 V phase-phase		
Energy accuracy			
Active (according to IEC 62053-21)	Class 1		
Active (according to EN 50470)	Class B		
Reactive (according to IEC 62053-22)	Class 2		
Power supply			
Self-powered	Yes		
Frequency	50/60 Hz		
Output (pulses)			
Optoisolated type (IEC 62053-31)	250 VAC/DC - 100 mA (E21/E22) 27 VDC - 27 mA (E23 … E28)		
Number	2 (E21/E22) 1 (E23 ... E28)		
Fixed pulse weight	100 Wh		
Pulse duration	50 ± 2 ms ON time 30 ± 2 ms OFF time		
Operating conditions			
Operating temperature	-25 … 55°C		
Storage temperature	-25 … 75°C		
Relative humidity	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/E24)		Full duplex
Protocol	MODBUS RTU	M-BUS	MODBUS TCP, HTTP, NTP, DHCP
Baudrate	1200 … 115200 bauds	300 … 9600 bauds	10/100 Mbps

Connection



References

Type	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 80 A - Dual tariff	4850 **3062**							
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**

Single-circuit metering, measurement & analysis

COUNTIS E3x

Active energy meters

three-phase - direct 100 A

count_219.psd

COUNTIS E32 - MID

Function

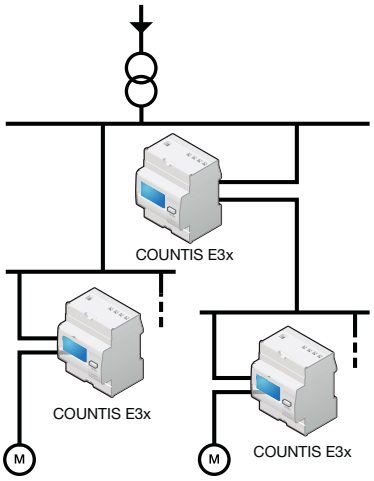
The COUNTIS E3x is a modular energy meter displaying the energy and power consumed (kWh and kW) directly on its backlit LCD display. It is designed for three-phase load metering and is used for direct connections of up to 100 A.

COUNTIS E32, E34 and E36 are MID certified.

Common characteristics

- Measurement accuracy: 1 %
- Backlit LCD display.
- Detects connection errors.

Principle diagram



count_225_a_1_x_cat

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.

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.

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

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

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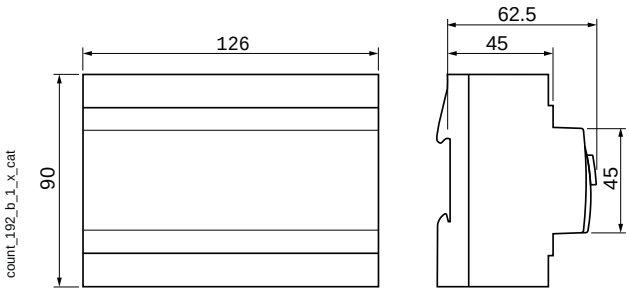
Front panel

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.

Dimensions (mm)



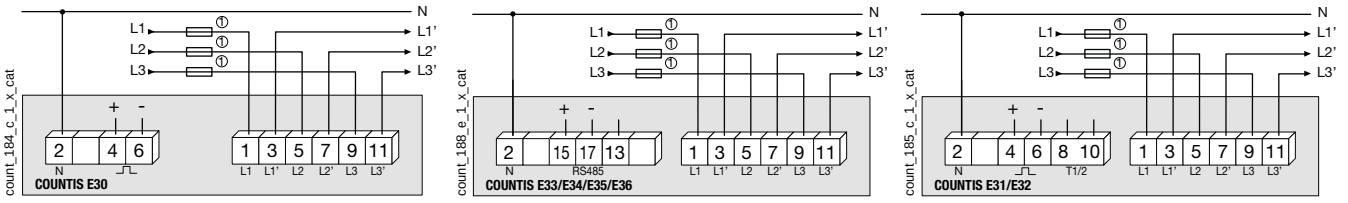
Type	modular
Number of modules	7
Dimensions W x H x D	126 x 90 x 62.5 mm
Case degree of protection	IP20
Front degree of protection	IP51
Display type	backlit LCD display
Rigid cable cross-section	2.5 … 35 mm²
Flexible cable cross-section	2.5 … 35 mm²
Weight	490 g

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 ± 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) $I_{(min)} \leq 0.5 * Itr$
(2) The accuracy class is guaranteed between I_{tr} and I_{max}.
*(3) $I_{(ref)} = I_{(b)}$ (base current) = 10 * $I_{(tr)}$ 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 + MODBUS communication via RS485 (1)				4850 **3012**			
100 A direct - Dual tariff + MODBUS communication via RS485 + MID(1)					4850 **3013**		
100 A direct - Dual tariff + M-Bus communication (1)						4850 **3025**	
100 A direct - Dual tariff + M-Bus communication + MID(1)							4850 **3026**

(1) 4 tariffs through RS485 communication.

Single-circuit metering, measurement & analysis

COUNTIS E4x

Active energy meters

three-phase - via CT up to 12000 A

COUNTIS E44 - MID

Function

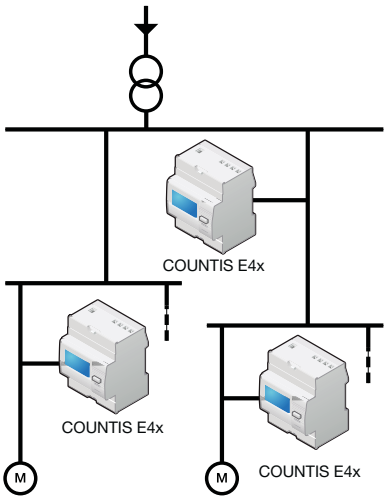
The COUNTIS E4x is a modular electrical energy meter displaying the energies (kWh, kVArh and kVA) and other measurements directly on its backlit LCD display. It is designed for three-phase load metering with connection via CT and is suitable for applications of up to 12000 A.

COUNTIS E42, E44, E46 and E48 are MID certified.

Common characteristics

- Measurement accuracy: 1 % / 0,5%(MID).
- Backlit LCD display.
- Multi-measurement available on display.

Principle diagram



Advantages

RS485 (MODBUS), M-BUS, Ethernet communication or pulse outputs

To enable the remote reporting of energy consumption, COUNTIS E4x devices have either one pulse output, one RS485 (MODBUS), M-BUS or an Ethernet Modbus TCP communication output.

In addition to their reporting functions, COUNTIS E4x with RS485 and Ethernet can be configured remotely and enable access to multi-measurement values.

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

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 3 day period via communication.

Models	Key functions
E41	Dual tariff + Pulse output
E42	Dual tariff + Pulse output + MID
E43	Dual tariff + Pulse output + RS485 MODBUS communication
E44	Dual tariff + Pulse output + RS485 MODBUS communication + MID
E45	Dual tariff + Pulse output + M-BUS communication
E46	Dual tariff + Pulse output + M-BUS communication + MID
E47	Dual tariff + Pulse output + Ethernet
E48	Dual tariff + Pulse output + Ethernet + MID

The solution for

- > Industry
- > Infrastructure
- > Data centre
- > EV Chargers

Strong points

- > RS485 (MODBUS), M-BUS, Ethernet or pulse outputs
- > Multi-tariff
- > 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

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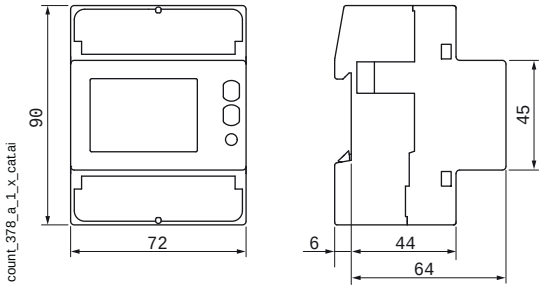
Front panel

count_347x_b_1_cat.eps

1. Terminal shrouds (COUNTIS E42, E44, E46 and E48).
2. Backlit LCD display.
3. Navigation button.
4. ENTER key.
5. Metrological LED.
6. Current, voltage terminals and terminal shrouds (COUNTIS E42/E44/E46/E48).

Dimensions (mm)



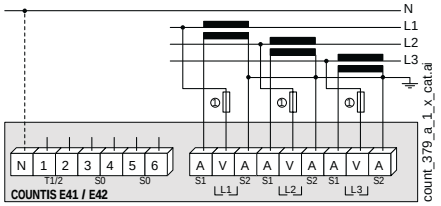
count_378_a_1_x_cat.ai

Type	modular
Number of modules	4
Dimensions W x H x D	72 x 90 x 64 mm
Case degree of protection	IP20
Front degree of protection	IP51
Display type	8-digit backlit LCD
Rigid cable cross-section	1.5 … 6 mm^2
Flexible cable cross-section	1.5 … 6 mm^2
Weight	322 g

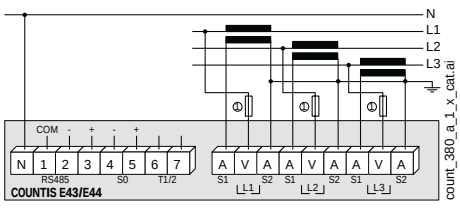
Connection

Recommendation:

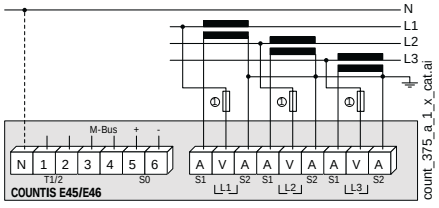
- For IT earthing systems, it is recommended that the CT secondary is not connected to earth.
- When disconnecting the COUNTIS, the secondary of each current transformer must be short-circuited. This operation can be carried out automatically by a SOCOMEC PTI, an accessory which is included in this catalogue. Please consult us.



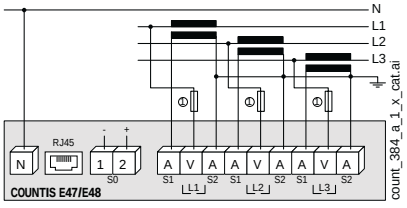
count_379_a_1_x_cat.ai



count_380_a_1_x_cat.ai



count_375_a_1_x_cat.ai



count_384_a_1_x_cat.ai

1. Fuses 0.5 A gG / 0.5 A class CC.

Electrical characteristics

Current measurement	
Type	three-phase on CT1 and 5A up to 12000 A
Input consumption	0.5 VA max. per phase
Startup current (I_{st})	1 mA - Class C 2 mA - Class 1
Minimum current (I_{min})	10 mA
Transition current (I_{tr})	50 mA
Reference current (I_{ref})	1 A
Permanent overload (I_{max})	6 A
Intermittent overload	120 A for 0.5 s
Voltage measurement	
Range of measurement	230 … 240 V ± 20 %
Consumption (VA)	7.5 VA max (0,5 W) per phase E41/E42/E45/E46 3.5 VA max (1 W) per phase E43/E44/E47/E48
Permanent overload	290 V phase-neutral / 500 V phase-phase
Energy accuracy	
Active (according to IEC 62053-21)	Class 1
Active (according to EN 50470)	Class C
Reactive (according to IEC 62053-22)	Class 2
Power supply	
Self-supplied	yes
Frequency	50 / 60 Hz
Output (pulse)	
Number	2 (E41/E42) 1 (E43 ... E48)
Type of optoisolated	250 VAC/DC - 100 mA (E41/E42) 27 VDC - 27 mA (E43 ... E48)
Pulse weight	1 Wh ⇨ CT = 1 ... 4 5 Wh ⇨ CT = 5 ... 24 25 Wh ⇨ CT = 25 ... 124 125 Wh ⇨ CT = 125 ... 624 1000 Wh ⇨ CT = 625 ... 3124 10000 Wh ⇨ CT = 3125 ... 12000
Pulse duration	50 ± 2 ms ON time 30 ± 2 ms OFF time
Operating conditions	
Operating temperature	-25 … +55 °C
Storage temperature	-25 … +75 °C
Relative humidity	80 %

Communication	COUNTIS E43/E44	COUNTIS E45/E46	COUNTIS E47/E48
Link	RS485	Wired	RJ45
Type	2 to 3 half duplex	2 half duplex	Full duplex
Protocol	MODBUS RTU	M-BUS	MODBUS TCP, STTP, NTP, DHCP
Speed	1200 … 115200 bauds	300 … 9600 bauds	10/100 Mbps

References

Type	COUNTIS E41 Reference	COUNTIS E42 Reference	COUNTIS E43 Reference	COUNTIS E44 Reference	COUNTIS E45 Reference	COUNTIS E46 Reference	COUNTIS E47 Reference	COUNTIS E48 Reference
Via CT - Dual tariff	4850 **3063**							
Via CT - Dual tariff + MID		4850 **3064**						
Via CT - Dual tariff + MODBUS communication via RS485(1)			4850 **3065**					
Via CT - Dual tariff + MODBUS communication via RS485 + MID(1)				4850 **3066**				
Via CT - Dual tariff + M-Bus communication(1)					4850 **3067**			
Via CT - Dual tariff + M-Bus communication + MID(1)						4850 **3068**		
Via CT - Dual tariff + Ethernet Modbus TCP communication(1)							4850 **3056**	
Via CT - Dual tariff + Ethernet Modbus TCP communication + MID(1)								4850 **3057**

(1) 4 tariffs through RS485 communication.

COUNTIS E5x

Active energy meters

three-phase - via CT up to 6000 A

count_196_b_1_cat

COUNTIS E53 *up to 6000 A via CT*

The solution for

- Industry
- Infrastructure
- Data centres

Strong points

- RS485 MODBUS communication or pulse output
- Large backlit LCD display
- Detection of connection errors
- Direct display of multi-measurement and metering values

Conformity to standards

- IEC 62053-23 class 2
- IEC 62053-22 class 0.5S
- IEC 61557-12

Management software

- To get the most effective use from your Socomec measurement and metering devices, we offer a range of dedicated software tools.

Function

The **COUNTIS E5x** is a panel mounted active and reactive electrical energy meter displaying energy and multi-measurement 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 CT ratio can be configured by the user via the keypad and the display, or via RS485 MODBUS communication (E53).

Common characteristics

- Measurement accuracy: 0.5%.
- Large backlit LCD display.
- Direct access to multi-measurement and metering values.
- Detects connection errors.

Advantages

RS485 MODBUS communication or pulse output

To enable the remote reporting of energy consumption, COUNTIS E5x are provided with either a pulse output (E50) or an RS485 MODBUS communication output (E53).

Remote configuration of the Countis E53 is possible via RS485 MODBUS communication.

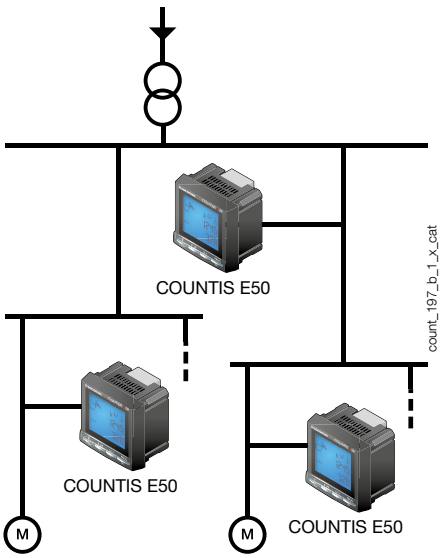
Detection of connection errors

The COUNTIS E5x is protected against phase/neutral inversion and has an integrated test function which can be utilised to detect wiring errors. This function enables CT installation errors to be corrected without having to remake connections. This simplifies the installation and commissioning, thereby reducing associated costs, and ensures that the device operates correctly.

Large backlit LCD display

Thanks to its large backlit LCD display and its multiple viewing screens with direct pushbutton access, COUNTIS E5x provide clear readings and are easy to use.

Principle diagram



count_197_b_1_x_cat

They directly display a number of total/partial metering and multi-measurement values : ± kWh, ± kvarh, kVAh, I, U, V, S, PF, etc.

Direct display of multi-measurement and metering values

Multi-measurement

- Currents: instantaneous: I1, I2, I3
- Voltages: instantaneous: V1, V2, V3, U12, U23, U31
- Power:
  - instantaneous: 3P, 3Q, 3S
  - maximum average: 3P
- Power factor:
  - instantaneous: 3PF

Metering

- Active energy: ± kWh
- Reactive energy: ± kvarh
- Apparent energy: kVAh

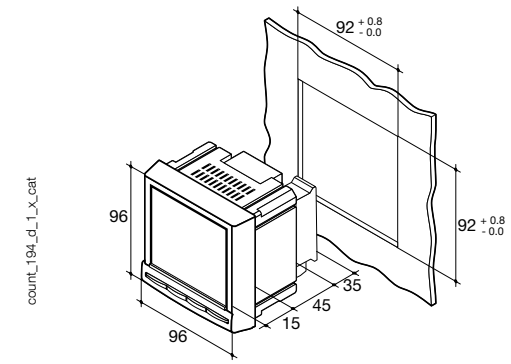
models	Key characteristics
E50	Pulse output
E53	RS485 MODBUS communication

160.

Front panel

1. Backlit LCD display
2. Energy display and test function key
3. Power and power factor display key
4. Current and voltage display key
5. Programming mode access key

Dimensions (mm)



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
Voltage and current connection cross-section	0.5 … 2.5 mm²
Current connection cross-section	1.5 … 6 mm²
Weight	370 g

(1) $I_{(min)} \leq 0.5 * I_{tr}$
(2) The accuracy class is guaranteed between I_{tr} and I_{max}.
*(3) $I_{(ref)} = I_{(b)}$ (base current) = 10 * $I_{(tr)}$ for direct connection COUNTIS.*

Electrical characteristics

Current measurement	
Type	three-phase on CT/5A up to 6000 A
Input consumption	< 0.6 VA
Startup current (I_{st})	40 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	50 A for 1 s
Voltage measurement	
Range of measurement	86 … 520 VAC
Input consumption	< 0.1 VA
Permanent overload	800 VAC
Energy accuracy	
Reactive (according to IEC 62053-23)	Class 2
Active (according to IEC 62053-22)	Class 0.5S
Power supply	
Self-supplied	no
Auxiliary power supply U_s	110 … 400 VAC / 125… 350 VDC ±10 %
Frequency	45 … 65 Hz
Output (pulsed)	
Number	1
Type	100 VDC - 0.5 A - 10 VA
Max. number of operations	≤ 10^8
Operating conditions	
Operating temperature	-10 … 55 °C
Storage temperature	-20 … 85 °C
Relative humidity	95 %
Communication	
Link	RS485
Type	2 … 3 half duplex wires
Protocol	MODBUS RTU
MODBUS® speed	1400 … 38400 bauds

References

Type	COUNTIS E50 Reference	COUNTIS E53 Reference
Pulse output	4850 **3010**	
RS485 MODBUS communication (1)		4850 **3011**
Management software for COUNTIS		

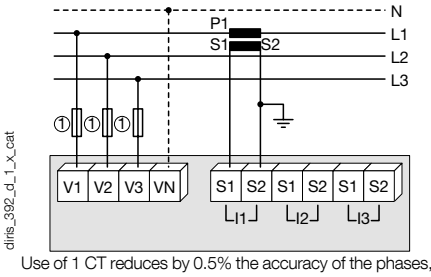
(1) 4 tariffs through RS485 communication.

Connection

Recommendation:

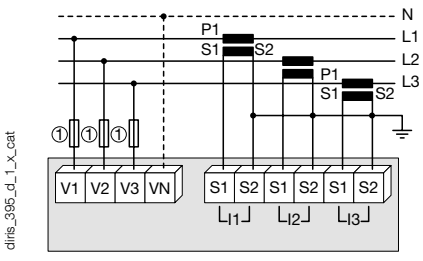
- For IT earthing systems, it is recommended that the CT secondary is not connected to earth.
- When disconnecting the COUNTIS, the secondary of each current transformer must be short-circuited. This operation can be carried out automatically by a SOCOMEC PTI, an accessory which is included in this catalogue. Please consult us.

Low voltage balanced network
3/4 wires with 1 CT

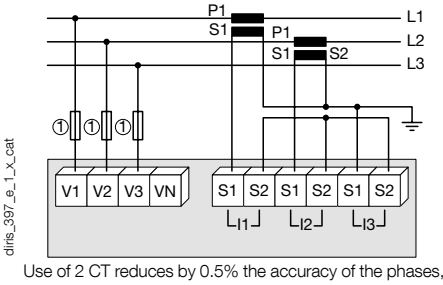


Use of 1 CT reduces by 0.5% the accuracy of the phases, the current of which is worked out by vector calculation.

Low voltage unbalanced network
3/4 wires with 3 CTs



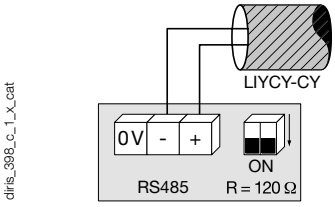
3 wires with 2 CTs



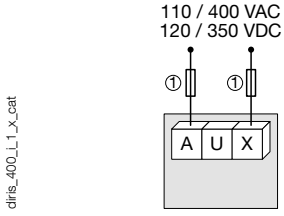
Use of 2 CT reduces by 0.5% the accuracy of the phases, the current of which is worked out by vector calculation.

Additional information

Communication via RS485 link



AC & DC auxiliary power supply



1. Fuses 0.5 A gG / 0.5 A class CC.

COUNTIS ECix

Multi-utility pulse concentrator

Single-circuit metering, measurement & analysis

count_207.psd

COUNTIS ECi3

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

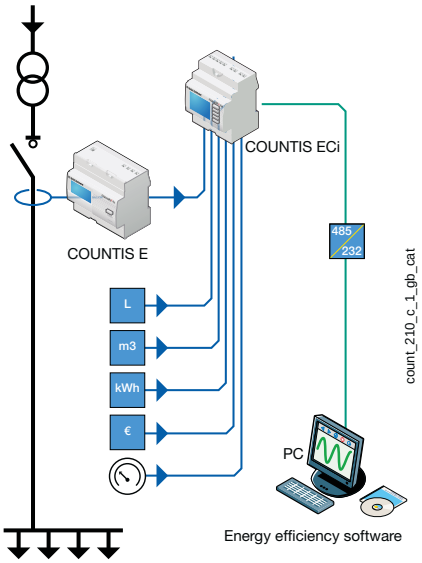
> To get the most effective use from your Socomec measurement and metering devices, we offer a range of dedicated software tools.

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



count_210_c_1_gb_cat

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, m^3, liters.
- Selection of the currency unit: €, K€, £, $.

Values can be displayed in the unit of your choice and energy costs can be directly calculated.

Models	Key characteristics
ECi2	7 insulated inputs
ECi3	7 insulated inputs + 2 analogue inputs.

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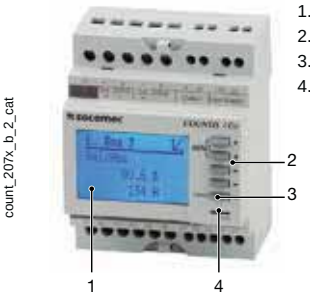
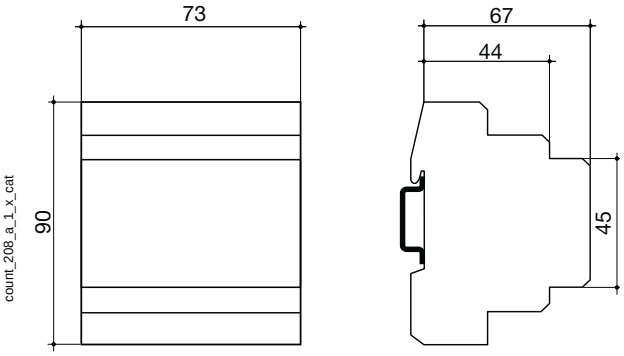
Front panel



1. Backlit LCD display.
2. Navigation keys.
3. Validation pushbutton in programming mode.
4. Communication status indicator (COM).

Dimensions (mm)

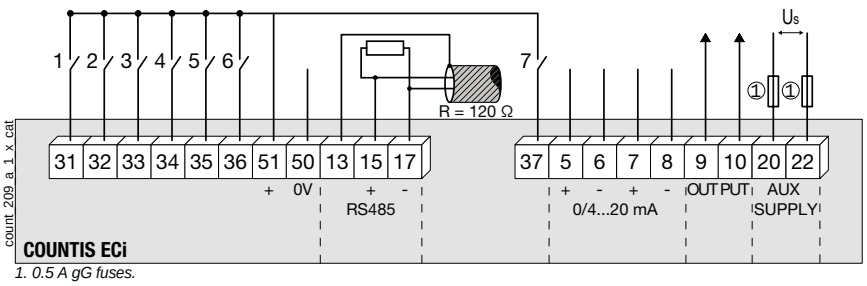


Type	modular
Number of modules	4
Dimensions W x H x D	73 x 90 x 67 mm
Case degree of protection	IP20
Front degree of protection	IP51
Display type	backlit LCD display
Terminal blocks type	fixed
Rigid cable cross-section	1 … 10 mm²
Flexible cable cross-section	0.5 … 6 mm²
Weight	215 g

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



1. 0.5 A gG fuses.

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.

51-50: Inputs internal/ external power supply.

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 %.

References

Auxiliary power supply U_s	**COUNTIS ECi2 Reference**	**COUNTIS ECi3 Reference**
230 / 400 VAC	4853 **0000**	
230 / 400 VAC + 2 analogue inputs		4853 **0001**
Description of accessories	**Reference**	**Reference**
Panel mounting kit	192J **8015**	192J **8015**

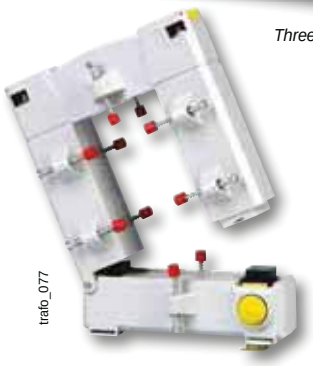
Current transformers

Measurement devices

from 5 to 5000 A

Three-phase CT

Bar-through CT



Split-core transformer

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

SOCOMEC also offer customised solutions:

> 1 A secondary
> Double or triple primary ratio
> Voltage transformer
> Summation CTs

Function

SOCOMEC 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.

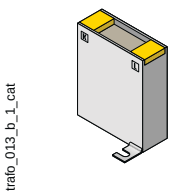
A wide range of ratings and dimensions

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).

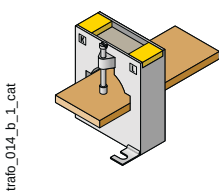
Quick and easy to mount

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.

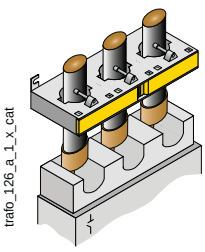
Composition of the range



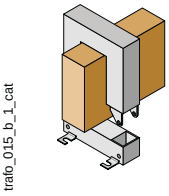
Primary wound moulded case CT



Bar or cable-through CT



Bar or cable-through three-phase CT



Bar-through split-core CT

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Primary wound moulded case CT

References

Primary	Secondary[1]	TRB 60 Class 0.5	TRB 60 Reference	TRB 70 Class 0.5	TRB 70 Reference	T2RB 115 Class 0.2s	T2RB 115 Reference	TRB 135 Class 0.5	TRB 135 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

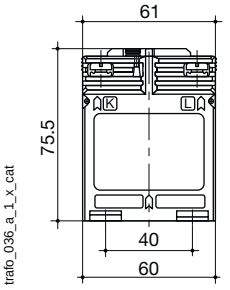
Certificate of performance

Each class 0.2s current transformer is supplied with an individual certificate of performance, attesting to its accuracy.

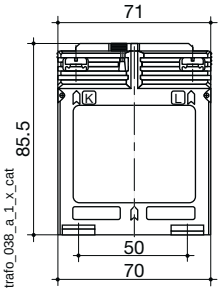
Primary wound moulded case CT (continued)

Dimensions (mm)

TRB 60

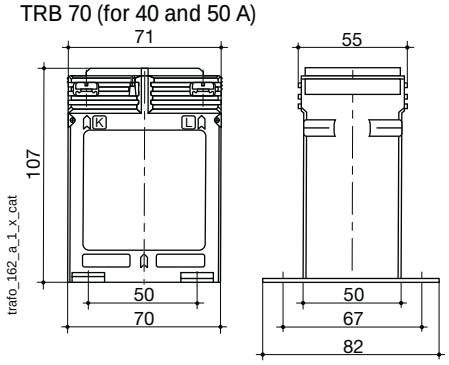


TRB 70(1)

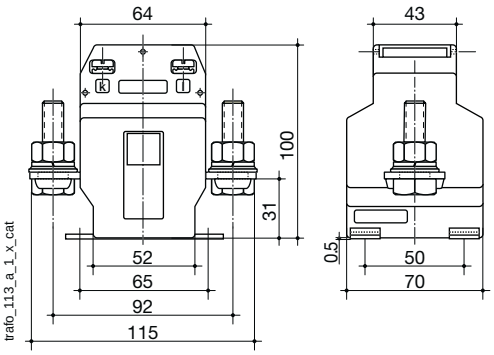


(1) different dimensions for 40 and 50 A ratings

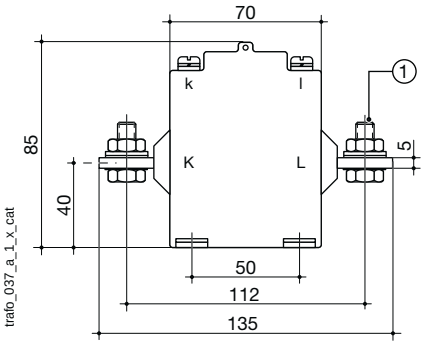
TRB 70 (for 40 and 50 A)



T2RB115

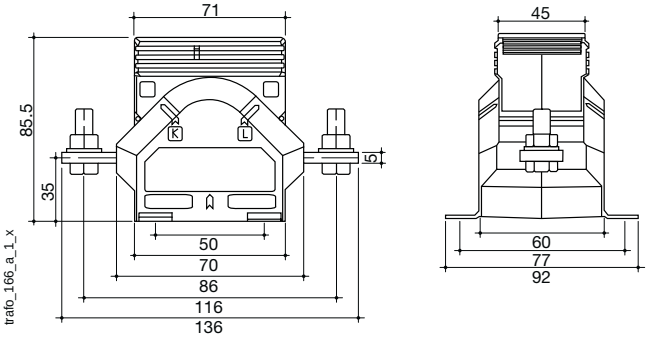


TRB 135



① *25 to 100 A: M8 x 25*

TRB 135 (for 125 and 150 A)



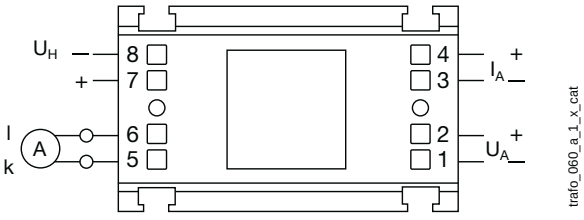
Primary wound CT	TRB 60	TRB 70 (1)	T2RB 115	TRB 135 (2)
H x W x D (mm)	75.5 x 61 x 35	85.5 x 71 x 45	115 x 100 x 70	85 x 135 x 60
DIN-rail mounting	yes	yes	no	no

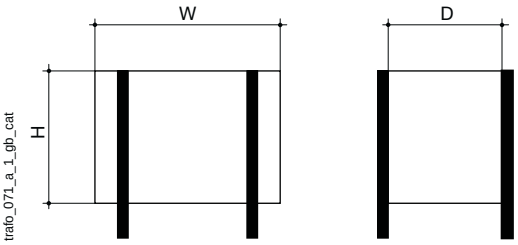
(1) Dimensions are different for TRB 70 with 40 and 50 A ratings.
(2) Dimensions are different for TRB 135 with 125 and 150 A ratings.

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

Primary	Secondary(1)	TCA 14 Class 1	TCA 14 Reference	TCA 21 Class 1	TCA 21 Class 0.5	TCA 21 Reference	TCA 22 Class 1	TCA 22 Reference	T2CA 225 Class 0.2s	T2CA 225 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*

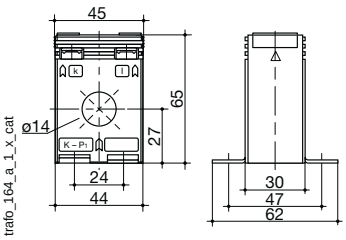
Accessories

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**

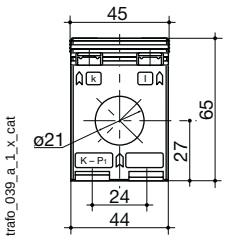
(1) For centralising cables within the CT aperture.

Dimensions (mm)

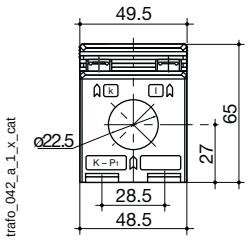
TCA 14



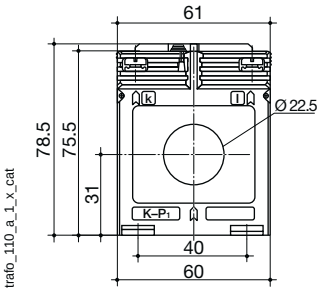
TCA 21



TCA 22



T2CA 225



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

		TCB 17-20		TCB 26-30			T2CB 26-30		TCB 28-30		
Primary	Secondary[1]	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.

		TCB 26-40		TCB 32-40			T2CB 32-40	
Primary	Secondary[1]	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 Class 0.5	TCB 44-50 Reference	TCB 44-63 Class 0.5	TCB 44-63 Reference	T2CB 44-63 Class 0.2s	T2CB 44-63 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 Class 0.5	TCB 55-80 Reference	TCB 85-100 Class 0.5	TCB 85-100 Reference	TCB 100-125 Class 0.5	TCB 100-125 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**

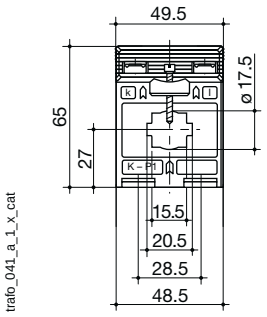
CT Plug-in transducer (CEA-VA4)

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**

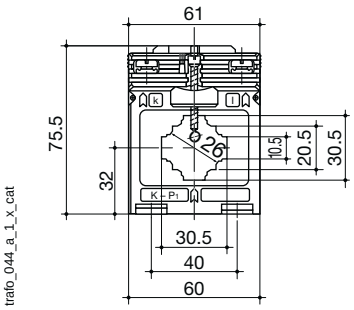
Bar or cable-through CT (continued)

Dimensions (mm)

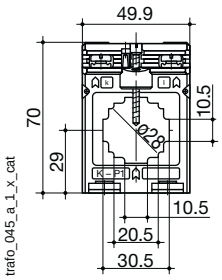
TCB 17-20



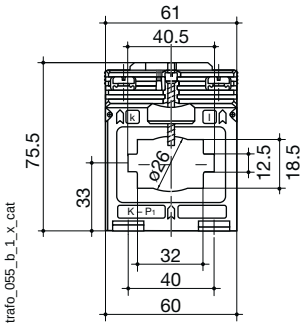
TCB 26-30 and T2CB 26-30



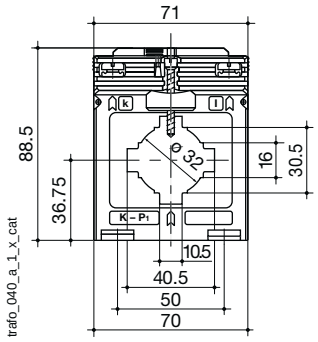
TCB 28-30



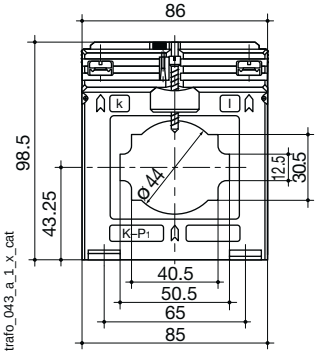
TCB 26-40



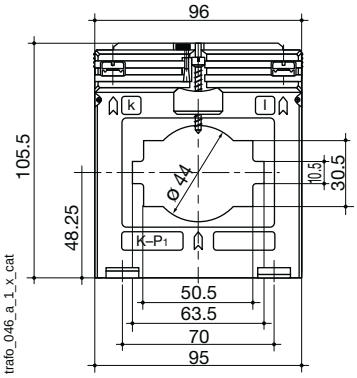
TCB 32-40 and T2CB 32-40



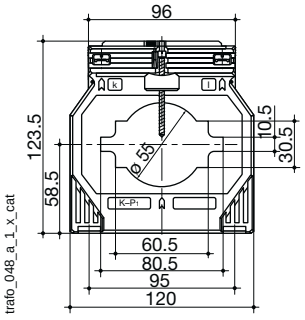
TCB 44-50



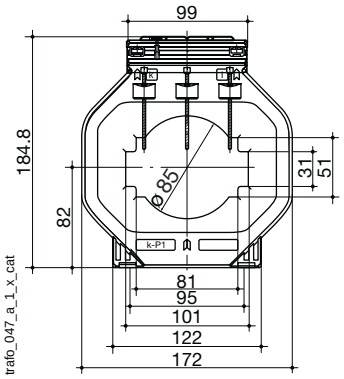
TCB 44-63 and T2CB 44-63



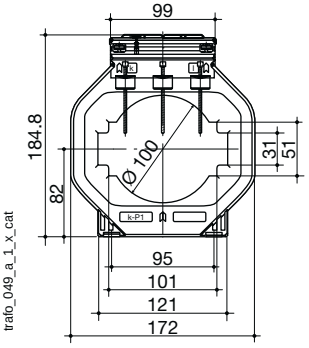
TCB 55-80



TCB 85-100



TCB 100-125



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

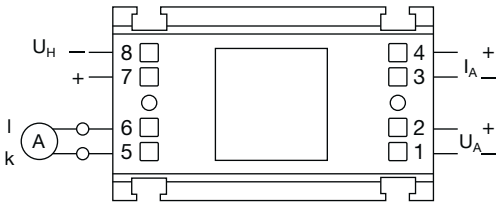
Bar or cable-through CT	TCB 44-50	TCB 44-63	T2CB 44-63	TCB 55-80	TCB 85-100	TCB 100-125
Bar (mm)	50 x 12 (x 1)/ 40 x 10 (x 1…2)	63 x 10 (x 1)/ 50 x 10 (x 1…2)	63 x 10 (x 1)/ 50 x 10 (x 1…2)	80 x 10 (x 1)/ 60 x 30 (x 1) / 60 x 10 (x 1…2)	100 x 10 (x 1…2) / 80 x 10 (x 1…3)	123 x 30 (x 1)/ 100 x 10 (x 1…3)
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

trafo_074

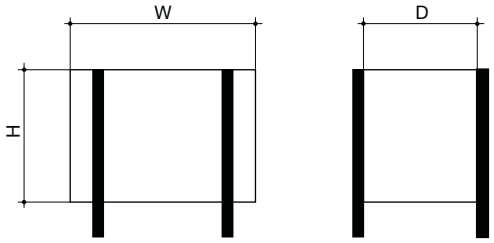
Transducer to be associated with adapted current transformers:

- *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.*



trafo_060_a_1_x_cat

trafo_071_a_1_gb_cat



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

Bar-through CT

References

		TBA 60			TBA 80		TBA 100		T2BA 100	
Primary	Secondary	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.

		TBA 103		T2BA 103		TBA 127		T2BA 127	
Primary	Secondary	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)

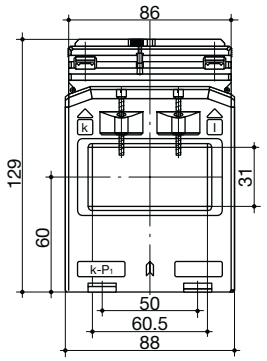
Power supply	Output	TBA 100 Reference
Self-supplied	0-20 mA / 0-10 VDC	192Y **0045**
230 VAC	0-20 mA / 0-10 VDC	192Y **0245**
24 VDC	0-20 mA / 0-10 VDC	192Y **0145**

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**

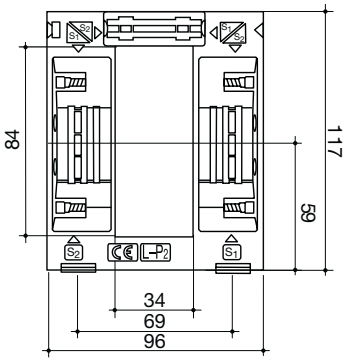
Dimensions (mm)

TBA 60



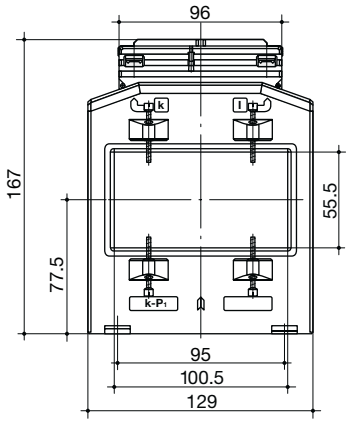
trafo_050_a_1_x_cat

TBA 80
300 to 2000 A



trafo_059_a_1_x_cat

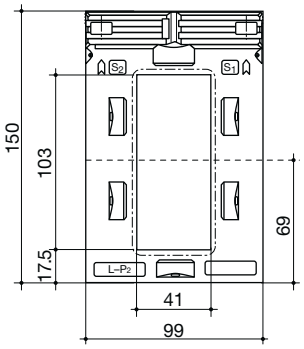
TBA 100 600 to 2500 A(1)
T2BA 100 1200 to 3000 A



trafo_082_a_1_x_cat

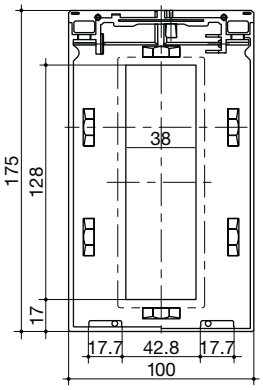
(1) TBA 100, 3000 and 4000 A: 214 x 129 x 78 mm.

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.

Three-phase bar or cable-through CT

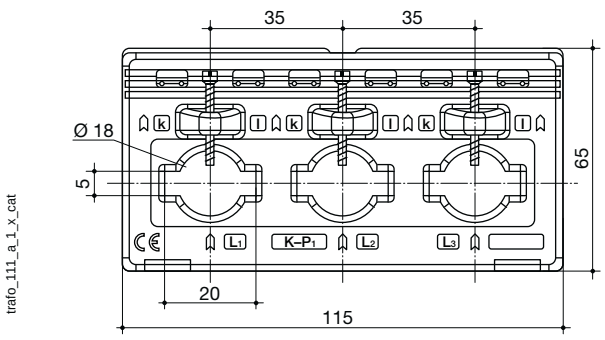
References

Primary	Secondary(1)	TCB3 18-20 Class 1	TCB3 18-20 Reference	TCB3 22-30 Class 1	TCB3 22-30 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.

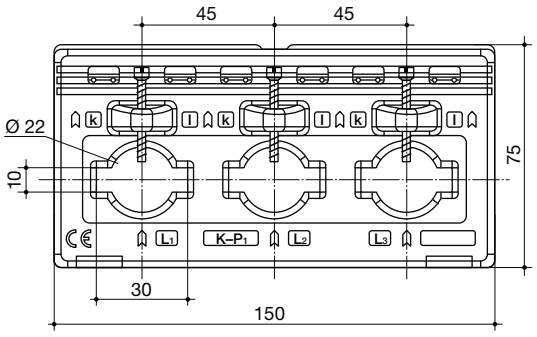
Dimensions (mm)

TCB3 18-20



trafo_111_a_1_x_cat

TCB3 22-30



trafo_112_a_1_x_cat

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

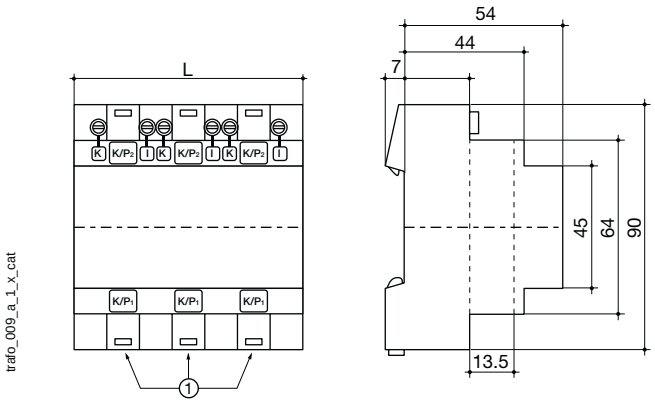
References

Primary	Secondary(1)	TCA 13 — 3P Class 1	TCA 13 — 3P 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 (mm)

TCA 13 — 3P



trafo_009_a_1_x_cat

(1) Cable-through aperture Ø 13.5 mm.

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

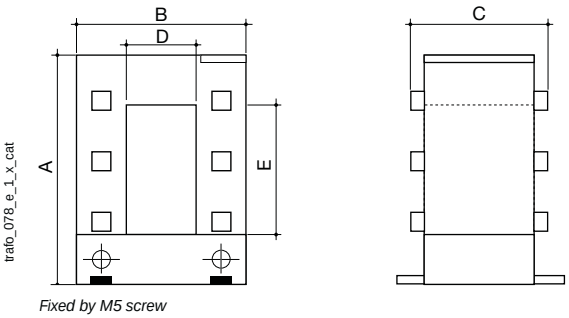
from 5 to 5000 A

Split-core CT

References

		TO 23			TO 58			TO 812			TO 816	
Primary	**Secondary**	**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 (mm)



Fixed by M5 screw

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

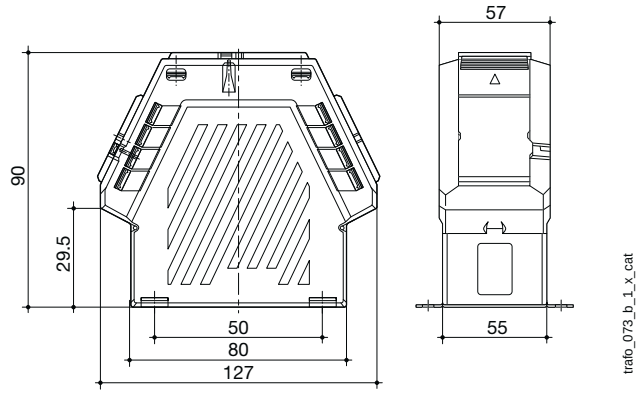
Summation CT

Reference

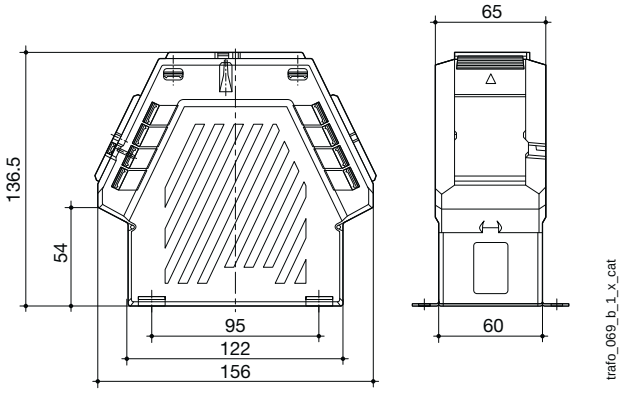
Primary	Secondary	BSA 02 Reference	BSA 03 Reference	BSA 04 Reference
5 + 5/5 A	5 A	192T **0802**		
5A + 5+ 5/5	5 A		192T **0803**	
5 + 5 + 5 + 5/5 A	5 A			192T **0904**

Dimensions (mm)

BSA 02 and BSA 03



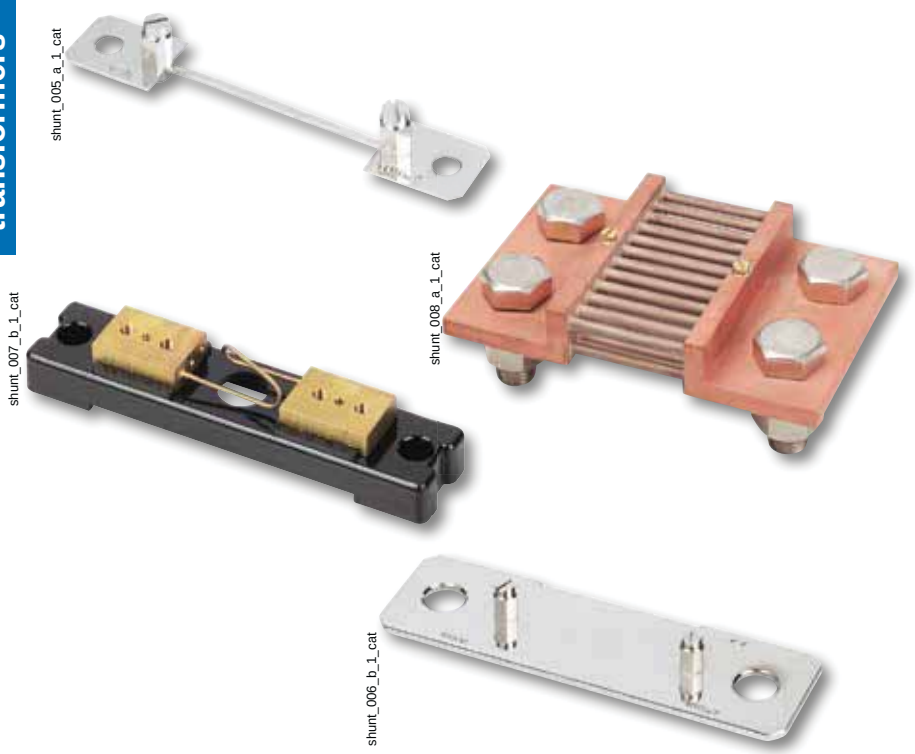
BSA 04



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



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 ≤ 500 A
  5 In / 5s rating 600 to 1500 A
  2 In / 5s rating ≥ 2500 A.

References

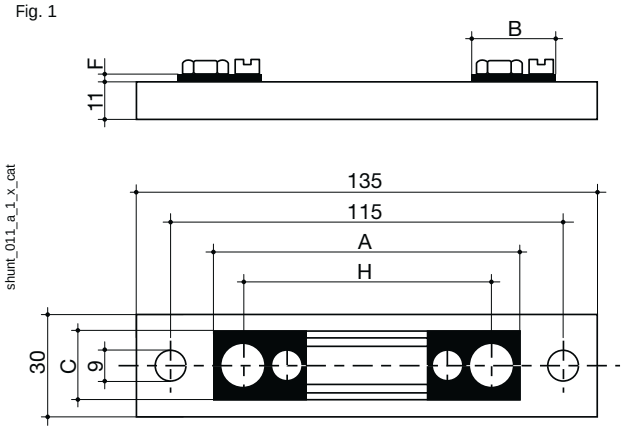
Rating (A)(1)	Secondary voltage drop	DIN series Reference
1 A	100 mV	192S **2101**
4 A	100 mV	192S **2104**
6 A	100 mV	192S **2106**
10 A	100 mV	192S **2110**
15 A	100 mV	192S **2112**
25 A	100 mV	192S **2114**
40 A	100 mV	192S **2116**
60 A	100 mV	192S **2118**
100 A	100 mV	192S **2120**
150 A	100 mV	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

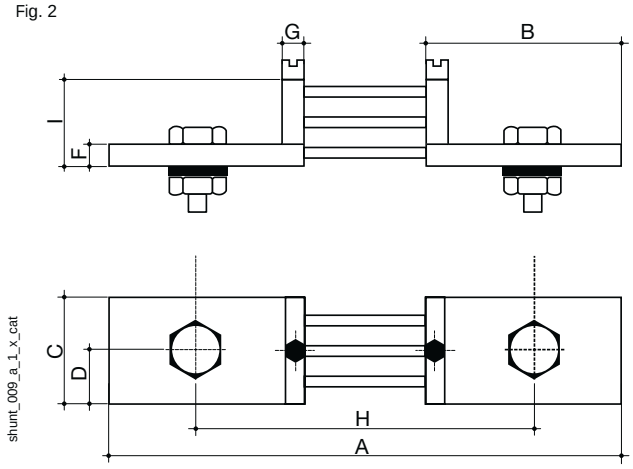


Rating (A)(1)	Figure	A	B	C	D	E	F	G	H	I
1	1	90	28	20			8		78	
4	1	90	28	20			8		78	
6	1	90	28	20			8		78	
10	1	90	28	20			8		78	
15	1	90	28	20			8		78	
25	1	90	28	20			8		78	
40	2	123	33	20			8		103	
60	2	123	33	20			8		103	
100	2	123	33	20			8		103	
150	2	123	33	20			8		103	
200	2	168	55	30	15		10	10	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.

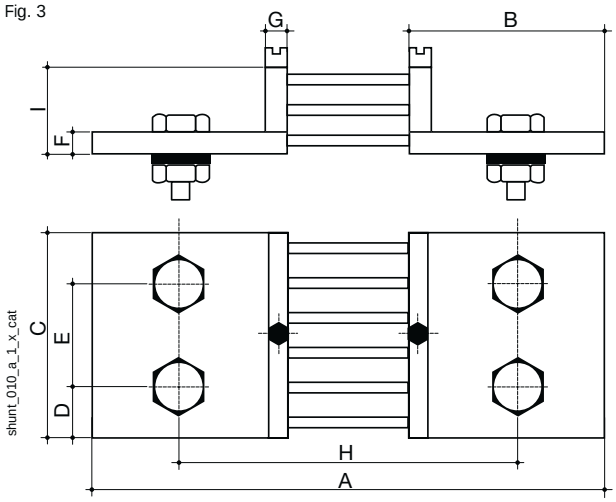
DIN Series 40 to 1000 A

Fig. 2



DIN Series 1500 to 6000 A

Fig. 3



Other products

Measurement devices

PTI: CT automatic short-circuiter

pti_005

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)

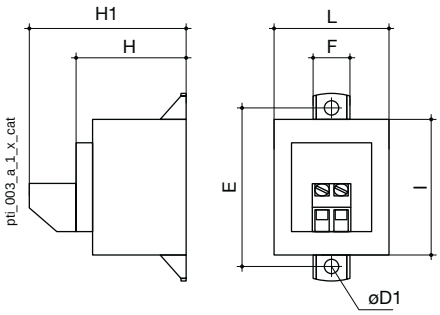
(1) DCN approved (French State Naval Construction Company).

Characteristics

Case degree of protection	IP55
Terminal protection degree	IP20
Connection cross-section	2.5 mm²
Weight	82 g

Rating (A)	D1	E	F	H	H1	I	L
5	4.2	47	9.6	32	44	41	34.7

Dimensions (mm)



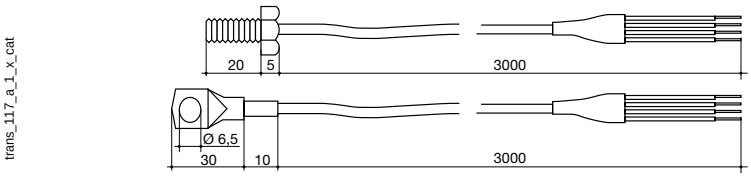
Sensor PT100 - screw type

- 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



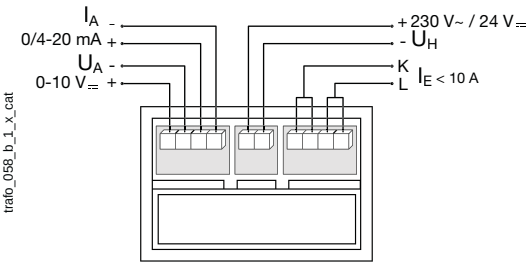
socomec Innovative Power Solutions

Transformer with integrated converter (CTA-VA)


trafo_057

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 50 to 400 A (self-supplied)
  - CT primary of 15 to 500 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.



trafo_058_b_1_x_cat

References

	0-20 mA / 0-10 VDC Self supplied	4-20 mA / 0-10 VDC 230 VAC	4-20 mA / 0-10 VDC 24 VDC
Primary	**Reference**	**Reference**	**Reference**
5 A	-	192Y **0602**	192Y **0902**
10 A	-	192Y **0603**	-
15 A	-	192Y **0604**	192Y **0904**
20 A	-	192Y **0605**	192Y **0905**
25 A	-	192Y **0606**	192Y **0906**
30 A	-	192Y **0607**	192Y **0907**
40 A	-	192Y **0608**	192Y **0908**
50 A	192Y **0409**	-	192Y **0909**
60 A	192Y **0410**	-	-
75 A	192Y **0411**	192Y **0611**	192Y **0911**
100 A	192Y **0412**	192Y **0612**	192Y **0912**
250 A	192Y **0425**	-	192Y **0925**
400 A	192Y **0440**	-	192Y **0940**
500 A	-	192Y **0650**	-

Voltage transformer BTV 25


trafo_062

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.

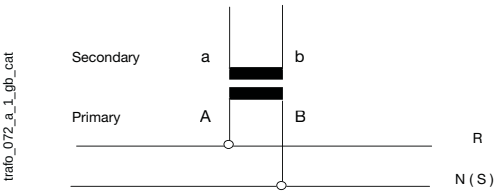
Characteristics

Accuracy class	1 %
Dielectric quality	3 kV for 1 min.
Operating frequency	50 - 60 Hz
Permanent overload	1.2 U_n

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

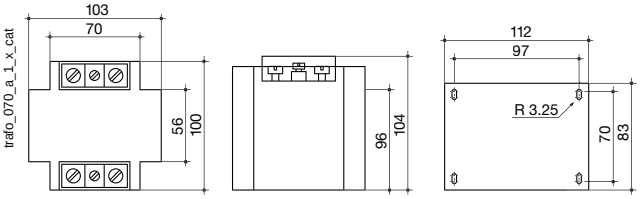
Connection



trafo_072_a_1_gb_cat

A and B : primary connection *a and b : secondary connection*

Dimensions (mm)



trafo_070_a_1_x_cat

Other electrical measurement devices

Measurement devices

Transducers

trans_071_a_2_cat

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

trans_076_a_2_cat

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

freq_003_a_3_cat
freq_002_a_1_cat
phase_002_b_3_cat
amper_027_a_1_cat
amper_033_a_2_cat

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 Ø 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

DIRIS G-30
RS485 / Ethernet

DIRIS G-40
RS485 - wireless / Ethernet

Configuration with EasyConfig,

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 "WEBVIEW" pages.

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			•	•

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

Create your project

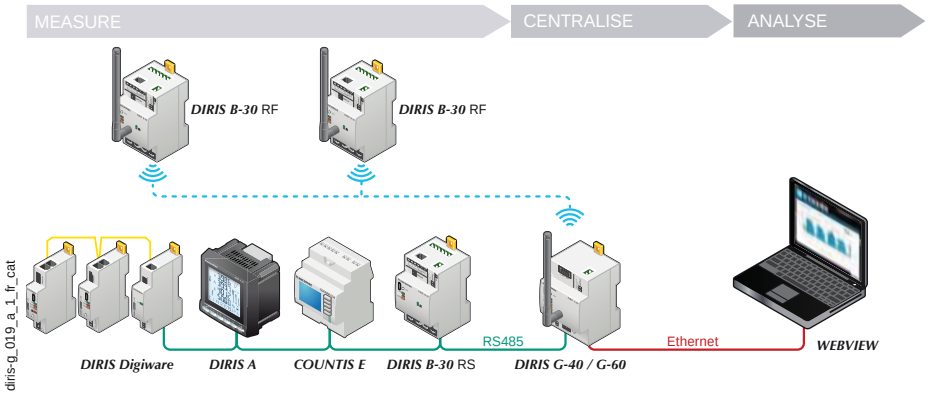
- Find the best DIRIS Digiware configuration: www.meter-selector.com

METER SELECTOR DIGITAL TOOL AVAILABLE

socomec Innovative Power Solutions

Architecture

Example of communication architecture with DIRIS G gateway and WEBVIEW embedded WEB server



Embedded web server

WEBVIEW 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)

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

Optional module ***DIRIS B-30***

Accessories

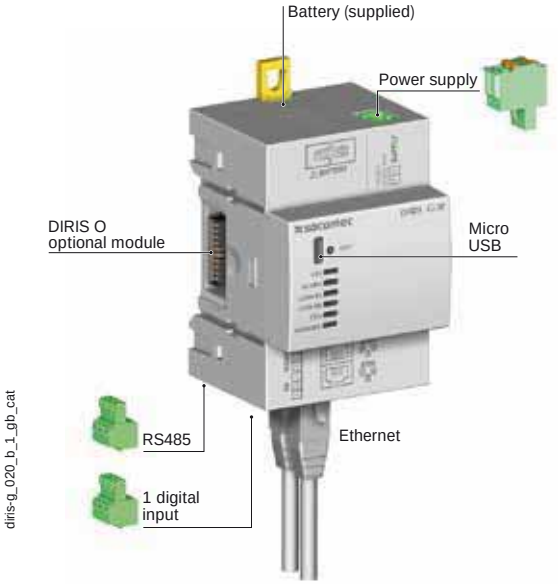
Remote radio antenna

- Allows the antenna to be mounted outside the enclosure to increase the transmission distance up to 300 m if there are no obstacles.

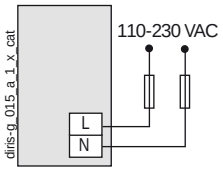
USB configuration cable

- Configuration of DIRIS G gateways can be achieved using EASY CONFIG software via Ethernet or direct USB connection.

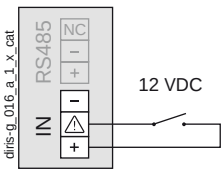
DIRIS G terminals



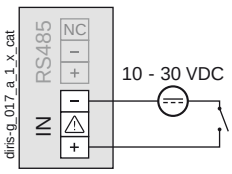
Power supply



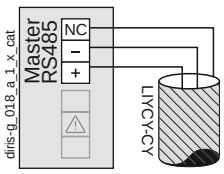
Input powered by the product



Input with external power supply



RS485



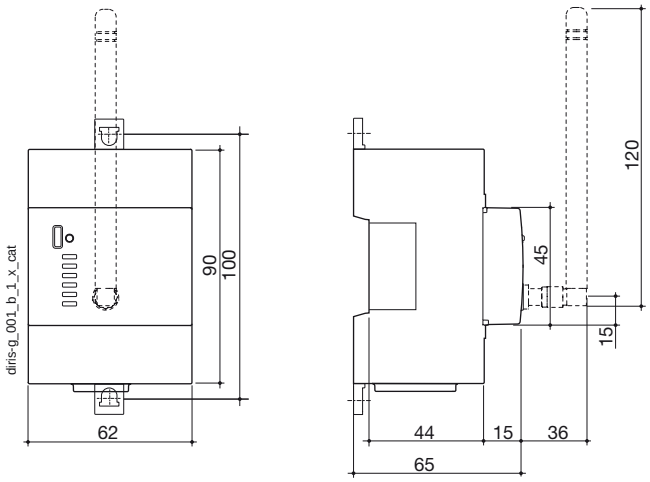
NC: not connected

Terminals of DIRIS O optional modules

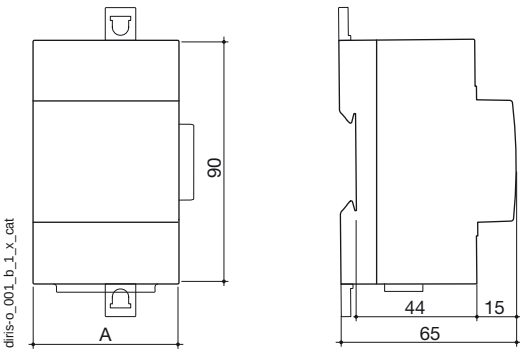
Optional modules are common to the DIRIS B-30 monitoring device.
For a description of the terminals see “DIRIS B” pages.

Dimensions (mm)

DIRIS G-30 / G-40 / G-50 / G-60



DIRIS O optional modules



DIRIS O optional modules	A
DIRIS O-iod - DIRIS O-ioa - DIRIS O-it - DIRIS O-m	45 mm

Specifications

Mechanical specifications

Casing type	DIN-rail mounting module and base
Case degree of protection	IP20 / IK06
Front degree of protection	IP40 on the nose in modular assembly / IK08
Weight	DIRIS G-30, G-50 = 190 g DIRIS G-40, G-60 = 215 g

Electrical characteristics

Power supply	
Alternative voltage	110-230 VAC ±15% (Ph/N or Ph/Ph) Cat III
Frequency	50/60 Hz
Power consumption	6 VA
Battery	CR 1220 3 V lithium button cell battery

Input	
Number	1
Type / Power supply	Optocoupler internal polarisation (12 VDC ±10%) or external (10-30 VDC ±10%)
Input function	Logic status, pulse meter or synchronisation pulse status

Communication specifications

DIRIS G	
Link	RS485
Connection type	2 … 3 half duplex wires
Protocol	Modbus RTU
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)

Ethernet	
Link	Ethernet 10/100 base-T, 2 RJ45 bases with integrated switch
Protocol	Modbus TCP (port 502), Modbus RTU over TCP (port 503), HTTP, SMTP, SNTP, DHCP, FTP (G-50/G-60)
Clock	Internal
SNTP protocol	Gateway time updating from an NTP server. Connected PMDs time updating.
SMTP protocol	Sending of alarm emails from the gateway
Function	Configuration of the gateway, connected PMDs and meters Access to the WEBVIEW web server, data centralisation

USB	
Connection type	USB 2 (required installation of Easy Config)
Protocol	Modbus RTU on USB
Function	Configuration of the gateway, connected PMDs and meters
Connection	Type B micro USB connector

Memory characteristics

Consumption history (memory extension for meters and measurement units)	1 year (1 hour period)
Electrical values	2 months (10 min period)
Number of events	Alarms 1000 Network quality according to EN 50160: 1000

Environmental specifications

Ambient operating temperature	-10 … +70°C
Storage temperature	-25 … +85°C
Operating humidity	55°C / 97% HR

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**	**Reference**
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 holders to protect the auxiliary power supply (type RM) 1 pole + neutral	6	5601 **0017**
gG 10x38 0.5 A fuses	10	6012 **0000**

Datalogger

DATALOG H80

DATALOG H60

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 (SOCOMEC 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 solution for

> Industry
> Building
> Infrastructure
> Local authority

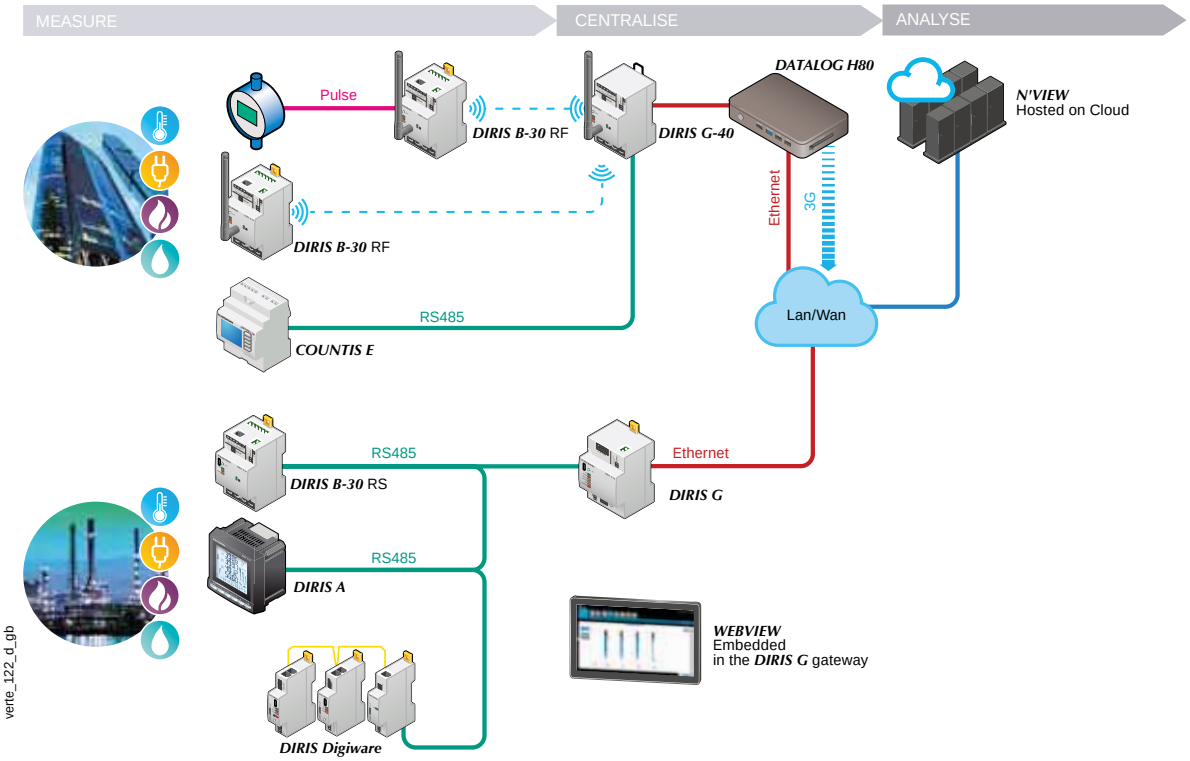
Strong points

> 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.

The SOCOMEC communicating energy-efficiency solution



Specifications

	DATALOG H60	DATALOG H80 / H81
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	
3G	900/2100 MHz	900/2100 MHz
Protocols		
Data collection	Modbus RTU and TCP/Wireless Mbus	Ethernet/Modbus TCP:
Data transmission	FTP	FTPS/HTTPS
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.

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.

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

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.

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Innovative Power Solutions

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-SOCl2 battery. Battery life up to 12 years guaranteed	3.6V Li-SOCl2 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	**Reference**
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

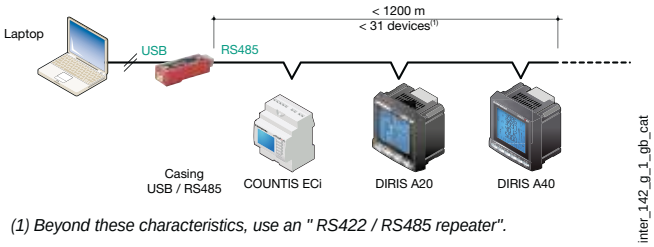
Connecting the RS485 link

USB / RS485 interface

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.



(1) Beyond these characteristics, use an " RS422 / RS485 repeater".

References

Description of accessories	Reference
External USB / RS485 interface unit	4899 **0110**

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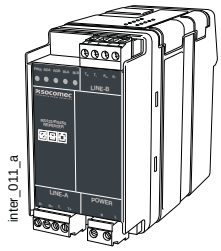
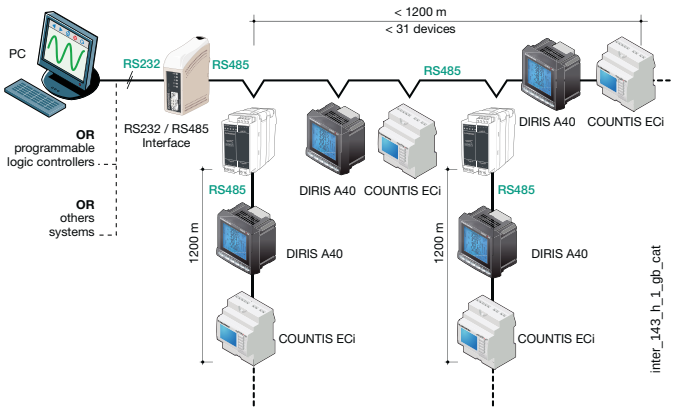
RS422 / RS485 repeater



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.

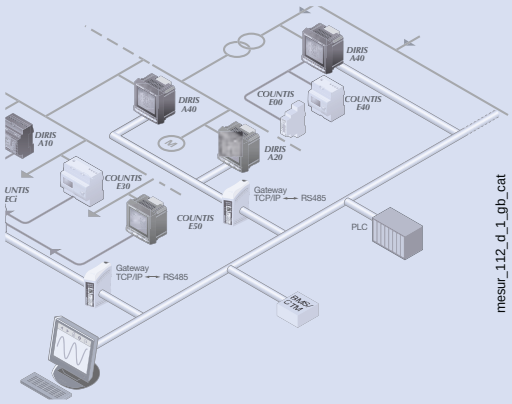
In addition, it allows you to introduce a new branch to the network, thereby making it possible to reduce the length of connection cable required by avoiding back and forth cabling.



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.

WEBVIEW

Monitoring software for energy measurement and analysis

soft_027_a_1_fr_cat

The solution for

> Industry
> Building
> Infrastructure
> Local authority

Strong points

> Plug & Play
> Easy to use
> Various functions

Compliance with standards

> IEC 62974-1(1)

(1) Energy Server standard applicable to WEBVIEW-M and L versions hosted on DIRIS G, DIRIS Digiware D-70 and DATALOG H80.

Function

WEBVIEW is a web based software embedded in DIRIS A-40 meters and in communication gateways (DIRIS G, DIRIS Digiware D-70, DATALOG H80/H81) delivering real-time monitoring of all measurements from up to 200 devices and displaying the breakdown of energy consumptions.

Uncover the causes of electrical disturbances and anticipate maintenance requirements thanks to historical records of multiple electrical parameters.

Pre-set alarms defined by the user can be sent by e-mail. Users can access WEBVIEW via a web browser on a PC or a tablet.

Advantages

Plug & Play

Quickly configure WEBVIEW thanks to the automatic detection of Socomec devices. Create geographical and electrical hierarchies to reflect your installation and your processes.

Easy to use

WEBVIEW centralises all the device measurements via a single clear and user friendly interface. The ergonomics of the display screens allow users to easily and quickly analyse the parameters and the behaviour of the installation.

Various functions

Very easy to configure and to use, WEBVIEW offers a wide range of features including real-time monitoring, alarm management and transmission by e-mail, multi-utility analysis (electricity, water, gas), power parameter logging and allocation of consumption by end-use and location.

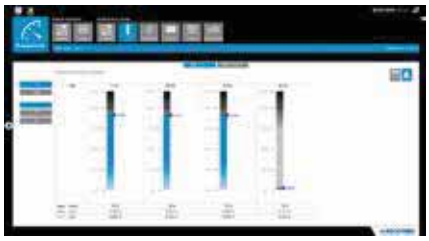
Characteristics

Type	Hosting	Functions	Number of measurement devices
WEBVIEW-S	DIRIS A-40	Monitor, Alarm, View	1
WEBVIEW-M	DIRIS G-30/G-40	Monitor, View	32
	DIRIS G-50/G-60	Monitor, Alarm, View,	32
	DIRIS Digiware D-70	Monitor, Alarm, View, Photoview	32
WEBVIEW-L	DATALOG H80/H81	Monitor, Alarm, View, Photoview	100/200

Functions

Monitor

- Automatic detection of connected devices.
- Summary of the parameters measured for the electrical network and loads.
- Display of voltage, current, power, power factor, total harmonic distortion (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 alarms history.
- Sorting by type, nature, criticality or state.
- Alarms displayed on the main page.
- Transmission of alarms by e-mail (SMTP).

View

- Historical measurements and consumption.
- Historical records of multiple power parameters.
- Distribution of consumption by location, by end-use and by utility (water, gas, electricity…).
- Export of consumption data in a CSV format.

Photoview

- Photoview: customised dashboard of the WEBVIEW environment via the upload of graphical files (building plans, electrical circuit diagrams, production processes…)
- Real time data tracking via the insertion of parameters on the background pictures (measurement points, alarms, text…).
- Display of the mapping of the measurement plan by cascading of several images.

References

Type	Host device	Reference
WEBVIEW-S	DIRIS A-40	4825 **0501**
WEBVIEW-M	DIRIS Digiware D-70	4829 **0202**
	DIRIS G-30	4829 **0300**
	DIRIS G-40	4829 **0301**
	DIRIS G-50	4829 **0302**
	DIRIS G-60	4829 **0303**
WEBVIEW-L 100	DATALOG H80	4854 **0020**
	DATALOG H81 (3G network)	4854 **0021**
WEBVIEW-L 200	DATALOG H80	4854 **0030**
	DATALOG H81 (3G network)	4854 **0031**

N'VIEW

Online service to manage your energy performance

Software suite

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The solution for

> Industry
> Building
> Infrastructure
> Local authority

Strong points

> Easy to use
> Multi-user access
> Various functions

Function

The N'VIEW online service offers easy and intuitive analysis of energy consumption regardless of the business sector (industry, building, infrastructure…).

Compatible with the main market communication gateways including Socomec devices (DIRIS G, DIRIS Digiware D-70 and DATALOG H80/81), N'VIEW platform ensures that multi-utility data is collected.

From the identification of potential energy savings to long-term performance tracking and investment validation, N'VIEW offers a complete package of services for efficient energy management.

To meet specific requirements, the N'VIEW platform can also interface with other energy management applications (Energy Apps) which are already available or can be created on demand.

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.

Eliminates technical infrastructure problems, leaving the customer free to focus on management of energy performance.

Multi-user access

The N'VIEW service appeals to stakeholders directly involved in energy performance, such as Energy Managers and technical users. It also provides services to help the management team define the energy strategy, and to help management controllers optimise and allocate energy spending.

Various functions

The N'VIEW service provides a wide range of functions for the monitoring of measurements, the analysis of energy consumption levels and the management of costs.

All these features are part of a continuous improvement plan for energy performance, as defined in standard ISO 50001.

Functions

View

- Display of all data collected.
- Configuration of multiple viewing options (widgets) appropriate to the data displayed.
- Customisation of dashboards by user and by site.
- Graphical representation of the energy data (electrical hierarchy, site map or building map, industrial process diagram...).
- Comparison and ranking of sites based on their energy performance.

Analyse

- Analysis and comparison of multi-utility energy consumption according to multiple criteria (time frames, sites, fluids).
- Analyse energy costs.
- Tariff simulation and comparison.
- Management of external influencing factors (temperature, surface area, occupancy rate, production).
- Set up indicators for measuring energy efficiency.
- Measurement and verification based on the international method, IPMVP (International Performance Measurement and Verification Protocol).
- Forecasting of consumption levels and costs.
- Manage and archive customisable queries.

Alert and communicate

- Generation of personalised reports.
- Programming of multiple alarms (quality of data, cost overruns, consumption overruns).
- Manage and log alerts.
- Sending reports and alarms by e-mail (and by SMS for alarms).

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, 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).

Compatible with:

COUNTIS E

DIRIS A

DIRIS Digiware

DIRIS B

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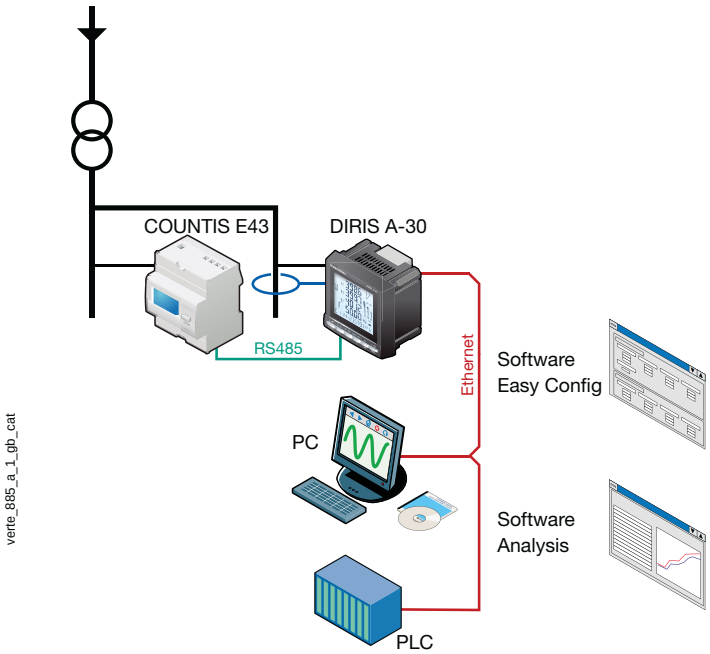
Principle diagram



	Easy Config	Analysis	WEBVIEW See page 156
COUNTIS E with RS485 communication	•		•(1)
COUNTIS ECi	•		•(1)
DIRIS A10, A14, A17 and A20 with RS485 communication	•		•(1)
DIRIS A-30 with RS485 communication	•		•(1)
DIRIS A-30 with Ethernet communication module	•		•(1)
DIRIS A-40	•		•(1)
DIRIS A60 with RS485 communication module	•	•	•(1)
DIRIS A60 with Ethernet communication module	•	•	•(1)
DIRIS B	•		•(1)
DIRIS Digiware	•		•
DIRIS G	•		•

(1) With DIRIS G or DIRIS Digiware D-70.

Management software tools

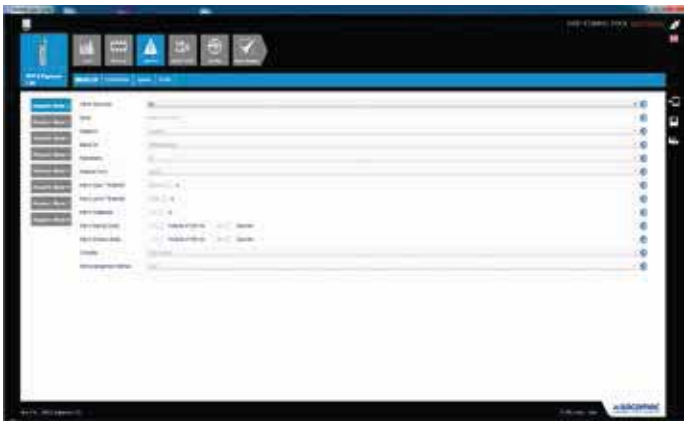
Easy Config software

The Easy Config software enables quick and easy remote configuration of DIRIS Digiware, DIRIS B, DIRIS G, 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

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Configuration of Quality events

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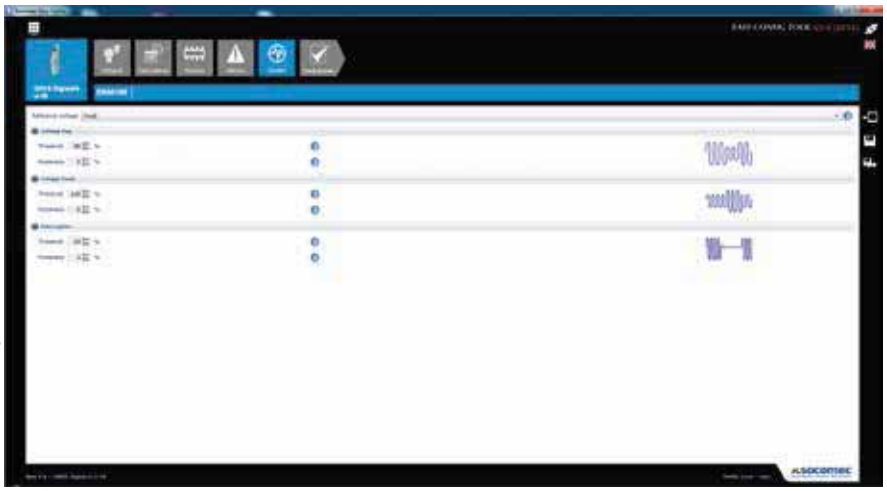

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Analysis software

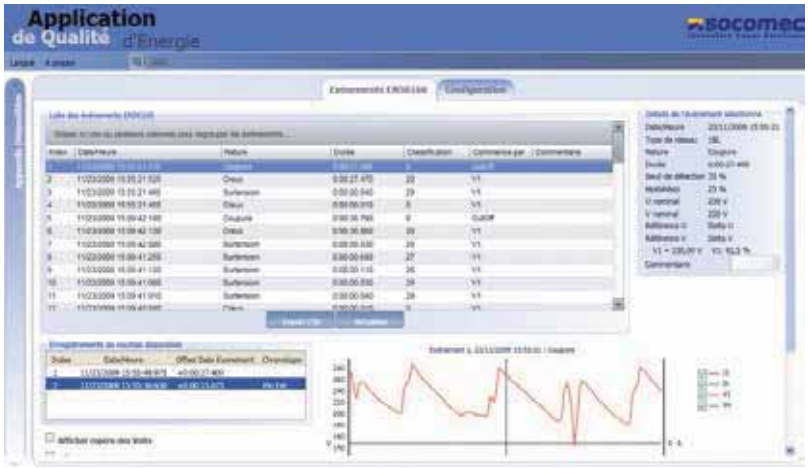
Improvement to the reliability of your electrical installation can be achieved with this software through the analysis of displayed event curves generated from the event log.

It offers the following functions:

- A list of voltage dips, cut-offs, overvoltages and overcurrents.
- A list of alarms IΔn 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



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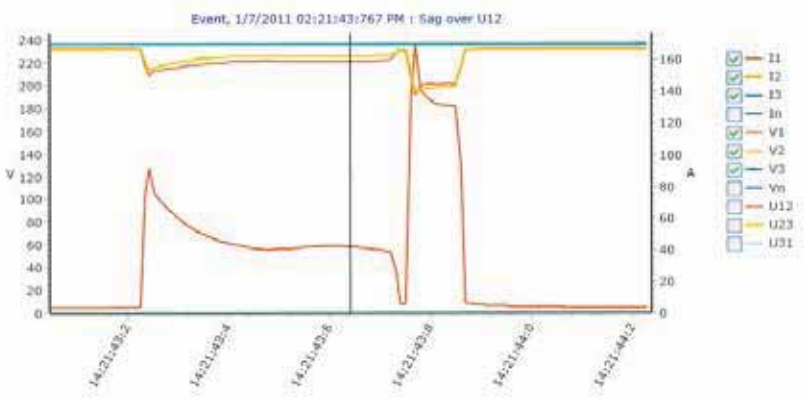
Event display and analysis



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