

New range for metering and power monitoring

2018
2019





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Multi-circuit metering & measurement

DIRIS Digiware AC



DIRIS Digiware D and C
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DIRIS Digiware U
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DIRIS Digiware DC



DIRIS Digiware Udc
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Single-circuit metering, measurement & analysis



DIRIS A-40
p. 62



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Software suite

Embedded web server
WEBVIEW



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Online energy management
service **N'VIEW**



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Current sensors



AC current sensors
TE, TR, TF
p. 40



DC current sensors
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Quality analyser



DIRIS Q800
p. 20



Integrated technologies

Groundbreaking technologies for greater simplicity and performance



PreciSense

Products that are setting new standards in measurement accuracy

PreciSense technology ensures 100% reliable accuracy over the entire measuring chain.

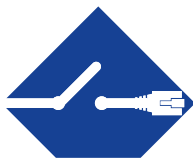
Be guaranteed of the accuracy of your measurements:

- For the global measurement chain.
- For reliable measurements.
- For relevant corrective actions.

PreciSense technology offers the best accuracy on the market regardless of the type of current sensors used (closed, 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

Virtual Monitor technology enables a monitoring solution to be installed simply and at all levels of the installation.

Virtual Monitor:

- Detects the position and status of the device.
- Detects tripping of the protective device.
- Meters the number of operations.

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 an auxiliary contact).



Discover the video



AutoCorrect

The software that eliminates wiring errors

AutoCorrect technology ensures that the equipment is properly wired at all times, thus avoiding on-site inspections.

AutoCorrect technology ensures the operation of the measuring system thanks to simple and rapid detection of connection errors:

- Automatic wiring control (phase sequence detection and automatic configuration of the direction of the current).
- Correction of errors with a single click.
- Feature available off-load.

Error correction is carried out without any modification to the wiring.



Discover the video



S'00V_419_A

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

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

Multi-circuit metering & measurement

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
Split-core



TF
Flexible

+

Digital and analog input/output modules



DIRIS Digiware IO-x






Find the best DIRIS Digiware configuration!



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

- Fill in information regarding your project.
- Download the electrical diagram and bill of material.
- Find all your archived projects in your personal account.

Control and power supply interface

Application	Centralisation and display of data			Data centralisation	Repeater
					
<i>DIRIS Digiware</i>	<i>D-40</i> <i>p. 24</i>	<i>D-50</i> <i>p. 24</i>	<i>D-70</i> <i>p. 24</i>	<i>C-31</i> <i>p. 24</i>	<i>C-32</i> <i>p. 24</i>
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	Modbus TCP BACnet IP SNMP		
Embedded web server			•		

Voltage acquisition module









Application	Metering	Monitoring	Analysis
			
<i>DIRIS Digiware U</i>	<i>U-10</i> <i>p. 30</i>	<i>U-20</i> <i>p. 30</i>	<i>U-30</i> <i>p. 30</i>
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 rank 63)			•
Voltage dips, cutoffs and surges (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 <i>p. 36</i>	I-31 <i>p. 36</i>	I-33 <i>p. 36</i>	I-35 <i>p. 36</i>	I-43 <i>p. 36</i>	I-45 <i>p. 36</i>	I-60 <i>p. 36</i>	I-61 <i>p. 36</i>
Number of current inputs	3	3	3	3	4	4	6	6
Metering								
± kWh, ± kvarh, kVAh	•	•	•	•	•	•	•	•
Load curves		•		•		•		•
Multi-tariff		•		•		•		•
Multi-measurement								
I1, I2, I3, In, ΣP, ΣQ, ΣS, ΣPF	•	•	•	•	•	•	•	•
P, Q, S, PF per phase			•	•	•	•		
Predictive power				•		•		
Current unbalance (Inba, Idir, linv, lhom, Inb)				•		•		
Phi, cos Phi, tan Phi				•		•		
Quality								
THDi1, THDi2, THDi3, THDin			•	•	•	•		
Individual harmonics I (up to level 63)				•		•		
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








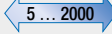
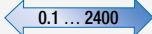
Application	Metering	Analysis	Monitoring
			
DIRIS Digiware S	S-130 <i>p. 32</i>	S-135 <i>p. 32</i>	S-Datacenter <i>p. 32</i>
Number of current inputs	3	3	3
Base current I_b	10 A	10 A	10 A
Maximum current I_{max}	63 A	63 A	63 A
Load type accepted	1P + N 2P / 2P + N 3P / 3P + N	1P + N 2P / 2P + N 3P / 3P + N	1P + N
Metering			
\pm kWh, \pm kvarh, kVAh	•	•	•
Multi-tariff (max 8)		•	
Load curves		•	•
Multi-measurement			
$I1, I2, I3, I_n, \Sigma P, \Sigma Q, \Sigma S, \Sigma PF$	•	•	•
P, Q, S, PF per phase		•	•
Predictive power		•	
Current unbalance ($I_{nba}, I_{nb}, I_{dir}, I_{inv}, I_{hom}$)		•	
Phi, cos Phi, tan Phi		•	•
Quality			
THDi1, THDi2, THDi3, THDin		•	•
Individual harmonics I (up to level 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

Selection guide





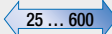
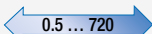
Measurement and monitoring system for electrical installations

DIRIS Digiware




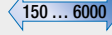
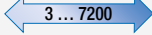
Current sensors

Suitable for new installations match the pitch of protective devices	Solid-core current sensors						
							
	<i>TE-18</i> <i>p. 40</i>	<i>TE-25</i> <i>p. 40</i>	<i>TE-25</i> <i>p. 40</i>	<i>TE-35</i> <i>p. 40</i>	<i>TE-45</i> <i>p. 40</i>	<i>TE-55</i> <i>p. 40</i>	<i>TE-90</i> <i>p. 40</i>
Nominal current I_n (A) 	5 ... 20	25 ... 63	40 ... 160	63 ... 250	160 ... 630	400 ... 1000	600 ... 2000
Actual coverage range (A) 	0.1 ... 24	0.5 ... 75.6	0.8 ... 192	1.26 ... 300	3.2 ... 756	8 ... 1200	12 ... 2400
Aperture (mm)	Ø 8.4	Ø 8.4	13.5 x 13.5	21 x 21	31 x 31	41 x 41	64 x 64
Dimensions (mm)	28 x 20 x 45	28 x 20 x 45	25 x 32.5 x 65	35 x 32.5 x 71	45 x 32.5 x 86	55 x 32.5 x 100	90 x 126 x 24.6
Connection	RJ12	RJ12	RJ12	RJ12	RJ12	RJ12	RJ12



For demands greater than 2000 A, the 5 A / RJ12 adapter guarantees the compatibility of the TCs.

Suitable for existing installations	Split-core current sensors			
				
	<i>TR/iTR-10</i> <i>p. 44</i>	<i>TR/iTR-14</i> <i>p. 44</i>	<i>TR/iTR-21</i> <i>p. 44</i>	<i>TR/iTR-32</i> <i>p. 44</i>
Nominal current I_n (A) 	25 ... 63	40 ... 160	63 ... 250	160 ... 600
Actual coverage range (A) 	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		
			
	<i>TF-55</i> <i>p. 46</i>	<i>TF-120</i> <i>p. 46</i>	<i>TF-300</i> <i>p. 46</i>
Nominal current I_n (A) 	150 ... 600	500 ... 2000	1600 ... 6000
Actual coverage range (A) 	3 ... 720	10 ... 2400	32 ... 7200
Aperture (mm)	Ø 55	Ø 120	Ø 300
Connection	RJ12	RJ12	RJ12

Input/output modules

Application	Comptage / surveillance / pilotage	
		
DIRIS Digiware IO	IO-10 <i>p. 60</i>	IO-20 <i>p. 60</i>
Number of digital inputs/outputs	4/2	
Number of analog 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

Multi-circuit metering
& measurement

Build your own DC system

Control and power supply interface (24 VDC)



DIRIS Digiware D-x
with display

ou



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

Control and power supply interface



Application	Centralisation and display of data			Data centralisation	Repeater
					
<i>DIRIS Digiware</i>	<i>D-40</i> <i>p. 24</i>	<i>D-50</i> <i>p. 24</i>	<i>D-70</i> <i>p. 24</i>	<i>C-31</i> <i>p. 24</i>	<i>C-32</i> <i>p. 24</i>
Function					
Centralising measurement points	•	•	•	•	•
High-resolution LCD display (configuration, selection and visualisation display of circuits)	•	•	•		
Repeater					•
Power supply					
24 VDC	•	•	•	•	•
Communication					
RS485 Modbus	OUT	IN	IN	•	
Digiware Bus	•	•	•	•	•
Ethernet		Modbus TCP	Modbus TCP BACnet IP SNMP		
Embedded web server			•		




Selection guide

Measurement and monitoring system for DC electrical installations



DIRIS Digiware

Direct voltage acquisition module (DC)

Application	DC voltage measurement	
		
DIRIS Digiware Udc	U-31dc <i>p. 48</i>	U-32dc <i>p. 48</i>
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 <i>p. 48</i>	U1000dc <i>p. 48</i>	U1500dc <i>p. 48</i>
Max. voltage range	200 ... 600 VDC	400 ... 1200 VDC	1200 ... 1650 VDC
Association			
U-32dc	•	•	•
Format			
Width/number of modules	54 mm / 3		

Modules d'acquisition du courant continu (DC)

Application	Direct current (DC) measurement modules	
		
DIRIS Digiware Idc	I-30dc <i>p. 52</i>	I-35dc <i>p. 52</i>
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

Single-circuit metering,
measurement &
analysis

Which
application?

Which
functions?



DIRIS A-10
p. 76

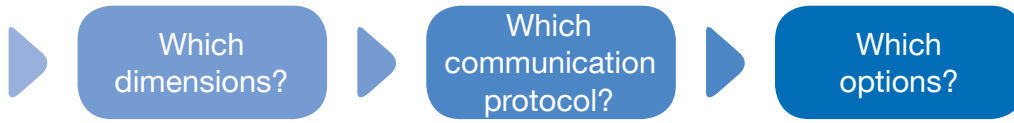




DIRIS A-20
p. 72

		CURRENT TRANSFORMERS	
General characteristics	Functions		
	Remote display		
	Number of loads	1	1
	Mounting	DIN	96°96
	Power supply	AC	AC
	All In One	•	
	Optional modules		•
	Ethernet (Modbus TCP/Bacnet IP)	o/-	o/-
	RS485 (Modbus/Bacnet MSTP)	•/-	•/-
	Profibus DPV1		
	Websvrer / File export	o/-	o/o
Manage energy consumptions	4-quadrant energy metering	•	•
	Load curves (local memory)		
	Rebilling of energy (MID approved)		
	Multi-tariff management	2	
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		
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.



 DIRIS A-30 <i>p. 66</i>		 DIRIS A-40 Modbus <i>p. 62</i>			DIRIS A-40 Modbus + Profibus <i>p. 62</i>		DIRIS A-40 Modbus + Ethernet <i>p. 62</i>	
CURRENT TRANSFORMERS		SMART SENSORS						
1	1							
96*96	96*96							
AC/DC	AC							
•	•							
0/-	-/-	-/-	-/-	•/•				
•/-	•/-	•/-	•/-	•/-				
0	-	-	•	-				
0/0	0/0	0/0	0/0	•/•				
6/4	3/-							
6/4	2/-							
•	•							
0	•							
•	4							
•	•							
•	•							
-/•	-/•							
•/•	•/•							
•	•							
•	•							
•	•/•							
•	•							
•	•							



Selection guide

Software solutions for energy monitoring and analysis

What are the features?

For what size of project?

Where is the data stored?

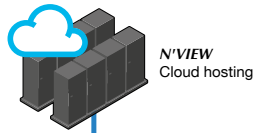
	WEBVIEW-S	WEBVIEW-M		WEBVIEW-L	N'VIEW
Hosting of the application⁽¹⁾	DIRIS A-40 Ethernet <i>p. 80</i>	DIRIS G <i>p. 80</i>	DIRIS Digiware D-70 <i>p. 80</i>	DATALOG H80/H81 <i>p. 80</i>	Cloud <i>p. 82</i>
Data collection					
Maximum number of connected measurement devices	1	32	32	100 (WEBVIEW-L100) 200 (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 63 rd	•	•	•	•	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.

Architecture

Level 4
Cloud hosting



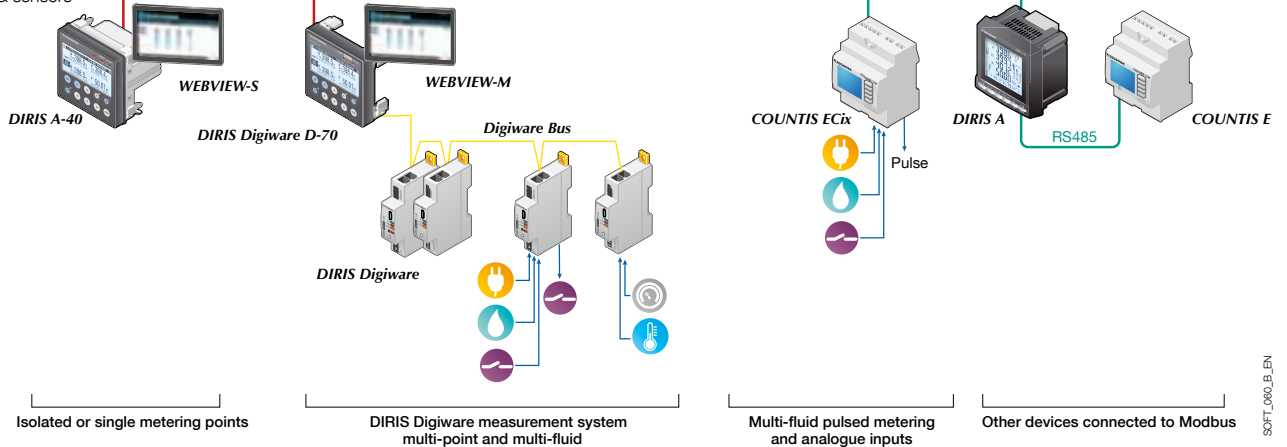
Level 3
Long-distance communication network (WAN)



Level 2
Local communication network (LAN)



Level 1
PMD & sensors



SOFT_080_B_EN

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 Q800

Electrical network analyser

quality analysis of electrical energy and power grids

Single-circuit metering,
measurement &
analysis

new



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.

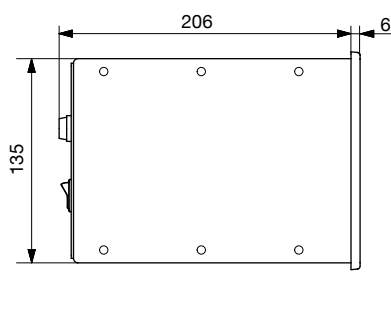
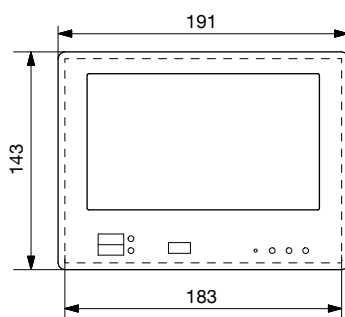
Logging

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

Inputs/outputs

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

Dimensions



diris_q800_c_1_cat

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%
4 th voltage (neutral/earth)	± 0.2%
Currents	± 0.2%
Power	± 0.2%
Frequency	± 10 mHz
Harmonics	IC. 1 IEC/EN 61000-4-7
Active energy	IC. 0.5S IEC/EN 62053-22
Reactive energy	IC. 1 IEC/EN 62053-24

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 conformity	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

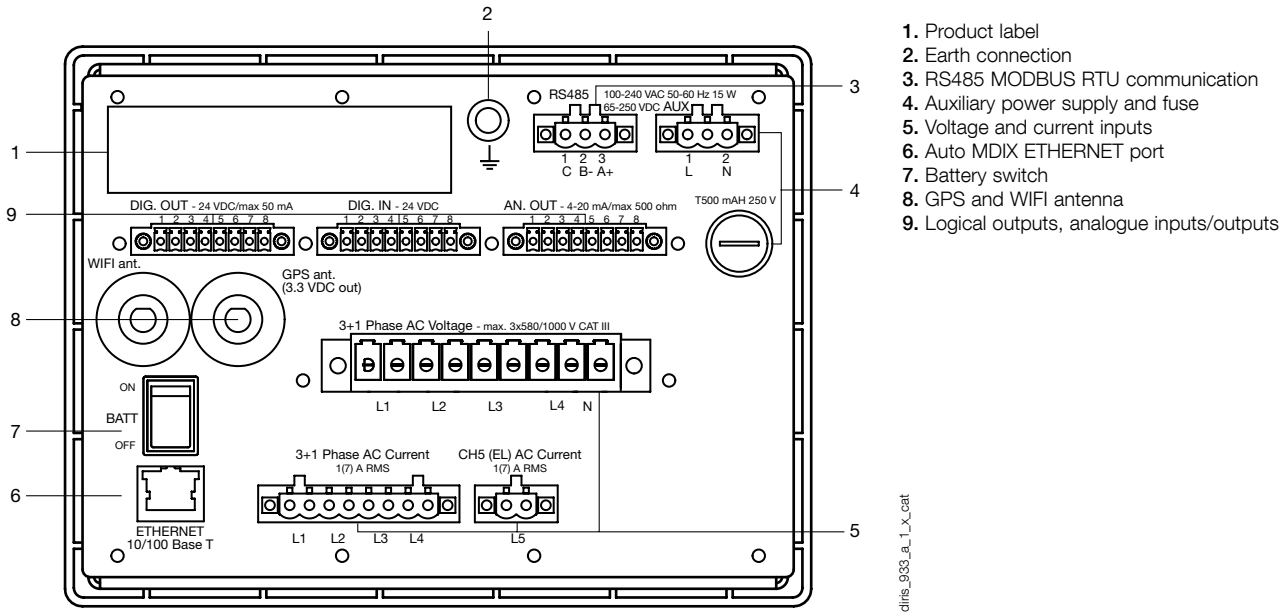
Designation	Reference
DIRIS Q800	4826 0100

DIRIS Q800

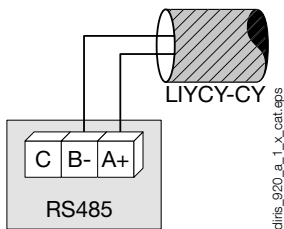
Electrical network analyser

quality analysis of electrical energy and power grids

Terminals

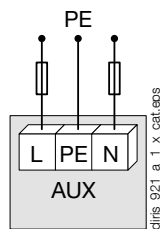


Communication via RS485 link

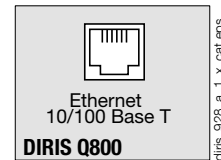


AC and DC auxiliary power supply

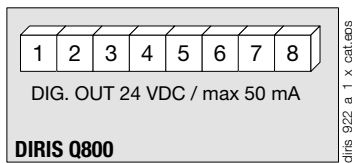
85/265 VAC
65/250 VDC



Ethernet communication

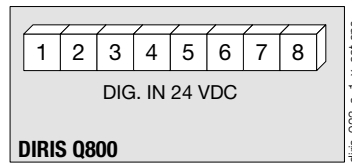


Digital outputs



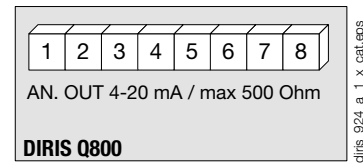
DIRIS Q800
1-2: optocoupler output 1
3-4: optocoupler output 2
5-6: optocoupler output 3
7-8: optocoupler output 4

Digital inputs



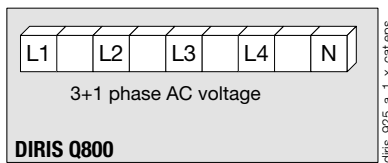
DIRIS Q800
1-2: optocoupler input 1
3-4: optocoupler input 2
5-6: optocoupler input 3
7-8: optocoupler input 4

Analogue outputs

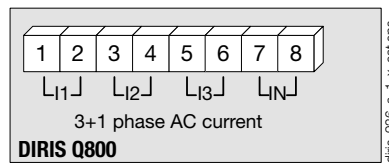


DIRIS Q800
1-2: analogue output 1
3-4: analogue output 2
5-6: analogue output 3
7-8: analogue output 4

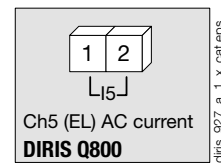
Current and voltage inputs



DIRIS Q800
L1, L2, L3, L4, N: voltage inputs



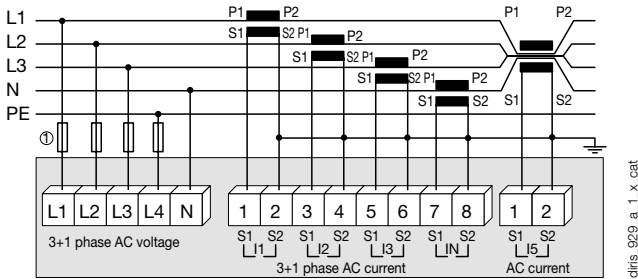
DIRIS Q800
1-2: current input i1
3-4: current input i2
5-6: current input i3
7-8: current input i4



DIRIS Q800
1-2: differential core connections

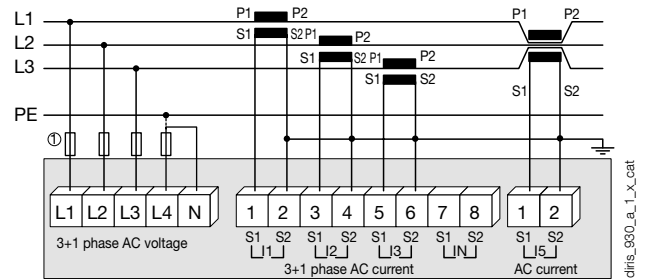
Connections

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



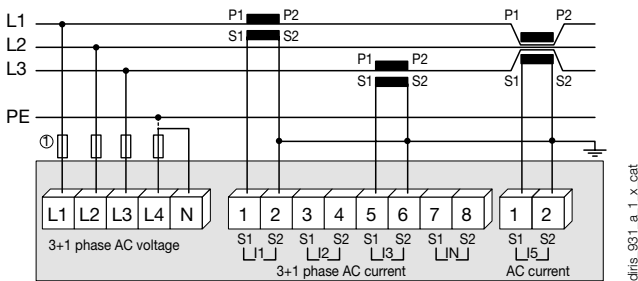
1. 0.5 A gG / 0.5 A class CC fuses.

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



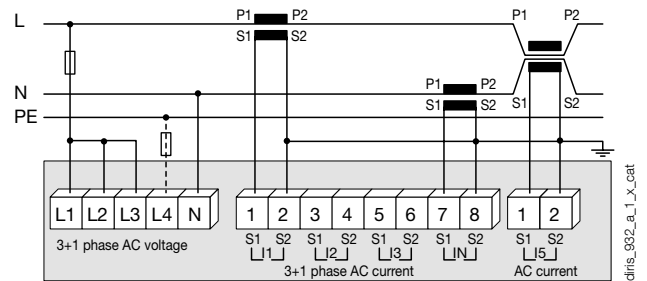
1. 0.5 A gG / 0.5 A class CC fuses.

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.





DIRIS Digiware **D** and **C**

Control and power supply interfaces

Multi-circuit metering & measurement



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

diris-dw_006_a_cat



DIRIS Digiware C-31
Centralisation

diris-dw_142_a

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 U, I and IO 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, the "Power & Energy monitoring" embedded web server.

DIRIS Digiware screens 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

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.

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 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



Application	Control and power supply interface			
				
DIRIS Digiware	C-31	D-40	D-50	D-70
Digiware input	•	•	•	•
RS485 input			•	•
RS485 Modbus output	•	•		
Ethernet output			Modbus	Modbus BACnet IP SNMP
Webview web server				•

Functions



Webview

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 by FTP 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.

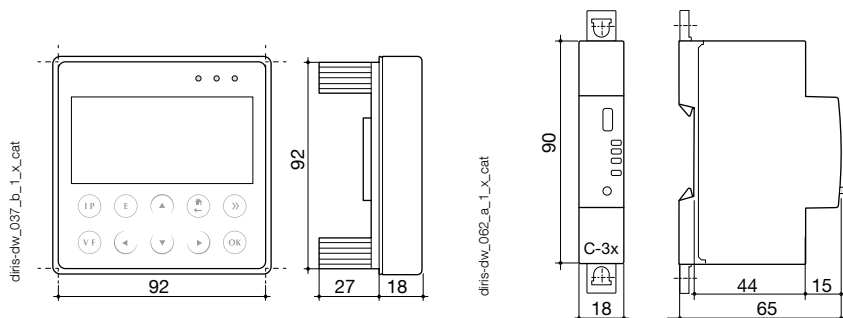
DIRIS Digiware D and C

Control and power supply interfaces

Dimensions

DIRIS Digiware D-40/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	
Cables		
50 metre package		1.5
System interfaces		
DIRIS Digiware D-40/D-50		2
DIRIS Digiware D-70		2.5
DIRIS Digiware C-31		0.8
Module voltage		
DIRIS Digiware U-xx		0.72
Current modules		
DIRIS Digiware I-3x		0.52
DIRIS Digiware I-4x		1.125
DIRIS Digiware I-6x		0.7
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-50 display (2W)
- 1 DIRIS Digiware voltage module U-xx (0.72 W)
- 50 metres of cable (1.5 W)

and

- 20 DIRIS Digiware current modules I-3x (20 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

For example, it is possible to use

- 1 DIRIS Digiware D-50 display (2W)
- 1 DIRIS Digiware voltage module U-xx (0.72 W)
- 50 metres of cable (1.5 W)

and

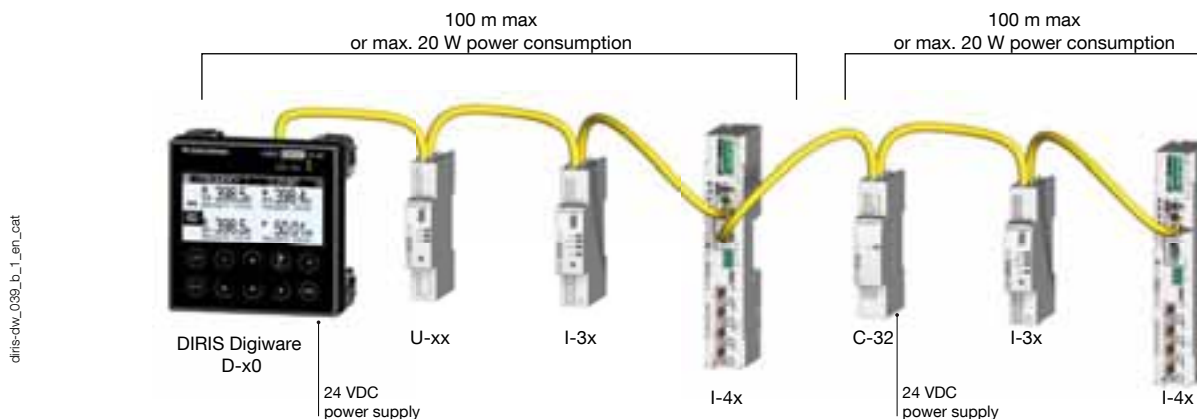
- 30 DIRIS Digiware current modules I-3x (30 x 0.52 = 15.6 W)
- ⇒ **Total power = 19.82 W**

or

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

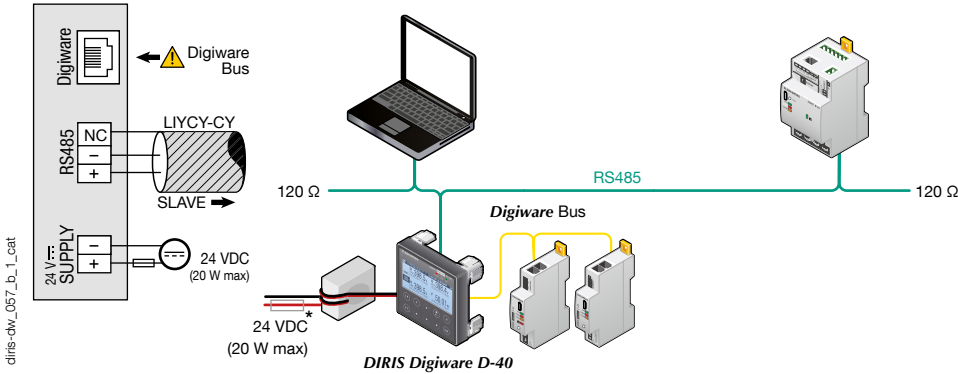
Repeater

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 (continued)

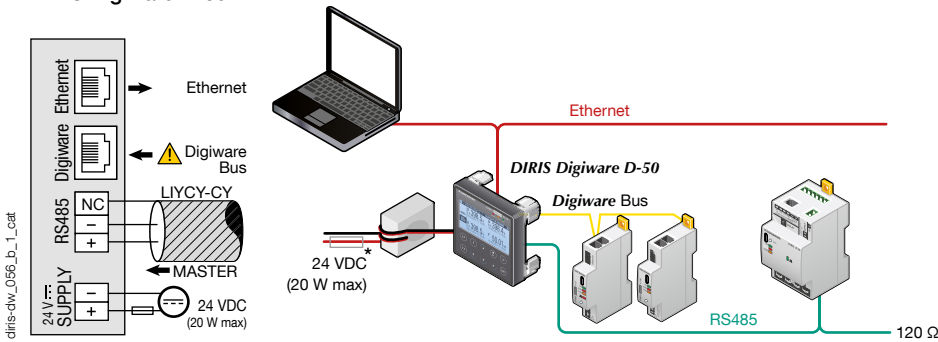
DIRIS Digiware D-40



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

(**) On DIRIS Digiware D-40 and D-50 displays, class B radiated power is obtained using ferrites (ref. 4829 0048) on the power supply (two turns).

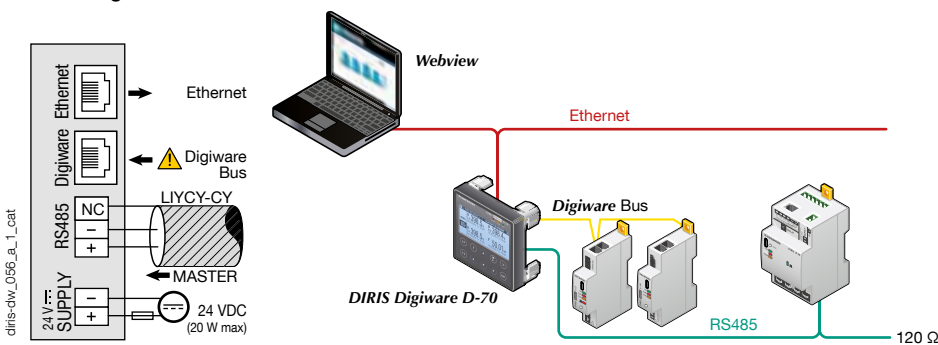
DIRIS Digiware D-50



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

(**) On DIRIS Digiware D-40 and D-50 displays, class B radiated power is obtained using ferrites (ref. 4829 0048) on the power supply (two turns).

DIRIS Digiware D-70



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

DIRIS Digiware D and C

Control and power supply interfaces

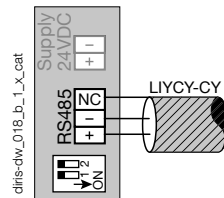
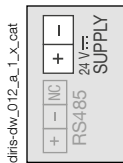
Connections

DIRIS Digiware C-31

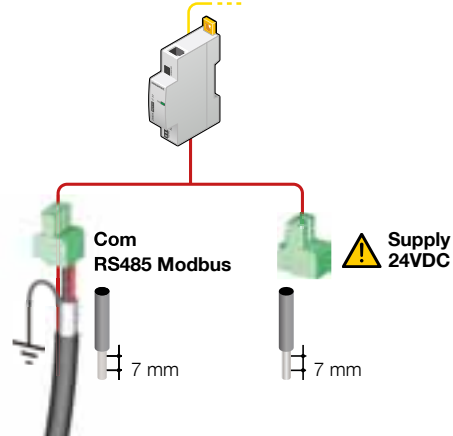
Power supply

Digiware bus

Communication



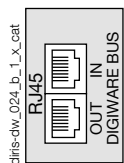
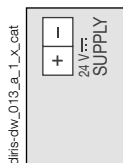
DIRIS Digiware C-31



DIRIS Digiware C-32

Power supply

Digiware bus



Technical characteristics

Electrical characteristics

DIRIS Digiware C-31	
Input voltage	24 VDC \pm 20 % - 20 W max
Connection	Removable screw terminal block, 2 positions, stranded or solid 0.2-2.5 mm ² cable
P15 power supply	Characteristics: 100-240 VAC/ 24 VDC - 0,63 A - 15 W Modular format - Dimensions (H x L): 90 x 25 mm

Communication specifications

Digiware Bus	
Function	Connection between DIRIS Digiware modules
Cable type	Specific Socomec cable with RJ45 connections
RS485	
Connection type	2 to 3 half duplex wires
Protocol	Modbus RTU
Baudrate	1200 to 115200 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 Mbps	Gateway function: Modbus TCP (D-50/D-70) BACnet IP (D-70) SNMP v1, v2, v3 (D-70)	
RJ45 Digiware	Control and power supply interface function	
RS485 2-3 wires	Modbus RTU communication function (input D-50/D-70/output D-40)	
USB	Upgrade and configuration via type B micro USB connector	
Electrical characteristics		
Power supply	24 VDC \pm 10 % / -20%	
Power consumption	2 VA (D-40/D-50) / 2.5 VA (D-70)	
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		Part number
D-40	Multipoint display, RS485 output	4829 0199
D-50	Multipoint display, Ethernet output	4829 0201
D-70	Multipoint display, Ethernet output + web server	4829 0202
C-31	System interface	4829 0101
C-32	Repeater	4829 0103
Power supply		Part number
P15	Powers supply 100-240 VAC/ 24 VDC 15 W	4829 0120
Digiware connection cables		Part number
RJ45 cables for Digiware Bus	Length 0.10m	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		Part number
DIRIS D-30 ⁽¹⁾	Single-point display for DIRIS Digiware I-4x	4829 0200

(1) DIRIS D-30 display characteristics

Accessories	To be ordered in multiples of	Part number
Accessories		
Fuse circuit breakers to protect voltage inputs (type RM) 1 pole + neutral	4	5601 0017
gG 10x38 0.5 A fuses	10	6012 0000

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

Multi-circuit metering & measurement



diris-dw_005_a_cat

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

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

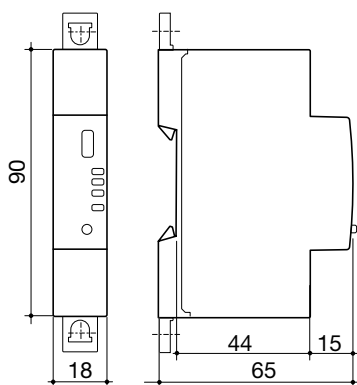
- > Find the best DIRIS Digiware configuration: www.meter-selector.com



Application	Voltage measurement module		
	Metering	Monitoring	Analysis
			
	U-10	U-20	U-30
DIRIS Digiware U			
Multi-measurement			
U12, U23, U31, V1, V2, V3, f	•	•	•
U system, V system			•
Ph/N unbalance			•
Ph/Ph unbalance			•
Quality analysis			
THDv1, THDv2, THDv3, THDu12, THDu23, THDu31		•	•
Individual harmonics U & V (up to rank 63)			•
Voltage dips, cutoffs and surges (EN 50160)			•
Alarms			
On threshold			•
History of average values			
45 days (max)			•
Format			
Width/number of modules	18 mm / 1	18 mm / 1	18 mm / 1

Dimensions

DIRIS Digiware U



diris-dw_069_a_1_x_cat

Specifications

Measuring characteristics

Voltage measurement - DIRIS Digiware U	
Characteristics of the network measured	50-300 VAC (Ph/N) - 87-520 VAC (Ph/Ph) - CAT III
Frequency range	45 ... 65 Hz
Frequency accuracy	Class 0.02
Network type	Single-phase/ Two-phase / Two-phase with neutral / Three-phase / Three-phase with neutral
Measurement by voltage transformer	Primary: 400 000 VAC Secondary: 60, 100, 110, 173, 190 VAC
Input consumption	≤ 0.1 VA
Permanent overload	300 VAC Ph/N
Accuracy of voltage measurement	Class 0.2
Connection	Removable screw terminal block, 4 positions, stranded or solid 0.2 ... 2.5 mm ² cable

Communication specifications

USB	
Protocol	Modbus RTU on USB
Function	Configuration of DIRIS Digiware U and I modules
Location	On each DIRIS Digiware U and I measurement module
Connection	Type B micro USB connector

References

Digiware connection cables	Reference	
RJ45 cables for Digiware Bus	Length 0.10 m	4829 0181
	Length 0.20 m	4829 0188
	Length 0.50 m	4829 0182
	Length 1 m	4829 0183
	Length 2 m	4829 0184
	Length 5 m	4829 0186
	Length 10 m	4829 0187
Reel 50 m + 100 connectors	4829 0185	
Digiware bus terminating resistor (supplied with C and D devices)	4829 0180	
USB configuration cable	4829 0050	

DIRIS Digiware		Reference
U-10	Metering	4829 0105
U-20	Monitoring	4829 0106
U-30	Analysis	4829 0102

Accessories		
Description of accessories	To be ordered in multiples of	Reference
Fuse holder to protect voltage inputs (type RM) 3 pole	4	5601 0018
gG 10x38 0.5 A fuses	10	6012 0000



DIRIS Digiware S

Current acquisition module with integrated sensors

Multi-circuit metering & measurement



DIRIS Digiware S

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

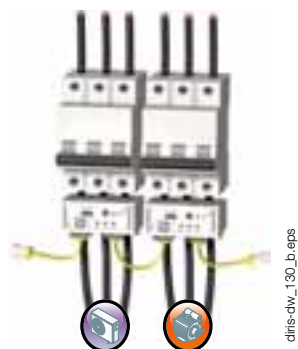
- A measurement module offering the best compactness/performance ratio of the market.
- Matches the pitch of the protective device.

Accurate

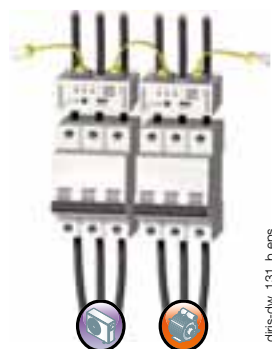
- Class 0.5 for active energy in accordance with the IEC 61557-12 standard, allowing accurate measurements over a wide range of currents.

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 page 4.

Compliance with standards

- > IEC 61557-12






- > ISO 14025



- > UL 257746



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
Base 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			
\pm kWh, \pm kvarh, kVAh	•	•	•
Multi-tariff (max 8)		•	
Load curves		•	•
Multi-measurement			
$I_1, I_2, I_3, I_n, \Sigma P, \Sigma Q, \Sigma S, \Sigma PF$	•	•	•
P, Q, S, PF per phase		•	•
Predictive power		•	
Current unbalance ($I_{nba}, I_{nb}, I_{dir}, I_{inv}, I_{hom}$)		•	
Phi, cos Phi, tan Phi		•	•
Quality			
THDi1, THDi2, THDi3, THDin		•	•
Individual harmonics I (up to level 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

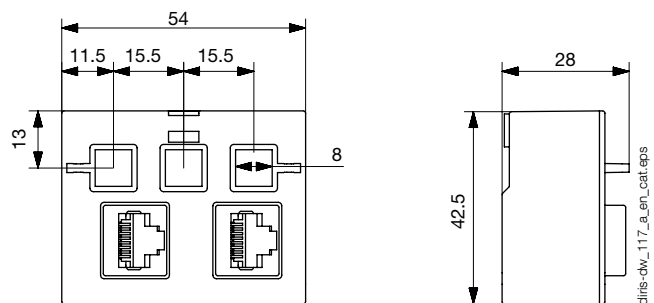


diris-dw_139_a.eps

DIRIS Digiware S

Current acquisition module with integrated sensors

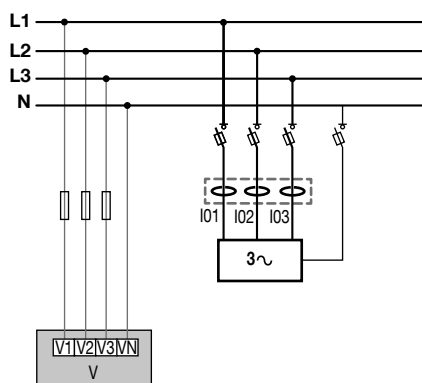
Dimensions (mm)



Connections

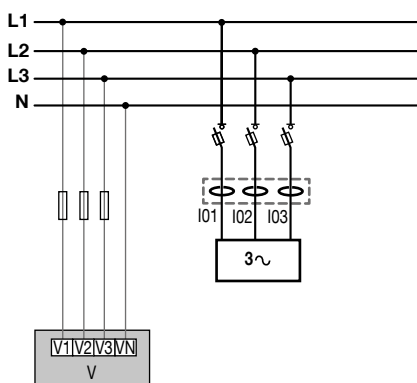
Current is measured by the integrated inputs I01, I02 and I03 on the DIRIS Digiware S module.

3P+N - 3CT

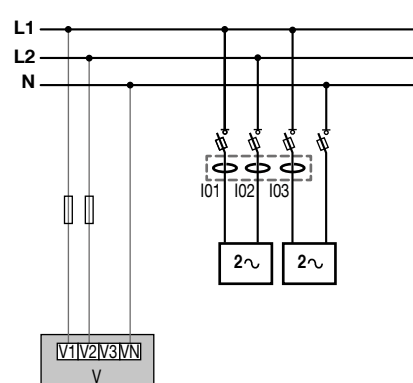


diris-dw_118_a_x_cat.ai

3P - 3CT



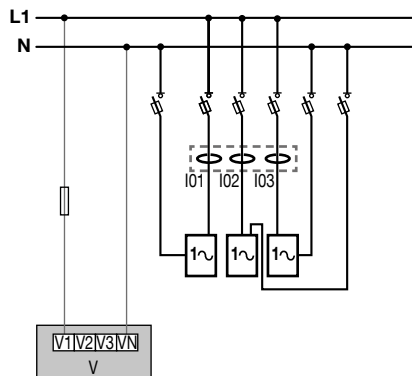
2P+N - 2CT & 2P+N - 1CT



diris-dw_119_a_x_cat.ai

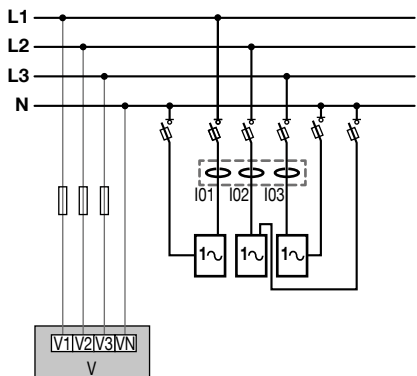
diris-dw_120_a_x_cat.ai

1P+N - 1CT (3x)



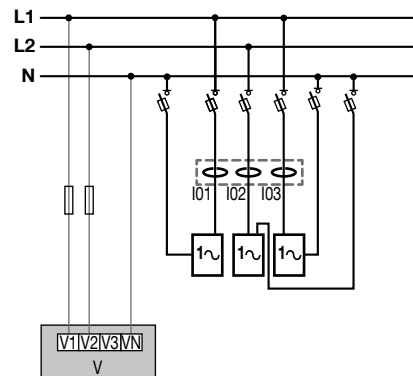
diris-dw_121_a_x_cat.ai

3P+N - 1CT (3x)



diris-dw_122_a_x_cat.ai

2P+N - 1CT (3x)



diris-dw_123_a_x_cat.ai



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 I _b	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	Part number	
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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DIRIS Digiware I

Current acquisition modules

Multi-circuit metering & measurement



DIRIS Digiware I-3x



DIRIS Digiware I-4x



DIRIS Digiware I-6x

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



For more information, see page 4.

Conformity to standards

- > IEC 61557-12



- > ISO 14025



- > UL



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www.meter-selector.com



Application	Current measurement modules							
	Metering		Monitoring	Analysis	Monitoring	Analysis	Metering	
DIRIS Digiware I	I-30	I-31	I-33	I-35	I-43	I-45	I-60	I-61
Number of current inputs	3	3	3	3	4	4	6	6
Metering								
± kWh, ± kvarh, kVAh	•	•	•	•	•	•	•	•
Load curves		•		•		•		•
Multi-tariff		•		•		•		•
Multi-measurement								
I1, I2, I3, In, ΣP, ΣQ, ΣS, ΣPF	•	•	•	•	•	•	•	•
P, Q, S, PF per phase			•	•	•	•		
Predictive power				•		•		
Current unbalance (Inba, Idir, linv, lhom, lnb)				•		•		
Phi, cos Phi, tan Phi				•		•		
Quality								
THDi1, THDi2, THDi3, THDin			•	•	•	•		
Individual harmonics I (up to level 63)				•		•		
Overcurrents				•		•		
Alarms								
On threshold				•		•		
Inputs/outputs					2/2	2/2		
History of average values								
45 days (max)				•		•		
Format								
Width/number of modules	18 mm / 1	18 mm / 1	18 mm / 1	18 mm / 1	27 mm / 1.5	27 mm / 1.5	36 mm / 2	36 mm / 2

Accessories

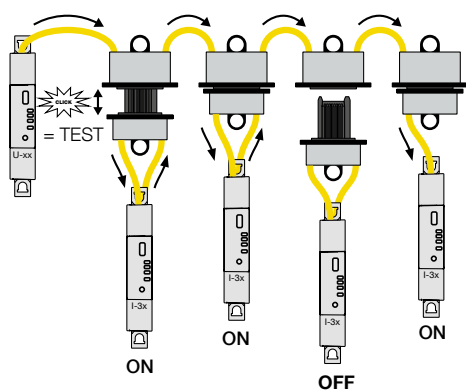
Digiware plug-in connector

With the Digiware plug-in connector you can disconnect a DIRIS Digiware module from the Bus while ensuring the DIRIS Digiware system continues to run downstream.

This accessory is particularly useful in applications with retractable drawers or critical applications such as in data centres.



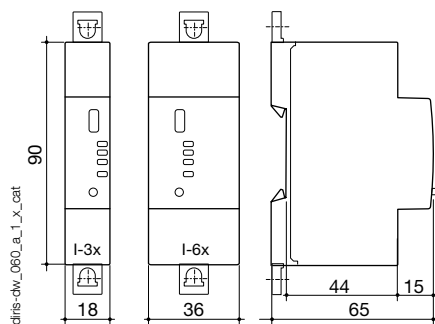
diris-o_025_a.eps



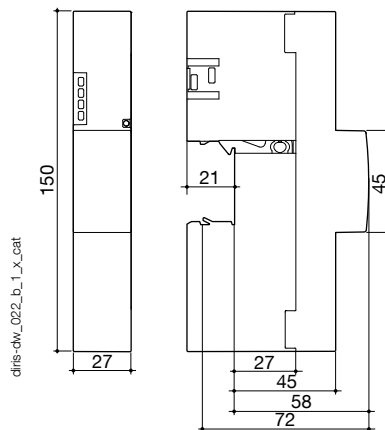
diris-o_026_a_1_cat.ai

Dimensions

DIRIS Digiware I-3x / I-6x



DIRIS Digiware I-4x



Connections

Associated current sensors

Various types of current sensors are connected to the DIRIS Digiware: closed (TE), split core (TR) or flexible (TF). This range of sensors can be adapted to all types of new or existing installations. A rapid RJ12 connection makes wiring easy and reliable and prevents wiring errors. The DIRIS Digiware system automatically recognises the sensor size and type. This guarantees the overall accuracy of the DIRIS Digiware + current sensor measurement chain.

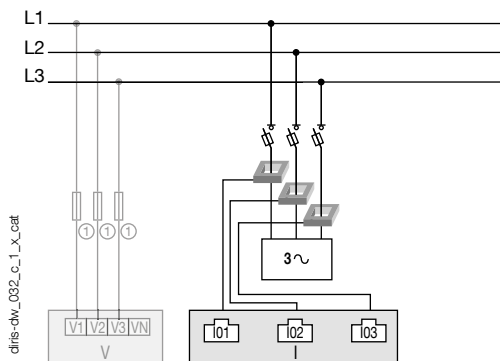
For more information: see page 40.

Network and connection examples

I3x

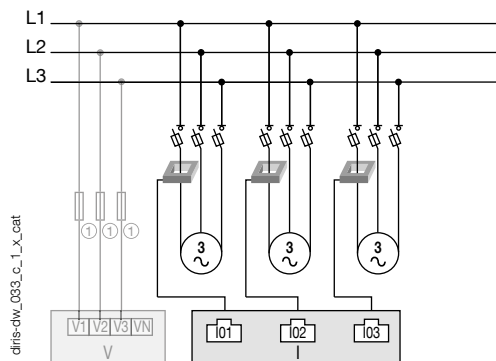
Three-phase

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



Three-phase

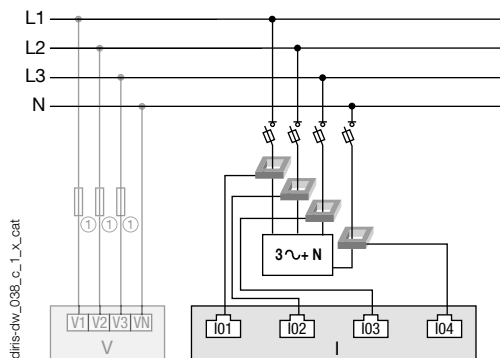
3P - 1CT (3 balanced, three-phase loads)



I4x

Three phase + neutral

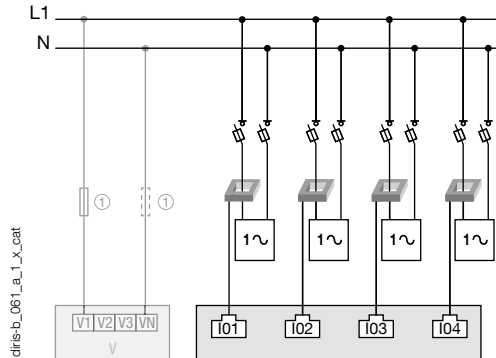
3P+N - 4CT (1 three-phase load + Neutral measured)



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

Single-phase

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



CT: Current sensor 3~ Load

Specifications

Measuring characteristics

Current measurement - DIRIS Digiware I	
Number of current inputs	I-3x: 3 / I-45: 4 / I-6x: 6
Associated current sensors	Solid TE, split-core TR, flexible TF current sensors
Accuracy of current measurement	0.2 DIRIS Digiware class only Class 0.5 with TE or TF sensors Class 1 with TR sensors
Connection	Specific Socomec cable with RJ12 connectors

Inputs - DIRIS Digiware I-45	
Number of inputs	2
Type / Power supply	Non-insulated input, internal polarisation 12 VDC max, 1mA
Input functions	Logic status, pulse meter, multi-tariff
Connection	Removable screw terminal block, stranded or solid 0.14-1.5 mm ² cable

Outputs - DIRIS Digiware I-45	
Number of outputs	2
Relay type	230 VAC ±15 % - 1 A
Function	Configurable alarm (current, power, etc.) when threshold is exceeded or remote controlled status
Connection	Removable screw terminal block, stranded or solid 0.2-2.5 mm ² cable

Communication specifications

USB	
Protocol	Modbus RTU on USB
Function	Configuration of DIRIS Digiware U and I modules
Location	On each DIRIS Digiware U and I measurement module
Connection	Type B micro USB connector

References

DIRIS Digiware	Reference
I-30 Metering - 3 current inputs	4829 0110
I-31 Metering + load curve - 3 current inputs	4829 0111
I-33 Monitoring - 3 current inputs	4829 0128
I-35 Analysis - 3 current inputs	4829 0130
I-43 Monitoring - 2 inputs/ 2 outputs - 4 current inputs	4829 0129
I-45 Analysis - 2 inputs/ 2 outputs - 4 current inputs	4829 0131
I-60 Metering - 6 current inputs	4829 0112
I-61 Metering + load curve - 6 current inputs	4829 0113

Accessories	Reference
Digiware x 5 plug-in connector	4829 0605

Digiware connection cables	Reference	
RJ45 cables for Digiware Bus	Length 0.10 m	4829 0181
	Length 0.20 m	4829 0188
	Length 0.50 m	4829 0182
	Length 1 m	4829 0183
	Length 2 m	4829 0184
	Length 5 m	4829 0186
	Length 10 m	4829 0187
	Reel 50 m + 100 connectors	4829 0185
Digiware bus terminating resistor (supplied with C and D devices)	4829 0180	
USB configuration cable	4829 0050	

(1) DIRIS D-30 display characteristics see page 24.

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TE sensors

Solid current sensors

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

Current sensors

new



TE solid sensors

Function

TE smart **current sensors** measure the load currents of an electrical system and send the data to meters and measurement hubs via an RJ12 plug-and-play output. Thanks to a wide measurement range, TE current sensors cover the full current range of 5 to 2000 A, with 7 references. TE solid current sensors can be connected to DIRIS Digiware and DIRIS B-30 via a rapid RJ12 connection.

Numerous accessories are available to aid the installation of sensors in any type of cabinet.

Advantages

Plug & Play

- A rapid RJ12 connection makes wiring easy and reliable and prevents wiring errors. This also allows automatic detection of the sensor type and size/transformation ratio.
- The sensors can be installed in both directions.

Accuracy as per standard IEC 61557-12

- Class 0.5 for the global measuring chain (measurement hub + TE current sensors) from 2 to 120% of the nominal current I_n .

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

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Mounting

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



DIN rail mounted



TE-90 clamps



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



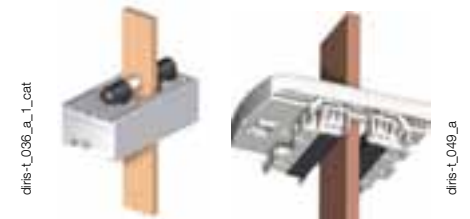
Back-plate mounting



Cable mounting



Bar mounting







Connections

TE / TR / TF current sensors



Mounting accessories

Mounting accessories delivered with TE sensors:

Switch mounting		TE-18	TE-25	TE-35 TE-45 TE-55	TE-90
	DIN rail and back-plate	1 pc			2 pcs
	DIN rail		2 pcs	2 pcs	
	Back-plate		4 pcs	4 pcs	6 pcs
	Busbar			2 pcs	

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 the DIRIS Digiware and DIRIS B-30. For use with standard 5 A sensors for measuring applications of > 2000 A. The dimensions are the same as the TE-18.

Coupling link

diris-t_020_a_1_cat



- Associated with the TE range, this accessory is for inter-connecting the sensors when linear or staggered mounted.



Sealable cover

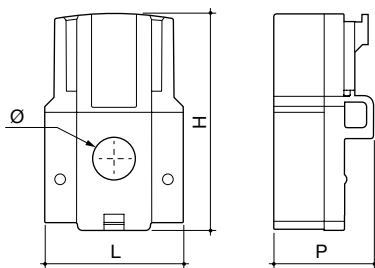
- Using a sealable cover guarantees the immunity of the sensor connection on TE/TR/TF current sensors.



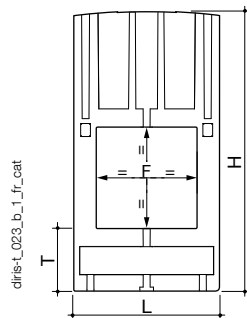
Dimensions (mm)

TE - Solid current sensors

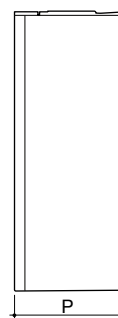
TE-18



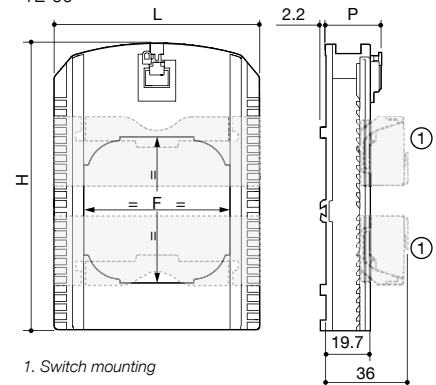
TE-25 / TE-35 / TE-45 / TE-55



diris-t_023_b_1_fr_cat



TE-90



1. Switch mounting

diris-t_047_a_1_fr_cat

Model	Nominal current range (A)	Actual coverage range (A)	Pitch (mm)	H x W x D (mm)	F (mm)	T (mm)
TE-18	5 ... 20 / 25 ... 63	0.1 ... 24 / 0.5 ... 75	18	45 x 28 x 20	8.6	-
TE-25	40 ... 160	0.8 ... 192	25	65 x 25 x 32.5	13.5 x 13.5	17.5
TE-35	63 ... 250	1.26 ... 300	35	71 x 35 x 32.5	21 x 21	17.5
TE-45	160 ... 630	3.2 ... 756	45	86 x 45 x 32.5	31 x 31	19.5
TE-55	400 ... 1000	8 ... 1200	55	100 x 55 x 32.5	41 x 41	21.5
TE-90	600 ... 2000	12 ... 2400	90	126 x 90 x 24.6	64 x 64	-

Specifications

TE - Solid current sensors							
Model	TE-18	TE-18	TE-25	TE-35	TE-45	TE-55	TE-90
Nominal current range I_n (A)	5 ... 20	25 ... 63	40 ... 160	63 ... 250	160 ... 630	400 ... 1000	600 ... 2000
Actual coverage range (A)	0.1 ... 24	0.5 ... 75	0.8 ... 192	1.26 ... 300	3.2 ... 756	8 ... 1200	12 ... 2400
Max. current (A)	24	75.6	192	300	756	1200	2400
Weight (g)	24	24	69	89	140	187	163
Max. voltage (phase/neutral)	300 V						
Rated withstand voltage	3 kV						
Frequency	50/60 Hz						
Intermittent overload	10 x I_n over 1 sec						
Measurement category	CAT III						
Protection degree	IP30 / IK06						
Operating temperature	-10 ... +70°C						
Storage temperature	-25 ... +85°C						
Relative humidity	95% RH non-condensing						
Altitude	< 2000 m						
Connection	Socomec RJ12 cable						

References

Model	Nominal current range (A)	Actual coverage range (A)	Pitch (mm)	Reference
TE-18	5 ... 20	0.1 ... 24	18	4829 0500
TE-18	25 ... 63	0.5 ... 75	18	4829 0501
TE-25	40 ... 160	0.8 ... 192	25	4829 0502
TE-35	63 ... 250	1.26 ... 300	35	4829 0503
TE-45	160 ... 630	3.2 ... 756	45	4829 0504
TE-55	400 ... 1000	8 ... 1200	55	4829 0505
TE-90	600 ... 2000	12 ... 2400	90	4829 0506

Accessories	Reference
Coupling link (20 linear assembly parts and 10 for staggered assembly)	4829 0598
CT/5A adapter (measurements of >2000 A) (max primary current 10000 A/5/A)	4829 0599
Sealable caps (20 pieces)	4829 0600

RJ12 connection cables	Cable length (m)								
	0.1	0.2	0.3	0.5	1	2	5	10	50 m reel + 100 connectors
Number of cables	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference
1	-	-	-	-	-	-	4829 0602	4829 0603	4829 0601
3	4829 0580	4829 0581	4829 0582	4829 0595	4829 0583	4829 0584	-	-	-
4	-	-	-	4829 0596	4829 0588	4829 0589	-	-	-
6	4829 0590	4829 0591	4829 0592	4829 0597	4829 0593	4829 0594	-	-	-



TR/iTR sensors

Split-core AC current sensors

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

Current sensors



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 technology makes it possible to monitor the status of protective devices:

- Throughout your electrical installation.
- Remotely and in real-time.
- Without additional hardware or wiring.

AutoCorrect technology

AutoCorrect technology guarantees that your measurement system will function properly through:

- Automatic installation verification (by checking phase sequencing and automatic configuration of the direction of current).
- Correction of errors.

The solution for

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



Strong points

- > Smart sensors
- > PreciSense technology: Global accuracy in accordance with the IEC 61557-12 standard.
- > Easy installation and configuration.

Integrated technologies⁽¹⁾



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

For more information, see page 4.

Compliance with standards

- > IEC 61557-12



- > ISO 14025



- > UL



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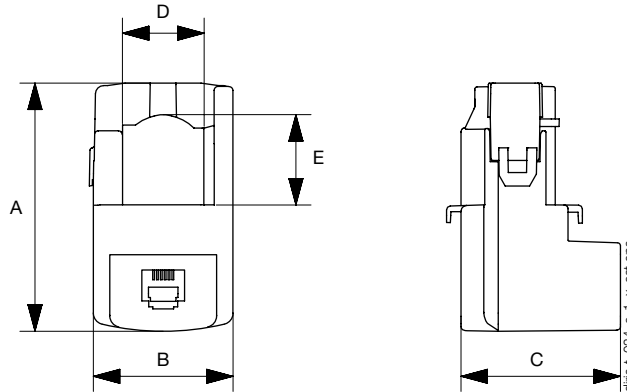
Installation

Cable mounting



Dimensions

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



Model	Nominal current range (A)	Actual coverage range (A)	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	Ø (mm)
TR/iTR-10	25 ... 63	0.5 ... 90	44	26	28	-	-	10
TR/iTR-14	40 ... 160	0.64 ... 120	67	29	28	14	15	14
TR/iTR-21	63 ... 250	1.26 ... 200	65	37	43	21	23	21
TR/iTR-32	160 ... 600	4 ... 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	
Actual coverage range (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)	Actual coverage range (A)	Ø (mm)	Part number
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)	Actual coverage range (A)	Ø (mm)	Part number
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	Part number	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference
1	-	-	-	-	-	-	4829 0602	4829 0603	4829 0601
3	4829 0580	4829 0581	4829 0582	4829 0595	4829 0583	4829 0584	-	-	-
4	-	-	-	4829 0596	4829 0588	4829 0589	-	-	-
6	4829 0590	4829 0591	4829 0592	4829 0597	4829 0593	4829 0594	-	-	-



TF sensors

Flexible current sensors

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

Current sensors



diris-t_016_a-1_cat

TF Flexible current sensors

Function

TF smart **current sensors** measure the load currents of an electrical system and send the data to meters and measurement hubs via an RJ12 plug-and-play output. Thanks to a wide measurement range, TF current sensors cover the full current range of 150 to 6000 A, with 3 references. TF flexible current sensors can be connected to DIRIS Digiware and DIRIS B-30 via a rapid RJ12 connection.

Advantages

Plug & Play

- A rapid RJ12 connection makes wiring easy and reliable and prevents wiring errors. This also allows automatic detection of the sensor type and size/transformation ratio.
- The sensors can be installed in both directions.

Accuracy as per standard IEC 61557-12

- Class 0.5 for the global measuring chain (measurement hub + TF current sensors) from 2 to 120% of the nominal current I_n .

Installation

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

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

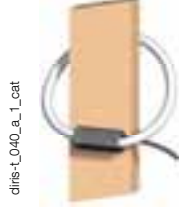


Mounting

Cable mounting



Bar mounting



Accessories

Sealable cover

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



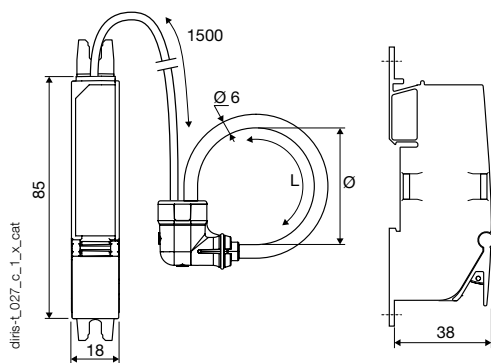
Connections

TE / TR / TF current sensors

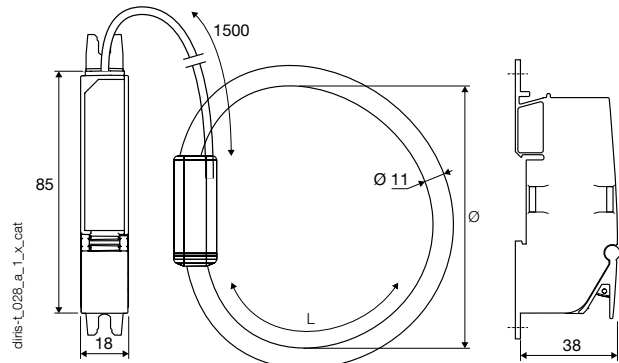


Dimensions

TF-55



TF-120 / TF-300



Model	Nominal current range (A)	Actual coverage range (A)	Ø loop (mm)	L = Loop length (mm)
TF-55	150 ... 600	3 ... 720	55	182
TF-120	500 ... 2000	10 ... 2400	120	376
TF-300	1600 ... 6000	32 ... 7200	300	942

Specifications

Model	TF-55	TF-120	TF-300
Nominal current range I_n (A)	150 ... 600	500 ... 2000	1600 ... 6000
Actual coverage range (A)	3 ... 720	10 ... 2400	32 ... 7200
Weight (g)	114	142	220
Max. voltage (phase/neutral)	600 V		
Rated withstand voltage	3.6 kV		
Frequency	50 / 60 Hz		
Intermittent overload	10 x I_n for 1 s		
Measurement category	CAT III		
Protection degree	IP30 / IK07		
Operating temperature	-10 ... +70°C		
Storage temperature	-25 ... +75°C		
Relative humidity	95% RH non-condensing		
Altitude	< 2000 m		
Connection	Socomec cable or equivalent RJ12 straight, twisted pair, unshielded 300 V cat. III cable. -40 / +85 °C		

References

Model	Nominal current range (A)	Actual coverage range (A)	Ø loop (mm)	Reference
TF-55	150 ... 600	3 ... 720	55	4829 0570
TF-120	500 ... 2000	10 ... 2400	120	4829 0571
TF-300	1600 ... 6000	32 ... 7200	300	4829 0572

Accessories

Accessories	Reference
Sealable caps (20 pieces)	4829 0600

RJ12 connection cables	Cable length (m)								
	0.1	0.2	0.3	0.5	1	2	5	10	50 m reel + 100 connectors
Number of cables	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference	Reference
1	-	-	-	-	-	-	4829 0602	4829 0603	4829 0601
3	4829 0580	4829 0581	4829 0582	4829 0595	4829 0583	4829 0584	-	-	-
4	-	-	-	4829 0596	4829 0588	4829 0589	-	-	-
6	4829 0590	4829 0591	4829 0592	4829 0597	4829 0593	4829 0594	-	-	-



DIRIS Digiware Udc

DC voltage acquisition module

Multi-circuit metering & measurement

new



diris-dw_116_a

DIRIS Digiware U-31dc/U-32dc



diris-dw_005_a_cat

DIRIS Digiware U500dc/U1000dc/U1500dc adaptor

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



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

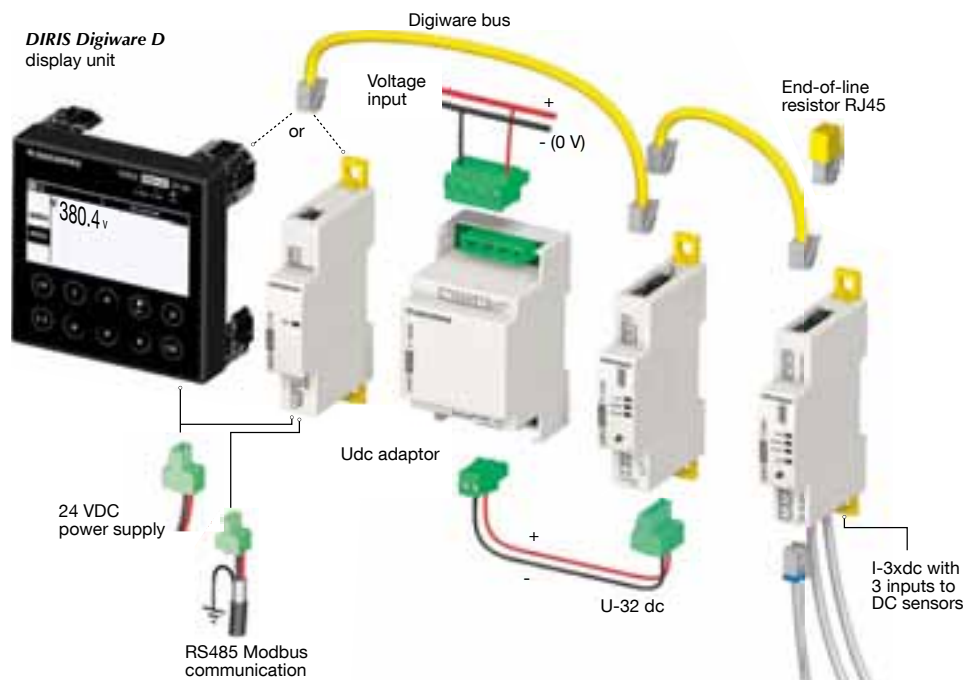
- Easy to configure from DIRIS Digiware D interfaces or from the Easy Config configuration software.

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

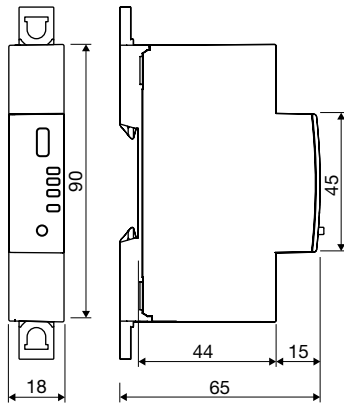


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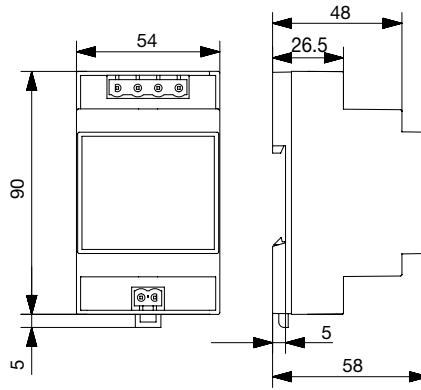
Dimensions (mm)

DIRIS Digiware U-3xdc

DIRIS Digiware adaptors U500dc/U1000dc/U1500dc



diris-dw_106_a_1_cat



diris-dw_115_a_1_x_cat

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 mm ² cable
Connection with adaptor	Adaptor input: removable screw terminal block, 2 positions, stranded or solid 0.2 ... 2.5 mm ² cable Adaptor output: removable screw terminal block, 2 positions, stranded or solid 0.2 ... 2.5 mm ² 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		Part number
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		Part number
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

Multi-circuit metering & measurement

new



DIRIS Digiware I-30dc/I-35dc

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.

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.

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

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



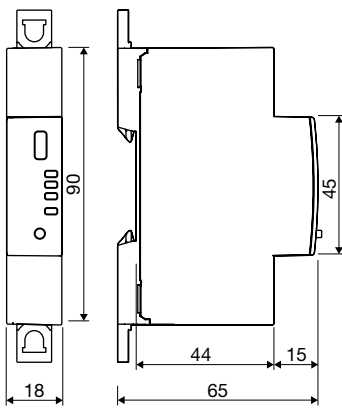
- > UL E257746



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

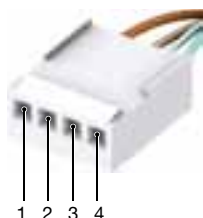


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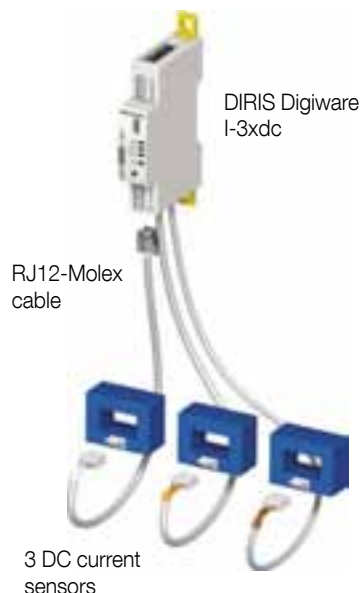
Connections

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.



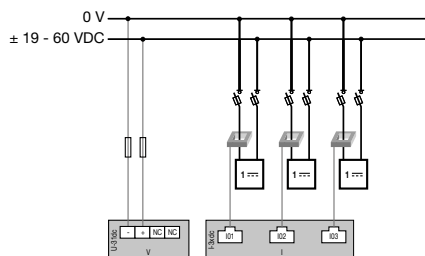
- PIN 1: + 15 V (+ V_c)
- PIN 2: - 15 V (- V_c)
- PIN 3: sensor input (M)
- PIN 4: 0 V sensor (0)



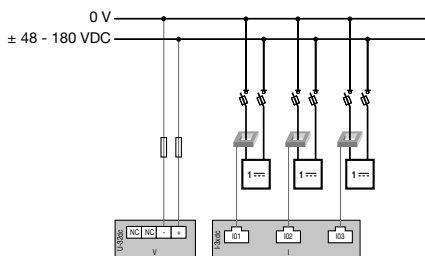
Network and connection examples

Measurement of 3 DC loads

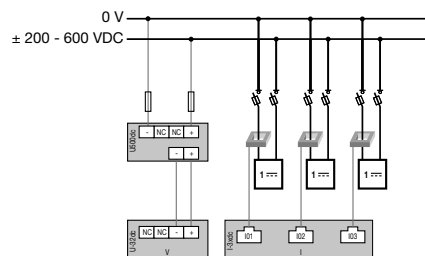
DIRIS Digiware U-31dc
Voltage (VDC): 19 - 60 V



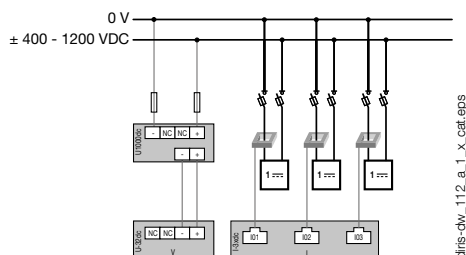
DIRIS Digiware U-32dc
Voltage (VDC): 48 - 180 V



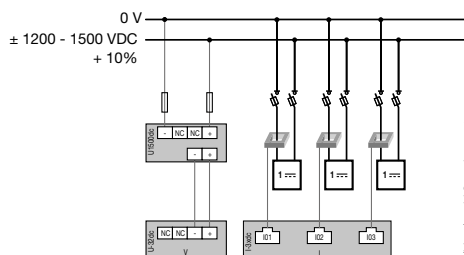
DIRIS Digiware U-32dc + adaptor U500dc
Voltage (VDC): 200 - 600 V





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		Part number
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	Part number
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		Part number
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

Current sensors

new



tore_072_a.eps

Solid-core sensors 50 ... 600 A



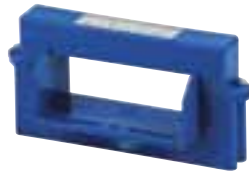
tore_071_a.eps

Split-core sensors 50 ... 500 A



tore_068_a.eps

Solid-core sensors 850 ... 5000 A



tore_066_a.eps

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

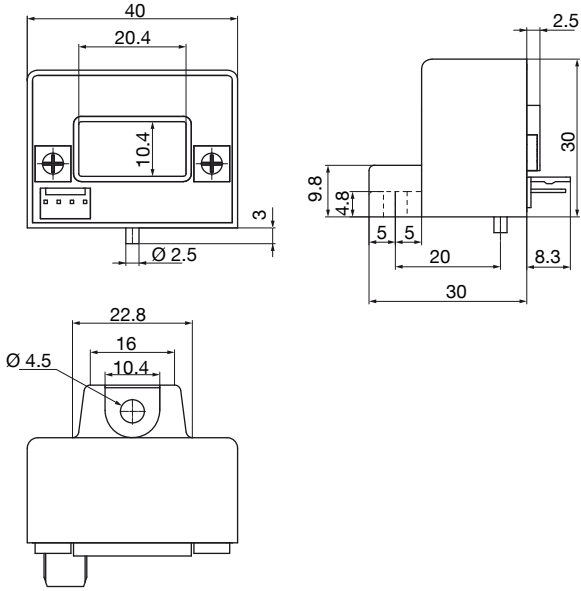
- A complete range of solid-core and split-core sensors from 50 to 5000 A designed for new or existing electrical installations.

Installation

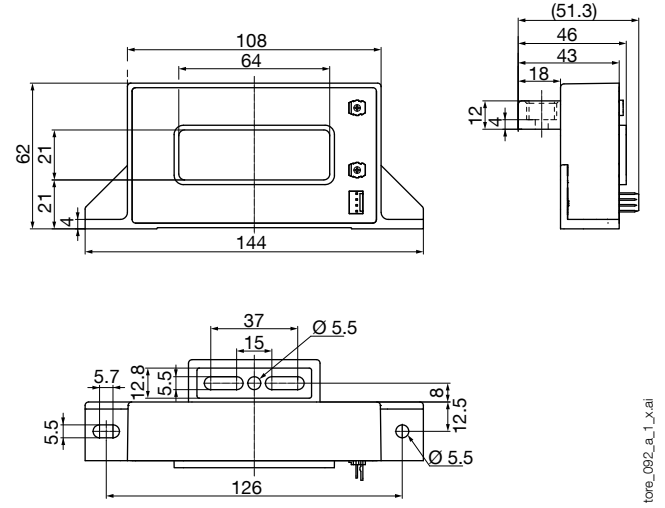
- Easy to install.
- Ideal for installations with limited space available.
- Only 4 different frame sizes cover a wide measurement range.
- Colour-coded cables for ease of identification, and to prevent wiring errors.

Dimensions (mm)

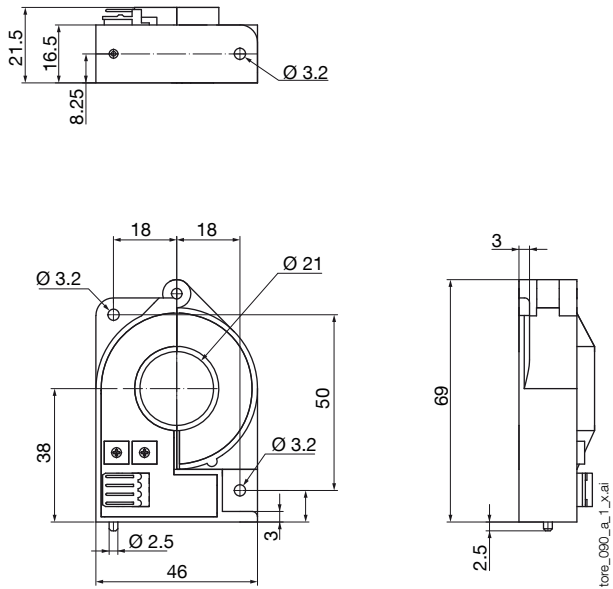
Solid-core sensors 50 ... 600 A (frame size 1)



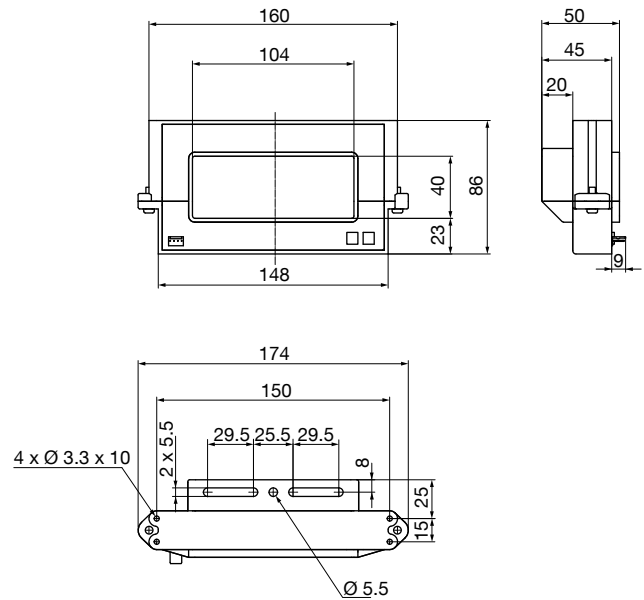
Solid-core sensors 850 ... 5000 A (frame size 2)



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



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



DC current sensors

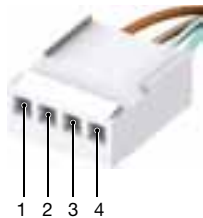
Associated with DIRIS Digiware DC

Connections

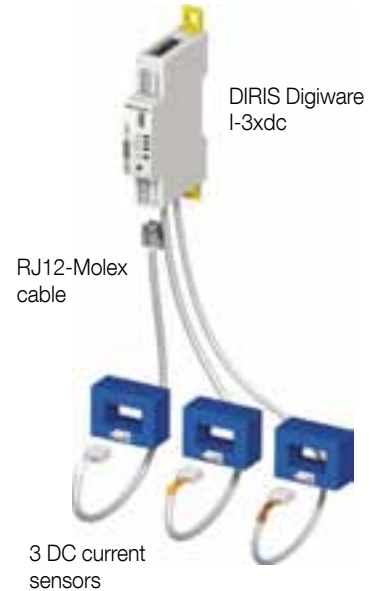
DC current is measured by external sensors connected to the DIRIS Digiware I-3xdc modules via RJ12-Molex cables. Connection of the current sensors is quick and error-free. A wide range of current sensors is available from Socomec to suit all installations and applications including split-core current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



DIRIS Digiware IO

Digital and analog input/output modules

Multi-circuit metering & measurement

new



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

DIRIS Digiware IO-20
2 analog inputs

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 protection devices and withdrawable drawers (ON/OFF, trip counter) or to collect pulses from multi-fluid meters. The 2 digital outputs allow the remote control of switching devices by sending a binary output signal. Alarms can be configured and assigned to the digital outputs.

- Thanks to their 2 analog inputs, DIRIS Digiware IO-20 modules can collect the data from analog 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.

Connected

All the reported information is accessible from the displays, from Webview or any other centralized 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
- > Connected
- > Compact

Compliance with standards

- > IEC 61557-12
- > IEC 61010



- > ISO 14025



- > UL

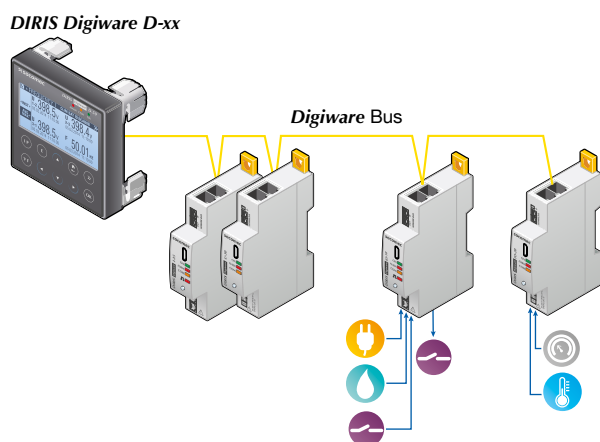


Create your project

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



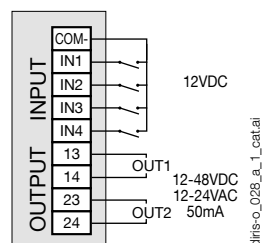
Application diagram



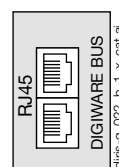
Connections

DIRIS Digiware IO-10

Digital inputs/outputs

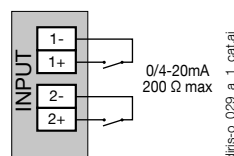


Digiware Bus

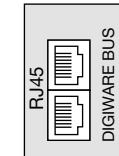


DIRIS Digiware IO-20

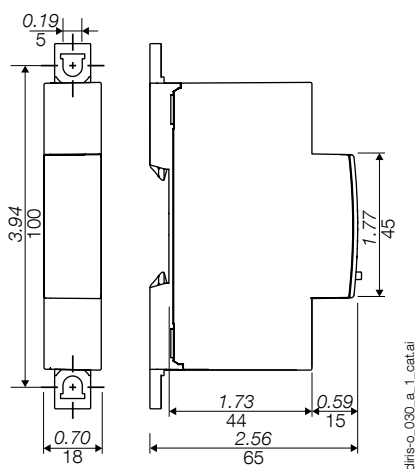
Analog inputs



Digiware Bus



Dimensions (in/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	- Logical status - Status of the circuit breaker, of the drawer (ON/OFF, trip counter) - Pulse counter
Number of outputs	2
Type	Insulated output, 48 VDC max., 50 mA and 24 VAC max.
Output function	- Remote control of status - 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 mm ² cable

Analog 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 analog 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 mm ² cable

References

Digiware connection cables		Reference
RJ45 cables for Digiware Bus	Length 0.10 m	4829 0181
	Length 0.20 m	4829 0188
	Length 0.50 m	4829 0182
	Length 1 m	4829 0183
	Length 2 m	4829 0184
	Length 5 m	4829 0186
	Length 10 m	4829 0187
	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 analog input module	4829 0145

DIRIS A-40

Multi-function meters



DIRIS A-40

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 and Rogowski coil TF) allow integration of the DIRIS A-40 into new and existing electrical installations.

See page 40.

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.

The solution for

- > Industry
- > Building
- > Infrastructure



Strong points

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

Integrated technologies



For more information, see page 4.

Conformity to standards

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



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, Vnom, Udir, Uinv, Unba, Vnba, Vnb, Unb
- Current unbalance
 - Idir, linv, 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 rank 63
 - Currents: I1h, I2h, I3h, INh
 - Phase-to-neutral voltage: V1h, V2h, V3h
 - Phase-to-phase voltage: U12h, U23h, U31h
- Quality events
 - Voltage sags, cut-offs and swells EN50160
 - Kfactor & Crest factor
- Events according to EN 50160
 - Voltage dips, outages, voltage surges

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

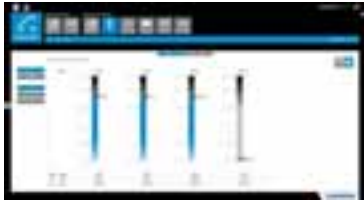
Inputs

- 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 multifunction metering
- 2 logical outputs
 - Function: Command, energy pulse output, load shedding, alarm

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.

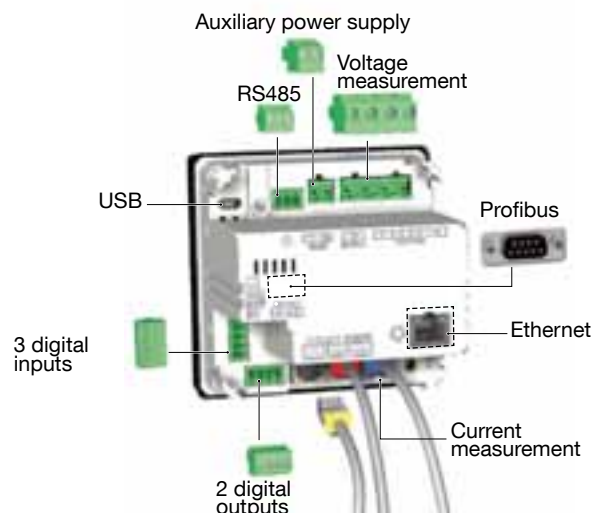


Alarming

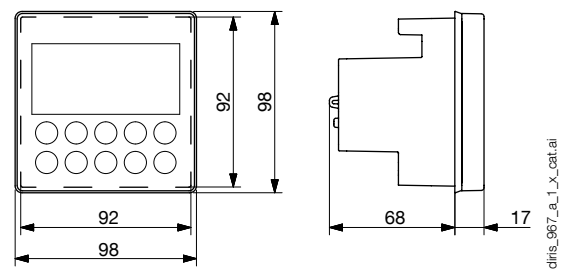
- Display of alarms.
- History of alarms.



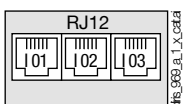
Terminals



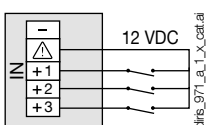
Dimensions (mm)



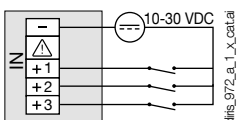
Current measurement



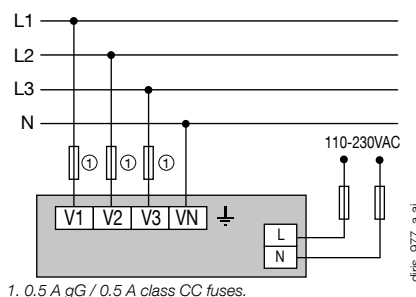
3 inputs supplied by the product



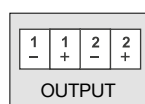
3 inputs with external power supply



Voltage connections inc auxiliary power supply



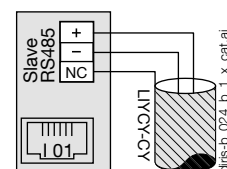
2 outputs



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) 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 page 40.

TE solid current sensors



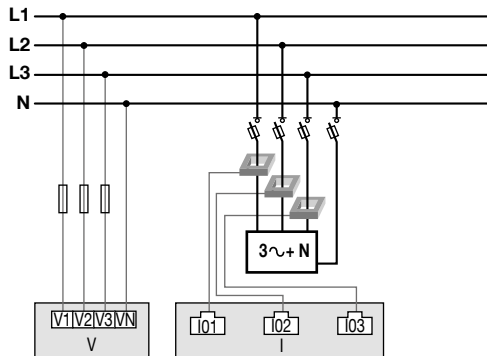
TE / TR / TF current sensors



Network and connection examples

Three phase + Neutral

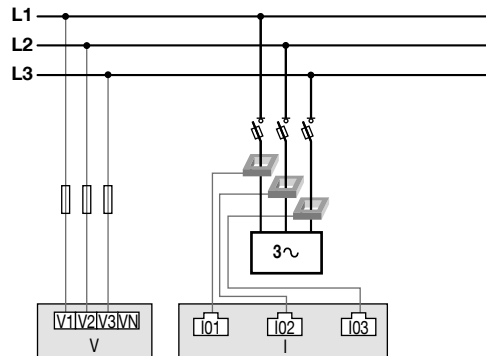
3P+N - 3 CT (1 three-phase load + calculated Neutral)



diris_973_a.ai

Three-phase

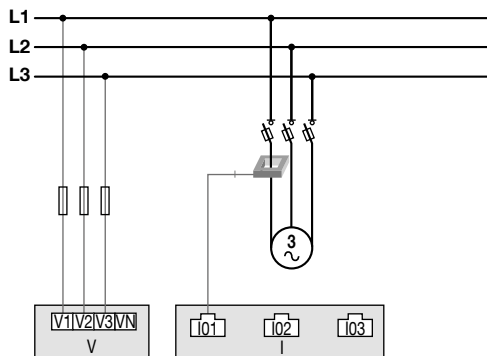
3P - 3CT (1 three-phase load)



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Three-phase

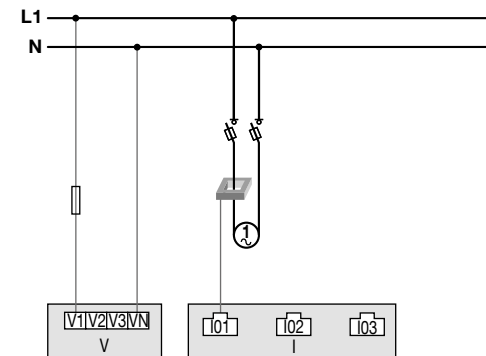
3P - 1CT (1 balanced three-phase load)



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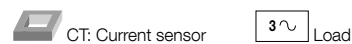
Single-phase

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



diris_976_a.ai

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



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 mm ² solid cable or 0.25 - 1.5 mm ² stranded cable with end piece

Measurement characteristics

Power and energy measurement	
Accuracy	0.2 DIRIS A-40 class only
Active energy and active power	Class 0.5 with TE, TF or iTR sensors Class 1 with TR sensors
Accuracy of reactive energy	Class 2 with TE, TR 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 mm ² solid cable or 0.25 - 1.5 mm ² stranded cable with end piece

Current measurement	
Number of current inputs	3
Associated current sensors	Solid TE, split-core TR, 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 mm ² 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 mm ² 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 and webserver - RS485 Modbus - 3 inputs / 2 outputs	4825 0501
DIRIS A-40	Profibus DPV1 - RS485 Modbus - 3 inputs / 2 outputs	4825 0502



DIRIS A-30/A-41

Multifunction performance metering & monitoring device - PMD
Energy monitoring

Single-circuit metering,
measurement &
analysis



DIRIS A-30

diris_984_a_frontEps

The solution for

- Industry
- Building
- Infrastructures



Strong points

- User-friendly operation
- Detects wiring errors.
- Customisable
- Web server function
- 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 performance metering & 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.

Advantages

User-friendly operation

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

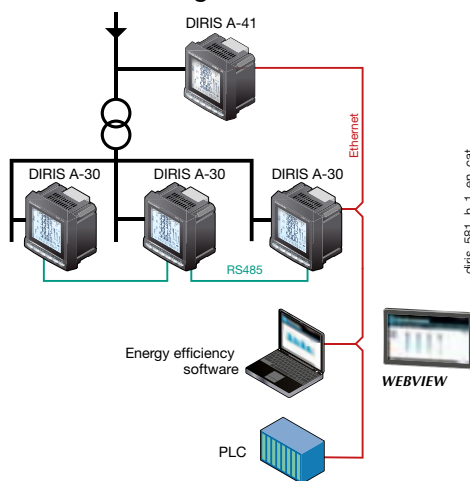
Detects wiring errors.

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.

Functional diagram



diris_591_h_1_en_cat

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, Ussystem
 - 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
- Timetable:

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 readings up to 63rd level

- 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 & Profibus-DP)
- Ethernet (Modbus/TCP or Modbus RTU over TCP and Web server)
- Ethernet with RS485 Modbus RTU gateway over TCP

Inputs/Outputs⁽¹⁾

- Pulse counting
- Checking / control of equipment items
- Alarm report
- Pulse report

Analogue output

- Analogue 0/4- 20 mA

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

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

Integratable modules

DIRIS® A-30



diris_773_a

DIRIS® A-41*



diris_774_a

* With current measurement module for Neutral as standard.



Pulse outputs

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



MODBUS® communication

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



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, \pm Σ P, \pm Σ Q, Σ S, Σ PFL/C, I sys, Vsys, U_{sys}, P_{pred}, Q_{pred}, S_{pred}, 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, \pm Σ P, \pm Σ Q, Σ S, Σ PFL/C, THD 3I, THD In, THD 3V, THD 3U, P_{pred}, Q_{pred}, S_{pred}, 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, Σ P \pm , Σ Q \pm , Σ S, 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.
- Integrated web server function⁽¹⁾.



Ethernet communication with RS485 MODBUS gateway

- Ethernet link with MODBUS/TCP or MODBUS RTU over TCP.
- Connect 1 to 247 RS485 MODBUS slaves.
- Integrated webserver function⁽¹⁾.

DIRIS A-30/A-41

Multifunction performance metering & monitoring device - PMD

Energy monitoring

Accessories

Current transformer
(see general catalogue)

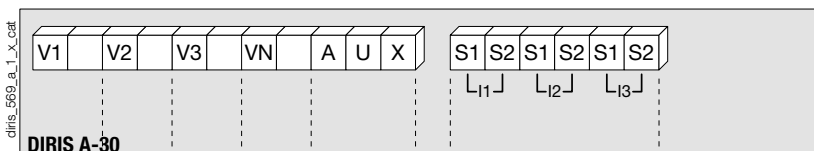


IP65 protection.



Terminals

DIRIS A-30

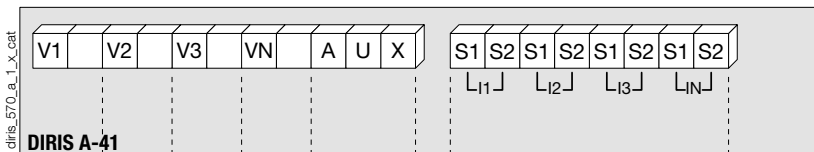


S1 - S2: current inputs

AUX: auxiliary power supplies U_s

V1 - V2 - V3 - VN: voltage inputs

DIRIS A-41

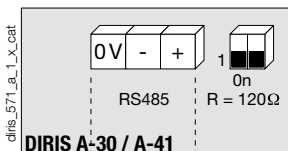


S1 - S2: current inputs

AUX: auxiliary power supplies U_s

V1 - V2 - V3 - VN: voltage inputs

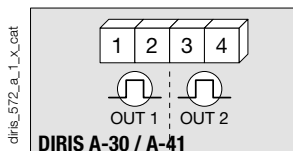
Communication module



DIRIS A-30 / A-41

RS485 link.
 $R = 120 \Omega$: internal resistance for the RS485 link.

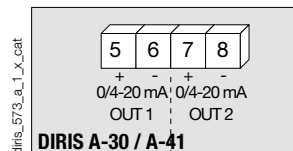
Pulse output module



DIRIS A-30 / A-41

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

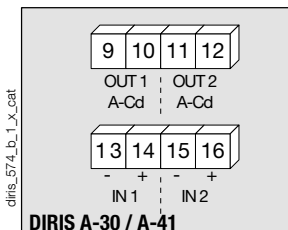
Analogue output module



DIRIS A-30 / A-41

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

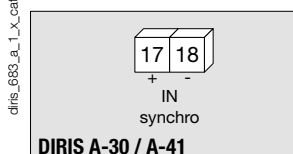
2 input / 2 output module



DIRIS A-30 / A-41

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

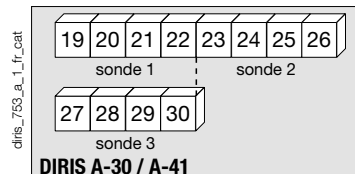
Memory module



DIRIS A-30 / A-41

17 - 18: synchronisation input.

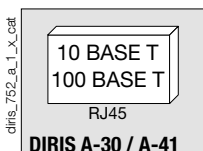
Temperature module



DIRIS A-30 / A-41

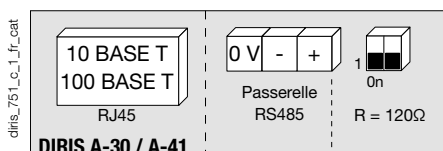
Probe 1 Probe 2 Probe 3
19: red 23: red 27: red
20: red 24: red 28: red
21: white 25: white 29: white
22: white 26: white 30: white

Ethernet module



DIRIS A-30 / A-41

Ethernet module + RS485 MODBUS gateway



DIRIS A-30 / A-41

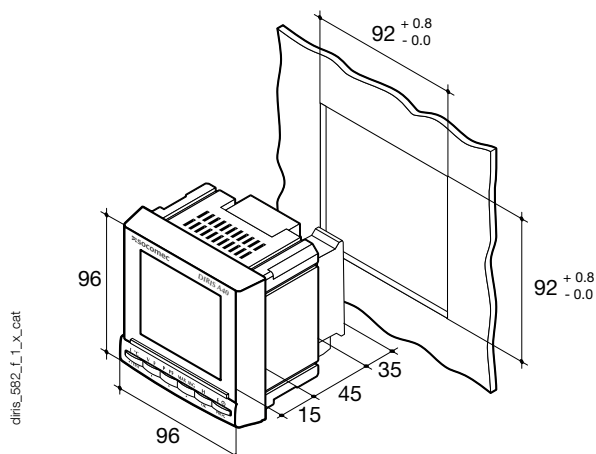
Electrical characteristics

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 500 VAC
Direct measurement between phase and neutral	28 to 289 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



Type	Integratable
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

DIRIS A-30/A-41

Multifunction performance metering & monitoring device - PMD

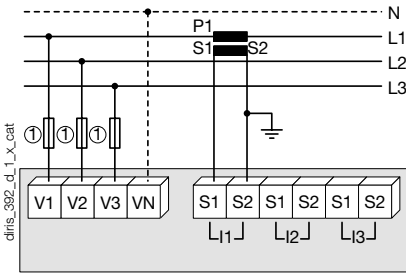
Energy monitoring

Connections

Balanced low-voltage network for DIRIS A-30

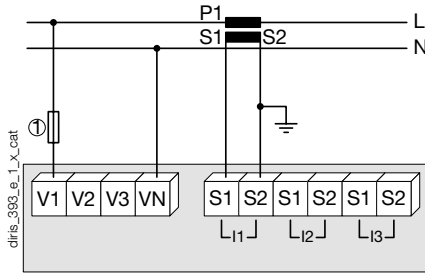
Recommendation: When disconnecting the DIRIS, the secondary of each current transformer must be short-circuited. This operation can be carried out automatically by a SOCOMEC PTI, which can be found in the SOCOMEC catalogue: please consult us. In TNC mode, it is advisable to connect the DIRIS A-30/A-41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

3/4 wires with 1 CTs



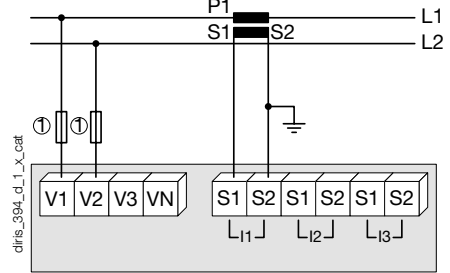
The use of 1 TC reduces by 0.5% the accuracy of the phases, the current for which is worked out by vector calculation.
1. 0.5 A gG / 0.5 A class CC fuses.

Single-phase



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

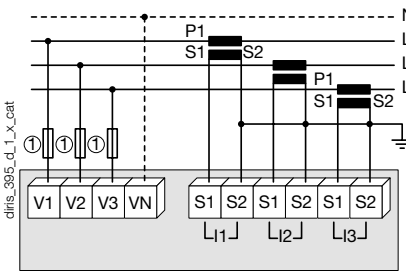
Two-phase



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

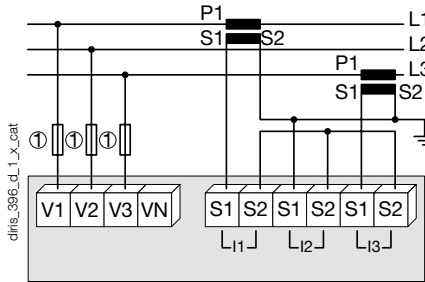
Balanced low-voltage network for DIRIS A-30

3/4 wires with 3 CTs



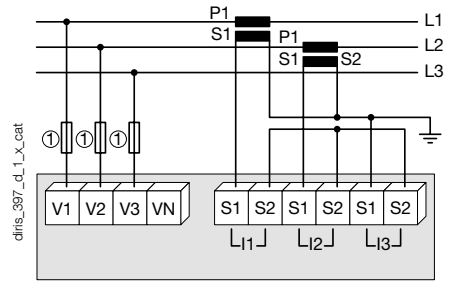
1. 0.5 A gG / 0.5 A class CC fuses.

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.

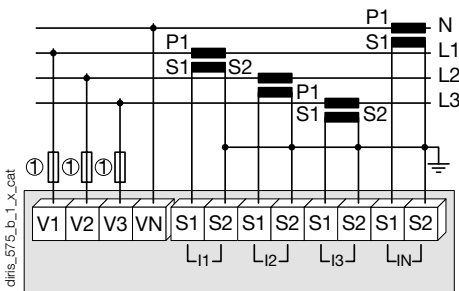
3 wires with 2 CTs



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

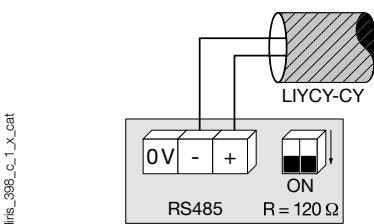
4 wires with 4 CTs



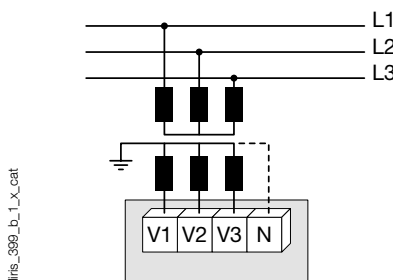
1. 0.5 A gG / 0.5 A class CC fuses.

Additional information

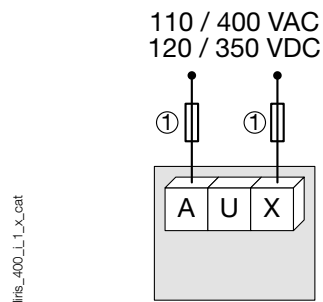
Communication via RS485 link



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

Options	Part number		Reference
Integratable modules⁽¹⁾			
Pulse outputs	4825 0090		4825 0090
RS485 MODBUS® communication	4825 0092		4825 0092
Analogue outputs	4825 0093		4825 0093
2 inputs - 2 outputs	4825 0094		4825 0094
Storage capability	4825 0097		4825 0097
Ethernet communication (integrated web server function) ⁽²⁾	4825 0203		4825 0203
Ethernet communication + RS485 gateway (integrated web server function) ⁽²⁾	4825 0204		4825 0204
Temperature inputs.	4825 0206		4825 0206

(1) Ease of integration of additional functions (maximum 4 placements on A-30 and 3 on A-41).

(2) Dimensions: 2 placements.

Accessories	To be ordered in multiples of	Part number	To be ordered in multiples of	Part number
IP65 protection.	1	4825 0089	1	4825 0089
Integration kit for 144 x 96 mm cutout	1	4825 0088	1	4825 0088
Fuse circuit breakers to protect voltage inputs (type RM) 3 pole	4	5601 0018	4	5601 0018
Fuse circuit breakers to protect the auxiliary power supply (type RM) 1 pole + neutral	6	5601 0017	6	5601 0017
gG 10x38 0.5 A fuses	10	6012 0000	10	6012 0000
Range of current transformers	1	See page 40	1	See page 40
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 general catalogue

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 performance metering & monitoring device - PMD
Multi-measurement

Single-circuit metering,
measurement &
analysis



DIRIS A-20

diris_061_a_front.eps

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 general catalogue.

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.

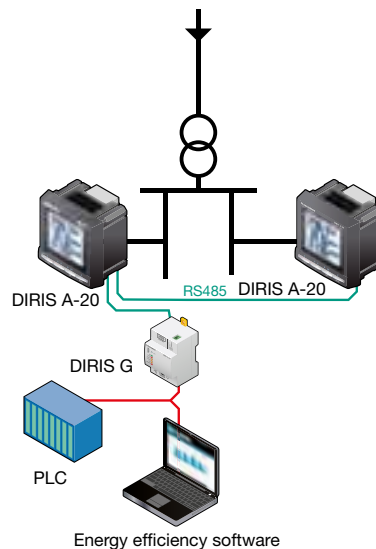
Detects wiring errors

The DIRIS A-20 is equipped with an error correction function for TC 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_L1_en_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
- 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
- Timetable: ⌚

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

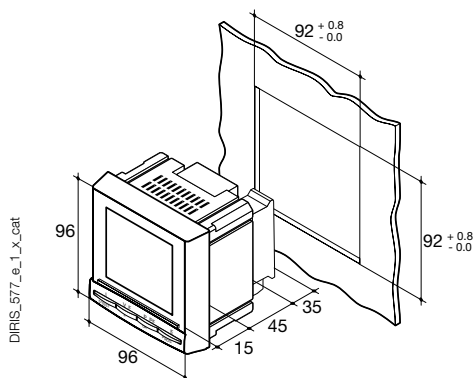
(1) Available as an option (see the following pages).

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 40)



IP65 protection



DIRIS A-20

Multifunction performance metering & monitoring device - PMD

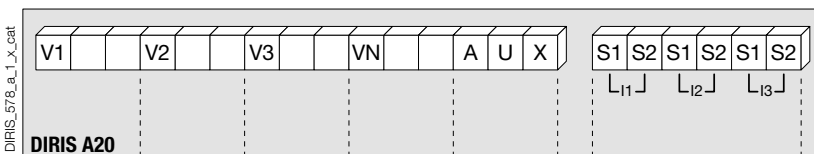
Multi-measurement

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%

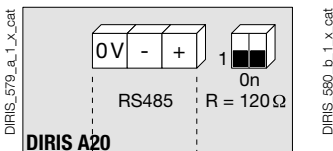
Terminals



S1 - S2: current inputs.

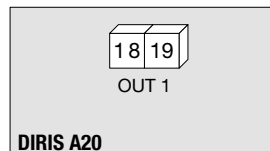
AUX: auxiliary power supply U_s.
V1, V2, V3 & VN: voltage inputs.

Module communication



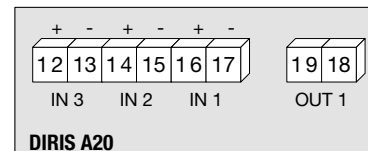
RS485 link.
R = 120 Ω : internal resistance for the RS485 link.

Output or alarm module



18 - 19: output n°1

Module with 3 inputs, 1 output



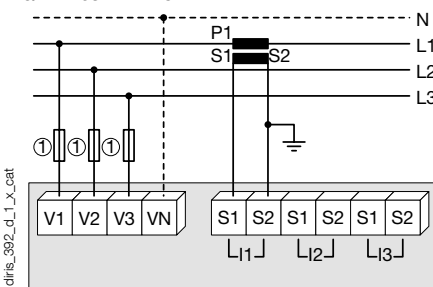
Connection

Low voltage balanced network

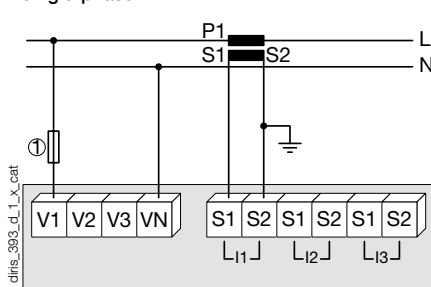
Recommendation

- 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.

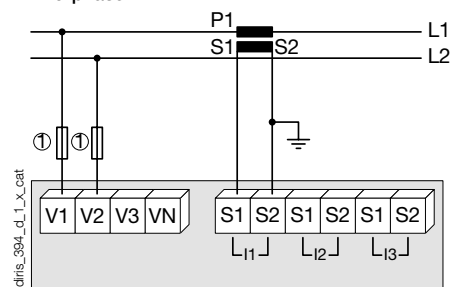
3/4 wires with 1 CT



Single-phase



Two-phase



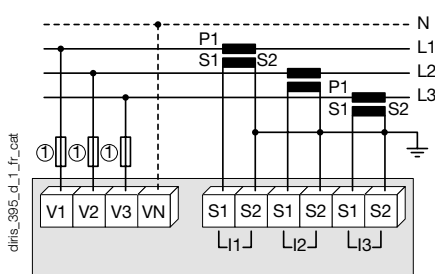
The 1CT solution reduces by 0.5% the accuracy of the phase for which the current is deduced by a vector calculation.
1. 0.5 A gG / 0.5 A class CC fuses.

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

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

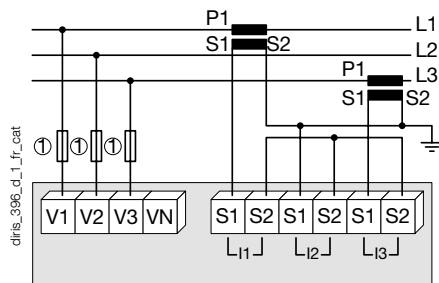
Low voltage unbalanced network

3/4 wires with 3 CTs



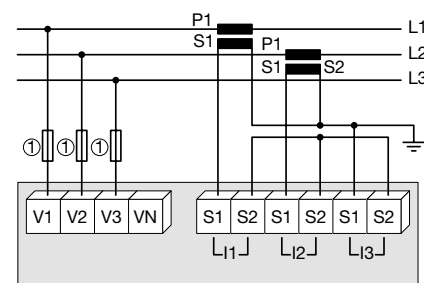
1. 0.5 A gG / 0.5 A class CC fuses.

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.

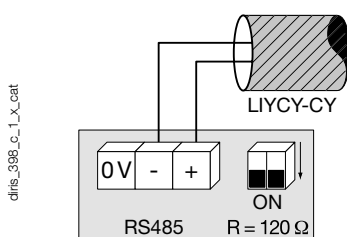
3 wires with 2 CTs



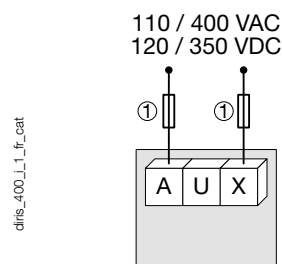
The 2CT solution reduces by 0.5% the accuracy of the phase for which the current is deduced by a vector calculation.
1. 0.5 A gG / 0.5 A class CC fuses.

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		DIRIS A-20
Auxiliary power supply U _a		Part number
110 ... 400 VAC / 120 ... 350 VDC		4825 0402
Options		Part number
Plug-in optional modules		
On/Off output.		4825 0080
RS485 MODBUS® communication		4825 0082
3 inputs, 1 output		4825 0083
Accessories		
Designation of accessories		To be ordered in multiples of
Protection IP65		1
Plug-in kit for cutout 144 x 96 mm		1
Fuse circuit breakers to protect voltage inputs (type RM) 3 pole		4
Fuse circuit breakers to protect the auxiliary power supply (type RM) 1 pole + neutral		6
gG 10x38 0.5 A fuses		10
Ferrite for use with communication modules		1
Current transformer range		1
Software associated with DIRIS		See page 40
		See general catalogue

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.

Advantages

Easy to use

Five direct access pushbuttons enable all measurements to be clearly viewed on its backlit LCD display.

Integrated temperature sensor

It allows variations in temperature to be detected.

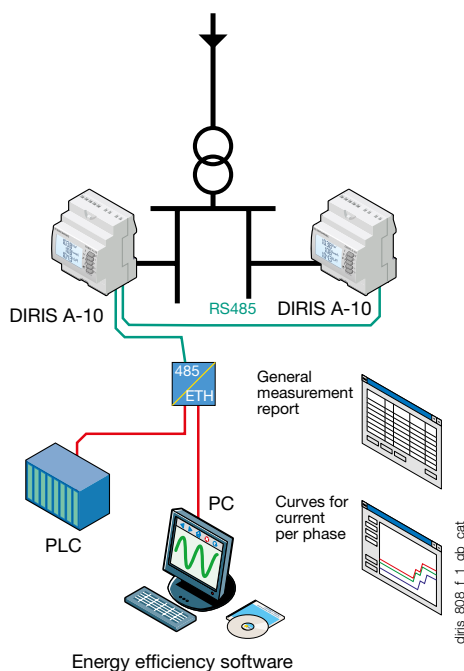
Detects wiring errors

An integrated test function can be utilised to detect incorrect wiring and to automatically correct CT installation errors.

Compliant with IEC 61557-12

IEC 61557-12 is a high-level standard for all PMDs (Performance Monitoring Devices) that are designed to measure and monitor electrical parameters in distribution networks. Compliance with IEC 61557-12 ensures a high level of equipment performance, in terms of metrology, and the mechanical and environmental aspects (EMC, temperature, etc.).

Principle diagram



Functions

Multi-measurement

- Currents
 - instantaneous: I1, I2, I3, In
 - maximum average: I1, I2, I3, In
- Voltages & frequency
 - instantaneous: V1, V2, V3, U12, U23, U31, F
- Power
 - instantaneous: 3P, ΣP, 3Q, ΣQ, 3S, ΣS
 - maximum average: ΣP, ΣQ, ΣS
- Power factors
 - instantaneous: 3PF, ΣPF

Metering

- Active energy: +/- kWh
- Reactive energy: +/- kVarh
- Hours: ⌚
- Harmonic analysis
 - Total harmonic distortion (level 51)
 - Currents: thd I1, thd I2, thd I3
 - Phase-to-neutral voltage: thd V1, thd V2, thd V3
 - Phase-to-phase voltage: thd U12, thd U23, thd U31

Dual tariff function

Selection of one out of 2 billing tariffs

Events

Alarms on all electrical values

Communications⁽¹⁾

RS485 with MODBUS protocol

Input

- Tariff selection
- Remote device status

Output

- Remote command of device
- Alarm report
- Pulse report

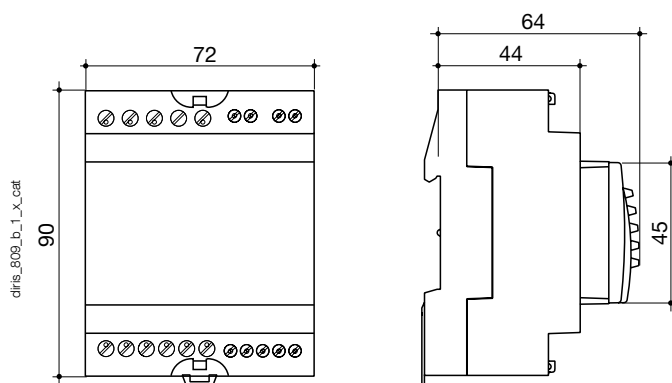
⁽¹⁾ Available on specific version (see the following pages).

Front panel



1. Backlit LCD display.
2. Direct access key for currents (instant and maximum), current THD and test function.
3. Direct access key for voltages, frequency and voltage THD.
4. Direct access key for active, reactive and apparent power (instantaneous and max. values) and power factor.
5. Direct access key for energies.
6. Pushbutton for hour meter, temperature and programming menu access.
7. Metrological LED.

Case



Type	modular
Number of modules	4
Dimensions W x H x D	72 x 90 x 64 mm
Case degree of protection	IP 30
Front degree of protection	IP 52
Display type	backlit LCD display
Voltage and current connection cross-section	4 mm ²
Connection cross-section for AUX supply, input, output and comms.	2.5 mm ²
Weight	205 g (4825 0010) - 215 g (4825 0011)

Electrical characteristics

Current measurement (TRMS)	
Via CT primary	9 999 A
Via CT secondary	5 A
Measurement range	0 ... 11 kA
Input consumption	0.6 VA
Measurement updating period	1 s
Accuracy	0.2 %
Permanent overload	6 A
Intermittent overload	10 I _n for 1 s
Voltage measurements (TRMS)	
Direct measurement between phases	50 ... 500 VAC
Direct measurement between phase and neutral	28 ... 289 VAC
Input consumption	≤ 0.1 VA
Measurement updating period	1 s
Accuracy	0.2 %
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 ⁹
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 %

DIRIS A-10

Multifunction meters - PMD
modular multifunction meter

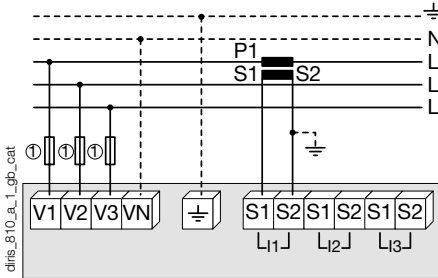
Connection

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 PT1, 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.

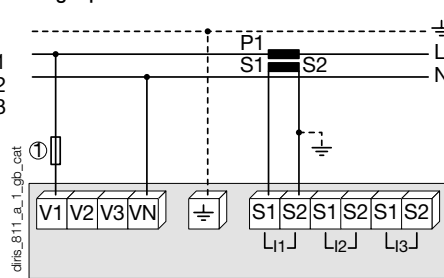
Low voltage balanced network

3/4 wires with 1 CT



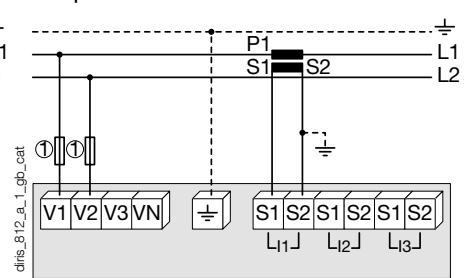
1. Fuses 0.5 A gG / 0.5 A class CC.

Single-phase



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

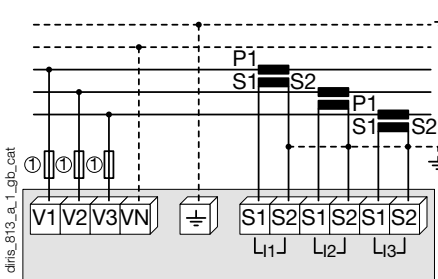
Two-phase



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

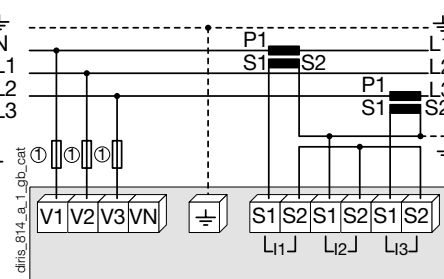
Low voltage unbalanced network

3/4 wires with 3 CTs



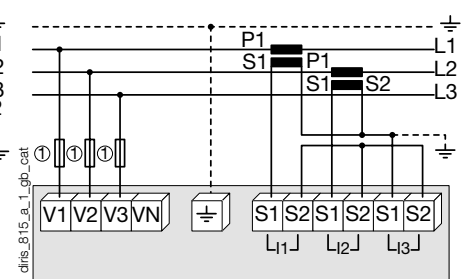
1. Fuses 0.5 A gG / 0.5 A class CC.

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.

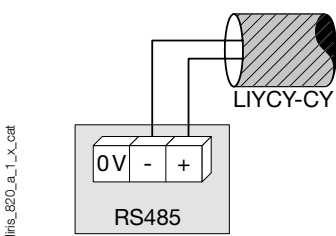
3 wires with 2 CTs



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.

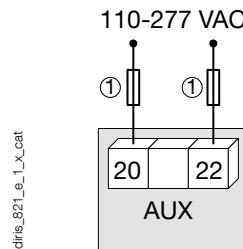
Additional information

Communication via RS485 link



diris_b20_a_1_x_cat

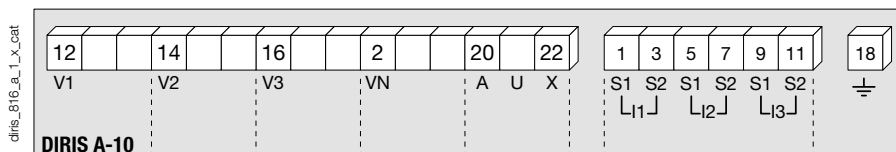
AC auxiliary power supply



diris_b21_e_1_x_cat

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

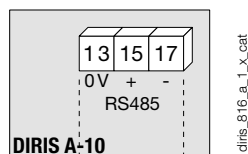
Terminals



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

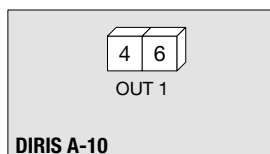
S1 - S2: current inputs.

Communication terminals



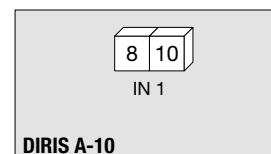
RS485 link.

Pulse or alarm output terminals



4 - 6: output n°1

Input terminals



8 - 10: input n°1

References

Basic device	DIRIS A-10	
Description	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 40
Management software for DIRIS	See general catalogue	

Expert Services

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





WEBVIEW

Monitoring software for energy measurement and analysis

Software suite



soft_027_a_1_fr_cat

The solution for

- > Industry
- > Building
- > Infrastructure
- > Local authority



Function

The **WEBVIEW** web server embedded in DIRIS A-40 meters and in communication gateways (DIRIS G, DIRIS Digiware D-70, DATALOG H80/H81) delivers real-time monitoring of all measurements from up to 200 devices and displays the breakdown of energy consumption.

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.

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.

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, Represent	32
WEBVIEW-L	DATALOG H80/H81	Monitor, Alarm, View, Represent	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.

Represent

- Photoview: customised synoptic 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	Hosting	Part number
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



soft_043_a_1_x_cat

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).



References

Type		Reference
Pack N 'VIEW 25 datapoints	Commissioning package for 25 datapoints	Contact us
	Annual subscription for 25 datapoints	Contact us
Pack N 'VIEW 50 datapoints	Commissioning package for 50 datapoints	Contact us
	Annual subscription for 50 datapoints	Contact us
Pack N 'VIEW 100 datapoints	Commissioning package for 100 datapoints	Contact us
	Annual subscription for 100 datapoints	Contact us
Pack N 'VIEW 250 datapoints	Commissioning package for 250 datapoints	Contact us
	Annual subscription for 250 datapoints	Contact us

References list

References	Pages	References	Pages	References	Pages	References	Pages
4825 0080	75	4829 0103	29	4829 0184	29, 31, 35, 39, 51, 55, 61	4829 0594	43, 45, 47
4825 0082	75	4829 0105	31	4829 0185	29, 31, 35, 39, 51, 55, 61	4829 0595	43, 45, 47
4825 0083	75	4829 0106	31	4829 0186	29, 31, 35, 39, 51, 55, 61	4829 0596	43, 45, 47
4825 0088	71, 75	4829 011x	39	4829 0187	29, 31, 35, 39, 51, 55, 61	4829 0597	43, 45, 47
4825 0089	71, 75	4829 0120	29	4829 0188	29, 31, 35, 39, 51, 55, 61	4829 0598	43
4825 009x	71	4829 0128	39	4829 0189	35, 51, 55	4829 0599	43
4825 02xx	71	4829 0129	39	4829 0195	35	4829 0600	43, 47
4825 0400	79	4829 013x	39	4829 0196	35	4829 0601	43, 45, 47
4825 0401	79	4829 014x	61	4829 0199	29	4829 0602	43, 45, 47
4825 0402	75	4829 0150	51	4829 0200	29	4829 0603	43, 45, 47
4825 0403	71	4829 0151	51	4829 0201	29	4829 0605	39
4825 0404	71	4829 0153	51	4829 0202	29, 83	4829 065x	45
4825 0405	71	4829 0154	51	4829 03xx	83	4829 07xx	55
4825 0406	71	4829 0155	51	4829 050x	43	485x xxxx	83
4825 0500	65	4829 0156	55	4829 055x	45	4899 0011	71
4825 0501	65, 83	4829 0157	55	4829 057x	47	5601 0017	29, 71, 75, 79
4825 0502	65	4829 016x	35	4829 058x	43, 45, 47	5601 0018	31, 71, 75, 79
4826 0100	21	4829 0180	29, 31, 35, 39, 51, 55, 61	4829 0590	43, 45, 47	6012 0000	29, 31, 71, 75, 79
4829 0050	29, 31, 35, 39, 51, 55, 61	4829 0181	29, 31, 35, 39, 51, 55, 61	4829 0591	43, 45, 47		
4829 0101	29	4829 0182	29, 31, 35, 39, 51, 55, 61	4829 0592	43, 45, 47		
4829 0102	31	4829 0183	29, 31, 35, 39, 51, 55, 61	4829 0593	43, 45, 47		

Model: SOCOMEC
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- Italy
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- China (x2)

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- Slovenia • Spain • Switzerland • Thailand
- Tunisia • Turkey • UK • USA

80 countries

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