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

Energy measurement & management

Multi-circuit metering & measurement

DIRIS Digiware AC

DIRIS Digiware D** et **C
p. 228

DIRIS Digiware M
p. 234

DIRIS Digiware U
p. 240

DIRIS Digiware S
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DIRIS Digiware DC

DIRIS Digiware IO
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Single-circuit metering, measurement & analysis

COUNTIS E
p. 280

MULTIS L50
p. 266

DIRIS A
p. 286

DIRIS B
p. 308

Software suite

Embedded web server
WEBVIEW

p. 338

Configuration software
Easy Config System

p. 340

Current sensors

AC current sensors
TE, TR, iTR, TF
p. 250

Quality analyser

DIRIS Q800
p. 316

Measurement devices

Current transformers
5 to 6000 A
p. 322

Integrated technologies

Groundbreaking technologies for greater simplicity and performance

PreciSense

Products that are setting new standards in measurement accuracy

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

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

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

Discover the video

VirtualMonitor

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

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

Virtual Monitor:
- detects the position and status of the protective device,
- detects if the breaker has tripped,
- dounts the number of operations and trips.

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

Discover the video

AutoCorrect

Software elimination of wiring errors

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

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

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

Discover the video

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

Power metering and monitoring system for AC electrical installations

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

DIRIS-DW_184_A.PSD

Multifunction meters

- DIRIS A-40 and DIRIS B with iTR sensors.

DIRIS_B80.PSD
TORE_078.EPS
TORE_080.EPS
TORE_074.PSD

Selection guide

Power monitoring system AC

DIRIS Digiware AC

Multi-circuit power monitoring

Build your own AC system

System interface, displays and gateways (24 VDC)

DIRIS Digiware D
display

or

DIRIS Digiware M
gateway

or

DIRIS Digiware C
RS485 interface

\+

Voltage acquisition module

DIRIS Digiware U

\+

Current acquisition module with integrated sensors

DIRIS Digiware S

\+

Current acquisition modules

DIRIS Digiware I-3x
3 inputs

DIRIS Digiware I-4x
4 inputs

DIRIS Digiware I-6x
6 inputs

\+

Current sensors

TE
Solid

TR/iTR
Split-core

TF
Flexible

\+

Digital and analogue input/output modules

DIRIS Digiware IO

Find the best DIRIS Digiware configuration!

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

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

Control and power supply interface

Application	Centralisation and display of data				Data centralisation	Repeater
						
DIRIS Digiware	***D-50*** *p. 234*	***D-70*** *p. 234*	***M-50*** *p. 228*	***M-70*** *p. 228*	***C-31*** *p. 228*	***C-32*** *p. 228*
Function						
Centralising measurement points	•	•	•	•	•	
High-resolution LCD display (configuration, selection and visualisation display of circuits)	•	•				
Repeater						•
Power supply						
24 VDC	•	•	•	•	•	•
Communication						
RS485 Modbus	Input/Output	Input/Output	Input/Output	Input/Output	Output	
Digiware bus	•	•	•	•	•	•
Ethernet	Modbus TCP BACnet IP SNMP	Modbus TCP BACnet IP SNMP	Modbus TCP BACnet IP SNMP	Modbus TCP BACnet IP SNMP		
Embedded web server	WEB-CONFIG	WEBVIEW-M	WEB-CONFIG	WEBVIEW-M		

Voltage acquisition module

Application	Metering	Monitoring	Analysis
			
DIRIS Digiware U	***U-10*** *p. 240*	***U-20*** *p. 240*	***U-30*** *p. 240*
Multi-measurement			
U12, U23, U31, V1, V2, V3, f	•	•	•
U system, V system			•
Ph/N unbalance			•
Ph/Ph unbalance			•
Quality analysis			
THDv1, THDv2, THDv3, THDu12, THDu23, THDu31		•	•
Crest factors V1, V2, V3, U12, U23, U31			•
Individual harmonics U & V (up to 63rd)			•
Voltage dips, interruptions and swells (EN50160)			•
Alarms			
On threshold			•
History			
Average values			•
Format			
Width/number of modules	18 mm / 1	18 mm / 1	18 mm / 1

Selection guide

Power monitoring system AC

DIRIS Digiware AC

Current acquisition modules

Application	Metering		Monitoring	Analysis	Monitoring	Analysis	Metering	
								
DIRIS Digiware I	***I-30*** *p. 246*	***I-31*** *p. 246*	***I-33*** *p. 246*	***I-35*** *p. 246*	***I-43*** *p. 246*	***I-45*** *p. 246*	***I-60*** *p. 246*	***I-61*** *p. 246*
Number of current inputs	3	3	3	3	4	4	6	6
Metering								
± kWh, ± kvarh, kVAh	•	•	•	•	•	•	•	•
Load curves		•		•		•		•
Multi-tariff		•		•		•		•
Multi-measurement								
I1, I2, I3, In, ΣP, ΣQ, ΣS, ΣPF	•	•	•	•	•	•	•	•
P, Q, S, PF per phase			•	•	•	•		
Predictive power				•		•		
Current unbalance (Inba, Idir, Iinv, Ihom, Inb)				•		•		
Phi, cos Phi, tan Phi				•		•		
Quality								
THDi1, THDi2, THDi3, THDin			•	•	•	•		
Individual harmonics I (up to 63rd)				•		•		
Crest factors I1, I2, I3, In				•		•		
Overcurrents				•		•		
Alarms								
On threshold				•		•		
Inputs/outputs					2/2	2/2		
History								
Average values				•		•		
Format								
Width/number of modules	18 mm / 1	18 mm / 1	18 mm / 1	18 mm / 1	27 mm / 1.5	27 mm / 1.5	36 mm / 2	36 mm / 2

Current acquisition module with integrated sensors

Application	Metering	Analysis	Monitoring
			
DIRIS Digiware S	***S-130*** *p. 242*	***S-135*** *p. 242*	***S-Datacenter*** *p. 242*
Number of current inputs	3	3	3
Basic current I_b	10 A	10 A	10 A
Maximum current I_{max}	63 A	63 A	63 A
Load type accepted	1P + N 2P / 2P + N 3P / 3P + N	1P + N 2P / 2P + N 3P / 3P + N	1P + N
Metering			
± kWh, ± kvarh, kVAh	•	•	•
Multi-tariff (max 8)		•	
Load curves		•	•
Multi-measurement			
I1, I2, I3, In, ΣP, ΣQ, ΣS, ΣPF	•	•	•
P, Q, S, PF per phase		•	•
Predictive power		•	
Current unbalance (Inba, Inb, Idir, Iinv, Ihom)		•	
Phi, cos Phi, tan Phi		•	•
Quality			
THDi1, THDi2, THDi3, THDin		•	•
Individual harmonics I (up to 63rd)		•	
Crest factors U, V, I		•	
K factor		•	
Overcurrents		•	
Alarms			
Thresholds and combinations		•	•
Load level			•
Wiring errors		•	•
Protective device		•	•
Trends			
Average values		•	•
Format			
Width	54 mm	54 mm	54 mm

Selection guide

Power monitoring system AC

DIRIS Digiware AC

Current sensors

Suitable for new installations match the pitch of protective devices

	Solid-core current sensors						
							
	TE-18 *p. 250*		***TE-25*** *p. 250*	***TE-35*** *p. 250*	***TE-45*** *p. 250*	***TE-55*** *p. 250*	***TE-90*** *p. 250*
Nominal current I_n (A) 5 … 2000	5 … 20	25 … 63	40 … 160	63 … 250	160 … 630	400 … 1000	600 … 2000
Real range covered (A) 0.1 … 2400	0.1 … 24	0.5 … 75.6	0.8 … 192	1.26 … 300	3.2 … 756	8 … 1200	12 … 2400
Aperture (mm)	Ø 8.4	Ø 8.4	13.5 x 13.5	21 x 21	31 x 31	41 x 41	64 x 64
Dimensions (mm)	28 x 20 x 45	28 x 20 x 45	25 x 32.5 x 65	35 x 32.5 x 71	45 x 32.5 x 86	55 x 32.5 x 100	90 x 126 x 24.6
Connection	RJ12	RJ12	RJ12	RJ12	RJ12	RJ12	RJ12

For currents above 2000 A, the 5A / RJ12 adapter provides compatibility with 1A or 5A secondary CTs.

Suitable for existing installations

	Split-core current sensors			
				
	TR/iTR-10 *p. 254*	***TR/iTR-14*** *p. 254*	***TR/iTR-21*** *p. 254*	***TR/iTR-32*** *p. 254*
Nominal current I_n (A) 25 … 600	25 … 63	40 … 160	63 … 250	160 … 600
Real range covered (A) 0.5 … 720	0.5 ... 90	0.64 ... 120	1.26 ... 200	4 ... 720
Aperture (mm)	Ø 10	Ø 14	Ø 21	Ø 32
Dimensions (mm)	26 x 44 x 28	29 x 67 x 28	37 x 65 x 43	53 x 86 x 47
Connection	RJ12	RJ12	RJ12	RJ12

For currents above 600 A, the 5A / RJ12 adapter provides compatibility with 1A or 5A secondary CTs.

Suitable for existing installations with space constraints or with high currents

			Flexible current sensors				
							
	TF-40 *p. 256*	***TF-55*** *p. 256*	***TF-80*** *p. 256*	***TF-120*** *p. 256*	***TF-200*** *p. 256*	***TF-300*** *p. 256*	***TF-600*** *p. 256*
Nominal current I_n (A) 100 … 6000	140 … 400	150 ... 600	150 … 600	400 ... 2000	600 … 4000	1600 … 6000	1600 … 6000
Real range covered (A) 2 … 7200	2 … 480	3 ... 720	3 … 720	8 ... 2400	12 ... 4800	32 … 7200	32 … 7200
Aperture (mm)	Ø 40	Ø 55	Ø 80	Ø 120	Ø 200	Ø 300	Ø 600
Connection	RJ12	RJ12	RJ12	RJ12	RJ12	RJ12	RJ12

Input/output modules

Application	Metering / monitoring / control	
		
DIRIS Digiware IO	***IO-10*** *p. 262*	***IO-20*** *p. 262*
Number of digital inputs/outputs	4 / 2	
Number of analogue inputs		2
Format		
Width/number of modules	18 mm / 1	18 mm / 1

DIRIS Digiware D and *C*

Display and system interface

Multi-circuit power monitoring

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

DIRIS Digiware C-31
Centralisation

Configuration with Easy Config System.

Function

DIRIS Digiware D-50 and D-70

DIRIS Digiware D remote displays allow:

- local visualisation the data from DIRIS Digiware modules
- a power supply to the DIRIS Digiware modules,
- access to measurements over RS485 or Ethernet.

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 visualised on WEBVIEW-M, the "Power & Energy monitoring" embedded web server.

DIRIS Digiware displays are 24 VDC powered.

DIRIS Digiware C-31

For applications without a local display

DIRIS Digiware C-31 interfaces centralise all measurements and communicate data over RS485 to an external software or PLC.

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

Advantages

DIRIS Digiware D

- High-resolution graphic screen
- Embedded web server (DIRIS Digiware D-70)
- Multi-protocols (Modbus, BACnet, SNMP)
- 24 VDC SELV (Safety Extra Low Voltage) power supply eliminating hazardous voltage on panel doors.
- Ergonomic and easy to use with 10 direct access buttons for:
  - device configuration,
  - circuit selection,
  - display of measurements.

Cyber security

Dedicated cyber security features referring to IEC 62443 to guarantee the confidentiality, integrity and availability of data and reduce the risk of cyber attacks:

- secured HTTPS navigation,
- secured data push (FTPS, SMTPS),
- restriction of certain protocols or services,
- firewall to prevent denial-of-service attacks.

DIRIS Digiware C-31

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

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

The solution for

- Industry
- Building
- Infrastructure
- Data centers

Strong points

- Centralising and displaying measurement data
- A single power supply for the entire system
- A single RS485 or Ethernet output for the entire system
- WEBVIEW-M embedded web server

Compliance with standards

- IEC 61557-12
- IEC 62443
- ISO 14025
- UL

Create your project

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

METER SELECTOR DIGITAL TOOL AVAILABLE

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

Functions

soft_073_b

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

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

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

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

Accessories

DIN rail mounting kit
The accessory allows you to install the DIRIS Digiware D-50/D-70 display on a DIN rail.
This kit is not included with the displays and must be ordered separately.

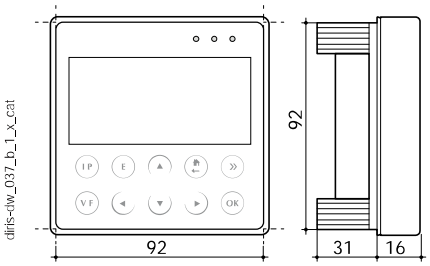
diris-dw_162_a.psd

DIRIS Digiware D and *C*

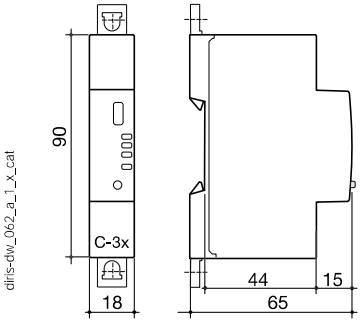
Display and system interface

Dimensions (mm)

DIRIS Digiware D-50/D-70



DIRIS Digiware C-31



Configuration

Equipment consumption

Product	Power delivered (W)	Power consumed (W)
Power supply		
P15 100-240 VAC / 24 VDC	15	
P30 100-240 VAC / 24 VDC	20	
Cables		
50 metre package		1.5
System interfaces		
DIRIS Digiware D-50/D-70		2.5
DIRIS Digiware C-31		0.8
Module voltage		
DIRIS Digiware U-xx		0.72
DIRIS Digiware U-3xdc		0.6
Current modules		
DIRIS Digiware I-3x		0.52
DIRIS Digiware I-4x		1.125
DIRIS Digiware I-6x		0.7
DIRIS Digiware I-3xdc (+ 3 DC current sensors)		2
DIRIS Digiware S-xx		0.35
Input/output modules		
DIRIS Digiware IO-10/IO-20		0.5
Repeater		
DIRIS Digiware C-32		1.5

Calculation rules for the max. number of products on the Digiware Bus

The total power consumed by the equipment connected to the Digiware Bus must not exceed the power from the 24 VDC supply.
The power supply must not exceed 20 W/70°C or 27 W/40°C.

Size with P15 power supply (ref: 4829 0120) delivering 15 W

For example, it is possible to use

- 1 DIRIS Digiware D-50 display (2.5 W)
- 1 DIRIS Digiware voltage module U-xx (0.72 W)
- 50 metres of cable (1.5 W)

and

- 19 DIRIS Digiware current modules I-3x (19 x 0.52 = 9.9 W)
  ⇨ **Total power = 14.845 W**

or

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

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

For example, it is possible to use

- 1 DIRIS Digiware D-50 display (2.5 W)
- 1 DIRIS Digiware voltage module U-xx (0.72 W)
- 50 metres of cable (1.5 W)

and

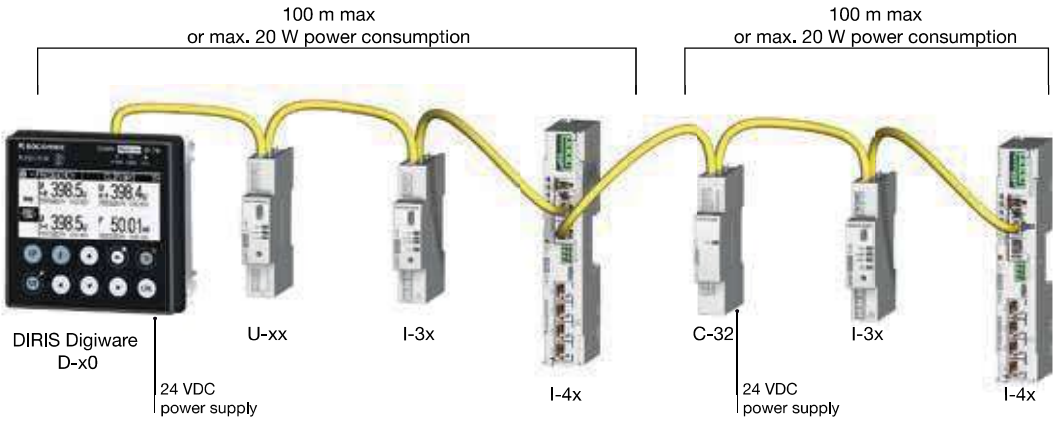
- 29 DIRIS Digiware current modules I-3x (29 x 0.52 = 15.1 W)
  ⇨ **Total power = 19.82 W**

or

- 13 DIRIS Digiware current modules I-4x (13 x 1.125 = 14.625)
  ⇨ **Total power = 19.345 W.**

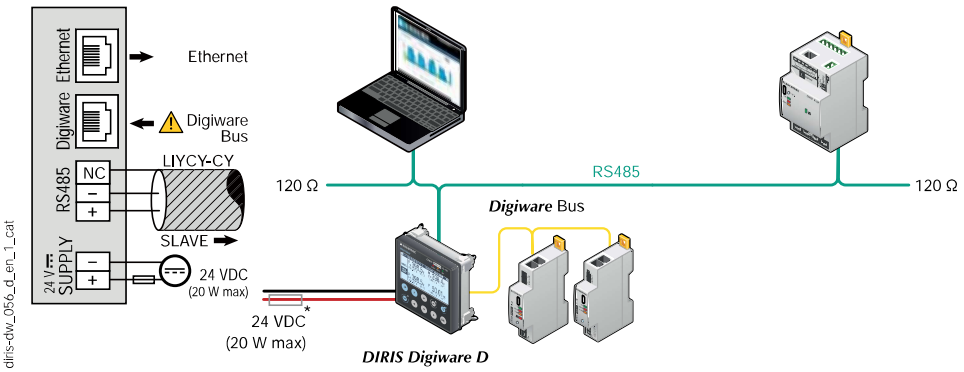
Repeater

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.



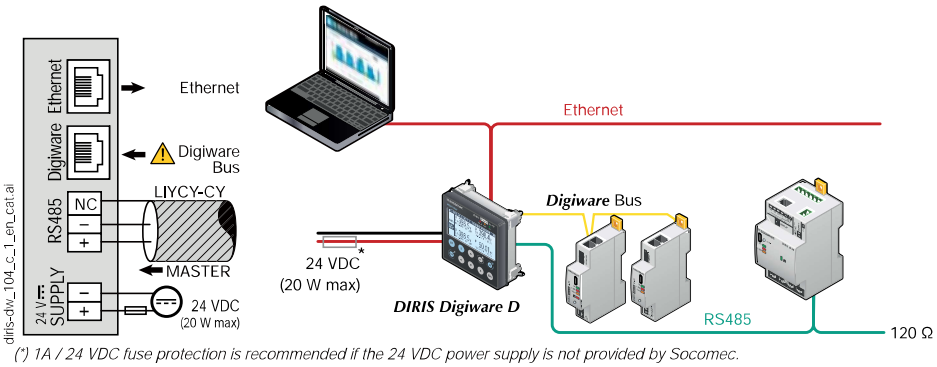
Connections

RS485 slave mode



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

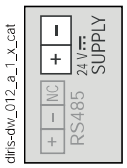
RS485 master mode



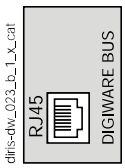
(*) 1A / 24 VDC fuse protection is recommended if the 24 VDC power supply is not provided by Socomec.

DIRIS Digiware C-31

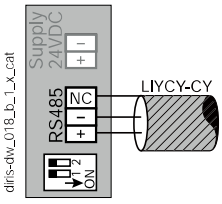
Power supply

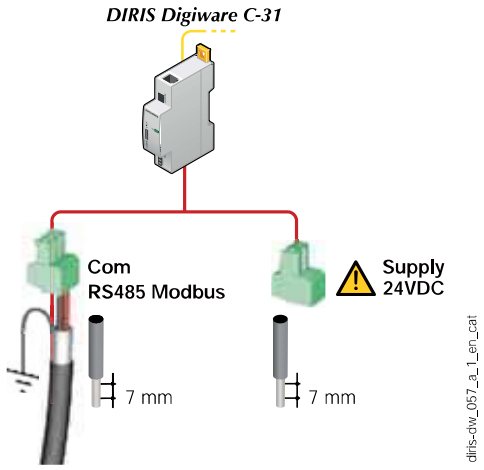


Digiware bus



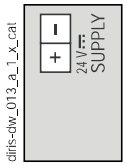
Communication



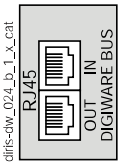


DIRIS Digiware C-32

Power supply



Digiware bus



Technical characteristics

Electrical characteristics

DIRIS Digiware C-31	
Input voltage	24 VDC ± 20 % - 20 W max
Connection	Removable screw terminal block, 2 positions, stranded or solid 0.2-2.5 mm² cable
P15 power supply	Characteristics: 100-240 VAC/ 24 VDC - 0.63 A - 15 W Modular format - Dimensions (H x L): 90 x 36 mm

Communication specifications

Digiware Bus	
Function	Connection between DIRIS Digiware modules
Cable type	Specific Socomec cable with RJ45 connections
RS485	
Connection type	2 to 3 half duplex wires
Protocol	Modbus RTU
Baudrate	9600 to 115 200 bauds
Function	Data configuration and reading
Location	Single-point on DIRIS Digiware C

Mechanical features

Casing type	DIN-rail mounting module and base
Casing protection index	IP20 / IK06
Front panel protection index	IP40 on the nose in modular assembly / IK06

Environmental specifications

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

DIRIS Digiware D-50/D-70 features

Mechanical characteristics	
Type of screen	Capacitive touch-screen technology, 10 keys
Screen resolution	350 x 160 pixels
Front panel protection index	IP65
Communication	
Ethernet RJ45 10/100 Mbs	Gateway function (D-50/D-70): Modbus TCP BACnet IP SNMP v1, v2, v3
RJ45 Digiware	Control and power supply interface function
RS485 2-3 wires	Modbus RTU communication function Configurable as input or output
USB	Upgrade and configuration via type B micro USB connector
Electrical characteristics	
Power supply	24 VDC ±15 %
Power consumption	2.5 VA
Battery lifetime	10 years

Environmental specifications	
Storage temperature	-20 to +70°C
Operating temperature	-10 to +55°C
Humidity	95% at 40°C
Installation category, degree of pollution	CAT III, 2
Ports	
Digiware	Input
RS485	Input/Output
Ethernet	Output

References

DIRIS Digiware		Reference
D-50	Multipoint display, Ethernet & RS485 output + WEB-CONFIG	4829 **0204**
D-70	Multipoint display, Ethernet & RS485 output + WEBVIEW-M	4829 **0203**
C-31	System interface - no display, RS485 output	4829 **0101**
C-32	Repeater	4829 **0103**
Power supply		**Reference**
P15	Power supply 100-240 VAC/ 24 VDC 15 W	4829 **0120**
P30	Power supply 100-240 VAC/ 24 VDC 20 W	4729 **0603**
Digiware connection cables		**Reference**
RJ45 cables for Digiware Bus	Length 0.06 m	4829 **0189**
	Length 0.10 m	4829 **0181**
	Length 0.20 m	4829 **0188**
	Length 0.50 m	4829 **0182**
	Length 1 m	4829 **0183**
	Length 2 m	4829 **0184**
	Length 3 m	4829 **0190**
	Length 5 m	4829 **0186**
	Length 10 m	4829 **0187**
	50 m reel + 100 connectors	4829 **0185**
Termination for Digiware Bus (supplied with interfaces C and D)		4829 **0180**
USB configuration cable		4829 **0050**
Single-point display		**Reference**
DIRIS D-30[1]	Single-point display for DIRIS Digiware I-4x and DIRIS B	4829 **0200**

Accessories	To be ordered in multiples of	Reference
Fuse holder to protect voltage inputs (type RM) 1 pole + neutral	4	5701 **0017**
gG 10x38 0.5 A fuses	10	6012 **0000**
DIN rail mounting kit for D-50 and D-70 displays	1	4829 **0230**
Door mounting kit DIN 144 x 96 mm		4729 **0290**
IP 65 flexible cover for 144 x 96 mm door mounting frame		4729 **0291**

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

Expert Services

Require integration onto your network?
No problem for our "Expert Services" team. They will fully integrate all your SOCOMEC devices,
audit your system, **commission** selected equipment and **train** your staff on its use.
For further information, please contact your nearest SOCOMEC branch.

Multi-circuit metering & measurement

DIRIS Digiware M

Multi-protocol communication gateways

new

diris-dw_165.eps

DIRIS Digiware M-50 - M-70 *gateway*

The solution for

> Building
> Industry
> Infrastructure

Strong points

> Plug & Play
> Advanced connectivity
> Embedded web server
> Cyber security

RJ45 (Digiware bus) cables are available.

Compliance with standards

> IEC 62974-1 (Energy Server standard)

> IEC 62443 (Cyber security)

> UL

Create your project

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

METER SELECTOR DIGITAL TOOL AVAILABLE

Function

The **DIRIS Digiware M-50 and M-70** communication gateways are the access point for the DIRIS Digiware system, centralising the 24 VDC power supply and communication in one single point.

The M-50 and M-70 act as the Ethernet gateway for all the devices connected on the Digiware or RS485 bus, and integrate a web server to configure the network parameters and to remotely display measurement data.

The M-50 and M-70 gateways offer a wide range of functionalities, including:

- memory extension for connected devices,
- automatic export of logged consumption and data to an FTP(S) server,
- notification emails if there is an alarm on one of the connected devices (SMTPS),
- automatic time synchronisation of all connected devices via SNTP.

Advantages

Plug & Play

- Direct Digiware and RS485 to Ethernet gateway.
- Automatic detection of connected devices.
- Easy setup using the embedded web server.
- Safety Extra Low Voltage 24 VDC power supply.

Advanced connectivity

- Ethernet output for communication using multiple protocols: Modbus TCP, BACnet IP and SNMP v1, v2, v3 (encrypted) to suit any metering and power monitoring application.
- Possible to configure as RS485 slave to communicate measurement data to a second PLC, for example.

Embedded web server

WEBVIEW-M embedded in the M-70 and available without licence fees, allows users to visualise and analyse real-time and logged data thanks to graphical tools that are user-friendly and easily accessible to all.

Cyber security

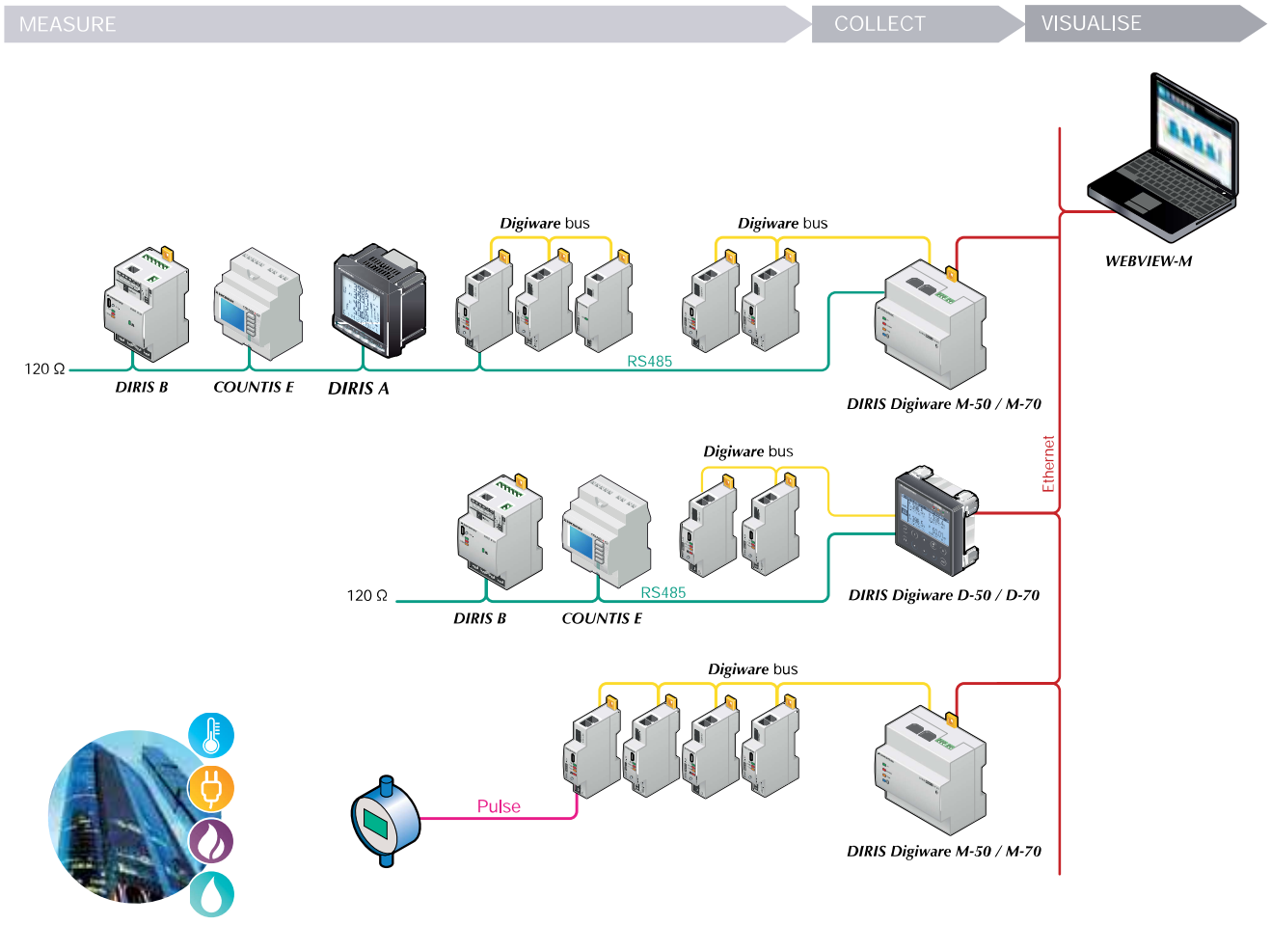
The M-50 and M-70 gateways allow users to secure the transmission of data and reduce the risk of cyber attacks with special IEC 62443-compliant cyber security features:

- secured HTTPS navigation by uploading TLS/SSL certificates,
- secured data push (FTPS, SMTPS),
- possible to block or restrict certain protocols or services to reduce attack potential,
- implementation of a firewall to guard against denial-of-service attacks.

Application	Multi-protocol communication gateway	
		
DIRIS Digiware M	***M-50***	***M-70***
Digiware bus input	•	•
RS485	Input/output (1)	Input/output (1)
Ethernet output	•	•
Compatible protocols	Modbus RTU Modbus TCP BACnet IP SNMP v1, v2, v3, Traps	Modbus RTU Modbus TCP BACnet IP SNMP v1, v2, v3, Traps
FTP(S) (automatic data export)	•	•
SMTP(S) (email notifications in case of alarm)	•	•
SNTP (time synchronisation)	•	•
Web Server	WEB-CONFIG	WEBVIEW-M

(1) The gateways can be configured as Modbus master (RS485 input) or slave (RS485 output).

Architecture



DIRIS Digiware M

Multi-protocol communication gateways

Embedded webserver

WEB-CONFIG (M-50)

The M-50 gateway includes a WEB-CONFIG allowing you to:

- configure the device hierarchy and data access,
- block or restrict access to certain peripherals, protocols or services.

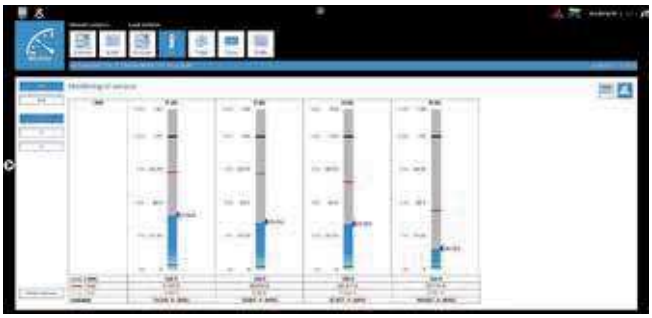
WEBVIEW-M (M-70)

In addition to the WEB-CONFIG, the M-70 gateway allows a remote visualisation of data on the embedded WEBVIEW-M software, available without licence fees.

- Real-time measurements.
- On-going and terminated alarms.
- Consumption curves and load curves per load or usage.
- Photoview: displays electrical parameters on a customised background such as a site map, an electrical diagram or a panel picture to provide an overview of your electrical installation.

Data storage

These gateways extend the memory of connected devices so you can log a year's worth of measurements, load curves and consumption curves.



Configuration

Device consumption

Device	Power supplied (W)
Power supply	
P15 100-240 VAC / 24 VDC	15
P30 100-240 VAC / 24 VDC	20
Device	**Power consumed (W)**
Cables	
50-metre package	1.5
System interfaces	
DIRIS Digiware C-31	0.8
DIRIS Digiware D-50/D-70	2.5
DIRIS Digiware M-50/M-70	2.5
Voltage module	
DIRIS Digiware U-xx	0.72
DIRIS Digiware U-3xdc	0.6
Current modules	
DIRIS Digiware I-3x	0.52
DIRIS Digiware I-4x	1.125
DIRIS Digiware I-6x	0.7
DIRIS Digiware I-3xdc (+ 3 DC current sensors)	2
DIRIS Digiware S-xx	0.35
Input/output modules	
DIRIS Digiware IO-10/IO-20	0.5
Repeater	
DIRIS Digiware C-32	1.5

Calculation rules for the max. number of devices on the Digiware bus

The total power consumed by the devices 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 M-50 gateway (2.5 W)
- 1 DIRIS Digiware voltage module U-xx (0.72 W)
- 50 metres of cable (1.5 W)

and
- 29 DIRIS Digiware current modules S-xx (29x 0.35 = 10.15 W)
  ⇨ **Total power = 14.87 W**

or
- 9 DIRIS Digiware current modules I-4x (9 x 1.125 = 10.125 W)
  ⇨ **Total power = 14.845 W**.

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

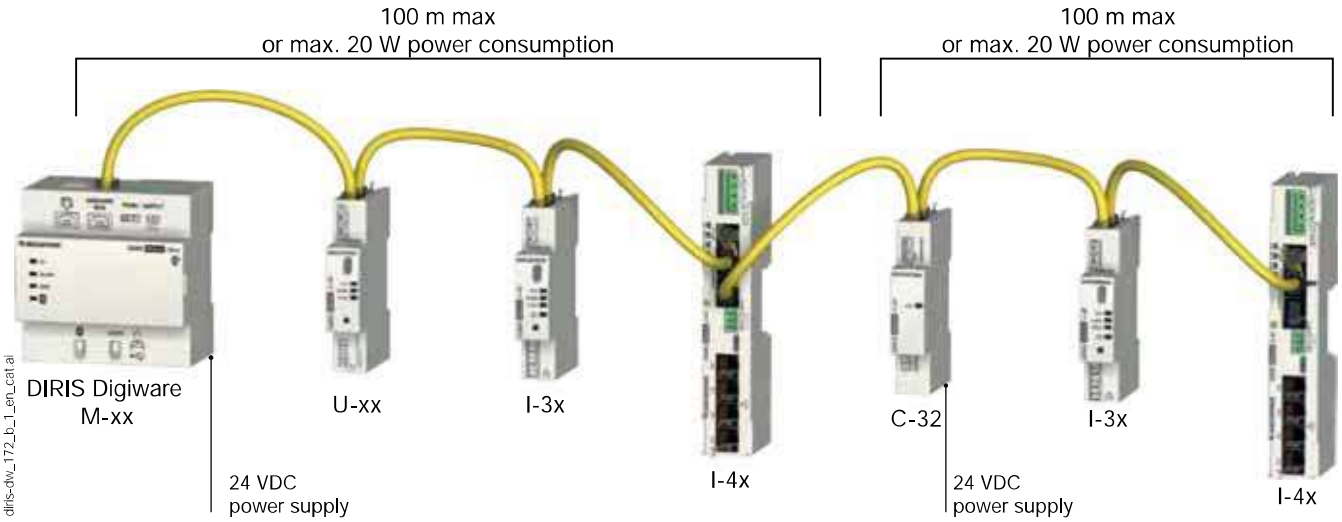
Possible options include:
- 1 DIRIS Digiware M-50 gateway (2.5 W)
- 1 DIRIS Digiware voltage module U-xx (0.72 W)
- 50 metres of cable (1.5 W)

and
- 29 DIRIS Digiware current modules I-3x (30 x 0.52 = 15.08 W)
  ⇨ **Total power = 19.8 W**

or
- 14 DIRIS Digiware current modules I-4x (13 x 1.125 = 15.72)
  ⇨ **Total power = 19.345 W**.

Repeater

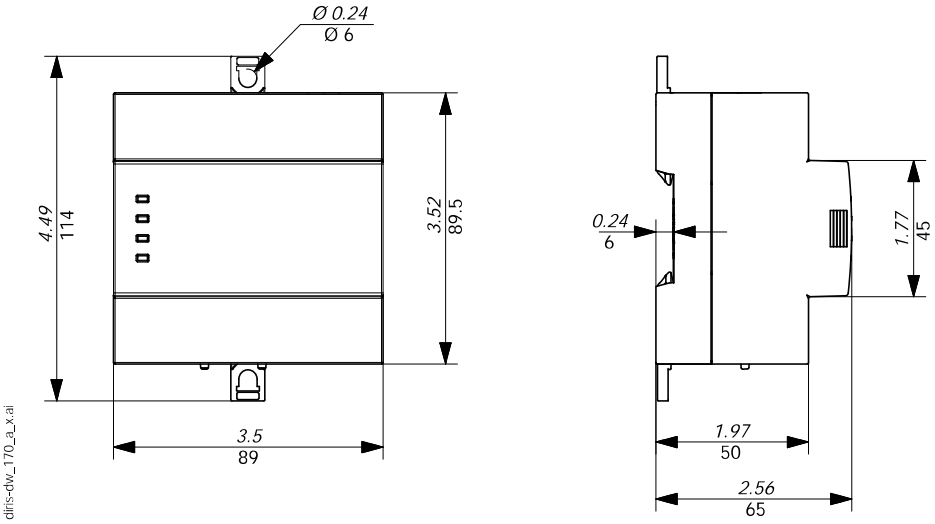
With power consumptions higher than 20 W or distances greater than 100 m, a DIRIS Digiware C-32 repeater is required.
In a DIRIS Digiware system, a maximum of 2 repeaters may be used.



DIRIS Digiware M

Multi-protocol communication gateways

Dimensions (in/mm)



Technical characteristics

Electrical characteristics	
Power supply	24 VDC ± 10 % - 20 W max
Power consumption	2.5 W
Battery life	10 years

Mechanical characteristics	
Casing type	DIN-rail or back plate mounting
Weight	166 g
Protection degree	IP40 on the nose in modular assembly

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

Communication characteristics	
Ethernet RJ45 10/100 Mbs	Gateway function (M-50/M-70): Modbus TCP BACnet IP SNMP v1, v2, v3, Traps
Digiware bus	
Function	2 to 3 half duplex wires
Cable type	Specific Socomec cable with RJ45 connection
RS485	
Connection type	24 VDC +10 % / -20%
Protocol	Modbus RTU
Baudrate	9600 bds (max. 10 devices) 38400 bds - 115200 bds (max. 32 devices)
Function	Communication with PMD and meters or energy management systems (in RS485 slave mode)
USB	
Protocol	Modbus RTU over USB
Function	Configuration of gateway and connected PMDs/meters

References

DIRIS Digiware		Reference
M-50	Multi-protocol Ethernet gateway	4829 **0221**
M-70	Multi-protocol Ethernet gateway with embedded WEBVIEW-M web server	4829 **0222**
Power supply		**Reference**
P15	Power supply 100-240 VAC/ 24 VDC 15 W	4829 **0120**
P30	Power supply 100-240 VAC/ 24 VDC 20 W	4729 **0603**
Digiware connection cables		**Reference**
RJ45 cables for Digiware bus	Length 0.06 m	4829 **0189**
	Length 0.10 m	4829 **0181**
	Length 0.20 m	4829 **0188**
	Length 0.50 m	4829 **0182**
	Length 1 m	4829 **0183**
	Length 2 m	4829 **0184**
	Length 3 m	4829 **0190**
	Length 5 m	4829 **0186**
	Length 10 m	4829 **0187**
	50 m reel + 100 connectors	4829 **0185**
Terminal for Digiware bus (spare part ref. only as already supplied with M-50 and M-70 gateways)		4829 **0180**
USB configuration cable		4829 **0050**

Accessories	Available for order in multiples of	Reference
Fuse circuit breakers to protect voltage inputs (type RM) 1 pole + neutral	4	5701 **0017**
gG 10x38 0.5 A fuses	10	6012 **0000**

Expert Services

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Multi-circuit metering & measurement

DIRIS Digiware Uac

Voltage acquisition module

diris-diw_005_a_cat

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

Configuration with Easy Config System.

Function

The **DIRIS Digiware Uac** 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

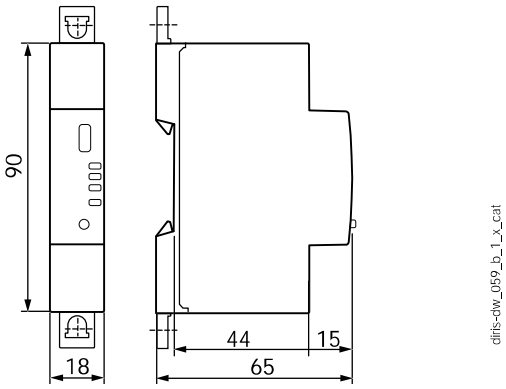
DIRIS Digiware Uac

Voltage acquisition module

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

Dimensions (mm)

DIRIS Digiware Uac



Specifications

Measuring characteristics

Voltage measurement - DIRIS Digiware Uac	
Characteristics of the network measured	50-300 VAC (Ph/N) - 87-520 VAC (Ph/Ph) - CAT III
Frequency range	45 … 65 Hz
Frequency accuracy	Class 0.02
Network type	Single-phase/ Two-phase / Two-phase with neutral / Three-phase / Three-phase with neutral
Measurement by voltage transformer	Primary: 400 000 VAC Secondary: 60, 100, 110, 173, 190 VAC
Input consumption	≤ 0.1 VA
Permanent overload	300 VAC Ph/N
Accuracy of voltage measurement	Class 0.2
Connection	Removable screw terminal block, 4 positions, stranded or solid 0.2 … 2.5 mm² cable

Communication specifications

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

References

Digiware connection cables		Reference
RJ45 cables for Digiware Bus	Length 0.06 m	4829 **0189**
	Length 0.10 m	4829 **0181**
	Length 0.20 m	4829 **0188**
	Length 0.50 m	4829 **0182**
	Length 1 m	4829 **0183**
	Length 2 m	4829 **0184**
	Length 3 m	4829 **0190**
	Length 5 m	4829 **0186**
	Length 10 m	4829 **0187**
	Reel 50 m + 100 connectors	4829 **0185**
Replacement reference: Digiware bus terminating resistor (supplied with C and D devices)		4829 **0180**
USB configuration cable		4829 **0050**

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

Accessories	To be ordered in multiples of	Reference
Fuse holder to protect voltage inputs (type RM) 3 pole + neutral	3	5701 **0019**
gG 10x38 0.5 A fuses	10	6012 **0000**

Multi-circuit metering & measurement

DIRIS Digiware S

Current acquisition module with integrated sensors

diris-dw_127.psd

DIRIS Digiware S

Configuration with Easy Config System.

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

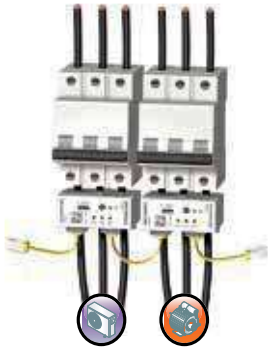
- A measurement module offering the best compactness/performance ratio of the market.
- Matches the pitch of the protective device.

Accurate

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

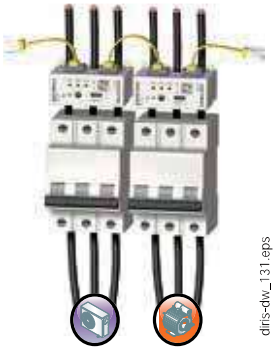
Functional diagram

Downstream



diris-dw_130.eps

Upstream



diris-dw_131.eps

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

The solution for

Distribution boards in:

> Data center
> Building
> Industry

Strong points

> Plug & Play
> Multi-circuit
> Compact

RJ45 (Digiware Bus) cables are available.

Integrated technologies

PreciSense AutoCorrect VirtualMonitor

For more information see our website www.socomec.com

Compliance with standards

> IEC 61557-12

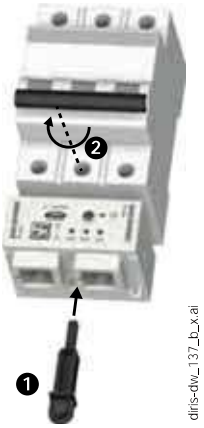
> ISO 14025

> UL 257746

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

Mounting accessories

Temporary MCB insert
(for use during panel assembly)



diris-dw_137_b_x.ai

DIN rail and back plate mounting


diris-dw_138_b_x.ai

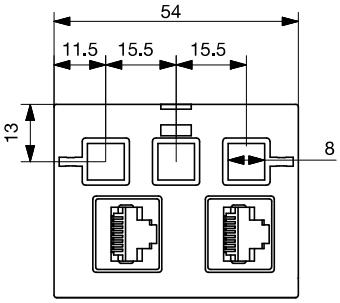
Cable tie tether

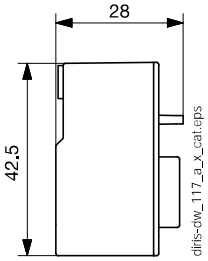

diris-dw_139_b_x.ai

DIRIS Digiware S

Current acquisition module with integrated sensors

Dimensions (mm)

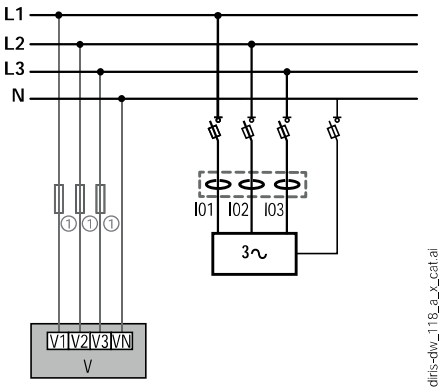




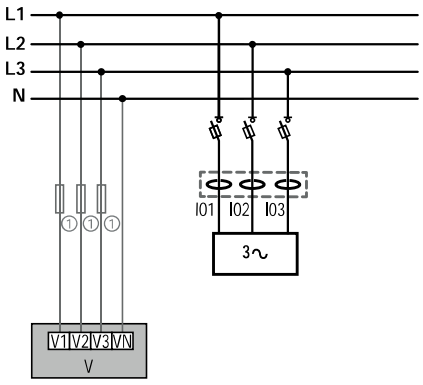
Connections

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

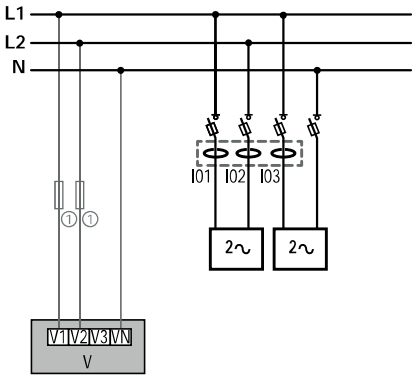
3P+N - 3CT



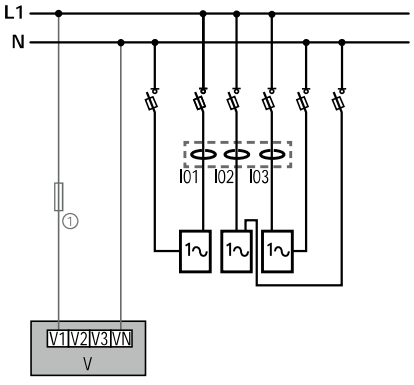
3P - 3 CT



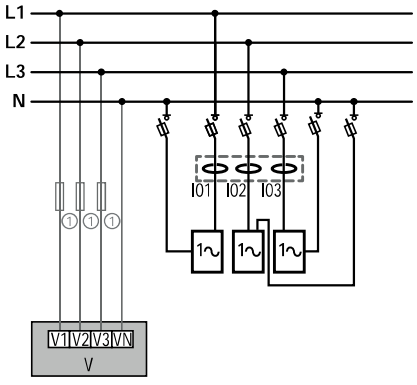
2P+N - 2CT & 2P+N - 1CT



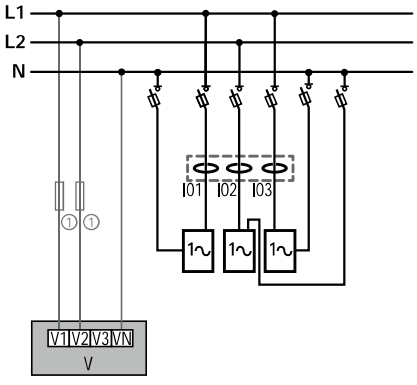
1P+N - 1 CT (3x)



3P+N - 1CT (3x)



2P+N - 1CT (3x)



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

Technical characteristics

Measurement characteristics

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

Mechanical characteristics

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

Communication specifications

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

Environmental specifications

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

References

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

Digiware connection cables		Reference
RJ45 cables for Digiware Bus	Length 0.06 m(1)	4829 **0189**
	Length 0.10 m	4829 **0181**
	Length 0.20 m	4829 **0188**
	Length 0.50 m	4829 **0182**
	Length 1 m	4829 **0183**
	Length 2 m	4829 **0184**
	Length 3 m	4829 **0190**
	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.

Expert Services

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For further information, please contact your nearest SOCOMEC branch.

Multi-circuit metering & measurement

DIRIS Digiware Iac

Current acquisition modules

DIRIS Digiware I-3x

DIRIS Digiware I-4x

DIRIS Digiware I-6x

Configuration with Easy Config System.

Function

DIRIS Digiware Iac 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 I_n (with TE/ iTR/TF current sensors).

The solution for

- Industry
- Building
- Infrastructure
- Data center

Strong points

- Multi-circuit
- Plug and Play
- Compact
- High-precision measurement chain

Integrated technologies

PreciSense AutoCorrect VirtualMonitor

For more information see our website www.socomec.com

Conformity to standards

- IEC 61557-12
- ISO 14025
- UL

Create your project

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

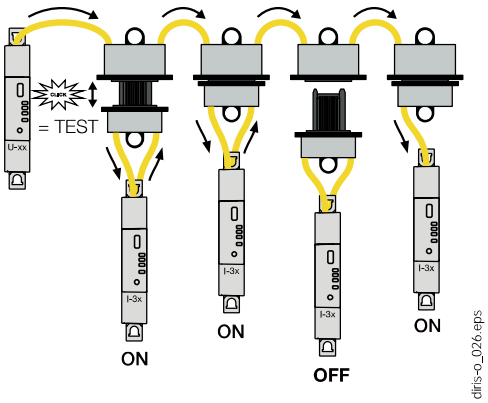
METER SELECTOR DIGITAL TOOL AVAILABLE

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

Accessories

Digiware plug-in connector

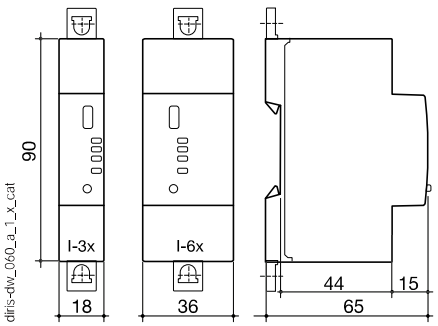
With the Digiware plug-in connector you can disconnect a DIRIS Digiware module form the Bus while ensuring the DIRIS Digiware system continues to run downstream.
This accessory is particularly useful in applications with retractable drawers or critical applications such as in data centres.



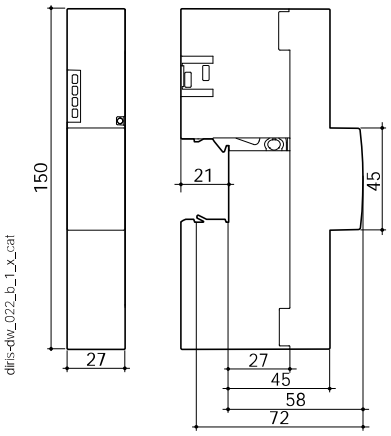
DIRIS Digiware Iac
Current acquisition modules

Dimensions (mm)

DIRIS Digiware I-3xac / I-6xac



DIRIS Digiware I-4xac



Connections

Associated current sensors

Various types of current sensors are connected to the DIRIS Digiware: closed (TE), split core (TR/iTR) 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.

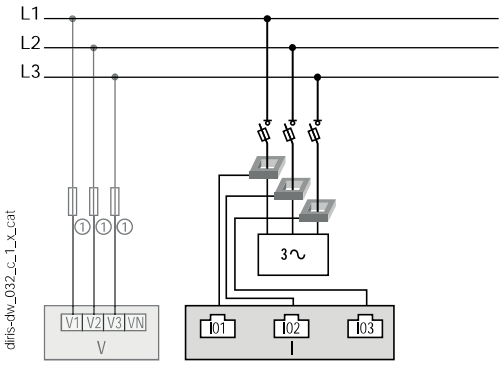
For more information see "TE, TR and TF sensors" pages.

Network and connection examples

I-3x

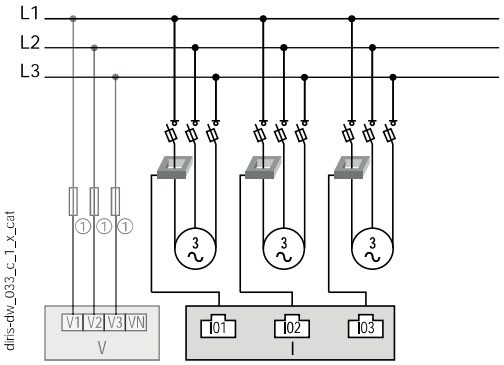
Three-phase

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



Three-phase

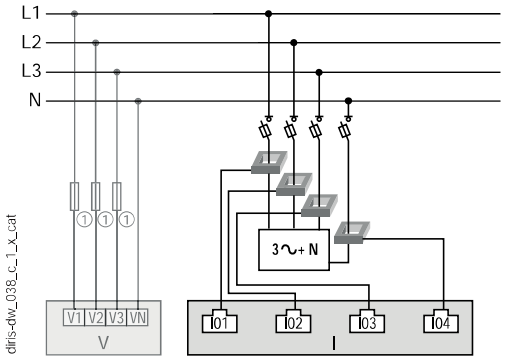
3P - 1CT (3 balanced, three-phase loads)



I-4x

Three phase + neutral

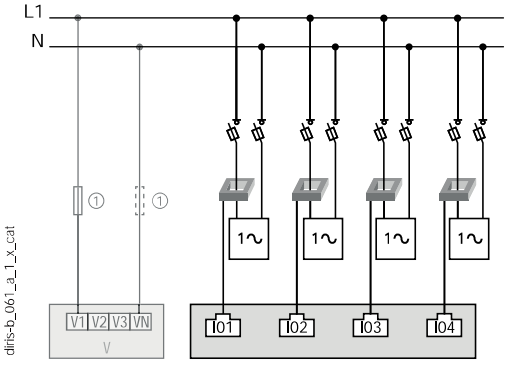
3P+N - 4CT (1 three-phase load + Neutral measured)



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

Inputs - DIRIS Digiware I-45ac	
Number of inputs	2
Type / Power supply	Non-insulated input, internal polarisation 12 VDC max, 1mA
Input functions	Logic status, pulse meter, multi-tariff
Connection	Removable screw terminal block, stranded or solid 0.14-1.5 mm² cable

Outputs - DIRIS Digiware I-45ac	
Number of outputs	2
Relay type	230 VAC ±15 % - 1 A 30 VDC - 3 A
Function	Configurable alarm (current, power, etc.) when threshold is exceeded or remote controlled status
Connection	Removable screw terminal block, stranded or solid 0.2-2.5 mm² cable

Communication specifications

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

References

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

Accessories	Reference
Digiware x 5 plug-in connector	4829 **0605**

Digiware connection cables		Reference
RJ45 cables for Digiware Bus	Length 0.06 m	4829 **0189**
	Length 0.10 m	4829 **0181**
	Length 0.20 m	4829 **0188**
	Length 0.50 m	4829 **0182**
	Length 1 m	4829 **0183**
	Length 2 m	4829 **0184**
	Length 3 m	4829 **0190**
	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 "DIRIS B" pages.

Expert Services

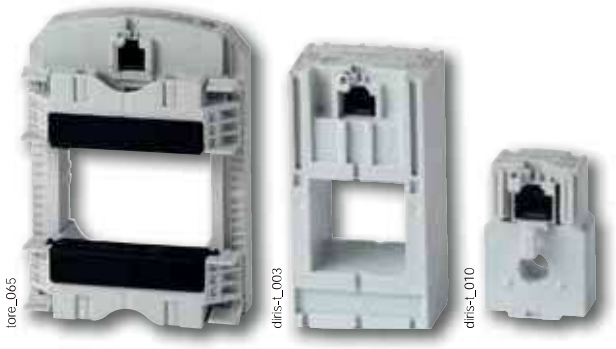
Require integration onto your network?
No problem for our "Expert Services" team. They will fully integrate all your SOCOMEC devices, **audit** your system, **commission** selected equipment and **train** your staff on its use.
For further information, please contact your nearest SOCOMEC branch.

TE sensors

Solid current sensors

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

Current sensors



***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, DIRIS A-40 and DIRIS B via a rapid RJ12 connection.

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

Advantages

Plug & Play

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

Accuracy as per standard IEC 61557-12

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

Installation

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

The solution for

- Industry
- Building
- Infrastructure
- Data center

Strong points

- Plug & Play
- Accuracy as per standard IEC 61557-12
- Installation

Conformity to standards

- IEC 61557-12
- ISO 14025
- UL

Create your project

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

METER SELECTOR DIGITAL TOOL AVAILABLE

Mounting

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


diris-t_006

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


diris-t_005

Cable mounting


diris-t_035

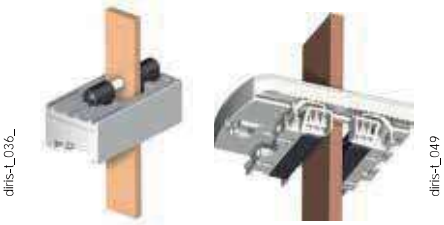
DIN rail mounted


diris-t_033

Back-plate mounting


diris-t_034

Bar mounting


diris-t_036_ diris-t_049

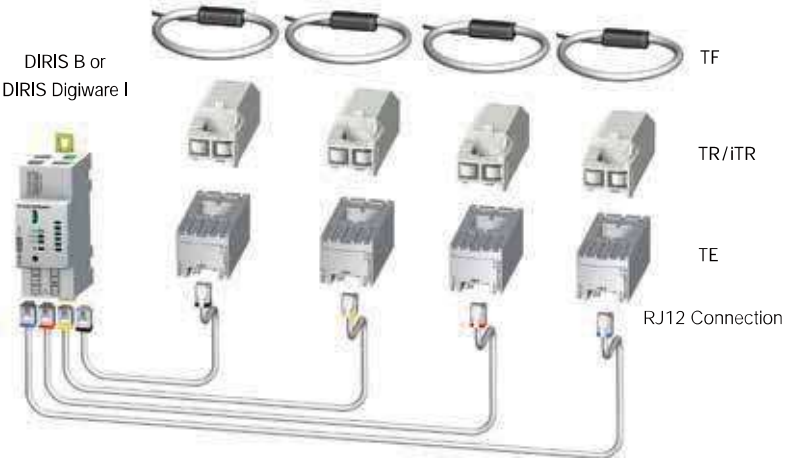
TE-90 clamps


diris-t_048

Connections

TE / TR / iTR / TF current sensors

DIRIS B or
DIRIS Digiware I



diris-b_033

TE sensors

Solid current sensors

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

Mounting accessories

Mounting accessories delivered with TE sensors:

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

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

Compatible accessories

Adapter for CT with 5A secondary

diris-t_041_a_1_cat

- With this adapter you can use a current transformer with a 1 A or 5 A output on DIRIS Digiware I, DIRIS B and DIRIS A-40.
  For use with 5 A CTs (measurement up to 10 000 A) or 1 A CTs (measurement up to 2000 A). The dimensions are the same as the TE-18.

Coupling link

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

diris-t_020_a_1_cat

Sealable cover

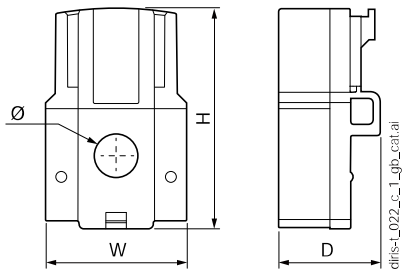
- Using a sealable cover guarantees the immunity of the sensor connection on TE/TR/iTR/ TF current sensors.

diris-t_046_a_1_cat

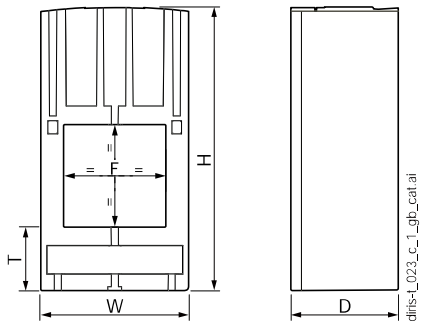
Dimensions (mm)

TE - Solid current sensors

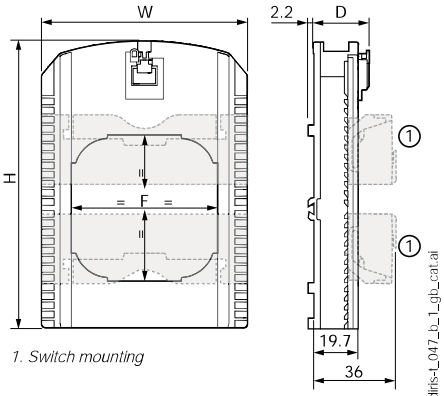
TE-18



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



TE-90



1. Switch mounting

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

Specifications

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

References

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

Accessories	Reference
Coupling link (20 linear assembly parts and 10 for staggered assembly)	4829 **0598**
5 A CT adapter (max primary current 2000 A /1 A or 10 000 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	3	5	10	50 m reel + 100 connectors
Number of cables	Reference	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**	4829 **0606**	-	-	-
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 provides monitoring of protective devices:

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

AutoCorrect technology

AutoCorrect guarantees that your measurement system is working correctly:

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

The solution for

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

Strong points

- Smart sensors
- PreciSense technology: Accurate
- Easy installation and configuration

Integrated technologies(1)

PreciSense AutoCorrect VirtualMonitor

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

For more information see our website www.socomec.com

Compliance with standards

- IEC 61557-12
- ISO 14025
- UL

Create your project

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METER SELECTOR DIGITAL TOOL AVAILABLE

TR/iTR sensors

Split-core AC current sensors

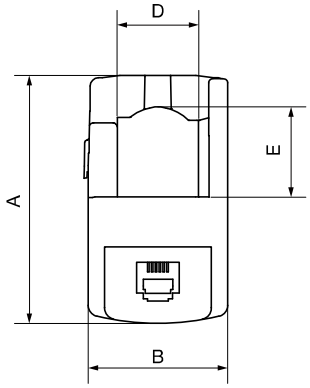
used with DIRIS Digiware, DIRIS A-40 and DIRIS B

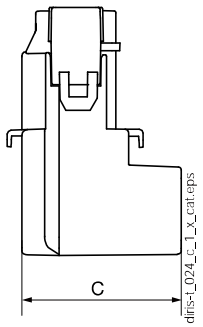
Installation

Cable mounting

Dimensions (mm)

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





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

Technical characteristics

Model	TR-10	iTR-10	TR-14	iTR-14	TR-21	iTR-21	TR-32	iTR-32
Nominal current range I_n (A)	25 ... 63		40 ... 160		63 ... 250		160 ... 600	
Real range covered (A)	0.5 ... 75.6		0.8 ... 192		1.26 ... 300		3.2 ... 720	
Max. current (A)	75.6		192		300		720	
Weight (g)	74		117		211		311	
Max. voltage (phase/neutral)	300 V							
Rated withstand voltage	3 kV							
Frequency	50/60 Hz							
Intermittent overload	10 x I_n for 1 s							
Measurement category	CAT III							
Global class used with Diris Digiware/A-40/B-10/B-30	Class 1	Class 0.5	Class 1	Class 0.5	Class 1	Class 0.5	Class 1	Class 0.5
Protection degree	IP20 / IK07							
Operating temperature range	-10 to +70°C						-10°...+55°C	
Storage temperature range	-25 to +85°C							
Relative humidity	95% RH non-condensing							
Altitude	< 2000 m							
Connection	Socomec RJ12 cable							

References

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

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

RJ12 connection cables	Cable length (m)									
	0.1	0.2	0.3	0.5	1	2	3	5	10	50 m reel + 100 connectors
Number of cables	Reference	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**	4829 **0606**	-	-	-
4	-	-	-	4829 **0596**	4829 **0588**	4829 **0589**	-	-	-	-
6	4829 **0590**	4829 **0591**	4829 **0592**	4829 **0597**	4829 **0593**	4829 **0594**	-	-	-	-

TF sensors

Flexible TF current sensors

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

Current sensors

diris-I_077.eps

TF *Flexible current sensors*

The solution for

- Industry
- Building
- Infrastructure
- Data centers

Strong points

- Plug & Play
- Accuracy according to IEC 61557-12
- Safe locking mechanism
- Installation
- Simplified installation

Integrated technologies

PreciSense

For more information see our website www.socomec.com

Compliance with standards

- IEC 61557-12
- ISO 14025
- UL

Create your project

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METER SELECTOR DIGITAL TOOL AVAILABLE

Function

TF flexible **current sensors** measure the load currents of an electrical circuit and send the data to meters and Power Monitoring Devices or current modules via an RJ12 plug-and-play connection. Thanks to a wide measurement range, TF current sensors cover a wide current range from 100 to 6000 A, with only 7 references. TF flexible current sensors can be used with DIRIS Digiware I modules, DIRIS A-40 and DIRIS B.

Advantages

Plug & Play

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

Accuracy according to IEC 61557-12

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

Safe locking mechanism(1)

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

Installation

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

Simplified installation

- The Rogowski integrator is directly integrated to the RJ12(1) cable enabling a quick and compact integration (no DIN rail assembly required) inside electrical panels.
- The integrator is self supplied by the PMD through the RJ12 cable and does not need any external power supply.

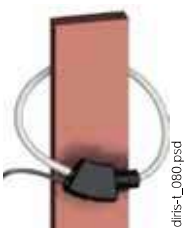
(1) Except for TF-55.

Installation

Cable mounting

diris-I_079.psd

Bar mounting



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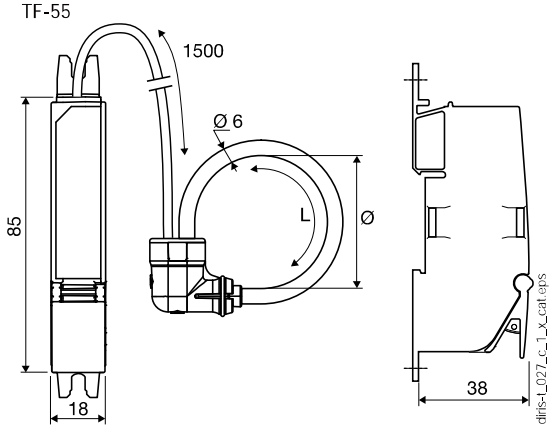
TF sensors

Flexible TF current sensors

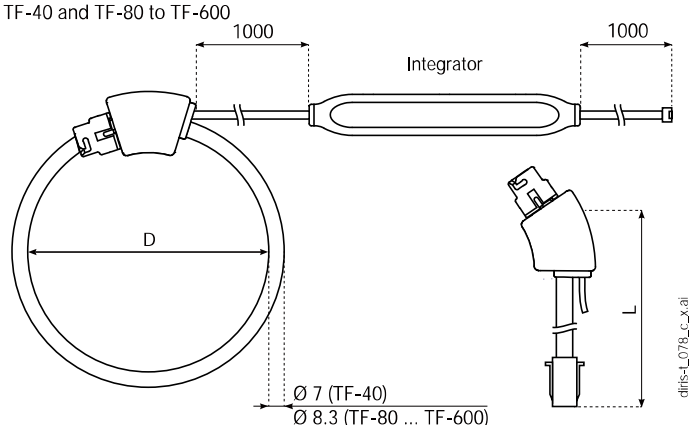
used with DIRIS Digiware, DIRIS A-40 and DIRIS B

Dimensions (mm)

TF-55



TF-40 and TF-80 to TF-600



Model	Nominal current range (A)	Real range covered (A)	D = Ø loop (mm)	L = Loop length (mm)
TF-40	100 ... 400	2 ... 480	40	126
TF-55	150 ... 600	3 ... 720	55	173
TF-80	150 ... 600	3 ... 720	80	251
TF-120	400 ... 2000	8 ... 2400	120	377
TF-200	600 ... 4000	12 ... 4800	200	628
TF-300	1600 ... 6000	32 ... 7200	300	942
TF-600	1600 ... 6000	32 ... 7200	600	1885
Integrator dimensions: 128 x 19 x 15 mm				

Technical characteristics

Model	TF-40	TF-55	TF-80	TF-120	TF-200	TF-300	TF-600
Nominal current range I_n (A)	100 ... 400	150 ... 600	150 ... 600	400 ... 2000	600 ... 4000	1600 ... 6000	1600 ... 6000
Real range covered (A)	2 ... 480	3 ... 720	3 ... 720	8 ... 2400	12 ... 4800	32 ... 7200	32 ... 7200
Weight (g)	114	114	130	142	164	193	274
Max. voltage (phase/neutral)	600 V						
Rated withstand voltage	3.6 kV						
Accuracy class	0.5 in association with DIRIS Digiware I, DIRIS A-40, DIRIS B based on IEC 61557-12						
Frequency	50 / 60 Hz						
Intermittent overload	10 x In for 1 s						
Measurement category	CAT III						
Protection degree	IP30 / IK07						
Operating temperature	-10 to +70°C						
Storage temperature	-25 to +85°C						
Relative humidity	95% RH non-condensing						
Altitude	< 2000 m						
Connection	Socomec cable or equivalent RJ12 straight, twisted pair, unshielded, 600 V, -10 ... +70 °C						

References

Model	Nominal current range (A)	Real range covered (A)	D = Ø loop (mm)	L = Loop length (mm)	Reference
TF-40	100 ... 400	2 ... 480	40	126	4829 **0573**
TF-55	150 ... 600	3 ... 720	55	173	4829 **0570**
TF-80	150 ... 600	3 ... 720	80	251	4829 **0574**
TF-120	400 ... 2000	8 ... 2400	120	377	4829 **0575**
TF-200	600 ... 4000	12 ... 4800	200	628	4829 **0576**
TF-300	1600 ... 6000	32 ... 7200	300	942	4829 **0577**
TF-600	1600 ... 6000	32 ... 7200	600	1885	4829 **0578**
Accessories					**Reference**
Female/female connector for extension of the RJ12 connection between PMD and TF sensor					4829 **0670**

RJ12 connection cables	Cable length (m)									
	0.1	0.2	0.3	0.5	1	2	3	5	10	50 m reel + 100 connectors
Number of cables	Reference	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**	4829 **0606**	-	-	-
4	-	-	-	4829 **0596**	4829 **0588**	4829 **0589**	-	-	-	-
6	4829 **0590**	4829 **0591**	4829 **0592**	4829 **0597**	4829 **0593**	4829 **0594**	-	-	-	-

DIRIS Digiware R-60

Residual Current Monitoring module

Residual Current Monitoring

new

difs-dw_173_front

DIRIS Digiware R-60

Configuration with Easy Config System software.

Function

DIRIS Digiware R-60 modules combine residual current monitoring (RCM) with power metering and monitoring functions, for any combination of 1-phase, 2-phase or 3-phase circuits used in TN-S and TT earthing systems.

With six RJ12 channels, they can be connected to a mix of ΔIC residual CTs and TE/TR/iTR/TF current sensors via RJ12 cables enabling quick connection and avoiding wiring errors.

Advantages

2 in 1

One DIRIS Digiware R-60 module can be connected to residual CTs and traditional TE/TR/iTR/TF current sensors to pool residual current and power monitoring.

Multi-circuit

One DIRIS Digiware R-60 module can monitor the residual current on up to 6 circuits.

The Digiware modular concept allows several R-60 modules to be added within a single system, making it easy to implement RCM for a large number of outgoing circuits instead of the main incomer only.

Plug & Play solution

The Digiware concept and the RJ45 bus allow:

- easy connection of R-60 modules to an existing DIRIS Digiware system,
- optimal scalability by adding additional modules when needed.

The connection to current sensors is quick and error-free thanks to colour coded RJ12 cables.

Smart alarming

DIRIS Digiware R-60 provides the most advanced RCM alarm features for preventive notifications:

- before the residual current device (RCD) trips,
- before leakage currents become hazardous for people and assets,
- if the RCD is defective.

The combination with Virtual Monitor technology specifies if the RCD has tripped on an overload or a high residual current.

Patented innovation

Thanks to an automatic learning sequence, launched for a chosen duration representative of the normal operation of the electrical installation, 6 dynamic residual current (I_{Δ}) thresholds are automatically set. This facilitates the determination of the maximum residual current not to be exceeded for each outgoing circuit.

The solution for

> Industries
> Data centres

Strong points

> 2 in 1
> Multi-circuit
> Plug & play solution
> Smart alarming
> Patented innovation

Compliance with standards

> IEC 62020
> IEC 61557-12

> ISO 14025

Create your project

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

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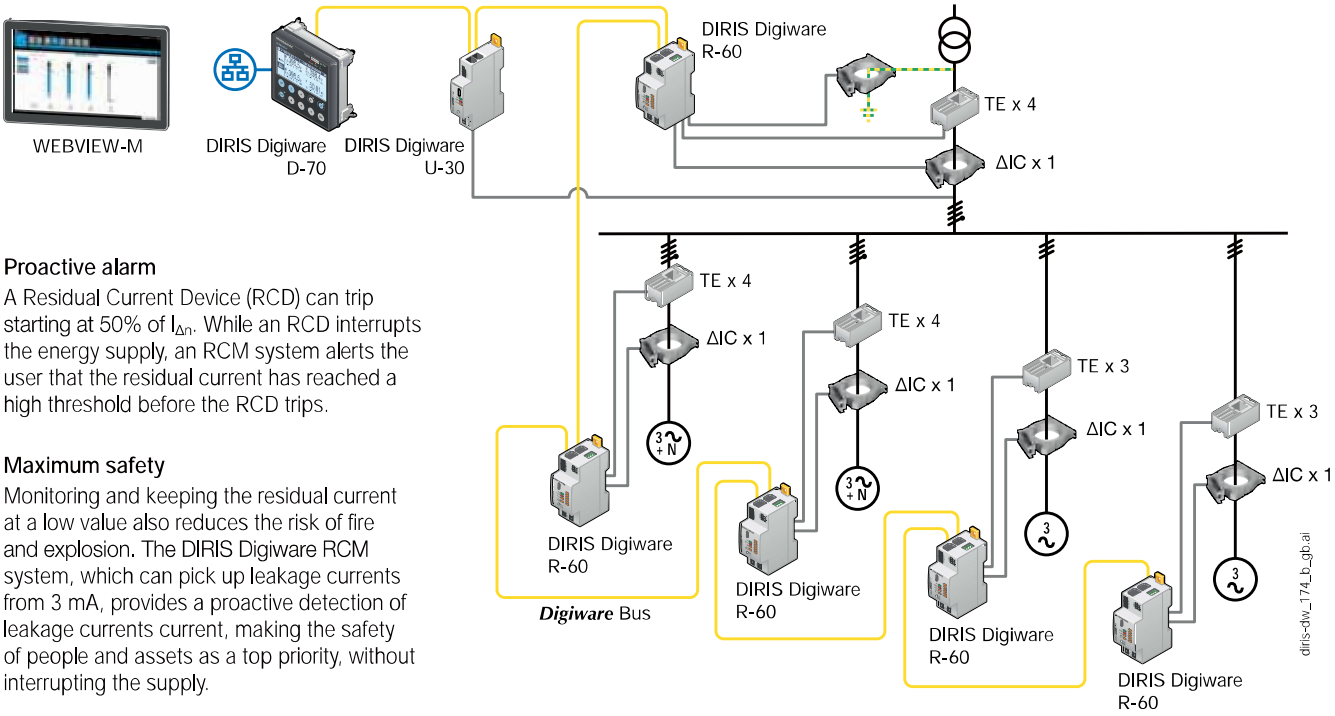
DIRIS Digiware R-60

Residual Current Monitoring module

Applications



Proactive alarm

A Residual Current Device (RCD) can trip starting at 50% of $I_{\Delta n}$. While an RCD interrupts the energy supply, an RCM system alerts the user that the residual current has reached a high threshold before the RCD trips.

Maximum safety

Monitoring and keeping the residual current at a low value also reduces the risk of fire and explosion. The DIRIS Digiware RCM system, which can pick up leakage currents from 3 mA, provides a proactive detection of leakage currents current, making the safety of people and assets as a top priority, without interrupting the supply.

Protective earthing (PE) conductor

Adding a residual CT on the upstream PE conductor is essential to ensure the proper connection to earth.

It is also the easiest and cheapest way to measure the upstream residual current reliably.

Compliance with installation standards

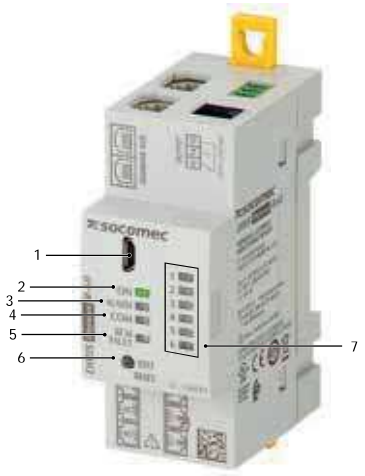
Many local electrical codes require an insulation resistance measurement as part of the Periodic Inspection and Testing. This operation is costly as it must be done on all outgoing circuits and intrusive as the main protective device must be opened.

According to IEC 60364-6 installation standards and many national transpositions, periodic insulation resistance testing is not necessary if permanently monitored by an RCM solution such as the DIRIS Digiware RCM system.

Measurements

DIRIS Digiware R-60	
Residual Current Monitoring	
I_{Δ}	•
I_{PE}	•
Metering	
+/- kWh, +/- kvarh, kVAh	•
Multi-tariff (max 8)	•
Load curves	•
Multi-measurement	
I1, I2, I3, In, ΣP, ΣQ, ΣS, ΣPF	•
P, Q, S, PF per phase	•
Alarms	
Dynamic I_{Δ} and I_{PE} thresholds	•
Overloaded neutral conductor	•
Protective device (opening, Trip, defective RCD)	•
I_{Δ} and I_{PE} comparisons	•
Trends	
I_{Δ}	•
I_{PE}	•
Load curves	•

Front face



1. USB port for configuration.
2. ON LED. Lights when the device is active.
3. ALARM LED for system alarms (CT disconnected, etc.)
4. COM LED. Flashes when the communication bus is active.
5. RCM FAULT. Lights if there is an RCM alarm on any of the channel 1 through 6.
6. TEST / RESET button. Starts the auto test (long press) and resets alarms (short press). Used during auto-discovery process for the resolution of address conflicts.
7. Individual LED alarm signals for each channel 1 to 6.

DIRIS Digiware R-60
Residual Current Monitoring module

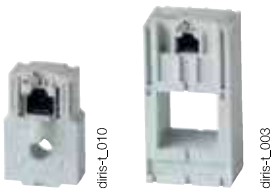
Connections

Associated sensors

Various types of residual CTs and current sensors can be connected to the DIRIS Digiware R-60 module: ΔIC solid-core, ΔIP-R split-core residual CTs, and solid-core TE, split-core TR/iTR, flexible TF current sensors. This range of sensors can be adapted to all types of new or existing installations. A rapid RJ12 connection makes wiring easy and reliable and prevents wiring errors.

For more information: refer to the residual CTs and current sensors catalogue pages

TE solid current sensors



ΔIC solid-core residual CTs

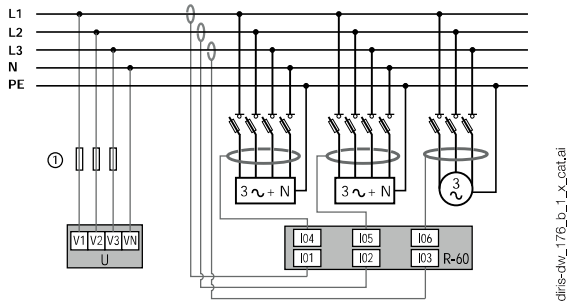
TR/iTR split-core current sensors

TF Flexible current sensors

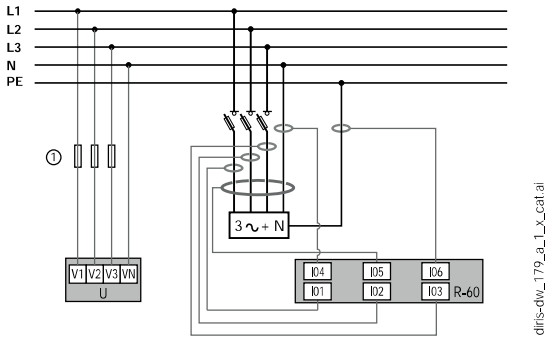
ΔIP-R split-core residual CTs

Connection examples

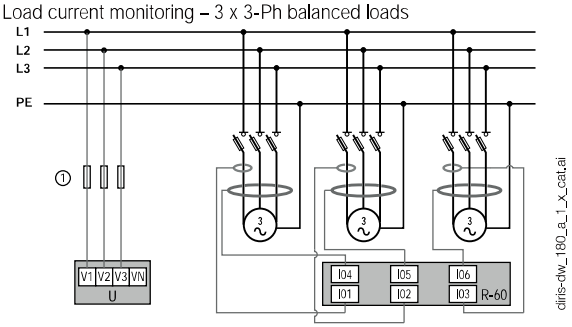
RCM (I_Δ)– 3 x 3-Ph load
Load current monitoring – L1, L2, L3, upstream



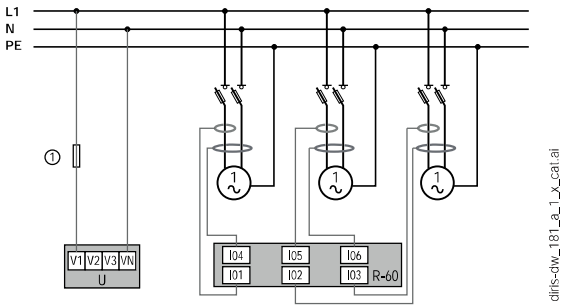
RCM (I_Δ + I_{PE}) – 1 x 3-Ph load
Load current monitoring – 1 x 3-Ph load (L1, L2, L3, N)



RCM (I_Δ)– 3 x 3-Ph load
Load current monitoring – 3 x 3-Ph balanced loads

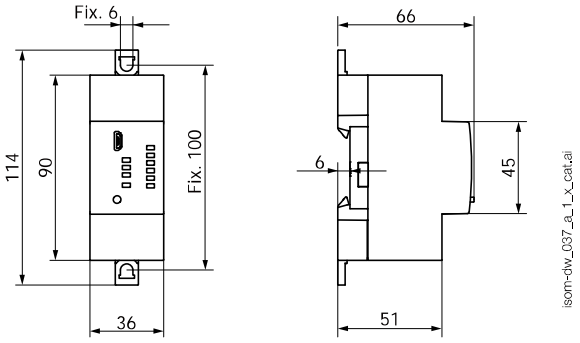


RCM (I_Δ) – 3 x 1-Ph load
Load current monitoring – 3 x 1-Ph loads

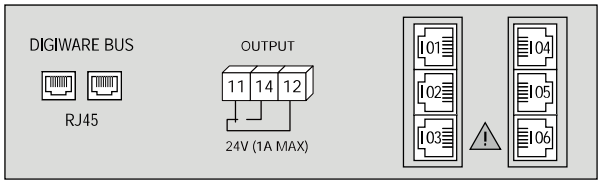


3 Balanced load | 3 ~ + N Unbalanced load | Current sensor | 2 A gG | Residual CT

Dimensions (mm)



Terminals and wiring



DIGIWARE BUS: RJ45 bus to connect to other Digiware modules

11 - 12 - 14: alarm relay output
I01 - I02 - I03 - I04 - I05 - I06: RJ12 connection of residual CTs (via the T-10 adaptor) and current sensors

Technical characteristics

Measurement characteristics	
RCM type	Type A according to IEC 62020
Number of RJ12 channels	6
Residual CTs connection	RJ12 cables via Digiware T-10 adaptor
Current sensors connection	RJ12 cables
Current measurement accuracy	Class 0.5 according to IEC 61557-12
Active energy accuracy	Class 0.5 according to IEC 61557-12
Reactive energy accuracy	Class 1 according to IEC 61557-12
Digital output characteristics	
Number of contacts	1
Contact type	Changeover switch
Nominal voltage	24 VAC / 24 VDC
Max current	1 A
Default mode	Normally open
Mechanical characteristics	
Mounting type	DIN rail or back plate
Casing protection index	IP20
Weight	103 g

Electrical characteristics	
Auxiliary power supply	24 VDC with Digiware bus
R-60 consumption	0.5 W
Communication characteristics	
Digiware bus	
Function	Connection between Digiware modules
Cable type	Specific Socomec RJ45 cable
USB	
Protocol	Modbus RTU on USB
Function	Configuration of DIRIS Digiware modules
Cable type	Type B micro USB connector
Environmental characteristics	
Operating temperature	-10 ... +55°C
Storage temperature	-25 ... +70°C
Operating humidity	55°C / 97% RH
Operating altitude	< 2000 m

References

Module	Reference
DIRIS Digiware R-60	4829 **0114**
Accesories	**Reference**
DIRIS Digiware T-10 RJ12 adaptor	4829 **0620**

RJ12 connection cables	Cable length (m)									
	0.1	0.2	0.3	0.5	1	2	3	5	10	50 m reel + 100 connectors
Number of cables	Reference	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**	4829 **0606**	-	-	-
4	-	-	-	4829 **0596**	4829 **0588**	4829 **0589**	-	-	-	-
6	4829 **0590**	4829 **0591**	4829 **0592**	4829 **0597**	4829 **0593**	4829 **0594**	-	-	-	-

Expert Services

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Multi-circuit metering & measurement

DIRIS Digiware IO

Digital and analogue input/output modules

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

DIRIS Digiware IO-20
2 analogue inputs

Configuration with Easy Config System.

The solution for

> Industry
> Building
> Data center

Strong points

> Plug & Play
> Multifunction
> Integrated
> Compact

Compliance with standards

> IEC 61557-12
> IEC 61010
> ISO 14025
> UL

Create your project

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

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Function

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

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

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

Advantages

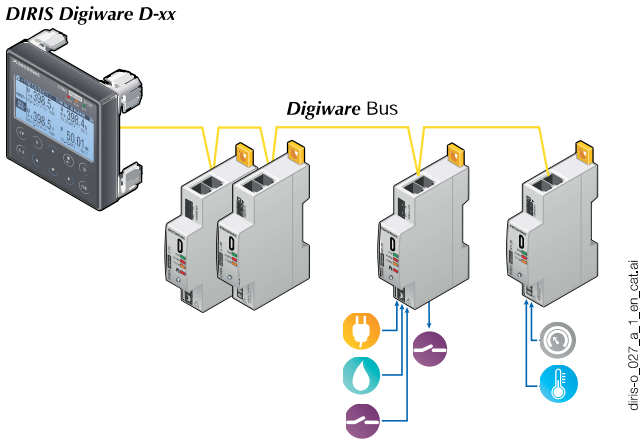
Plug & Play
The IO modules can be easily added anywhere within the measurement system thanks to a quick RJ45 connection.

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

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

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

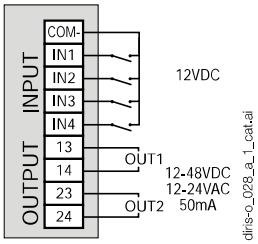
Application diagram



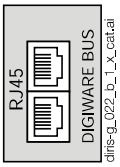
Connections

DIRIS Digiware IO-10

Digital inputs/outputs

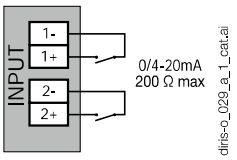


Digiware Bus

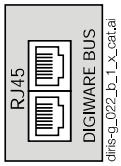


DIRIS Digiware IO-20

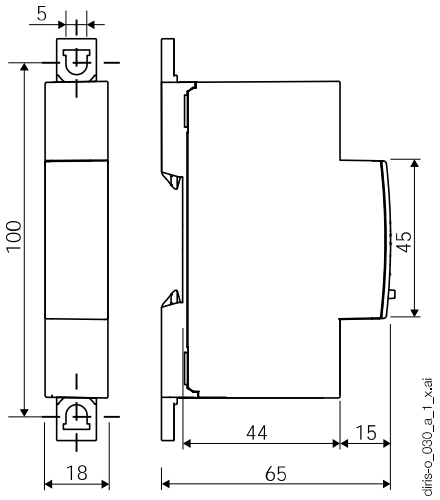
Analogue inputs



Digiware Bus



Dimensions (mm)



Technical characteristics

Measuring characteristics

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

References

Digiware connection cables		Reference
RJ45 cables for Digiware Bus	Length 0.06 m	4829 **0189**
	Length 0.10 m	4829 **0181**
	Length 0.20 m	4829 **0188**
	Length 0.50 m	4829 **0182**
	Length 1 m	4829 **0183**
	Length 2 m	4829 **0184**
	Length 3 m	4829 **0190**
	Length 5 m	4829 **0186**
	Length 10 m	4829 **0187**
	Reel 50 m + 100 connectors	4829 **0185**
Termination for Digiware Bus (supplied with interfaces C and D)		4829 **0180**
USB configuration cable		4829 **0050**

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