

DIRIS Digiware U

Voltage measurement module



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

Configuration with Easy Config System.

Function

You can use the ISOM Digiware system without **DIRIS Digiware U** modules.

Why add a DIRIS Digiware U module?

This module provides access to energy and power monitoring features on ISOM Digiware F & DIRIS Digiware I modules.

This pools together all the voltage measurements for all these modules.

The Digiware RJ45 Bus allows you to pass voltage measurements as well as power supply and communication to all connected products.

Advantages

- A single voltage measurement point for all ISOM Digiware F and DIRIS Digiware I. modules.
- A complete, dedicated solution:
  - Metering
  - Monitoring voltage
  - Quality analysis of the supplied voltage
- No hazardous voltage on cabinet doors.
- Suitable for all types of network: single-phase, two-phase, three-phase.

The solution for

- Industry
- Building
- Infrastructures
- Data centers



Strong points

- 1 single voltage measurement point for the entire system
- Plug & Play
- Compact

RJ45 (Digiware Bus) cables are available.

Compliance with standards

- CEI 61557-12
- ISO 14025
- UL

Create your project

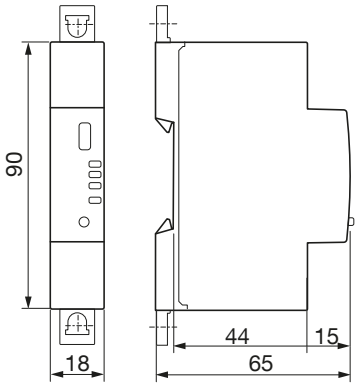
- Find the best Digiware configuration: **www.meter-selector.com**

METER SELECTOR DIGITAL TOOL AVAILABLE

Application	Voltage measurement module		
	Metering	Monitoring	Analysis
			
DIRIS Digiware U	***U-10***	***U-20***	***U-30***
Multi-measurement			
U12, U23, U31, V1, V2, V3, f	•	•	•
U system, V system			•
Ph/N unbalance			•
Ph/Ph unbalance			•
Power quality analysis			
THDv1, THDv2, THDv3, THDu12, THDu23, THDu31		•	•
Individual harmonics U & V (up to 63rd)			•
Voltage dips, swells and interruptions (EN 50160)			•
Alarms			
Thresholds and combinations			•
Trends			
Average values			•
Format			
Width/number of modules	18 mm / 1	18 mm / 1	18 mm / 1

Dimensions (mm)

DIRIS Digiware U



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Technical characteristics

Measurement characteristics

Voltage measurement - DIRIS Digiware U	
Characteristics of the network measured	50-300 VAC (Ph/N) - 87-520 VAC (Ph/Ph) - CAT III
Frequency range	45-65 Hz
Frequency accuracy	Class 0.02
Network type	Single-phase/ Two-phase / Two-phase with neutral / Three-phase / Three-phase with neutral
Measurement by voltage transformer	Primary: 400 000 VAC Secondary: 60, 100, 110, 173, 190 VAC
Input consumption	≤ 0,1 VA
Permanent overload	300 VAC Ph/N
Accuracy of voltage measurement	Class 0.2
Connection	Removable screw terminal block, 4 positions, stranded or solid 0.2-2.5 mm² cable

Communication characteristics

USB (1)	
Protocol	Modbus RTU on USB
Function	Module configuration
Location	On each module
Connection	Type B micro USB connector

(1) On all Digiware modules.

References

Digiware connection cables		Reference
RJ45 cables for Digiware Bus	Length 0.06 m	4829 **0189**
	Length 0.10 m	4829 **0181**
	Length 0.20 m	4829 **0188**
	Length 0.50 m	4829 **0182**
	Length 1 m	4829 **0183**
	Length 2 m	4829 **0184**
	Length 5 m	4829 **0186**
	Length 10 m	4829 **0187**
	50 m reel + 100 connectors	4829 **0185**
Spare part number: Digiware bus terminating resistor (included with C-31 and D-xx)		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	To be ordered in multiples of	Reference
Fuse circuit breakers to protect voltage inputs (type RM) 3 pole + neutral	4	5701 **0019**
gG 10x38 0.5 A fuses	10	6012 **0000**

DIRIS Digiware Iac

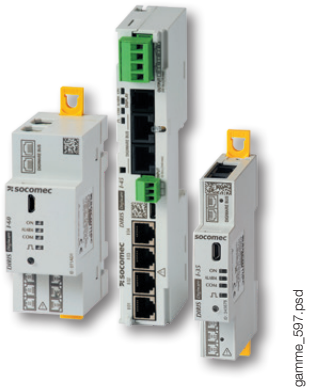
AC current measurement modules

for the DIRIS Digiware system

new

MID CERTIFIED

Configuration with Easy Config System.



gamme_597.psd

Function

DIRIS Digiware Iac modules measure consumption and monitor the installation as close as possible to loads. Their flexibility allows you to distribute the loads to meter or monitor independent current inputs (for example: 1 three-phase load or 3 single-phase loads).

Advantages

Multi-circuit

- One module can monitor up to 2 three-phase circuits or 6 single-phase circuits.
- Up to 31 current measurement modules can be added, allowing the monitoring of a large number of circuits within the same DIRIS Digiware system.

Accurate

DIRIS Digiware I modules guarantee the quality and accuracy of measurements:
- Class 0.5 from 2 to 120% In as regards the whole measurement chain, with TE/iTR/TF current sensors in class 1 from 2 to 120% In as regards the whole measurement chain with TR current sensors (IEC 61557-12).
- Class C (EN 50470).

Compact

Two-module width for monitoring 2 threephase loads or 6 single-phase loads, simplifying incorporation as close to the load as possible.

Plug & Play

- RJ45 cables for simple and fast module connection.
- Colour coded RJ12 cables to connect current sensors speedily, safely and without errors.
- Automatic sensing of the type of user load, type of current sensor and rating.
- If connected to iTR current sensors, AutoCorrect technology detects and corrects wiring errors to make the system more reliable.

Leading edge technology

- PreciSense: highest accuracy of the overall measurement chain.
- VirtualMonitor: circuit breaker status without using auxiliary contacts.
- AutoCorrect: detection and software correction of wiring errors.

MID certified and more

DIRIS Digiware I-30MID, I-35MID, I-60MID and I-61MID current modules comply with the MID Directive and guarantee accurate and reliable metering. “Module B+D” certification means that an external laboratory has certified the design of the meter and its production process.

They are also fitted with innovative functions that go beyond the standard offerings on the market:

- Innovative tamper-resistance systems: the MID modules have a smart alarm system that is more effective than the standard mechanical seals offered by MID meters.
- Integrated PreciSense Technology: MID modules have a class C energy accuracy measurement, which is the most accurate class under the MID directive. In addition, as with any DIRIS Digiware system, PreciSense technology offers the best accuracy on the market across the chain (modules and sensors).

General characteristics

- Versions with 3, 4 or 6 RJ12 current inputs.
- Compatible with TE, TR/iTR and TF current sensors.
- DIN rail assembly.

The solution for

> Data centre
> Healthcare
> Industry

Strong points

> Multi-circuit
> Accurate
> Compact
> Plug & Play
> Leading edge technology
> MID certified and more

Integrated technologies

PreciSense AutoCorrect VirtualMonitor

For more information see our website www.socomec.com

Conformity to standards

> IEC 61557-12
> UL 61010 Guide PICQ File E257746
> ANSI C12.20
> EN 50470-1
> EN 50770-3
> Directive 2014/32/EU

Create your project

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

METER SELECTOR DIGITAL TOOL AVAILABLE

Application	Current measurement modules										
	Metering			Analysis		Monitoring	Analysis	Metering			
											
DIRIS Digiware Iac	*I-30*	*I-30MID*	*I-31*	*I-35*	*I-35MID*	*I-43*	*I-45*	*I-60*	*I-60MID*	*I-61*	*I-61MID*
Number of current inputs											
	3	3	3	3	3	**4**	4	6	6	6	6
Metering											
± kWh, ± kvarh, kVAh	•	•	•	•	•	•	•	•	•	•	•
Load curves			•	•	•		•			•	•
Multi-tariff			•	•	•		•			•	•
MID		•			•				•		•
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	18 mm / 1	27 mm / 1,5	27 mm / 1,5	36 mm / 2	36 mm / 2	36 mm / 2	36 mm / 2

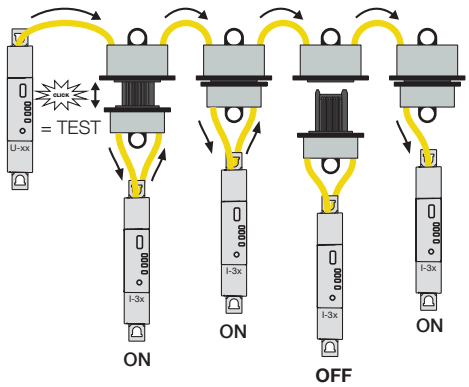
○: *only for total power (P,Q,S).*
To be compliant with the MID directive, the DIRIS Digiware system must be equipped with a D-50/D-70 display.

Accessories

Digiware plug-in connector

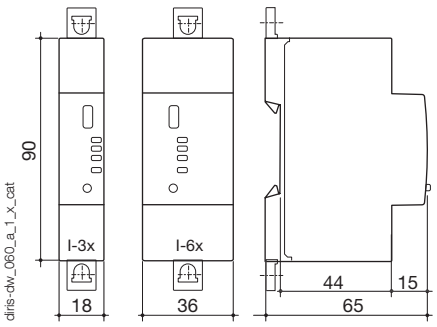
With the Digiware plug-in connector you can disconnect a DIRIS Digiware module form the Bus while ensuring the DIRIS Digiware system continues to run downstream.
This accessory is particularly useful in applications with retractable drawers or critical applications such as in data centres.



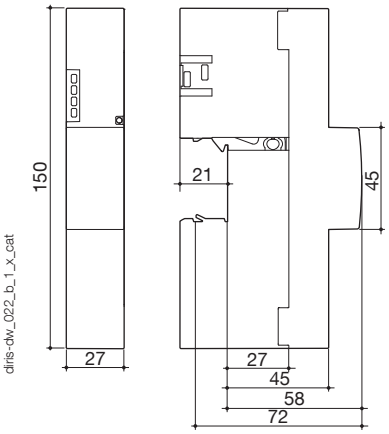


Dimensions (mm)

DIRIS Digiware I-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.

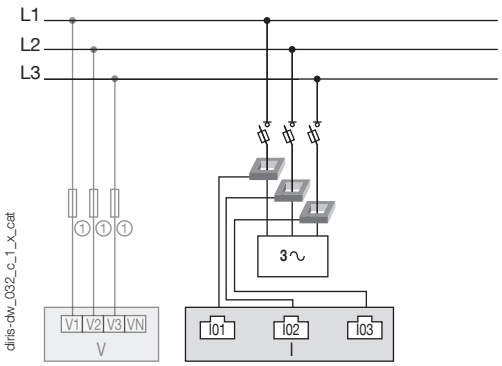
For more information see "TE, TR and TF sensors" pages.

Network and connection examples

I-3x/I-3xMID

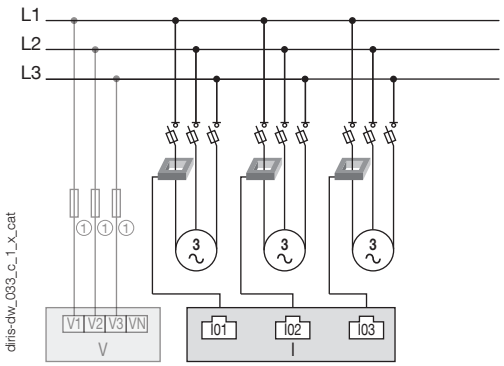
Three-phase

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



Three-phase

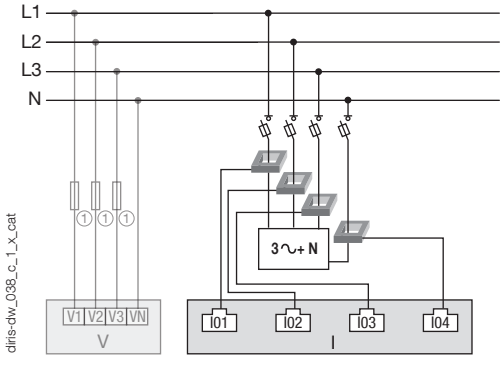
3P - 1CT (3 balanced, three-phase loads)



I-4x

Three phase + neutral

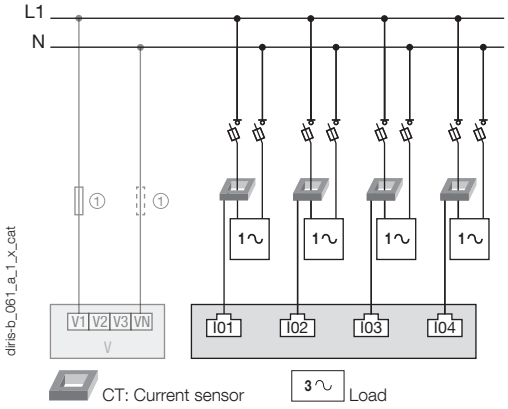
3P+N - 4CT (1 three-phase load + Neutral measured)



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

Single-phase

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



Specifications

Measuring characteristics

Current measurement - DIRIS Digiware Iac	
Number of current inputs	I-3x / I-3xMID : 3 inputs I-4x : 4 inputs I-6x / -6xMID : 6 inputs
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
Energy measurement	
Active energy accuracy	Class 0.5 (IEC 61557-12) / Class C (EN 50470)

Entrées - 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-30MID	Metering - 3 current inputs + MID	4829 **0133**
I-31	Metering + load curve - 3 current inputs	4829 **0111**
I-35	Analysis - 3 current inputs	4829 **0130**
I-35MID	Analysis - 3 current inputs+ MID	4829 **0135**
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-60MID	Metering - 6 current inputs + MID	4829 **0134**
I-61	Metering + load curve - 6 current inputs	4829 **0113**
I-61MID	Metering + load curve - 6 current inputs + MID	4829 **0136**

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

To be compliant with the MID directive, the DIRIS Digiware system must be equipped with a D-50/D-70 display

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

EXPERT SERVICES

To continuously guarantee a functional and accurate energy monitoring system, Socomec offers a wide range of services:
- Incorporation of devices.
- System audit.
- Commissioning.
- Training for your teams.

Also, Ideal for ISO 50001 sites (periodic verification):
- Measurement consistency check to 3%.
- Measurement accuracy check to 0.2%.

For more information, please call your Socomec contact.