

# DIRIS Digiware *lac*

## AC current measurement modules

for the DIRIS Digiware system

**new**



Configuration  
with Easy Config System.



gamme\_697.psd

### The solution for

- > Data centre
- > Healthcare
- > Industry

### Strong points

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

### Integrated technologies



For more information see our website  
[www.socomec.com](http://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](http://www.meter-selector.com)

**METER SELECTOR**  
DIGITAL TOOL AVAILABLE

## Function

DIRIS Digiware *lac* 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 three-phase 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.

Application	Current measurement modules										
	Metering			Analysis		Monitoring	Analysis	Metering			
<b>DIRIS Digiware Iac</b>	<b>I-30</b>	<b>I-30MID</b>	<b>I-31</b>	<b>I-35</b>	<b>I-35MID</b>	<b>I-43</b>	<b>I-45</b>	<b>I-60</b>	<b>I-60MID</b>	<b>I-61</b>	<b>I-61MID</b>
Number of current inputs	3	3	3	3	3	4	4	6	6	6	6
<b>Metering</b>											
± kWh, ± kvarh, kVAh	•	•	•	•	•	•	•	•	•	•	•
Load curves			•	•	•		•			•	•
Multi-tariff			•	•	•		•			•	•
MID		•			•				•		•
<b>Multi-measurement</b>											
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				•	•		•				
<b>Quality</b>											
THDi1, THDi2, THDi3, THDin				•	•	•	•				
Individual harmonics I (up to 63rd)				•	•		•				
Overcurrents				•	•		•				
<b>Alarms</b>											
On threshold			○	•	•		•			○	○
Inputs/outputs						2/2	2/2				
<b>History of average values</b>											
45 days (max)				•	•		•				
<b>Format</b>											
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

o: 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

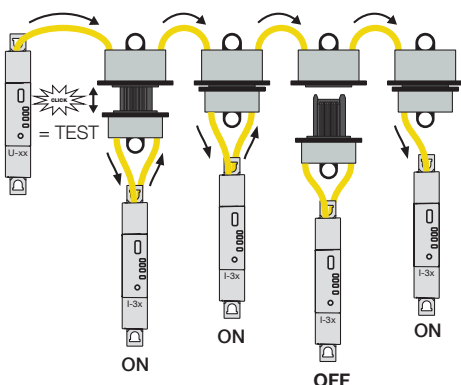
### Digiware plug-in connector

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

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

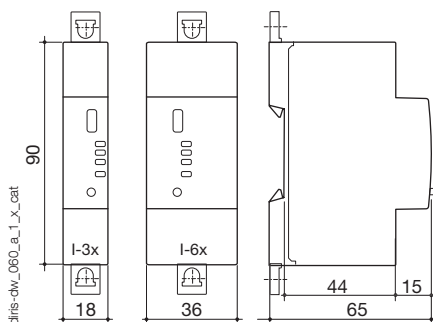


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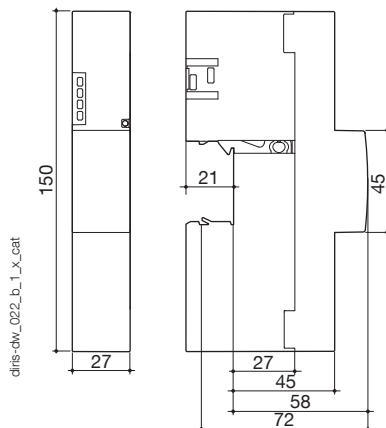


## Dimensions (mm)

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.

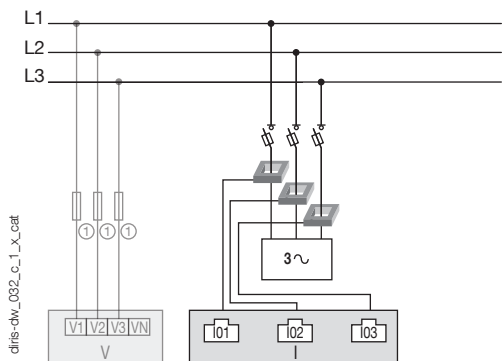
For more information see "TE, TR and TF sensors" pages.

## Network and connection examples

### I-3x/I-3xMID

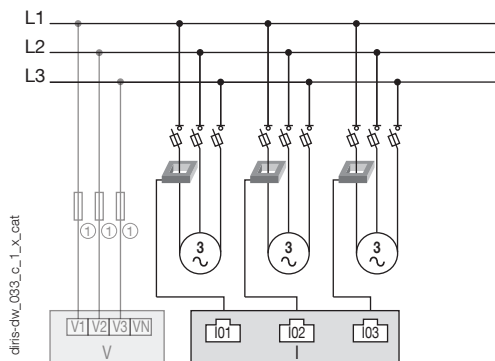
#### Three-phase

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



#### Three-phase

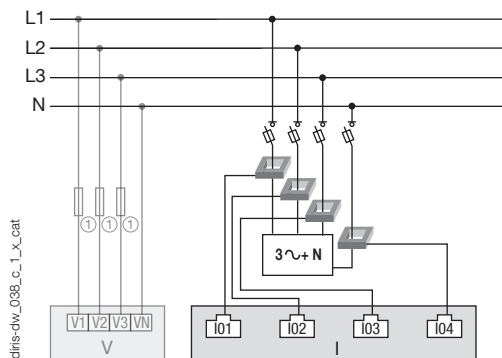
3P - 1CT (3 balanced, three-phase loads)



### I-4x

#### Three phase + neutral

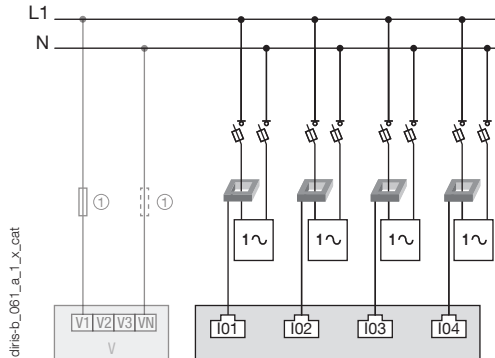
3P+N - 4CT (1 three-phase load + Neutral measured)



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

#### Single-phase

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



CT: Current sensor      3~ Load

## Specifications

### Measuring characteristics

Current measurement - DIRIS Digiware lac	
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 mm <sup>2</sup> 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 mm <sup>2</sup> 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.