



# DIRIS Digiware *lac*

## Current acquisition modules

Multi-circuit metering  
& measurement



DIRIS Digiware I-3x



DIRIS Digiware I-4x



DIRIS Digiware I-6x



Configuration  
with Easy Config System.

### Function

DIRIS Digiware lac 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](http://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](http://www.meter-selector.com)

**METER SELECTOR**  
DIGITAL TOOL AVAILABLE

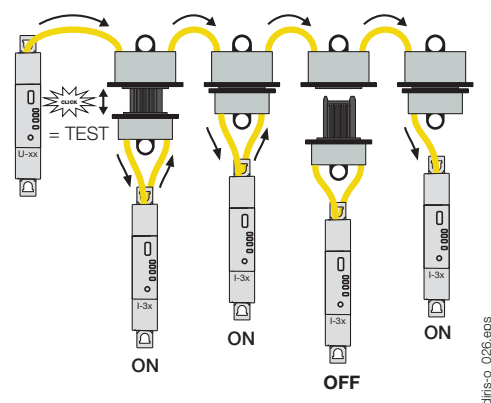
| Application                                     | Current measurement modules                                                       |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |
|-------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|                                                 | Metering                                                                          |                                                                                   | Monitoring                                                                        | Analysis                                                                          | Monitoring                                                                         | Analysis                                                                            | Metering                                                                            |                                                                                     |
|                                                 |  |  |  |  |  |  |  |  |
| <b>DIRIS Digiware Iac</b>                       | <b>I-30</b>                                                                       | <b>I-31</b>                                                                       | <b>I-33</b>                                                                       | <b>I-35</b>                                                                       | <b>I-43</b>                                                                        | <b>I-45</b>                                                                         | <b>I-60</b>                                                                         | <b>I-61</b>                                                                         |
| Number of current inputs                        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |
|                                                 | 3                                                                                 | 3                                                                                 | 3                                                                                 | 3                                                                                 | 4                                                                                  | 4                                                                                   | 6                                                                                   | 6                                                                                   |
| Metering                                        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |
| ± kWh, ± kvarh, kVAh                            | •                                                                                 | •                                                                                 | •                                                                                 | •                                                                                 | •                                                                                  | •                                                                                   | •                                                                                   | •                                                                                   |
| Load curves                                     |                                                                                   | •                                                                                 |                                                                                   | •                                                                                 |                                                                                    | •                                                                                   |                                                                                     | •                                                                                   |
| Multi-tariff                                    |                                                                                   | •                                                                                 |                                                                                   | •                                                                                 |                                                                                    | •                                                                                   |                                                                                     | •                                                                                   |
| Multi-measurement                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |
| I1, I2, I3, In, ΣP, ΣQ, ΣS, ΣPF                 | •                                                                                 | •                                                                                 | •                                                                                 | •                                                                                 | •                                                                                  | •                                                                                   | •                                                                                   | •                                                                                   |
| P, Q, S, PF per phase                           |                                                                                   |                                                                                   | •                                                                                 | •                                                                                 | •                                                                                  | •                                                                                   |                                                                                     |                                                                                     |
| Predictive power                                |                                                                                   |                                                                                   |                                                                                   | •                                                                                 |                                                                                    | •                                                                                   |                                                                                     |                                                                                     |
| Current unbalance (Inba, Idir, linv, 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 from the Bus while ensuring the DIRIS Digiware system continues to run downstream.

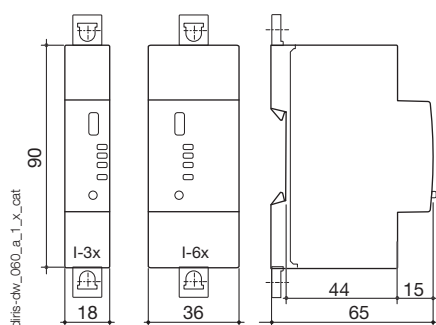
This accessory is particularly useful in applications with retractable drawers or critical applications such as in data centres.



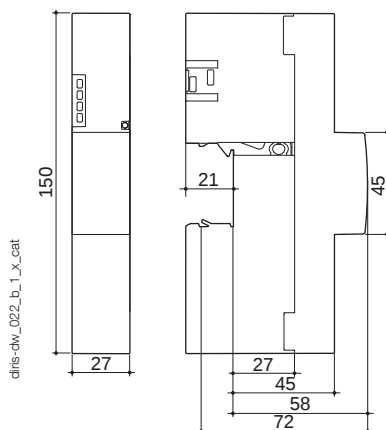
diris-o\_026.eps

## 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.

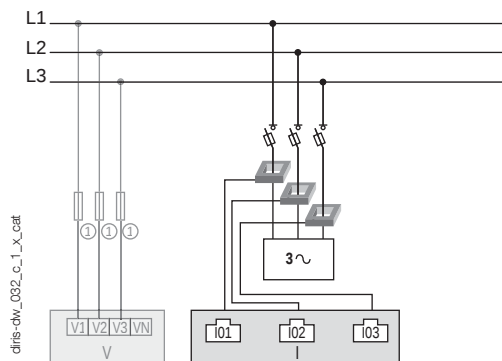
For more information see "TE, TR and TF sensors" pages.

## Network and connection examples

### I-3x

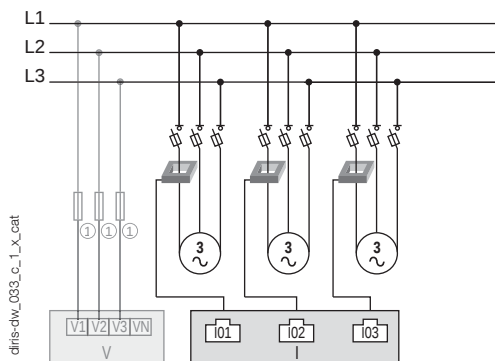
#### Three-phase

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



### Three-phase

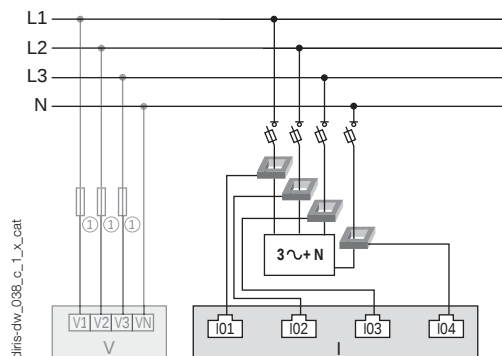
3P - 1CT (3 balanced, three-phase loads)



### I-4x

#### Three phase + neutral

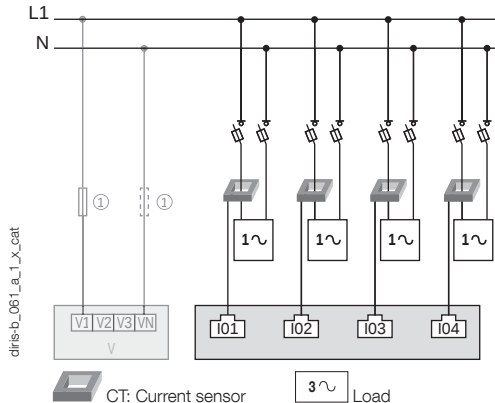
3P+N - 4CT (1 three-phase load + Neutral measured)



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

### Single-phase

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



## 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<br>Class 0.5 with TE, iTR or TF sensors<br>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 mm <sup>2</sup> cable                 |

### Outputs - DIRIS Digiware I-45ac

|                   |                                                                                                  |
|-------------------|--------------------------------------------------------------------------------------------------|
| Number of outputs | 2                                                                                                |
| Relay type        | 230 VAC ±15 % - 1 A<br>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-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.