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DIRIS A14

Multifunction meters - PMD

Modular multifunction meter - MID

Single-circuit metering, measurement & analysis



DIRIS A14

The solution for

- Industry
- Infrastructures
- Data centre



Strong points

- MID certified B+D module
- Bi-directional metering
- Multi-measurement and load curves
- Compliant with IEC 61557-12
- Detection of connection errors

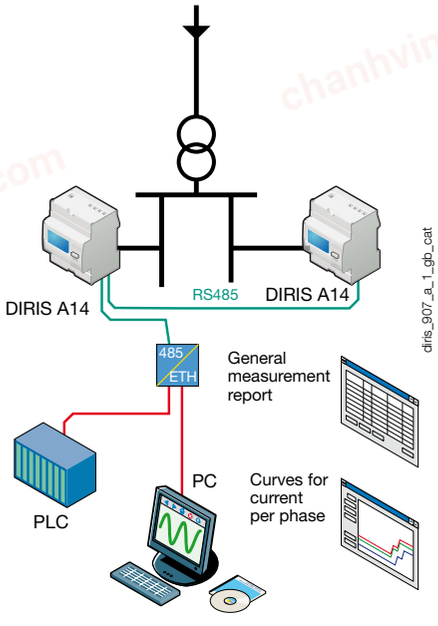
Conformity to standards

- IEC 61557-12
- IEC 62053-23 class 2
- EN50470-1
- EN50470-3 class C

Function

The **DIRIS A14** is a modular multifunction meter for measuring electrical values in low voltage networks.
It allows all electrical parameters to be displayed and utilised for communication and/or output functions.

Functional diagram



VERTELIS software solution

Advantages

MID certified B+D module
DIRIS A14 products with MID certification provide the guaranteed accuracy required for applications in which sub-billing of the electrical energy consumed is necessary. “Module B+D” certification guarantees that the design and manufacturing process of products are approved by an accredited laboratory.

Bi-directional metering (four quadrants)
This function is for metering energy production or energy consumption.

Multi-measurement and load curve.
Display of electrical values
(I, U, V, ΣP, ΣQ, ΣS, PF) and P+ load curve over a 7 day period via communication.

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

Detection of connection errors
The product is protected against phase/neutral inversion and detects wiring errors

Functions

Multi-measurement
- Currents
  - instantaneous: I1, I2, I3, In
  - maximum average: I1, I2, I3, In
- Voltages
  - instantaneous: V1, V2, V3, U12, U23, U31
- Power
  - instantaneous: ΣP, ΣQ, ΣS
  - maximum average: ΣP, ΣQ, ΣS
- Power factor (cos φ)
  - instantaneous: Σ cos φ
  - maximum average: Σ cos φ

Total and partial metering
- Active energy: + kWh, - kWh
- Reactive energy: + kvarh, - kvarh

Harmonic analysis (via communication)
- Total harmonic distortion (level 63)
  - Currents: thd I1, thd I2, thd I3
  - Phase-to-neutral voltage: thd V1, thd V2, thd V3
  - Phase-to-phase voltage: thd U12, thd U23, thd U31

Multi tariff function (via communication)
Selection of one out of 4 billing tariffs

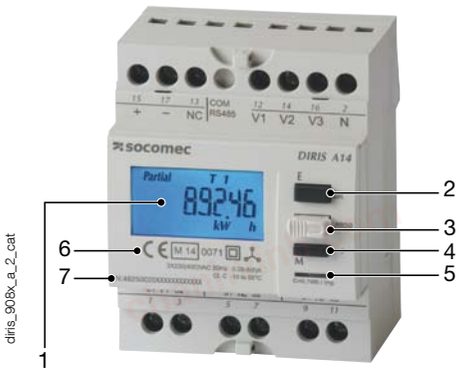
Events (via communication)
- Active energy consumption: day n-1 / week n-1 / month n-1
- Active power load curve: P 10 minutes over 7 days with time-log

Communications
RS485 with MODBUS protocol

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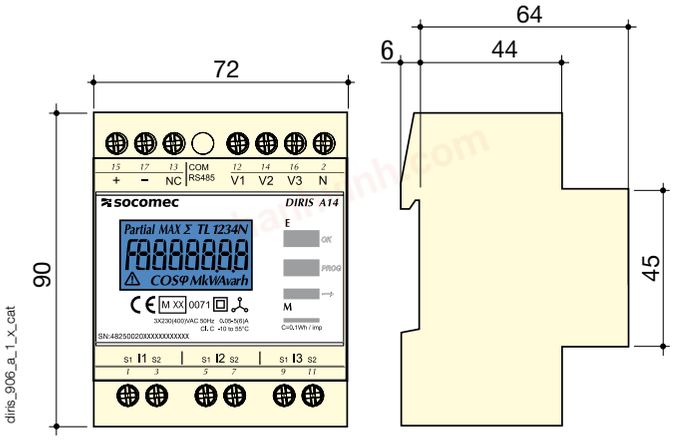
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Front panel



1. Backlit LCD display.
2. Direct access for energies and validation key.
3. Programming key.
4. Navigation key for measurements.
5. Metrological LED
6. MID marking.
7. Serial Number.

Case



Type	modular
Number of modules	4
Dimensions W x H x D	72 x 90 x 64 mm
Case degree of protection	IP20
Front degree of protection	IP51
Display type	Backlit LCD
Rigid cable cross-section	1.5 to 10 mm^2
Flexible cable cross-section	1 to 6 mm^2
Weight	240 gr

Electrical characteristics

Current measurement (TRMS)	
Via CT primary	10 to 2500 A
Via CT secondary	5 A
Input consumption	0.6 VA
Startup current (I_{st})	5 mA
Minimum current (I_{min})	50 mA
Transmission current (I_{tr})	250 mA
Reference current (I_{ref})	5 A
Measurement updating period	1 s
Accuracy	0,5 %
Permanent overload	6 A
Intermittent overload	120 A for 0.5 s
Voltage measurements (TRMS)	
Direct measurement (four phases)	50 to 460 VAC +/- 15%
Input consumption	2 VA
Measurement updating period	1 s
Accuracy	0,2 %
Permanent overload	480 V (phase-to-phase measurement)
Power measurement	
Measurement updating period	1 s
Accuracy	0.5 %
Power factor measurement (cos φ)	
Measurement updating period	1 s
Accuracy	0.01

Energy accuracy	
Active (according to IEC 62053-22)	Class 0.5 S
Reactive (according to IEC 62053-23)	Class 2
Active (according to EN 50470)	Class C
Metrological LED (EA^+,EA^-)	
Pulse weight	10000 pulses/kWh
Colour	Red
Auxiliary power supply	
Self-supply	Yes
Frequency	50 / 60 Hz
Communication	
Link	RS485
Type	2 … 3 half duplex wires
Protocol	MODBUS RTU
MODBUS® speed	4800 … 38400 bauds
Operating conditions	
Operating temperature	- 10 … + 55 °C
Storage temperature	- 20 … + 70 °C
Relative humidity	95% without condensation

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Connection

Low voltage balanced network

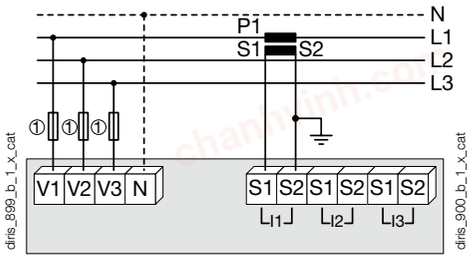
Recommendation:

- For IT earthing systems, it is recommended that the CT secondary is not connected to earth.

- When disconnecting the DIRIS, the secondary of each current transformer must be short-circuited.

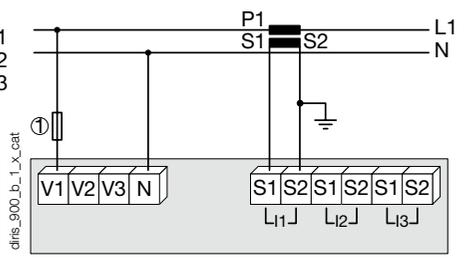
This operation can be carried out automatically by a SOCOMEC PTI, which can be found in the SOCOMEC catalogue: please consult us.

3/4 wires with 1 CT



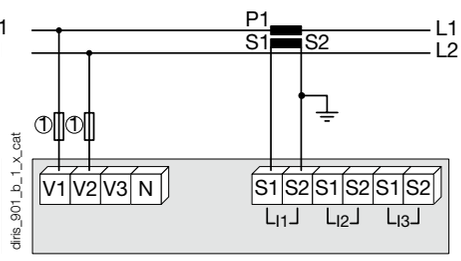
1. Fuses 0.5 A gG / 0.5 A class CC.

Single-phase



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

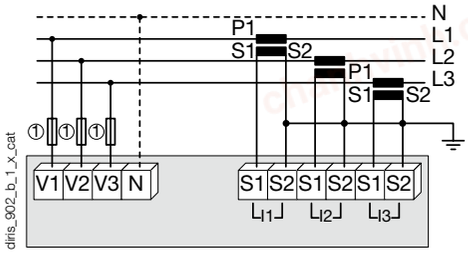
Two-phase



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

Low voltage unbalanced network

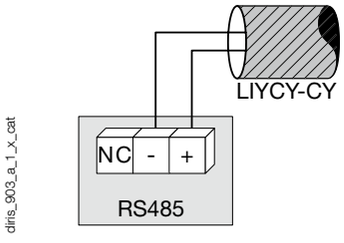
3/4 wires with 3 CTs



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

Additional information

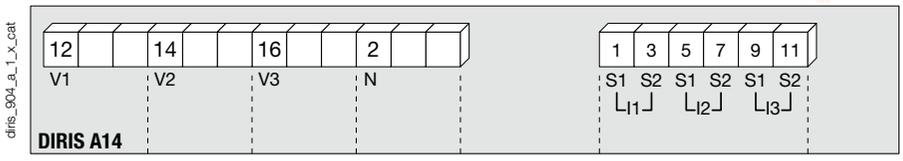
Communication via RS485 link



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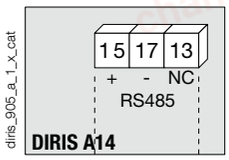
Terminals



V1, V2, V3 & N: voltage inputs.

S1 - S2: current inputs.

Communication module



RS485 link.

References

Basic device **Description**	**DIRIS A14** **Reference**
DIRIS A14 MID + RS485 MODBUS communication	4825 **0020**
Accessories	**Reference**
Panel mounting kit	4825 **0070**

Services & Technical Assistance

> Our expertise extends to a complete offer of customised services, such as technical site audit and solution specification, commissioning, training, maintenance, and project engineering.

