



# DIRIS A14

Multifunction measuring unit - PMD - MID  
multi-measurement

Single-circuit metering,  
measurement &  
analysis

**new**



DIRIS A14 panel mounted



DIRIS A14 DIN rail mounted

## The solution for

- > Industry
- > Infrastructures
- > Data centers



## Strong points

- > Single phase and three phase MID certified
- > Bi-directional metering
- > Multi-measurement and load curves
- > IEC 61557-12 measuring method
- > Detection of connection errors

## Compliance with standards

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



## Function

The DIRIS A14 is an MID approved 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.

## Advantages

### Single phase and three phase MID certified

DIRIS A14 products with MID certification provide the guaranteed accuracy required for applications in which sub-billing of the electrical energy consumed is necessary, whether on a three-phase or single-phase network. "Module B+D" certification guarantees that the design and manufacturing process of products are approved by an accredited laboratory.

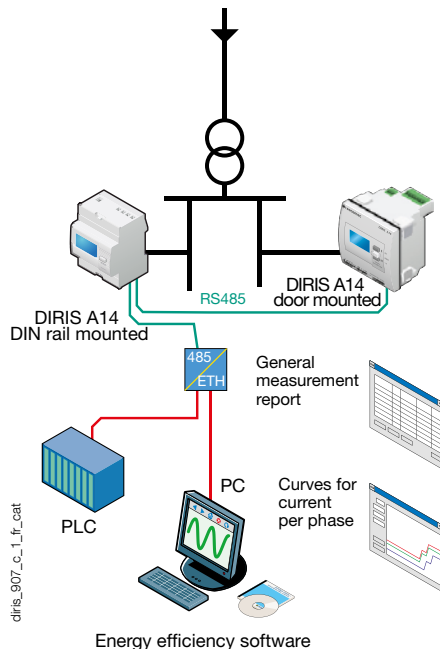
### Bi-directional metering (four quadrants)

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.

## Functional diagram



### IEC 61557-12 measuring method

IEC 61557-12 is a high-level standard covering all PMDs (Performance Monitoring Devices). By using the measuring method of IEC 61557-12 ensures a high level of equipment performance, in terms of metrology.

### Detection of connection errors

The product is protected against phase/neutral inversion and detects wiring errors. The power supply internally derived from the voltage connections ensures realtime MID counting as soon as the mains voltage is present.

## Functions

### Multi-measurement

- Currents
  - instantaneous: I1, I2, I3, In
  - maximum average: I1, I2, I3, In
- Frequency
- Voltages
  - instantaneous: V1, V2, V3, U12, U23, U31, F
- Powers
  - 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 (rank 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

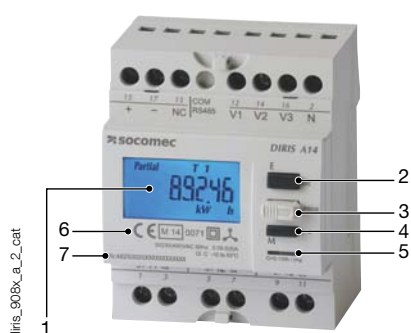
### Events (via communication)

- Active energy consumption: day n-1 / week n-1 / month n-1
- Active power load curves: P 10 minutes over 7 days with time-log

### Communications

RS485 with MODBUS protocol

## Front panel

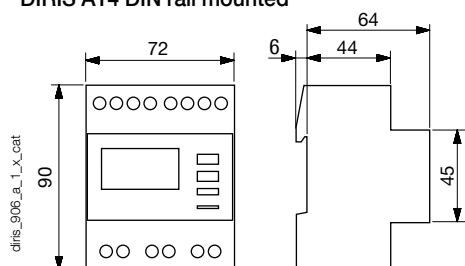


1. Backlit LCD display
2. Direct access for energies and validation key
3. Programming key
4. Navigation key for measurements
5. Metrological LED
6. MID marking
7. Serial Number

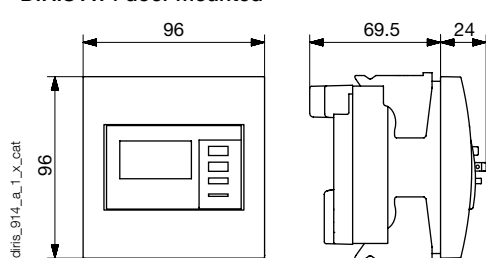


## Case

### DIRIS A14 DIN rail mounted



### DIRIS A14 door mounted



	DIRIS A14 DIN rail mounted	DIRIS A14 door mounted
Type	modular	Recessed
Number of modules	4	-
Dimensions W x H x D	72 x 90 x 64 mm	96 x 96 x 69.5 mm
Case degree of protection		IP20
Front degree of protection		IP51
Display type		Backlit LCD
Rigid cable cross-section		1.5 ... 10 mm <sup>2</sup>
Flexible cable cross-section		1 ... 6 mm <sup>2</sup>
Weight	240 g	450 g

## Electrical characteristics

Current measurement (TRMS)	
Via CT primary	10 ... 2500 A
Via CT secondary	5 A
Input consumption	0.6 VA
Startup current (Ist)	5 mA
Minimum current (Imin)	50 mA
Transmission current (Itr)	250 mA
Reference current (Iref)	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 ... 460 VAC
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-powered	Yes
Frequency	50 / 60 Hz
Communication	
Link	RS485
Type	2 to 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% non-condensing

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## Connection

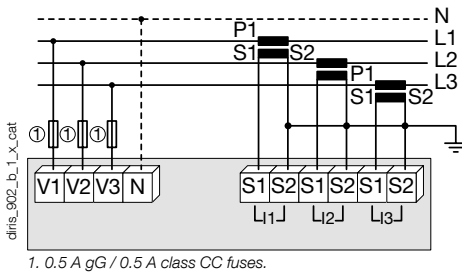
### Low voltage balanced network

#### Recommendation:

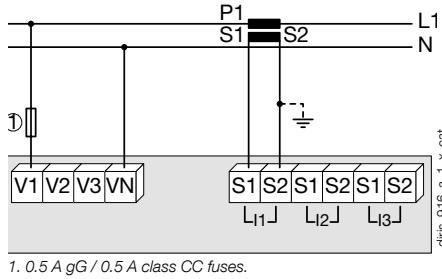
- For IT earthing systems, it is recommended that the CT secondary is not connected to earth.
  - When disconnecting the DIRIS, the secondary of each current transformer must be short-circuited.
- This operation can be carried out automatically by a SOCOMEC PTI, which can be found in the SOCOMEC catalogue: please consult us.

### Low voltage unbalanced network

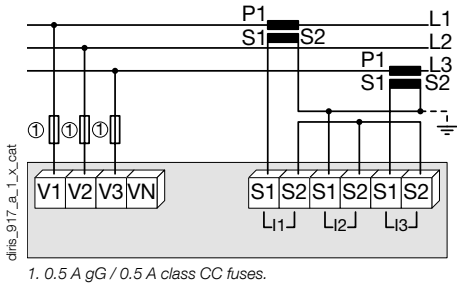
#### 3/4 wires with 3 CTs



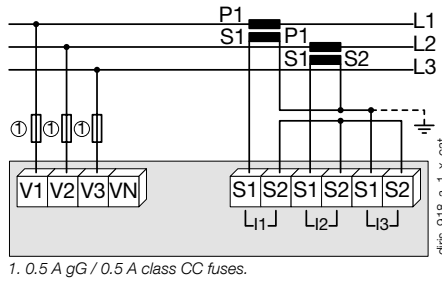
#### Single-phase



#### 3 wires with 2 CTs

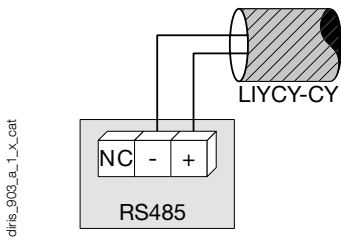


#### 3 wires with 2 CTs



### Additional information

#### Communication via RS485 link



## Terminals

Voltage outlets	
V	12
V2	14
V3	16
N	2
ICM (Intelligent Communication Module)	
RS485 "+"	15
RS485 "-"	17
RS485'NC"	13

Current inputs	
I1 S1	1
I1 S2	3
I2 S1	5
I2 S2	7
I3 S1	9
I3 S2	11

## References

Basic device	DIRIS A14 Reference
<b>Description</b>	
DIRIS A14 MID DIN rail mounted	4825 0020
DIRIS A14 MID door mounted	4825 0021

## Expert Services

- > Study, definition, advice, implementation, maintenance and training... Our experts "Expert Services" offer complete support for the success of your project.

