



DIRIS A17

Multifunction meters - PMD

Multi-measurement meter - dimensions 72x72 mm - LV/HV

new



DIRIS A17

Single-circuit metering,
measurement &
analysis

Function

Compact and ergonomic, the **DIRIS A17** is a multifunction meter specially adapted for monitoring and managing electrical energy. Its communication function allows the use and analysis of data collected via a PLC or VERTELIS energy management software. The DIRIS A17 is a key tool for all your energy efficiency projects.

Advantages

Compact

The 72 x 72 mm compact, surface-mounted format allows easy integration into any type of electrical cabinet configuration.

Compliant with IEC 61557-12

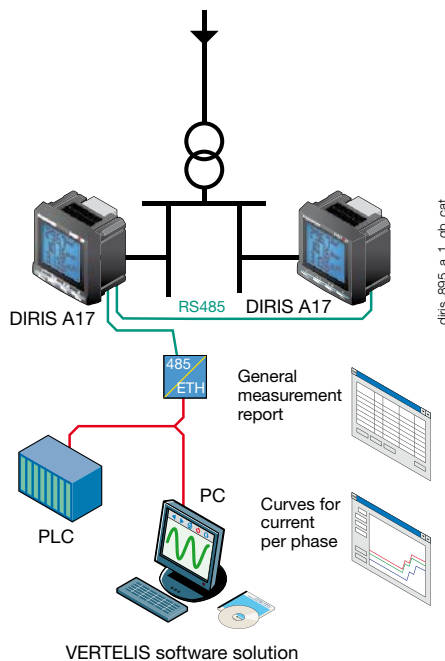
IEC 61557-12 is a high-level standard for all PMDs (Performance Monitoring Devices) that are designed to measure and monitor electrical parameters in distribution networks.

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.).

User friendly

As well as being compact, the DIRIS A17 also allows easy navigation via its 4 direct access keys. Its screen displays a large amount of information, whilst remaining easy to read.

Functional diagram



VERTELIS software solution

The solution for

- > Industry
- > Infrastructure
- > Non critical buildings



Strong points

- > Compact
- > Compliant with IEC 61557-12
- > User friendly
- > Advanced functionalities

Conformity to standards

- > IEC 61557-12
- > IEC 62053-21 class 1
- > IEC 62053-23 class 2



Management software

- > To get the most effective use from your Socomec measurement and metering devices, we offer a range of dedicated software tools. See page 142.

Functions

Multi-measurement

- Currents
 - instantaneous: I1, I2, I3, In
 - maximum average: I1, I2, I3, In
- Voltages & frequency
 - instantaneous: V1, V2, V3, U12, U23, U31, f
- Power
 - instantaneous: 3P, ΣP, 3Q, ΣQ, 3S, ΣS
 - maximum average: ΣP, ΣQ, ΣS
- Power factors
 - instantaneous: 3PF, ΣPF

Metering

- Active energy: +/- kWh
- Reactive energy: +/- kvarh

Harmonic analysis

- Total harmonic distortion (level 31)
 - Currents: thd I1, thd I2, thd I3, thd In
 - Phase-to-neutral voltage: thd V1, thd V2, thd V3, (4 wire network)
 - Phase-to-phase voltage: thd U12, thd U23, thd U31, (3 wire networks)

Events

Alarms on all electrical values

Communications

RS485 with MODBUS protocol

Input

- Pulsed Input
- Data report via external dry contact

Output

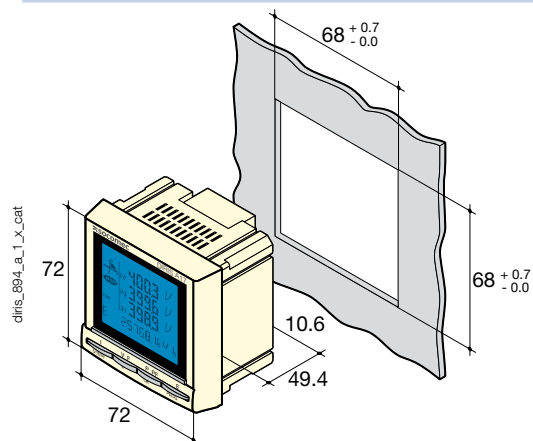
- Remote command of device
- Alarm report
- Pulse report

Front panel



1. Backlit LCD display.
2. Direct access key for currents (instantaneous and maximum) and current THD.
3. Direct access key for voltages, frequency and voltage THD.
4. Pushbutton for active, reactive, and apparent power (instantaneous and max. values) and power factor.
5. Direct access key for energies.

Case



Type	Panel mounting
Dimensions W x H x D	72 x 72 x 60 mm
Case degree of protection	IP30
Front degree of protection	IP52
Display type	Backlit LCD
Terminal block type	fixed or plug-in
Voltage and other connection cross-section	0.2 ... 2.5 mm ²
Current connection cross-section	0.5 ... 6 mm ²
Weight	400 g

Accessories

Current transformers
(see page 98)



DIRIS A17

Multifunction meters - PMD

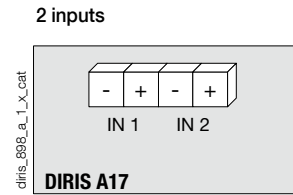
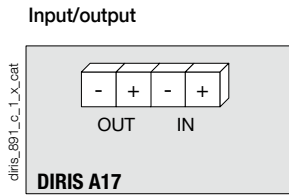
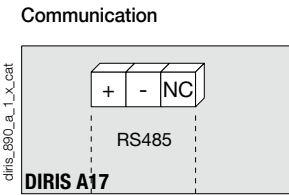
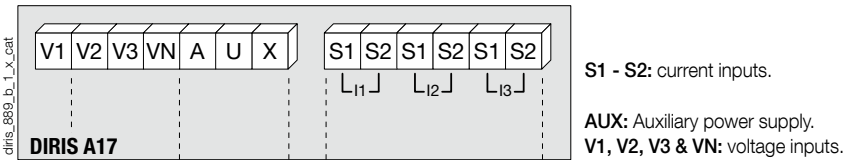
Multi-measurement meter - dimensions 72x72 mm - LV/HV

Electrical characteristics

Current measurement (TRMS)	
Via CT primary	9 999 A
Via CT secondary	1 or 5 A
Measurement range	0 ... 11 kA
Input consumption	0.6 VA
Measurement updating period	1 s
Accuracy at 50 Hz	0.5 %
Accuracy at 60 Hz	1 %
Permanent overload	6 A
Intermittent overload	10 I _n for 1 s
Voltage measurements (TRMS)	
Direct measurement between phases	50 ... 500 VAC
Direct measurement between phase and neutral	28 ... 289 VAC
VT primary	400 000 VAC
VT secondary	60, 100, 110, 173, 190 VAC
Input consumption	≤ 0.1 VA
Measurement updating period	1 s
Accuracy at 50 Hz	0.5 %
Accuracy at 60 Hz	1 %
Permanent overload	800 VAC
Power measurement	
Measurement updating period	1 s
Accuracy at 50 Hz	1 %
Accuracy at 60 Hz	2 %
Power factor measurement	
Measurement updating period	1 s
Accuracy at 50 Hz	0.5 %
Accuracy at 60 Hz	1 %
Frequency measurement	
Measurement range	45 ... 65 Hz
Measurement updating period	1 s
Accuracy	0.1 %

Energy accuracy	
Active (according to IEC 62053-21) at 50 Hz	class 1
Active (according to IEC 62053-21) at 60 Hz	class 2
Reactive (according to IEC 62053-23)	class 2
Operating conditions	
Operating temperature	- 10 ... + 55 °C
Storage temperature	- 20 ... + 85 °C
Relative humidity	95 %
Auxiliary power supply	
AC voltage	220 ... 277 VAC
AC tolerance	± 15 %
Frequency	50 / 60 Hz
Consumption	3 VA
Digital, pulse, command input	
Number	1
Type	optocoupler 8 to 30 VDC
Minimum signal width	10 ms
Minimum duration between 2 pulses	18 ms
Communication	
Link	RS485
Type	2 ... 3 half duplex wires
Protocol	MODBUS RTU
MODBUS [®] speed	1200 ... 38400 bauds
Pulse, alarm and control output	
Number	1
Power supply	8 to 30 VDC
Minimum signal width	10 ms
Minimum duration between 2 pulses	18 ms
Type of optocoupler	IEC 62053-31 Class A (5 ... 30 VDC)
Pulse weight	100 Wh, 1 kWh, 10 kWh, 100 kWh, 1000 kWh, 10000 kWh
Pulse length	100 ms, 200 ms, 300 ms, ..., 900 ms

Terminals



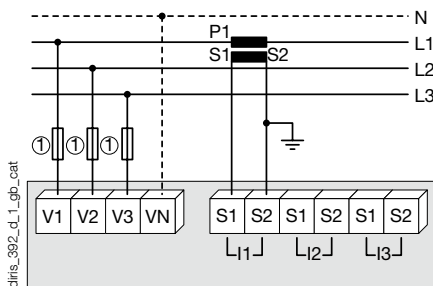
Connection

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.

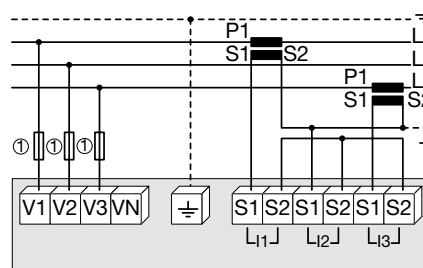
Low voltage balanced network

3/4 wires with 1 CT



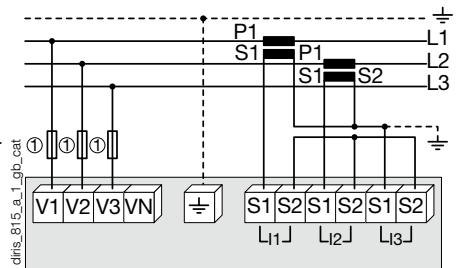
Low voltage unbalanced network

3 wires with 2 CTs



Use of 2 CTs reduces by 0.5% the accuracy of the phases, the current of which is worked out by vector calculation.

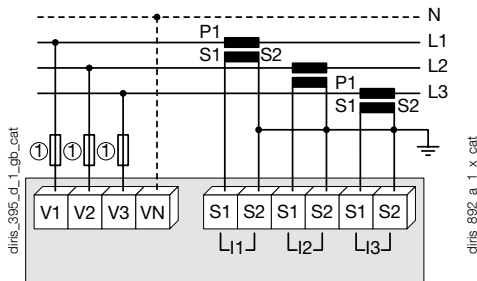
3 wires with 2 CTs



Use of 2 CTs reduces by 0.5% the accuracy of the phases, the current of which is worked out by vector calculation.

Low voltage unbalanced network

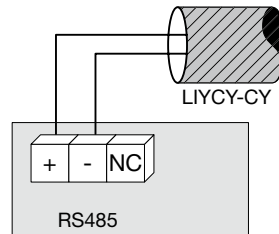
3/4 wires with 3 CTs



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

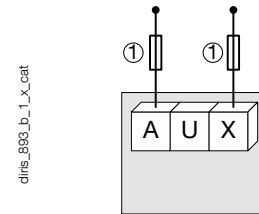
Additional information

Communication via RS485 link



AC auxiliary power supply

AUX Supply 230VAC



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

References

Basic device		DIRIS A17
Auxiliary power supply U_s		Reference
220 ... 277 VAC with pulse output		4825 0101
220 ... 277 VAC with MODBUS communication via RS485		4825 0102
220 ... 277 VAC with MODBUS communication via RS485 + THD		4825 0103
220 ... 277 VAC with MODBUS communication via RS485 + 2 inputs		4825 0104
220 ... 277 VAC with MODBUS communication via RS485 + 2 inputs + THD		4825 0105
Accessories		
Description of accessories	To be ordered in multiples of	Reference
Fuse disconnect switches for the protection of voltage inputs (type RM) 3 poles	4	5601 0018
Fuse disconnect switches for the protection of the auxiliary supply (type RM) 1 pole + neutral	6	5601 0017
Fuses type gG 10x38 0.5 A	10	6012 0000
Current transformer range	1	See page 98
Management softwares for DIRIS		See page 142

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.

