



DIRIS A17

Multifunction meters - MFM

Multi-measurement meter - dimensions 72 x 72 mm

new



DIRIS A17

Function

Compact and ergonomic, the **DIRIS A17** is a multifunction meter specially adapted for monitoring and managing electrical energy. Its communication function allows the analysis of data collected via a PLC or Vertelis energy management software.

Advantages

Compact

The compact 72 x 72 mm panel-mount format enables easy integration into any type of electrical cabinet, including MCCs (Motor Control Centres).

Compliant with IEC 61557-12

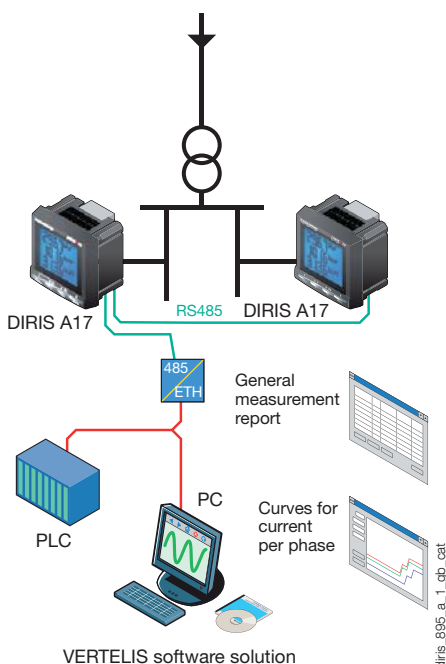
IEC 61557-12 is a high-level standard for all PMDs (Performance Monitoring Devices) that are designed to measure and monitor electrical parameters in distribution networks. Compliance with IEC 61557-12 ensures a high level of equipment performance, in terms of metrology, and the mechanical and environmental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

Advanced functions

The DIRIS A17 includes a programmable input and output as standard on all versions; input/output functions include pulse metering, alarm report and pulse output.

An RS485 MODBUS communication output is supplied on two versions, allowing the extraction of data and device configuration remotely.

Principle diagram



Easy to use

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.

The solution for

- > Industry.
- > Infrastructure.
- > Non critical buildings.



Strong points

- > Compact.
- > Compliant with IEC 61557-12.
- > Advanced functions.
- > Easy to use.

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 464.

Functions

Multi-measurement

- Currents
 - instantaneous: I1, I2, I3, In
 - maximum average: I1, I2, I3, In
- Voltages & frequency
 - instantaneous: U1, U2, U3, 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 U1, thd U2, thd U3, (4 wire networks)
 - Phase-to-phase voltage: thd U12, thd U23, thd U31, (3 wire networks)

Events

Alarms on all electrical values

Communications

Digital RS485 (MODBUS)

Input

- Pulse metering
- Remote device status

Output

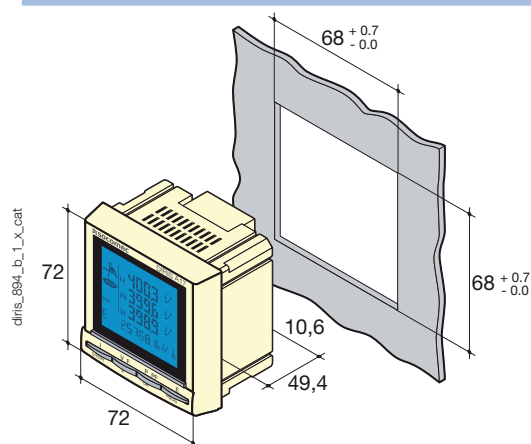
- Remote command of device
- Alarm report
- Pulse report

Front panel



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

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 display
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 488)



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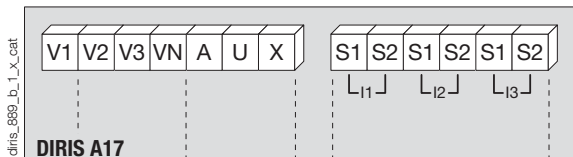
Multi-measurement meter - dimensions 72 x 72 mm

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	69 ... 690 VAC
Direct measurement between phase and neutral	40 ... 400 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 %

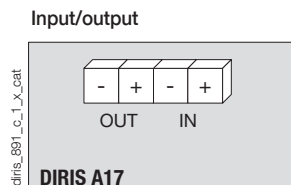
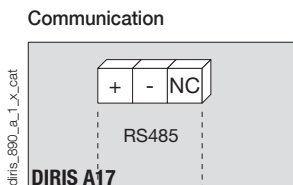
Energy accuracy	
Active (according to IEC 62053-21) at 50 Hz	Class 1
Active (according to IEC 62053-21) at 60 Hz	Class 2
Reactive (according to IEC 62053-23)	Class 2
Operating conditions	
Operating temperature	- 10 ... + 55 °C
Storage temperature	- 20 ... + 85 °C
Relative humidity	95 %
Auxiliary power supply	
Alternating voltage	220 ... 277 VAC
AC tolerance	± 15 %
Frequency	50 / 60 Hz
Consumption	3 VA
Digital pulse and control 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



S1 - S2: current inputs.

AUX: auxiliary power supply.
V1, V2, V3 & VN: voltage inputs.



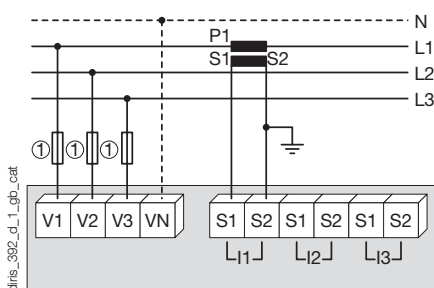
Connection

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, an accessory which is included in this catalogue. Please consult us. 440.

Low voltage balanced network

3/4 wires with 1 CT

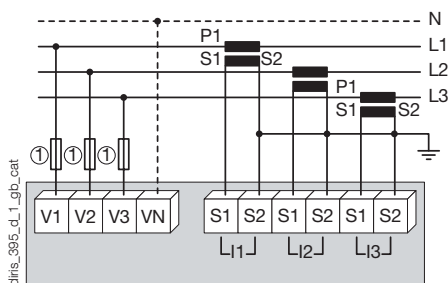


Use of 1 CT reduces by 0.5% the accuracy of the phases, the current of which is worked out by vector calculation.

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

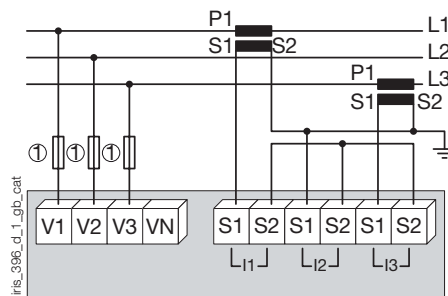
Low voltage unbalanced network

3/4 wires with 3 CTs



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

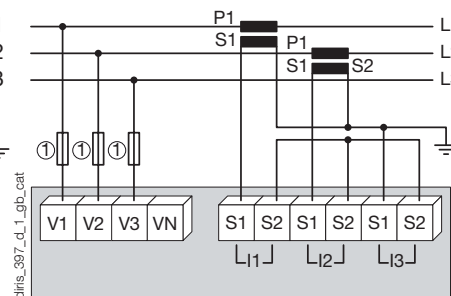
3 wires with 2 CTs



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

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

3 wires with 2 CTs

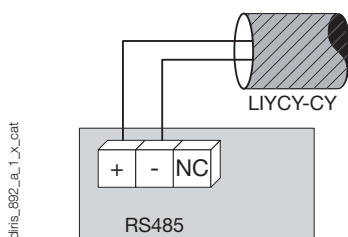


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1. Fuses 0.5 A gG / 0.5 A class CC.

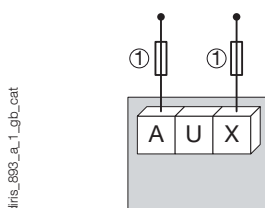
Additional information

Communication via RS485 link



AC auxiliary power supply

220 / 277 VAC



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 RS485 MODBUS communication		4825 0102
220 ... 277 VAC with RS485 MODBUS communication		4825 0103
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 488
Management software for DIRIS		See page 464

Services & Technical Assistance

- Technical site audits and solution specification, commissioning, maintenance, training... Our Services & Technical Assistance experts offer you personalised support to ensure success with all your projects.

