DIRIS A10

Modular multi function meter

➲ Function

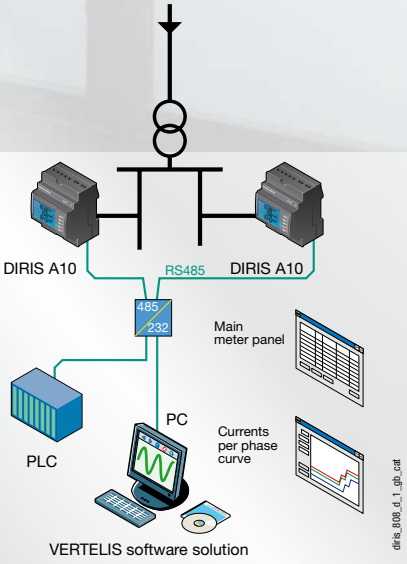
The **DIRIS A10** is a multi function meter for measuring electrical values in low voltage networks in modular format. It allows all electrical parameters to be displayed and the measurement, energy metering and communication functions to be used.
In addition, the DIRIS A10 has a function for correcting errors in CT connections. It also allows variations in temperature to be detected thanks to its internal temperature measurement function.

➲ Conformity to standards

- IEC 62053-22 class 0.5S
- IEC 62053-23 class 2
- IEC 61557-12
- UL 61010-1

➲ Applications

Multi-function meter
- Current
  - 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 factor
  - instantaneous: 3PF, ΣPF
- Internal temperature



Metering
- Active energy: + kWh
- Reactive energy: + kvarh
- Hours:

Harmonic analysis
- Total harmonic distortion (level 51)
  - Currents: thd I1, thd I2, thd I3
  - Phase-to-neutral voltage: thd U1, thd U2, thd U3
  - Phase to phase voltage: thd U12, thd U23, thd U31

Dual tariff function
Selection of one out of 2 billing tariffs

Events
Alarms on all electrical values

Communications (1)
RS485 (JBUS/MODBUS) digital

Output
- Remote comand of apparatus
- Alarm report
- Pulse report

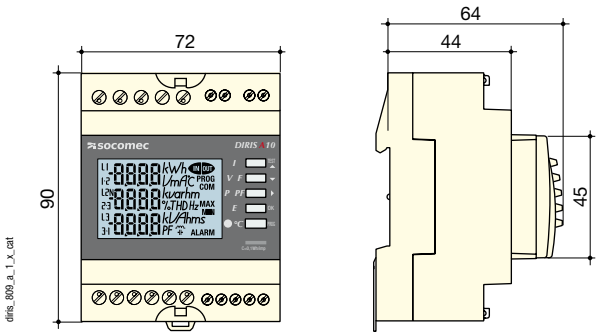
Input
- Remote control

(1) Available as an option (see the following pages).

➲ Front panel

1. Backlit LCD screen.
2. Direct access key for currents (instant and maximum) and current THD.
3. Direct access key for voltages, frequency and voltage THD.
4. Direct access key for active, reactive and apparent power (instantaneous and max. values) and power factor.
5. Direct access key for energies and hour meter.
6. Pushbutton for currents, temperatures and CT setup wiring correction.
7. Metrological LED.

➲ Case



Type	Modular
Number of optional modules	4
Dimensions W x H x D	72 x 90 x 64 mm
Case protection index	30
Front protection rating	52
Display type	LCD
Voltage and other connection section	4 mm²/AWG 10
Connection cross-section of others	2.5 mm²/AWG 14
Weight	205 g (4825 0010) - 215 g (4825 0011)

➲ Electrical characteristics

Current measurement on high-impedance inputs (TRMS)	
Via CT primary	9 999 A
Via CT secondary	5 A
Measurement range	0 … 11 kA
Input consumption	0.6 VA
Measurement updating period	1 s
Accuracy	0.2 %
Sustained overload	6 A
intermittent overload	10 I_n for 1 s

Voltage measurements (TRMS)	
Direct measurement between phases	50 … 520 VAC
Direct measurement between phase and neutral	28 … 300 VAC
Input consumption	≤ 0.1 VA
Measurement updating period	1 s
Accuracy	0.2 %
Sustained overload	800 VAC

Power measurement	
Measurement updating period	1 s
Accuracy	0.5 %

Power factor measurement	
Measurement updating period	1 s
Accuracy	0.5 %

Frequency measurement	
Measurement range	45 … 65 Hz
Measurement updating period	1 s
Accuracy	0.1 %

Energy accuracy	
Active (according to IEC 62053-22)	class 0.5 S
Reactive (according to IEC 62053-23)	class 2

Auxiliary power supply	
Alternating voltage	110 … 277 VAC
AC tolerance	+/-10 %
Direct voltage	110 … 277 VDC
DC tolerance	+15 %
Frequency	50 / 60 Hz
Consumption	< 3 VA

Digital output (pulses or on/off)	
Number	1
Type	20 / 30 VDC - 0.5 A - 10 VA
Max. number of operations	≤ 10^8

Communication	
Link	RS485
Type	2 … 3 half duplex wires
Protocol	JBUS/MODBUS® in RTU mode
JBUS/MODBUS® speed	1400 … 38400 bauds

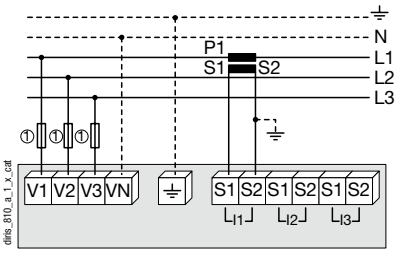
Operating conditions	
Operating temperature	- 10 … + 40°C
Storage temperature	- 20 … + 70 °C
Relative humidity	80 %

➲ DIRIS A10 - Connection

Low voltage balanced network

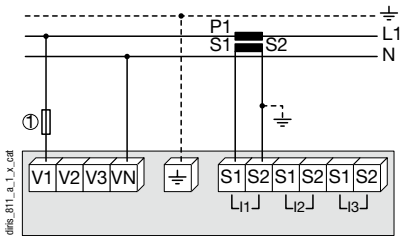
Recommandation:
- For IT earthing systems, it is recommended that the CT secondary is not connected to earth.
- When disconnecting the DIRIS, the secondaries of each current transformer must be short-circuited.
- It is recommended that the earthing point for the DIRIS A10 and the current transformer secondaries should not earthed at the same time.

3/4 wires with 1 CT



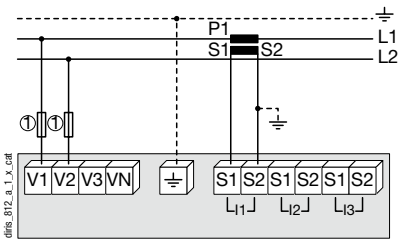
1. Fus. 0.5 A gG / 0.5 A class CC

Single phase



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

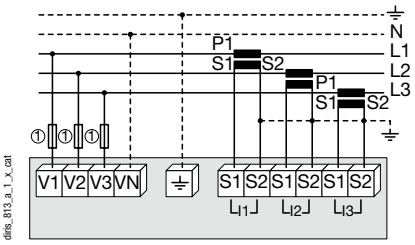
Two phase



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

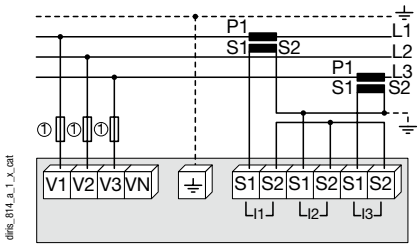
Low voltage unbalanced network

3/4 wires with 3 CTs



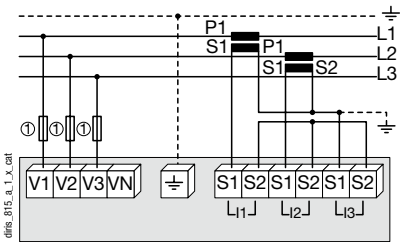
1. Fus. 0.5 A gG / 0.5 A class CC

3 wires with 2 CTs



Use of 2 CTs reduces by 0.5% the accuracy of the phase, whose current is worked out by vector calculation.
1. Fus. 0.5 A gG / 0.5 A class CC

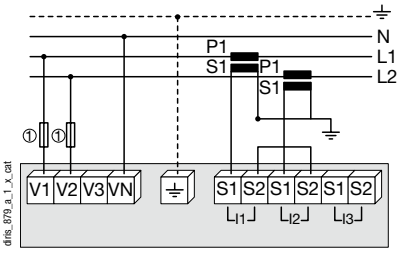
3 wires with 2 CTs



Use of 2 CTs reduces by 0.5% the accuracy of the phase, whose current is worked out by vector calculation.
1. Fus. 0.5 A gG / 0.5 A class CC

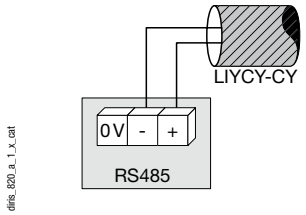
Additional information

2 ph, 3 wires with 2 CTs

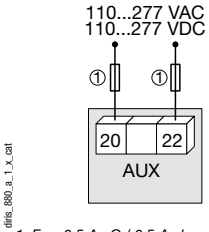


1. Fus. 0.5 A gG / 0.5 A class CC

Communication via RS485 link

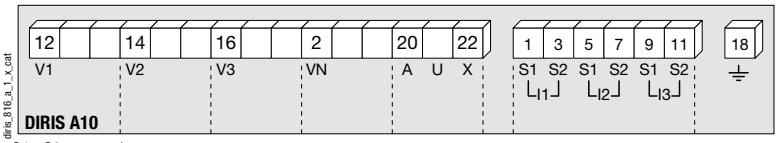


AC & DC auxiliary power supply



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

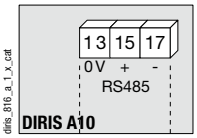
➲ Terminals



S1 - S2: current inputs.

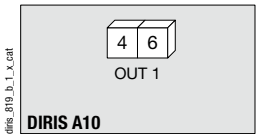
AUX: auxiliary power supply Us.
V1, V2, V3 & VN: voltage inputs.

Communication (option)



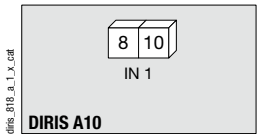
RS485 link.

Output



4 - 6: *output n°1*

Input



8 - 10*: input n°1*

➲ References

Basic device **Description**	**DIRIS A10** **Reference**
DIRIS A10 (grey colour available on request)	4825 **U010**
DIRIS A10 with JBUS/MODBUS communication via RS485 (grey colour available on request)	4825 **U011**

Description of accessories	**To be ordered by multiple**	**Reference**
Fuse combination switches for the protection of voltage inputs (type RM) 3 poles	4	5601 **0018**
Fuse combination switches for the protection of the auxiliary supply (type RM) 1 pole + neutral	6	5601 **0017**
Fuses Class CC 0.5A	10	6CC0 **5000**

➲ Services and Technical assistance

Our expertise extends to a complete offer of services like commissioning installation audit, training, maintenance and project engineering.