

NEW



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

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

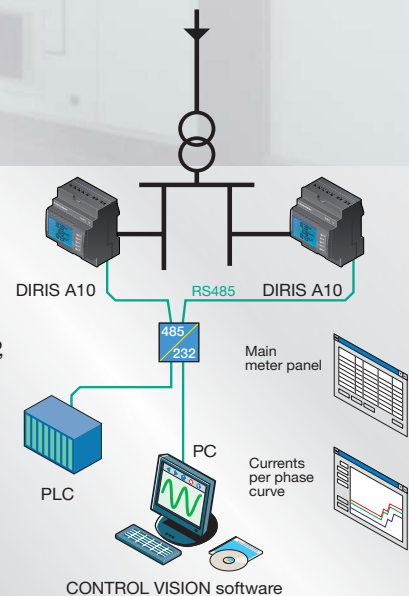
- Active energy: + kWh
- Reactive energy: + kvarh
- Hours: ⌚

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

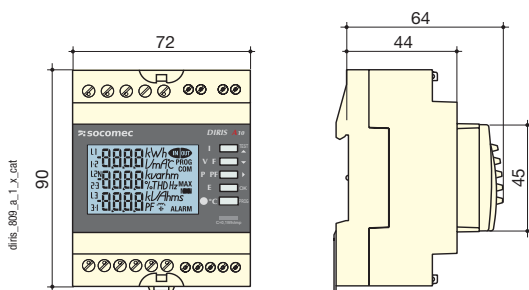
(1) Available as an option (see the following pages).

➔ 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 mm ² |
| Connection cross-section of others | 2.5 mm ² |
| 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 ... 500 VAC |
| Direct measurement between phase and neutral | 28 ... 289 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 | 220 ... 277 VAC |
| AC 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 ... + 55 °C |
| Storage temperature | - 20 ... + 70 °C |
| Relative humidity | 85 % |

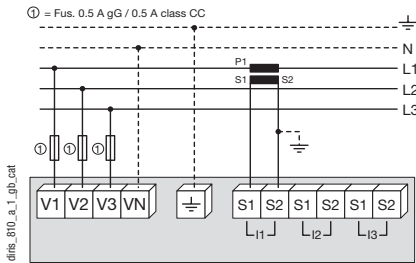
➤ DIRIS A10 - Connection

Low voltage balanced network

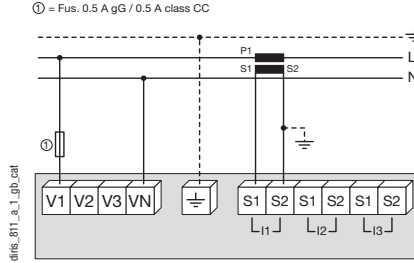
Recommendation:

- For IT earthing systems, it is recommended that the CT secondary is not connected to earth.
- When disconnecting the DIRIS, the secondaries of each current transformer must be short-circuited. This operation can be carried out automatically from a product in the SOCOMEC catalogue, PTI: consult us.
- It is recommended that the earthing point for the DIRIS A10 and the current transformer secondaries should not be earthed at the same time.

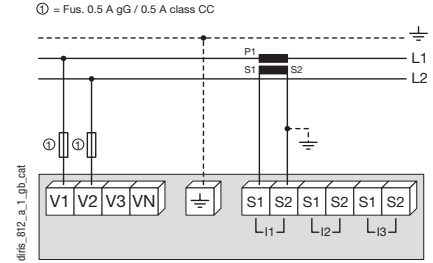
3/4 wires with 1 CT



Single phase

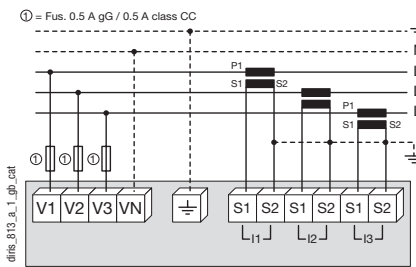


Two phase

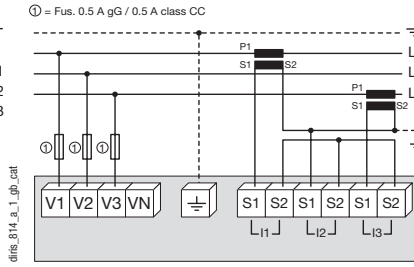


Low voltage unbalanced network

3/4 wires with 3 CTs

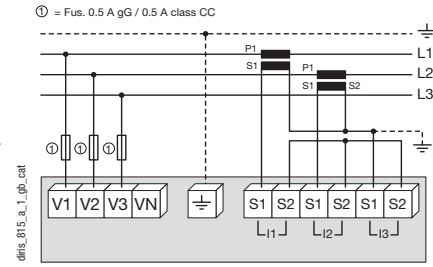


3 wires with 2 CTs



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

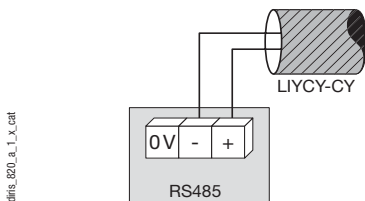
3 wires with 2 CTs



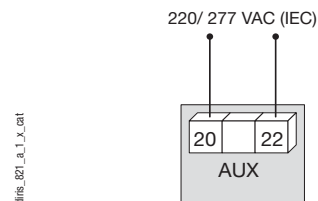
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Additional information

Communication via RS485 link

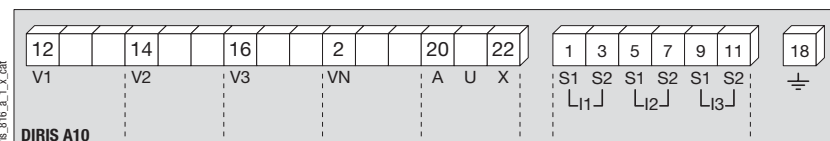


AC & DC auxiliary power supply



It is recommended that the auxiliary power supply be protected by the use of 500 mA gG fuses.

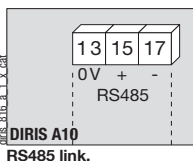
➔ **Terminals**



S1 - S2: current inputs.

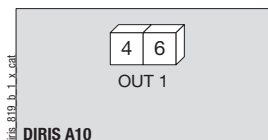
AUX: auxiliary power supply Us.
V1, V2, V3 & VN: voltage inputs.

Communication (option)



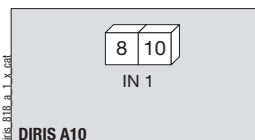
DIRIS A10
RS485 link.

Output



DIRIS A10
4 - 6: output n°1

Input



DIRIS A10
8 - 10: input n°1

➔ **References**



DIRIS A10
Reference

| Basic device | Reference |
|---|-----------|
| DIRIS A10 (grey colour available on request) | 4825 0010 |
| DIRIS A10 with JBUS/MODBUS communication via RS485 (grey colour available on request) | 4825 0011 |

| 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 type gG 10x38 0.5 A | 10 | 6012 0000 |
| Current transformers range | | See page 334 |

➔ **Services and Technical assistance**

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

