

NEW



Monitoring and managing energy for low voltage electrical installations

Function

DIRIS A20 are measurement units which ensure the user has access to all the measurements required for successfully carrying out energy efficiency projects and ensuring the electrical distribution is monitored.

All this information can be used and analysed remotely using the CONTROL VISION software.

Conformity to standards

- IEC 61557-12
- IEC 62053-22 class 0.5S
- IEC 62053-23 class 2

Applications

Multi-function meter

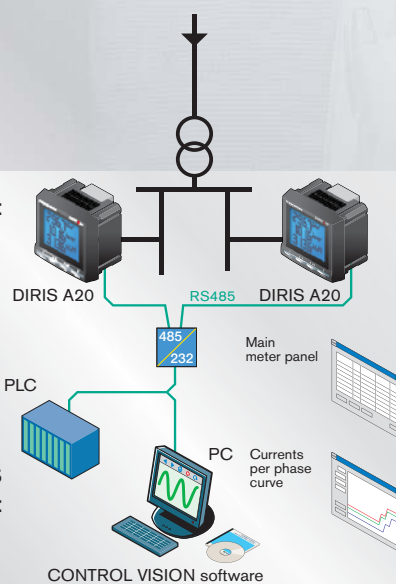
- Current
 - instantaneous: I1, I2, I3, In
 - maximum average: I1, I2, I3, In
- Voltages & frequency
 - instantaneous: U1, U2, U3, U12, U23, U31, F
- Power
 - instantaneous: 3P, ΣP, 3Q, ΣQ, 3S, ΣS
 - maximum average: ΣP, ΣQ, ΣS
- Power factor
 - instantaneous: 3PF, ΣPF

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



Events⁽¹⁾

Alarms on all electrical values

Communications⁽¹⁾

RS485 (JBUS/MODBUS) digital

Output⁽¹⁾

- Remote comand of apparatus
- Alarm report
- Pulse report

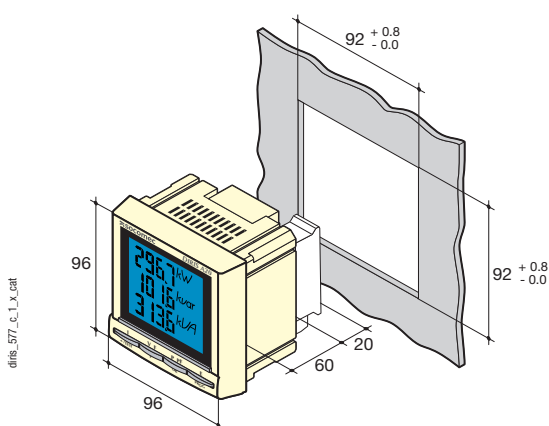
⁽¹⁾ Available as an option (see the following pages).

➔ Front panel



1. Backlit LCD screen.
2. Direct access key for currents (instantaneous and max. values), current THD and set up wiring correction.
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 and hour meter.

➔ Case



Type	Panel mounting
Dimensions W x H x D	96 x 96 x 60 mm
Case protection index	IP30
Front protection rating	IP52
Display type	LCD
Terminal blocks type	fixed or pull-out
Voltage and other connection section	0.2 ... 2.5 mm ²
Current connection section	0.5 ... 6 mm ²
Weight	400 g

➔ Plug-in modules



1 Output

1 output assignable to:

- Pulses: configurable (type, weight, time) in kWh or kvarh
- Monitoring: 3I, In, 3V, 3U, F, ΣP, ΣQ, ΣS, ΣPFL/C, THD 3I, THD 3V, THD 3U and timer
- Control of apparatus

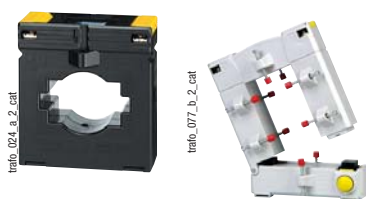


Communication

RS485 link with JBUS / MODBUS protocol
(speed up to 38400 bauds)

➔ Accessories

Current transformer (see page 334)



IP65 protection



Mounting kit for 144 x 96 mm cut out plate



➤ DIRIS A20 - 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	110 ... 400 VAC
AC tolerance	± 10 %
Direct voltage	120 ... 350 VDC
DC tolerance	± 20 %
Frequency	50 / 60 Hz
Consumption	10 VA

Pulse or alarm output

Number	1
Type	100 VDC - 0.5 A - 10 VA
Max. number of operations	≤ 10 ⁸

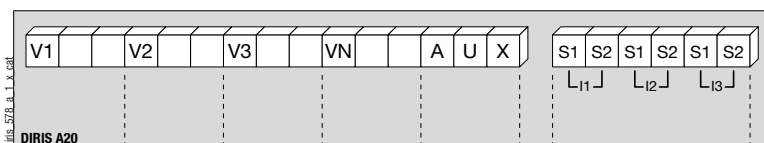
Communication

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 ... + 85 °C
Relative humidity	95 %

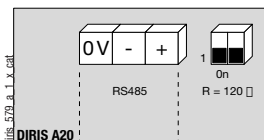
➤ Terminals



S1 - S2: current inputs.

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

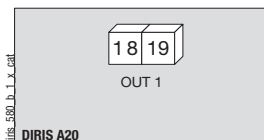
Communication module



RS485 link.

R = 120 Ω: internal resistance for the RS485 link.

Output or alarm module



18 - 19: output n°1

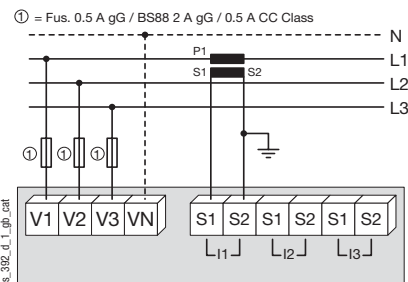
➤ Connection

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.

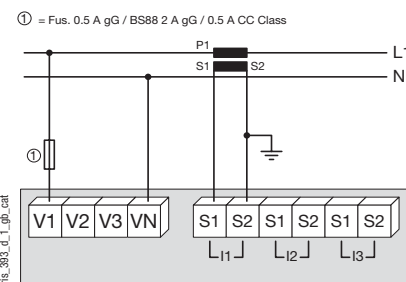
Low voltage balanced network

3/4 wires with 1 CT

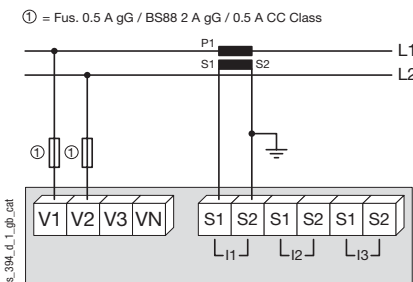


Use of 1 CT reduces by 0.5% the accuracy of the phases, the current of which is worked out by vector calculation.

Single phase

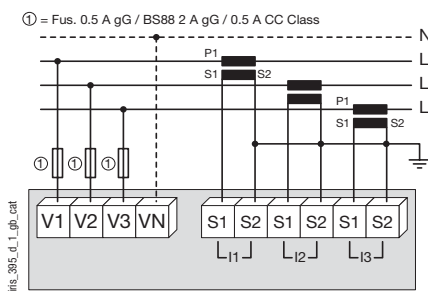


Two phase

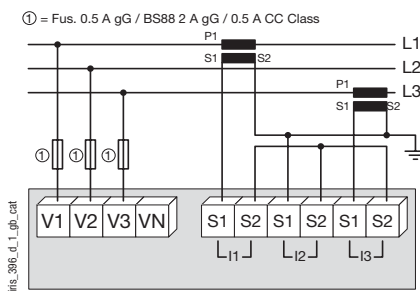


Low voltage unbalanced network

3/4 wires with 3 CTs

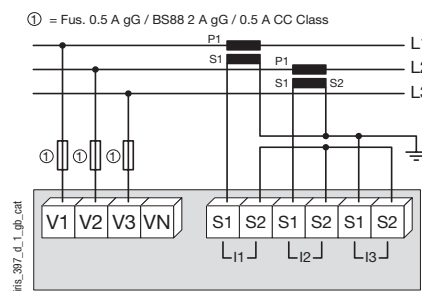


3 wires with 2 CTs



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

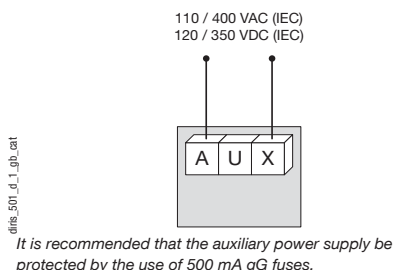
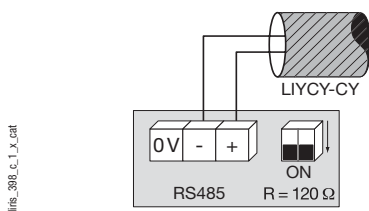


Use of 2 CTs reduces by 0.5% the accuracy of the phase, whose current is worked out by vector calculation.

Additional information

Communication via RS485 link

AC & DC auxiliary power supply



References



DIRIS A20
Reference

Basic device

Auxiliary power supply Us

110 ... 400 VAC / 180 ... 350 VDC

Reference

4825 0200

Options

Plug-in modules

1 output

RS485 JBUS / MODBUS[®] communication

Reference

4825 0080

4825 0082

Accessories

Description of accessories	To be ordered by multiple	Reference
IP65 protection	1	4825 0089
Panel mounting kit for a 144 x 96 mm cutout	1	4825 0088
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.

