

DIRIS A20

Network analysis

- DIRIS Am
- DIRIS A20**
- DIRIS A40 / DIRIS A41
- Communication interfaces
- DIRIS VISION software
- CONTROL VISION software
- BILLING APPLICATION software



Functions

The **DIRIS A20** is a multi-function meter for measuring electrical values in all low voltage networks. All the parameters can be configured and displayed on its front panel and measuring and timing functions used. In addition **DIRIS A20** has a function for correcting connection errors.

Conformity to standards

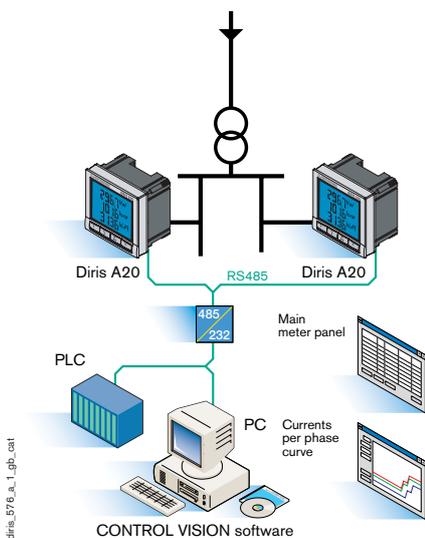
- IEC 62053-22 class 0.5 S
- IEC 62053-23 class 2
- IEC 61010-1
- IEC 61000-4-2
- IEC 61000-4-3
- IEC 61000-4-4
- IEC 61000-4-5
- IEC 61000-4-6
- IEC 61000-4-8
- IEC 61000-4-11
- IEC 60068-2-6
- IEC 60068-2-11
- IEC 60068-2-30
- UL 61010-1
- CSA C22.2 No. 61010-1



DIRIS A20

1. Backlit LCD display.
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. Direct access key for active, reactive and apparent power (instantaneous and max. values) and power factor.
5. Direct access key for energies.

Applications



Using electrical parameters means using several analog or digital single-function products such as ammeters, voltmeters or wattmeters.

DIRIS A20, with its four direct access keys and LCD display, helps you use all the parameters in an LV installation. These parameters can be centralized on a PC or PLC through an RS485 link using JBUS/MODBUS protocol®. The casing is designed so that the installer can easily fit the DIRIS A20 to the door of a cabinet. To facilitate and optimize the operator's work, the DIRIS A20 uses one of the most functional principles for integrating communications or metering. Simply fit a module to the rear of the casing to add a function.

Measurement in real effective values (TRMS) of:

- current per phase and neutral in instant,
- phase-to-neutral and phase-to-phase voltages,
- frequency,
- active positive power total in instant and maximum value over a programmable period,
- reactive positive power total in instant,
- apparent positive power total in instant,
- power Factor (PF) total with inductive or capacitive indication,
- harmonic distortion rate (THD) up to 31 on phase-to-neutral and phase-to-phase voltages and currents (THD 3U, THD 3V, THD 3I).

Energies meters

- Positive active energy meter.
- Positive reactive energy meter.



Services +
 > Audit
 > Setting up
 > Training
 See page IV



References



diris_560_b_2_cat

DIRIS A20

Base unit	References
Auxiliary power supply U_s	4825 0A20
110 ... 400 VAC / 120 ... 350 VDC (IEC) - 110 ... 240 VAC / 120 ... 250 VDC (UL/CSA)	
Options	
Plug-in modules	
Pulse outputs	4825 0080
RS485 JBUS / MODBUS® communication	4825 0082
Accessories	
IP65 protection cover (not UL/CSA)	4825 0089
Fitting kit for 144 x 96 mm cut out (not UL/CSA)	4825 0088

Plug-in modules



Pulse outputs

1 configurable pulse output (type, weight and duration).

RS485 JBUS / MODBUS® communication

RS485 link with JBUS / MODBUS® protocol and transmission speed up to 38400 bauds.

Accessories

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IP65 protection

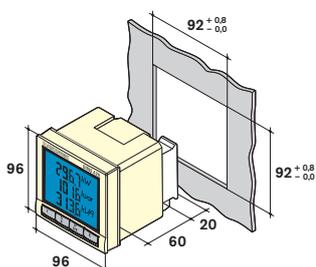
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Device fitted with 144 x 96 mm cut out plate

Overall dimensions

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

Electrical characteristics

Current measurement on insulated inputs (TRMS)

CT primary	9 999 A
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 measurement (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

AC voltage (IEC)	110 ... 400 VAC
AC voltage (UL/CSA)	110 ... 240 VAC
AC tolerance	± 10%
DC voltage (IEC)	120 ... 350 VDC
DC voltage (UL/CSA)	120 ... 250 VDC
DC tolerance	± 20%
Frequency	50 / 60 Hz
Consumption	10 VA

Outputs (pulsed)

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

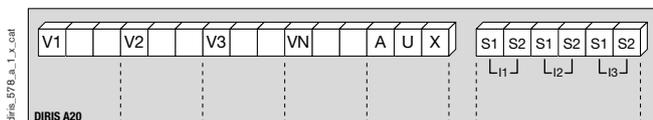
Communication

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

Operating conditions

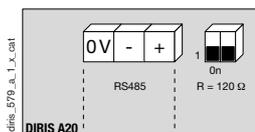
Operating temperature	- 10 ... + 55 °C
Storage temperature	- 20 ... + 85 °C
Relative humidity	95%

Terminals



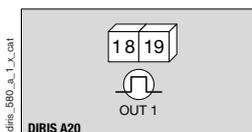
S1 - S2: current inputs
AUX: auxiliary power supply U_s
V1 - V2 - V3 - VN: voltage inputs

• Communication module



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

• Metering module



18 - 19: pulse output no. 1



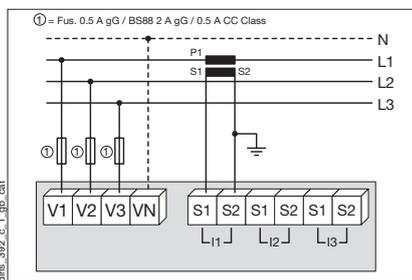
Connections

Recommendation

- For IT systems, it is recommended not to connect the CT secondary to earth.
- When disconnecting the DIRIS, the secondaries of each current transformer must be short-circuited. This operation can be carried out automatically with a product in the SOCOMEC catalogue, PTI (only available for 5 A secondary): please consult us.

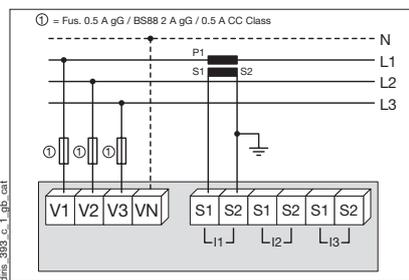
► Low voltage balanced network

• 3/4 wires with 1 CT

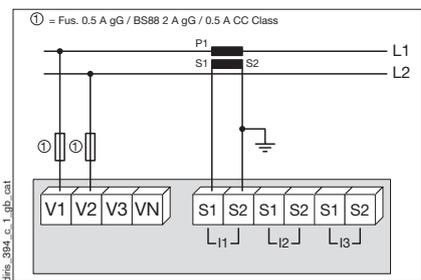


The use of 1 CT reduces by 0.5 % the accuracy of the phases whose current is determined by vector calculation

• Single phase

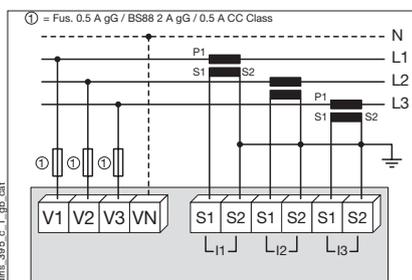


• Two phases

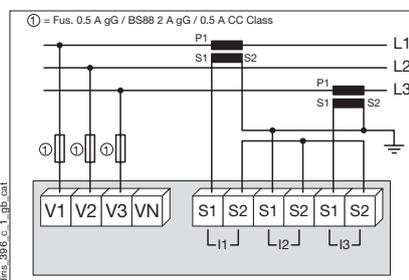


► Low voltage unbalanced network

• 3/4 wires with 3 CTs

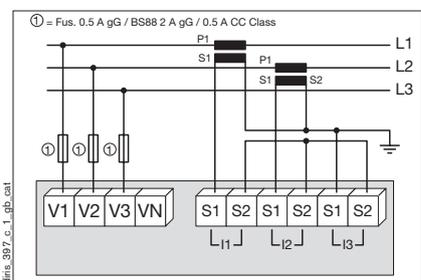


• 3 wires with 2 CTs



The use of 2 CTs reduces by 0.5 % the accuracy of the phase whose current is determined by vector calculation

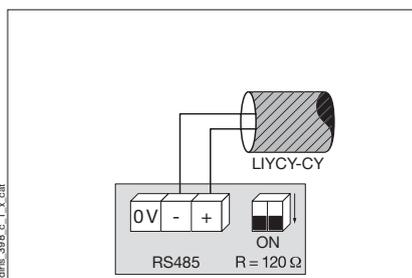
• 3 wires with 2 CTs



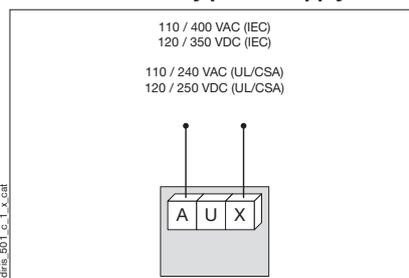
The use of 2 CTs reduces by 0.5 % the accuracy of the phase whose current is determined by vector calculation

► Other 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, BS88 2A gG or 500 mA CC Class fuses