

Single phase counter, direct connection 32 A, pulse output

Cat. No: 0 046 70



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1. DESCRIPTION - USE

Single phase active energy meter.
Measures the electric power consumed by a single-phase circuit downstream of the power distribution metering.
Displays the energy consumption in kWh.

2. RANGE

. Cat. No 0 046 70: Single phase counter in 1 module (18,1 mm) self-supplied on the measurement terminals.

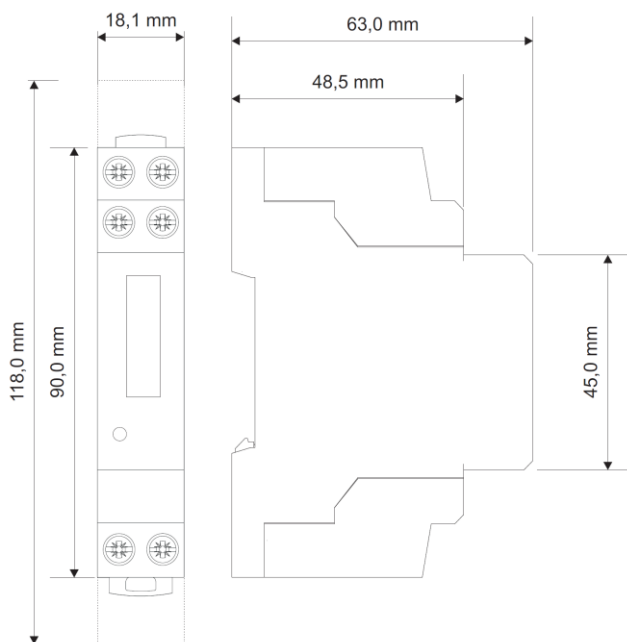
Rated currents:

- . Starting current, I_{st} : 20 mA
- . Base current, I_b : 5 A
- . Maximum current, I_{max} : 32 A

Rated voltage and frequency:

- . U_n : 230 VAC - Operational range: 196 ÷ 264 VAC
- . F_n : 50/60 Hz - Operational range: 47 ÷ 63 Hz

3. OVERALL DIMENSIONS



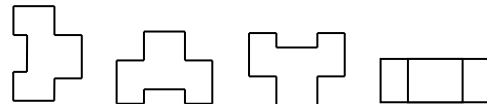
4. PREPARATION - CONNECTION

Fixing:

- . On symmetrical EN/IEC 60715 rail or DIN 35 rail.

Operating position:

- . Vertical Horizontal Upside down On the side



Power terminals (1-3; 4-6):

- . Terminals depth: 8 mm.
- . Stripping length: 8 mm

Pulse output terminals (20-21):

- . Terminals depth: 8 mm.
- . Stripping length: 8 mm

Screw head:

- . Slotted and Philips.

Recommended tightening torque:

- . Power terminals: 0,8 Nm.
- . Pulse output terminals: 0,5 Nm.

Max. tightening torque:

- . Power terminals: 1,1 Nm.
- . Pulse output terminals: 0,8 Nm.

Tools required:

- . For terminals: Philips n°1 screwdriver or flat screwdriver 4 mm.
- . For fixing the device on the DIN rail: flat screwdriver 5.5 mm (max. 6 mm).

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4. PREPARATION - CONNECTION *(continued)*

Connectable section:

- . Copper cables.
- . Power terminals

	Without ferrule	With ferrule
Rigid cable	1 to 10 mm ²	-
Flexible cable	1 to 10 mm ²	1 to 6 mm ²

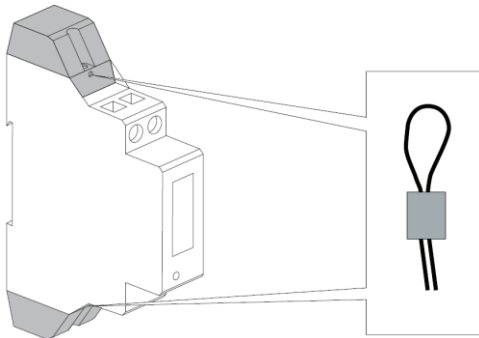
Pulse output terminals

	Without ferrule	With ferrule
Rigid cable	1 to 6 mm ²	-
Flexible cable	1 to 6 mm ²	1 to 4 mm ²

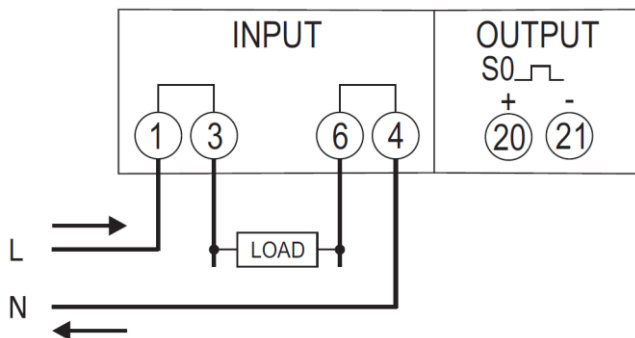
ATTENTION: for safety reasons, it is compulsory not to exceed 4 A/mm² as current density in the input terminals.

Terminal protection:

- . Power terminals are protected with integrated sealable screw cover.



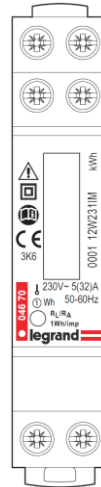
Electrical wiring diagram:



5. GENERAL CHARACTERISTICS

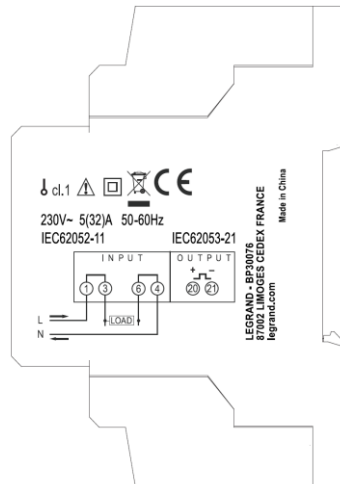
Front face marking:

- . By permanent ink pad printing.



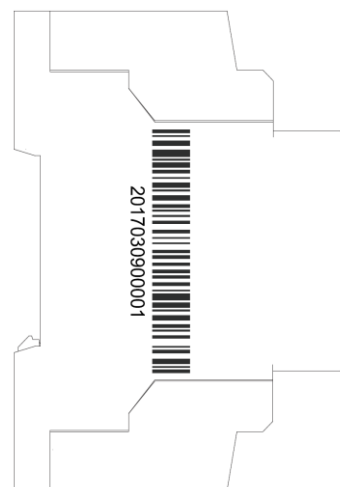
Right face marking:

- . By laser:



Left face marking:

- . By laser:



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5. GENERAL CHARACTERISTICS *(continued)*

Display:

- . Type: 7 digits LCD
- . Resolution: 0,01 kWh
- . Maximum indication: 99999,99 kWh
- . Total Energy counter non-resettable

Metrological LED:

- . Pulse weight: 1 Wh/imp

Pulse output's characteristics:

- . Type S0 according to IEC/EN62053-31, class A
- . Voltage U_{imp} : 12...27 VDC
- . Current I_{imp} : 10...27 mA
- . Pulse weight: 1 Wh/imp
- . Pulse duration: 70 ms

Ambient operating temperature:

- . Min. = - 5 °C; Max. = + 55 °C.

Ambient storage temperature:

- . Min. = - 25 °C; Max. = + 70 °C.

Protection Index:

- . Protection index of terminals against solid and liquid bodies (wired device): IP 20 (IEC/EN 60529).
- . Protection index of the front face against solid and liquid bodies: IP 20 (IEC/EN 60529).
- . Class II, front with faceplate

Insulation rated voltage:

- . 300 V

Impulse withstand voltage:

- . All circuits / earth:
alternate current 50 Hz / 1 min.: 4 kV

Short-time overcurrent:

- . 30 I_{max} for 10 ms (according EN62053-21, EN62053-23)

Power Factor - Operating range:

- . 0.5 inductive to 0.8 leading (according EN62053-21, EN62053-23)

Installation category:

- . III

Pollution degree:

- . 2

Accuracy class:

- . Active energy: class 1 according EN62053-21

Average weight per device:

- . 0,1 kg.

Volume when packed:

- . 0,15 dm³.

Consumption

- . Voltage circuit: max. 9,7 VA (0,5 W) @ 264 VAC.
- . Current circuit: max. 0,4 W.

Thermal power dissipated:

- . ≤ 1 W.

6. COMPLIANCE AND APPROVALS

Compliance to standards:

- . Compliance with Directive on electromagnetic compatibility (EMC) n° 2014/30/EU
- . Compliance with low voltage directive n° 2014/35/EU.
- . Electromagnetic Compatibility: IEC 62052-11.
- . Accuracy class:
active energy accuracy class: 1 (EN 62053-21).

Environment respect - Compliance with EU directives:

- . Compliance with Directive 2011/65/EU as amended by Directive 2015/863 (RoHS 2) on the restriction of the use of certain hazardous substances in electrical and electronic equipment.
- . Compliance with REACH regulation (1907/2006): at the date of the publication of this document no element of the SVHC substance list (updated on 27/06/2018) is present in these products.
- . WEEE directive (2012/19/EU): the sale of this product is subject to a contribution to eco-organisations in each country responsible for managing end-of-life products in the field of application of the European Waste Electronic and Electrical Equipment Directive.

Packaging:

- . Design and manufacture of packaging compliant to decree 98-638 of the 20/07/98 and also to directive 94/62/CE.

Installation software:

- . XL PRO³.

7. EQUIPMENT AND ACCESSORIES

Wiring accessories:

- . Sealable terminals shield (supplied with the counter).
The overall height of the device and terminal shields is 118 mm.

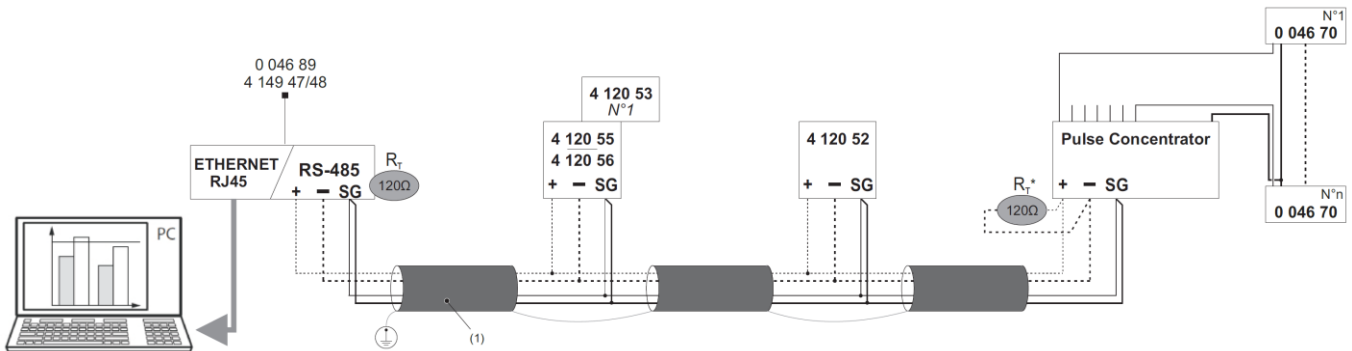
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8.COMMUNICATION

Modbus connection system diagram:

. Termination resistors R_T (120 Ω) must be inserted on the first and the last device connected to the RS485 bus in the same terminals (+,-) where the bus cable is connected.



⁽¹⁾ RS485: Prescribed use of Cable Belden 9842, Belden 3106A (or equivalent) for a maximum length of 1000 m, or Category 6 cable (FTP or UTP) for a maximum length of 50 m;

The pulse output of the energy counter must be connected to a pulse concentrator (cat. 0 046 87, 4 120 65 or 4 149 26) or pulse input of new NON-MID energy counters (cat. 4 120 81, 4120 91, 4 120 41), for integration in a monitoring / energy metering system.