



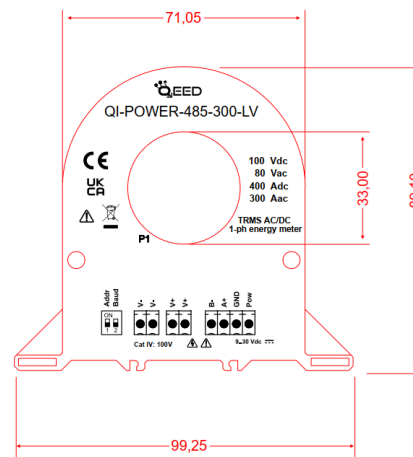
POWER /ENERGY METER SINGLE PHASE AC/DC TRMS - RS485 MODBUS

QI-POWER-485-300-LV



POWER SUPPLY	9...30 Vdc, protection against polarity reversal and overtemperature.
ABSORPTION	< 1,3 W
MEASUREMENT	Irms, Vrms, Watt, Var, Va, Vpk, Ipk, Frequency, Cosφ, Energy bidirectional, THD, min e MAX of each measure
TYPE OF MEASURE	TRMS or DC
RANGE	Current: up to 300 A AC/DC Voltage: up to 80 VAC or 100 VDC
ACCURACY	@ 25°C up to 200Hz Voltage, Current, Active Power: < 0,5% F.S. Frequency: ± 0,1 Hz Energy: ± 1% of reading Vpeak, Ipeak: ± 5% F.S.
OUTPUT	RS485 Modbus RTU
BAUDRATE	From 1.200 a 115.200 baud
CREST FACTOR	1,4 (on current measurement)
WORKING FREQUENCY	DC or 1...400 Hz
SAMPLING RATE	11k samples per second
INPUT IMPEDENCE	1 Mohm ± 1%
STANDARDS CE	EN61000-6-4/2006 + A1 2011; EN64000-6-2/2005; EN61010-1/2010
OVERVOLTAGE CATEGORY	Cat IV up to 100 V
INSULATION	3 kV on bare wire for Current measure. 4 kV for Voltage measure (reinforced insulation to power supply and serial output)
PROTECTION INDEX	IP20
TEMPERATURE COEFFICIENT	< 200 ppm/°C
WORKING TEMPERATURE	-15...+65°C
STORAGE TEMPERATURE	-40°C... +85°C
HUMIDITY	10...90% not condensing
ALTITUDE	Up to 2000 m s.l.m.
DIMENSIONS	89,1 x 99,25 x 28,5 mm (terminal excluded)
TERMINALS	Removable terminals 3,5 mm, n°1 of 4 poles, n°2 of 2 poles
WEIGHT	370 g
FILLING	Epoxy resin
BOX MATERIAL	PBT, grey
LED	N°1 yellow, power on fixed, data communication blinking
DIP-SWITCH	2 poles
MOUNTING	Screw predisposition for vertical/horizontal mounting, DIN rail clips (included) for vertical/horizontal mounting.

The **QI-POWER-485-300-LV** is the **LOW VOLTAGE** version of the **Single-phase Power meter QI-POWER-485**, able to measure the RMS AC or DC Current and Voltage. On the RS485 Modbus are available: **Irms, Vrms, Watt, VAR, VA, Vpk, Ipk, Frequency, Cosφ, Energy bidirectional and THD**. The device is fully **configurable by RS485**, DIN rail mounting, 4 kV galvanic isolation for Voltage input.



The images/schemes proposed are to be considered indicative and not binding

QI-POWER-485-300-LV
POWER /ENERGY METER SINGLE PHASE AC/DC TRMS - RS485 MODBUS

Suitable for measurements with **varying frequencies** (Wind, Hydro, Shipbuilding Industries, Aviation). Telecom applications, Refrigeration, Motors, OEM's application. Suitable for direct measurements **between inverter and motor**.



IEC 61010-1 COMPLIANT



ENGLISH



INSTRUCTION MANUAL

QI-POWER-485-300-LV

Using a serial link RS485 you can connect the QI-POWER-485-300-LV with the interface program FACILE QI-POWER-485. Using this software, allows you to set the Modbus address, baud rate, delay, the TV and TA ratio, modify the measuring filter type (from fastest response time to better accuracy) and the frequency measurement on current channel instead of voltage channel. You can download the FACILE QI-POWER-485 free of charge from our website https://qeed.it/en/software-drivers/.

Alternatively it is possible to program QI-POWER-485-300-LV via RS485 Modbus RTU accessing the MODBUS Register Map directly. (Available from the page of the product or from https://qeed.it/en/documents-manuals/).

MOUNTING:

the Power Meter QI-POWER-485-300-LV can be mounted (see photo on the right) horizontally or vertically using the screws or by means of the provided DIN rail clips.



QI-POWER-485-300-LV

REMARKS:

- Modbus connections: A+ and B- as per Modbus RTU standards
- Modbus Register reference: with reference to the logical address, for ex. 40010, corresponds to physical address n°9 as per Modbus RTU standard;
- Modbus functions supported: 3 (Read multiple registers, max 100), 6 (Write single), 16 (Write multiple);
- Any changes made by dip-switch required to switch off the power supply or sending reset command.

Energy storage data on flash memory: 4,5 years minimum, 45 years typical.

Measurement refresh: every 50 cycles or 1 second (the faster), programmable by FACILE.

Minimum value of Current / Power measured (cut off): configurable with FACILE¹⁾ tool in range [0...10200 mA] / [0...10200 W]²⁾ (see register map³⁾ - register 40013 - for more details).

- 1) Not allowed values entered with FACILE tool are automatically rounded to the closed lower admissible value
- 2) [0...2550 mA] / [0...2550 W] for products with FW prior to FW37
- 3) For FW prior FW37 refer to OLD_register_map, starting from FW37 refer to NEW_register_map

If you want to configure the device with FACILE set the dip-switches to 0 (down). In order to configure the device via RS485 directly, set "DIP 1" to 1 (up) then the adjust "DIP 2" for baudrate setting. Save the configuration using the COMMAND register. Restore default dip switches setting (down 0) to use the EEPROM configuration.

BAUDRATE SETTING	DIP 1	DIP 2
All setting from EEPROM	0	X
Set address 1 - 9600	1	0
Set address 1 - 38400	1	1

FACILE QI-POWER-485

The free interface program FACILE QI-POWER-485 is the fastest way to configure the device. There is only one configuration screen (see picture shown). The changes made to the program act on the register of the QI-POWER-485-300-LV. To restore the default configuration, press the button FACTORY DEFAULT.

MEASURING MODE: allows selection between RMS or DC to define the sign, positive or negative, of measure.

ENERGY SAVING ON FLASH: it is possible to activate the saving of the counters directly on the device's flash memory.

FREQUENCY MEASURING CHANNEL: possibility to select current or voltage channel to calculate the frequency.

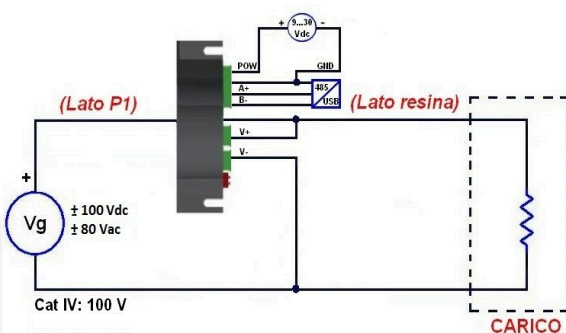
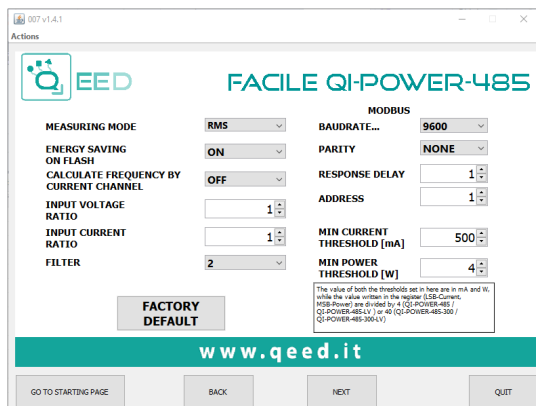
TRANSFORMATION RATIO: in case of use of CT or VT, you can define the transformation ratio for the current input and voltage input; default ratio is 1:1.

FILTER: allows to set a filter on measurement reading in order to get faster response time (value 1) or a more stable and accurate measurement (value 5). Default value is set to 2.

MIN CURRENT THRESHOLD (mA): Allow you to set the minimum current value (Cut off). Under this value the device measure zero. For more details, refer to box above.

MIN POWER THRESHOLD (W): Allow you to set the minimum power value (Cut off). Under this value the device measure zero. For more details, refer to box above.

CAUTION: magnetic fields of high intensity can vary the values measured by the transformer. Avoid installation near permanent magnets, electromagnets or iron masses that induces strong changes in the magnetic field. If case of anomalies it is recommend orienting or moving the transformer in a more suitable area.



The protection offered by the device can be compromised in case it is not used according to the instructions.

Disposal of Electrical & Electronic Equipment (Applicable throughout the European Union and other European countries with separate collection programs) This symbol, found on your product or on its packaging, indicates that this product should not be treated as household waste when you wish to dispose of it. Instead, it should be handed over to an applicable collection point for the recycling of electrical and electronic equipment. By ensuring this product is disposed of correctly, you will help prevent potential negative consequences to the environment and human health, which could otherwise be caused by inappropriate disposal of this product. The recycling of materials will help to conserve natural resources. For more detailed information about the recycling of this product, please contact your local city office, waste disposal service or the retail store where you purchased this product.

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