



EED

QUALITY ELECTRONIC DESIGN

Q EED

WWW.QEED.IT
INFO@QEED.IT

D.E.M. S.p.A.

WWW.DEM-IT.COM

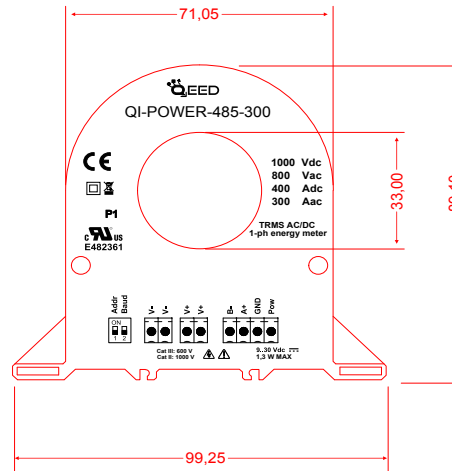
Z.I. Villanova, 20 - 32013 LONGARONE (BL) Italy

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



POWER SUPPLY	9...30 Vdc, protection against polarity reversal and overtemperature.
ABSORPTION	< 1,3 W
MEASUREMENT	I _{rms} , V _{rms} , Watt, Var, Va, V _{pk} , I _{pk} , Frequency, Cosφ, Energy bidirectional, THD, min e MAX of each measure
TYPE OF MEASURE	TRMS or DC
RANGE	Current: up to 300 A AC or 400 A DC Voltage: up to 800 VAC or 1000 VDC
ACCURACY	@ 25°C UP TO 200Hz Voltage, Current, Active Power: < 0,5% F.S. Frequency: ± 0,1 Hz Energy: ± 1% of reading V _{peak} , I _{peak} : ± 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	11 k 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 III up to 600V; Cat II up to 1000V
ISOLATION	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** is a Single-phase Power meter able to measure the TRMS AC/DC **current and voltage**. Internal Calibration certificate for each device available on request. Configuration software FACILE QI-POWER-485 for free. The device is fully configurable by RS485, DIN rail mounting.



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

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

LEGEND OF SYMBOL ONTO PAD PRINTING	
	It indicates that all the accessible parts of the object, are separated from the live parts by double or reinforced insulation
	High Voltage warning
	General warning
P1	Insertion of the cable



ENGLISH



INSTRUCTION MANUAL

QI-POWER-485-300

Using a serial link RS485-USB you can connect the QI-POWER-485-300 with the interface program FACILE QI-POWER-485. Using this software, allows you to set the Modbus address, baudrate, delay, the TV and TA ratio, to modify a filter in order to have fastest response time instead of a more stable measurement (filter range from 1-speed to 5-accuracy) and to measure frequency on current channel instead of voltage channel. You can download the FACILE QI-POWER-485 free of charge from our website www.qeed.it (section Products / Download Software).

A second way to programming the QI-POWER-485-300 is by using the **Modbus Register Map** directly. Download it from our website: www.qeed.it (section Products / Download Software/ Facile QI-POWER-485 or section Products / Network Analyzers).

MOUNTING:
 the Power Meter QI-POWER-485-300 can be mounted in any position (see photo below), horizontal or vertical mounting, horizontal or vertical through the two.

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.
Minimum Current measurement (cut off): 0 - 2560 mA.
Minimum Power measurement (cut off): 0 - 2560 W.
Measurement refresh: every 50 cycles or 1 second (the faster), programmable by FACILE.

If you want to set the device by FACILE QI-POWER-485 set the dips in 0. If you want to set by RS485 directly, set the first dip to 1 (up) then use the second dip for baudrate setting (0 for 9600 or 1 for 38400). After the settings, please save the configuration by the COMMAND register, then switch off the power supply, before to switch on the power supply set the DIPS in 0.

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, if you want to restore the default configuration, just press the button FACTORY DEFAULT.

TYPE OF MEASURE: allows the selection of the measure RMS or DC only to define the sign, positive or negative, of reading.

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

REPORT OF TRANSFORMATION: in case you would use the CT and / or VT, you can define the transformation ratio for the current input and voltage input, the default ratio is 1:1.

FILTER: allows you to insert a filter on reading in order to get more speed in responding (value 1) or a more stable and accurate measurement (value 5), by default the value is set to 2. You can choose between intermediate values already set or manually enter the desired filter by choosing the CUSTOM option from the menu, in this case, you can set the following parameters: *filtering in DC, filtering in AC (default value 5), Frequency measurement on Current channel.*

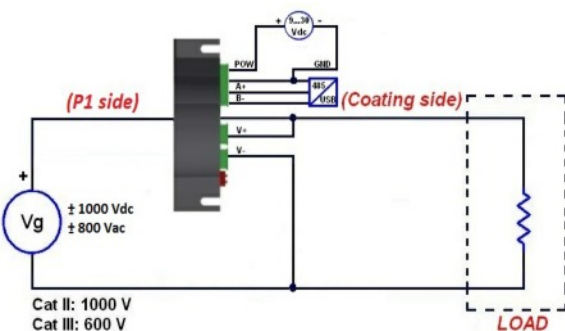
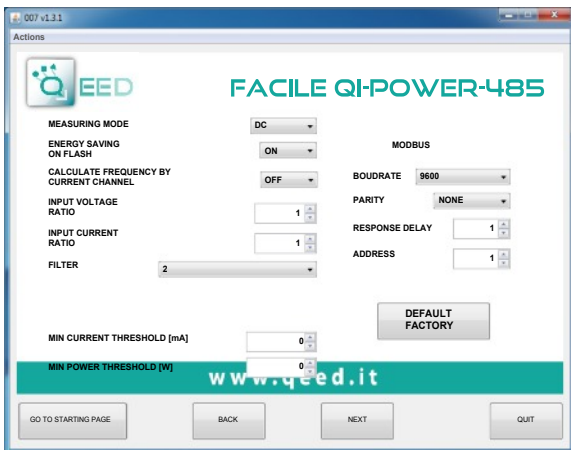
MIN CURRENT THRESHOLD (mA): Allow you to set the minimum current value (Cut off). Under this value the device measure Zero.

MIN POWER THRESHOLD (W): Allow you to set the minimum power value (Cut off). Under this value the device measure Zero.

CAUTION: magnetic fields of high intensity can vary the values measured by the transformer. Avoid installation near permanent magnets, electromagnets or iron masses that induce strong changes in the magnetic field. If any irregularity recommend reorient or move the transformer in the area most appropriate.

QI-POWER-485-300

INSTRUCTION MANUAL



The protection offered by the device can be compromised in the case that it isn't used in accordance with the instructions.

Smaltimento dei rifiuti elettrici ed elettronici (applicabile nell'Unione Europea e negli altri paesi con servizio di raccolta differenziata). Il simbolo presente sul prodotto o sulla sua confezione indica che il prodotto non verrà trattato come rifiuto domestico. Sarà invece consegnato al centro di raccolta autorizzato per il riciclo dei rifiuti elettrici ed elettronici. Assicurandovi che il prodotto venga smaltito in modo adeguato, eviterete un potenziale impatto negativo sull'ambiente e la salute umana, che potrebbe essere causato da una gestione non conforme dello smaltimento del prodotto. Il riciclaggio dei materiali contribuirà alla conservazione delle risorse naturali. Per ricevere ulteriori informazioni più dettagliate Vi invitiamo a contattare l'ufficio preposto nella Vostra città, il servizio per lo smaltimento dei rifiuti o il fornitore da cui avete acquistato il prodotto.

Questo documento è di proprietà di D.E.M. S.p.A.. La duplicazione e la riproduzione sono vietate. Il contenuto della presente documentazione corrisponde ai prodotti e alle tecnologie descritte. I dati riportati potranno essere modificati o integrati per esigenze tecniche e commerciali.