POWER / ENERGY METER SINGLE PHASE
AC/DC LOW VOLTAGE - RS485 MODBUS

QI-POWER-485-LV

CE

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 and MAX of each measure.
TYPE OF MEASURE	RMS or DC
RANGE	Current: Up to 50 A AC/DC Voltage: up to 80 V AC or 100V DC
ACCURACY	@ 25°C up to 200 Hz Voltage, Current, Active Power : < 0,5% F.S. Frequency : +/- 0,1 Hz Energy : +/- 1% of reading Vpeak, I peak: +/- 5% f.s.
OUTPUT	RS485 Modbus RTU
BAUDRATE	from 1200...115200 Baud
CREST FACTOR	1,8 (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 100V ;
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	46,1x 63x 26,4 mm (terminal excluded)
TERMINALS	Removable terminals 3,5mm, n°1 4 poles, n°2 2 poles
WEIGHT	80 g.
FILLING	Epoxy Resins
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-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, **4kV galvanic isolation for Voltage input**.

15,0mm
46,2mm
63,0mm

QI-POWER-485-LV
POWER / ENERGY METER SINGLE PHASE
AC/DC TRMS - RS485 MODBUS
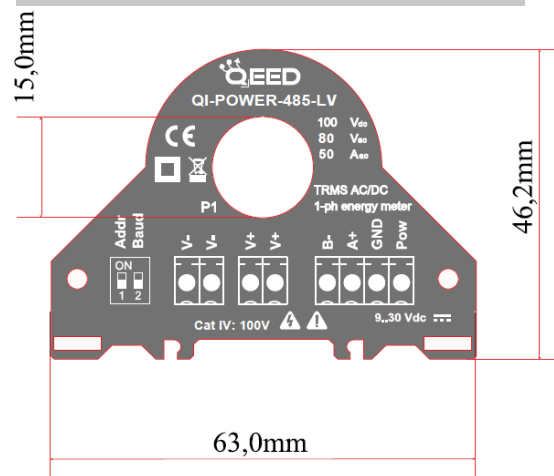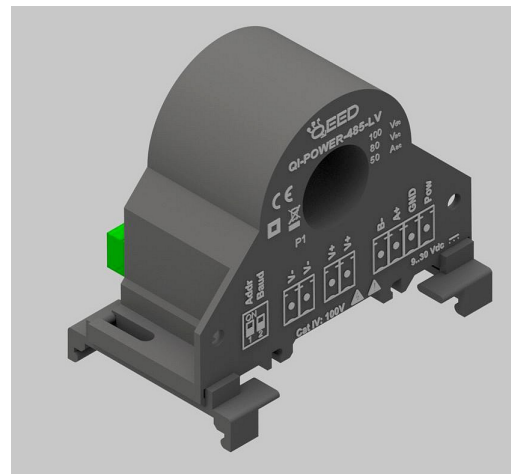
Strengths:
- *LOW VOLTAGE VERSION*
- *RMS Measure, THD available on the Current measurement;*
- *0,5 % Accuracy;*
- *RS485 Modbus integrated;*
- *Bidirectional Energy metering;*
- *Din rail mounting in both side;*
- *OEM's design, low cost;*
- *Fully configurable by free interface software FACILE QI-POWER-485*
- *Available Measure register: MSW first, LSW first or hundredts*

POWER / ENERGY METER SINGLE PHASE   QI-POWER-485-LV
AC/DC LOW VOLTAGE - RS485 MODBUS

Using a serial link RS485-USB you can connect the QI-POWER-485-LV 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 responce 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-LV is by using the Modbus Register Map directly. Download it from our website: www.qeed.it (section Products / Dowload Software/ Facile QI-POWER-485 or section Products / Network Analyzers).

MOUNTING: The Power Meter QI-POWER-485-LV can be mounted in any position (see photo below), horizontal or vertical mounting, horizontal or vertical through the two hooks for DIN rail included in the box.
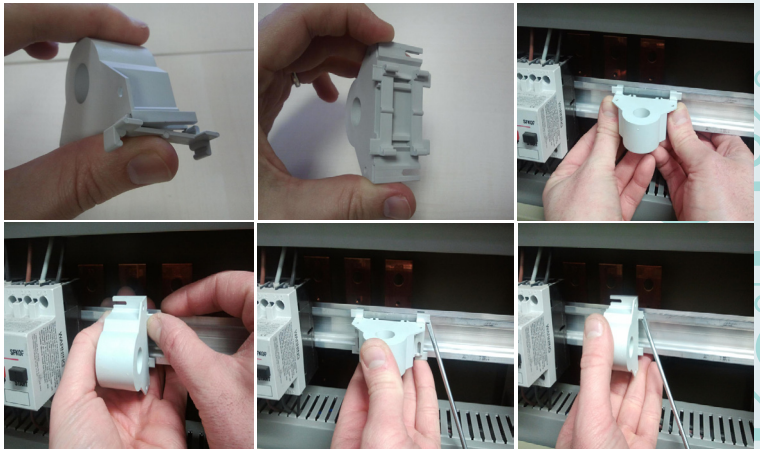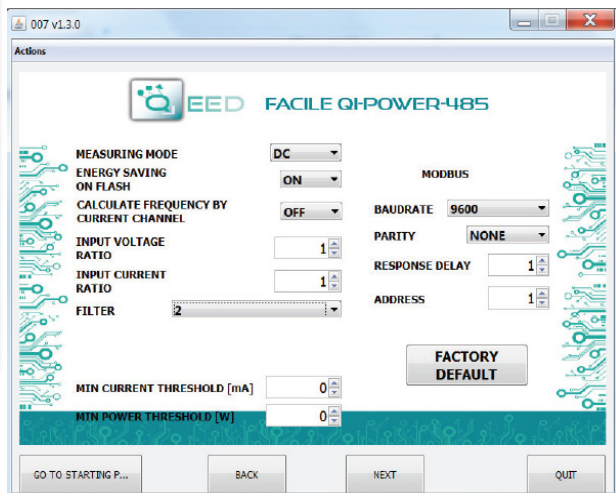
REMARKS:
- Modbus connections: A+ and B- Modbus Register reference: with reference to the logical address, for ex. 40010, corresponds to physical address n°9 as per Modbus RTU standard;
- Modbus functions supported: 3 (Read multiple registers, max 100), 6 (Write single), 16 (Write multiple).
- **Any changes made by dip-switch required to switch off the power supply or sending reset command.**

Dip-switch settings	1	2
All setting from EEPROM	**0**	**0**
Set Address 1- Baud 9600	1	0
Set Address 1 -Baud 38400	1	1

Energy storage data on flash memory : 4,5 years minimum, 45 years typical.
Minimum Current measurement (cut off): 250mA
Minimum Power measurement (cut off) : 1 W
Measurement refresh : every 50 cycles or 1 second (the faster), programmable by FACILE

### DIP SWITCH SETTING (see the table)
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.

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-LV , 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 TA and / or TV , 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 measurament 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.
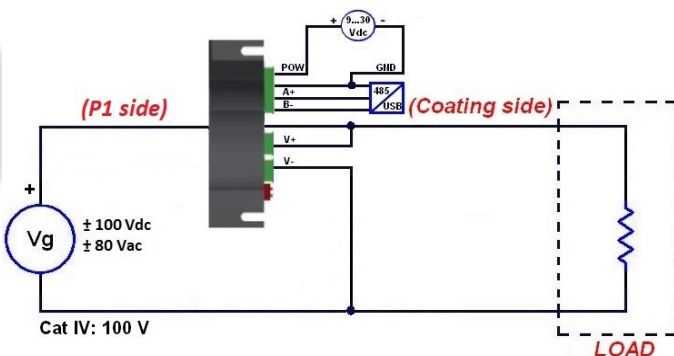
Modbus Register Map -ID MACHINE #19
Download it from our website: *www.qeed.it (section Products / Dowload Software/ Facile QI-POWER-485* or section Products / Network Analyzers).

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.

(P1 side)

(Coating side)

Vg   ± 100 Vdc
± 80 Vac

Cat IV: 100 V

LOAD