



QI-POWER-485-LV | QI-POWER-485-300-LV



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QI-POWER-485-LV



QI-POWER-485-300-LV

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SAFETY WARNINGS AND CAUTIONS

The following warnings and cautions must be observed to ensure personal safety and prevent damage.



Death or **serious injury** may result from failure to heed this warning.



It is necessary to comply with national regulations when installing and picking materials for power lines.



Material damage or **serious personal injury** may result from failure to heed this warning.



Repairs and modifications must be carried out only by the manufacturer. It is forbidden to open the case and make any changes to the device. Tampering with the device will invalidate the warranty.



The manufacturer **declines all responsibility** for electrical safety in the event of improper use of the equipment.



It is essential to read the entire contents of this manual before carrying out any work.



The product described in this document may only be used for the specified application. The maximum performance data and environmental conditions specified in the product data sheet must be observed. Proper transport and storage, as well as professional assembly, installation, handling and maintenance are required for the correct and safe operation of the device.



Before commissioning, make sure that:

- the maximum values for all connections are not exceeded; refer to the product data sheet;
- the connection cables are not damaged or live during wiring;
- the direction of current flow and phase rotation are correct.

Use under ambient conditions other than those specified, application of signals or voltages other than those specified, may cause significant deviations from the specified measurement tolerances, which may be irreversible.

During installation, ensure that a switch or circuit-breaker is near the product and easily accessible.



Although the contents of this document have been checked for accuracy, it may contain errors or inconsistencies and we cannot guarantee its completeness or accuracy.

The unit must be uninstalled if safe operation can no longer be guaranteed (e.g. visible damage). Disconnect all connections in this case. The unit should be returned to the manufacturer or to an authorised service centre for repair.



This document is subject to periodic revision and updating. QEED reserves the right to make changes to the product and/or its technical documentation at any time in the interests of continuous quality improvement. Always consult the latest version of the documentation available on the website:



WARNING: High-intensity magnetic fields may alter the values measured by the transformer. Avoid installation near: permanent magnets, electromagnets, or iron masses. If irregularities are detected, reposition or move the unit to a more suitable location.

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If you find any errors or missing information in this document, please notify us by e-mail to:

technical@qeed.it



Failure to observe the warnings may result in damage to the equipment or failure to operate as intended.



Disposal of waste electrical and electronic equipment (applicable in the European Union and other countries with separate collection). The symbol on the product or its packaging indicates that the product should not be treated as household waste. Instead, it will be handed over to an authorised collection point for the recycling of electrical and electronic waste. Ensuring that the product is disposed of properly will prevent potential negative effects on the environment and human health, which could otherwise be caused by inappropriate waste management of the product. Recycling materials helps to conserve natural resources. For further information, please contact your local authority, waste disposal service or the retailer from whom you purchased the product.



Please note that the information on the nameplate must be observed.





PRODUCT OVERVIEW

The QI-POWER-485-(xxx)-LV (in its three versions 50A, 100A and 300A) is a single-phase power meter capable of measuring current and AC/DC TRMS voltage without the need for external current transformers. The accuracy class is 0.5% of F.S.

The unit provides instantaneous values of I_{rms} , V_{rms} , Power (active, reactive and apparent), V_{pk} , I_{pk} , Frequency, $\cos\phi$, THD and cumulative values of total, absorbed and produced energy.

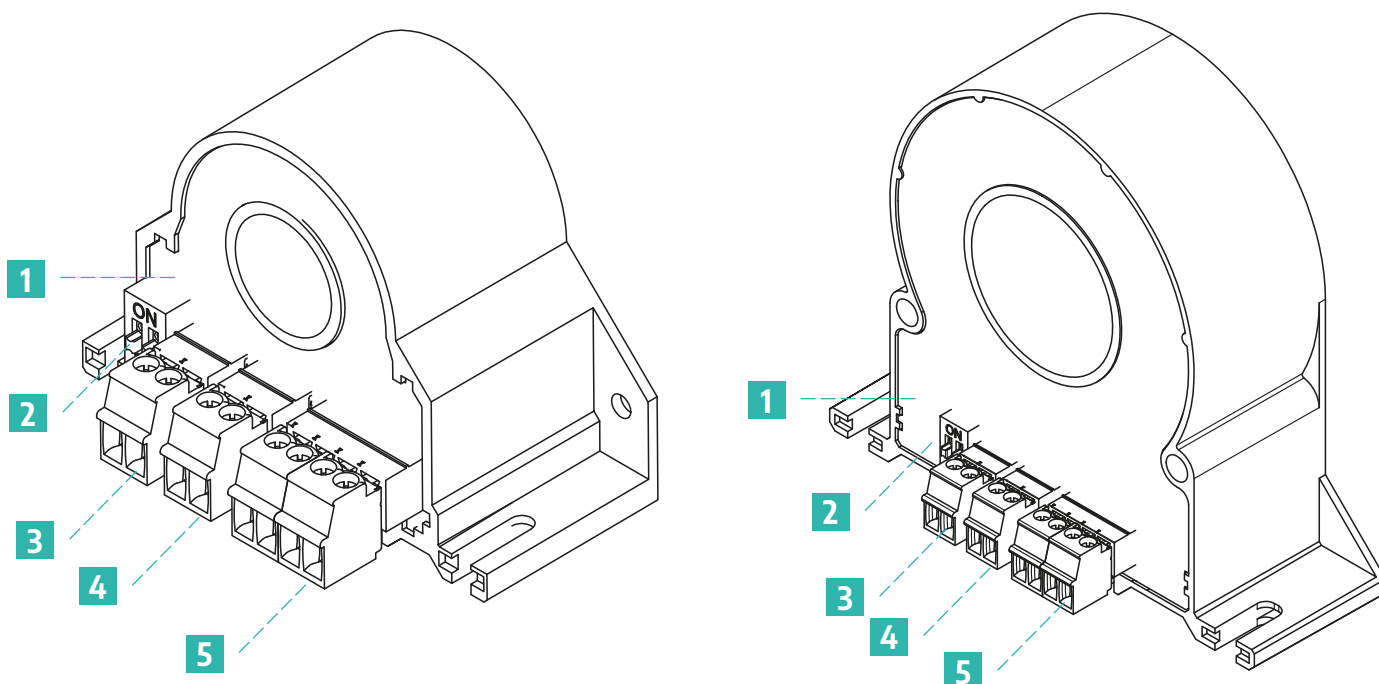
The product is powered by an external 12V_{DC} or 24V_{DC} power supply.

The input voltage isolation is 4kV.

The safety category is Cat IV up to 100V.

RS485 serial interface for communication with Modbus RTU protocol, either from the [Q-WIZARD configuration tool \(download at link\)](#), or with third party Modbus masters by acting on register map registers.

Mounting accessories supplied as standard for DIN rail mounting.



- 1** Status LED
 - Off: product not powered
 - Steady yellow: product powered
 - Flashing yellow: communication in progress
- 2** DIP switch for Modbus RTU baud rate setting
- 3** Screw terminals for voltage input V- (N)
- 4** Screw terminals for voltage input V+ (L)
- 5** Screw terminals for power supply and serial communication



TECHNICAL SPECIFICATIONS

Electrical characteristics

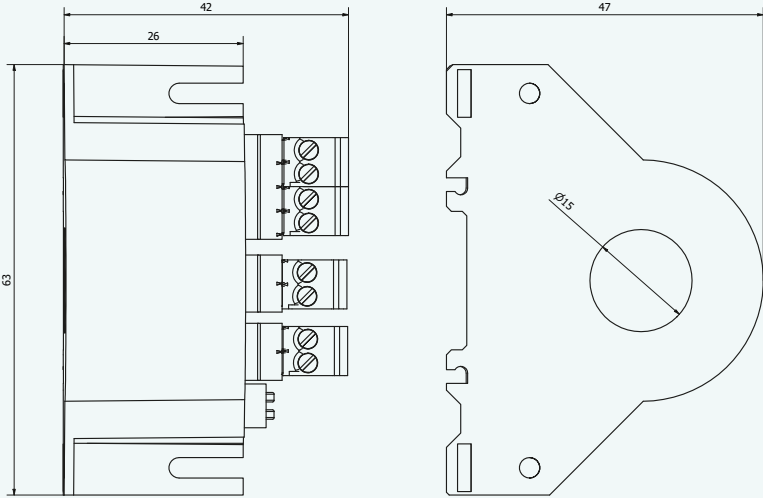
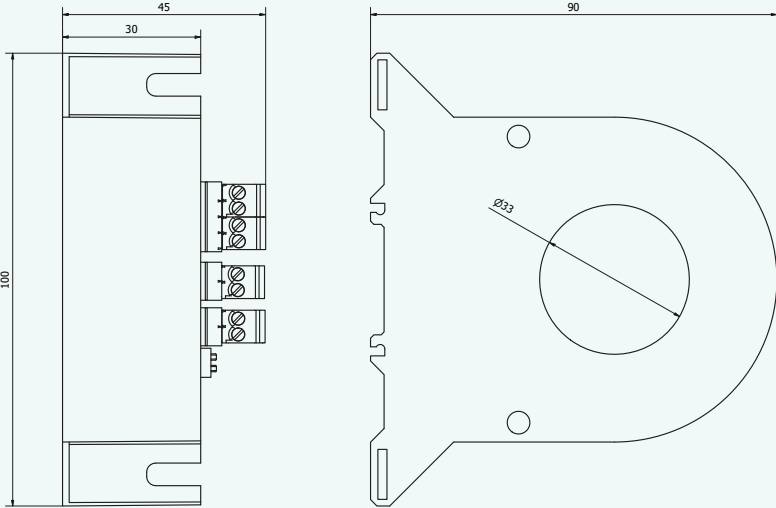
	QI-POWER-485-LV	QI-POWER-485-300-LV
Power supply	9÷30V _{DC} with reverse polarity protection	
Current consumption	1,3 W	
Measurable AC/DC current range	0÷50 A	0÷300 A
Max. measuring voltage	80V _{AC} , 100V _{DC}	
Measurement type	TRMS(AC)/DC	
Measurement frequency	DC or 1÷400Hz	
Accuracy class @25°C, 50Hz, PF = 1	Voltage, Current, Active Power: <0,5% F.S. Frequency: ±0,1 Hz Energy: ±1% on reading V _{peak} , I _{peak} : ± 5% F.S.	
Crest factor	1.8 (on current measurement)	
Sampling rate	11 ksample/s	
Input impedance	1 MΩ	
Overvoltage category	Cat IV up to 100V	
Isolation	3kV on bare cable for current measurement 4kV for voltage measurement (reinforced insulation to power supply and RS485 serial interface)	
THD	Available for measured currents greater than 15% of F.S.	
Communication interface	RS485 Modbus RTU	

Communication characteristics

Protocol	Modbus RTU
Baudrate	1200÷115200 bps (default 9600)
Addresses	1÷247 (default 1)
Data format	1 start bit, 8-bit data, NO/ODD/EVEN parity (default NO parity)
Response delay	1÷1000ms
Connection	Via removable 4-pin terminal

General data

Working temperature	-15÷60° C
Storage temperature	-40÷85° C
Relative humidity	10÷90% not condensing
Elevation	Up to 2000 a.s.l.
Temperature coefficient	< 200ppm/°C
Protection degree	IP20

Measurements	QI-POWER-485-LV 42x63x47 mm  QI-POWER-485-300 45x100x90 mm 
Weight	QI-POWER-485-LV QI-POWER-485-300-LV 350 g
Terminal cable cross-section	0.05÷1.5 mm² (30÷14 AWG)
Energy values storage	Flash, min 100k writings
Approvals and certifications	IEC 61010-1: 2010 - IEC 61010-2-030: 2010 - EN IEC 61326-1: 2021 - EN IEC 61000-6-2: 2019 EN IEC 61000-6-4: 2019 - CEI EN IEC 63000: 2021 
Installation	Inside electrical panels and mounted on a DIN rail with attachment clips provided

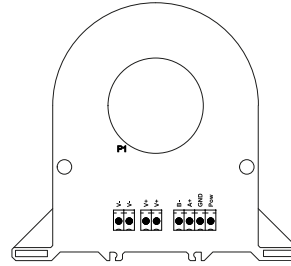
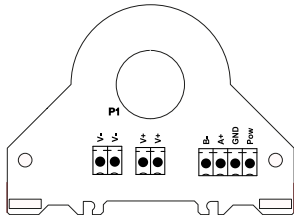
Order codes

50A Low Voltage version	QI-POWER-485-50-LV
300A Low Voltage version	QI-POWER-485-300-LV
Attachment clips (50A)	90000009
Attachment clips (300A)	900000012

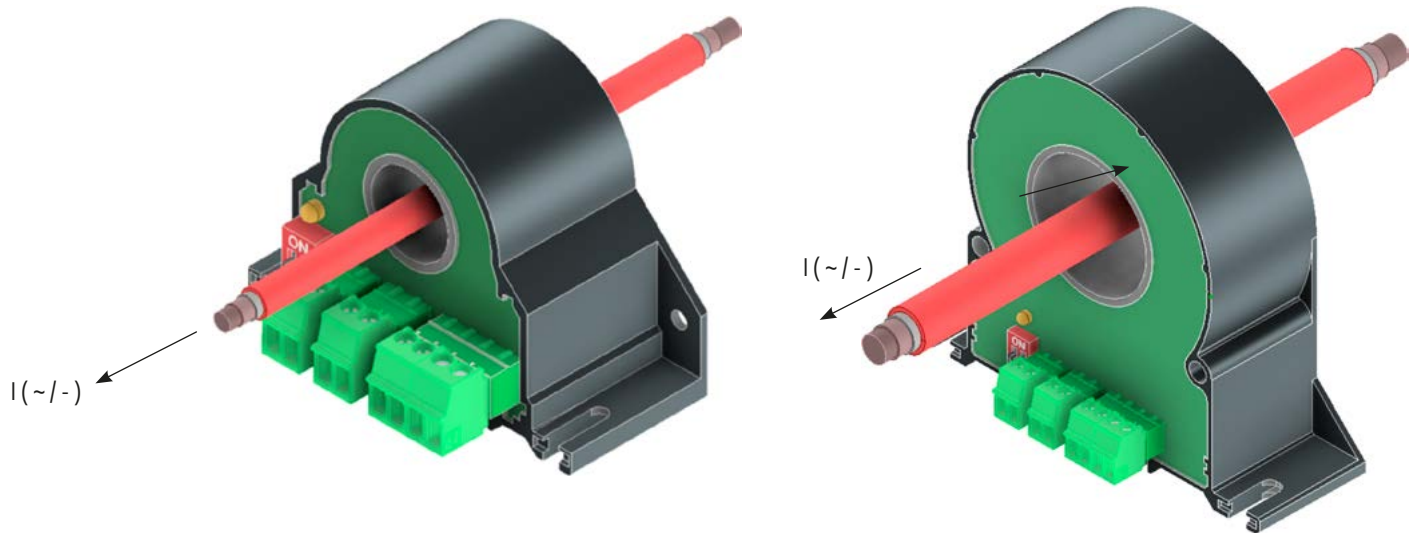


CONNECTION AND INSTALLATION

The instrument is designed to be installed inside electrical panels and mounted in four different ways (DIN rail or panel mounting, vertical or horizontal). All connection terminals are shown on the pad print on the product and correspond to the figure below:



The system installation is as in the following image:



The conductor must be positioned as close to the product centre as possible to ensure correct current measurement. The incoming direction of the current is represented by the nomenclature P1 pad-printed on the product.

PLEASE NOTE: If you wish to measure currents with intensities close to the lower measuring limit of the instrument, wind the conductor on the instrument so that it has a greater number of turns; in this case, change the transformation ratio in the 40011 register for correct current measurement.

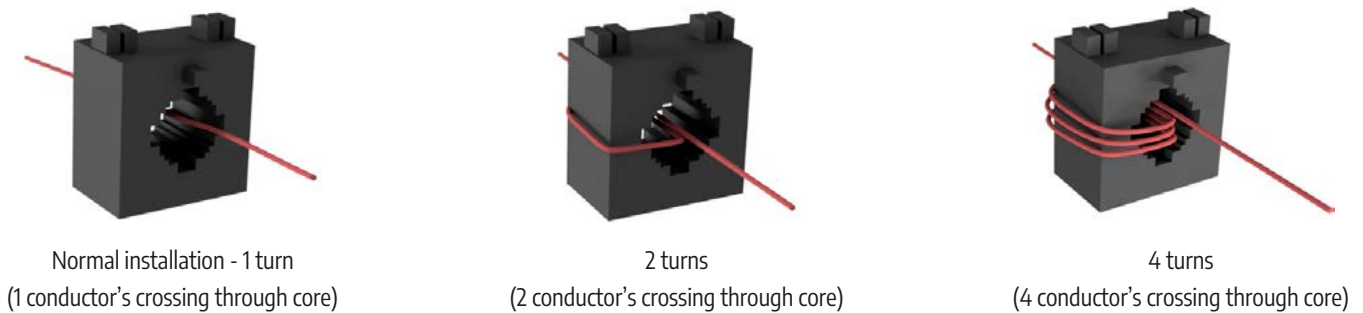
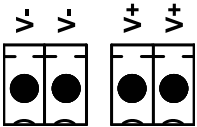
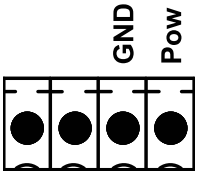
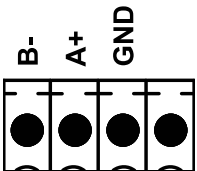


Figure 1: turns examples

WARNING: strong magnetic fields can alter the values measured by the instrument. Avoid installation near permanent magnets, electromagnets or ferrous masses that can significantly alter the magnetic field. In the event of anomalies, we recommend reorienting the instrument or moving it to a more suitable location.

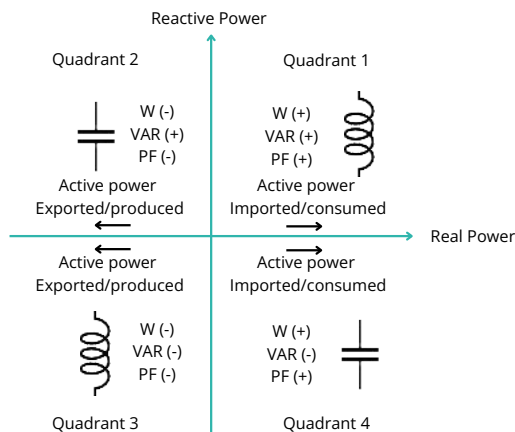


The connection of the terminals is described below:

	Screw terminals for voltage input V- (N) Screw terminals for voltage input V+ (L)
	Device power supply. Please note: Wiring must be protected against short circuits and/or accidental faults
	RS485 Modbus RTU connection: terminals 3 (A+), 4 (B-), 1 (GND)

AVAILABLE MEASUREMENTS

The unit provides power readings in all 4 quadrants. The sign conventions used in the product are summarized in the following figure:



PRODUCT FEATURES

Using the configuration software or acting on the dedicated registers, the following functions can be configured:

Modbus

Address, baud rate, parity and response delay can be set.

Input/Output

- Measurement method [Reg. 40008]
- Enable energy flash storage [Reg. 40008]
- Frequency calculation channel [Reg. 40008]
- Ratio of transformations for voltage and current [Reg. 40009 - 40011]
- Measurement filtering [Reg. 40007]
- Current and power display threshold [Reg. 40013]



DEVICE CONFIGURATION

Baudrate setting via DIP switch

The baud rate can be set via DIP switches, before connecting and switching on the product.

The possible combinations are shown below:

DIP 1	DIP 2	ADDRESS	BAUDRATE
0	X	RS485 settings from EEPROM	
1	0	1	9600
1	1	1	38400

Addresses other than 1 (default value) and baud rates other than those selected by the DIP switches can be configured using the **Q-WIZARD configuration software** or with the Modbus RTU functions below, by acting on the dedicated registers - see page 12).

PLEASE NOTE: to make active all changes via DIP-switch, it is necessary to remove and restore power to the device.

Functionality configuration

Through an RS485 serial device such as our Q-USB485, it is possible to connect to the product using the Modbus RTU input terminals.

Configuration of the module can be done with our **Q-WIZARD configuration software** or with any third-party Modbus master by acting on the registers in the map in the last chapter of this document - see page 12.

Q-WIZARD

Using the **Q-WIZARD interface tool** that can be downloaded from the link, it is possible to configure all device parameters by following the simple, self-explanatory steps.

In addition to the configuration of various parameters, inputs and outputs, the **Q-WIZARD** also allows real-time monitoring of device variables.

Third-party Modbus Master

Alternatively, the product can communicate directly with a third-party Modbus RTU Master using the communication settings according to the DIP switch configuration (when using microUSB the DIP switch settings are irrelevant).

The communication protocol supported is Modbus RTU Slave:

- Modbus RTU connections: A+ and B- according to Modbus RTU standards
- Supported Modbus RTU functions: 03 hexadecimal (read multiple registers, max 100), 06 hexadecimal (write single), 10 hexadecimal (write multiple registers)
- Modbus RTU address numbering is by convention '1 BASED' (standard), but the physical register is base 0; the logical address, e.g. 40010, corresponds to the physical address #9, as required by Modbus RTU standards

PLEASE NOTE: All setting changes of calibration and configuration parameters must be followed by the flash save command 0xC1C0 = Flash settings save command in register 40252; changes of device communication parameters in addition must also be followed by the command 0xC1A0 = Reboot command in register 40252.

In this case, all device configurations are performed by accessing the Modbus RTU register map available in the last chapter of this document using the functions:

- Read holding registers (function 03 hexadecimal)
- Write single holding register (function 06 hexadecimal)
- Write multiple registers (function 10 hexadecimal)



Function 03 Hexadecimal (Read Holding Registers)

This function is used to read the contents of a contiguous block of holding registers (words). The request frame specifies the source register address and the number of registers to read. A maximum of 120 registers (words) can be read with a single request, unless otherwise specified. The register data in the response message is packaged as two bytes per register (word), with the binary contents right-justified within each byte. For each register, the first byte contains the most significant bits (MSB) and the second byte contains the least significant bits (LSB).

Request Frame			
Description	Lenght	Value	Comments
Physical address	1 byte	1 to F7 HEX (1 to 247)	
Function code	1 byte	03 HEX	
Starting address	2 bytes	0000 to FFFF HEX	Bytes order: MSB, LSB
Number of registers (N word)	2 bytes	1 to 10 HEX (1 to 16)	Bytes order: MSB, LSB
CRC	2 bytes		

Response frame (right action)			
Description	Lenght	Value	Comments
Physical address	1 byte	1 to F7 HEX (1 to 247)	
Function code	1 byte	03 HEX	
Required Number of bytes	1 byte	N word * 2	
Register value	N*2 bytes		Bytes order: MSB, LSB
CRC	2 bytes		

Response frame (wrong action)			
Description	Lenght	Value	Comments
Physical address	1 byte	1 to F7 HEX (1 to 247)	Possible exception: 01: illegal function 02: illegal data address 03: Illegal data value 04: Slave device failure
Function code	1 byte	83 HEX	
Exception code	1 byte	01, 02, 03, 04 (see note)	
CRC	2 bytes		

**Function 06 Hexadecimal** (Write Single Holding Register)

This function is used to write a single holding register. The request frame specifies the address of the register (word) to be written and its contents. The correct response is an echo of the request, returned after the contents of the register have been written.

Request frame			
Description	Lenght	Value	Comments
Physical address	1 byte	1 to F7 HEX (1 to 247)	
Function code	1 byte	06 HEX	
Starting address	2 bytes	0000h to FFFF HEX	Bytes order: MSB, LSB
Register value	2 bytes	0000h to FFFF HEX	Bytes order: MSB, LSB
CRC	2 bytes		

Response frame (right action)			
Description	Lenght	Value	Comments
Physical address	1 byte	1 to F7 HEX (1 to 247)	
Function code	1 byte	06 HEX	
Starting address	2 bytes	0000h to FFFF HEX	Bytes order: MSB, LSB
Register value	2 bytes	0000h to FFFF HEX	Bytes order: MSB, LSB
CRC	2 bytes		

Response frame (wrong action)			
Description	Lenght	Value	Comments
Physical address	1 byte	1 to F7 HEX (1 to 247)	Possible exception: 01: illegal function 02: illegal data address 03: Illegal data value 04: Slave device failure
Function code	1 byte	86 HEX	
Exception code	1 byte	01, 02, 03, 04 (see note)	
CRC	2 bytes		



Function 10 Hexadecimal (Write Multiple Registers)

This function is used to write a block of contiguous registers (maximum of 2). The required values to be written are specified in the data field of the request. The data is packed as two bytes per register.

A correct response returns the function code, the starting address and the number of registers written.

Request frame			
Description	Lenght	Value	Comments
Physical address	1 byte	1 to F7 HEX (1 to 247)	
Function code	1 byte	10 HEX	
Starting address	2 bytes	0000 to FFFF HEX	Bytes order: MSB, LSB
Number of registers (N word)	2 bytes	0001 to 0078 HEX	Bytes order: MSB, LSB
Byte counting	1 byte	N word * 2	
Register value	N * 2 bytes	value	Bytes order: MSB, LSB
CRC	2 bytes		

Response frame (right action)			
Description	Lenght	Value	Comments
Physical address	1 byte	1 to F7 HEX (1 to 247)	
Function code	1 byte	10 HEX	
Starting address	2 bytes	0000 to FFFF HEX	Bytes order: MSB, LSB
Number of registers (N word)	2 bytes	0001 to 0078 HEX	Bytes order: MSB, LSB
CRC	2 bytes		

Response frame (wrong action)			
Description	Lenght	Value	Comments
Physical address	1 byte	1 to F7 HEX (1 to 247)	Possible exception: 01: illegal function 02: illegal data address 03: Illegal data value 04: Slave device failure
Function code	1 byte	90 HEX	
Exception code	1 byte	01, 02, 03, 04 (see note)	
CRC	2 bytes		



REGISTER MAP

Default values are in **bold**.

Address Modbus	Description	Register Type	R/W	Default	Range
40001	Machine ID: 19 = QI-POWER-485-LV 22 = QI-POWER-485-300-LV	UShort [16b]	R		
40002	Firmware version	UShort [16b]	R		
40003	Modbus address	UShort [16b]	R/W	1	1...247
40004	Machine answer delay (in characters)	UShort [16b]	R/W	1	1...1000
40005	Baudrate Value: 0 = 1200 1 = 2400 2 = 4800 3 = 9600 4 = 19200 5 = 38400 6 = 57600 7 = 115200	UShort [16b]	R/W	3	0...7
40006	Parity: 0 = NONE 1 = ODD 2 = EVEN	UShort [16b]	R/W	0	0...2
40007	Update interval for RMS calculation. Valid for DC systems. [tenths of a second].	UShort [16b]	R/W	10	1...65535
40008	Measurement settings: bit[0] = Measurement type 0 → TRMS value (without sign) 1 → DC_measurement (with sign) bit[1] = Energy logging in flash 0 → disable 1 → enabled bit[2] = Frequency detection 0 → on voltage channel 1 → on current channel	UShort [16b]	R/W	2	
40009	Voltage transformer ratio	Float [32b-LSW]	R/W	1.0	
40011	Current transformer ratio If turns are placed around the instrument, CT ratio = 1 / (number of turns - if any) [see figure 1]	Float [32b-LSW]	R/W	1.0	
40013	Current and power cutoff threshold - minimum level for measurements (below trimmed to 0) ¹⁾ LSB: Current cutoff MSB: Power cutoff	UShort [16b]	R/W	See Note ¹	
40014	Number of line zero-crossing for RMS calculation. Valid for AC systems. (example: 50 → if frequency is 50Hz, updated every 1s)	UShort [16b]	R/W	50	1...65535
40041	Partial serial number	UShort [16b]	R		
40050	Partial serial number	UShort [16b]	R		
40057	Partial serial number	UShort [16b]	R		
40072	Status: bit[0] = flash settings error bit[1] = flash calibration error bit[2] = Voltage Over Range bit[3] = Voltage Under Range bit[4:5] = don't care bit[6] = Zero crossing detecting bit[7:9] = don't care bit[10] = Energy storing error bit[11] = Energy initialization error bit[12] = don't care bit[13] = Current Over Range bit[14] = Current Under Range bit[15] = don't care	UShort [16b]	R		
40073	Voltage RMS Measurement (V)	Float [32b-LSW]	R		
40075	Current RMS Measurement (mA)	Float [32b-LSW]	R		
40077	Active Power Measurement (W)	Float [32b-LSW]	R		
40079	Reactive Power Measurement (VAR)	Float [32b-LSW]	R		
40081	Apparent Power Measurement (VA)	Float [32b-LSW]	R		
40083	Cosφ Measurement	Float [32b-LSW]	R		
40085	Frequency Measurement (Hz)	Float [32b-LSW]	R		
40087	THD Measurement	Float [32b-LSW]	R		
40089	Total Energy Measurement (kWh)	Float [32b-LSW]	R/W		
40091	Positive Energy Measurement (kWh)	Float [32b-LSW]	R/W		
40093	Negative Energy Measurement (kWh)	Float [32b-LSW]	R/W		
40095	Voltage Peak (V)	Float [32b-LSW]	R		



Address Modbus	Description	Register Type	R/W	Default	Range
40097	Current Peak (mA)	Float [32b-LSW]	R		
40099	Max RMS Voltage (V)	Float [32b-LSW]	R/W		
40101	Min RMS Voltage (V)	Float [32b-LSW]	R/W		
40103	Max RMS Current (mA)	Float [32b-LSW]	R/W		
40105	Min RMS Current (mA)	Float [32b-LSW]	R/W		
40107	Max RMS Power (W)	Float [32b-LSW]	R/W		
40109	Min RMS Power (W)	Float [32b-LSW]	R/W		
40111	Max Reactive Power (VAR)	Float [32b-LSW]	R/W		
40113	Min Reactive Power (VAR)	Float [32b-LSW]	R/W		
40115	Max Apparent Power (VA)	Float [32b-LSW]	R/W		
40117	Min Apparent Power (VA)	Float [32b-LSW]	R/W		
40119	Max Cosφ	Float [32b-LSW]	R/W		
40121	Min Cosφ	Float [32b-LSW]	R/W		
40123	Max Frequency (Hz)	Float [32b-LSW]	R/W		
40125	Min Frequency (Hz)	Float [32b-LSW]	R/W		
40127	Max THD	Float [32b-LSW]	R/W		
40129	Min THD	Float [32b-LSW]	R/W		
40132	Status swapped: bit[0] = flash settings error bit[1] = flash calibration error bit[2] = Voltage Over Range bit[3] = Voltage Under Range bit[4:5] = don't carebit bit[6] = Zero crossing detecting bit[7:9] = don't care bit[10] = Energy storing error bit[11] = Energy initialization error bit[12] = don't care bit[13] = Current Over Range bit[14] = Current Under Range bit[15] = don't care	UShort [16b]	R		
40133	Voltage RMS measurement (V) swapped	Float [32b-MSW]	R		
40135	Current RMS measurement (mA) swapped	Float [32b-MSW]	R		
40137	Power measurement (W) swapped	Float [32b-MSW]	R		
40139	Reactive Power measurement Q (VAR) swapped	Float [32b-MSW]	R		
40141	Apparent Power measurement S (VA) swapped	Float [32b-MSW]	R		
40143	Cosφ measurement swapped	Float [32b-MSW]	R		
40145	Frequency measurement (Hz) swapped	Float [32b-MSW]	R		
40147	THD swapped	Float [32b-MSW]	R		
40149	Total Energy measurement (kWh) swapped	Float [32b-MSW]	R/W		
40151	Only positive Energy Measurement (kWh) swapped	Float [32b-MSW]	R/W		
40153	Only negative Energy Measurement (kWh) swapped	Float [32b-MSW]	R/W		
40155	Voltage Peak (V) swapped	Float [32b-MSW]	R		
40157	Current Peak (mA) swapped	Float [32b-MSW]	R		
40159	Max RMS Voltage (V) swapped	Float [32b-MSW]	R/W		
40161	Min RMS Voltage (V) swapped	Float [32b-MSW]	R/W		
40163	Max RMS Current (mA) swapped	Float [32b-MSW]	R/W		
40165	Min RMS Current (mA) swapped	Float [32b-MSW]	R/W		
40167	Max RMS Power (W) swapped	Float [32b-MSW]	R/W		
40169	Min RMS Power (W) swapped	Float [32b-MSW]	R/W		
40171	Max Reactive Power (VAR) swapped	Float [32b-MSW]	R/W		
40173	Min Reactive Power (VAR) swapped	Float [32b-MSW]	R/W		
40175	Max Apparent Power (VA) swapped	Float [32b-MSW]	R/W		
40177	Min Apparent Power (VA) swapped	Float [32b-MSW]	R/W		
40179	Max Cosφ swapped	Float [32b-MSW]	R/W		
40181	Min Cosφ swapped	Float [32b-MSW]	R/W		
40183	Max Frequency (Hz) swapped	Float [32b-MSW]	R/W		
40185	Min Frequency (Hz) swapped	Float [32b-MSW]	R/W		
40187	Max THD swapped	Float [32b-MSW]	R/W		
40189	Min THD swapped	Float [32b-MSW]	R/W		



Address Modbus	Description	Register Type	R/W	Default	Range
40192	Status for measurements in hundredths: bit[0] = flash settings error bit[1] = flash calibration error bit[2] = Voltage Over Range bit[3] = Voltage Under Range bit[4:5] = don't care bit[6] = Zero crossing detecting bit[7:9] = don't care bit[10] = Energy storing error bit[11] = Energy initialization error bit[12] = don't care bit[13] = Current Over Range bit[14] = Current Under Range bit[15] = don't care	UShort [16b]	R		
40193	Voltage RMS measurement [V/100] (in hundredths)	Long [32b-LSW]	R		
40195	Current RMS measurement [mA/100] (in hundredths)	Long [32b-LSW]	R		
40197	Power measurement [W/100] (in hundredths)	Long [32b-LSW]	R		
40199	Reactive Power measurement Q [VAR/100] (in hundredths)	Long [32b-LSW]	R		
40201	Apparent Power measurement S [VA/100] (in hundredths)	Long [32b-LSW]	R		
40203	Cosφ measurement (in hundredths)	Long [32b-LSW]	R		
40205	Frequency measurement [Hz/100] (in hundredths)	Long [32b-LSW]	R		
40207	THD (in hundredths)	Long [32b-LSW]	R		
40209	Total Energy measurement [kWh] swapped Energy positive	Long [32b-MSW]	R/W		
40211	Only positive Energy Measurement [kWh/100] (in hundredths)	Long [32b-LSW]	R/W		
40213	Only negative Energy Measurement [kWh/100] (in hundredths)	Long [32b-LSW]	R/W		
40215	Voltage Peak [V/100] (in hundredths)	Long [32b-LSW]	R		
40217	Current Peak [mA/100] (in hundredths)	Long [32b-LSW]	R		
40219	Max RMS Voltage [V/100] (in hundredths)	Long [32b-LSW]	R/W		
40221	Min RMS Voltage [V/100] (in hundredths)	Long [32b-LSW]	R/W		
40223	Max RMS Current [mA/100] (in hundredths)	Long [32b-LSW]	R/W		
40225	Min RMS Current [mA/100] (in hundredths)	Long [32b-LSW]	R/W		
40227	Max RMS Power [W/100] (in hundredths)	Long [32b-LSW]	R/W		
40229	Min RMS Power [W/100] (in hundredths)	Long [32b-LSW]	R/W		
40231	Max Reactive Power [VAR/100] (in hundredths)	Long [32b-LSW]	R/W		
40233	Min Reactive Power [VAR/100] (in hundredths)	Long [32b-LSW]	R/W		
40235	Max Apparent Power [VA/100] (in hundredths)	Long [32b-LSW]	R/W		
40237	Min Apparent Power [VA/100] (in hundredths)	Long [32b-LSW]	R/W		
40239	Max Cosφ swapped (in hundredths)	Long [32b-MSW]	R/W		
40241	Min Cosφ swapped (in hundredths)	Long [32b-MSW]	R/W		
40243	Max Frequency [Hz/100] (in hundredths)	Long [32b-LSW]	R/W		
40245	Min Frequency [Hz/100] (in hundredths)	Long [32b-LSW]	R/W		
40247	Max THD swapped (in hundredths)	Long [32b-MSW]	R/W		
40249	Min THD swapped (in hundredths)	Long [32b-MSW]	R/W		
40252	Command: 0xC1C0 = Flash settings save command 0xC1A0 = Reboot command 0xBABA = Set Energy command (energy to load must be written in Reg. 40253) 0xBABB = Set Positive Energy command (positive energy to load must be written in Reg. 40253) 0xBABC = Set Negative Energy command (negative energy to load must be written in Reg. 40253)	UShort [16b]	R/W	0	
40253	Auxiliary Register for Energy Command (see register 40252)	Float [32b-LSW]	R/W	0	

Note:

¹⁾ The LSB and MSB values written in register 40013 are the cutoff values (minimum accepted value) for currents and powers (default values in brackets).

For each model, the cutoff values are:

	FW rev. < 37	FW rev. ≥ 37
QI-POWER-485-LV	1x mA the value written into the register (default 0xFA=250mA) 1x W the value written into the register (default 0x01=1W)	4x mA the value written into the register (default 0x7D=500mA) 4x W the value written into the register (default 0x01=4W)
QI-POWER-485- 300-LV	10x mA the value written into the register (default 0x96=1500mA) 10x W the value written into the register (default 0x01=10W)	40x mA the value written into the register (default 0x4B=3000mA) 40x W the value written into the register (default 0x01=40W)



LEGEND:

Short [16b] = Signed Short (16 bit)
UShort [16b] = Unsigned Short (16 bit)

Long [32b-MSW] = Signed Long (32 bit - MSW First Register)
Long [32b-LWS] = Signed Long (32 bit - LSW First Register)
ULong [32b-LSW] = Unsigned Long (32 bit - LSW First Register)
ULong [32b] = Unsigned Long (32 bit)

Float [32b-MSW] = Float (32 bit - MSW First Register)
Float [32b-LSW] = Float (32 bit - LSW First Register)

UInt [16b] = Unsigned Integer (16 bit)
UInt [32b-MSW] = Unsigned Integer (32 bit - MSW First Register)
Int [64b-LSW] = Signed Long Long (64 bit - LSW First Register)



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As standards, specifications, and design change from time to time, please ask for confirmation of the information given in this publication.