

HIQ

HIQ PM1-E-D



Single-Phase Multifunction DIN rail Power Sensor



- Measures kWh, Kvarh, KW, Kvar, KVA, PF, Hz, dmd, V, A, etc.
- Bi-directional measurement IMP & EXP
- Two pulse outputs
- RS485 Modbus
- Din rail mounting 17.5mm
- 0.1VAC CT connection
- Better than Class 1 accuracy

Application

The HIQ PM1-E-D power sensors have been produced to offer a low-cost solution to metering low Amp circuits. The HIQ PM1-E-D range work directly connected to a maximum load 45A AC circuit.

The power sensor measures a vast range of parameters, including Voltage, Current and Power Factor.

All HIQ PM1-E-D power sensors are housed in a 1 Module DIN rail-mounted housing. They also come complete

with sealable terminal covers to stop any tampering with the connections.

Measured Parameters

The HIQ PM1-E-D monitors and displays the following parameters of a single phase two wire (1p2w) system:

- Voltage (V)
- Current (A)
- Active Power (kW)
- Power Factor (PF)
- Frequency (Hz)
- Import Active Energy (kWh)
- Export Active Energy (kWh)
- Total Active Energy (kWh)

Voltage and Current

- Phase to Neutral Voltage - 176 to 276V AC
- Phase Current - Imin-Ib(I_{max}) 0.25-5(45)A AC

Power factor and Frequency and Max. Demand

- Frequency in Hz
- Instantaneous power:
- Power 0 to 12 kW
- Reactive power 0 to 12 kVAr
- Volt-amps 0 to 12 kVA
- Maximum demanded power since last Demand reset Power factor Environment

Energy Measurements

Imported/Exported active energy	0 to 99999.99 kWh
Imported/Exported reactive energy	0 to 99999.99 kVArh
Total active energy	0 to 99999.99 kWh
Total reactive energy	0 to 99999.99 kVArh

Measured Inputs

Nominal Voltage Input	(Ph+N) 176 to 276V
Max Continuous Voltage	120% of nominal
Nominal Input Current	5(45)A
Max Continuous Current	120% of nominal
Frequency	50Hz (±10%)

Accuracy

Voltage	0.5% of range maximum
Current	0.5% of nominal
Frequency	0.2% of mid-frequency
Power factor	1% of Unity
Active power	1% of range maximum
Reactive power	1% of range maximum
Apparent power	1% of range maximum
Active energy	Class 1 IEC62053-21 Class B EN50470-3
Reactive energy	1% of range maximum

Environment

Operating temperature	-25°C to +55°C*
Storage temperature	-40°C to +70°C*
Relative humidity	0 to 95%, non-condensing
Altitude	Up to 3000m
Warm up time	1 minute
Vibration	10Hz to 50Hz, IEC 60068-2-6, 2g
Shock	30g in 3 planes

Reference Conditions of Influence Quantities

Ambient temperature	23°C ±1°C
Input waveform	50 or 60Hz ±2%
Input waveform	Sinusoidal (distortion factor < 0.005)
Auxiliary supply voltage	Nominal ±1%
Auxiliary supply frequency	Nominal ±1%
Auxiliary supply waveform (if AC)	Sinusoidal (distortion factor < 0.05)
Magnetic field of external origin	Terrestrial flux

Pulse Output

The sensor provides two pulse outputs. Both pulse outputs are passive type.

Pulse output 1 is configurable. The pulse output can be set to generate pulses to represent total /import/ export kWh or kVarh.

The pulse constant can be set to generate 1 pulse per: 0.001(default) /0.01/0.1/1/10/100/1000 kWh/kVarh.

Pulse width: 200/100/60ms

Pulse output 2 is non-configurable. It is fixed up with total kWh. The constant is 1000imp/kWh.

RS485 output for Modbus RTU

The sensor provides a RS485 port for remote communication. Modbus RTU is the protocol applied. For Modbus RTU, the following RS485 communication parameters can be configured by the Modbus command.

Baud rate: 1200, 2400, 4800, 9600

Parity: NONE/EVEN/ODD

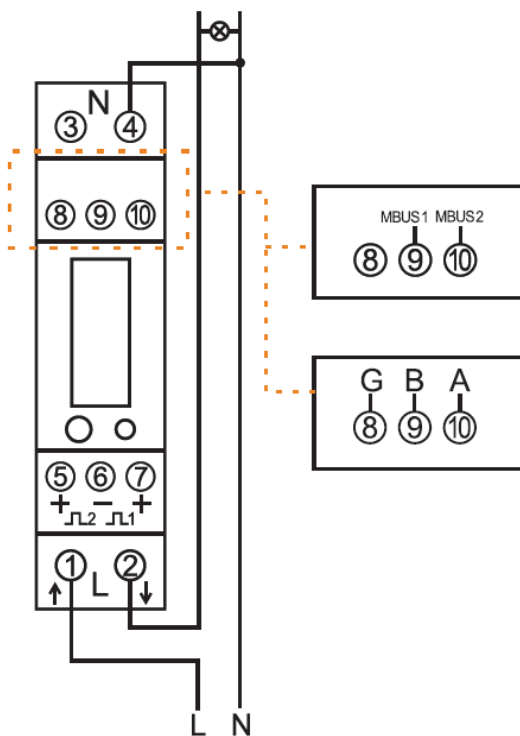
Stop bits: 1 or 2

Modbus Address: 1 to 247

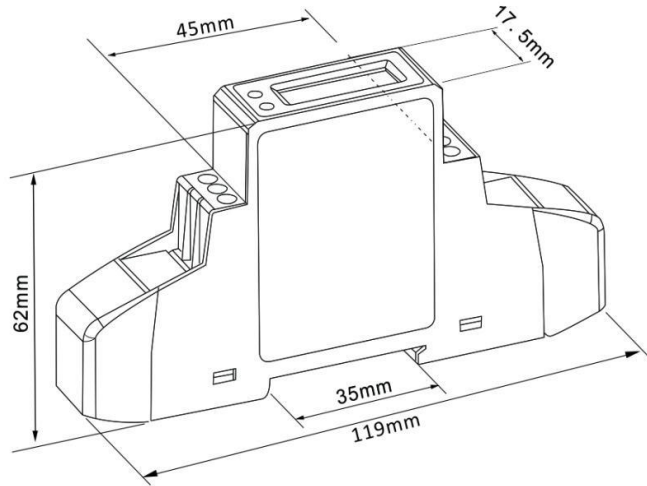
Mechanics

Din rail dimensions	17.5x119x62 (WxHxD) DIN 43880
Mounting	DIN rail 35mm
Sealing	IP51 (indoor)
Material	self-extinguishing UL94V-0

Wiring diagram



Dimensions



Installation

