

Single-phase multifunction Power Transmitter

Product features

- Measuring of 12 different parameters
- 0-125 VAC / 0-250 VAC voltage input (CAT III)
- 0-5 AAC / 0-1 AAC galvanic isolated current inputs (CAT III)
- 2 × 0-20 mA / 4-20 mA galvanic isolated outputs
- RS485 communication, MODBUS RTU / ASCII Slave protocol
- 2 energy pulse outputs / limit outputs
- Configurable from PC via USB port
- 19-35 VAC / 25-50 VDC / 90-250 V AC/DC power supply
- 22.5 mm width, TS-35 rail mounting



Type designation

PQRM5100 11			OPTION	OPTION*	
			DO	2IA	RS4
			dual-channel impulse output	dual-channel active output 0-20 mA / 4-20 mA	RS485 MODBUS
INPUT	I1	0-1 A	● ●	● ●	● ●
	I5	0-5 A	● ●	● ●	● ●
	U125	0-125 V	● ●	● ●	● ●
	U250	0-250 V	● ●	● ●	● ●
PQRM5100 11				20-50 VDC / 19-35 VAC POWER SUPPLY	
PQRM5100 11				PS 90-250 VAC / DC POWER SUPPLY	

* only one option at the same time

The PQRM5100 11 ... Single-phase multifunction Power Transmitter suitable for the measuring of 12 different parameters of the singlephase power network: • The TRMS values of phase voltage and phase current • active power, reactive power, apparent power and power factor • + active energy, - active energy, inductive energy, - capacitive energy • frequency, phase angle. The voltage inputs of the equipment are resistor networks (nonisolated) and the current inputs are isolated from the network with wideband current transformers. The current inputs 0-5 AAC or 0-1 AAC, and the voltage inputs 0-125 VAC / 0-250 VAC are in compliance with the requirements for measurement category CAT III.

The PQRM5100 11... is available with the following output options:

- 2 × 0-20 mA / 4-20 mA galvanic isolated, scalable, active analog current outputs *
- MODBUS RTU galvanic isolated communication which makes possible the reading of all measurement values via the communication line, with a PLC or with a PC *.

(* only one option at the same time)

2 energy pulse outputs / limit outputs for limit-switching and for simple control tasks.

The measurement and output parameters are configurable from PC via USB port with the help of a user friendly configuration software. The configuration software is free of charge.

The PQRM5100 11 ... has two power supply versions 19-35 VAC / 25-50 VDC (PQRM5100 11 ...) or 90-250 V AC/DC (PQRM5100 11 ... PS).

Safety data:

The connection terminals of the supply voltages are isolated from each other, the isolation is in compliance with the standard EN 61010-1, taking into consideration the following:

Pollution level:	2
Measurement category:	CAT III
Overcurrent protection in instalation:	4A

Input parameters:

Measured parameters:	URMS, IRMS, P, Q, S, PF, ϕ , f , +EP, -EP, +EQ, -EQ
Input voltage:	0-125 VAC / 0-250 VAC resistor network (specified at ordering)
Input current:	0-5 AAC / 0-1 AAC galvanic isolated (specified at ordering)
Ovrange:	$2 \times I$, $1.2 \times U$, 300 V (max.)
Short overrange (1 sec.):	$20 \times I$, 100 A (max.)
Consumption of the input:	0.5 VA (max.)
Frequency range:	40-80 Hz
Error:	0.2%
Refreshing time:	250 ms
Temperature coefficient:	25 ppm / °C (max.)

Output parameters:

Analogue outputs (optional):

Output type:	2 active current outputs (configurable, specified at ordering)
Range:	0-20 mA / 4-20 mA (scalable)
Burden:	500 ohm (max.)
Refreshing time:	same as the measuring time (2 s)
Overcurrent:	20.8 mA
Error:	$< 4 \mu\text{A}$ ($23 \text{ }^\circ\text{C} \pm 2 \text{ }^\circ\text{C}$) $< 40 \mu\text{A}$ ($-20 - +60 \text{ }^\circ\text{C}$)
Burden resistance effect:	practically zero

Pulse outputs (optional):

Output type:	2 galvanic isolated transistor, passiv switching transistor
Rating:	30 V, 50 mA

MODBUS communication interface (optional):

Interface type:	RS485, galvanic isolated
Baud rate:	300 / 600 / 1200 / 2400 / 4800 / 9600 / 14400 / 19200 / 32800 Baud
Parity:	even / odd / none
Protocol:	MODBUS RTU slave
Address:	1-255
Possible commands:	3 (register read)

Power supply:

Supply voltage:	20-50 VDC / 19-35 VAC PQR5100 11 90-250 V AC/DC PQR5100 11 PS
Power consumption:	1.5 VA / 1 W

Galvanic isolation:

Current power measure input:	galvanic isolated, $R < 20 \text{ MOhm}$
Voltage power measure input:	resistordivider, $R = 1.6 \text{ MOhm}$
Operating isolation voltage:	$250 V_{\text{eff}}$ (between measuring inputs and power supply input)
Test voltage:	4200 VDC (1 min.) (between measuring inputs and power supply input) 500 VDC (between output-power supply terminals)

Ambient conditions:

Operating temperature range:	0-60 °C
Storage temperature range:	0-70 °C
Relative humidity:	90% (max., non condensing)
Place of installation:	cabinet

Electromagnetic compatibility (EMC):

accordance with the standard EN 61326-1

Immunity:	industrial area
Noise emission:	Group 1, Class B

General data:

Housing:	terminal assembly box, rail mounting on TS-35 rail, material: polyamide PA6.6
Connection:	screw terminal
Connection cable:	4.5 mm ² (max.)
Dimensions / weight:	22.5 × 108 × 114 mm (width × height × depth) / 0.17 kg (max.)
Protection:	IP 20

Detailed information see in operating instructions. The Manufacturer maintains the right to change the technical data!