

RI-18-45-P Series



Single Phase Energy Meter (MID Certified)

- 45A direct connected
- High definition LCD display
- Import active energy measurement
- Single pulse output
- Single module width DIN rail mounted
- MID B+D Certified (TCM 221/13 - 5099)
- LED pulse indication

Product Description

The RI-18-45-P Series forms part of the Rayleigh Instruments family of MID Certified energy meters.

This compact single phase digital kWh energy meter has been designed for the accurate measurement of energy consumption in residential, commercial, industrial and utility applications. The direct connection of the unit to a 45A ac circuit means the meter does not require an additional current transformer.

This meter has a high definition LCD display with 6mm high digits allowing easy reading of the recorded value.

Its MID status means the RI-18-45-P has been tested for the build quality and accuracy of the meter and is certified for billing purposes.

The meter is currently available in one version:-

- With single pulse output.

The unit is housed in a compact single module width case suitable for 35mm DIN rail mounting.

Displayed Parameters

Import Active Energy (kWh)



Display

Display Type	LCD, high definition	
Digit height	6mm (displayed value)	
Page scrolling	N/A single page	
Displayed parameters and accuracies	Active Energy	Class B (IEC/EN50470) / Class 1 (IEC/EN62053-21)
Energy maximum display	99999.99	
Resolution	10wh	

Programming

Programmable parameters	N/A	
Programming access	N/A	
Memory retention	Non volatile memory	

Input

Connection	Single phase only	
Input voltage (Un)	230V	
Operating voltage range	184...276V	
Voltage circuit power consumption (Max.)	≤8VA, ≤0.4W	
Current rating (Imin-Iref)	0.25...5A	
Max current (Imax)	45A	
Current circuit power consumption (Max.)	N/A combined with voltage input	
Starting current	20mA	
Short time overcurrent	30 Imax/ 10mS (IEC/EN62053-21 and -23)	
Impulse voltage withstand	6kV 1.2μS	
AC voltage withstand	4kV for 1 minute	
CT ratio range	N/A direct connection	
VT ratio range	N/A direct connection	
Frequency	50Hz	
Current distortion factor	According to IEC/EN50470	

Auxiliary Supply

Voltage range	Self supplied from measuring input	
Operating frequency	See input section	
Power consumption	See input section	

Outputs

Energy pulses	
Number of pulse outputs	1
Pulse output function	1 x fixed at 1000imp/kWh.
Pulse output type	Semiconductor (does not support volt-free operation)
Pulse output Max. current	27mA (Class A to IEC/EN62053-31)
Pulse output voltage range	5...27VDC
Pulse duration	80mS
Communication	
Communication protocol	N/A
Address	N/A
Number of bits	N/A
Parity	N/A
Baud rate	N/A
Required response time to request	N/A
Number of meters connected on the bus	N/A
Max. distance from Master device	N/A

Insulation

Installation category	III
Pollution degree	2
Insulation voltage rating	300V

Environmental Conditions

Reference temperature	23°C ±1°C
Specified temperature operating range	-25°C...+55°C
Storage temperature	-40°C...+70°C
Relative humidity	0...85%, non condensing
Mechanical environment	M1
Electromagnetic environment	E2

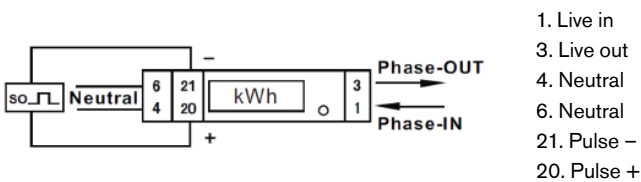
Mechanical

Housing	
Housing Type	1 module DIN 43880
Mounting	Snap-on 35mm rail
Tamper sealing	Terminal cover and meter housing (meter housing by means of a tamper sticker)
Housing material	Self-extinguishing ABS
Protection degree (IEC/EN60529)	IP20 (terminals), IP51 (front of housing)
Weight	<170g
Termination	
Current input terminal type	Screw type - rising clamp
Max. wire size	13mm ²
Voltage input terminal type	Combined with current circuit
Max. wire size	N/A
Output terminal type	Screw type - rising clamp
Max. wire size	2.5mm ²

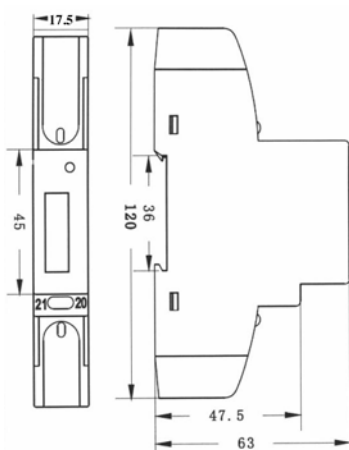
Conformity

Electromagnetic compatibility	Emission and immunity tests according to IEC/EN50470 Immunity test according to IEC/EN50470
Accuracy and functionality	IEC/EN50470-1:2006 - Electricity metering equipment (a.c.). Part 1: General requirements, tests and test conditions Metering equipment (class indexes A, B and C) IEC/EN50470-3:2006 - Electricity metering equipment (a.c.). Part 3: Particular requirements Static meters for active energy (class indexes A, B and C) EC Directive 2004/22/EC

Wiring Diagrams



Dimensions (mm)



Model Selection Table

Description and Communications	Model
Single Phase kWh Meter - Single Pulse Output	RI-18-45-P