Rayleigh Instruments
EST. 1964

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RI-70-100-P Series

Three Phase Energy Meter (MID Certified)

- 100A direct connected
- High definition LCD display
- Import active energy measurement
- Single pulse output
- Four module width DIN rail mounted
- MID B+D Certified
- LED pulse indication

Product Description

The RI-70-100-P Series forms part of the Rayleigh Instruments family of MID Certified energy meters.

This three 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 100A ac circuit means the meter does not require additional current transformers.

This meter has a high definition LCD display with 10mm high digits allowing easy reading of the recorded value.

Its MID status means the RI-70-100-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 four module width case suitable for 35mm DIN rail mounting.

Displayed Parameters

Import Active Energy (kWh)

MID APPROVED FOR BILLING APPLICATIONS
Measuring Instruments Directive

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Display

Display Type	LCD, high definition
Digit height	10mm (displayed value)
Page scrolling	N/A
Displayed parameters and accuracies	Active Energy Class 1, Class B (IEC/EN62053-21, IEC/EN50470-3)
Energy maximum display	999999.99
Resolution	10wh

Programming

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

Input

Connection	Three phase four wire
Input voltage (Un)	3 x 230V/400V
Operating voltage range	161…300V (L-N), 279…500V (L-L)
Voltage circuit power consumption (Max.)	≤2W, 10VA per phase
Current rating (Imin-Iref)	0.5…10A
Max current (Imax)	100A
Current circuit power consumption (Max.)	N/A combined with voltage input
Starting current	20mA
Short time overcurrent	30 Imax/ 10mS (IEC/EN 62053-21 and -23)
Impulse voltage withstand	6kV 1.2/50µS 0.5J
AC voltage withstand	4kV 50Hz for 1 minute
CT ratio range	N/A direct connection
VT ratio range	N/A direct connection
Frequency	50Hz ±10%
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

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Outputs

Energy pulses	
Number of pulse outputs	1
Pulse output function	1 x fixed 400imp/kWh.
Pulse output type	Passive transistor (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 (L-N)

Environmental Conditions

Reference temperature	23°C ±1°C
Specified temperature operating range	–25°C…+55°C
Storage temperature	–30°C…+70°C
Relative humidity	0…95%, non condensing
Mechanical environment	M1
Electromagnetic environment	E2

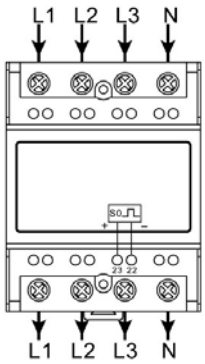
Mechanical

Housing	
Housing Type	4 module DIN 43880
Mounting	Snap-on 35mm rail
Tamper sealing	Terminal cover and meter housing (by means of a crimped seals)
Housing material	Self-extinguishing Polycarbonate
Protection degree (IEC/EN60529)	IP20 (terminals), IP51 (front of housing)
Weight	390g
Termination	
Current input terminal type	Screw type - rising clamp
Max. wire size	33.6mm^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

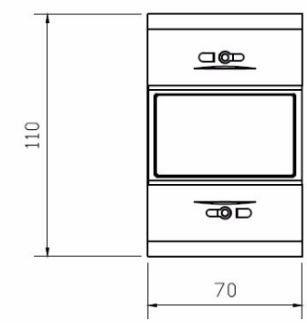
Conformity

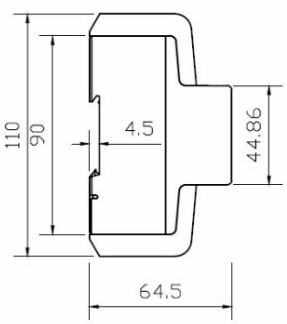
Electromagnetic compatibility	Emission and immunity tests according to IEC/EN50470 Immunity test according to IEC/EN50470
Accuracy and functionality	IEC/EN50470-1:2006 - Electricity metering equipment (a.c.). Part 1: General requirements, tests and test conditions Metering equipment (class indexes A, 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 2014/32/EU

Wiring Diagrams



Dimensions (mm)





Model Selection Table

Description and Communications	Model
Three Phase kWh Meter - Single Pulse Output	RI-70-100-P

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