Rayleigh Instruments

RI-D175CT

OP050 V01

OVERVIEW

RI-D175CT-C Modbus

RI-D175CT-MB M-Bus

Pulse

DIN RAIL MOUNT

CE

RoHS

SPECIFICATIONS

Wiring input	1Ø, CT Connected
Input voltage (Un)	230V
Operating voltage range	195…253V
Current rating (Imin-Iref)	0.02…5A / Max current (Imax) 6A
Frequency range	50Hz (operating range 45…55Hz)
Short time overcurrent	30 x Imax. for 10mS (IEC/EN62053-21 and -23)
Impulse voltage withstand	6kV 1.2µS
AC voltage withstand	4kV for 1 minute
Auxiliary	230VAC
Power consumption	≤2W / 10VA
Energy maximum display	999999.9 (default) or 99999.99 programmable
Displayed parameters and accuracy	Active energy: Class 1 (IEC/EN62053-21 Voltage: 0.5% of full scale Current: 0.5% of full scale Active power: 0.5% Power factor: 1% of unity Frequency: 0.1% of full scale (L-N >20V)
Communication	RS485: Modbus RTU or MBus EN13757-3 **Address Register at www.rayleigh.com**
Modbus RTU (RI-D175-C only)	Address: 1… 255 Data bits / Parity: 8 bit / None, Odd, Even Baudrate: 1200, 2400, 4800, 9600 Bus loading: 64 meters max Max distance: 1000m
MBus EN13757-3 (RI-D175-MB only)	Address: 1… 255 Baudrate: 2400, 4800, 9600 Bus loading: 64 meters max (dependant on converter and baudrate) Max distance: 1000m (64 meters)
Pulse output	1 x fixed 2000 imp/kWh / 5 - 27V DC (external supply) / 10mA max / pulse duration 80mS
Operating temperature	-25°C … +55°C
Storage temperature	-30°C … +70°C
Relative humidity	0… 95%, non-condensing
Net weight	120g
Housing material	Self-extinguishing ABS
Insulation voltage rating	300V (L - N)
Installation category	III
Protection degree	IP20 (terminals), IP51 (front of housing)

SAFETY PRECAUTIONS

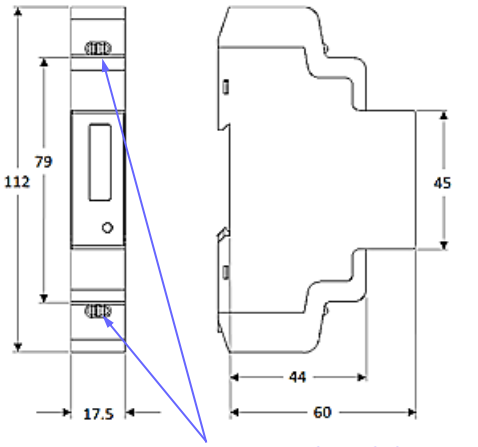
Safety related notification, symbols and instructions that appear in this operating manual or on the equipment must be strictly followed to ensure the safety of personnel as well as the instrument.

- If the equipment is not used in a manner specified by the manufacturer it may impair the protection provided by the equipment
- Do not use the equipment if there is any mechanical damage
- Do not exceed the stated maximum ratings of the device
- No repairs, maintenance or adjustments are possible
- Read complete instruction prior to installation or operation of the unit
- The equipment in its installed state must not come into close proximity to any heating sources, oils, steam, caustic vapours or other unwanted process by-products
- Do not use in hazardous or classified location where explosion or other dangers can be triggered by the device

INSTALLATION

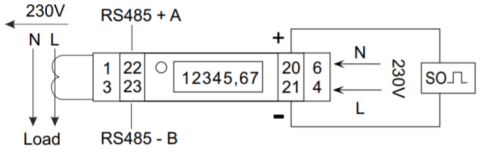
Risk of electric shock! To avoid personal and material damage, the installation process must be performed by qualified and trained personnel only.

- To prevent the risk of electrocution, always isolate and lock-off the power supply to the equipment prior to undertaking any work
- Always confirm absence of electricity prior to starting work using appropriate voltage detection equipment
- Wiring shall be done strictly according to the terminal layout
- Confirm that all connections are correct before energizing the equipment
- Routing of connecting cables should be away from any internal EMI sources
- Copper cable should be used



All dimensions in mm

Security Hasp: Must be sealed to comply with MID



RS485	22	23
Modbus	A	B
MBus	MBus1	MBus2

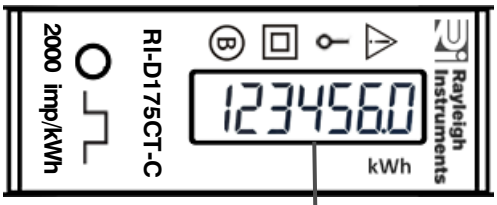
L/N	Output
0.4 Nm Max	0.2 Nm Max

	L/N: 7 AWG / 10.5mm² max	Output: 14 AWG / 2.5mm² max
	8mm	6mm
	+ Ø 3.5mm max	+ Ø 1.5mm

POWER UP CYCLE

Software version	34AE
Comm Baud Rate	bd 9600
Pulse Weight (imp/kWh)	C 2000
Comm ID	Id 01
Serial Number 2nd 4 digits	SNL0010
Serial Number 1st 4 digits	SNH 1802

OPERATION



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Total kWh	123456.0
Import kWh	123456.0
Export kWh	123456.0
Voltage	U 230.0
Current	A 12.00
Active Power	P 1234.0
Power Factor	PF 1.00
Frequency	F 50.0
Pulse Weight (imp/kWh)	C 2000
Baud Rate (Change via RS485)	bd 9600
Comm ID (Change via RS485)	Id 01
Serial Number 1st 4 digits	SNH 1802
Serial Number 2nd 4 digits	SNL0010

Rayleigh Instruments Limited
Raytel House, Cutlers Road, South Woodham Ferrers, Chelmsford, Essex. CM3 5WA
T: 01245 428500 **E:** tech.support@rayleigh.com www.rayleigh.com