

Data sheet

MR-SM3 Modbus RTU

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P/N

11084113

EAN 4250184174028

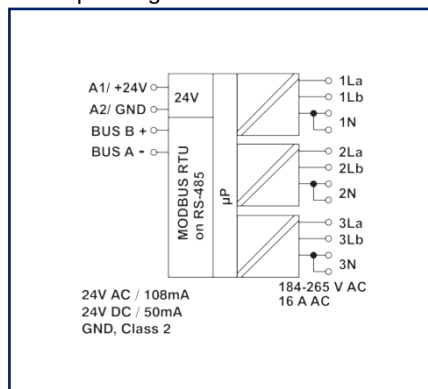
2023/06/23

Version: G

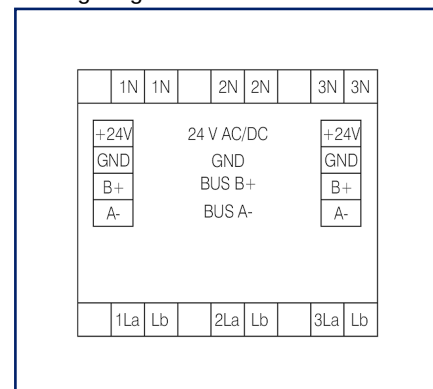
Illustrations



Principle diagram



Wiring diagram



See enlarged drawings at the end of document

Product specification

The module MR-SM3 is a smart meter component for building automation. Current, voltage, power and many other values can be captured by three 230 Volt current circuits. In addition, the device provides monitoring functions of for example asymmetry, phase failure, phase sequence, overvoltage and undervoltage. These values can be queried via a Modbus-Master. Module address, bit rate and parity are set with two rotary switches on the front or by software. Suitable for decentralized mounting on DIN TH35 rail according to IEC 60715 in electrical distribution cabinets.

- Connection with screw type terminal blocks

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Technical Data

RS485 interface	
Protocol	Modbus RTU
Address range	00 - F9
Bus interface	RS485 two wire bus with potential equalization in bus or line topology, terminate with 120 Ohm
Transmission parameters	
Transmission rate	min. 1200 Bit/s (Bd) - max. 115200 Bit/s (Bd)
Transmission rate default setting	19200 Bit/s (Bd)
Parity	None, Even (default setting), Odd
Stopbits	1 (default setting), 2
Supply	
Operating voltage	24 V AC/DC +/- 10 % (SELV)
Power consumption	
Power consumption AC (max.)	108 mA
Power consumption DC (max.)	50 mA
Duty cycle relative	100 %
Inputs	
Analog inputs	3
Current range	0 A - 16 A AC
Voltage range	184 V - 265 V AC
Voltage input	230 V AC -20% ... +15%
Measurement accuracy	
Effective voltage [Ueff]	1 V
Peak voltage [US]	1 V
Effective current [Ieff]	30 mA +1% (from [I _{eff}])
Peak current [IS]	100 mA +1% (from [IS])
Active power [P]	7 W +1% (from [S])
Reactive power [Q]	7 VAR +1% (from [S])
Apparent power [S]	7 VA +1% (from [S])

Technical Data

Housing	
Dimensions	
Dimension (W x H x D)	50 mm x 69.3 mm x 60 mm
Dimension (W x H x D)	1.969 in. x 2.728 in. x 2.362 in.
Weight	110 g
Mounting style	Standard rail TH35
Mounting position	any
Apposition	The maximum quantity of Modbus modules connected side-by-side is limited to 15 or to a maximum power consumption of 2 Amps (AC or DC) per connection to the power supply. For any similar block of additional modules a separate connection to the power supply is necessary., without distance
Connection type	Screw type terminal blocks
Indicator	green and red LED
Terminal blocks	
Supply and bus	
Terminal block	4-pole
Solid wire (AWG)	max. 1.5 mm ² / max. 16 AWG
Stranded wire (AWG)	max. 1 mm ² / max. 18 AWG
Wire diameter	max. 1.4 mm - min. 0.3 mm
Module connection	
Wire cross section solid	0.34 mm ² - 2.5 mm ² / AWG 22-12
Wire cross section multi	0.25 mm ² - 2.5 mm ² / AWG 22-12
Wire cross section with wire ferrule	0.25 mm ² - 2.5 mm ² / AWG 22-12
Screw torque (max.)	0.5 Nm
Stripping length (min.)	8 mm
Protection circuit	Polarity reversal protection for DC operating voltage, Protection against interchanging power supply and bus
Material	
Material - Housing	Polyamid 6.6 V0
Color	gray
Material - Terminal block	Polyamid 6.6 V0
Material - Covers	Polycarbonat

Technical Data

Protection category according to IEC 60529

Protection category - housing (acc. to IEC 60529) IP40

Protection category - terminal blocks (acc. to IEC 60529) IP20

Temperature range

Operating

Temperature - Operating °C -5 °C - 55 °C

Temperature - Operating °F 23 °F - 131 °F

Storage

Temperature - Storage °C -20 °C - 70 °C

Temperature - Storage °F -4 °F - 158 °F

Classifications

ETIM 7.0 EC000794

ETIM 8.0 EC000794

ETIM 9.0 EC000794

Software and additional documents

Software and documentation Further documentation is available for free download at www.metz-connect.com



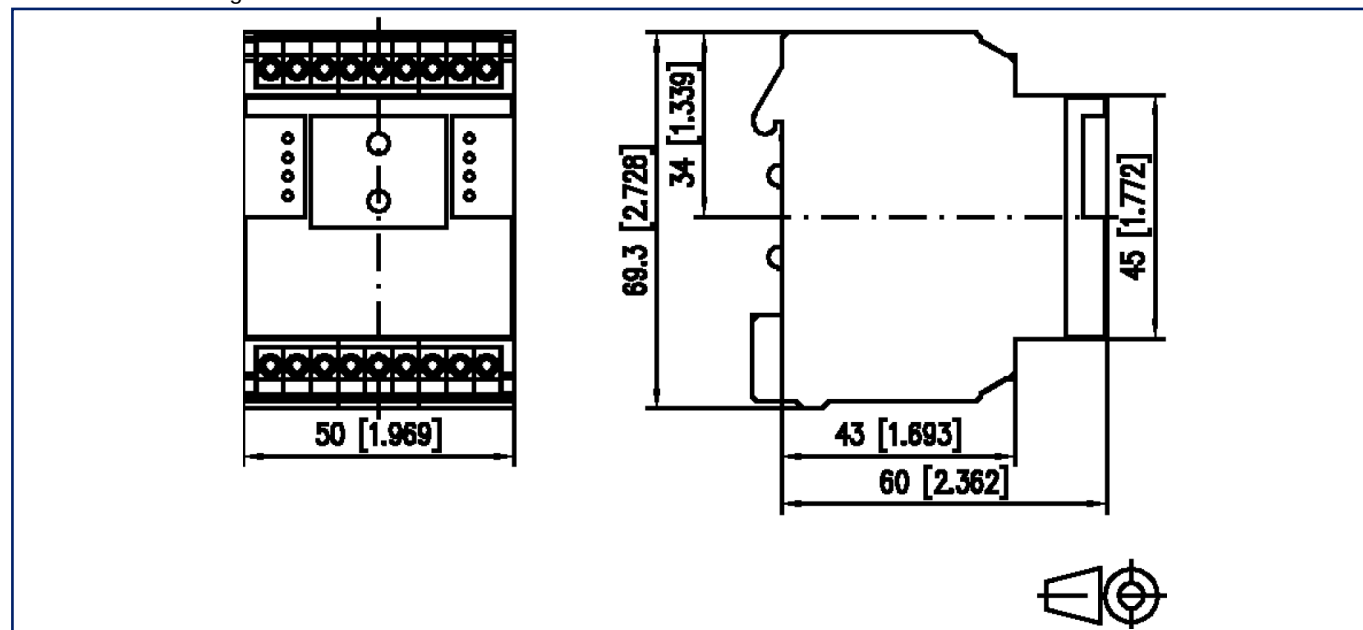
Accessories from

P/N	Designation
11083001	MR-GW Modbus RTU / Modbus TCP Gateway
1108300170	MR-F-GW Modbus RTU / Modbus TCP Gateway

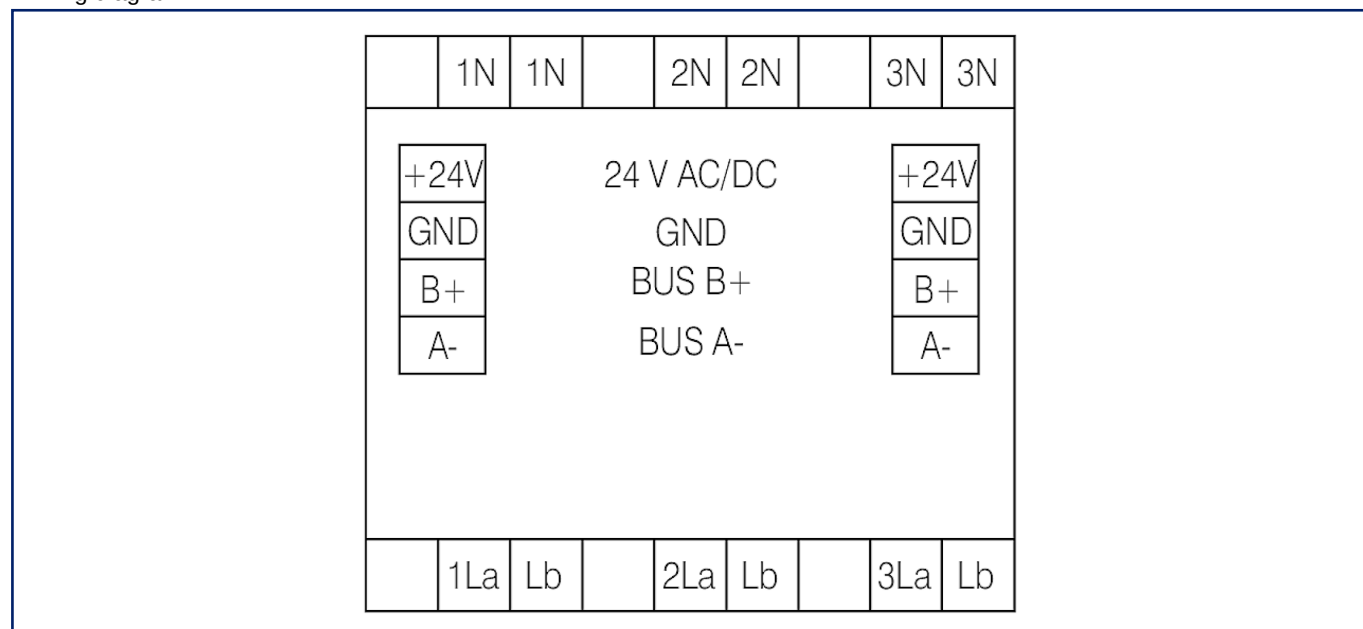


Illustrations

Dimensional drawing

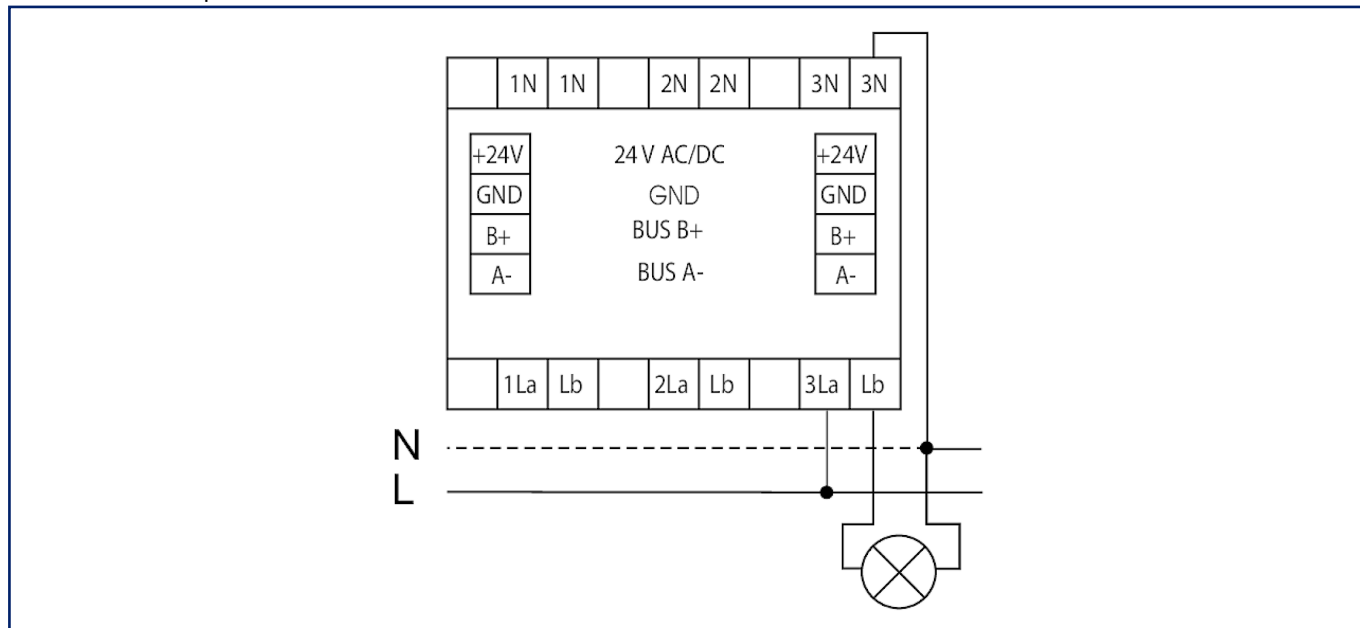


Wiring diagram

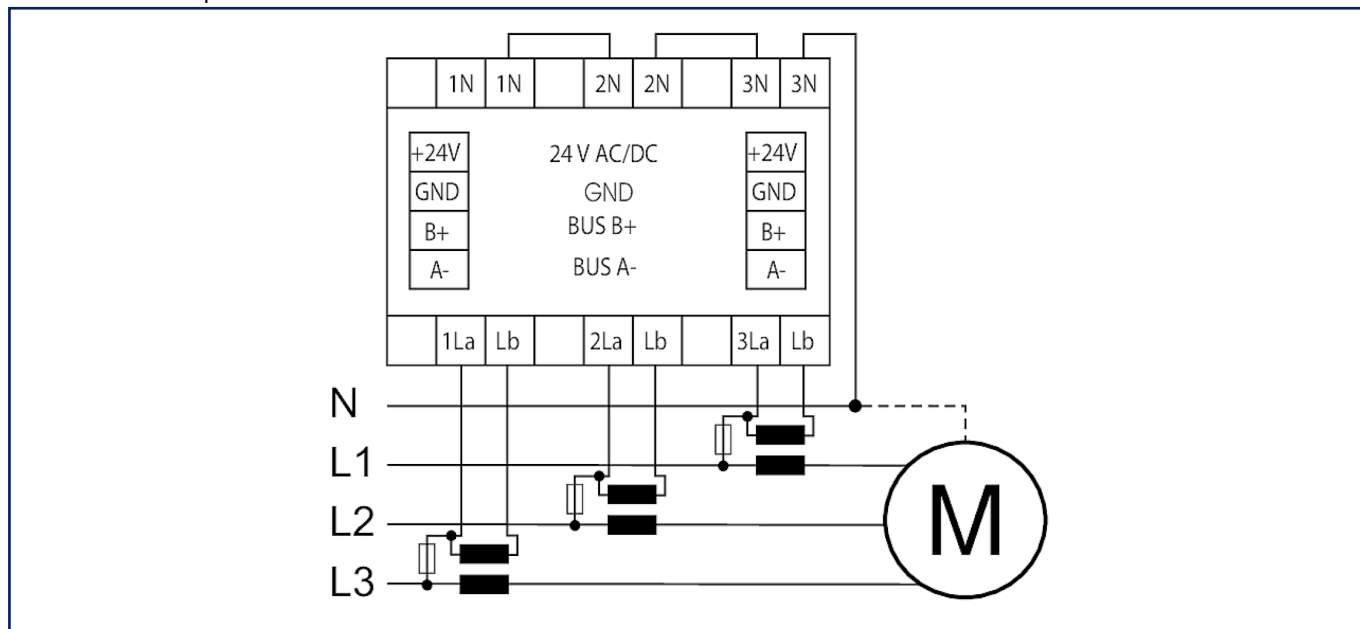


Illustrations

Connection example



Connection example



Illustrations

Principle diagram

