

Data sheet

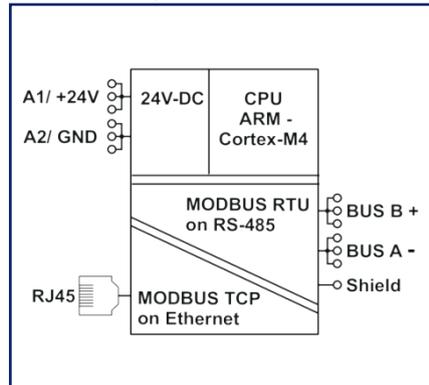
MR-F-GW

Modbus RTU / Modbus TCP Gateway

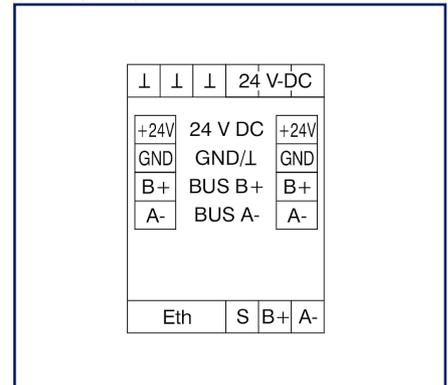
Illustrations



Principle diagram



Wiring diagram



See enlarged drawings at the end of document

Product specification

MR-(F)-GW is a compact Modbus RTU / Modbus TCP Gateway. The MR-Gateway enables bidirectional data exchange between Modbus RTU fieldbus devices and a Modbus TCP master (client). The MR-(F)-GW can be operated in two modes. Either as a transparent gateway in Modbus RTU over TCP mode or as a protocol converter (Modbus TCP mode). The MR-Gateway can be connected to METZ CONNECT Modbus RTU devices via two 4-pole terminals on the front of the device and a jumper plug. An integrated web server is used for parameter settings, management and monitoring of the two interfaces (Ethernet / RS485). The web interface is also used to update the firmware. The MR-Gateway is suitable for decentralised mounting in electrical sub-distribution boards or in control cabinets on TH35 mounting rails in accordance with IEC 60715.

- Simultaneous access from 32 Modbus TCP clients
- Bidirectional exchange of data between Modbus RTU Slave devices and a Modbus TCP Master (client)
- Protocol: Modbus RTU over TCP (Transparent gateway), Modbus TCP/IP v1.0b, HTTP 1.0
- Integrated web server
- Intuitive and software-independent TCP configuration via web interface
- Simple device search of METZ CONNECT Modbus RTU devices on the RS485 bus
- Fast connection of METZ CONNECT Modbus RTU devices via proven jumper plug technology
- Galvanic 3-way isolation (RS485- Ethernet-power supply)
- Status monitoring of TCP and RS485 communication



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Technical Data

Approvals



Open Energy Management Equipment 34TZ

Ethernet interface

Network connection	1 x Ethernet port (RJ-45 IEC 60603-7-51 (2010))
Speed	10/100 Mbits with auto-negotiation
Protocol	Modbus RTU over TCP (Transparent gateway) Modbus TCP/IP v1.0b HTTP 1.0

RS485 interface

Protocol	Modbus RTU v1.1b3
Transmission parameters	
Transmission rate	min. 300 Bit/s (Bd) max. 115200 Bit/s (Bd)
Transmission rate default setting	19200 Bit/s (Bd)
Parity	Odd Even (default setting) None
Stopbits	1 (default setting) 2
Galvanic isolation	1.5 kV
Bus termination resistor	120 Ohm switchable
Number of bus participants	32; with 1 unit load per participant

Supply

Operating voltage	24 V DC +/- 10 % (SELV)
Power consumption (max.)	50 mA
Power loss (max.)	1.3 W

Housing

Dimensions	
Dimension (W x H x D)	35 mm x 69.3 mm x 60 mm
Dimension (W x H x D)	1.378 in. x 2.728 in. x 2.362 in.
Weight	64 g
Mounting style	Standard rail TH35
Mounting position	any

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Housing	
Apposition	without distance
Connection type	Spring clamp terminal blocks
Indicator	
Operation "RDY"	green LED
LAN connection "LINK 10/100"	green LED (100 Mbit), yellow LED (10 Mbit)
RS485 bus "TX" / "RX"	green LED
Terminal blocks	
Supply and bus	
Terminal block	4-pole, pluggable, on front of housing
Solid wire (AWG)	max. 1.5 mm ² / max. 16 AWG
Stranded wire (AWG)	max. 1 mm ² / max. 18 AWG
Wire diameter	min. 0.3 mm max. 1.4 mm
Module connection	
Wire cross section solid	0.2 mm ² - 2.5 mm ² / AWG 24-14
Wire cross section multi	0.25 mm ² - 2.5 mm ² / AWG 24-12
Wire cross section with wire ferrule	0.25 mm ² - 1.5 mm ² / AWG 24-16
Stripping length (min.)	8 mm
Ethernet connection	RJ45-jack
Material	
Material - Housing	Polyamid 6.6 V0
Color	gray
Material - Terminal block	Polyamid 6.6 V0
Material - Covers	Polycarbonat
Protection category according to IEC 60529	
Protection category - housing (acc. to IEC 60529)	IP40
Protection category - terminal blocks (acc. to IEC 60529)	IP20

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Climatic Data

Operating

Temperature - Operating °C	-5 °C - 55 °C
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Temperature - Operating °F	23 °F - 131 °F
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Relative humidity	max. 85 % non-condensing
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Storage

Temperature - Storage °C	-20 °C - 70 °C
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Temperature - Storage °F	-4 °F - 158 °F
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Classifications

ETIM 7.0	EC001099
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ETIM 8.0	EC001099
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ETIM 9.0	EC001099
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ETIM 10.0	EC001099
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Software and additional documents

Software

MC Search Tool: Windows-based and free tool to configure and search the MR-(F)-GW in a TCP/IP network (free download at www.metz-connect.com)

Application note

This product is a standard product of METZ CONNECT. METZ CONNECT is not aware of the specific intended use of the goods by the Customer or any customers of the Customer. The Customer guarantees that it has fully and sufficiently tested the use of the goods and any product modifications, product changes or product enhancements with regard to the specific intended use in accordance with the state of the art or in any other way. At METZ CONNECT's request, the Customer shall submit and make available meaningful evidence (e.g. test and laboratory protocols, certifications, etc.).



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Accessories

P/N	Designation
110369	Terminal block Type 259
110561	Power supply NG4 24 V DC
11056170	Power supply NG4-F 24 V DC
11083013	MR-TO4 Modbus RTU
1108301370	MR-F-TO4 Modbus RTU
1108311319	MR-DI10 Modbus RTU
110831131970	MR-F-DI10 Modbus RTU
11083213	MR-AI8 Modbus RTU
1108321370	MR-F-AI8 Modbus RTU
1108331326	MR-DIO4/2 Modbus RTU
110833132601	MR-DIO4/2S Modbus RTU
11083313260170	MR-F-DIO4/2S Modbus RTU
110833132670	MR-F-DIO4/2 Modbus RTU
1108341319	MR-DI4 Modbus RTU
110834131970	MR-F-DI4 Modbus RTU
1108351302	MR-AO4 Modbus RTU
110835130270	MR-F-AO4 Modbus RTU
1108361321	MR-DO4 Modbus RTU
110836132101	MR-DOA4 Modbus RTU
11083613210170	MR-F-DOA4 Modbus RTU
110836132170	MR-F-DO4 Modbus RTU
1108371302	MR-AOP4 Modbus RTU
110837130270	MR-F-AOP4 Modbus RTU
11083813	MR-TP Modbus RTU
11083813-01	MR-TPS Modbus RTU
1108381370	MR-F-TP Modbus RTU
1108381370-01	MR-F-TPS Modbus RTU
11083913	MR-SI4 Modbus RTU
1108391370	MR-F-SI4 Modbus RTU
1108401332	MR-CI4 Modbus RTU
110840133270	MR-F-CI4 Modbus RTU
11084113	MR-SM3 Modbus RTU
1108411370	MR-F-SM3 Modbus RTU

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Accessories

11084313	MR-Multi I/O Modbus RTU
11084413	MR-LD6 Modbus RTU
1108441370	MR-F-LD6 Modbus RTU
31135104	Typ 135 RIACON 135_3.5



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Accessories from

P/N	Designation
1108110526IP	MB-DIO2/1-IP Modbus/BACnet 230 V
1108111326IP	MB-DIO2/1-IP Modbus/BACnet 24V AC/DC
1108120526IP	MB-DIO4/2-IP Modbus/BACnet 230 V
1108121326IP	MB-DIO4/2-IP Modbus/BACnet 24V AC/DC

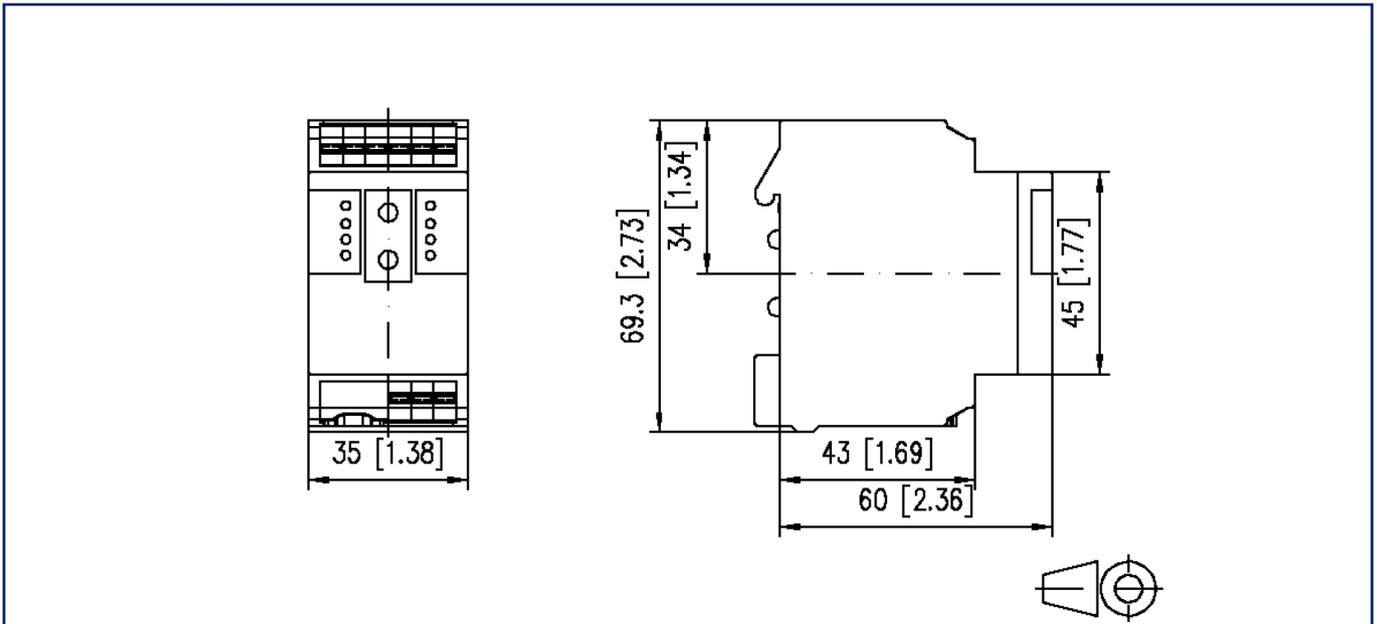
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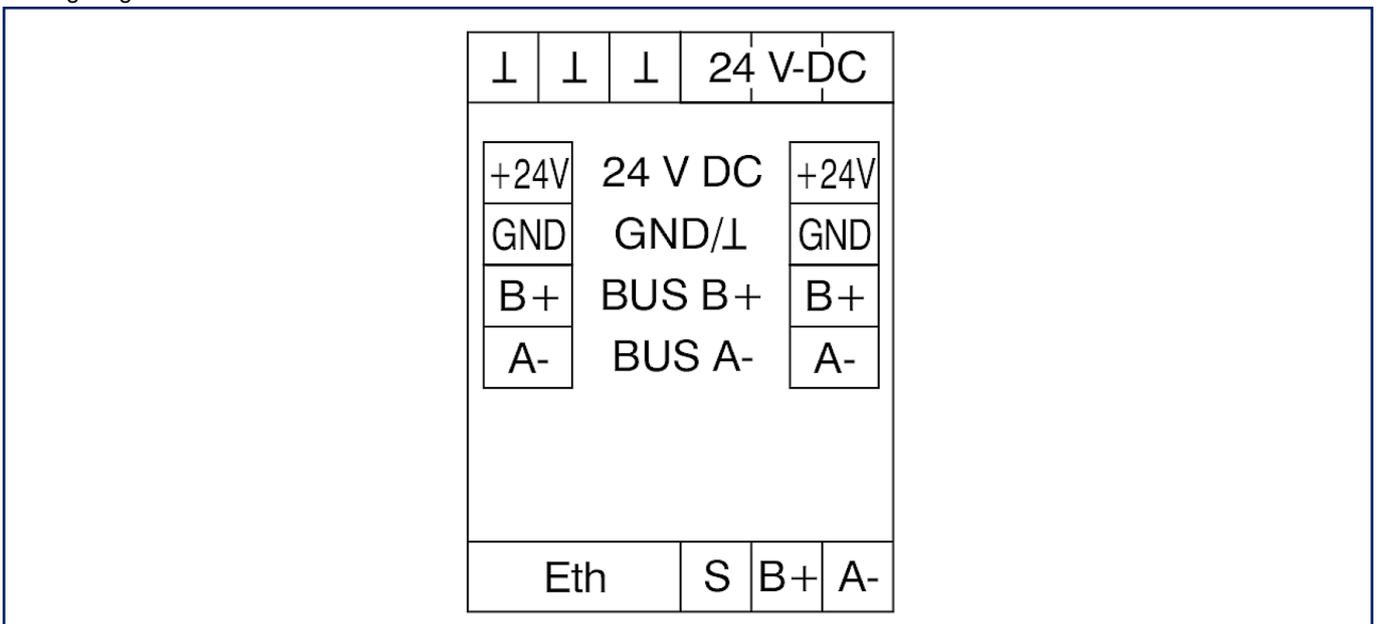
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Illustrations

Dimensional drawing



Wiring diagram



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