

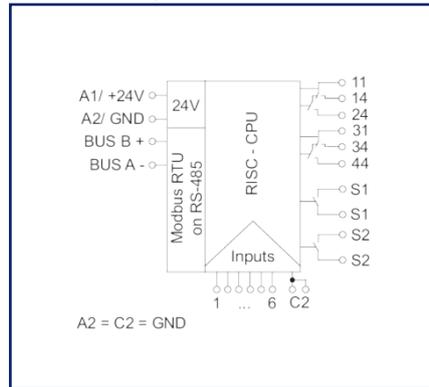
# Data sheet

## MR-F-TP Modbus RTU

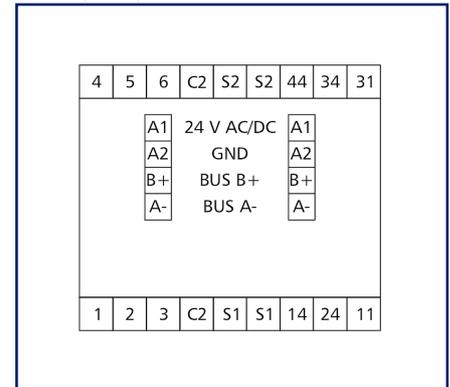
### Illustrations



Principle diagram



Wiring diagram



See enlarged drawings at the end of document

### Product specification

The Modbus three-point module with 6 digital inputs, 2 two-level relay outputs and 2 digital outputs was developed for decentralized switching tasks. It is suitable for switching, for example, multi-level pumps and fans or louvers. In this case it is necessary to protect the relay contacts by appropriate load-dependent measures. The inputs and outputs can be switched and scanned by means of standard registers via a Modbus master. The input terminals 1 to 6 are wired with the C2 terminals on two poles to potential-free switches or contacts. The module has a manual control for the outputs. 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 spring clamp terminal blocks (push-in)

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**Technical Data**

**Approvals**



Open Energy Management Equipment 34TZ

**RS485 interface**

Protocol	Modbus RTU
Address range	00 - 99
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	Odd Even (default setting) None
Stopbits	1 (default setting) 2

**Supply**

Operating voltage	24 V AC/DC +/- 10 %
Power consumption	
Power consumption AC (max.)	100 mA
Power consumption DC (max.)	40 mA
Duty cycle relative	100 %

**Inputs**

Digital inputs	6, for potential-free contacts
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**Outputs**

Digital outputs	4
Relay output	
Relay output	2 x two-stage
Switching voltage relay output (max.)	250 V AC
Continuous current relay output	5 A / relay
Semiconductor output	
Semiconductor output	2 normally open contacts
Switching voltage semiconductor output (max.)	40 V AC/DC
Continuous current semiconductor output	100 mA
Switch-on current semiconductor output (max.)	500 mA

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**Technical Data**

<b>Outputs</b>	
Switching frequency	360 switching cycles/h
Mechanical life	30x10 <sup>6</sup> switching cycles
Electrical life	9x10 <sup>4</sup> switching cycles
<b>Isolation</b>	
Nominal voltage of the power supply system	230 / 400 V AC
Overvoltage category	III   II
Degree of pollution	2   2
Rated test voltage	4 kV   4 kV
Type of insulation	basic insulation   reinforced insulation
<b>Housing</b>	
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.
Total depth with switch/plug	69 mm
Weight	126 g
Mounting style	Standard rail TH35
Mounting position	any
Apposition	without distance 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.
Connection type	Spring clamp terminal blocks
Indicator	green, red and yellow LED
<b>Terminal blocks</b>	
Supply and bus	
Terminal block	4-pole
Solid wire (AWG)	max. 1.5 mm <sup>2</sup> / max. 16 AWG
Stranded wire (AWG)	max. 1 mm <sup>2</sup> / max. 18 AWG
Wire diameter	min. 0.3 mm max. 1.4 mm
Module connection	
Wire cross section solid	0.2 mm <sup>2</sup> - 2.5 mm <sup>2</sup> / AWG 24-14
Wire cross section multi	0.25 mm <sup>2</sup> - 2.5 mm <sup>2</sup> / AWG 24-12

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## Technical Data

### Terminal blocks

#### Module connection

Wire cross section with wire ferrule	0.25 mm <sup>2</sup> - 1.5 mm <sup>2</sup> / AWG 24-16
Stripping length (min.)	8 mm
Protection circuit	Polarity reversal protection for DC operating voltage Protection against interchanging power supply and bus

### Material

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

### Climatic Data

#### Operating

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

#### Storage

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

### Classifications

ETIM 7.0	EC001584
ETIM 8.0	EC001584
ETIM 9.0	EC001584
ETIM 10.0	EC001584



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**MR-F-TP Modbus RTU**

P/N

1108381370

EAN 4251394620695

2026/02/02

Version: N

**Technical Data****Software and additional documents**

Software and documentation

Further documentation is available for free download at [www.metz-connect.com](http://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
11056170	Power supply NG4-F 24 V DC
11080101	USB/RS485 Converter
31135104	Typ 135 RIACON 135_3.5

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**Accessories from**

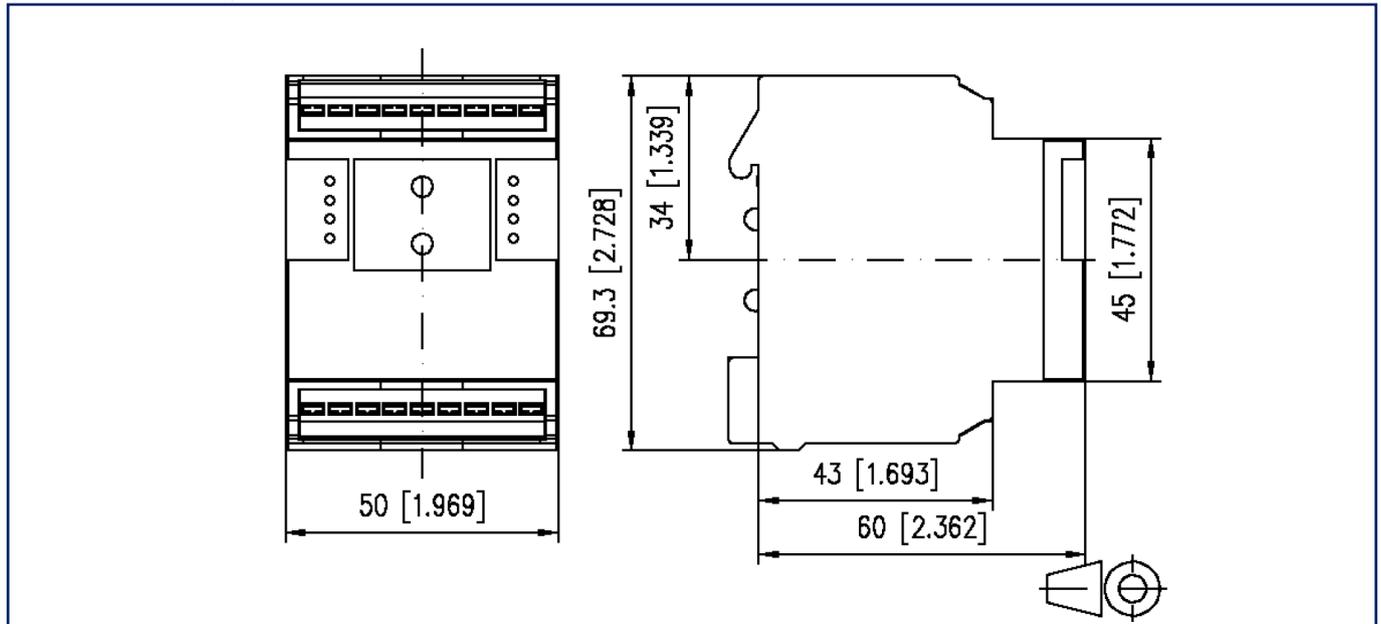
P/N	Designation
11083001	MR-GW Modbus RTU / Modbus TCP Gateway
1108300170	MR-F-GW Modbus RTU / Modbus TCP Gateway

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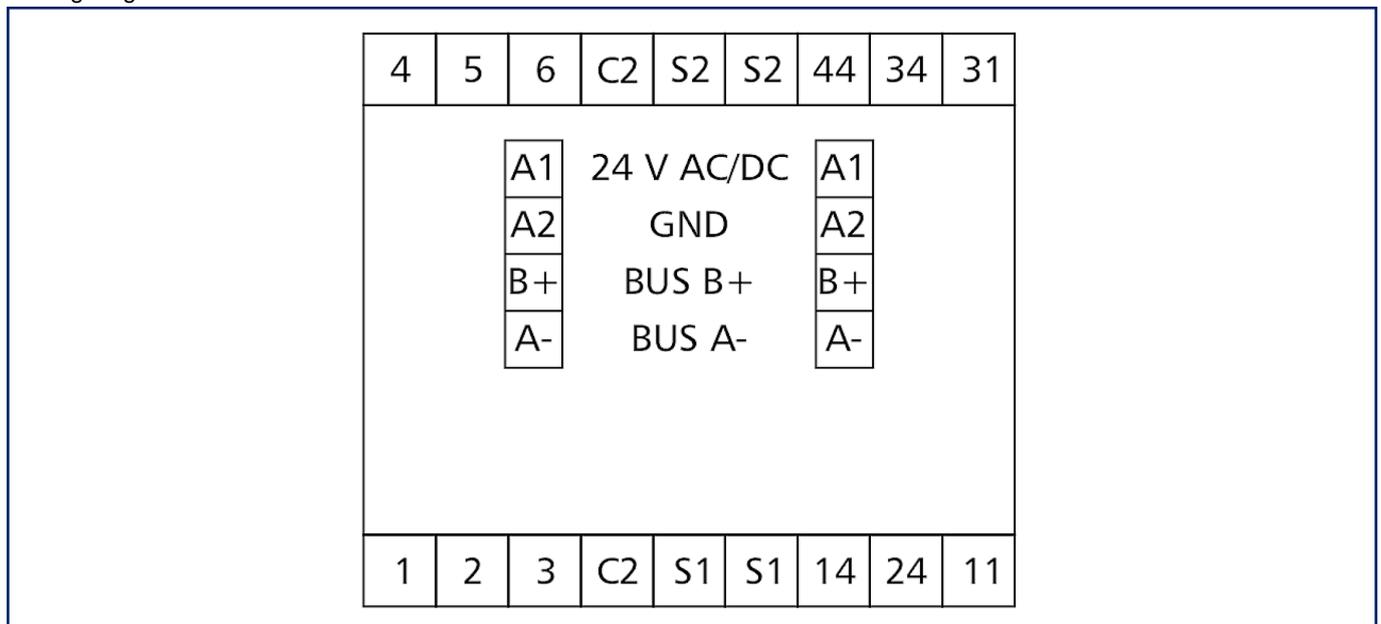
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**Illustrations**

Dimensional drawing



Wiring diagram



**Illustrations**

Principle diagram

