

Data sheet

MR-AIO4/2-IP65 Modbus RTU

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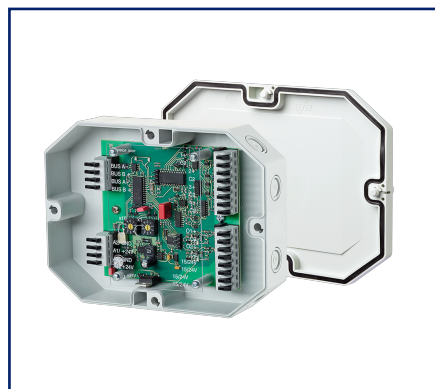
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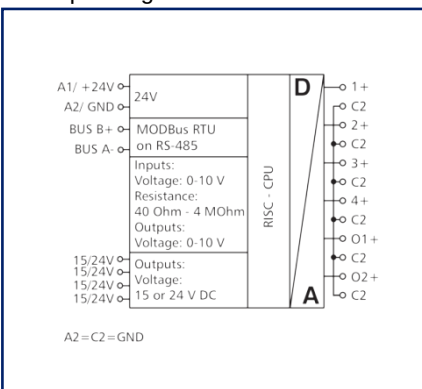
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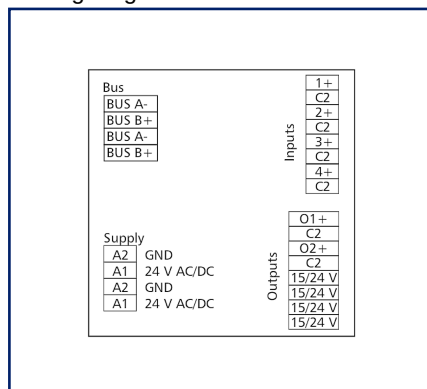
Illustrations



Principle diagram



Wiring diagram



See enlarged drawings at the end of document

Product specification

The Modbus module in an IP65 housing with 4 individually configurable resistance or voltage inputs and 2 analog outputs was developed for decentralized tasks. The inputs are suitable for detecting resistances and voltages of for example, passive and active temperature sensors, electrical vent and mixing valves, valve positions, etc. The outputs are suitable as encoder for control variables for example for electrical vent and mixing valves, valve positions, etc. Via a Modbus master the inputs can be configured universally by standard registers and the outputs can be set. The module address, the bit rate and the parity are set with two rotary switches or by software. The Modbus module has two integrated PID controllers which can be used for room control, for example. The settings of the PID controllers are done via the Modbus registers and can be found in the Modbus software manual at www.metz-connect.com. Using the Modbus Gateway MR-GW from METZ CONNECT, the settings can be done faster and more conveniently via the graphical interface of the built-in WEB server.



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Technical Data

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 % (SELV)
Power consumption	
Power consumption AC (max.)	90 mA
Power consumption DC (max.)	35 mA
Duty cycle relative	100 %
Inputs	
Analog inputs	4, individually configurable
Resistance range	40 Ohm - 4 MOhm
Error resistance input < 12 kOhm	0.1 %
Error resistance input >= 12 kOhm	1 %
Voltage range	0 V - 10 V DC
Resolution voltage input	15 Bit
Error voltage input	10 mV

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Technical Data

Outputs	
Analog outputs	2
Voltage range	0 V - 10 V DC
Resolution voltage output	0.625 mV / digit
Error voltage output	100 mV
Continuous current voltage output	5 mA at 10 V DC
Housing	
Dimensions	
Dimension (W x H x D)	160 mm x 40.7 mm x 120 mm
Dimension (W x H x D)	6.299 in. x 1.602 in. x 4.724 in.
Weight	104 g
Mounting style	directly on a flat surface, 8 knock-out openings for M12 and M16 cable glands
Mounting position	any
Connection type	Spring clamp terminal blocks
Indicator	green, red and yellow 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	min. 0.3 mm max. 1.4 mm
Module connection	
Wire cross section solid	0.2 mm ² - 1.5 mm ² / AWG 28-18
Wire cross section multi	0.08 mm ² - 0.75 mm ² / AWG 28-18
Wire cross section with wire ferrule	0.08 mm ² - 0.75 mm ² / AWG 28-20
Stripping length (min.)	4 mm
Protection circuit	Polarity reversal protection for DC operating voltage Protection against interchanging power supply and bus

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Technical Data

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)	IP65
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

Software and additional documents

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



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Accessories

P/N	Designation
110368	TSH 35 Hutschienenhalter für IP65
110486	HUB DC
110561	Power supply NG4 24 V DC
ASP0250404	SP025xxHDNC ASP025

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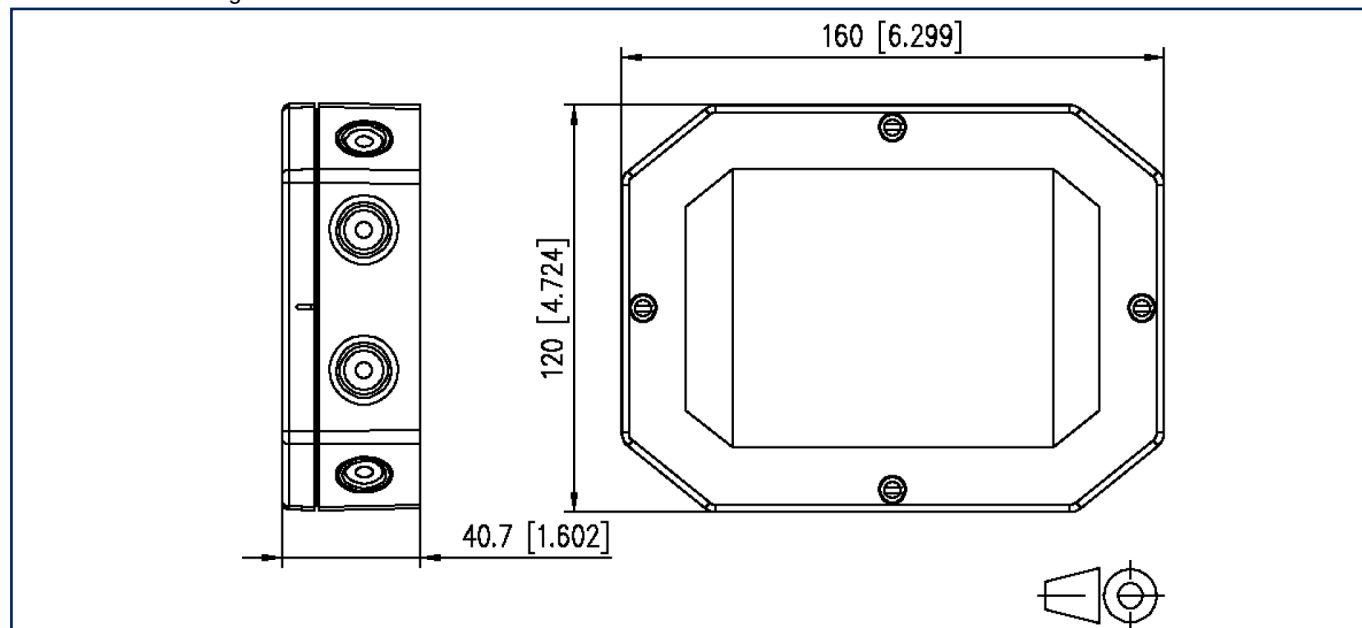
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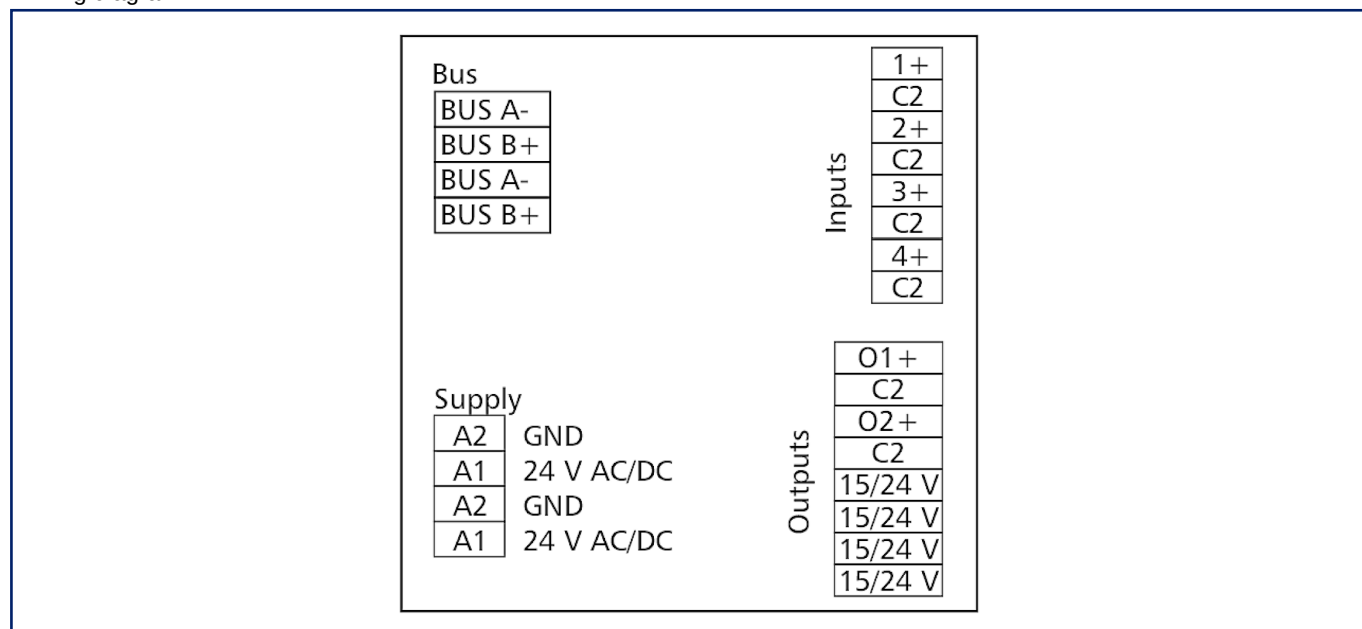
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Illustrations

Dimensional drawing

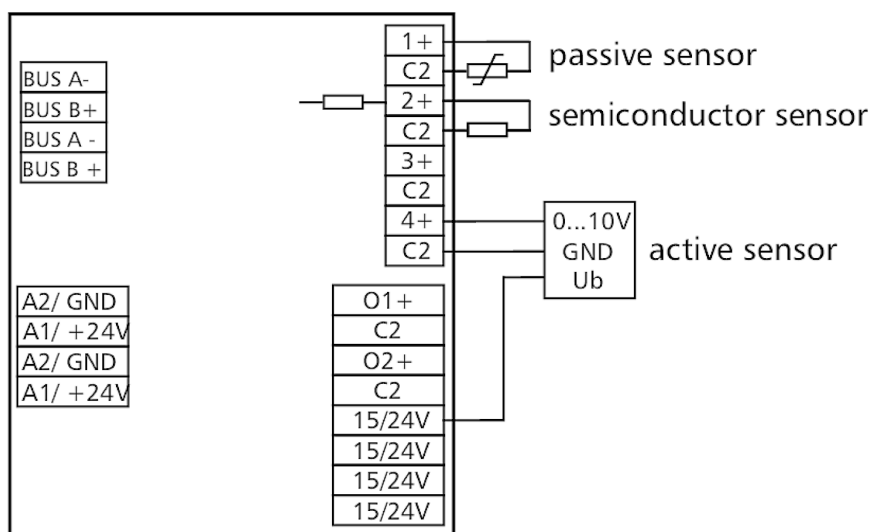


Wiring diagram



Illustrations

Grafik



Principle diagram

