

# Data sheet

## MR-AI8

### Modbus module with analog inputs

Part number

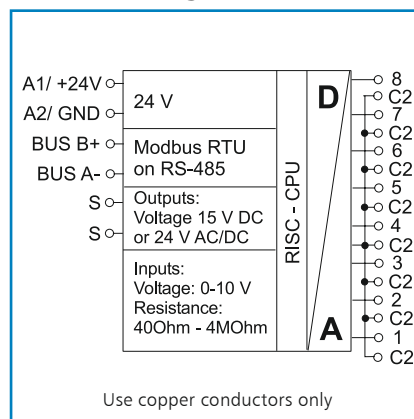
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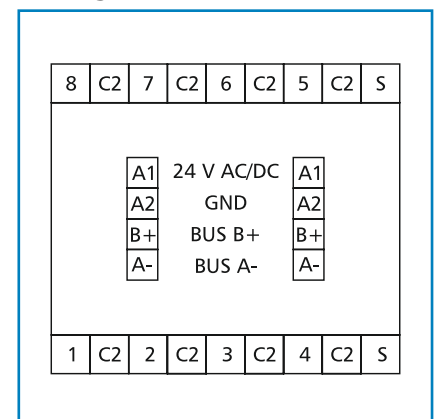
#### Illustrations



#### Principle diagram



#### Wiring



#### Product description

The Modbus module with 8 individually configurable resistance or voltage inputs was developed for decentralized switching tasks.

It is suitable for detecting resistances and voltages of, for example, passive and active temperature sensors, electrical vent and mixing valves, valve positions, etc.

The inputs can be configured universally by means of standard registers via a Modbus master. Module address, bit rate and parity are set by means of two address switches on the front or by software.

Suitable for decentralized mounting on DIN TH35 rail according to IEC 60715 in electrical distribution cabinets.

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Technical data

<b>Approvals</b>	
C-UL Certification	Open Energy Management Equipment 34TZ
<b>Modbus interface</b>	
Protocol	Modbus RTU
Address range	00 to 99
Transmission rate	1200 to 115200 bit/s, factory setting 19200 bit/s Even
Bus interface	RS485 two wire bus with potential equalization in bus or line topology terminate with 120 Ohm
<b>Supply</b>	
Operating voltage	24 V AC/DC $\pm$ 10 % (SELV)
Current consumption	65 mA (AC) / 25 mA (DC)
Relative duty cycle	100 %
<b>Input</b>	
Analog inputs	8, configurable
Resistance range	40 Ohm to 4 MOhm
Voltage input	0 to 10 V DC
Resolution	15 bit
Error	
Voltage input	10 mV
Resistance input <12 kOhm	0.1 %
Resistance input $\geq$ 12 kOhm	1 %
<b>Housing</b>	
Dimensions WxHxD	1.969 x 2.728 x 2.362 in. (50 x 69.3 x 60 mm)
Weight	104 g
Mounting position	any
Mounting	on TH35 rail per IEC 60715
Side-by-side mounting	Without space 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.
<b>Material</b>	
Housing	polyamide 6.6 V0
Terminal blocks	polyamide 6.6 V0
Cover plate	polycarbonate
<b>Type of protection (IEC 60529)</b>	
Housing	IP40
Terminal blocks	IP20

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<b>Terminal blocks</b>	
Supply and bus	
Terminal block	4-pole
Solid wire	max. AWG 16 (1.5 mm <sup>2</sup> )
Stranded wire	max. AWG 18 (1.0 mm <sup>2</sup> )
Wire diameter	0.3 mm to max. 1.4 mm
Module connection, analog inputs	
Solid wire	max. AWG12 (4 mm <sup>2</sup> )
Stranded wire	max. AWG 14 (2.5 mm <sup>2</sup> )
Wire diameter	0.3 mm to max. 2.7 mm
Protective circuitry	Polarity reversal protection of operating voltage Polarity reversal protection of supply and bus
<b>Temperature range</b>	
Operation	23 °F to 131 °F (-5 °C to +55 °C)
Storage	-4 °F to +158 °F (-20 °C to +70 °C)
<b>Display</b>	
Operating and bus activity	green LED
Error indication	red LED
<b>Additional documents</b>	
Software description, mounting note, certificates	All additional documents are available for download at <a href="http://www.metz-connect.com">www.metz-connect.com</a>

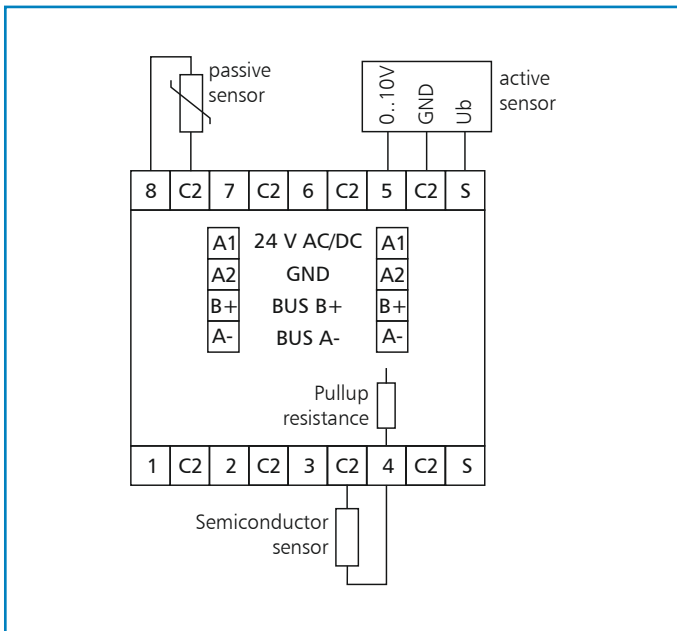


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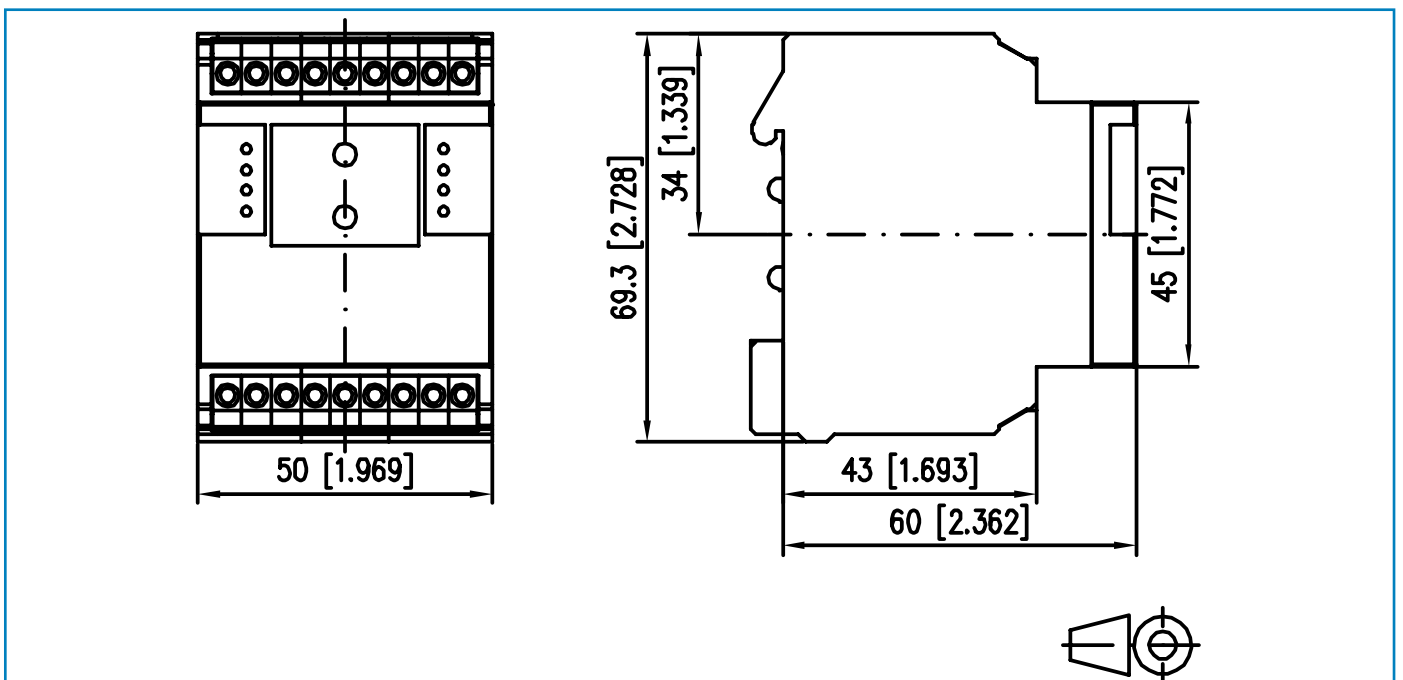
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### Connection example



### Dimensional drawing



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