Data sheet

MR-Multi I/O

12DI / 7AI / 2AO / 8DO
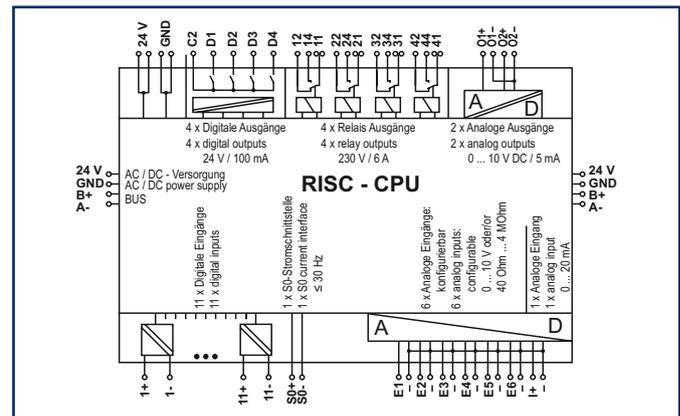
Illustration

Wiring diagram

Product specification

The Modbus module MR-Multi I/0 is a compact and rapidly to install solution to connect digital and analog signals from the actor and sensor level directly to a control unit in building automation via Modbus RTU protocol. 29 I/Os, some of them are configurable, are available for different tasks. With strong inductive loads, we recommend protecting the relay contacts with an RC element. The inputs and outputs can be switched and scanned by means of standard registers 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.

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Technical Data

Modbus-Interface

Protocol	Modbus RTU
Address range	00 - 99
Transmission rate	1200 – 115200 Bit/s, Default 19200 Bit/s Even
Cabling	RS485 TP (Bus- Linetopology). Term.120 Ω

Mechanical Features

Dimensions (WxHxD)	4.921 x 3.661 x 2.394 in
Housing	45 mm front height / 7 HP
Apposition	without spacing
Mounting orientation	user defined, recommended horizontal
Weight	385 g
Protection class	IP20
Mounting on DIN Railway	TH35 (IEC 60715)
Terminal blocks	two-tier srew type
Conductor cross-section	0.34 – 2.5 mm² / AWG 22 – 12

Electrical Features

Nominal voltage	24 V AC/DC ± 10% (50/60Hz)
Nominal current (max.)	220 mA @ AC; 110 mA @ DC
Power dissipation (max.)	5.1 VA @ AC; 3 W @ DC
Power-on time (max.)	100 % @ 25° C; 50 % @ 55° C

Materials

Housing upper part	polycarbonate
Color housing upper par	translucent
Housing lower part	polyamide
Color housing lower part	black
Housing cover	polyamide
Color housing cover	light grey

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Technical Data

Temperature range	
Operating temperature	-5° to 55° C
Storage temperature	-25° to 70° C
Relative humidity	max. 85 % non-condensing

Terminal blocks	
Solid wire	0.34 – 2.5 mm² / AWG 22 – 12
Stranded wire	0.34 – 2.5 mm² / AWG 22 – 12
Wire diameter	0.66 mm – max. 1.78 mm

Display	
Operating and bus activity	green LED
Error indication	red LED
Status of the inputs and outputs	yellow LEDs

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Technical Data

Inputs	
Digital inputs	
Optocoupler	optical seperated
Quantity	11x
High detection	>7 V AC/DC
S0 current interface	per DIN EN 62053-31, Class A
Quantity	1x
Sample rate max.	30 Hz
Analog Inputs	
Configurable (resistance or voltage)	
Quantity	6x
Resistance range	40 Ohm - 4 MOhm
Resolution	15 Bit
Failure < 12 kOhm ≥ 12 kOhm	0.1 % 1 %
Voltage range	0 – 10 V DC
Resolution	15 Bit
Failure	10 mV
Current input	
Quantity	1x
Current range	0 – 20 mA DC
Resolution	15 Bit
Failure	20 µA

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Technical Data

Outputs	
Digital outputs	
Relay output	
Quantity	4x
Contact	changeover ($PDT) 250 V AC / 6 A
Manual operation (only relay outputs)	push-button
Toggle automatic – manual opereration	push > 1 s
Semiconductor output	
Quantity	4x
PhotoMOS	optical separated 24 V AC/DC / 100 mA
Analog Outputs	15 Bit
Voltage output potential free	
Quantity	2x
Voltage range	0 – 10 V DC
Output current	5 mA (10 V DC)
Resolution	10 mV

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.).

Data sheet

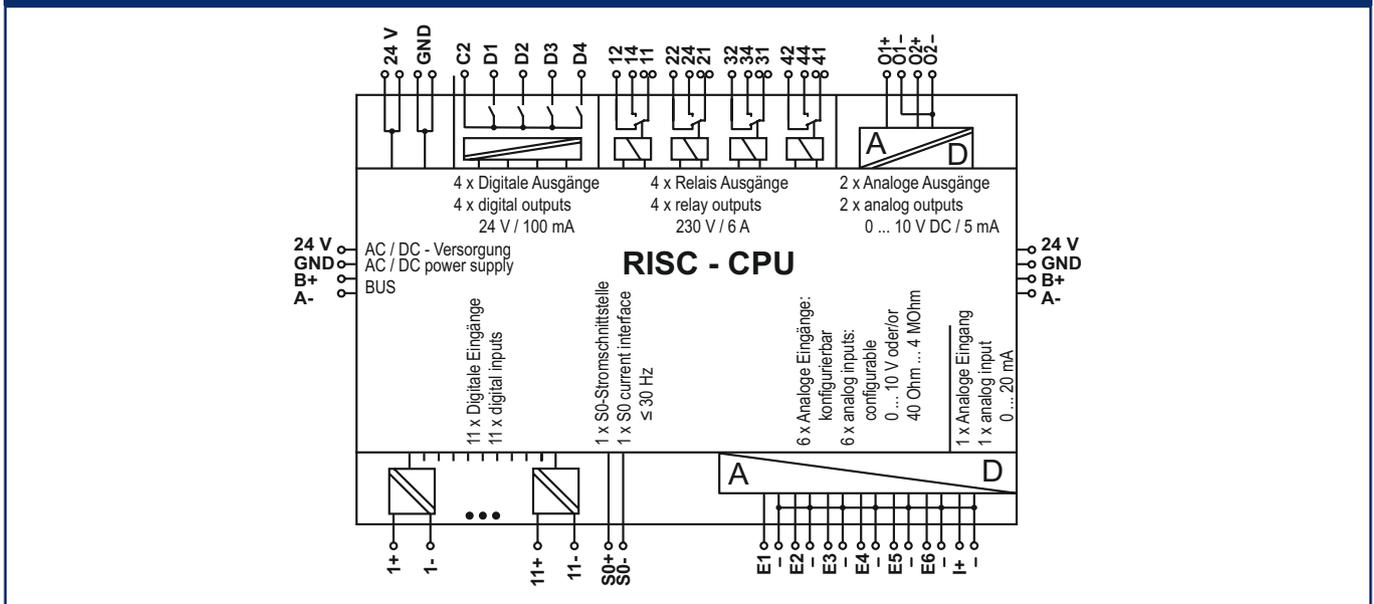## MR-Multi I/O

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Pinout

24 V | GND | C2 | D1 | D2 | D3 | D4 | 12 14 11 | 22 24 21 | 32 34 31 | 42 44 41 | O1+ O1− O2+ O2−

4 x Digitale Ausgänge
4 x digital outputs
24 V / 100 mA

4 x Relais Ausgänge
4 x relay outputs
230 V / 6 A

2 x Analoge Ausgänge
2 x analog outputs
0 ... 10 V DC / 5 mA

24 V — AC / DC - Versorgung
GND — AC / DC power supply
B+ — BUS
A-

RISC - CPU

24 V
GND
B+
A-

11 x Digitale Eingänge
11 x digital inputs

1 x S0-Stromschnittstelle
1 x S0 current interface
≤ 30 Hz

6 x Analoge Eingänge:
konfigurierbar
6 x analog inputs:
configurable
0 ... 10 V oder/or
40 Ohm ... 4 MOhm

1 x Analoge Eingang
1 x analog input
0 ... 20 mA

1+ | 1- | 11+ | 11- | S0+ S0- | E1 E2 E3 E4 E5 E6 | I + −

Wiring diagram

125 [4.921]

60.81 [2.394]

93 [3.661]

47.4 [1.866]

45 [1.772]

43.7 [1.72]