METZ CONNECT

We realize ideas

Data sheet
MB-DIO4/2-IP Modbus/BACnet 24V AC/DC

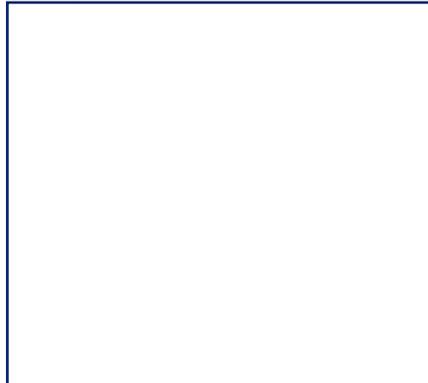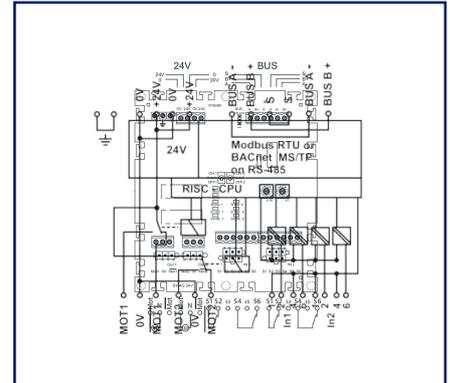## Illustrations

Wiring diagram

Principle diagram

See enlarged drawings at the end of document

Product specification

The MB-DIO4/2-IP 24 V module in IP65 housing with 4 digital inputs, as well as 2 relay outputs, is suitable for the inclusion of decentralized signal contacts and the control of decentralized switching tasks. As signal contacts, e.g. window contacts or the positions of ventilation flaps, etc. can be detected and controlled for switching tasks, e.g. motorized actuators or light bands, etc. Actuators with AMP connectors (AMP brand from TE Connectivity) can be connected directly to the MB-DIO4/2-IP 24 V. Depending on the operating mode, the module can be switched or requested with Modbus standard registers or with BACnet objects.

- for the control of up to two actuators, e.g. fire dampers
- Connection options for actuators with AMP plug-in connector or open connection lines with pluggable push-in technology
- Supply voltage is also switching voltage
- Relay output suitable for inrush current 65 A < 20 ms (NO), continuous current 6A, total current 8A
- generous space for installation - no additional distribution box required

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Technical Data

Approvals

(BTL logo)	BACnet is a registered trademark of ASHRAE. ASHRAE does not endorse, approve or test products for compliance with ASHRAE standards. Compliance of listed products to the requirements of ASHRAE Standard 135 is the responsibility of BACnet International (BI). BTL is a registered trademark of BI.

RS485 interface

Protocol	Modbus RTU / BACnet MS/TP
Address range	00 - EF
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)
Duty cycle relative	100 %

Inputs

Digital inputs	4

Outputs

Digital outputs	2
Relay output	2 changeover contacts
Switching voltage relay output (max.)	24 V AC
Continuous current relay output	6 A / relay
Switch-on current relay output (max.)	65 A < 20 ms (NO)
Total current across all outputs	8 A
Mechanical life	10×10^6 switching cycles
Electrical life	10×10^4 switching cycles

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Insulation coil - contact set

Nominal voltage of the power supply system	24V AC/DC = Operating voltage
Overvoltage category	III | II
Degree of pollution	2 | 2
Rated test voltage	4 kV | 2.5 kV
Type of insulation	basic insulation | reinforced insulation

Housing

Dimensions	
Dimension (W x H x D)	175 mm x 175 mm x 75 mm
Dimension (W x H x D)	6.89 in. x 6.89 in. x 2.953 in.
Weight	630.7 g
Mounting style	directly on a flat base, knock-out openings for screw connections 4 x M16/25 + 14 x M12/20
Mounting position	any
Indicator	green, red and yellow LED

Terminal blocks

Connection type 1	Pluggable spring clamp terminal block
Terminal block (bus)	6-pole
Terminal block (motor)	2 x 3-pole
Connection terminal (digital inputs, potential-free limit switches)	2 x 6-pole
Solid wire (AWG)	max. 12 AWG
Stranded wire (mm²)	max. 2.5 mm²
Stranded wire (AWG)	max. 12 AWG
Wire diameter	min. 0.25 mm max. 2.5 mm
Wire cross section solid	0.2 mm² - 2.5 mm² / AWG 22-12
Wire cross section multi	0.2 mm² - 2.5 mm² / AWG 22-12
Wire cross section with wire ferrule	0.2 mm² - 2.5 mm² / AWG 22-12
Stripping length (min.)	10 mm
Connection type 2	AMP pin header (Mate-N-Lok)
Pin header connection (motor)	3-pole (TE Connectivity 1-770170-1)
Pin header connection (digital inputs, potential-free limit switches)	6-pole (TE Connectivity 1-770178-1)
Hinged cable glands	e.g. KVT 20 with cable grommets KT 6 (6 mm) and KT 8 (8mm) from icotek (R)

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Terminal blocks

Connection type 3	screw type terminal block
Terminal block (protective conductor)	3x 1-pole
Wire cross section solid	0.2 mm² - 1.5 mm² / AWG 22-16
Wire cross section multi	0.2 mm² - 1.5 mm² / AWG 22-18
Wire cross section with wire ferrule	0.2 mm² - 1.5 mm² / AWG 22-18
Screw torque (max.)	0.5 Nm
Stripping length (min.)	6 mm
Protection circuit	Polarity reversal protection for DC operating voltage

Material

Material - Housing	Polycarbonat
Color	gray
Material - Terminal block	Polyamid 6.6 V0

Protection category according to IEC 60529

Protection category - housing (acc. to IEC 60529)	IP65 (without screw fittings)
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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Software and additional documents

Software and documentation	Further documentation is available for 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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P/N
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EAN 4251394658360
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Version: I

Accessories

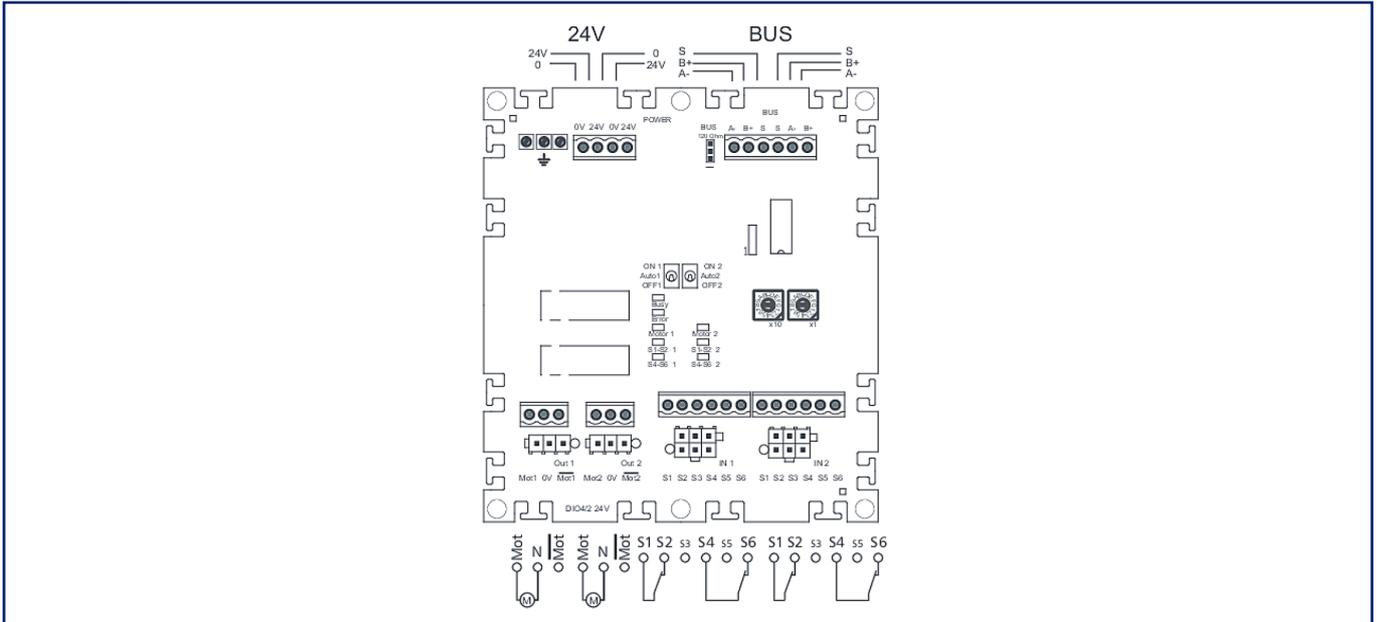| P/N	Designation
110561	Power supply NG4 24 V DC
11056170	Power supply NG4-F 24 V DC
11083001	MR-GW Modbus RTU / Modbus TCP Gateway
1108300170	MR-F-GW Modbus RTU / Modbus TCP Gateway
11088001	BMT-RTR BACnet-Router
1108800170	BMT-F-RTR BACnet-Router
11088101	BMT-RTR/SC BACnet/SC Router
1108810170	BMT-F-RTR/SC BACnet/SC Router

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