

MBM System

The MBM system is certified for connection to PROFIBUS-DP, INTERBUS-S or CANopen. The modules will also work with components from other manufacturers.

Mounting

The unit can be DIN-rail mounted.

Plug in connection technology

The connection is via screw or spring clamp plug in terminals, which allows for a fast module change. Potential terminals can be snapped on, too. Additional terminals are not necessary.

Diagnostics

The extensive use of LED's on the module or over the field bus to the master helps to diagnose and locate faults.

Protection against over voltage, over load, short-circuit and reverse polarity

High levels of protection are achieved through well designed fusing for the power supply, input and output terminals.

Galvanic separation

All the inputs and outputs are optically isolated from the field bus. The separate connections of bus nodes and I/O-sector make it easy to realize Emergency OFF circuits.

Labelling

The large exchangeable label strip for the signals and the module can be labelled manually, or with a printer or plotter.

Open bus system

Murrelektronik supports both Profibus-DP and Interbus with the product range MBK.

Module range

The wide range of modules has been designed to cover most industrial applications.

Certification

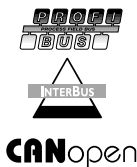
All units are certified for respective bus system. The modules also work with modules from other manufactures.

Decentralized intelligence from Murrelektronik

The modern concept of the MBM with its decentralized intelligence, marks the way for a cost effective and clear automation solution.

Self functioning units allow a modular system to be designed and implemented both in the field and at the control level.

Communication is hierarchical with the CANopen. An additional local CANopen interface is a gateway to further expansion on the I/O modules and controllers.



Bus nodes

Bus nodes Profibus-DP

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Bus nodes Interbus

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Bus nodes CAN

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Intelligent bus nodes CAN

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Expander modules

DI8

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DI16

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DO8/0,5A

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DO8/2A

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DO16/0,5A

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DI4 DO4/0,5A

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DO 8R

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AI 4

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AO 4

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Operator panels MSM

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MERIO

Modular, pluggable I/O-system for the peripherals
(Accessories included)

From page 2.2.25



Bus nodes

- CANopen
- Interbus

IP20 Protection



CANopen



Ordering data	Art.-No.	Art.-No.
MBM-C D18	55900	
MBM-I (28 words) with diagnostics		55904
Screw terminal block 3 x 2-pole		55940
Spring clamp terminal block 3 x 2-pole		55950
2-wire screw terminal block 1 x Ub	55834	
3-wire screw terminal block 1 x Ub	55944	
3-wire screw terminal block 2 x Ub	55976	
2-wire spring clamp terminal block 1 x Ub	55854	
3-wire spring clamp terminal block 1 x Ub	55954	
3-wire spring clamp terminal block 2 x Ub	55977	
Technical data		
Supply	24 V DC (18...30,2 V DC) to EN 61131-2	
Current usage min./max.	approx. 100 mA / 500 mA	approx. 130 mA / 1,3 A
Field bus		
Connection	Sub-D 9-pole	2 Sub-D 9-pole
Addressing	1...99 via rotary switch	–
Data rate	10 kBit/s...1 MBit/s	500 kBit/s
Galvanic separation	opto-coupler	
Expansion Interface		
Number I/O module	up to 16 expander modules ¹⁾	
Inputs		
Inputs	8	–
Galvanic separation	opto-coupler	
Input characteristics	p-switching	
Input signals	24 V DC, guide line to IEC 1131-2	
Input delay time	approx. 1 ms	
Sensor supply	24 V DC (18...30,2 V DC), to EN 61131-2, I Σ max. 0,7 A overl. protection	
Status indicator	per input 1 yellow LED on the labelling block	
Connection	2- or 3-wire, dependent on conn. terminal block	
Diagnostics		
Status indicator	bus specific LEDs with label	
Voltage	green LEDs with labels	
Diagnostics interface	RS 232	
General data		
Temperature range	0...55 °C	
Mounting method	DIN-rail mounting to EN 50022	
Dimensions H x W x D	116 x 96 x 60 mm	
Accessories		
Handbook bus nodes German/English	Art.-No. 55901/55812	Art.-No. 55905/55811
EDS data	55246	
Terminal block fastener (10 pieces)	55896	55896
Spare labels (1 piece = 8 labels)	55962	55968
Local adapter	55910	55910
System connection cable 0,5 m	55911	55911
Notes		
Master-units, field bus cables, connection units and connection drawings start on page 2.2.18.		
¹⁾ Please read first application manual.		

Bus nodes

– Profibus-DP

IP20 Protection



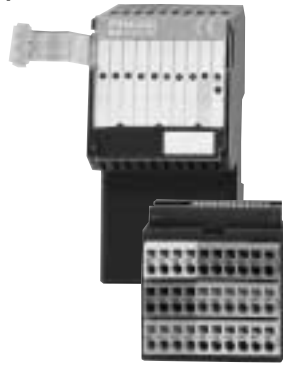
Ordering data	Art.-No.	Art.-No.
Data rate bis 1,5 Mbit/s	55016	
Data rate bis 12 MBit/s	55018	
Data rate bis 12 MBit/s; diagnostics interface	55017	
Data rate bis 1,5 MBit/s; 8 dig. inputs		55883
Screw terminal block 3 x 2-pole	55940	
Spring clamp terminal block 3 x 2-pole	55950	
2-wire screw terminal block 1 x Ub		55834
3-wire screw terminal block 1 x Ub		55944
3-wire screw terminal block 2 x Ub		55976
2-wire spring clamp terminal block 1 x Ub		55854
3-wire spring clamp terminal block 1 x Ub		55954
3-wire spring clamp terminal block 2 x Ub		55977
Technical data		
Supply	24 V DC (18...30,2 V DC) to EN 61131-2	
Current usage min./max.	approx. 100 mA/1,3 A	approx. 100 mA/500 mA
Field bus		
Connection	Sub-D 9-pole	
Addressing	1...99 via rotary switch	
Data rate	9,6 kbit/s...1,5(12) Mbit/s	9,6 kbit/s...1,5 Mbit/s
Galvanic separation	opto-coupler	
Expansion Interface		
Capacity	up to 16 expander modules ¹⁾	up to 4 expander modules, single row version ¹⁾
Inputs		
Inputs	–	8
Galvanic separation	–	opto-coupler
Input characteristics	–	p-switching
Input signals	–	24 V DC, guide line to IEC 1131-2
Input delay time	–	approx. 1ms
Sensor supply	–	24 V DC (18...30,2 V DC), to EN 61131-2, I Σ max 0,7 A overload protection
Status indicator	–	per input 1 yellow LED with label
Connection	–	2- or 3-wire, dependent on connection terminal box
Diagnostics		
Status indicator	bus specific LEDs with label	
Voltage	green LEDs with labels	
RS 232 diagnostics interface	only at Art.-No. 55017	
General data		
Temperature range	0...55 °C	
Mounting method	DIN-rail mounting to EN 50022	
Dimensions H x W x D	116 x 96 x 60 mm	
Accessories		
Handbook bus nodes German/English	Art.-No. 55903/55810	Art.-No. 55903/55810
GSD-/type data	55246	55246
Terminal block fastener	55896	55896
Spare labels (1 piece = 8 labels)	55967	55962
Local adapter	55910	
System connection cable 0,5 m	55911	
Notes		
Master-units, field bus cables, connection units and connection drawings start on page 2.2.18. ¹⁾ Please read first application manual.		

Expander modules MBM

Digital 4-way Input/Output module

IP20 Protection

without operator panel interface



Ordering data		Art.-No.
4 digital input and output		55882
3-wire screw terminal block		55832
3-wire spring clamp terminal block		55852
Technical data		
System supply	via system connection from the bus node	
Load weight	6	
Galvanic separation	opto-coupler	
Inputs		
Inputs	4	
Input signals	24 V DC, guide line to IEC 1131-2	
Input delay time	approx. 1 ms	
Sensor supply	24 V DC (18...30,2 V DC) to EN 61131-2, I Σ max. 0,7 A overload protection	
Status indicator	per input 1 yellow LED with label	
Connection	3-wire via terminal block	
Outputs		
Outputs	4	
Supply	24 V DC (18...30,2 V DC) to EN 61131-2, I Σ \leq 4 A	
Switching current per output	typ. 0,5 A, 100 % ED, short-circuit protected	
Filament lamp load	2 W	
Max. switching frequency	at ohmic: 100 Hz, at inductive load: 1...4 Hz (independent of the current load per output)	
Status indicator	per output 1 yellow LED with label	
Special function	output status in the case of a bus fault - parameters definable	
Connection	3-wire via terminal block and additional common terminal block	
Diagnostics		
Status indicator	LED green with label	
Sensor supply	LED green with label and return signal to the bus node	
Overload sensor supply	LED red with label and return signal to the bus node	
General data		
Temperature range	0...55 °C	
Mounting method	DIN-rail mounting to EN 50022	
Dimensions H x W x D	116 x 56 x 60 mm	
Accessories		
Handbook digital expansion German/English		55935/55814
Spare labels (1 piece = 8 labels)		55589
Notes		
Master-units, field bus cables, connection units and connection drawings start on page 2.2.18.		

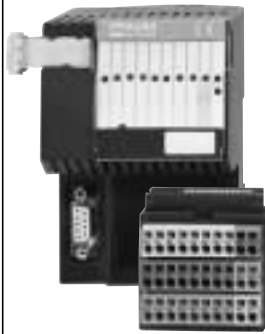
Expander modules MBM

Digital 8-way Input modules

IP20 Protection



with operator panel interface



without operator panel interface



Ordering data	Art.-No.	Art.-No.
8 digital inputs		55920
8 digital inputs SD	55970	
2-wire screw terminal block p-switching	55834	55834
3-wire screw terminal block p-switching	55944	55944
2-wire spring clamp terminal block p-switching	55854	55854
3-wire spring clamp terminal block p-switching	55954	55954
Technical data		
System supply	via system connection from the bus node	
Load weight	5	
Galvanic separation	opto-coupler	
Inputs		
Inputs	8	
Input characteristics	p-switching	
Input signals	24 V DC, guide line to IEC 1131-2	
Input delay time	approx. 1 ms	
Sensor supply	24 V DC (18...30,2 V DC), to EN 61131-2, I Σ max. 0,7 A overload protection	
Status indicator	per input 1 yellow LED with label	
Connection	2- or 3-wire, dependent on connection terminal box	
Diagnostics		
Status indicator	LED green with label	
Sensor supply	LED green with label and return signal to the bus node	
Overload sensor supply	LED red with label and return signal to the bus node	
General data		
Temperature range	0...55 °C	
Mounting method	DIN-rail mounting to EN 50022	
Dimensions H x W x D	116 x 76 x 60 mm	116 x 56 x 60 mm

Accessories	Art.-No.	Art.-No.
Handbook digital expansion German/English	55935/55814	55935/55814
MSM connection cable (2 m)	55988	
MSM connection cable (3 m)	55986	
Operation panel MSM DD8	55980	
Terminal block fastener	55896	55896
Spare labels (1 piece = 8 labels)	55966	55966

Notes
Control panels see page 2.2.13. Master-units, field bus cables, connection units and connection drawings start on page 2.2.18.

Expander modules MBM

Digital 16-way Input module

IP20 Protection

without operator panel interface



Ordering data		Art.-No.
16 digital Inputs		55921
1-wire screw terminal block		55943
1-wire spring clamp terminal block		55953
Common screw terminal block f. 3-wire-connection		55990
Spring clamp terminal block f. 3-wire-connection		55995
Technical data		
System supply	via system connection from the bus node	
Load weight	6	
Galvanic separation	opto-coupler	
Inputs		
Inputs	16	
Input signals	24 V DC, guide line to IEC 1131-2	
Input delay time	approx. 1 ms	
Sensor supply	24 V DC (18...30,2 V DC) to EN 61131-2, I Σ max. 0,7 A overload protection	
Status indicator	per input 1 yellow LED with label	
Connection	3-wire via terminal block and additional common terminal block	
Diagnostics		
Status indicator	LED green with label	
Sensor supply	LED green with label and return signal to the bus node	
Overload sensor supply	LED red with label and return signal to the bus node	
General data		
Temperature range	0...55 °C	
Mounting method	DIN-rail mounting to EN 50022	
Dimensions H x W x D	116 x 56 x 60 mm	

Accessories		Art.-No.
Handbook digital expansion German/English		55935/55814
Spare labels (1 piece = 8 labels)		55897
Notes		

Master-units, field bus cables, connection units and connection drawings start on page 2.2.18.

Expander modules MBM

Digital 8-way Output modules

IP20 Protection



with operator panel interface



without operator panel interface



Ordering data	Art.-No.	Art.-No.	Art.-No.
8 digital outputs 0,5 A	55971	55922	
8 digital outputs 2 A			55924
2-wire screw terminal block (1 x 8 bit)	55835	55835	
3-wire screw terminal block (2 x 4 bit)	55946	55946	55946
3-wire screw terminal block (1 x 8 bit)	55945	55945	
2-wire spring clamp terminal block (1 x 8 bit)	55855	55855	
3-wire spring clamp terminal block (2 x 4 bit)	55956	55956	55956
3-wire spring clamp terminal block (1 x 8 bit)	55955	55955	
Technical data			
System supply	via system connection from the bus node		
Load weight	7		
Galvanic separation	opto-coupler		
Outputs			
Outputs	8		
Supply	24 V DC (18...30,2 V DC) to EN 61131-2, $I_{\Sigma} \leq 8$ A	24 V DC (18...30,2 V DC), $I_{\Sigma} \leq 16$ A	
Switching current per output	typ. 0,5 A, short-circuit protected	typ. 2 A, short-circuit protected	
Filament lamp load	2 W	10 W	
Max. switching frequency	at ohmic, 100 Hz at inductive load: 1...4 Hz (independent of the current load per output)		
Status indicator	per output 1 yellow LED with label		
Special function	output status in the case of a bus fault - parameters definable		
Connection	2- or 3-wire, dependent on connection terminal box		
Diagnostics			
Status indicator	LED green with label		
Output supply	LED green with label and return signal to the bus node		
Output overload	LED red with label and return signal to the bus node		
General data			
Temperature range	0...55 °C		
Mounting method	DIN-rail mounting to EN 50022		
Dimensions H x W x D	116 x 76 x 60 mm	116 x 56 x 60 mm	
Functional description			
Using the correct terminal blocks, it is possible to split the power supply of Art.-No. 55922 and 55971 into two groups, each containing 4 outputs or one group of 8. The version MBM D08/2 A can only used as 2 x 4 outputs.			
Accessories			
Handbook digital expansion German/English	55935/55814	55935/55814	55935/55814
MSM connection cable (2 m)	55988		
MSM connection cable (3 m)	55986		
Operation panel MSM DD8	55980		
Terminal block fastening	55896	55896	55896
Spare labels (1 piece = 8 labels)	55963	55963	55961
Notes			
Control panels see page 2.2.13			
Master-units, field bus cables, connection units and connection drawings start on page 2.2.18.			

Expander modules MBM

Digital 16-way Output module

IP20 Protection

without operator panel interface



Ordering data		Art.-No.
16 digital outputs 0,5 A		55923
1-wire screw terminal block (2 x 8 bit)		55948
1-wire spring clamp terminal block (2 x 8 bit)		55958
Common screw terminal block f. 3-wire-connection		55991
Spring clamp terminal block f. 3-wire-connection		55996
Technical data		
System supply	via system connection from the bus node	
Load weight	12	
Galvanic separation	opto-coupler	
Outputs		
Outputs	16	
Supply	24 V DC (18...30,2 V DC) to EN 61131-2, $I_{\Sigma} \leq 8$ A	
Switching current per output	0,5 A, 100% ED, short-circuit protected	
Filament lamp load	2 W	
Max. switching frequency	at ohmic: 100 Hz, at inductive load: 1...4 Hz (independent of the current load per output)	
Status indicator	per output 1 yellow LED with label	
Special function	output status in the case of a bus fault - parameters definable	
Connection	3-wire via terminal block and additional common terminal block	
Diagnostics		
Status indicator	LED green with label	
Output supply	LED green with label and return signal to the bus node	
Output overload	LED red with label and return signal to the bus node	
General data		
Temperature range	0...55 °C	
Mounting method	DIN-rail mounting to EN 50022	
Dimensions H x W x D	116 x 56 x 60 mm	

Accessories		Art.-No.
Handbook digital expansion German/English		55935/55814
Spare labels (1 piece = 8 labels)		55969
Notes		

Master-units, field bus cables, connection units and connection drawings start on page 2.2.18.

Expander modules MBM

4-way relay
Output module

IP20 Protection



with operator
panel interface



without operator
panel interface



Ordering data	Art.-No.	Art.-No.
4 N/O relays	55978	55925
1-wire screw terminal block (4 x 1 bit)	55941	55941
3-wire screw terminal block (1 x 4 bit)	55592	55592
1-wire spring clamp terminal block (4 x 1 bit)	55951	55951
3-wire spring clamp terminal block (1 x 4 bit)	55597	55597
Technical data		
System supply	via system connection from the bus node	
Load weight	9	
Galvanic separation	opto-coupler/relay	
Outputs		
Supply	24 V DC (18...30,2 V DC) to EN 61131-2	
Current usage	≤ 50 mA	
Contact material	AgNi 0,15 + htv	
Switching capability 24 V (AC1/AC15/DC13)	5 A/2 A/1,3 A	
Switching capability 110 V (AC1/AC15/DC13)	5 A/2 A/250 mA	
Switching capability 230 V (AC1/AC15/DC13)	5 A/2 A/100 mA	
Min. load per output	1 mA	
Status indicator	per output 1 yellow LED with label	
Special function	output status in the case of a bus fault - parameters definable	
Connection	1-/3-wire via terminal block	
Diagnostics		
Status indicator	LED green with label	
Relay supply	LED green with label and return signal to the bus node	
General data		
Temperature range	0...55 °C	
Mounting method	DIN-rail mounting to EN 50022	
Dimensions H x W x D	116 x 76 x 60 mm	116 x 56 x 60 mm

Accessories	Art.-No.	Art.-No.
Handbook digital expansion German/English	55935/55814	55935/55814
MSM connection cable (2 m)	55988	
MSM connection cable (3 m)	55986	
Operation panel MSM DD4 DS4	55981	
Operation panel MSM DS4/1	55982	
Operation panel MSM DS4/2	55983	
Operation panel MSM DS4/4	55984	
Switching-module Hand-O-Automatic	556265	
Terminal block fastener	55896	55896
Spare labels (1 piece = 8 labels)	55961	55961

Notes
Control panels see page 2.2.13 Master-units, field bus cables, connection units and connection drawings start on page 2.2.18.

Expander modules MBM

8-way relay
Output module

IP20 Protection

without operator
panel interface



Ordering data		Art.-No.
8 N/O relays		55927
1-wire screw terminal block (left)		55949
1-wire screw terminal block (right)		55831
1-wire spring clamp terminal block (left)		55959
1-wire spring clamp (right)		55851
Technical data		
System supply	via system connection from the bus node	
Load weight	16	
Galvanic separation	opto-coupler/relay	
Outputs		
Supply	24 V DC (18...30,2 V DC) to EN 61131-2	
Current usage	≤ 120 mA	
Contact material	AgSnO2	
Switching capability 24 V (AC1/AC15/DC13)	5 A/3 A/1 A	
Switching capability 110 V (AC1/AC15/DC13)	5 A/3 A/200 mA	
Switching capability 230 V (AC1/AC15/DC13)	5 A/3 A/100 mA	
Min. load per output	10 mA	
Status indicator	per output 1 yellow LED with label	
Special function	output status in the case of a bus fault - parameters definable	
Connection	1-wire via terminal block	
Diagnostics		
Status indicator	LED green with label	
Relay supply	LED green with label and return signal to the bus node	
General data		
Temperature range	0...55 °C	
Mounting method	DIN-rail mounting to EN 50022	
Dimensions H x W x D	116 x 112 x 60 mm	
Accessories		
Handbook digital expansion German/English		55935/55814
Terminal block fastener		55896
Spare labels (1 piece = 8 labels)		55939
Notes		
Master-units, field bus cables, connection units and connection drawings start on page 2.2.18.		

Expander modules MBM

4-way, analogue Input modules

IP20 Protection



with operator panel interface



without operator panel interface



Ordering data	Art.-No.	Art.-No.	Art.-No.
4 analogue Inputs SD	55975		
4 analogue Inputs		55891	55929
2/3/4-wire screw terminal block	55947	55947	55947
2/3/4-wire spring clamp terminal block	55957	55957	55957
Technical data			
System supply	via system connection from the bus node		
Load weight	16		
Galvanic separation	opto-coupler between system and inputs		
Inputs			
Supply	24 V DC (18...30,2 V DC) to EN 61131-2		
Current usage	approx. 50 mA		
Response time	≤ 80 ms/module	≤ 40 ms/module	≤ 80 ms/module
Master-connection	via terminal block		
Voltage Inputs			
Type	difference input, load resistance 200 kΩ		
Input range	± 20 V DC	± 10 V DC	
Resolution	12 bit + digit sign		
Voltage Inputs			
Type	difference input, load resistance approx. 50 Ω		
Input range 1	± 40 mA	± 20 mA	
Input range 2	4...32 mA with cable break recognition	4...20 mA with cable break recognition	
Resolution	12 bit + digit sign		
PT 100-Inputs			
Type	4-wire-connection, sensor supply 15 V DC/2,5 mA per channel		
Input range	- 56...+ 200 °C, internal linear regulated	- 56...+ 456 °C, internal linear regulated	
Resolution	12 bit		
Diagnostics			
Status indicator	LED green with label		
Eingangsversorgung	LED green with label and return signal to the bus node		
General data			
Temperature range	0...55 °C		
Mounting method	DIN-rail mounting to EN 50022		
Dimensions H x W x D	116 x 76 x 60 mm		
Functional description			
Every single input can, if the correct terminal combinations are used, measure current voltage or temperature.			
Accessories			
Handbook analogue expander German/English	55937/55816	55936/55815	55936/55815
MSM connection cable (2 m)	55988		
MSM connection cable (3 m)	55986		
Operation panel MSM AS2U	55985		
Channel separation for 2 operator panels	55964		
Terminal block fastening	55896	55896	55896
Spare labels (1 piece =8 labels)	55965	55965	55965
Notes			
Control panels see page 2.2.13. Master-units, field bus cables, connection units and connection drawings start on page 2.2.18.			

Expander modules MBM

4-way, analogue
Output modules

IP20 Protection



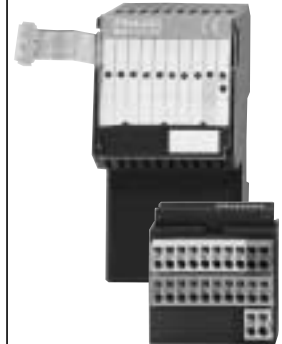
with operator
panel interface



without operator
panel interface



without operator
panel interface



Ordering data	Art.-No.	Art.-No.	Art.-No.
4 analogue outputs SD	55974		
4 analogue outputs		55931	55930
3-wire screw terminal block	55942	55942	55838
3-wire spring clamp terminal block	55952	55952	55858
Technical data			
System supply	via system connection from the bus node		
Load weight	12		
Galvanic separation	opto-coupler		
General Outputs			
Supply	24 V DC (18...30,2 V DC) to EN 61131-2		
Current usage	≤ 120 mA		
Response time	typ. ≤ 1 ms/module		
Actuator connection	via terminal block		
Voltage Outputs			
Characteristics	short-circuit protected, load resistance > 750 Ω		
Range	0...12,5 V DC	0...10 V DC	± 10 V DC
Resolution	11 bit/channel	12 bit/channel	11 bit + digit sign/channel
Current Outputs			
Working-resistance	–	–	≤ 500 Ω
Range	–	–	0...20 mA
Resolution	–	–	11 bit/channel
Diagnostics			
Status indicator	LED green with label		
Output supply	LED green with label and return signal to the bus node		
General data			
Temperature range	0...55 °C		
Mounting method	DIN-rail mounting to EN 50022		
Dimensions H x W x D	116 x 76 x 60 mm	116 x 76 x 60 mm	116 x 56 x 60 mm

Accessories	Art.-No.	Art.-No.	Art.-No.
Handbook analogue expander German/English	55937/55816	55936/55815	55936/55815
MSM connection cable (2 m)	55988		
MSM connection cable (3 m)	55986		
Operation panel MSM AS2U	55985		
Channel separation for 2 operator panels	55964		
Terminal block fastening	55896	55896	55896
Spare labels (1 piece =8 labels)	55898	55898	55898

Notes

Control panels see page 2.2.13.

Master-units, field bus cables, connection units and connection drawings start on page 2.2.18.

Operator panels MSM

IP40 Protection mounted



8 LED indicators



4 LED indicators, 4 switches



2-channel H-O-A-switch
2-channel bar graph display



Ordering data	Art.-No.	Art.-No.	Art.-No.
MSM DD8	55980		
MSM DD4 DS4		55981	
MSM AS2U			55985
Technical data			
Supply	24 V DC (18...30,2 V DC) to EN 61131-2		
Current usage	typ. 100 mA	typ. 100 mA	typ. 110 mA
Indicators			
Number of channels	8	4	2
Display type	LED, polarity and color definable	LED, polarity and color definable	LED, bar indicator 10 step
MBM input status	digital	–	analogue
MBM output status	digital	digital	analogue
LED test function	yes	yes	yes
Operation panel			
Number of channels	–	4	2
Signal type	–	digital	analogue
Operation module	–	4 switches	2 toggle switch, 2 potentiometer
Operation	–	on-off, lamp test	Hand-Off-Auto
Status return signal	–	–	Hand-Off-Auto
General data			
Temperature range	0...55 °C		
Dimensions	3 height x 8 depth approx. 128,4 mm x 40,3 mm		
Connection diagram			
	<p>Set-up variants in example LED 1</p> <ul style="list-style-type: none"> J 1.0 J 1.1 LED green, not inverted J 2.0 J 2.1 LED red, not inverted J 3.0 J 3.1 LED green, inverted J 4.0 J 4.1 LED red, inverted 	<p>Set-up variants in example LED 2</p> <p>LED Status = output status MBM DO4R</p> <ul style="list-style-type: none"> J 2.0 J 2.1 LED green, not inverted J 3.0 J 3.1 LED red, not inverted J 4.0 J 4.1 LED green, inverted J 5.0 J 5.1 LED red, inverted <p>lamp test activated via button J X.0 = Polarity J X.1 = color J X.2 = output</p>	
Accessories	Art.-No.	Art.-No.	Art.-No.
Handbook MSM German/English	55938/55817	55938/55817	55938/55817
MSM connection cable (2 m)	55988	55988	55988
MSM connection cable (3 m)	55886	55886	55886
MSM channel separation		55964	55964
MSM ribbon cable power	55987	55987	55987
MSM 24 V power input terminal	55989	55989	55989
Notes			
For use with	MBM DI8 SD Art.-No. 55970 MBM DO8 SD Art.-No. 55971	MBM DO4R SI Art.-No. 55972 MBM DO4R SI Art.-No. 55978	MBM AI4 SD Art.-No. 55973 MBM AO4 SI Art.-No. 55974 MBM AI4 DSD Art.-No. 55975

Operator panels MSM

IP40 Protection mounted



H-O-A-switch for 4-step operation

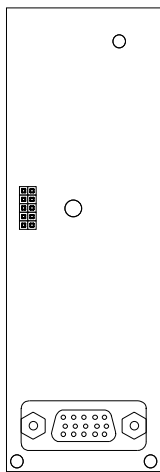
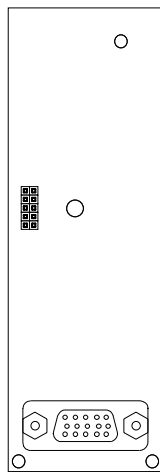
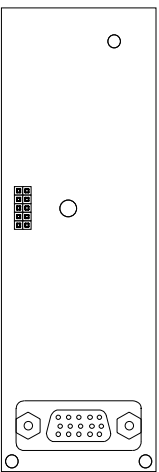


H-O-A-switch for 2-step operation



H-O-A-switch for 1 4-step operation

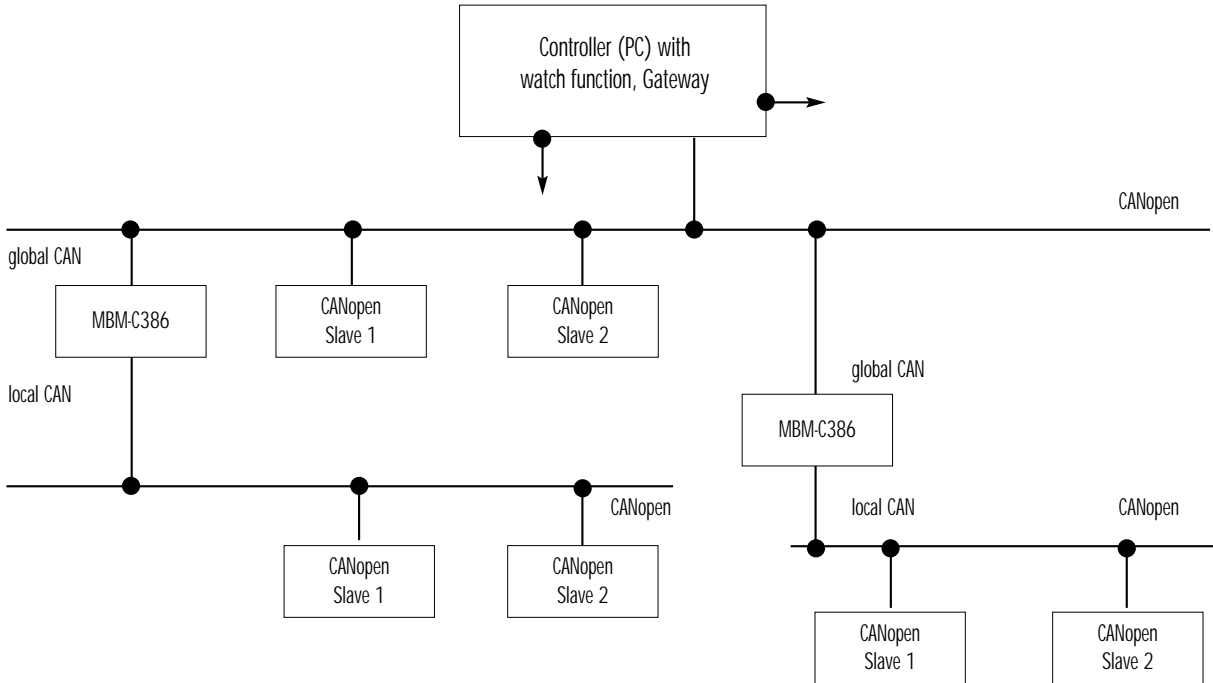


Ordering data	Art.-No.	Art.-No.	Art.-No.
MSM DS4/1	55982		
MSM DS4/2		55983	
MSM DS4/4			55984
Technical data			
Supply	24 V DC (18...30,2 V DC) to EN 61131-2		
Current usage	typ. 70 mA	typ. 80 mA	typ. 70 mA
Indicators			
Number of channels	4	4	4
Display type	LED yellow	LED yellow	LED yellow
MBM input status	–	–	–
MBM output status	digital	digital	digital
LED test function	yes	yes	yes
Operation panel			
Number of channels	4	4	4
Signal type	digital	digital	digital
Operation module	4 toggle switch	2 toggle switch, 2 rotary switches	1 toggle switch, 1 rotary switches
Operation	Hand-Off-Auto	Hand-Off-Auto	Hand-Off-Auto
Status return signal	Hand-Off-Auto	Hand-Off-Auto	Hand-Off-Auto
General data			
Temperature range	0...55 °C		
Dimensions	3 height x 8 depth approx. 128,4 mm x 40,3 mm		
Connection diagram			
			
Accessories			
	Art.-No.	Art.-No.	Art.-No.
Handbook MSM German/English	55938/55817	55938/55817	55938/55817
MSM connection cable (2 m)	55988	55988	55988
MSM connection cable (3 m)	55886	55886	55886
MSM channel separation	55964	55964	55964
MSM ribbon cable power	55987	55987	55987
MSM 24 V power input terminal	55989	55989	55989
Notes			
For use with	MBM DO4R SI Art.-No. 55972 MBM DO4R SI Art.-No. 55978	MBM DO4R SI Art.-No. 55972 MBM DO4R SI Art.-No. 55978	MBM DO4R SI Art.-No. 55972 MBM DO4R SI Art.-No. 55978

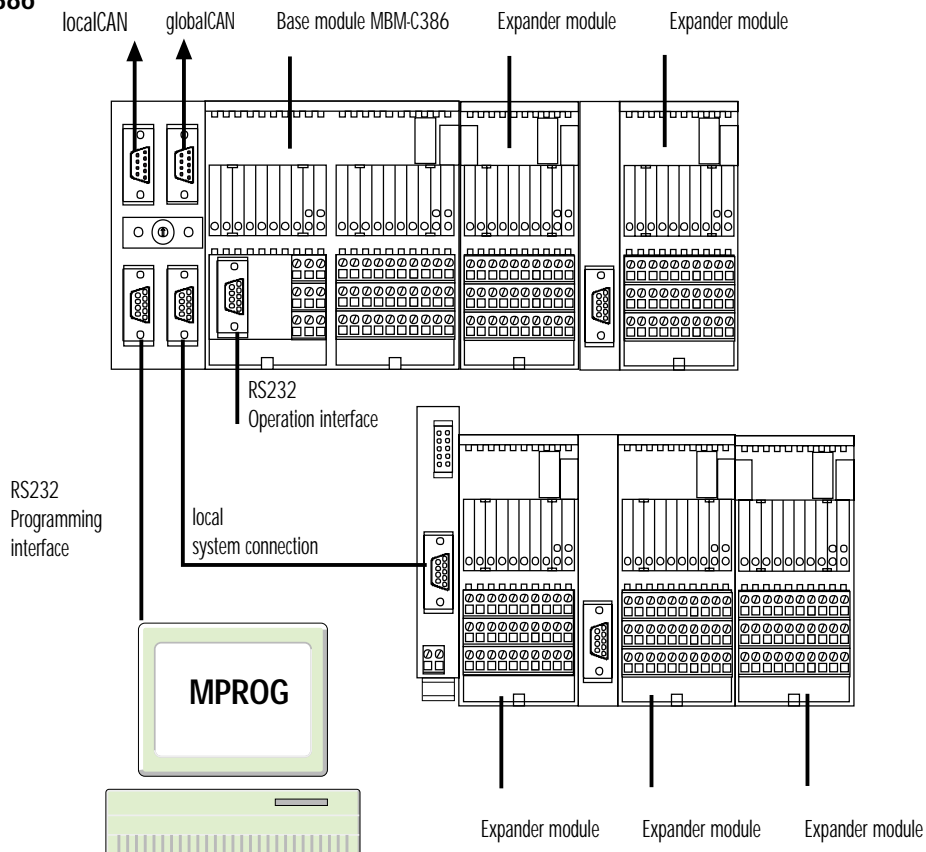
Automation with intelligent bus nodes

The modern concept of the MBM with its decentralized intelligence, marks the way for a cost effective and clear automation solution. Self functioning units allow a modular system to be designed and implemented both in the field and at the control level. Communication is hierarchical with the PROFIBUS-DP and CANopen.

Processing signals in the field drastically reduces reaction times and reduces the load on the controlling bus system. An additional local CANopen interface is a gateway to further expansion on the I/O modules and controllers.



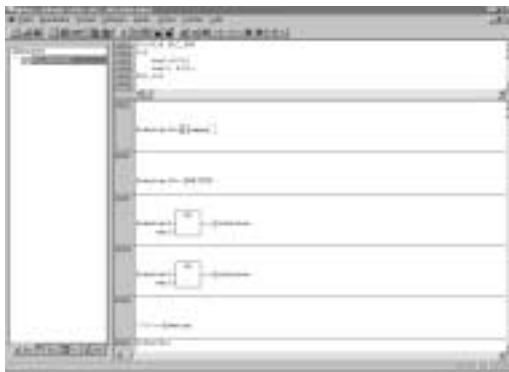
Typical set up for MBM-C386 field bus nodes



Programming to IEC 1131-3

Programming to IEC 1131-3 can easily be achieved using a PC and various editors:

- Instruction list
- Ladder diagram
- Function plan
- Structured text
- Contact plan



Why MPROG?

- Standard IEC 1131-3 to program process control applications
- Programming, Translation, Simulation, Visualising, Download, Debugging

Programming to IEC 1131-3

- Manufacturer independent standard for programming controllers
- 100% compatibility is achieved via import and export from program blocks. Only the controller configuration must be altered. 5 languages: AWL, ST, KOP, FUP, AS

Translation

- Syntax checking of the program code
- Translation into a code which can be directly used by the target system

Simulation

- Debugging and visualization of all the program components without the target system

Special online- functions in the programming software offer ideal support at all stages from simple program testing to installation.

- Graphic configuration
- Complete simulation
- Library administration to sort and store operator defined libraries
- Administration and graphic visualization of project variables (Trace)

- Online functions to
 - Monitor all project variables
 - Write and force action from flags, inputs and outputs
 - Debug complete projects (Breakpoints, Steps, single cycles, run control, call stacks)
 - For pause free replacement of program modules
- Online help and documentation



Download

- Transfer of the program to the target system

Debugging

- Testing of the program on the target system

Visualization

- Using various symbols, both static and dynamic process can be shown in various colors and forms
- Operator can directly control the control the process via the Visualization mode

Other advantages

- Simple learning process via online help, hand book and Windows-typical standards
- Operator created libraries to IEC 1131-3 or in ANSI-C
- Online functionality
 - Breakpoints
 - Single steps
 - Single cycles
 - Trace
 - Force

Bus nodes MBM

Decentralized intelligent
Control system

IP20 Protection



MBM-C386

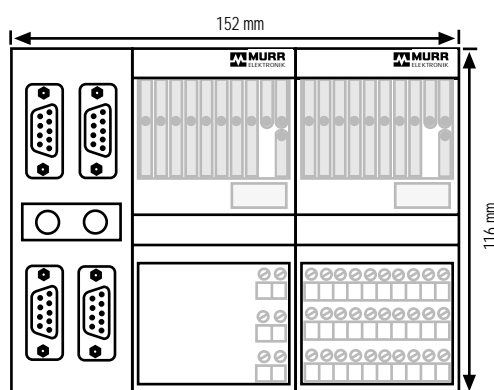
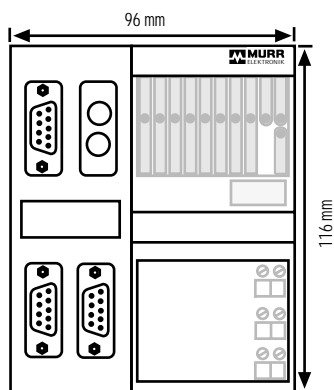


Ordering data		Art.-No.
MBM-C386		55862
Screw terminal block 3 x 2-pole		55940
Spring clamp terminal block 3 x 2-pole		55950
2-wire screw terminal block		55834
3-wire screw terminal block		55944
2-wire spring clamp terminal block		55854
3-wire spring clamp terminal block		55954
RS232 Box screw terminal block 3 x 2-pole		55836
RS232 Box spring clamp terminal block 3 x 2-pole		55856
MPROG program software		55908
Technical data		
Supply	24 V DC (18...30,2 V DC) to EN 61131-2	
Current usage min./max.	230 mA/1,3 A	
Program memory capacity	2 MB Flash PROM	
Working memory	2 MB DRAM	
Retaining memory	256 kB SRAM	
Watchdog	2 sec	
Programm language	IEC 1131-3: AWL, KOP, FUP, ST, AS	
Programming interface	COM1: RS232, Sub-D 9-pole, 38400 Baud	
Operation interface	COM2: RS232, Sub-D 9-pole, 110...38400 Baud, via RS232 connection box	
Field bus		
Connection	Sub-D 9-pole	
Addressing	1...99 via rotary switch (local CAN max. 32 participant)	
Data rate CAN	global CAN: 10 kBit/s...1 MBit/s; local CAN: 10 kBit/s...500 MBit/s	
Galvanic separation	opto-coupler	
Expansion Interface		
Capacity	up to 16 expander modules ¹⁾	
Inputs		
Inputs	8	
Input characteristics	p-switching	
Input signals	24 V DC, guide line to IEC 1131-2	
Input delay time	≤ 1 ms	
Sensor supply	24 V DC (18...30,2 V DC) to EN 61131-2, I _Σ max. 0,7 A overload protection	
Status indicator	per input 1 yellow LED with label	
Connection	2- or 3-wire, dependent on the terminal block	
Diagnostics		
Status indicator	LED green with label	
Voltage	two green LEDs with labels	
Diagnostics interface	RS232 programming interface to IEC 1131-3 via MPROG	
General data		
Temperature range	0...55 °C	
Mounting method	snaps onto DIN-rail to 50022	
Dimensions H x W x D	116 x 152 x 60 mm	
Accessories		Art.-No.
Handbook German		55907
Handbook MPROG German		55909
Notes	Master-units, field bus cables, connection units and connection drawings start on page 2.2.18. ¹⁾ Please read first application manual.	

Dimension drawing MBM bus nodes

(Art.-No. 55902, 55904, 55915,
55016...018)

(Art.-No. 55862)

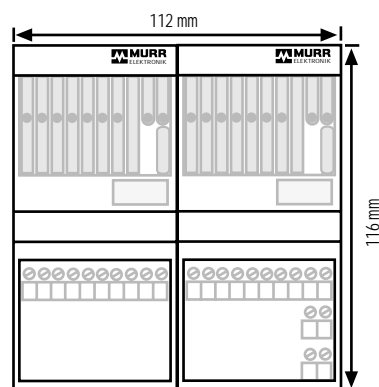
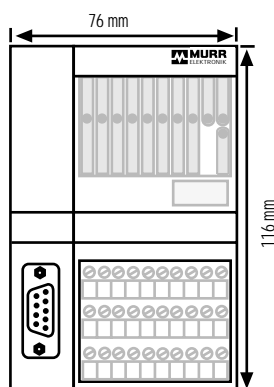
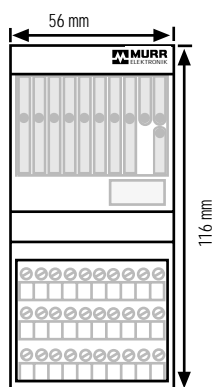


Dimension drawing MBM expander modules

(Art.-No. 55880, 55881, 55920...926,
55930)

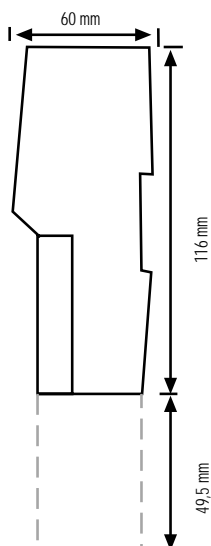
(Art.-No. 55929, 55931, 55970...975, 55978)

(Art.-No. 55927)



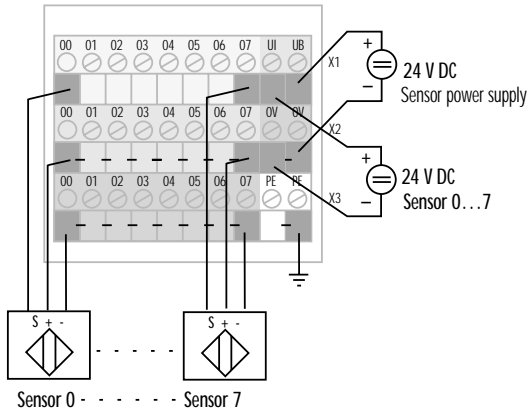
Dimension drawing MBM bus nodes, side view

simplified representation
(with potential terminals 3-row)

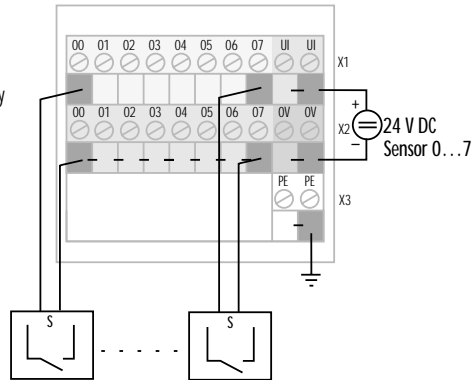


Connection examples for MBM-bus nodes

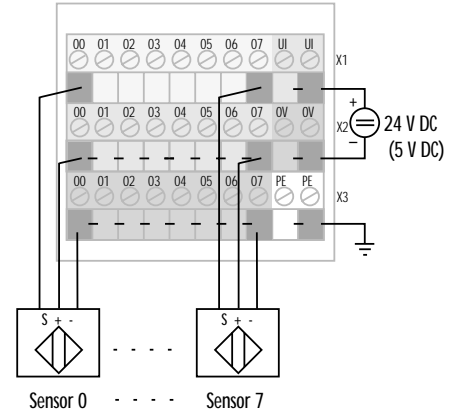
Spring clamp terminal block Art.-No. 55977
Screw terminal block Art.-No. 55976



Spring clamp terminal block Art.-No. 55854
Screw terminal block Art.-No. 55834

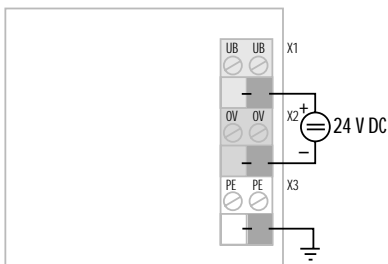


Spring clamp terminal block Art.-No. 55954
Screw terminal block Art.-No. 55944

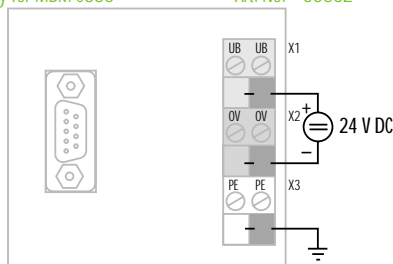


Connection examples for MBM-bus nodes

Spring clamp terminal block Art.-No. 55950
Screw terminal block Art.-No. 55940

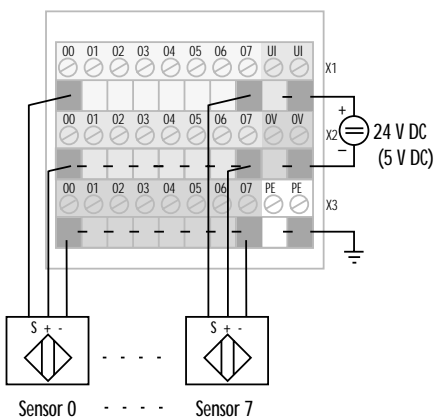


Spring clamp terminal block Art.-No. 55856
Screw terminal block Art.-No. 55836
only for MBM-C386 Art.-No. 55862

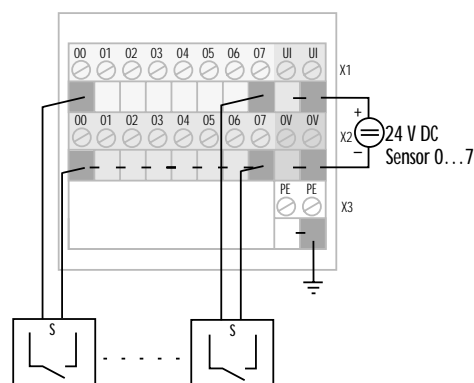


Connection examples for MBM digital 8-way input modules

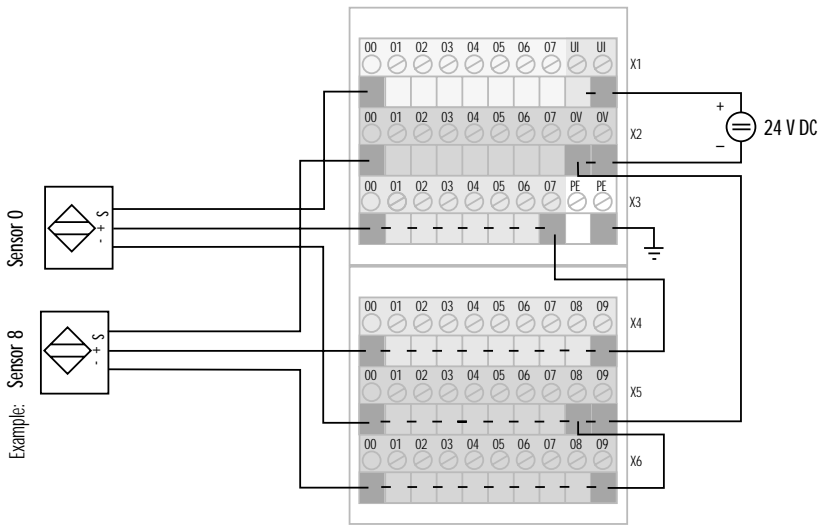
Spring clamp terminal block Art.-No. 55954
Spring clamp terminal block Art.-No. 55595
Spring clamp terminal block Art.-No. 55850
Screw terminal block Art.-No. 55944
Screw terminal block Art.-No. 55590
Screw terminal block Art.-No. 55830



Spring clamp terminal block Art.-No. 55854
Screw terminal block Art.-No. 55834



Connection examples for MBM digital 16-way input modules



Spring clamp terminal block Art.-No. 55953
Screw terminal block Art.-No. 55943

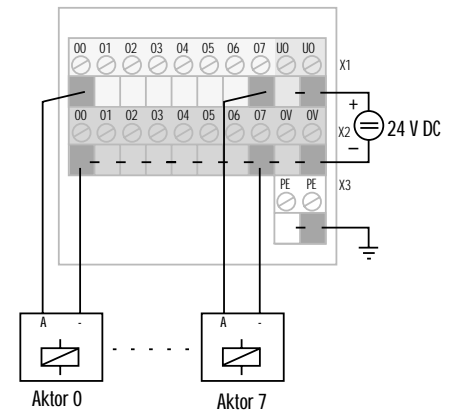
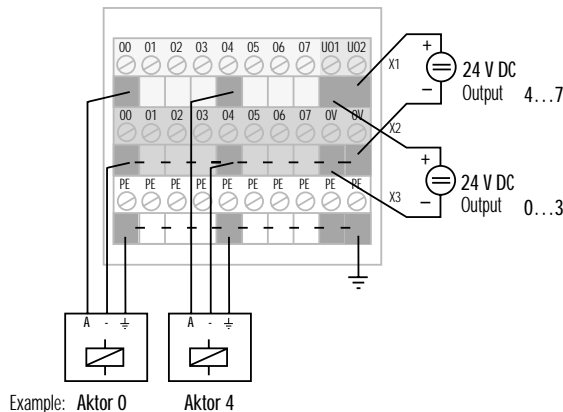
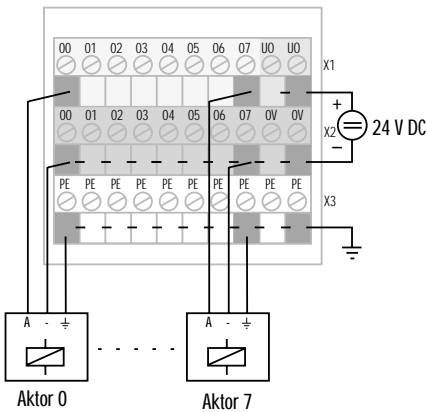
Spring clamp terminal block Art.No. 55995
Common screw terminal block Art.No. 55990

Connection examples for MBM digital 8-way output modules

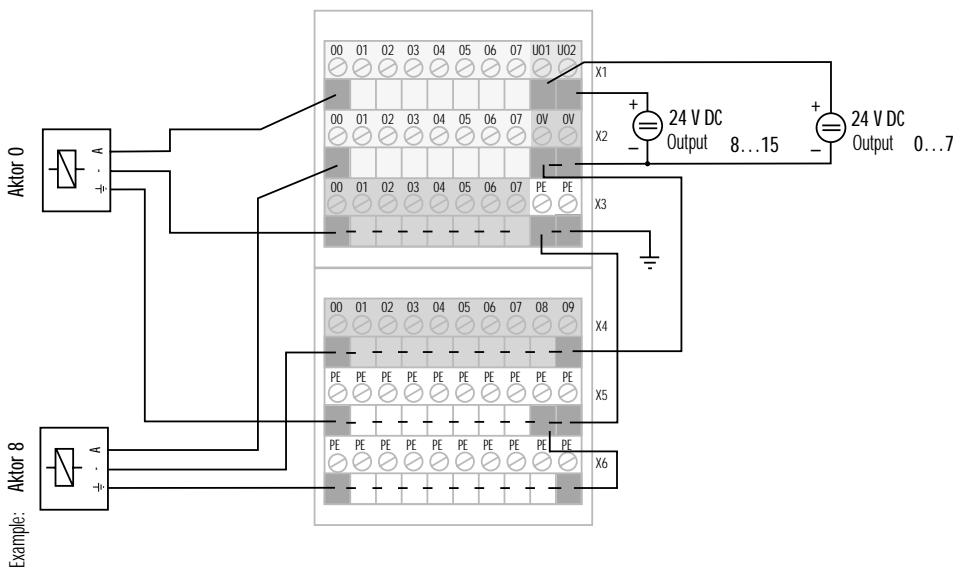
Spring clamp terminal block Art.-No. 55955
Screw terminal block Art.-No. 55945

Spring clamp terminal block Art.-No. 55956
Screw terminal block Art.-No. 55946

Spring clamp terminal block Art.-No. 55855
Screw terminal block Art.-No. 55835



Connection examples for MBM digital 16-way output modules

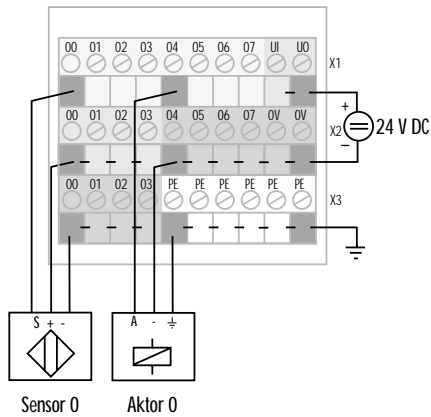


Spring clamp terminal block Art.-No. 55958
Screw terminal block Art.-No. 55948

Spring clamp terminal block Art.No. 55996
Common screw terminal block Art.No. 55991

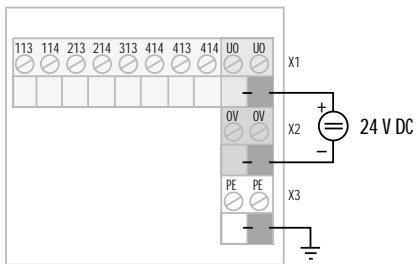
Connection examples for MBM digital input/output modules

Spring clamp terminal block Art.-No. 55852
 Screw terminal block Art.-No. 55832

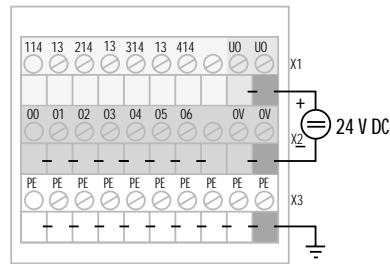


Connection examples for MBM 4-way relay modules

Spring clamp terminal block Art.-No. 55951
 Screw terminal block Art.-No. 55941

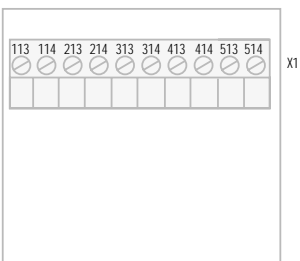


Spring clamp terminal block Art.-No. 55597
 Screw terminal block Art.-No. 55592

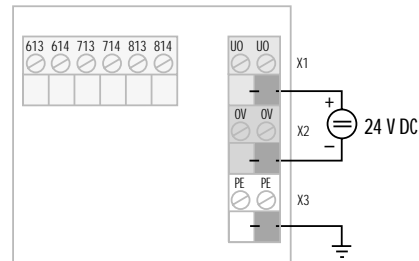


Connection examples for MBM 8-way relay modules

Spring clamp terminal block Art.-No. 55959
 Screw terminal block Art.-No. 55949



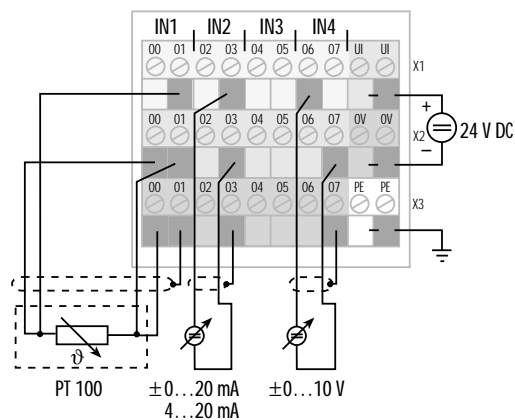
Spring clamp terminal block Art.-No. 55851
 Screw terminal block Art.-No. 55831



Connection examples for MBM analogue input modules

Spring clamp terminal block Art.-No. 55957

Screw terminal block Art.-No. 55947



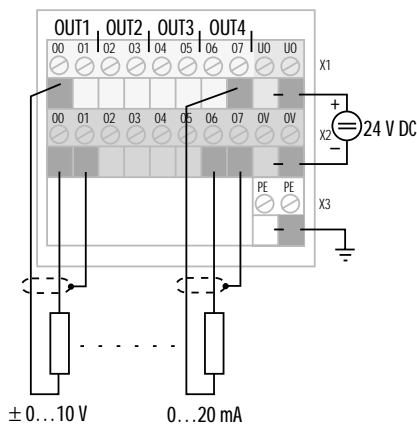
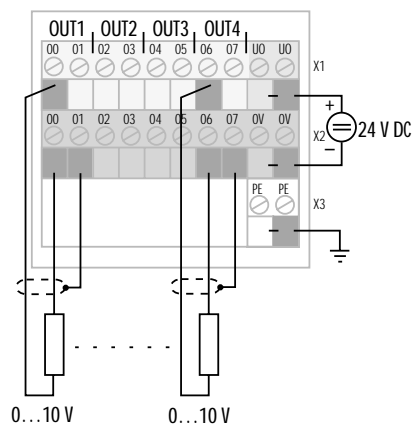
Connection examples for MBM analogue output modules

Spring clamp terminal block Art.-No. 55952

Screw terminal block Art.-No. 55942

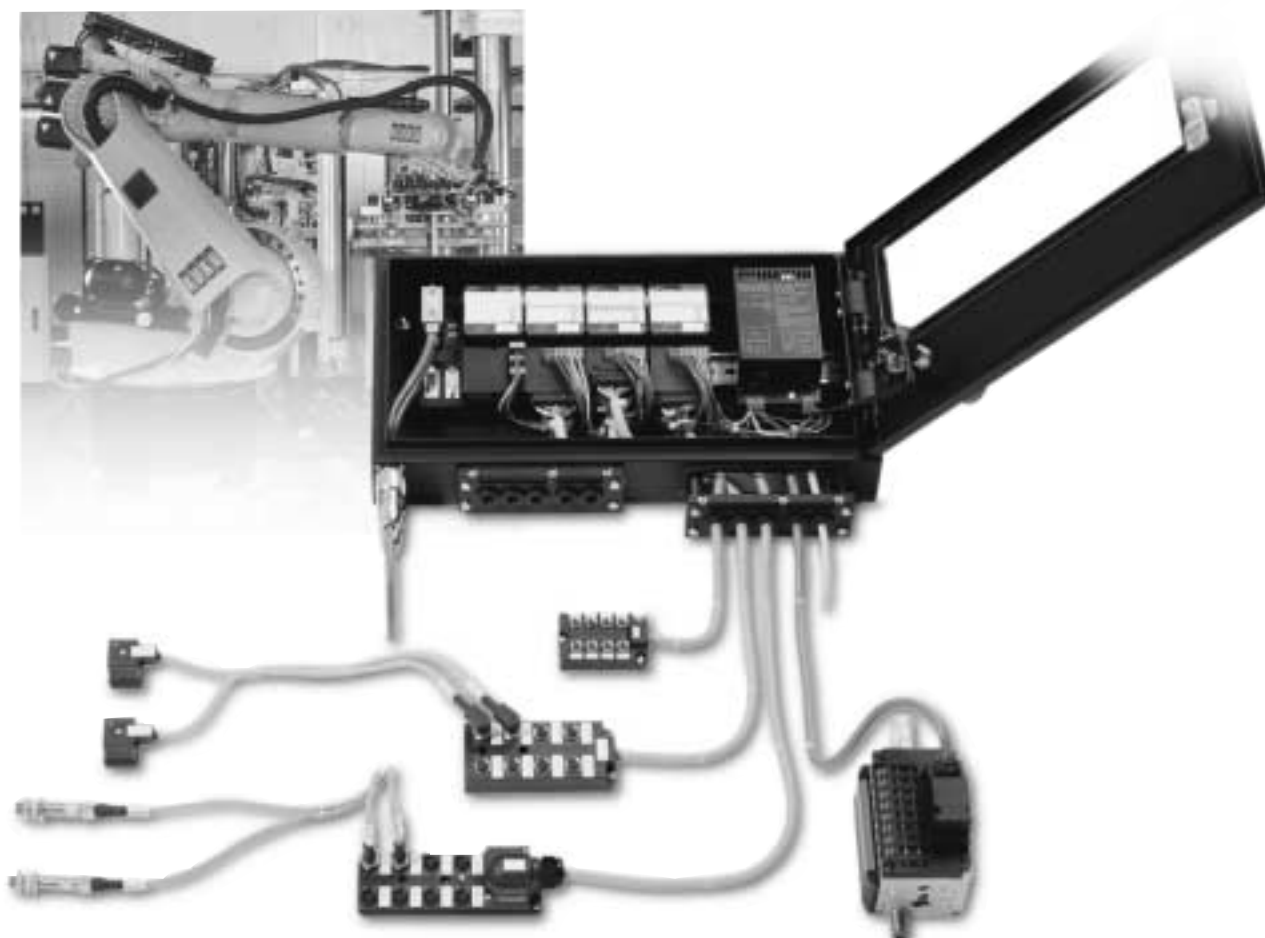
Spring clamp terminal block Art.-No. 55858

Screw terminal block Art.-No. 55838



Screw terminal block				Art.-No.
	for MBM-P; MBM-C; MBM-I	3 x 2-pole	Input voltage	55940
	for MBM DI8; MBM DI8 SD; MBM-C-DI8; MBM-P-DI8	3 x 10-pole	3-wire	55944
	for MBM DI16	3 x 10-pole	1-wire	55943
	for MBM DO8/0,5 A; MBM DO8/0,5 A SD; MBM DO8/2 A	3 x 10-pole	3-wire	55946
	for MBM DO8/0,5 A; DO8/0,5 A SD	3 x 10-pole	3-wire	55945
	for MBM DO16/0,5 A	3 x 10-pole	1-wire	55948
	for MBM DO4R; MBM DO4R SI	1 x 10-pole	1-wire	55941
	for MBM AI4; MBM AI4 SD, MBM AI4 DSD	3 x 10-pole	2-; 3-; 4-wire	55947
	for MBM AO4U; MBM AO4U SI, MBM AO4	2 x 10-pole	3-wire	55942
	for MBM-C DI8; MBM-P DI8 (1 x UB); MBM DI8 + SD	3 x 10-pole	2-wire	55834
	for MBM-C DI8; MBM-P DI8 (2 x UB)	3 x 10-pole	3-wire	55976
	for MBM DI4 DO4	3 x 10-pole	3-wire	55832
	for MBM DI8 n/p (n-switching)	3 x 10-pole	3-wire	55830
	for MBM DI8 n/p (p-switching)	3 x 10-pole	3-wire	55590
	for MBM DO8/0,5 A; MBM DO8/0,5 A SD	2 x 10-pole	2-wire	55835
	for MBM DO4R; MBM DO4R SI	3 x 10-pole	3-wire	55592
	for MBM DO8R (left)	1 x 10-pole	1-wire	55949
	for MBM DO8R (right)	1 x 6-pole	1-wire	55831
Spring clamp terminal block				Art.-No.
	for MBM-P; MBM-C; MBM-I	3 x 2-pole	Input voltage	55950
	for MBM DI8; MBM DI8 SD; MBM-C-DI8; MBM-P-DI8	3 x 10-pole	3-wire	55954
	for MBM DI16	3 x 10-pole	1-wire	55953
	for MBM DO8/0,5 A; MBM DO8/0,5 A SD; MBM DO8/2 A	3 x 10-pole	3-wire	55956
	for MBM DO8/0,5 A; DO8/0,5 A SD	3 x 10-pole	3-wire	55955
	for MBM DO16/0,5 A	3 x 10-pole	1-wire	55958
	for MBM DO4R; MBM DO4R SI	1 x 10-pole	1-wire	55951
	for MBM AI4; MBM AI4 SD, MBM AI4 DSD	3 x 10-pole	2-; 3-; 4-wire	55957
	for MBM AO4U; MBM AO4U SI, MBM AO4	2 x 10-pole	3-wire	55952
	for MBM-C DI8, MBM-P DI8 (1 x UB)	3 x 10-pole	2-wire	55854
	for MBM-C DI8, MBM-P DI8 (2 x UB)	3 x 10-pole	3-wire	55977
	for MBM DI4 DO4	3 x 10-pole	3-wire	55852
	for MBM DI8 n/p (n-switching)	3 x 10-pole	3-wire	55850
	for MBM DI8 n/p (p-switching)	3 x 10-pole	3-wire	55595
	for MBM DO8/0,5 A; MBM DO8/0,5 A SD	2 x 10-pole	2-wire	55855
	for MBM DO4R; MBM DO4R SI	3 x 10-pole	3-wire	55597
	for MBM DO8R (left)	1 x 10-pole	1-wire	55959
	for MBM DO8R (right)	1 x 6-pole	1-wire	55851
Potential terminal block				Art.-No.
Screw terminal block	MBM DI16	3 x 10-pole	3-wire	55990
	MBM DO16/0,5 A	3 x 10-pole	3-wire	55991
Spring clamp terminal block	MBM DI16	3 x 10-pole	3-wire	55995
	MBM DO16/0,5 A	3 x 10-pole	3-wire	55996
System connection				Art.-No.
	MSM connection cable 2 m			55988
	MSM connection cable 3 m			55986
	MSM ribbon			55987
	MBM system connection cable 0,5 m to local adapter			55911
Handbooks				Art.-No.
	Handbook for MBM-C	German/English		55901/55812
	Handbook for MBM-P	German/English		55903/55810
	Handbook for MBM-I	German/English		55905/55811
	Handbook for MBM C386	German		55907
	Handbook for MPROG	German		55909
	Handbook for MBM digital E/A	German/English		55935/55814
	Handbook for MBM analogue E/A without simulation	German/English		55936/55815
	Handbook for MBM analogue E/A with simulation	German/English		55937/55816
	Handbook for MSM	German/English		55938/55817
	Type-, GSD- and EDS-datas on 3,5"-disk			55246
Others				Art.-No.
	MBM-TL terminal-lock			55896

Connector and Cable		Art.-No.
PROFIBUS-connector	without PG-connection	55762
PROFIBUS-connector	with PG-connection	55766
CAN-connector		55760
INTERBUS-connector set		55799
Profibus data cable	cut goods	55770
CAN data cable	cut goods	55774
INTERBUS long-distance cable	cut goods	55771
System Components		Art.-No.
Master, Repeater, Gateways		on request

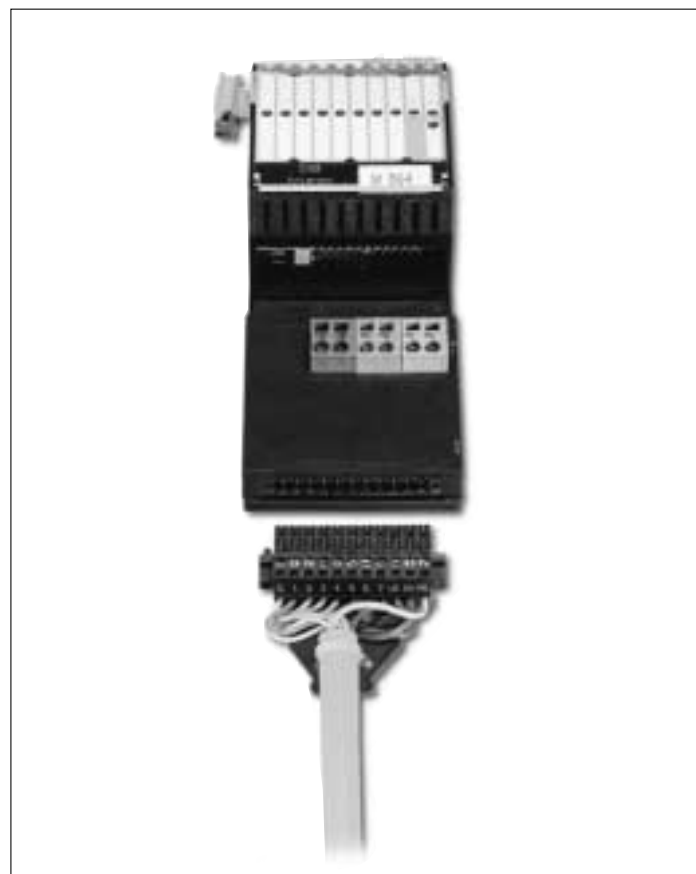


MERIO

Murr Elektronik Rationik I/O system

If you want to bring sensors and actuators together in the periphery MERIO is what you want.

MERIO is the completely pluggable I/O system for the peripherals. Passive valves, sensors and actuators can be brought together on a bus system. The same modules as in a control cabinet reduce project engineering and warehouse cost. Wiring mistakes can be prevented through completely pluggable connections. No matter what sensors or actuators you have, everything can be brought together on one system.



System MERIO
Metal housing black

200 x 300 mm

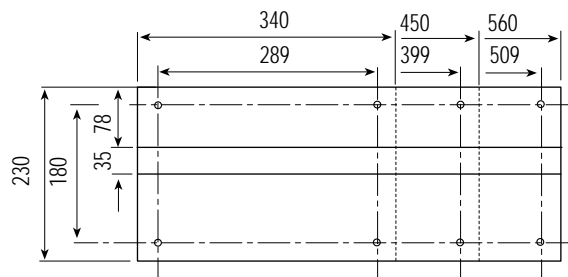
200 x 410 mm

200 x 520 mm

IP54 Protection



Ordering data	Art.-No.	Art.-No.	Art.-No.
Metal housing	55870	55871	55872
Dimensions			
Outer dimensions	230 x 90 x 340 mm	230 x 90 x 450 mm	230 x 90 x 560 mm
Mounting area (inside)	200 x 300 mm	200 x 410 mm	200 x 520 mm
General data			
Cable entry plate	9-way	10-way	15-way
Component mounting	via internal fitted DIN-rail to EN 50022		
Mounting method	screw mounting		
MBM module capacity	1 bus node + 3 I/O modules	1 bus node + 5 I/O modules	1 bus node + 7 I/O modules
Delivery content			
housing with transparent top, installed DIN-rail			
Accessories			
Blind plugs	for cable entry plate	Art.-No. 90250	
Cable sleeves ¹⁾	for cable diameter 8 ... 9 mm	Art.-No. 90252	
	for cable diameter 9 ... 10 mm (suggested for distributor cable)	Art.-No. 90253	
	for cable diameter 11 ... 12 mm	Art.-No. 90254	
Dimension drawing			



Notes

¹⁾ Other sizes on request.

System MERIO

Pluggable distribution box

Terminal block and Plug-in Terminal



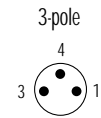
M8 for Sensors and Actuators



Contact layout

3-pole

Connector: M8
 Contact 1: (+)
 Contact 3: (-)
 Contact 4: (N/O)



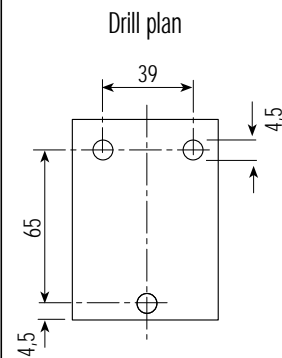
Ordering data

	Art.-No.	8-way	Art.-No.
for DI8	55893	3 m	27001
for DO8/0,5 A	55893	5 m	27002
for DI4 DO4/0,5 A	55893	10 m	27003
	55892	15 m	27004
	55894		
for DI16	55894		
for DO16/0,5 A	55894		
	55892		
	55892		

Technical data

Connection cable	PUR 2 x 0,75 mm ² + 8 x 0,34 mm ²
Cable length	3,0 m (other version on request)
Cable diameter	9,1 mm (+ 1,1 -0,7 mm)
Cable end	plug-in terminal 11-pole
I/O connection	M8 round plug connector
Dimensions H x W x D	77 x 48 x 25 mm

Dimension drawing



Accessories

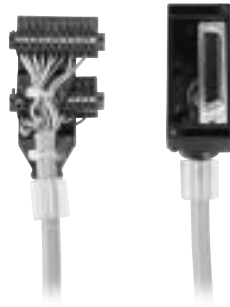
Blind plugs	for cable entry plate	Art.-No. 90250
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Notes

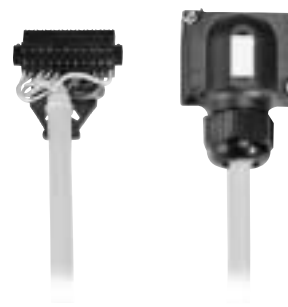
The connection cables for Multipole-valve get manufactured by Murrelektronik when configuration is given.

System MERIO

Valve Cables



M12 Connection Cap Cable



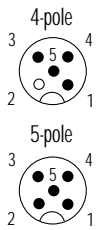
M12 for Sensors and Actuators



Contact layout

4-pole/5-pole

Connector: 4-pole 5-pole
 Contact 1: (+) (+)
 Contact 2: (N/C) (N/C)
 Contact 3: (-) (-)
 Contact 4: (N/O) ((N/O)
 Contact 5: (PE) (PE)



Ordering data

Art.-No.

Art.-No.

Art.-No.

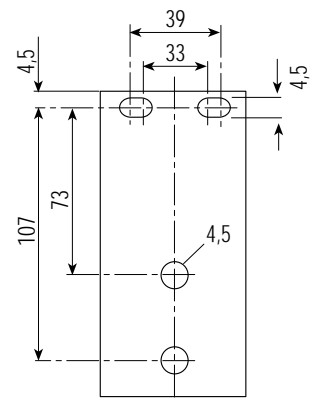
for DI8	0,8 m	826820	3 m	4327021	4-way (5-pole)	27104
for DO8/0,5 A	1,6 m	826821	5 m	4327022	8-way (4-pole)	27103
for DI4 DO4/0,5 A			10 m	4327023		
			15 m	4327024		
for DI16	0,8 m	826822	3 m	4327081	8-way (5-pole)	27106
for DO16/0,5 A	1,6 m	826823	5 m	4327082		
	5 m	826795	10 m	4327083		
	10 m	826958	15 m	4327084		

Technical data

Connection cable	PVC X x 0,25 mm ²	PUR 3 x 0,75 mm ² + X x 0,34 mm ²
Cable end		plug-in terminal 11-pole
I/O connection	plug-in terminal, Sub-D 25-pole	M12-round plug connector
Dimensions H x W x D		157 x 54 x 28 mm

Dimension drawing

Drill plan



Accessories

Blind plugs		for cable entry plate	Art.-No. 90250
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Notes

Other versions on request.