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
- Bus nodes Interbus
- Bus nodes CAN
- Intelligent bus nodes CAN

**Expander modules**
- DI8
- DI16
- DO8/0,5A
- DO8/2A
- DO16/0,5A
- DI4 DO4/0,5A
- DO 4R
- DO 8R
- AI 4
- AO 4
- Operator panels MSM

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

---

From page 2.2.13 + 2.2.14
## MBM – IP20 modular I/O System

### Bus nodes
- CANopen
- Interbus

### IP20 Protection

#### Ordering data

<table>
<thead>
<tr>
<th>Description</th>
<th>Art.-No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MBM-C DI8</td>
<td>55900</td>
</tr>
<tr>
<td>MBM-I (28 words) with diagnostics</td>
<td>55904</td>
</tr>
<tr>
<td>Screw terminal block 3 x 2-pole</td>
<td>55940</td>
</tr>
<tr>
<td>Spring clamp terminal block 3 x 2-pole</td>
<td>55950</td>
</tr>
<tr>
<td>2-wire screw terminal block 1 x Ub</td>
<td>55834</td>
</tr>
<tr>
<td>3-wire screw terminal block 1 x Ub</td>
<td>55944</td>
</tr>
<tr>
<td>3-wire screw terminal block 2 x Ub</td>
<td>55976</td>
</tr>
<tr>
<td>2-wire spring clamp terminal block 1 x Ub</td>
<td>55854</td>
</tr>
<tr>
<td>3-wire spring clamp terminal block 1 x Ub</td>
<td>55954</td>
</tr>
<tr>
<td>3-wire spring clamp terminal block 2 x Ub</td>
<td>55977</td>
</tr>
</tbody>
</table>

#### 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
  - **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
- **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, $\Sigma$ 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
  - **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

<table>
<thead>
<tr>
<th>Description</th>
<th>Art.-No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Handbook bus nodes German/English</td>
<td>55901/55812</td>
</tr>
<tr>
<td>EDS data</td>
<td>55246</td>
</tr>
<tr>
<td>Terminal block fastener (10 pieces)</td>
<td>55896</td>
</tr>
<tr>
<td>Spare labels (1 piece = 8 labels)</td>
<td>55962</td>
</tr>
<tr>
<td>Local adapter</td>
<td>55910</td>
</tr>
<tr>
<td>System connection cable 0,5 m</td>
<td>55911</td>
</tr>
</tbody>
</table>

#### Notes

- Master units, field bus cables, connection units and connection drawings start on page 2.2.18.
- Please read first application manual.
MBM – IP20 modular I/O System

### Ordering data

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Art.-No.</th>
<th>Art.-No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data rate bis 1,5 Mbit/s</td>
<td>55016</td>
<td></td>
</tr>
<tr>
<td>Data rate bis 12 MBit/s</td>
<td>55018</td>
<td></td>
</tr>
<tr>
<td>Data rate bis 12 MBit/s; diagnostics interface</td>
<td>55017</td>
<td></td>
</tr>
<tr>
<td>Data rate bis 1,5 MBit/s; 8 dig. inputs</td>
<td></td>
<td>55883</td>
</tr>
<tr>
<td>Screw terminal block 3 x 2-pole</td>
<td>55940</td>
<td></td>
</tr>
<tr>
<td>Spring clamp terminal block 3 x 2 pole</td>
<td>55950</td>
<td></td>
</tr>
<tr>
<td>2-wire screw terminal block 1 x Ub</td>
<td>55834</td>
<td></td>
</tr>
<tr>
<td>3-wire screw terminal block 1 x Ub</td>
<td>55944</td>
<td></td>
</tr>
<tr>
<td>3-wire screw terminal block 2 x Ub</td>
<td>55976</td>
<td></td>
</tr>
<tr>
<td>2-wire spring clamp terminal block 1 x Ub</td>
<td>55854</td>
<td></td>
</tr>
<tr>
<td>3-wire spring clamp terminal block 1 x Ub</td>
<td>55954</td>
<td></td>
</tr>
<tr>
<td>3-wire spring clamp terminal block 2 x Ub</td>
<td>55977</td>
<td></td>
</tr>
</tbody>
</table>

### Technical data

#### Supply

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current usage min./ max.</td>
<td>approx. 100 mA/ 500 mA</td>
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</tbody>
</table>

#### Field bus

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connection</td>
<td>Sub-D 9-pole</td>
</tr>
<tr>
<td>Addressing</td>
<td>1…99 via rotary switch</td>
</tr>
<tr>
<td>Data rate</td>
<td>9,6 kbit/s...1,5(12) Mbit/s</td>
</tr>
<tr>
<td>Galvanic separation</td>
<td>opto-coupler</td>
</tr>
</tbody>
</table>

#### Expansion Interface

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capacity</td>
<td>up to 16 expander modules</td>
</tr>
<tr>
<td>Inputs</td>
<td>8</td>
</tr>
<tr>
<td>Galvanic separation</td>
<td>opto-coupler</td>
</tr>
<tr>
<td>Input characteristics</td>
<td>p-switching</td>
</tr>
<tr>
<td>Input signals</td>
<td>24 V DC, guide line to IEC 1131-2</td>
</tr>
<tr>
<td>Input delay time</td>
<td>approx. 1 ms</td>
</tr>
<tr>
<td>Sensor supply</td>
<td>24 V DC (18…30,2 V DC), to EN 61131-2; I ∑ max 0,7 A overload protection</td>
</tr>
<tr>
<td>Status indicator</td>
<td>per input 1 yellow LED with label</td>
</tr>
<tr>
<td>Connection</td>
<td>2- or 3-wire, dependent on connection terminal box</td>
</tr>
</tbody>
</table>

#### Diagnostics

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Status indicator</td>
<td>bus specific LEDs with label</td>
</tr>
<tr>
<td>Voltage</td>
<td>green LEDs with labels</td>
</tr>
<tr>
<td>RS 232 diagnostics interface</td>
<td>only at Art.-No. 55017</td>
</tr>
</tbody>
</table>

#### General data

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature range</td>
<td>0…55 °C</td>
</tr>
<tr>
<td>Mounting method</td>
<td>DINrail mounting to EN 50022</td>
</tr>
<tr>
<td>Dimensions H x W x D</td>
<td>116 x 96 x 60 mm</td>
</tr>
</tbody>
</table>

### Accessories

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Art.-No.</th>
<th>Art.-No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Handbook bus nodes German/ English</td>
<td>55903/ 55810</td>
<td>55903/ 55810</td>
</tr>
<tr>
<td>GSD/ type data</td>
<td>55246</td>
<td>55246</td>
</tr>
<tr>
<td>Terminal block fastener</td>
<td>55896</td>
<td>55896</td>
</tr>
<tr>
<td>Spare labels (1 piece = 8 labels)</td>
<td>55967</td>
<td>55962</td>
</tr>
<tr>
<td>Local adapter</td>
<td>55910</td>
<td></td>
</tr>
<tr>
<td>System connection cable 0,5 m</td>
<td>55911</td>
<td></td>
</tr>
</tbody>
</table>

### Notes

- Master-units, field bus cables, connection units and connection drawings start on page 2.2.18.
- Please read first application manual.
Expander modules MBM

**Digital 4-way Input/Output module**

**IP20 Protection**

---

## Ordering data

<table>
<thead>
<tr>
<th>Feature</th>
<th>Art.-No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 digital input and output</td>
<td>55882</td>
</tr>
<tr>
<td>3-wire screw terminal block</td>
<td>55832</td>
</tr>
<tr>
<td>3-wire spring clamp terminal block</td>
<td>55852</td>
</tr>
</tbody>
</table>

## Technical data

**System supply** via system connection from the bus node

**Load weight** 6

**Galvanic separation** opto-coupler

### Inputs

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inputs</td>
<td>4</td>
</tr>
<tr>
<td>Input signals</td>
<td>24 V DC, guide line to IEC 1131-2</td>
</tr>
<tr>
<td>Input delay time</td>
<td>approx. 1 ms</td>
</tr>
<tr>
<td>Sensor supply</td>
<td>24 V DC (18... 30,2 V DC) to EN 61131-2, I∑ max. 0,7 A overload protection</td>
</tr>
<tr>
<td>Status indicator</td>
<td>per input 1 yellow LED with label</td>
</tr>
<tr>
<td>Connection</td>
<td>3-wire via terminal block</td>
</tr>
</tbody>
</table>

### Outputs

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outputs</td>
<td>4</td>
</tr>
<tr>
<td>Supply</td>
<td>24 V DC (18... 30,2 V DC) to EN 61131-2, I∑ ≤ 4 A</td>
</tr>
<tr>
<td>Switching current per output</td>
<td>typ. 0,5 A, 100 % ED, short-circuit protected</td>
</tr>
<tr>
<td>Filament lamp load</td>
<td>2 W</td>
</tr>
<tr>
<td>Max. switching frequency</td>
<td>at ohmic: 100 Hz, at inductive load: 1... 4 Hz (independent of the current load per output)</td>
</tr>
<tr>
<td>Status indicator</td>
<td>output 1 yellow LED with label</td>
</tr>
<tr>
<td>Special function</td>
<td>output status in the case of a bus fault - parameters definable</td>
</tr>
<tr>
<td>Connection</td>
<td>3-wire via terminal block and additional common terminal block</td>
</tr>
</tbody>
</table>

### 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

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature range</td>
<td>0... 55 °C</td>
</tr>
<tr>
<td>Mounting method</td>
<td>DIN-rail mounting to EN 50022</td>
</tr>
<tr>
<td>Dimensions H x W x D</td>
<td>116 x 56 x 60 mm</td>
</tr>
</tbody>
</table>

---

## Accessories

<table>
<thead>
<tr>
<th>Feature</th>
<th>Art.-No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Handbook digital expansion German/English</td>
<td>55935/55814</td>
</tr>
<tr>
<td>Spare labels (1 piece = 8 labels)</td>
<td>55589</td>
</tr>
</tbody>
</table>

---

## Notes

Masterunits, field bus cables, connection units and connection drawings start on page 2.2.18.
**MBM – IP20 modular I/ O System**

### Expander modules MBM

**Digital 8-way Input modules**

**IP20 Protection**

<table>
<thead>
<tr>
<th>Ordering data</th>
<th>Art.-No.</th>
<th>Art.-No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 digital inputs</td>
<td>55920</td>
<td></td>
</tr>
<tr>
<td>8 digital inputs SD</td>
<td>55970</td>
<td></td>
</tr>
<tr>
<td>2-wire screw terminal block p-switching</td>
<td>55834</td>
<td>55834</td>
</tr>
<tr>
<td>3-wire screw terminal block p-switching</td>
<td>55944</td>
<td>55944</td>
</tr>
<tr>
<td>2-wire spring clamp terminal block p-switching</td>
<td>55854</td>
<td>55854</td>
</tr>
<tr>
<td>3-wire spring clamp terminal block p-switching</td>
<td>55954</td>
<td>55954</td>
</tr>
</tbody>
</table>

**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 ∑ 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

<table>
<thead>
<tr>
<th>Accessories</th>
<th>Art.-No.</th>
<th>Art.-No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Handbook digital expansion German/ English</td>
<td>55935/ 55814</td>
<td>55935/ 55814</td>
</tr>
<tr>
<td>MSM connection cable (2 m)</td>
<td>55988</td>
<td></td>
</tr>
<tr>
<td>MSM connection cable (3 m)</td>
<td>55986</td>
<td></td>
</tr>
<tr>
<td>Operation panel MSM DDB</td>
<td>55980</td>
<td></td>
</tr>
<tr>
<td>Terminal block fastener</td>
<td>55896</td>
<td></td>
</tr>
<tr>
<td>Spare labels (1 piece = 8 labels)</td>
<td>55966</td>
<td></td>
</tr>
</tbody>
</table>

**Notes**

- Control panels see page 2.2.13.
- Master-units, field bus cables, connection units and connection drawings start on page 2.2.18.
## MBM – IP20 modular I/O System

### Expander modules MBM

**Digital 16-way Input module**

**IP20 Protection**

---

### Ordering data

<table>
<thead>
<tr>
<th>Description</th>
<th>Art.-No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>16 digital Inputs</td>
<td>55921</td>
</tr>
<tr>
<td>1-wire screw terminal block</td>
<td>55943</td>
</tr>
<tr>
<td>1-wire spring clamp terminal block</td>
<td>55953</td>
</tr>
<tr>
<td>Common screw terminal block f. 3-wire-connection</td>
<td>55990</td>
</tr>
<tr>
<td>Spring clamp terminal block f. 3-wire-connection</td>
<td>55995</td>
</tr>
</tbody>
</table>

### 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, | \( \Sigma \) 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

<table>
<thead>
<tr>
<th>Description</th>
<th>Art.-No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Handbook digital expansion German/ English</td>
<td>55935/ 55814</td>
</tr>
<tr>
<td>Spare labels (1 piece = 8 labels)</td>
<td>55897</td>
</tr>
</tbody>
</table>

### Notes

Master-units, field bus cables, connection units and connection drawings start on page 2.2.18.
MBM – IP20 modular I/O System

**Expander modules MBM**

**Digital 8-way Output modules**

**IP20 Protection**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>8 digital outputs 0,5 A</td>
<td>55971</td>
<td>55922</td>
<td></td>
</tr>
<tr>
<td>8 digital outputs 2 A</td>
<td></td>
<td></td>
<td>55924</td>
</tr>
<tr>
<td>2-wire screw terminal block (1 x 8 bit)</td>
<td>55835</td>
<td>55835</td>
<td></td>
</tr>
<tr>
<td>3-wire screw terminal block (2 x 4 bit)</td>
<td>55946</td>
<td>55946</td>
<td>55946</td>
</tr>
<tr>
<td>3-wire screw terminal block (1 x 8 bit)</td>
<td>55945</td>
<td>55945</td>
<td></td>
</tr>
<tr>
<td>2-wire spring clamp terminal block (1 x 8 bit)</td>
<td>55855</td>
<td>55855</td>
<td></td>
</tr>
<tr>
<td>3-wire spring clamp terminal block (2 x 4 bit)</td>
<td>55956</td>
<td>55956</td>
<td>55956</td>
</tr>
<tr>
<td>3-wire spring clamp terminal block (1 x 8 bit)</td>
<td>55955</td>
<td>55955</td>
<td></td>
</tr>
</tbody>
</table>

**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, \( I_{\Sigma} \leq 8 \text{ A} \)
- Switching current per output: typ. 0,5 A, 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: 2- or 3-wire, dependent on connection 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 76 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 DO8/2 A can only be used as 2 x 4 outputs.

**Accessories**

- Handbook digital expansion German/ English: 55935/ 55814
- MSM connection cable (2 m): 55988
- MSM connection cable (3 m): 55986
- Operation panel MSM DD8: 55980
- Terminal block fastening: 55896
- Spare labels (1 piece = 8 labels): 55963

**Notes**

Control panels see page 2.2.13
Master-units, field bus cables, connection units and connection drawings start on page 2.2.18.
## MBM – IP20 modular I/O System

### Expander modules MBM

**Digital 16-way Output module**

**IP20 Protection**

---

### 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, \( I \sum \leq 8 \ A \)

**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

---

### Ordering data

<table>
<thead>
<tr>
<th>Description</th>
<th>Art.-No.</th>
</tr>
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<tbody>
<tr>
<td>16 digital outputs 0.5 A</td>
<td>55923</td>
</tr>
<tr>
<td>1-wire screw terminal block (2 x 8 bit)</td>
<td>55948</td>
</tr>
<tr>
<td>1-wire spring clamp terminal block (2 x 8 bit)</td>
<td>55958</td>
</tr>
<tr>
<td>Common screw terminal block f. 3-wire-connection</td>
<td>55991</td>
</tr>
<tr>
<td>Spring clamp terminal block f. 3-wire-connection</td>
<td>55996</td>
</tr>
</tbody>
</table>

### 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, \( I \sum \leq 8 \ A \)

**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

<table>
<thead>
<tr>
<th>Description</th>
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<tbody>
<tr>
<td>Handbook digital expansion German/ English</td>
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<td>Spare labels (1 piece = 8 labels)</td>
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### Notes

Masterunits, field bus cables, connection units and connection drawings start on page 2.2.18.
## MBM - IP20 modular I/O System

### Expander modules MBM

- **4-way relay**
- **Output module**

### IP20 Protection

<table>
<thead>
<tr>
<th>Ordering data</th>
<th>Art.-No.</th>
<th>Art.-No.</th>
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<tbody>
<tr>
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<td>55925</td>
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<tr>
<td>3-wire screw terminal block (1 x 4 bit)</td>
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<td>55592</td>
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<tr>
<td>1-wire spring clamp terminal block (4 x 1 bit)</td>
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<td>55951</td>
</tr>
<tr>
<td>3-wire spring clamp terminal block (1 x 4 bit)</td>
<td>55597</td>
<td>55597</td>
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</table>

### 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**: \( \leq 50 \) 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

<table>
<thead>
<tr>
<th>Accessories</th>
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<th>Art.-No.</th>
</tr>
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<td>MSM connection cable (3 m)</td>
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<td>Operation panel MSM D04 D54</td>
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<td>Operation panel MSM D54/ 1</td>
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<td>Operation panel MSM D54/ 2</td>
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<td>Operation panel MSM D54/ 4</td>
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<td>Switching-module Hand-O-Automatic</td>
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<td>Terminal block fastener</td>
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### Notes

- Control panels see page 2.2.13
- Master-units, field bus cables, connection units and connection drawings start on page 2.2.18.
MBM – IP20 modular I/ O System

Expander modules MBM

8-way relay
Output module
IP20 Protection

### Ordering data

<table>
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<tr>
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<tr>
<td>1-wire screw terminal block (right)</td>
<td>55831</td>
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<tr>
<td>1-wire spring clamp terminal block (left)</td>
<td>55959</td>
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<td>1-wire spring clamp (right)</td>
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### Technical data

<table>
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<tr>
<td>System supply</td>
<td>via system connection from the bus node</td>
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<tr>
<td>Load weight</td>
<td>16</td>
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<tr>
<td>Galvanic separation</td>
<td>opto-coupler/ relay</td>
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### Outputs

<table>
<thead>
<tr>
<th>Description</th>
<th>Details</th>
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</thead>
<tbody>
<tr>
<td>Supply</td>
<td>24 V DC (18... 30,2 V DC) to EN 61131-2</td>
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<tr>
<td>Current usage</td>
<td>≤ 120 mA</td>
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<tr>
<td>Contact material</td>
<td>AgSnO2</td>
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<td>Switching capability 24 V (AC1/ AC15/ DC13)</td>
<td>5 A/ 3 A/ 1 A</td>
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<tr>
<td>Switching capability 110 V (AC1/ AC15/ DC13)</td>
<td>5 A/ 3 A/ 200 mA</td>
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<tr>
<td>Switching capability 230 V (AC1/ AC15/ DC13)</td>
<td>5 A/ 3 A/ 100 mA</td>
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<tr>
<td>Min. load per output</td>
<td>10 mA</td>
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<tr>
<td>Status indicator</td>
<td>per output 1 yellow LED with label</td>
</tr>
<tr>
<td>Special function</td>
<td>output status in the case of a bus fault - parameters definable</td>
</tr>
<tr>
<td>Connection</td>
<td>1-wire via terminal block</td>
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</table>

### Diagnostics

<table>
<thead>
<tr>
<th>Description</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Status indicator</td>
<td>LED green with label</td>
</tr>
<tr>
<td>Relay supply</td>
<td>LED green with label and return signal to the bus node</td>
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### General data

<table>
<thead>
<tr>
<th>Description</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature range</td>
<td>0... 55 °C</td>
</tr>
<tr>
<td>Mounting method</td>
<td>DIN-rail mounting to EN 50022</td>
</tr>
<tr>
<td>Dimensions H x W x D</td>
<td>116 x 112 x 60 mm</td>
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### Accessories

<table>
<thead>
<tr>
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<th>Art.-No.</th>
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</thead>
<tbody>
<tr>
<td>Handbook digital expansion German/ English</td>
<td>55935/ 55814</td>
</tr>
<tr>
<td>Terminal block fastener</td>
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<td>Spare labels (1 piece = 8 labels)</td>
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</table>

### Notes

Master-units, field bus cables, connection units and connection drawings start on page 2.2.18.
### Expander modules MBM

**4-way, analogue panel interface**

#### Input modules

**IP20 Protection**

<table>
<thead>
<tr>
<th></th>
<th></th>
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<tbody>
<tr>
<td>4 analogue Inputs SD</td>
<td>55975</td>
<td>55981</td>
<td>55929</td>
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<tr>
<td>4/3/4-wire screw terminal block</td>
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<tr>
<td>2/3/4-wire spring clamp terminal block</td>
<td>55957</td>
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</table>

#### 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

#### 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**
- **Eingangssversorgung 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

<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
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<td>55936/55815</td>
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<td>MSM connection cable (2 m)</td>
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<td>MSM connection cable (3 m)</td>
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<tr>
<td>Operation panel MSM AS2U</td>
<td>55985</td>
<td>55964</td>
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<tr>
<td>Channel separation for 2 operator panels</td>
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<td>55964</td>
</tr>
<tr>
<td>Terminal block fastening</td>
<td>55896</td>
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<td>Spare labels (1 piece = 8 labels)</td>
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</table>

### Notes

Control panels see page 2.2.13.

Master-units, field bus cables, connection units and connection drawings start on page 2.2.18.
### MBM – IP20 modular I/O System

#### Expander modules MBM

4-way, analogue
Output modules

IP20 Protection

<table>
<thead>
<tr>
<th></th>
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<tbody>
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<tr>
<td>4 analogue outputs</td>
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<td>55931</td>
<td>55930</td>
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<td>3-wire screw terminal block</td>
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<td>55838</td>
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<tr>
<td>3-wire spring clamp terminal block</td>
<td>55952</td>
<td>55952</td>
<td>55858</td>
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</tbody>
</table>

#### 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 \( \leq 120 \text{ mA} \)
Response time typ. \( \leq 1 \text{ ms/module} \)
Actuator connection via terminal block

#### Voltage Outputs

Characteristics short-circuit protected, load resistance > 750 \( \Omega \)
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 - \( \leq 500 \Omega \)
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

<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>Handbook analogue expander German/English</td>
<td>55937/55816</td>
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<tr>
<td>MSM connection cable (2 m)</td>
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<tr>
<td>MSM connection cable (3 m)</td>
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<tr>
<td>Operation panel MSM AS2U</td>
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<tr>
<td>Channel block separation for 2 operator panels</td>
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<td>Terminal block fastening</td>
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<td>Spare labels (1 piece = 8 labels)</td>
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#### Notes

Control panels see page 2.2.13.
Master-units, field bus cables, connection units and connection drawings start on page 2.2.18.
MBM – IP20 modular I/O System

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

<table>
<thead>
<tr>
<th>MSM DD8</th>
<th>MSM DD4 DS4</th>
<th>MSM AS2U</th>
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</thead>
<tbody>
<tr>
<td>55980</td>
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</table>

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
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

Accessories

<table>
<thead>
<tr>
<th></th>
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<th></th>
</tr>
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<tbody>
<tr>
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<tr>
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<td>MSM connection cable [3 m]</td>
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<td>MSM ribbon cable power</td>
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<tr>
<td>MSM 24 V power input terminal</td>
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Notes

For use with
MBM DD8 SD  Art.-No. 55970
MBM DD8 SD  Art.-No. 55971
MBM DD4 SI  Art.-No. 55972
MBM DD4 SI  Art.-No. 55973
MBM AS4 SD  Art.-No. 55974
MBM AS4 DSD Art.-No. 55975
MBM AI4 SD  Art.-No. 55975
MBM AI4 DSD Art.-No. 55975

Set-up variants in example LED 1
Set-up variants in example LED 2

LED green, not inverted
LED red, not inverted
LED green, inverted
LED red, inverted
lamp test activated via button
J X.0 = Polarity
J X.1 = color
J X.2 = output
LED Status = output status
MBM DO4R
J 0.0
J 0.1
J 0.2
J 0.3
J 1.0
J 1.1
J 1.2
J 2.0
J 2.1
J 2.2
J 3.0
J 3.1
J 3.2
J X.0
J X.1
J X.2

MBM – IP20 modular I/O System

### 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

<table>
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<tr>
<td>MSM DS4/ 4</td>
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<td>55984</td>
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</table>

### Technical data

- **Supply**: 24 V DC (18...30 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

![Connection diagram](image)

### Accessories

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Handbook MSM German/ English</td>
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<td>MSM channel separation</td>
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<tr>
<td>MSM 24 V power input terminal</td>
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### Notes

For use with:

- MBM DO4R SI Art.-No. 55972 MBM DO4R SI Art.-No. 55972 MBM DO4R SI Art.-No. 55972
- MBM DO4R SI Art.-No. 55978 MBM DO4R SI Art.-No. 55978 MBM DO4R SI Art.-No. 55978
MBM – IP20 modular I/O System

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

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

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

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 process via the Visualization mode

Other advantages

- Simple learning process via online help, handbook and Windows-typical standards
- Operator created libraries to IEC 1131-3 or in ANSI-C
- Online functionality
  - Breakpoints
  - Single steps
  - Single cycles
  - Trace
  - Force
MBM – IP20 modular I/O System

Bus nodes MBM

Decentralized intelligent Control system

IP20 Protection

Ordering data

<table>
<thead>
<tr>
<th>Item Description</th>
<th>Art.-No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MBM-C386</td>
<td>55862</td>
</tr>
<tr>
<td>Screw terminal block 3 x 2-pole</td>
<td>55940</td>
</tr>
<tr>
<td>Spring clamp terminal block 3 x 2-pole</td>
<td>55950</td>
</tr>
<tr>
<td>2-wire screw terminal block</td>
<td>55834</td>
</tr>
<tr>
<td>3-wire screw terminal block</td>
<td>55944</td>
</tr>
<tr>
<td>2-wire spring clamp terminal block</td>
<td>55854</td>
</tr>
<tr>
<td>3-wire spring clamp terminal block</td>
<td>55954</td>
</tr>
<tr>
<td>RS232 Box screw terminal block 3 x 2-pole</td>
<td>55836</td>
</tr>
<tr>
<td>RS232 Box spring clamp terminal block 3 x 2-pole</td>
<td>55856</td>
</tr>
<tr>
<td>MPROG program software</td>
<td>55908</td>
</tr>
</tbody>
</table>

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
- Program 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

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, IΣ 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

- Handbook German: 55907
- Handbook MPROG German: 55909

Notes

Master-units, field bus cables, connection units and connection drawings start on page 2.2.18.  
Please read first application manual.
**MBM – IP20 modular I/O System**

- **Dimension drawing MBM bus nodes**
  - (Art.-No. 55902, 55904, 55915, 55016... 018)
  - (Art.-No. 55862)

  ![MBM bus nodes diagram](image)

- **Dimension drawing MBM expander modules**
  - (Art.-No. 55880, 55881, 55920... 926, 55930)
  - (Art.-No. 55929, 55931, 55970... 975, 55978)
  - (Art.-No. 55927)

  ![MBM expander modules diagram](image)

- **Dimension drawing MBM bus nodes, side view**
  - simplified representation
  - (with potential terminals 3-row)

  ![MBM bus nodes side view diagram](image)
Connection examples for MBM-bus nodes

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

Spring clamp terminal block
Screw terminal block
Art.-No. 55854
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
Screw terminal block
Art.-No. 55950
Art.-No. 55940

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

Connection examples for MBM digital 8-way input modules

Spring clamp terminal block
Spring clamp terminal block
Spring clamp terminal block
Screw terminal block
Screw terminal block
Screw terminal block
Screw terminal block
Art.-No. 55590
Art.-No. 55977
Art.-No. 55976
Art.-No. 55954
Art.-No. 55834
Art.-No. 55850
Art.-No. 55944

Spring clamp terminal block
Art.-No. 55595
Spring clamp terminal block
Art.-No. 55594
Spring clamp terminal block
Art.-No. 55590
Screw terminal block
Art.-No. 55830
Screw terminal block
Art.-No. 55834
Screw terminal block
Art.-No. 55854

Sensor power supply

Sensor 0...7

Sensor 0...7

Sensor 0...7
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. 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

<table>
<thead>
<tr>
<th>Art.-No.</th>
<th>for MBM P; MBM C; MBM I</th>
<th>3 x 2-pole</th>
<th>Input voltage</th>
</tr>
</thead>
<tbody>
<tr>
<td>55940</td>
<td>for MBM DI8; MBM DI8 SD; MBM-C-DI8; MBM-P-DI8</td>
<td>3 x 10-pole</td>
<td>3-wire</td>
</tr>
<tr>
<td>55944</td>
<td>for MBM DI16</td>
<td>3 x 10-pole</td>
<td>1-wire</td>
</tr>
<tr>
<td>55943</td>
<td>for MBM DO8/0.5 A; MBM DO8/0.5 A SD; MBM DO8/2 A</td>
<td>3 x 10-pole</td>
<td>3-wire</td>
</tr>
<tr>
<td>55946</td>
<td>for MBM DO8/0.5 A; MBM DO8/0.5 A SD</td>
<td>3 x 10-pole</td>
<td>3-wire</td>
</tr>
<tr>
<td>55945</td>
<td>for MBM DO16/0.5 A</td>
<td>3 x 10-pole</td>
<td>1-wire</td>
</tr>
<tr>
<td>55948</td>
<td>for MBM DO16R; MBM DO16R SI</td>
<td>1 x 10-pole</td>
<td>1-wire</td>
</tr>
<tr>
<td>55947</td>
<td>for MBM A4; MBM A4 SD; MBM A4 DSD</td>
<td>3 x 10-pole</td>
<td>2; 3; 4-wire</td>
</tr>
<tr>
<td>55942</td>
<td>for MBM A4U; MBM A4U SD; MBM A4U DSD</td>
<td>2 x 10-pole</td>
<td>3-wire</td>
</tr>
<tr>
<td>55943</td>
<td>for MBM-C DI8; MBM-P DI8 (1 x UB); MBM DI8 + SD</td>
<td>3 x 10-pole</td>
<td>2-wire</td>
</tr>
<tr>
<td>55834</td>
<td>for MBM-C DI8; MBM-P DI8 (2 x UB)</td>
<td>3 x 10-pole</td>
<td>3-wire</td>
</tr>
<tr>
<td>55976</td>
<td>for MBM DI4 DO4</td>
<td>3 x 10-pole</td>
<td>3-wire</td>
</tr>
<tr>
<td>55832</td>
<td>for MBM DI8 n/p (p switches)</td>
<td>3 x 10-pole</td>
<td>3-wire</td>
</tr>
<tr>
<td>55960</td>
<td>for MBM DI8 n/p (p switches)</td>
<td>3 x 10-pole</td>
<td>3-wire</td>
</tr>
<tr>
<td>55830</td>
<td>for MBM DO8/0.5 A; MBM DO8/0.5 A SD</td>
<td>2 x 10-pole</td>
<td>2-wire</td>
</tr>
<tr>
<td>55835</td>
<td>for MBM DO16/0.5 A; MBM DO16R SI</td>
<td>3 x 10-pole</td>
<td>3-wire</td>
</tr>
<tr>
<td>55949</td>
<td>for MBM DO8R (left)</td>
<td>1 x 10-pole</td>
<td>1-wire</td>
</tr>
<tr>
<td>55947</td>
<td>for MBM DO8R (right)</td>
<td>1 x 6-pole</td>
<td>1-wire</td>
</tr>
</tbody>
</table>

### Spring clamp terminal block

<table>
<thead>
<tr>
<th>Art.-No.</th>
<th>for MBM P; MBM C; MBM I</th>
<th>3 x 2-pole</th>
<th>Input voltage</th>
</tr>
</thead>
<tbody>
<tr>
<td>55950</td>
<td>for MBM DI8; MBM DI8 SD; MBM-C-DI8; MBM-P-DI8</td>
<td>3 x 10-pole</td>
<td>3-wire</td>
</tr>
<tr>
<td>55954</td>
<td>for MBM DI16</td>
<td>3 x 10-pole</td>
<td>1-wire</td>
</tr>
<tr>
<td>55953</td>
<td>for MBM DO8/0.5 A; MBM DO8/0.5 A SD; MBM DO8/2 A</td>
<td>3 x 10-pole</td>
<td>3-wire</td>
</tr>
<tr>
<td>55956</td>
<td>for MBM DO8/0.5 A; MBM DO8/0.5 A SD</td>
<td>3 x 10-pole</td>
<td>3-wire</td>
</tr>
<tr>
<td>55955</td>
<td>for MBM DO16/0.5 A</td>
<td>3 x 10-pole</td>
<td>1-wire</td>
</tr>
<tr>
<td>55958</td>
<td>for MBM DO16R; MBM DO16R SI</td>
<td>1 x 10-pole</td>
<td>1-wire</td>
</tr>
<tr>
<td>55952</td>
<td>for MBM A4; MBM A4 SD; MBM A4 DSD</td>
<td>3 x 10-pole</td>
<td>2; 3; 4-wire</td>
</tr>
<tr>
<td>55951</td>
<td>for MBM A4U; MBM A4U SD; MBM A4U DSD</td>
<td>2 x 10-pole</td>
<td>3-wire</td>
</tr>
<tr>
<td>55954</td>
<td>for MBM-C DI8; MBM-P DI8 (1 x UB)</td>
<td>3 x 10-pole</td>
<td>2-wire</td>
</tr>
<tr>
<td>55977</td>
<td>for MBM-C DI8; MBM-P DI8 (2 x UB)</td>
<td>3 x 10-pole</td>
<td>3-wire</td>
</tr>
<tr>
<td>55952</td>
<td>for MBM DI4 DO4</td>
<td>3 x 10-pole</td>
<td>3-wire</td>
</tr>
<tr>
<td>55950</td>
<td>for MBM DI8 n/p (p switches)</td>
<td>3 x 10-pole</td>
<td>3-wire</td>
</tr>
<tr>
<td>55957</td>
<td>for MBM DI8 n/p (p switches)</td>
<td>3 x 10-pole</td>
<td>3-wire</td>
</tr>
<tr>
<td>55955</td>
<td>for MBM DO8/0.5 A; MBM DO8/0.5 A SD</td>
<td>2 x 10-pole</td>
<td>2-wire</td>
</tr>
<tr>
<td>55958</td>
<td>for MBM DO16/0.5 A; MBM DO16R SI</td>
<td>3 x 10-pole</td>
<td>3-wire</td>
</tr>
<tr>
<td>55959</td>
<td>for MBM DO8R (left)</td>
<td>1 x 10-pole</td>
<td>1-wire</td>
</tr>
<tr>
<td>55951</td>
<td>for MBM DO8R (right)</td>
<td>1 x 6-pole</td>
<td>1-wire</td>
</tr>
</tbody>
</table>

### Potential terminal block

<table>
<thead>
<tr>
<th>Art.-No.</th>
<th>for MBM P; MBM C; MBM I</th>
<th>3 x 2-pole</th>
<th>Input voltage</th>
</tr>
</thead>
<tbody>
<tr>
<td>55940</td>
<td>for MBM DI8; MBM DI8 SD; MBM-C-DI8; MBM-P-DI8</td>
<td>3 x 10-pole</td>
<td>3-wire</td>
</tr>
<tr>
<td>55944</td>
<td>for MBM DI16</td>
<td>3 x 10-pole</td>
<td>1-wire</td>
</tr>
<tr>
<td>55943</td>
<td>for MBM DO8/0.5 A; MBM DO8/0.5 A SD; MBM DO8/2 A</td>
<td>3 x 10-pole</td>
<td>3-wire</td>
</tr>
<tr>
<td>55946</td>
<td>for MBM DO8/0.5 A; MBM DO8/0.5 A SD</td>
<td>3 x 10-pole</td>
<td>3-wire</td>
</tr>
<tr>
<td>55945</td>
<td>for MBM DO16/0.5 A</td>
<td>3 x 10-pole</td>
<td>1-wire</td>
</tr>
<tr>
<td>55948</td>
<td>for MBM DO16R; MBM DO16R SI</td>
<td>1 x 10-pole</td>
<td>1-wire</td>
</tr>
<tr>
<td>55947</td>
<td>for MBM A4; MBM A4 SD; MBM A4 DSD</td>
<td>3 x 10-pole</td>
<td>2; 3; 4-wire</td>
</tr>
<tr>
<td>55942</td>
<td>for MBM A4U; MBM A4U SD; MBM A4U DSD</td>
<td>2 x 10-pole</td>
<td>3-wire</td>
</tr>
<tr>
<td>55943</td>
<td>for MBM-C DI8; MBM-P DI8 (1 x UB)</td>
<td>3 x 10-pole</td>
<td>2-wire</td>
</tr>
<tr>
<td>55947</td>
<td>for MBM-C DI8; MBM-P DI8 (2 x UB)</td>
<td>3 x 10-pole</td>
<td>3-wire</td>
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<tr>
<td>55943</td>
<td>for MBM DI4 DO4</td>
<td>3 x 10-pole</td>
<td>3-wire</td>
</tr>
<tr>
<td>55942</td>
<td>for MBM DI8 n/p (p switches)</td>
<td>3 x 10-pole</td>
<td>3-wire</td>
</tr>
<tr>
<td>55941</td>
<td>for MBM DI8 n/p (p switches)</td>
<td>3 x 10-pole</td>
<td>3-wire</td>
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<td>55945</td>
<td>for MBM DO8/0.5 A; MBM DO8/0.5 A SD</td>
<td>2 x 10-pole</td>
<td>2-wire</td>
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<tr>
<td>55948</td>
<td>for MBM DO16/0.5 A; MBM DO16R SI</td>
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<td>55949</td>
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<td>1 x 10-pole</td>
<td>1-wire</td>
</tr>
<tr>
<td>55947</td>
<td>for MBM DO8R (right)</td>
<td>1 x 6-pole</td>
<td>1-wire</td>
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</tbody>
</table>

### System connection

<table>
<thead>
<tr>
<th>Art.-No.</th>
<th>MSM connection cable 2 m</th>
</tr>
</thead>
<tbody>
<tr>
<td>55988</td>
<td>MSM connection cable 3 m</td>
</tr>
<tr>
<td>55986</td>
<td>MSM ribbon</td>
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<tr>
<td>55911</td>
<td>MBM system connection cable 0.5 m to local adapter</td>
</tr>
</tbody>
</table>

### Handbooks

<table>
<thead>
<tr>
<th>Art.-No.</th>
<th>Handbook for MBM C (German/English)</th>
<th>55901/55812</th>
</tr>
</thead>
<tbody>
<tr>
<td>55903/55810</td>
<td>Handbook for MBM P (German/English)</td>
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<tr>
<td>55905/55811</td>
<td>Handbook for MBM I (German/English)</td>
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<td>55907</td>
<td>Handbook for MBM C386 (German)</td>
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<td>55909</td>
<td>Handbook for MPROG (German)</td>
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<tr>
<td>55935/55814</td>
<td>Handbook for MBM digital E/A (German/English)</td>
<td></td>
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<tr>
<td>55936/55815</td>
<td>Handbook for MBM analogue E/A without simulation (German/English)</td>
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<tr>
<td>55937/55816</td>
<td>Handbook for MBM analogue E/A with simulation (German/English)</td>
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<tr>
<td>55938/55817</td>
<td>Handbook for MSM (German/English)</td>
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<tr>
<td>55246</td>
<td>Type, GSD- and EDS-data on 3,5” disk</td>
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### Others

<table>
<thead>
<tr>
<th>Art.-No.</th>
<th>MBM-TL terminal-lock</th>
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<tr>
<td>55896</td>
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</table>
## MBM – IP20 modular I/O System

<table>
<thead>
<tr>
<th>Connector and Cable</th>
<th>Art.-No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>PROFIBUS-connector without PG-connection</td>
<td>55762</td>
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<tr>
<td>PROFIBUS-connector with PG-connection</td>
<td>55766</td>
</tr>
<tr>
<td>CAN-connector</td>
<td>55760</td>
</tr>
<tr>
<td>INTERBUS-connector set</td>
<td>55799</td>
</tr>
<tr>
<td>Profibus data cable</td>
<td>cut goods</td>
</tr>
<tr>
<td>CAN data cable</td>
<td>cut goods</td>
</tr>
<tr>
<td>INTERBUS long-distance cable</td>
<td>cut goods</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>System Components</th>
<th>Art.-No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Master, Repeater, Gateways</td>
<td>on request</td>
</tr>
</tbody>
</table>

2.2.24
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.
## MBM – IP20 modular I/O System

### System MERIO
**Metal housing black**

**IP54 Protection**

### Ordering data

<table>
<thead>
<tr>
<th>Metal housing</th>
<th>Art.-No.</th>
<th>Art.-No.</th>
<th>Art.-No.</th>
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<td>55871</td>
<td>55872</td>
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### Dimensions

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<tr>
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<td>55870</td>
<td>55871</td>
<td>55872</td>
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<td>230 x 90 x 450 mm</td>
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<tr>
<td>230 x 90 x 560 mm</td>
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<tr>
<th></th>
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<tbody>
<tr>
<td>200 x 300 mm</td>
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<td>200 x 410 mm</td>
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<td>200 x 520 mm</td>
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### General data

<table>
<thead>
<tr>
<th>Cable entry plate</th>
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<th>Art.-No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>9-way</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10-way</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15-way</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>via internal fitted DIN-rail to EN 50022</td>
<td>55870</td>
<td>55871</td>
<td>55872</td>
</tr>
<tr>
<td>screw mounting</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Delivery content

- Housing with transparent top, installed DIN-rail

### Accessories

<table>
<thead>
<tr>
<th>Blind plugs</th>
<th>Art.-No.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>90250</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cable sleeves</th>
<th>Art.-No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>for cable diameter 8... 9 mm</td>
<td>90252</td>
</tr>
<tr>
<td>for cable diameter 9... 10 mm (suggested for distributor cable)</td>
<td>90253</td>
</tr>
<tr>
<td>for cable diameter 11... 12 mm</td>
<td>90254</td>
</tr>
</tbody>
</table>

### Dimension drawing

![Dimension drawing image]

### Notes

**Note:** Other sizes on request.
# MBM – IP20 modular I/O System

## System MERIO

### Pluggable distribution box

## Terminal block and Plug-in Terminal

### M8 for Sensors and Actuators

### Contact layout

<table>
<thead>
<tr>
<th>Connector: M8</th>
<th>3-pole</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contact 1: (+)</td>
<td></td>
</tr>
<tr>
<td>Contact 3: (-)</td>
<td></td>
</tr>
<tr>
<td>Contact 4: (N/O)</td>
<td>3-pole</td>
</tr>
</tbody>
</table>

## Ordering data

<table>
<thead>
<tr>
<th>Art.-No.</th>
<th>8-way</th>
<th>Art.-No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>for DI8</td>
<td>55893</td>
<td>27001</td>
</tr>
<tr>
<td>for DO8/ 0,5 A</td>
<td>55893</td>
<td>27002</td>
</tr>
<tr>
<td>for DI4 DO4/ 0,5 A</td>
<td>55893</td>
<td>27003</td>
</tr>
<tr>
<td>plug-in terminal 11-pole</td>
<td>55892</td>
<td>27004</td>
</tr>
<tr>
<td>for DI16</td>
<td>55894</td>
<td></td>
</tr>
<tr>
<td>for DO16/ 0,5 A</td>
<td>55894</td>
<td></td>
</tr>
<tr>
<td>plug-in terminal 22-pole (respect. 2 x 11-pole)</td>
<td>55892</td>
<td></td>
</tr>
</tbody>
</table>

## Technical data

<table>
<thead>
<tr>
<th>Connection cable</th>
<th>PUR 2 x 0,75 mm² + 8 x 0,34 mm²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cable length</td>
<td>3,0 m (other version on request)</td>
</tr>
<tr>
<td>Cable diameter</td>
<td>9,1 mm (+ 1,1 -0,7 mm)</td>
</tr>
<tr>
<td>Cable end</td>
<td>plug-in terminal 11-pole</td>
</tr>
<tr>
<td>I/O connection</td>
<td>M8 round plug connector</td>
</tr>
<tr>
<td>Dimensions H x W x D</td>
<td>77 x 48 x 25 mm</td>
</tr>
</tbody>
</table>

## Dimension drawing

### Drill plan

## Accessories

<table>
<thead>
<tr>
<th>Art.-No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>90250</td>
</tr>
</tbody>
</table>

### Notes

The connection cables for Multipole-valve get manufactured by Murrelektronik when configuration is given.
## MBM – IP20 modular I/ O System

### System MERIO

<table>
<thead>
<tr>
<th>Valve Cables</th>
<th>M12 Connection Cap Cable</th>
<th>M12 for Sensors and Actuators</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Contact layout

<table>
<thead>
<tr>
<th>Contact layout</th>
<th>4-pole/ 5-pole</th>
</tr>
</thead>
<tbody>
<tr>
<td>1: (+)</td>
<td>(+)</td>
</tr>
<tr>
<td>2: (N/C)</td>
<td>(-)</td>
</tr>
<tr>
<td>3: (–)</td>
<td>(–)</td>
</tr>
<tr>
<td>4: (N/0)</td>
<td>(N/0)</td>
</tr>
<tr>
<td>5: (PE)</td>
<td>(PE)</td>
</tr>
</tbody>
</table>

### Ordering data

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>0.8 m</td>
<td>826820</td>
<td>3 m</td>
<td>826821</td>
</tr>
<tr>
<td>1.6 m</td>
<td>826821</td>
<td>5 m</td>
<td>4327021</td>
</tr>
<tr>
<td>10 m</td>
<td></td>
<td>10 m</td>
<td>4327022</td>
</tr>
<tr>
<td>15 m</td>
<td></td>
<td></td>
<td>4327023</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>for DI4/0.5 A</th>
<th>Art.-No.</th>
<th>Art.-No.</th>
<th>Art.-No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.8 m</td>
<td>826822</td>
<td>3 m</td>
<td>826823</td>
</tr>
<tr>
<td>1.6 m</td>
<td>826823</td>
<td>5 m</td>
<td>4327081</td>
</tr>
<tr>
<td>5 m</td>
<td>826795</td>
<td>10 m</td>
<td>4327082</td>
</tr>
<tr>
<td>10 m</td>
<td>826958</td>
<td>15 m</td>
<td>4327083</td>
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</tbody>
</table>

### Technical data

<table>
<thead>
<tr>
<th>Connection cable</th>
<th>PVC x 0.25 mm²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cable end</td>
<td>plug-in terminal 11-pole</td>
</tr>
<tr>
<td>I/O connection</td>
<td>plug-in terminal, Sub-D 25-pole</td>
</tr>
<tr>
<td>Dimensions H x W x D</td>
<td>157 x 54 x 28 mm</td>
</tr>
</tbody>
</table>

### Accessories

<table>
<thead>
<tr>
<th>Accessories</th>
<th>Art.-No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blind plugs</td>
<td>90250</td>
</tr>
</tbody>
</table>

### Notes

"Other versions on request."