Magnetic Cylinder Sensors with a Compact Design

BMF 204 Global

Installed and adjusted quickly and easily
The retaining element is integrated into the sensor.

Can also be used in space-critical applications
Flush-fitting, the sensor “disappears” in the slot.

Optimum solution for every gripper and short-stroke cylinder
Miniature design, extremely short

The BMF 204 and BMF 214 have an impressive, extremely compact design.

Series

Properties

PNP, NO
Ordering code
Part number

Supply voltage \( U_b \)
Voltage drop \( U_d \)
Rated insulation voltage \( U_i \)
Rated operating current \( I_e \)
No-load supply current \( I_0 \) max.
Polarity reversal protected/transposition protected/short-circuit protected
Rated switching field strength \( I_{Hn} \)
Assured switching field strength \( I_{Ha} \)
Temperature drift of switch-on point of \( I_{Hn} \)
On/off delay
Ambient temperature \( T_a \)
Degree of protection as per IEC 60529
Approval
Housing material
Cable

Suggested mating cable
Installation
Slot

Wiring diagrams

NO
PNP cable

PNP connector

C-slot (size 10 slot)
e.g. Festo

Slot dimension

V-Twin PNP connector

Additional cable lengths on request

Basic information and definitions can be found on page 952.
Magnetic Cylinder Sensors
with a Compact Design

BMF 204 Global

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMF002</td>
<td>Small housing for the Festo C-slot with M8 connector</td>
</tr>
<tr>
<td>BMF005</td>
<td>Small housing V-Twin for the Festo C-slot with M12 connector</td>
</tr>
<tr>
<td>BMF006</td>
<td>Small housing for the Festo C-slot with M8 connector</td>
</tr>
<tr>
<td>BMF007</td>
<td>Small housing V-Twin for the Festo C-slot with M12 connector</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Model</th>
<th>Suitable for</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMF002</td>
<td>BMF 204K-PS-C-2A-SA2-S4-00,3</td>
</tr>
<tr>
<td>BMF005</td>
<td>BMF 204K-PS-C-2A-SA65-S4-00,3</td>
</tr>
<tr>
<td>BMF006</td>
<td>BMF 204K-PS-C-2A-SA2-S75-00,3</td>
</tr>
<tr>
<td>BMF007</td>
<td>BMF 204K-PS-C-2A-SA95-S75-00,3</td>
</tr>
</tbody>
</table>

- **Sensing surface**: ≤ 0.3%/°C
- **Temperature range**: –25...+85 °C
- **Electrical properties**: 10...30 V DC
- **Contact resistance**: ≤ 2.5 V
- **Contact conductance**: ≥ 2 kA/m (25 Gauss)
- **Magnetic properties**: ≥ 2 kA/m (15 Gauss)
- **Environmental properties**: IP 67

Recommended accessories (please order separately)

Special accessories for magnetic cylinder sensors, such as installation tools, cable clips, or tube cuffs, can be found in this catalog on page 910.
Magnetic Cylinder Sensors with a Compact Design
BMF 214 Global

Installed and adjusted quickly and easily
The retaining element is integrated into the sensor.

Can also be used in space-critical applications
Flush-fitting, the sensor “disappears” in the slot.

Optimum solution for every gripper and short-stroke cylinder
Miniature design, extremely short.

V-Twin – two sensors, one connector
- Less installation hardware
- Less wiring
- Less installation time
- Less cost

Wiring diagrams
NO contact
PNP cable

PNP connector

Slot dimension
C-slot (rounded slot)
e.g. SMC

V-Twin PNP connector

Basic information and definitions can be found on page 952.

Additional cable lengths on request
### Magnetic Cylinder Sensors

**BMF 214 Global**

<table>
<thead>
<tr>
<th>BMF 214</th>
<th>BMF 214</th>
<th>BMF 214</th>
<th>BMF 214</th>
<th>BMF 214</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small housing</td>
<td>Small housing</td>
<td>Small housing</td>
<td>Small housing</td>
<td>Small housing</td>
</tr>
<tr>
<td>for the SMC C-slot</td>
<td>V-Twin for the SMC C-slot</td>
<td>with M8 connector</td>
<td>V-Twin for the SMC C-slot</td>
<td>with M12 connector</td>
</tr>
<tr>
<td>BMF00A2</td>
<td>BMF00A5</td>
<td>BMF00FC</td>
<td>BMF00A4</td>
<td>BMF00A1</td>
</tr>
<tr>
<td>BMF 214K-PS-C-2A-SA2-S4-03</td>
<td>BMF 214K-PS-C-2A-SA6-S7-03</td>
<td>BMF 214K-PS-C-2A-SA4-S4-03</td>
<td>BMF 214K-PS-C-2A-SA6-S4-03</td>
<td>BMF 214K-PS-C-2A-PU-02</td>
</tr>
</tbody>
</table>

- **Supply Voltage**: 10...30 V DC
- **Current**: ≤ 2.5 V
- **Outer Diameter**: ≤ 8 mA
- **Magnetic Field**: ≤ 1.2 kA/m (15 Gauss)
- **Temperature Range**: –25...+85 °C
- **Protection Rating**: IP 67
- **Certifications**: CE, cULus

### Recommended Accessories

- **Slide-in C-slot (rounded slot)**
- **Slide-in C-slot (size 10 slot)**
- **Slide-in 0.3 m PUR cable with M8 connector, 3-pin**
- **BCC M313-0000-10-001-VX43T2-050-C013**
- **BCC M314-0000-10-003-VX44T2-050-C013**
- **BCC M415-0000-1A-003-VX44T2-050-C013**

Special accessories for magnetic cylinder sensors, such as installation tools, cable clips, or tube cuffs, can be found in this catalog on page 910.
Magnetic Cylinder Sensors with a Compact Design
BMF 243 Global

New mounting concept
Solid hold in the slot, sensor cannot be wrenched from the slot.

Can be installed in the slot from above
Can be installed even on cylinders with an end plate.

Compact design, i.e. can be mounted flush
Can also be used in space-critical applications

Short housing (24 mm)
Can also be used in space-critical applications

C-slot (rounded slot and size 10 slot)
Drop-in

Series

Properties

<table>
<thead>
<tr>
<th>Part number</th>
<th>Ordering code</th>
</tr>
</thead>
<tbody>
<tr>
<td>PNP, NO</td>
<td></td>
</tr>
<tr>
<td>PNP, NC</td>
<td></td>
</tr>
<tr>
<td>NPN, NO</td>
<td></td>
</tr>
<tr>
<td>NPN, NC</td>
<td></td>
</tr>
</tbody>
</table>

Supply voltage \( U_b \)
Voltage drop \( U_d \)
Rated insulation voltage \( U_i \)
Rated operating current \( I_e \)
No-load supply current \( I_0 \) max.
Polarity reversal protected/transposition protected/short-circuit protected
Rated switching field strength \( I_{Hn} \)
Assured switching field strength \( I_{Ha} \)
On/off delay
Ambient temperature \( T_a \)
Degree of protection as per IEC 60529
Approval
Housing material
Cable
Suggested mating cable
Installation
Slot

Basic information and definitions can be found on page 952.

Additional cable lengths on request

Wiring diagrams

NO
PNP cable

PNP connector

NPN cable

NPN connector

NC contact
PNP cable

PNP connector

NPN cable

NPN connector

For more information, visit us online!
**Magnetic Cylinder Sensors**

**BMF 243 Global**

<table>
<thead>
<tr>
<th>BMF 243</th>
<th>BMF 243</th>
<th>BMF 243</th>
<th>BMF 243</th>
</tr>
</thead>
<tbody>
<tr>
<td>The new standard for every C-slot (rounded slot) with M8 connector</td>
<td>The new standard for every C-slot (rounded slot) with M8 connector</td>
<td>The new standard for every C-slot (rounded slot) with M12 connector</td>
<td>The new standard for every C-slot (rounded slot) with direct PUR cable</td>
</tr>
<tr>
<td>BMF00EL</td>
<td>BMF00ET</td>
<td>BMF00ER</td>
<td>BMF00EF</td>
</tr>
<tr>
<td>BMF 243K-PS-C-2A-SA2-S49-00,3</td>
<td>BMF 243K-PS-C-2A-SA85-S75-00,3</td>
<td>BMF 243K-PS-C-2A-SA2-S4-00,3</td>
<td>BMF 243K-PS-C-2A-PU-02</td>
</tr>
<tr>
<td>BMF00EM</td>
<td>BMF00EN</td>
<td>BMF00EP</td>
<td>BMF00EK</td>
</tr>
<tr>
<td>BMF 243K-PO-C-2A-SA2-S49-00,3</td>
<td>BMF 243K-NS-C-2A-SA2-S49-00,3</td>
<td>BMF 243K-NO-C-2A-SA2-S49-00,3</td>
<td>BMF 243K-NO-C-2A-PU-02</td>
</tr>
<tr>
<td>10...30 V DC</td>
<td>10...30 V DC</td>
<td>10...30 V DC</td>
<td>10...30 V DC</td>
</tr>
<tr>
<td>≤ 2.4 V</td>
<td>≤ 2.4 V</td>
<td>≤ 2.4 V</td>
<td>≤ 2.4 V</td>
</tr>
<tr>
<td>75 V DC</td>
<td>75 V DC</td>
<td>75 V DC</td>
<td>75 V DC</td>
</tr>
<tr>
<td>100 mA</td>
<td>100 mA</td>
<td>100 mA</td>
<td>100 mA</td>
</tr>
<tr>
<td>7.5 mA</td>
<td>7.5 mA</td>
<td>7.5 mA</td>
<td>7.5 mA</td>
</tr>
<tr>
<td>Yes/Yes/Yes</td>
<td>Yes/Yes/Yes</td>
<td>Yes/Yes/Yes</td>
<td>Yes/Yes/Yes</td>
</tr>
<tr>
<td>2 kA/m (25 Gauss)</td>
<td>2 kA/m (25 Gauss)</td>
<td>2 kA/m (25 Gauss)</td>
<td>2 kA/m (25 Gauss)</td>
</tr>
<tr>
<td>≥ 2.4 kA/m (30 Gauss)</td>
<td>≥ 2.4 kA/m (30 Gauss)</td>
<td>≥ 2.4 kA/m (30 Gauss)</td>
<td>≥ 2.4 kA/m (30 Gauss)</td>
</tr>
<tr>
<td>≤ 0.07 ms/≤ 0.07 ms</td>
<td>≤ 0.07 ms/≤ 0.07 ms</td>
<td>≤ 0.07 ms/≤ 0.07 ms</td>
<td>≤ 0.07 ms/≤ 0.07 ms</td>
</tr>
<tr>
<td>−25...+85 °C</td>
<td>−25...+85 °C</td>
<td>−25...+85 °C</td>
<td>−25...+85 °C</td>
</tr>
<tr>
<td>IP 67</td>
<td>IP 67</td>
<td>IP 67</td>
<td>IP 67</td>
</tr>
<tr>
<td>CE, cULus</td>
<td>CE, cULus</td>
<td>CE, cULus</td>
<td>CE, cULus</td>
</tr>
<tr>
<td>PA 12 and A2 steel</td>
<td>PA 12 and A2 steel</td>
<td>PA 12 and A2 steel</td>
<td>PA 12 and A2 steel</td>
</tr>
<tr>
<td>0.3 m PUR cable with M8 connector, 3-pin</td>
<td>0.3 m PUR cable with M8 connector, 4-pin</td>
<td>0.3 m PUR cable with M12 connector, 4-pin</td>
<td>2 m PUR cable</td>
</tr>
<tr>
<td>BCC M313-0000-10-001-VX43T2-050-C013</td>
<td>BCC M314-0000-10-003-VX43T2-050-C013</td>
<td>BCC M15-0000-1A-003-VX44T2-050-C013</td>
<td>28 AWG</td>
</tr>
<tr>
<td>Drop-in</td>
<td>Drop-in</td>
<td>Drop-in</td>
<td>Drop-in</td>
</tr>
</tbody>
</table>

**Special accessories**

Recommended accessories (please order separately)

Special accessories for magnetic cylinder sensors, such as installation tools, cable clips, or tube cuffs, can be found in this catalog on page 910.
Magnetic Cylinder Sensors with a Compact Design
BMF 235 Global

Very bright LED
Reliable detection of switching function from far away (25 m in bright factory building).

New mounting concept
Solid hold in the slot, sensor cannot be wrenched from the slot.

Knurled screw
Sensor screws in firmly, extremely secure hold in any slot (e.g. Parker, Festo, SMC, Bosch).

Can be installed from above. Easy installation with Allen or slotted screwdriver.

Basic information and definitions can be found on page 952.

Additional cable lengths on request
See page 884 for mounting brackets for tie-rod and round body cylinders.

Wiring diagrams

NO
PNP cable
PNP connector
NPN cable
NPN connector
V-Twin PNP connector

NC contact
PNP cable
PNP connector
NPN cable
NPN connector

Series
Properties

<table>
<thead>
<tr>
<th>PNP, NO</th>
<th>Ordering code</th>
<th>Part number</th>
</tr>
</thead>
<tbody>
<tr>
<td>PNP, NC</td>
<td>Ordering code</td>
<td>Part number</td>
</tr>
<tr>
<td>NPN, NO</td>
<td>Ordering code</td>
<td>Part number</td>
</tr>
<tr>
<td>NPN, NC</td>
<td>Ordering code</td>
<td>Part number</td>
</tr>
</tbody>
</table>

Supply voltage $U_b$
Voltage drop $U_d$
Rated insulation voltage $U_i$
Rated operating current $I_e$
No-load supply current $I_0$ max.
Polarity reversal protected/transpose protected/short-circuit protected
Rated switching field strength $I_{H_1}$
Assured switching field strength $I_{H_2}$
Temperature drift of switch-on point of $I_{H_1}$
On/off delay
Ambient temperature $T_a$
Degree of protection as per IEC 60529
Approval
Housing material
Cable
Suggested mating cable
Installation
Slot
Magnetic Cylinder Sensors with a Compact Design

BMF 235 Global

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>T-slot</th>
<th>T-slot</th>
<th>T-slot</th>
<th>T-slot</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMF 235</td>
<td>The new standard for every T-slot with M8 connector</td>
<td>5.5</td>
<td>23.5</td>
<td>27</td>
<td>5.5</td>
</tr>
<tr>
<td>BMF00C4</td>
<td>BMF235K-PS-C-2A-SA2-S49-00,3</td>
<td>BMF235K-PS-C-2A-SA2-S49-00,3</td>
<td>BMF235K-PS-C-2A-SA2-S49-00,3</td>
<td>BMF235K-PS-C-2A-SA2-S49-00,3</td>
<td>BMF235K-PS-C-2A-SA2-S49-00,3</td>
</tr>
<tr>
<td>BMF00C6</td>
<td>BMF235K-PO-C-2A-SA2-S49-00,3</td>
<td>BMF235K-PO-C-2A-SA2-S49-00,3</td>
<td>BMF235K-PO-C-2A-SA2-S49-00,3</td>
<td>BMF235K-PO-C-2A-SA2-S49-00,3</td>
<td>BMF235K-PO-C-2A-SA2-S49-00,3</td>
</tr>
<tr>
<td>BMF00C2</td>
<td>BMF235K-NS-C-2A-SA2-S49-00,3</td>
<td>BMF235K-NS-C-2A-SA2-S49-00,3</td>
<td>BMF235K-NS-C-2A-SA2-S49-00,3</td>
<td>BMF235K-NS-C-2A-SA2-S49-00,3</td>
<td>BMF235K-NS-C-2A-SA2-S49-00,3</td>
</tr>
<tr>
<td>BMF00C3</td>
<td>BMF235K-NO-C-2A-SA2-S49-00,3</td>
<td>BMF235K-NO-C-2A-SA2-S49-00,3</td>
<td>BMF235K-NO-C-2A-SA2-S49-00,3</td>
<td>BMF235K-NO-C-2A-SA2-S49-00,3</td>
<td>BMF235K-NO-C-2A-SA2-S49-00,3</td>
</tr>
</tbody>
</table>

Recommended accessories (please order separately)

Special accessories for magnetic cylinder sensors, such as installation tools, cable clips, or tube cuffs, can be found in this catalog on page 910.