Please enclose this order form filled in the order.

### Connecting flange

<table>
<thead>
<tr>
<th>Flange</th>
<th>Diameter</th>
<th>Pressure</th>
<th>p.c.d.</th>
<th>Holes</th>
</tr>
</thead>
<tbody>
<tr>
<td>MBR25-6</td>
<td>DN25/0.98&quot;</td>
<td>PN6</td>
<td>0.75</td>
<td>4</td>
</tr>
<tr>
<td>MBR25-16(*)</td>
<td>DN25/0.98&quot;</td>
<td>PN16</td>
<td>0.85</td>
<td>4</td>
</tr>
<tr>
<td>MBR25-G</td>
<td>DN25/0.98&quot;</td>
<td>G1 1/2&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MBR50-6/4(*)</td>
<td>DN50/1.97&quot;</td>
<td>PN6</td>
<td>1.10</td>
<td>4</td>
</tr>
<tr>
<td>MBR50-6/6(*)</td>
<td>DN50/1.97&quot;</td>
<td>PN16</td>
<td>1.15</td>
<td>6</td>
</tr>
<tr>
<td>MBR50-16/4(*)</td>
<td>DN50/1.97&quot;</td>
<td>PN16</td>
<td>1.25</td>
<td>4</td>
</tr>
<tr>
<td>MBR80-6/4(*)</td>
<td>DN80/3.15&quot;</td>
<td>PN6</td>
<td>1.50</td>
<td>4</td>
</tr>
<tr>
<td>MBR80-6/6(*)</td>
<td>DN80/3.15&quot;</td>
<td>PN16</td>
<td>1.50</td>
<td>6</td>
</tr>
<tr>
<td>MBR80-16/4(*)</td>
<td>DN80/3.15&quot;</td>
<td>PN16</td>
<td>1.60</td>
<td>4</td>
</tr>
<tr>
<td>MBR80-16/8(*)</td>
<td>DN80/3.15&quot;</td>
<td>PN16</td>
<td>1.80</td>
<td>8</td>
</tr>
<tr>
<td>MBR80-CH(*)</td>
<td>DN80/3.15&quot;</td>
<td>PN6</td>
<td>1.60</td>
<td>4</td>
</tr>
<tr>
<td>MBR80-QU(*)</td>
<td>DN80/3.15&quot;</td>
<td>PN6</td>
<td>1.32</td>
<td>4</td>
</tr>
</tbody>
</table>

*) Offshore model available

### Color housing

- RAL 7033
- RAL 7038 (similar to ANSI 70 light grey)
- Other colors on request

### Triggering pressure flap

- 1 m/s
- 1.2 m/s (DN25 only)
- 1.5 m/s
- 2 m/s
- 2.5 m/s (DN25 and DN80 only)
- 3 m/s (only on request)

*) Other velocities on request

### Cable gland

- 1x M25x1.5
- 2x M25x1.5
- 1x NPT 1/2" (not for offshore)
- 2x NPT 1/2" (not for offshore)
- Other connections on request

### Offshore model

- Offshore model includes:
  - Flange in offshore version
  - Color acc. protection class C5M
  - Attached parts made of suitable materials (V4A)

*) Only MBR25-16, MBR50 (all models), MBR80 (all models)

### Options

- Inspection glass cover
- Reset for function test (manual reset)
- Connection for pneumatic test

---

**Connecting flanges**

- MBR25-6  
- MBR25-16(*)  
- MBR25-G  
- MBR50-6/4(*)  
- MBR50-6/6(*)  
- MBR50-16/4(*)  
- MBR80-6/4(*)  
- MBR80-6/6(*)  
- MBR80-16/4(*)  
- MBR80-16/8(*)  
- MBR80-CH(*)  
- MBR80-QU(*)

**Cable gland**

- 1x M25x1.5  
- 2x M25x1.5  
- 1x NPT 1/2" (not for offshore)  
- 2x NPT 1/2" (not for offshore)  
- Other connections on request

**Offshore model**

- Offshore model includes:
  - Flange in offshore version
  - Color acc. protection class C5M
  - Attached parts made of suitable materials (V4A)

*) Only MBR25-16, MBR50 (all models), MBR80 (all models)

**Options**

- Inspection glass cover
- Reset for function test (manual reset)
- Connection for pneumatic test

---

**MESSKO MSafe® BUCHHOLZ RELAY**

**ORDERING SPECIFICATIONS.**

**MESSKO INSTRUMENTS**

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**Please enclose this order form filled in the order.**
MESSKO® MSafe® – BUCHHOLZ RELAY
TECHNICAL DATA.

### Materials

- **Housing and upper part inclusive terminal box**: Aluminium casting, RAL 7033 or 7038 (similar to ANSI 70 light grey), powder coated;
- **Offshore model on request**;
- **Design and construction acc. EN 50216-2**

###Characteristic data

- **Installation**: Indoors and outdoors, tropical proof
- **Ambient temperature**: -50... 80 °C
- **Isolation liquid temperature**: -30... 120 °C (mineral oil)
- **Protection mode**: IP 55 as per DIN EN 60 529
- **Nominal tube diameter**: DN25, DN50, DN80 or DN25 with G 1 1/2” threaded connection
- **Flap triggering pressure**: For DN25 on customer request 1 m/s, 1.2 m/s, 1.3 m/s, 1.5 m/s or 2.5 m/s (each ±15%); for DN50 on customer request 1 m/s, 1.3 m/s, 1.5 m/s or 2 m/s (each ±15%); for DN80 on customer request 1 m/s, 1.3 m/s, 1.5 m/s, 2 m/s or 2.5 m/s (each ±15%); 3 m/s for DN25, DN50, DN80 on request
- **Isolation liquid**: Designed for isolation liquid acc. IEC 60296 Class II

### Protected reed switch

- **Number and type**: Normally closed, normally open or changeover contacts on customer request; potential free; 2 pieces per function; maximum 4 pieces
- **Nominal voltage**: 24-250 V AC/DC
- **Max. nominal current**: 2 A AC/DC
- **Min. switching current**: 50 mA/24 V DC
- **Max. switching capacity AC**: 1.2 VA-400 VA
- **Max. switching capacity DC**: 1.2 W-250 W
- **Rated insulation voltage**: 2.7 kV AC/2 sec. contacts against housing; 1 kV AC/2 sec. open contacts
- **Insulation resistance**: 1000 MΩ/500 V DC

### Connection via terminal-box

- **Connection terminals**: Min. 0.25 mm² / max. 4 mm²
- **Cable gland**: M25x1.5 for cable ø 13...20 mm or 1/2" NPT

### Mechanical tests

- **Vibration**: 5-35 Hz and 10-150 Hz at 2 g, 2 h (IEC 60068-2-6)
- **Earthquake**: 2-10 Hz, 22.5 mm, 1 h (IEC 60068-2-57)
- **Shock**: 10 g, 10 ms (IEC 60068-2-27)
- **Continuous oscillation test**: 100, 200, 300, 400 Hz, 1 g, 2 h

### Dimension table devices with circular flange

<table>
<thead>
<tr>
<th>Type</th>
<th>d1</th>
<th>d2</th>
<th>d3 = p.c.d.</th>
<th>d4</th>
<th>Ø d5</th>
<th>f</th>
<th>l1</th>
<th>h1</th>
<th>h2</th>
</tr>
</thead>
<tbody>
<tr>
<td>MBR25-6</td>
<td>25/0.98&quot;</td>
<td>100/3.94&quot;</td>
<td>75/2.95&quot;</td>
<td>60/2.36&quot;</td>
<td>4 x 12/0.47&quot;</td>
<td>12,5/0.49&quot;</td>
<td>185/7.28&quot;</td>
<td>244/9.61&quot;</td>
<td>107/4.21&quot;</td>
</tr>
<tr>
<td>MBR25-16</td>
<td>25/0.98&quot;</td>
<td>115/4.53&quot;</td>
<td>85/3.35&quot;</td>
<td>68/2.68&quot;</td>
<td>4 x 14/0.55&quot;</td>
<td>20/0.78&quot;</td>
<td>200/7.87&quot;</td>
<td>244/9.61&quot;</td>
<td>107/4.21&quot;</td>
</tr>
<tr>
<td>MBR25-G</td>
<td>25/0.98&quot;</td>
<td>-</td>
<td>85/3.35&quot;</td>
<td>G1 1/2&quot;</td>
<td>-</td>
<td>14,5/0.57&quot;</td>
<td>185/7.28&quot;</td>
<td>244/9.61&quot;</td>
<td>107/4.21&quot;</td>
</tr>
<tr>
<td>MBR50-6/4</td>
<td>50/1.97&quot;</td>
<td>140/5.51&quot;</td>
<td>110/4.33&quot;</td>
<td>90/3.54&quot;</td>
<td>4 x 14/0.55&quot;</td>
<td>19/0.75&quot;</td>
<td>185/7.28&quot;</td>
<td>244/9.61&quot;</td>
<td>95/3.74&quot;</td>
</tr>
<tr>
<td>MBR50-6/6</td>
<td>50/1.97&quot;</td>
<td>140/5.51&quot;</td>
<td>110/4.33&quot;</td>
<td>G1 (40/5.51&quot;)</td>
<td>6 x 12/0.47&quot;</td>
<td>14/0.55&quot;</td>
<td>185/7.28&quot;</td>
<td>244/9.61&quot;</td>
<td>95/3.74&quot;</td>
</tr>
<tr>
<td>MBR50-16/4</td>
<td>50/1.97&quot;</td>
<td>165/6.50&quot;</td>
<td>125/4.92&quot;</td>
<td>102/4.02&quot;</td>
<td>4 x 18/0.71&quot;</td>
<td>23/0.91&quot;</td>
<td>195/7.68&quot;</td>
<td>244/9.61&quot;</td>
<td>95/3.74&quot;</td>
</tr>
<tr>
<td>MBR50-16/6</td>
<td>50/1.97&quot;</td>
<td>180/7.48&quot;</td>
<td>150/5.91&quot;</td>
<td>130/5.12&quot;</td>
<td>4 x 18/0.71&quot;</td>
<td>15/0.59&quot;</td>
<td>195/7.68&quot;</td>
<td>244/9.61&quot;</td>
<td>95/3.74&quot;</td>
</tr>
<tr>
<td>MBR80-6/4</td>
<td>80/3.15&quot;</td>
<td>190/7.48&quot;</td>
<td>125/4.92&quot;</td>
<td>102/4.02&quot;</td>
<td>6 x 12/0.47&quot;</td>
<td>14/0.55&quot;</td>
<td>185/7.28&quot;</td>
<td>244/9.61&quot;</td>
<td>95/3.74&quot;</td>
</tr>
<tr>
<td>MBR80-6/6</td>
<td>80/3.15&quot;</td>
<td>160/6.30&quot;</td>
<td>130/5.12&quot;</td>
<td>(160/6.30&quot;)</td>
<td>4 x 18/0.71&quot;</td>
<td>17,5/0.69&quot;</td>
<td>195/7.68&quot;</td>
<td>244/9.61&quot;</td>
<td>95/3.74&quot;</td>
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<tr>
<td>MBR80-16/4</td>
<td>80/3.15&quot;</td>
<td>200/7.87&quot;</td>
<td>160/6.29&quot;</td>
<td>138/5.45&quot;</td>
<td>6 x 18/0.71&quot;</td>
<td>2 x M16</td>
<td>17,5/0.69&quot;</td>
<td>195/7.68&quot;</td>
<td>244/9.61&quot;</td>
</tr>
<tr>
<td>MBR80-16/8</td>
<td>80/3.15&quot;</td>
<td>200/7.87&quot;</td>
<td>160/6.29&quot;</td>
<td>138/5.45&quot;</td>
<td>6 x 18/0.71&quot;</td>
<td>2 x M16</td>
<td>17,5/0.69&quot;</td>
<td>195/7.68&quot;</td>
<td>244/9.61&quot;</td>
</tr>
</tbody>
</table>

*Refer to pages 3 and 4*
MESSKO® MSafe® – BUCHHOLZ RELAY DIMENSIONS DEVICES WITH CIRCULAR FLANGE.

MESSKO® MSafe® – Buchholz relay MBR25–6 and MBR25/16

For dimensions refer to dimension table page 2

MESSKO® MSafe® – Buchholz relay MBR25–G

For dimensions refer to dimension table page 2
MESSKO® MSafe® – BUCHHOLZ RELAY DIMENSIONS DEVICES WITH CIRCULAR FLANGE.

MESSKO® MSafe® – Buchholz relay MBR50-6/4 and MBR50-16/4

For dimensions refer to dimension table page 2

MESSKO® MSafe® – Buchholz relay MBR50-6/6

For dimensions refer to dimension table page 2
MESSKO® MSafe® – BUCHHOLZ RELAY
DIMENSIONS DEVICES WITH CIRCULAR FLANGE.

MESSKO® MSafe® – Buchholz relay MBR80–6/4, MBR80–16/4 and MBR80–16/8

In the 4 hole versions of the MBR80 the 4 flange hole drills are arranged as in the MRB50–6/4. For dimensions refer to dimension table page 2.

MESSKO® MSafe® – Buchholz relay MBR80–6/6

For dimensions refer to dimension table page 2
MESSKO® MSafe® – BUCHHOLZ RELAY
DIMENSIONS DEVICES WITH SQUARE FLANGE.

Dimension table devices with square flange

<table>
<thead>
<tr>
<th>Type</th>
<th>d1</th>
<th>d3 = p.c.d.</th>
<th>Ø d5</th>
<th>f</th>
<th>l1</th>
<th>h1</th>
<th>h2</th>
</tr>
</thead>
<tbody>
<tr>
<td>MBR80-CH</td>
<td>80/3.15&quot;</td>
<td>160/6.30&quot;</td>
<td>4x18/0.71&quot;</td>
<td>16/0.63&quot;</td>
<td>185/7.28&quot;</td>
<td>244/9.61&quot;</td>
<td>95/3.74&quot;</td>
</tr>
<tr>
<td>MBR80-QU</td>
<td>80/3.15&quot;</td>
<td>132/5.20&quot;</td>
<td>4x18/0.71&quot;</td>
<td>21/0.83&quot;</td>
<td>200/7.87&quot;</td>
<td>244/9.61&quot;</td>
<td>95/3.74&quot;</td>
</tr>
</tbody>
</table>

MESSKO® MSafe® – Buchholz relay MBR80-CH (square flange)

MESSKO® MSafe® – Buchholz relay MBR80-QU (square flange)
MESSKO® MSafe® – BUCHHOLZ RELAY
SWITCHING CONTACTS AND ELECTRICAL
CONNECTION

MESSKO® MSafe® – Position of switching contacts

MESSKO® MSafe® – Electrical connection
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