Clogging indicators are devices that check the life time of the filter elements. They measure the pressure drop through the filter element directly connected to the filter housing. These devices trip when the clogging of the filter element causes a pressure drop increasing across the filter element.

Filter elements are efficient only if their Dirt Holding Capacity is fully exploited. This is achieved by using filter housings equipped with clogging indicators. The indicator is set to alarm before the element becomes fully clogged.

MP Filtri can supply indicators of the following designs:
- Vacuum switches and gauges
- Pressure switches and gauges
- Differential pressure indicators

These type of devices can be provided with a visual, electrical or both signals. The electronic differential pressure clogging indicator is also available. It provides both analogical 4-20 mA output and digital warning (75% of clogging) and alarm (clogging) outputs.
Suitable indicator types

**VACUUM INDICATORS**
Vacuum indicators are used on the Suction line to check the efficiency of the filter element. They measure the pressure downstream of the filter element. Standard items are produced with R 1/4" EN 10226 connection. Available products with R 1/8" EN 10226 to be fitted on MPS series.

**BAROMETRIC INDICATORS**
Pressure indicators are used on the Return line to check the efficiency of the filter element. They measure the pressure upstream of the filter element. Standard items are produced with R 1/8" EN 10226 connection.

**DIFFERENTIAL INDICATORS**
Differential indicators are used on the Pressure line to check the efficiency of the filter element. They measure the pressure upstream and downstream of the filter element (differential pressure). Standard items are produced with special connection G 1/2" size. Also available in Stainless Steel models.
### VACUUM INDICATORS

#### Dimensions

<table>
<thead>
<tr>
<th>VE*50</th>
<th><strong>Electrical Vacuum Indicator</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ordering code</strong></td>
<td>VE A 21 A A 50 P01</td>
</tr>
<tr>
<td><strong>Dimensions</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Hydraulic symbol</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Electrical symbol</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Materials</strong></td>
<td>Brass</td>
</tr>
<tr>
<td>- Body:</td>
<td>Brass</td>
</tr>
<tr>
<td>- Base:</td>
<td>Black Nylon</td>
</tr>
<tr>
<td>- Contacts:</td>
<td>Silver</td>
</tr>
<tr>
<td>- Seal:</td>
<td>NBR</td>
</tr>
<tr>
<td><strong>Technical data</strong></td>
<td></td>
</tr>
<tr>
<td>- Vacuum setting:</td>
<td>-0.21 bar ±10%</td>
</tr>
<tr>
<td>- Max working pressure:</td>
<td>10 bar</td>
</tr>
<tr>
<td>- Proof pressure:</td>
<td>15 bar</td>
</tr>
<tr>
<td>- Working temperature:</td>
<td>From -25 °C to +80 °C</td>
</tr>
<tr>
<td>- Compatibility with fluids:</td>
<td>Mineral oils, Synthetic fluids</td>
</tr>
<tr>
<td>- Degree of protection:</td>
<td>IP65 according to EN 60529</td>
</tr>
<tr>
<td><strong>Electrical data</strong></td>
<td></td>
</tr>
<tr>
<td>- Electrical connection:</td>
<td>IEC 61076-2-101 D (M12)</td>
</tr>
<tr>
<td>- Resistive load:</td>
<td>1 A / 24 Vdc</td>
</tr>
<tr>
<td></td>
<td>1 A / 110 Vdc</td>
</tr>
<tr>
<td></td>
<td>1 A / 230 Vac</td>
</tr>
<tr>
<td>- Available ATEX product:</td>
<td>II 1GD Ex ia IIC X</td>
</tr>
<tr>
<td>- CE certification:</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>VL<em>51 - VL</em>52 - VL*53</th>
<th><strong>Electrical/Visual Vacuum Indicator</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ordering code</strong></td>
<td>VL A 21 A A xx P01</td>
</tr>
<tr>
<td><strong>Dimensions</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Hydraulic symbol</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Electrical symbol</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Materials</strong></td>
<td>Brass</td>
</tr>
<tr>
<td>- Body:</td>
<td>Brass</td>
</tr>
<tr>
<td>- Base:</td>
<td>Transparent Nylon</td>
</tr>
<tr>
<td>- Contacts:</td>
<td>Brass - Nylon</td>
</tr>
<tr>
<td>- Seal:</td>
<td>NBR</td>
</tr>
<tr>
<td><strong>Technical data</strong></td>
<td></td>
</tr>
<tr>
<td>- Vacuum setting:</td>
<td>-0.21 bar ±10%</td>
</tr>
<tr>
<td>- Max working pressure:</td>
<td>10 bar</td>
</tr>
<tr>
<td>- Proof pressure:</td>
<td>15 bar</td>
</tr>
<tr>
<td>- Working temperature:</td>
<td>From -25 °C to +80 °C</td>
</tr>
<tr>
<td>- Compatibility with fluids:</td>
<td>Mineral oils, Synthetic fluids</td>
</tr>
<tr>
<td>- Degree of protection:</td>
<td>IP65 according to EN 60529</td>
</tr>
<tr>
<td><strong>Electrical data</strong></td>
<td></td>
</tr>
<tr>
<td>- Electrical connection:</td>
<td>EN 175301-803</td>
</tr>
<tr>
<td>- Type:</td>
<td>51 52 53</td>
</tr>
<tr>
<td>- Lamps:</td>
<td>24 Vdc 110 Vdc 230 Vac</td>
</tr>
<tr>
<td>- Resistive load:</td>
<td>1 A / 24 Vdc 1 A / 110 Vdc 1 A / 230 Vac</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>VL*71</th>
<th><strong>Electrical/Visual Vacuum Indicator</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ordering code</strong></td>
<td>VL A 21 A A 71 P01</td>
</tr>
<tr>
<td><strong>Dimensions</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Hydraulic symbol</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Electrical symbol</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Materials</strong></td>
<td>Brass</td>
</tr>
<tr>
<td>- Body:</td>
<td>Brass</td>
</tr>
<tr>
<td>- Base:</td>
<td>Black Nylon</td>
</tr>
<tr>
<td>- Contacts:</td>
<td>Silver</td>
</tr>
<tr>
<td>- Seal:</td>
<td>NBR</td>
</tr>
<tr>
<td><strong>Technical data</strong></td>
<td></td>
</tr>
<tr>
<td>- Vacuum setting:</td>
<td>-0.21 bar ±10%</td>
</tr>
<tr>
<td>- Max working pressure:</td>
<td>10 bar</td>
</tr>
<tr>
<td>- Proof pressure:</td>
<td>15 bar</td>
</tr>
<tr>
<td>- Working temperature:</td>
<td>From -25 °C to +80 °C</td>
</tr>
<tr>
<td>- Compatibility with fluids:</td>
<td>Mineral oils, Synthetic fluids</td>
</tr>
<tr>
<td>- Degree of protection:</td>
<td>IP65 according to EN 60529</td>
</tr>
<tr>
<td><strong>Electrical data</strong></td>
<td></td>
</tr>
<tr>
<td>- Electrical connection:</td>
<td>IEC 61076-2-101 D (M12)</td>
</tr>
<tr>
<td>- Lamps:</td>
<td>24 Vdc</td>
</tr>
<tr>
<td>- Resistive load:</td>
<td>0.4 A / 24 Vdc</td>
</tr>
</tbody>
</table>
VACUUM INDICATORS

Dimensions

Materials
- Case: Painted Steel
- Window: Transparent plastic
- Dial: Painted Steel
- Pointer: Painted Aluminium
- Pressure connection: Brass
- Pressure element: Bourdon tube Cu-alloy soft soldered

Technical data
- Max working pressure: Static: 7 bar
  Fluctuating: 6 bar
  Short time: 10 bar
- Working temperature: From -40 °C to +60 °C
- Compatibility with fluids: Mineral oils, Synthetic fluids HFA, HFB, HFC according to ISO 2943
- Accuracy: Class 2.5 according to EN 13190
- Degree of protection: IP31 according to EN 60529

---

VVA - VVB
Axial Vacuum Gauge

<table>
<thead>
<tr>
<th>R</th>
<th>Ordering code</th>
</tr>
</thead>
<tbody>
<tr>
<td>EN 10226 - R1/4&quot;</td>
<td>VVA 16 P01</td>
</tr>
<tr>
<td>EN 10226 - R1/8&quot;</td>
<td>VVB 16 P01</td>
</tr>
</tbody>
</table>

Hydraulic symbol

Dial scale

Conversion to SI units

<table>
<thead>
<tr>
<th>cmHg</th>
<th>bar</th>
</tr>
</thead>
<tbody>
<tr>
<td>-12</td>
<td>-0.16</td>
</tr>
<tr>
<td>-18</td>
<td>-0.24</td>
</tr>
<tr>
<td>-76</td>
<td>-1.01</td>
</tr>
</tbody>
</table>

---

VVR - VVS
Radial Vacuum Gauge

<table>
<thead>
<tr>
<th>R</th>
<th>A/F</th>
<th>Ordering code</th>
</tr>
</thead>
<tbody>
<tr>
<td>EN 10226 - R1/4&quot;</td>
<td>14</td>
<td>VVR 16 P01</td>
</tr>
<tr>
<td>EN 10226 - R1/8&quot;</td>
<td>11</td>
<td>VVS 16 P01</td>
</tr>
</tbody>
</table>

Hydraulic symbol

Dial scale

Conversion to SI units

<table>
<thead>
<tr>
<th>cmHg</th>
<th>bar</th>
</tr>
</thead>
<tbody>
<tr>
<td>-12</td>
<td>-0.16</td>
</tr>
<tr>
<td>-18</td>
<td>-0.24</td>
</tr>
<tr>
<td>-76</td>
<td>-1.01</td>
</tr>
</tbody>
</table>

---

DESIGNATION & ORDERING CODE

Series
- VE Electrical vacuum indicator
- VL Electrical/Visual vacuum indicator
- VV Vacuum gauge

Type VE - VL
- A Connection EN 10226 - R1/4"
- B Connection EN 10226 - R1/8"

Type VV
- A Axial connection EN 10226 - R1/4"
- B Axial connection EN 10226 - R1/8"
- R Radial connection EN 10226 - R1/4"
- S Radial connection EN 10226 - R1/8"

Vacuum setting
- 16 0.16 bar
- 21 0.21 bar

Seals
- A NBR

Thermostat
- A Without

Electrical connections
- 50 Connection EN 175301-803
- 51 Connection EN 175301-803, transparent base with lamps 24 Vdc
- 52 Connection EN 175301-803, transparent base with lamps 110 Vdc
- 53 Connection EN 175301-803, transparent base with lamps 230 Vdc
- 71 Connection IEC 61076-2-101 D (M12), black base with lamps 24 Vdc

Option
- P01 MP Filtri standard
- Pxx Customized
## BAROMETRIC INDICATORS

### Dimensions

#### BEA*50
**Electrical Pressure Indicator**

<table>
<thead>
<tr>
<th>Settings</th>
<th>Ordering code</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.5 bar ±10%</td>
<td>BE A 15 H A 50 P01</td>
</tr>
<tr>
<td>2 bar ±10%</td>
<td>BE A 20 H A 50 P01</td>
</tr>
</tbody>
</table>

**Hydraulic symbol**

```
1   3
2
```

**Electrical symbol**

```
1 2 3
```

**Materials**
- Body: Brass
- Base: Black Nylon
- Contacts: Silver
- Seal: HNBR

**Technical data**
- Max working pressure: 40 bar
- Proof pressure: 60 bar
- Working temperature: From -25 °C to +80 °C
- Compatibility with fluids: Mineral oils, Synthetic fluids
- Degree of protection: IP65 according to EN 60529

**Electrical data**
- Electrical connection: EN 175301-803
- Resistive load: 5 A / 14 Vdc
  4 A / 30 Vdc
  5 A / 125 Vac
  4 A / 250 Vac
- Available Atex product: II 1GD Ex ia IIC Tx Ex ia III C Tx °C X

**Ordering code**
- A/F 27
- Max tightening torque: 25 N·m

EN 10226 - R1/8"

#### BEM*41
**Electrical Pressure Indicator**

<table>
<thead>
<tr>
<th>Settings</th>
<th>Ordering code</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.5 bar ±10%</td>
<td>BE M 15 H A 41 P01</td>
</tr>
<tr>
<td>2 bar ±10%</td>
<td>BE M 20 H A 41 P01</td>
</tr>
</tbody>
</table>

**Hydraulic symbol**

```
1   3
2
```

**Electrical symbol**

```
1 2 3
```

**Materials**
- Body: Brass
- Base: Black Nylon
- Contacts: Silver
- Seal: HNBR

**Technical data**
- Max working pressure: 40 bar
- Proof pressure: 60 bar
- Working temperature: From -25 °C to +80 °C
- Compatibility with fluids: Mineral oils, Synthetic fluids
- Degree of protection: IP67 according to EN 60529

**Electrical data**
- Electrical connection: Four-core cable
- Resistive load: 5 A / 14 Vdc
  4 A / 30 Vdc
  5 A / 125 Vac
  4 A / 250 Vac
- CE certification

**Ordering code**
- A/F 27
- Max tightening torque: 25 N·m

EN 10226 - R1/8"

#### BET*10
**Electrical Pressure Indicator**

<table>
<thead>
<tr>
<th>Settings</th>
<th>Ordering code</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 bar ±10%</td>
<td>BE T 20 H F 10 P01</td>
</tr>
<tr>
<td>2.5 bar ±10%</td>
<td>BE T 25 H F 10 P01</td>
</tr>
</tbody>
</table>

**Hydraulic symbol**

```
1   2
```

**Electrical symbol**

```
1 2
```

**Materials**
- Body: Brass
- Base: Black Nylon
- Contacts: Silver
- Seal: HNBR

**Technical data**
- Max working pressure: 10 bar
- Proof pressure: 15 bar
- Working temperature: From -25 °C to +100 °C
- Compatibility with fluids: Mineral oils, Synthetic fluids
- Degree of protection: IP65 according to EN 60529

**Electrical data**
- Electrical connection: AMP Superseal series 1.5
- Resistive load: 0.5 A / 48 Vdc
- Thermostat condition: Open up to 30 °C
- CE certification

**Ordering code**
- A/F 27
- Max tightening torque: 25 N·m

EN 10226 - R1/8"
**Electrical Pressure Indicator**

**Bet*30**

**Technical data**
- Max working pressure: 10 bar
- Proof pressure: 15 bar
- Working temperature: From -25 °C to +100 °C
- Compatibility with fluids: Mineral oils, Synthetic fluids HFA, HFB, HFC according to ISO 2943
- Degree of protection: IP65 according to EN 60529

**Electrical data**
- Electrical connection: Deutsch DT-04-2-P
- Resistive load: 0.5 A / 48 Vdc
- Thermostat condition: Open up to 30 °C
- CE certification

**Bet*50**

**Technical data**
- Max working pressure: 10 bar
- Proof pressure: 15 bar
- Working temperature: From -25 °C to +100 °C
- Compatibility with fluids: Mineral oils, Synthetic fluids HFA, HFB, HFC according to ISO 2943
- Degree of protection: IP65 according to EN 60529

**Electrical data**
- Electrical connection: EN 175301-803
- Resistive load: 0.5 A / 48 Vdc
- Thermostat condition: Open up to 30 °C
- CE certification

**Bl*51 - Bl*52 - Bl*53**

**Technical data**
- Max working pressure: 40 bar
- Proof pressure: 60 bar
- Working temperature: From -25 °C to +80 °C
- Compatibility with fluids: Mineral oils, Synthetic fluids HFA, HFB, HFC according to ISO 2943
- Degree of protection: IP65 according to EN 60529

**Electrical data**
- Electrical connection: EN 175301-803
- Type: 51 52 53
- Lamps: 24 Vdc 110 Vdc 230 Vac
- Resistive load: 1 A / 24 Vdc 1 A / 110 Vdc 1 A / 230 Vac
- CE certification
# BAROMETRIC INDICATORS

## Dimensions

<table>
<thead>
<tr>
<th>BL-71 Electrical/Visual Pressure Indicator</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Settings</strong></td>
<td><strong>Ordering code</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.5 bar ±10%</td>
<td>BL A 15 HA 71 P01</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 bar ±10%</td>
<td>BL A 20 HA 71 P01</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

![Hydraulic symbol](EN 10226 - R1/8"

- **Materials**
  - **Body:** Brass
  - **Base:** Black Nylon
  - **Contacts:** Silver
  - **Seal:** HNBR

- **Technical data**
  - **Max working pressure:** Static: 7 bar
    Fluctuating: 6 bar
  - **Proof pressure:** 60 bar
  - **Working temperature:** From -25 °C to +60 °C
  - **Compatibility with fluids:** Mineral oils, Synthetic fluids HFA, HFB, HFC according to ISO 2943
  - **Degree of protection:** IP65 according to EN 60529

- **Electrical data**
  - **Electrical connection:** IEC 61076-2-101 D (M12)
  - **Lamps:** 24 Vdc
  - **Resistive load:** 0.4 A / 24 Vdc

<table>
<thead>
<tr>
<th>BVA Axial Pressure Gauge</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Settings</strong></td>
<td><strong>Ordering code</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.4 bar ±10%</td>
<td>BV A 14 P01</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.5 bar ±10%</td>
<td>BV A 25 P01</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

![Hydraulic symbol](EN 10226 - R1/8"

- **Materials**
  - **Case:** Painted Steel
  - **Window:** Transparent plastic
  - **Dial:** Painted Steel
  - **Pointer:** Painted Aluminium
  - **Pressure connection:** Brass
  - **Pressure element:** Bourdon tube Cu-alloy soft soldered

- **Technical data**
  - **Max working pressure:** Static: 7 bar
    Fluctuating: 6 bar
  - **Proof pressure:** 60 bar
  - **Working temperature:** From -40 °C to +60 °C
  - **Compatibility with fluids:** Mineral oils, Synthetic fluids HFA, HFB, HFC according to ISO 2943
  - **Accuracy:** Class 2.5 according to EN 13190
  - **Degree of protection:** IP31 according to EN 60529

- **Electrical data**
  - **Electrical connection:** IEC 61076-2-101 D (M12)
  - **Lamps:** 24 Vdc
  - **Resistive load:** 0.4 A / 24 Vdc

<table>
<thead>
<tr>
<th>BVR Radial Pressure Gauge</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Settings</strong></td>
<td><strong>Ordering code</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.4 bar ±10%</td>
<td>BV R 14 P01</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.5 bar ±10%</td>
<td>BV R 25 P01</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

![Hydraulic symbol](EN 10226 - R1/8"

- **Materials**
  - **Case:** Painted Steel
  - **Window:** Transparent plastic
  - **Dial:** Painted Steel
  - **Pointer:** Painted Aluminium
  - **Pressure connection:** Brass
  - **Pressure element:** Bourdon tube Cu-alloy soft soldered

- **Technical data**
  - **Max working pressure:** Static: 7 bar
    Fluctuating: 6 bar
  - **Proof pressure:** 60 bar
  - **Working temperature:** From -40 °C to +60 °C
  - **Compatibility with fluids:** Mineral oils, Synthetic fluids HFA, HFB, HFC according to ISO 2943
  - **Accuracy:** Class 2.5 according to EN 13190
  - **Degree of protection:** IP31 according to EN 60529
### BAROMETRIC INDICATORS

#### Dimensions

**Barometric Indicators**

**BE**
- **Type:** Electrical pressure indicator
- **Setting:** 1.5 bar ±10%
  - Ordering code: BV P 15 H P01
- **Setting:** 2 bar ±10%
  - Ordering code: BV Q 20 H P01

**BL**
- **Type:** Electrical/Visual pressure indicator
- **Setting:** 1.5 bar ±10%
  - Ordering code: BL HA 71A20 P01

**BV**
- **Type:** Visual pressure indicator
  - **Setting:** 1.4 bar
  - **Setting:** 2 bar
  - **Setting:** 1.5 bar
  - **Setting:** 2.5 bar

#### Configuration Examples

1. **BE** HM 41A15 P01
2. **BL** HA 71A20 P01
3. **BV** R 14 P01
4. **BV** H P 20 P01

#### Designation & Ordering Code

**Series**
- **BE** Electrical pressure indicator
- **BL** Electrical/Visual pressure indicator
- **BV** Visual pressure indicator

**Type**
- **A** Standard type
- **M** With wired electrical connection
- **T** With thermal switch
- **A** Axial connection pressure gauge
- **R** Radial connection pressure gauge
- **P** Visual indicator with automatic reset
- **Q** Visual indicator with manual reset

<table>
<thead>
<tr>
<th>Pressure setting</th>
<th>BEA-BEM</th>
<th>BET</th>
<th>BLA</th>
<th>BVA-BVR</th>
<th>BVP-BVQ</th>
</tr>
</thead>
<tbody>
<tr>
<td>14 1.4 bar</td>
<td>•</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15 1.5 bar</td>
<td>•</td>
<td>•</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20 2 bar</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td></td>
<td></td>
</tr>
<tr>
<td>25 2.5 bar</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Seals**
- **BE**
- **BL**
- **A** Without
- **F** With

**Thermostat**
- **BEA-BEM**
- **BET**
- **BLA**
- **BV**
- **H** HNBR

**Electrical connections**
- **BEA**
- **BEM**
- **BET**
- **BL**
- **BV**
  - **10** Connection AMP Superseal series 1.5
  - **30** Connection Deutsch DT-04-2-P
  - **41** Connection via four-core cable
  - **50** Connection EN 175301-803
  - **51** Connection EN 175301-803, transparent base with lamps 24 Vdc
  - **52** Connection EN 175301-803, transparent base with lamps 110 Vdc
  - **53** Connection EN 175301-803, transparent base with lamps 230 Vdc
  - **71** Connection IEC 61076-2-101 D (M12), black base with lamps 24 Vdc

#### Technical Data
- **Body:** Brass
- **Cover / internal parts:** Nylon
- **Caps:** VMQ
- **Seal:** HNBR

**Reset:**
- **BVP** - Automatic reset
- **BVQ** - Manual reset

- **Max working pressure:** 10 bar
- **Proof pressure:** 15 bar
- **Working temperature:** From -25 °C to +80 °C
- **Compatibility with fluids:** Mineral oils, Synthetic fluids
  - HFA, HFB, HFC according to ISO 2943
- **Degree of protection:** IP45 according to EN 60529

**Visual Pressure Indicator**
- **BVP - BVQ**
  - **Absence of pressure** (no indicator)
  - **Presence of pressure** (green button rises gradually)
  - **Clogged filter element** (red button risen)

**Materials**
- **Body:** Brass
- **Cover / internal parts:** Nylon
- **Caps:** VMQ
- **Seal:** HNBR

#### Signals
- **Absence of pressure**
- **Presence of pressure**
- **Clogged filter element**

**Connection**
- **Deutsch DT-04-2-P**
- **AMP Superseal series**
- **EN 175301-803**
- **IEC 61076-2-101 D** (M12)

---

**MP Filtri standard**
- **P01**

**Customized**
- **Pxx**
### DEA*50
**Electrical Differential Indicator**

<table>
<thead>
<tr>
<th>Settings</th>
<th>Ordering code</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.2 bar ±10%</td>
<td>DE A 12 x A 50 P01</td>
</tr>
<tr>
<td>2 bar ±10%</td>
<td>DE A 20 x A 50 P01</td>
</tr>
<tr>
<td>5 bar ±10%</td>
<td>DE A 50 x A 50 P01</td>
</tr>
<tr>
<td>7 bar ±10%</td>
<td>DE A 70 x A 50 P01</td>
</tr>
<tr>
<td>9.5 bar ±10%</td>
<td>DE A 95 x A 50 P01</td>
</tr>
</tbody>
</table>

**Materials**
- Body: Brass
- Base: Black Nylon
- Contacts: Silver
- Seal: HNBR - FPM

**Technical data**
- Max working pressure: 420 bar
- Proof pressure: 630 bar
- Burst pressure: 1260 bar
- Working temperature: -25 °C to +110 °C
- Compatibility with fluids: Mineral oils, Synthetic fluids
- Degree of protection: IP66 according to EN 60529
- IP69K according to ISO 20653

**Electrical data**
- Electrical connection: EN 175301-803
- Resistive load: 0.2 A / 115 Vdc

### DEH*48
**Hazardous Area Electronic Differential Indicator**

<table>
<thead>
<tr>
<th>Settings</th>
<th>Ordering code</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 bar ±10%</td>
<td>DE H 50 x A 48 P01</td>
</tr>
<tr>
<td>7 bar ±10%</td>
<td>DE H 70 x A 48 P01</td>
</tr>
</tbody>
</table>

**Materials**
- Body: AISI 316 Stainless steel
- Contacts: Rhodium (tungsten optional)
- Seal: MFQ - FPM

**Protection class**
- Ex ia IIC T4/T6: Intrinsically safe

**Temperature class**
- T4 (135 °C) and T6 (85 °C)

**Technical data**
- Max working pressure: 420 bar
- Working temperature: -60 °C to +125 °C
- Connection type: M20 x 1.5 - 3 core polyrad cable supplied with 5 meters
- Contact type: SPCO/SPDT (Hermetically sealed - volt free contacts)
- Degree of protection: IP 66/67/68 according to EN 60529
- Certification / Approvals: ATEX, IECEx, TRCU, INMETRO

**Electrical data**
- Current Ratings: 24V DC 830mA - 110V AC 180mA
- Electrical Ratings: Ui 30V - Li 250mA - Pi 1.3W
- Compliance standards: ATEX, IECEx, TRCU, INMETRO
- Certification included as standard

### DEH*49
**Hazardous Area Electronic Differential Indicator**

<table>
<thead>
<tr>
<th>Settings</th>
<th>Ordering code</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 bar ±10%</td>
<td>DE H 50 x A 49 P01</td>
</tr>
<tr>
<td>7 bar ±10%</td>
<td>DE H 70 x A 49 P01</td>
</tr>
</tbody>
</table>

**Materials**
- Body: AISI 316 Stainless steel
- Contacts: Rhodium (tungsten optional)
- Seal: MFQ - FPM

**Protection class**
- Ex d IIC T4/T6: Flameproof

**Temperature class**
- T4 (135 °C) and T6 (85 °C)

**Technical data**
- Max working pressure: 420 bar
- Working temperature: -60 °C to +105 °C
- Connection type: 1/2" NPT - 3 core polyrad cable supplied with 5 meters
- Contact type: SPCO/SPDT (Hermetically sealed - volt free contacts)
- Degree of protection: IP 66/67/68 according to EN 60529
- Certification / Approvals: ATEX, IECEx, TRCU, INMETRO, UL/CSA Class I Division 1, UL/CSA Class II Division 1, UL/CSA Class II Division 2
- Certification included as standard

**Electrical data**
- Current Ratings: 24V DC 830mA - 110V AC 180mA
- Electrical Ratings: Supply Voltage 24 VDC / 110 VAC
- Max switching current: 830mA / 1180mA
- Max voltage: 150 V AC/DC
- Power watts: 20 W VA

---

**DIFFERENTIAL INDICATORS**

**Dimensions**

- **A/F 30**
  - Max tightening torque: 65 N·m

- **A/F 25 mm**
  - Max tightening torque: 50 N·m

- **A/F 25 mm**
  - Max tightening torque: 50 N·m
DIFFERENTIAL INDICATORS

DEH*70
Hazardous Area Electronic Differential Indicator

<table>
<thead>
<tr>
<th>Settings</th>
<th>Ordering code</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 bar ±10%</td>
<td>DE H 50 x A 70 P01</td>
</tr>
<tr>
<td>7 bar ±10%</td>
<td>DE H 70 x A 70 P01</td>
</tr>
</tbody>
</table>

Materials
- Body: AISI 316 Stainless steel housing with internal engineered resin switch
- Contacts: Rhodium
- Seal: MFQ - FPM

Protection class: EX ia IIC T6: Intrinsically safe

Temperature class: T6 (85 °C)

Technical data
- Max working pressure: 420 bar
- Working temperature: From -20 °C to +80 °C
- Connection type: 4 pole male M12 connector - plastic
- Contact type: SPCO/SPDT (Hermetically sealed - volt free contacts)
- Compatibility with fluids: Mineral oils, Synthetic fluids
- Degree of protection: IP 66/67 according to EN 60529

Electrical data
- Current Ratings: 24v DC 830mA - 110v AC 180mA
- Electrical Ratings: Ue 30V - Li 250mA - Pi 1.3W

DEM*10
Electronic Differential Indicator

<table>
<thead>
<tr>
<th>Settings</th>
<th>Ordering code</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.2 bar ±10%</td>
<td>DE M 12 x 10 P01</td>
</tr>
<tr>
<td>2 bar ±10%</td>
<td>DE M 20 x 10 P01</td>
</tr>
<tr>
<td>5 bar ±10%</td>
<td>DE M 50 x 10 P01</td>
</tr>
<tr>
<td>7 bar ±10%</td>
<td>DE M 70 x 10 P01</td>
</tr>
<tr>
<td>9.5 bar ±10%</td>
<td>DE M 95 x 10 P01</td>
</tr>
</tbody>
</table>

Materials
- Body: Brass
- Base: Black Nylon
- Contacts: Silver
- Seal: HNBR - FPM

Technical data
- Max working pressure: 420 bar
- Proof pressure: 630 bar
- Burst pressure: 1260 bar
- Working temperature: From -25 °C to +110 °C
- Compatibility with fluids: Mineral oils, Synthetic fluids
- Degree of protection: IP66 according to EN 60529

Electrical data
- Electrical connection: AMP Superseal series 1.5
- Resistive load: 0.2 A / 115 Vdc
- Switching type: Normally open contacts (NC on request)
- Thermal lockout: Normally open up to 30 °C (option “F”)

DEM*20
Electronic Differential Indicator

<table>
<thead>
<tr>
<th>Settings</th>
<th>Ordering code</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.2 bar ±10%</td>
<td>DE M 12 x 20 P01</td>
</tr>
<tr>
<td>2 bar ±10%</td>
<td>DE M 20 x 20 P01</td>
</tr>
<tr>
<td>5 bar ±10%</td>
<td>DE M 50 x 20 P01</td>
</tr>
<tr>
<td>7 bar ±10%</td>
<td>DE M 70 x 20 P01</td>
</tr>
<tr>
<td>9.5 bar ±10%</td>
<td>DE M 95 x 20 P01</td>
</tr>
</tbody>
</table>

Materials
- Body: Brass
- Base: Black Nylon
- Contacts: Silver
- Seal: HNBR - FPM

Technical data
- Max working pressure: 420 bar
- Proof pressure: 630 bar
- Burst pressure: 1260 bar
- Working temperature: From -25 °C to +110 °C
- Compatibility with fluids: Mineral oils, Synthetic fluids
- Degree of protection: IP66 according to EN 60529

Electrical data
- Electrical connection: AMP Time junior
- Resistive load: 0.2 A / 115 Vdc
- Switching type: Normally open contacts (NC on request)
- Thermal lockout: Normally open up to 30 °C (option “F”)

Clogging Indicators

Materials
- Body: Brass
- Base: Black Nylon
- Contacts: Silver
- Seal: HNBR - FPM

Technical data
- Max working pressure: 420 bar
- Proof pressure: 630 bar
- Burst pressure: 1260 bar
- Working temperature: From -25 °C to +110 °C
- Compatibility with fluids: Mineral oils, Synthetic fluids
- Degree of protection: IP66 according to EN 60529

Electrical data
- Electrical connection: AMP Time junior
- Resistive load: 0.2 A / 115 Vdc
- Switching type: Normally open contacts (NC on request)
- Thermal lockout: Normally open up to 30 °C (option “F”)
### DEM*30

**Electrical Differential Indicator**

<table>
<thead>
<tr>
<th>Settings</th>
<th>Ordering Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.2 bar ±10%</td>
<td>DE M 12 x x 30 P01</td>
</tr>
<tr>
<td>2 bar ±10%</td>
<td>DE M 20 x x 30 P01</td>
</tr>
<tr>
<td>5 bar ±10%</td>
<td>DE M 50 x x 30 P01</td>
</tr>
<tr>
<td>7 bar ±10%</td>
<td>DE M 70 x x 30 P01</td>
</tr>
<tr>
<td>9.5 bar ±10%</td>
<td>DE M 95 x x 30 P01</td>
</tr>
</tbody>
</table>

**Materials**
- Body: Brass
- Base: Black Nylon
- Contacts: Silver
- Seal: HNBR - FPM

**Technical data**
- Max working pressure: 420 bar
- Proof pressure: 630 bar
- Burst pressure: 1260 bar
- Working temperature: From -25 °C to +110 °C
- Compatibility with fluids: Mineral oils, Synthetic fluids
- Degree protection: IP66 according to EN 60529

**Electrical data**
- Electrical connection: Deutsch DT-04-2-P
- Resistive load: 0.2 A / 115 Vdc
- Switching type: Normally open contacts (NC on request)
- Thermal lockout: Normally open up to 30 °C (option “F”)

---

### DEM*35

**Electrical Differential Indicator**

<table>
<thead>
<tr>
<th>Settings</th>
<th>Ordering Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.2 bar ±10%</td>
<td>DE M 12 x x 35 P01</td>
</tr>
<tr>
<td>2 bar ±10%</td>
<td>DE M 20 x x 35 P01</td>
</tr>
<tr>
<td>5 bar ±10%</td>
<td>DE M 50 x x 35 P01</td>
</tr>
<tr>
<td>7 bar ±10%</td>
<td>DE M 70 x x 35 P01</td>
</tr>
<tr>
<td>9.5 bar ±10%</td>
<td>DE M 95 x x 35 P01</td>
</tr>
</tbody>
</table>

**Materials**
- Body: Brass
- Base: Black Nylon
- Contacts: Silver
- Seal: HNBR - FPM

**Technical data**
- Max working pressure: 420 bar
- Proof pressure: 630 bar
- Burst pressure: 1260 bar
- Working temperature: From -25 °C to +110 °C
- Compatibility with fluids: Mineral oils, Synthetic fluids
- Degree protection: IP66 according to EN 60529

**Electrical data**
- Electrical connection: Deutsch DT-04-3-P
- Resistive load: 0.2 A / 115 Vdc
- Switching type: SPDT contact
- Thermal lockout: Normally open up to 30 °C (option “F”)

---

### DLA*51 - DLA*52

**Electrical/Visual Differential Indicator**

<table>
<thead>
<tr>
<th>Settings</th>
<th>Ordering Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.2 bar ±10%</td>
<td>DL A 12 x A xx P01</td>
</tr>
<tr>
<td>2 bar ±10%</td>
<td>DL A 20 x A xx P01</td>
</tr>
<tr>
<td>5 bar ±10%</td>
<td>DL A 50 x A xx P01</td>
</tr>
<tr>
<td>7 bar ±10%</td>
<td>DL A 70 x A xx P01</td>
</tr>
<tr>
<td>9.5 bar ±10%</td>
<td>DL A 95 x A xx P01</td>
</tr>
</tbody>
</table>

**Materials**
- Body: Brass
- Base: Transparent Nylon
- Contacts: Silver
- Seal: HNBR - FPM

**Technical data**
- Max working pressure: 420 bar
- Proof pressure: 630 bar
- Burst pressure: 1260 bar
- Working temperature: From -25 °C to +110 °C
- Compatibility with fluids: Mineral oils, Synthetic fluids
- Degree protection: IP66 according to EN 60529

**Electrical data**
- Electrical connection: EN 175301-803
- Type: 51
- Lamps: 24 Vdc
- Resistive load: 1 A / 24 Vdc, 1 A / 110 Vdc
**Differential Indicators**

### DLA*71

**Electrical/Visual Differential Indicator**

<table>
<thead>
<tr>
<th>Settings</th>
<th>Ordering Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.2 bar ±10%</td>
<td>DL A 12 x A 71 P01</td>
</tr>
<tr>
<td>2 bar ±10%</td>
<td>DL A 20 x A 71 P01</td>
</tr>
<tr>
<td>5 bar ±10%</td>
<td>DL A 50 x A 71 P01</td>
</tr>
<tr>
<td>7 bar ±10%</td>
<td>DL A 70 x A 71 P01</td>
</tr>
<tr>
<td>9.5 bar ±10%</td>
<td>DL A 95 x A 71 P01</td>
</tr>
</tbody>
</table>

Hydraulic symbol:

- **Materials:**
  - Body: Brass
  - Base: Black Nylon
  - Contacts: Silver
  - Seal: HNBR - FPM

**Technical data:**
- Max working pressure: 420 bar
- Proof pressure: 630 bar
- Burst pressure: 1260 bar
- Working temperature: From -25 °C to +110 °C
- Compatibility with fluids: Mineral oils, Synthetic fluids
  - HFA, HFB, HFC according to ISO 2943
- Degree protection: IP65 according to EN 60529
  - IP69K according to ISO 20653

**Electrical data:**
- Electrical connection: IEC 61076-2-101 D (M12)
- Lamps 24 Vdc
- Available the connector with lamps

### DLE*A50

**Electrical/Visual Differential Indicator**

<table>
<thead>
<tr>
<th>Settings</th>
<th>Ordering Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.2 bar ±10%</td>
<td>DL E 12 x A 50 P01</td>
</tr>
<tr>
<td>2 bar ±10%</td>
<td>DL E 20 x A 50 P01</td>
</tr>
<tr>
<td>5 bar ±10%</td>
<td>DL E 50 x A 50 P01</td>
</tr>
<tr>
<td>7 bar ±10%</td>
<td>DL E 70 x A 50 P01</td>
</tr>
<tr>
<td>9.5 bar ±10%</td>
<td>DL E 95 x A 50 P01</td>
</tr>
</tbody>
</table>

Hydraulic symbol:

- **Materials:**
  - Body: Brass
  - Base: Black Nylon
  - Contacts: Silver
  - Seal: HNBR - FPM

**Technical data:**
- Max working pressure: 420 bar
- Proof pressure: 630 bar
- Burst pressure: 1260 bar
- Working temperature: From -25 °C to +110 °C
- Compatibility with fluids: Mineral oils, Synthetic fluids
  - HFA, HFB, HFC according to ISO 2943
- Degree protection: IP65 according to EN 60529
  - IP69K according to ISO 20653

**Electrical data:**
- Electrical connections: EN 175301-803
- Resistive load: 0.4 A / 24 Vdc

### DLE*F50

**Electrical/Visual Differential Indicator**

<table>
<thead>
<tr>
<th>Settings</th>
<th>Ordering Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.2 bar ±10%</td>
<td>DL E 12 x F 50 P01</td>
</tr>
<tr>
<td>2 bar ±10%</td>
<td>DL E 20 x F 50 P01</td>
</tr>
<tr>
<td>5 bar ±10%</td>
<td>DL E 50 x F 50 P01</td>
</tr>
<tr>
<td>7 bar ±10%</td>
<td>DL E 70 x F 50 P01</td>
</tr>
<tr>
<td>9.5 bar ±10%</td>
<td>DL E 95 x F 50 P01</td>
</tr>
</tbody>
</table>

Hydraulic symbol:

- **Materials:**
  - Body: Brass
  - Base: Black Nylon
  - Contacts: Silver
  - Seal: HNBR - FPM

**Technical data:**
- Max working pressure: 420 bar
- Proof pressure: 630 bar
- Burst pressure: 1260 bar
- Working temperature: From -25 °C to +110 °C
- Compatibility with fluids: Mineral oils, Synthetic fluids
  - HFA, HFB, HFC according to ISO 2943
- Degree protection: IP65 according to EN 60529

**Electrical data:**
- Electrical connections: EN 175301-803
- Resistive load: 5 A / 250 Vac
- Available the connector with lamps
### Electronic Differential Indicator

**DTA®70**

**Electronic Differential Indicator**

<table>
<thead>
<tr>
<th>Settings</th>
<th>Ordering code</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.2 bar ±10%</td>
<td>DTA 12 x 70 P01</td>
</tr>
<tr>
<td>2 bar ±10%</td>
<td>DTA 20 x 70 P01</td>
</tr>
<tr>
<td>5 bar ±10%</td>
<td>DTA 50 x 70 P01</td>
</tr>
<tr>
<td>7 bar ±10%</td>
<td>DTA 70 x 70 P01</td>
</tr>
<tr>
<td>9.5 bar ±10%</td>
<td>DTA 95 x 70 P01</td>
</tr>
</tbody>
</table>

**Materials**
- Body: Brass
- Internal parts: Brass - Nylon
- Contacts: Silver
- Seal: HNBR - FPM

**Technical data**
- Max working pressure: 420 bar
- Proof pressure: 630 bar
- Burst pressure: 1260 bar
- Compatibility with fluids: Mineral oils, Synthetic fluids
- Degree protection: IP67 according to EN 60529

**Electrical data**
- Electrical connection: IEC 61076-2-101 D (M12)
- Power supply: 24 Vdc
- Analogue output: From 4 to 20 mA
- Thermal lockout: 30 °C (all output signals stalled up to 30 °C)

**Hydraulic symbol**

![Hydraulic symbol for Electronic Differential Indicator](image1.png)

### Visual Differential Indicator

**DVA**

**Visual Differential Indicator**

<table>
<thead>
<tr>
<th>Settings</th>
<th>Ordering code</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.2 bar ±10%</td>
<td>DVA 12 x P01</td>
</tr>
<tr>
<td>2 bar ±10%</td>
<td>DVA 20 x P01</td>
</tr>
<tr>
<td>5 bar ±10%</td>
<td>DVA 50 x P01</td>
</tr>
<tr>
<td>7 bar ±10%</td>
<td>DVA 70 x P01</td>
</tr>
<tr>
<td>9.5 bar ±10%</td>
<td>DVA 95 x P01</td>
</tr>
</tbody>
</table>

**Materials**
- Body: Brass
- Internal parts: Brass - Nylon
- Contacts: Silver
- Seal: HNBR - FPM

**Technical data**
- Reset: Automatic reset
- Max working pressure: 420 bar
- Proof pressure: 630 bar
- Burst pressure: 1260 bar
- Working temperature: From -25 °C to +110 °C
- Compatibility with fluids: Mineral oils, Synthetic fluids
- Degree protection: IP65 according to EN 60529

**Electrical data**
- Electrical connection: IEC 61076-2-101 D (M12)
- Power supply: 24 Vdc
- Analogue output: From 4 to 20 mA
- Thermal lockout: 30 °C (all output signals stalled up to 30 °C)

**Hydraulic symbol**

![Hydraulic symbol for Visual Differential Indicator](image2.png)

### Visual Differential Indicator

**DVM**

**Visual Differential Indicator**

<table>
<thead>
<tr>
<th>Settings</th>
<th>Ordering code</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.2 bar ±10%</td>
<td>DVM 12 x P01</td>
</tr>
<tr>
<td>2 bar ±10%</td>
<td>DVM 20 x P01</td>
</tr>
<tr>
<td>5 bar ±10%</td>
<td>DVM 50 x P01</td>
</tr>
<tr>
<td>7 bar ±10%</td>
<td>DVM 70 x P01</td>
</tr>
<tr>
<td>9.5 bar ±10%</td>
<td>DVM 95 x P01</td>
</tr>
</tbody>
</table>

**Materials**
- Body: Brass
- Internal parts: Brass - Nylon
- Contacts: Silver
- Seal: HNBR - FPM

**Technical data**
- Reset: Manual reset
- Max working pressure: 420 bar
- Proof pressure: 630 bar
- Burst pressure: 1260 bar
- Working temperature: From -25 °C to +110 °C
- Compatibility with fluids: Mineral oils, Synthetic fluids
- Degree protection: IP65 according to EN 60529

**Electrical data**
- Electrical connection: IEC 61076-2-101 D (M12)
- Power supply: 24 Vdc
- Analogue output: From 4 to 20 mA
- Thermal lockout: 30 °C (all output signals stalled up to 30 °C)

**Hydraulic symbol**

![Hydraulic symbol for Visual Differential Indicator](image3.png)
**T2 Indicator plug**

<table>
<thead>
<tr>
<th>Seal</th>
<th>Ordering code</th>
</tr>
</thead>
<tbody>
<tr>
<td>HNBR</td>
<td>T2 H</td>
</tr>
<tr>
<td>FPM</td>
<td>T2 V</td>
</tr>
</tbody>
</table>

**Materials**
- Body: Phosphatized steel
- Seal: HNBR / FPM

---

**DESIGNATION & ORDERING CODE - DIFFERENTIAL INDICATORS**

<table>
<thead>
<tr>
<th>Series</th>
<th>Configuration example 1:</th>
<th>Configuration example 2:</th>
<th>Configuration example 3:</th>
<th>Configuration example 4:</th>
<th>Configuration example 5:</th>
</tr>
</thead>
<tbody>
<tr>
<td>DE</td>
<td>DE M 50 H F 50 P01</td>
<td>DE H 50 F A 70 P01</td>
<td>DL E 70 V A 71 P01</td>
<td>DT A 50 H F 70 P01</td>
<td>DV M 95 V P01</td>
</tr>
<tr>
<td>DL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DT</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DV</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Type**
- DE Standard type
- DL With automatic reset
- DT With manual reset
- DV For high power supply
- H Hazardous area

**Pressure setting**

<table>
<thead>
<tr>
<th>12</th>
<th>1.2 bar</th>
<th>20</th>
<th>2 bar</th>
<th>50</th>
<th>5 bar</th>
<th>70</th>
<th>7 bar</th>
<th>95</th>
<th>9.5 bar</th>
</tr>
</thead>
<tbody>
<tr>
<td>DEA</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>DEA</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>DEA</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
</tbody>
</table>

**Seals**
- F MFQ
- H HNBR
- V FPM

**Thermostat**
- DE Without
- F With thermostat

**Electrical connections**

<table>
<thead>
<tr>
<th>10</th>
<th>Connection AMP Superseal series 1.5</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>Connection AMP Timer Junior</td>
</tr>
<tr>
<td>30</td>
<td>Connection Deutsch DT-04-2-P</td>
</tr>
<tr>
<td>35</td>
<td>Connection Deutsch DT-04-3-P</td>
</tr>
<tr>
<td>48</td>
<td>Connection M20</td>
</tr>
<tr>
<td>49</td>
<td>Connection 1/2” NPT</td>
</tr>
<tr>
<td>50</td>
<td>Connection EN 175301-803</td>
</tr>
<tr>
<td>51</td>
<td>Connection EN 175301-803, transparent base with lamps 24 Vdc</td>
</tr>
<tr>
<td>52</td>
<td>Connection EN 175301-803, transparent base with lamps 110 Vdc</td>
</tr>
<tr>
<td>70</td>
<td>Connection IEC 61076-2-101 D (M12)</td>
</tr>
<tr>
<td>71</td>
<td>Connection IEC 61076-2-101 D (M12), black base with lamps 24 Vdc</td>
</tr>
</tbody>
</table>

**Option**
- P01 MP Filtri standard
- Pxx Customized

---

**DESIGNATION & ORDERING CODE - DIFFERENTIAL INDICATOR PLUG**

<table>
<thead>
<tr>
<th>T2 Indicator plug</th>
<th>Configuration example</th>
</tr>
</thead>
<tbody>
<tr>
<td>T2 Indicator plug</td>
<td>T2 H</td>
</tr>
</tbody>
</table>

**Seals**
- H HNBR
- V FPM
### STAINLESS STEEL DIFFERENTIAL INDICATORS

#### DEH*48

**Hazardous Area Electronic Differential Indicator**

<table>
<thead>
<tr>
<th>Settings</th>
<th>5 bar ±10%</th>
<th>7 bar ±10%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Torque</td>
<td>50 N∙m</td>
<td>50 N∙m</td>
</tr>
</tbody>
</table>

**Connection diagram**

Red, Black, White

**Materials**
- Body: AISI 316 Stainless steel
- Contacts: Rhodium (tungsten optional)
- Seal: MFQ - FPM

**Protection class**
EX ia IIC T4/T6: Intrinsically safe

**Temperature class**
T4 (135 °C) and T6 (85 °C)

**Technical data**
- Max working pressure: 420 bar
- Working temperature: From -60 °C to +125 °C
- Connection type: M20 x 1.5 - 3 core polyrad cable supplied with 5 meters
- Contact type: SPCO/SPDT (Hermetically sealed - volt free contacts)
- Compatibility with fluids: Mineral oils, Synthetic fluids
- Degree of protection: IP 66/67/68 according to EN 60529

**Electrical data**
- Current Ratings: 24V DC 830mA - 110V AC 180mA
- Electrical Ratings: UI 30V - LI 250mA - PI 1.3W

**Connection diagram**

Red, Black, White

**Certification / Approvals:**
ATEX, IECEx, TRCU, INMETRO

**Materials**
- Body: AISI 316 Stainless steel
- Contacts: Rhodium (tungsten optional)
- Seal: MFQ - FPM

**Protection class**
EX ia IIC T4/T6: Flameproof

**Temperature class**
T4 (135 °C) and T6 (85 °C)

**Technical data**
- Max working pressure: 420 bar
- Working temperature: From -60 °C to +125 °C
- Connection type: M20 x 1.5 - 3 core polyrad cable supplied with 5 meters
- Contact type: SPCO/SPDT (Hermetically sealed - volt free contacts)
- Compatibility with fluids: Mineral oils, Synthetic fluids
- Degree of protection: IP 66/67/68 according to EN 60529

**Electrical data**
- Current Ratings: 24V DC 830mA - 110V AC 180mA
- Electrical Ratings: UI 30V - LI 250mA - PI 1.3W

**Connection diagram**

Red, Green, White, Black

**Certification / Approvals:**
ATEX, IECEx, TRCU, INMETRO, UL/CSA Class I Division 1 Groups A-D, UL/CSA Class II Division 1 Groups E-G

**Materials**
- Body: AISI 316 Stainless steel housing with internal engineered resin switch
- Contacts: Rhodium
- Seal: MFQ - FPM

**Protection class**
EX ia IIC T6: Intrinsically safe

**Temperature class**
T6 (85 °C)

**Technical data**
- Max working pressure: 420 bar
- Working temperature: From -20 °C to +80 °C
- Connection type: 4 pole male M12 connector - plastic
- Contact type: SPCO/SPDT (Hermetically sealed - volt free contacts)
- Compatibility with fluids: Mineral oils, Synthetic fluids
- Degree of protection: IP 66/67 according to EN 60529

**Electrical data**
- Current Ratings: 24V DC 830mA - 110V AC 180mA
- Electrical Ratings: UI 30V - LI 250mA - PI 1.3W

**Connection diagram**

Brown, Blue, Black
### DEX*50
#### Electrical Differential Indicator

<table>
<thead>
<tr>
<th>Settings</th>
<th>Ordering code</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 bar ±10%</td>
<td>DE X 50 x A 50 P01</td>
</tr>
<tr>
<td>7 bar ±10%</td>
<td>DE X 70 x A 50 P01</td>
</tr>
<tr>
<td>9.5 bar ±10%</td>
<td>DE X 95 x A 50 P01</td>
</tr>
</tbody>
</table>

**Materials**
- Body: AISI 316L
- Base: Black Nylon
- Contacts: Silver
- Seal: HNBR - MFQ

**Technical data**
- Max working pressure: 420 bar
- Proof pressure: 630 bar
- Burst pressure: 1260 bar
- Working temperature: From -25 °C to +110 °C
- Compatibility with fluids: Mineral oils, Synthetic fluids
- Degree protection: IP66 according to EN 60529
- IP69K according to ISO 20653

**Electrical data**
- Electrical connection: EN 175301-803
- Resistive load: 0.2 A / 115 Vdc

**Dimensions**
- A/F 30
- Max tightening torque: 65 N·m

### DLX*51 - DLX*52
#### Electrical/Visual Differential Indicator

<table>
<thead>
<tr>
<th>Settings</th>
<th>Ordering code</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 bar ±10%</td>
<td>DL X 50 x A x x P01</td>
</tr>
<tr>
<td>7 bar ±10%</td>
<td>DL X 70 x A x x P01</td>
</tr>
<tr>
<td>9.5 bar ±10%</td>
<td>DL X 95 x A x x P01</td>
</tr>
</tbody>
</table>

**Materials**
- Body: AISI 316L
- Base: Transparent Nylon
- Contacts: Silver
- Seal: HNBR - MFQ

**Technical data**
- Max working pressure: 420 bar
- Proof pressure: 630 bar
- Burst pressure: 1260 bar
- Working temperature: From -25 °C to +110 °C
- Compatibility with fluids: Mineral oils, Synthetic fluids
- Degree protection: IP66 according to EN 60529
- IP69K according to ISO 20653

**Electrical data**
- Electrical connection: EN 175301-803
- Type 51
- Lamps 24 Vdc 110 Vdc
- Resistive load: 1 A / 24 Vdc 1 A / 110 Vdc

**Dimensions**
- A/F 30
- Max tightening torque: 65 N·m

### DVX
#### Visual Differential Indicator

<table>
<thead>
<tr>
<th>Settings</th>
<th>Ordering code</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 bar ±10%</td>
<td>DV X 50 x P01</td>
</tr>
<tr>
<td>7 bar ±10%</td>
<td>DV X 70 x P01</td>
</tr>
<tr>
<td>9.5 bar ±10%</td>
<td>DV X 95 x P01</td>
</tr>
</tbody>
</table>

**Materials**
- Body: AISI 316L
- Internal parts: AISI 316L - Nylon
- Contacts: Silver
- Seal: HNBR - MFQ

**Technical data**
- Reset: Automatic reset
- Max working pressure: 420 bar
- Proof pressure: 630 bar
- Burst pressure: 1260 bar
- Working temperature: From -25 °C to +110 °C
- Compatibility with fluids: Mineral oils, Synthetic fluids
- Degree protection: IP65 according to ISO 2943

**Dimensions**
- A/F 28
- Max tightening torque: 65 N·m

**Green / Red clogging indicator**
- A/F 28
- Max tightening torque: 65 N·m
### STAINLESS STEEL DIFFERENTIAL INDICATORS

#### Dimensions

<table>
<thead>
<tr>
<th>DVY</th>
<th>Visual Differential Indicator</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Materials</strong></td>
<td></td>
</tr>
<tr>
<td>- Body:</td>
<td>AISI 316L</td>
</tr>
<tr>
<td>- Internal parts:</td>
<td>AISI 316L - Nylon</td>
</tr>
<tr>
<td>- Contacts:</td>
<td>Silver</td>
</tr>
<tr>
<td>- Seal:</td>
<td>HNBR - MFQ</td>
</tr>
<tr>
<td><strong>Technical data</strong></td>
<td></td>
</tr>
<tr>
<td>- Reset:</td>
<td>Manual reset</td>
</tr>
<tr>
<td>- Max working pressure:</td>
<td>420 bar</td>
</tr>
<tr>
<td>- Proof pressure:</td>
<td>630 bar</td>
</tr>
<tr>
<td>- Burst pressure:</td>
<td>1260 bar</td>
</tr>
<tr>
<td>- Working temperature:</td>
<td>From -25 °C to +110 °C</td>
</tr>
<tr>
<td>- Compatibility with fluids:</td>
<td>Mineral oils, Synthetic fluids</td>
</tr>
<tr>
<td>- Degree protection:</td>
<td>IP65 according to EN 60529</td>
</tr>
</tbody>
</table>

#### X2 Indicator plug

<table>
<thead>
<tr>
<th>Seal</th>
<th>Ordering code</th>
</tr>
</thead>
<tbody>
<tr>
<td>HNBR</td>
<td>X2 H</td>
</tr>
<tr>
<td>MFQ</td>
<td>X2 F</td>
</tr>
</tbody>
</table>

<p>| <strong>Materials</strong> |                              |
| - Body: | AISI 316L                      |
| - Seal: | HNBR / MFQ                     |</p>
<table>
<thead>
<tr>
<th>Series</th>
<th>Configuration example 1:</th>
<th>Configuration example 2:</th>
<th>Configuration example 3:</th>
<th>Configuration example 4:</th>
</tr>
</thead>
<tbody>
<tr>
<td>DE</td>
<td>DE H 50 F A 70 P01</td>
<td>DE X 50 H A 50 P01</td>
<td>DL X 95 V A 71 P01</td>
<td>DV Y 70 V 71 P01</td>
</tr>
<tr>
<td>DL</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DV</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Type</td>
<td>Pressure setting</td>
<td>Seals</td>
<td>Thermostat</td>
</tr>
<tr>
<td></td>
<td>H Hazardous area</td>
<td>50 5 bar</td>
<td>F MFQ</td>
<td>A Without</td>
</tr>
<tr>
<td></td>
<td>X Standard type</td>
<td>70 7 bar</td>
<td>H HNBR</td>
<td>48 Connection M20</td>
</tr>
<tr>
<td></td>
<td>Y Optional type</td>
<td>95 9.5 bar</td>
<td>V FPM</td>
<td>49 Connection 1/2&quot; NPT</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>50 Connection EN 175301-803</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>51 Connection EN 175301-803, transparent base with lamps 24 Vdc</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>52 Connection EN 175301-803, transparent base with lamps 110 Vdc</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>70 Connection IEC 61076-2-101 D (MT2)</td>
</tr>
<tr>
<td></td>
<td>Electrical connections</td>
<td>Connection EN 175301-803, transparent base with lamps 110 Vdc</td>
<td>Option</td>
<td></td>
</tr>
<tr>
<td></td>
<td>DEH DEH DLX DV</td>
<td>Connection M20</td>
<td>70 MP Filtri standard</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>48 Connection M20</td>
<td>P01</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>49 Connection 1/2&quot; NPT</td>
<td>P01</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>50 Connection EN 175301-803</td>
<td>Customized</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>51 Connection EN 175301-803, transparent base with lamps 24 Vdc</td>
<td>Pxx</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>52 Connection EN 175301-803, transparent base with lamps 110 Vdc</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>70 Connection IEC 61076-2-101 D (MT2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Option</td>
</tr>
</tbody>
</table>

**DESIGNATION & ORDERING CODE - DIFFERENTIAL INDICATOR PLUG**

<table>
<thead>
<tr>
<th>Series</th>
<th>Configuration example</th>
</tr>
</thead>
<tbody>
<tr>
<td>X2</td>
<td>X2 H</td>
</tr>
<tr>
<td>H</td>
<td>H HNBR</td>
</tr>
<tr>
<td>F</td>
<td>F MFQ</td>
</tr>
</tbody>
</table>

**Dimensions**

**Clogging Indicators**

**Seals**

<table>
<thead>
<tr>
<th>Seals</th>
</tr>
</thead>
<tbody>
<tr>
<td>F MFQ</td>
</tr>
<tr>
<td>H HNBR</td>
</tr>
<tr>
<td>V FPM</td>
</tr>
</tbody>
</table>

**Electrical connections**

<table>
<thead>
<tr>
<th>Electrical connections</th>
</tr>
</thead>
<tbody>
<tr>
<td>48 Connection M20</td>
</tr>
<tr>
<td>49 Connection 1/2&quot; NPT</td>
</tr>
<tr>
<td>50 Connection EN 175301-803</td>
</tr>
<tr>
<td>51 Connection EN 175301-803, transparent base with lamps 24 Vdc</td>
</tr>
<tr>
<td>52 Connection EN 175301-803, transparent base with lamps 110 Vdc</td>
</tr>
<tr>
<td>70 Connection IEC 61076-2-101 D (MT2)</td>
</tr>
</tbody>
</table>
## Clogging Indicators

### Clogging Indicators

<table>
<thead>
<tr>
<th>Filter family</th>
<th>Filter series</th>
<th>Visual indicator</th>
<th>Electrical indicator</th>
<th>Electrical / Visual indicator</th>
<th>Electronic indicator</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Low &amp; Medium-Pressure Filters</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>With bypass valve</td>
<td>With bypass valve</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LMP 900 - 901</td>
<td>LMP 902 - 903</td>
<td>LMP 950 - 951</td>
<td>LMP 952 - 953 - 954</td>
<td>LMD 211 - 400 - 401 - 431 - 951 - LDD</td>
<td></td>
</tr>
<tr>
<td>LMP 500 - 501</td>
<td>LMP 600 - 601 &amp; 430 - 431</td>
<td>LMP 900 - 901</td>
<td>LMP 902 - 903</td>
<td>LMP 950 - 951</td>
<td>LMP 952 - 953 - 954</td>
</tr>
<tr>
<td>Without bypass valve</td>
<td>Without bypass valve</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LMP 500 - 501</td>
<td>LMP 600 - 601 &amp; 430 - 431</td>
<td>LMP 900 - 901</td>
<td>LMP 902 - 903</td>
<td>LMP 950 - 951</td>
<td>LMP 952 - 953 - 954</td>
</tr>
<tr>
<td><strong>High-Pressure Filters</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FMP 039 - 065 - 135 - 320</td>
<td>FHP 010 - 011 - 065 - 135 - 320 - 500</td>
<td>HFA 051</td>
<td>HFA 051</td>
<td>HFH 050 - 051</td>
<td>FHD 021 - 051 - 326 - 333</td>
</tr>
<tr>
<td>With bypass valve</td>
<td>With bypass valve</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HN 006 - 007 - 010 - 050 - 065 - 135 - 320 - 500</td>
<td>FHP 050 - 150</td>
<td>HFA 051</td>
<td>HFA 051</td>
<td>HFH 050 - 051</td>
<td>FHD 021 - 051 - 326 - 333</td>
</tr>
<tr>
<td><strong>High-Pressure Stainless Steel Filters</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FZ0 010 - 011 - 039</td>
<td>FZ0 039 - 136</td>
<td>FZB 039</td>
<td>FZM 039</td>
<td>FZD 051</td>
<td></td>
</tr>
<tr>
<td>Without bypass valve</td>
<td>Without bypass valve</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FZ0 010 - 011 - 039</td>
<td>FZ0 039 - 136</td>
<td>FZB 039</td>
<td>FZM 039</td>
<td>FZD 051</td>
<td></td>
</tr>
</tbody>
</table>
All data, details and words contained in this publication are provided for information purposes only.
MP Filtri reserves the right to make modifications to the models and versions of the described products at any time for both technical and/or commercial reasons.
The colors and the pictures of the products are purely indicative.
Any reproduction, partial or total, of this document is strictly forbidden.
All rights are strictly reserved.
HEADQUARTERS

MP Filtri S.p.A.
Pessano con Bornago
Milano - Italy
+39 02 957031
sales@mpfiltri.it

BRANCH OFFICES

ITALFILTRI LLC
Moscow - Russia
+7 (495) 220 94 60
mpfiltrirussia@yahoo.com

MP Filtri Canada Inc.
Concord, Ontario - Canada
+1 905 303 1369
sales@mpfiltricanada.com

MP Filtri France SAS
Villeneuve la Garenne
Paris - France
+33 (0)1 40 86 47 00
sales@mpfiltrifrance.com

MP Filtri Germany GmbH
St. Ingbert - Germany
+49 (0) 6894 95652 2-0
sales@mpfiltri.de

MP Filtri India Pvt. Ltd.
Bangalore - India
+91 80 4147 7444 / +91 80 4146 1444
sales@mpfiltri.co.in

MP Filtri (Shanghai) Co., Ltd.
Shanghai Pudong - China
+86 21 58919916 116
sales@mpfiltrishanghai.com

MP Filtri U.K. Ltd.
Bourton on the Water
Gloucestershire - United Kingdom
+44 (0) 1451 822 522
sales@mpfiltri.co.uk

MP Filtri U.S.A. Inc.
Quakertown, PA - U.S.A.
+1 215 529 1300
sales@mpfiltriusa.com