

# Clogging Indicators



Filter elements are efficient only if their Dirt Holding Capacity is fully exploited. This is achieved by using filter housings equipped with clogging indicators. These devices trip when the clogging of the filter element causes an increase in pressure drop across the filter element. 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 model (only available for differential type indicators) with warning signals (75% of clogging) and alarm (clogging).

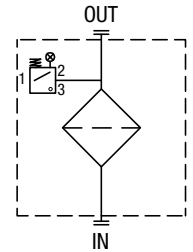
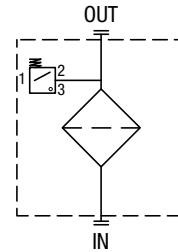
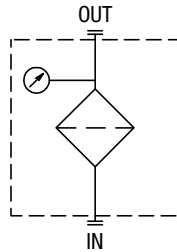
## Suitable indicator types

### 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.

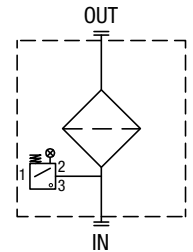
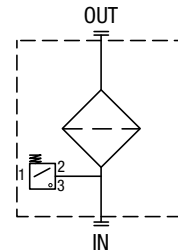
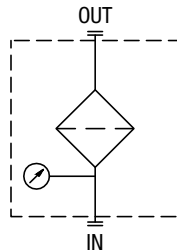
Available products with R 1/8" EN 10226 to be fitted on MPS series.



### 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.

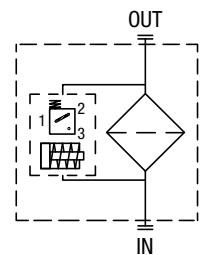
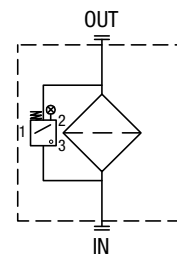
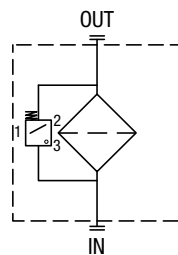
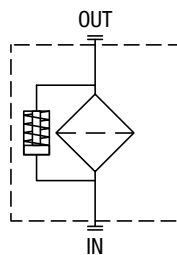


### DIFFERENTIAL INDICATORS

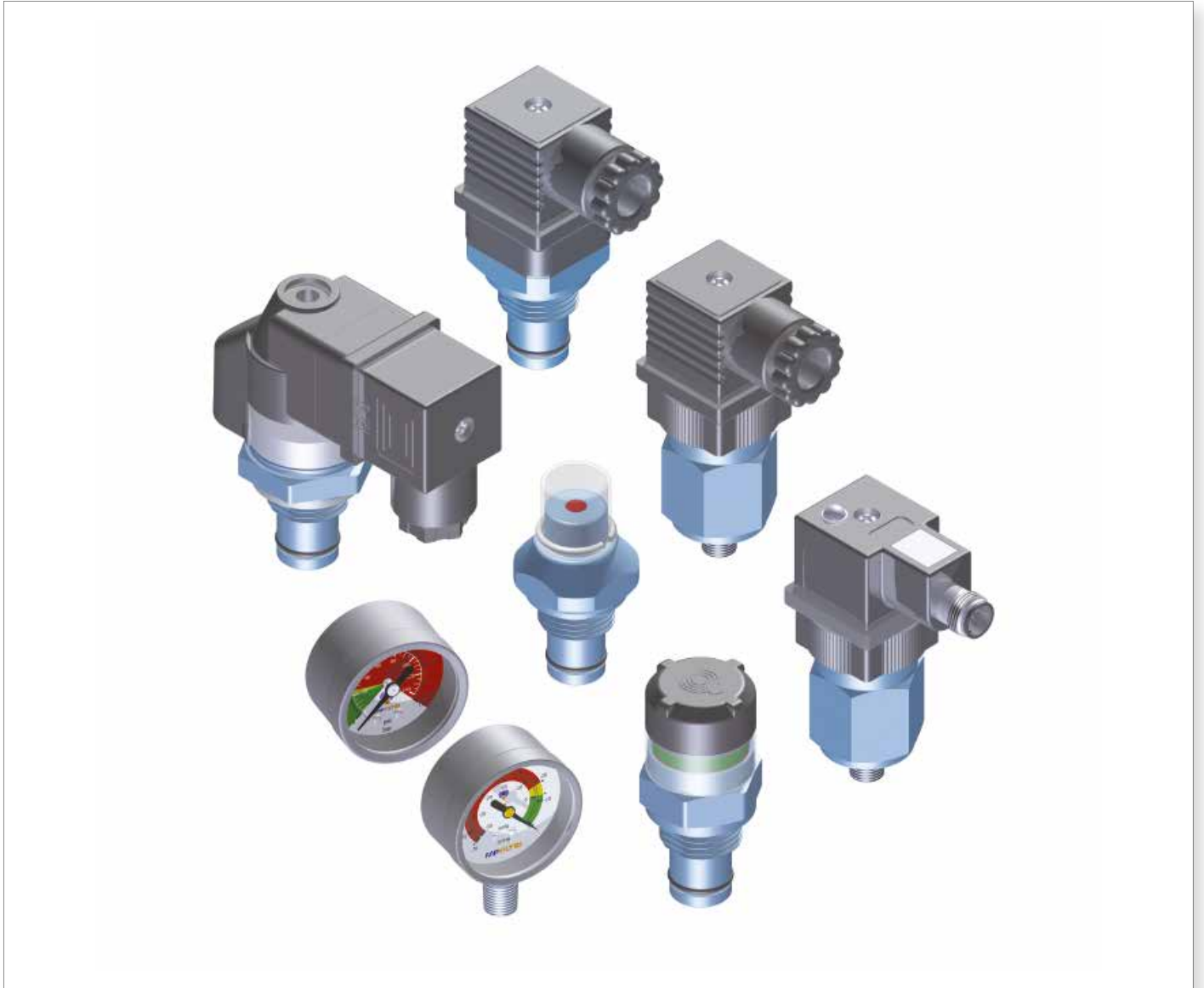
Differential indicators are used on the Pressure line to check the efficiency of the filter element. They measure the pressure upstream and downstream of the filter element (differential pressure).

Standard items are produced with special connection G 1/2" size.

Also available in Stainless Steel models.



# Clogging indicators



# VACUUM INDICATORS

## Dimensions

VE*50	
Electrical Vacuum Indicator	
R	Ordering code
EN 10226 - R1/4"	VE A 21 A A 50 P01
EN 10226 - R1/8"	VE B 21 A A 50 P01

A/F 27  
Max tightening torque: 25 N·m

**Hydraulic symbol**

**Electrical symbol**

**Materials**

- Body: Brass
- Base: Black Nylon
- Contacts: Silver
- Seal: NBR

**Technical data**

- Vacuum setting: -0.21 bar  $\pm$ 10%
- Max working pressure: 10 bar
- Proof pressure: 15 bar
- Working temperature: From -25 °C to +80 °C
- Compatibility with fluids: Mineral oil, 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: 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 IIIC Tx°C X
- CE certification

VL*51 - VL*52 - VL*53	
Electrical/Visual Vacuum Indicator	
R	Ordering code
EN 10226 - R1/4"	VL A 21 A A xx P01
EN 10226 - R1/8"	VL B 21 A A xx P01

A/F 27  
Max tightening torque: 25 N·m

**Hydraulic symbol**

**Electrical symbol**

**Materials**

- Body: Brass
- Base: Transparent Nylon
- Contacts: Brass - Nylon
- Seal: NBR

**Technical data**

- Vacuum setting: -0.21 bar  $\pm$ 10%
- Max working pressure: 10 bar
- Proof pressure: 15 bar
- Working temperature: From -25 °C to +80 °C
- Compatibility with fluids: Mineral oil, 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: 0.8 A / 24 Vdc   0.2 A / 115 Vdc   4 A / 230 Vac

VL*71	
Electrical/Visual Vacuum Indicator	
Connections	Indicator code
EN 10226 - R1/4"	VL A 21 A A 71 P01
EN 10226 - R1/8"	VL B 21 A A 71 P01

A/F 27  
Max tightening torque: 25 N·m

**Hydraulic symbol**

**Electrical symbol**

**Materials**

- Body: Brass
- Base: Black Nylon
- Contacts: Silver
- Seal: NBR

**Technical data**

- Vacuum setting: -0.21 bar  $\pm$ 10%
- Max working pressure: 10 bar
- Proof pressure: 15 bar
- Working temperature: From -25 °C to +80 °C
- Compatibility with fluids: Mineral oil, 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

VVA - VVB	
Axial Vacuum Gauge	
R	Ordering code
EN 10226 - R1/4"	VVA 16 P01
EN 10226 - R1/8"	VVB 16 P01

**Hydraulic symbol**

**Dial scale**

**Conversion to SI units**

[cmHg]	[bar]
-12	-0.16
-18	-0.24
-76	-1.01

**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 oil, 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

VVR - VVS	
Radial Vacuum Gauge	
R	Ordering code
EN 10226 - R1/4"	VVR 16 P01
EN 10226 - R1/8"	VVS 16 P01

**Hydraulic symbol**

**Dial scale**

**Conversion to SI units**

[cmHg]	[bar]
-12	-0.16
-18	-0.24
-76	-1.01

**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 oil, 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

DESIGNATION & ORDERING CODE							
<b>Series</b>	Configuration example 1:	VE	A	21	A	A	50 P01
<b>VE</b> Electrical vacuum indicator	Configuration example 2:	VL	B	21	A	A	71 P01
<b>VL</b> Electrical/Visual vacuum indicator	Configuration example 3:	VV	R	16			P01
<b>VV</b> Vacuum gauge							
<b>Type VE - VL</b>	<b>Type VV</b>						
<b>A</b> Connection EN 10226 - R1/4"	<b>A</b> Axial connection EN 10226 - R1/4"						
<b>B</b> Connection EN 10226 - R1/8"	<b>B</b> Axial connection EN 10226 - R1/8"						
	<b>R</b> Radial connection EN 10226 - R1/4"						
	<b>S</b> Radial connection EN 10226 - R1/8"						
<b>Vacuum setting</b>		VE	VL	VV			
<b>16</b> 0.16 bar				•			
<b>21</b> 0.21 bar		•	•				
<b>Seals</b>		VE	VL	VV			
<b>A</b> NBR		•	•				
<b>Thermostat</b>		VE	VL	VV			
<b>A</b> Without		•	•				
<b>Electrical connections</b>		VE	VL	VV			
<b>50</b> Connection EN 175301-803		•					
<b>51</b> Connection EN 175301-803, transparent base with lamps 24 Vdc			•				
<b>52</b> Connection EN 175301-803, transparent base with lamps 110 Vdc			•				
<b>53</b> Connection EN 175301-803, transparent base with lamps 230 Vdc			•				
<b>71</b> Connection IEC 61076-2-101 D (M12), black base with lamps 24 Vdc			•				
	<b>Option</b>						
	<b>P01</b> MP Filtri standard						
	<b>Pxx</b> Customized						

# BAROMETRIC INDICATORS

## Dimensions

BEA*50		
<b>Electrical Pressure Indicator</b>		
Settings	Ordering code	
1.5 bar ±10%	BE A 15 H A 50 P01	
2 bar ±10%	BE A 20 H A 50 P01	
<p><b>Hydraulic symbol</b></p>		<p><b>Materials</b></p> <ul style="list-style-type: none"> <li>- Body: Brass</li> <li>- Base: Black Nylon</li> <li>- Contacts: Silver</li> <li>- Seal: HNBR</li> </ul> <p><b>Technical data</b></p> <ul style="list-style-type: none"> <li>- Max working pressure: 40 bar</li> <li>- Proof pressure: 60 bar</li> <li>- Working temperature: From -25 °C to +80 °C</li> <li>- Compatibility with fluids: Mineral oil, Synthetic fluids HFA, HFB, HFC according to ISO 2943</li> <li>- Degree of protection: IP65 according to EN 60529</li> </ul> <p><b>Electrical data</b></p> <ul style="list-style-type: none"> <li>- Electrical connection: EN 175301-803</li> <li>- Resistive load: 5 A / 14 Vdc 4 A / 30 Vdc 5 A / 125 Vac 4 A / 250 Vac</li> <li>- Available Atex product: II 1GD Ex ia IIC Tx Ex ia IIIC Tx°C X </li> <li>- CE certification</li> </ul>

BEM*41			
<b>Electrical Pressure Indicator</b>			
Settings	Ordering code		
1.5 bar ±10%	BE M 15 H A 41 P01		
2 bar ±10%	BE M 20 H A 41 P01		
		<p><b>Hydraulic symbol</b></p>	<p><b>Materials</b></p> <ul style="list-style-type: none"> <li>- Body: Brass</li> <li>- Base: Black Nylon</li> <li>- Contacts: Silver</li> <li>- Seal: HNBR</li> </ul> <p><b>Technical data</b></p> <ul style="list-style-type: none"> <li>- Max working pressure: 40 bar</li> <li>- Proof pressure: 60 bar</li> <li>- Working temperature: From -25 °C to +80 °C</li> <li>- Compatibility with fluids: Mineral oil, Synthetic fluids HFA, HFB, HFC according to ISO 2943</li> <li>- Degree of protection: IP67 according to EN 60529</li> </ul> <p><b>Electrical data</b></p> <ul style="list-style-type: none"> <li>- Electrical connection: Four-core cable</li> <li>- Resistive load: 5 A / 14 Vdc 4 A / 30 Vdc 5 A / 125 Vac 4 A / 250 Vac</li> <li>- CE certification</li> <li>On request this indicator can be provided with main connectors in use for wirings.</li> </ul>
<p><b>Electrical symbol</b></p>			

BET*10			
<b>Electrical Pressure Indicator</b>			
Settings	Ordering code		
2 bar ±10%	BE T 20 H A 10 P01		
2.5 bar ±10%	BE T 25 H A 10 P01		
		<p><b>Hydraulic symbol</b></p>	<p><b>Materials</b></p> <ul style="list-style-type: none"> <li>- Body: Brass</li> <li>- Base: Black Nylon</li> <li>- Contacts: Silver</li> <li>- Seal: HNBR</li> </ul> <p><b>Technical data</b></p> <ul style="list-style-type: none"> <li>- Max working pressure: 10 bar</li> <li>- Proof pressure: 15 bar</li> <li>- Working temperature: From -25 °C to +100 °C</li> <li>- Compatibility with fluids: Mineral oil, Synthetic fluids HFA, HFB, HFC according to ISO 2943</li> <li>- Degree of protection: IP65 according to EN 60529</li> </ul> <p><b>Electrical data</b></p> <ul style="list-style-type: none"> <li>- Electrical connection: AMP Superseal series 1.5</li> <li>- Resistive load: 0.5 A / 48 Vdc</li> <li>- Thermostat condition: Open up to 30°C</li> <li>- CE certification</li> </ul>
<p><b>Electrical symbol</b></p>			

BET*30	
<b>Electrical Pressure Indicator</b>	
Settings	Ordering code
2 bar ±10%	BE T 20 H A 30 P01
2.5 bar ±10%	BE T 25 H A 30 P01

**Hydraulic symbol**

**Electrical symbol**

**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 oil, 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	
<b>Electrical Pressure Indicator</b>	
Settings	Ordering code
2 bar ±10%	BE T 20 H A 50 P01
2.5 bar ±10%	BE T 25 H A 50 P01

**Hydraulic symbol**

**Electrical symbol**

**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 oil, 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	
<b>Electrical/Visual Pressure Indicator</b>	
Settings	Ordering code
1.5 bar ±10%	BL A 15 H A xx P01
2 bar ±10%	BL A 20 H A xx P01

**Hydraulic symbol**

**Electrical symbol**

**Materials**

- Body: Brass
- Base: Transparent 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 oil, Synthetic fluids  
HFA, HFB, HFC according to ISO 2943
- Degree of protection: IP65 according to EN 60529

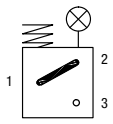
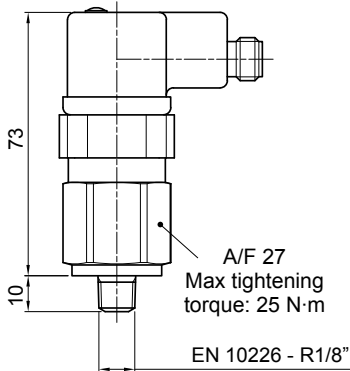
**Electrical data**


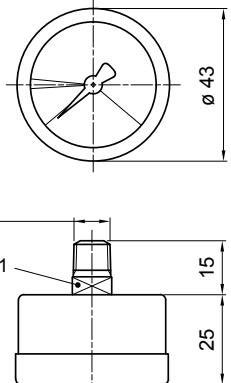
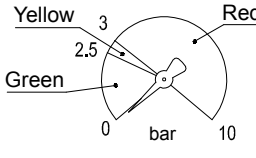
- Electrical connection: EN 175301-803
- Type: 51                      52                      53
- Lamps: 24 Vdc              110 Vdc              230 Vac
- Resistive load: 0.8 A / 24 Vdc    0.2 A / 110 Vdc    4 A / 230 Vac


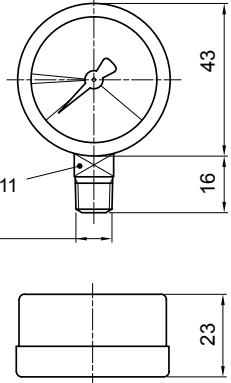
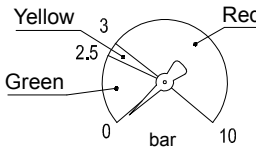


# BAROMETRIC INDICATORS

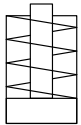
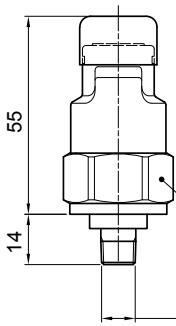
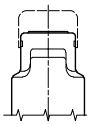
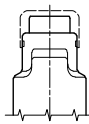
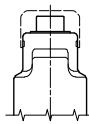
## Dimensions

BL*71		<b>Hydraulic symbol</b> 	<b>Materials</b> - Body: Brass - Base: Black Nylon - Contacts: Silver - Seal: HNBR
Electrical/Visual Pressure Indicator			
Settings	Ordering code		
1.5 bar ±10%	BL A 15 H A 71 P01	<b>Technical data</b> - Max working pressure: 40 bar - Proof pressure: 60 bar - Working temperature: From -25 °C to +80 °C - Compatibility with fluids: Mineral oil, Synthetic fluids HFA, HFB, HFC according to ISO 2943 - Degree of protection: IP65 according to EN 60529	
2 bar ±10%	BL A 20 H A 71 P01		
		<b>Electrical data</b> - Electrical connection: IEC 61076-2-101 D (M12) - Lamps: 24 Vdc - Resistive load: 0.4 A / 24 Vdc	

BVA		<b>Hydraulic symbol</b> 	<b>Materials</b> - Case: Painted Steel - Window: Transparent plastic - Dial: Painted Steel - Pointer: Painted Aluminium - Pressure connection: Brass - Pressure element: Bourdon tube Cu-alloy soft soldered
Axial Pressure Gauge			
Settings	Ordering code		
1.4 bar ±10%	BVA 14 P01	<b>Technical data</b> - 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 oil, 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	
2.5 bar ±10%	BVA 25 P01		
		<b>Dial scale</b> BVA 25 P01 	

BVR		<b>Hydraulic symbol</b> 	<b>Materials</b> - Case: Painted Steel - Window: Transparent plastic - Dial: Painted Steel - Pointer: Painted Aluminium - Pressure connection: Brass - Pressure element: Bourdon tube Cu-alloy soft soldered
Radial Pressure Gauge			
Settings	Ordering code		
1.4 bar ±10%	BVR 14 P01	<b>Technical data</b> - 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 oil, 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	
2.5 bar ±10%	BVR 25 P01		
		<b>Dial scale</b> BVR 25 P01 	



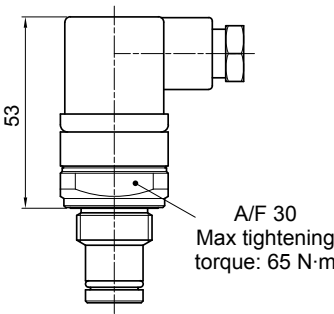
BVP - BVQ		Hydraulic symbol	Materials		
Visual Pressure Indicator					- Body: Brass - Cover / internal parts: Nylon - Caps: VMQ - Seal: HNBR
Setting	Ordering code				
1.5 bar ±10%	BV P 15 H P01 BV Q 15 H P01		<b>Technical data</b> - Reset: BVP - Automatic reset BVQ - Manual reset - Max working pressure: 10 bar - Proof pressure: 15 bar - Working temperature: From -25 °C to +80 °C - Compatibility with fluids: Mineral oil, Synthetic fluids HFA, HFB, HFC according to ISO 2943 - Degree of protection: IP45 according to EN 60529		
2 bar ±10%	BV P 20 H P01 BV Q 20 H P01				
A/F 27 Max tightening torque: 25 N·m EN 10226 - R1/8"		<b>Signals</b>	 Absence of pressure (no indicator)	 Presence of pressure (green button rises gradually)	 Clogged filter element (red button risen)

DESIGNATION & ORDERING CODE							
<b>Series</b>	Configuration example 1: BE M 15 H A 41 P01						
<b>BE</b> Electrical pressure indicator	Configuration example 2: BL A 20 H A 71 P01						
<b>BL</b> Electrical/Visual pressure indicator	Configuration example 3: BV R 14 P01						
<b>BV</b> Visual pressure indicator	Configuration example 4: BV P 20 H P01						
<b>Type</b>	BE	BL	BV				
<b>A</b> Standard type	•	•	<b>A</b> Axial connection pressure gauge				
<b>M</b> With wired electrical connection	•		<b>R</b> Radial connection pressure gauge				
<b>T</b> With thermal switch	•		<b>P</b> Visual indicator with automatic reset				
			<b>Q</b> Visual indicator with manual reset				
<b>Pressure setting</b>	BEA-BEM	BET	BL	BVA-BVR	BVP-BVQ		
<b>14</b> 1.4 bar				•			
<b>15</b> 1.5 bar	•		•		•		
<b>20</b> 2 bar	•	•	•		•		
<b>25</b> 2.5 bar		•		•			
<b>Seals</b>	BE	BL	BVA-BVR	BVP-BVQ			
<b>H</b> HNBR	•	•		•			
<b>Thermostat</b>	BE	VL	BV				
<b>A</b> Without	•	•					
<b>Electrical connections</b>	BEA	BEM	BET	BL	BV		
<b>10</b> Connection AMP Superseal series 1.5			•				
<b>30</b> Connection Deutsch DT-04-2-P			•				
<b>41</b> Connection via four-core cable		•					
<b>50</b> Connection EN 175301-803	•		•				
<b>51</b> Connection EN 175301-803, transparent base with lamps 24 Vdc				•			
<b>52</b> Connection EN 175301-803, transparent base with lamps 110 Vdc				•			
<b>53</b> Connection EN 175301-803, transparent base with lamps 230 Vdc				•			
<b>71</b> Connection IEC 61076-2-101 D (M12), black base with lamps 24 Vdc				•			
	<b>Option</b>						
	<b>P01</b> MP Filtri standard						
	<b>Pxx</b> Customized						

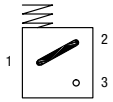
# DIFFERENTIAL INDICATORS

## Dimensions

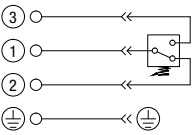
DEA*50	
<b>Electrical Differential Indicator</b>	
Settings	Ordering code
1,2 bar ±10%	DE A 12 x A 50 P01
2 bar ±10%	DE A 20 x A 50 P01
5 bar ±10%	DE A 50 x A 50 P01
7 bar ±10%	DE A 70 x A 50 P01
9.5 bar ±10%	DE A 95 x A 50 P01



**Hydraulic symbol**



**Electrical symbol**



**Materials**

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

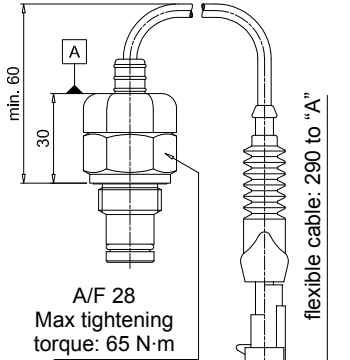
**Technical data**

- 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 oil, Synthetic fluids  
HFA, HFB, HFC according to ISO 2943
- Degree protection: IP66 according to EN 60529  
IP69K according to ISO 20653

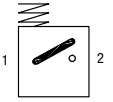
**Electrical data**

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

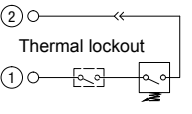
DEM*10	
<b>Electrical Differential Indicator</b>	
Settings	Ordering code
1,2 bar ±10%	DE M 12 x x 10 P01
2 bar ±10%	DE M 20 x x 10 P01
5 bar ±10%	DE M 50 x x 10 P01
7 bar ±10%	DE M 70 x x 10 P01
9.5 bar ±10%	DE M 95 x x 10 P01



**Hydraulic symbol**



**Electrical symbol**



**Materials**

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

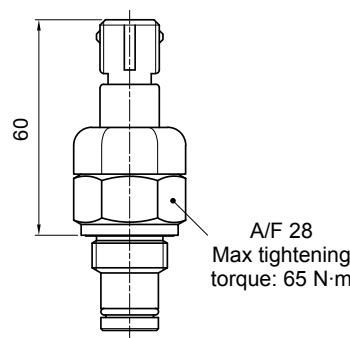
**Technical data**

- 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 oil, Synthetic fluids  
HFA, HFB, HFC according to ISO 2943
- Degree protection: IP66 according to EN 60529

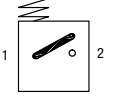
**Electrical data**

- 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")

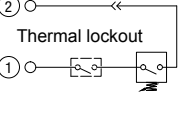
DEM*20	
<b>Electrical Differential Indicator</b>	
Settings	Ordering code
1,2 bar ±10%	DE M 12 x x 20 P01
2 bar ±10%	DE M 20 x x 20 P01
5 bar ±10%	DE M 50 x x 20 P01
7 bar ±10%	DE M 70 x x 20 P01
9.5 bar ±10%	DE M 95 x x 20 P01



**Hydraulic symbol**



**Electrical symbol**



**Materials**

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

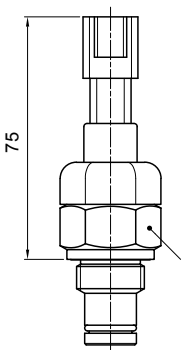
**Technical data**

- 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 oil, Synthetic fluids  
HFA, HFB, HFC according to ISO 2943
- Degree protection: IP66 according to EN 60529

**Electrical data**

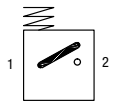
- Electrical connection: AMP Time junior
- Resistive load: 0.2 A / 115 Vdc
- Switching type: Normally open contacts (NC on request)
- Thermal lockout: Normally open up to 30 °C (option "F")

DEM*30	
<b>Electrical Differential Indicator</b>	
Settings	Ordering code
1,2 bar ±10%	DE M 12 x x 30 P01
2 bar ±10%	DE M 20 x x 30 P01
5 bar ±10%	DE M 50 x x 30 P01
7 bar ±10%	DE M 70 x x 30 P01
9.5 bar ±10%	DE M 95 x x 30 P01

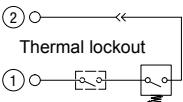


A/F 28  
Max tightening torque: 65 N·m

**Hydraulic symbol**



**Electrical symbol**



Thermal lockout

**Materials**

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

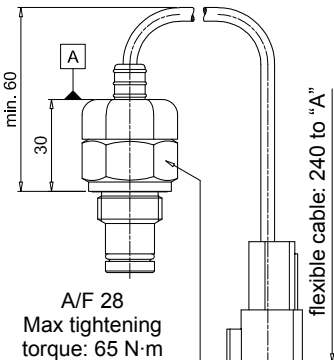
**Technical data**

- 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 oil, 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")

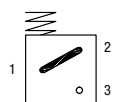
DEM*35	
<b>Electrical Differential Indicator</b>	
Settings	Ordering code
1,2 bar ±10%	DE M 12 x x 35 P01
2 bar ±10%	DE M 20 x x 35 P01
5 bar ±10%	DE M 50 x x 35 P01
7 bar ±10%	DE M 70 x x 35 P01
9.5 bar ±10%	DE M 95 x x 35 P01



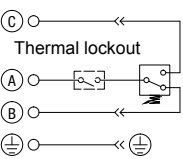
A/F 28  
Max tightening torque: 65 N·m

flexible cable: 240 to "A"

**Hydraulic symbol**



**Electrical symbol**



Thermal lockout

**Materials**

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

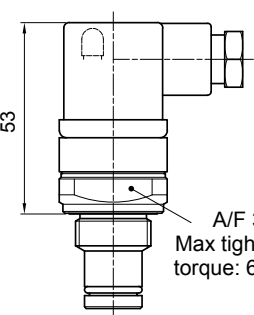
**Technical data**

- 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 oil, Synthetic fluids
- Degree protection: IP66 according to EN 60529

**Electrical data**

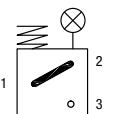
- Electrical connection: Deutsch DT-04-3-P
- Resistive load: 0.2 A / 115 Vdc
- Switching type: SPDT contact
- Thermal lockout: Normally open up to 30 °C (option "F")

DLA*51 - DLA*52	
<b>Electrical/Visual Differential Indicator</b>	
Settings	Ordering code
1,2 bar ±10%	DL A 12 x A xx P01
2 bar ±10%	DL A 20 x A xx P01
5 bar ±10%	DL A 50 x A xx P01
7 bar ±10%	DL A 70 x A xx P01
9.5 bar ±10%	DL A 95 x A xx P01

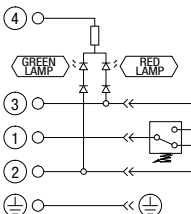


A/F 30  
Max tightening torque: 65 N·m

**Hydraulic symbol**



**Electrical symbol**



**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 oil, Synthetic fluids
- Degree protection: IP66 according to EN 60529

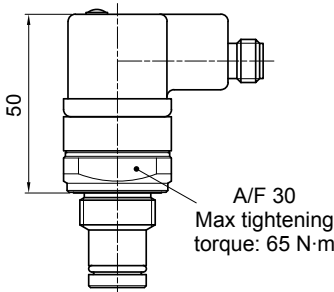
**Electrical data**

- Electrical connection: EN 175301-803
- Type: 51 52
- Lamps: 24 Vdc 110 Vdc
- Resistive load: 0.8 A / 24 Vdc 0.2 A / 110 Vdc

# DIFFERENTIAL INDICATORS

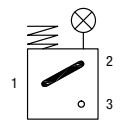
## Dimensions

DLA*71	
Electrical/Visual Differential Indicator	
Settings	Ordering code
1,2 bar ±10%	DL A 12 x A 71 P01
2 bar ±10%	DL A 20 x A 71 P01
5 bar ±10%	DL A 50 x A 71 P01
7 bar ±10%	DL A 70 x A 71 P01
9.5 bar ±10%	DL A 95 x A 71 P01



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

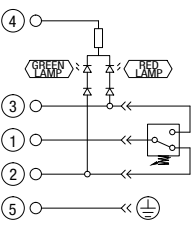
**Hydraulic symbol**



**Materials**

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

**Electrical symbol**



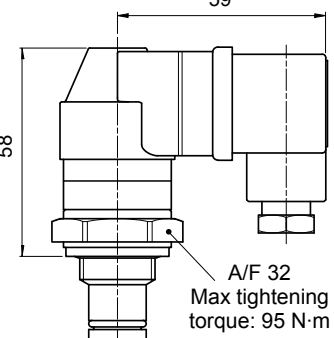
**Technical data**

- 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 oil, Synthetic fluids
- Degree protection: IP65 according to EN 60529
- IP69K according to ISO 20653

**Electrical data**

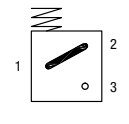
- Electrical connection: IEC 61076-2-101 D (M12)
- Lamps: 24 Vdc
- Resistive load: 0.4 A / 24 Vdc

DLE*A50	
Electrical/Visual Differential Indicator	
Settings	Ordering code
1,2 bar ±10%	DL E 12 x A 50 P01
2 bar ±10%	DL E 20 x A 50 P01
5 bar ±10%	DL E 50 x A 50 P01
7 bar ±10%	DL E 70 x A 50 P01
9.5 bar ±10%	DL E 95 x A 50 P01



A/F 32  
Max tightening torque: 95 N·m

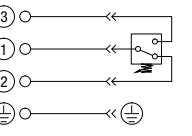
**Hydraulic symbol**



**Materials**

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

**Electrical symbol**



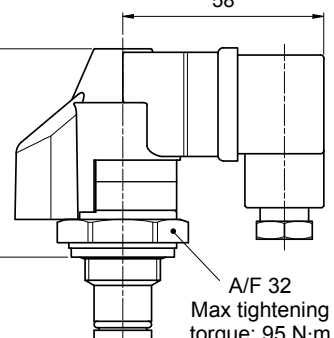
**Technical data**

- 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 oil, Synthetic fluids
- Degree protection: IP65 according to EN 60529

**Electrical data**

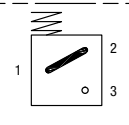
- Electrical connections: EN 175301-803
- Resistive load: 5 A / 250 Vac
- Available the connector with lamps

DLE*F50	
Electrical/Visual Differential Indicator	
Settings	Ordering code
1,2 bar ±10%	DL E 12 x F 50 P01
2 bar ±10%	DL E 20 x F 50 P01
5 bar ±10%	DL E 50 x F 50 P01
7 bar ±10%	DL E 70 x F 50 P01
9.5 bar ±10%	DL E 95 x F 50 P01



A/F 32  
Max tightening torque: 95 N·m

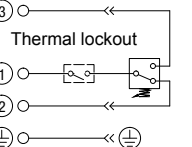
**Hydraulic symbol**



**Materials**

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

**Electrical symbol**



**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 oil, Synthetic fluids
- Degree protection: IP65 according to EN 60529

**Electrical data**

- Electrical connections: EN 175301-803
- Resistive load: 5 A / 250 Vac
- Thermal lockout setting: +30 °C

DTA*70	
<b>Electronic Differential Indicator</b>	
Settings	Ordering code
1,2 bar ±10%	DT A 12 x x 70 P01
2 bar ±10%	DT A 20 x x 70 P01
5 bar ±10%	DT A 50 x x 70 P01
7 bar ±10%	DT A 70 x x 70 P01
9.5 bar ±10%	DT A 95 x x 70 P01

47

A/F 30  
Max tightening torque: 50 N·m

**Hydraulic symbol**

**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 oil, Synthetic fluids HFA, HFB, HFC according to ISO 2943
- 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)

**Electrical symbol**

①	○	○	+24 Vdc
②	○	○	4 ÷ 20 mA
③	○	○	75% - N.O. Digital output
④	○	○	100% - N.O. Digital output
⑤	○	○	0 Vdc

DVA	
<b>Visual Differential Indicator</b>	
Settings	Ordering code
1,2 bar ±10%	DV A 12 x P01
2 bar ±10%	DV A 20 x P01
5 bar ±10%	DV A 50 x P01
7 bar ±10%	DV A 70 x P01
9.5 bar ±10%	DV A 95 x P01

39

Green / Red clogging indicator

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

**Hydraulic symbol**

**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 oil, Synthetic fluids HFA, HFB, HFC according to ISO 2943
- Degree protection: IP65 according to EN 60529

DVM	
<b>Visual Differential Indicator</b>	
Settings	Ordering code
1,2 bar ±10%	DV M 12 x P01
2 bar ±10%	DV M 20 x P01
5 bar ±10%	DV M 50 x P01
7 bar ±10%	DV M 70 x P01
9.5 bar ±10%	DV M 95 x P01

34

Red clogging indicator

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

**Hydraulic symbol**

**Materials**

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

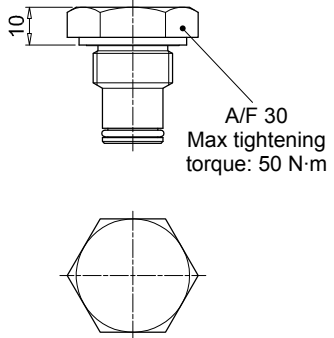
**Technical data**

- 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 oil, Synthetic fluids HFA, HFB, HFC according to ISO 2943
- Degree protection: IP65 according to EN 60529

# DIFFERENTIAL INDICATORS

## Dimensions

T2	
Indicator plug	
Seal	Ordering code
HNBR	T2 H
FPM	T2 V



**Materials**

- Body: Phosphatized steel
- Seal: HNBR / FPM

### DESIGNATION & ORDERING CODE - DIFFERENTIAL INDICATORS

Series	Configuration example 1:							
<b>DE</b> Electrical differential indicator	DE	M	20	H	F	50	P01	
<b>DL</b> Electrical/Visual differential indicator	DL	E	20	V	A	71	P01	
<b>DT</b> Electronic differential indicator	DT	A	20	H	F	70	P01	
<b>DV</b> Visual differential indicator	DV	M	20	V			P01	

Type	DE	DL	DT	DV
<b>A</b> Standard type	•	•	•	<b>A</b> With automatic reset
<b>M</b> With wired electrical connection	•			<b>M</b> With manual reset
<b>E</b> For high power supply		•		

Pressure setting
<b>12</b> 1,2 bar
<b>20</b> 2 bar
<b>50</b> 5 bar
<b>70</b> 7 bar
<b>95</b> 9,5 bar

Seals
<b>H</b> HNBR
<b>V</b> FPM

Thermostat	DEA	DEM	DLA	DLE	DT	DV
<b>A</b> Without	•	•	•	•		
<b>F</b> With thermostat				•	•	

Electrical connections	DEA	DEM	DLA	DLE	DT	DV
<b>10</b> Connection AMP Superseal series 1.5		•				
<b>20</b> Connection AMP Timer Junior		•				
<b>30</b> Connection Deutsch DT-04-2-P		•				
<b>35</b> Connection Deutsch DT-04-3-P		•				
<b>50</b> Connection EN 175301-803	•			•		
<b>51</b> Connection EN 175301-803, transparent base with lamps 24 Vdc			•			
<b>52</b> Connection EN 175301-803, transparent base with lamps 110 Vdc			•			
<b>70</b> Connection IEC 61076-2-101 D (M12)					•	
<b>71</b> Connection IEC 61076-2-101 D (M12), black base with lamps 24 Vdc			•			

Option
<b>P01</b> MP Filtri standard
<b>Pxx</b> Customized

### DESIGNATION & ORDERING CODE - DIFFERENTIAL INDICATOR PLUG

Series	Configuration example	
<b>T2</b> Indicator plug	T2	H

Seals
<b>H</b> HNBR
<b>V</b> FPM

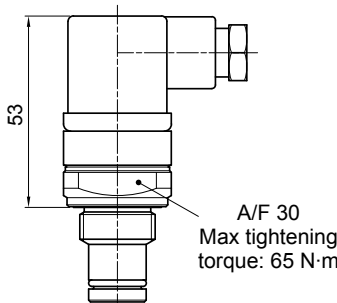




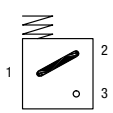
# STAINLESS STEEL DIFFERENTIAL INDICATORS

## Dimensions

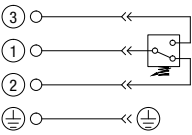
DEX*50	
<b>Electrical Differential Indicator</b>	
Settings	Ordering code
1,2 bar ±10%	DE X 12 x A 50 P01
2 bar ±10%	DE X 20 x A 50 P01
5 bar ±10%	DE X 50 x A 50 P01
7 bar ±10%	DE X 70 x A 50 P01
9.5 bar ±10%	DE X 95 x A 50 P01



**Hydraulic symbol**



**Electrical symbol**



**Materials**

- Body: AISI 316L
- Base: Black Nylon
- Contacts: Silver
- Seal: HNBR - FPM

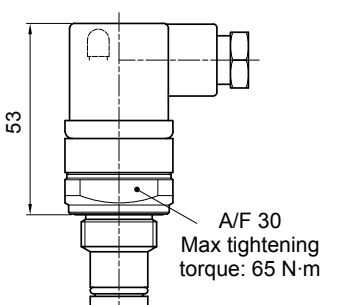
**Technical data**

- 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 oil, Synthetic fluids
- Degree protection: IP66 according to EN 60529  
IP69K according to ISO 20653

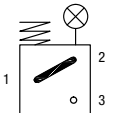
**Electrical data**

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

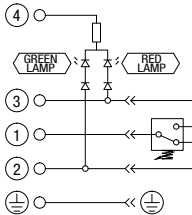
DLX*51 - DLX*52	
<b>Electrical/Visual Differential Indicator</b>	
Settings	Ordering code
1,2 bar ±10%	DE X 12 x A xx P01
2 bar ±10%	DE X 20 x A xx P01
5 bar ±10%	DE X 50 x A xx P01
7 bar ±10%	DE X 70 x A xx P01
9.5 bar ±10%	DE X 95 x A xx P01



**Hydraulic symbol**



**Electrical symbol**



**Materials**

- Body: AISI 316L
- Base: Transparent Nylon
- Contacts: Silver
- Seal: HNBR - FPM

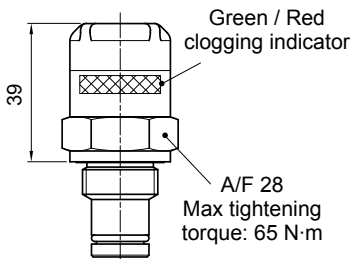
**Technical data**

- 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 oil, Synthetic fluids
- Degree protection: IP66 according to EN 60529  
IP69K according to ISO 20653

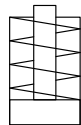
**Electrical data**

- Electrical connection: EN 175301-803
- Type: 51                      52
- Lamps: 24 Vdc              110 Vdc
- Resistive load: 0.8 A / 24 Vdc    0.2 A / 110 Vdc

DVX	
<b>Visual Differential Indicator</b>	
Settings	Ordering code
1,2 bar ±10%	DE X 12 x P01
2 bar ±10%	DE X 20 x P01
5 bar ±10%	DE X 50 x P01
7 bar ±10%	DE X 70 x P01
9.5 bar ±10%	DE X 95 x P01



**Hydraulic symbol**

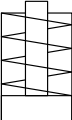
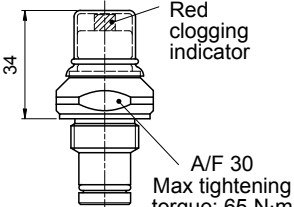


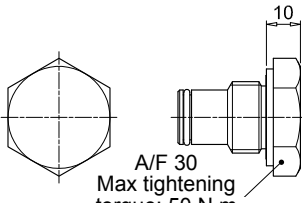
**Materials**

- 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 oil, Synthetic fluids
- Degree protection: IP65 according to EN 60529

DVY		Hydraulic symbol  	Materials		
Visual Differential Indicator			- Body: AISI 316L - Internal parts: AISI 316L - Nylon - Contacts: Silver - Seal: HNBR - MFQ		
Settings	Ordering code				
1,2 bar ±10%	DV Y 12 x P01				
2 bar ±10%	DV Y 20 x P01				
5 bar ±10%	DV Y 50 x P01				
7 bar ±10%	DV Y 70 x P01				
9.5 bar ±10%	DV Y 95 x P01				
					
		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 oil, Synthetic fluids HFA, HFB, HFC according to ISO 2943 - Degree protection: IP65 according to EN 60529			

X2		Materials - Body: AISI 316L - Seal: HNBR / MFQ	
Indicator plug			
Seal	Ordering code		
HNBR	X2 H		
MFQ	X2 F		
			

DESIGNATION & ORDERING CODE - DIFFERENTIAL INDICATORS									
<b>Series</b>	DE	X	12	H	A	50	P01	Configuration example 1:	
<b>DE</b> Electrical differential indicator	DL	X	20	V	A	71	P01	Configuration example 2:	
<b>DL</b> Electrical/Visual differential indicator	DV	Y	70	V			P01	Configuration example 3:	
<b>DV</b> Visual differential indicator									
<b>Type</b>	DE	DL	DV						
<b>X</b> Standard type	•	•	•						
<b>Y</b> Optional type			•						
<b>Pressure setting</b>									
<b>12</b> 1.2 bar									
<b>20</b> 2 bar									
<b>50</b> 5 bar									
<b>70</b> 7 bar									
<b>95</b> 9.5 bar									
<b>Seals</b>									
<b>H</b> HNBR									
<b>F</b> MFQ									
<b>Thermostat</b>									
<b>A</b> Without									
<b>Electrical connections</b>	DE	DL	DV						
<b>50</b> Connection EN 175301-803	•								
<b>51</b> Connection EN 175301-803, transparent base with lamps 24 Vdc		•							
<b>52</b> Connection EN 175301-803, transparent base with lamps 110 Vdc			•						
<b>Option</b> <b>P01</b> MP Filtri standard <b>Pxx</b> Customized									

DESIGNATION & ORDERING CODE - DIFFERENTIAL INDICATOR PLUG	
<b>Series</b>	Configuration example: X2 H
<b>X2</b> Indicator plug	
<b>Seals</b>	
<b>H</b> HNBR	
<b>F</b> MFQ	

Filter family	Filter series	Visual indicator	Electrical indicator	Electrical / Visual indicator	Electronic indicator
<b>SUCTION FILTERS</b>	SF2 250 - 350 SF2 500 - 501 - 503 - 504 - 505 SF2 510 - 535 - 540	VVA16P01 VVR16P01	VEA21AA50P01	VLA21AA51P01 VLA21AA52P01 VLA21AA53P01 VLA21AA71P01	
<b>RETURN FILTERS</b>	MPFX-MPTX-MPF-MPT with bypass 1.75 bar MPH with bypass 1.75 bar	BVA14P01 BVR14P01 BVP20HP01 BVQ20HP01	BEA15HA50P01 BEM15HA41P01	BLA15HA51P01 BLA15HA52P01 BLA15HA53P01 BLA15HA71P01	
	MPFX-MPTX-MPF-MPT with bypass 3 bar MPH with bypass 2.5 bar FRI 255	BVA25P01 BVR25P01 BVP20HP01 BVQ20HP01	BEA20HA50P01 BEM20HA41P01	BLA20HA51P01 BLA20HA52P01 BLA20HA53P01 BLA20HA71P01	
	FRI 025 - 040 - 100 - 250 - 630 - 850	DVA20xP01 DVM20xP01	DEA20xA50P01 DEM20xAxxP01	DLA20xA51P01 DLA20xA52P01 DLA20xA71P01 DLE20xA50P01 DLE20xF50P01	DTA20xF70P01
<b>RETURN / SUCTION FILTERS</b>	Suction line MRSX 116 - 165 - 166	VVB16P01 VVS16P01	VEB21AA50P01	VLB21AA51P01 VLB21AA52P01 VLB21AA53P01 VLB21AA71P01	
	Return line MRSX 116 - 165 - 166 LMP 124	BVA25P01 BVR25P01 BVP20HP01 BVQ20HP01	BEA25HA50P01 BEM25HA41P01 BET25HF10P01 BET25HF30P01 BET25HF50P01	BLA25HA51P01 BLA25HA52P01 BLA25HA53P01 BLA25HA71P01	
<b>SPIN-ON FILTERS</b>	Suction line MPS 050 - 070 - 100 - 150 MPS 200 - 250 - 300 - 350	VVB16P01 VVS16P01	VEB21AA50P01	VLB21AA51P01 VLB21AA52P01 VLB21AA53P01 VLB21AA71P01	
	Return line MPS 050 - 070 - 100 - 150 MPS 200 - 250 - 300 - 350 MST 050 - 070 - 100 - 150	BVA14P01 BVR14P01 BVP20HP01 BVQ20HP01	BEA15HA50P01 BEM15HA41P01	BLA15HA51P01 BLA15HA52P01 BLA15HA53P01 BLA15HA71P01	
	In-line MPS 051 - 071 - 101 - 151 MPS 301 - 351 MSH 050 - 070 - 100 - 150	DVA12xP01 DVM12xP01	DEA12xA50P01 DEM12xAxxP01	DLA12xA51P01 DLA12xA52P01 DLA12xA71P01 DLE12xA50P01 DLE12xF50P01	
<b>LOW &amp; MEDIUM PRESSURE FILTERS</b>	With bypass valve LMP 110 - 112 - 116 - 118 - 119 LMP 120 - 122 - 123 LMP 210 - 211 - LDP LMP 400 - 401 - 430 - 431 LMP 902 - 903 - 952 - 953 - 954 LMD 211 - 400 - 401 - 431 - 951 - LDD	DVA20xP01 DVM20xP01	DEA20xA50P01 DEM20xAxxP01	DLA20xA51P01 DLA20xA52P01 DLA20xA71P01 DLE20xA50P01 DLE20xF50P01	DTA20xF70P01
	Without bypass valve LMP 110 - 112 - 116 - 118 - 119 LMP 120 - 122 - 123 LMP 210 - 211 - LDP LMP 400 - 401 - 430 - 431 LMP 902 - 903 - 952 - 953 - 954 LMD 211 - 400 - 401 - 431 - 951 - LDD	DVA50xP01 DVM50xP01	DEA50xA50P01 DEM50xAxxP01	DLA50xA51P01 DLA50xA52P01 DLA50xA71P01 DLE50xA50P01 DLE50xF50P01	DTA50xF70P01
<b>HIGH PRESSURE FILTERS</b>	With bypass valve FMP 039 - 065 - 135 - 320 FHP 010 - 011 - 065 - 135 - 320 - 500 FMM 050 - FHA 051 FHM 006 - 007 - 010 - 050 - 065 - 135 - 320 - 500 FHB 050 - 135 - 320 FHF 325 FHD 021 - 051 - 326 - 333	DVA50xP01 DVM50xP01	DEA50xA50P01 DEM50xAxxP01	DLA50xA51P01 DLA50xA52P01 DLA50xA71P01 DLE50xA50P01 DLE50xF50P01	DTA50xF70P01
	Without bypass valve FMP 039 - 065 - 135 - 320 FHP 010 - 011 - 065 - 135 - 320 - 500 FMM 050 - FHA 051 FHM 006 - 007 - 010 - 050 - 065 - 135 - 320 - 500 FHB 050 - 135 - 320 FHF 325 FHD 021 - 051 - 326 - 333	DVA70xP01 DVM70xP01	DEA70xA50P01 DEM70xAxxP01	DLA70xA51P01 DLA70xA52P01 DLA70xA71P01 DLE70xA50P01 DLE70xF50P01	DTA70xF70P01
<b>STAINLESS STEEL HIGH PRESSURE FILTERS</b>	With bypass valve FZH 010 - 011 - 039 FZP 039 - 136 FZX 011 FZB 039 FZM 039 FZD 051	DVX50xP01 DVY50xP01	DEX50xA50P01	DLX50xA51P01 DLX50xA52P01	
	Without bypass valve FZH 010 - 011 - 039 FZP 039 - 136 FZB 039 FZM 039 FZD 010 - 021 - 051	DVX70xP01 DVY70xP01	DEX70xA50P01	DLX70xA51P01 DLX70xA52P01	

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