

# LMD 400-401 & 431 series

Maximum working pressure up to 1.6 MPa (16 bar) - Flow rate up to 600 l/min



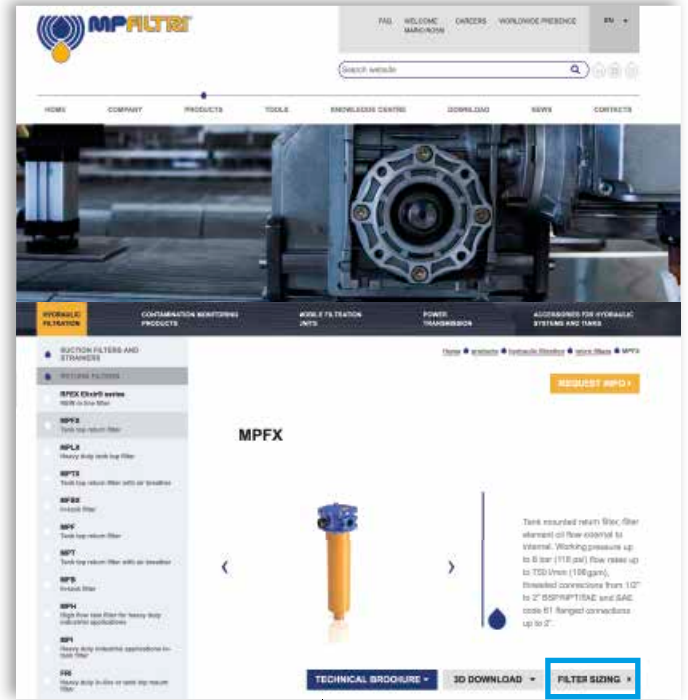
# TYPICAL FILTER SIZING Selection Software

## Step ①

Select "FILTER SIZING SOFTWARE" after login

OR

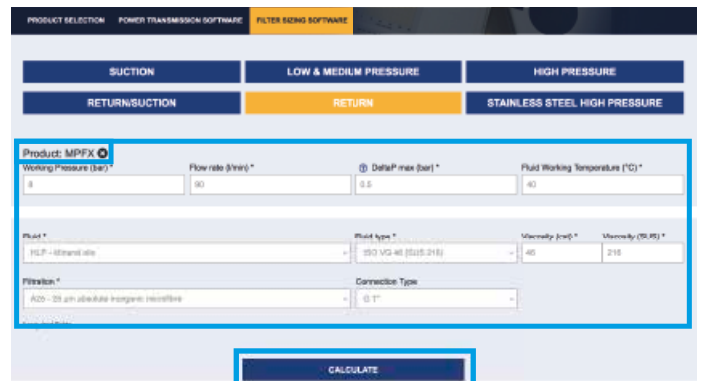
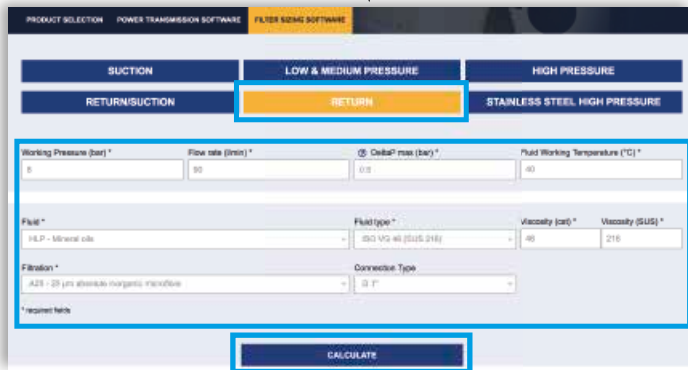
Select "FILTER SIZING" after login from a product page



Choose the type of filter family.  
Enter the main data for sizing the filter  
then push CALCULATE.

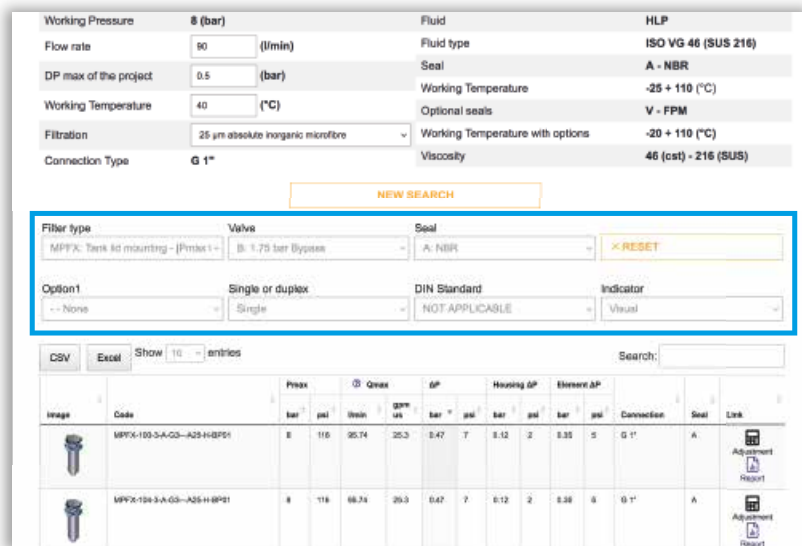
## Step ②

Enter the main data for sizing the filter  
then push CALCULATE.



## Step ③

Select the desired options to choose the appropriate filter type for the application.



## Step 4

Choose the most suitable filter from the proposed list.

Image	Code	Peak bar	Qmax gal/min	ΔP bar	Housing ΔP bar	Element ΔP bar	Connection	Seal	Link					
	MPFX-103-3-A-Q3-A25-H-BPFI	8	116	25.74	25.3	0.47	7	0.12	2	0.33	5	G 1"	A	<a href="#">Adjustment</a> <a href="#">Report</a>
	MPFX-104-3-A-Q3-A25-H-BPFI	8	116	25.74	25.3	0.47	7	0.12	2	0.33	5	G 1"	A	<a href="#">Adjustment</a> <a href="#">Report</a>

## Step 5

It is possible to change the filter modifying every parameter.



### A SAVE YOUR FILTER'S REPORT



### B MANUAL EDIT



SAVE IN YOUR ARCHIVE  
typing your reference data and then SAVE AS PDF



A new browser window displays the pdf

see A

Close the report window



By clicking your WELCOME button, the SHOW REPORTS is displayed: select it to see your filters list.

## Description

## Technical data

**Low & Medium Pressure filters****Duplex****Maximum working pressure up to 1.6 MPa (16 bar)****Flow rate up to 600 l/min**

LMD400 is a range of versatile low pressure duplex filter with integrated changeover function to allow the filter element replacement without the system shut-down.

They are directly connected to the lines of the system through the hydraulic fittings.

**Available features:**

- 2 1/2" flanged connections, for a maximum flow rate of 600 l/min
- LMD400: In-line connections
- LMD401: In-line connections with compact design
- LMD431: In-line connections with compact design and base mounting
- Base-mounting design also available, for ease of the replacement of the filter element
- Fine filtration rating, to get a good cleanliness level into the system
- Water removal elements, to remove the free water from the hydraulic fluid.  
For further information, see the Contamination Management document and the dedicate leaflet.
- Balancing valve, to equalize the housing pressure before the switch
- Bypass valve, to relieve excessive pressure drop across the filter media
- Vent ports, to avoid air trapped into the filter going into the system
- Drain ports, to remove the fluid from the housing prior the maintenance work
- Visual, electrical and electronic differential clogging indicators

**Common applications:**

- Systems where shut-down causes high costs
- Systems where shut-down causes safety issues

**Filter housing materials**

- Head: Anodized Aluminium
- Housing: Anodized Aluminium
- Manifolds: Steel - Painted black
- Bypass valve: Steel
- 3-way ball valve: Steel housings - Stainless Steel ball
- Valve: Phosphatized Steel - Stainless Steel

**Pressure**

Test pressure: 2.5 MPa (25 bar)

**Bypass valve**

- Opening pressure 350 kPa (3.5 bar)  $\pm$ 10%
- Other opening pressures on request.

 **$\Delta p$  element type**

- Microfibre filter elements - series N - W: 20 bar
- Fluid flow through the filter element from OUT to IN

**Seals**

FPM series V

**Temperature**

From -25° C to +110° C

**Connections**

- LMD 400-401: In-line Inlet/Outlet
- LMD 401: Same side
- LMD 400-401-431: In-Line

**Note**

LMD 400 - 401 - 431 filters are provided for vertical mounting

Weights [kg] and volumes [dm<sup>3</sup>]

Filter series	Weights [kg]				Volumes [dm <sup>3</sup> ]			
	Length	4	5	6	Length	4	5	6
<b>LMD 400 - 401</b>	60	65	72		20	28	33	
<b>LMD 431</b>	-	68	78		-	28	33	

Filter series	Length	Filter element design - N Series							
		A03	A06	A10	A16	A25	M25 M60 M90	P10	P25
<b>LMD 400 - 401</b>	<b>4</b>	308	349	453	474	530	628	547	567
	<b>5</b>	395	427	509	547	589	637	577	592
	<b>6</b>	429	483	558	568	597	639	583	597
<b>LMD 431</b>	<b>5</b>	395	427	509	547	589	637	577	592
	<b>6</b>	429	483	558	568	597	639	583	597

### Maximum flow rate for a complete low and medium pressure filter with a pressure drop $\Delta p = 0.7$ bar.

The reference fluid has a kinematic viscosity of 30 mm<sup>2</sup>/s (cSt) and a density of 0.86 kg/dm<sup>3</sup>.

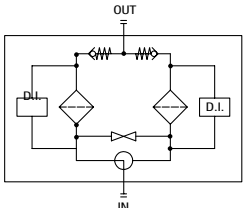
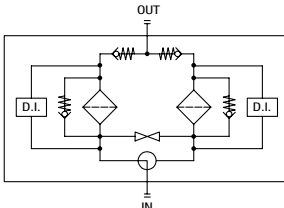
For different pressure drop or fluid viscosity we recommend to use our selection software available on [www.mpfiltri.com](http://www.mpfiltri.com).

You can also calculate the right size using the formulas present on the FILTER SIZING paragraph at the beginning of the full catalogue or at the beginning of the filter family brochure.

Please, contact our Sales Department for further additional information.

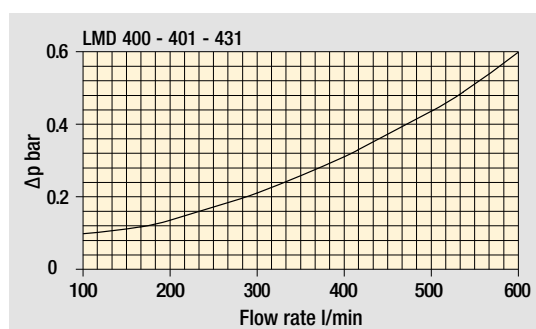
### Hydraulic symbols

Filter series	Execution S	Execution B
<b>LMD 400 - 401</b>	•	•
<b>LMD 431</b>	•	•

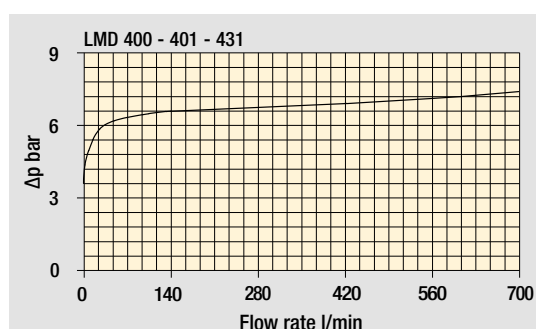



### Pressure drop

Filter housings  $\Delta p$  pressure drop

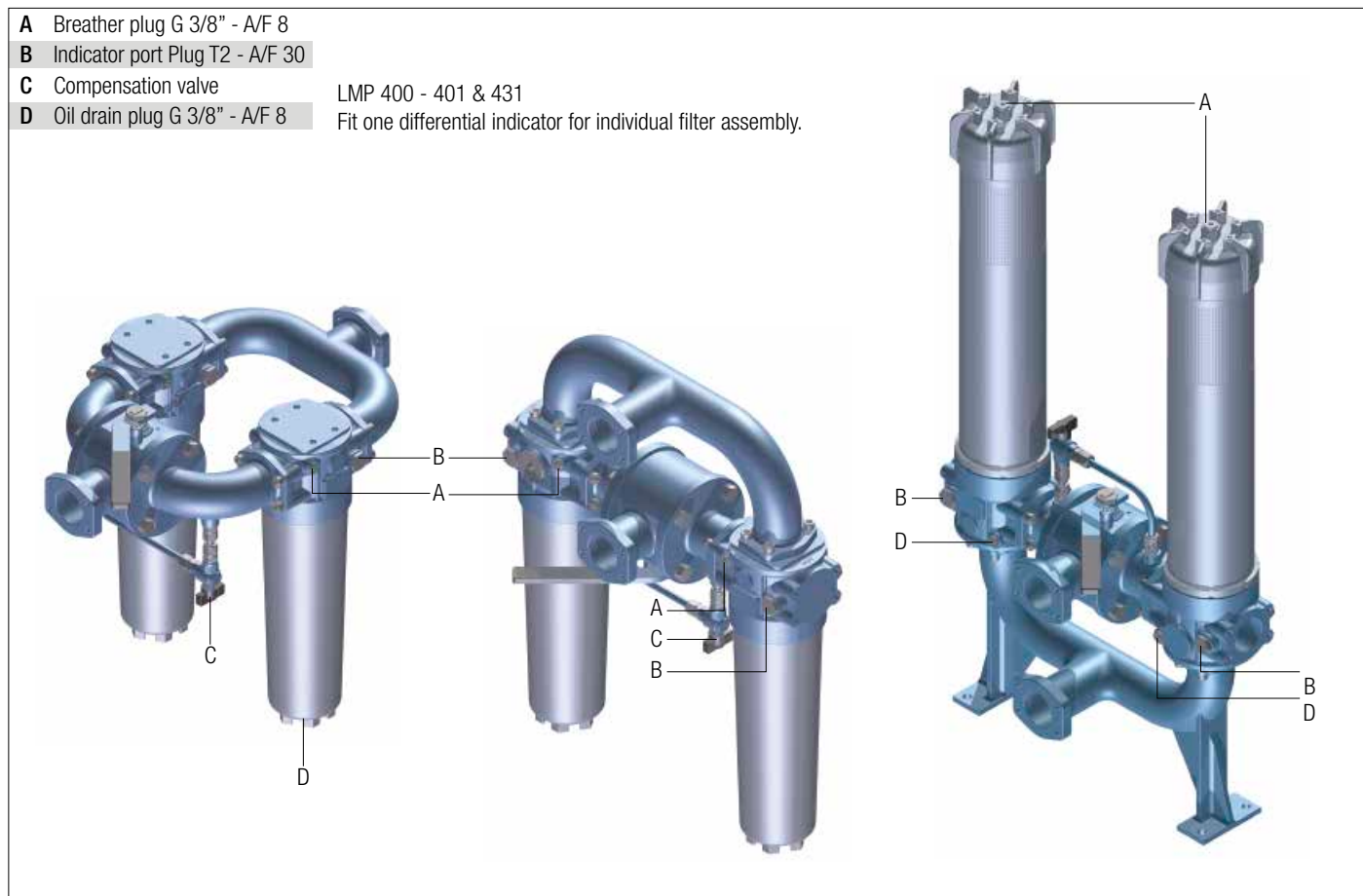


Bypass valve pressure drop

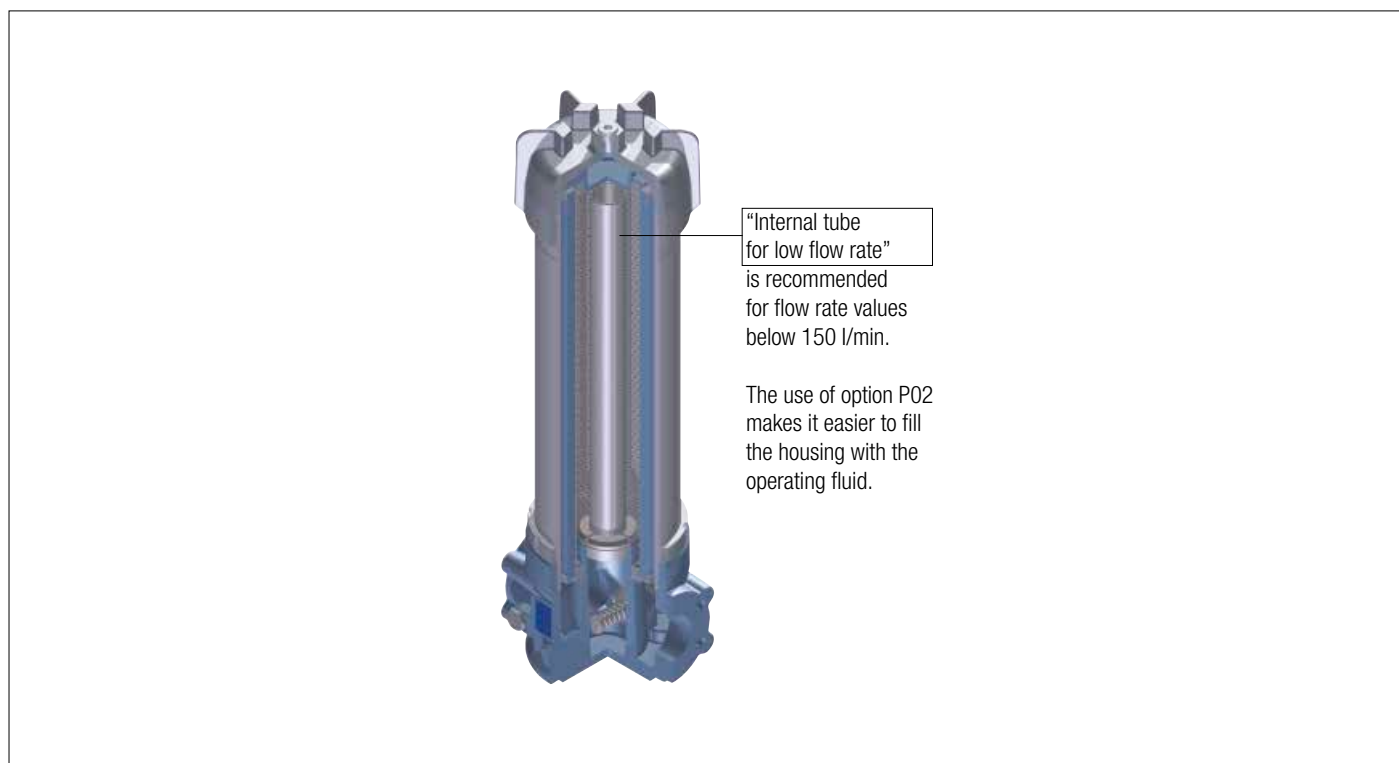


The curves are plotted using mineral oil with density of 0.86 kg/dm<sup>3</sup> in compliance with ISO 3968.  $\Delta p$  varies proportionally with density.

Focus on



## LMD 431: Execution P02







# LMD 400-401

## Designation & Ordering code

### COMPLETE FILTER

Series and size **LMD400 | LMD401** Configuration example: **LMD401** **4** **B** **V** **F1** **A10** **N** **P01**

Length **4** | **5** | **6**

Bypass valve **S** Without bypass | **B** With bypass 3.5 bar

Seals and treatments **V** FPM

Connections	LMD400	LMD401
<b>F1</b> 2 1/2" SAE 3000 psi/M	•	•
<b>F2</b> 2 1/2" SAE 3000 psi/UNC	•	•
<b>F3</b> 2 1/2" SAE 3000 psi/M, In-line connections	-	•
<b>F4</b> 2 1/2" SAE 3000 psi/UNC, In-line connections	-	•

Filtration rating (filter media)

<b>A03</b> Inorganic microfiber 3 µm	<b>M25</b> Wire mesh 25 µm
<b>A06</b> Inorganic microfiber 6 µm	<b>M60</b> Wire mesh 60 µm
<b>A10</b> Inorganic microfiber 10 µm	<b>M90</b> Wire mesh 90 µm
<b>A16</b> Inorganic microfiber 16 µm	<b>P10</b> Resin impregnated paper 10 µm
<b>A25</b> Inorganic microfiber 25 µm	<b>P25</b> Resin impregnated paper 25 µm
<b>WA025</b> Water absorber inorganic microfiber 25 µm	

Element Δp	N 20 bar	Execution	Filter length		
			4	5	6
		<b>P01</b> MP Filtri standard	•	•	•
		<b>P02</b> Maintenance from the bottom of the housing	-	•	•
		<b>Pxx</b> Customized	-	-	-

### FILTER ELEMENT

Element series and size **CU400** Configuration example: **CU400** **4** **A10** **V** **N** **P01**

Element length **4** | **5** | **6**

Filtration rating (filter media)

<b>A03</b> Inorganic microfiber 3 µm	<b>M25</b> Wire mesh 25 µm
<b>A06</b> Inorganic microfiber 6 µm	<b>M60</b> Wire mesh 60 µm
<b>A10</b> Inorganic microfiber 10 µm	<b>M90</b> Wire mesh 90 µm
<b>A16</b> Inorganic microfiber 16 µm	<b>P10</b> Resin impregnated paper 10 µm
<b>A25</b> Inorganic microfiber 25 µm	<b>P25</b> Resin impregnated paper 25 µm
<b>WA025</b> Water absorber inorganic microfiber 25 µm	

Seals **V** FPM

Element Δp	N 20 bar	Execution	Filter length		
			4	5	6
		<b>P01</b> MP Filtri standard	•	•	•
		<b>Pxx</b> Customized	-	-	-

### CLOGGING INDICATORS

See page 478

<b>DEA</b> Electrical differential indicator
<b>DEM</b> Electrical differential indicator
<b>DLA</b> Electrical / visual differential indicator
<b>DLE</b> Electrical / visual differential indicator

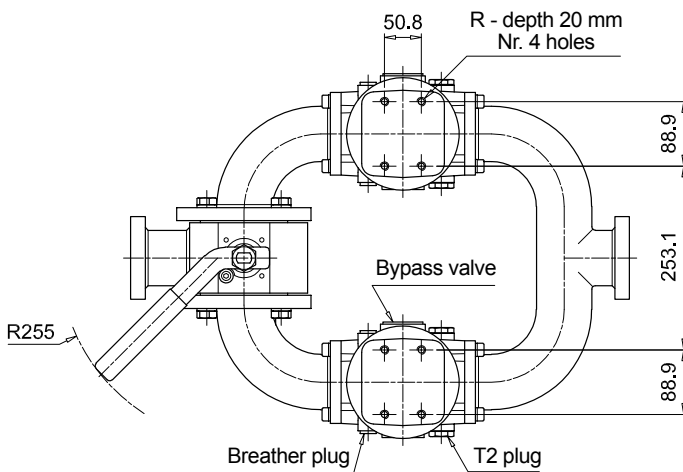
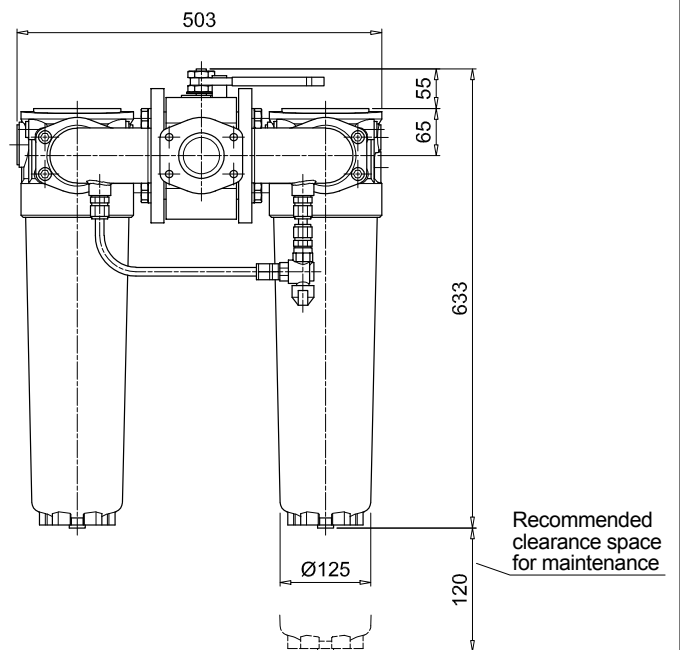
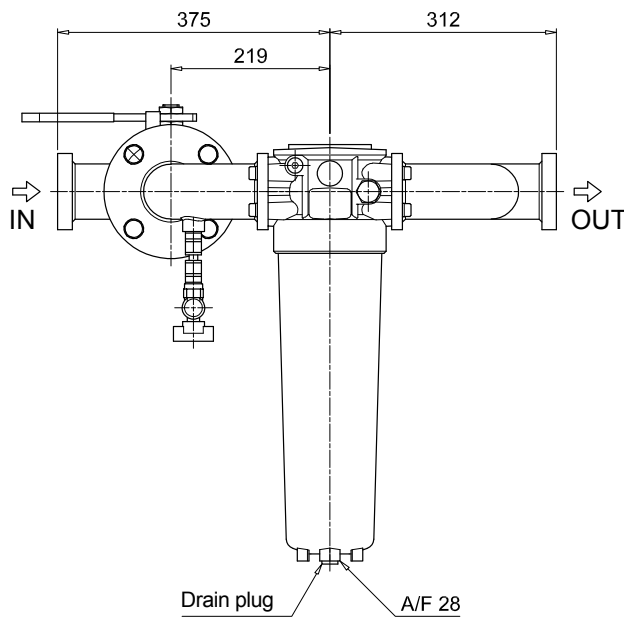
<b>DTA</b> Electronic differential indicator
<b>DVA</b> Visual differential indicator
<b>DVM</b> Visual differential indicator
<b>T2</b> Plug



# LMD 400-401

## Dimensions

LMD400	
Length 4	
Connections	R
F1	M12
F2	1/2" UNC
F3	M12
F4	1/2" UNC



T2 plug =  
Connection for differential indicator

# LMD 400-401

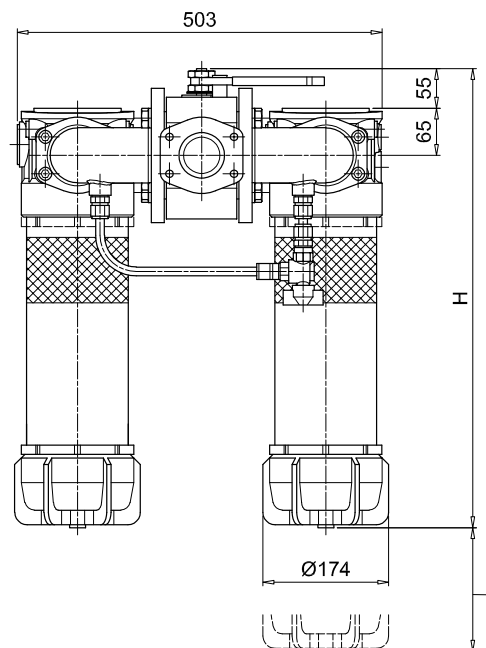
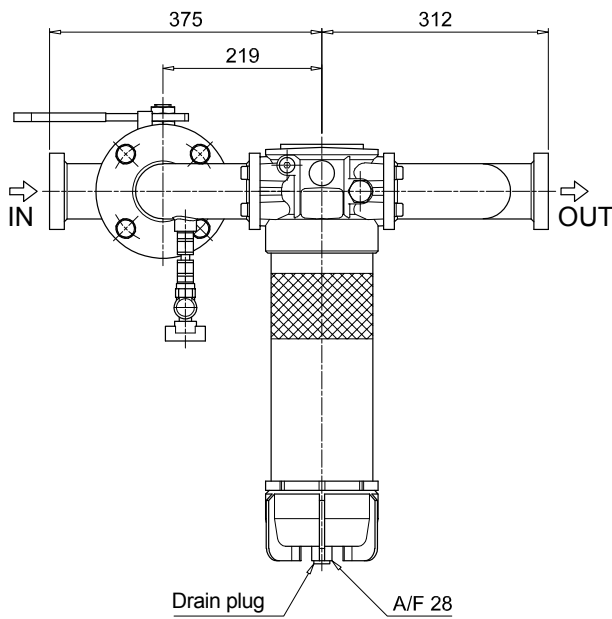
## Dimensions

LMD400

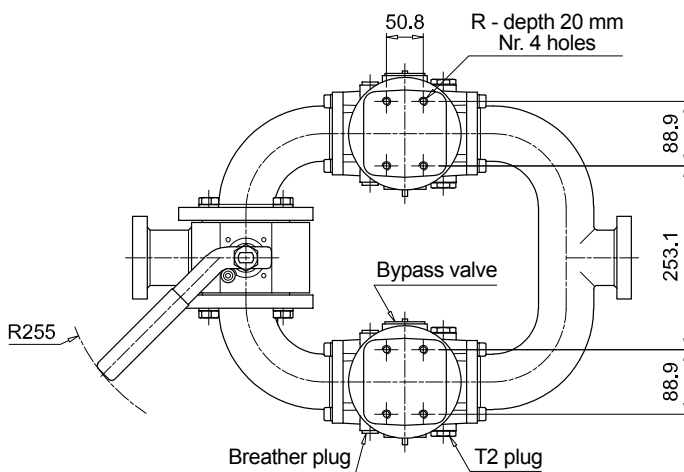
Length 5 - 6

Filter length	H [mm]	H2 [mm] Execution	
		P01	P02
5	883	120	660
6	1213	120	690

Connections	R
F1	M12
F2	1/2" UNC
F3	M12
F4	1/2" UNC



H2 - Recommended clearance space for maintenance

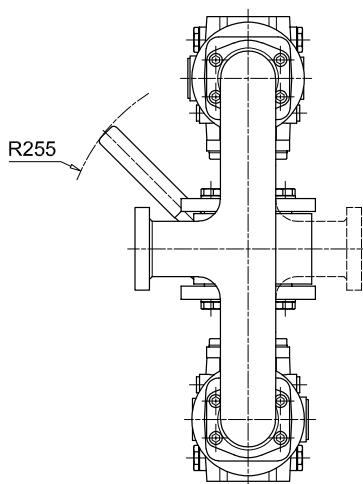
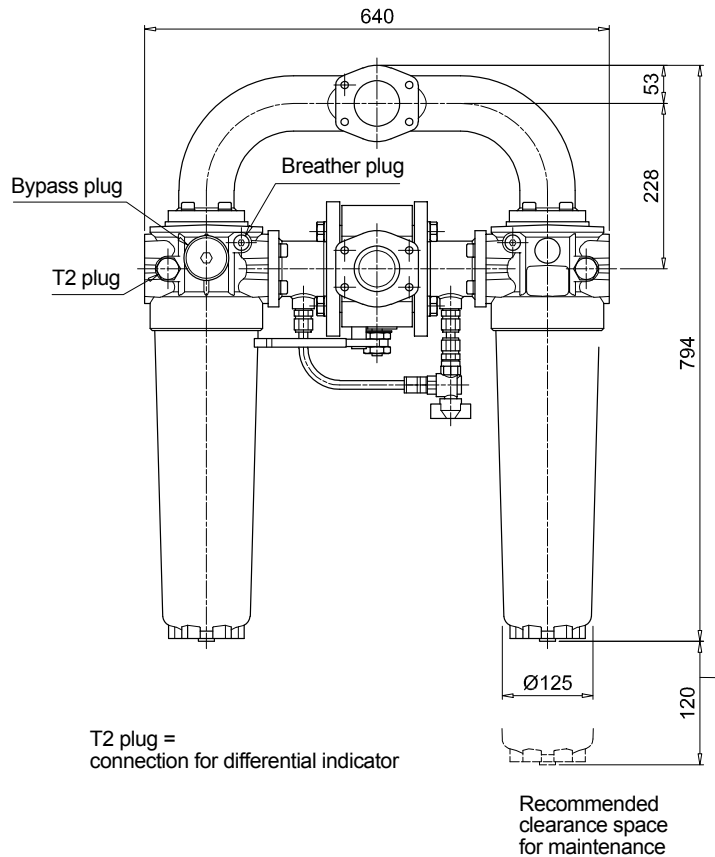
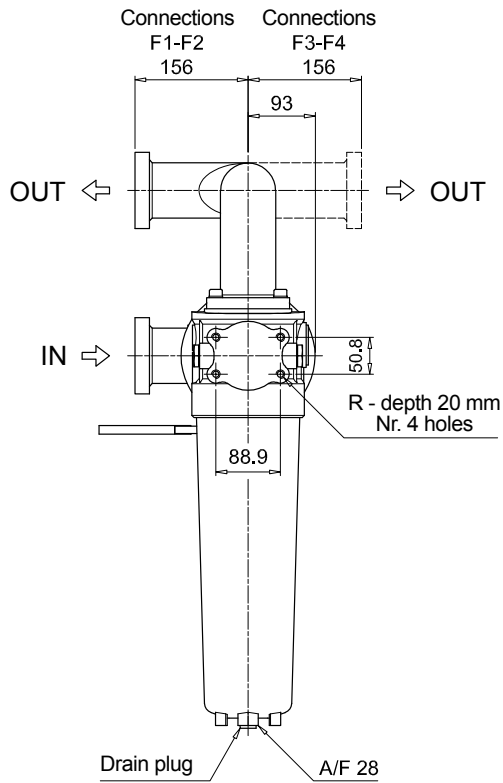


T2 plug =  
Connection for differential indicator

# LMD 400-401

## Dimensions

LMD401	
Length 4	
Connections	R
<b>F1</b>	M12
<b>F2</b>	1/2" UNC
<b>F3</b>	M12
<b>F4</b>	1/2" UNC



# LMD 400-401

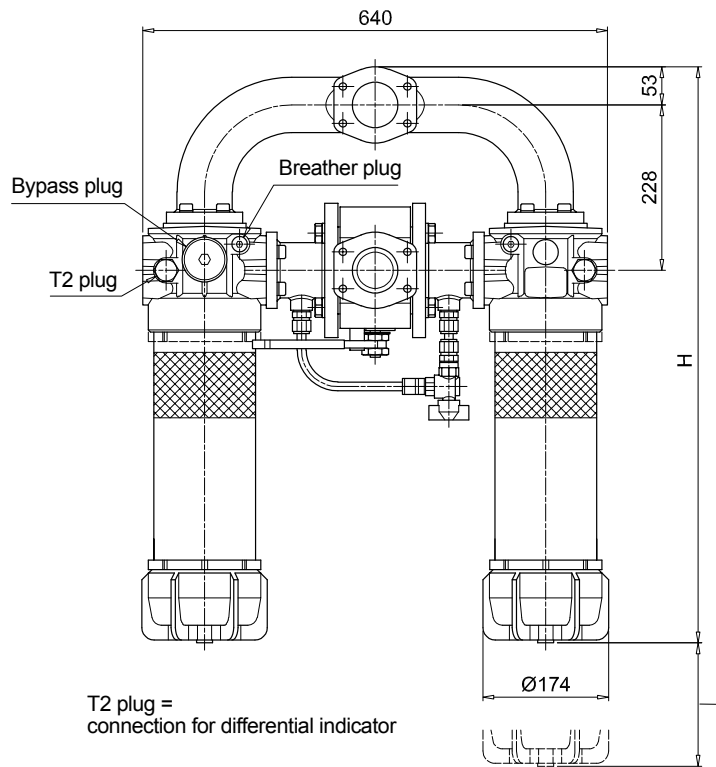
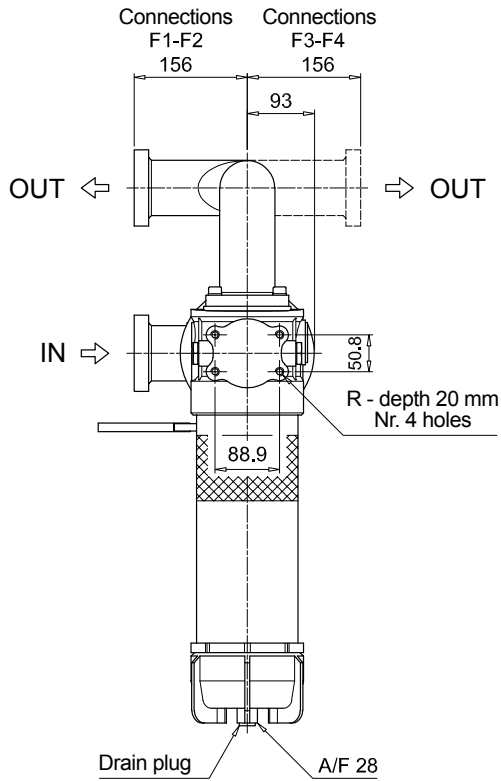
## Dimensions

LMD401

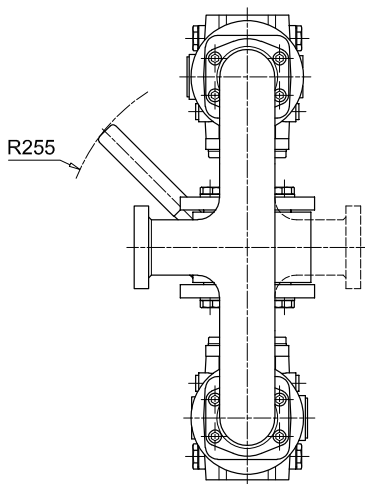
Length 5 - 6

Filter length	H [mm]	H2 [mm] Execution	
		P01	P02
5	1044	120	660
6	1374	120	690

Connections	R
F1	M12
F2	1/2" UNC
F3	M12
F4	1/2" UNC



H2 - Recommended  
clearance space  
for maintenance





# LMD 431

## Designation & Ordering code

### COMPLETE FILTER

<b>Series and size</b> <b>LMD431</b>	Configuration example: <b>LMD431</b>   <b>5</b>   <b>B</b>   <b>V</b>   <b>F1</b>   <b>A10</b>   <b>N</b>   <b>P01</b>
<b>Length</b> <b>5</b>   <b>6</b>	
<b>Bypass valve</b> <b>S</b> Without bypass   <b>B</b> With bypass 3.5 bar	
<b>Seals and treatments</b> <b>V</b> FPM	
<b>Connections</b> <b>F1</b> 2 1/2" SAE 3000 psi/M <b>F2</b> 2 1/2" SAE 3000 psi/UNC <b>F3</b> 2 1/2" SAE 3000 psi/M, In-line connections <b>F4</b> 2 1/2" SAE 3000 psi/UNC, In-line connections	
<b>Filtration rating (filter media)</b> <b>A03</b> Inorganic microfiber 3 µm   <b>M25</b> Wire mesh 25 µm <b>A06</b> Inorganic microfiber 6 µm   <b>M60</b> Wire mesh 60 µm <b>A10</b> Inorganic microfiber 10 µm   <b>M90</b> Wire mesh 90 µm <b>A16</b> Inorganic microfiber 16 µm   <b>P10</b> Resin impregnated paper 10 µm <b>A25</b> Inorganic microfiber 25 µm   <b>P25</b> Resin impregnated paper 25 µm <b>WA025</b> Water absorber inorganic microfiber 25 µm	
<b>Element Δp</b> <b>N</b> 20 bar	<b>Execution</b> <b>P01</b> MP Filtri standard <b>P02</b> With internal tube for low flow rate <b>Pxx</b> Customized

### FILTER ELEMENT

<b>Element series and size</b> <b>CU400</b>	Configuration example: <b>CU400</b>   <b>5</b>   <b>A10</b>   <b>V</b>   <b>N</b>   <b>P01</b>
<b>Element length</b> <b>5</b>   <b>6</b>	
<b>Filtration rating (filter media)</b> <b>A03</b> Inorganic microfiber 3 µm   <b>M25</b> Wire mesh 25 µm <b>A06</b> Inorganic microfiber 6 µm   <b>M60</b> Wire mesh 60 µm <b>A10</b> Inorganic microfiber 10 µm   <b>M90</b> Wire mesh 90 µm <b>A16</b> Inorganic microfiber 16 µm   <b>P10</b> Resin impregnated paper 10 µm <b>A25</b> Inorganic microfiber 25 µm   <b>P25</b> Resin impregnated paper 25 µm <b>WA025</b> Water absorber inorganic microfiber 25 µm	
<b>Seals</b> <b>V</b> FPM	
<b>Element Δp</b> <b>N</b> 20 bar	<b>Execution</b> <b>P01</b> MP Filtri standard <b>Pxx</b> Customized

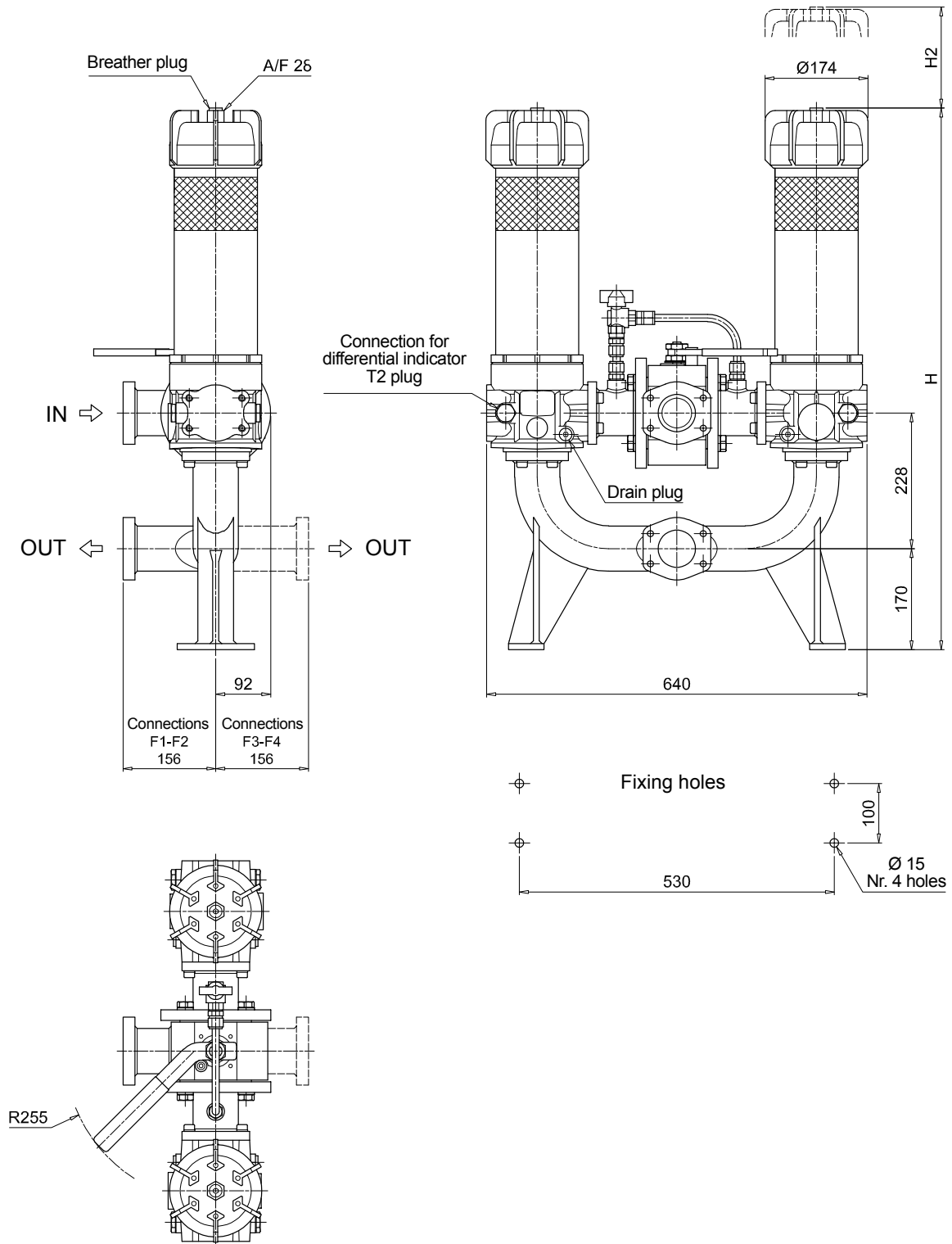
### CLOGGING INDICATORS

See page 478

<b>DEA</b> Electrical differential indicator	<b>DTA</b> Electronic differential indicator
<b>DEM</b> Electrical differential indicator	<b>DVA</b> Visual differential indicator
<b>DLA</b> Electrical / visual differential indicator	<b>DVM</b> Visual differential indicator
<b>DLE</b> Electrical / visual differential indicator	<b>T2</b> Plug

### LMD431

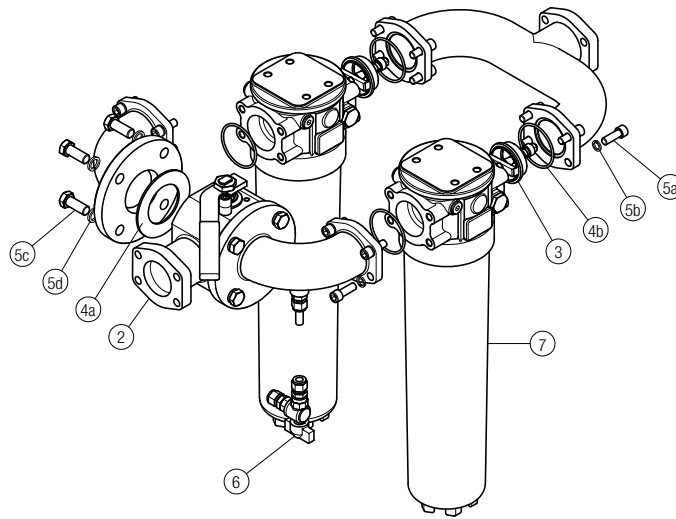
Filter length	H [mm]	H2 [mm]
<b>5</b>	1161	660
<b>6</b>	1491	690





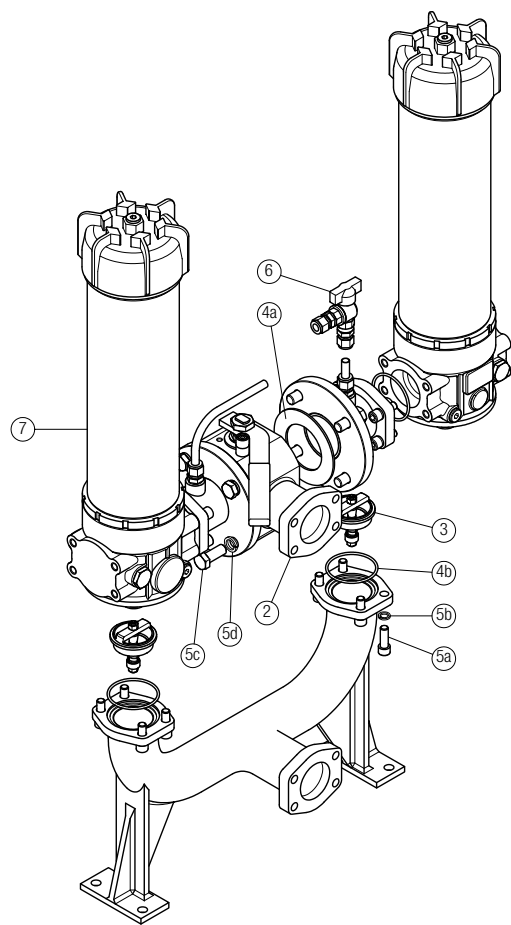
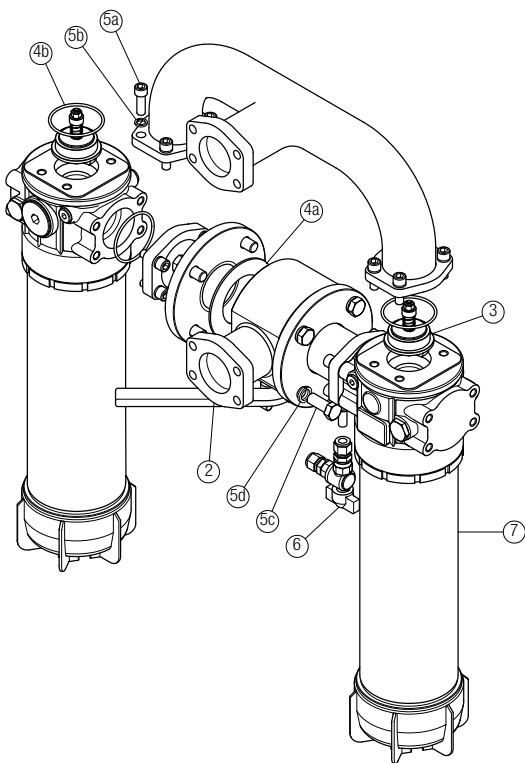
Order number for spare parts

**LMD 400**



**LMD 401**

**LMD 431**



Item:	Q.ty: 1 pc.		Q.ty: 2 pcs.	Q.ty: 1 pc.	Q.ty: 1 pc.	Q.ty: 1 pc.	Q.ty: 2 pcs.
Filter series	3-way ball valve PN 16 2 1/2" SAE 3000 psi/M 2 1/2" SAE 3000 psi/UNC		One-way valve	Seal Kit	Threaded fasteners kit	Kit ball valve with hose fitting	Filter See order table
<b>LMD 400-401-431</b>	02001440	02001441	02001429	02050399	02049062	02025043	LMP400xF2.....



# Clogging indicators

## Introduction

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.

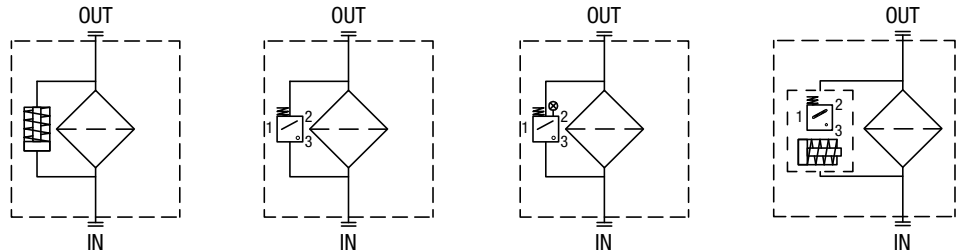
## Suitable indicator types

### 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.



## Quick reference guide

Filter family	Filter series	Visual indicators	Electrical indicators	Electrical / Visual indicators
LOW & MEDIUM PRESSURE FILTERS	<b>ELIXIR®</b> LFEX060-080-110-160	DVS25HP01	DES25HA10P01 DES25HA30P01 DES25HA80P01	
	With bypass valve 3.5 bar LMP 110 - 112 - 116 - 118 - 119 MULTIPORT LMP 120 - 122 - 123 MULTIPORT LMP 210 - 211 - LDP LMP 400 - 401 & 430 - 431 LMP 900 - 901 LMP 902 - 903 LMP 950 - 951 LMP 952 - 953 - 954 LMD 211 - 400 - 401 - 431 - 951 - LDD	DVA20xP01 DVM20xP01	DEA20xA50P01 DEM20XX10P01 DEM20XX20P01 DEM20XX30P01 DEM20XX35P01 DTA20xF70P01	DLA20xA51P01 DLA20xA52P01 DLA20xA71P01 DLE20xA50P01 DLE20xF50P01
	<b>ELIXIR®</b> LFEX060-080-110-160	DVS40HP01	DES40HA10P01 DES40HA30P01 DES40HA80P01	
	Without bypass valve LMP 110 - 112 - 116 - 118 - 119 MULTIPORT LMP 120 - 122 - 123 MULTIPORT LMP 210 - 211 - LDP LMP 400 - 401 & 430 - 431 LMP 900 - 901 LMP 902 - 903 LMP 950 - 951 LMP 952 - 953 - 954 LMD 211 - 400 - 401 - 431 - 951 - LDD	DVA50xP01 DVM50xP01	DEA50xA50P01 DEM50XX10P01 DEM50XX20P01 DEM50XX30P01 DEM50XX35P01 DTA50xF70P01	DLA50xA51P01 DLA50xA52P01 DLA50xA71P01 DLE50xA50P01 DLE50xF50P01

DEA*50	
<b>Electrical Differential Indicator</b>	
Settings	Ordering code
2.0 bar ±10%	DE A 20 x A 50 P01
5.0 bar ±10%	DE A 50 x A 50 P01

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

**Hydraulic symbol**

**Electrical symbol**

**Materials**

- Body: Brass
- Base: Black polyamide
- 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: 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
2.0 bar ±10%	DE M 20 x x 10 P01
5.0 bar ±10%	DE M 50 x x 10 P01

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

flexible cable: 290 to "A"

**Hydraulic symbol**

**Electrical symbol**

Thermal lockout

**Materials**

- Body: Brass
- Base: Black polyamide
- 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: 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
2.0 bar ±10%	DE M 20 x x 20 P01
5.0 bar ±10%	DE M 50 x x 20 P01

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

flexible cable: 290 to "A"

**Hydraulic symbol**

**Electrical symbol**

Thermal lockout

**Materials**

- Body: Brass
- Base: Black polyamide
- 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: 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")

# DIFFERENTIAL INDICATORS

## Dimensions

DEM*30	
<b>Electrical Differential Indicator</b>	
Settings	Ordering code
2.0 bar ±10%	DE M 20 x x 30 P01
5.0 bar ±10%	DE M 50 x x 30 P01

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

**Hydraulic symbol**

**Electrical symbol**

**Materials**

- Body: Brass
- Base: Black polyamide
- 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: 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
2.0 bar ±10%	DE M 20 x x 35 P01
5.0 bar ±10%	DE M 50 x x 35 P01

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

**Hydraulic symbol**

**Electrical symbol**

**Materials**

- Body: Brass
- Base: Black polyamide
- 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: 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")

DES*10	
<b>Electrical Differential Indicator</b>	
Settings	Ordering code
2.5 bar ±10%	DE S 25 HA 10 P01
4.0 bar ±10%	DE S 40 HA 10 P01

A/F 19  
Max tightening torque: 25 N·m

**Hydraulic symbol**

**Electrical symbol**

**Materials**

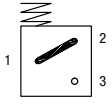
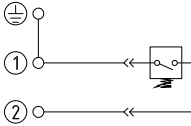
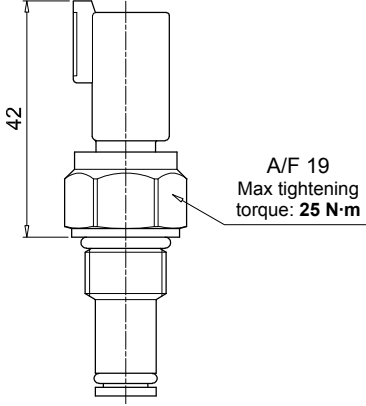
- Body: Brass
- Internal parts: Brass - Polyamide
- Contacts: Silver
- Seal: HNBR

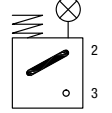
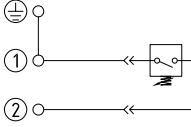
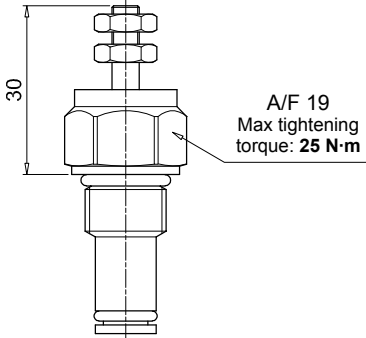
**Technical data**

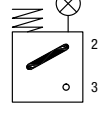
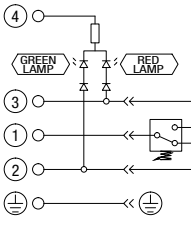
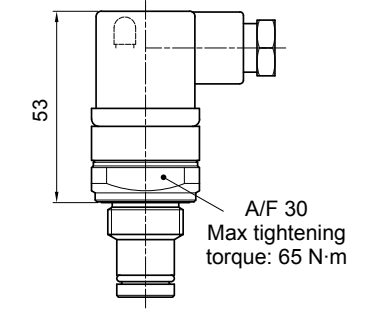
- Max working pressure: 16 bar
- Proof pressure: 24 bar
- Burst pressure: 48 bar
- Working temperature: From -25 °C to +110 °C
- Compatibility with fluids: Mineral oils, Synthetic fluids  
HFA, HFB, HFC according to ISO 2943
- Degree protection: IP67 according to EN 60529

**Electrical data**

- Electrical connection: AMP Superseal series 1.5
- Resistive load: 0.2 A / 24 Vdc
- Switching type: Normally open contacts (NC on request)

DES*30		<b>Hydraulic symbol</b>	<b>Materials</b>
<b>Electrical Differential Indicator</b>			- Body: Brass - Internal parts: Brass - Polyamide - Contacts: Silver - Seal: HNBR
Settings	Ordering code		<b>Technical data</b>
2.5 bar ±10%	DE S 25 H A 30 P01		- Max working pressure: 16 bar - Proof pressure: 24 bar - Burst pressure: 48 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: IP67 according to EN 60529
4.0 bar ±10%	DE S 40 H A 30 P01	<b>Electrical symbol</b> 	<b>Electrical data</b>
			

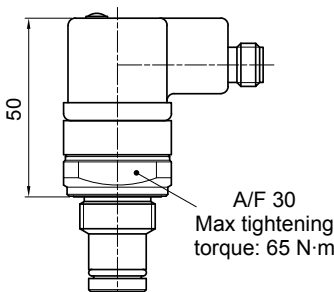
DES*80		<b>Hydraulic symbol</b>	<b>Materials</b>
<b>Electrical Differential Indicator</b>			- Body: Brass - Internal parts: Brass - Polyamide - Contacts: Silver - Seal: HNBR
Settings	Ordering code		<b>Technical data</b>
2.5 bar ±10%	DE S 25 H A 80 P01		- Max working pressure: 16 bar - Proof pressure: 24 bar - Burst pressure: 48 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: IP67 according to EN 60529
4.0 bar ±10%	DE S 40 H A 80 P01	<b>Electrical symbol</b> 	<b>Electrical data</b>
			

DLA*51 - DLA*52		<b>Hydraulic symbol</b>	<b>Materials</b>
<b>Electrical/Visual Differential Indicator</b>			- Body: Brass - Base: Transparent polyamide - Contacts: Silver - Seal: HNBR - FPM
Settings	Ordering code		<b>Technical data</b>
2.0 bar ±10%	DL A 20 x A x x P01		- 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: IP66 according to EN 60529 IP69K according to ISO 20653
5.0 bar ±10%	DL A 50 x A x x P01	<b>Electrical symbol</b> 	<b>Electrical data</b>
			

# DIFFERENTIAL INDICATORS

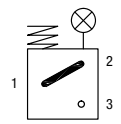
## Dimensions

DLA*71	
<b>Electrical/Visual Differential Indicator</b>	
Settings	Ordering code
2.0 bar $\pm$ 10%	DLA 20 x A 71 P01
5.0 bar $\pm$ 10%	DLA 50 x A 71 P01

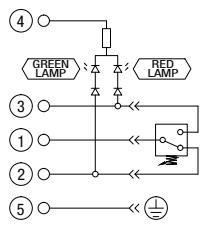


A/F 30  
Max tightening torque: 65 N·m

**Hydraulic symbol**



**Electrical symbol**



**Materials**

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

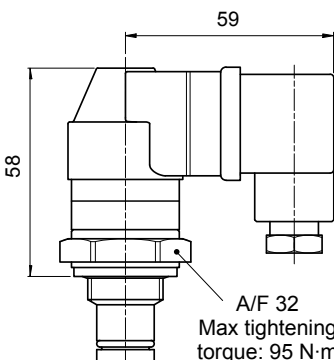
**Technical data**

- 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**

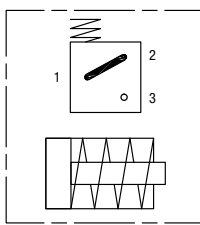
- Electrical connection: IEC 61076-2-101 D (M12)
- Lamps: 24 Vdc
- Resistive load: 0.4 A / 24 Vdc

DLE*A50	
<b>Electrical/Visual Differential Indicator</b>	
Settings	Ordering code
2.0 bar $\pm$ 10%	DL E 20 x A 50 P01
5.0 bar $\pm$ 10%	DL E 50 x A 50 P01

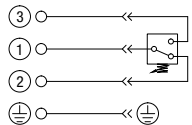


A/F 32  
Max tightening torque: 95 N·m

**Hydraulic symbol**



**Electrical symbol**



**Materials**

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

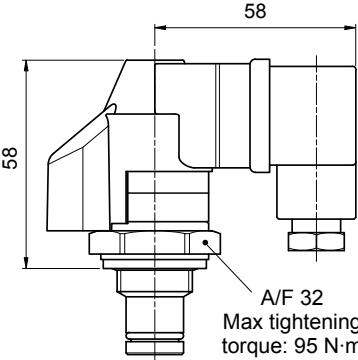
**Technical data**

- 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**

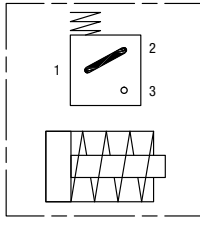
- Electrical connections: EN 175301-803
- Resistive load: 5 A / 250 Vac
- Available the connector with lamps

DLE*F50	
<b>Electrical/Visual Differential Indicator</b>	
Settings	Ordering code
2.0 bar $\pm$ 10%	DL E 20 x F 50 P01
5.0 bar $\pm$ 10%	DL E 50 x F 50 P01

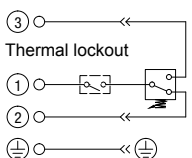


A/F 32  
Max tightening torque: 95 N·m

**Hydraulic symbol**



**Electrical symbol**



**Materials**

- Body: Brass
- Base: Black polyamide
- 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
- Thermal lockout setting: +30 °C



DTA*70	
<b>Electronic Differential Indicator</b>	
Settings	Ordering code
2.0 bar $\pm 10\%$	DT A 20 x x 70 P01
5.0 bar $\pm 10\%$	DT A 50 x x 70 P01

47

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

**Hydraulic symbol**

**Materials**

- Body: Brass
- Internal parts: Brass - Polyamide
- 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 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
2.0 bar $\pm 10\%$	DV A 20 x P01
5.0 bar $\pm 10\%$	DV A 50 x P01

39

Green / Red clogging indicator

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

**Hydraulic symbol**

**Materials**

- Body: Brass
- Internal parts: Brass - Polyamide
- 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 HFA, HFB, HFC according to ISO 2943
- Degree protection: IP65 according to EN 60529

DVM	
<b>Visual Differential Indicator</b>	
Settings	Ordering code
2.0 bar $\pm 10\%$	DV M 20 x P01
5.0 bar $\pm 10\%$	DV M 50 x P01

34

Red clogging indicator

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

**Hydraulic symbol**

**Materials**

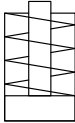
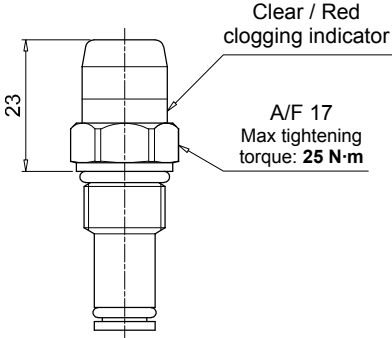
- Body: Brass
- Internal parts: Brass - Polyamide
- Contacts: Silver
- Seal: HNBR - FPM

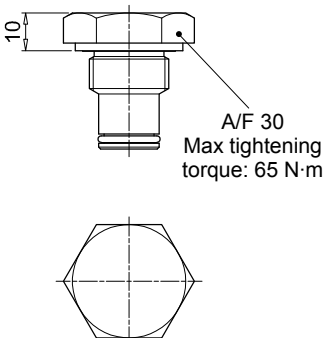
**Technical data**

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

# DIFFERENTIAL INDICATORS

## Dimensions

DVS		Hydraulic symbol	Materials
<b>Visual Differential Indicator</b>			
<b>Settings</b>	<b>Ordering code</b>		<b>Materials</b> - Body: Brass - Internal parts: Brass - Polyamide - Contacts: Silver - Seal: HNBR
2.5 bar $\pm 10\%$	DV S 25 H P01		
4.0 bar $\pm 10\%$	DV S 40 H P01		
		<b>Technical data</b> - Reset: Automatic reset - Max working pressure: 16 bar - Proof pressure: 24 bar - Burst pressure: 48 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: IP67 according to EN 60529	

T2		Materials
<b>Indicator plug</b>		
<b>Seal</b>	<b>Ordering code</b>	<b>Materials</b> - Body: Phosphatized steel - Seal: HNBR / FPM
HNBR	T2 H	
FPM	T2 V	
		

DESIGNATION & ORDERING CODE - DIFFERENTIAL INDICATORS										
<b>Series</b>		Configuration example 1:								P01
<b>DE</b>	Electrical differential indicator	DE	M	20	H	F	50			
<b>DL</b>	Electrical/Visual differential indicator	Configuration example 2:								P01
		DL	E	50	V	A	71			
<b>DT</b>	Electronic differential indicator	Configuration example 3:								P01
		DT	A	20	H	F	70			
<b>DV</b>	Visual differential indicator	Configuration example 4:								P01
		DV	M	50	V					
<b>Type</b>		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	-	•	-	<b>S</b>	With automatic reset				
<b>S</b>	Compact version	•	-	-						
<b>Pressure setting</b>										
<b>20</b>	2.0 bar									
<b>25</b>	2.5 bar									
<b>40</b>	4.0 bar									
<b>50</b>	5.0 bar									
<b>Seals</b>										
<b>H</b>	HNBR									
<b>V</b>	FPM									
<b>Thermostat</b>										
<b>A</b>	Without	•	•	•	•	-	-			
<b>F</b>	With thermostat	-	•	-	•	•	-			
<b>Electrical connections</b>										
<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	-	-	•	-	-	-			
<b>Option</b>										
<b>P01</b>	MP Filtri standard									
<b>Pxx</b>	Customized									

DESIGNATION & ORDERING CODE - DIFFERENTIAL INDICATOR PLUG				
<b>Series</b>		Configuration example	T2	H
<b>T2</b>	Indicator plug			
<b>Seals</b>				
<b>H</b>	HNBR			
<b>V</b>	FPM			