

LDP & LDD series

Filter element according to DIN 24550

Maximum working pressure up to 6 MPa (60 bar) - Flow rate up to 360 l/min

TYPICAL FILTER SIZING Selection Software

Step ①

Select "FILTER SIZING SOFTWARE" after login

The screenshot shows the MP Filtri website's homepage. A user profile for 'WELCOME MARIO ROSSI' is displayed. Below it, a section titled 'Then here by selecting the tool wanted:' contains three buttons: 'FILTER SIZING SOFTWARE' (highlighted with a blue box), 'POWER TRANSMISSION SOFTWARE', and 'MODIFY PROFILE'. At the bottom of the page, there is contact information for MP Filtri srl.

OR

Select "FILTER SIZING" after login from a product page

The screenshot shows a product page for 'MPFX' filter elements. The 'FILTER SIZING' button is highlighted with a blue box at the bottom right of the page. To the right, there is a technical drawing of a filter element and some descriptive text.

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

Step ②

The screenshot shows the 'FILTER SIZING SOFTWARE' interface. Under 'RETURN/SUCTION', the 'RETURN' option is selected. The 'CALCULATE' button is highlighted with a blue box at the bottom.

Working Pressure (bar)*	Flow rate (l/min)*	Fluid type*	Fluid Working Temperature (°C)*
8	90	ISO VG 46 (SUS 216)	40
Fluid*	Fluid type*	Viscosity (cst)*	Viscosity (SSU)*
HLP - Mineral oil	ISO VG 46 (SUS 216)	40	216
Filtration*	Connective Type		
A25 - 25 µm absolute inorganic microfibre	G 1"		

The screenshot shows the 'FILTER SIZING SOFTWARE' interface with the same input fields as the previous step, but for a different product ('Product: MPFX'). The 'CALCULATE' button is highlighted with a blue box at the bottom.

Working Pressure (bar)*	Flow rate (l/min)*	Fluid type*	Fluid Working Temperature (°C)*
8	90	ISO VG 46 (SUS 216)	40
Fluid*	Fluid type*	Viscosity (cst)*	Viscosity (SSU)*
HLP - Mineral oil	ISO VG 46 (SUS 216)	40	216
Filtration*	Connective Type		
A25 - 25 µm absolute inorganic microfibre	G 1"		

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

The screenshot shows the 'FILTER SIZING SOFTWARE' interface with various filter selection options and a search results table. The 'Filter type' dropdown is set to 'MPFX: Tank lid mounting - [Pmax x -] B: 1.75 bar bypass'. The 'Seal' dropdown is set to 'A - NBR'. The 'Option1' dropdown is set to 'Single or duplex'. The 'DIN Standard' dropdown is set to 'NOT APPLICABLE'. The 'Indicator' dropdown is set to 'Visual'. The search results table lists two filter models: 'MPFX-103-3-A-G3-A25-H-BP21' and 'MPFX-103-3-A-G3-A25-H-BP21', with columns for 'Image', 'Code', 'Prex', 'Qmax', 'DP', 'Housing DP', 'Element DP', 'Connection', 'Seal', and 'Link'.

TYPICAL FILTER SIZING

Step ④

Choose the most suitable filter from the proposed list.

Filter type	Valve	Seal	XRESET							
MPPX: Tank lid mounting - [Preset 1]	B: 1.75 bar bypass	A: NBR								
Option1	Single or duplex	DIN Standard	Indicator							
- None	Single	NOT APPLICABLE	Visual							
CSV	Excel	Show	10 entries							
			Search:							
Image	Code	Max	Qmax	ΔP	Housing ΔP	Element ΔP	Connection	Seal	Link	
	MPPX-104-3-A-Q3-A25-H-BP91	E	116	95.74	25.3	8.47	T	E.12	2	
	MPPX-104-3-A-Q3-A25-H-BP91	E	116	95.74	25.3	8.47	T	E.12	2	

Step ⑤

It is possible to change the filter modifying every parameter.

A SAVE YOUR FILTER'S REPORT

Adjustment

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

B MANUAL EDIT

Report

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

LDP & LDD GENERAL INFORMATION

Filter element according to DIN 24550

Descriptions

Low & Medium Pressure filters

Maximum working pressure up to 6 MPa (60 bar)

Flow rate up to 360 l/min

LDP is a range of versatile low pressure filter for transmission, protection of sensitive components in low pressure hydraulic systems and filtration of the coolant into the machine tools.

They are also suitable for the off-line filtration of small reservoirs.

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

Available features:

- Female threaded connections up to 1 1/2", for a maximum return flow rate of 360 l/min
- Filter element designed in accordance with DIN 24550 regulation
- 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.
- Bypass valve, to relieve excessive pressure drop across the filter media
- Visual, electrical and electronic differential clogging indicators

Common applications:

Delivery lines, in low pressure industrial equipment or mobile machines

LDD 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:

- Female threaded connections up to 1 1/2" and flanged connections up to 1 1/2", for a maximum flow rate of 360 l/min
- Filter element designed in accordance with DIN 24550 regulation
- 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 integrated in the changeover lever, 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
- Optional sampling ports, to get samples of fluid or to connect additional instrument to the system
- Visual, electrical and electronic differential clogging indicators

Common applications:

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

Technical data

Filter housing materials

- Head: Aluminium
- Bowl: Cataphoretic painted steel
- Bypass valve: AISI 304 - Polyamide

Pressure

- Test pressure: 9 MPa (90 bar)
- Burst pressure: 21 MPa (210 bar)
- Pulse pressure fatigue test: 1 000 000 cycles with pressure from 0 to 6 MPa (60 bar)

Bypass valve

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

Δp element type

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

Seals

- Standard NBR series A
- Optional FPM series V

Temperature

From -25° C to +110° C

Connections

Inlet/Outlet In-Line

Note

LDP - LDD filters are provided for vertical mounting

Weights [kg] and volumes [dm³]

Filter series	Weights [kg]	Volumes [dm ³]
LDP 016	2.0	1.2
LDP 025	3.0	1.6
LDP 040	5.0	2.2
LDD 016	9.3	3.6
LDD 025	9.5	4.1
LDD 040	11.3	4.8

GENERAL INFORMATION LDP & LDD

Filter element according to DIN 24550

FILTER ASSEMBLY SIZING
Flow rates [l/min]

Filter series	Filter element design - N Series									
	A03	A06	A10	A16	A25	M25	M60	M90	P10	P25
LDP 016	83	91	178	198	222	350	353	358	295	309
LDP 025	124	134	227	245	265	357	358	358	319	330
LDP 040	173	191	274	284	311	359	360	361	332	337
LDD 016	68	73	120	130	140	189	190	192	169	174
LDD 025	93	98	142	149	157	191	192	192	178	181
LDD 040	118	126	161	165	175	192	192	193	182	184

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 mm²/s (cSt) and a density of 0.86 kg/dm³.

For different pressure drop or fluid viscosity we recommend to use our selection software available on www.mpfilttri.com.

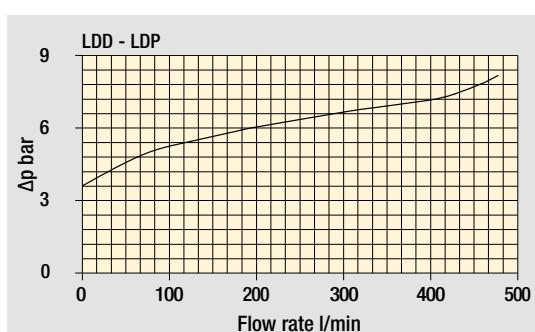
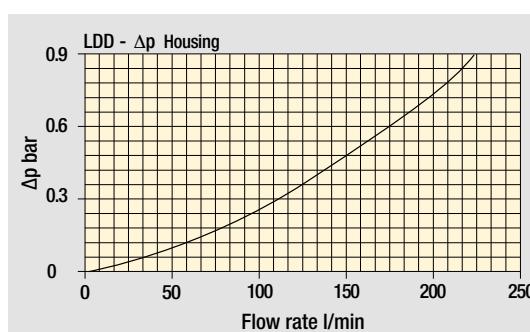
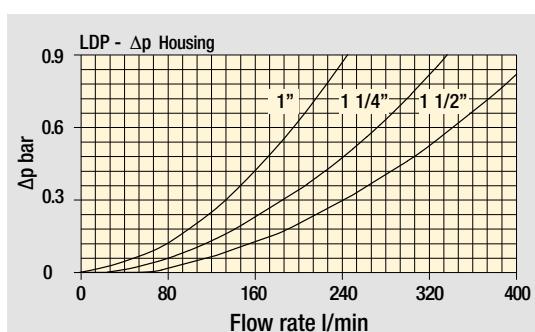
You can also calculate the right size using the formulas present on the FILTER SIZING paragraph at the beginning of the full catalogue or at the beginning of the filter family brochure.
Please, contact our Sales Department for further additional information.

Hydraulic symbols

Filter series	Execution S	Execution B	Execution S	Execution B
LDP 016	•	•	-	-
LDP 025	•	•	-	-
LDP 040	•	•	-	-
LDD 016	-	-	•	•
LDD 025	-	-	•	•
LDD 040	-	-	•	•

Pressure drop

Filter housings Δp pressure drop



Bypass valve pressure drop

The curves are plotted using mineral oil with density of 0.86 kg/dm³ in compliance with ISO 3968. Δp varies proportionally with density.

LDP Filter element according to DIN 24550

Designation & Ordering code

COMPLETE FILTER									
Series	Configuration example: LDP 025 B A D 6 A10 N P01								
LDP									
Size									
016 Element according to DIN 24550 - T3 DN160									
025 Element according to DIN 24550 - T3 DN250									
040 Element according to DIN 24550 - T3 DN400									
Bypass valve									
S Without bypass	B With bypass 3.5 bar								
Seals and treatments									
A NBR									
V FPM									
Connections									
A G 1"	F 1 1/2" NPT								
B G 1 1/4"	G SAE 16 - 1 5/16" - 12 UN								
C G 1 1/2"	H SAE 20 - 1 5/8" - 12 UN								
D 1" NPT	I SAE 24 - 1 7/8" - 12 UN								
E 1 1/4" NPT									
Connection for differential indicator									
6 With plugged connection									
Filtration rating (filter media)									
A03 Inorganic microfiber 3 µm	M25 Wire mesh 25 µm								
A06 Inorganic microfiber 6 µm	M60 Wire mesh 60 µm								
A10 Inorganic microfiber 10 µm	M90 Wire mesh 90 µm								
A16 Inorganic microfiber 16 µm	P10 Resin impregnated paper 10 µm								
A25 Inorganic microfiber 25 µm	P25 Resin impregnated paper 25 µm								
WA025 Water absorber inorganic microfiber 25 µm									
Element Δp									
N 20 bar									
Execution									
P01 MP Filtri standard									
Pxx Customized									

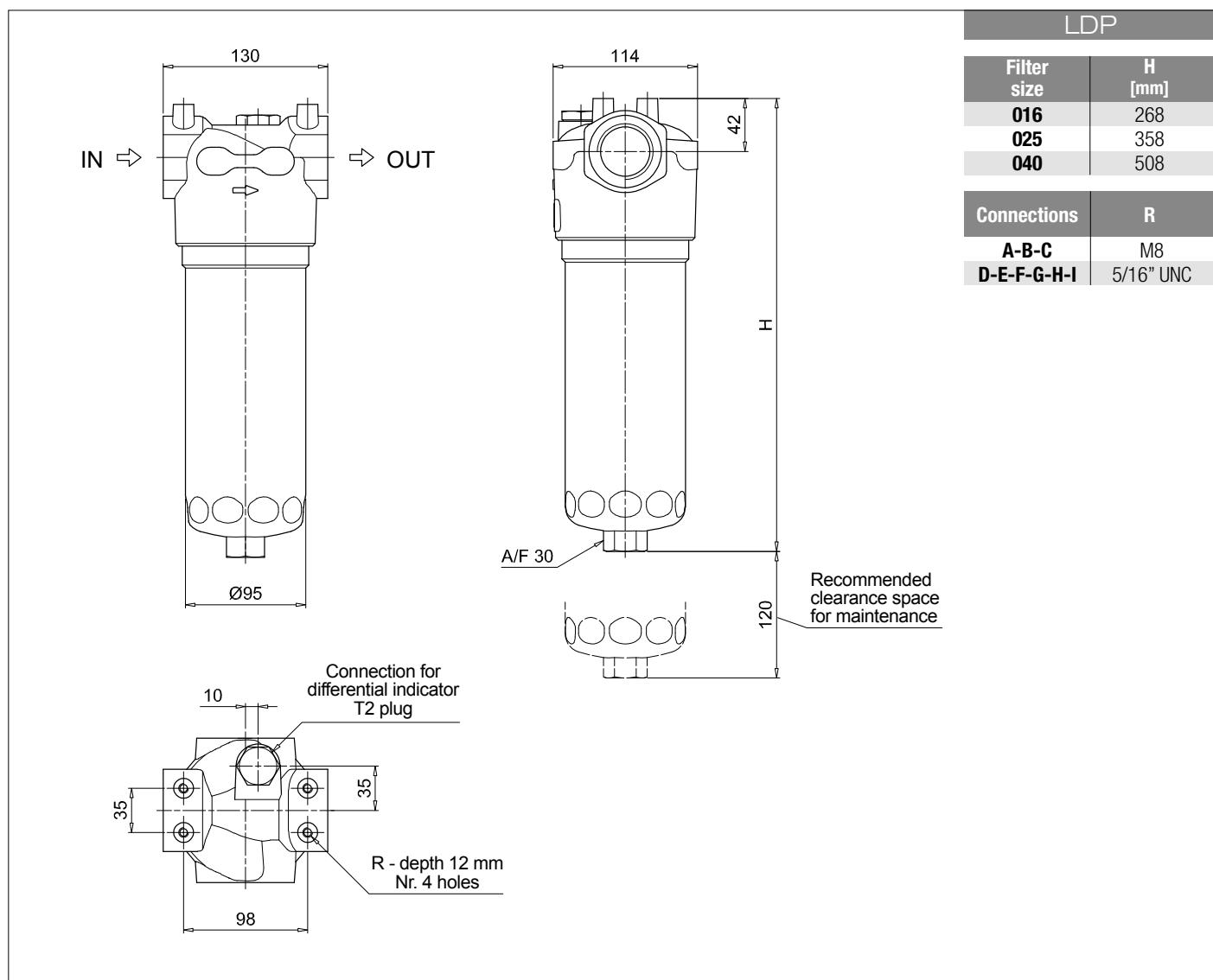
FILTER ELEMENT										
Element series	Configuration example: DN 025 A10 A N P01									
DN										
Element size										
016 Element according to DIN 24550 - T3 DN160										
025 Element according to DIN 24550 - T3 DN250										
040 Element according to DIN 24550 - T3 DN400										
Filtration rating (filter media)										
A03 Inorganic microfiber 3 µm	M25 Wire mesh 25 µm									
A06 Inorganic microfiber 6 µm	M60 Wire mesh 60 µm									
A10 Inorganic microfiber 10 µm	M90 Wire mesh 90 µm									
A16 Inorganic microfiber 16 µm	P10 Resin impregnated paper 10 µm									
A25 Inorganic microfiber 25 µm	P25 Resin impregnated paper 25 µm									
WA025 Water absorber inorganic microfiber 25 µm										
Seals and treatments										
A NBR	Element Δp									
V FPM	N 20 bar									
Execution										
P01 MP Filtri standard										
Pxx Customized										

CLOGGING INDICATORS

- DEA** Electrical differential indicator
- DEM** Electrical differential indicator
- DLA** Electrical / visual differential indicator
- DLE** Electrical / visual differential indicator

- DTA** Electronic differential indicator
- DVA** Visual differential indicator
- DVM** Visual differential indicator
- T2** Plug

See page 478



LDD Filter element according to DIN 24550

Designation & Ordering code

COMPLETE FILTER										
Series	Configuration example: LDD 025 B A C 6 A10 N P01									
LDD										
Size										
016 Element according to DIN 24550 - T3 DN160										
025 Element according to DIN 24550 - T3 DN250										
040 Element according to DIN 24550 - T3 DN400										
Bypass valve										
S Without bypass										
B With bypass 3.5 bar										
Seals and treatments										
A NBR										
V FPM										
Connections										
C G 1 1/2"										
F 1 1/2" NPT										
I SAE 24 - 1 7/8" - 12 UN										
L 1 1/2" SAE 3000 psi/M + G 1 1/4"										
M 1 1/2" SAE 3000 psi/UNC + 1 1/4" NPT										
N 1 1/2" SAE 3000 psi/UNC + SAE 20 - 1 5/8" UN										
Connection for differential indicator										
6 With plugged connection										
Filtration rating (filter media)										
A03 Inorganic microfiber 3 µm	M25 Wire mesh 25 µm									
A06 Inorganic microfiber 6 µm	M60 Wire mesh 60 µm									
A10 Inorganic microfiber 10 µm	M90 Wire mesh 90 µm									
A16 Inorganic microfiber 16 µm	P10 Resin impregnated paper 10 µm									
A25 Inorganic microfiber 25 µm	P25 Resin impregnated paper 25 µm									
WA025 Water absorber inorganic microfiber 25 µm										
Element Δp										
N	20 bar									
Execution										
P01	MP Filtri standard									
Pxx	Customized									

FILTER ELEMENT										
Element series	Configuration example: DN 025 A10 A N P01									
DN										
Element size										
016 Element according to DIN 24550 - T3 DN160										
025 Element according to DIN 24550 - T3 DN250										
040 Element according to DIN 24550 - T3 DN400										
Filtration rating (filter media)										
A03 Inorganic microfiber 3 µm	M25 Wire mesh 25 µm									
A06 Inorganic microfiber 6 µm	M60 Wire mesh 60 µm									
A10 Inorganic microfiber 10 µm	M90 Wire mesh 90 µm									
A16 Inorganic microfiber 16 µm	P10 Resin impregnated paper 10 µm									
A25 Inorganic microfiber 25 µm	P25 Resin impregnated paper 25 µm									
WA025 Water absorber inorganic microfiber 25 µm										
Seals and treatments										
A NBR										
V FPM										
Element Δp										
N	20 bar									
Execution										
P01	MP Filtri standard									
Pxx	Customized									

CLOGGING INDICATORS

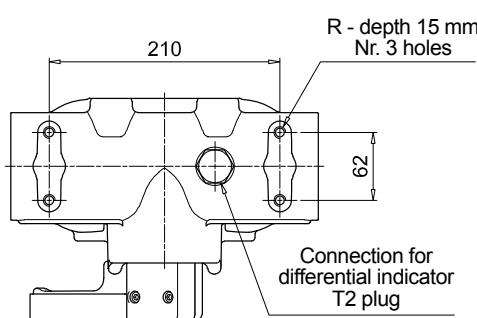
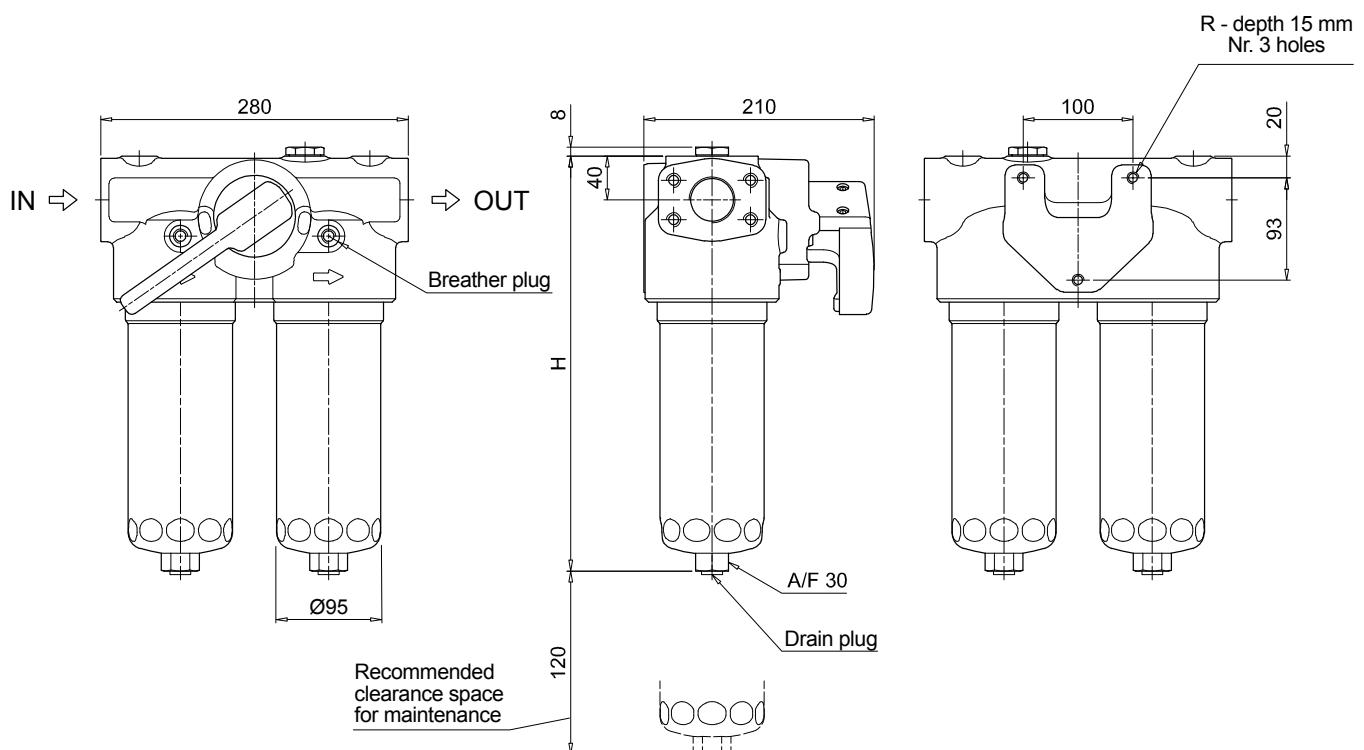
See page 478

DEA Electrical differential indicator
DEM Electrical differential indicator
DLA Electrical / visual differential indicator
DLE Electrical / visual differential indicator

DTA Electronic differential indicator
DVA Visual differential indicator
DVM Visual differential indicator
T2 Plug

LDD	
Filter size	H [mm]
016	293
025	383
040	533

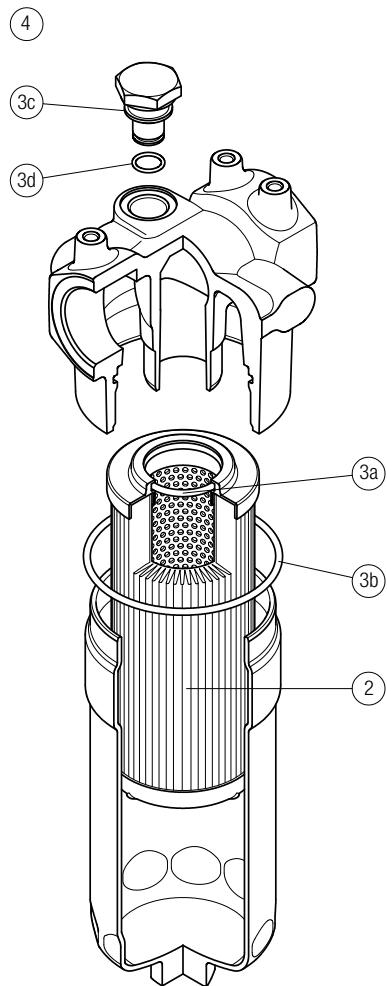
Connections	R
C	M10
F - I	3/8" UNC
L	M10
M - N	3/8" UNC



Filter element according to DIN 24550

Order number for spare parts

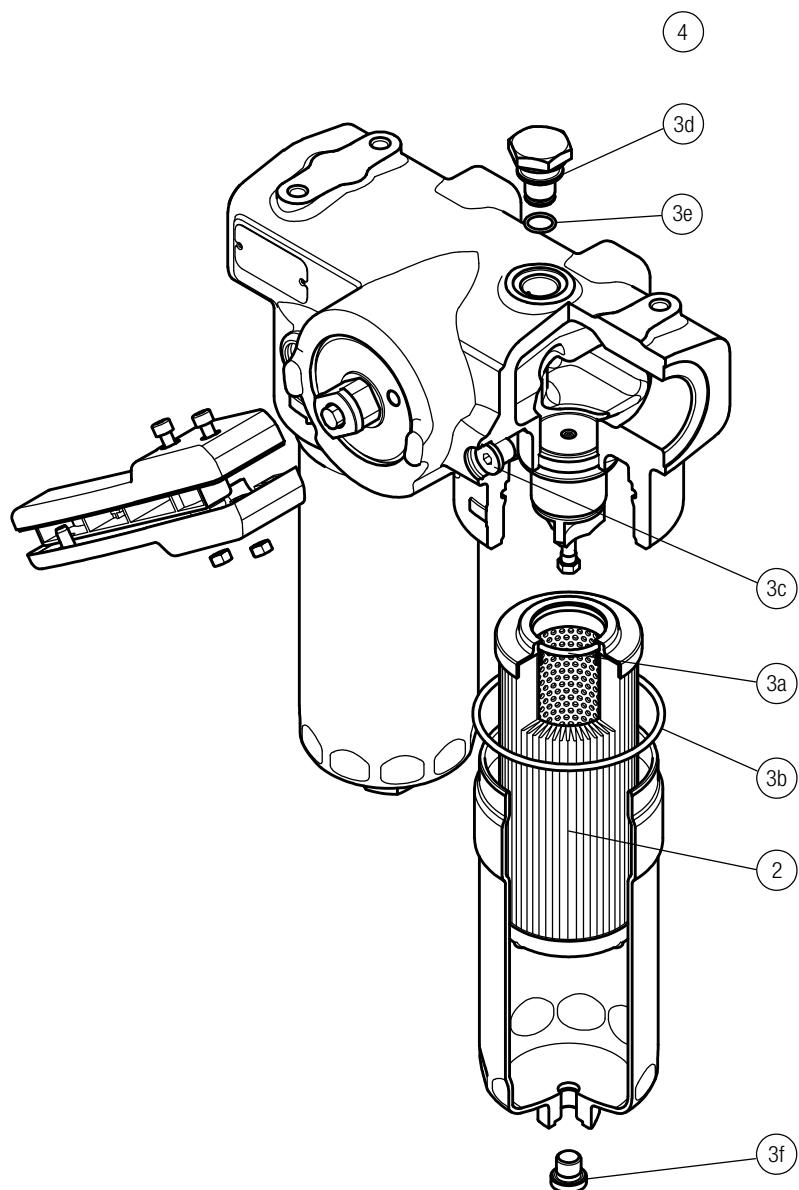
LDP



Item:	Q.ty: 1 pc. ②	Q.ty: 1 pc. ③ (3a ÷ 3d)	Q.ty: 1 pc. ④
Filter series	Filter element	Seal Kit code number NBR FPM	Indicator connection plug NBR FPM
LDP	See order table	02050435 02050436	T2H T2V

Order number for spare parts

LDD



Item:	Q.ty: 1 pc. ②	Q.ty: 1 pc. ③ (3a ÷ 3i)	Q.ty: 2 pc. ④
Filter series	Filter element	Seal Kit code number NBR FPM	Indicator connection plug NBR FPM
LDD	See order table	02050671 02050672	T2H T2V

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:

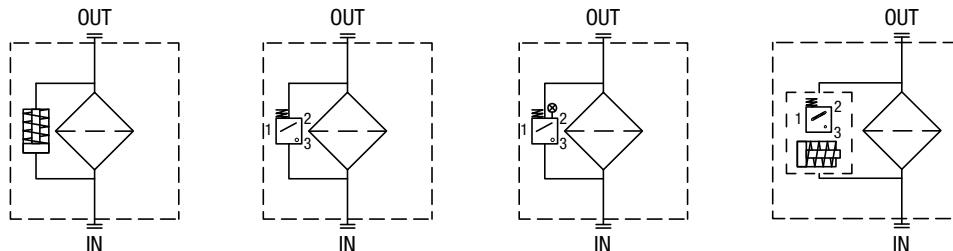
- Vacuum switches and gauges
- Pressure switches and gauges
- Differential pressure indicators

These type of devices can be provided with a visual, electrical or both signals.

Suitable indicator types

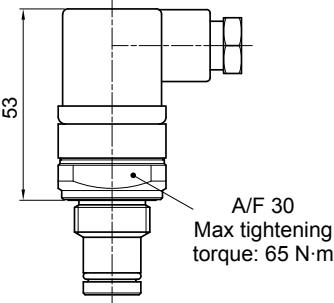
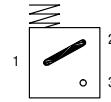
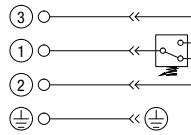
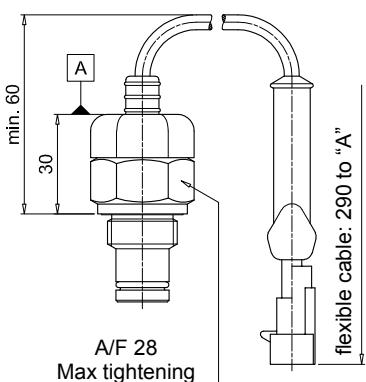
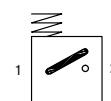
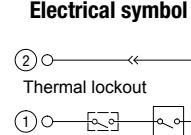
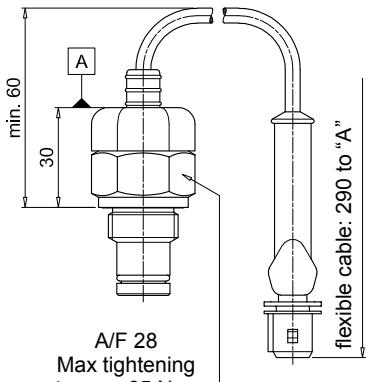
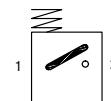
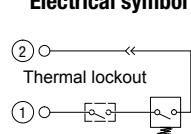
DIFFERENTIAL INDICATORS

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.



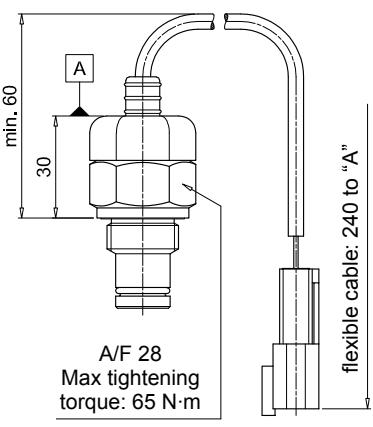
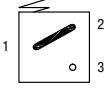
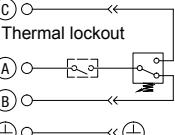
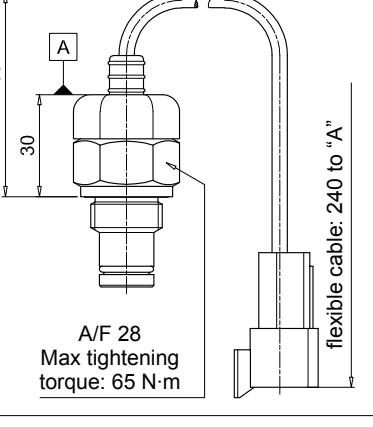
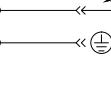
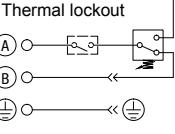
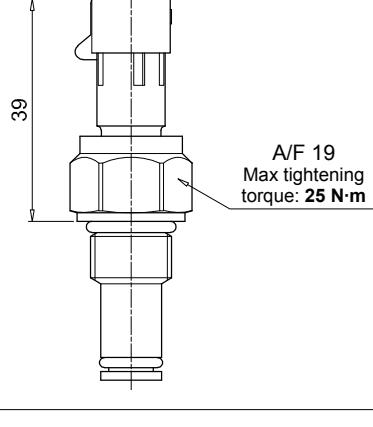
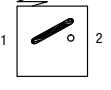
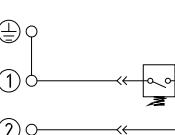
Quick reference guide

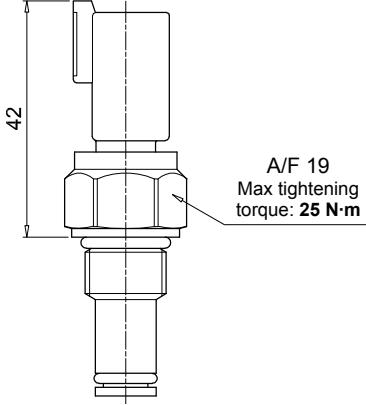
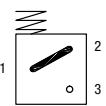
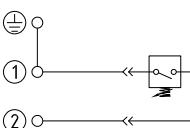
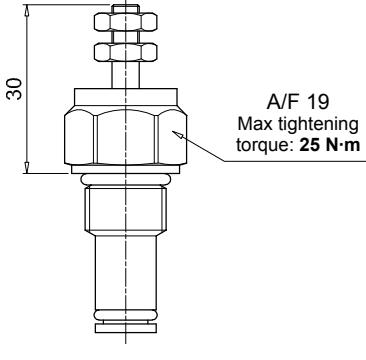
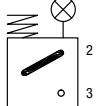
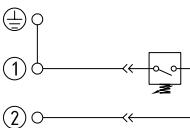
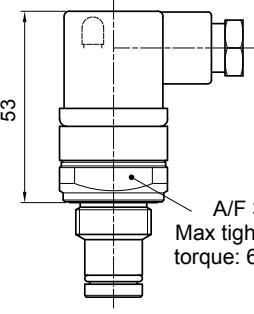
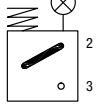
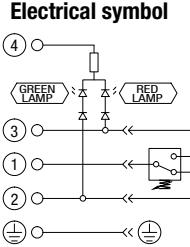
Filter family	Filter series	Visual indicators	Electrical indicators	Electrical / Visual indicators
	ELIXIR® LFEX060-080-110-160	DVS25HP01	DES25HA10P01 DES25HA30P01 DES25HA80P01	
With bypass valve 3.5 bar	LMP 110 - 112 - 116 - 118 - 119 MULTIPORT LMP 120 - 122 - 123 MULTIPORT LMP 210 - 211 - LDP LMP 400 - 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
	ELIXIR® 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

<p>DEA*50</p> <p>Electrical Differential Indicator</p> <table border="1"> <thead> <tr> <th>Settings</th><th>Ordering code</th></tr> </thead> <tbody> <tr> <td>2.0 bar $\pm 10\%$</td><td>DE A 20 x A 50 P01</td></tr> <tr> <td>5.0 bar $\pm 10\%$</td><td>DE A 50 x A 50 P01</td></tr> </tbody> </table>  <p>A/F 30 Max tightening torque: 65 N·m</p>	Settings	Ordering code	2.0 bar $\pm 10\%$	DE A 20 x A 50 P01	5.0 bar $\pm 10\%$	DE A 50 x A 50 P01	<p>Hydraulic symbol</p>  <p>Electrical symbol</p> 	<p>Materials</p> <ul style="list-style-type: none"> - Body: Brass - Base: Black polyamide - Contacts: Silver - Seal: HNBR - FPM <p>Technical data</p> <ul style="list-style-type: none"> - 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 <p>Electrical data</p> <ul style="list-style-type: none"> - Electrical connection: EN 175301-803 - Resistive load: 0.2 A / 115 Vdc
Settings	Ordering code							
2.0 bar $\pm 10\%$	DE A 20 x A 50 P01							
5.0 bar $\pm 10\%$	DE A 50 x A 50 P01							
<p>DEM*10</p> <p>Electrical Differential Indicator</p> <table border="1"> <thead> <tr> <th>Settings</th><th>Ordering code</th></tr> </thead> <tbody> <tr> <td>2.0 bar $\pm 10\%$</td><td>DE M 20 x 10 P01</td></tr> <tr> <td>5.0 bar $\pm 10\%$</td><td>DE M 50 x 10 P01</td></tr> </tbody> </table>  <p>A/F 28 Max tightening torque: 65 N·m</p>	Settings	Ordering code	2.0 bar $\pm 10\%$	DE M 20 x 10 P01	5.0 bar $\pm 10\%$	DE M 50 x 10 P01	<p>Hydraulic symbol</p>  <p>Electrical symbol</p> 	<p>Materials</p> <ul style="list-style-type: none"> - Body: Brass - Base: Black polyamide - Contacts: Silver - Seal: HNBR - FPM <p>Technical data</p> <ul style="list-style-type: none"> - 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 <p>Electrical data</p> <ul style="list-style-type: none"> - 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")
Settings	Ordering code							
2.0 bar $\pm 10\%$	DE M 20 x 10 P01							
5.0 bar $\pm 10\%$	DE M 50 x 10 P01							
<p>DEM*20</p> <p>Electrical Differential Indicator</p> <table border="1"> <thead> <tr> <th>Settings</th><th>Ordering code</th></tr> </thead> <tbody> <tr> <td>2.0 bar $\pm 10\%$</td><td>DE M 20 x 20 P01</td></tr> <tr> <td>5.0 bar $\pm 10\%$</td><td>DE M 50 x 20 P01</td></tr> </tbody> </table>  <p>A/F 28 Max tightening torque: 65 N·m</p>	Settings	Ordering code	2.0 bar $\pm 10\%$	DE M 20 x 20 P01	5.0 bar $\pm 10\%$	DE M 50 x 20 P01	<p>Hydraulic symbol</p>  <p>Electrical symbol</p> 	<p>Materials</p> <ul style="list-style-type: none"> - Body: Brass - Base: Black polyamide - Contacts: Silver - Seal: HNBR - FPM <p>Technical data</p> <ul style="list-style-type: none"> - 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 <p>Electrical data</p> <ul style="list-style-type: none"> - 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")
Settings	Ordering code							
2.0 bar $\pm 10\%$	DE M 20 x 20 P01							
5.0 bar $\pm 10\%$	DE M 50 x 20 P01							

DIFFERENTIAL INDICATORS

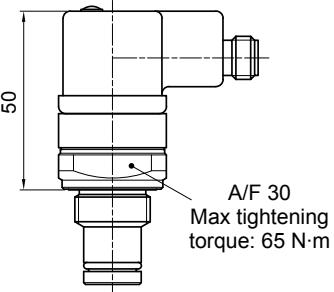
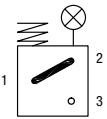
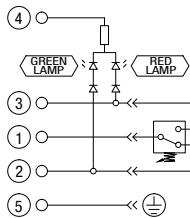
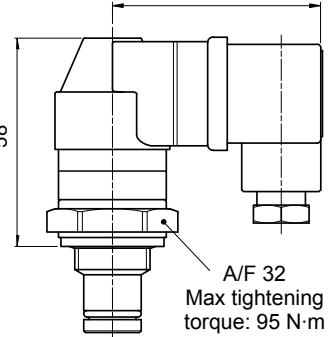
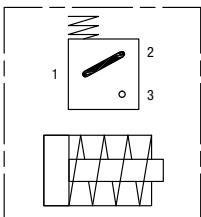
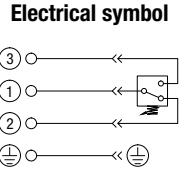
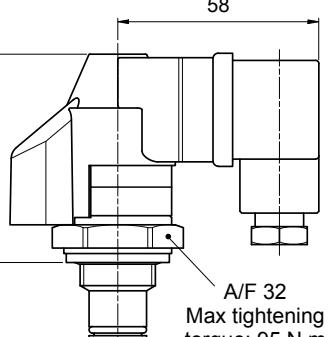
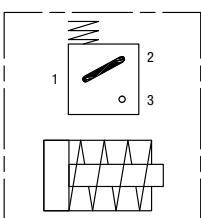
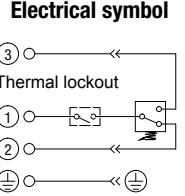
Dimensions

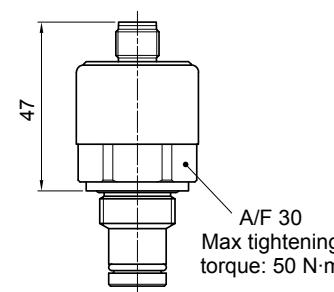
<p>DEM*30</p> <p>Electrical Differential Indicator</p> <table border="1"> <thead> <tr> <th>Settings</th><th>Ordering code</th></tr> </thead> <tbody> <tr> <td>2.0 bar $\pm 10\%$</td><td>DE M 20 x x 30 P01</td></tr> <tr> <td>5.0 bar $\pm 10\%$</td><td>DE M 50 x x 30 P01</td></tr> </tbody> </table>  <p>A/F 28 Max tightening torque: 65 N·m</p>	Settings	Ordering code	2.0 bar $\pm 10\%$	DE M 20 x x 30 P01	5.0 bar $\pm 10\%$	DE M 50 x x 30 P01	<p>Hydraulic symbol</p>  <p>Electrical symbol</p>  <p>③ ○ → Thermal lockout ② ○ → [] ① ○ → [] ○ → []</p>	<p>Materials</p> <ul style="list-style-type: none"> - Body: Brass - Base: Black polyamide - Contacts: Silver - Seal: HNBR - FPM <p>Technical data</p> <ul style="list-style-type: none"> - 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 <p>Electrical data</p> <ul style="list-style-type: none"> - 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")
Settings	Ordering code							
2.0 bar $\pm 10\%$	DE M 20 x x 30 P01							
5.0 bar $\pm 10\%$	DE M 50 x x 30 P01							
<p>DEM*35</p> <p>Electrical Differential Indicator</p> <table border="1"> <thead> <tr> <th>Settings</th><th>Ordering code</th></tr> </thead> <tbody> <tr> <td>2.0 bar $\pm 10\%$</td><td>DE M 20 x x 35 P01</td></tr> <tr> <td>5.0 bar $\pm 10\%$</td><td>DE M 50 x x 35 P01</td></tr> </tbody> </table>  <p>A/F 28 Max tightening torque: 65 N·m</p>	Settings	Ordering code	2.0 bar $\pm 10\%$	DE M 20 x x 35 P01	5.0 bar $\pm 10\%$	DE M 50 x x 35 P01	<p>Hydraulic symbol</p>  <p>Electrical symbol</p>  <p>④ ○ → Thermal lockout ③ ○ → [] ② ○ → [] ① ○ → [] ○ → []</p>	<p>Materials</p> <ul style="list-style-type: none"> - Body: Brass - Base: Black polyamide - Contacts: Silver - Seal: HNBR - FPM <p>Technical data</p> <ul style="list-style-type: none"> - 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 <p>Electrical data</p> <ul style="list-style-type: none"> - 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")
Settings	Ordering code							
2.0 bar $\pm 10\%$	DE M 20 x x 35 P01							
5.0 bar $\pm 10\%$	DE M 50 x x 35 P01							
<p>DES*10</p> <p>Electrical Differential Indicator</p> <table border="1"> <thead> <tr> <th>Settings</th><th>Ordering code</th></tr> </thead> <tbody> <tr> <td>2.5 bar $\pm 10\%$</td><td>DE S 25 H A 10 P01</td></tr> <tr> <td>4.0 bar $\pm 10\%$</td><td>DE S 40 H A 10 P01</td></tr> </tbody> </table>  <p>A/F 19 Max tightening torque: 25 N·m</p>	Settings	Ordering code	2.5 bar $\pm 10\%$	DE S 25 H A 10 P01	4.0 bar $\pm 10\%$	DE S 40 H A 10 P01	<p>Hydraulic symbol</p>  <p>Electrical symbol</p>  <p>② ○ → [] ① ○ → [] ○ → []</p>	<p>Materials</p> <ul style="list-style-type: none"> - Body: Brass - Internal parts: Brass - Polyamide - Contacts: Silver - Seal: HNBR <p>Technical data</p> <ul style="list-style-type: none"> - 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 <p>Electrical data</p> <ul style="list-style-type: none"> - Electrical connection: AMP Superseal series 1.5 - Resistive load: 0.2 A / 24 Vdc - Switching type: Normally open contacts (NC on request)
Settings	Ordering code							
2.5 bar $\pm 10\%$	DE S 25 H A 10 P01							
4.0 bar $\pm 10\%$	DE S 40 H A 10 P01							

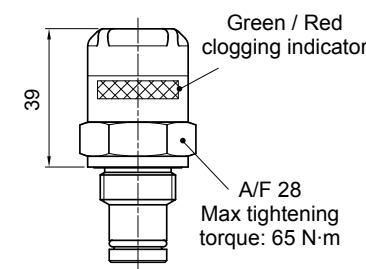
<p>DES*30</p> <p>Electrical Differential Indicator</p> <table border="1"> <thead> <tr> <th>Settings</th><th>Ordering code</th></tr> </thead> <tbody> <tr> <td>2.5 bar $\pm 10\%$</td><td>DE S 25 HA 30 P01</td></tr> <tr> <td>4.0 bar $\pm 10\%$</td><td>DE S 40 HA 30 P01</td></tr> </tbody> </table>  <p>A/F 19 Max tightening torque: 25 N·m</p> <p>42</p>	Settings	Ordering code	2.5 bar $\pm 10\%$	DE S 25 HA 30 P01	4.0 bar $\pm 10\%$	DE S 40 HA 30 P01	<p>Hydraulic symbol</p>  <p>1 2 3</p> <p>Electrical symbol</p>  <p>① ②</p>	<p>Materials</p> <ul style="list-style-type: none"> - Body: Brass - Internal parts: Brass - Polyamide - Contacts: Silver - Seal: HNBR <p>Technical data</p> <ul style="list-style-type: none"> - 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 <p>Electrical data</p> <ul style="list-style-type: none"> - Electrical connection: Deutsch DT-04-2-P - Resistive load: 0.2 A / 24 Vdc - Switching type: Normally open contacts (NC on request)
Settings	Ordering code							
2.5 bar $\pm 10\%$	DE S 25 HA 30 P01							
4.0 bar $\pm 10\%$	DE S 40 HA 30 P01							
<p>DES*80</p> <p>Electrical Differential Indicator</p> <table border="1"> <thead> <tr> <th>Settings</th><th>Ordering code</th></tr> </thead> <tbody> <tr> <td>2.5 bar $\pm 10\%$</td><td>DE S 25 HA 80 P01</td></tr> <tr> <td>4.0 bar $\pm 10\%$</td><td>DE S 40 HA 80 P01</td></tr> </tbody> </table>  <p>A/F 19 Max tightening torque: 25 N·m</p> <p>30</p>	Settings	Ordering code	2.5 bar $\pm 10\%$	DE S 25 HA 80 P01	4.0 bar $\pm 10\%$	DE S 40 HA 80 P01	<p>Hydraulic symbol</p>  <p>1 2 3</p> <p>Electrical symbol</p>  <p>① ②</p>	<p>Materials</p> <ul style="list-style-type: none"> - Body: Brass - Internal parts: Brass - Polyamide - Contacts: Silver - Seal: HNBR <p>Technical data</p> <ul style="list-style-type: none"> - 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 <p>Electrical data</p> <ul style="list-style-type: none"> - Electrical connection: Stud #10-32 UNF - Resistive load: 0.2 A / 24 Vdc - Switching type: Normally open contacts (NC on request)
Settings	Ordering code							
2.5 bar $\pm 10\%$	DE S 25 HA 80 P01							
4.0 bar $\pm 10\%$	DE S 40 HA 80 P01							
<p>DLA*51 - DLA*52</p> <p>Electrical/Visual Differential Indicator</p> <table border="1"> <thead> <tr> <th>Settings</th><th>Ordering code</th></tr> </thead> <tbody> <tr> <td>2.0 bar $\pm 10\%$</td><td>DL A 20 x A x x P01</td></tr> <tr> <td>5.0 bar $\pm 10\%$</td><td>DL A 50 x A x x P01</td></tr> </tbody> </table>  <p>A/F 30 Max tightening torque: 65 N·m</p> <p>53</p>	Settings	Ordering code	2.0 bar $\pm 10\%$	DL A 20 x A x x P01	5.0 bar $\pm 10\%$	DL A 50 x A x x P01	<p>Hydraulic symbol</p>  <p>1 2 3</p> <p>Electrical symbol</p>  <p>④ ③ ① ② ⑤</p> <p>(GREEN LAMP) (RED LAMP)</p>	<p>Materials</p> <ul style="list-style-type: none"> - Body: Brass - Base: Transparent polyamide - Contacts: Silver - Seal: HNBR - FPM <p>Technical data</p> <ul style="list-style-type: none"> - 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 - Degree protection: IP69K according to ISO 20653 <p>Electrical data</p> <ul style="list-style-type: none"> - Electrical connection: EN 175301-803 - Type 51 52 - Lamps 24 Vdc 110 Vdc - Resistive load: 1 A / 24 Vdc 1 A / 110 Vdc
Settings	Ordering code							
2.0 bar $\pm 10\%$	DL A 20 x A x x P01							
5.0 bar $\pm 10\%$	DL A 50 x A x x P01							

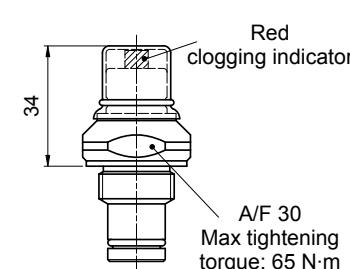
DIFFERENTIAL INDICATORS

Dimensions

<p>DLA*71</p> <p>Electrical/Visual Differential Indicator</p> <table border="1"> <thead> <tr> <th>Settings</th><th>Ordering code</th></tr> </thead> <tbody> <tr> <td>2.0 bar $\pm 10\%$</td><td>DL A 20 x A 71 P01</td></tr> <tr> <td>5.0 bar $\pm 10\%$</td><td>DL A 50 x A 71 P01</td></tr> </tbody> </table>  <p>50</p> <p>A/F 30 Max tightening torque: 65 N·m</p>	Settings	Ordering code	2.0 bar $\pm 10\%$	DL A 20 x A 71 P01	5.0 bar $\pm 10\%$	DL A 50 x A 71 P01	<p>Hydraulic symbol</p>  <p>1 2 3</p> <p>Electrical symbol</p>  <p>④ ○ --- --- ⑤ ○ --- --- ③ ○ --- --- ② ○ --- --- ① ○ --- ---</p> <p>(GREEN LAMP) (RED LAMP)</p> <p>○ --- --- ① ○ --- --- ② ○ --- --- ③ ○ --- --- ④ ○ --- ---</p> <p>○ --- --- ② ○ --- --- ③ ○ --- --- ④ ○ --- --- ⑤ ○ --- ---</p> <p>○ --- --- ③ ○ --- --- ④ ○ --- --- ⑤ ○ --- ---</p> <p>○ --- --- ④ ○ --- --- ⑤ ○ --- ---</p>	<p>Materials</p> <ul style="list-style-type: none"> - Body: Brass - Base: Black polyamide - Contacts: Silver - Seal: HNBR - FPM <p>Technical data</p> <ul style="list-style-type: none"> - 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 <p>Electrical data</p> <ul style="list-style-type: none"> - Electrical connection: IEC 61076-2-101 D (M12) - Lamps 24 Vdc - Resistive load: 0.4 A / 24 Vdc
Settings	Ordering code							
2.0 bar $\pm 10\%$	DL A 20 x A 71 P01							
5.0 bar $\pm 10\%$	DL A 50 x A 71 P01							
<p>DLE*A50</p> <p>Electrical/Visual Differential Indicator</p> <table border="1"> <thead> <tr> <th>Settings</th><th>Ordering code</th></tr> </thead> <tbody> <tr> <td>2.0 bar $\pm 10\%$</td><td>DL E 20 x A 50 P01</td></tr> <tr> <td>5.0 bar $\pm 10\%$</td><td>DL E 50 x A 50 P01</td></tr> </tbody> </table>  <p>59</p> <p>A/F 32 Max tightening torque: 95 N·m</p>	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	<p>Hydraulic symbol</p>  <p>1 2 3</p> <p>Electrical symbol</p>  <p>③ ○ --- --- ① ○ --- --- ② ○ --- ---</p> <p>○ --- --- ① ○ --- --- ② ○ --- ---</p> <p>○ --- --- ② ○ --- --- ③ ○ --- ---</p> <p>○ --- --- ③ ○ --- ---</p>	<p>Materials</p> <ul style="list-style-type: none"> - Body: Brass - Base: Black polyamide - Contacts: Silver - Seal: HNBR - FPM <p>Technical data</p> <ul style="list-style-type: none"> - 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 <p>Electrical data</p> <ul style="list-style-type: none"> - Electrical connections: EN 175301-803 - Resistive load: 5 A / 250 Vac - Available the connector with lamps
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							
<p>DLE*F50</p> <p>Electrical/Visual Differential Indicator</p> <table border="1"> <thead> <tr> <th>Settings</th><th>Ordering code</th></tr> </thead> <tbody> <tr> <td>2.0 bar $\pm 10\%$</td><td>DL E 20 x F 50 P01</td></tr> <tr> <td>5.0 bar $\pm 10\%$</td><td>DL E 50 x F 50 P01</td></tr> </tbody> </table>  <p>58</p> <p>A/F 32 Max tightening torque: 95 N·m</p>	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	<p>Hydraulic symbol</p>  <p>1 2 3</p> <p>Electrical symbol</p>  <p>③ ○ --- --- Thermal lockout ① ○ --- --- ② ○ --- ---</p> <p>○ --- --- ① ○ --- --- ② ○ --- ---</p> <p>○ --- --- ② ○ --- --- ③ ○ --- ---</p> <p>○ --- --- ③ ○ --- ---</p>	<p>Materials</p> <ul style="list-style-type: none"> - Body: Brass - Base: Black polyamide - Contacts: Silver - Seal: HNBR - FPM <p>Technical data</p> <ul style="list-style-type: none"> - 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 <p>Electrical data</p> <ul style="list-style-type: none"> - Electrical connections: EN 175301-803 - Resistive load: 5 A / 250 Vac - Thermal lockout setting: +30 °C
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							

DTA*70		Hydraulic symbol	Materials	
Electronic Differential Indicator				
Settings	Ordering code			
2.0 bar $\pm 10\%$	DT A 20 x 70 P01			
5.0 bar $\pm 10\%$	DT A 50 x 70 P01			
 <p>47 A/F 30 Max tightening torque: 50 N·m</p>			Technical data	
			- 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)	

DVA		Hydraulic symbol	Materials	
Visual Differential Indicator				
Settings	Ordering code			
2.0 bar $\pm 10\%$	DVA 20 x P01			
5.0 bar $\pm 10\%$	DVA 50 x P01			
 <p>39 Green / Red clogging indicator A/F 28 Max tightening torque: 65 N·m</p>			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		Hydraulic symbol	Materials	
Visual Differential Indicator				
Settings	Ordering code			
2.0 bar $\pm 10\%$	DV M 20 x P01			
5.0 bar $\pm 10\%$	DV M 50 x P01			
 <p>34 Red clogging indicator A/F 30 Max tightening torque: 65 N·m</p>			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	
Visual Differential Indicator				
Settings	Ordering code	Technical data		
2.5 bar $\pm 10\%$	DV S 25 H P01	- Reset: Automatic reset		
4.0 bar $\pm 10\%$	DV S 40 H 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		

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

DIFFERENTIAL INDICATORS

Dimensions

DESIGNATION & ORDERING CODE - DIFFERENTIAL INDICATORS

Series	Configuration example 1: DE M 20 H F 50 P01					
DE Electrical differential indicator	Configuration example 2: DL E 50 V A 71 P01					
DL Electrical/Visual differential indicator	Configuration example 3: DT A 20 H F 70 P01					
DT Electronic differential indicator	Configuration example 4: DV M 50 V P01					
DV Visual differential indicator						
Type	DE	DL	DT	DV		
A Standard type	•	•	•	A With automatic reset		
M With wired electrical connection	•	-	-	M With manual reset		
E For high power supply	-	•	-	S With automatic reset		
S Compact version	•	-	-			
Pressure setting						
20 2.0 bar						
25 2.5 bar						
40 4.0 bar						
50 5.0 bar						
Seals						
H HNBR						
V FPM						
Thermostat	DEA	DEM	DLA	DLE	DT	DV
A Without	•	•	•	•	-	-
F With thermostat	-	•	-	•	•	-
Electrical connections	DEA	DEM	DLA	DLE	DT	DV
10 Connection AMP Superseal series 1.5	-	•	-	-	-	-
20 Connection AMP Timer Junior	-	•	-	-	-	-
30 Connection Deutsch DT-04-2-P	-	•	-	-	-	-
35 Connection Deutsch DT-04-3-P	-	•	-	-	-	-
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	-	-	•	-	-	-
70 Connection IEC 61076-2-101 D (M12)	-	-	-	-	•	-
71 Connection IEC 61076-2-101 D (M12), black base with lamps 24 Vdc	-	-	•	-	-	-
Option						
P01 MP Filtri standard						
Pxx Customized						

DESIGNATION & ORDERING CODE - DIFFERENTIAL INDICATOR PLUG

Series	Configuration example T2 H	
T2 Indicator plug		
Seals		
H HNBR		
V FPM		