

FMMX 050 series

Maximum working pressure up to 42 MPa (420 bar) - Flow rate up to 154 l/min



INSTALLATION, SERVICE AND MAINTENANCE MANUAL AND SAFETY INSTRUCTIONS



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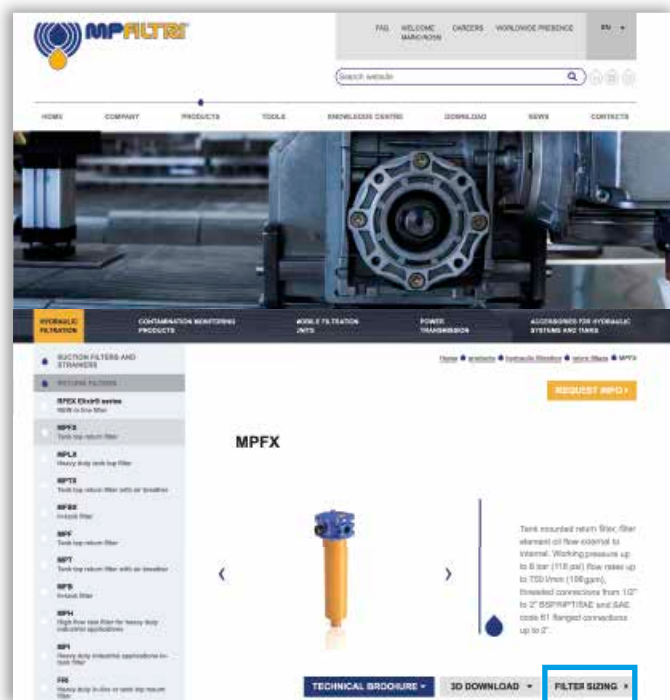
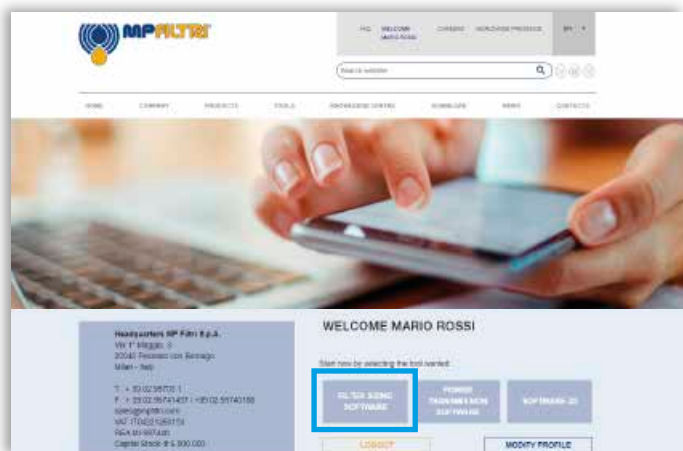
TYPICAL FILTER SIZING Selection Software

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.

PRODUCT SELECTION POWER TRANSMISSION SOFTWARE FILTER SIZING SOFTWARE

SUCTION LOW & MEDIUM PRESSURE HIGH PRESSURE
RETURN/SUCTION RETURN STAINLESS STEEL HIGH PRESSURE

Working Pressure (bar) * 5 Flow rate (l/min) * 90 DP max of the project (bar) * 0.5 Fluid Working Temperature (°C) * 40

Fluid * HLP - Mineral oils Fluid type * ISO VG 46 (SUS 216) Viscosity (cst) * 46 Viscosity (SUS) * 216

Filtration * A25 - 25 µm absolute inorganic microfibre Connection Type * G 1"

CALCULATE

PRODUCT SELECTION POWER TRANSMISSION SOFTWARE FILTER SIZING SOFTWARE

SUCTION LOW & MEDIUM PRESSURE HIGH PRESSURE
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Product: MPFX Working Pressure (bar) * 5 Flow rate (l/min) * 90 DP max of the project (bar) * 0.5 Fluid Working Temperature (°C) * 40

Fluid * HLP - Mineral oils Fluid type * ISO VG 46 (SUS 216) Viscosity (cst) * 46 Viscosity (SUS) * 216

Filtration * A25 - 25 µm absolute inorganic microfibre Connection Type * G 1"

CALCULATE

Step ③

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

Working Pressure 8 (bar) Fluid HLP
Flow rate 90 (l/min) Fluid type ISO VG 46 (SUS 216)
DP max of the project 0.5 (bar) Seal A - NBR
Working Temperature 40 (°C) Optional seals V - FPM
Filtration 25 µm absolute inorganic microfibre Working Temperature with options -20 + 110 (°C)
Connection Type G 1" Viscosity 46 (cst) - 216 (SUS)

NEW SEARCH

Filter type MPFX: Tank top mounting - (Pmax) 1 Valve B: 1.75 bar System Seal A: NBR X-RESET

Option1 Single or duplex DIN Standard NOT APPLICABLE Indicator Visual

CSV Excel Show 10 entries Search:

Image	Code	Press bar	Qmax l/min	Qmax gpm	DP bar	Housing DP bar	Element DP bar	Connection	Seal	Link				
	MPFX-100-3-A-G3-A25-H-BP51	8	116	30.74	25.3	0.47	7	0.12	2	0.35	5	G 1"	A	Adjustment Report
	MPFX-100-3-A-G3-A25-H-BP21	8	116	30.74	25.3	0.47	7	0.12	2	0.35	5	G 1"	A	Adjustment Report

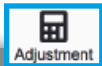
Step 4

Choose the most suitable filter from the proposed list.

Image	Code	Pressure	Flow rate	AP	Housing AP	Element AP	Connection	Seal	Link
	MPTX-100-5-A-Q3-A25-H-BPFI	8 bar	116 l/min	25.3	0.47	0.12	G 1"	A	
	MPTX-104-5-A-Q3-A25-H-BPFI	8 bar	116 l/min	25.3	0.47	0.12	G 1"	A	

Step 5

It is possible to change the filter modifying every parameter.



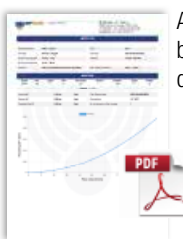
A SAVE YOUR FILTER'S REPORT



B MANUAL EDIT



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



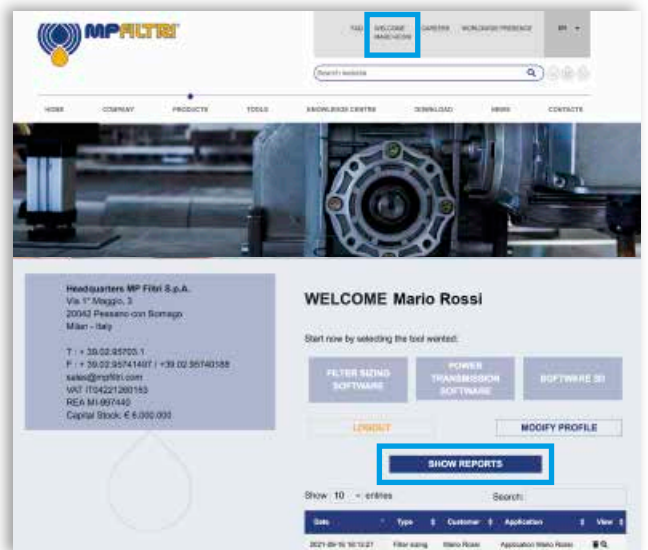
A new
browser window
displays the pdf

see **A**

Close the report window



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





THE X CONCEPT FOR OUR FILTERS

Protect the performance of your system with MYclean.

Quality and efficiency are fundamental for MP Filtri: this exclusive new filter element possesses polygon shape geometry and specific seal that ensures only original spare parts can be used - ensuring correct operation and higher system reliability.

+

zerospark®

THE ANTI-STATIC FILTERS

THE Z CONCEPT FOR OUR FILTERS

Zerospark® is a specialist solution designed to solve the problem of electrostatic discharge inside hydraulic filters. Caused by the electrical charge build-up due to the passage of oil through the filters, this can result in damage to filter elements, oils and circuit components. It can even cause fire hazards in environments where flammable materials are present.



FMMX 050 ATEX series 

with  + 

HPX 050 Filter Element

- ◆ **Protects the machine from improper use of non-original products.**
- ◆ **Safety of constant quality protection & reliability**

With exclusive filter element you are sure that only MP Filtri filter elements can be used, ensuring the best cleaning level of the oil due to the use of originals filter elements.

The products identified as FMMX 050 are protected by:

- ◆ Italian Patent n° 102014902261205
- ◆ Canadian Patent n° 2,937,258
- ◆ European Patent n° 16181725.9
- ◆ US Patent n° 15/224,337

FMMX 050 GENERAL INFORMATION

Description

Technical data

Filters for potentially explosive atmosphere

In-line

Maximum working pressure up to 42 MPa (420 bar)

Flow rate up to 154 l/min

FMMX is a range of versatile high pressure filter for protection of sensitive components in high pressure hydraulic systems in the mobile machines.

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

Available features:

- Female threaded connections up to 1 1/4", for a maximum flow rate of 250 l/min
- Fine filtration rating, to get a good cleanliness level into the system
- Bypass valve, to relieve excessive pressure drop across the filter media
- Low collapse filter element with external support "N", for filter element protection against the back pressure caused by the check valve in filters provided with the bypass valve
- High collapse filter element with external support "S", for filter element protection against the back pressure caused by the check valve in filters not provided with the bypass valve
- Visual, electrical and electronic differential clogging indicators

Common applications:

- Agricultural machines
- Mobile machines




Filter with:

NBR seal in configuration **zerospark⁺**




II 3G Ex h IIC T6 Gc X
II 3D Ex h IIIC T85°C Dc X
T_{amb} : -15°C ÷ +80°C, T_{max fluid} +80°C

EPDM / FPM / MFQ seal in configuration **zerospark⁺**




II 3G Ex h IIC T6... T4 Gc X
II 3D Ex h IIIC T85°C...T115°C Dc X
T_{amb} : -15°C ÷ +110°C, T_{max fluid} +110°C

Filter housing materials

- Head: Painted cast iron, black RAL 9005
- Housing: Phosphatized steel
- Bypass valve: Steel

Pressure

- Test pressure: 63 MPa (630 bar)
- Burst pressure: 126 MPa (1260 bar)
- Pulse pressure fatigue test: 1 000 000 cycles with pressure from 0 to 42 MPa (420 bar)

Bypass valve

- Opening pressure 600 kPa (6 bar) ±10%
- Other opening pressures on request.

Δp element type

- Microfiber filter elements - series N-R: 20 bar
- Microfiber filter elements - series S: 210 bar
- Wire mesh 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

In-line Inlet/Outlet

Note

FMMX filters are provided for vertical mounting

Weights [kg] and volumes [dm³]

Filter series	Weights [kg]					Volumes [dm³]						
	Length	1	2	3	4	5	Length	1	2	3	4	5
FMMX 050		3.11	3.48	3.90	4.36	5.54		0.34	0.48	0.63	0.81	1.23

Filter series	Length	Filter element design - N Series						Filter element design - S Series				
		A03	A06	A10	A16	A25	M25	A03	A06	A10	A16	A25
FMMX 050	1	42	43	79	82	106	147	29	39	57	59	74
	2	52	57	85	96	121	149	45	49	76	88	114
	3	66	69	97	106	130	150	58	61	89	99	125
	4	83	89	113	115	134	152	74	80	106	108	129
	5	107	110	130	134	141	154	93	95	111	121	139

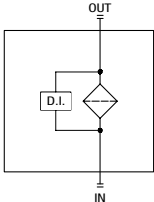
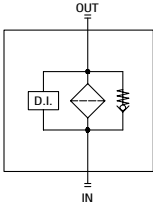
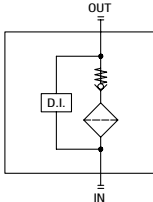
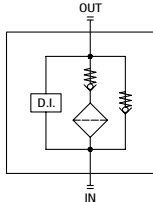
Maximum flow rate for a complete pressure filter with a pressure drop $\Delta p = 1.5$ bar.

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.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.

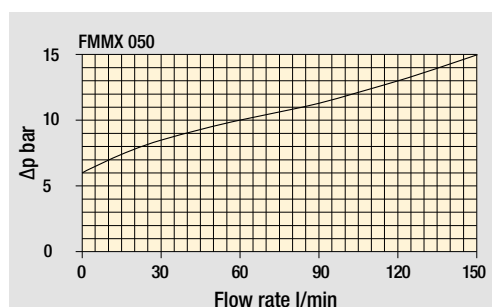
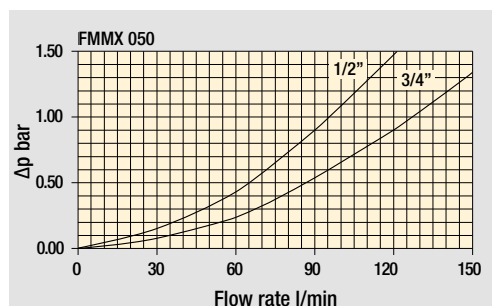
Hydraulic symbols

Filter series	Style S	Style B	Style T	Style D
FMMX 050				

Pressure drop

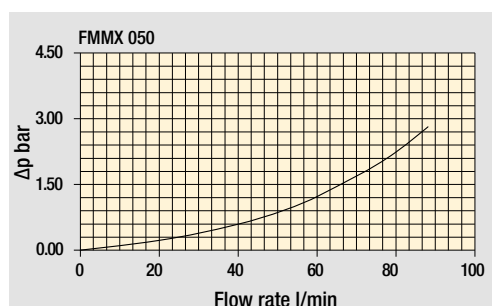
Filter housings

Δp pressure drop



Bypass valve

pressure drop



Filter housing
with check valve


Valves

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


FMMX 050

Designation & Ordering code

COMPLETE FILTER

Series and size		Configuration example: FMMX050									
FMMX050 Filter featuring  Filter Element		3	B	A	G	A10	N	Z01	EX		
Length											
1 2 3 4 5											
Valves											
S Without bypass											
B With bypass 6 bar											
T With check valve, without bypass											
D With check valve, with bypass 6 bar											
Seals											
A NBR											
V FPM											
Connections											
A M18x1.5 - ISO 6149											
B M22x1.5 - ISO 6149											
C G 1/2"											
D G 3/4"											
E 1/2" NPT											
F 3/4" NPT											
G SAE 8 - 3/4" - 16 UNF											
H SAE 12 - 1 1/16" - 12 UN											
Filtration rating (filter media)											
A03 Inorganic microfiber 3 µm											
A06 Inorganic microfiber 6 µm											
A10 Inorganic microfiber 10 µm											
A16 Inorganic microfiber 16 µm											
A25 Inorganic microfiber 25 µm											
M25 Wire mesh 25 µm											
Element Δp											
N 20 bar											
S 210 bar											
Valves											
S B T D											
N 20 bar											
S 210 bar											
Executions											
zerospark®											
Z01 Upper connection for clogging indicator											
Z02 Without connection for clogging indicator											
Z03 Frontal connection for clogging indicator											
Zxx Customized											
Certifications											
EX ATEX certifications											

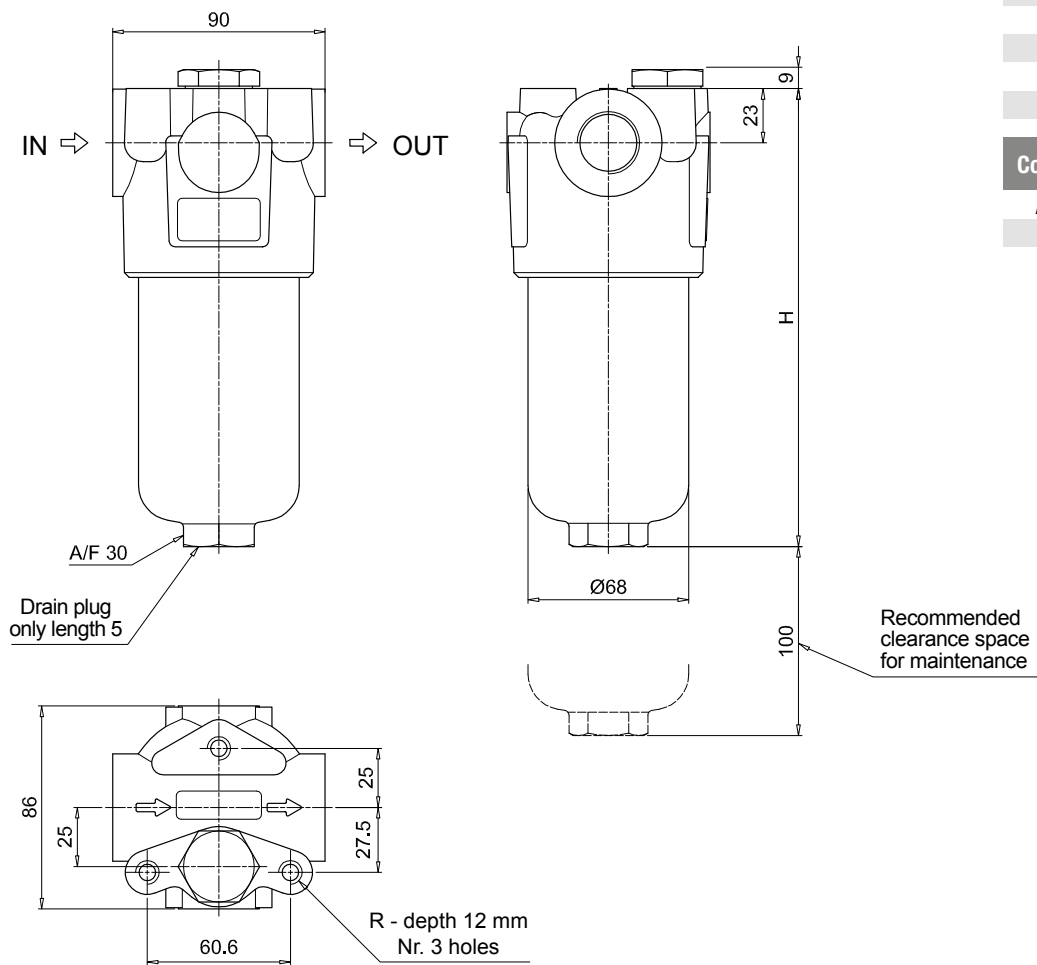
FILTER ELEMENT

Element series and size		Configuration example: HPX050					
HPX050 Filter Element with  feature		3	A10	A	N	Z01	
Element length							
1 2 3 4 5							
Filtration rating (filter media)							
A03 Inorganic microfiber 3 µm							
A06 Inorganic microfiber 6 µm							
A10 Inorganic microfiber 10 µm							
A16 Inorganic microfiber 16 µm							
A25 Inorganic microfiber 25 µm							
M25 Wire mesh 25 µm							
Seals							
A NBR							
V FPM							
Element Δp							
N 20 bar							
S 210 bar							
Execution							
zerospark®							
Z01 MP Filtri standard							
Zxx Customized							

CLOGGING INDICATORS

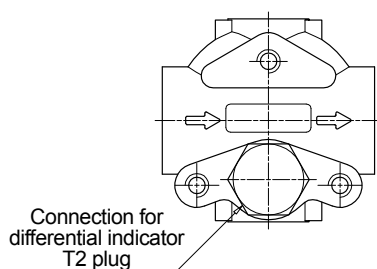
See page 729

DEH Electrical differential indicator	DVM Visual differential indicator
DVA Visual differential indicator	T2 Plug

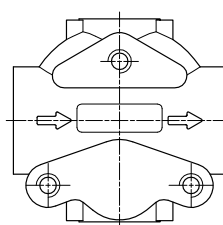


FMMX050	
Filter length	H [mm]
1	158
2	195
3	237
4	285
5	407
Connections	R
A-B-C-D	M10
E-F-G-H	3/8" UNC

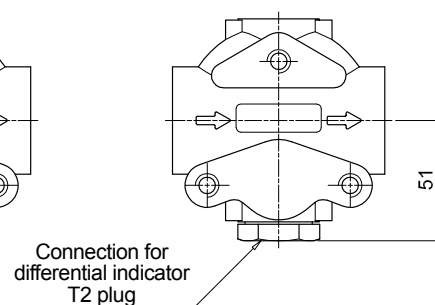
Execution P01



Execution P02



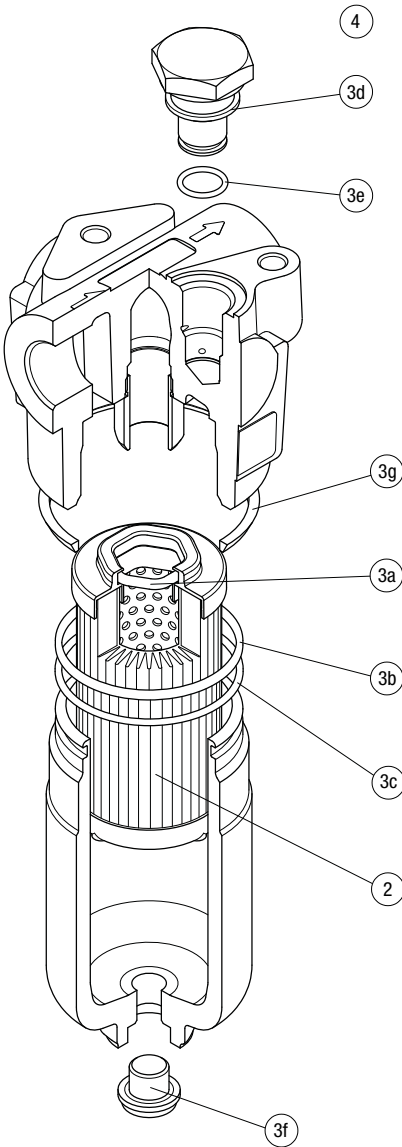
Execution P03



FMMX 050 SPARE PARTS

Order number for spare parts

FMMX 050



Item:	Q.ty: 1 pc.	Q.ty: 1 pc.	Q.ty: 1 pc.
Filter series	Filter element	Seal Kit code number	Indicator connection plug
FMMX 050	See order table	NBR	NBR
		FPM	FPM
		02050864	T2H
		02050865	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:

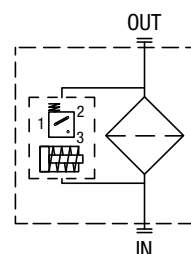
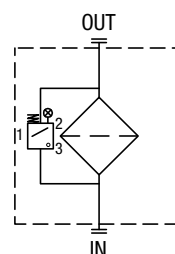
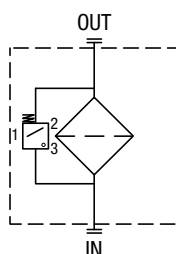
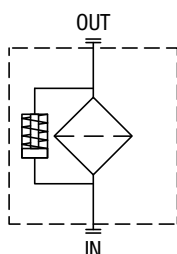
- Vacuum switches and gauges
- Pressure switches and gauges
- Differential pressure indicators

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.

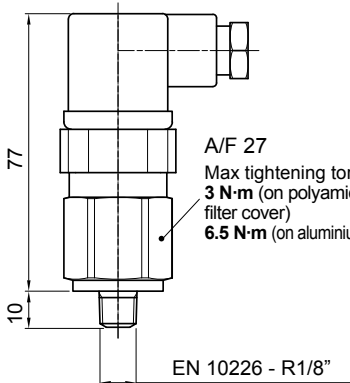
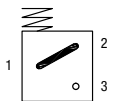
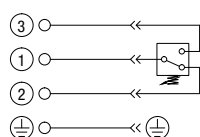


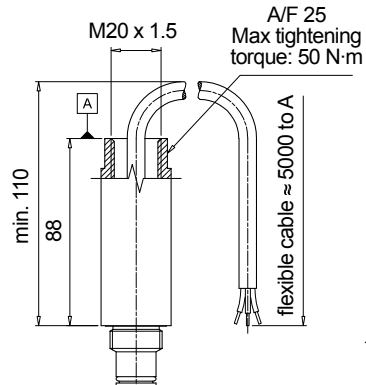
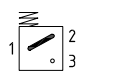
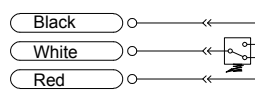
Quick reference guide

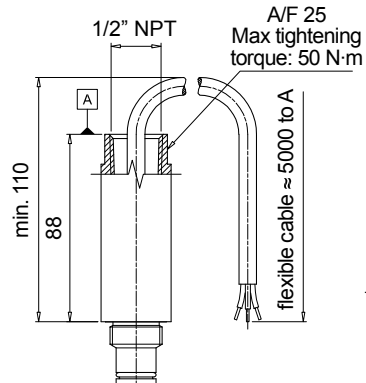
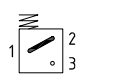
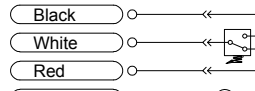
Filter family	Filter series		Visual indicators	Electrical indicators	Electrical / Visual indicators
FILTERS FOR POTENTIALLY EXPLOSIVE ATMOSPHERE	With bypass valve 6 bar	FMMX 50 FMM 050 - 150	DVA50xP01 DVM50xP01	DEH50xA48P01 DEH50xA49P01 DEH50xA70P01	
	Without bypass valve	FMMX 50 FMM 050 - 150	DVA70xP01 DVA95xP01 DVM70xP01 DVM95xP01	DEH70xA48P01 DEH70xA49P01 DEH70xA70P01 DEH95xA48P01 DEH95xA49P01 DEH95xA70P01	
	With bypass valve 6 bar	FZP 039 - 136	DVX50xP01 DVG50xP01	DEH50xA48P01 DEH50xA49P01 DEH50xA70P01 DEX50xA50P01 DEZ50xA50P01	
	Without bypass valve	FZP 039 - 136	DVX70xP01 DVG95xP01 DVG70xP01 DVG95xP01	DEH70xA48P01 DEH70xA49P01 DEH70xA70P01 DEH95xA48P01 DEH95xA49P01 DEH95xA70P01 DEX70xA50P01 DEZ70xA50P01 DEZ95xA50P01	
	With bypass valve 6 bar	FZH 012 - 040	DVZ50xP01		
	Without bypass valve	FZH 012 - 040	DVZ70xP01 DVZ95xP01		


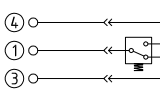
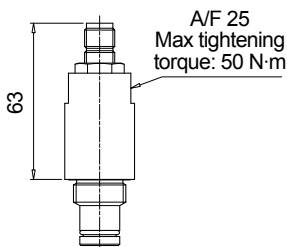
DIFFERENTIAL INDICATORS


Dimensions

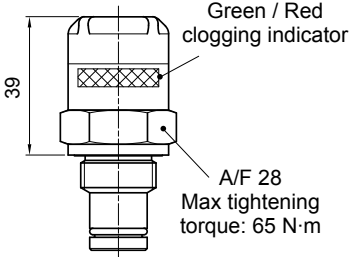
BEA*50			
Electrical Pressure Indicator			
Settings	Ordering code		
1.5 bar ±10%	BE A 15 H A 50 P01		
2.0 bar ±10%	BE A 20 H A 50 P01		
		<div>Hydraulic symbol</div>  <div>Electrical symbol</div> 	
A/F 27 Max tightening torque: 3 N·m (on polyamide filter cover) 6.5 N·m (on aluminium filter)			
EN 10226 - R1/8"			
		<div>Materials</div> <ul style="list-style-type: none">- Body: Brass- Base: Black polyamide- Contacts: Silver- Seal: HNBR <div>Technical data</div> <ul style="list-style-type: none">- Max working pressure: 40 bar- Proof pressure: 60 bar- Working temperature: From -25 °C to +80 °C- Compatibility with fluids: Mineral oils, Synthetic fluids HFA, HFB, HFC according to ISO 2943- Degree of protection: IP65 according to EN 60529 <div>Electrical data</div> <ul style="list-style-type: none">- 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: I M1 Ex ia I Ma II 1GD Ex ia IIC TX Ga Ex ia IIIC TX °C Da- CE certification	

DEH*48			
Electrical Differential Indicator			
Settings	Ordering code		
5.0 bar ±10%	DE H 50 x A 48 P01		
7.0 bar ±10%	DE H 70 x A 48 P01		
		<div>Hydraulic symbol</div>  <div>Electrical symbol</div> 	
M20 x 1.5 A/F 25 Max tightening torque: 50 N·m			
flexible cable ≈ 5000 to A			
min. 110 88			
		<div>Materials</div> <ul style="list-style-type: none">- Body: AISI 316L- Contacts: Rhodium- Seal: FPM - MFQ <div>Technical data</div> <ul style="list-style-type: none">- Max working pressure: 420 bar- Proof pressure: 630 bar- Burst pressure: 1260 bar- Working temperature: From -60 °C to +125 °C- Compatibility with fluids: Mineral oils, Synthetic fluids HFA, HFB, HFC according to ISO 2943- Temperature class: T4 (135 °C) and T6 (85 °C)- Degree of protection: IP 66/67/68 according to EN 60529- Connection type: Three-core cable, fitting M20x1.5- Contact type: SPCO/SPDT (Hermetically sealed - Volt-free contacts) <div>Electrical data</div> <ul style="list-style-type: none">- Resistive Load: 830 mA / 24 Vdc - 180 mA / 110 Vac- Electrical Ratings: $U_i = 30$ Vdc / $I_i = 250$ mA / $P_i = 1.3$ W- Available ATEX product: II 1 GD Ex ia IIC T6 Ga -60°C ≤ Ta ≤ 80°C Ex ia IIC T4 Ga -60°C ≤ Ta ≤ 125°C II 2 GD Ex db IIC T6* Gb Ex tb IIIC T85°C* Db (Tamb : = -60°C to +70°C)* IP66/67 * alternative T/Class and ambients T4, T135°C (Tamb = -60°C to +120°C)	

DEH*49			
Electrical Differential Indicator			
Settings	Ordering code		
5.0 bar ±10%	DE H 50 x A 49 P01		
7.0 bar ±10%	DE H 70 x A 49 P01		
		<div>Hydraulic symbol</div>  <div>Electrical symbol</div> 	
1/2" NPT A/F 25 Max tightening torque: 50 N·m			
flexible cable ≈ 5000 to A			
min. 110 88			
		<div>Materials</div> <ul style="list-style-type: none">- Body: AISI 316L- Contacts: Rhodium- Seal: FPM - MFQ <div>Technical data</div> <ul style="list-style-type: none">- Max working pressure: 420 bar- Proof pressure: 630 bar- Burst pressure: 1260 bar- Working temperature: From -60 °C to +120 °C : ATEX, IECEx, EAC TR CU, INMETRO From -60 °C to +105 °C : UL/CSA- Compatibility with fluids: Mineral oils, Synthetic fluids HFA, HFB, HFC according to ISO 2943- Temperature class: T4 (135 °C) and T6 (85 °C)- Degree of protection: IP 66/67/68 according to EN 60529- Connection type: Four-core cable, fitting 1/2" NPT- Contact type: SPCO/SPDT (Hermetically sealed - Volt-free contacts) <div>Electrical data</div> <ul style="list-style-type: none">- Resistive Load: 830 mA / 24 Vdc - 180 mA / 110 Vac- Max voltage: 150 Vac/dc- Power: 20 W- Available ATEX product: II 1 GD Ex ia IIC T6 Ga -60°C ≤ Ta ≤ 80°C Ex ia IIC T4 Ga -60°C ≤ Ta ≤ 125°C II 2 GD Ex db IIC T6* Gb Ex tb IIIC T85°C* Db (Tamb : = -60°C to +70°C)* IP66/67 * alternative T/Class and ambients T4, T135°C (Tamb = -60°C to +120°C)	

DEH*70		Hydraulic symbol	Electrical symbol	Materials	Technical data		
Electrical Differential Indicator							
Settings	Ordering code						
5.0 bar ±10%	DE H 50 x A 70 P01						
7.0 bar ±10%	DE H 70 x A 70 P01						
		<p>Electrical data</p> <ul style="list-style-type: none">- Body: AISI 316L with internal engineered resin switch- Contacts: Rhodium- Seal: FPM - MFQ- Max working pressure: 420 bar- Proof pressure: 630 bar- Burst pressure: 1260 bar- Working temperature: From -60 °C to +80 °C- Compatibility with fluids: Mineral oils, Synthetic fluids- Temperature class: HFA, HFB, HFC according to ISO 2943- Degree of protection: IP 66/67 according to EN 60529- Connection type: IEC 61076-2-101 D (M12)- Contact type: SPCO/SPDT (Hermetically sealed - Volt-free contacts) <p>Electrical data</p> <ul style="list-style-type: none">- Resistive Load: 830 mA / 24 Vdc - 180 mA / 110 Vdc- Electrical Ratings: $U_i = 30 \text{ Vdc}$$I_i = 250 \text{ mA}$$P_i = 1.3 \text{ W}$- Available ATEX product: II 1 GD Ex ia IIC T6 Ga -60°C ≤ Ta ≤ 80°CEx ia IIC T4 Ga -60°C ≤ Ta ≤ 125°CII 2 GD Ex db IIC T6* Gb Ex tb IIIC T85°C* Db (Tamb = -60°C to +70°C)* IP66/67* alternative T/Class and ambients T4, T135°C (Tamb = -60°C to +120°C) <p>Certification / Approvals: ATEX, IECEx, EAC TR CU, INMETRO</p> <p>- Certification included as standard</p>					

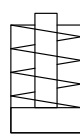
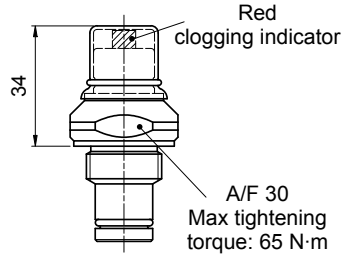
DVA		<h3>Hydraulic symbol</h3> 	<h3>Materials</h3> <ul style="list-style-type: none">- Body: Brass- Internal parts: Brass - Polyamide- Contacts: Silver- Seal: HNBR - FPM <h3>Technical data</h3> <ul style="list-style-type: none">- Reset: Automatic reset- Max working pressure: 420 bar- Proof pressure: 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
Visual Differential Indicator			
Settings	Ordering code		
5.0 bar ±10%	DV A 50 x P01		
7.0 bar ±10%	DV A 70 x P01		
9.5 bar ±10%	DV A 95 x P01		



39

Green / Red
clogging indicator

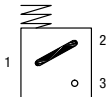
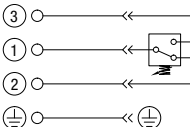
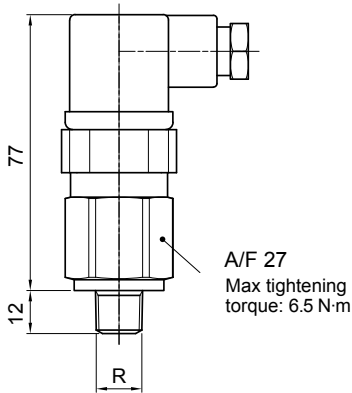
A/F 28
Max tightening
torque: 65 N·m

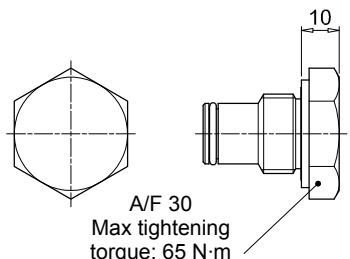
DVM		Hydraulic symbol		Materials <ul style="list-style-type: none">- Body: Brass- Internal parts: Brass - Polyamide- Contacts: Silver- Seal: HNBR - FPM	Technical data <ul style="list-style-type: none">- Reset: Manual reset- Max working pressure: 420 bar- Proof pressure: 630 bar- Burst pressure: 1260 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
Visual Differential Indicator					
Settings	Ordering code				
5.0 bar ±10%	DV M 50 x P01				
7.0 bar ±10%	DV M 70 x P01				
9.5 bar ±10%	DV M 95 x P01				
					

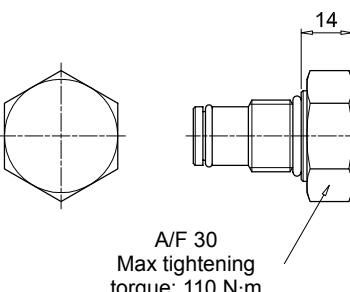
DIFFERENTIAL INDICATORS

Dimensions

<div>DVX</div> <div>Visual Differential Indicator</div> <table><tr><th>Settings</th><th>Ordering code</th></tr><tr><td>5.0 bar ±10%</td><td>DV X 50 x P01</td></tr><tr><td>7.0 bar ±10%</td><td>DV X 70 x P01</td></tr><tr><td>9.5 bar ±10%</td><td>DV X 95 x P01</td></tr></table> <div><p>Green / Red clogging indicator</p><p>39</p><p>A/F 28 Max tightening torque: 65 N·m</p></div>		Settings	Ordering code	5.0 bar ±10%	DV X 50 x P01	7.0 bar ±10%	DV X 70 x P01	9.5 bar ±10%	DV X 95 x P01	<div>Hydraulic symbol</div> <div></div>	<div>Materials</div> <div><div>- Body:</div><div>- Internal parts:</div><div>- Contacts:</div><div>- Seal:</div></div> <div><div>AISI 316L</div><div>AISI 316L - Polyamide</div><div>Silver</div><div>HNBR - MFQ</div></div> <div>Technical data</div> <div><div>- Reset:</div><div>- Max working pressure:</div><div>- Proof pressure:</div><div>- Burst pressure:</div><div>- Working temperature:</div><div>- Compatibility with fluids:</div><div>- Degree protection:</div></div> <div><div>Automatic reset</div><div>420 bar</div><div>630 bar</div><div>1260 bar</div><div>From -25 °C to +110 °C</div><div>Mineral oils, Synthetic fluids HFA, HFB, HFC according to ISO 2943</div><div>IP65 according to EN 60529</div></div>
Settings	Ordering code										
5.0 bar ±10%	DV X 50 x P01										
7.0 bar ±10%	DV X 70 x P01										
9.5 bar ±10%	DV X 95 x P01										
<div>DVY</div> <div>Visual Differential Indicator</div> <table><tr><th>Settings</th><th>Ordering code</th></tr><tr><td>5.0 bar ±10%</td><td>DV Y 50 x P01</td></tr><tr><td>7.0 bar ±10%</td><td>DV Y 70 x P01</td></tr><tr><td>9.5 bar ±10%</td><td>DV Y 95 x P01</td></tr></table> <div><p>Red clogging indicator</p><p>34</p><p>A/F 30 Max tightening torque: 65 N·m</p></div>		Settings	Ordering code	5.0 bar ±10%	DV Y 50 x P01	7.0 bar ±10%	DV Y 70 x P01	9.5 bar ±10%	DV Y 95 x P01	<div>Hydraulic symbol</div> <div></div>	<div>Materials</div> <div><div>- Body:</div><div>- Internal parts:</div><div>- Contacts:</div><div>- Seal:</div></div> <div><div>AISI 316L</div><div>AISI 316L - Polyamide</div><div>Silver</div><div>HNBR - MFQ</div></div> <div>Technical data</div> <div><div>- Reset:</div><div>- Max working pressure:</div><div>- Proof pressure:</div><div>- Burst pressure:</div><div>- Working temperature:</div><div>- Compatibility with fluids:</div><div>- Degree protection:</div></div> <div><div>Manual reset</div><div>420 bar</div><div>630 bar</div><div>1260 bar</div><div>From -25 °C to +110 °C</div><div>Mineral oils, Synthetic fluids HFA, HFB, HFC according to ISO 2943</div><div>IP65 according to EN 60529</div></div>
Settings	Ordering code										
5.0 bar ±10%	DV Y 50 x P01										
7.0 bar ±10%	DV Y 70 x P01										
9.5 bar ±10%	DV Y 95 x P01										
<div>DVZ</div> <div>Visual Differential Indicator</div> <table><tr><th>Settings</th><th>Ordering code</th></tr><tr><td>5.0 bar ±10%</td><td>DV Z 50 x P01</td></tr><tr><td>7.0 bar ±10%</td><td>DV Z 70 x P01</td></tr><tr><td>9.5 bar ±10%</td><td>DV Z 95 x P01</td></tr></table> <div><p>Green / Red clogging indicator</p><p>39</p><p>A/F 30 Max tightening torque: 110 N·m</p></div>		Settings	Ordering code	5.0 bar ±10%	DV Z 50 x P01	7.0 bar ±10%	DV Z 70 x P01	9.5 bar ±10%	DV Z 95 x P01	<div>Hydraulic symbol</div> <div></div>	<div>Materials</div> <div><div>- Body:</div><div>- Internal parts:</div><div>- Contacts:</div><div>- Seal:</div></div> <div><div>AISI 316L</div><div>AISI 316L - Polyamide</div><div>Silver</div><div>HNBR - MFQ</div></div> <div>Technical data</div> <div><div>- Reset:</div><div>- Max working pressure:</div><div>- Proof pressure:</div><div>- Burst pressure:</div><div>- Working temperature:</div><div>- Compatibility with fluids:</div><div>- Degree protection:</div></div> <div><div>Automatic reset</div><div>700 bar</div><div>1050 bar</div><div>2100 bar</div><div>From -25 °C to +110 °C</div><div>Mineral oils, Synthetic fluids HFA, HFB, HFC according to ISO 2943</div><div>IP65 according to EN 60529</div></div>
Settings	Ordering code										
5.0 bar ±10%	DV Z 50 x P01										
7.0 bar ±10%	DV Z 70 x P01										
9.5 bar ±10%	DV Z 95 x P01										

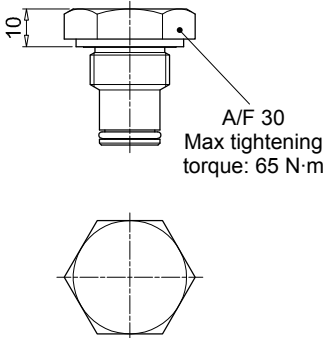
VE*50		Hydraulic symbol	Materials
Electrical Vacuum Indicator			- Body: Brass - Base: Black polyamide - Contacts: Silver - Seal: NBR
R	Ordering code	Electrical symbol	Technical data
EN 10226 - R1/8"	VE B 21 A A 50 P01		- Vacuum setting: -0.21 bar ±10% - Max working pressure: 10 bar - Proof pressure: 15 bar - Working temperature: From -25 °C to +80 °C - Compatibility with fluids: Mineral oils, Synthetic fluids HFA, HFB, HFC according to ISO 2943 - Degree of protection: 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: I M1 Ex ia I Ma II 1GD Ex ia IIC Tx Ex ia IIIC Tx°C X - CE certification

X2		Indicator plug 420 bar	Materials
Seal	Ordering code		
HNBR	X2 H		- Body: AISI 316L - Seal: HNBR / MFQ
MFQ	X2 F		

X3		Indicator plug 700 bar (only for FZH)	Materials
Seal	Ordering code		
HNBR	X3 H		- Body: AISI 316L - Seal: HNBR / MFQ
MFQ	X3 F		

DIFFERENTIAL INDICATORS

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



Materials

- Body: Phosphatized steel
- Seal: HNBR / FPM

DESIGNATION & ORDERING CODE - DIFFERENTIAL INDICATORS

[illegible]

DESIGNATION & ORDERING CODE - DIFFERENTIAL INDICATOR PLUG

Series	Configuration example	X2	H
X2 Indicator plug 420 bar			
X3 Indicator plug 700 bar (only for FZH)			
Seals			
H HNBR			
V FPM			
F MFQ			