

FZD series

Maximum working pressure up to 35 Mpa (350 bar) - Flow rate up to 60 l/min



TYPICAL FILTER SIZING Selection Software

Step ①

Select "FILTER SIZING SOFTWARE" after login

WELCOME MARIO ROSSI

Then you're selecting the tool wanted:

- FILTER SIZING SOFTWARE** (highlighted)
- POWER TRANSMISSION SOFTWARE
- SOP MANUALS

OR

Select "FILTER SIZING" after login from a product page

MPFX

Tank mounted return filter, filter element with flow control M connection. Working pressure up to 6 bar (110 psi), flow rates up to 100 l/min (106 gpm). Threaded connections from 1/2" to 2" BSP/PTFE and SAE code 81 flanged connections up to 3".

TECHNICAL BROCHURE ▾ 3D DOWNLOAD ▾ FILTER SIZING ▾

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

Step ②

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

Working Pressure (bar)* Flow rate (l/min)* Fluid max (bar)* Fluid Working Temperature (°C)*

Fluid* Fluid type* Viscosity (cst)* Viscosity (SSU)*

Filtration* Connection Type*

* required field

CALCULATE

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

Product: MPFX

Working Pressure (bar)* Flow rate (l/min)* Fluid max (bar)* Fluid Working Temperature (°C)*

Fluid* Fluid type* Viscosity (cst)* Viscosity (SSU)*

Filtration* Connection Type*

CALCULATE

Select the desidered 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) Working Temperature -25 + 110 (°C)

Filtration 25 µm absolute inorganic microfibre Optional seals V - FPM

Connection Type G 1" Working Temperature with options -20 + 110 (°C)

Viscosity 46 (cst) - 216 (SUS) Viscosity

NEW SEARCH

Filter type	Valve	Seal
MPFX - Tank lid mounting - [Pmax x -] B: 1.75 bar Bypass	A: NBR	X RESET

Option1	Single or duplex	DIN Standard	Indicator
--None	Single	NOT APPLICABLE	Visual

CSV Excel Show 10 entries Search:

Image	Code	Prex	Qmax	ΔP	Housing ΔP	Element ΔP	Connection	Seal	Link
	MPFX-103-3-A-G3-A25-H-BP6	8	116	95.74	25.3	0.47	T	A	
	MPFX-103-3-A-G3-A25-H-BP2	8	116	68.74	26.3	0.47	Z	A	

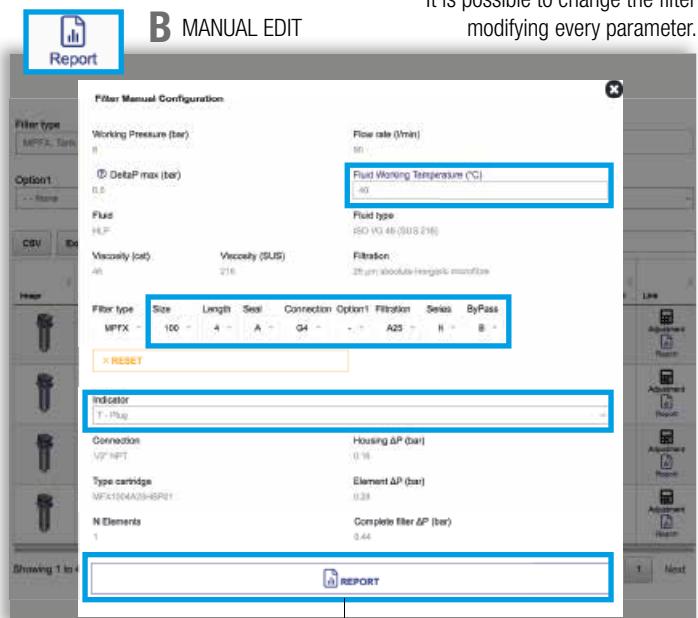
TYPICAL FILTER SIZING

Step 4

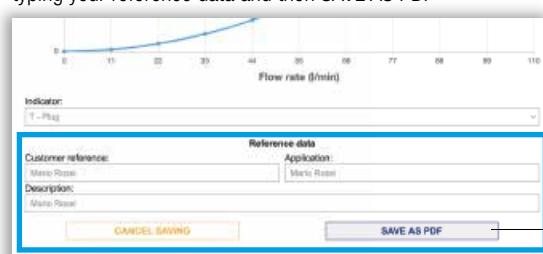
Choose the most suitable filter from the proposed list.

Filter type	Valve	Seal							
MPFX-Tank lid mounting - [Pmax] =	B: 1.75 bar Bypass	A: NBR	X RESET						
Option1	Single or duplex	DIN Standard	Indicator						
-- None	Single	NOT APPLICABLE	Visual						
CSV	Excel	Show 10 entries	Search:						
Image	Code	Peak bar psi	Qmax dm³/h gpm us	dP bar in	Housing AP bar psi	Element AP bar psi	Connection	Seal	Link
	MPFX-100-S-A-G3-A25-H-BPS1	B 116 95.74	25.3 0.47	T 0.12 2	E35 5	G 1"	A		
	MPFX-104-S-A-G3-A25-H-BPS1	B 116 95.74	25.3 0.47	T 0.12 2	E35 5	G 1"	A		

Step 5



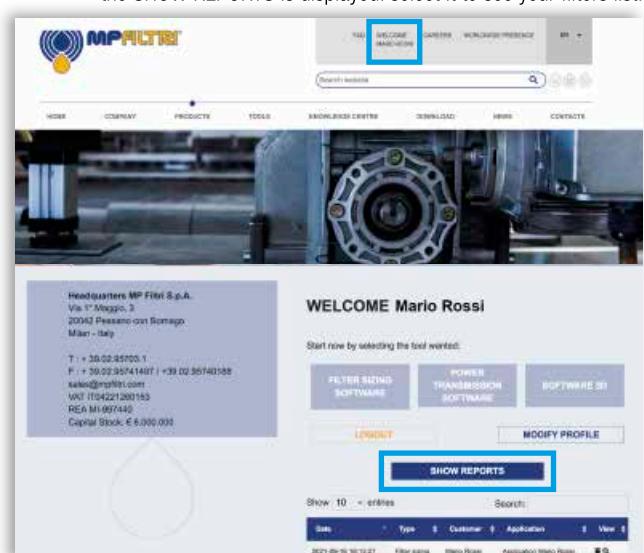
SAVE IN YOUR ARCHIVE
typing your reference data and then **SAVE AS PDF**



A new browser window displays the pdf

see A

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



FZD GENERAL INFORMATION

Description

Technical data

<p>Stainless steel high pressure filters</p> <p>Duplex Maximum working pressure up to 35 Mpa (350 bar) Flow rate up to 60 l/min</p> <p>FZD is a range of stainless steel high 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.</p> <p>Available features:</p> <ul style="list-style-type: none"> - Female threaded connections up to 3/4", for a maximum flow rate of 60 l/min - Fine filtration rating, to get a good cleanliness level into the system - Balancing valve, available for FZD051, 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 - High collapse filter element "H", for use with filters not provided with bypass valve - Low collapse filter element with external support "R", for filter element protection against the back pressure caused by the check valve or the reverse flow 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 or the reverse flow in filters not provided with the bypass valve - High collapse filter element "U", for use with aggressive fluids - Visual, electrical and electronic differential clogging indicators <p>Common applications:</p> <ul style="list-style-type: none"> - System where shut-down causes high costs - System where shut-down causes safety issues 	<p>Filter housing materials</p> <ul style="list-style-type: none"> - Head: AISI 316L - Housing: AISI 316L - Bypass valve: AISI 316L <p>Seals</p> <ul style="list-style-type: none"> - Standard NBR series A (-25 °C to +110 °C) - Optional FPM series V (-20 °C to +120 °C) - Optional MFQ series F (-50 °C to +120 °C) <p>Bypass valve Opening pressure 6 bar ±10%</p> <p>Temperature From -50 °C to +120 °C</p> <p>Note FZD filters are provided for vertical mounting</p>	<p>Δp element type</p> <p>Fluid flow through the filter element from OUT to IN</p> <p>Microfibre filter elements - series R: 20 bar. Element series "R":</p> <ul style="list-style-type: none"> - End cap: Polyamide - Core tube: Tinned steel - External/Internal support: Wire mesh Epoxy painted - Media/Support/Pre-filter: Microfibre/Syntetic <p>Microfibre filter elements - series H-S: 210 bar. Element series "H - S":</p> <ul style="list-style-type: none"> - End cap: Tinned steel - Core tube: Tinned steel - External support: Wire mesh Epoxy painted - Internal support: Wire mesh Stainless steel - Media/Support/Pre-filter: Microfibre/Syntetic <p>Stainless Steel Microfibre filter elements series U: 210 bar. Element series "U":</p> <ul style="list-style-type: none"> - End cap: Stainless steel - Core tube: Stainless steel - External support: Stainless steel - Internal support: Stainless steel - Media/Support/Pre-filter: Microfibre/Syntetic
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Weights [kg] and volumes [dm³]

Filter series	Length	Weights [kg]					Length	Volumes [dm ³]				
		1	2	3	4	5		1	2	3	4	4
FZD 010	-	7.9	-	-	-	-	-	0.10	-	-	-	-
FZD 021	-	9.6	9.8	10.3	-	-	-	0.06	0.12	0.22	-	-
FZD 051	-	17.4	18.0	19.0	20.3	-	-	0.31	0.41	0.53	0.83	-

GENERAL INFORMATION FZD

FILTER ASSEMBLY SIZING Flow rates [l/min]

Filter series	Length	Filter element design - H Series					Filter element design - U Series				
		A03	A06	A10	A16	A25	A03	A06	A10	A16	A25
FZD 010	2	4	5	7	8	11	4	5	7	8	11
FZD 021	2	5	6	11	12	16	5	6	11	12	16
	3	9	11	16	18	20	9	11	16	18	20
	4	10	12	17	19	21	10	12	17	19	21
Filter series	Length	Filter element design - R Series					Filter element design - S Series				
		A03	A06	A10	A16	A25	A03	A06	A10	A16	A25
FZD 051	2	39	41	51	54	59	35	37	48	51	58
	3	45	46	54	56	61	41	43	52	54	60
	4	50	52	58	58	62	47	49	56	56	61
	5	56	57	61	62	63	53	53	57	59	63

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

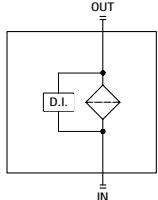
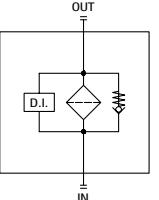
The reference fluid has a kinematic viscosity of 30 mm²/s (cSt) and a density of 0.86 kg/dm³.

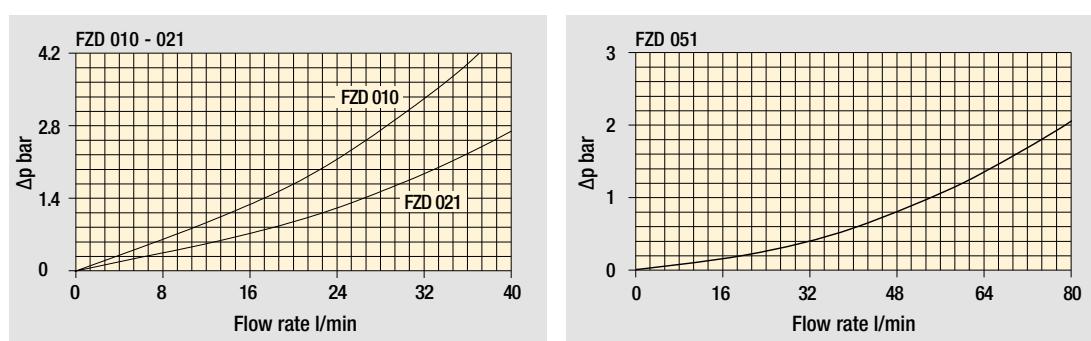
For different pressure drop or fluid viscosity we recommend to use our selection software available on www.mpfiltris.com.

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
FZD 010	•	-
FZD 021	•	-
FZD 051	•	•



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

Pressure drop

Filter housings Δp pressure drop

Designation & Ordering code

COMPLETE FILTER

Series and size		Configuration example: FZD021 4 S A G1 A06 H P01									
FZD010 FZD021											
Length	FZD010 FZD021										
2	• •										
3	- •										
4	- •										
Bypass valve	S Without bypass										
Seals	A NBR V FPM										
Connections	FZD010 FZD021										
G1	G 3/8"	G 1/2"									
G2	3/8" NPT	1/2" NPT									
G3	-	SAE 8 - 3/4" - 16 UNF									
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										
Element Δp									Execution		
H 210 bar									P01 MP Filtri standard		
U 210 bar, stainless steel filter element									Pxx Customized		

Element series and size		Configuration example: HP011 4 A06 A H P01									
HP010 HP011											
Element length	HP010 HP011										
2	• •										
3	- •										
4	- •										
Filtration rating (filter media)									Execution		
A03 Inorganic microfiber	3 µm									P01 MP Filtri standard	
A06 Inorganic microfiber	6 µm									Pxx Customized	
A10 Inorganic microfiber	10 µm										
A16 Inorganic microfiber	16 µm										
A25 Inorganic microfiber	25 µm										
Seals											
A NBR											
V FPM											
Element Δp											
H 210 bar											
U 210 bar, stainless steel filter element											

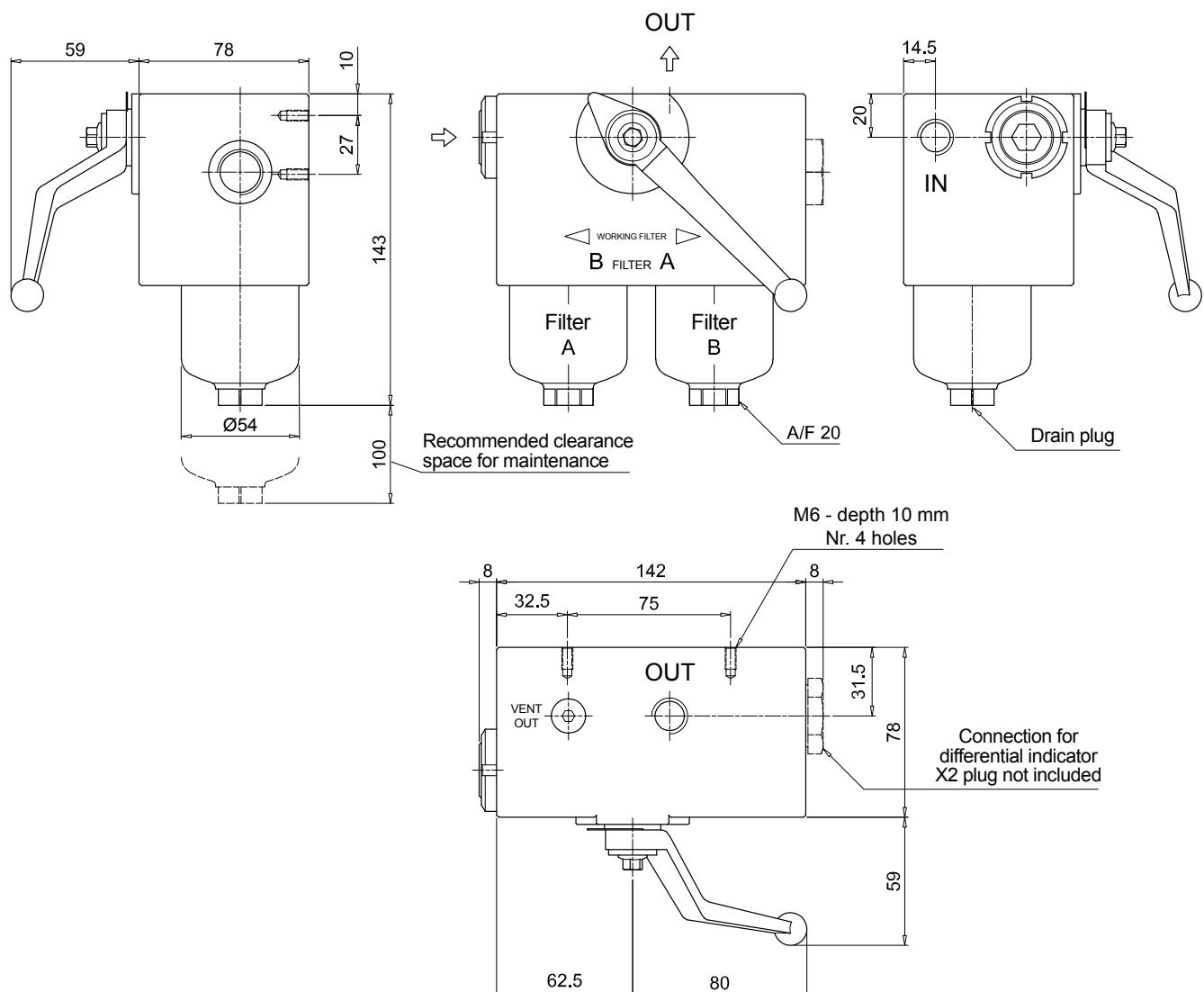
CLOGGING INDICATORS

See page 687

DEX Electrical differential indicator
DLX Electrical / visual differential indicator
DVX Visual differential indicator

DVY Visual differential indicator
X2 Plug

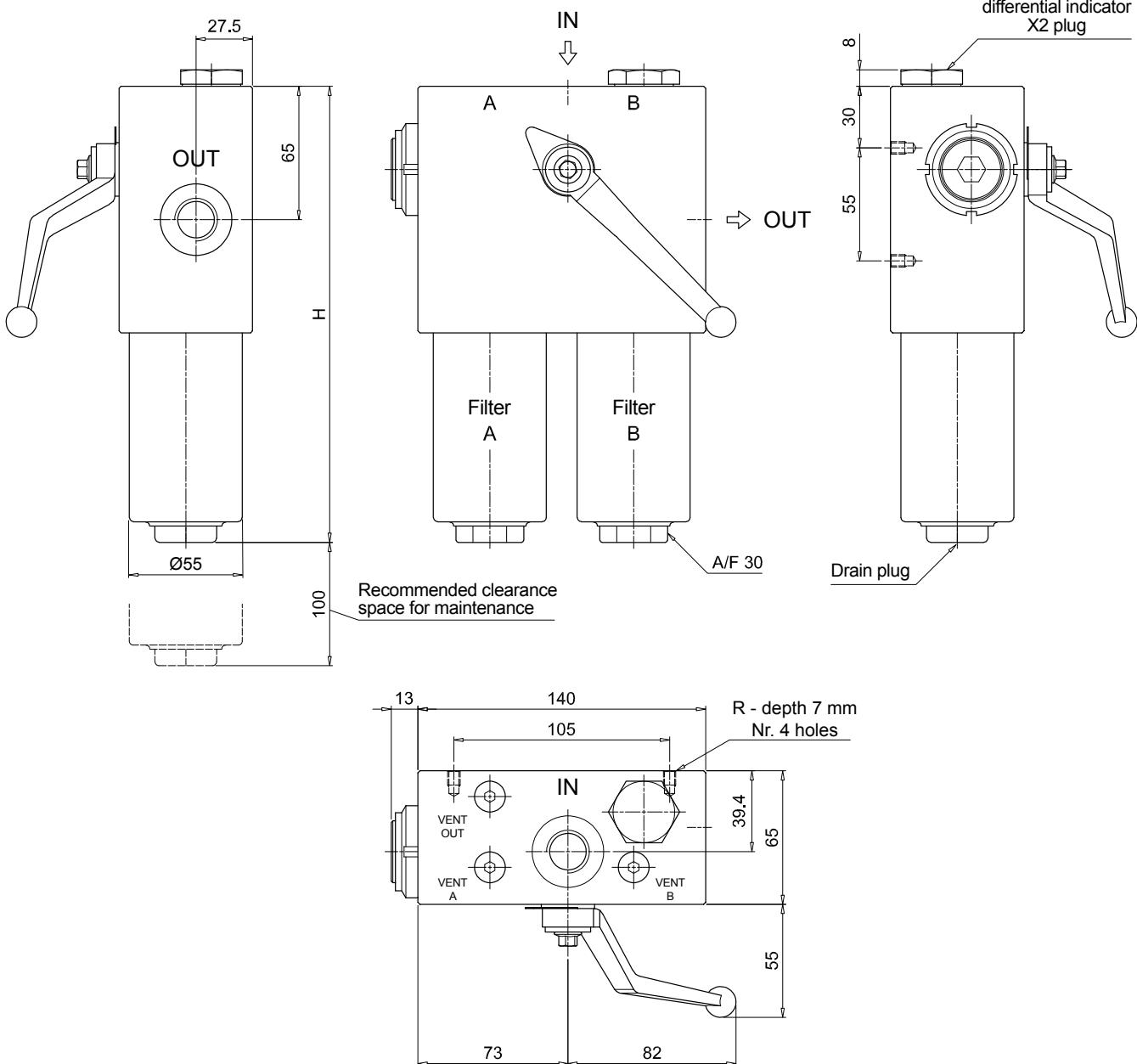
FZD010



Dimensions

FZD021

Filter length	H [mm]
2	172
3	222
4	272
Connections	R
G1	M6
G2 - G3	1/4" UNC



Designation & Ordering code

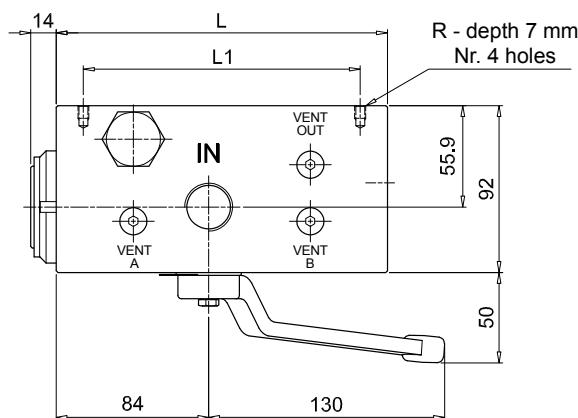
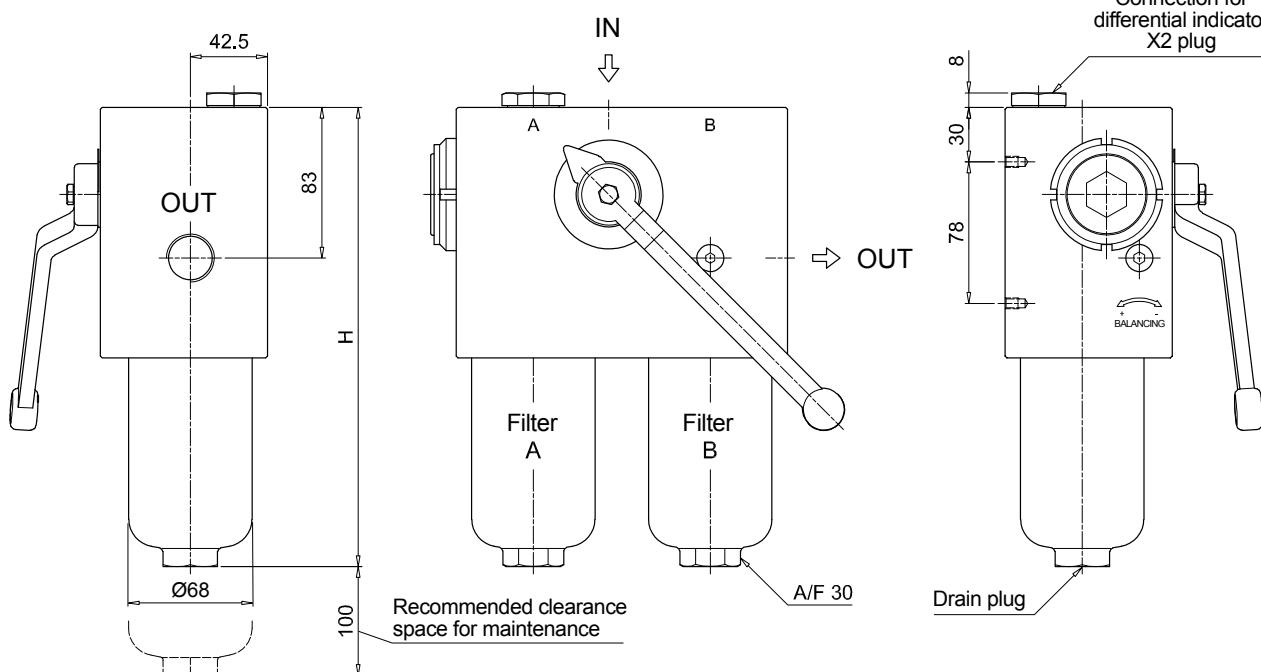
COMPLETE FILTER

Series and size	Configuration example: FZD051 3 B A G3 A03 U P01								
FZD051									
Length									
2 3 4 5									
Bypass valve									
S Without bypass									
B With bypass 6 bar									
Seals									
A NBR									
V FPM									
Connections									
G1 G 3/4"									
G2 3/4" NPT									
G3 G 1/2"									
G4 1/2" NPT									
G5 SAE 8 - 3/4" - 16 UNF									
G6 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								

FZD051	
Filter length	H [mm]
2	253
3	295
4	343
5	465

Connections	R
G1	M6
G2	1/4" UNC
G3	M6
G4-G5-G6	1/4" UNC

Valves	L [mm]	L1 [mm]
S	168	138
B	182.5	152.5

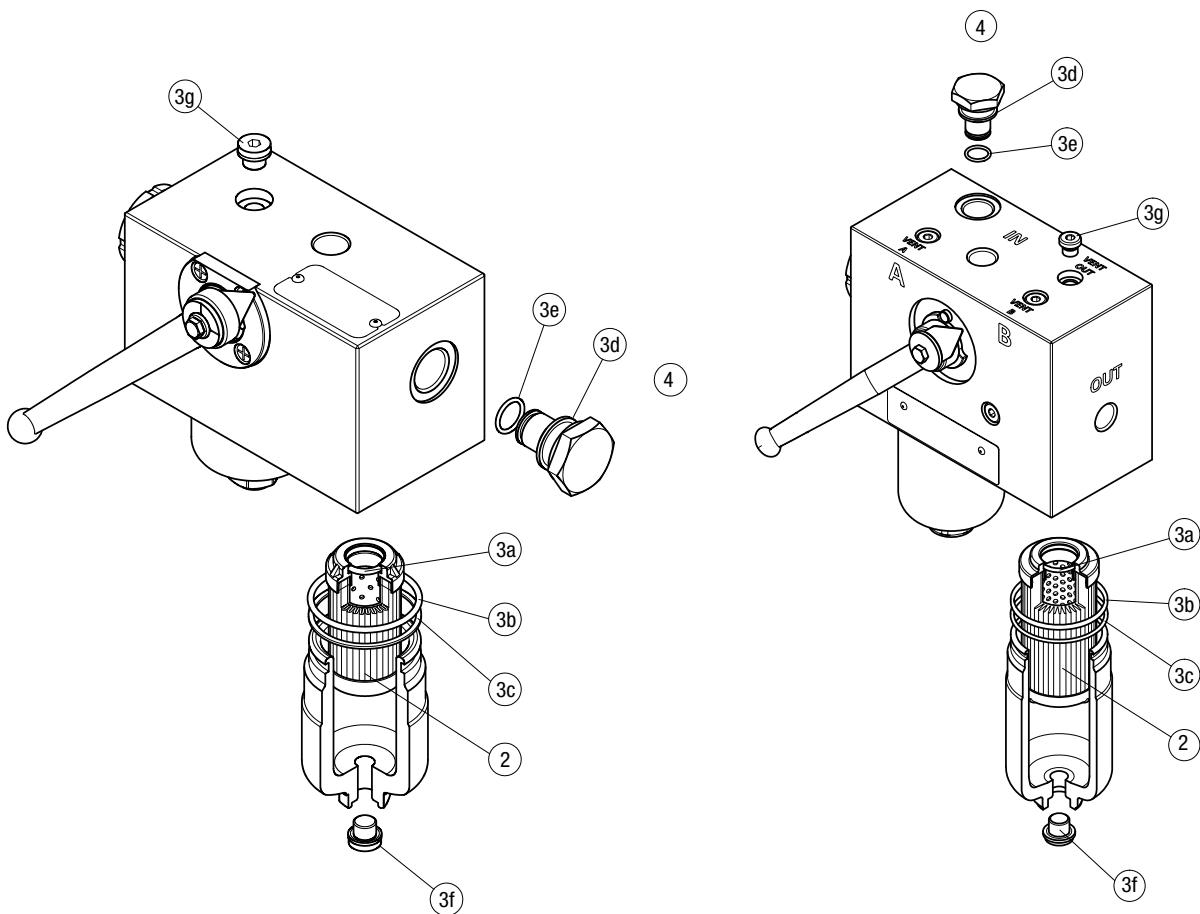


FZD SPARE PARTS

Order number for spare parts

FZD 010

FZD 021 - FZD 051



Item:	Q.ty: 1 pc.		Q.ty: 1 pc.		Q.ty: 1 pc.	
	2	3 (3a ÷ 3g)	4			
Filter series	Filter element	Seal Kit code number NBR FPM	Indicator connection plug NBR FPM			
FZD 010	See order table	02050613	02050655			
FZD 021		02050796	02050797	X2H		
FZD 051		02050800	02050801		X2V	

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

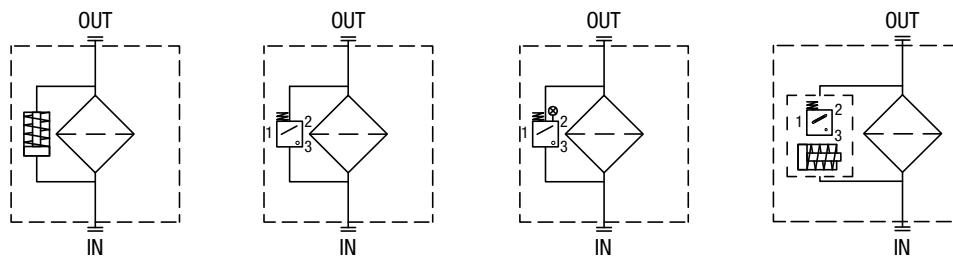
DIFFERENTIAL INDICATORS

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.



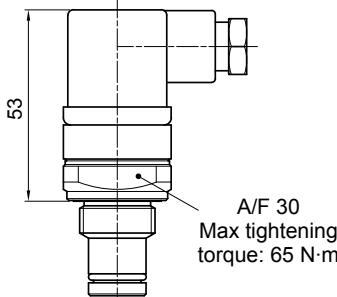
Quick reference guide

Filter family	Filter series	Visual indicators	Electrical indicators	Electrical / Visual indicators
	With bypass valve 6 bar	FZH 012 - 040	DVZ50xP01	DEZ50xA50P01
	Without bypass valve	FZH 012 - 040	DVZ70xP01 DVZ95xP01	DEZ70xA50P01 DEZ95xA50P01
STAINLESS STEEL HIGH PRESSURE FILTERS	With bypass valve 6 bar	FZP 039 - 136 FZB 039 FZM 039 FZD 051	DVX50xP01 DVY50xP01	DEX50xA50P01 DLX50xA51P01 DLX50xA52P01
	Without bypass valve	FZP 039 - 136 FZB 039 FZM 039 FZD 010 - 021 - 051	DVX70xP01 DVX95xP01 DVY70xP01 DVY95xP01	DEX70xA50P01 DEX95xA50P01 DLX70xA51P01 DLX70xA52P01 DLX95xA51P01 DLX95xA52P01

DIFFERENTIAL INDICATORS

Dimensions

DEX*50		Hydraulic symbol	Materials
Settings	Ordering code		
5.0 bar $\pm 10\%$	DE X 50 x A 50 P01		- Body: AISI 316L - Base: Black polyamide - Contacts: Silver - Seal: HNBR - MFQ
7.0 bar $\pm 10\%$	DE X 70 x A 50 P01		
9.5 bar $\pm 10\%$	DE X 95 x A 50 P01		



53
A/F 30
Max tightening torque: 65 N·m

Electrical symbol

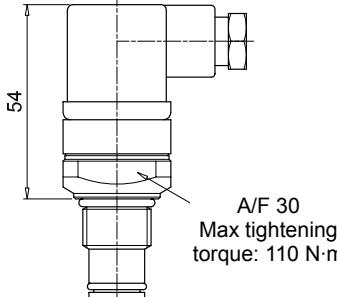
Technical data

- Max working pressure: 420 bar
- Proof pressure: 630 bar
- Burst pressure: 1260 bar
- Working temperature: From -25 °C to +110 °C
- Compatibility with fluids: Mineral 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

DEZ*50		Hydraulic symbol	Materials
Settings	Ordering code		
5.0 bar $\pm 10\%$	DE Z 50 x A 50 P01		- Body: AISI 316L - Base: Black polyamide - Contacts: Silver - Seal: HNBR - MFQ
7.0 bar $\pm 10\%$	DE Z 70 x A 50 P01		
9.5 bar $\pm 10\%$	DE Z 95 x A 50 P01		



54
A/F 30
Max tightening torque: 110 N·m

Electrical symbol

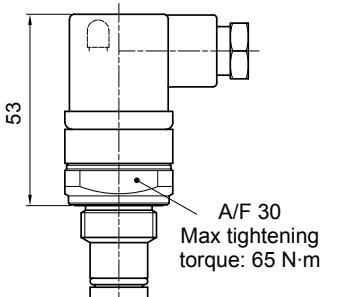
Technical data

- Max working pressure: 700 bar
- Proof pressure: 1050 bar
- Burst pressure: 2100 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

DLX*51 - DLX*52		Hydraulic symbol	Materials
Settings	Ordering code		
5.0 bar $\pm 10\%$	DL X 50 x A x x P01		- Body: AISI 316L - Base: Transparent polyamide - Contacts: Silver - Seal: HNBR - MFQ
7.0 bar $\pm 10\%$	DL X 70 x A x x P01		
9.5 bar $\pm 10\%$	DL X 95 x A x x P01		



53
A/F 30
Max tightening torque: 65 N·m

Electrical symbol

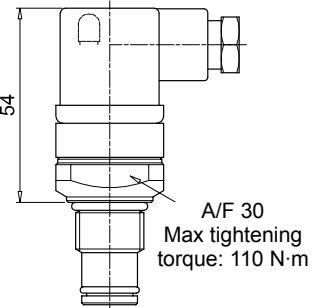
Technical data

- Max working pressure: 420 bar
- Proof pressure: 630 bar
- Burst pressure: 1260 bar
- Working temperature: From -25 °C to +110 °C
- Compatibility with fluids: Mineral 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
- Type	51
- Lamps	24 Vdc
- Resistive load:	1 A / 24 Vdc
	52
	110 Vdc
	1 A / 110 Vdc

DLZ*51 - DLZ*52		Hydraulic symbol	Materials
Settings	Ordering code		
5.0 bar $\pm 10\%$	DL Z 50 x A 50 P01		- Body: AISI 316L - Base: Transparent polyamide - Contacts: Silver - Seal: HNBR - MFQ
7.0 bar $\pm 10\%$	DL Z 70 x A 50 P01		
9.5 bar $\pm 10\%$	DL Z 95 x A 50 P01		



A/F 30
Max tightening torque: 110 N·m

Electrical symbol

The electrical symbol shows a switch with four terminals (1, 2, 3, 4) connected to two lamps: a green lamp and a red lamp. Terminals 1 and 2 are connected in parallel with the lamps. Terminal 3 is connected to ground (GND). Terminal 4 is connected to a power source. Terminals 1 and 2 also have a small switch symbol between them.

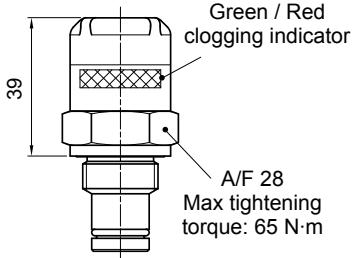
Technical data

- Max working pressure: 700 bar
- Proof pressure: 1050 bar
- Burst pressure: 2100 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
- Type	51 52
- Lamps	24 Vdc 110 Vdc
- Resistive load:	1 A / 24 Vdc 1 A / 110 Vdc

DVX		Hydraulic symbol	Materials
Settings	Ordering code		
5.0 bar $\pm 10\%$	DV X 50 x P01		- Body: AISI 316L - Internal parts: AISI 316L - Polyamide - Contacts: Silver - Seal: HNBR - MFQ
7.0 bar $\pm 10\%$	DV X 70 x P01		
9.5 bar $\pm 10\%$	DV X 95 x P01		



Green / Red clogging indicator
A/F 28
Max tightening torque: 65 N·m

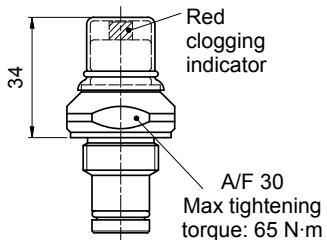
Hydraulic symbol

The hydraulic symbol for DVX consists of a vertical rectangle divided into three horizontal sections. The top section has diagonal hatching, the middle section has horizontal hatching, and the bottom section is solid white.

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

DVY		Hydraulic symbol	Materials
Settings	Ordering code		
5.0 bar $\pm 10\%$	DV Y 50 x P01		- Body: AISI 316L - Internal parts: AISI 316L - Polyamide - Contacts: Silver - Seal: HNBR - MFQ
7.0 bar $\pm 10\%$	DV Y 70 x P01		
9.5 bar $\pm 10\%$	DV Y 95 x P01		



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

Hydraulic symbol

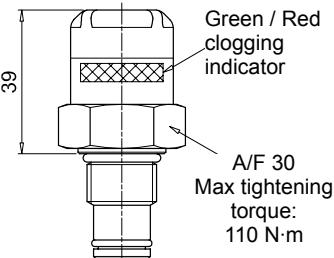
The hydraulic symbol for DVY is identical to the one for DVX, consisting of a vertical rectangle divided into three horizontal sections with different hatching patterns.

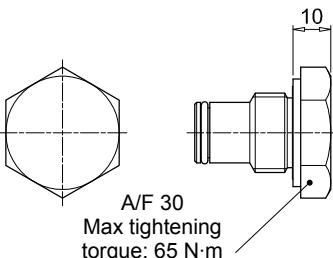
Technical data

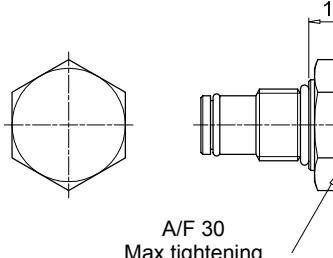
- Reset: Manual reset
- Max working pressure: 420 bar
- Proof pressure: 630 bar
- Burst pressure: 1260 bar
- Working temperature: From -25 °C to +110 °C
- Compatibility with fluids: Mineral oils, Synthetic fluids HFA, HFB, HFC according to ISO 2943
- Degree protection: IP65 according to EN 60529

DIFFERENTIAL INDICATORS

Dimensions

DVZ		Hydraulic symbol	Materials	
Visual Differential Indicator				
Settings	Ordering code	Technical data		
5.0 bar $\pm 10\%$	DV Z 50 x P01	- Body: AISI 316L - Internal parts: AISI 316L - Polyamide - Contacts: Silver - Seal: HNBR - MFQ		
7.0 bar $\pm 10\%$	DV Z 70 x P01			
9.5 bar $\pm 10\%$	DV Z 95 x P01			
		Technical data <ul style="list-style-type: none"> - Reset: Automatic reset - Max working pressure: 700 bar - Proof pressure: 1050 bar - Burst pressure: 2100 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 		

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

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

DIFFERENTIAL INDICATORS

Designation & Ordering code

DESIGNATION & ORDERING CODE - DIFFERENTIAL INDICATORS

Series	Configuration example 1:	DE	Z	50	H	A	50	P01
DE Electrical differential indicator	Configuration example 2:	DL	X	70	V	A	52	P01
DL Electrical / Visual differential indicator								
DV Visual differential indicator								
Type	DE	DL	DV					
X Standard type	•	•	•					
Z 700 bar	•	•	•					
Y Optional type	-	-	•					
Pressure setting								
50 5.0 bar								
70 7.0 bar								
95 9.5 bar								
Seals								
H HNBR								
V FPM								
Thermostat								
A Without thermostat								
Electrical connections	DEX	DEZ	DL	DV				
48 Connection via three-core cable - fitting M20x1.5	-	-	-	-				
49 Connection via four-core cable - fitting 1/2" NPT	-	-	-	-				
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)	-	-	-	-				
					Option			
					P01	MP Filtri standard		
					Pxx	Customized		

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			