

FMP series

Maximum working pressure up to 32 MPa (320 bar) - Flow rate up to 500 l/min



INSTALLATION, SERVICE AND MAINTENANCE MANUAL AND SAFETY INSTRUCTIONS



FMP065



FMP135



FMP320

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High Pressure filters

In-line

Maximum working pressure up to 32 MPa (320 bar)

Flow rate up to 500 l/min

FMP is a range of versatile high pressure filter for protection of sensitive components in high pressure hydraulic systems in the industrial equipment.

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 500 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
- Check valve, to protect the system against reverse flow
- Low collapse filter element "N", for use with filters provided with bypass valve
- 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 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:

Delivery lines, in any high pressure industrial equipment or mobile machines

Filter housing materials

- Head: Phosphatized cast iron
- Housing: Phosphatized steel
- Bypass valve: Brass
- Reverse Flow: Steel (only for series FMP 320)
- Check valve: Steel

Pressure

- Test pressure: 48 MPa (480 bar)
- Burst pressure: 96 MPa (960 bar)
- Pulse pressure fatigue test: 1 000 000 cycles with pressure from 0 to 32 MPa (320 bar)

Bypass valve

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

Δp element type

- Microfibre filter elements - series N-R: 20 bar
- Microfibre filter elements - series H-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

FMP filters are provided for vertical mounting

Weights [kg] and volumes [dm³]

Filter series	Weights [kg]					Volumes [dm ³]				
	Length	1	2	3	4	Length	1	2	3	4
FMP 065		3.26	3.62	4.83	-		0.36	0.47	0.84	-
FMP 135		5.61	7.21	8.27	-		0.45	0.78	1.00	-
FMP 320		10.95	13.08	15.37	17.85		1.03	1.75	2.52	3.35

Flow rates [l/min]

Filter series	Length	Filter element design - N Series					
		A03	A06	A10	A16	A25	M25
FMP 065	1	23	30	48	54	72	105
	2	31	45	60	65	82	106
	3	52	60	80	84	94	108
FMP 135	1	69	73	120	129	171	201
	2	110	117	149	152	211	232
	3	151	152	192	195	212	233
FMP 320	1	130	144	244	296	361	477
	2	267	291	417	438	492	509
	3	348	390	476	493	503	519
	4	389	415	483	502	525	534

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 - E	Style B - C	Style T	Style D
FMP 065	•	•	•	•
FMP 135	•	•	•	•
FMP 320	•	•	•	•

OUT

IN

OUT

IN

OUT

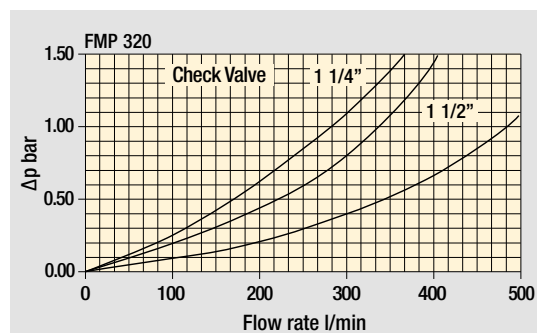
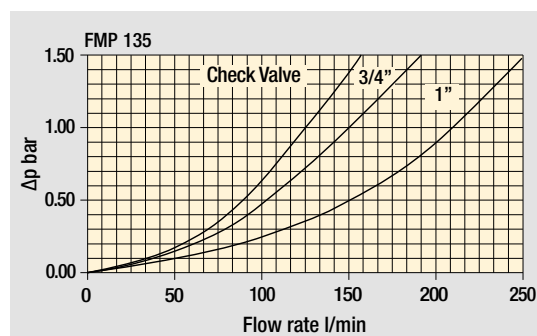
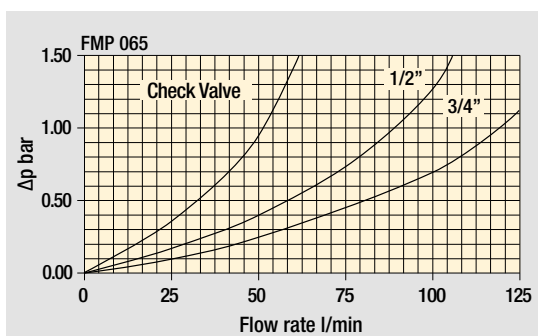
IN

OUT

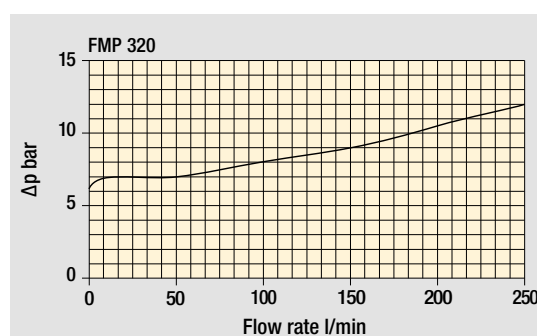
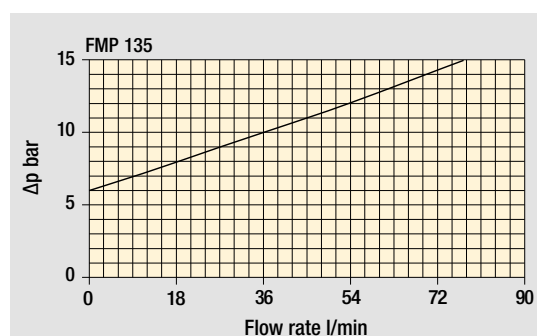
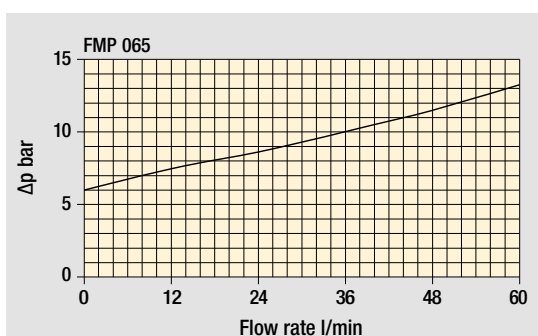
IN

Pressure drop

Filter housings Δp pressure drop



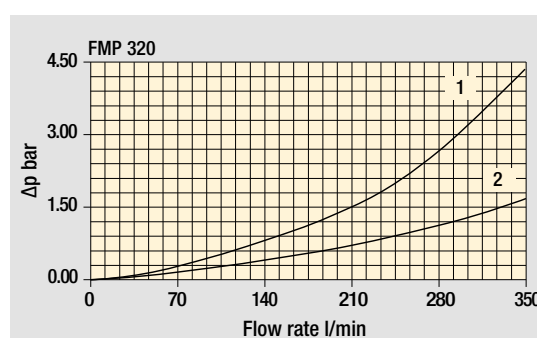
Bypass valve pressure drop



Valves

Filter housing with check valve

- 1 - Reverse flow
- 2 - In filter direction



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

FMP FMP065 - FMP135 - FMP320

Designation & Ordering code

COMPLETE FILTER

Series and size				Configuration example: FMP065 3 T A G1 M25 S P01											
FMP065 FMP135 FMP320															
Length	FMP065	FMP135	FMP320												
1	•	•	•												
2	•	•	•												
3	•	•	•												
4	-	-	•												
Valves															
S		Without bypass		C		With bypass 6 bar, plug on the opposite side									
E		Without bypass, plug on the opposite side		T		With check valve, without bypass									
B		With bypass 6 bar		D		With check valve, with bypass									
Seals															
A		NBR		V		FPM									
Connections	FMP065		FMP135	FMP320											
G1	G 1/2"		G 3/4"	G 1 1/4"											
G2	G 3/4"		G 1"	G 1 1/2"											
G3	1/2" NPT		3/4" NPT	1 1/4" NPT											
G4	3/4" NPT		1" NPT	1 1/2" NPT											
G5	SAE 8 - 3/4" - 16 UNF		SAE 12 - 1 1/16" - 12 UN	SAE 20 - 1 5/8" - 12 UN											
G6	SAE 12 - 1 1/16" - 12 UN		SAE 16 - 1 5/16" - 12 UN	SAE 24 - 1 7/8" - 12 UN											
F1	-		3/4" SAE 3000 psi/M	1 1/4" SAE 3000 psi/M											
F2	-		1" SAE 3000 psi/M	1 1/2" SAE 3000 psi/M											
F3	-		3/4" SAE 3000 psi/UNC	1 1/4" SAE 3000 psi/UNC											
F4	-		1" SAE 3000 psi/UNC	1 1/2" SAE 3000 psi/UNC											
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													
			Valves						Filter length						
Element Δp	S	E	B	C	T	D									
N 20 bar	-	-	•	•	-	-									
R 20 bar	-	-	-	-	-	•									
H 210 bar	•	•	-	-	-	-									
S 210 bar	-	-	-	-	•	-									
Execution							1	2	3	4					
P01 MP Filtri standard							•	•	•	•					
P02 Maintenance from the bottom of the housing							-	-	-	•					
Pxx Customized							-	-	-	-					

FILTER ELEMENT

Element series and size				Configuration example: HP065 3 M25 A S P01					
HP065 HP135 HP320									
Element length	HP065	HP135	HP320						
1	•	•	•						
2	•	•	•						
3	•	•	•						
4	-	-	•						
Filtration rating (filter media)				Seals		Element Δp		Execution	
A03	Inorganic microfiber	3 μm		A	NBR	N	20 bar	P01	MP Filtri standard
A06	Inorganic microfiber	6 μm		V	FPM	R	20 bar	Pxx	Customized
A10	Inorganic microfiber	10 μm				H	210 bar		
A16	Inorganic microfiber	16 μm				S	210 bar		
A25	Inorganic microfiber	25 μm							
M25	Wire mesh	25 μm							

CLOGGING INDICATORS

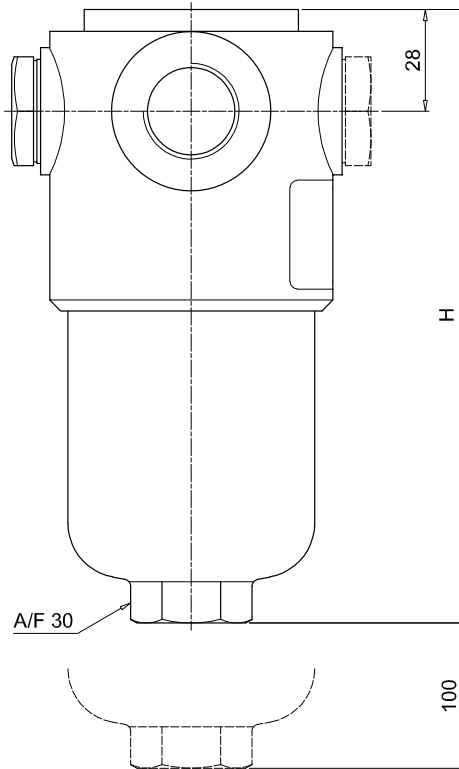
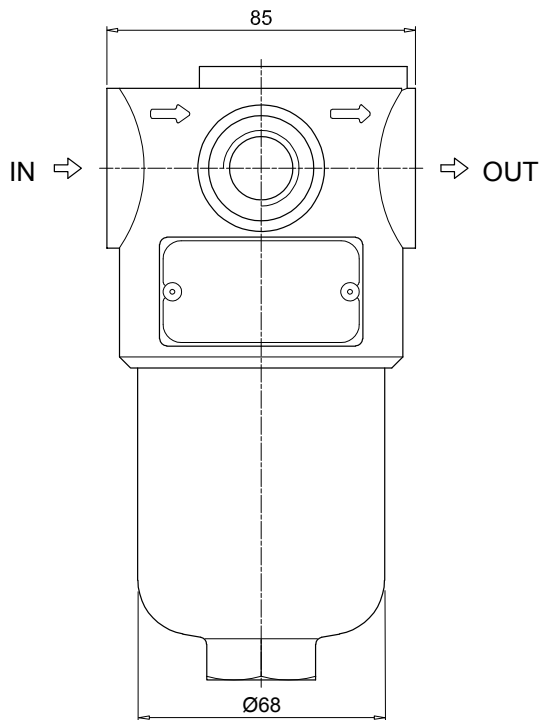
See page 727

DEA Electrical differential pressure indicator	DLE Electrical / visual differential pressure indicator
DEM Electrical differential pressure indicator	DTA Electronic differential pressure indicator
DEU Electrical differential pressure indicator	DVA Visual differential pressure indicator
DLA Electrical / visual differential pressure indicator	DVM Visual differential pressure indicator

PLUGS

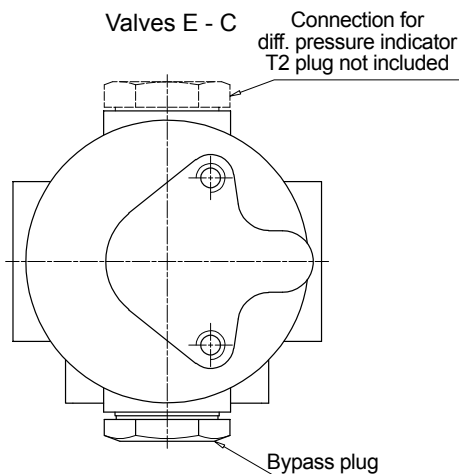
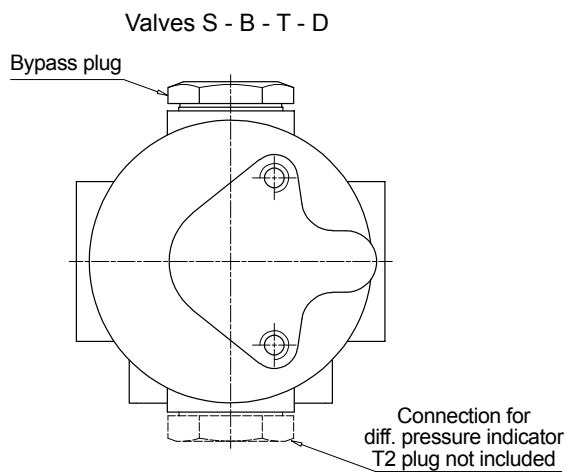
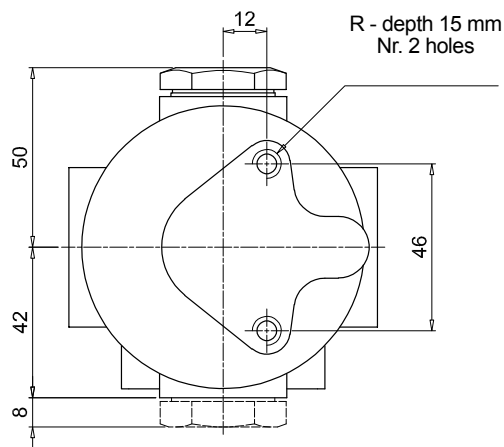
See page 747

T2 Plug (not included)



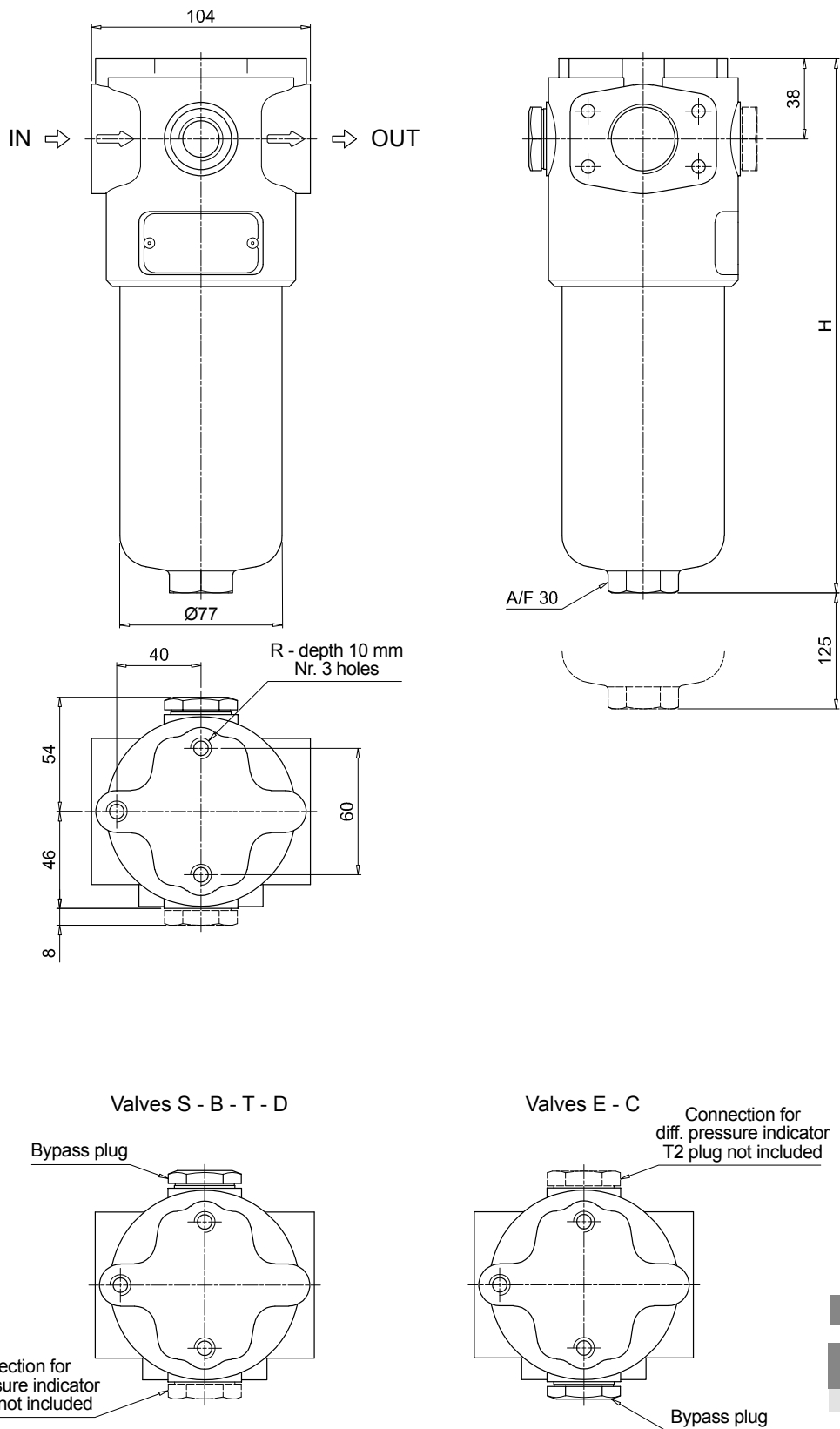
FMP065	
Filter length	H [mm]
1	169
2	200
3	302
Connections	R
G1-G2	M8
G3-G4-G5-G6	5/16" UNC

Recommended clearance space for maintenance

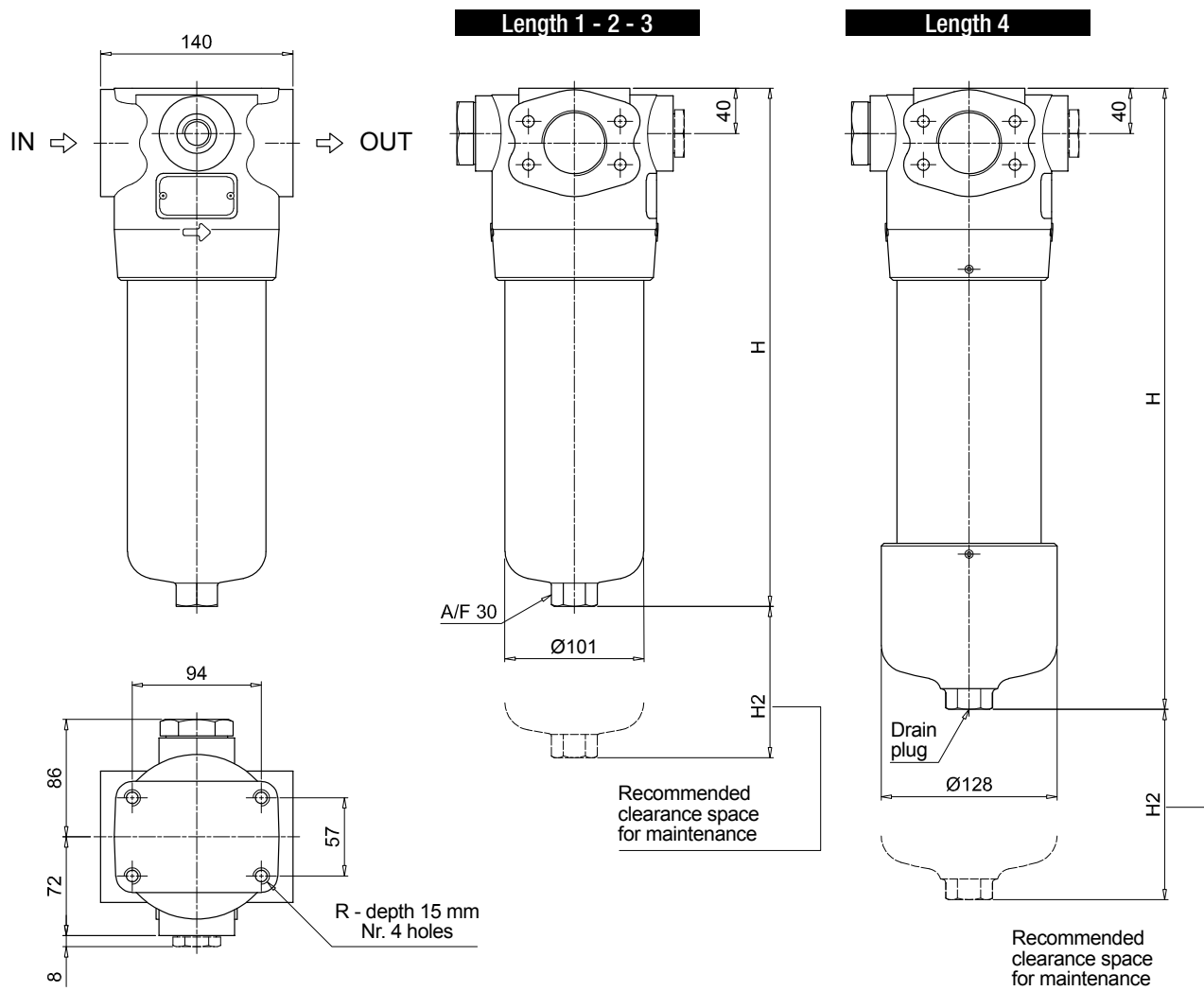


FMP FMP065 - FMP135 - FMP320

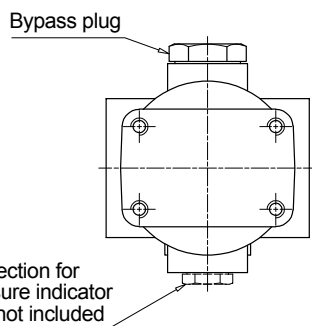
Dimensions



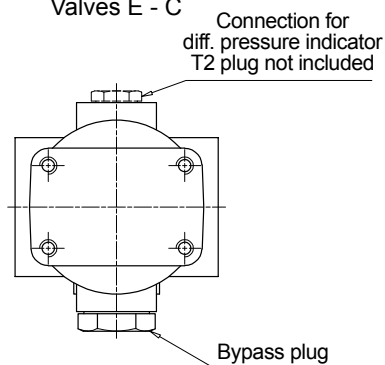
FMP135	
Filter length	H [mm]
1	221
2	334
3	409
Connections	R
G1-G2	M10
G3-G4-G5-G6	3/8" UNC
F1-F2	M10
F3-F4	3/8" UNC



Valves S - B - T - D



Valves E - C



FMP320

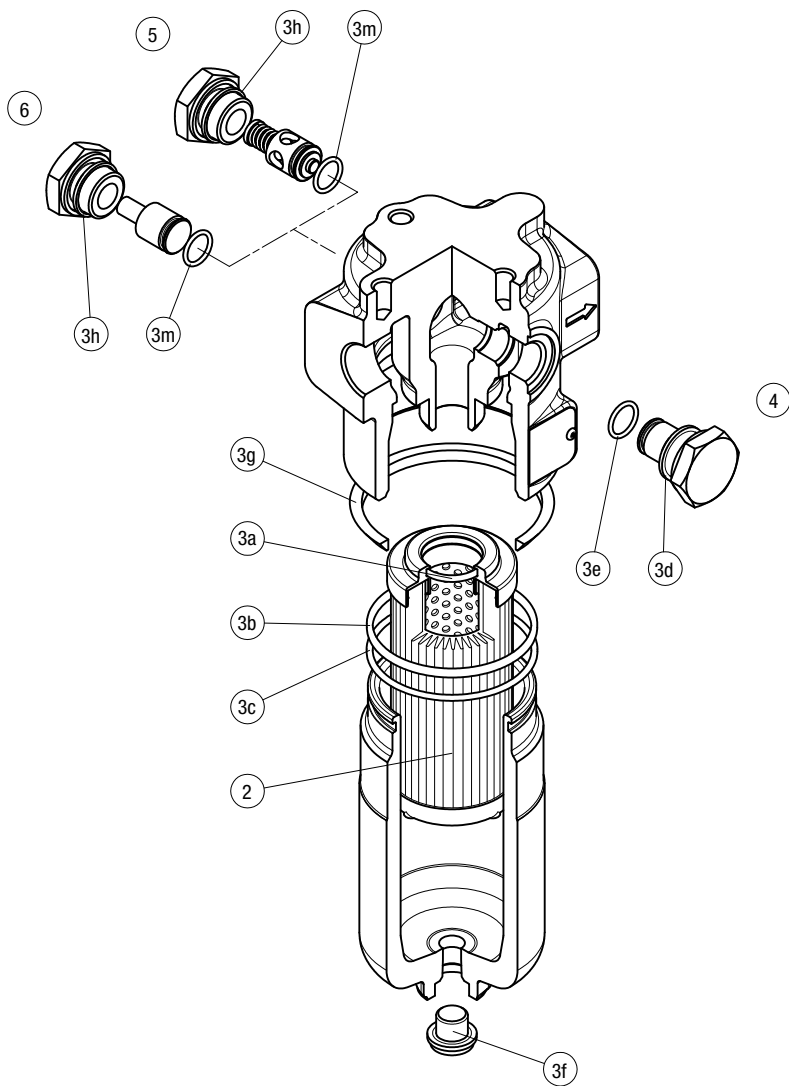
Filter length	H [mm]	H2 [mm]	
		Execution P01	P02
1	263	150	-
2	386	150	-
3	518	150	-
4	671	150	550

Connections	R
G1-G2	M12
G3-G4-G5-G6	1/2" UNC
F1-F2	M12
F3-F4	1/2" UNC

FMP SPARE PARTS

Order number for spare parts

FMP 065 - 135 - 320



Item:		Q.ty: 1 pc.		Q.ty: 1 pc.		Q.ty: 1 pc.		Q.ty: 1 pc.	
		2		3 (3a ÷ 3m)		4		5	
Filter series	Filter element	Seal Kit code number		Indicator connection plug		Bypass assembly		Non-bypass assembly	
		NBR	FPM	NBR	FPM	NBR	FPM	NBR	FPM
FMP 065	See order table	02050267	02050278	T2H	T2V	02001312	02001385	02001314	02001386
FMP 135		02050293	02050294			02001312	02001385	02001314	02001386
FMP 320		02050274	02050285			02001396	02001397	02001398	02001399

DIFFERENTIAL PRESSURE INDICATORS

Series				Configuration example 1:								
DE Electrical differential pressure indicator				DE	M	12	H	F	50	P01	UL	
DL Electrical/Visual differential pressure indicator				Configuration example 2:								
DT Electronic differential pressure indicator				DL	E	20	V	A	71	P01		
DV Visual differential pressure indicator				Configuration example 4:								
				DT	A	50	H	F	70	P01		
				Configuration example 5:								
				DV	M	70	V			P01		

PLUGS

Series		Configuration example										T2	H
T2 Plug													
Seals													
H HNBR													
V FPM													