

FHB series

Maximum working pressure up to 32 MPa (320 bar) - Flow rate up to 485 l/min



INSTALLATION, SERVICE AND MAINTENANCE MANUAL AND SAFETY INSTRUCTIONS



Please scan or click the QR codes to get updated electronic version of the related document:



FHB050



FHB065



FHB135



FHB320

For all the QR codes: Scan or click me!

Description

Technical data

High Pressure filters

Manifold

Maximum working pressure up to 32 MPa (320 bar)

Flow rate up to 485 l/min

FHB is a range of high pressure filter for protection of sensitive components in high pressure hydraulic systems in the mobile machines. They are directly connected to the side of the manifold, through the proper flanged interface.

Available features:

- Manifold connections up to Ø30 mm, for a maximum flow rate of 485 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
- 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: Steel
- Check valve: Steel

Pressure

- Working pressure: 32 MPa (320 bar)
- 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: 20 bar
- Microfibre filter elements - series H: 210 bar (not available for FHB050)
- Microfibre filter elements - series S: 210 bar (only for FHB050)
- 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

Manifold mounting

Note

FHB 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
FHB 050		2.61	2.98	3.39	3.86	5.04		0.21	0.30	0.40	0.52	0.81
FHB 065		3.33	3.69	4.90	-	-		0.20	0.27	0.49	-	-
FHB 135		6.61	8.21	9.21	-	-		0.40	0.73	0.94	-	-
FHB 320		12.95	15.08	17.37	26.77	-		0.91	1.63	2.40	3.59	-

Flow rates [l/min]

Filter series	Length	Filter element design - N Series						Filter element design - S Series				
		A03	A06	A10	A16	A25	M25	A03	A06	A10	A16	A25
FHB 050	1	43	42	79	81	101	131	30	40	58	60	74
	2	53	58	84	93	112	132	46	50	76	86	108
	3	67	70	94	101	119	133	59	62	87	95	115
	4	82	87	106	108	122	134	74	80	101	103	119
	5	102	104	119	122	127	136	90	92	105	113	126

Filter series	Length	Filter element design - N Series						Filter element design - H Series				
		A03	A06	A10	A16	A25	M25	A03	A06	A10	A16	A25
FHB 065	1	25	33	55	62	87	133	23	25	49	58	81
	2	33	51	70	76	101	134	33	38	66	75	94
	3	60	71	97	103	118	138	60	68	95	102	116
FHB 135	1	67	72	120	129	177	212	49	55	97	100	160
	2	109	116	152	154	224	250	90	110	137	140	182
	3	153	155	201	205	226	253	126	142	175	187	207
FHB 320	1	130	143	238	286	343	442	110	117	192	201	304
	2	259	281	391	409	454	468	200	230	319	325	392
	3	332	368	441	455	463	476	269	312	381	389	432
	4	368	390	446	462	481	488	311	334	388	394	437

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.

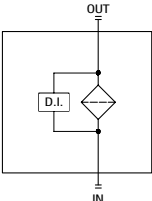
For different pressure drop or fluid viscosity we recommend to use our selection software available on www.mpfiltri.com.

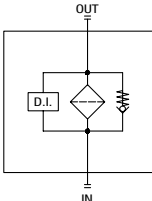
You can also calculate the right size using the formulas present on the FILTER SIZING paragraph at the beginning of the full catalogue or at the beginning of the filter family brochure.

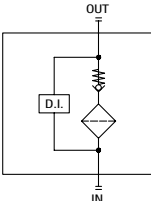
Please, contact our Sales Department for further additional information.

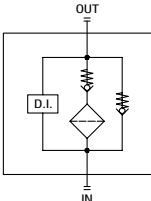
Hydraulic symbols

Filter series	Style S	Style B	Style T	Style D
FHB 050	•	•	•	•
FHB 065	•	•	•	•
FHB 135	•	•	•	•
FHB 320	•	•	•	•



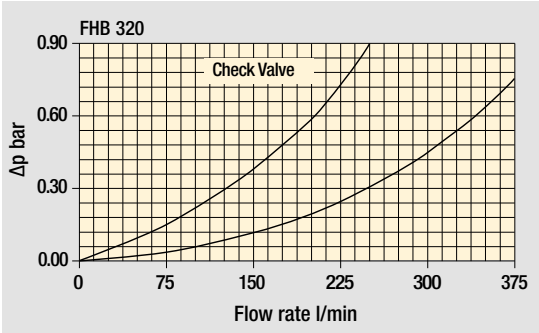
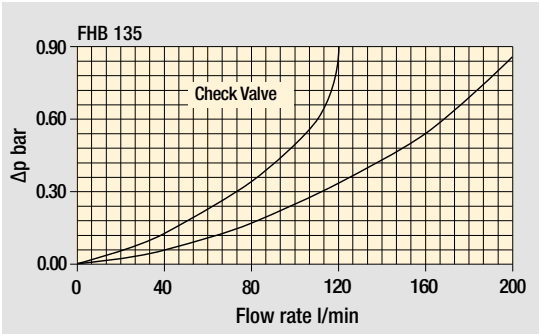
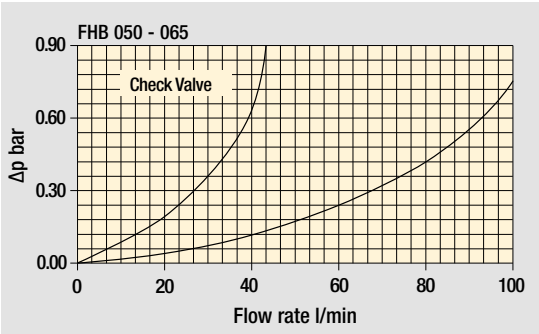




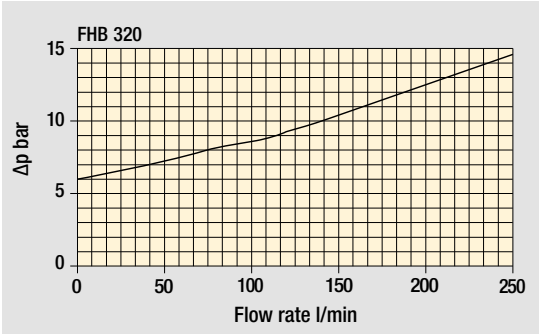
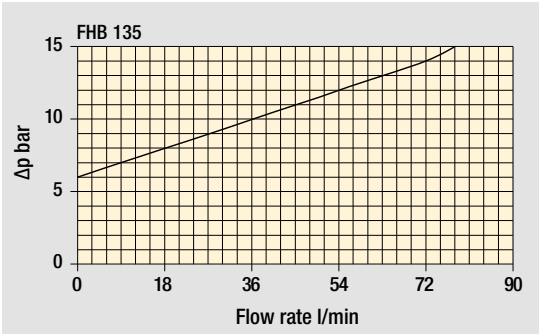
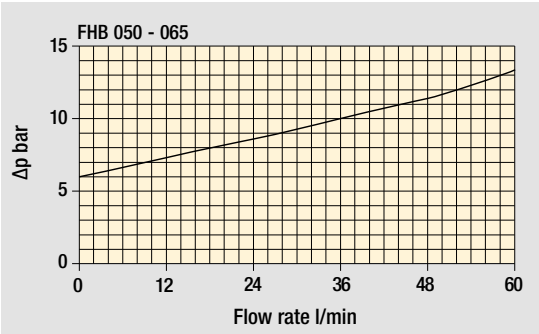


Pressure drop

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.

FHB FHB050 - FHB065 - FHB135 - FHB320

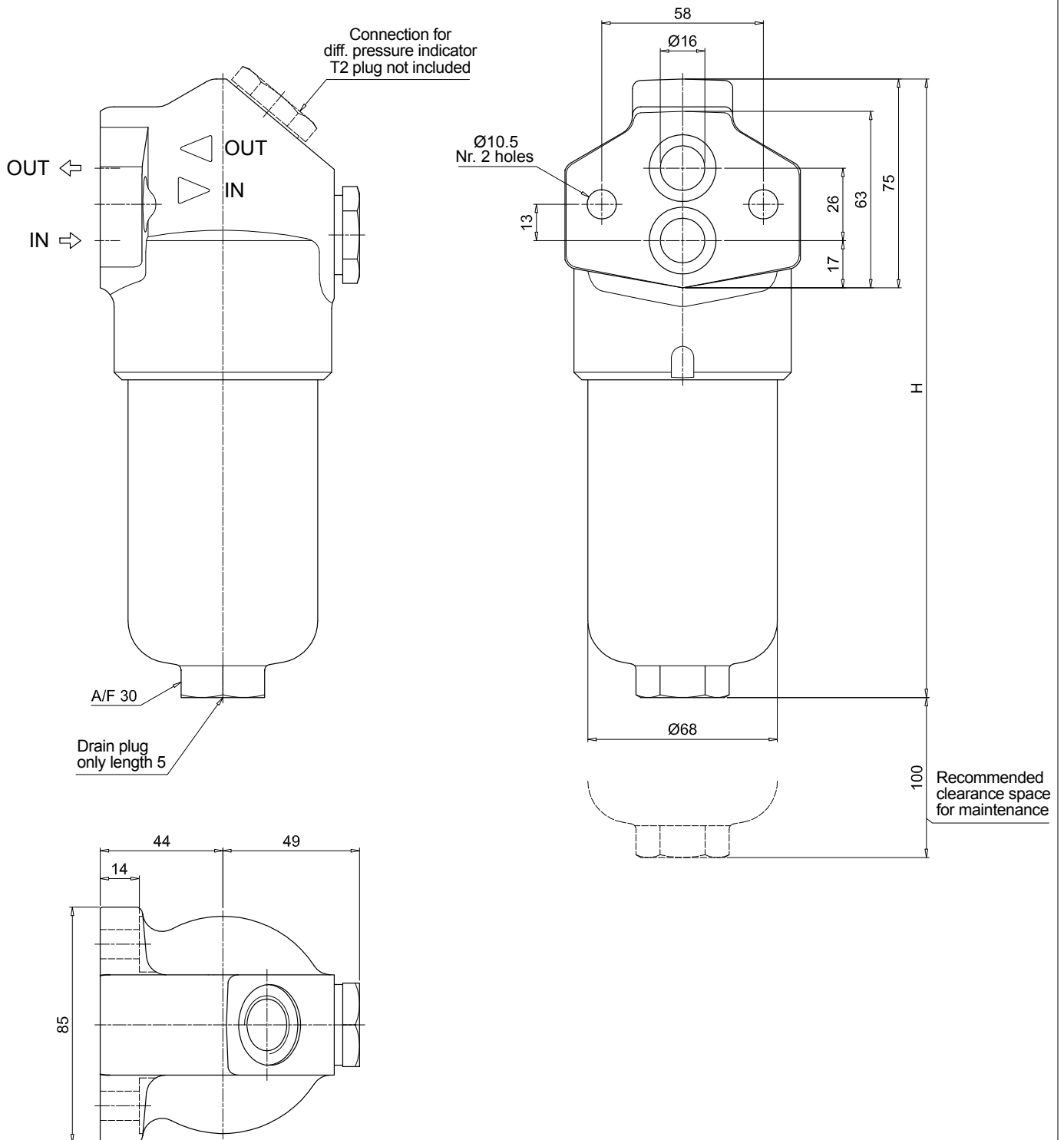
Designation & Ordering code

COMPLETE FILTER

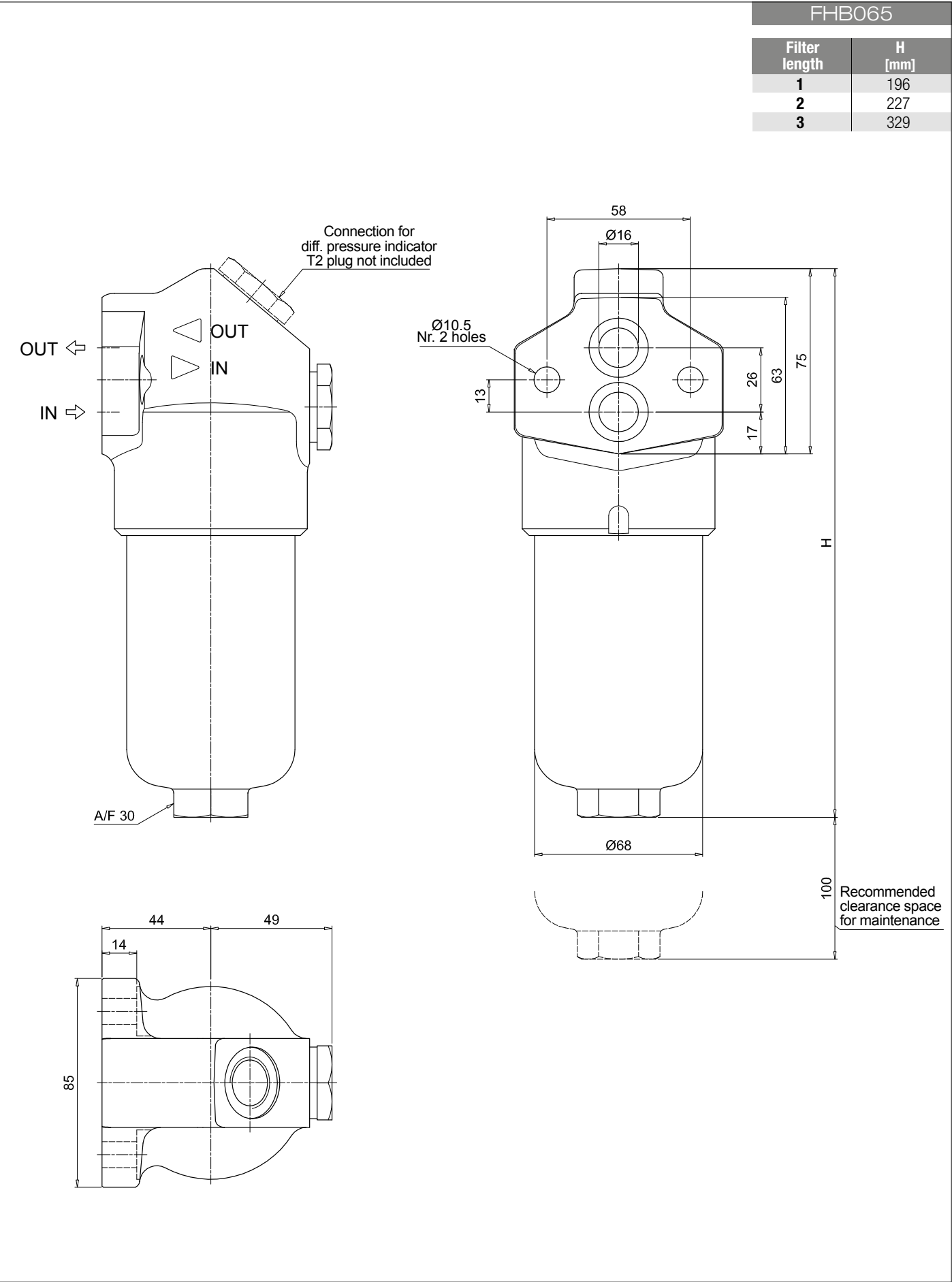
Series and size					Configuration example: FHB320 4 S A F1 A06 H P01									
FHB050 FHB065 FHB135 FHB320														
Length	FHB050	FHB065	FHB135	FHB320										
1	•	•	•	•										
2	•	•	•	•										
3	•	•	•	•										
4	•	-	-	•										
5	•	-	-	-										
Valves														
S Without bypass														
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														
F1 Manifold														
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														

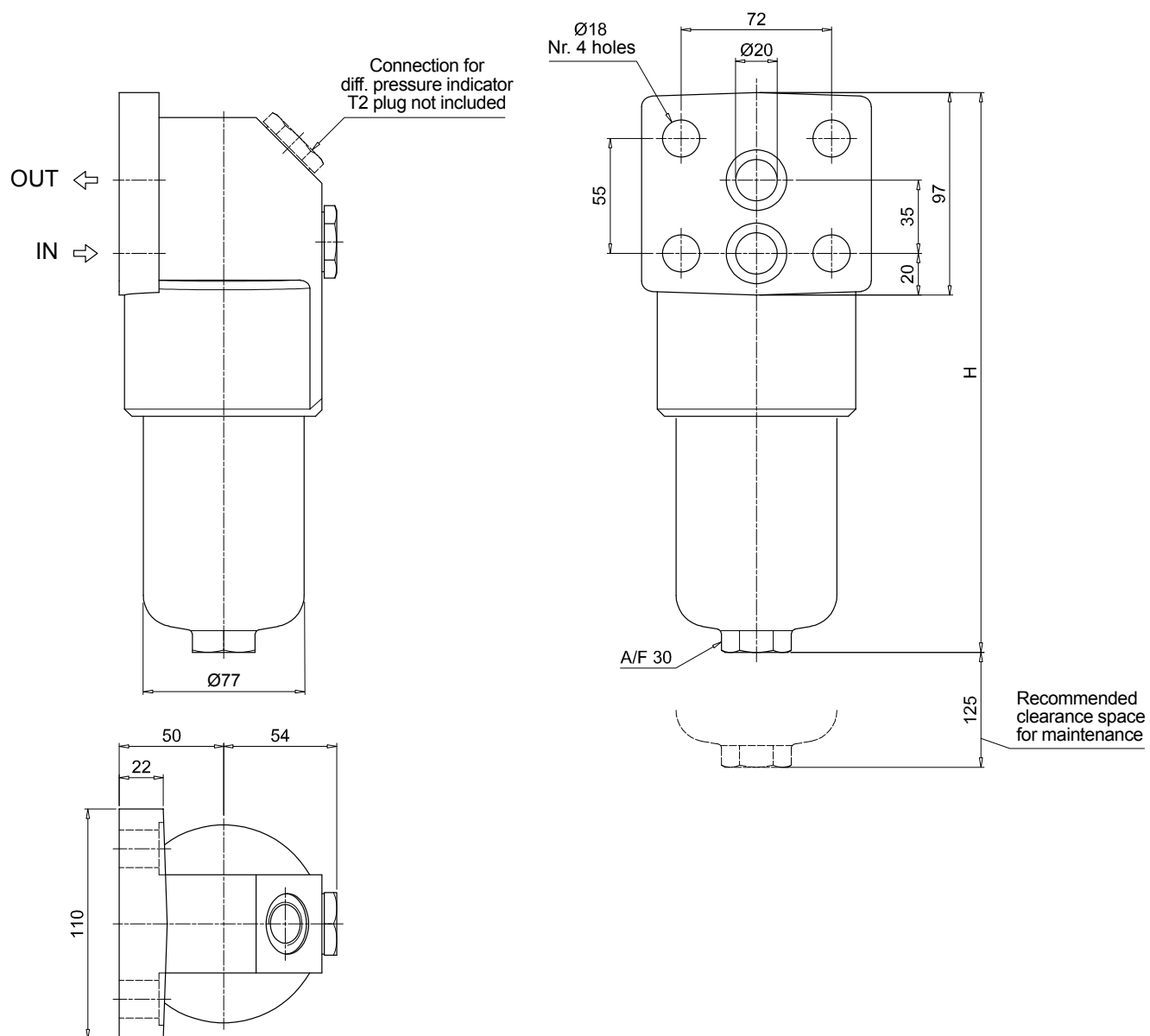
FHB050

Filter length	H [mm]
1	187
2	224
3	266
4	314
5	436



Dimensions

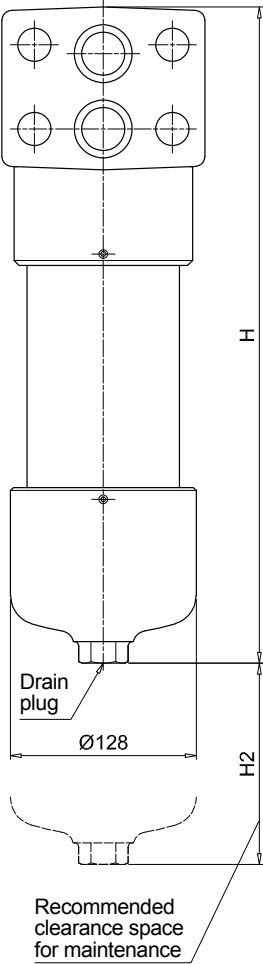
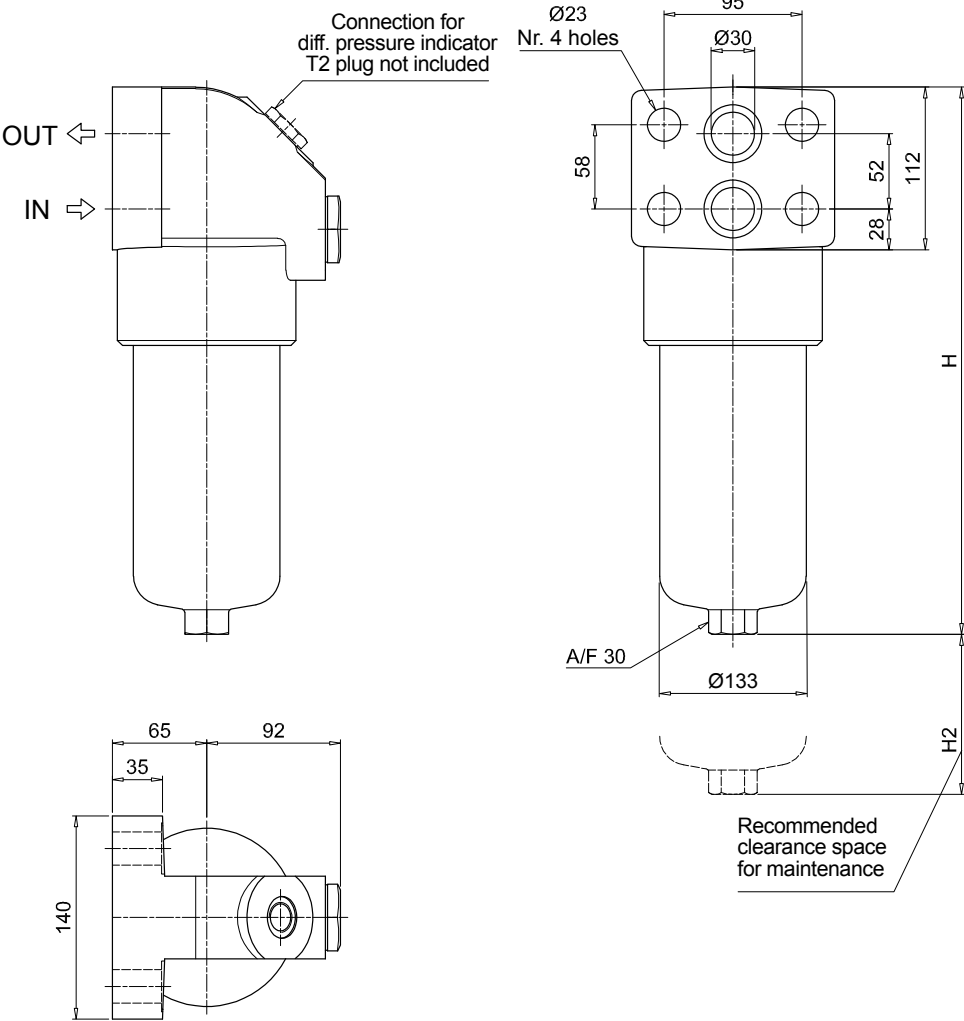




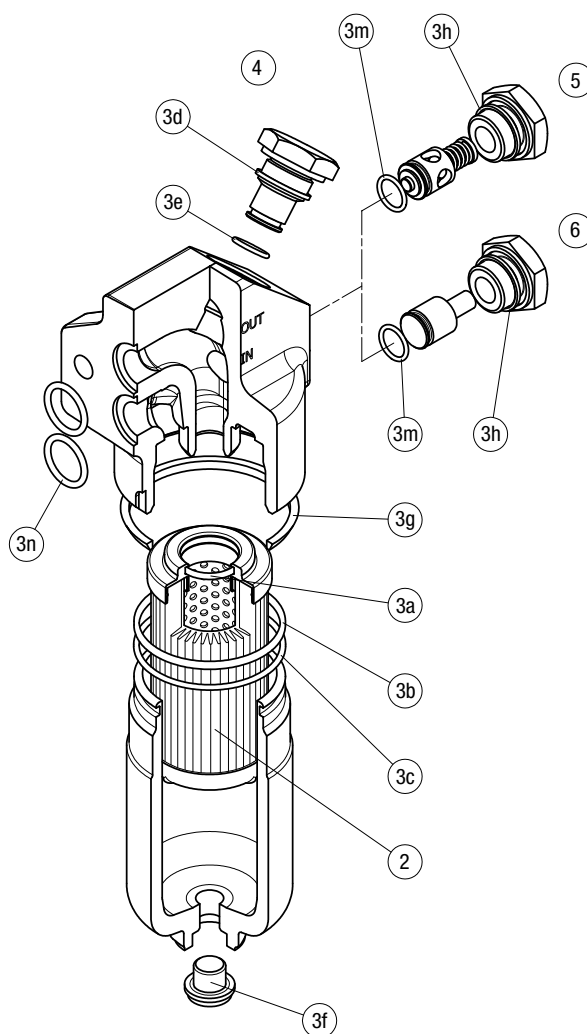
FHB320			
Filter length	H [mm]	H2 [mm]	
		Execution P01	Execution P02
1	301	150	-
2	424	150	-
3	556	150	-
4	709	150	550

Length 1 - 2 - 3

Length 4



FHB 050 - 065 - 135 - 320



Item:		Q.ty: 1 pc.		Q.ty: 1 pc.		Q.ty: 1 pc.		Q.ty: 1 pc.		Q.ty: 1 pc.	
		2		3 (3a ÷ 3n)		4		5		6	
Filter series	Filter element	Seal Kit code number		Indicator connection plug		Bypass assembly		Non-bypass assembly			
		NBR	FPM	NBR	FPM	NBR	FPM	NBR	FPM	NBR	FPM
FHB 050	See order table	02050412	02050413	T2H	T2V	02001312	02001385	02001314	02001386		
FHB 065		02050266	02050277			02001312	02001385	02001314	02001386		
FHB 135		02050270	02050281			02001312	02001385	02001314	02001386		
FHB 320		02050273	02050284			02001381	02001382	02001383	02001384		

DIFFERENTIAL PRESSURE INDICATORS

Series					Configuration example 1:					Configuration example 2:					Configuration example 3:					Configuration example 4:					Configuration example 5:																			
DE Electrical differential pressure indicator					DE					U					50					V					A					50					P01					UL				
DL Electrical/Visual differential pressure indicator					DL					E					20					V					A					71					P01									
DT Electronic differential pressure indicator					DT					A					50					H					F					70					P01									
DV Visual differential pressure indicator					DV					M					70					V															P01									
Type					DE					DL					DT					DV																								
A Standard type					•					•					•					A With automatic reset																								
M With wired electrical connection					•					-					-					M With manual reset																								
U Standard type 210 bar, UL certified					•					-					-																													
E For high power supply					-					•					-																													
Pressure setting					DEA					DEM					DEU					DLA					DLE					DTA					DVA					DVM				
50 5.0 bar					•					•					•					•					•					•					•					•				
70 7.0 bar					•					•					•					•					•					•					•					•				
95 9.5 bar					•					•					-					•					•					•					•					•				
Seals					DEA					DEM					DEU					DLA					DLE					DTA					DVA					DVM				
H HNBR					•					•					-					•					•					•					•					•				
V FPM					•					•					•					•					•					•					•					•				
Thermostat					DEA					DEM					DEU					DLA					DLE					DT														
A Without thermostat					•					•					•					•					•					-														
F With thermostat					-					•					-					-					•					•														
Electrical connections					DEA					DEM					DEU					DLA					DLE					DT														
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																																												
Certifications					DEU					OTHERS																																		
Without					-					•																																		
UL UL certification					•					-																																		

PLUGS

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