

FHM series

Maximum working pressure up to 32 MPa (320 bar) - Flow rate up to 400 l/min



High Pressure filters

Manifold

Maximum working pressure up to 32 MPa (320 bar)

Flow rate up to 400 l/min

FHM 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 top of the manifold, through the proper flanged interface.

Available features:

Available features:

- Manifold connections up to Ø30 mm, for a maximum flow rate of 400 l/min

- ISO 4401 CETOP 3 and CETOP 5 interface, for direct mounting on the CETOP valves

- 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

Filter housing materials

- Head

Phosphatized cast iron: FHM 006-007-010

Phosphatized steel: FHM 050-065-135-320-500

- Housing: Phosphatized steel

- Bypass valve: Steel

- 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) ±10%

- Other opening pressures on request.

Δp element type

- Microfibre filter elements - series N: 20 bar (not available for FHM 006, FHM 007 and FHM 010)

- Microfibre filter elements - series H: 210 bar (not available for FHM 050 and FHM 500)

- Microfibre filter elements - series S: 210 bar (only for FHM 050 and FHM 500)

- Wire mesh filter elements - series N: 20 bar (not available for FHM 006)

- Wire mesh filter elements - series H: 210 bar (not available for FHM 050 and FHM 500)

- 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

FHM 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
FHM 006		2.17	-	-	-	-		0.12	-	-	-	-
FHM 007		-	4.74	5.95	-	-		-	0.30	0.50	-	-
FHM 010		-	4.74	5.95	-	-		-	0.30	0.50	-	-
FHM 050		5.31	5.68	6.09	6.56	7.74		0.29	0.38	0.48	0.60	0.89
FHM 065		5.47	5.83	7.04	-	-		0.27	0.34	0.56	-	-
FHM 135		8.78	10.38	11.43	-	-		0.49	0.82	1.03	-	-
FHM 320		19.80	21.93	24.22	26.70	-		1.04	1.76	2.53	3.36	-
FHM 500		35.00	39.17	42.69	54.70	60.50		1.63	2.35	2.96	5.11	6.44

		Filter element design - H Series										
Filter series	Length	A03	A06	A10	A16	A25	M25					
FHM 006	1	9	10	13	14	15	16					
FHM 007	2	13	13	15	16	16	16					
	3	15	15	16	16	17	17					
FHM 010	2	23	25	32	34	37	38					
	3	31	33	37	38	39	40					
		Filter element design - N Series						Filter element design - S Series				
Filter series	Length	A03	A06	A10	A16	A25	M25	A03	A06	A10	A16	A25
FHM 050	1	38	37	65	67	81	101	28	36	50	52	62
	2	46	50	69	75	89	102	41	44	63	71	85
	3	57	59	76	81	93	103	51	53	71	77	90
	4	68	71	84	86	95	103	62	66	81	82	93
	5	82	83	93	95	98	105	73	75	83	89	97
		Filter element design - N Series						Filter element design - H Series				
Filter series	Length	A03	A06	A10	A16	A25	M25	A03	A06	A10	A16	A25
FHM 065	1	23	30	48	53	71	102	22	23	43	50	67
	2	30	45	59	64	81	103	30	34	56	62	76
	3	52	60	78	82	92	105	51	58	77	81	91
FHM 135	1	61	65	99	104	131	149	46	51	83	86	122
	2	91	96	118	119	155	167	79	92	109	111	134
	3	118	119	144	146	156	168	103	112	130	137	146
FHM 320	1	112	121	187	217	252	312	97	102	156	162	228
	2	200	214	281	293	320	328	161	181	237	241	282
	3	245	267	312	320	325	333	207	233	275	280	306
	4	267	281	315	325	336	341	232	247	279	283	309
		Filter element design - N Series						Filter element design - S Series				
Filter series	Length	A03	A06	A10	A16	A25	M25	A03	A06	A10	A16	A25
FHM 500	1	211	232	281	289	309	394	126	135	208	210	261
	2	242	262	303	308	330	397	187	206	258	266	285
	3	284	294	336	338	357	399	226	230	285	290	315
	4	302	325	346	350	361	401	251	273	314	315	341
	5	325	334	356	361	373	401	296	301	335	338	360

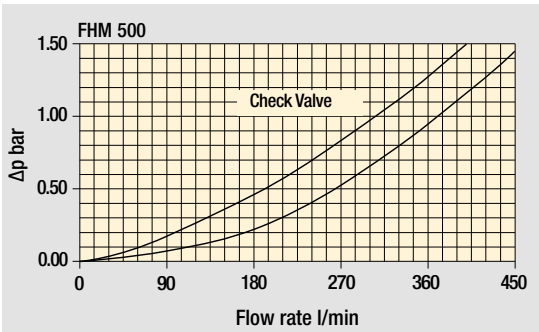
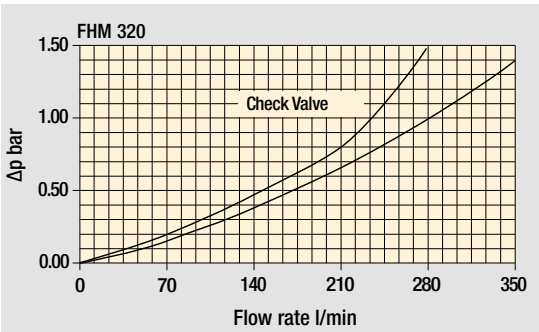
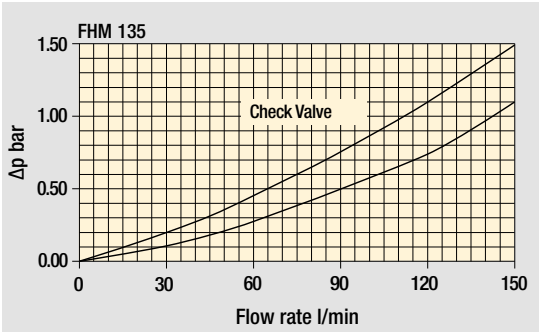
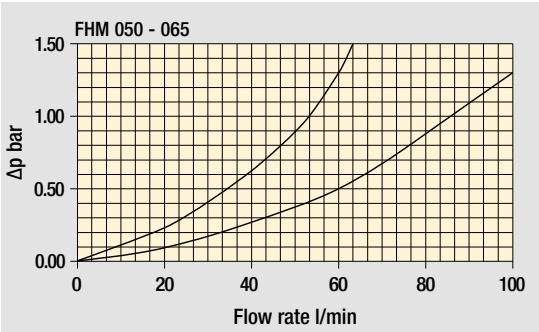
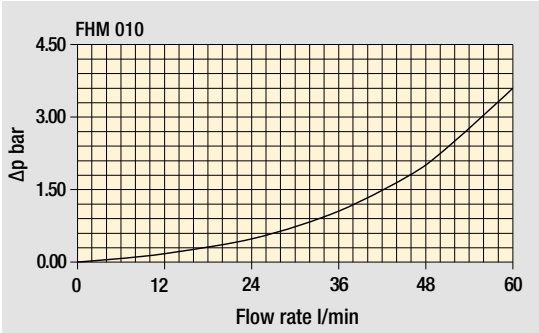
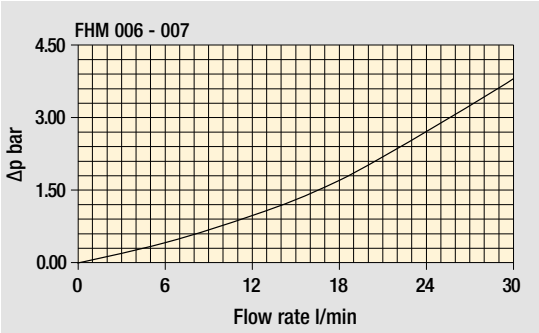
Maximum flow rate for a complete pressure filter with a pressure drop $\Delta p = 1.5$ bar.
The reference fluid has a kinematic viscosity of 30 mm²/s (cSt) and a density of 0.86 kg/dm³.
For different pressure drop or fluid viscosity we recommend to use our selection software available on www.mpfiltri.com.
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

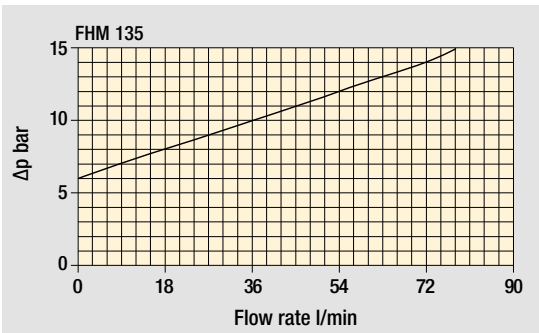
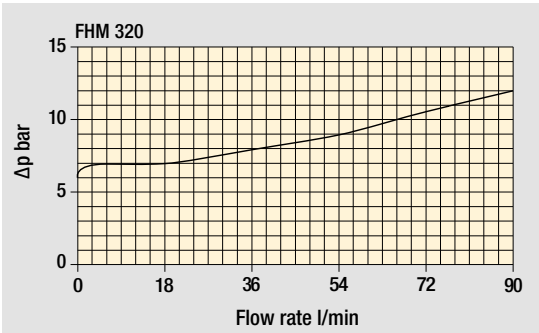
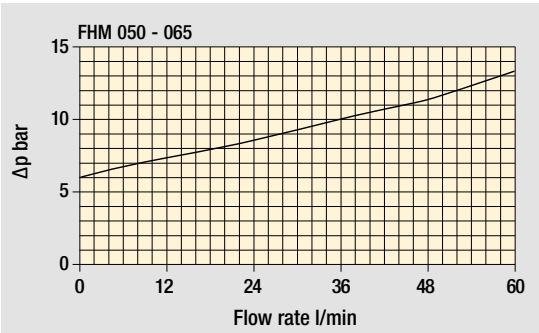
Filter series	Stile S	Stile S	Stile S	Stile B	Stile T	Stile D
FHM 006	•					
FHM 007	•					
FHM 010		•				
FHM 050			•	•	•	•
FHM 065			•	•	•	•
FHM 135			•	•	•	•
FHM 320			•	•	•	•
FHM 500			•	•	•	•

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.

FHM FHM006 - FHM007 - FHM010

Designation & Ordering code

COMPLETE FILTER

Series and size

FHM006 | FHM007 | FHM010

Configuration example:

FHM010

2

S

V

G1

A03

H

P01

Length

FHM006

FHM007

FHM010

1

•

2

•

•

3

•

•

Valves

S Without bypass

Seals

A NBR

V FPM

Connections

G1 Manifold side "A"

G2 Manifold side "B"

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

H 210 bar

Execution

P01 MP Filtri standard

Pxx Customized

FILTER ELEMENT

Element series and size

FHM006 | FHM007 | FHM010

Configuration example:

HP065

2

A03

A

H

P01

Element length

FHM006

FHM007

FHM010

2

•

•

3

•

•

•

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

H 210 bar

Execution

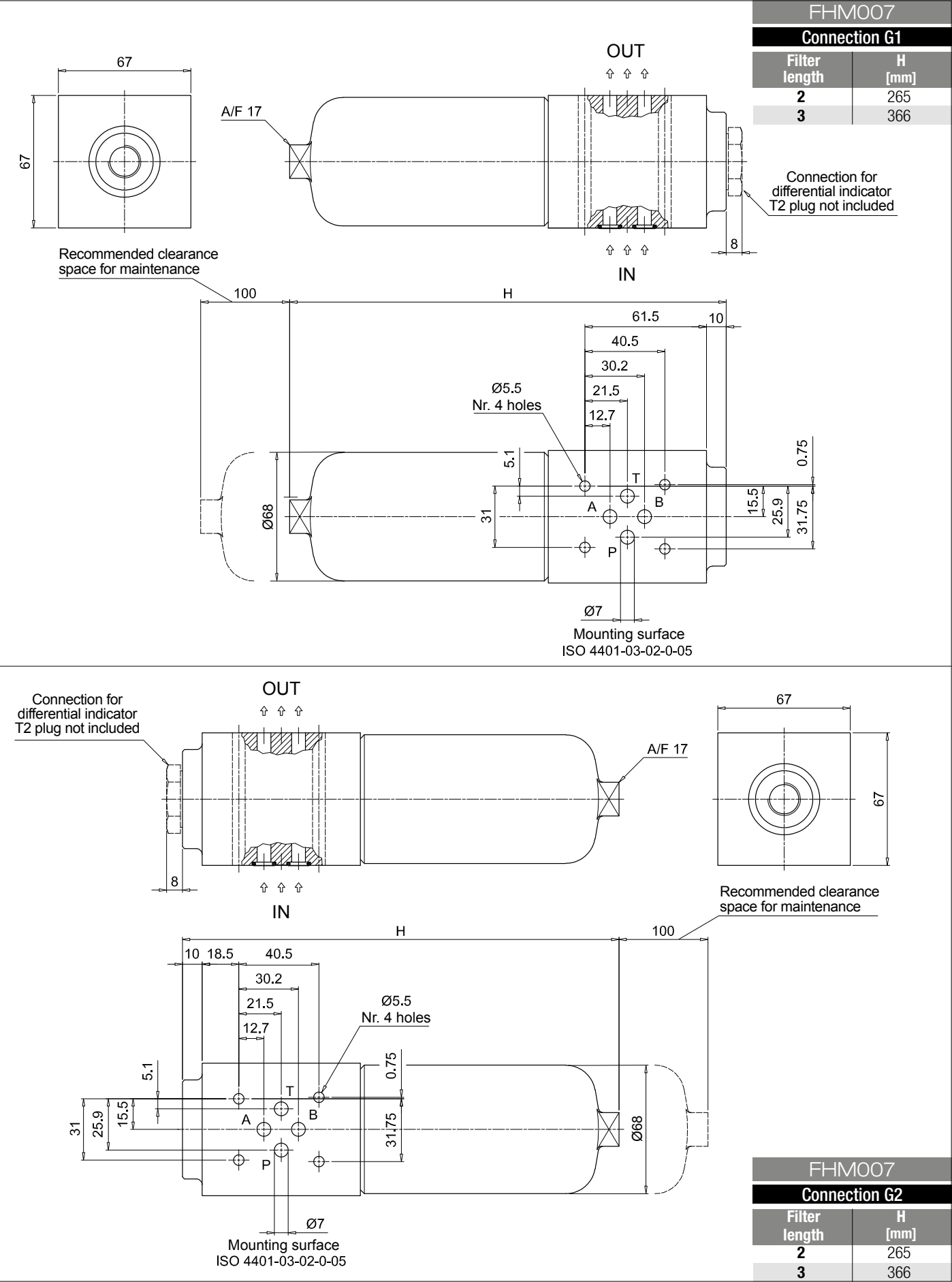
P01 MP Filtri standard

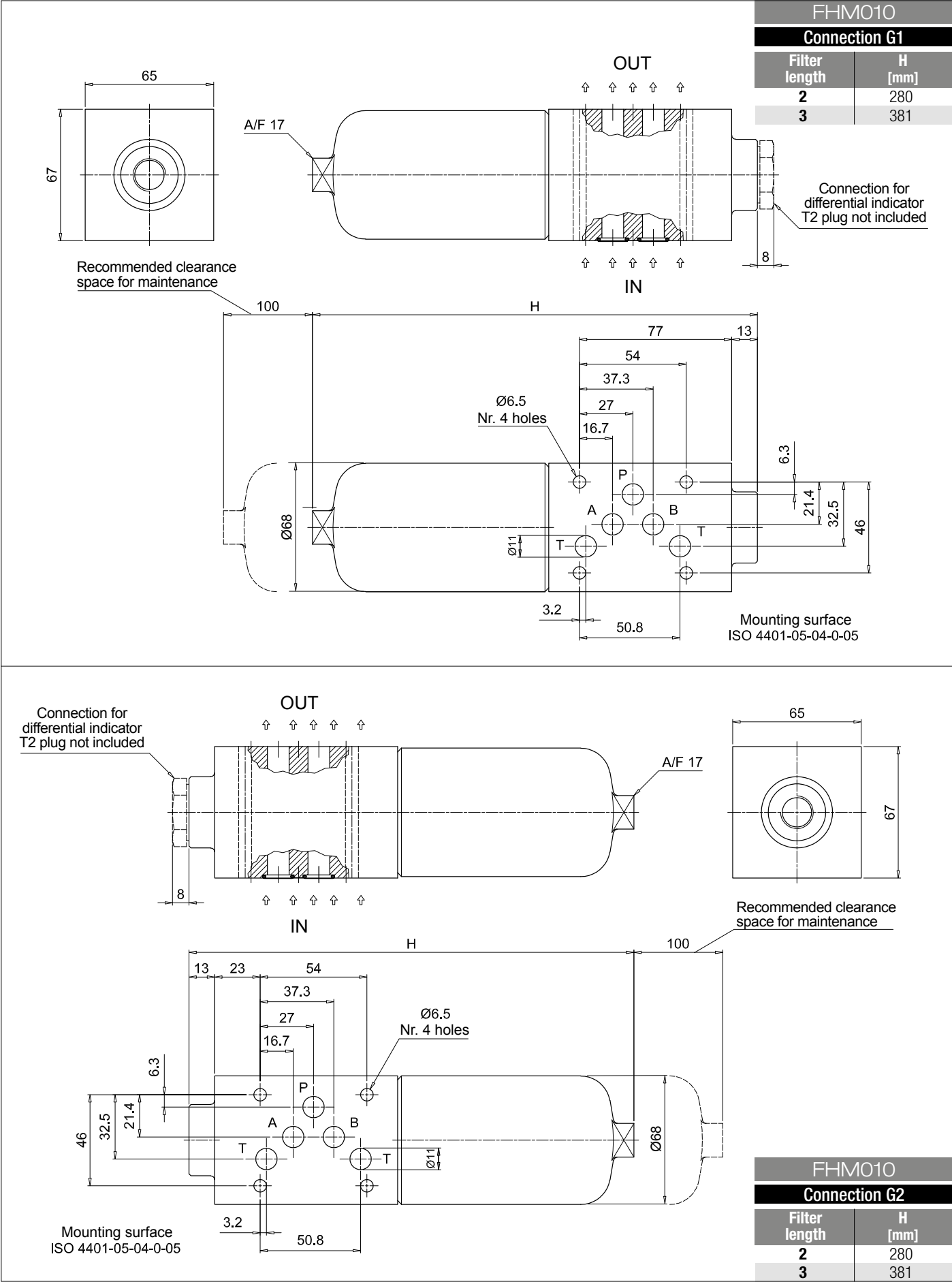
Pxx Customized

ACCESSORIES			
Differential indicators		page	
DEA	Electrical differential indicator	577	DLE Electrical / visual differential indicator 580
DEH	Hazardous area electronic differential indicator	577-578	DTA Electronic differential indicator 581
DEM	Electrical differential indicator	578-579	DVA Visual differential indicator 581
DLA	Electrical / visual differential indicator	579-580	DVM Visual differential indicator 581
Additional features		page	
T2	Plug	582	



Dimensions





FHM FHM050 - FHM065 - FHM135

Designation & Ordering code

COMPLETE FILTER

Series and size

FHM050 | FHM065 | FHM135

Configuration example:

FHM135

3

S

A

F1

A10

H

P01

Length

FHM050

FHM065

FHM135

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

Valves:

FHM050

FHM065-135

Element Δp

S

B

T

D

S

B

T

D

Execution

N 20 bar

•

•

•

P01 MP Filtri standard

H 210 bar

•

•

Pxx Customized

S 210 bar

•

•

FILTER ELEMENT

Element series and size

HP050 | HP065 | HP135

Configuration example:

HP135

3

A10

A

H

P01

Element length

HP050

HP065

HP135

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

HP050

HP065

HP135

Execution

N 20 bar

•

•

•

P01 MP Filtri standard

H 210 bar

•

•

Pxx Customized

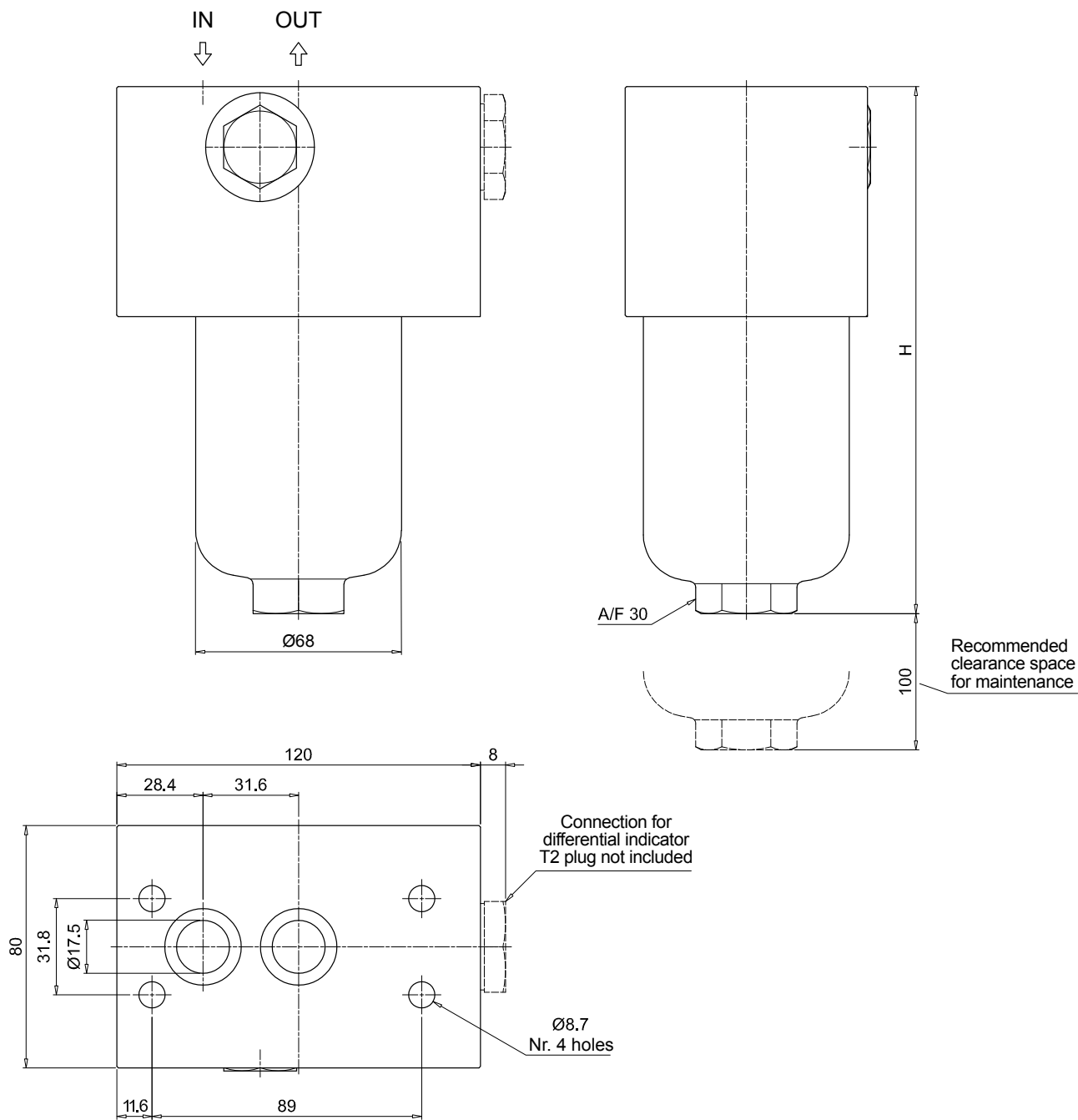
S 210 bar

•

ACCESSORIES			
Differential indicators		page	page
DEA	Electrical differential indicator	577	580
DEH	Hazardous area electronic differential indicator	577-578	581
DEM	Electrical differential indicator	578-579	581
DLA	Electrical / visual differential indicator	579-580	581
DLE	Electrical / visual differential indicator		580
DTA	Electronic differential indicator		581
DVA	Visual differential indicator		581
DVM	Visual differential indicator		581
Additional features		page	
T2	Plug	582	

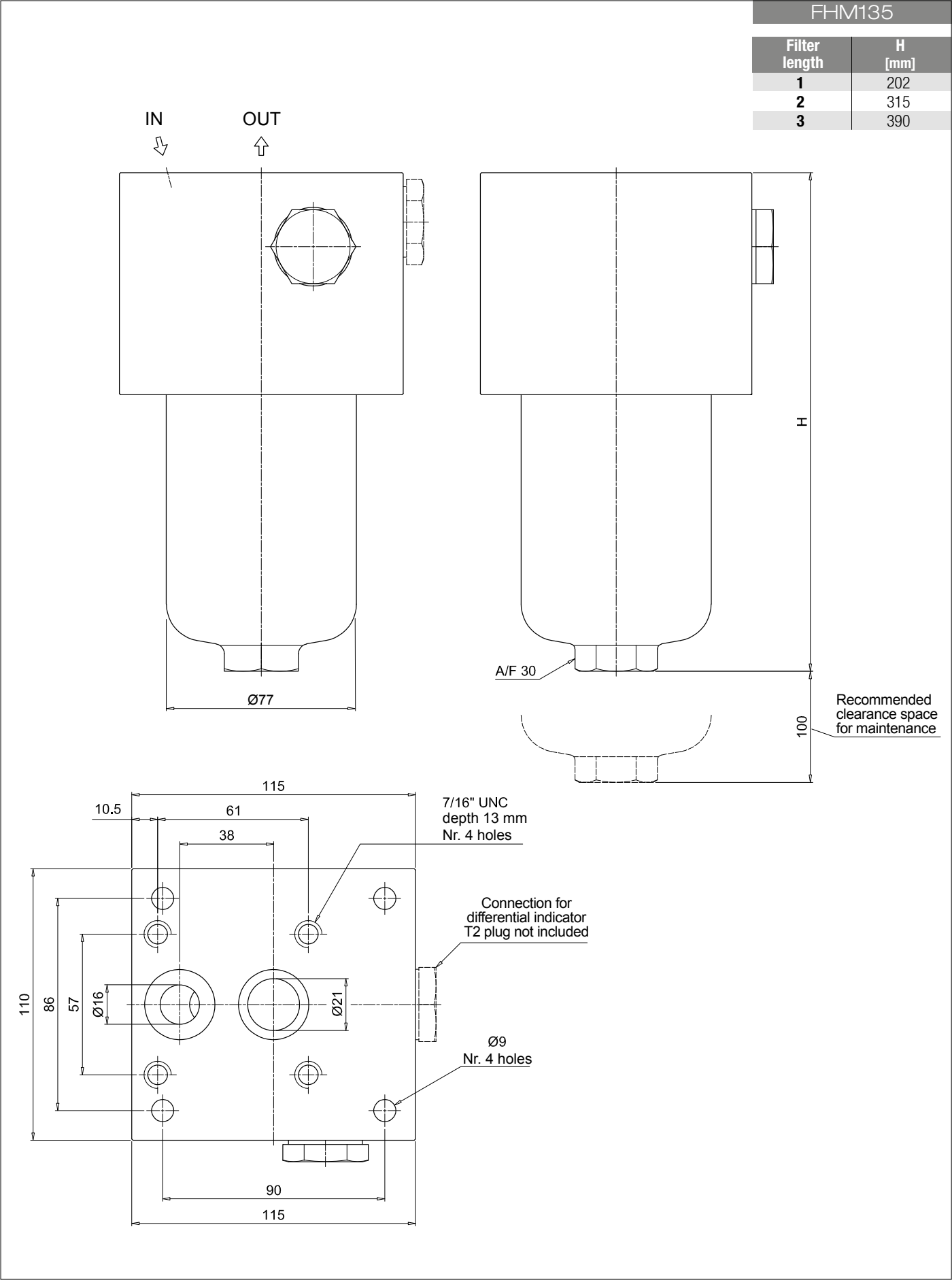
FHM050	
Filter length	H [mm]
1	154
2	191
3	233
4	281
5	403

FHM065	
Filter length	H [mm]
1	162
2	193
3	295



FHM FHM050 - FHM065 - FHM135

Dimensions



FHM FHM320 - FHM500

Designation & Ordering code

COMPLETE FILTER

Series and size

FHM320 | FHM500

Configuration example:

FHM320

4

D

A

F1

A06

N

P01

Length

FHM320

FHM500

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

A16

Inorganic microfiber

16 μm

A06

Inorganic microfiber

6 μm

A25

Inorganic microfiber

25 μm

A10

Inorganic microfiber

10 μm

M25

Wire mesh

25 μm

Valves:

FHM320

FHM500

Element Δp

S

B

T

D

S

B

T

D

N

20 bar

•

•

•

•

H

210 bar

•

•

S

210 bar

•

•

Execution

1

2

3

4

5

P01

MP Filtri standard

•

•

•

•

•

P02

Maintenance from the bottom of the housing

•

•

Pxx

Customized

FILTER ELEMENT

Element series and size

HP320 | HP500

Configuration example:

HP320

4

A06

A

N

P01

Element length

HP320

HP500

1

•

•

2

•

•

3

•

•

4

•

•

5

•

Filtration rating (filter media)

A03

Inorganic microfiber

3 μm

A16

Inorganic microfiber

16 μm

A06

Inorganic microfiber

6 μm

A25

Inorganic microfiber

25 μm

A10

Inorganic microfiber

10 μm

M25

Wire mesh

25 μm

Seals

A

NBR

V

FPM

Element Δp

HP320

HP500

N

20 bar

•

•

H

210 bar

•

S

210 bar

•

Execution

P01

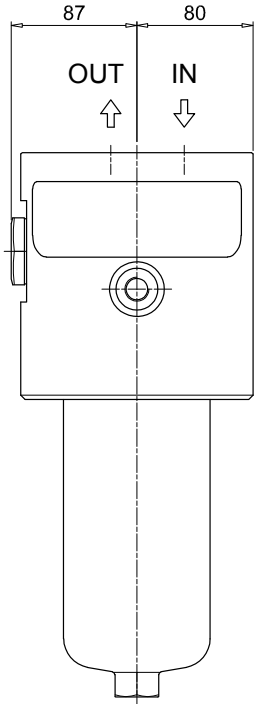
MP Filtri standard

Pxx

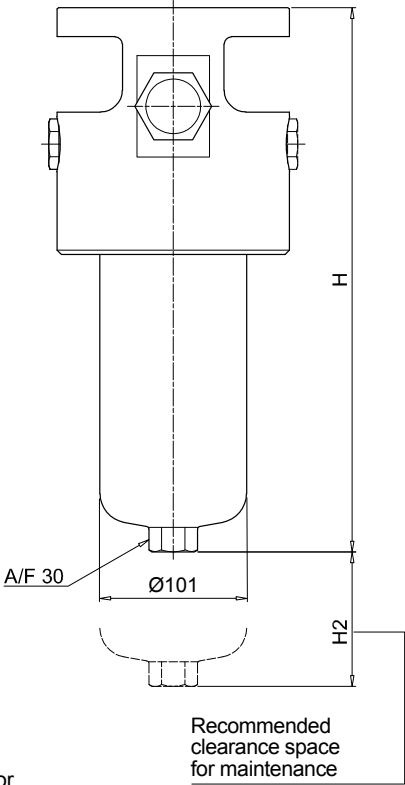
Customized

ACCESSORIES			
Differential indicators		page	
DEA	Electrical differential indicator	577	
DEH	Hazardous area electronic differential indicator	577-578	
DEM	Electrical differential indicator	578-579	
DLA	Electrical / visual differential indicator	579-580	
Additional features		page	
T2	Plug	582	
DLE	Electrical / visual differential indicator	580	
DTA	Electronic differential indicator	581	
DVA	Visual differential indicator	581	
DVM	Visual differential indicator	581	

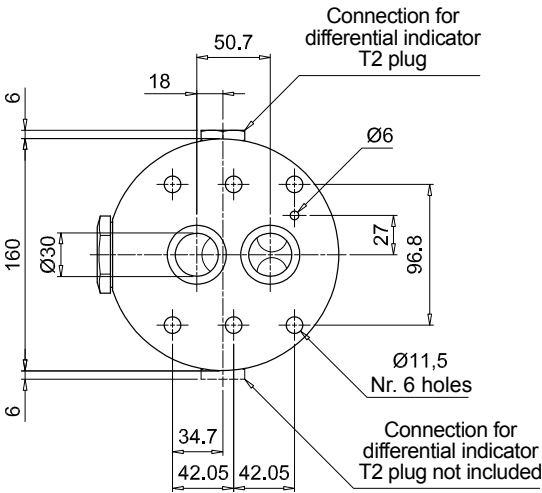
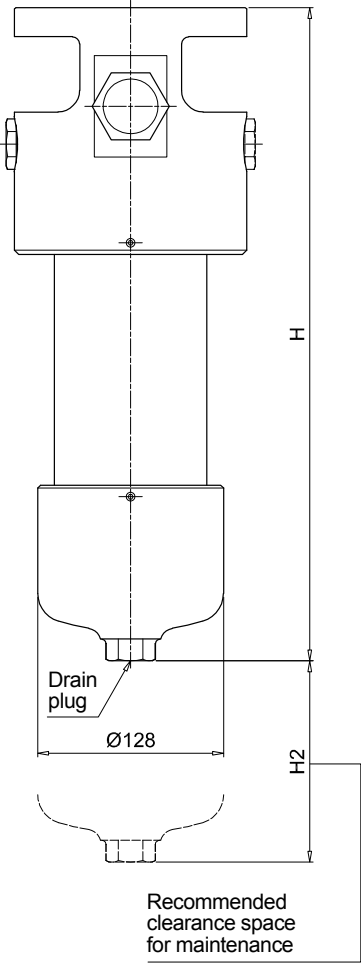
FHM320			
Filter length	H [mm]	H2 [mm]	
		Execution P01	Execution P02
1	293	150	-
2	416	150	-
3	548	150	-
4	702	150	550



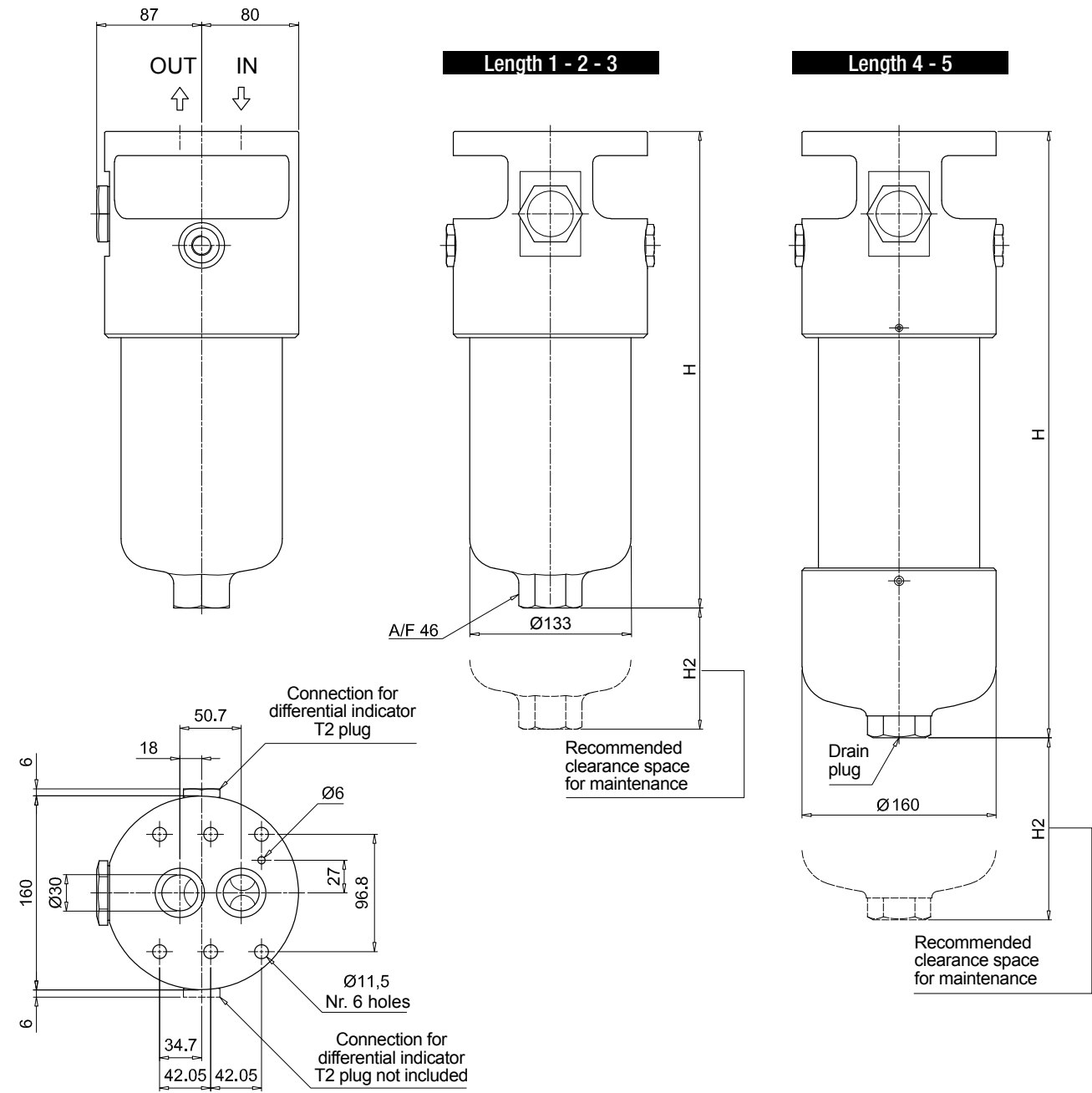
Length 1 - 2 - 3



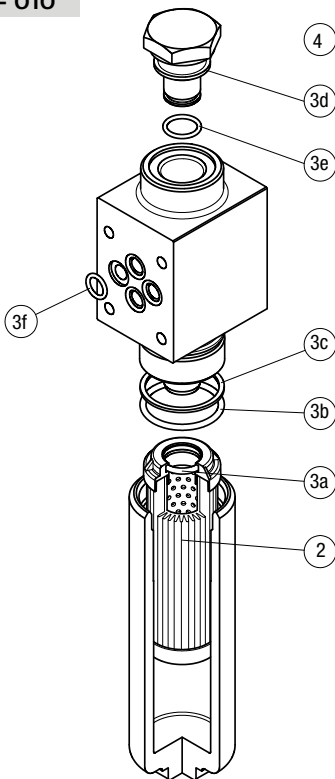
Length 4



FHM500			
Filter length	H [mm]	H2 [mm]	
		Execution P01	Execution P02
1	355	150	-
2	445	150	-
3	521	150	-
4	679	150	480
5	845	150	650

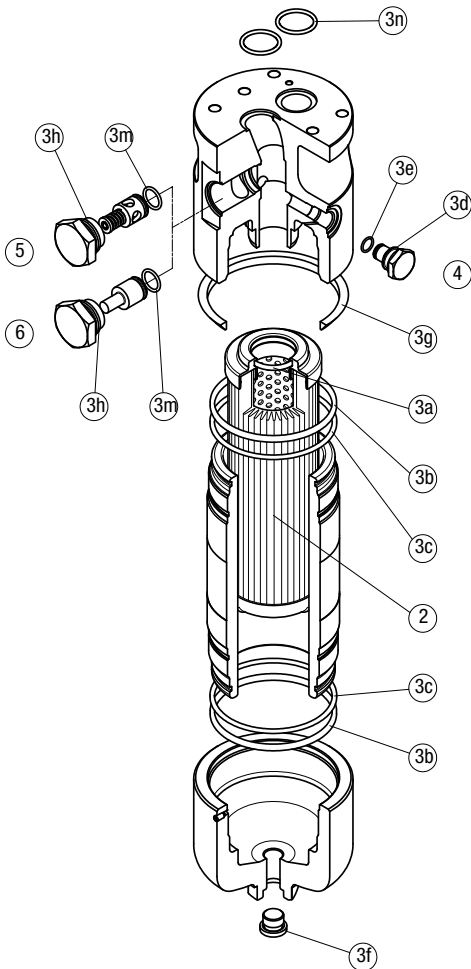


FHM 006 - 007 - 010



Item:		Q.ty: 1 pc.		Q.ty: 1 pc.		Q.ty: 1 pc.	
		2		3 (3a ÷ 3f)		4	
Filter series	Filter element	Seal Kit code number		Indicator connection plug			
		NBR	FPM	NBR	FPM		
FHM 006	See order table	02050324	02050325	T2H	T2V		
FHM 007		02050600	02050601				
FHM 010		02050320	02050321				

FHM 050 - 065 - 135 - 320 - 500



Item:		Q.ty: 1 pc.		Q.ty: 1 pc.		Q.ty: 1 pc.		Q.ty: 1 pc.	
2		3 (3a ÷ 3m)		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
FHM 050	See order table	02050410	02050411	T2H	T2V	02001400	02001401	02001402	02001403
FHM 065		02050268	02050279			02001400	02001401	02001402	02001403
FHM 135		02050271	02050282			02001404	02001405	02001406	02001407
FHM 320		02050275	02050286			02001408	02001409	02001410	02001411
FHM 500		02050332	02050333			02001408	02001409	02001410	02001411