

FHP series

Maximum working pressure up to 42 MPa (420 bar) - Flow rate up to 630 l/min



Description

High Pressure filters

In-line

Maximum working pressure up to 42 MPa (420 bar)

Flow rate up to 630 l/min

FHP 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 2", for a maximum return flow rate of 750 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

- Reverse flow valve, to allow bidirectional flow through the filter housing. The back flow is not filtered. The filter requires the use of internal check valves to direct the flow through the element in one direction and around the element in the other

- 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 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

- Visual, electrical and electronic differential clogging indicators

Common applications:

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

Technical data

Filter housing materials

- Head: Phosphatized cast iron

- Housing: Phosphatized steel

- Bypass valve
AISI 316L: FHP 010 - 011
Brass: FHP 065 - 135
Brass / AISI 304: FHP 350
Steel: FHP 500

- Reverse Flow
Steel: FHP 350 - FHP 500

- Check 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

- Microfibre filter elements - series N: 20 bar

- Microfibre filter elements - series R: 20 bar (not available for FHP 010-011 and FHP 500)

- Microfibre filter elements - series H: 210 bar

- Microfibre filter elements - series S: 210 bar (only for FHP 500)

- 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

FHP 010 - 065 - 135 - 350 - 500:
In-line Inlet/Outlet

FHP 011:
90° Inlet/Outlet

Note

FHP filters are provided for vertical mounting



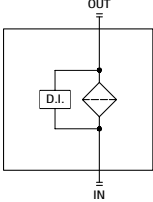
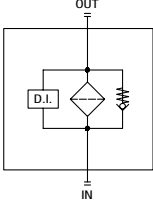
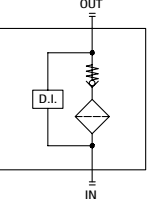
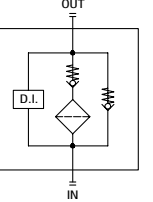
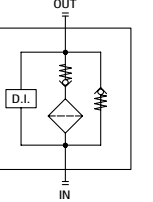
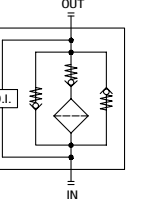
Weights [kg] and volumes [dm³]

Filter series	Weights [kg]						Volumes [dm³]					
	Length	1	2	3	4	5	Length	1	2	3	4	5
FHP 010 - 011		2.05	2.18	2.64	3.13	-		0.10	0.12	0.15	0.20	-
FHP 065		4.26	4.62	5.83	-	-		0.25	0.30	0.50	-	-
FHP 135		7.11	8.71	9.76	-	-		0.43	0.76	0.97	-	-
FHP 350		13.95	16.08	18.37	20.85	-		1.00	1.72	2.49	3.32	-
FHP 500		27.00	31.17	34.69	46.70	52.5		1.71	2.43	3.04	5.18	6.51

Filter series	Length	Filter element design - H Series					Filter element design - N Series					
		A03	A06	A10	A16	A25	A03	A06	A10	A16	A25	M25
FHP 010	1	3	5	6	7	8	4	6	8	9	10	37
	2	5	7	13	16	22	6	8	16	19	24	40
	3	10	13	22	25	30	11	14	23	26	31	41
	4	12	15	25	27	32	16	19	27	30	33	41
FHP 011	1	3	5	6	7	9	4	6	8	9	11	47
	2	5	7	14	17	24	7	9	17	21	28	52
	3	11	14	25	29	36	11	14	26	30	37	53
	4	12	16	28	32	38	17	21	32	36	40	54
FHP 065	1	24	25	50	59	84	25	33	56	63	90	142
	2	33	38	68	77	98	34	52	72	79	106	143
	3	61	70	100	107	123	61	73	101	108	125	147
FHP 135	1	49	55	95	98	147	67	72	115	122	159	184
	2	89	106	129	131	163	105	111	140	142	192	209
	3	120	132	158	166	180	141	143	176	179	193	211
FHP 350	1	108	115	188	197	301	127	140	234	282	343	451
	2	196	225	317	323	396	256	278	394	415	465	480
	3	266	310	384	392	440	331	370	450	466	475	490
	4	308	333	391	398	445	369	393	456	474	495	503
FHP 500	1	144	157	265	268	355	269	305	390	406	444	612
	2	232	262	350	363	398	321	357	433	441	484	619
	3	293	301	398	408	455	396	416	497	499	537	622
	4	336	377	452	455	507	430	475	516	524	545	626
	5	420	428	494	500	544	475	493	535	545	569	627

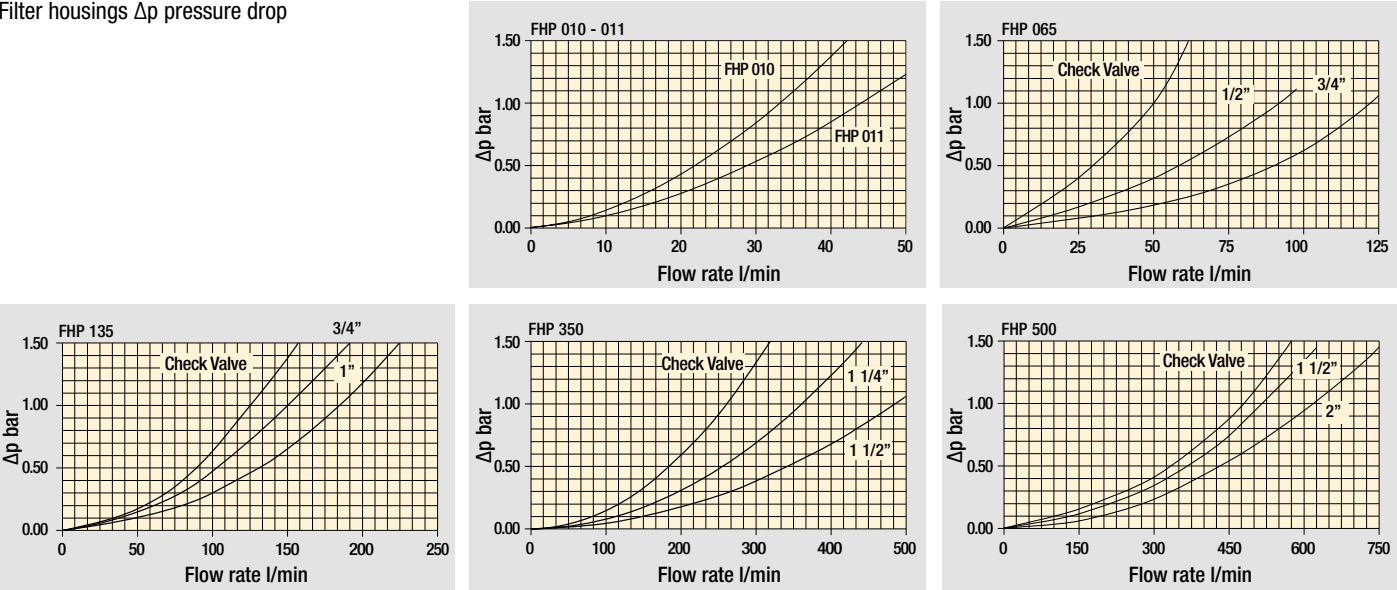
Maximum flow rate for a complete pressure filter with a pressure drop $\Delta p = 1.5$ bar.
The reference fluid has a kinematic viscosity of 30 mm²/s (cSt) and a density of 0.86 kg/dm³.
For different pressure drop or fluid viscosity we recommend to use our selection software available on www.mpfiltri.com.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

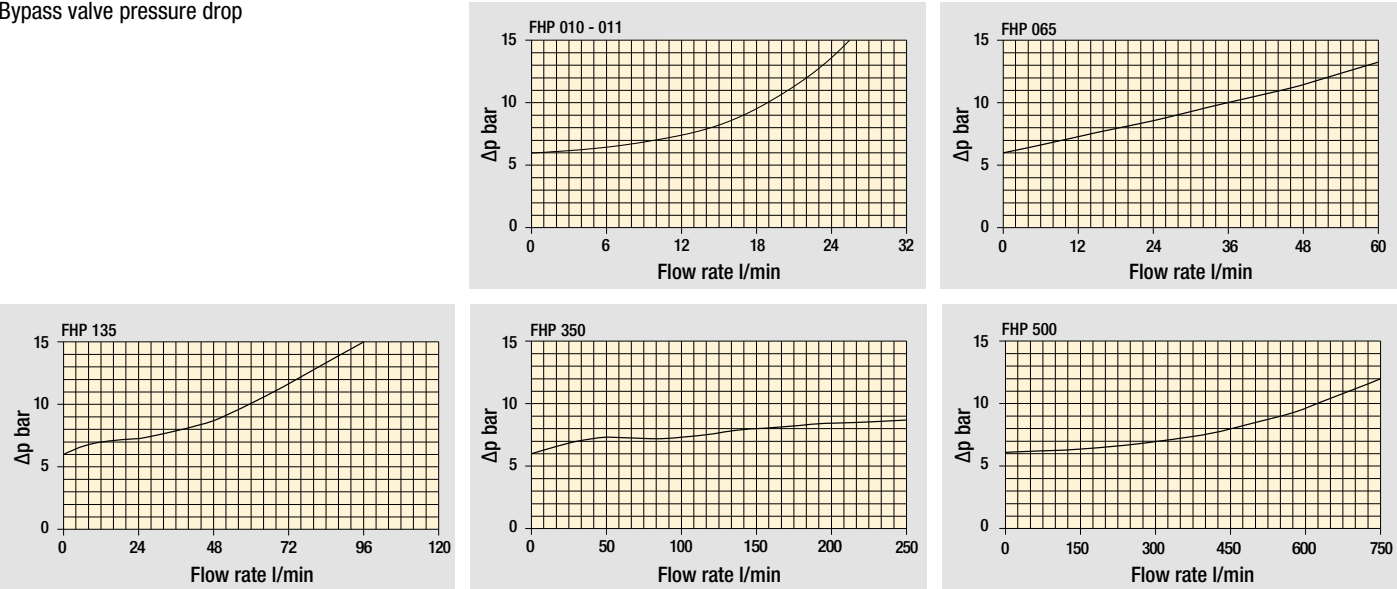
Filter series	Style S	Style B	Style T	Style D	Style V	Style Z
FHP 010 - 011	•	•			•	•
FHP 065	•	•	•			
FHP 135	•	•	•			
FHP 350	•	•	•	•	•	•
FHP 500	•	•	•	•	•	•
						

Pressure drop

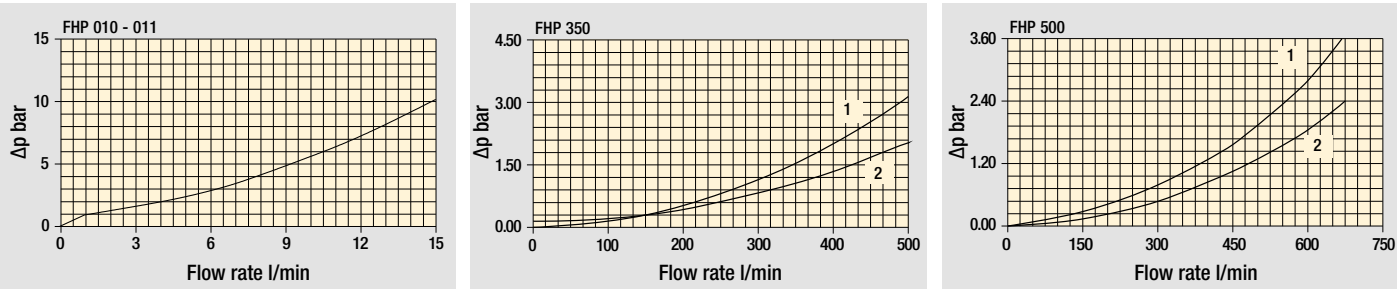
Filter housings Δp pressure drop



Bypass valve pressure drop



Valves



Filter housing with check valve

Pressure drop with reverse flow valve in
1 - Filtering direction
2 - Opposite direction

Pressure drop with reverse flow valve in
1 - Opposite direction
2 - Filtering 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.

Designation & Ordering code

COMPLETE FILTER

Series and size

FHP010 | FHP011

Configuration example:

FHP010

2

B

A

B

2

A03

N

P01

Length

1 | 2 | 3 | 4 |

Valves

S Without bypass

B With bypass 6 bar

V With reverse flow, without bypass

Z With reverse flow, with bypass 6 bar

Seals

A NBR

V FPM

Connections

A G 1/4"

B 1/4" NPT

C SAE 5 - 1/2" - 20 UNF

D G 3/8"

E 3/8" NPT

F SAE 6 - 9/16" - 18 UNF

Connection for differential indicator

1 Without

2 With connection

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

S

B

V

Z

Element Δp

N 20 bar

H 210 bar

Execution

P01 MP Filtri standard

Pxx Customized

FILTER ELEMENT

Element series and size

HP011

Configuration example:

HP011

2

A03

A

N

P01

Element length

1 | 2 | 3 | 4 |

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

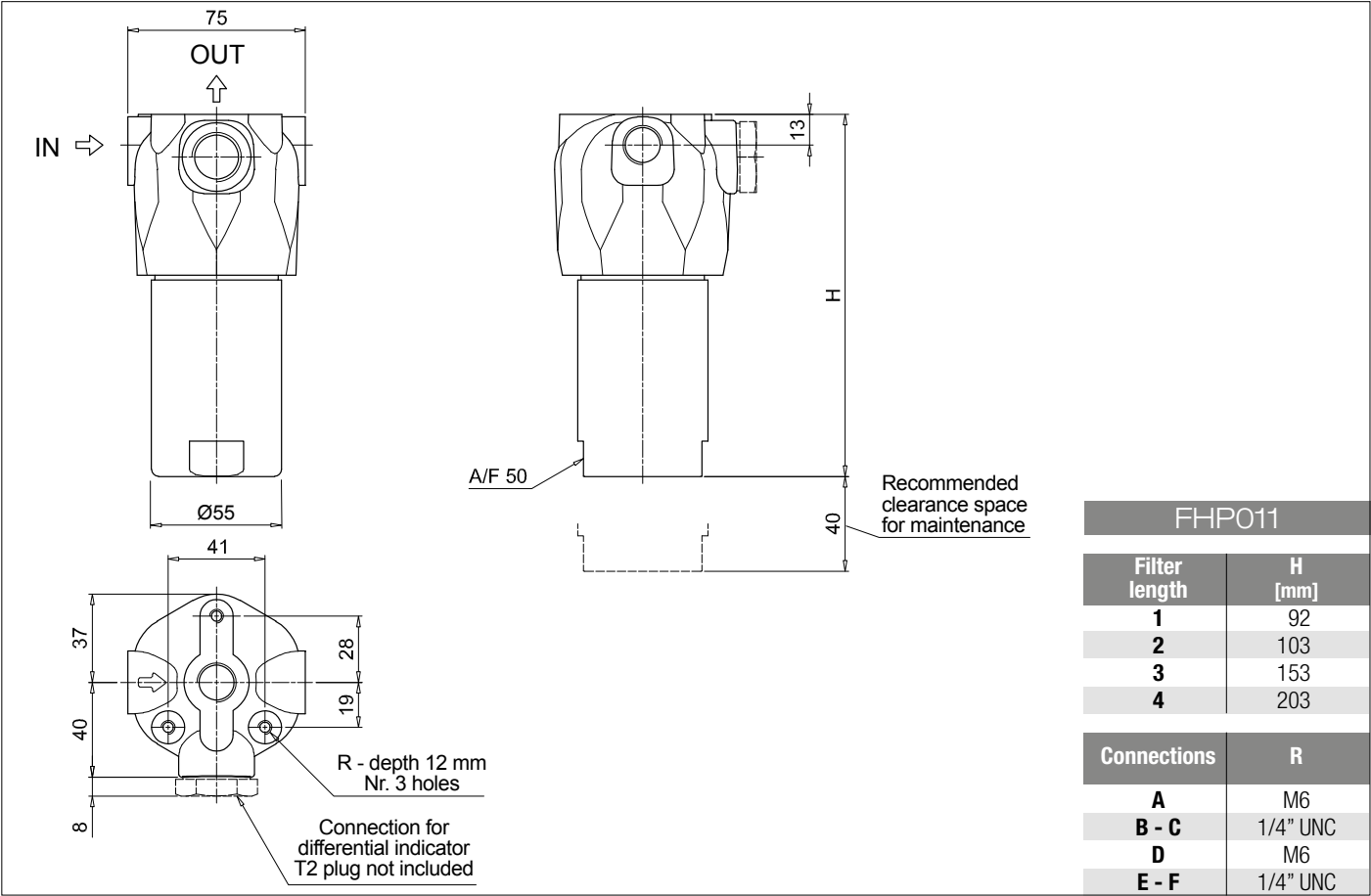
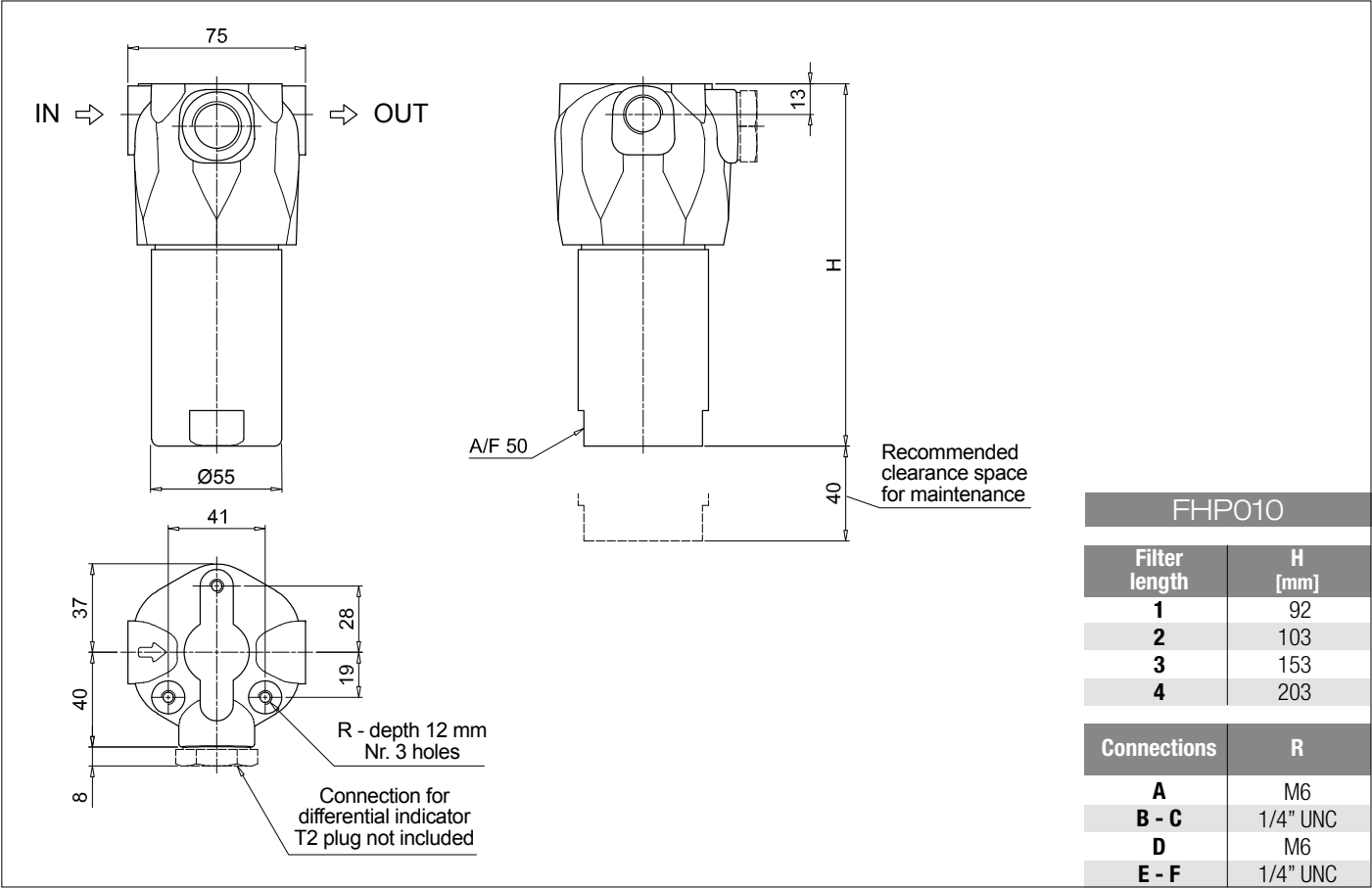
H 210 bar

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			



FHP FHP065 - FHP135

Designation & Ordering code

COMPLETE FILTER

Series and size

FHP065 | FHP135

Configuration example:

FHP135

2

B

A

G3

A06

S

P01

Length

1

2

3

Valves

S Without bypass

B With bypass 6 bar

T With check valve, without bypass

Seals

A NBR

V FPM

Connections

	FHP065	FHP135
G1	G 1/2"	G 3/4"
G2	G 3/4"	G 1"
G3	1/2" NPT	3/4" NPT
G4	3/4" NPT	1" NPT
G5	SAE 8 - 3/4" - 16 UNF	SAE 12 - 1 1/16" - 12 UN
G6	SAE 12 - 1 1/16" - 12 UN	SAE 16 - 1 5/16" - 12 UN
F1	-	3/4" SAE 3000 psi/M
F2	-	1" SAE 3000 psi/M
F3	-	3/4" SAE 3000 psi/UNC
F4	-	1" SAE 3000 psi/UNC
F5	-	3/4" SAE 6000 psi/M
F6	-	3/4" SAE 6000 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

Element Δp	S	B	T	D	V	Z
N 20 bar		•				
R 20 bar				•		•
H 210 bar	•					
S 210 bar			•		•	

Execution

P01	MP Filtri standard
Pxx	Customized

FILTER ELEMENT

Element series and size

HP065 | HP135

Configuration example:

HP135

2

A06

A

S

P01

Element length

1

2

3

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

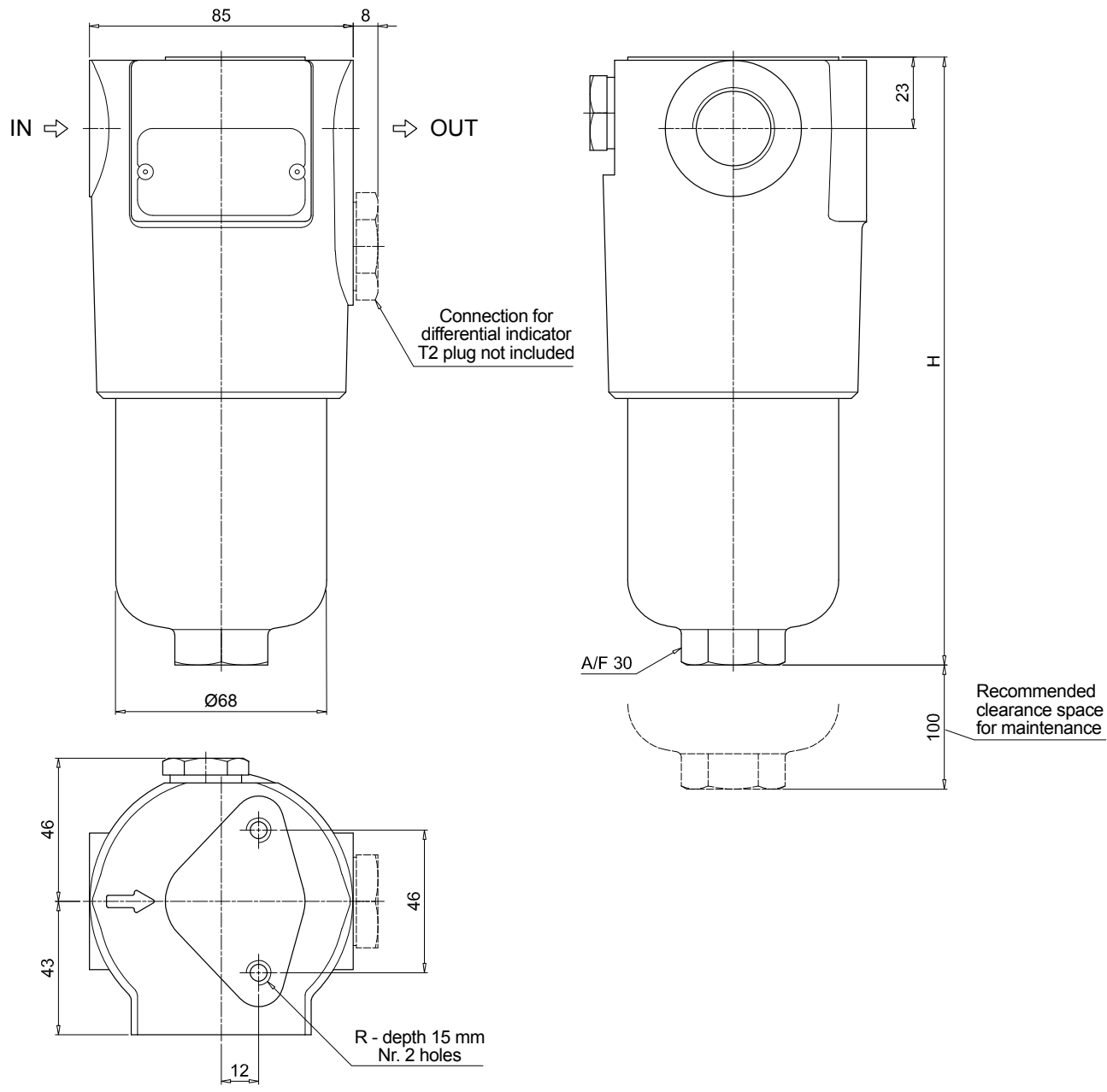
Element Δp

N	20 bar
R	20 bar
H	210 bar
S	210 bar

Execution

P01	MP Filtri standard
Pxx	Customized

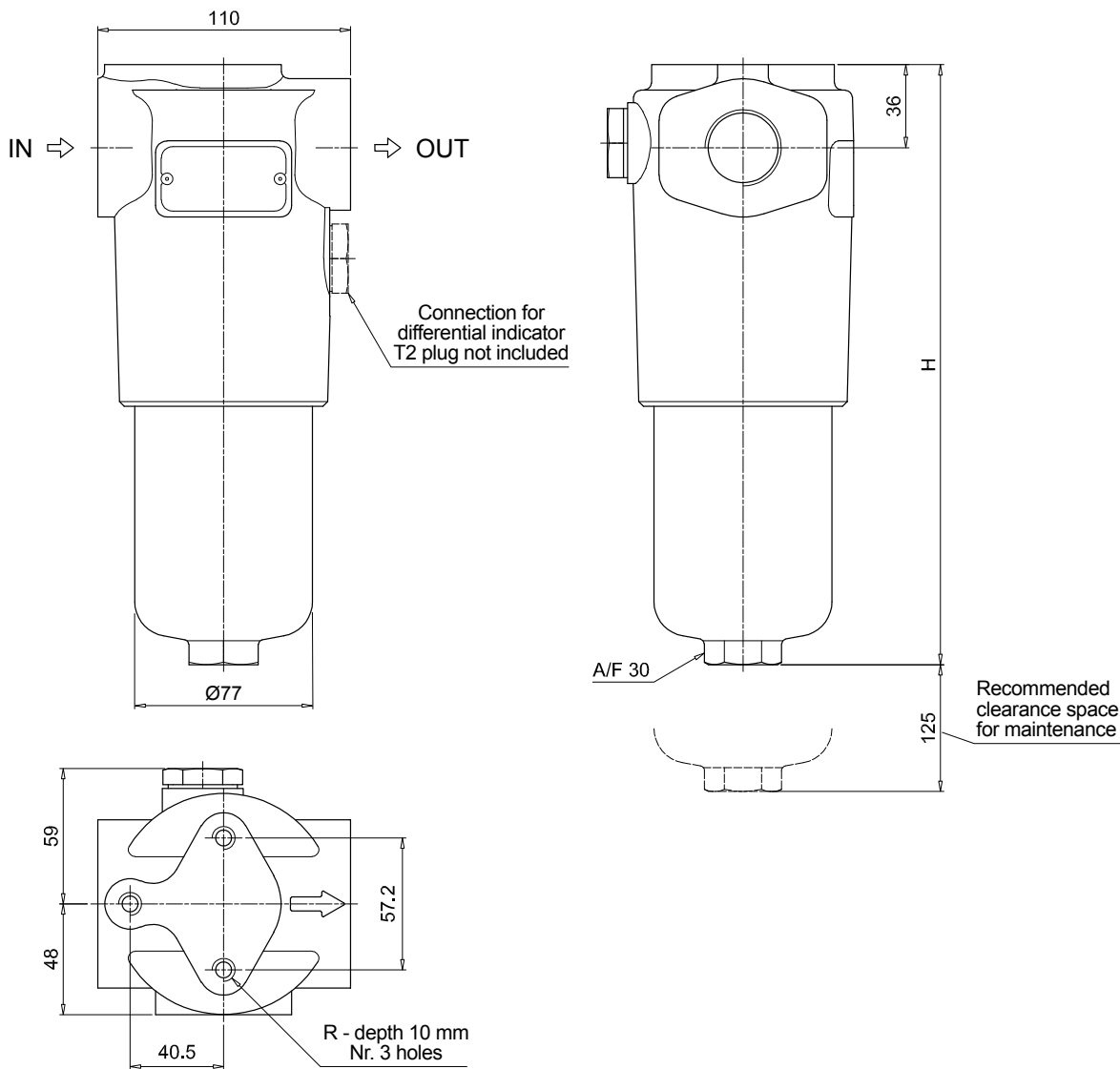
ACCESSORIES			
Differential indicators		page	
DEA	Electrical differential indicator	577	DLE Electrical / visual differential indicator 580
DEH	Hazardous area electronic differential indicator	577-578	DTA Electronic differential indicator 581
DEM	Electrical differential indicator	578-579	DVA Visual differential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



FHP065	
Filter length	H [mm]
1	196
2	227
3	329
Connections	R
G1-G2	M8
G3-G4-G5-G6	5/16" UNC

FHP FHP065 - FHP135

Dimensions



FHP135	
Filter length	H [mm]
1	260
2	373
3	448
Connections	R
G1-G2	M10
G3-G4-G5-G6	3/8" UNC
F1-F2	M10
F3-F4	3/8" UNC
F5	M10
F6	3/8" UNC

COMPLETE FILTER

Series and size

FHP350

Configuration example: FHP350 4 B A D 2 A06 N P01

Length

1 2 3 4

Valves

S Without bypass
B With bypass 6 bar
T With check valve, without bypass
D With check valve, with bypass 6 bar
V With reverse flow, without bypass
Z With reverse flow, with bypass 6 bar

Seals

A NBR
V FPM

Connections

A G 1 1/2"
B 1 1/2" NPT
C SAE 24 - 1 7/8" - 12 UN
D 1 1/2" SAE 3000 psi/M + G 1 1/4"
E 1 1/2" SAE 3000 psi/UNC + 1 1/4" NPT
F 1 1/2" SAE 3000 psi/UNC + SAE 20 - 1 5/8" - 12 UN
G 1 1/4" SAE 3000 psi/M
H 1 1/4" SAE 3000 psi/UNC
I 1 1/4" SAE 6000 psi/M
L 1 1/4" SAE 6000 psi/UNC

Connection for differential indicator

2 With connection

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

Element Δp	S	B	T	D	V	Z
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

HP320

Configuration example: HP320 4 A06 A N P01

Element length

1 2 3 4

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

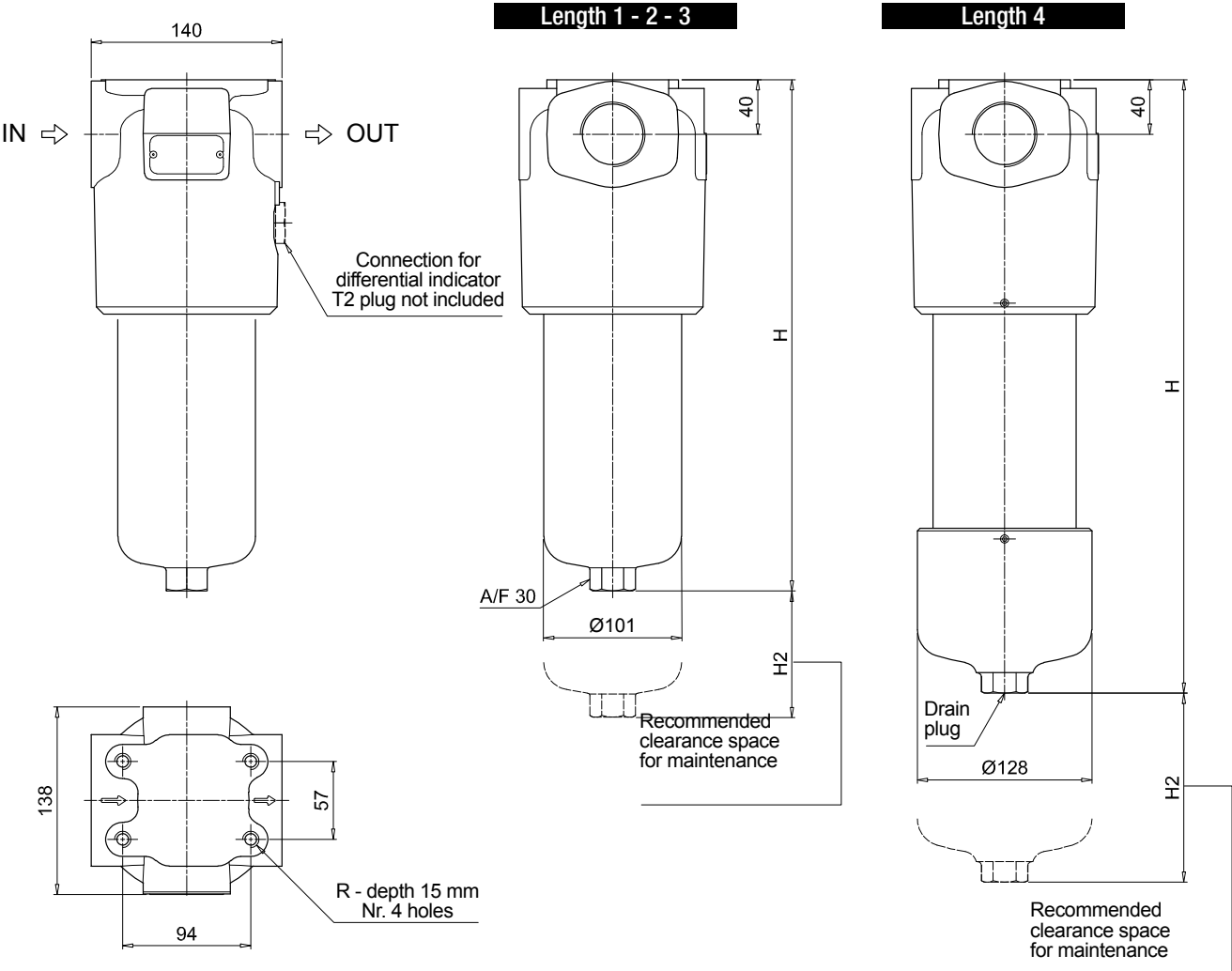
Element Δp

N 20 bar
R 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	
			page
DLE	Electrical / visual differential indicator		580
DTA	Electronic differential indicator		581
DVA	Visual differential indicator		581
DVM	Visual differential indicator		581



FHP350			
Filter length	H [mm]	H2 [mm]	
		Execution P01	P02
1	295	150	-
2	418	150	-
3	550	150	-
4	703	150	550

Connections	R
A	M12
B - C	1/2" UNC
D	M12
E - F	1/2" UNC
G	M12
H	1/2" UNC
I	M12
L	1/2" UNC

COMPLETE FILTER

Series and size

FHP500

Configuration example:

FHP500

4

V

A

F1

A06

S

P01

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

V

With reverse flow, without bypass

Z

With reverse flow, with bypass 6 bar

Seals

A

NBR

V

FPM

Connections

F1

1 1/2" SAE 3000 psi/M

F2

1 1/2" SAE 3000 psi/UNC

F3

2" SAE 3000 psi/M

F4

2" SAE 3000 psi/UNC + 1 1/2" NPT

F5

1 1/2" SAE 6000 psi/M

F6

1 1/2" SAE 6000 psi/UNC

F7

2" SAE 6000 psi/M + G 1 1/2"

F8

2" SAE 6000 psi/UNC + SAE 24 - 1 7/8" - 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

Valves

Element Δp

S

B

T

D

V

Z

N

20 bar

R

20 bar

S

210 bar

Execution

Filter length

1

2

3

4

5

P01

MP Filtri standard

P02

Maintenance from the bottom of the housing

P03

Drain plug

Pxx

Customized

FILTER ELEMENT

Element series and size

HP500

Configuration example:

HP500

4

A06

A

S

P01

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

R

20 bar

S

210 bar

Execution

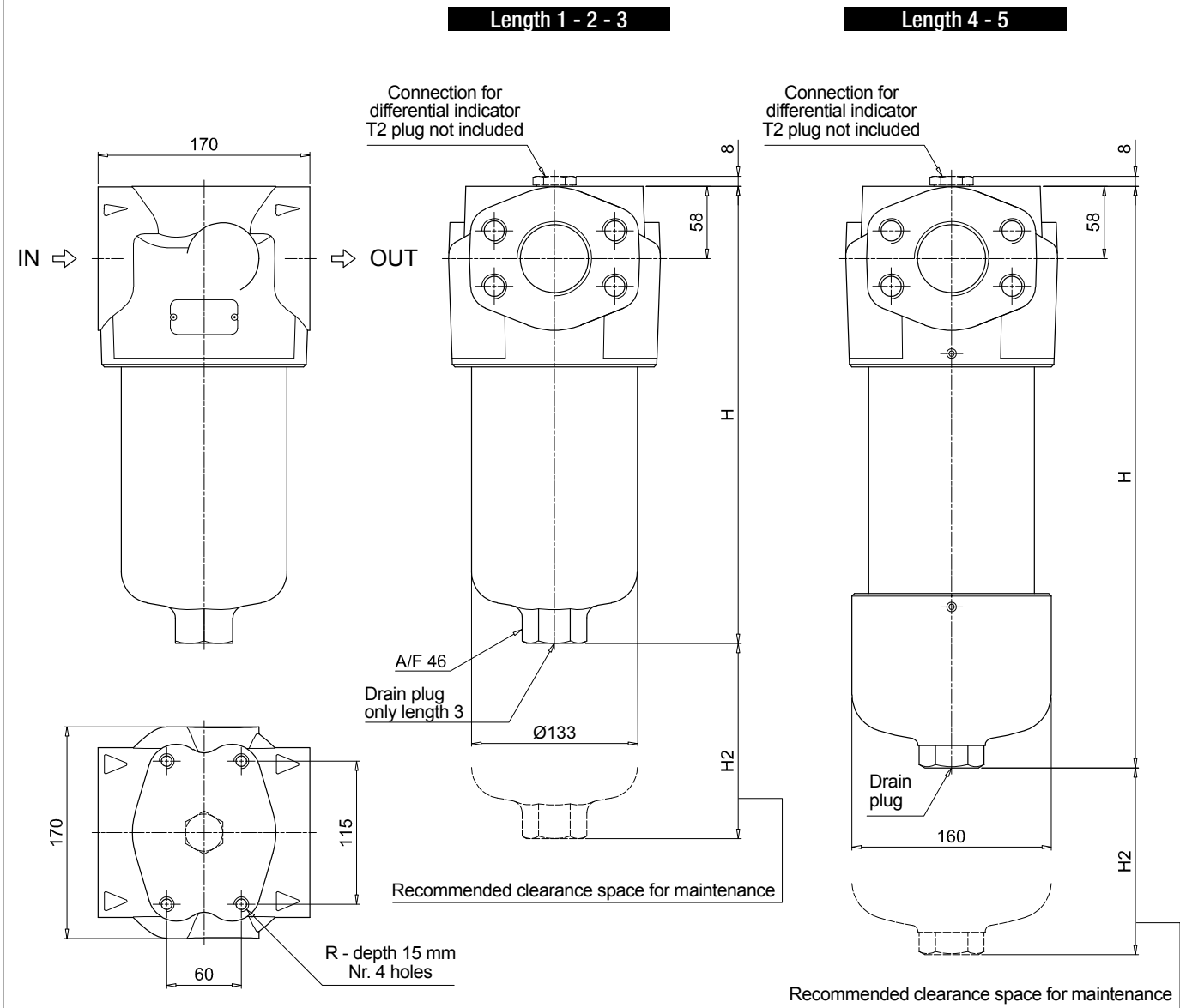
P01

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			

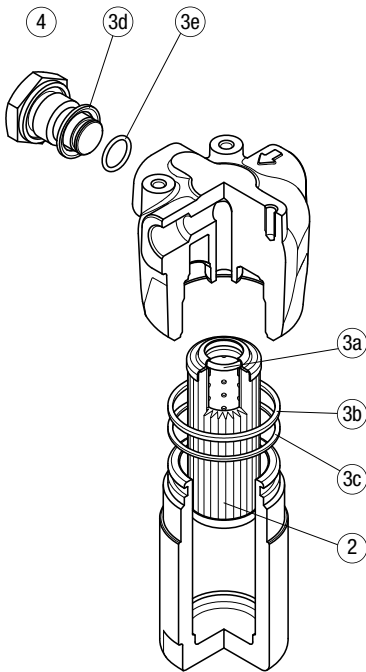


FHP500			
Filter length	H [mm]	H2 [mm]	
		Execution P01	P02
1	330	150	-
2	420	150	-
3	496	150	-
4	654	150	480
5	820	150	650

Connections	R
F1	M12
F2	1/2" UNC
F3	M12
F4	1/2" UNC
F5	M12
F6	1/2" UNC
F7	M12
F8	1/2" UNC

Order number for spare parts

FHP 010 - 011

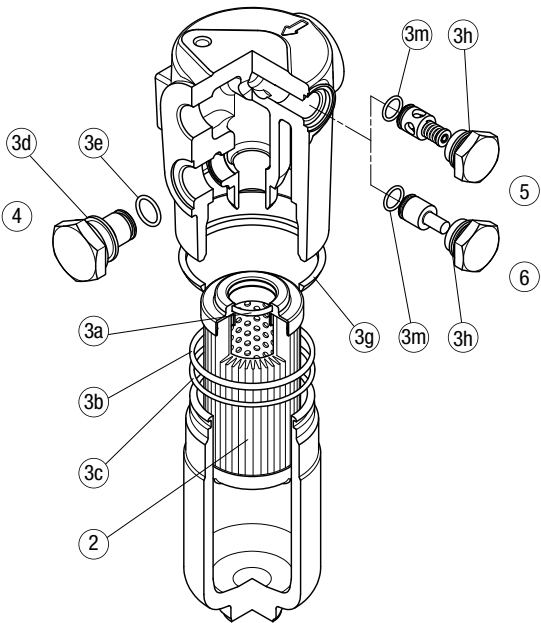


Q.ty:
nr. 0 pcs. for version 1
(without indicator port)

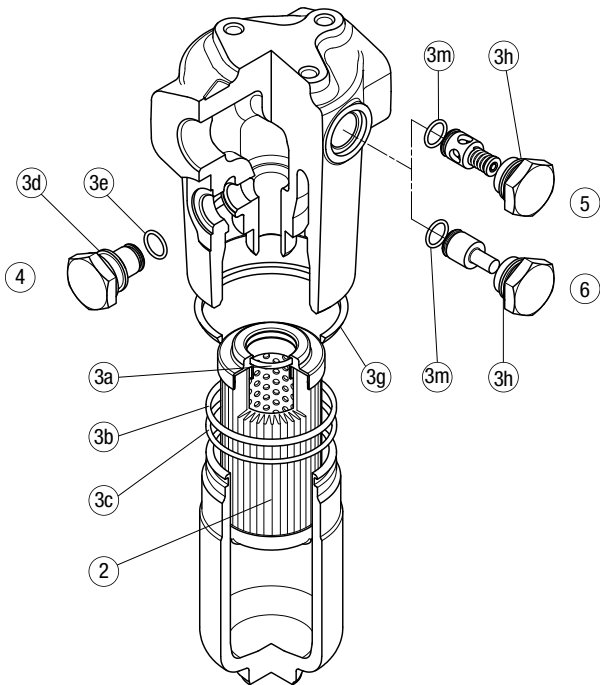
nr. 1 pc. for version 2
(with indicator port)

Q.ty: 1 pc.		Q.ty: 1 pc.		Q.ty: 1 pc.	
Item:	2	3 (3a ÷ 3e)		4	
Filter series	Filter element	Seal Kit code number		Indicator connection plug	
		NBR	FPM	NBR	FPM
FHP 010-011	See order table	02050501	02050492	T2H	T2V

FHP 065



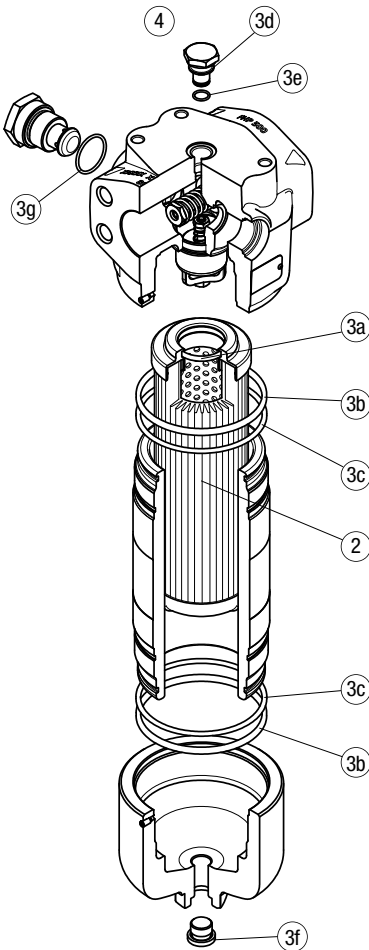
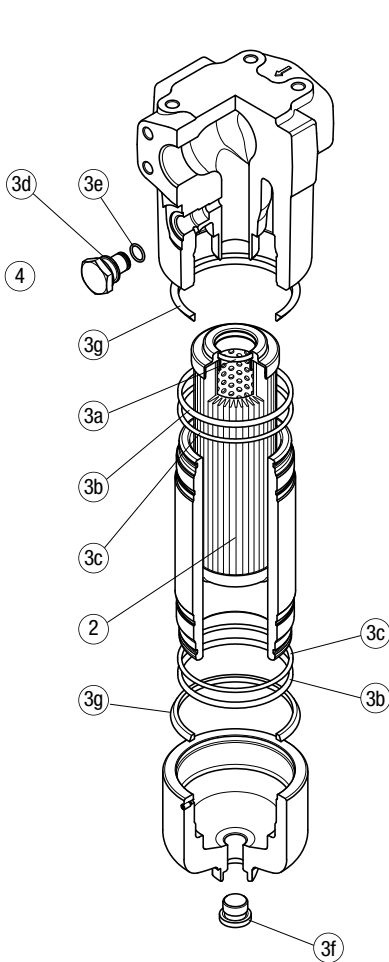
FHP 135



Q.ty: 1 pc.		Q.ty: 1 pc.		Q.ty: 1 pc.		Q.ty: 1 pc.		Q.ty: 1 pc.	
Item:	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
FHP 065	See order table	02050265	02050276	T2H	T2V	02001116	02001136	02001142	02001139
FHP 135		02050269	02050280			02001117	02001137	02001143	02001392

FHP 350

FHP 500



Q.ty: 1 pc.		Q.ty: 1 pc. (3a ÷ 3g for FHP 350) (3a ÷ 3f for FHP 500)		Q.ty: 1 pc.	
Item:	2	3		4	
Filter series	Filter element	Seal Kit code number		Indicator connection plug	
		NBR	FPM	NBR	FPM
FHP 350	See order table	02050272	02050283	T2H	T2V
FHP 500		02050330	02050331		