HYDRATECH
www.hydratech.no

MPH series

Maximum working pressure up to 1 MPa (10 bar) - Flow rate up to 3500 l/min



MPH GENERAL INFORMATION

Description

Return filter

Maximum working pressure up to 1 MPa (10 bar)
Flow rate up to 3500 l/min

MPH is a range of return filters for protection of the reservoir against the system contamination.
They are directly fixed to the reservoir, in immersed or semi-immersed position.
The use of the diffuser is recommended, to place the filter output always immersed into the fluid to avoid aeration or foam generation into the reservoir.
The filtration from inside to outside allows a cleaner filter element replacement, the dirty remains into the filter element.

Available features:
- Female threaded connections up to 1 1/2" and flanged connections up to 4", for a maximum flow rate of 3500 l/min
- Multiple connections, to connect several return lines or drains
- Fine filtration rating, to get a good cleanliness level into the reservoir
- Bypass valve, to relieve excessive pressure drop across the filter media
- Magnetic filter, to hold the ferrous particles
- 2, 3, 4 or 8 fixing holes for installation, to suit a variety of reservoir surfaces
- Flat Seal to suit a variety of reservoir surfaces
- Oil dipstick, to easily check the level of the fluid into the reservoir (separate item)
- Diffuser, to reduce the risk of aeration, foaming and noise
- Filler plug, to fill cleaned fluid into the tank without an additional plug
- Integrated breather filter, to clean the air that moves into the reservoir as result of the oil level fluctuation (MPH110/114)
- Integrated breather filter with pressurization valve, to clean the air that moves into the reservoir as result of the oil level fluctuation and to guarantee the pressurization into the reservoir (MPH110/114)
- Visual, electrical and electronic clogging indicators

Common applications:
Heavy duty industrial equipment

Technical data

Filter housing materials
- Head
  Aluminium: MPH 110-114-116-120-250
  Anodized Aluminium: MPH 630-850
  Painted Aluminium: MPH 660

- Cover
  Polyamide: MPH 110-114-116-120
  Aluminium: MPH 250
  Anodized Aluminium: MPH 630
  Painted Aluminium: MPH 660
  Steel: MPH 850

- Insert assembly
  Polyamide: MPH 110-114-116-120
  Aluminium: MPH 250-630-660-850

- Diffuser: Tinned Steel

- Valve: Phosphatized Steel

Bypass valve
- Opening pressure 175 kPa (1.75 bar)±10%
- Opening pressure 250 kPa (2.5 bar) ±10%, except for MPH 850

Δp element type
- Microfibre filter elements - series MR: 10 bar
- Fluid flow through the filter element from IN to OUT

Seals
- Standard NBR series A
- Optional FPM series V

Temperature
From -25 °C to +110 °C

Note
MPH 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
MPH 110		1.60	1.70	1.80	2.20	2.60		1.60	1.70	1.80	2.20	2.60
MPH 114		1.60	1.70	1.80	2.20	2.60		1.60	1.70	1.80	2.20	2.60
MPH 116		1.60	1.70	1.80	2.20	2.60		1.60	1.70	1.80	2.20	2.60
MPH 120		1.60	1.70	1.80	2.20	2.60		1.60	1.70	1.80	2.20	2.60
MPH 250		3.60	3.90	4.20	5.60	-		4.40	4.40	5.40	8.00	-
MPH 630		6.50	7.00	7.40	8.50	10.50		7.30	9.00	11.00	13.00	19.20
MPH 660		-	-	-	11.50	14.00		-	-	-	14.60	21.00
MPH 850		32.00	35.00	38.00	42.00	-		13.00	16.50	21.00	25.00	-

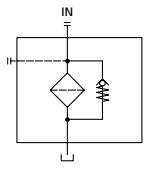
FILTER ASSEMBLY SIZING
Flow rates [l/min]

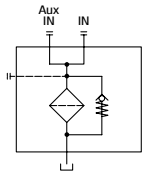
Filter series	Length	A03	A06	A10	A16	A25	M25 M60 M90	P10	P25
MPH 110-114 116-120	1	26	29	72	79	107	282	164	190
	2	43	46	112	114	161	318	164	190
	3	64	72	132	156	178	324	219	251
	4	90	99	184	198	216	324	266	302
	5	117	128	201	219	244	324	282	318
MPH 250	1	93	102	210	251	315	1093	339	383
	2	124	151	327	412	421	1122	460	514
	3	189	221	418	445	500	1137	544	616
	4	261	304	592	670	766	1166	832	923
MPH 630	1	160	200	369	423	518	1894	565	632
	2	240	257	571	611	1045	1929	1137	1285
	3	330	374	745	788	1308	1938	1416	1577
	4	374	403	887	1010	1348	1956	1448	1612
	5	625	698	1210	1257	1723	2121	1839	1929
MPH 660	4	370	399	903	1042	1460	2376	1596	1830
	5	624	699	1282	1343	1997	2663	2182	2331
MPH 850	1	775	1041	1246	1568	2242	3311	2371	2625
	2	1176	1522	1682	1747	2449	3378	2684	2886
	3	1490	1914	1995	2014	3035	3405	3144	3220
	4	1668	2088	2305	2363	3169	3517	3272	3378

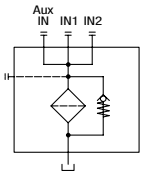
Maximum flow rate for a complete return filter with a pressure drop Δp = 0.5 bar.
The reference fluid has a kinematic viscosity of 30 mm^2/s (cSt) and a density of 0.86 kg/dm^3.
For different pressure drop or fluid viscosity we recommend to use our selection software available on www.mpfiltri.com.
You 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 1 connection	Style 2 connections	Style 3 connections
MPH 110	-	•	-
MPH 114	•	-	-
MPH 116	•	-	-
MPH 120	-	-	•
MPH 250	•	•	-
MPH 630	•	•	-
MPH 660	•	-	-
MPH 850	-	•	-

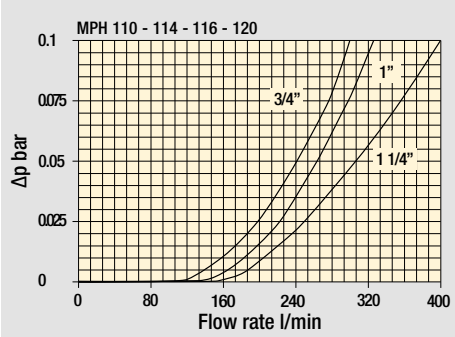


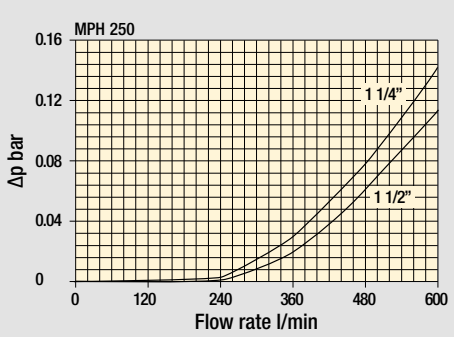


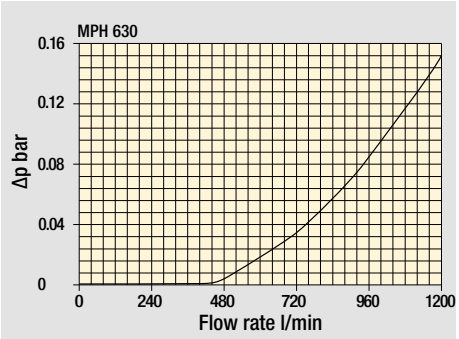


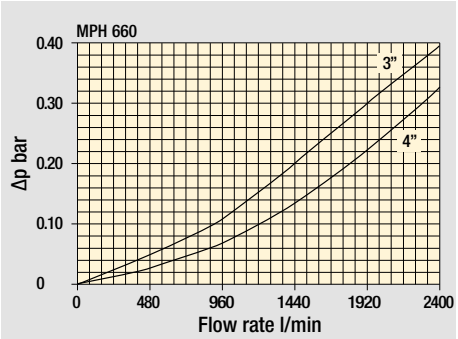
Pressure drop

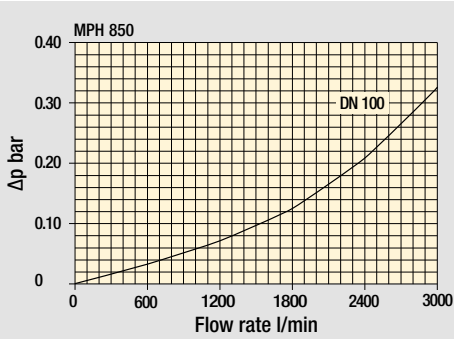
Filter housings Δp pressure drop



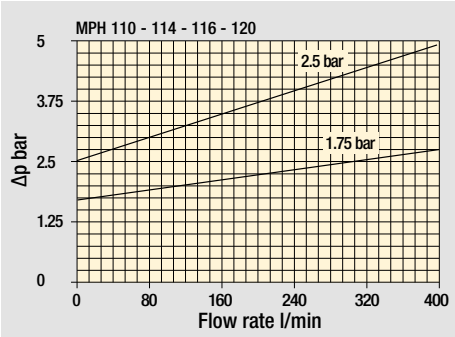


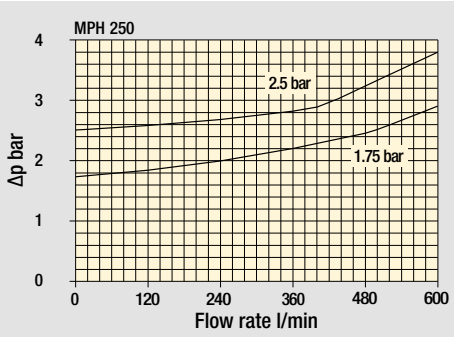


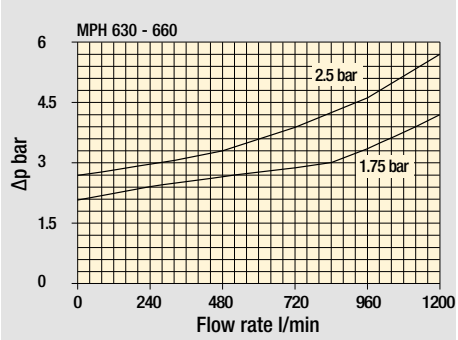


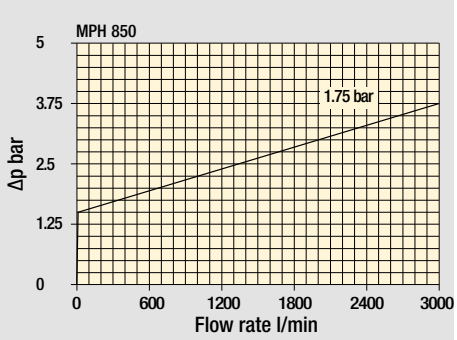


Bypass valve pressure drop

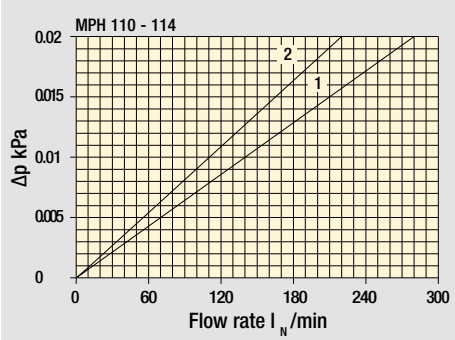








Air breather pressure drop



1 C With air breather 10 µm
2 D With anti-splash and SAP50 10 µm

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

Configuration example: MPH850 | 1 | C | D | S | A | F1 | A10 | P01

Series and size
MPH850

Length
1 | **2** | **3** | **4**

Bypass valve

S	Without bypass
C	1.75 bar

Diffuser and magnetic filter

D	With diffuser, with magnetic filter
F	With diffuser, without magnetic filter
O	Without diffuser, with magnetic filter
E	Without diffuser, without magnetic filter

Air breather

S	Without air breather

Seals and treatments

		Filtration rating Axx	Mxx	Pxx
A	NBR	•	•	•
V	FPM	•	•	•
W	NBR head anodized	•	•	-
Z	FPM head anodized	•	•	-

filter element compatible with fluids HFA-HFB-HFC

Main Connections	Rear connections
F1 UNI 2223 DN 100 PN 10/16	3” SAE 3000 psi/M
F2 UNI 2223 DN 100 PN 10/16	3” SAE 3000 psi/UNC
F5 Not machined	3” SAE 3000 psi/M
F6 Not machined	3” SAE 3000 psi/UNC
F7 4” SAE 3000 psi/M	3” SAE 3000 psi/M
F8 4” SAE 3000 psi/UNC	3” SAE 3000 psi/UNC

Filtration rating (filter media)

A03	Inorganic microfiber 3 µm	**M25**	Wire mesh 25 µm
A06	Inorganic microfiber 6 µm	**M60**	Wire mesh 60 µm
A10	Inorganic microfiber 10 µm	**M90**	Wire mesh 90 µm
A16	Inorganic microfiber 16 µm	**P10**	Resin impregnated paper 10 µm
A25	Inorganic microfiber 25 µm	**P25**	Resin impregnated paper 25 µm

Execution

P01	MP Filtri standard
Pxx	Customized

All filter media except M60, P10 and P25 are compatible with fluids HFA, HFB and HFC

FILTER ELEMENT

Configuration example: MR850 | 1 | A10 | A | P01

Element series and size
MR850

Element length
1 | **2** | **3** | **4**

Filtration rating (filter media)

A03	Inorganic microfiber 3 µm	**M25**	Wire mesh 25 µm
A06	Inorganic microfiber 6 µm	**M60**	Wire mesh 60 µm
A10	Inorganic microfiber 10 µm	**M90**	Wire mesh 90 µm
A16	Inorganic microfiber 16 µm	**P10**	Resin impregnated paper 10 µm
A25	Inorganic microfiber 25 µm	**P25**	Resin impregnated paper 25 µm

Seals

A	NBR
V	FPM

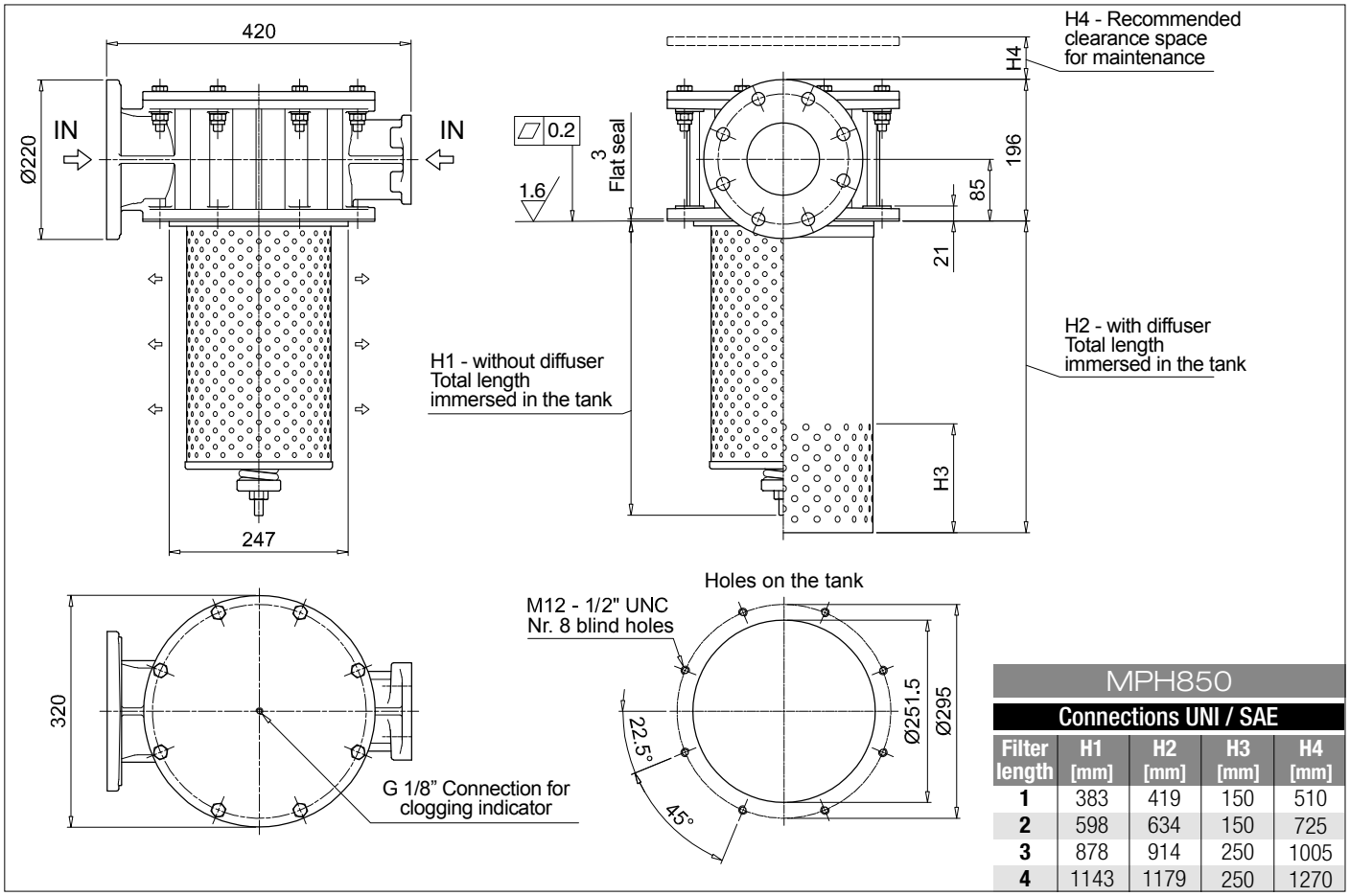
Execution

P01	MP Filtri standard
Pxx	Customized

CLOGGING INDICATORS

See page 680-681

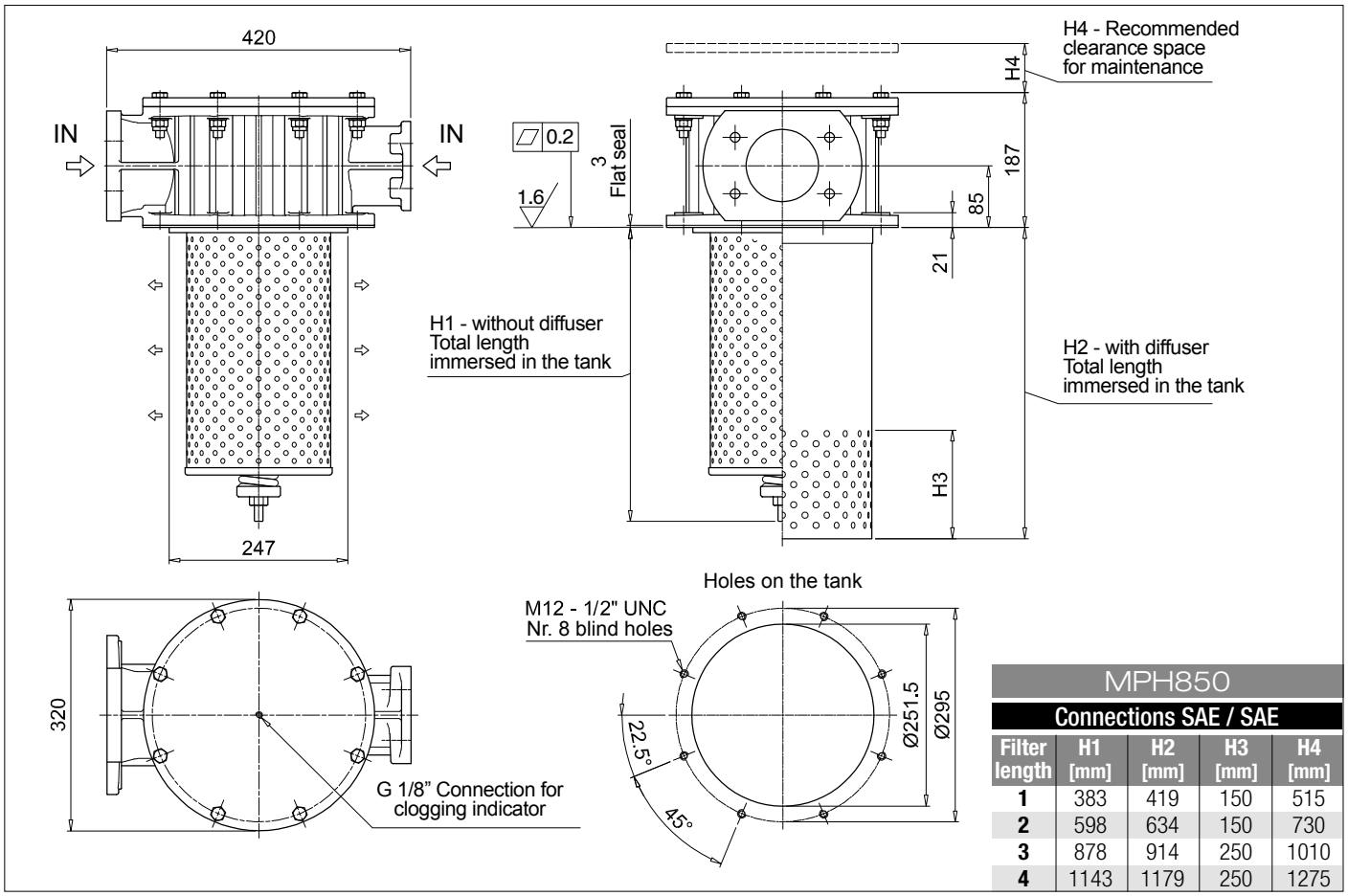
BVA	Axial pressure gauge
BVR	Radial pressure gauge
BVP	Visual pressure indicator with automatic reset
BVQ	Visual pressure indicator with manual reset
BEA	Electrical pressure indicator
BEM	Electrical pressure indicator
BLA	Electrical / visual pressure indicator



MPH850

Connections UNI / SAE

Filter length	H1 [mm]	H2 [mm]	H3 [mm]	H4 [mm]
1	383	419	150	510
2	598	634	150	725
3	878	914	250	1005
4	1143	1179	250	1270



MPH850

Connections SAE / SAE

Filter length	H1 [mm]	H2 [mm]	H3 [mm]	H4 [mm]
1	383	419	150	515
2	598	634	150	730
3	878	914	250	1010
4	1143	1179	250	1275