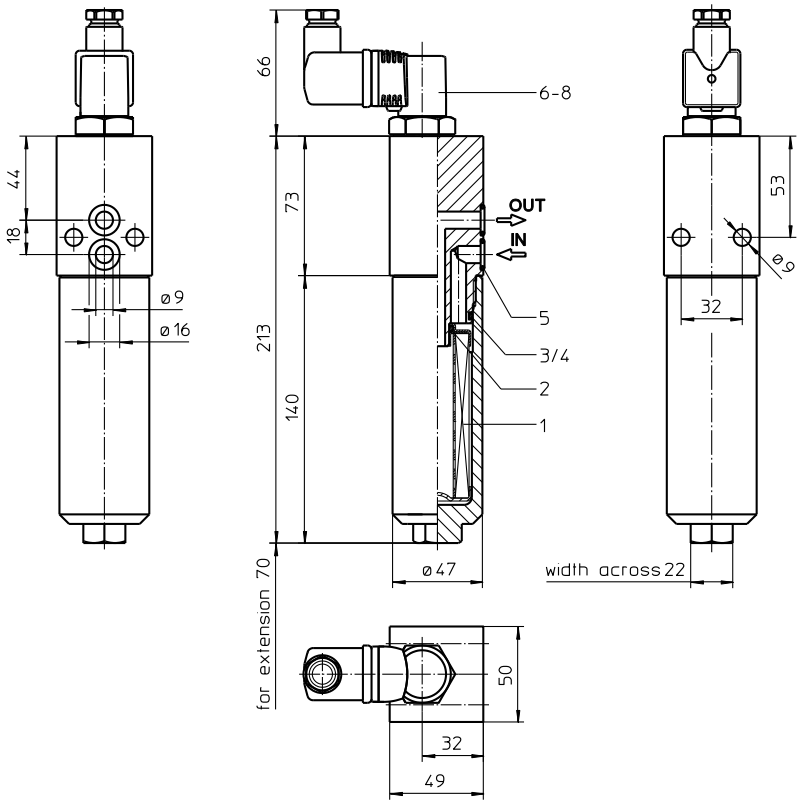
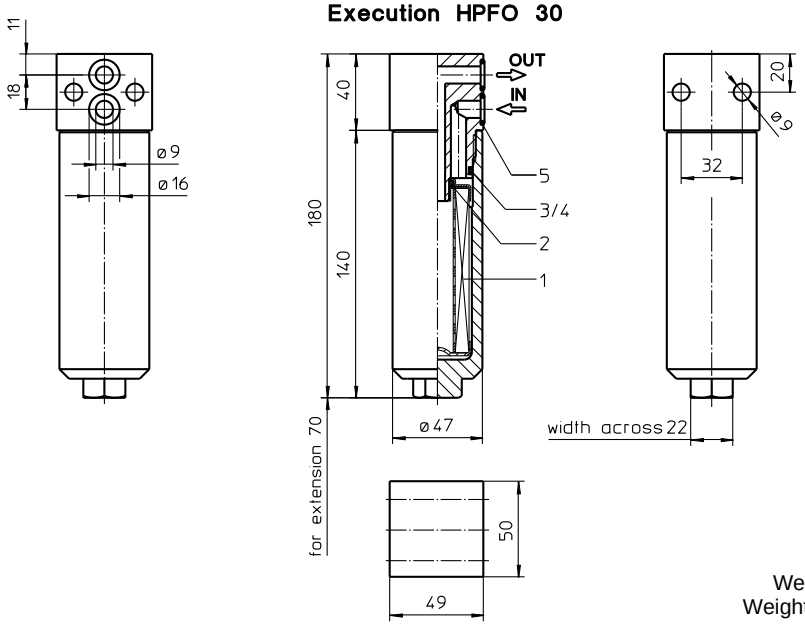
Series HPF-HPFO 30
DN10 PN315

Execution HPF 30



Execution HPFO 30



Weight with indicator: approx. 2,4 kg
Weight without indicator: approx. 1,8 kg

Dimensions: mm

Designs and performance values are subject to change.

Pressure Filter
Series HPF-HPFO 30
DN10 PN315

Description:

Pressure filter series HPF 30 and HPFO 30 have a working pressure up to 315 bar. Pressure peaks can be absorbed with a sufficient safety margin. The HPF-HPFO filters are flange mounted to the hydraulic system.

The filter element consists of star-shaped, pleated filter material, which is supported on the inside by a perforated core tube and is bonded to the end caps with a high-quality adhesive. The flow direction is from outside to inside. Filter elements are available down to 5 $\mu m_{(c)}$. Finer filtration is available upon request.

For cleaning the stainless steel mesh element (see special leaflets 21070-4 and 39448-4) or changing the filter element, remove the filter bowl and take out the element. The mesh elements are not guaranteed to maintain 100% performance after cleaning.

Eaton filter elements are known for high intrinsic stability and an excellent filtration capability, a high dirt-retaining capacity and a long service life.

Eaton filter can be used for petroleum-based fluids, HW emulsions, water glycols, most synthetic fluids and lubrication fluids. Consult factory for specific fluid applications.

Eaton filter elements are available up to a pressure resistance of Δp 160 bar and a rupture strength of Δp 250 bar.

Type index:

Complete filter: (ordering example)

HPF.	30.	10VG.	HR.	E.	P.	-.	F.	2.	-.	AE
1	2	3	4	5	6	7	8	9	10	11

1 **series:**
- HPF = pressure filter manifold mounted with indicator
- HPFO = pressure filter manifold mounted without indicator

2 **nominal size:** 30

3 **filter-material:**
- 80G, 40G, 25G stainless steel wire mesh
- 25VG, 16VG, 10VG, 6VG, 3VG microglass

4 **filter element collapse rating:**
- 30 = Δp 30 bar
- HR = Δp 160 bar (rupture strength Δp 250 bar)

5 **filter element design:**
- E = single-end open

6 **sealing material:**
- P = Nitrile (NBR)
- V = Viton (FPM)

7 **filter element specification:**
- - = standard
- VA = stainless steel
- IS06 = for HFC applications, see sheet-no. 31601

8 **process connection:**
- F = manifold mounted

9 **process connection size:**
- 2 = DN10

10 **filter housing specification:**
- - = standard
- IS06 = for HFC applications, see sheet-no. 31605

11 **clogging indicator or clogging sensor:**

-	= without	(HPFO 30)
AOR	= visual, see sheet-no. 1606	(HPF 30)
AOC	= visual, see sheet-no. 1606	(HPF 30)
AE	= visual-electric, see sheet-no. 1615	(HPF 30)
VS5	= electronic, see sheet-no. 1619	(HPF 30)

To add an indicator/sensor to your filter, use the corresponding indicator data sheet to find the indicator details and add them to the filter assembly model code.

Filter element: (ordering example)

01E.	30.	10VG.	HR.	E.	P.	-
1	2	3	4	5	6	7

1 **series:**
- 01E. = filter element according to company standard

2 **nominal size:** 30

3 - 7 see type index-complete filter

.

Technical data:

operating temperature:	-10°C to +100°C
operating medium	mineral oil, other media on request
max. operating pressure:	315 bar
test pressure:	450 bar
process connection:	manifold mounted
housing material:	C-steel
sealing material:	Nitrile (NBR) or Viton (FPM), other materials on request
installation position:	vertical
volume tank:	0,1 l

Classified under the Pressure Equipment Directive 2014/68/EU for mineral oil (fluid group 2), Article 4, Para. 3.
Classified under ATEX Directive 2014/34/EU according to specific application (see questionnaire sheet-no. 34279-4).

Pressure drop flow curves:

Filter calculation/sizing

The pressure drop of the assembly at a given flow rate Q is the sum of the housing ∆p and the element ∆p and is calculated as follows:

$\Delta p_{assembly} = \Delta p_{housing} + \Delta p_{element}$

$\Delta p_{housing}$ = *(see ∆p = f (Q) - characteristics)*

$$\Delta p_{element}\,(mbar) = Q\left(\frac{l}{min}\right) x \frac{MSK}{10}\left(\frac{mbar}{l/min}\right) x\ \nu\left(\frac{mm^2}{s}\right) x \frac{p}{0{,}876}\left(\frac{kg}{dm^3}\right)$$

For ease of calculation our Filter Selection tool is available online at www.eaton.com/hydraulic-filter-evaluation

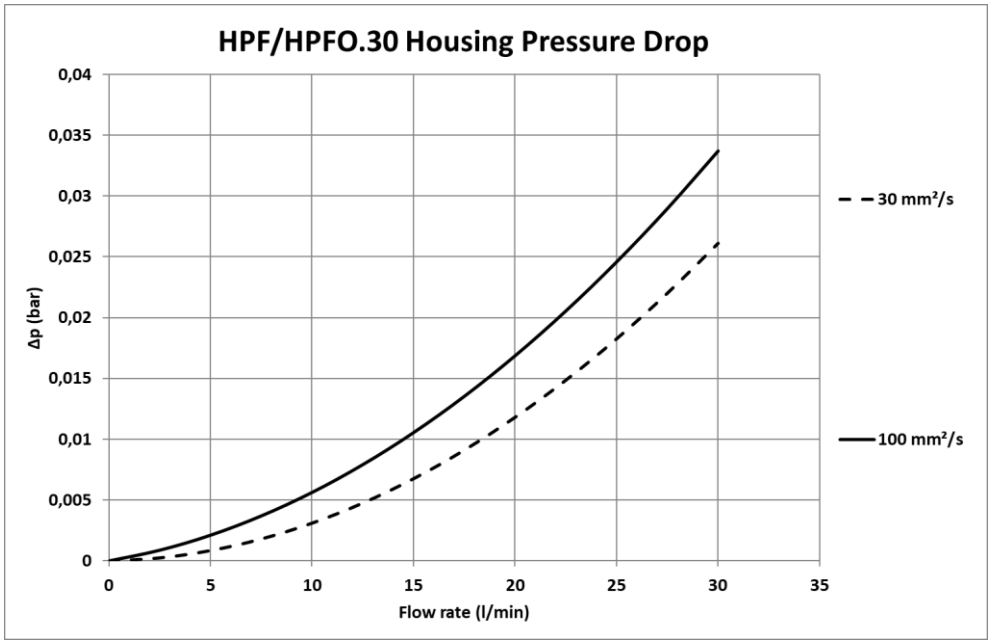
Material gradient coefficients (MSK) for filter elements

The material gradient coefficients in mbar/(l/min) apply to mineral oil (HLP) with a density of 0,876 kg/dm³ and a kinematic viscosity of 30 mm²/s (139 SUS). The pressure drop changes proportionally to the change in kinematic viscosity and density.

HPF-HPFO	VG					G		
	3VG	6VG	10VG	16VG	25VG	25G	40G	80G
30	10,116	7,023	4,496	3,915	2,674	0,2073	0,1935	0,1325

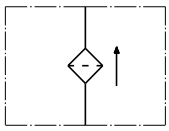
∆p = f(Q) – characteristics according to ISO 3968

The pressure drop characteristics apply to mineral oil (HLP) with a density of 0,876 kg/dm³. The pressure drop changes proportionally to the density.

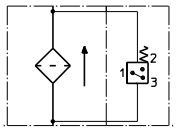


Symbols:

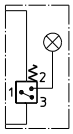
without indicator



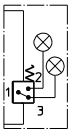
with electric indicator AE30 / AE40



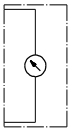
with visual-electric indicator AE50 / AE62



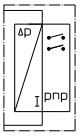
with visual-electric indicator AE70 / AE80 / AE90



with visual indicator AOR/AOC



with electronic clogging sensor VS5



Spare parts:

item	qty.	designation	dimension	article-no.	
1	1	filter element	01E.30…		
2	1	O-ring	11 x 3	312603 (NBR)	312727 (FPM)
3	1	O-ring	32 x 2,5	306843 (NBR)	308269 (FPM)
4	1	support ring	37 x 2,1 x 1	305466	
5	2	O-ring	12 x 2	311014 (NBR)	310271 (FPM)
6	1	clogging indicator visual	AOR or AOC	see sheet-no. 1606	
7	1	clogging indicator visual-electric	AE	see sheet-no. 1615	
8	1	clogging sensor electronic	VS5	see sheet-no. 1619	

Test methods:

Filter elements are tested according to the following ISO standards:

ISO 2941	Verification of collapse/burst resistance
ISO 2942	Verification of fabrication integrity
ISO 2943	Verification of material compatibility with fluids
ISO 3723	Method for end load test
ISO 3724	Verification of flow fatigue characteristics
ISO 3968	Evaluation of pressure drop versus flow characteristics
ISO 16889	Multi-pass method for evaluating filtration performance

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