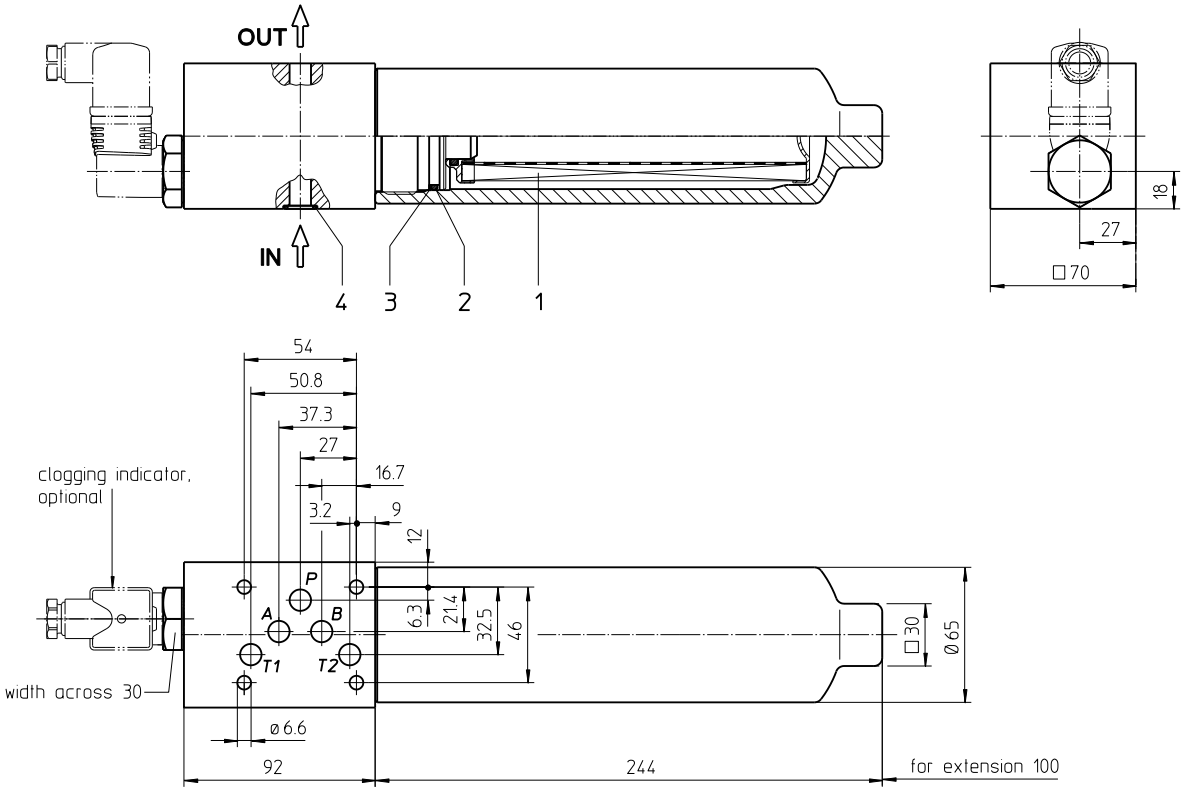
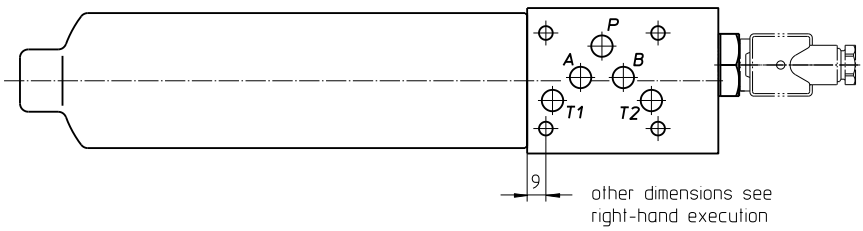
Series HPZ 90
DN10 PN350

Right hand installation



Left hand installation



Weight: approx. 6,5 kg

Dimensions: mm

Designs and performance values are subject to change.

Powering Business Worldwide

Pressure Filter
Series HPZ 90
DN10 PN350

Description:

The HPZ series filter is a valve protection filter according to DIN 24340-A10. These pressure filters are mounted between the valve and manifold to provide extra protection for critical valves. The HPZ filter can be mounted on either side of the valve for easy filter maintenance, depending on the filter configuration.

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

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.

1. Type index:

1.1. Complete filter: (ordering example)

HPZ.	90.	10VG.	HR.	E.	P.	-.	Z.	2.	-.	R.	AE
1	2	3	4	5	6	7	8	9	10	11	12

1 **series:**
HPZ = pressure filter for sandwich stacking

2 **nominal size:** 90

3 **filter-material and filter-fineness:**
80G, 40G, 25G, 10G 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

8 **process connection:**
Z = sandwich stacking according to DIN 24340, T2

9 **process connection size:**
2 = A10 according to DIN 24340, T2

10 **filter housing specification:**
- = standard

11 **head design:**
R = right-hand installation
L = left-hand installation

12 **clogging indicator or clogging sensor:**
- = without
AOR = visual, see sheet-no. 1606
AOC = visual, see sheet-no. 1606
AE = visual-electric, see sheet-no. 1615
VS5 = electronic, see sheet-no. 1619

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

1.2. Filter element: (ordering example)

01E.	90.	10VG.	HR.	E.	P.	-
1	2	3	4	5	6	7

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

2 **nominal size:** 90

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:	350 bar
test pressure:	500 bar
process connection:	sandwich stacking according to DIN 24340-A10
housing material:	EN-GJS-400-18-LT, C-steel (filter bowl)
sealing material:	Nitrile (NBR) or Viton (FPM), other materials on request
installation position:	vertical (preferably) horizontal
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 $\Delta p = f(Q)$ - 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

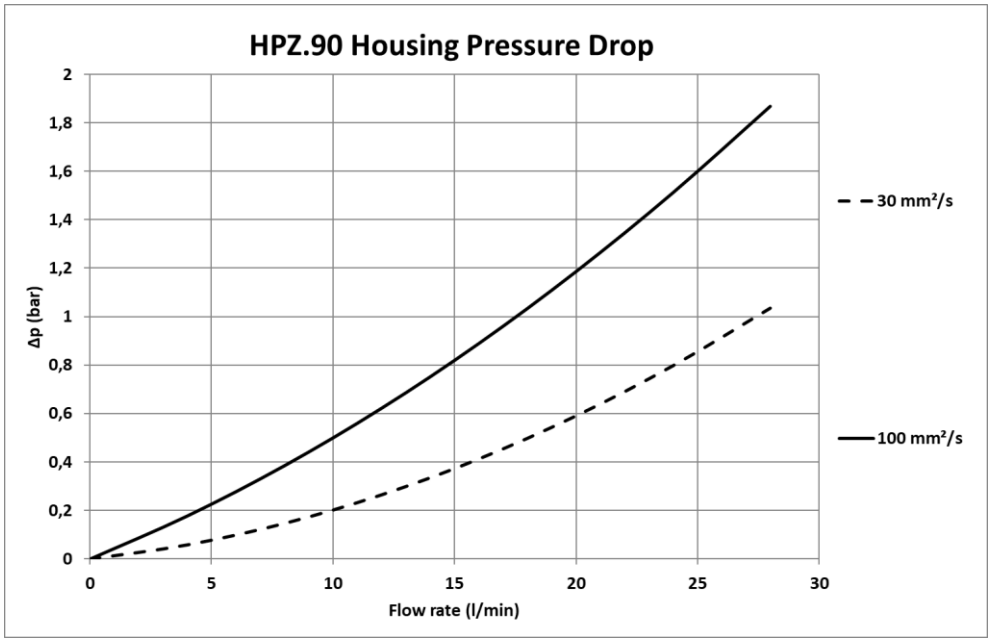
Material gradient coefficients (MSK) for filter elements

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.

HPZ	VG					G		
	3VG	6VG	10VG	16VG	25VG	25G	40G	80G
90	3,271	2,271	1,454	1,266	0,865	0,1333	0,0988	0,0922

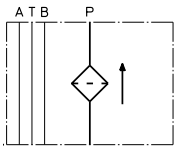
∆p = f(Q) – characteristics according to ISO 3968

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.

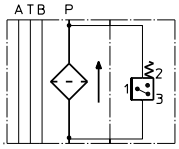


Symbols:

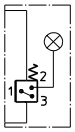
without indicator



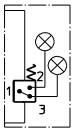
with electric indicator
AE30 / AE40



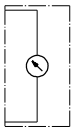
with visual-electric indicator
AE50 / AE62



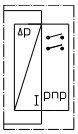
with visual-electric indicator
AE70 / AE80 / AE90



with visual indicator
AOR / AOC



with electronic clogging sensor
VS5



Spare parts:

item	qty.	designation	dimension	article-no.	
1	1	filer element	01E.90…		
2	1	O-ring	45 x 3	304991 (NBR)	304997 (FPM)
3	1	support ring	SRA 52 x 2,6 x 1	305466	
4	4	O-ring	12 x 2	311014 (NBR)	310271 (FPM)

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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