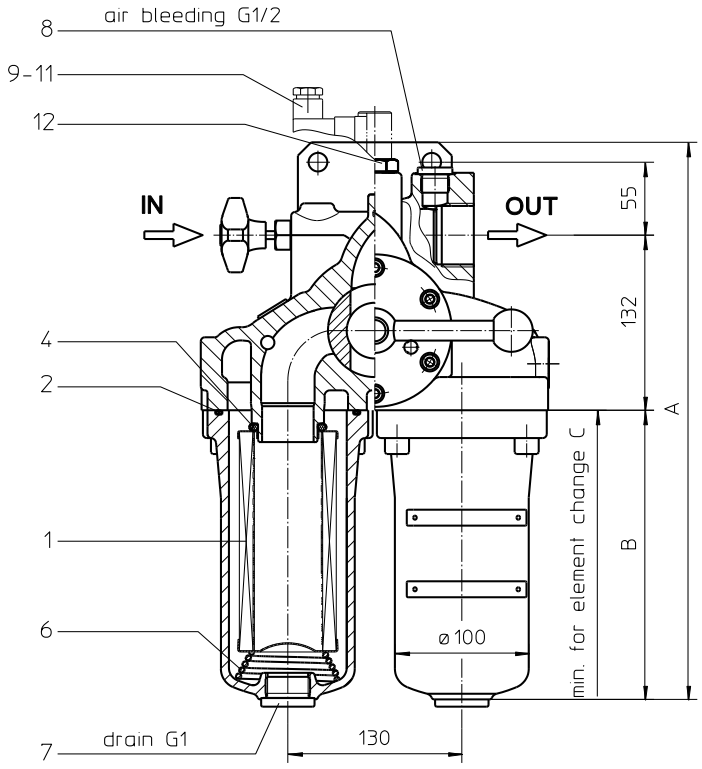
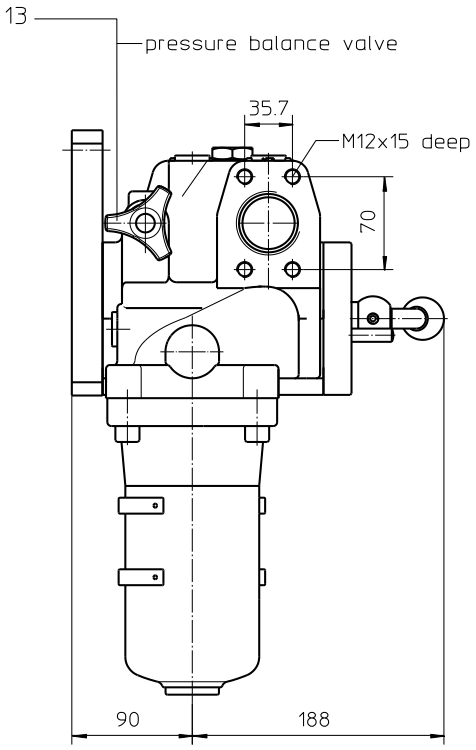
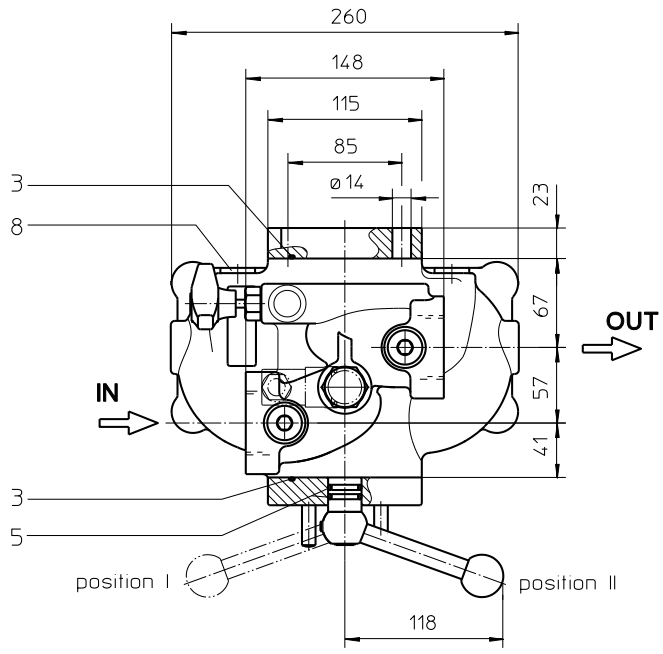
Series DSF 180-340
DN40 PN25







Dimensions:

type	DSF180	DSF 340
A	420	555
B	218	353
C	250	390
weight kg	40	44
volume tank	2x 1,2 l	2x 2,0 l

Information:
Execution IN right / OUT left
see sheet-no. 2148

Position I: Left filter-side in operation
Position II: Right filter-side in operation

Dimensions: mm

Designs and performance values are subject to change.

Pressure Filter, change over
Series DSF 180-340
DN40 PN25

Description:

Pressure filter change over series DSF 180-340 have a working pressure up to 25 bar. Pressure peaks can be absorbed with a sufficient safety margin.

A three-way-change-over valve which is integrated in the middle of the housing makes it possible to switch from the dirty filter-side to the clean filter-side without interruting operation. The filters can be installed as suction filter, pressure filter or return-line filter.

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.

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

For filtration finer than 40 µm, use the disposable elements made of microglass. Filter elements as fine as 5 µm(c) are available; finer filter elements are available upon request.

Eaton filter elements are known for a 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.

Ship classifications available upon request.

Type index:

Complete filter: (ordering example)

DSF.	180.	10VG.	16.	E.	P.	-.	FS.	7.	-.	-.	AE
1	2	3	4	5	6	7	8	9	10	11	13

1 **series:**
DSF = duplex filter

2 **nominal size:** 180, 340

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

4 **filter element collapse rating:**
16 = ∆p 16 bar

5 **filter element design:**
E = single end open
S1 = with bypass valve ∆p 3,5 bar
S2 = with bypass valve ∆p 7,0 bar

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

7 **filter element specification:**
- = standard
VA = stainless steel

8 **process connection:**
FS = SAE-flange connection 3000 PSI
G = thread connection according to DIN 3852, T2

9 **process connection size:**
7 = 1 ½"

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

11 **internal valve:**
- = without

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/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.	175.	10VG.	16.	E.	P.	-
1	2	3	4	5	6	7

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

2 **nominal size:** 175, 330

3 - 7 see type index complete filter

Accessories:

- SAE-counter flanges, see sheet-no. 1652

Technical data:

design temperature:	-10°C to +100°C
operating temperature:	-10°C to +80°C
operating medium:	mineral oil, other media on request
max. operating pressure:	25 bar
test pressure:	50 bar
process connection:	SAE-flange connection 3000 PSI or thread connection DIN3852, T2
housing material:	EN-GJS-400-18-LT
sealing material:	Nitrile (NBR) or Viton (FPM), other materials on request
installation position:	vertical

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 Δp and the element Δp and is calculated as follows:

$\Delta p_{assembly} = \Delta p_{housing} + \Delta p_{element}$
$\Delta p_{housing}$ = *(see Δp = 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

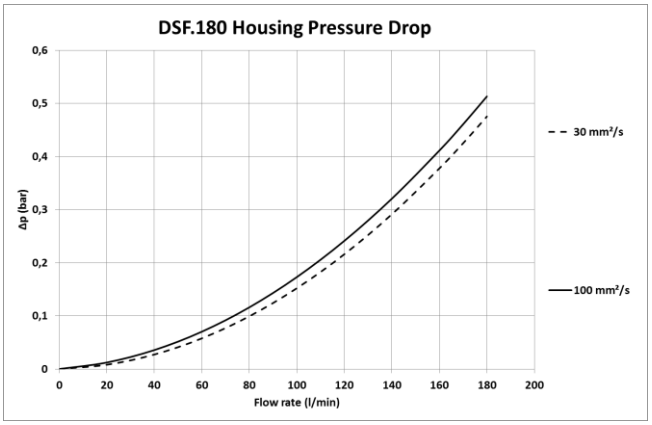
Material gradient coefficients (MSK) for filter elements

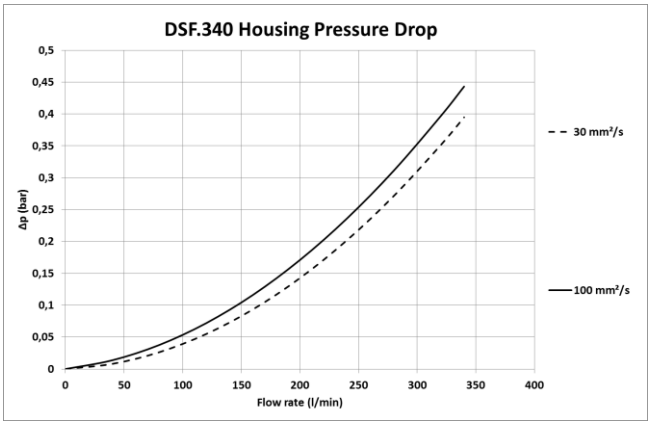
The material gradient coefficients in mbar/(l/min) apply to mineral oil (HLP) with a density of 0,876 kg/dm³ and a kinematic viscosity of 30 mm²/s (139 SUS). The pressure drop changes proportionally to the change in kinematic viscosity and density.

DSF	VG					G			P
	3VG	6VG	10VG	16VG	25VG	25G	40G	80G	10P
180	1,724	1,197	0,766	0,667	0,456	0,0607	0,0567	0,0388	0,36
340	0,956	0,664	0,425	0,370	0,253	0,0344	0,0321	0,0220	0,20

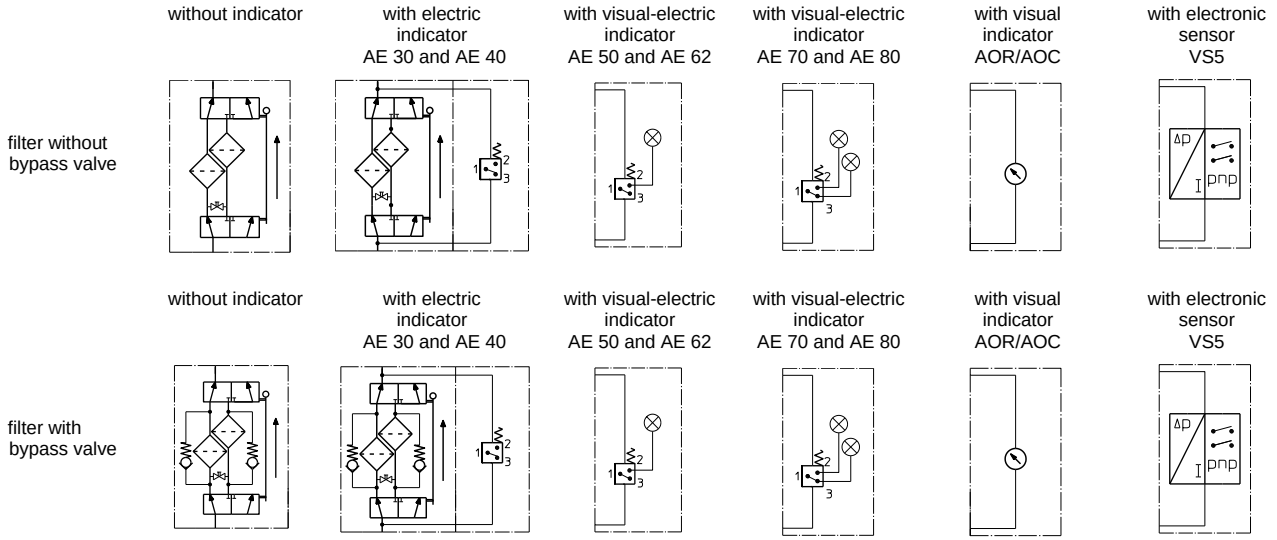
Δp = f(Q) – characteristics according to ISO 3968

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:



Spare parts:

item	qty.	designation	dimension		article-no.	
			DSF 180	DSF 340		
1	2	filter element	01E.175…	01E.330…		
2	2	O-ring	98 x 4		301914 (NBR)	304765 (FPM)
3	2	O-ring	75 x 3		302215 (NBR)	304729 (FPM)
4	2	O-ring	44 x 6		302222 (NBR)	304384 (FPM)
5	2	O-ring	18 x 3		304359 (NBR)	304399 (FPM)
6	2	Feder	Da = 52		304989	
7	2	screw plug	G 1		305303	
8	4	screw plug	G ½		304678	
9	1	clogging indicator, visual	AOR or AOC		see sheet-no 1606	
10	1	clogging indicator, visual-electric	AE		see sheet-no 1615	
11	1	clogging sensor, electronic	VS5		see sheet-no 1619	
12	1	screw plug	20913-4		309817	
13	1	pressure balance valve	DN10		305000	

item 12 execution only without clogging indicator or clogging sensor

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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