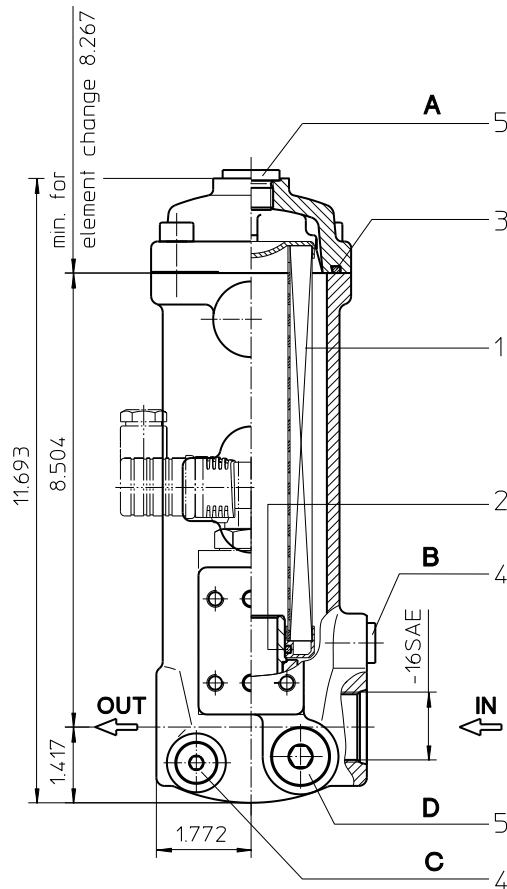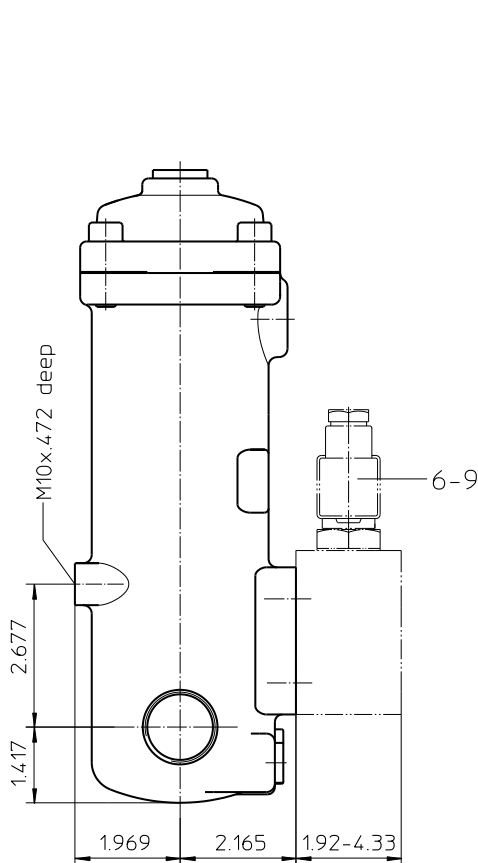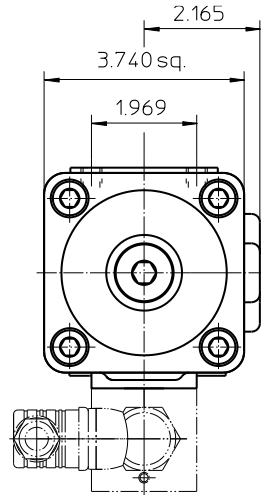# Series LF 101
464 PSI

Assignment of connections and functions

A: air bleeding BSPP1/2
B: mini-measuring connection BSPP1/4 dirt side
C: mini-measuring connection BSPP1/4 clean side
D: drain BSPP1/2 dirt side

Weight: approx. 9 lbs.

Dimensions: inches

Designs and performance values are subject to change.

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Pressure Filter
Series LF 101
464 PSI

Description:

In-line filters of the type LF 101 are suitable for a working pressure up to 464 PSI. Pressure peaks are absorbed with a sufficient margin of safety. It can be used as suction filter, pressure filter and 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)

LF. 101. 10VG. 16. E. P. -. UG. 5. -. -. -. AE
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |

1 | **series:**
LF = in-line filter

2 | **nominal size:** 101

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

4 | **filter element collapse rating:**
16 = Δp 232 PSI

5 | **filter element design:**
E = single end open
S = with bypass valve Δp 29 PSI
S1 = with bypass valve Δp 51 PSI

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

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

8 | **process connection::**
UG = thread connection

9 | **process connection size:**
5 = -16 SAE

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

11 | **pressure vessel specification:**
- = standard (PED 2014/68/EU)

12 | **internal valve:**
- = without

13 | **clogging indicator or clogging sensor:**
- = without
AE = visual-electric, see sheet-no.1609
OP = visual, see sheet-no.1628
OE = visual-electric, see sheet-no.1628
VS5 = electronic, see sheet-no.1641

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)

01N. 100. 10VG. 16. E. P. -
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

1 | **series:**
01N = filter element according to company standard

2 | **nominal size:** 100

3 - **7** | see type index complete filter

Technical data:

operating temperature:	+14 °F to +212 °F
operating medium:	mineral oil, other media on request
max. operating pressure:	464 bar
test pressure:	900 bar
process connection:	thread connection
housing material:	aluminium-cast
sealing material:	Nitrile (NBR) or Viton (FPM), other materials on request
installation position:	vertical
measuring connections:	BSPP ¼
drain- and bleeder connections:	BSPP ½
volume tank:	.26 Gal.

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:

$\Delta p \text{ assembly} = \Delta p \text{ housing} + \Delta p \text{ element}$
$\Delta p \text{ housing} = (see \Delta p = f (Q) - characteristics)$

$$\Delta p \text{ element} (PSI) = \ Q \ (GPM) \ x \ \frac{MSK}{1000} \left(\frac{PSI}{GPM}\right) x \ \nu \ (SUS) \ x \ \frac{\rho}{0.876} \left(\frac{kg}{dm^3}\right)$$

For ease of calculation our Filter Selection tool is available online at www.eatonpowersource.com/calculators/filtration/
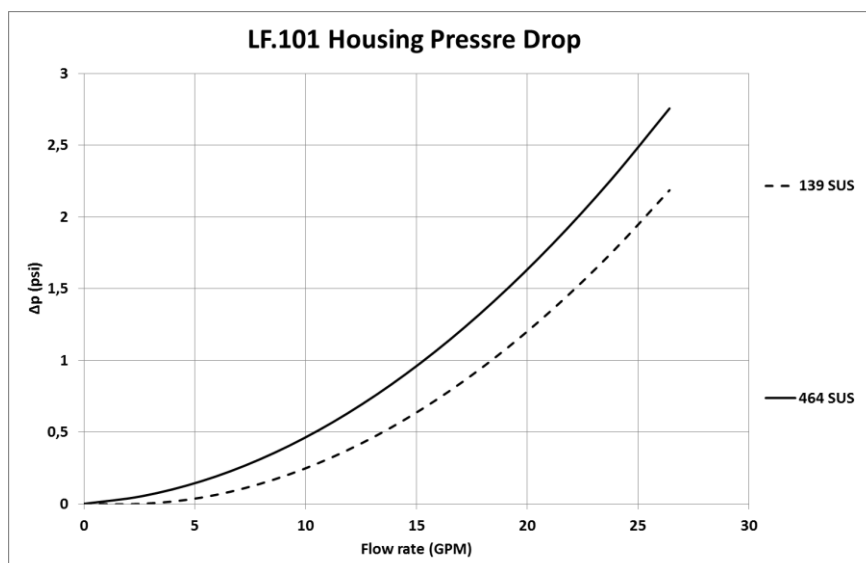
Material gradient coefficients (MSK) for filter elements

The material gradient coefficients in psi/gpm apply to mineral oil (HLP) with a density of 0.876 kg/dm³ and a kinematic viscosity of 139 SUS (30 mm²/s). The pressure drop changes proportionally to the change in kinematic viscosity and density.
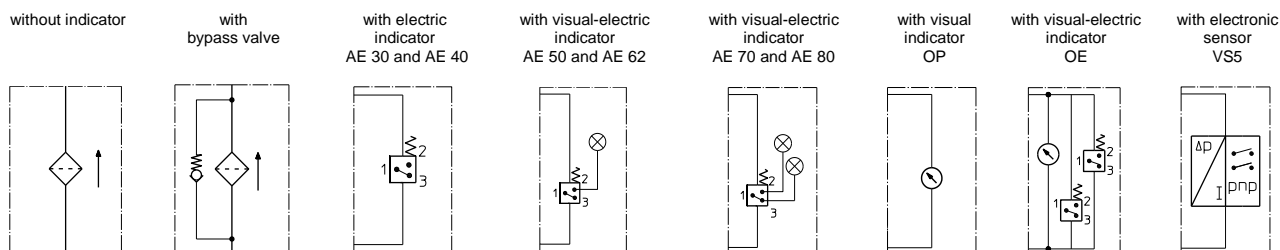
LF	VG					G			API	
	3VG	6VG	10VG	16VG	25VG	25G	40G	80G	10API	25API
101	2.473	1.717	1.099	0.957	0.654	0.0651	0.0607	0.0416	0.582	0.266

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:

| without indicator | with bypass valve | with electric indicator AE 30 and AE 40 | with visual-electric indicator AE 50 and AE 62 | with visual-electric indicator AE 70 and AE 80 | with visual indicator OP | with visual-electric indicator OE | with electronic sensor VS5 |

Spare parts:

item	qty.	designation	dimension	article no.	
1	1	filter element	01N.100…		
2	1	O-ring	32 x 3,5	304378 (NBR)	304401 (FPM)
3	1	O-ring	76 x 4	305599 (NBR)	310291 (FPM)
4	2	screw plug	BSPP ¼	305003	
5	2	screw plug	BSPP ½	304678	
6	1	clogging indicator, visual	OP	see sheet no. 1628	
7	1	clogging indicator, visual-electric	OE	see sheet no. 1628	
8	1	clogging indicator, visual-electric	AE	see sheet no. 1609	
9	1	clogging indicator, electronic	VS 5	see sheet no. 1641	

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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