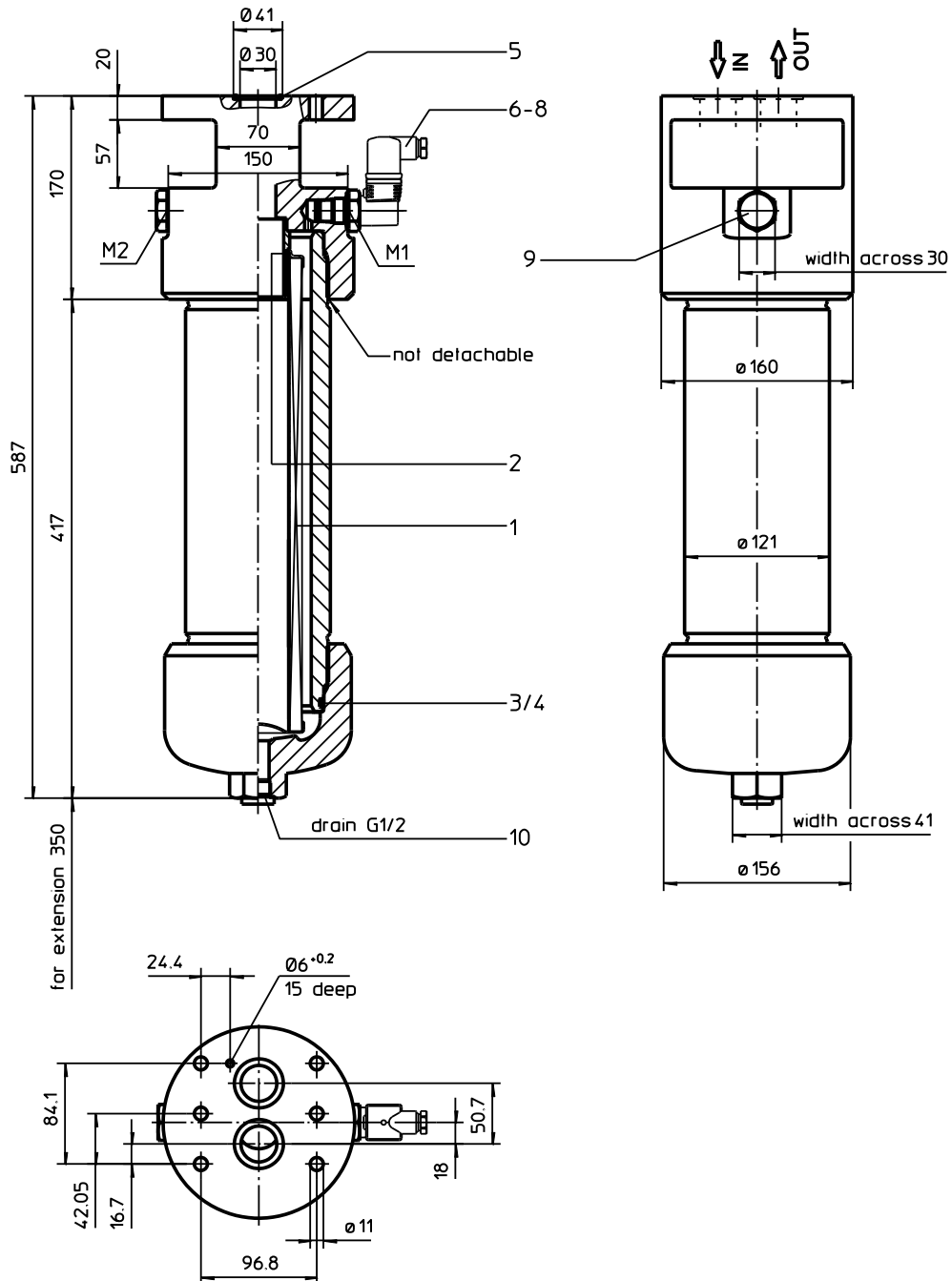


# Series HNU 401

## DN32 PN315



Weight: approx. 42 kg.

Dimensions: mm

Designs and performance values are subject to change.

EDV 11/21

# Pressure Filter

## Series HNU 401

### DN32 PN315

#### Description:

Pressure filter series HNU 401 have a working pressure up to 315 bar. Pressure peaks can be absorbed with a sufficient safety margin. The HNU-filters are flange to the mounting-surface.

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 4  $\mu\text{m}_{(c)}$ . 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 pipe plug 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  $\Delta p$  160 bar and a rupture strength of  $\Delta p$  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.

The internal valve is integrated into the filter head. After reaching the bypass pressure setting, the bypass valve will send unfiltered partial flow around the filter.

#### Type index:

#### Complete filter: (ordering example)

**HNU. 401. 10VG. HR. E. P. - . P. 6. - . - . AE. -**

1	2	3	4	5	6	7	8	9	10	11	12	13
---	---	---	---	---	---	---	---	---	----	----	----	----

- 1 | **series**  
HNU = pressure filter, manifold mounted
- 2 | **nominal size:** 601, 901, 1351
- 3 | **filter material:**  
80G, 40G, 25G stainless steel wire mesh  
25VG, 16VG, 10VG, 6VG, 3VG microglass
- 4 | **filter element collapse rating:**  
30 =  $\Delta p$  30 bar  
HR =  $\Delta p$  160 bar (rupture strength  $\Delta p$  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 application, see sheet-no. 31601
- 8 | **process connection:**  
P = manifold mounted
- 9 | **process connection size:**  
6 = DN32
- 10 | **filter housing specification:**  
- = standard  
IS06 = for HFC application, see sheet-no. 31605
- 11 | **internal valve:**  
- = without  
S1 = with by-pass valve  $\Delta p$  3,5 bar  
S2 = with by-pass valve  $\Delta p$  7,0 bar
- 12 | **clogging indicator at M1:**  
- = 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
- 13 | **clogging indicator at M2:**  
possible indicators see position 12 of the type index

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)

**01NL. 400. 10VG. HR. E. P. -**

1	2	3	4	5	6	7
---	---	---	---	---	---	---

- 1 | **series:**  
01NL. = standard filter element according to DIN 24550, T3
- 2 | **nominal size:** 400
- 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:	2,5 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  $\Delta p$  and the element  $\Delta p$  and is calculated as follows:

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

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

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

For ease of calculation our Filter Selection tool is available online at [www.eaton.com/hydraulic-filter-evaluation](http://www.eaton.com/hydraulic-filter-evaluation)

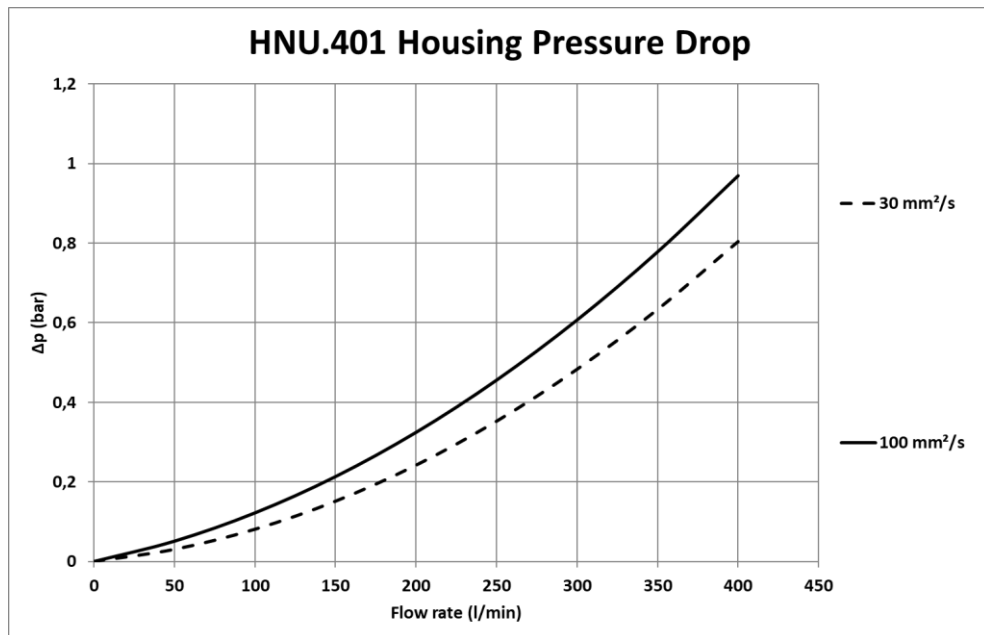
### Material gradient coefficients (MSK) for filter elements

The material gradient coefficients in mbar/(l/min) apply to mineral oil (HLP) with a density of 0,876 kg/dm<sup>3</sup> and a kinematic viscosity of 30 mm<sup>2</sup>/s (139 SUS). The pressure drop changes proportionally to the change in kinematic viscosity and density.

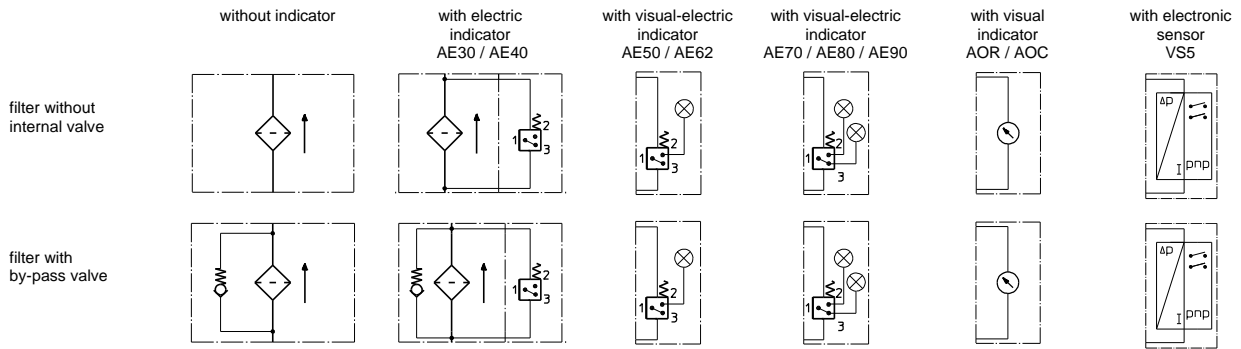
HNU	VG					G		
	3VG	6VG	10VG	16VG	25VG	25G	40G	80G
401	0,571	0,397	0,254	0,221	0,151	0,0169	0,0158	0,0108

### $\Delta p = f(Q)$ – characteristics according to ISO 3968

The pressure drop characteristics apply to mineral oil (HLP) with a density of 0,876 kg/dm<sup>3</sup>. The pressure drop changes proportionally to the density.



## Symbols:



## Spare parts:

item	qty.	designation	dimension	article-no.
1	1	filter element	01NL.400...	
2	1	O-ring	48 x 3	304357 (NBR)   304404 (FPM)
3	1	O-ring	98 x 4	301914 (NBR)   304765 (FPM)
4	1	support ring	110 x 3,5 x 2	304802
5	2	O-ring	34 x 3,5	304338 (NBR)   304730 (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
9	1	screw plug	20913-4	309817
10	1	screw plug	G ½	304678

item 9 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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