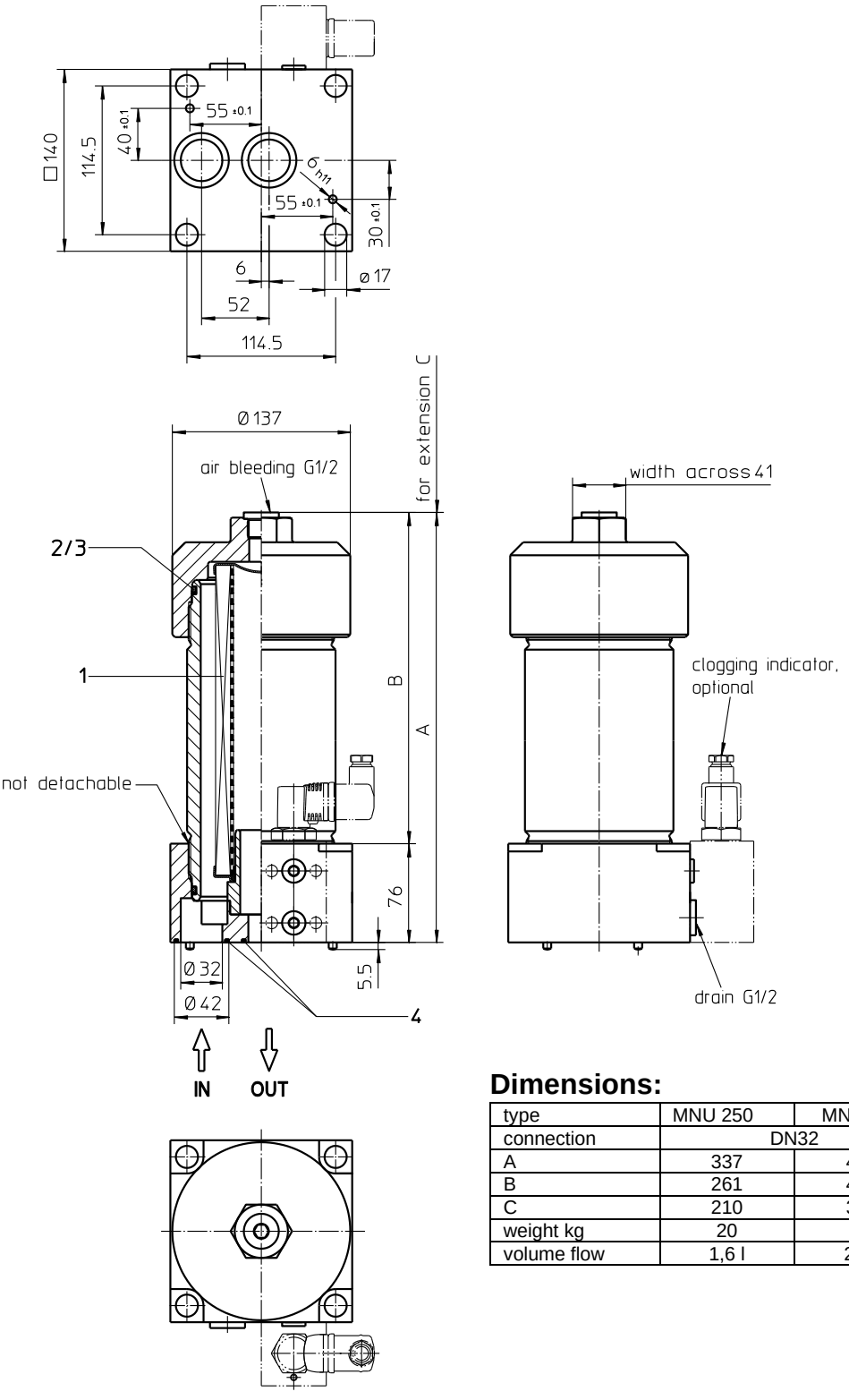
Series MNU 250-400
DN32 PN250



Dimensions:

type	MNU 250	MNU 400
connection	DN32	
A	337	487
B	261	411
C	210	360
weight kg	20	24
volume flow	1,6 l	2,6 l

Dimensions: mm

Designs and performance values are subject to change.

Pressure Filter
Series MNU 250-400
DN32 PN250

Description:

Pressure filter series MNU 25-400 have a working pressure up to 250 bar. Pressure peaks can be absorbed with a sufficient safety margin. The MNU-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 4 $\mu m_{(c)}$. 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 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 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.

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)

MNU.	250.	10VG.	30.	E.	P.	-.	P.	6.	-.	-.	AE
1	2	3	4	5	6	7	8	9	10	11	12

1 **series**
MNU = medium pressure standard filter

2 **nominal size:** 250, 400

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

8 **process connection:**
P = manifold mounted

9 **process connection size:**
6 = DN32

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

11 **internal valve:**
- = without
S1 = with by-pass valve Δp 3,5 bar
S2 = with by-pass valve Δp 7,0 bar

12 **clogging indicator or clogging sensor:**
- = without
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)

01NL.	250.	10VG.	30.	E.	P.	-
1	2	3	4	5	6	7

1 **series:**
01NL. = standard filter element according to DIN 24550, T3

2 **nominal size:** 250, 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:	250 bar
test pressure:	358 bar
process connection:	manifold mounted
housing material:	C-steel
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 ∆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

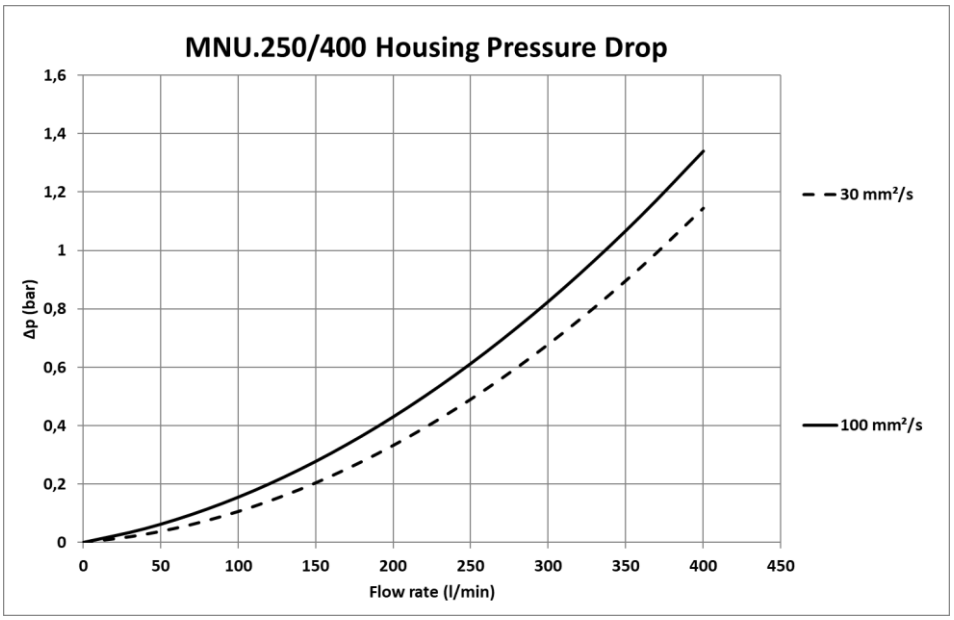
Material gradient coefficients (MSK) for filter elements

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.

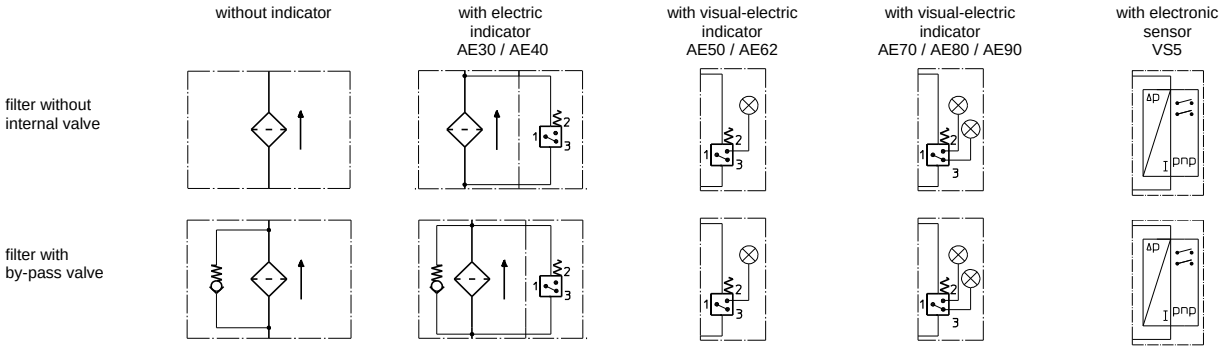
MNU	VG					G		
	3VG	6VG	10VG	16VG	25VG	25G	40G	80G
250	0,931	0,646	0,414	0,360	0,246	0,0277	0,0258	0,0177
400	0,571	0,397	0,254	0,221	0,151	0,0169	0,0158	0,0108

∆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:



Spare parts:

item	qty.	designation	dimension		article-no.	
1	1	filter element	01.NL250…	01.NL400…		
2	1	O-ring	98 x 4		301914 (NBR)	304765 (FPM)
3	1	support ring	110 x 3,5 x 2		304802	
4	2	O-ring	34 x 3,5		304338 (NBR)	304730 (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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