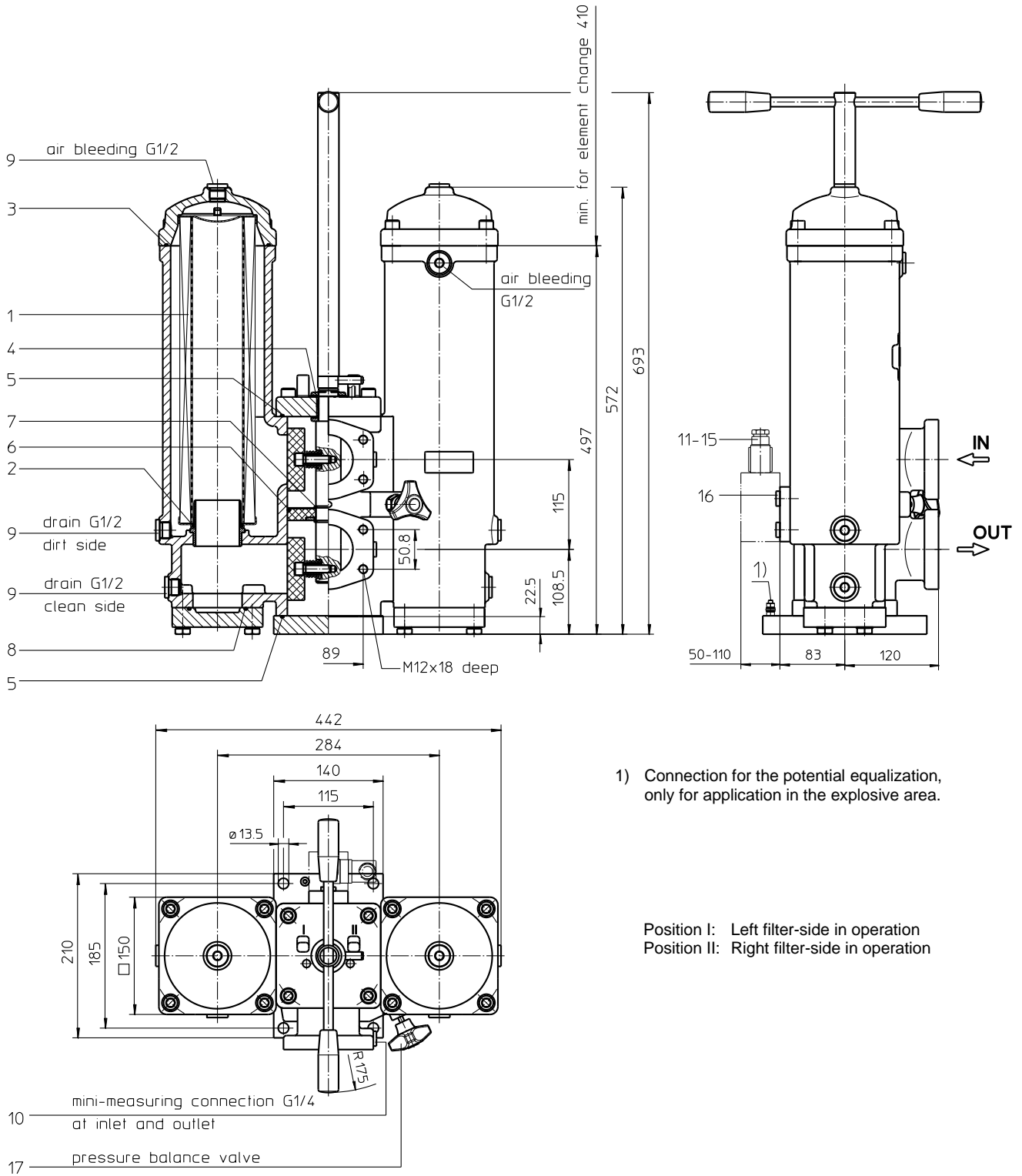


Series DU 631 DN65 PN32



1) Connection for the potential equalization, only for application in the explosive area.

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

weight: approx. 76 kg

Dimensions: mm

Designs and performance values are subject to change.



Powering Business Worldwide

Pressure Filter, change over Series DU 631 DN65 PN32

Description:

Pressure filter change over series DU 631 have a working pressure up to 32 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 interrupting operation. These filters can be installed as suction filters.

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)

DU. 631. 10VG. 30. E. P. -. FS. 9. -. -. -. AE

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

- 1 | **series:**
DU = pressure filter, changeover
- 2 | **nominal size:** 631
- 3 | **filter-material:**
80G, 40G, 25G stainless steel wire mesh
25VG, 16VG, 10VG, 6VG, 3VG microglass
25API, 10API microglass according to API
10P paper
- 4 | **filter element collapse rating:**
30 = Δp 30 bar
- 5 | **filter element design:**
E = single end open
S = with bypass valve Δp 2,0 bar
S1 = with bypass valve Δp 3,5 bar
- 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
IS07 = for oil/amonia mixtures (NH₃), see sheet-no. 31602
- 8 | **process connection:**
FS = SAE-flange connection 3000 PSI
- 9 | **process connection size:**
9 = 2 ½"
- 10 | **filter housing specification:**
- = standard
IS12 = internal parts of change over armature stainless steel, see sheet-no. 41028
- 11 | **pressure vessel specification:**
- = standard (PED 2014/68/EU)
IS20 = ASME VIII Div.1 with ASME equivalent material, see sheet-no. 55217 (max. operating pressure 16 bar)
IS14 = pressure vessel parts are calculated acc. to EN 13445 see sheet-no. 69828 (max. operating pressure 10 bar)
- 12 | **internal valve:**
- = without
- 13 | **clogging indicator or clogging sensor:**
- = without
AOR = visual, see sheet-no.1606
AOC = visual, see sheet-no.1606
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)

01NL. 630. 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:** 630
- 3 | - 7 | see type index complete filter

Accessories:

- gauge port and bleeder connection, see sheet-no. 1650
- drain- and bleeder connection, see sheet-no. 1651
- SAE-counter flanges, see sheet-no. 1652
- shut-off valve, see sheet-no. 1655

Technical data:

| | |
|------------------------------------|--|
| operating temperature: | -10 °C to +100 °C |
| operating medium: | mineral oil, other media on request |
| max. operating pressure: | 32 bar |
| test pressure: | 64 bar |
| max. operating pressure with IS20: | 16 bar |
| test pressure with IS20: | 32 bar |
| max. operating pressure with IS14: | 10 bar |
| test pressure with IS14: | 20 bar |
| process connection: | SAE-flange connection 3000 PSI |
| housing material: | EN-GJS-400-18-LT |
| sealing material: | Nitrile (NBR) or Viton (FPM), other materials on request |
| installation position: | vertical |
| measuring connections: | G ¼ |
| drain- and bleeder connections: | G ½ |
| volume tank: | 2x 5,7 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 Δp and the element Δp 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 <http://www.eaton.com/hydraulic-filter-evaluation>

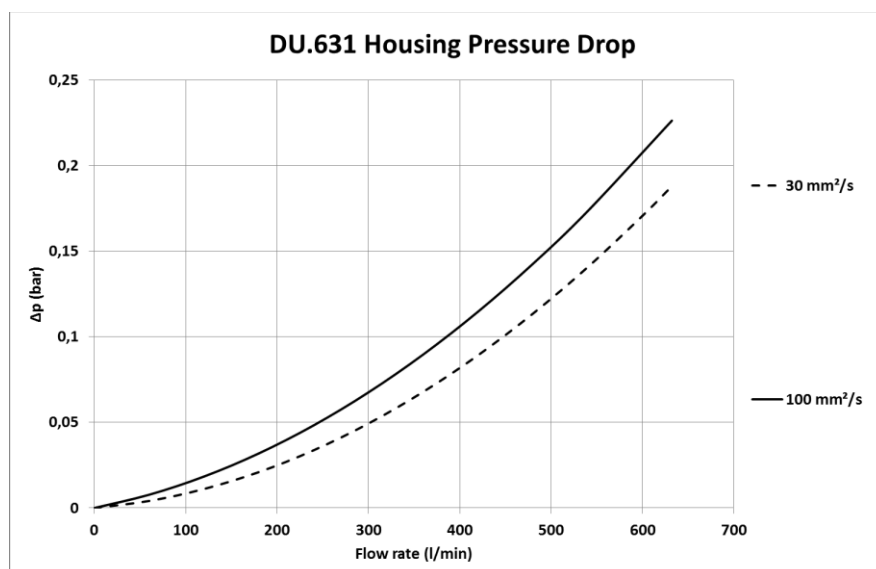
Material gradient coefficients (MSK) for filter elements

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 30 mm²/s (139 SUS). The pressure drop changes proportionally to the change in kinematic viscosity and density.

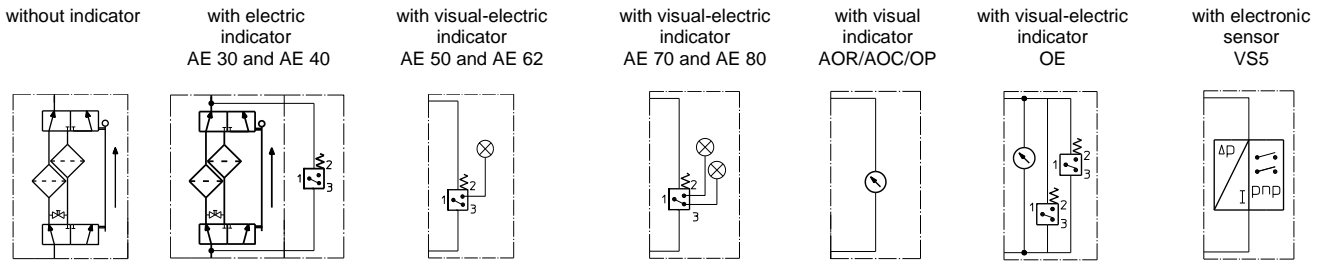
| DU | VG | | | | | G | | | P | API | |
|-----|-------|-------|-------|-------|-------|--------|--------|--------|-------|-------|-------|
| | 3VG | 6VG | 10VG | 16VG | 25VG | 25G | 40G | 80G | 10P | 10API | 25API |
| 631 | 0,436 | 0,303 | 0,194 | 0,169 | 0,115 | 0,0142 | 0,0132 | 0,0091 | 0,092 | 0,099 | 0,045 |

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

The pressure drop characteristics apply to mineral oil (HLP) with a density of 0,876 kg/dm³. The pressure drop changes proportionally to the density.



Symbols:



Spare parts:

| item | qty. | designation | dimension | article-no. | |
|------|------|---------------------------------------|--------------|--------------------|--------------|
| 1 | 2 | filter element | 01NL.630... | | |
| 2 | 2 | O-ring | 60 x 3,5 | 304377 (NBR) | 304398 (FPM) |
| 3 | 2 | O-ring | 125 x 3 | 306025 (NBR) | 307358 (FPM) |
| 4 | 1 | O-ring | 24 x 3 | 303038 (NBR) | 304397 (FPM) |
| 5 | 2 | O-ring | 115 x 3 | 303963 (NBR) | 307762 (FPM) |
| 6 | 1 | O-ring | 96 x 4 | 305190 (NBR) | 308148 (FPM) |
| 7 | 1 | O-ring | 32 x 2,5 | 306843 (NBR) | 308268 (FPM) |
| 8 | 2 | O-ring | 69,45 x 3,53 | 305868 (NBR) | 307357 (FPM) |
| 9 | 8 | screw plug | G ½ | 304678 | |
| 10 | 2 | screw plug | G ¼ | 305003 | |
| 11 | 1 | clogging indicator, visual | AOR or AOC | see sheet-no. 1606 | |
| 12 | 1 | clogging indicator, visual r, optisch | OP | see sheet-no. 1628 | |
| 13 | 1 | clogging indicator, visual-electric | OE | see sheet-no. 1628 | |
| 14 | 1 | clogging indicator, visual-electric | AE | see sheet-no. 1609 | |
| 15 | 1 | clogging sensor, electronic | VS5 | see sheet-no. 1641 | |
| 16 | 2 | screw plug | G ¼ | 305003 | |
| 17 | 1 | pressure balance valve | DN10 | 305000 | |

item 16 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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