Series EDA 103
NPS 1" CLASS 150-300 PSI

Position I: Filter 1 in operation
Position II: Filter 2 in operation

1) Connection for the potential equalization, only for application in the explosive area.
Switch lever standard in the front.

2) On request: The switch lever can be moved to backside of the changeover valve,
opposite to the inlet and outlet.
Please specify this configuration on the order.

Weight: approx. 93 lbs.
Dimensions: inches

Designs and performance values are subject to change.
Stainless steel pressure filter series EDA 103 have a working pressure up to 580 PSI. Pressure peaks can be absorbed with a sufficient safety margin.

A changeover ball valve between the two filter housings makes it possible to switch from the dirty filter side to the clean filter side without interrupting operation.

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 mesh element or changing the microglass 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 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 elements are suitable for all petroleum based fluids, HW-emulsions, most synthetic hydraulic fluids and lubrication ois.

Ship classifications available upon request.
Technical data:
operating temperature: +14°F to +212°F
operating medium: mineral oil, other media on request
max. operating pressure (pressure vessel): 580 PSI
test pressure acc. to ASME VIII Div. 1: 1.3 x operating pressure = 754 PSI
test pressure acc. to API 614, Chapter 1: 1.5 x operating pressure = 870 PSI
connection system: SAE-flange 3000 PSI or ANSI-flange B16.5 CLASS 150/300 PSI
housing material: stainless steel, see sheet-no. 67617
sealing material: Nitrile (NBR) or Viton (FPM), other materials on request
installation position: vertical
bleeder connection: NPT ½"
drain connection dirt side: NPT ¼"
drain connection clean side: NPT ½"
volume tank: 2x 0.17 Gal.
operating pressure adapter flanges: according to B16.5 CLASS 150/300 PSI

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:

\[ \Delta p_{\text{assembly}} = \Delta p_{\text{housing}} + \Delta p_{\text{element}} \]

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

\[ \Delta p_{\text{element}}(\text{PSI}) = Q \left( \frac{\text{GPM}}{} \right) \times \frac{\text{MSK}}{1000} \times \frac{\text{PSI}}{\text{GPM}} \times v \left( \frac{\text{SUS}}{} \right) \times \frac{\rho}{0.876} \times \left( \frac{\text{kg}}{\text{dm}^3} \right) \]

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.

<table>
<thead>
<tr>
<th>EDA</th>
<th>VG</th>
<th>G</th>
<th>API</th>
</tr>
</thead>
<tbody>
<tr>
<td>103</td>
<td>2.640</td>
<td>1.833</td>
<td>1.173</td>
</tr>
</tbody>
</table>

\[ \Delta p = f(Q) \text{ – characteristic according ISO 3968} \]

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.

![EDA.103 Housing Pressure Drop](image-url)
Symbols:

- without indicator
- with shut-off ball 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:

<table>
<thead>
<tr>
<th>item</th>
<th>qty.</th>
<th>designation</th>
<th>dimension</th>
<th>article-no.</th>
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<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>filter element</td>
<td>01.NL100…</td>
<td>350654 (NBR)</td>
</tr>
<tr>
<td>2</td>
<td>4</td>
<td>gasket kit of changeover</td>
<td>1”</td>
<td>304341 (NBR)</td>
</tr>
<tr>
<td>3</td>
<td>2</td>
<td>O-ring</td>
<td>22 x 3,8</td>
<td>304392 (FPM)</td>
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<tr>
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<td>4</td>
<td>O-ring</td>
<td>58.74 x 3.53</td>
<td>350640 (NBR)</td>
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<tr>
<td>5</td>
<td>6</td>
<td>O-ring</td>
<td>32 x 3</td>
<td>304368 (NBR)</td>
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<tr>
<td>6</td>
<td>2</td>
<td>O-ring</td>
<td>42 x 3,5</td>
<td>350840 (NBR)</td>
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<td>7</td>
<td>6</td>
<td>screw plug</td>
<td>NPT ½”</td>
<td>304341 (NBR)</td>
</tr>
<tr>
<td>8</td>
<td>2</td>
<td>screw plug</td>
<td>BSPP ½”</td>
<td>304368 (NBR)</td>
</tr>
<tr>
<td>9</td>
<td>1</td>
<td>clogging indicator, visual-electric</td>
<td>OE</td>
<td>see sheet-no. 1614</td>
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<tr>
<td>10</td>
<td>1</td>
<td>clogging indicator, visual</td>
<td>OP</td>
<td>see sheet-no. 1614</td>
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<tr>
<td>11</td>
<td>3</td>
<td>clogging indicator, visual-electric</td>
<td>AE</td>
<td>see sheet-no. 1609</td>
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<tr>
<td>12</td>
<td>1</td>
<td>clogging sensor, electronic</td>
<td>VS5</td>
<td>see sheet-no. 1614</td>
</tr>
</tbody>
</table>

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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