1. Clogging indicator AE

1.1. Type index: (ordering example)

AE. 30. 1,5. P. - -

1. series:
AE = clogging indicator, electrical / visual-electrical

2. version:
30-80 = see table below

3. indicator-pressure difference: \( \Delta p \)-nominal
   0,6 = 9 PSI (special order)
   0,8 = 12 PSI (special order)
   1,5 = 22 PSI
   2,5 = 36 PSI
   5,0 = 73 PSI

4. sealing material:
P = Nitrile (NBR)
V = Viton (FPM)

5. material:
- = standard (aluminium)
VA = stainless steel

6. execution:
- = standard

2. Technical data:

- operating temperature: +14°F to +176°F
- resistant to compression: -22°F to +212°F
- survival temperature: -40°F to +212°F
max. operating pressure: 6000 PSI (stainless steel)
3200 PSI (aluminium)
max. pressure difference: 2320 PSI
fatigue strength: max. 1 Mio load cycles for aluminium

<table>
<thead>
<tr>
<th>version</th>
<th>luminous indication</th>
<th>contact</th>
<th>voltage</th>
<th>max. rupturing capacity (resistive load)</th>
<th>max. switching current (resistive load)</th>
<th>connection protection</th>
</tr>
</thead>
<tbody>
<tr>
<td>30</td>
<td>-</td>
<td>contact maker and contact breaker</td>
<td>max. 175V DC</td>
<td>3 VA</td>
<td>0,25 A</td>
<td>0,25 A</td>
</tr>
<tr>
<td>40</td>
<td>-</td>
<td>contact maker and contact breaker</td>
<td>max. 125V AC</td>
<td>3 Watt</td>
<td>1,0 A</td>
<td>0,25 A</td>
</tr>
<tr>
<td>50</td>
<td>1x LED 1)</td>
<td>120V AC/DC</td>
<td>max. 175V DC</td>
<td>20 VA</td>
<td>0,025 A with 120V AC/DC</td>
<td>line adapter according to DIN 43650-designA/ISO4400</td>
</tr>
<tr>
<td>62</td>
<td>1x LED 1)</td>
<td>110...230V AC/DC</td>
<td>max. 230V AC</td>
<td>10 Watt</td>
<td>0,090 A with 230V AC/DC</td>
<td>IP 65 according to DIN EN 60529</td>
</tr>
<tr>
<td>70</td>
<td>2x LED</td>
<td>24V DC</td>
<td>max. 24V DC</td>
<td>3 VA</td>
<td>0,75 A with 24V DC</td>
<td></td>
</tr>
<tr>
<td>80</td>
<td>2x LED</td>
<td>24V DC</td>
<td>max. 24V DC</td>
<td>20 VA</td>
<td>0,080 A with 24V DC</td>
<td></td>
</tr>
</tbody>
</table>

1) LED = light emitting diode

Dimensions: inches

Designs and performance values are subject to change.
3. Spare parts:

<table>
<thead>
<tr>
<th>item</th>
<th>qty</th>
<th>designation</th>
<th>dimension</th>
<th>article-no.</th>
<th>type</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>O-ring</td>
<td>14 x 2</td>
<td>304342</td>
<td>(NBR) versions 30 - 80</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>304722</td>
<td>(FPM)</td>
</tr>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>304708</td>
<td>(NBR)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>304721</td>
<td>(FPM)</td>
</tr>
<tr>
<td>2</td>
<td>1</td>
<td>O-ring</td>
<td>22 x 2</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>1</td>
<td>line adapter</td>
<td></td>
<td>312492</td>
<td>versions 30 and 40</td>
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<tr>
<td></td>
<td></td>
<td>with LED 24V</td>
<td></td>
<td>315012</td>
<td>versions 70 and 80</td>
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<tr>
<td></td>
<td></td>
<td>with LED</td>
<td>DIN 43650-designA/ISO4400</td>
<td>315010</td>
<td>version 50</td>
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<tr>
<td>1</td>
<td></td>
<td>1 line adapter</td>
<td>with LED 120V</td>
<td>332235</td>
<td>version 62</td>
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<tr>
<td></td>
<td></td>
<td>1 line adapter</td>
<td>with LED 110...230V</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4. Symbols:

hydraulic-electrical symbol

connection configuration for LED

versions 30 and 40

versions 50 and 62

versions 70 and 80

p1 = measure connection supply

p2 = measure connection output

5. Description:

The AE 30 and AE 40 pollution indicators are electrical differential pressure indicators.

The AE 50 to AE 80 pollution indicators are combined optical and electrical differential pressure indicators. These differential pressure indicators can be fitted to all pressure filters (p ≤ 6000 PSI stainless steel, p ≤ 3200 PSI aluminium) for which there is a corresponding assignment on the relevant dimension drawing. As the degree of pollution of the filter element rises, so the difference between the entry pressure \( p_1 \) and the exit pressure \( p_2 \) of the filter increases.

Depending on this pressure difference and irrespective of the operating pressure, in the pollution indicators:
- AE 30 and AE 40, two electrical signals (contact maker/contact breaker) are triggered
- AE 50 and AE 62, two electrical signals (contact maker/contact breaker) are triggered and one optical signal is formed
- AE 70 and AE 80, two electrical signals (contact maker/contact breaker) are triggered and two optical signals are formed.

A metering piston subjected to the entry and exit pressure moves against a metering spring according to the pressure differential. Depending on the path, a permanent magnet integrated in the metering piston activates a reed contact (electromagnetic switch) and triggers the electrical signal. The electrical and optical indication is effected as a digital signal at the given switching pressure. Versions 50 to 80 of the pollution indicator are fitted with additional LED displays. The optical LED signal becomes visible according to the selected version in the translucent cover plate of the line box on the pollution indicator.

In the pollution indicators
- AE 50 and AE 62, the red LED signals that the filter element needs to be changed
- AE 70 and AE 80, the green LED signals the normal operating state (filter element not yet polluted to an unacceptable level), while the red LED signals that the filter element needs to be changed.

The clogging indicators meet protection class 2 according to DIN EN 61140.

6. Operating instructions:

Normally filters are supplied with mounted clogging indicator. When retrofitting - the filter is to be discharged of the operating pressure.
- dismantling the screw plug out of the bare hole which is foreseen for the clogging indicator
- screw in the clogging indicator into the bare hole (starting torque 74 lb.-ft. stainless steel, starting torque 59 lb.-ft. aluminium)

It is necessary to make sure the availability and the right positioning of sealing parts
- O-ring 22 x 2 and
- O-ring 14 x 2

as well as a dirt-free mounting. The electrical contacts are to be connected according to the graphical symbol shown on the type plate of the clogging indicator.

7. Maintenance:

The device is maintenance-free, however, note that no cleaning fluids and solvents get on the transparent cap of the optical indicator.