Electro-mechanical pneumatic pressure switches

> -1 ... 30 bar
Port size: G1/4 or flange
> Microswitch with gold plated contacts
> Vibration resistant to 15 g
> Microswitch approved by UL and CSA
> Intrinsically safe operation

> For Ex applications conforming to ATEX 100a: Zone 2 category ATEX 3G (gases): Ex nA nC IIC T6 Gc Zone 22 category ATEX 3D (dusts): Versions, form A connector: Ex tc IIIC T50 °C Dc; Versions, M12x1 connector: Ex tc IIIC T80 °C Dc Special condition to be observed during the installation

Technical features
Medium:
For neutral, gaseous and liquid fluids
Operation:
Diaphragm
Operating pressure:
-1 ... 30 bar (-14 ... 435 psi)
Maximum over pressure: 80 bar (1160 psi)
Repeatability:
±3% for vacuum; ±4% of final value (depending on regulating pressure)
Port size:
G1/4 or flange

Media viscosity:
Up to 1000 mm²/s
Switching pressure difference/hysteresis:
Fixed
Switching cycles:
100 1/min
Life cycle of mechanical parts:
10' switching cycles
Switching element:
Microswitch with gold plated contacts
Mounting position:
Optional

Degree of protection:
IP65 for DIN EN 175301-803 (DIN 43650) form A connection
IP67 for M12x1 connection
Electrical connection:
DIN EN 175301-803 (DIN 43650) form A or M12x1 IEC 947-5-2
Weight:
0.2 kg (0.44 lbs)
Ambient/Media temperature:
Versions, form A connector: 0 ... +50°C (32 ... +122°F)
Versions, M12x1 Connector: 0 ... +80°C (32 ... +176°F)
Air supply must be dry enough to avoid ice formation at temperatures below +2°C (+35°F)

Materials:
Housing: Aluminium
Sealing: FPM/brass
O-ring: NBR

Technical data
Electrical connection acc. to DIN EN 175301-803, form A

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Port size</th>
<th>Pressure range *1</th>
<th>Lower range</th>
<th>Upper range</th>
<th>Materials press sensor</th>
<th>Seal</th>
<th>Drawing No.</th>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>(bar)</td>
<td>(psi)</td>
<td>(bar)</td>
<td>(psi)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G1/4</td>
<td>-1 ... 0</td>
<td>-14 ... 0</td>
<td>0.15</td>
<td>0.18</td>
<td>2.17</td>
<td>AL</td>
<td>1</td>
<td>0880180</td>
</tr>
<tr>
<td>G1/4</td>
<td>0.2 ... 2</td>
<td>2.9 ... 29</td>
<td>0.20</td>
<td>0.35</td>
<td>5.07</td>
<td>AL</td>
<td>1</td>
<td>0882080</td>
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<tr>
<td>G1/4</td>
<td>0.5 ... 8</td>
<td>7.2 ... 116</td>
<td>0.35</td>
<td>0.85</td>
<td>12.3</td>
<td>AL</td>
<td>2</td>
<td>0880380</td>
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<tr>
<td>Flange</td>
<td>0.5 ... 8</td>
<td>7.2 ... 116</td>
<td>0.35</td>
<td>0.85</td>
<td>12.3</td>
<td>AL</td>
<td>3</td>
<td>0881380</td>
</tr>
<tr>
<td>G1/4</td>
<td>1 ... 16</td>
<td>23.2 ... 232</td>
<td>0.40</td>
<td>1.20</td>
<td>17.4</td>
<td>AL</td>
<td>2</td>
<td>0880580</td>
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<tr>
<td>G1/4</td>
<td>1 ... 30</td>
<td>23.2 ... 435</td>
<td>1.0</td>
<td>7.50</td>
<td>72.5</td>
<td>AL</td>
<td>2</td>
<td>0880680</td>
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</tbody>
</table>

Electrical connection M12x1 nach IEC 947-5-2 - plug not included, max. allowable voltage 30 V
The pressure switch will loose the Ex approval when using wire sockets other than those listed in the data sheet.

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<th>Lower range</th>
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<td>(psi)</td>
<td>(bar)</td>
<td>(psi)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G1/4</td>
<td>-1 ... 0</td>
<td>-14 ... 0</td>
<td>0.15</td>
<td>0.18</td>
<td>2.17</td>
<td>AL</td>
<td>1</td>
<td>0880181</td>
</tr>
<tr>
<td>G1/4</td>
<td>0.2 ... 2</td>
<td>2.9 ... 29</td>
<td>0.20</td>
<td>0.35</td>
<td>5.07</td>
<td>AL</td>
<td>1</td>
<td>0882081</td>
</tr>
<tr>
<td>G1/4</td>
<td>0.5 ... 8</td>
<td>7.2 ... 116</td>
<td>0.35</td>
<td>0.85</td>
<td>12.3</td>
<td>AL</td>
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<td>Flange</td>
<td>0.5 ... 8</td>
<td>7.2 ... 116</td>
<td>0.35</td>
<td>0.85</td>
<td>12.3</td>
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<td>3</td>
<td>0881381</td>
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<tr>
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<td>1 ... 16</td>
<td>23.2 ... 232</td>
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<td>23.2 ... 232</td>
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<td>17.4</td>
<td>AL</td>
<td>2</td>
<td>0881481</td>
</tr>
</tbody>
</table>

*1) Setpoints should be ideally in the middle of the switching pressure range. Reference pressure = atmospheric pressure. Switching pressure must not exceed the indicated values.
MS = brass
Accessories

<table>
<thead>
<tr>
<th>Pressure port reducing nipple</th>
<th>Surge damper</th>
<th>Cover</th>
<th>Connector</th>
<th>Connector M12x1 4-pin, 90°</th>
<th>4-pin, straight</th>
</tr>
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<td><img src="image" alt="Pressure port reducing nipple" /></td>
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<td><img src="image" alt="Connector M12x1 4-pin, 90°" /></td>
<td><img src="image" alt="4-pin, straight" /></td>
</tr>
<tr>
<td>0574767 (brass)</td>
<td>0574773 (brass)</td>
<td>0554737</td>
<td>0524210 (Form A)</td>
<td>0524207 (2 m cable, 4-core)</td>
<td>0524206 (2 m cable, 4-core)</td>
</tr>
<tr>
<td>0550883 (stainless steel)</td>
<td>0553258 (stainless steel)</td>
<td></td>
<td></td>
<td>0524209 (5 m cable, 4-core)</td>
<td>0524208 (5 m cable, 4-core)</td>
</tr>
</tbody>
</table>

Switching function

- **Connector DIN EN 175301-803, form A Microswitch SPDT**
  - Terminals 1 - 3: Contacts close on rising pressure.
  - Terminals 1 - 2: Contacts open on rising pressure.

- **Connector IEC 947-5-2, M12x1 Microswitch SPDT**
  - Terminals 1 - 4: Contacts close on rising pressure.
  - Terminals 1 - 2: Contacts open on rising pressure.

Switching capacity

**Commutator with gold plated contacts**

<table>
<thead>
<tr>
<th>Current type</th>
<th>Load type *2)</th>
<th>U min [V]</th>
<th>Max. permissible persistent current Imax [A] at U *1) (UL &amp; CSA)</th>
<th>Electrical life-time</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>DIN EN 175301-803, form A</td>
<td>125 V</td>
</tr>
<tr>
<td>a.c.</td>
<td>Ohmic, inductive</td>
<td>6</td>
<td>0.1</td>
<td>0.1</td>
</tr>
<tr>
<td>d.c.</td>
<td>Ohmic, inductive</td>
<td>6</td>
<td>0.1</td>
<td>0.1</td>
</tr>
</tbody>
</table>

Reference number: 20/min, Reference temperature: +20°C, 
I min = 1 mA at 24 V d.c. or 5 mA at 6 V d.c.

*1) Higher currents (5 A max) will cause a reduction of the durability of the micro-switch contacts. Furthermore additional measures has to be taken to fulfil the EMV regulation 2014/30/EU by the manufacturer

*2) Spark quenching/overload protection will be necessary using inductive loads.

Recommended circuit

**Spark quenching and EMV intrinsically safe**

1. Quick diode (D) with \( t_v \leq 200 \text{ ns} \), parallel to inductive load.
2. RC link in parallel to load in parallel to switching contact.

Dimensioning principles:
- \( R_L \text{ in } \Omega = 0.2 \times R_{\text{Load in } \Omega} \)
- \( C \text{ in } [\mu \text{F}] = 1 \text{Load in } [\text{A}] \)
**Warning**

These products are intended for use in industrial compressed air and fluid systems only. Do not use these products where pressures and temperatures can exceed those listed under "Technical features/data". Before using these products with fluids other than those specified, for non-industrial applications, life-support systems, or other applications not within published specifications, consult IMI Precision Engineering, Norgren GmbH.

Through misuse, age, or malfunction, components used in fluid power systems can fail in various modes. The system designer is warned to consider the failure modes of all component parts used in fluid power systems and to provide adequate safeguards to prevent personal injury or damage to equipment in the event of such failure. System designers must provide a warning to end users in the system instructional manual if protection against a failure mode cannot be adequately provided.
System designers and end users are cautioned to review specific warnings found in instruction sheets packed and shipped with these products.