High accuracy
Microswitch with gold plated contacts
(intrinsically safe operation)

Electrical connection: connector
acc. to DIN EN 175301-803 (form A)
or M20x1,5 (DIN 46320)

Robust metal housing

Technical data
Medium:
For neutral, non-inflammable gases
and liquids
Operation:
Diaphragm
Port size:
G1/4
Operating pressure range:
-0,025 to 1,6 bar
Temperature:
Fluid
-10° to +100°C
Ambient
-25° to +80°C
(please contact our technical service for use below +2°C)
Repeatability:
±1% of final value
(depending on regulating pressure)
Degree of protection (acc. to DIN 40050):
IP65
Mounting position:
Optional
Shock/vibrations (to avoid it possible):
4 g max. (sinusoidal), 5 Hz max.
Sealing:
≤5 • 10⁻³ mbar • l/s
Switching cycles:
Max. 10/min.

Materials:
Housing: aluminium die cast,
Sensor: galvanized steel or stainless steel
Sealing: perbunan diaphragm

Ordering example
See page 2
General information

Operating pressure range, fixed

<table>
<thead>
<tr>
<th>Type</th>
<th>Operating pressure range *2) pvu min. to pvo max. (VDI 3283)</th>
<th>Over pressure *1)</th>
<th>Switching pressure difference (typical)</th>
<th>Dimension No.</th>
<th>See page</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>pvu min. to pvo max. (VDI 3283)</td>
<td>bar</td>
<td>lower range</td>
<td>upper range</td>
<td></td>
</tr>
<tr>
<td>1812500</td>
<td>0 to 0,025</td>
<td>0,5</td>
<td>0,003</td>
<td>0,004</td>
<td>1</td>
</tr>
<tr>
<td>1812600</td>
<td>0 to 0,06</td>
<td>0,5</td>
<td>0,004</td>
<td>0,006</td>
<td>1</td>
</tr>
<tr>
<td>1812700</td>
<td>0,004 to 0,16</td>
<td>0,5</td>
<td>0,004</td>
<td>0,008</td>
<td>1</td>
</tr>
<tr>
<td>1812800</td>
<td>0 to 0,25</td>
<td>0,5</td>
<td>0,004</td>
<td>0,009</td>
<td>1</td>
</tr>
<tr>
<td>1814100</td>
<td>0,05 to 0,6</td>
<td>15</td>
<td>0,03</td>
<td>0,06</td>
<td>2</td>
</tr>
<tr>
<td>1814300</td>
<td>0,05 to 1,6</td>
<td>15</td>
<td>0,03</td>
<td>0,12</td>
<td>2</td>
</tr>
</tbody>
</table>

Operating pressure range, adjustable

<table>
<thead>
<tr>
<th>Type</th>
<th>Operating pressure range *2) pvu min. to pvo max. (VDI 3283)</th>
<th>Over pressure *1)</th>
<th>Switching pressure difference (typical)</th>
<th>Dimension No.</th>
<th>See page</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>pvu min. to pvo max. (VDI 3283)</td>
<td>bar</td>
<td>lower range</td>
<td>upper range</td>
<td></td>
</tr>
<tr>
<td>1802500</td>
<td>0 to 0,025</td>
<td>0,5</td>
<td>0,008</td>
<td>0,011</td>
<td>0,025</td>
</tr>
<tr>
<td>1802600</td>
<td>0 to 0,06</td>
<td>0,5</td>
<td>0,009</td>
<td>0,015</td>
<td>0,04</td>
</tr>
<tr>
<td>1802700</td>
<td>0 to 0,16</td>
<td>0,5</td>
<td>0,011</td>
<td>0,023</td>
<td>0,12</td>
</tr>
<tr>
<td>1802800</td>
<td>0 to 0,25</td>
<td>0,5</td>
<td>0,011</td>
<td>0,028</td>
<td>0,2</td>
</tr>
<tr>
<td>1804100</td>
<td>0,05 to 0,6</td>
<td>15</td>
<td>0,09</td>
<td>0,16</td>
<td>0,5</td>
</tr>
<tr>
<td>1804300</td>
<td>0,05 to 1,6</td>
<td>15</td>
<td>0,13</td>
<td>0,25</td>
<td>1,2</td>
</tr>
</tbody>
</table>

Special pressure ranges on request

*1) Short-term pressure peaks are not allowed to exceed this limit value during operations. Operative utilization of the limit value is not permitted.

*2) Reference pressure corresponds to maximum testing pressure.

Options selector

<table>
<thead>
<tr>
<th>Switching pressure difference</th>
<th>Substitute</th>
</tr>
</thead>
<tbody>
<tr>
<td>adjustable</td>
<td>0</td>
</tr>
<tr>
<td>fixed</td>
<td>1</td>
</tr>
</tbody>
</table>

Ordering example

Pressure switch, fixed operating pressure range, switch point at 150 mbar rising, port size: G 1/4, electrical port: M20 x 1,5 medium: neutral gas

Type: 1812805

Electrical connection Substitute
DIN EN 175301-803, form A 00
M20 x 1,5 05
Accessories

### Pneumatic pressure switch 20D

**Low pressure**

- **Connector**
  - See page 4
  - 0585418 (with LED)
  - 0570110

- **Connector Brackets**
  - See page 5
  - 0574772 (steel)
  - 0553258 (stainless steel G1/4)
  - 0550083 (G1/4 to G1/2)

- **Surge damper**
  - See page 5
  - 0553908 (stainless steel)
  - 0574773 (brass/steel G1/4)
  - 0574764 (G1/4 to G3/8)

- **Pressure port Reducing nipple**
  - See page 5
  - 0585420 (with glow lamp)
  - 0574765 (G1/4 to 1/4 NPT)

### Switching capacity

**Commutator with gold plated contacts**

<table>
<thead>
<tr>
<th>Load level</th>
<th>Current type</th>
<th>Load type</th>
<th>Umin [V]</th>
<th>Max. permanent current Imax [A] at U [V]</th>
<th>Contact life</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard *3) (z.B. contractors, solenoids)</td>
<td>AC</td>
<td>ohmic</td>
<td>12</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>AC</td>
<td>inductive, (\cos \varphi = 0.7)</td>
<td>12</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>DC</td>
<td>ohmic</td>
<td>12</td>
<td>5</td>
<td>1.2</td>
</tr>
<tr>
<td></td>
<td>DC</td>
<td>inductive, (L/R = 10,\text{ms})</td>
<td>12</td>
<td>3</td>
<td>0.5</td>
</tr>
<tr>
<td>Minor *4) (z.B. electronic circuits)</td>
<td>AC</td>
<td>ohmic,</td>
<td>5 *6)</td>
<td>0.34</td>
<td>0.2</td>
</tr>
<tr>
<td></td>
<td>DC</td>
<td>inductive, (L/R = 10,\text{ms})</td>
<td>5 *6)</td>
<td>0.1</td>
<td>0.01</td>
</tr>
</tbody>
</table>

Reference number: 30/min, Reference temperature: +30°C

Spark quenching with diode with DC and inductive load:

- \(I_{\text{max}} = 1.5 \times I_{\text{max}}\) of table
- \(I_{\text{min}} = 1\) (mA)

Creepage and air paths correspond to insulation group B according to VDE Reg. 0110 (except contact clearance of microswitch).

*3) Gold-plating not required as it would decay.
*4) Gold-plating required (will not decay).
*6) Lower value of critical voltage guarantees sufficient contact safety.

Spark quenching with DC voltage

1. Diode D in parallel to inductive load.
   Observance of correct polarity (positive pole to cathode).

Dimensioning specifications for quenching diode:

- Rated voltage at diode: \(U_D \geq 1.4 \times U_s\)

- Rated current at diode: \(I_N \geq I_{\text{Last}}\)

Selection of a quick switching diode (recovery time \(t_{rr} \leq 200\,[\text{ms}]\)).

2. RC link in parallel to load in parallel to switching contact.
   Suiited for DC and AC voltage.

Dimensioning principles:

- \(R\) in \(\Omega\) = \(0.2 \times R_{\text{Load}}\) in \(\Omega\)
- \(C\) in \(\mu\text{F}\) = \(I_{\text{Load}}\) in \(\text{A}\)

\*1) load

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N/EN 5.11.023.03

Our policy is one of continued research and development. We therefore reserve the right to amend, without notice, the specifications given in this document.
Basic dimensions

Electrical connection
Connector acc. to DIN EN 175301-803 (form A)

Sensor for pressure range substitutes 41 and 43

for pressure range substitutes 25, 26, 27 and 28

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### Accessories

**Connectors (black) with light indicator**
- 3-pin + protective conductor
- Connection acc. to DIN EN 175301-803 (form A)
- Optionally available for DC or AC

<table>
<thead>
<tr>
<th>Description</th>
<th>Voltage Range</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>With LED</td>
<td>12 to 28 V</td>
<td>0585418</td>
</tr>
<tr>
<td>With glow lamp</td>
<td>90 to 130 V</td>
<td>0585419</td>
</tr>
<tr>
<td>With glow lamp</td>
<td>180 to 240 V</td>
<td>0585420</td>
</tr>
</tbody>
</table>

**Pressure switch with – pilot lamp**
The pilot lamp shows the switching position of the connected pressure switch.

*For contact (4) a special lead (Mp resp.-) is required.

### 3-pin connector with protective conductor

Acc. to DIN EN 175301-803 (form A)
**Type:** 0570110

### Brackets (2 brackets and 4 screws)
- Steel
  **Type:** 0574772
- Stainl. steel 1.4301 (AISI 304)
  **Type:** 0553908

### Surge damper

Stainless steel 1.4301 (AISI 304)
**Type:** 0553258
Brass/steel
**Type:** 0574773
Warning

These products are intended for use in industrial compressed air systems only. Do not use these products where pressures and temperatures can exceed those listed under 'Technical 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 NORGREN. 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.