Compact Pressure Switch

Series 8000

Features
- Proven design in stationary and mobile hydraulic applications
- Wide setpoint pressure range
- Available in wide range of configurations
- Precise setpoint adjustment
- Factory preset or field adjustable
- UL Type 4
- Modular concept
- Manifold mount
- Additional process connections

Applications
- Hydraulic power packs
- Machine tools
- Overload controls
- Railways
- Factory automation
- Balers and compactors

General Specifications*

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Repeatability</td>
<td>±2% typical, diaphragm models&lt;br&gt;±1% typical, piston models</td>
</tr>
<tr>
<td>Microswitch Type</td>
<td>SPDT contact</td>
</tr>
<tr>
<td>Rating Silver</td>
<td>3A @ 250 VAC&lt;br&gt;5A @ 125 VAC&lt;br&gt;3A @ 30 VDC</td>
</tr>
<tr>
<td>Gold</td>
<td>0.1A @ 125 VAC&lt;br&gt;0.1A @ 30 VDC</td>
</tr>
<tr>
<td>Switching Frequency</td>
<td>Max. 60 /min piston switch&lt;br&gt;Max. 30/ min diaphragm switch</td>
</tr>
<tr>
<td>Wetted Parts</td>
<td>300 series stainless steel</td>
</tr>
<tr>
<td>Housing</td>
<td>Aluminum die-cast 230</td>
</tr>
<tr>
<td>Seals &amp; Diaphragms</td>
<td>Buna-N (NBR) standard; FKM, EPDM (EPR) optional</td>
</tr>
<tr>
<td>Adjustment Screw</td>
<td>300 stainless steel (HEX 5 mm)</td>
</tr>
<tr>
<td>Electrical Connection/Rating</td>
<td>For IP rating and electrical connections see page 2</td>
</tr>
<tr>
<td>Enclosure Ratings*</td>
<td>NEMA 4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Pressure Connection</th>
<th>Standard manifold (Additional options available; see product configurator)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Approvals</td>
<td>UL / cULus (CSA)</td>
</tr>
<tr>
<td>Ambient Temperature Range</td>
<td>Piston Switch: -40°F to +167°F (-40°C to +75°C)&lt;br&gt;Diaphragm Switch: -4°F to +167°F (-20°C to +75°C)</td>
</tr>
<tr>
<td>Adjustment Instructions</td>
<td>Setpoint Adjustment: Turn adjustment screw clockwise to increase pressure setpoint; counterclockwise to decrease pressure setpoint.</td>
</tr>
<tr>
<td>Shipping Weight</td>
<td>0.77 lbs. (350 g)&lt;br&gt;1.36 lbs. (620 g)&lt;br&gt;1.48 lbs. (675 g)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Wiring Code</th>
<th>DIN 43650 Plug (T/B)</th>
<th>M12 Plug (M)</th>
<th>Cable Gland (P)</th>
<th>1/2&quot; NPT Conduit w/ Free Leads (C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Common</td>
<td>1</td>
<td>1</td>
<td>White</td>
<td>Violet</td>
</tr>
<tr>
<td>Normally Closed</td>
<td>2</td>
<td>2</td>
<td>Black</td>
<td>Blue</td>
</tr>
<tr>
<td>Normally Open</td>
<td>3</td>
<td>4</td>
<td>Red</td>
<td>Red</td>
</tr>
<tr>
<td>Ground</td>
<td>GRD</td>
<td>3</td>
<td>Green</td>
<td>Green</td>
</tr>
</tbody>
</table>

* See product configurator for additional options.
Compact Pressure Switch

Series 8000

Technical Drawings

Product Configurator

Example: 8 A A 1 T B

Pressure Range

<table>
<thead>
<tr>
<th>Diaphragm</th>
<th>Adjustable Ranges</th>
<th>Max. Hysteresis³ (Dead-band)</th>
<th>Max. Operating Pressure</th>
<th>Proof Operating Pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(decreasing pressure) psi</td>
<td>(increasing pressure) psi</td>
<td>≤15% of max adjustable range</td>
<td>psi bar</td>
</tr>
<tr>
<td>A</td>
<td>5.8 - 82</td>
<td>0.4 - 5.7</td>
<td>725</td>
<td>50</td>
</tr>
<tr>
<td>B</td>
<td>29 - 246</td>
<td>2.0 - 17</td>
<td>725</td>
<td>50</td>
</tr>
<tr>
<td>C</td>
<td>43 - 600</td>
<td>3.0 - 41</td>
<td>725</td>
<td>50</td>
</tr>
<tr>
<td>D³</td>
<td>43 - 2320</td>
<td>3.0 - 160</td>
<td>3600</td>
<td>250</td>
</tr>
<tr>
<td>E³</td>
<td>430 - 4300</td>
<td>30 - 300</td>
<td>6500</td>
<td>450</td>
</tr>
<tr>
<td>F³</td>
<td>800 - 7550</td>
<td>55 - 520</td>
<td>8700</td>
<td>600</td>
</tr>
</tbody>
</table>

SPDT Contacts

1. Silver
2. Gold-plated

Options

- Small hysteresis (not UL)
- Factory set rising
- Factory set falling
- Surge protection

Electrical Connectors

- 4 pin M12 female right angle plug molded cable, 3.28 feet (1 meter)
- 4 pin M12 female right angle plug molded cable, 6.56 feet (2 meter)
- 4 pin M12 female right angle plug molded cable, 16.40 feet (5 meters)
- 4 pin M12 female straight plug molded cable, 3.28 feet (1 meter)
- 4 pin M12 female straight plug molded cable, 6.56 feet (2 meter)
- 4 pin M12 female straight plug molded cable, 16.40 feet (5 meters)
- 4 pin M12 female straight connector
- DIN 43650 type A connector with molded cable 6.56 feet (2 meters)
- DIN 43650 type A connector with molded cable, 16.40 feet (5 meters)
- DIN 43650 type A connector

Seals

- Buna-N (NBR)
- FKM
- EPDM (EPR)

Notes:

- Consult factory for other process connections, minimum quantities may apply.
- Model 81XX- at pressure ranges (A to E) is delivered with 2 spring washers and 2 mounting screws 5 x 60 mm, steel 10.9, galvanized (hex 4). Pressure range (F) is delivered with 4 mounting screws.
- Consult sales drawing for dead-band chart.
- UL not available for L option.
- Only for piston version (D, E, F pressure range)
- Stainless steel model is not UL approved if electrical connector option "P" is chosen.
- Factory set examples: If set point is 2500 psi rising, order 2500R, if set point is 500 psi falling, order 0500F.
- For water applications or pressure over 3,000 psi, D option, surge protection, is recommended.

Accessories

- 3211 Fruitland Avenue • Los Angeles, CA 90058 • 800-835-1060 • Fax: 323-589-3463 • www.barksdale.com

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Notes:

⁴Electrical connectors listed meet NEMA 4 rating

1. Consult factory for other process connections, minimum quantities may apply.
2. Model 81XX- at pressure ranges (A to E) is delivered with 2 spring washers and 2 mounting screws 5 x 60 mm, steel 10.9, galvanized (hex 4). Pressure range (F) is delivered with 4 mounting screws.
3. Consult sales drawing for dead-band chart.
4. UL not available for L option.
5. Only for piston version (D, E, F pressure range)
6. Stainless steel model is not UL approved if electrical connector option "P" is chosen.
7. Factory set examples: If set point is 2500 psi rising, order 2500R, if set point is 500 psi falling, order 0500F.
8. For water applications or pressure over 3,000 psi, D option, surge protection, is recommended.
**Pressure**

**Instrinsically Safe Compact Pressure Switch Series 8000-EXI**

**Features**
- Proven design in stationary and mobile hydraulic applications
- Wide setpoint pressure range
- Available in wide range of configurations
- Precise setpoint adjustment
- Factory preset or field adjustable
- IP65, IP68
- ATEX
- Modular concept

**Applications**
- Hydraulic power packs
- Oil and gas
- Flour mills
- Paint spraying
- Factory automation
- Mining
- Marine applications

**General Specifications**

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
</table>
| **Repeatability**                | ±1% typical, piston models  
                                  | ±2% typical, diaphragm models                                                |
| **Microswitch**                  | Type: SPDT contact  
                                  | Rating: Silver/Gold contacts:  
                                  | Voltage = 28 V max  
                                  | Current = 50 mA max                                                    |
| **Switching Frequency**          | max. 60 /min piston switch  
                                  | max. 30/ min diaphragm switch                                               |
| **Wetted Parts**                 | Process Fitting: 300 series stainless steel  
                                  | Housing: Aluminum die-cast 2014 or 2007 Stainless steel - optional AISI 303  |
| **Seals & Diaphragms**           | Buna-N (NBR), FKM, EPDM                                                      |
| **Adjustment Screw**             | 300 stainless steel (HEX 5mm)                                                |
| **Electrical Connection**        | For IP rating and electrical connections see page 2                         |

**Pressure Connection**
- Multiple pressure connections available

**Approvals**
- ATEX:
  - II1GD Ex ia IIC T6 Ga  
  - Ex ia IIIC T100°C Da  
  - II1GD Ex ia IIIB T6 Ga  
  - Ex ia IIIC T100°C Da

**Ambient Temperature Range**
- -40°F to +167°F (-40°C to +75°C)
- -4°F to +167°F (-20°C to +75°C)

**Adjustment Instructions**
- Setpoint Adjustment: Turn adjustment screw clockwise to increase pressure; counterclockwise to decrease pressure.

**Shipping Weight**
- CETOP Flange Model: 0.77 lbs. (350 g)
- Adaptor Version Straight: 1.36 lbs. (620 g)
- Adaptor Version 90° Angle: 1.48 lbs. (675 g)

**Wiring Code**

<table>
<thead>
<tr>
<th>Common</th>
<th>1</th>
<th>Brown</th>
<th>1/2&quot; NPT Conduit w/ Free Leads (CD1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normally Closed</td>
<td>2</td>
<td>Black</td>
<td>2</td>
</tr>
<tr>
<td>Normally Open</td>
<td>3</td>
<td>Gray</td>
<td>4</td>
</tr>
<tr>
<td>Ground</td>
<td>GRD</td>
<td>Green/Yellow</td>
<td>3*</td>
</tr>
</tbody>
</table>
Technical Drawings

Process Connections

Electrical Connections

Product Configurator

Series 8000

Options

Seals

Pressure Range

Example: 8 A A 1 - PL1 - B - VA - EXI - EXII Intrinsically safe EXia

Adjustable Ranges

Max. Hysteresis 1 (Dead-band)

Max. Operating

Proof Pressure

Diaphragm

A

B

C

D

E

F

D7

E7

Piston

[decreasing pressure] (psi) (bar)

[increasing pressure] (psi) (bar)

[decreasing pressure] (psi) (bar)

[increasing pressure] (psi) (bar)

[decreasing pressure] (psi) (bar)

[increasing pressure] (psi) (bar)

[decreasing pressure] (psi) (bar)

[increasing pressure] (psi) (bar)

[decreasing pressure] (psi) (bar)

[increasing pressure] (psi) (bar)

[decreasing pressure] (psi) (bar)

[increasing pressure] (psi) (bar)

[decreasing pressure] (psi) (bar)

[increasing pressure] (psi) (bar)

[decreasing pressure] (psi) (bar)

[increasing pressure] (psi) (bar)

[decreasing pressure] (psi) (bar)

[increasing pressure] (psi) (bar)

[decreasing pressure] (psi) (bar)

[increasing pressure] (psi) (bar)

Notes:

1 Consult factory for other process connections. Minimum quantities may apply.

2 Model 81XX- at pressure ranges is (A to E) delivered with 2 spring clips and 2 mounting screws 5 x 60 mm, steel 10.9, galvanized (hex 4). Pressure range (F) is delivered with 4 mounting screws.

3 Consult sales drawing for dead-band chart

4 Consult factory for additional options.

5 Only for piston version (D, E, F pressure range)

6 Intrinsically safe model can be ordered with or without stainless steel feature (-VA).

7 For water applications or pressure over 3,000 psi, E-D option, surge protection, is recommended.

Intrinsically Safe Compact Pressure Switch

Series 8000-EXI

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Seals

- B Buna-N (NBR)

- V FKM

- E EPDM

Options

Blank

-VA 300 series stainless steel (Optional)

-LH Low hysteresis

-S Surge protection

Series 8000

Process Connections

1.22

90° Side Entry

DIN 725851/2” NPT

Top edge of housing

Top edge of housing

Top edge of housing

Top edge of housing

Top edge of housing

Top edge of housing

PL1

PL2

CA3

CD1

Dimensions in mm (inch)

Electrical Connectors

- PL1 Plug DIN 43650 A, iP65

- PL2 Plug M12, 4-pol. without female plug, IP67

- CA3 Cable gland, 27.5” (0.7 m) cable, neoprene jacketed, IP68

- CD1 1/2” NPTM AWG 20 with 24” (60 cm) leads (3 leads + ground)

Electrical Connectors

SPDT Contacts

1 Silver

2 Gold-plated

Pressure Range

- A 10 - 80 (0.7 - 5.9)

- B 30 - 245 (2.0 - 17)

- C 45 - 600 (3.1 - 41)

- D 45 - 600 (3.1 - 41)

- E 430 - 4300 (3.1 - 300)

- F 800 - 7550 (55 - 520)

- D7 45 - 2320 (3.1 - 160)

- E7 430 - 4300 (3.1 - 300)

- F7 800 - 7550 (55 - 520)

Diaphragm

- A 10 - 80 (0.7 - 5.9)

- B 30 - 245 (2.0 - 17)

- C 45 - 600 (3.1 - 41)

- D 45 - 600 (3.1 - 41)

- E 430 - 4300 (3.1 - 300)

- F 800 - 7550 (55 - 520)

- D7 45 - 2320 (3.1 - 160)

- E7 430 - 4300 (3.1 - 300)

- F7 800 - 7550 (55 - 520)

Adjustable Ranges

Max. Hysteresis 1 (Dead-band)

Max. Operating Pressure

Proof Pressure

Proof pressure 2000 psi (200 bar) on request (May shorten the lifetime of the switch).