

# Electronic Dual Pressure Switch

**BPS3000**

## Features

- ▶ Measuring range: gauge: 0 - 9000 psig, absolute: 0 - 150 psia
- ▶ One or two switch points
- ▶ Analog output 4 - 20 mA or 0 - 10 V
- ▶ Enclosure Rating: Type 4X (IP65) / Type 6 (IP67)
- ▶ Superior EMI protection
- ▶ Simple navigation menu
- ▶ Suitable for rapid cycling applications
- ▶ Display & electronic connection: rotatable by 320°
- ▶ IO-Link communication interface
- ▶ 0.50% accuracy

## Applications

- ▶ Machine tool industry
- ▶ Factory Automation
- ▶ Injection molding machines
- ▶ Lubrication monitoring
- ▶ Pumps and compressors
- ▶ Hydraulic and pneumatic applications



## General Specifications\*\*

<b>Sensor element:</b>	Ceramic sensor (standard) Optional: piezoresistive sensor (For proper sensor selection see product configurator for more details.)	<b>Analog output:</b> Current output: 4-20 mA Scanning rate: 2 ms Voltage output: 0 to 10 V DC Rating: max. 10 mA Adjustment range: 25% to 100% f. s.
<b>Materials:</b> Wetted parts:	304 Stainless steel; brass (if surge dampener is required)	<b>Transistor switching outputs:</b>
Enclosure:	304 Stainless steel, PBT	Switching function
Seals:	FKM fluoroelastomer (standard) EPDM (optional)	Switching output:
<b>Operating elements:</b>	3 easy-response push-buttons	Adjustment range for switching point and hysteresis:
<b>Enclosure rating:</b>	Type 4X (IP65) / Type 6 (IP67)	Switching frequency:
<b>Protection class:</b>	III	Load:
<b>Electrical connection:</b>	Plug M12 x 1, 4-pin / 5-pin / 8-pin (see product configurator)	Delay:
<b>Process connection:</b>	1/4" NPT, 1/2" NPT flush diaphragm, 7/16-20 (SAE), 7/16-20 (JIC 37°), G1/4" M, G1/2" flush diaphragm (only piezoresistive)	Status display(s):
<b>Dimensions:</b>	1.6 Ø x 4.4 inches (without plug connector)	<b>IO-Link Communication Interface</b>
<b>Weight:</b>	Approx. 0.4 lb (200 g)	Transmission type:
<b>Proof pressure:</b>	1.5X rated pressure	IO-Link revision:
<b>A/D-Converter:</b>		SDCI standard:
Resolution:	12 bit (4,096 steps per measure span)	Profiles:
Scanning rate:	1000/s	SIO modules:
<b>Linearity error:</b>	< ±0.5 % f. s. at +25 °C	Required master port type:
<b>Temperature influence:</b>	TC zero < ±0.2 % FSO / 10K TC span < ±0.3 % FSO / 10K	SIO output:
<b>Compensation range:</b>	14°F to 158°F (-10°C to +70°C)	Min. process cycle time [ms]:
<b>Repeatability:</b>	±0.1% f. s.	Device ID:
<b>Temperature range:</b>		<b>Approvals<sup>1</sup>:</b>
Media:	-13°F to 212°F (-25°C to +100°C)	EMI
Electronics <sup>1</sup> :	14°F to 158°F (-10°C to +70°C)	EN 61000-4-2 ESD
Storage:	-22°F to 176°F (-30°C to +80°C)	EN 61000-4-3 HF radiated
<b>Power supply<sup>1</sup>:</b>	15 to 32 V DC, reversed polarity protected (SELV, PELV), Class 2	EN 61000-4-4 Burst
<b>Power consumption:</b>	Approx. 50 mA (without load) Approx. 80 mA (Output Code 6)	EN 61000-4-5-Surge
<b>Digital display:</b>	4-digit 14-segment LED red display, digit height .35 inches (9 mm)	EN 61000-4-6 HF conducted
Display rate:	20/s	Shock resistance
<b>Error display:</b>	LED RED and alphanumeric display	DIN EN 60028-2-27
		Vibration resistance
		DIN EN 60028-2-26

\*\* See product configurator for additional options.

<sup>1</sup> Condition of use with cULus: 140°F max. ambient; power supply: max. 28 V DC

<sup>2</sup> BV approval only with output code 1-5; for more details please see BV certification.

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## Technical Drawings

**Electrical Connection Chart**

Pin	Signal Output Code 1 & 7	Signal Output Code 2 & 3	Signal Output Code 4 & 5 & 8	Signal Output Code 6
1	+Ub	+Ub	+Ub	+Ub
2	SP2	Signal	Signal	SP1a
3	0V	0V	0V	SP1b
4	SP1/ IO-Link *	SP1	SP1/ IO-Link *	0V
5	-	-	SP2	SP2a
6	-	-	-	SP2b
7	-	-	-	-
8	-	-	-	Housing

\* IO-LINK ONLY FOR SIGNAL OUTPUT C.CODES 7 & 8

**Process Connections "A"**

Process Connections "A"	Dimension "B"
1/4" NPT	.66" [16.9 mm]
1/2" NPT flush diaphragm seal	.83" [21 mm]
7/16-20 UNF (SAE 4)	.36" [9.1 mm]
7/16-20 UNF (JIC 37°)	.55" [14 mm]
G 1/4"	.47" [12 mm]
G 1/2"	.55" [14 mm]

**UL** US Dimensions in inches [mm]

## Product Configurator

**Example**    **BPS3**    **8**    **N**    **V**    **M**    **9000P**    **P**

**Series:**

**BPS3** Series BPS3000, electronic dual pressure switch

**Output:**

1	Dual switch point
2	Single switch point plus 4-20mA (0-10V field selectable)
3	Single switch point plus 0-10V (4-20mA field selectable)
4	Dual switch point plus 4-20mA (0-10V field selectable)
5	Dual switch plus 0-10V (4-20mA field selectable)
6	Dual switch points (1 x NO SPST / 1 x NC SPST), requires piezo. sensor, not UL approved
7	IO-Link / Dual switch point
8	IO-Link / Dual switch point plus 4-20mA (0-10V field selectable)

**Process Connections\*:**

N	1/4" NPT male thread
3'	1/2" NPT flush diaphragm seal
E	7/16-20 UNF (SAE 4)
P	7/16-20 UNF male thread (JIC 37°)
G	G1/4" male thread
2'	G1/2" flush diaphragm seal

\*Contact factory for a 40x40 Cetop/Manifold or G1/2 with Large Bore Diameter connection.

**Electrical Connection:**

**M<sup>2</sup>** M12

**Sealing:**

V	FKM fluoroelastomer (standard)
E	EPDM (EPR) (optional)

**Sensor:**

Blank	Standard ceramic sensor
P	Piezoresistive sensor

**Pressure Ranges<sup>3</sup>**

0015PA <sup>4, 5, 7</sup>	0 - 15 psia (absolute)
0075PA <sup>4, 5, 7</sup>	0 - 75 psia (absolute)
0150PA <sup>4, 5, 7</sup>	0 - 150 psia (absolute)
0003P <sup>4, 5, 7</sup>	0 - 3 psig
0015P <sup>4, 5, 7</sup>	0 - 15 psig
0050P <sup>4, 5, 7</sup>	0 - 50 psig
0075P <sup>4, 5, 7</sup>	0 - 75 psig
0150P <sup>8</sup>	0 - 150 psig
0750P <sup>8</sup>	0 - 750 psig
1500P <sup>8</sup>	0 - 1500 psig
3000P <sup>8</sup>	0 - 3000 psig
6000P <sup>8</sup>	0 - 6000 psig
9000P <sup>4, 8</sup>	0 - 9000 psig

## Accessories

Order Number	Description
239535-1M-R-S <sup>6</sup>	4 Pin M12 Female Right Angle Plug Molded Cable, 3.28 Feet (1 Meter), Shielded
239535-1M-S <sup>6</sup>	4 Pin M12 Female Straight Plug Molded Cable, 3.28 Feet (1 Meter), Shielded
239537	4 Pin M12 Female Straight Connector
239236	4 Pin M12 Female Right Angle Connector
239546-1M-R-S <sup>6</sup>	5 Pin M12 Female Right Angle Plug Molded Cable, 3.28 Feet (1 Meter), Shielded
239546-1M-S <sup>6</sup>	5 Pin M12, Female Straight Plug Molded Cable, 3.28 Feet (1 Meter), Shielded
239548-S	5 Pin M12 Female Straight Connector
239548-R	5 Pin M12 Female Right Angle Connector

Note:

- Only available from (0-150 psig) range up to (0-9000 psig) range. Piezoresistive sensor only.
- Mating connector not included with unit; mating connectors are available and can be ordered as an accessory.
- Contact factory for ranges not listed including BAR.
- Pressure range requires piezoresistive sensor.
- Units are rated at IP65 only.
- See Cable Connectors & Accessories for more options.
- Not available with process connections 3 & 2
- Includes .2 mm Ø removable brass orifice