

# Pressure

## Electronic Pressure Switch

**BPS3000**

### Features

- ▶ Measuring range:
  - Gauge: 0 - 9000 psig
  - Absolute: 0 - 150 psia
- ▶ Suitable for indoor and outdoor usage\*
- ▶ One or two switch points
- ▶ 0.50% accuracy
- ▶ Analog output 4 - 20 mA or 0 - 10 V
- ▶ Superior EMI protection
- ▶ Display & electronic connection: rotatable by 320°
- ▶ Simple navigation menu
- ▶ Suitable for rapid cycling applications
- ▶ Hydraulic and pneumatic compatible

### Applications

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

### General Specifications\*\*



<b>Sensor element:</b>	Ceramic sensor (standard) Optional: piezoresistive sensor (For proper sensor selection see product configurator for more details.)	<b>Digital display:</b>	4-digit 14-segment LED red display, digit height .35 inches (9 mm)	
<b>Materials:</b>	Wetted parts: 304 Stainless steel Enclosure: 304 Stainless steel/polycarbonate/elastomer/polyamide Seals: FKM fluorelastomer (standard) EPDM (optional)	Display rate:	20/s	
<b>Operating elements:</b>	3 easy-response push-buttons	<b>Error display:</b>	LED RED and alphanumeric display	
<b>Enclosure rating:</b>	Type 4X (IP65) / Type 6 (IP67)	<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>Protection class:</b>	III	<b>Transistor switching outputs:</b>		
<b>Electrical connection:</b>	Plug M12 x 1, 4-pin / 5-pin	Switching function	Normally open / normally closed, standard /window mode and diagnosis function adjustable	
<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)	Switching output:	PNP	
<b>Dimensions:</b>	1.6 Ø x 4.4 inches (without plug connector)	Adjustment range for switching point and hysteresis:	0% to 125% f. s.	
<b>Weight:</b>	Approx. 0.4 lb (200 g)	Switching frequency:	Max. 100 Hz	
<b>Proof pressure:</b>	1.5X rated pressure	Load:	Max. 500 mA, short-circuit-proof	
<b>A/D-Converter:</b>	Resolution: 12 bit (4,096 steps per measure span) Scanning rate: 1000/s	Delay:	0.0 s to 9.9 s adjustable	
<b>Linearity error:</b>	< ±0.5 % f. s. at +25 °C	Status display(s):	LED(s) red	
<b>Temperature influence:</b>	TC zero < ±0.2 % FSO / 10K TC span < ±0.3 % FSO / 10K	<b>Approvals:</b>	cULus	
<b>Compensation range:</b>	14°F to 158°F (-10°C to +70°C)	<b>EMI</b>	EN 61000-4-2 ESD	4 kV CD / 8 kV AD
<b>Repeatability:</b>	±0.1% f. s.		EN 61000-4-3 HF radiated	10 V/m
<b>Temperature range:</b>	Media: -13°F to 212°F (-25°C to +100°C) Electronics: 14°F to 158°F (-10°C to +70°C) Storage: -22°F to 176°F (-30°C to +80°C)		EN 61000-4-4 Burst	2 kV
			EN 61000-4-5-Surge	1/2 kV
			EN 61000-4-6 HF conducted	10 V
<b>Power supply:</b>	15 to 32 V DC, reversed polarity protected (SELV, PELV) Class 2		Shock resistance	DIN EN 60028-2-27
<b>Power consumption:</b>	Approx. 50 mA (without load)	Vibration resistance	DIN EN 60028-2-26	20 g (10 to 2000 Hz)

\* Unit is made from UV rated materials and UL approved at an IP67 class of ingress protection. LED display may not be easily visible in bright direct sunlight.

\*\* See product configurator for additional options.

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## Technical Drawings

**Connection diagram**

Output order codes: 1, 2, 3, 4, 5

**Electrical Connection Chart**

M12 Pin Call-Out	Models with 2 switching output	Models with 1 switching output and 1 analog output	Models with 2 switching output and 1 analog output
Color Code of Mating Cable	Plug 4-pin	Plug 4-pin	Plug 5-pin
Pin 1 Brown	15 to 32 VDC	15 to 32 VDC	15 to 32 VDC
Pin 2 White	SP2 (500 mA/100 Hz)	Analog Output (500 mA/100 Hz)	Analog Output (500 mA/100 Hz)
Pin 3 Blue	0 V	0 V	0 V
Pin 4 Black	SP1 (500 mA/100 Hz)	SP1 (500 mA/100 Hz)	SP1 (500 mA/100 Hz)
Pin 5 Grey	Not Applicable	Not Applicable	SP2 (500 mA/100 Hz)

**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]

**Dimensions [in inches]**

## Product Configurator

Example **BPS3 4 E V M 6000P P**

### Series:

BPS3 Series BPS3000, electronic dual pressure switch

### Output:

1	Dual switch point
2	Single switch point plus 4-20mA
3	Single switch point plus 0-10V
4	Dual switch point plus 4-20mA
5	Dual switch plus 0-10V

### 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
1	40x40 Cetop/Manifold (contact factory)

### Sealing:

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

### Electrical Connection:

M<sup>1</sup> M12

### Sensor:

Blank	Standard ceramic sensor
P	Piezoresistive sensor

### Pressure Ranges<sup>2</sup>

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

## Accessories

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

- 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.
- See Cable Connectors & Accessories for more options.

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