

Pressure

Electronic Dual Pressure Switch

BPS3000

Features

- ▶ Measuring range: gauge: 0 - 9000 psig, absolute: 0 - 150 psia
- ▶ Enclosure Rating: Type 4X (IP65) / Type 6 (IP67)
- ▶ 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**

Sensor element:	Ceramic sensor (standard) Optional: piezoresistive sensor (For proper sensor selection see product configurator for more details.)	Power consumption:	Approx. 50 mA (without load)
Materials: Wetted parts:	304 Stainless steel; pressure ranges ≥ 0 -150 psi feature a .2 mm \varnothing removable brass orifice)	Digital display:	4-digit 14-segment LED red display, digit height .35 inches (9 mm)
Enclosure:	304 Stainless steel/polycarbonate/elastomer/ polyamide	Display rate:	20/s
Seals:	FKM fluoroelastomer (standard) EPDM (optional)	Error display:	LED RED and alphanumeric display
Operating elements:	3 easy-response push-buttons	Analog output:	4-20 mA
Enclosure rating:	Type 4X (IP65) / Type 6 (IP67)	Current output:	2 ms
Protection class:	III	Scanning rate:	0 to 10 V DC
Electrical connection:	Plug M12 x 1, 4-pin / 5-pin	Voltage output:	max. 10 mA
Process connection:	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)	Rating:	25% to 100% f. s.
Dimensions:	1.6 \varnothing x 4.4 inches (without plug connector)	Adjustment range:	
Weight:	Approx. 0.4 lb (200 g)	Transistor switching outputs:	
Proof pressure:	1.5X rated pressure	Switching function	Normally open / normally closed, standard / window mode and diagnosis function adjustable
A/D-Converter:		Switching output:	PNP
Resolution:	12 bit (4,096 steps per measure span)	Adjustment range for switching point and hysteresis:	0% to 125% f. s.
Scanning rate:	1000/s	Switching frequency:	Max. 100 Hz
Linearity error:	$< \pm 0.5$ % f. s. at +25 °C	Load:	Max. 500 mA, short-circuit-proof
Temperature influence:	TC zero $< \pm 0.2$ % FSO / 10K TC span $< \pm 0.3$ % FSO / 10K	Delay:	0.0 s to 9.9 s adjustable
Compensation range:	14°F to 158°F (-10°C to +70°C)	Status display(s):	LED(s) red
Repeatability:	± 0.1 % f. s.	Approvals¹:	cULus ¹
Temperature range:		EMI	EN 61000-4-2 ESD 4 kV CD / 8 kV AD
Media:	-13°F to 212°F (-25°C to +100°C)		EN 61000-4-3 HF radiated 10 V/m
Electronics ¹ :	14°F to 158°F (-10°C to +70°C)		EN 61000-4-4 Burst 2 kV
Storage:	-22°F to 176°F (-30°C to +80°C)		EN 61000-4-5-Surge 1/2 kV
Power supply¹:	15 to 32 V DC, reversed polarity protected (SELV, PELV), Class 2		EN 61000-4-6 HF conducted 10 V
		Shock resistance	DIN EN 60028-2-27 50 g (11 ms)
		Vibration resistance	DIN EN 60028-2-26 20 g (10 to 2000 Hz)

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Technical Drawings

Connection diagram

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 Gray	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 fluoroelastomer (standard)
E	EPDM (EPR) (optional)

Electrical Connection:

M² M12

Sensor:

Blank	Standard ceramic sensor
P	Piezoresistive sensor

Pressure Ranges³

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

Accessories

Order Number	Description
239535-1M-R-S ⁶	4 Pin M12 Female Right Angle Plug Molded Cable, 3.28 Feet (1 Meter), Shielded
239535-1M-S ⁶	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 ⁶	5 Pin M12 Female Right Angle Plug Molded Cable, 3.28 Feet (1 Meter), Shielded
239546-1M-S ⁶	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

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