

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**

Sensor element:	Ceramic sensor (standard) Optional: piezoresistive sensor (For proper sensor selection see product configurator for more details.)	Analog output:	4-20 mA
Materials:		Current output:	2 ms
Wetted parts:	304 Stainless steel; brass (if surge dampener is required)	Scanning rate:	0 to 10 V DC
Enclosure:	304 Stainless steel, PBT	Voltage output:	max. 10 mA
Seals:	FKM fluoroelastomer (standard) EPDM (optional)	Rating:	25% to 100% f. s.
Operating elements:	3 easy-response push-buttons	Adjustment range:	
Enclosure rating:	Type 4X (IP65) / Type 6 (IP67)	Transistor switching outputs:	
Protection class:	III	Switching function	Normally open / normally closed, standard / window mode and diagnosis function adjustable
Electrical connection:	Plug M12 x 1, 4-pin / 5-pin / 8-pin (see product configurator)	Switching output:	PNP / NPN (field-selectable on IO-Link units)
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)	Adjustment range for switching point and hysteresis:	0% to 125% f. s.
Dimensions:	1.6 Ø x 4.4 inches (without plug connector)	Switching frequency:	Max. 100 Hz
Weight:	Approx. 0.4 lb (200 g)	Load:	Max. 500mA, short-circuit-proof IO-Link: Max. 250mA
Proof pressure:	1.5X rated pressure	Delay:	0.0 s to 50.0 s adjustable
A/D-Converter:		Status display(s):	LED(s) red
Resolution:	12 bit (4,096 steps per measure span)	IO-Link Communication Interface	
Scanning rate:	1000/s	Transmission type:	COM2 (38.4 kBaud)
Linearity error:	< ±0.5 % f. s. at +25 °C	IO-Link revision:	1.1
Temperature influence:	TC zero < ±0.2 % FSO / 10K TC span < ±0.3 % FSO / 10K	SDCI standard:	IEC 61131-9
Compensation range:	14°F to 158°F (-10°C to +70°C)	Profiles:	Smart Sensor, Process Data Variable, Device Identification, Device Diagnosis
Repeatability:	±0.1% f. s.	SIO modules:	Yes
Temperature range:		Required master port type:	A
Media:	-13°F to 212°F (-25°C to +100°C)	SIO output:	1 analog / 2 binary (switch points) [see product configurator]
Electronics ¹ :	14°F to 158°F (-10°C to +70°C)	Min. process cycle time [ms]:	2.5
Storage:	-22°F to 176°F (-30°C to +80°C)	Device ID:	0x011...
Power supply ¹ :	15 to 32 V DC, reversed polarity protected (SELV, PELV), Class 2	Approvals ¹ :	cULus ¹ E42816, BV-50018/A0 ²
Power consumption:	Approx. 50 mA (without load) Approx. 80 mA (Output Code 6)	EMI	EN 61000-4-2 ESD 4 kV CD / 8 kV AD
Digital display:	4-digit 14-segment LED red display, digit height .35 inches (9 mm)		EN 61000-4-3 HF radiated 10 V/m
Display rate:	20/s		EN 61000-4-4 Burst 2 kV
Error display:	LED RED and alphanumeric display		EN 61000-4-5-Surge 1/2 kV
			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)

** See product configurator for additional options.

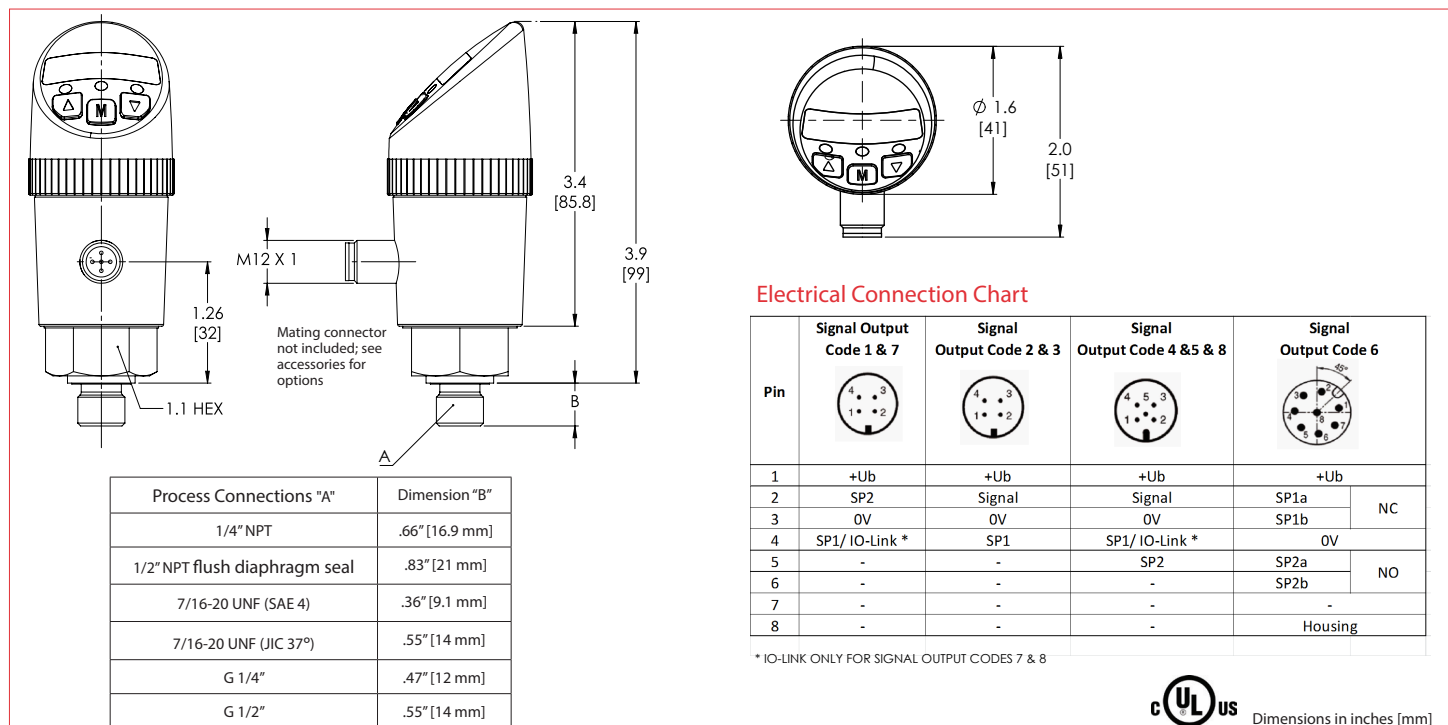
¹ Condition of use with cULus: 140°F max. ambient; power supply: max. 28 V DC

² 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 CODES 7 & 8



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	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 ¹	G1/2" flush diaphragm seal

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

Electrical Connection:

M ²	M12
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Sealing:

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

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 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