Electr. Dual Pressure Switch

BPS3000

Features

- Measuring ranges: 0 ... -1 bar to 0 ... 600 bar gauge
- Max. 2 switch points
- Analog output 4 - 20 mA or 0 - 10 V
- Rotatable 320° display & electrical connection
- Menu navigation refers to VDMA standard
- IO-Link communication interface

Applications

- Pressure control for:
  - Hydraulics & Pneumatics
  - Lubrication system
  - Cooling

Technical Data

Sensor element:	Ceramic sensor optional: piezoresistive sensor
Materials: **Wetted parts:** **Electronics housing:** **Seals:**	 Stainless steel, mat. no. 1.4301, brass MS58* Stainless steel, mat. no. V2A, PA / PC FKM, EPDM
Operating elements:	3 easy-response pushbuttons
System of protection:	IP65, IP67
Protection class:	III
Electrical connection:	Plug M12 x 1, 4-pin / 5-pin (depending on output code)
Process connection:	see order code
Dimensions:	110 x 41 mm (without plug connector)
Weight:	approx. 200 g
A/D converter: **Resolution:** **Scanning rate:**	 12 bit (4096 steps per measuring span) 1000 / s
Linearity error:	< ± 0.5 % v. f. s. at +25 °C
Temperature influence:	TC zero < ±0.2 % FSO / 10K TC span < ±0.3 % FSO / 10K
Compensation range:	-10 °C... +70 °C
Repeatability:	±0.1 % FSO
Temperature range: **Medium:** **Electronics:** **Storage:**	 -25 °C... +100 °C -10 °C... +70 °C [1)] -30 °C... +80 °C
Power supply:	15... 32 V DC, reversed polarity protected (SELV, PELV)
Digital display:	4-digit 14-segment LED display, red, digit height 9 mm
Error display:	LED red and alphanumeric display
Power consumption:	approx. 50 mA (without load)
Analog output: **Current output:** **Load:** **Scanning rate:** **Voltage output:** **Rating:** **Adjustment range:**	 4...20 mA max. Rl = (Ub-12V) / 20 mA Rl = 600 Ohm at Ub = 24 V DC 2 ms 0...10 V DC max. 10 mA 25 %... 100 % f. s.

Transistor switchting outputs / IO-Link:		
Switching function:	Normally open/normally closed, standard / window mode and diagnosis function adjustable	
Adjustment range for switching point and hysteresis:	0 %... 125 % f. s.	
Switching frequency:	max. 100 Hz	
Load:	max. 500 mA, short-circuit proof, IO-Link: max. 250 mA	
Delay:	0.0 s ... 50 s adjustable	
Status display(s):	LED(s) red	
Interfaces		
Communication interface:	IO-Link	
Transmission type:	COM2 (38,4 kBaud)	
IO-Link revision:	1.1	
SDCI standard:	IEC 61131-9	
Profiles:	Smart Sensor	
SIO mode:	yes	
Device type:	Class A	
Process data variable:	1	
Binary data channel:	2	
Min. process cycle time [ms]	2.5	
Device ID:	0x011...	
EMV /ESD	EN 61000-4-2 ESD	4 kV CD / 8 kV AD
	EN 61000-4-3 HF radiated	10 V/m
	EN 61000-4-4 Burst	2 kV
	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)
Vibrations resistance	DIN EN 60028-2-26	20 g (10...2000 Hz)
Approvals:	BV-50018/A0 [2),3)], cULus 1) - E42816	

* In the pressure inlet a damping screw made of brass is mounted. This screw can be removed if required, e.g. in case of soiled medium or material incompatibility, using a slotted screw driver (max. width 3 mm). The pressure switch is less resistant to pressure peaks when the damping screw has been removed.

[1)] Conditions of use with cULus: 60 °C max. ambient, power supply max. 28 V DC

[2)] BV approval only with output code 1-5

[3)] Direct electromagnetic fields can interfere the LED display, at some frequencies. This does not lead to an impairment of the performance.

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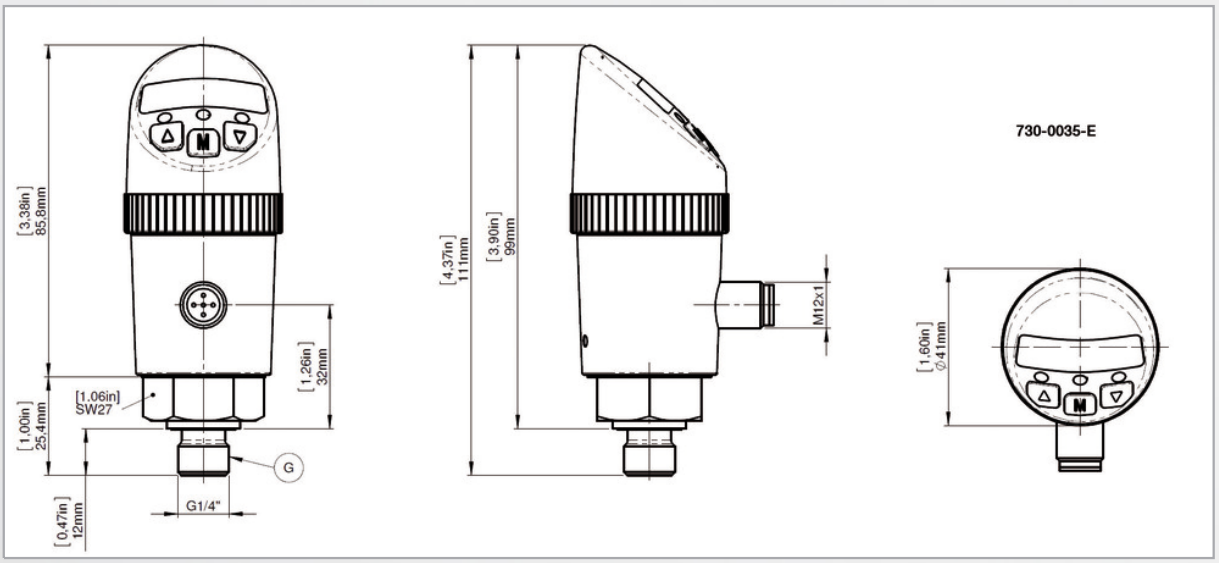
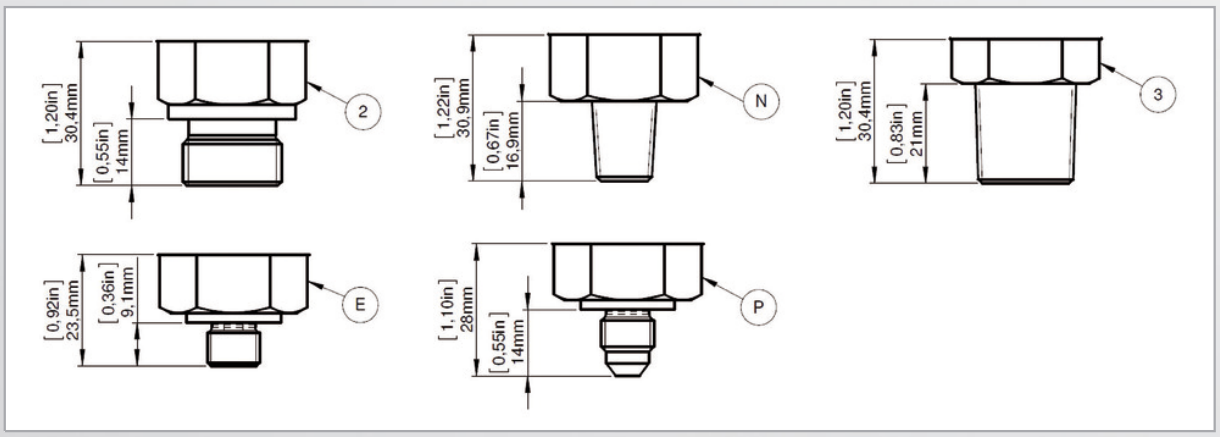
Accessories

Order Number	Description
907-0357	Plug connector M12 x 1, 4-pin, with screw terminals, angled (IP65)
907-0185	Plug connector M12 x 1, 5-pin, with screw terminals, angled (IP65)
908-0361	Plug connector M12 x 1, 5-pin, with sharped cable (IP67)

Dimensions (mm / *inch*)



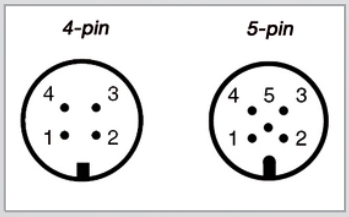
Process connection



Legend

G	G1/4" Ceramic
N	1/4" NPT Ceramic
2	G1/2" flush diaphragm
3	1/2" NPT flush diaphragm
E	7/16-20 UNF (SAE)
P	7/16-20 UNF (JIC)

Plug



Electrical Connection

Pin	Signal Output Code 1,7	Signal Output Code 2, 3	Signal Output Code 4, 5, 8
1	+Ub	+Ub	+Ub
2	SP2	Signal	Signal
3	OV	0V	0V
4	SP1 / IO-Link*	SP1	SP1 / IO-Link*
5	-	-	SP2

* only code 7 and 8

Subject to technical changes.

Order Code

BPS3000										
BPS3										Base Model
	Output									
	1									2 switch points
	2									4…20 mA - 1 switch point
	3									0…10 V - 1 switch point
	4									4…20 mA - 2 switch points
	5									0…10 V - 2 switch points
	7									IO-Link / 2 switch points (PNP, NPN, PP)
	8									IO-Link / 2 switch points (PNP, NPN, PP) / Analog Output
		Process Connection								
		G								G1/4" ext. thread
		2								G1/2" flush diaphr. (requires piezoresistive sensor / code P* /10-600 bar only)
		N								1/4"NPT ext. thread
		3								1/2"NPT flush diaphr. (requires piezoresistive sensor / code P* / 10-600 bar only)
		1								40x40 Cetop/Manifold - on request
		E								7/16-20 UNF (SAE4) ext. thread
		P								7/16-20 UNF (37° JIC) ext. thread
			Sealing							
			V							FKM
			E							EPDM
				Electrical Connection						
				M						M12
					Range					
					-	1	.	0	B	V -1 ... 0 bar requires piezoresistieve sensor / code P)*, IP65 only
					0	0	0	1	B	V -1 … 1 bar requires piezoresistieve sensor / code P)*, IP65 only
					0	0	0	5	B	V -1 … 5 bar requires piezoresistieve sensor / code P)*, IP65 only
					0	0	1	0	B	V -1 … 10 bar requires piezoresistieve sensor / code P)*, IP65 only
					0	0	0	1	B	A 0 … 1 bar absolute (requires piezoresistive sensor / code P)*
					0	0	0	5	B	A 0 … 5 bar absolute (requires piezoresistive sensor / code P)*
					0	0	1	0	B	A 0 … 10 bar absolute (requires piezoresistive sensor / code P)*
					0	0	.	2	B	0 … 0.2 bar (requires piezoresistive sensor / code P)*,P65 only
					0	0	.	5	B	0 … 0.5 bar (requires piezoresistive sensor / code P)*,IP65 only
					0	0	0	1	B	0 … 1 bar (requires piezoresistive sensor / code P)*,IP65 only
					0	0	0	2	B	0 … 2 bar (requires piezoresistive sensor / code P)*, IP65 only
					0	0	0	5	B	0 … 5 bar (requires piezoresistive sensor / code P)*, IP65 only
					0	0	1	0	B	0 … 10 bar
					0	0	5	0	B	0 … 50 bar
					0	1	0	0	B	0 … 100 bar
					0	2	0	0	B	0 … 200 bar
					0	4	0	0	B	0 … 400 bar
					0	6	0	0	B	0 … 600 bar (requires piezoresistive sensor / code P)*
										Others on request
										Sensor
										Blank Standard ceramic sensor
										P *Piezoresistive sensor

Example:

BPS3	4	G	V	M	0	2	0	0	B

Special designs on request