

Electr. Dual Pressure Switch

BPS3000

Features

- ▶ Measuring ranges: 0 ... -1 bar to 0 ... 600 bar gauge
- ▶ Max. 2 switch points
- ▶ Analogue 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:	Stainless steel, mat. no. 1.4301, brass MS58*
Electronics housing:	Stainless steel, mat. no. V2A, PA / PC
Seals:	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 / 8-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:	12 bit (4096 steps per measuring span)
Scanning rate:	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:	-25 °C... +100 °C
Electronics:	-10 °C... +70 °C ¹⁾
Storage:	-30 °C... +80 °C
Power supply:	15... 32 V DC, output code 6: 20... 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) output code 6: approx. 80 mA
Relay output:	Rel. 1 normally closed, Rel. 2 normally open Load: max. 1A, max 60 V, max. 30 W
Analog output:	
Current output:	4...20 mA
Load:	max. RI = (Ub-12V) / 20 mA RI = 600 Ohm at Ub = 24 V DC
Scanning rate:	2 ms
Voltage output:	0...10 V DC
Rating:	max. 10 mA
Adjustment range:	25 %... 100 % f. s.

Transistor switching 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/A02, 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

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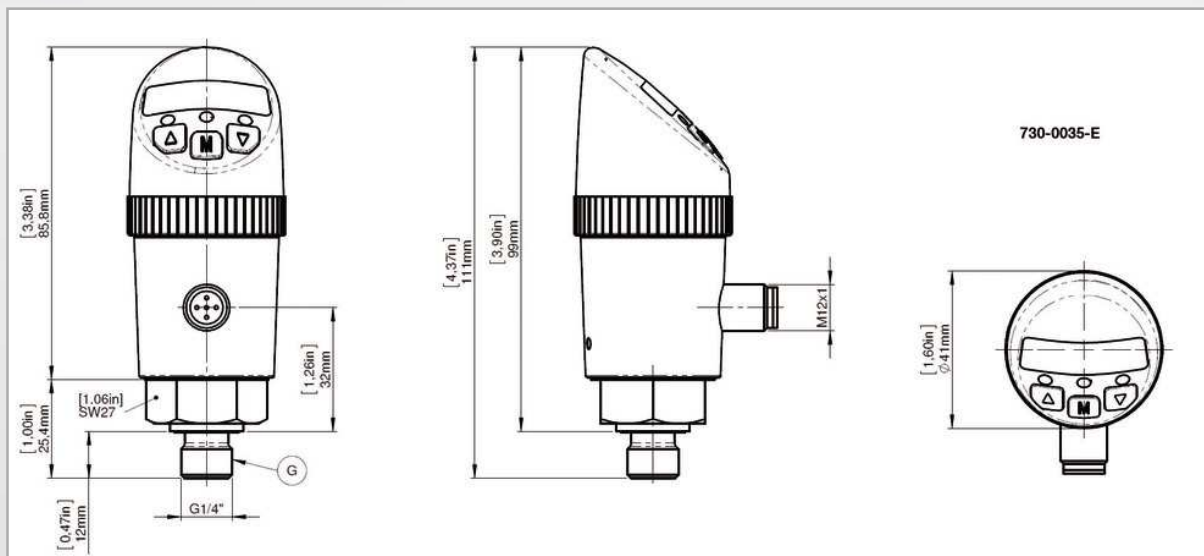
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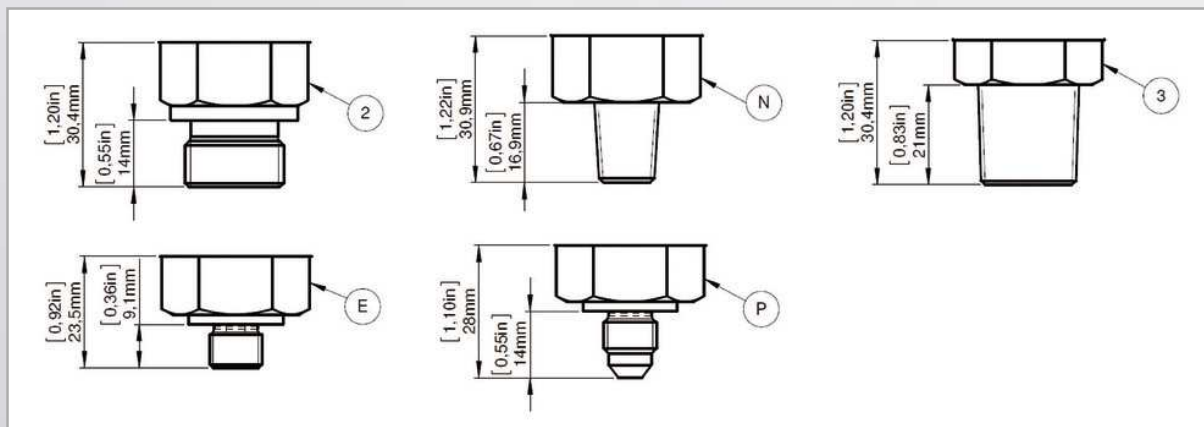
Accessories

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 moulded cable, (IP67), 2 m length
908-0544	Plug connector M12 x 1, 8-pin, with moulded cable (IP67), 2 m length

Dimensions (mm / inch)



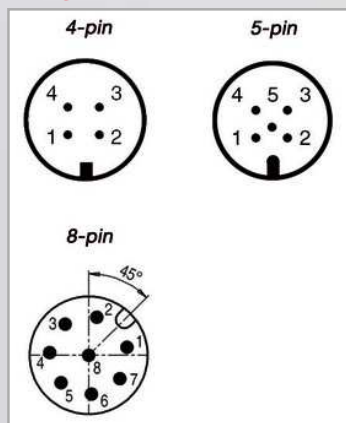
Process connection



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	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

* only code 7 and 8

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
6	2 relays switch points (1 x NO SPST / 1 x NC SPST)(requires piezo. sensor / code P)*, no UL
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
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Range

- 1 . 0 B V	-1 ... 0 bar requires piezoresistive sensor / code P)*, IP65 only
0 0 0 1 B V	-1 ... 1 bar requires piezoresistive sensor / code P)*, IP65 only
0 0 0 5 B V	-1 ... 5 bar requires piezoresistive sensor / code P)*, IP65 only
0 0 1 0 B V	-1 ... 10 bar requires piezoresistive 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)*, IP65 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

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Example:

BPS3 4 G V M 0 2 0 0 B

Special designs on request