

Electronic Dual Differential Pressure Switch

BDS3000

Features

- Measuring ranges: differential press. 0...350 mbar to 0...35 bar
- Enclosures Rating Type 4X (IP65) / Type 6 (IP67)
- Two switch points
- Analog output 4 - 20 mA or 0 - 10 V
- Superior EMI protection
- Rotatable 320° display & electrical connection
- IO-Link communication interface

Applications

- Filtration
- Machine tool industry
- Factory Automation
- Lubrication monitoring
- Pumps and compressors
- Marine

Technical Data

Sensor element	piezoresistive sensor
Materials	
Wetted parts	Stainless steel, mat. No. 1.4301
Electronics housing	Stainless steel, mat. No. VA2, PA / PC
Seals	FKM, EPDM
Operating elements	3 easy-response pushbuttons
System of protection	Type 4X (IP65) / Type 6 (IP67)
Protection class	III
Electrical connection	Plug M12 x 1; 4/5 pin
Process connection	see order code
Dimensions	76 x 41 x 122 mm
Weight	Approx. 600 g
A/D-Converter:	
Resolution	12 bit
Scanning rate	(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	0°C to +50°C (32°F to 122°F)
Repeatability	±0.1 % FSO
Temperature range	
Media	-25°C to +100°C (-13°F to 212°F)
Electronics	-10°C to +70°C (14°F to 158°F)
Storage	-30°C to +80°C (-22°F to 176°F)
Power supply	15 ... 32 V DC, reversed polarity protected (SELV, PELV) Class 2
Digital display	4-digit 14-segment LED red display, digit height 9 mm
Display rate	20/s
Power consumption	Approx. 50 mA (without load)
Error display	LED RED and alphanumeric display
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
Volte output	0... 10 V DC
Rating	max 10 mA
Adjustment range	25 % ... 100% f. s.



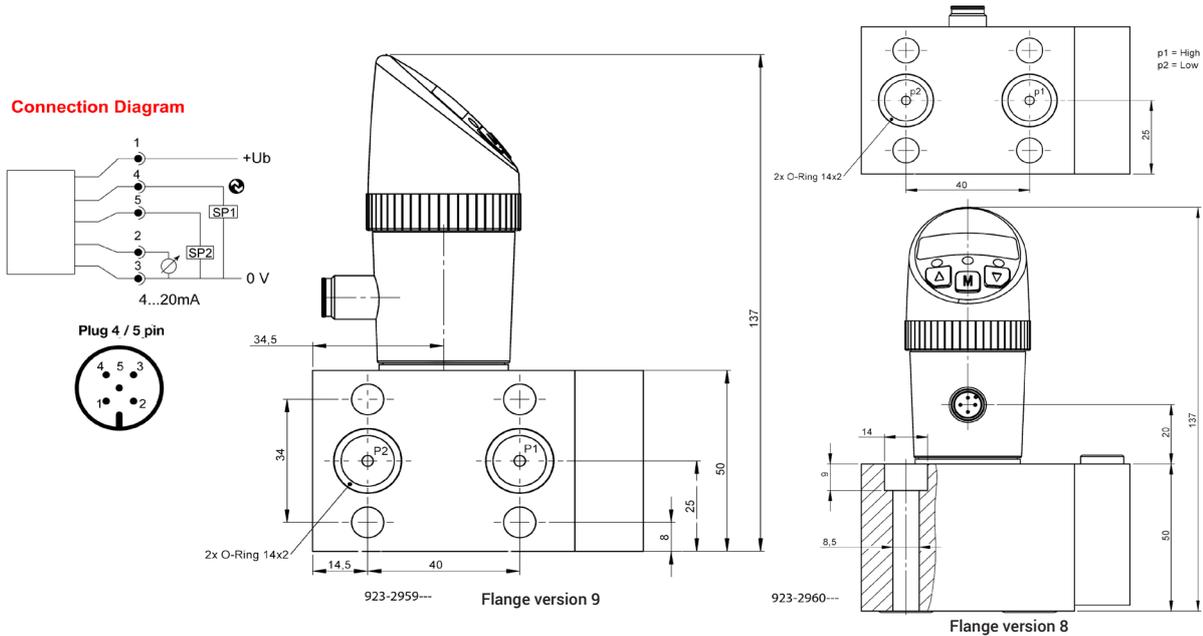
Transistor switching outputs		
Switching function	Normally open/normally closed, standard / windows mode and diagnosis function adjustable	
Switching output	PNP IO-Link: PNP / NPN / PP	
Adjustment range for switching point and hysteresis	0% to 125% f. s.	
Switching frequency	Max. 100 Hz	
Load	Max. 500 mA (250 mA IO-Link units) short-circuit-proof	
Delay	0.0 s to 50.0 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	
Devices type	Class A	
Process data variable	1	
Binary data channel	2	
Min. process cycle time [ms]	2.5	
Device ID	0X071	
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/B1 ^{1), 2)}	

¹⁾ BV approval only with output code 1-5, ²⁾ 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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Dimensions (mm / inch)



Pressure Ranges

Pressure Range Code	Differential Pressure	Proof Pressure	Proof Pressure	Common Pressure
[bar]	P1>P2 [bar]	P1>P2 [bar]	P2>P1 [bar]	P1=P2 [bar]
0.35	0-0.35	0.7	0.35	200
0.7	0-0.7	1.5	0.7	200
1	0-1	2	1	200
2	0-2	4	2	200
3.5	0-3.5	7	3.5	200
7	0-7	14	7	200
10	0-10	20	10	200
20	0-20	40	10	200
35	0-35	70	10	200

Accessories

Order Number	Description
0598-001	Plug connector M12 x 1, 4-pin, with screw terminals, angled (IP65)
0598-002	Plug connector M12 x 1, 5-pin, with screw terminals, angled (IP65)
0598-003	Plug connector M12 x 1, 5-pin, with moulded cable (IP67), 2 m length

Order Code

Base model			
BDS3	Differential Pressure Switch		
Output			
1	2 switch points		
2	4...20 mA 1 switch point		
3	0...10V 1 switch point		
4	4...20mA 2 switch points		
5	0...10V 2 switch points		
7	IO-Link / 2 switch points (PNP, NPN, PP ¹⁾)		
8	IO-Link / 2 switch points (PNP, NPN, PP / Analog Output ¹⁾)		
Process Connection			
5	G1/4" internal thread		
F	1/4" NPT female		
8	flange version, straight		
9	flange version, lateral		
Sealing*			
V	FKM		
E	EPDM		
Electrical Connection			
M	M12		
Range*			
0.35B	0 ... 0.35 bar	0005P	0 ... 5 psi
0.70B	0 ... 0.7 bar	0010P	0 ... 10 psi
0001B	0 ... 1 bar	0015P	0 ... 15 psi
0002B	0 ... 2 bar	0030P	0 ... 30 psi
3.50B	0 ... 3.5 bar	0050P	0 ... 50 psi
0007B	0 ... 7 bar	0100P	0 ... 100 psi
0010B	0 ... 10 bar	0150P	0 ... 150 psi
0020B	0 ... 20 bar	0300P	0 ... 300 psi
0035B	0 ... 35 bar	0500P	0 ... 500 psi

Example

¹⁾ without BV approval

* Other configurations are available upon request.