

Model PD1L

Wet/Wet Differential Pressure Transducers

 \checkmark ±0.5%FS static accuracy (±0.25%FS possible as an option)

- ✓ Compact, rugged, hermetically sealed 316 stainless steel construction
 - \checkmark High-performance transducers using a single silicon die
 - ✓ 3,000 psi static pressure rating
 - ✓ Fully tested, fully compensated, calibrated and serialized
 - ✓ Ranges from 3 to 30 psi



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SEN²ORS

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Description

Senzors' model PD1L is a compact rugged wet/wet differential pressure transducer that utilizes the latest leadingedge technologies to measure differential pressures. With its excellent stability and proven reliability the PD1L provides unequaled performance and is designed to accurately measure wet/wet differential pressures at high static line pressures. Its small size and light weight allows for mounting in places too tight for most other transducers.

The sensing element is a single solid-state piezoresistive silicon die. This technology is based on a principle that results in excellent linearity, increased long-term stability and reliability and virtually no hysteresis. The silicon strain gage is fitted into a high-tech 316 stainless steel package which provides 2 stainless steel diaphragms and isolates the silicon die on both positive and negative sides.

The sensor signal is amplified by a signal conditioning module that integrates an advanced electronic amplifier and a built-in voltage regulator providing a high-level output from an unregulated voltage supply. This design using a single die and an advanced electronics provides a much better accuracy and durability than most designs using 2 sensors. Each unit is fully tested compensated and calibrated for pressure and temperature. Each transducer is shipped with a traceable calibration card.

The electronics is packaged in an hermetically-sealed 316 stainless steel housing enabling the PD1L to be immersed in water or pressure washed without internal leakage. This design makes the PD1L ideal for pressure measurements that can involve wet, corrosive or sterile media in the most severe environments, including underwater or subsea applications.

Applications

Pressure Instrumentation Aircrafts / Avionics Flow control / Flow measurement Leak detection Filter Fontrol / Monitoring Hydraulic & Pneumatic Systems Tank pressure / Pressurized Tank Level Industrial Controls Biomedical instruments / Medical Equipment Process Control Systems Engine test stands Automotive test stands







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Dimensions

Dimensions below are in inches and (mm). Tolerance on diameter: -0.000"/-0.0020" (-0.00mm/-0.05mm)



Specifications	
Pressure Ranges	0-3 psi through 0-30 psi
Type of pressure	Differential

Performances	
Static Accuracy (linearity, hysteresis, repeatability and calibration)	± 0.5%FS (B.F.S.L.) ± 0.25%FS (B.F.S.L.) optional
Temperature error	± 0.02%FS/°F
Static pressure effect	< 0.0005%FS/psi
Long term stability	± 0.3%FS per annum
Response time (-3dB)	< 10 ms
Resolution	infinite (0.02%FS practical mini- mum)
Fatigue life	> 1 million cycles

-40°C to +100°C
-40°C to +80°C
1G
5G, 11 ms, half-sine
1.5 m

Electrical characteristics									
Supply	5 to 28 VDC	8 to 28 VDC	13 to 28 VDC	8 to 28 VDC					
Output	0 to 1 VDC	0 to 5 VDC	0 to 10 VDC	4 to 20 mA					
Load	> 5 kΩ	> 5 kΩ	> 5 kΩ	< 1 kΩ					
Current draw	< 3 mA	< 3 mA	< 3 mA	< 25 mA					
Insulation	> 100 MΩ at 50 VDC								

Physical chara	cteristics	
Proof pressure	+ side	2x
	- side	1x
Max. static pressure		3,000 psi
Burst pressure (pressure containment)		750 psi
Wetted parts		316L Stainless Steel
Weight		≈ 1 lb (440 g)



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Wiring diagram

		Cable	D	IN 43650		Binder	MIL			
3-wire, voltage output	Black+Supplypin 1Red+OUTpin 2WhiteGNDpin 3		pin 1 pin 2 pin 3	GND +OUT +Supply	pin 1 pin 2 pin 3	GND +OUT +Supply	pin C pin B pin A	GND +OUT +Supply		
2-wire, 4-20 mA output	Black +9 Red +0	Supply OUT/GND	pin 1 pin 3	GND +Supply	pin 1 pin 3	GND +Supply	pin C pin A	GND +Supply		

Ordering information

			PD1L	-	D	P10	05	-	42	5C	-	I4	D4	S	V	К	-	0000	
Pressure referen	ce																		
D	Differential																		
Pressure range Reques	t code to use for your pressure i	range																	
Compensated te 05 A8	mperature range 0 to +50°C -10 to +80°C																		
Output signal	t code to use for any other com	pensated te	mperature	rang	ge														
42 10 Reques	4 to 20 mA 0 to 10 VDC st code to use for any other outp	01 05 ut signal	0 to 1 VD0 0 to 5 VD0																
Static accuracy	· · · · · · · · · · · · · · · · · · ·																		
5C 3D	0.5%FS 0.25%FS																		
Pressure fitting I4 E4 Reques	1/4"-18NPT female 1/4" BSP (G 1/4") female it code to use for any other pres	sure fitting																	
Electrical connect	tion		~~	~ .															
D4 BI	Binder connector		L1	MIL	con	nector													
Reques	t code to use for any other elect	rical termin	ation																
S H	316L Stainless Steel Hastelloy C276																		
O-ring material	Elverseiliserse	C	Cilianna																
E	EPDM	5	Silicone																
К	Kalrez®																		
Cil filling K O	Silicone oil Olive oil																		
Option 0000	Standard																		

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