SENZORS

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Model PF1L

Flush Mount Pressure Transducers

MODEL PF1L

- ✓ ±0.5%FS static accuracy (±0.25%FS possible as an option)
- ✓ Compact, rugged, all-welded 316 stainless steel construction (No O-ring)
- ✓ Reliable (lifetime in millions of cycles), high-performance transducers
- ✓ MEMS technology for superior linearity and low hysteresis
- ✓ Fully tested, fully compensated, calibrated and serialized
- ✓ Ranges from 3 to 30 psi

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Description

Senzors' model PF1L is a compact rugged pressure transducer with a flush diaphragm that utilizes the latest leading-edge technologies to measure pressure. With its excellent stability and proven reliability the PF1L provides unequaled performance and is designed for any application that requires a low pressure measurement.

The sensing element is a 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 316 stainless steel package and is completely isolated from the media. There are no internal O-rings or elastomers to contain the media and to contribute to instabilities or drifts.

The sensor signal is amplified by a state-of-the-art ASIC-based electronics providing a high-level output from an un-regulated voltage supply. The ASIC enables enhanced accuracy, stability and reliability while reducing the transducer's size. Coupled with MEMS technology, the ASIC technology also enables Senzors to offer almost any output over any pressure range. 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 all-welded 316 stainless steel housing enabling the PF1L to be immersed in water or pressure washed without internal leakage (only with some termination). This design makes the PF1L ideal for pressure measurements that can involve wet, corrosive or sterile media in the most severe environments.

Applications

- Pressure Instrumentation
- Aircrafts / Avionics
- Flow control / Flow measurement / Filter Monitoring
- Smart valves
- Pumps / Compressors
- Refrigeration / Air Conditioning / HVAC
- Hydraulic & Pneumatic Systems
- Liquid level measurement
- Tank pressure / Tank Level Metering
- Industrial Controls
- Biomedical instruments / Medical Equipment
- Process Control Systems

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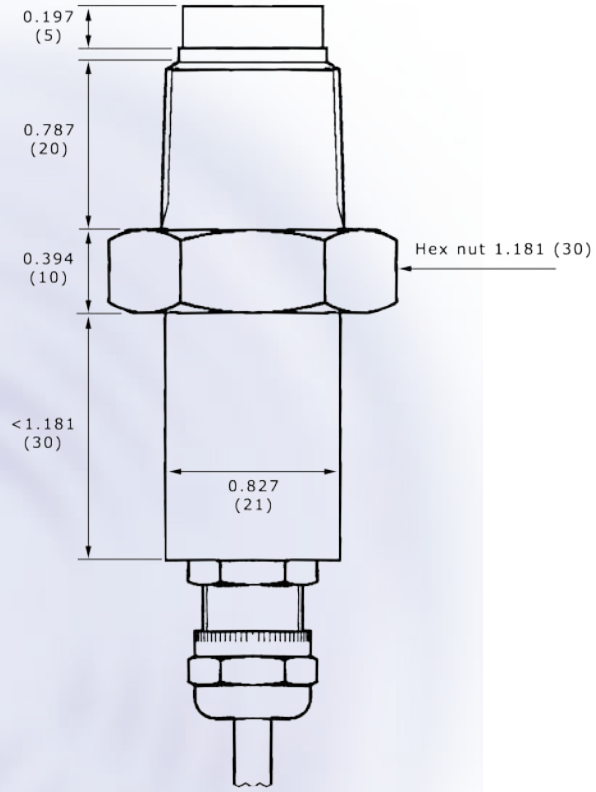
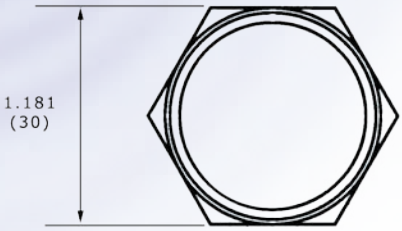
Dimensions

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	Absolute, Vented, Sealed, Vacuum

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
Long term stability	± 0.3%FS per annum
Response time (-3dB)	< 1 ms
Resolution	infinite (0.02%FS practical mini-mum)
Fatigue life	> 10 million cycles

Environmental characteristics

Operating temperature (process)	-40°C to +125°C
Ambient temperature	-40°C to +80°C
Random vibration (50-2000Hz)	1G
Shock	10G, 11 ms, half-sine
Drop (any axis)	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	< 20 mA
Insulation	> 100 MΩ at 50 VDC			

Physical characteristics

Proof pressure	2x
Burst pressure (pressure containment)	750 psi for vented-type transducers 2000 psi for absolute and sealed
Wetted parts	316L Stainless Steel
Weight	≈ 5.3 oz. (150 g)

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Wiring diagram

	Cable	DIN 43650	Binder	MIL
3-wire, voltage output	Black +Supply Red +OUT White GND	pin 1 GND pin 2 +OUT pin 3 +Supply	pin 1 GND pin 2 +OUT pin 3 +Supply	pin C GND pin B +OUT pin A +Supply
2-wire, 4-20 mA output	Black +Supply Red +OUT/GND	pin 1 GND pin 3 +Supply	pin 1 GND pin 3 +Supply	pin C GND pin A +Supply

Ordering information

PF1L	-	A	P10	05	-	42	5C	-	N2	D4	S	X	K	-	0000

Pressure reference
- A Absolute
- S Sealed
- R Vented
- C Compound
- B Barometric
- V Vacuum

Pressure range
- Request code to use for your pressure range

Compensated temperature range
- 05 0 to +50°C
- A8 -10 to +80°C
- Request code to use for any other compensated temperature range

Output signal
- 42 4 to 20 mA
- 10 0 to 10 VDC
- 01 0 to 1 VDC
- 05 0 to 5 VDC
- Request code to use for any other output signal

Static accuracy
- 5C 0.5%FS
- 3A 0.25%FS

Pressure fitting
- N2 1/2"-14NPT
- G2 1/2" BSP (G 1/4")
- Request code to use for any other pressure fitting

Electrical connection
- D4 DIN43650 connector
- BI Binder connector
- CC Cable
- L1 MIL connector
- Request code to use for any other electrical termination

Wetted material
- S 316L Stainless Steel
- H Hastelloy C276

O-ring material
- V Fluorocarbon
- E EPDM
- K Kalrez®
- S Silicone
- X No O-ring (metal seal threads)

Oil filling
- K Silicone oil
- O Olive oil

Option
- 0000 Standard

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