

MODEL PT1M

- ✓ $\pm 0.25\%$ FS static accuracy ($\pm 0.1\%$ 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 30 to 300 psi



Description

Senzors' model PT1M is a compact rugged pressure transducer that utilizes the latest leading-edge technologies to measure pressure. With its excellent stability and proven reliability the PT1M provides unequaled performance and is designed for any application that requires a low to medium pressure measurement. Its modular design makes it a general purpose industrial pressure transducer that can serve as the basis for a unique custom solution without sacrificing price and high performance.

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 unregulated 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 PT1M to be immersed in water or pressure washed without internal leakage. This design makes the PT1M 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

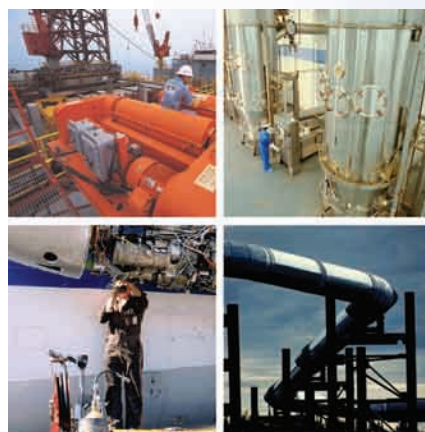
Liquid level measurement

Tank pressure / Tank Level Metering

Industrial Controls

Biomedical instruments / Medical Equipment

Process Control Systems

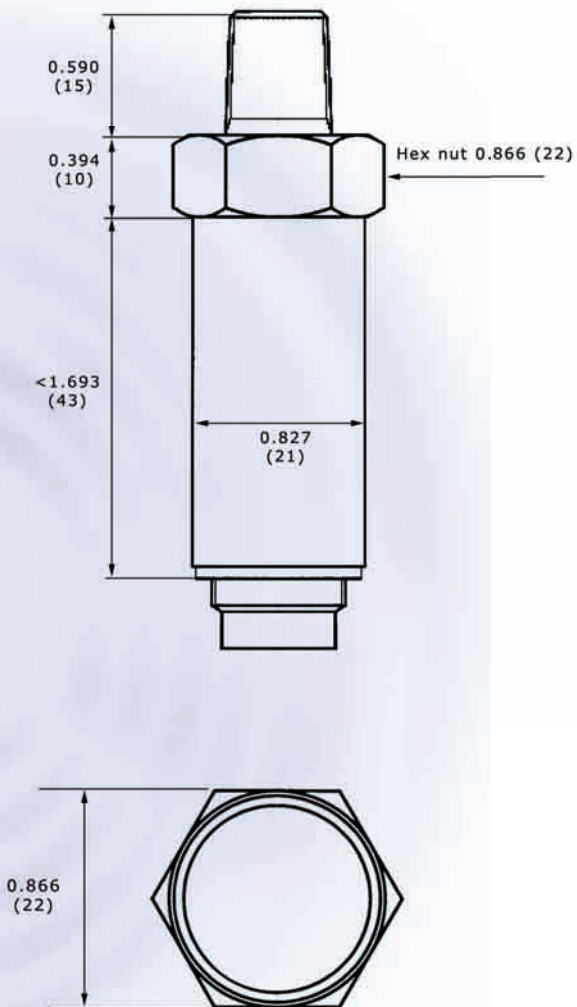


Model PT1M

Industrial Pressure Transducers

Dimensions

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



Specifications

Pressure Ranges	0-30 psi through 0-300 psi
Type of pressure	Absolute, Vented, Sealed

Performances

Static Accuracy (linearity, hysteresis, repeatability and calibration)	$\pm 0.25\%FS$ (B.F.S.L.) $\pm 0.1\%FS$ (B.F.S.L.) optional
Temperature error	$\pm 0.01\%FS/^{\circ}F$
Long term stability	$\pm 0.2\%FS$ per annum
Response time (-3dB)	< 1 ms
Resolution	infinite (0.02%FS practical minimum)
Fatigue life	> 100 million cycles

Environmental characteristics

Operating temperature (process)	$-40^{\circ}C$ to $+125^{\circ}C$
Ambient temperature	$-40^{\circ}C$ to $+80^{\circ}C$
Random vibration (50-2000Hz)	20G
Shock	100G, 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 k Ω	> 5 k Ω	> 5 k Ω	< 1 k Ω
Current draw	< 3 mA	< 3 mA	< 3 mA	< 20 mA
Insulation	> 100 M Ω 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	Varies upon pressure port

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

PT1M - A P50 05 - 42 3D - N4 D4 S X K - 0000

Pressure reference	A Absolute	C Compound																	
	S Sealed																		
	R Vented																		
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		01	0 to 1 VDC														
	10	0 to 10 VDC		05	0 to 5 VDC														
	Request code to use for any other output signal																		
Static accuracy	3D	0.25%FS																	
	1C	0.1%FS																	
Pressure fitting	N4	1/4"-18NPT		N8	1/8"-27NPT														
	G4	1/4" BSP (G 1/4")		S4	SAE #4														
	Request code to use for any other pressure fitting																		
Electrical connection	D4	DIN43650 connector			CC	Cable													
	BI	Binder connector			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			S	Silicone													
	E	EPDM			X	No O-ring (metal seal threads)													
	K	Kalrez®																	
Oil filling	K	Silicone oil																	
	O	Olive oil																	
Option	0000	Standard																	

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