



FEATURES

- **Stainless Steel 316L Construction**
- **High Accuracy** - nonlinearity within $\pm 0.2\%$ FS
- **Wide Operating Temperature** from $-40\text{ }^{\circ}\text{C}$ to $+125\text{ }^{\circ}\text{C}$
- **Shock and Vibration Resistant** rated to 100g shock and 20g vibration
- **Excitation Options** for both constant current (1.5 mA) and constant voltage (10 V)
- **Compact 12 mm Size** simplifies OEM assembly and system integration
- **High Pressure Range:** 500PSI to 10,000PSI (Sealed Gauge)

DESCRIPTION

The PPS02 is a media-isolated Stainless Steel Pressure Sensor Element engineered for high-accuracy measurement in harsh or corrosive environments. This silicon-based sensor is widely integrated into aerospace, medical, industrial, and marine systems where reliability and material compatibility are critical. Its all-Stainless Steel construction provides superior corrosion resistance and long-term stability across a wide temperature range ($-40\text{ }^{\circ}\text{C}$ to $125\text{ }^{\circ}\text{C}$).

The PPS02 incorporates a piezoresistive MEMS sensing element isolated by silicone oil within a Stainless Steel housing, delivering excellent repeatability, precision, and durability. Its compact 12 mm form factor allows for seamless OEM integration, and custom configurations are available upon request—please contact Phoenix Sensors for more information.

APPLICATIONS

- Process control systems
- Pressure calibration instruments
- Refrigeration equipment and HVAC control
- Hydraulic systems and valves
- Level measurement
- Biomedical instruments
- Ships and navigation
- Aircraft and avionics systems
- Weaponry

Environmental Ratings

Operating Temperature $-40\text{ }^{\circ}\text{C}$ to $125\text{ }^{\circ}\text{C}$
 Storage Temperature Range $-40\text{ }^{\circ}\text{C}$ to $125\text{ }^{\circ}\text{C}$
 Compensated Temperature Range $-10\text{ }^{\circ}\text{C}$ to $70\text{ }^{\circ}\text{C}$
 Service Life 10×10 (cycles)

Proof Pressure 1.5x Full Scale Pressure
 Burst Pressure 2x Full Scale Pressure
 Vibration 20g (20-5000Hz)
 Shock 100g (10ms)

PPS02 Operational Characteristics

Parameter	Symbol	Min	Typ	Max	Units
Excitation Voltage	Vexc		10		VDC
Excitation Current	Iexc		1.5		mA
Input Impedance	Current	2.0	—	5.0	kΩ
	Voltage	3		18	
Full Scale Output	1.5mA	60	90	150	mV
	10V	80	100	120	
Zero Offset Output	Vzero	-2	±1	+2	mV
Linearity (BFSL)	—	±0.3	±0.2	±0.3	%FS
Repeatability	—	±0.05	±0.03	±0.05	%FS
Hysteresis	—	±0.05	±0.03	±0.05	%FS
Thermal Error (0–70°C)	—	—	±1.0	—	%FS
Zero Temp. Coefficient	—	±1.5	±0.75	±1.5	%FS
Sensitivity Temp. Coefficient	—	±1.5	±1.0	±1.5	%FS
Response Time (10–90%)	—	—	1	—	ms
Overpressure	—	—	150–200	—	%FS
Operating Temperature Range	—	-40	—	+125	°C
Compensated Temperature Range	—	-10	—	+70	°C
Insulation Resistance	—	200	—	—	MΩ @ 250VDC
Shock	—	—	100	—	g (10ms)

Application Information

Package

The PPS02 is constructed with a full Stainless Steel housing and diaphragm for superior corrosion resistance, biocompatibility, and strength-to-weight performance. The 12 mm design provides a compact form factor for OEM integration.

Stability

Precision factory calibration ensures excellent long-term stability, low hysteresis, and consistent output across a wide operating temperature range.

Pressure Connections

The PPS02 can be supplied as a standalone sensing element with an O-ring face seal for direct integration or with standard pressure ports such as 1/4"-18 NPT, 1/8"-27 NPT, or 7/16"-20 UNF. Additional custom port configurations are available upon request.

Media

The PPS02 is compatible with most liquids and gases, including hydraulic fluids, refrigerants, saltwater, and other corrosive or aggressive media that are not reactive with Stainless Steel.

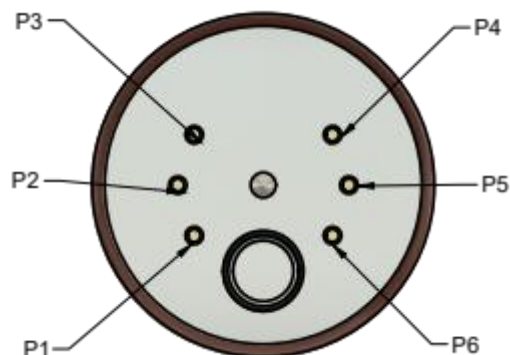
Wetted parts

All wetted components are constructed of Stainless Steel and sealed with fluorine rubber. The internal fill is high-purity silicone oil for optimal thermal stability and media isolation.

Pressure ranges

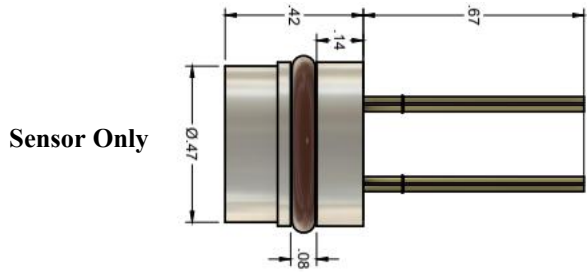
Standard pressure ranges are between 1,000psi - 5,000psi in sealed gauge. Custom pressure ranges are available for OEM customers.

Electrical Connections



Electrical Connections	
P#	Function
P1	-IN
P2	+OUT
P3	NC
P4	+IN
P5	-OUT
P6	-IN

Mechanical Dimensions (in)



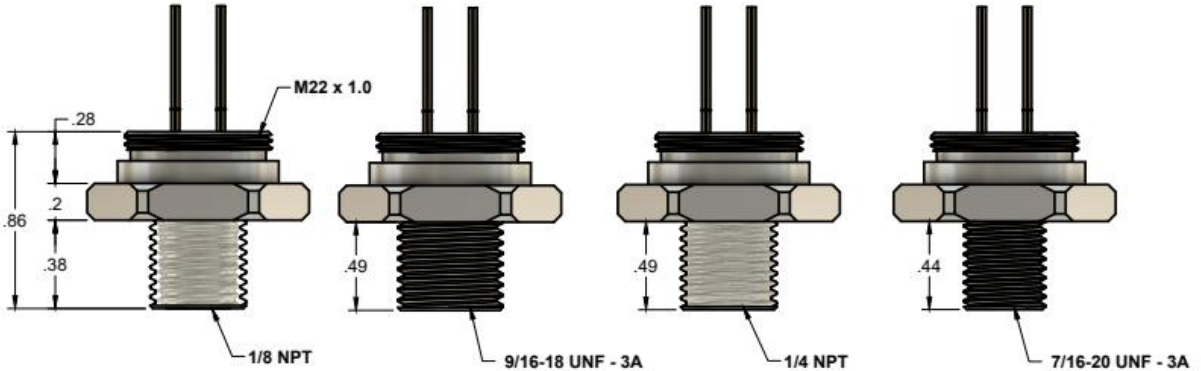
Sensor Only

1/8"-27NPT

9/16"-18UNF

1/4"-18NPT

7/16"-20UNF



Part Number Configuration

Model	Pressure Range (500-10,000PSI)	Pressure Type (S)	Temp Compensation	Port
PPS02 (Φ12mm)	500 = 500PSI	S = Sealed Gauge (500-10Kpsi)	1 = Uncompensated	S = Sensor Only (No Port)
		2 = Compensated	1 = 1/4" NPT
	10K = 10,000PSI			2 = 1/8"NPT
				3 = 7/16" UNF
				4 = 9/16" UNF AN
				5 = 1/4" BSPP
				C = Custom

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