



PTS High Accuracy Resonant Pressure Sensor

The PTS Pressure Sensor is the first product to incorporate an exciting new resonant silicon pressure sensor technology. This platform provides an order of magnitude greater accuracy and stability than current pressure measurement technologies available. The new technology also extends the pressure range capability to high pressures and by incorporating true pressure media isolation greatly improves its suitability for use in harsh environments.

In addition to providing the performance and packaging improvements available, the PTS product line takes advantage of best practices to offer a wide range of pressure and electrical connections to enable a level of customization for your specific requirements never before available in the performance class of this sensor.

The combination of the power of the silicon technology and the quality, reliability and flexibility of the PTS Series offer a truly unique solution for high accuracy and high stability pressure measurement requirements.



Features & Benefits

High Precision, ± 0.01 FS over compensated temperature range

High Stability, ± 100 PPM FS/year

Wide temperature range, -40°C to $+85^{\circ}\text{C}$ (-40°F to 185°F)

Media Isolated construction, suitable for use in harsh environments

Multiple output configurations: RS-232, RS-485

Wide selection of pressure and electrical connections

PTS Specifications

Measurement

Pressure Ranges

- 0 to 2 bar (0 to 30 psi) absolute
- 0 to 7 bar (0 to 100 psi) absolute
- 0 to 14 bar (0 to 200 psi) absolute
- 0 to 20 bar (0 to 300 psi) absolute
- 0 to 35 bar (0 to 500 psi) absolute
- 0 to 70 bar (0 to 1000 psi) absolute

(Values in psi are approximate.)

Barometric ranges are available in the RPS/DPS 8100 series.

Overpressure

1.5X FS

Sensor Failure Pressure

2.0X FS

Pressure Containment

- Ranges to 7 bar, (100 psi), 70 bar (1,000 psi)
- Ranges to 70 bar (1,000 psi), 200 bar (3,000 psi)

Supply and Output

Electronics Option	Supply Voltage (V)	Output	Current Consumption*** (mA)
A	11-28	RS485	16.5 quiescent, 32 max
B	11-28	RS232	16.5 quiescent, 32 max

* Low Power has Jitter of <120 ns

** Low Noise has Jitter of <75 ns

*** At 6V at 25°C (77°F)

^ Square wave pressure signal, 25 kHz nominal, 4-10 kHz span

^^ Forward voltage diode, 0.5 to 0.7 V @ 25°C (77°F), typically -2 mV/°C nominal

Response Time

< 300 msec for pressure change from 10% to 90% FS

Electrical Protection

Connecting V_{supply} and GND between any combinations of pins on the connector will not damage the unit

Insulation

- 500 V dc

Performance

There are two levels of performance specification:

Standard and Improved

Specifications include combined effects of non-linearity, hysteresis, repeatability and temperature errors over the compensated temperature range.

Performance (continued)

Accuracy Code	Precision	Accuracy
A1 - Standard	0.02% FS	0.0225% FS
A2 - Improved	0.01% FS	0.0144% FS

Compensated Temperature Ranges:

There are two compensated temperature ranges available:

-10 to +50°C

-40 to +85°C

Temperature Effects

All temperature effects are included in accuracy statement.

Long Term Stability

Standard: ±0.02% FS/annum

Improved: ±0.01% FS/annum

Note: Unless otherwise specified, specifications are at reference conditions: 25°C (77°F) ±5°C (±9°F).

Physical Specifications

Storage Temperature Range

As compensated temperature range.

Operating Temperature Range

As compensated

Pressure Media

Media compatible with 316L Stainless Steel and Hastelloy C276

Vibration

DO-160E Curve W Sine sweeps 5 Hz to 2 kHz, levels to 20g_n

<0.2 mbar/g_n (<0.003 psi/g_n) output change

Shock

DO-160E 9 (Figure 7.2) 20 g_n 11 ms terminal saw-tooth Profile. Negligible calibration change

Humidity

MIL-STD-810D Method 507.2 Procedure III (Aggravated humidity environment, 65°C, 95% RH)

Certification

- CE Marked
- RoHS
- EMC Standards



Pressure Connector

Available Options are:

- G1/4 Female
- G1/4 Male Flat
- G1/4 Male 60 degree Cone
- G1/8 Male 60 degree Cone
- 1/4 NPT Female
- 1/4 NPT Male
- 1/8 NPT Male
- M20 x 1.5
- M14 x 1.5 60 degree Internal Cone
- M12 x 1 Internal Cone
- 7/16 UNF Male
- G1/2 Male
- G1/4 Quick Connect
- 1/2 NPT Male
- G1/4 Male Flat Long
- 7/16-20 UNF Female
- Depth Cone (G1/4 Female)
- 7/16-20 UNF Male Short Flat
- Other pressure connectors may be available

Code Number	Description	Max operating Temp range		IP Rating
		°C	°F	
0	No Connector	-55 to +125	-67 to +257	-
1	Cable Gland	-40 to +80	-40 to +176 65	65
2	Raychem Cable	-55 to +125	-67 to +257	65
3	Polyurethane Depth	-40 to +80	-40 to +176	68
4	Hytrel Depth	-40 to +80	-40 to +176	68
6	Bayonet MIL-C-26482	-55 to +125	-67 to +257	67
C	1/2 NPT Conduit	-40 to +80	-40 to +176	67
G	M12 X 1 5-pin	-55 to +125	-67 to +257	65
H	PTFE Cable (Orange)	-55 to +125	-67 to +257	54