



PT-L9/L13/L14*

Millivolt Output Pressure Transducer

- Cost effective
- Available ranges from vacuum up to 500 psi and 0 to 10000 psi
- Single piece stainless steel process fitting and sensor
- Standardized output of 10 mV/V (other outputs available)
- Rugged all-stainless welded construction
- Tamper-resistant body design
- Available with several different electrical connectors
- $\pm 0.25\%$ accuracy of full-scale (on select ranges)

Options

- Special fittings, outputs and metric ranges available on request
- Color coded cable "pigtail" with optional wire lengths
- $\pm 0.1\%$ accuracy of full scale with NIST certification on selected ranges (from 0 to 60 psi up to 0 to 5,000 psi)
- 1 1/2 in. sanitary fitting
- Extended temperature compensation
- High vibration
- Cleaned for oxygen service
- For OEM applications or other configurations, consult factory

■ Operational Description

These transducers offer pressure ranges of vacuum to 10,000 psi, gauge or absolute. Features include high burst pressure (without risk of silicon oil contamination) and a high accuracy of $\pm 0.25\%$ full scale (B.F.S.L.).

The sensor consists of silicon piezoresistive strain gages arranged in a Wheatstone bridge configuration mounted on a single piece, stainless steel diaphragm. The output is conditioned for 100 mV full scale output for all ranges (10 mV/V).

The sensor, along with a hybrid temperature compensation network, is packaged in an all stainless steel housing for use in harsh environments.

■ Applications

These transducers are the economical answer for all general purpose pressure measurements where a cost-effective, high reliability unit is required.

The small size and weight (2 oz.), integrated hybrid compensation and rugged construction make this unit an excellent all purpose transducer with an extremely long life for virtually all static and dynamic pressure measurement applications.

* The PT-L9/L13/L14 was formerly called the PSI-100.

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■ Specifications

Performance

Standard Pressure Ranges

Compound Gauge: From vac up to 500 psi

Gauge or Absolute: From 0 to 10,000 psi

Flush Mount: 0 to 5,000 psi

Overpressure: 2x full scale

Burst Pressure: 10x full scale or 20,000 psi (whichever is less)

Accuracy (linearity & hysteresis)

Standard Diaphragm: $\pm 0.25\%$ (B.F.S.L.);

NIST traceable certification available for $\pm 0.2\%$, $\pm 0.5\%$ and $\pm 0.1\%$ (select ranges only) Greater than 5000 psi: $\pm 0.5\%$ of full scale (B.F.S.L.)

Flush Mount Diaphragm: $\pm 1.0\%$ of better (B.F.S.L.); NIST traceable certification also available

Low Pressure Diaphragm: 15 psi min. to 30 psi max; $\pm 1.0\%$ or better (B.F.S.L.); NIST traceable certification available

Stability – One Year Zero Drift:

15-5: $< \pm 0.5\%$ F.S., **316:** $< \pm 1\%$ F.S.

Zero Balance Adjust: $\pm 1\%$ of full scale

Life: 10 million cycles minimum

Environmental

Standard Compensated Temp: 0 to 130°F (-17 to 54°C)

Extended Compensated Temp (Optional): -40 to 180°F (-40 to 82°C)

Storage Temp: -40 to 180°F (-40 to 82°C)

Operating Temp: -40 to 180°F (-40 to 82°C)

Electrical

Excitation: Calibrated at 10 VDC typically; contact factory for other input V options

Output: L9: 10 mV/V $\pm 1\%$; L13: 3 mV/V $\pm 1\%$; L14: 5 mV/V $\pm 1\%$

Input Impedance: 1200 minimum

Output Impedance: Approx. 500

Output/Input: Non isolated, floating, 4 wire

Resolution: Infinite

Physical

Weight: 2 oz. (57 g)

Wetted Materials: 15-5 SS, 316L SS available at no extra charge (Ranges under 100 psi in 316L SS incorporate a Hastelloy® C276 diaphragm); One piece Hastelloy® fitting also available (minimum quantities required)

Media: Compatible with 15-5 SS, 316L SS, or Hastelloy® C276

Connector: Electrical receptacle: 4 pin bayonet PT1H-8-4 P or equivalent

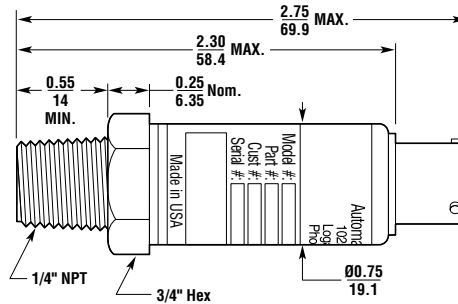
Mating Connector: PT06A-8-4S (SR) or equivalent (not included)

Process Cavity Volume: 0.05³ in.

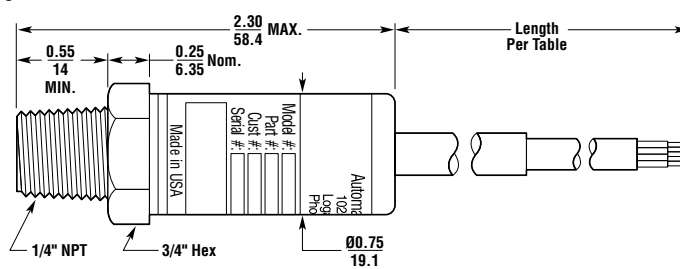
Specifications are subject to change without notice.

■ Dimensions — in./mm

4 PIN Bayonet



Pigtail



■ Thermal Shift

Thermal Zero Shift

Material	0 to 130°F	-40 to 180°F
15-5 PH	0.02% FS/°F	0.02% FS/°F
316L SS	0.02% FS/°F	0.03% FS/°F

Thermal Sensitivity Shift

Material	0 to 130°F	-40 to 180°F
15-5 PH	0.02% FS/°F	0.02% FS/°F
316L SS	0.02% FS/°F	0.03% FS/°F

Note: For flush mount fittings, add 0.01% to all values.

■ Common Pressure Ranges

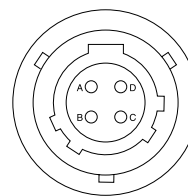
Range	Option	Range	Unit of Measure
30*		-30 to 0	inHg
30		0 to 30	psi
60		0 to 60	psi
100		0 to 100	psi
200		0 to 200	psi
500		0 to 500	psi
1000		0 to 1000	psi
5000		0 to 5000	psi
10000		0 to 10000	psi

Other ranges available.

*Requires VAC option when ordering.

■ Wiring

4 Pin Bayonet Connector



Electrical Cable Specifications

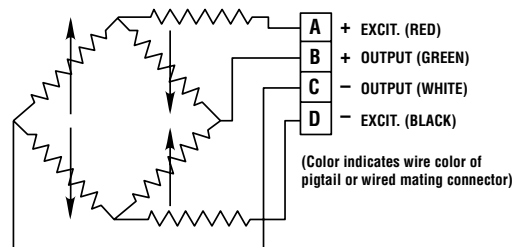
AWG: 26

Stranding: 7/34

Type: MIL-W-16878E

Shield: 36 AWG TPC Braid

Jacket: PVC



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Option Tables

Operation Table

L9	10 mV/V output
L13	3 mV/V output
L14	5 mV/V output

Unit of Measure Table

There are 9 choices available:

psi [▲]	mmHg
bar	inHg
mbar	kgcm²
kPa	fsw

inH2O

Other units of measure available.

Pressure Type Table

G [▲]	Gauge
CG	Compound gauge
V	Vac
A	Absolute
S	Sealed

Electrical Cable Length Table

Cable Length	Output		
	3 mV	5 mV	10 mV
W0 [▲] 0 ft.	✓	✓	✓
W1 2 ft. (0.6 m)	✓	✓	✓
W2 5 ft. (1.5 m)	✓	✓	✓
W3 10 ft. (3 m)	✓	✓	✓
W4 25 ft. (7.6 m)	✓	✓	✓

Process Connection Table

P0 [▲]	1/4-18 NPTM
P2	1 1/2 in. sanitary
P5	1/4-18 NPTF
P7	7/16-20 SAE male
P16	PT 1/4 (BSPM 1/4)
P22	G3/8 (3/8 BSPP) male
P23	G1/2 (BSPP 1/2) male
P26	7/16-20 UNF male with cone
P30	High pressure Sno Trik-male (M-250C, Autoclave male)

Other options available.

Linear Accuracy Chart

Full Scale PSI	Standard	Accuracy
	Linear Accuracy	Options
≥ 15 but < 30	Better than 1%	N3, N4
≥ 30 but < 60	0.25%	N0, N1
≥ 60 but ≤ 5000	0.25%	N0, N1, N2
> 5000 but < 10000	0.5%	N12, N13

Ordering Information

PT - [] - C - [Range] - [] - [] - [] - [] - [] - [] - [] - [] - [] - []	
Operation	See Operation Table
Commercial/Industrial	
Unit of Measure	See Unit of Measure Table
Pressure Type	See Pressure Type Table
Electrical Connection	See Electrical Connection Table
Electrical Cable Length	See Electrical Cable Length Table
Process Connection	See Process Connection Table
Accuracy (see Linear Accuracy Chart for details)	See Accuracy Chart
Materials	See Materials Table
Vibration	See Vibration Table
Temperature	See Temperature Table

[▲]This option is standard.

Accessories

Please order separately, by part number.

Description	Part Number
4-pin bayonet mating connector (E3)	509010
4-pin bayonet mating connector (E3) with cable (see note below)	509010-20XX*

*To order a 4-pin bayonet mating connector with cable, you will need to specify the cable length. Specify cable: 2, 5, 10, 25 or 50 ft. Example: 509010-2025 has mV output with 25 ft. cable

Notes:

- This table refer to linear accuracy for standard fittings. Contact APG for linear accuracies for non-standard fittings.
- These tables list linear accuracies for specific ranges. For an explanation of how linear accuracy is calculated, please contact APG.