



## 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 7,000 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.



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



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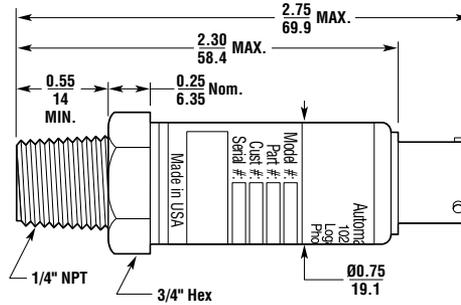
■ **Specifications**

<b>Performance</b>
<b>Standard Pressure Ranges</b>
<b>Compound Gauge:</b> From vac up to 500 psi
<b>Gauge or Absolute:</b> From 0 to 10,000 psi
<b>Flush Mount:</b> 0 to 5,000 psi
<b>Overpressure:</b> 2x full scale
<b>Burst Pressure:</b> 10x full scale or 20,000 psi (whichever is less)
<b>Accuracy (linearity &amp; hysteresis)</b>
<b>Standard Diaphragm:</b> ± 0.25% (B.F.S.L.); NIST traceable certification available for ±0.25% and ±0.1% (select ranges only)
<b>Flush Mount Diaphragm:</b> ±1.0% of better (B.F.S.L.); NIST traceable certification also available
<b>Low Pressure Diaphragm:</b> 15 psi min. to 30 psi max; ±1.0% or better (B.F.S.L.); NIST traceable certification available
<b>Stability – One Year Zero Drift:</b>
<b>15-5:</b> < ±0.5% F.S., <b>316:</b> < ±1% F.S.
<b>Zero Balance Adjust:</b> ±1% of full scale
<b>Life:</b> 10 million cycles minimum
<b>Environmental</b>
<b>Standard Compensated Temp:</b> 0 to 130°F (-17 to 54°C)
<b>Extended Compensated Temp (Optional):</b> -40 to 180°F (-40 to 82°C)
<b>Storage Temp:</b> -40 to 180°F (-40 to 82°C)
<b>Operating Temp:</b> -40 to 180°F (-40 to 82°C)
<b>Electrical</b>
<b>Excitation:</b> Calibrated at 10 VDC typically; contact factory for other input V options
<b>Output:</b> L9: 10 mV/V ±1%; L13: 3 mV/V ±1%; L14: 5 mV/V ± 1%
<b>Input Impedance:</b> 1200 Ω minimum
<b>Output Impedance:</b> Approx. 500 Ω
<b>Output/Input:</b> Non isolated, floating, 4 wire
<b>Resolution:</b> Infinite
<b>Physical</b>
<b>Weight:</b> 2 oz. (57 g)
<b>Wetted Materials:</b> 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)
<b>Media:</b> Compatible with 15-5 SS, 316L SS, or Hastelloy® C276
<b>Connector:</b> Electrical receptacle: 4 pin bayonet PT1H-8-4 P or equivalent
<b>Mating Connector:</b> PT06A-8-4S (SR) or equivalent (not included)
<b>Process Cavity Volume:</b> 0.05 <sup>3</sup> in.

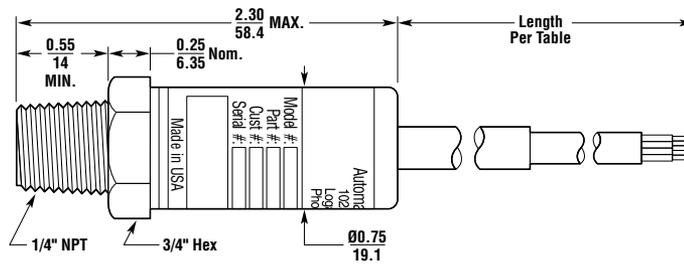
Specifications are subject to change without notice.

■ **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**

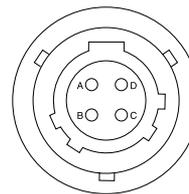
Range	Option	Range	Unit of Measure
<b>30*</b>		-30 to 0	inHg
<b>30</b>		0 to 30	psi
<b>60</b>		0 to 60	psi
<b>100</b>		0 to 100	psi
<b>200</b>		0 to 200	psi
<b>500</b>		0 to 500	psi
<b>1000</b>		0 to 1000	psi
<b>5000</b>		0 to 5000	psi
<b>10000</b>		0 to 10000	psi

Other ranges available.

\*Requires VAC option when ordering.

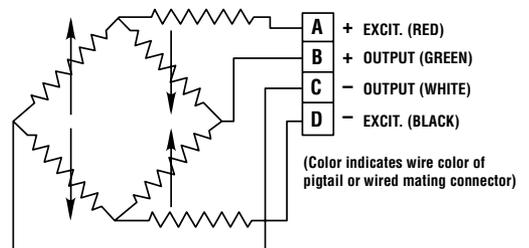
■ **Wiring**

**4 Pin Bayonet Connector**



**Electrical Cable Specifications**

<b>AWG:</b> 26
<b>Stranding:</b> 7/34
<b>Type:</b> MIL-W-16878E
<b>Shield:</b> 36 AWG TPC Braid
<b>Jacket:</b> PVC



■ **Option Tables**

**Operation Table**

<b>L9</b>	10 mV/V output
<b>L13</b>	3 mV/V output
<b>L14</b>	5 mV/V output

**Unit of Measure Table**

There are 9 choices available:

<b>psi</b> <sup>▲</sup>	<b>mmHg</b>
<b>bar</b>	<b>inHg</b>
<b>mbar</b>	<b>kgcm<sup>2</sup></b>
<b>kPa</b>	<b>fsw</b>
<b>inH2O</b>	

Other units of measure available.

**Pressure Type Table**

<b>G</b> <sup>▲</sup>	Gauge
<b>CG</b>	Compound gauge
<b>V</b>	Vac
<b>A</b>	Absolute
<b>S</b>	Sealed

**Electrical Cable Length Table**

Cable Length	Output		
	3 mV	5 mV	10 mV
<b>W0</b> <sup>▲</sup> 0 ft.	✓	✓	✓
<b>W1</b> 2 ft. (0.6 m)	✓	✓	✓
<b>W3</b> 10 ft. (3 m)	✓	✓	✓
<b>W4</b> 25 ft. (7.6 m)	✓	✓	✓

**Process Connection Table**

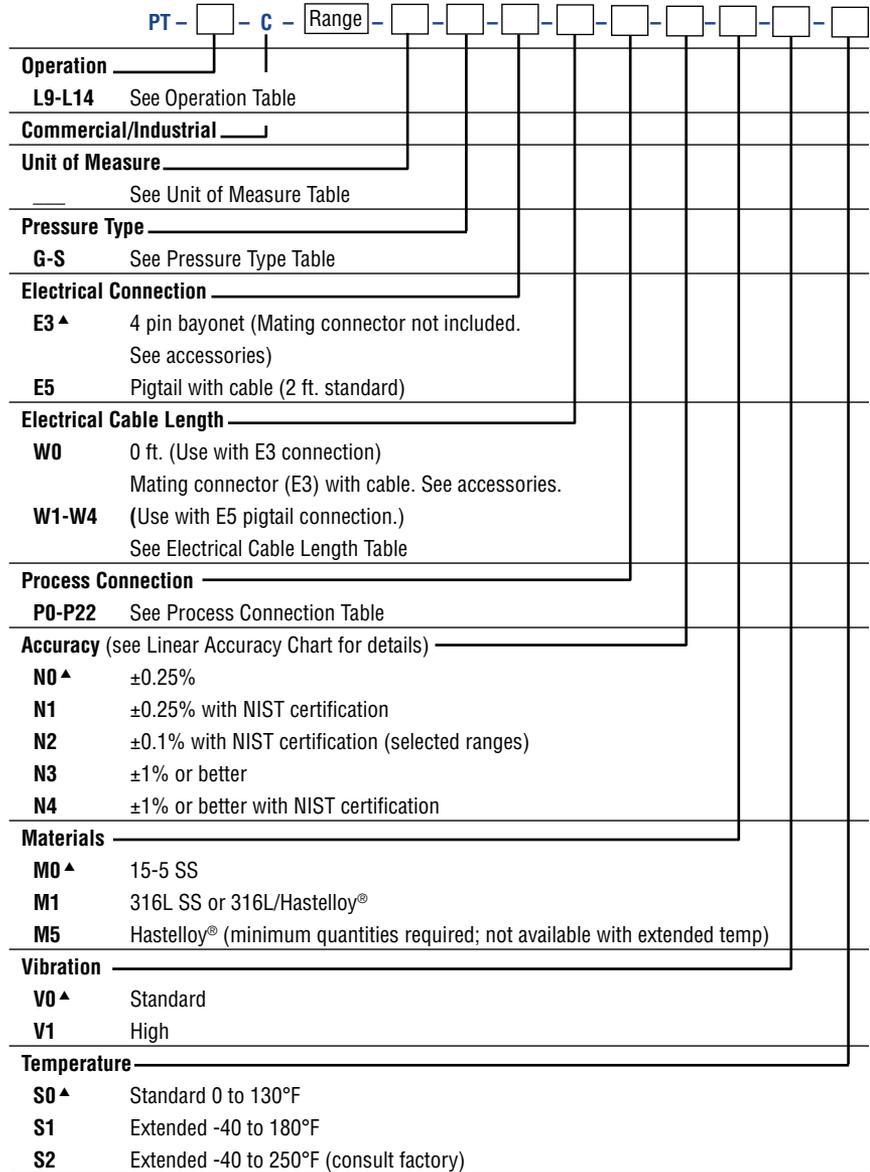
<b>P0</b> <sup>▲</sup>	1/4-18 NPTM
<b>P2</b>	1 1/2 in. sanitary
<b>P5</b>	1/4-18 NPTF
<b>P7</b>	7/16-20 SAE male
<b>P16</b>	PT 1/4 (BSPM 1/4)
<b>P22</b>	G3/8 (3/8 BSPP) male
<b>P23</b>	G1/2 (BSPP 1/2) male
<b>P26</b>	7/16-20 UNF male with cone
<b>P30</b>	High pressure Sno Trik-male (M-250C, Autoclave 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 < 7000	0.25%	N0, N1, N2
≥ 7000 but < 10000	0.25%	N0, N1

■ **Ordering Information**



▲ This option is standard.

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.

**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	509010-10XX*

\*Specify, 2, 5, 10 or 25 ft.)



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