



# PT-L1/L3/L10\*

## High Level Output Pressure Transmitters

- Low cost
- Available ranges from vacuum up to 500 psi and 0 up to 10,000 psi
- Standard outputs: 4-20 mA, 0-5 VDC, 0-10 VDC, 1-5 VDC, and 1-6 VDC
- High overpressure capability
- Hybrid compensation circuit for high reliability
- Zero and span adjustments
- 1/4-18 NPTM fitting standard
- True 0-5 or 0-10 VDC, can cross zero
- Mating connector included
- $\pm 0.25\%$  accuracy of full scale
- CE approved

### Options

- Color coded cable "pigtail" with optional wire lengths
- $\pm 0.1\%$  accuracy of full scale with NIST certification on selected ranges (from 0 to 20 psi up to 0 to 7,000 psi)
- Extended temperature compensation
- High vibration
- Tamper-resistant body design
- Process fittings
- Metric units of measure available at no extra cost
- Clean for oxygen service
- For OEM applications or other configurations, consult factory



For the Latest Information

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### Operational Description

This line of pressure transmitters offers pressure ranges from vacuum to 500 psi and from 0 up to 10,000 psi, all stainless steel construction, high burst pressure, and high accuracy of  $\pm 0.25\%$  F.S. (B.F.S.L.). The sensor consists of silicon piezoresistive strain gages arranged in a Wheatstone bridge configuration and mounted on a flat diaphragm. The highly accurate sensor and electronics are packaged in a stainless steel housing for use in most environments, yet still provides access to zero and span adjustments.

### Applications

These pressure transmitters are the economical answer for all applications requiring high accuracy over a wide range of pressures. The unit's small size (3 oz.), integrated electronics, wide operating temperature range (-40 to 180°F), exceptional reliability, durability, and long life, make them the perfect instrument for most static and dynamic pressure measurements where a high level output signal is desired.

\* The PT-L1 was formerly called the PSI-4/20.  
The PT-L3 was formerly called the PSI-5000.  
The PT-L10 was formerly called the PSI-10000.





pressure products

## ■ 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>Overpressure:</b> 2x full scale
<b>Burst Pressure:</b> 10x full scale or 20,000 psi (whichever is less)
<b>Accuracy (linearity, hysteresis, and repeatability)</b>
<b>Standard Diaphragm:</b> ± 0.25% of full scale (B.F.S.L.); traceable certification also available for ±0.25% and ±0.1% (select ranges only)
<b>Flush Mount Diaphragm:</b> ±0.5% of full scale (B.F.S.L.); traceable certification also available for ±0.5%
<b>Stability</b>
<b>One Year Zero Drift: 15-5:</b> < ±0.5% F.S., <b>316:</b> < ±1% F.S.
<b>Six Month Linearity:</b> < 0.25% F.S.
<b>Thermal Zero Shift</b>
<b>Standard Temperature</b>
<b>4-20 mA:</b> ±0.015% F.S./°F (±0.02% F.S./°F for 316L SS)
<b>0-5 VDC:</b> ±0.01% F.S./°F (±0.02% F.S./°F for 316L SS)
<b>0-10 VDC:</b> ±0.01% F.S./°F (±0.02% F.S./°F for 316L SS)
<b>Extended Temperature</b>
<b>All Outputs:</b> ±0.02% F.S./°F
<b>Flush Mount Temperature</b>
<b>All Outputs:</b> ±0.02% F.S./°F
<b>Thermal Sensitivity Shift:</b> ±0.01% F.S./°F (±0.02% F.S./°F for 316L SS)
<b>Zero Balance:</b> ±1% of full scale
<b>Life:</b> 10 million cycles minimum
<b>Environmental</b>
<b>Compensated Temp:</b> 0 to 130°F (-17 to 54°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>Extended Compensated Temp:</b> -40 to 180°F (-40 to 82°C)
<b>Humidity:</b> 0 to 90% relative
<b>Physical</b>
<b>Weight:</b> 3 oz. (85 g)
<b>Wetted Materials:</b> SS 15-5; 316L SS available at no extra charge (High resolution 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 SS 15-5
<b>Cavity Volume:</b> 0.035 <sup>3</sup> in.

Specifications are subject to change without notice.

## ■ Electrical Specifications

<b>4-20 mA Output</b>
<b>Excitation:</b> 10-36 VDC max
<b>Supply Voltage</b>
<b>Min:</b> [10 + 0.02 x (loop resistance)] VDC
<b>Max:</b> [40 + 0.0004 x (loop resistance)] VDC
<b>Input Current:</b> 3-30 mA max
<b>Output:</b> 4-20 mA ±0.16 mA at set points
<b>Output/Input:</b> 2 wire loop powered
<b>Resolution:</b> Infinite
<b>Protection:</b> Reversed polarity

<b>0-5 VDC Output</b>
<b>Excitation:</b> 8.5-33 VDC
<b>Input Current:</b> 10 mA max
<b>Output:</b> 0-5 VDC / ±0.05 VDC at set points
<b>Output/Input:</b> Non-isolated 3 wire
<b>Resolution:</b> Infinite
<b>Protection:</b> Reversed polarity

<b>0-10 VDC Output</b>
<b>Excitation:</b> 13.5-33 VDC
<b>Input Current:</b> 10 mA max
<b>Output:</b> 0-10 VDC / ±0.05 VDC at set points
<b>Output/Input:</b> Non-isolated 3 wire
<b>Resolution:</b> Infinite
<b>Protection:</b> Reversed polarity

## ■ Common Pressure Ranges

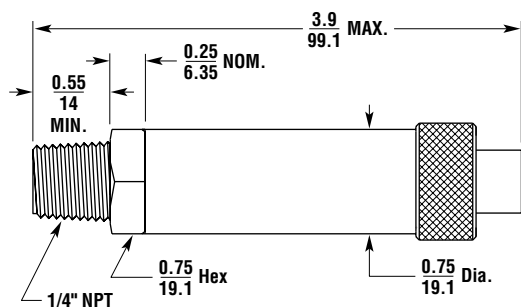
Range Option	Range	Unit of Measure
30*	-30 to 0	inHg
30	0 to 30	psi
60	0 to 60	psi
100	0 to 100	psi
200	0 to 200	psi
500	0 to 500	psi
1000	0 to 1000	psi
5000	0 to 5000	psi
10000	0 to 10000	psi

Other ranges available.

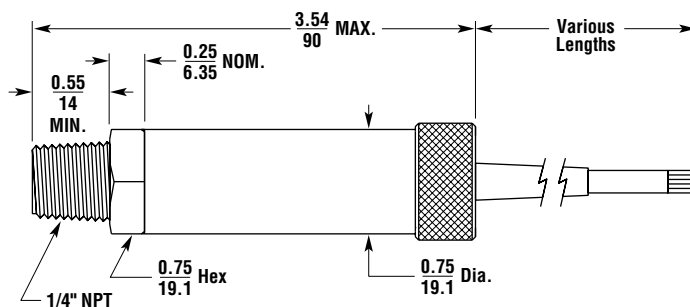
\*Requires VAC when ordering.

■ Dimensions — in./mm

4 PIN Bayonet



Pigtail



■ Wiring

PT-L1/3/10 Pin Out Table

	4-20 mA	0-5 VDC	0-10 VDC
6 Pin Circular	A + Excitation	+ Excitation	+ Excitation
	B - Excitation	+ Output	+ Output
	C N/C	- Output	- Output
	D N/C	- Excitation	- Excitation
4 Pin Bayonet	A + Excitation	+ Excitation	+ Excitation
	B - Excitation	+ Output	+ Output
	C N/C	- Output	- Output
	D N/C	- Excitation	- Excitation
4 Pin Eurofast	1 + Excitation	+ Excitation	+ Excitation
	2 - Excitation	+ Output	+ Output
	3 N/C	- Output	- Output
	4 N/C	- Excitation	- Excitation
Pigtail	RED + Excitation	+ Excitation	+ Excitation
	GRN N/C	+ Output	+ Output
	WHT N/C	- Output	- Output
	BLK - Excitation	- Excitation	- Excitation
MiniDIN 43650	1 + Excitation	+ Excitation	+ Excitation
	3 N/C	+ Output	+ Output
	2 - Excitation	- Output &	- Output &

N/C indicates no connection.

Electrical Cable Specifications

AWG: 26

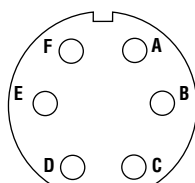
Stranding: 7/34

Type: MIL-W-16878E

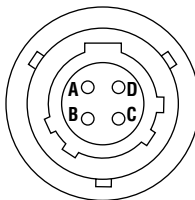
Shield: 36 AWG TPC Braid

Jacket: PVC

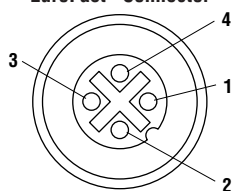
6 Pin Connector



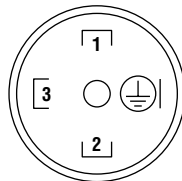
4 Pin Bayonet Connector



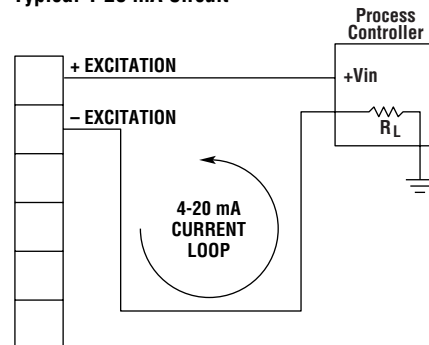
4-Pin EuroFast® Connector



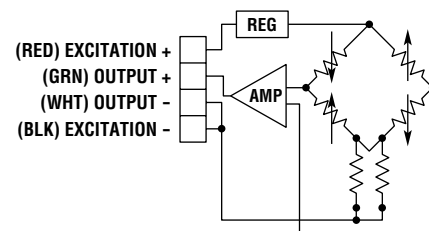
MiniDIN Connector



Typical 4-20 mA Circuit



Typical 0-5 and 0-10 VDC Circuit



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Option Tables

Electrical Connection Table

<b>E1</b>	Connector Option: 6 pin circular R04-R6M or equivalent (optional); Mating Connector (Included): 6 pin circular R04-J6F or equivalent
<b>E3</b>	Connector Option: 4 pin bayonet PT1H-8-4P or equivalent (standard); Mating Connector (Included): 4 pin bayonet PT06A-8-4S (SR) or equivalent
<b>E4</b>	Connector Option: 4 pin FS 4.4-0.5/18.25 or equivalent (EuroFast® type) (optional); Mating Connector (Included): 4 pin B8141-0 (straight) or equivalent (EuroFast® type) or B8241-0 (right angle) or equivalent (E4A)
<b>E5</b>	Pigtail with cable (2 ft. standard)
<b>E14</b>	Connector Option: 4 pin miniature L-plug per DIN 43650 (includes mating connector)
<b>E15</b>	Connector Option: 1.5 m vented cable with free ends (IP67/NEMA 4)

Process Connection Table

<b>P0</b>	1/4-18 NPTM
<b>P2</b>	1 1/2 in. sanitary
<b>P4</b>	Flush mount
<b>P5</b>	1/4-18 NPTF
<b>P7</b>	7/16-20 SAE male
<b>P8</b>	7/16-20 SAE female
<b>P10</b>	9/16-18 SAE male
<b>P11</b>	VCR male
<b>P12</b>	VCR swivel male
<b>P13</b>	VCR swivel female
<b>P14</b>	1/8-27 NPTM
<b>P15</b>	1/8-27 NPTF
<b>P16</b>	PT 1/4 (BSPM 1/4)
<b>P17</b>	3/8 BSPM
<b>P19</b>	3/8 in. x 1 1/2 in. stub tube
<b>P20</b>	Mini seal 1/4-18 NPTF to mini seal 1/4-18 NPTM
<b>P21</b>	Mini seal 1/4-18 NPTF to mini seal 1/2-14 NPTM
<b>P22</b>	G3/8 (3/8 BSPP) male

Ordering Information

PT - [ ] - C - [Range] - [ ] - [ ] - [ ] - [ ] - [ ] - [ ] - [ ] - [ ] - [ ] - [ ] - [ ] - [ ]

<b>Operation</b>	
<b>L1-L12</b>	See Operation Table
<b>Commercial/Industrial</b>	J
<b>Unit of Measure</b>	
	See Unit of Measure Table
<b>Pressure Type</b>	
<b>G-S</b>	See Pressure Type Table
<b>Electrical Connection</b>	
<b>E1-E14</b>	See Electrical Connection Table
<b>Electrical Cable Length</b>	
<b>W0-W5</b>	See Electrical Cable Length Table
<b>Process Connection</b>	
<b>P0-P22</b>	See Process Connection Table
<b>Accuracy</b>	
<b>N0</b>	±0.25%
<b>N1</b>	±0.25% with NIST certification
<b>N2</b>	±0.1% with NIST certification (selected ranges)
<b>Materials</b>	
<b>M0</b>	SS 15-5
<b>M1</b>	316L SS or 316L/Hastelloy®
<b>M5</b>	Hastelloy® (minimum quantities required)
<b>Vibration</b>	
<b>V0</b>	Standard
<b>V1</b>	High
<b>Can Assembly</b>	
<b>K0</b>	Knurl
<b>K1</b>	Tamper resistant with Loc-Tite
<b>K2</b>	Tamper resistant with weld
<b>Temperature</b>	
<b>S0</b>	Standard
<b>S1</b>	Extended (not available with 316L SS)

Operation Table

<b>L1</b>	4-20 mA output
<b>L3</b>	0-5 VDC output
<b>L10</b>	0-10 VDC output
<b>L11</b>	1-6 VDC output
<b>L12</b>	1-5 VDC output

Pressure Type Table

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

Unit of Measure Table

There are 9 choices available:

<b>psi</b>	<b>kPa</b>	<b>inHg</b>
<b>bar</b>	<b>INWC*</b>	<b>kg/cm²</b>
<b>mbar*</b>	<b>mmHg*</b>	<b>fsw</b>

\* Requires G2 option

For information on Pressure Sanitary Fittings, see page B53.

Electrical Cable Length Table

Cable Length	Output				
	4-20	0-5	0-10	1-5	1-6
<b>W0</b> 0 ft.	✓	✓	✓	✓	✓
<b>W1</b> 2 ft. (0.6 m)	✓	✓	✓	✓	✓
<b>W2</b> 5 ft. (1.5 m)	✓	✓	✓	✓	✓
<b>W3</b> 10 ft. (3 m)	✓	✓	✓	✓	✓
<b>W4</b> 25 ft. (7.6 m)	✓	n/a	n/a	n/a	n/a

<b>W5</b> 50 ft. (15.2 m)	✓	n/a	n/a	n/a	n/a
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