

P&R

INSTRUMENT SUPPLY, INC.



■ 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 (without risk of silicon oil contamination), 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 mounted on a single piece, stainless steel 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.

PT-L1/L3/L10*

Amplified Output Pressure Transmitters

- Cost effective
- 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
- Single piece stainless steel process fitting and sensor
- Zero and span adjustments
- 1/4-18 NPTM fitting standard
- True 0-5 or 0-10 VDC, can transition from vacuum to positive pressure
- $\pm 0.25\%$ accuracy of full scale; $\pm 0.5\%$ BFSL accuracy on ranges greater than 5000 psi (voltage output only)
- Internally compliant to CE

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 30 psi up to 0 to 7,000 psi)
- Extended temperature compensation
- High vibration
- Tamper-resistant body design
- Numerous process fittings
- Other units of measure available at no extra cost
- Cleaned for oxygen service
- For OEM applications or other configurations, consult factory

■ Applications

These pressure transmitters are the economical answer for all applications requiring high accuracy and reliability 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 an amplified 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.



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PT-L1/L3/L10 Amplified Output Pressure Transmitters

■ 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 Fitting: ± 0.25% of full scale (B.F.S.L.); NIST traceable certification also available for ±0.25%, ±0.5% and ±0.1% (select ranges only)
Greater than 5000 psi: ±0.5% of full scale (B.F.S.L.) (voltage output only)
Flush Mount Fitting: ±1.0% of full scale (B.F.S.L.); NIST traceable certification also available for ±1.0%
Stability – One Year Zero Drift: 15-5: < ±0.5% F.S., 316: < ±1% F.S.
Zero Balance Adjust: ±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)
Humidity: 0 to 90% relative
Physical
Weight: 3 oz. (85 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
Process Cavity Volume: 0.035 ³ in.

Specifications are subject to change without notice.

■ Electrical Specifications

4-20 mA Output

Input Voltage (Excitation): 10 VDC min (no load) to 36 VDC max

Input Current: 3-30 mA max

Output: 4-20 mA ±0.16 mA at set points

Output/Input: 2 wire loop powered

Resolution: Infinite

Protection: Reversed polarity

0-5 VDC Output

Input Voltage (Excitation): 9 to 33 VDC

Input Current: 15 mA max

Output: 0-5 VDC / ±0.05 VDC at set points

Output/Input: Non-isolated 3 wire

Resolution: Infinite

Protection: Reversed polarity

0-10 VDC Output

Input Voltage (Excitation): 14 to 33 VDC

Input Current: 15 mA max

Output: 0-10 VDC / ±0.05 VDC at set points

Output/Input: Non-isolated 3 wire

Resolution: Infinite

Protection: Reversed polarity

■ 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

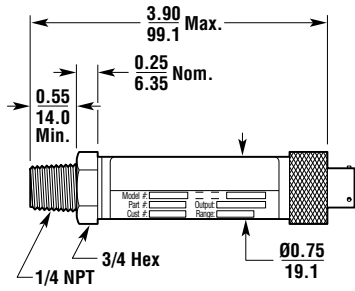
Range Option	Range	Unit of Measure
30*	-30 to 0	inHg
30	0 to 30	psi
60	0 to 60	psi
100	0 to 100	psi
200	0 to 200	psi
500	0 to 500	psi
1000	0 to 1000	psi
5000	0 to 5000	psi
10000	0 to 10000	psi

Other ranges available.

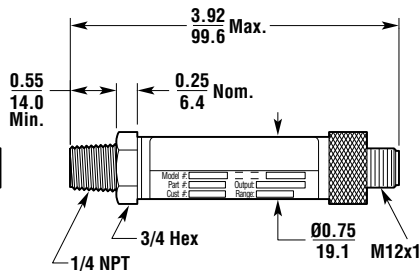
*Requires VAC option when ordering.

PT-L1/L3/L10 Amplified Output Pressure Transmitters

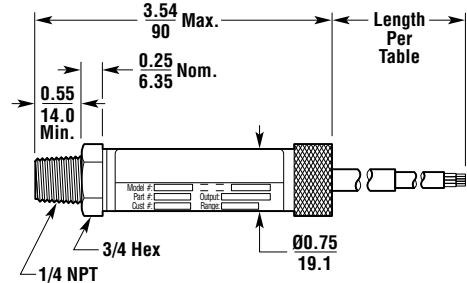
■ Dimensions — in./mm



4- or 6-PIN BAYONET



4-PIN M12



PIGTAIL

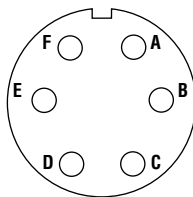
■ Wiring

PT-L1/3/10 Pin Out Table

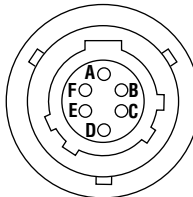
		4-20 mA	0-5 VDC	0-10 VDC
6 Pin Circular	A	+ Excitation	+ Excitation	+ Excitation
	B	- Excitation	+ Output	+ Output
	C	N/C	- Output	- Output
	D	N/C	- Excitation	- Excitation
6 Pin Bayonet	A	+ Excitation	+ Excitation	+ Excitation
	B	- Excitation	+ Output	+ Output
	C	N/C	- Output	- Output
	D	N/C	- Excitation	- Excitation
	E	N/C	N/C	N/C
	F	N/C	N/C	N/C
4 Pin Bayonet	A	+ Excitation	+ Excitation	+ Excitation
	B	- Excitation	+ Output	+ Output
	C	N/C	- Output	- Output
	D	N/C	- Excitation	- Excitation
4 Pin M12	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

N/C indicates no connection.

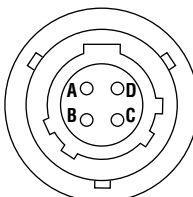
6 Pin Connector



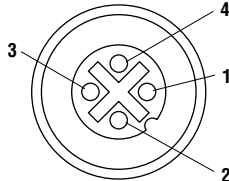
6 Pin Bayonet Connector



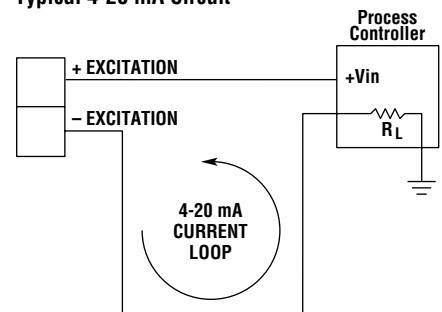
4 Pin Bayonet Connector



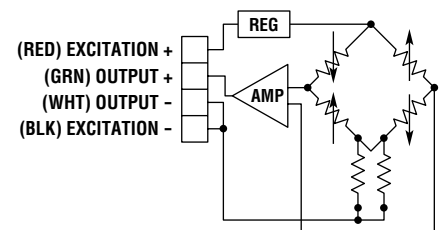
4 Pin M12 Micro Connector



Typical 4-20 mA Circuit



Typical 0-5 and 0-10 VDC Circuit



Electrical Cable Specifications

AWG: 26

Stranding: 7/34

Type: MIL-W-16878E

Shield: 36 AWG TPC Braid

Jacket: PVC

