



■ Operational Description

The PT-400 line of pressure transmitters offers pressure ranges from 0 up to 20,000 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 a Wheatstone bridge configuration mounted on a single piece, welded stainless steel pressure fitting. The highly accurate sensor and electronics are packaged in a stainless steel housing for use in most environments, yet still provide access to zero and span adjustments.

■ 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, 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.



PT-400

Amplified Output Pressure Transducers

- Cost effective
- Durable all welded construction
- Available ranges from 0 up to 20,000 psi
- Standard outputs:
4-20 mA, 0-5 VDC, 0-10 VDC
- High vibration
- High overpressure capability
- Zero and span adjustments
- 1/4-18 NPTM fitting standard
- $\pm 0.25\%$ BFSL accuracy; $\pm 0.5\%$ BFSL accuracy on ranges greater than 5000 psi (voltage output only)
- cCSAus hazardous location approved
 - 0-5 VDC, 0-10 VDC
Class I, Div. 2, Groups C & D
Class I, Zone 2, Group IIB
 - 4/20 mA
Class I, Div. 1, Groups C & D
Class I, Zone 0, Group IIB

Options

- Color coded cable "pigtail" with optional wire lengths
- $\pm 0.1\%$ BFSL accuracy with NIST certification on selected ranges
- Extended temperature compensation
- Numerous process fittings
- Other units of measure available
- For OEM applications or other configurations, consult factory

APG is a registered trademark of Automation Products Group, Inc.

Automation Products Group, Inc.
1025 West 1700 North Tel. 1/888/525-7300
Logan, UT 84321 USA Fax 1/435/753-7490

 **www.apgsensors.com**
sales@apgsensors.com
"Providing tailored solutions for measurement applications."



pressure products



pressure products

■ **Specifications**

Performance		
Standard Pressure Ranges		
Gauge:	From 0 to 1,000 psi	
Compound Gauge:	From VAC to 10,000 psi	
Sealed:	From 100 to 20,000 psi	
Absolute:	From 0 to 20,000 psi	
Overpressure: 2x full scale		
Burst Pressure: 3x full scale or limit of process connection (whichever is less)		
Accuracy (linearity & hysteresis)		
± 0.25% of full scale (B.F.S.L.); NIST traceable certification also available for ±0.25, ±0.5 and ±0.1% Greater than 5000 psi: ±0.5% of full scale (B.F.S.L.) (voltage output only)		
Stability – One Year Zero Drift: 17-4: < ±0.5% F.S.; 316L: < ±0.5% F.S.		
Zero Balance Adjust: ±5% of full scale		
Span Adjust: ±5%		
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: 10 oz. (283 g) typical		
Wetted Materials: 17-4 SS, 316L SS		
Media: Compatible with 17-4 SS, 316L SS		
Process Cavity Volume: 0.035 ³ in.		
Hazardous Location Approvals: CSA/cCSAus Contract #237484		
0-5 VDC, 0-10 VDC, 4-20 mA		
IS: Class I, Division 2; Groups C & D; Ex nL IIB T4 Class I, Zone 2; AEx nL IIB T4 Ambient: -40 to 85°C		
4/20 mA		
IS: Class I, Division 1; Groups C & D; Ex ia IIB T4 Class I, Zone 0; AEx ia IIB T4 Ambient: -40 to 85°C		

Specifications are subject to change without notice.

■ **Thermal Shift**

Thermal Zero Shift		
Material	0 to 130°F	-40 to 180°F
17-4 SS	0.02% FS/°F	0.02% FS/°F
316L SS	0.02% FS/°F	0.02% FS/°F
Thermal Sensitivity Shift		
Material	0 to 130°F	-40 to 180°F
17-4 SS	0.02% FS/°F	0.02% FS/°F
316L SS	0.02% FS/°F	0.02% FS/°F

■ **Electrical Specifications**

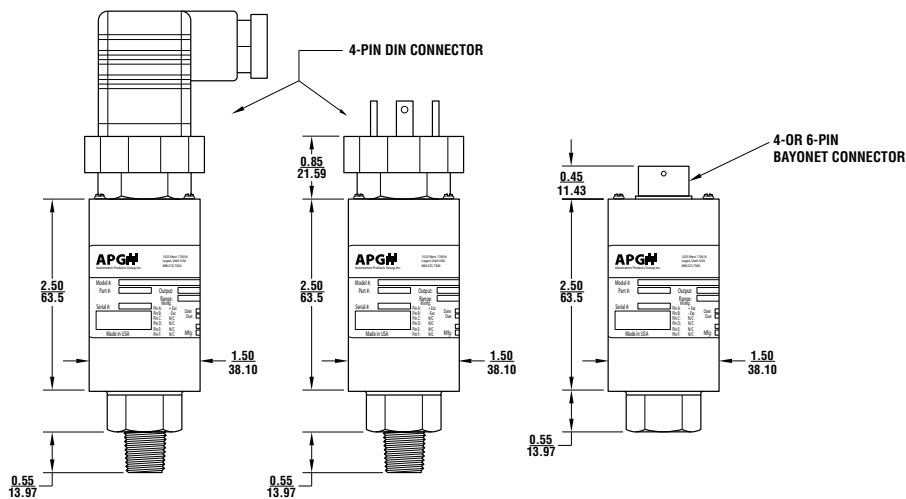
4-20 mA Output	
Input Voltage (Excitation):	10 VDC min (no load) to 28 VDC max
Input Current:	3-30 mA max
Output:	4-20 mA ±0.16 mA at set points
Output/Input:	2 wire loop powered
Resolution:	Infinite
Protection:	Reversed polarity, surge
0-5 VDC Output	
Input Voltage (Excitation):	9 to 28 VDC
Input Current:	15 mA max
Output:	0-5 VDC / ±0.05 VDC at set points
Output/Input:	Non-isolated 3 wire
Resolution:	Infinite
Protection:	Reversed polarity, surge
0-10 VDC Output	
Input Voltage (Excitation):	12.5 to 28 VDC
Input Current:	15 mA max
Output:	0-10 VDC / ±0.10 VDC at set points
Output/Input:	Non-isolated 3 wire
Resolution:	Infinite
Protection:	Reversed polarity, surge

■ **Common Pressure Ranges**

Range Option	Range
15	0 to 15 psi
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
3000	0 to 3000 psi
5000	0 to 5000 psi
10000	0 to 10000 psi

Other ranges available.

■ Dimensions — in./mm



pressure products

■ Wiring

PT-400 Pin Out Table

	4-20 mA	0-5 VDC	0-10 VDC
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
DIN 43650	1 + Excitation	+ Excitation	+ Excitation
	3 N/C	+ Output	+ Output
	2 - Excitation	- Output & - Excitation	- Output & - Excitation

N/C indicates no connection.

Electrical Cable Specifications

Voltage Outputs

AWG: 22

Stranding: 7/30

Shield: Aluminum foil with drain wire

Jacket: PVC

4/20 mA Output

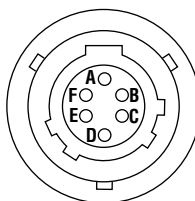
AWG: 18

Stranding: 16/30

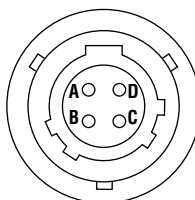
Shield: Aluminum foil with drawin wire

Jacket: PVC

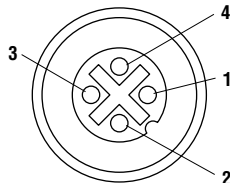
6 Pin Bayonet Connector



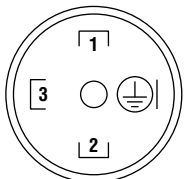
4 Pin Bayonet Connector



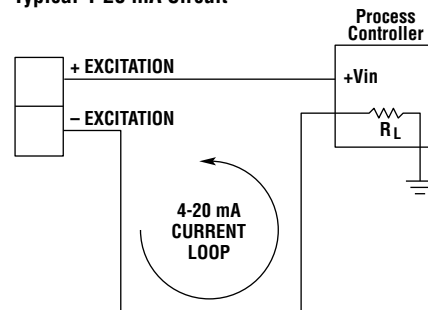
4-Pin M12 Micro Connector



DIN Connector

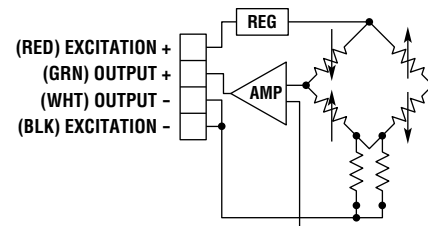


Typical 4-20 mA Circuit



Requires 10-28 VDC at the transmitter for proper operation.

Typical 0-5 and 0-10 VDC Circuit





pressure products

Ordering Information



Operation									
L1	4-20 mA output								
L3	0-5 VDC output								
L10	0-10 VDC output								
Unit of Measure									
psi [▲]									
bar									
kPa									
kgcm ²									
fsw									
Pressure Type									
A	Absolute								
S [▲]	Sealed (100 PSI or greater)								
G	Gauge (less than 1000 PSI)								
CG	Compound Gauge								
V	VAC								
Electrical Connection									
E3	Connector Option: 4 pin bayonet PT1H-8-4P or equivalent (Mating connector sold separately. See accessories.)								
E4	Connector Option: 4 pin M12 micro connector (Mating connector sold separately. See accessories.)								
E5 [▲]	Pigtail with cable (specify 2, 5, 10, 25, 50 ft.)								
E6	Connector Option: 4 pin per DIN 43650 (includes mating connector)								
E17	Connector Option: 6 pin bayonet PT02E-10-6P or equivalent (Mating connector sold separately. See accessories.)								
Electrical Cable Length (See Electrical Cable Table)									
W0 [▲]	0 ft. (Use with E3, E4, E6 (no cable), E17 connections) Mating connectors (E3, E4, E17) with cable. See accessories.								
W1	2 ft. (0.6 m) (Use with E5 pigtail and E6 DIN connections)								
W2	5 ft. (1.5 m) (Use with E5 pigtail and E6 DIN connections)								
W3	10 ft. (3 m) (Use with E5 pigtail and E6 DIN connections)								
W4	25 ft. (7.6 m) (Use with E5 pigtail and E6 DIN connections)								
W5	50 ft. (15.2 m) (Use with E5 pigtail and E6 DIN connections)								
Process Connection									
P0 [▲]	1/4-18 NPTM								
P1	1/2-14 NPTM								
P5	1/4-18 NPTF								
P40	1 1/2 in. tri-clover with 1/2 in. diaphragm								
Accuracy									
N0 [▲]	±0.25%								
N1	±0.25% with NIST certification								
N2	±0.1% with NIST certification (selected ranges)								
N12	±0.5% (standard on ranges greater than 5000 psi; voltage output only)								
N13	±0.5% with NIST certification								
Materials									
M1 [▲]	316L SS (15 to 10,000 psi)								
M2	17-4 SS (available on ranges greater than 5,000 psi)								
Temperature									
S0 [▲]	Standard								
S1	Extended								

▲ This option is standard.

Option Table

Electrical Cable Length Table

Cable Length	Output		
	4-20	0-5	0-10
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)	✓	n/a	n/a
W5 50 ft. (15.2 m)	✓	n/a	n/a

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-X0XX*
6-pin bayonet mating connector (E17)	509165
6-pin bayonet mating connector (E17) with cable (See note below)	509165-X0XX*
4 pin M12 mating connector (E4) with cable	135407-000X**

*To order a 4 or 6-pin bayonet mating connector with cable, you will need to specify the operation and cable length. Specify operation: L1=1, L3 and L10=2; Specify cable: 2, 5, 10, 25 or 50 ft. Example: 509010-1025 is a 4-pin bayonet mating connector with 4/20 mA output and 25 ft. cable.