



PT-405 SERIES

Explosion Proof, Heavy Duty Pressure Transmitter

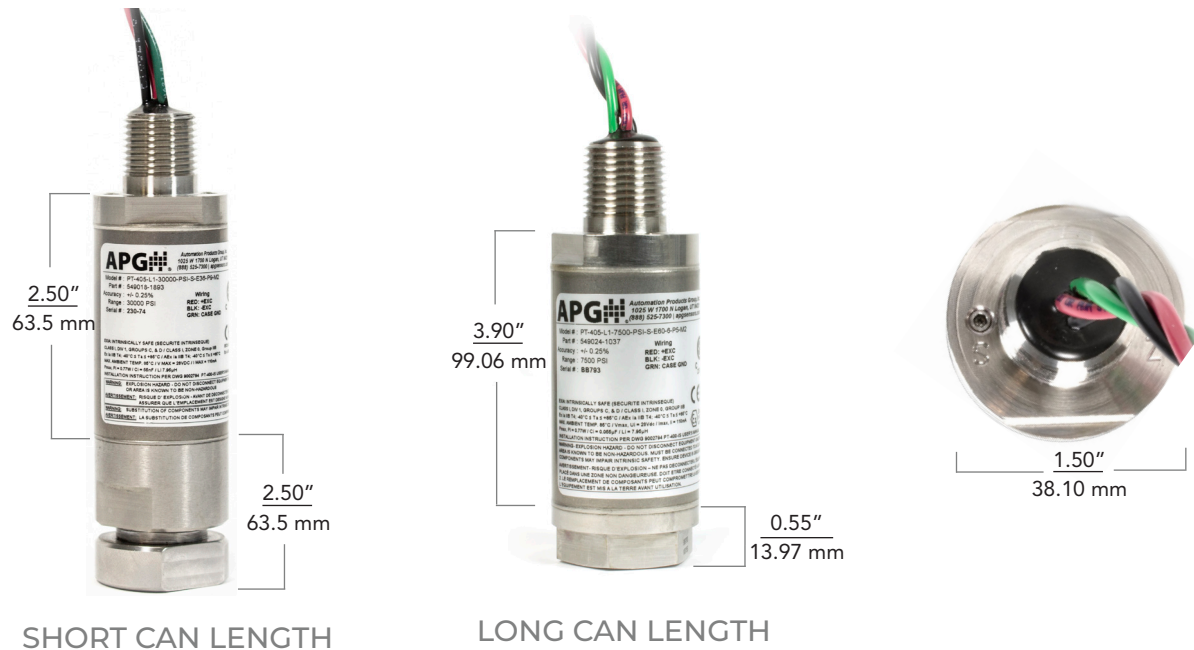


The PT-405 Explosion Proof, Heavy Duty Pressure Transducer gives you reliable accuracy in harsh conditions and hazardous locations. With a CSA certification for Class I, Division 1, Explosion Proof locations, an IP65 rated sensor body, and single seal construction for the highest safety factor, the PT-405 can survive in rough environments. With a standard accuracy of 0.25% BFS, and NIST certificates available for 0.5%, 0.25%, and 0.1%, the PT-405 is sensitive enough to give you precise pressure measurements over its 30,000 psi range. Durability, reliability, and sensitivity, all in one tough little package.

FEATURES

- Available ranges from 0 - 30,000 psi
- Standard Outputs: 4-20 mA, 0-5 VDC, 0.5-4.5 VDC, 1-5 VDC, 0-10 VDC, 1-10 VDC, RS-485
- High overpressure capability
- Zero and Span adjustments
- cCSAus hazardous location approved (up to 30,000 psi)
- Single seal for highest safety protection factor

PT-405 DIMENSIONS



*Overall length may vary depending on process connection.

PT-405 SPECIFICATIONS

PERFORMANCE

- **Pressure Ranges:** 0 to 30K psi
- **Analog Output:**
4-20mA, 0-5, 0.5-4.5, 1-5, 0-10, 1-10 VDC
- **Digital Output:** RS-485/Modbus
- **Overpressure:**
1.5X Full Scale or limit of fitting, whichever is less
- **Burst Pressure:**
3.0X Full Scale or limit of fitting, whichever is less
- **Frequency Response:** Less than 5ms

ACCURACY

- **Linearity, Hysteresis & Repeatability:**
±0.25% of Full Scale (BFSL) (1% for pressure ≤ 1 psi)
- **Thermal Zero Shift:**
[±0.036% FSO/°C (±0.02% FSO/°F)]
- **Thermal Span Shift:**
[±0.036% FSO/°C (±0.02% FSO/°F)]

ENVIRONMENTAL

- **Operating Temp:** -40° to 85°C / -40° to 185°F
- **Compensated Temp.:**
≤ 10 psi: 0° - 60°C / 32° - 140°F
10 < x ≤ 1000 psi: -10° - 70°C / 14° - 158°F
> 1000 psi: -17° - 54°C / 0° - 130°F
- **Enclosure Protection:** IP65

ELECTRICAL

- **Supply Voltage (at sensor):**
4-20 mA, 0 to 5 / 0.5 to 4.5 / 1 to 5 VDC: 9 to 28 VDC
0 to 10 / 1 to 10 VDC: 12.5 to 28 VDC
Modbus/RTU (RS-485): 9 to 28 VDC
- **Output Signal @ 21°C / 70°F:**
4-20 mA: 3-30 mA max
All VDC: 7.5 mA max
RS-485: 5 mA max
- **Electrical Protection:** Protected against reverse polarity, surge per IEC 61000-4-5
- **Startup Time:** (all models) 50 ms

MATERIALS OF CONSTRUCTION

- **Wetted Materials:**
316L Stainless Steel (≤ 1,000 psi)
17-4 Stainless Steel (> 1,000 psi)
- **Enclosure:**
316L Stainless Steel

MECHANICAL

- **Pressure Connection**
See model number configurator for complete list
- **Weight:**
408 to 680 g (0.9 to 1.5 lbs)
- **Zero & Span Protective Set Screws Torque:**
28 oz-in

COMMON MODEL CONFIGURATIONS

Short can, 1/2" Male NPT 5 ft flying leads, Standard Temperature Range

MODEL NUMBER	MODEL DESCRIPTION
PT-405-L1-15-PSIA-E60-5-P0-N12-M1-S10	4-20 mA, 0-15 PSI, Absolute Pressure, 316L SS, 0.5% Accuracy, -10° - 70°C
PT-405-L1-5-PSIS-E60-5-P0-N12-M1-S9	4-20 mA, 0-5 PSI, Sealed Gauge Pressure, 316L SS, 0.5% Accuracy, 0° - 60°C
PT-405-L1-15-PSIS-E60-5-P0-N12-M1-S10	4-20 mA, 0-15 PSI, Sealed Gauge Pressure, 316L SS, 0.5% Accuracy, -10° - 70°C
PT-405-L1-30-PSIS-E60-5-P0-N12-M1-S10	4-20 mA, 0-30 PSI, Sealed Gauge Pressure, 316L SS, 0.5% Accuracy, -10° - 70°C
PT-405-L1-50-PSIS-E60-5-P0-N12-M1-S10	4-20 mA, 0-50 PSI, Sealed Gauge Pressure, 316L SS, 0.5% Accuracy, -10° - 70°C
PT-405-L1-100-PSIS-E60-5-P0-N12-M1-S10	4-20 mA, 0-100 PSI, Sealed Gauge Pressure, 316L SS, 0.5% Accuracy, -10° - 70°C
PT-405-L1-200-PSIS-E60-5-P0-N12-M1-S10	4-20 mA, 0-200 PSI, Sealed Gauge Pressure, 316L SS, 0.5% Accuracy, -10° - 70°C
PT-405-L1-300-PSIS-E60-5-P0-N12-M1-S10	4-20 mA, 0-300 PSI, Sealed Gauge Pressure, 316L SS, 0.5% Accuracy, -10° - 70°C
PT-405-L1-500-PSIS-E60-5-P0-N0-M1-S10	4-20 mA, 0-500 PSI, Sealed Gauge Pressure, 316L SS, 0.25% Accuracy, -10° - 70°C
PT-405-L1-1000-PSIS-E60-5-P0-N0-M1-S10	4-20 mA, 0-1 kPSI, Sealed Gauge Pressure, 316L SS, 0.25% Accuracy, -10° - 70°C
PT-405-L1-5000-PSIS-E60-5-P0-N0-M2-S0	4-20 mA, 0-5 kPSI, Sealed Gauge Pressure, 17-4 SS, 0.25% Accuracy, -17° - 54°C
PT-405-L1-7500-PSIS-E60-5-P0-N0-M2-S0	4-20 mA, 0-5 kPSI, Sealed Gauge Pressure, 17-4 SS, 0.25% Accuracy, -17° - 54°C
PT-405-L1-10000-PSIS-E60-5-P0-N0-M2-S0	4-20 mA, 0-10 kPSI, Sealed Gauge Pressure, 17-4 SS, 0.25% Accuracy, -17° - 54°C

MODEL NUMBER CONFIGURATOR

MODEL NUMBER: PT-405 – – – – – – – – – –

A B C D E F G H I J

A. Operation / Output

- ☐ **L1*** 4-20 mA output
- ☐ **L3** 0-5 VDC output
- ☐ **L10** 0-10 VDC output
- ☐ **L12** 1-5 VDC output
- ☐ **L20** 0.5-4.5 VDC output
- ☐ **L21** 1-10 VDC output
- ☐ **L5** RS-485 (Modbus/RTU), 4-wire. Pressure reading only
- ☐ **L31** RS-485 (Modbus/RTU), 4-wire. Level calculations, tank volume

B. Common Pressure Ranges—PSI

- | | | | | |
|-----------------------------|------------------------------|------------------------------|-------------------------------|--------------------------------|
| ☐ 5 | ☐ 50 | ☐ 200 | ☐ 1000 | ☐ 5000 |
| ☐ 15 | ☐ 60 | ☐ 300 | ☐ 2000 | ☐ 10000 |
| ☐ 30 | ☐ 100 | ☐ 500 | ☐ 3000 | ☐ 30000 |

Other ranges available. Please consult factory.

C. Units of Measure

- | | | | | |
|-------------------------------|------------------------------|--------------------------------|--------------------------------|-------------------------------|
| ☐ psi* | ☐ bar | ☐ kPa | ☐ inH2O | ☐ inWC |
| ☐ fH2O | ☐ fWC | ☐ mmH2O | ☐ inHG | |

D. Pressure Type

- ☐ **A** Absolute (≤ 200 psi)
- ☐ **S*** Sealed ($\leq 30,000$ psi)

E. Electrical Connection

- ☐ **E60** 1/2 in. male NPT with flying leads, short can. (standard for L1, L3, L10, L12, L20. Not available for L5, L31)
- ☐ **E60L** 1/2 in. male NPT with flying leads, long can. (standard for L5, L31)

F. Electrical Cable Length

- ☐ Number represents length of flying leads in feet 4-ft length required minimum, 25-ft maximum

* This option is standard.

G. Process Connection

- ☐ **P0*** 1/4 – 18 male NPT ($\leq 10,000$ psi)
- ☐ **P1** 1/2-14 male NPT ($\leq 10,000$ psi)
- ☐ **P5** 1/4 – 18 female NPT ($\leq 15,000$ psi)
- ☐ **P6** 1/2 female NPT ($\leq 10,000$ psi)
- ☐ **P38** 1 1/2 in. tri-clover with 3/4 in. diaphragm ($\leq 1,000$ psi)
- ☐ **P52** 1 1/2 in. male NPT ($\leq 1,000$ psi)
- ☐ **P54** 7/16 – 20 UNJF-3A Male w/ Cone ($\leq 1,000$ psi)
- ☐ **P56** F250C High Pressure (10,000 psi – 30,000 psi)
- ☐ **P57** F562-C40 High Pressure (10,000 psi – 30,000 psi)

H. Accuracy

1-5,000 psi

- ☐ **N0*** $\pm 0.25\%$ (1% for pressure ≤ 1 psi)
 - Note: $\pm 0.25\%$ available up to 10,000 psi for 4-20mA output only
 - ☐ **N1** $\pm 0.25\%$ with NIST certification
 - Note: $\pm 0.25\%$ available up to 10,000 psi for 4-20mA output only
 - ☐ **N2** $\pm 0.1\%$ with NIST certification
 - ☐ **N12** $\pm 0.5\%$ (required for < 500 psi)
 - ☐ **N13** $\pm 0.5\%$ with NIST certification
- Up to 30,000 psi:
- ☐ **N12** $\pm 0.5\%$
 - ☐ **N13** $\pm 0.5\%$ with NIST certification

I. Materials

- ☐ **M1*** 316L SS ($\leq 1,000$ psi)
- ☐ **M2** 17-4 SS ($> 1,000$ psi)

J. Compensated Temperature Range

- ☐ **S0*** -17° to 54°C / 0° to 130°F ($> 1,000$ psi)
- ☐ **S1** -40° to 82°C / -40° to 180°F ($> 1,000$ psi)
- ☐ **S3** -34° to 77°C / -30° to 170°F ($> 1,000$ psi)
- ☐ **S9*** 0° to 60°C / 32° to 140°F (≤ 10 psi)
- ☐ **S10*** -10° to 70°C / 14° to 158°F ($10 < x \leq 1000$ psi)