

0.5% Industrial Pressure Transmitter User Manual

Series PT-200

Table of Contents

| | |
|---|------------|
| Introduction | iii |
| Warranty and Warranty Restrictions | iv |
| Chapter 1: Specifications and Options..... | 1 |
| Dimensions | 1 |
| Specifications | 2 |
| Model Number Configurator..... | 3 |
| Electrical Connectors, Pinout Table, and Supply Power Table..... | 4 |
| Wiring Diagram | 4 |
| Chapter 2: Installation and Removal Procedures and Notes..... | 5 |
| Tools Needed..... | 5 |
| Mounting Instructions | 5 |
| Electrical Installation | 5 |
| Removal Instructions | 5 |
| Chapter 3: Maintenance | 6 |
| General Care | 6 |
| Repair and Returns..... | 6 |

Introduction

Thank you for purchasing a series PT-200 0.5% industrial pressure transmitter from APG. We appreciate your business! Please take a few minutes to familiarize yourself with your PT-200 and this manual.

The series PT-200 pressure transmitters are rugged, general purpose sensors that offer reliable and accurate measurements under harsh conditions. The sensor fitting is machined from a solid piece of 17-4PH to provide stable operation when subjected to shock and vibration. PT-200s also incorporate digital compensation and temperature correction for high accuracy and stability.

Reading your label

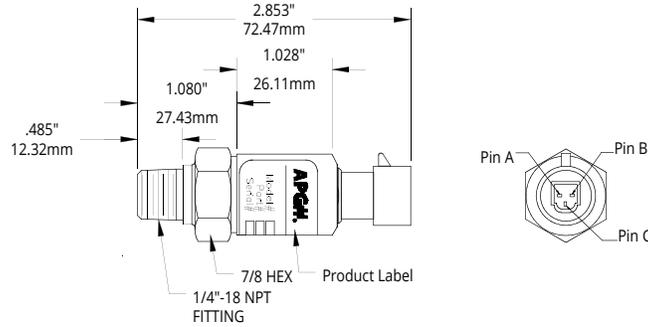
Every APG instrument comes with a label that includes the instrument's model number, part number, serial number, and a wiring pinout table. Please ensure that the part number and pinout table on your label match your order.

Warranty and Warranty Restrictions

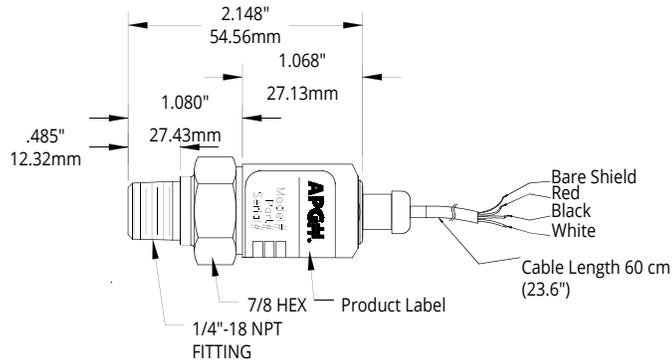
This product is covered by APG's warranty to be free from defects in material and workmanship under normal use and service of the product for 24 months. For a full explanation of our Warranty, please visit www.apgsensors.com/resources/warranty-certifications/warranty-returns/. Contact Technical Support to receive a Return Material Authorization before shipping your product back.

Chapter 1: Specifications and Options

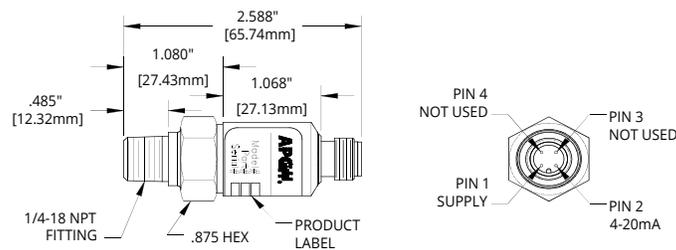
- **Dimensions**



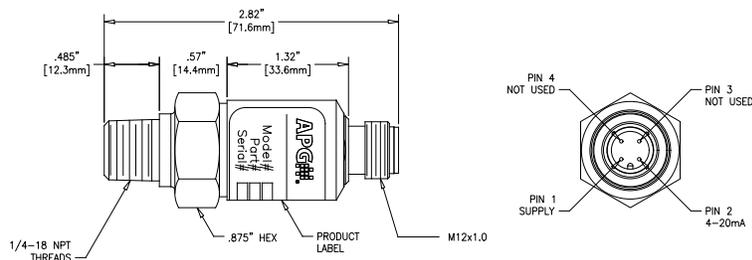
Packard Connector



3-Conductor Pigtail



M12 Connector



M12 Connector for 100 psi and 150 psi Units

• Specifications

Performance

| | |
|-----------------|-----------------------------------|
| Pressure Ranges | 0 to 10K PSIG |
| Analog Output | 4-20mA |
| Proof Pressure | 2X Full Scale |
| Burst Pressure | 3.5X Full Scale or 3x Full Scale* |
| Life span | 4 million full scale cycles |

Accuracy

| | |
|---------------------------------------|--|
| Linearity, Hysteresis & Repeatability | ±0.5% of Full Scale (BFSL) |
| Thermal Zero Shift | ±0.01% FSO/°C (±0.02% FSO/°F) or ±1.5% FS* |
| Thermal Span Shift | ±0.02% FSO/°C (±0.04% FSO/°F) or ±2% FS* |
| Long Term Stability | <±0.35% FSO/year or < ±0.25% FS/year* |
| Zero Span Offset Tolerance | ±1.75% FSO or ±1.5%FSO* |

Environmental

| | |
|-------------------------|--|
| Operating Temperature | -10 to 100°C (14 to 212°F) or -10° to 85°C (14° to 185°F)* |
| Compensated Temperature | 0 to 85°C (32 to 185°F) or 0° to 70°C (32° to 158°F)* |

Electrical

| | |
|----------------------------|----------|
| Supply Voltage (at sensor) | 9-32 VDC |
| Loop Resistance | < 100 Ω |

Materials of Construction

| | |
|------------------|------------------------|
| Wetted Materials | 17-4PH Stainless Steel |
|------------------|------------------------|

Mechanical

| | |
|--------------------|------------------|
| Process Connection | 1/4"-18 Male NPT |
|--------------------|------------------|

Environmental

| | |
|----------------------|------|
| Enclosure Protection | IP65 |
|----------------------|------|

Note: *This option refers to M12 connectors with 100 psi and 150 psi units only

• Model Number Configurator

Model Number: PT-200 - - - -
 A B C D E

A. Output

L1 4-20 mA

B. Common Pressure Ranges

100 **250** **500** **2500** **10000**
 200 **300** **1000** **5000**

C. Unit of Measure

PSIG Gauge

D. Electrical Connection

E4 M12 Connector
 E5 Pigtail with 2 ft. (60 cm) of cable
 E51 Packard Connector

E. Process Connection

P0 1/4"-18 Male NPT

- Electrical Connectors, Pinout Table, and Supply Power Table**

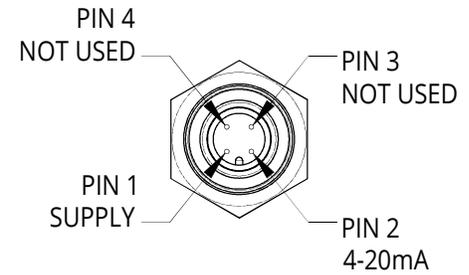
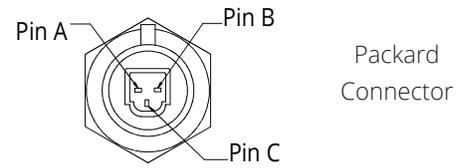
PT-200 Pin Out Table

| | Packard Connector | Pigtail 3/C with Shield | M12 Connector |
|---------------|-------------------|-------------------------|---------------|
| Excitation - | A | Black | Pin 2 |
| Excitation + | B | Red | Pin 1 |
| No Connection | C | White | Pins 3,4 |
| Gnd | - | Shield | |

N/C indicates no connection

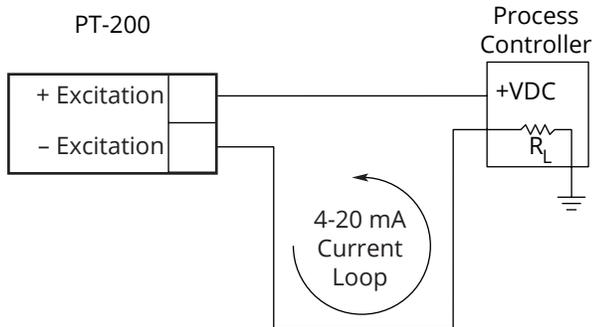
PT-200 Series Supply Power Table

| | 4-20 mA |
|--------------|----------|
| Power Supply | 9-32 VDC |



M12 Connector

- Wiring Diagram**



4-20 mA Output Wiring Diagram

The 4-20 mA PT-200 is a 2 wire, loop powered transducer/transmitter. A voltage of between 9 and 32 VDC must be maintained at this connection. Completion of the earth or system ground is recommended for proper circuit protection.

Power supply voltage must be sufficient to maintain a minimum of 9 VDC at the transducer/transmitter terminals after "dropping" voltage across R_L at full scale current (20 mA). Example: If $R_L = 250 \Omega$ then "drop" is $0.02 \text{ Amps} \times 250 \Omega = 5 \text{ volts}$. Therefore power supply minimum is $5 \text{ V} + 9 \text{ V} = 14 \text{ V}$.

Chapter 2: Installation and Removal Procedures and Notes

- **Tools Needed**

- 7/8" Hex wrench.
- Thread tape or sealant compound for threaded connections.

- **Mounting Instructions**

Mounting your pressure transmitter is easy if you follow a few simple steps:

- Never over-tighten the sensor. This can compress the diaphragm, changing how it reacts to pressure. In all cases, tighten the sensor as little as possible to create an adequate seal.
- Always use thread tape or sealant compound on tapered threads. Wrap thread tape in the opposite direction of the threads so it does not unravel as you screw the sensor into place. Unraveling can cause uneven distribution and seal failure.
- Always start screwing in your sensor by hand to avoid cross-threading. Thread failure can be a problem if you damage threads by over-tightening them or by crossing threads.

- **Electrical Installation**

- Check the pinout table on your PT-200 against your order.
- Check that your electrical system wiring matches the pinout table on your PT-200.
- For instruments with connectors, make the connection. For instruments with pigtails, run the cable to a junction box in a suitable location to connect to your system.

- **Removal Instructions**

Removing your PT-200 from service must be done with care. It's easy to create an unsafe situation, or damage your sensor, if you are not careful to follow these guidelines:

- Make sure the pressure is completely removed from the line or vessel where your sensor is installed. Follow any and all procedures for safely isolating any media contained inside the line or vessel.
- Remove the sensor with an 7/8" Hex wrench.
- Carefully clean the sensor's fitting and diaphragm of any debris (see General Care) and inspect for damage.
- Store your sensor in a dry place, at a temperature between -20 to 125°C (-4 to 257°F).

 **DANGER:** Removing your PT-200 Pressure Transmitter while there is still pressure in the line could result in injury or death.

Chapter 3: Maintenance

• General Care

Your series PT-200 pressure transmitter is very low maintenance and will need little care as long as it was installed correctly. However, in general, you should:

- Keep the transmitter and the area around it generally clean.
- Avoid applications for which the transmitter was not designed, such as extreme temperatures, contact with incompatible corrosive chemicals, or other damaging environments.
- Inspect the threads whenever you remove the transmitter from duty or change its location.
- Avoid touching the diaphragm. Contact with the diaphragm, especially with a tool, could permanently shift the output and ruin accuracy.
- Clean the diaphragm or the diaphragm bore with extreme care. If using a tool is required, make sure it does not touch the diaphragm.

i IMPORTANT: Any contact with the diaphragm can permanently damage the sensor. Use extreme caution.

• Repair and Returns

Should your series PT-200 pressure transmitter require service, please contact the factory via phone, email, or online chat. We will issue you a Return Material Authorization (RMA) number with instructions.

- Phone: 888-525-7300
- Email: sales@apgsensors.com
- Online chat at www.apgsensors.com

Please have your PT-200's part number and serial number available. See Warranty and Warranty Restrictions for more information.



Automation Products Group, Inc.

Tel: 1/888/525-7300 • Fax: 1/435/753-7490 • www.apgsensors.com • sales@apgsensors.com