

Series 251 – Installation and Operation Manual



**1. INTRODUCTION**

The Series 251 Wet/Wet Differential Pressure Transmitter utilizes a double diaphragm sensor technology that outperforms standard double sensor products in accuracy, reliability and static operating pressure. This differential pressure sensing technology offers 0.25% accuracy with static operating pressures up to 1000 PSI. The Series 251 features 316 stainless steel construction designed to meet NEMA 4X (IP 65) standards. The transmitter also offers exceptional field flexibility with a 5:1 turn down and comes standard with a certificate of calibration.

**1.1 Model Numbers**

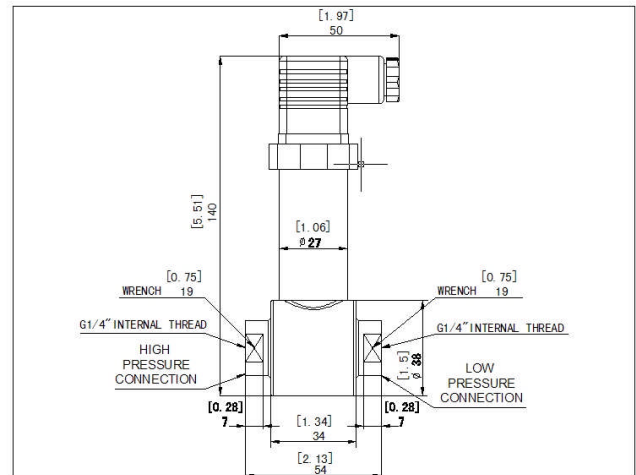
| Model  | Range     |
|--------|-----------|
| 251-01 | 0-5 PSI   |
| 251-02 | 0-10 PSI  |
| 251-03 | 0-15 PSI  |
| 251-04 | 0-30 PSI  |
| 251-05 | 0-50 PSI  |
| 251-06 | 0-100 PSI |
| 251-07 | 0-150 PSI |
| 251-08 | 0-300 PSI |
| 251-09 | 0-500 PSI |

\*Other ranges available upon request

**1.2 Specifications**

- Media compatibility:** Gas and Liquids compatible with 316SS
- Accuracy:** +/- 0.25%
- Over Pressure:** Positive side – 2x F.S.; Negative side – 1x F.S.
- Working Pressure:** 1000 PSI (7MPa)
- Temperature Limits:**
  - Compensated:** -4° to 120°F (-20° to 70°C)
  - Operating:** -40° to 185°F (-40° to 85°C)
- Thermal Effect:** +/- 0.028% FS/°F
- Stability:** +/- 0.5% FS/year
- Output Signal:** 4-20 mA, 2-wire
- Power Supply:** 12-36 VDC
- Response Time:** 100 ms
- Position Effect:** 0.1% F.S., corrected by zero
- Housing Material:** 316 SS
- Protection:** IP65 (NEMA 4X)
- Process Connection:** ¼” FNPT

**1.3 Dimensional Drawings**



**2. INSTALLATION**

**2.1 Mounting**

The Series 251 should be mounted in a location free from excess vibration that stays within the temperature ratings of the transmitter. It is recommended to mount the transmitter so the pressure connections are on a horizontal plane. It can be mounted in a vertical plane, but may require zero adjustment.

**2.2 Pressure Connection**

When connecting to the ¼” FNPT connections, use pipe thread sealant tape or other suitable joint compound. When measuring liquid, bleed fittings should be used to bleed off any trapped air to prevent erroneous readings.

### 2.3 Electrical Connections

Removing the top screw of the connector will allow the cover to be removed and give access to wire the transmitter. The cable should be put through the cable connector and then wired according to the below table:

| Pin | 2-wire |
|-----|--------|
| 1   | +      |
| 2   | -      |
| 3   | N/A    |

### 3. CALIBRATION

The Series 251 is factory calibrated and includes a certificate of calibration. Calibration should not be required out of the box unless the transmitter is mounted in a vertical plane. Periodically, it may be necessary to recalibrate the gauge to maintain the accuracy of the product.

To gain access to the zero and span adjustment potentiometers, the electrical connection head should be removed by unscrewing the large plastic hex from the body. To “zero” the gauge, remove the pressure connections from both pressure ports and adjust the zero potentiometer until the output is 4 mA. To “span” the gauge, apply the full scale pressure to the transmitter and adjust the span potentiometer until the output is 20 mA.

To properly calibrate the product, it is necessary to have an accurate pressure standard. If you do not have one available or would like calibration traceable to NIST, please contact Sensococon.

### 4. LIMITED WARRANTY

#### LIMITED WARRANTY

SENSOCON warrants its products to be free from defects in materials and workmanship for a period of one (1) year from the date of shipment, subject to the following terms and conditions: Without charge, SENSOCON will repair, replace, or refund the purchase price at SENSOCON’s option products found to be defective in materials or workmanship within the warranty period; provided that:

- i. the product has not been subjected to abuse, neglect, accident, incorrect wiring not our own, improper installation or servicing, or use in violation of labels or instructions provided by SENSOCON;
- ii. the product has not been repaired or altered by anyone except SENSOCON;
- iii. the maximum ratings label and serial number or date code have not been removed, defaced, or otherwise changed;
- iv. examination discloses, in the judgment of SENSOCON, the defect in materials or workmanship developed under normal installation, use and service; and
- v. SENSOCON is notified in advance of and the product is returned to SENSOCON transportation prepaid before expiration of the warranty period.

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