PARAGON CONTROLS INCORPORATED

DPT-4003

Differential Pressure Transducer

Operation & Maintenance Manual

Engineered for accuracy, applicability, durability and simplicity

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1. INTRODUCTION

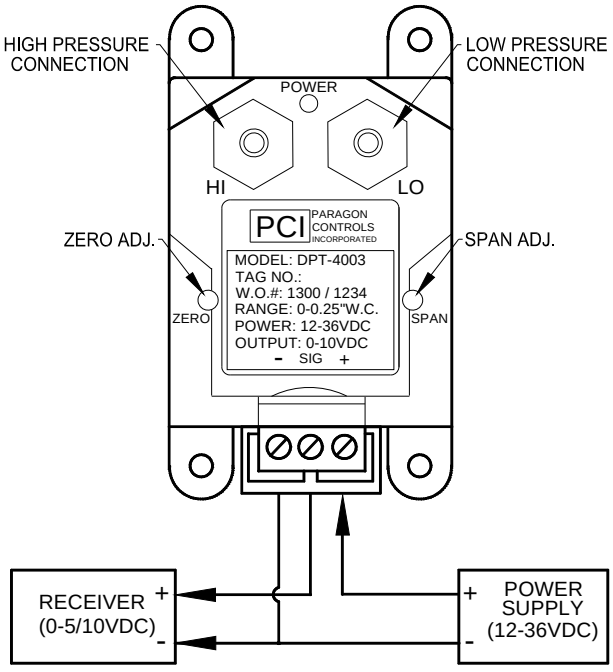
This user manual provides information on product features and guides you through all basic functions of the DPT-4003.

1.1. DESCRIPTION

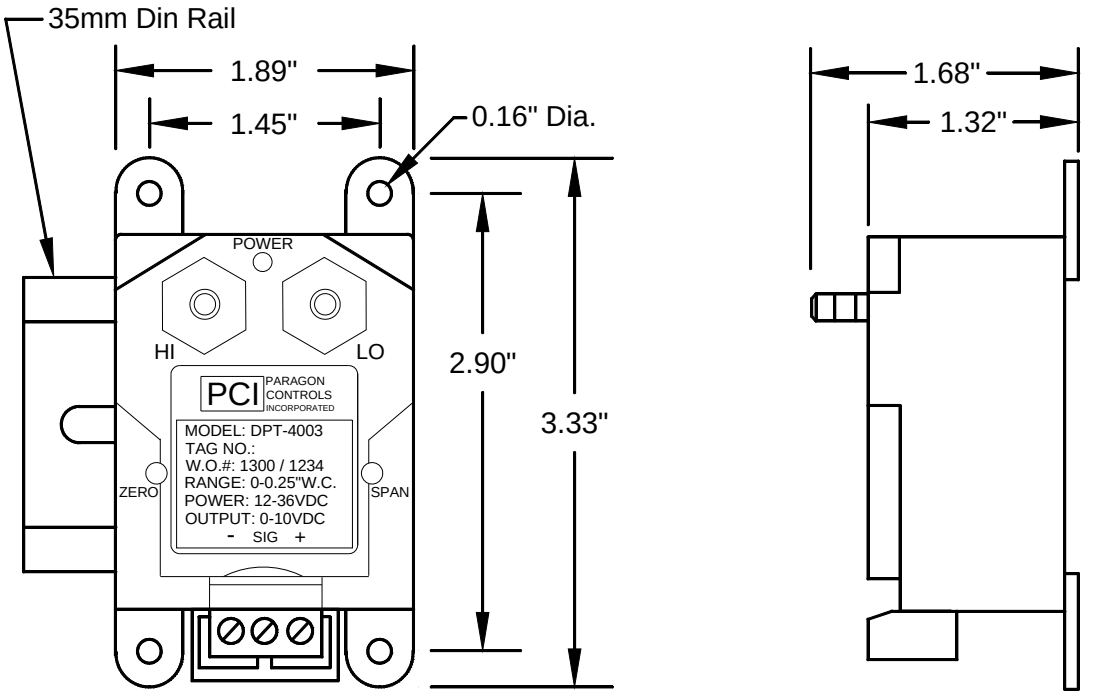
The **DPT-4003** differential pressure transducer sensor operates on the capacitance principal and is capable of sensing ultra low differential pressures. In the capacitance cell, a very lightweight, responsive diaphragm deflects a small amount when pressure is applied. This deflection results in a change in capacitance, which is then detected and processed electronically into an output signal linear to the differential pressure. The DPT-4003 can be configured as a Unipolar device (positive differential pressure only) or a Bipolar device (positive and negative differential pressures). A power indicator illuminates when power is attached correctly.

1.1.1. Field Connections

Refer to figures below for pressure and electrical connections.



1.1.2. Dimensions



(Mount with #8 screws or 35mm Din Rail)

2. CALIBRATION

It is recommended that the Zero Calibration be performed upon installation. Span Calibration is not affected by the Zero Calibration. The Span of the unit has been factory calibrated and should only be adjusted using high accuracy test equipment. **Refer to section 1.1.1.**

Zero Calibration Equipment Required:

- DMM (Digital Multi Meter)

Span Calibration Equipment Required:

- Low pressure air source (Paragon PS-100 or equivalent)
- Manometer for measuring low pressure
- DMM (Digital Multi Meter)

2.1. UNIPOLAR ZERO CALIBRATION

The following zero calibration procedure can be performed without the need to perform a span calibration.

Step 1. Place a DMM set to monitor DC voltage between the - terminal and SIG terminal.

Step 2. Apply Power to the transducer.

Step 3. Identify **ZERO** potentiometer.

Step 4. With no pressure applied, adjust the **ZERO** potentiometer for a reading of 0±.01vdc.

2.2. BIPOLAR ZERO CALIBRATION

The following zero calibration procedure can be performed without the need to perform a span calibration.

Step 1. Place a DMM set to monitor DC voltage between the - terminal and SIG terminal.

Step 2. Apply Power to the transducer.

Step 3. Identify **ZERO** potentiometer.

Step 4. With no pressure applied, adjust the **ZERO** potentiometer for a reading of 50%±.01vdc of full scale output voltage.

2.3. SPAN CALIBRATION

Check the transducer label to determine the voltage output range (0-5vdc or 0-10vdc) and perform the appropriate output procedure.

Note: It is recommended that a zero calibration be completed before performing a span calibration.

2.3.1. 0-5vdc Output Procedure

Step 1. Place a DMM set to monitor DC voltage between the - terminal and SIG terminal.

Step 2. Apply Power to the transducer.

Step 3. Identify **SPAN** potentiometer.

Step 4. Apply full scale pressure (Range shown on the transducer label) to the High Pressure port and adjust the **SPAN** potentiometer for an output reading of 5±.01vdc.

2.3.2. 0-10vdc Output Procedure

Step 1. Place a DMM set to monitor DC voltage between the - terminal and SIG terminal.

Step 2. Apply Power to the transducer.

Step 3. Identify **SPAN** potentiometer.

Step 4. Apply full scale pressure (Range shown on the transducer label) to the High Pressure port and adjust the **SPAN** potentiometer for an output reading of 10±.01vdc.

3. TROUBLESHOOTING GUIDE

TROUBLESHOOTING TABLE	
SYMPTOM	**SOLUTION**
1. No output reading	1. Verify Power Supply voltage is correct
	2. Verify correct wire connections
	3. Verify correct pressure connections
	4. Verify input pressure differential with a manometer
	5. Contact Factory Service Department.
2. Low output reading	1. Verify input pressure differential with a manometer
	2. Contact Factory Service Department.

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