



DPT & DPIT-4005 SERIES DIFFERENTIAL PRESSURE TRANSDUCERS

Description

The 4005 series of differential pressure transducers include **Models DPT-4005** and **DPIT-4005-M**. The 4005 series differential pressure transducers combine high accuracy, scaling multipliers, output filters, and type of output selection into a single package.

The 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 DPIT Series includes local indication of the measured differential pressure on an independent front panel mounted magnehelic pressure gauge (indicated by a “M” in the model number). The independent magnehelic gauge readout allows for quick and immediate verification that the electronic transducer is operating effectively, and is available in both SI and English engineering units.

Each DPT & DPIT-4005 Series transducer is selected and factory calibrated to meet the design requirements for the given application.

Features

- Field selectable 4-20 mA or 0-10 VDC output, (optional 0-5 VDC output)
- $\pm 0.5\%$ F.S. accuracy (standard)
 $\pm 0.25\%$ F.S. accuracy (optional)
- Full scale ranges as low as 0.10 inches of water differential pressure
- Signal noise cancellation
- Local indication of differential pressure on an independent magnehelic pressure gauge
- Can be operated continuously in temperature ranges of 32 to 160 °F
- Can be stored in temperature ranges of -40 to 180 °F
- Standard zero shift of only $\pm 0.025\%$ F.S./°F
Zero shift of only $\pm 0.015\%$ F.S./°F (optional)
- Standard span shift of only $\pm 0.025\%$ F.S./°F
Span shift of only $\pm 0.015\%$ F.S./°F (optional)
- 25 psi maximum static line pressure
- Differential overpressure of 5 psi proof and 25 psi burst
- Vibration less than 0.05% F.S. temporary effect with 5g's, 0-60 Hz
- Non-corrosive dry gas pressure media
- Pneumatic ¼” compression process input connection



DPT & DPIT-4005 Series Technical Specifications

1. AVAILABLE FULL SCALE RANGES

No.	Inches W.C.
1	0.10
2	0.25
3	0.50
4	0.75
5	1.00
6	2.00
7	3.00
8	5.00
9	10.0

2. PROCESS INPUT CONNECTION

Pneumatic 1/4" compression, suitable for either hard or soft wall signal tubing

3. ENCLOSURE

DPT-4005

NEMA-12 continuous hinge

DPIT-4005-M

NEMA 1 aluminum

4. PRESSURE MEDIA

Non-corrosive dry gases

5. OPERABLE LINE PRESSURE

25 psi maximum static line pressure

6. DIFFERENTIAL OVERPRESSURE

5 psi proof and 25 psi burst pressure

7. VIBRATION

<0.05% F.S. temporary effect with 5g's, 0-60 Hz

8. FULL SCALE ACCURACY DATA AT 70°F

	Standard	Optional
Combined accuracy	±0.50%	±0.25%
Terminal point nonlinearity	±0.40%	±0.20%
Hysteresis	±0.02%	±0.02%
Non-repeatability	±0.05%	±0.03%

9. ENVIRONMENTAL ATTRIBUTES

Storage	-40 ~ 180°F	-40 ~ 82°C
Operating	32 ~ 160°F	-18 ~ 71°C
Compensation Range	40 ~ 125°F	4 ~ 52°C
Zero shift **	±0.025%FS/°F	±0.025%FS/½°C
Span shift **	±0.025%FS/°F	±0.025%FS/½°C
** Opt 0.25%	±0.015%FS/°F	±0.015%FS/½°C
Accuracy		

10. ELECTRICAL INFORMATION

Output	Field selectable 4 ~ 20mA or 0 ~ 10VDC, (optional 0 ~ 5VDC)
Supply Power	18 ~ 28 volts DC/AC; 50 ~ 60Hz; 150mA
Connections	Removable plug w/screw terminals
External Load	500 Ω max

11. APPROXIMATE WEIGHT

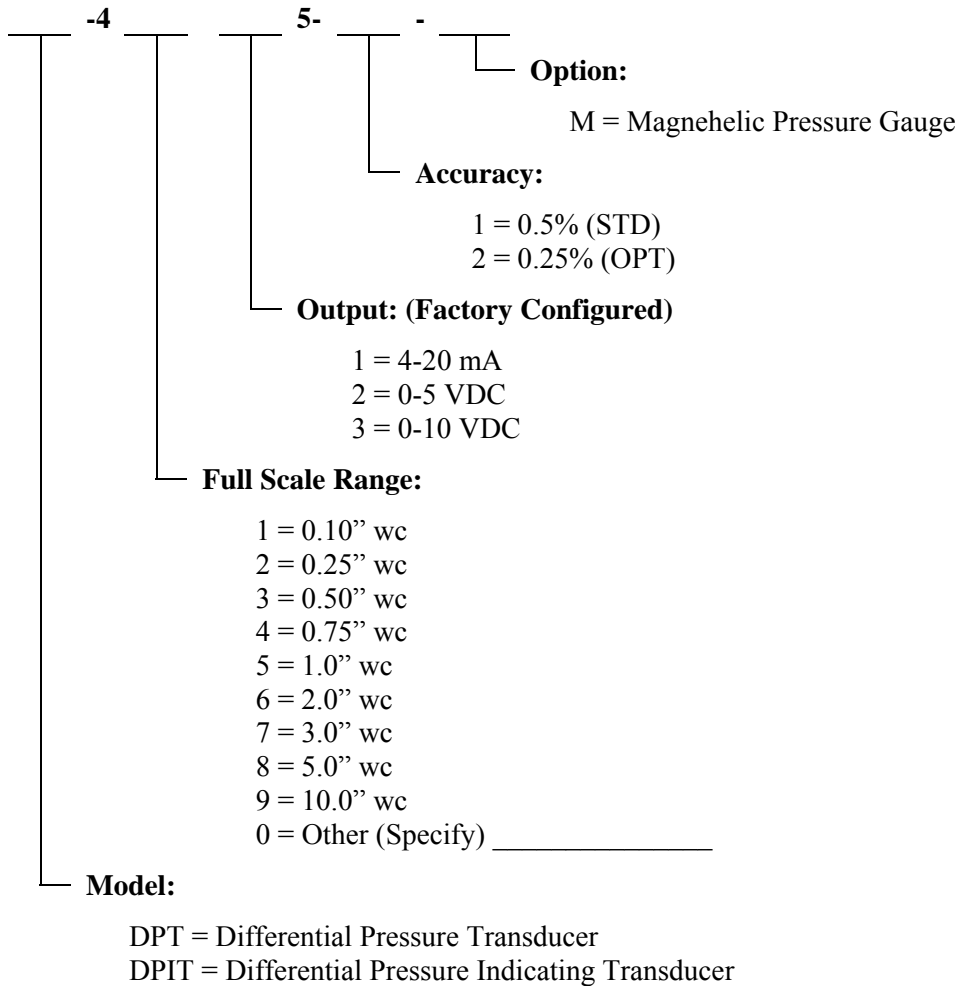
DPT-4005

3.5 LBS

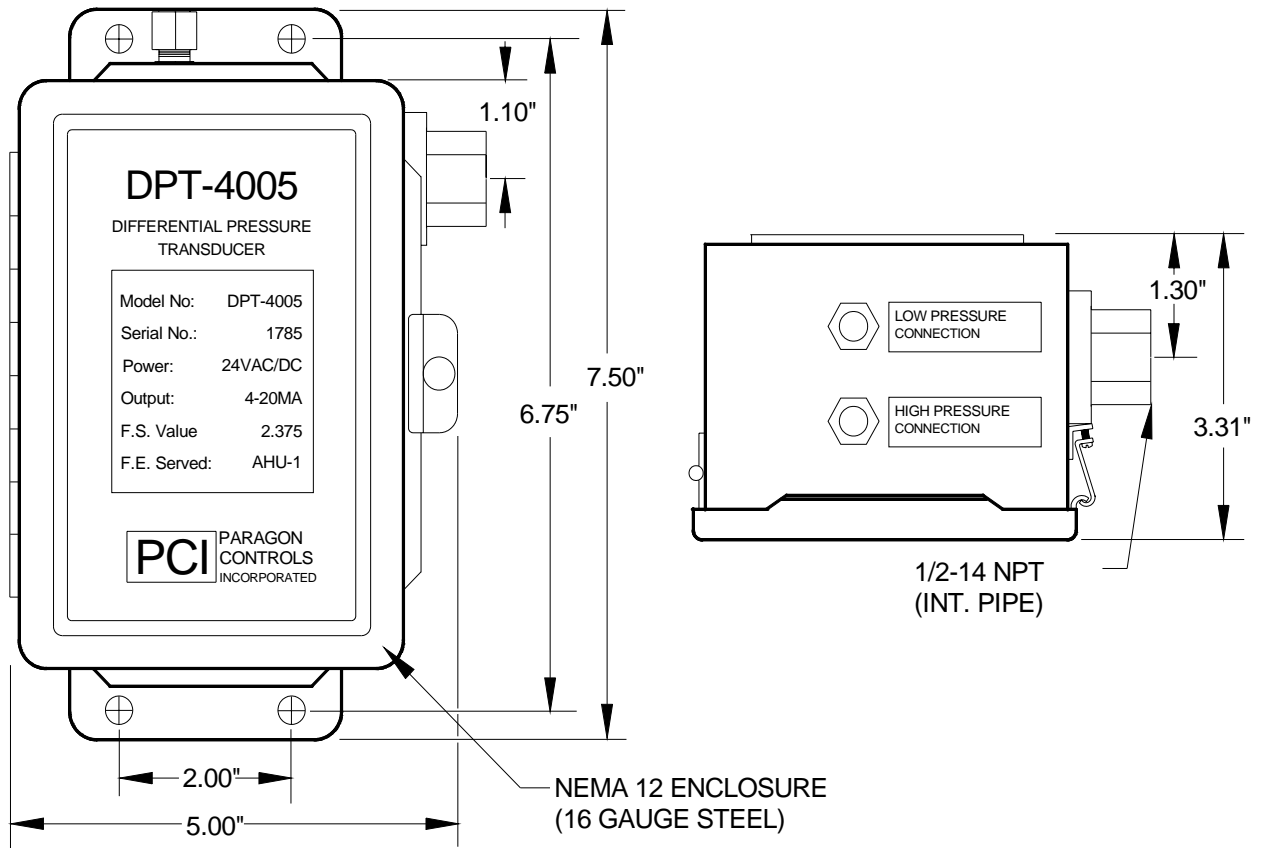
DPIT-4005-M

3.0 LBS

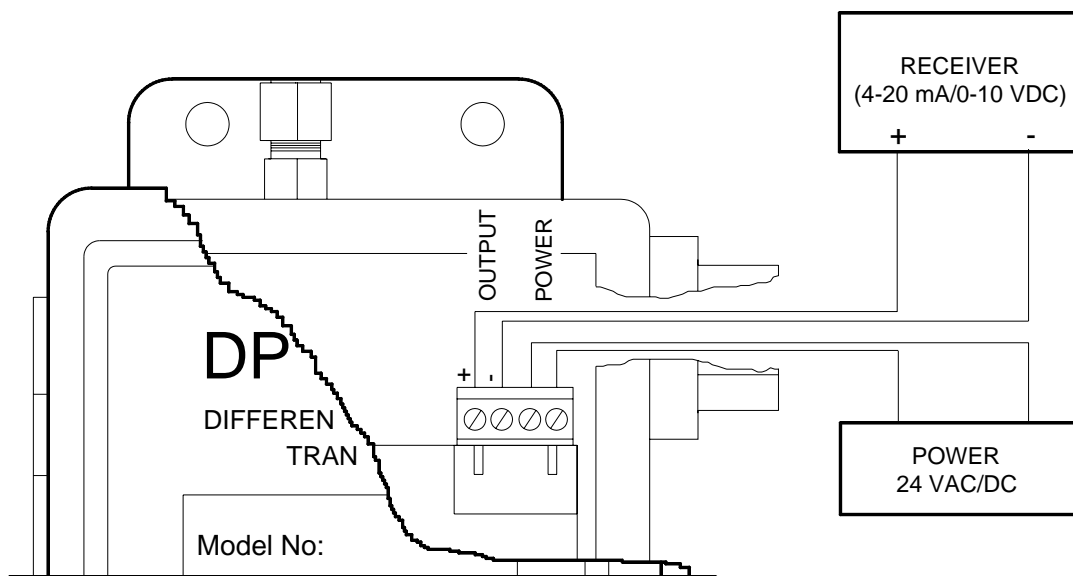
DPT & DPIT-4005 Series Ordering Information



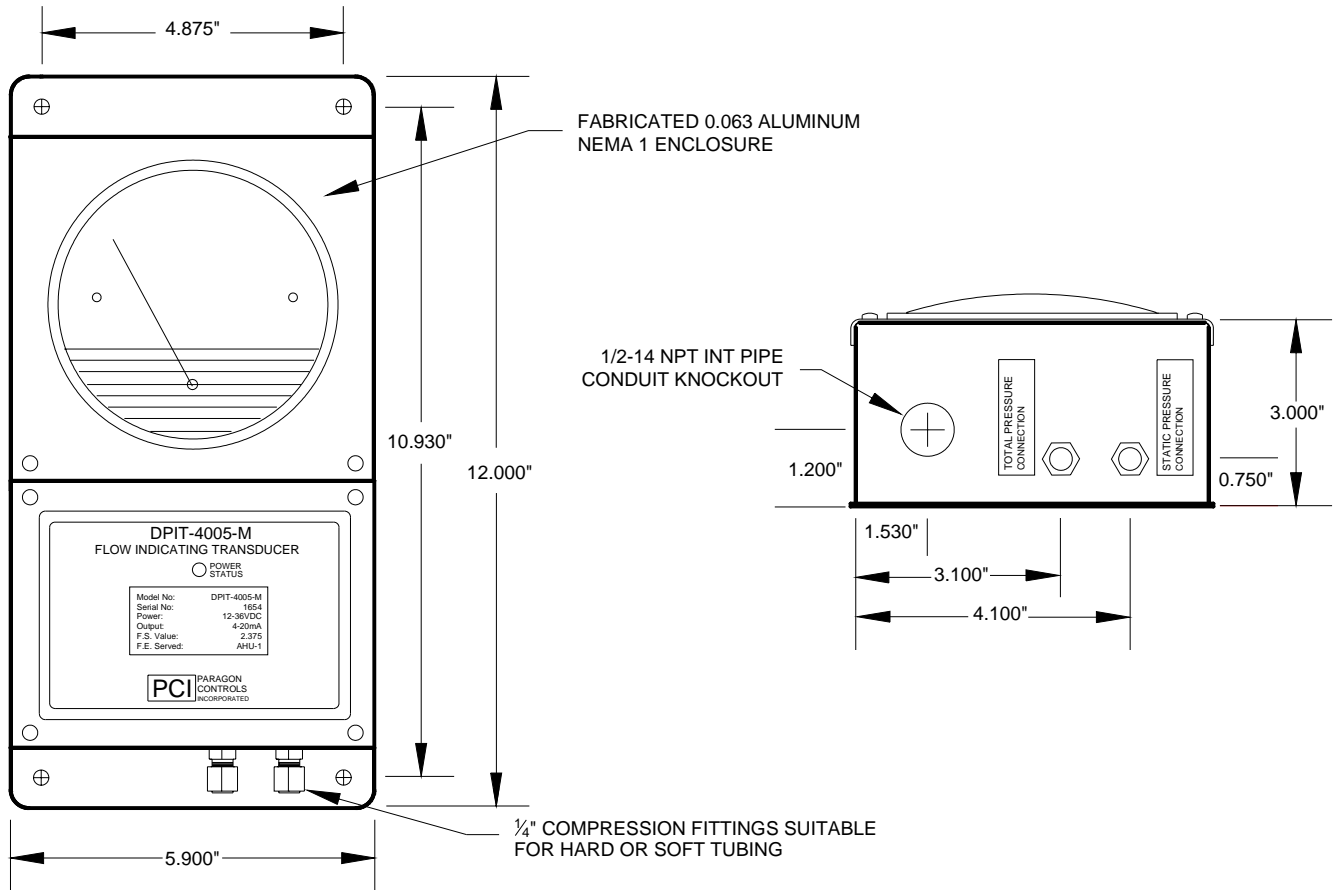
DPT-4005 Dimensions



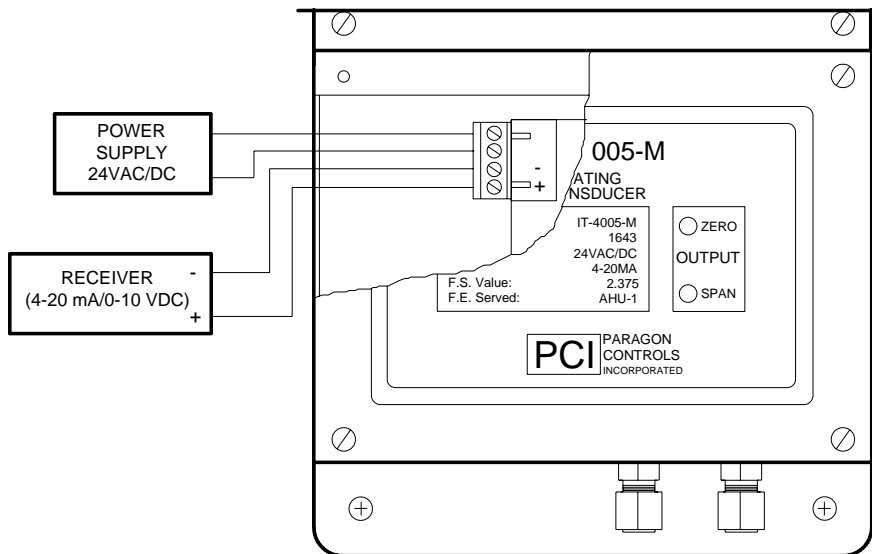
DPT-4005 Field Connections



DPIT-4005-M Dimensions



DPIT-4005-M Field Connections



DPT & DPIT-4005 Series Specification Guide

Electronic Transducers

1. Provide individual differential pressure transducers, selected for the required spans of the application being served. The transducer shall not be ranged for more than 200% of the application requirements.
2. The transducer(s) shall be solid state electronic type, with infinite output resolution, capable of performing dedicated differential pressure measurement. Microprocessor based transducers with time sharing of multiple inputs are not acceptable.
3. Each transducer's output shall not be affected by direction of mounting (attitude) or external vibrations, and shall be furnished with a factory calibrated span that matches the application.
4. Transducer performance shall be equal to or better than the following:
Accuracy: 0.5% F.S. (Terminal Point) / 0.35% F.S. (BFSL)
Temperature Effects: <0.03% F.S./°F
Over-pressure: 5 PSIG Proof / 10 PSIG Burst
Response: <0.25 seconds for full span input
Noise Filtration: Low Pass Filter, factory set @ 3.2Hz

Additional Specifications for Differential Pressure Transducer Options

- **Magnehelic Pressure Gauge:** Differential pressure transducers shall be provided with an integral dual scale indicating meter operating independent of all other control devices. The top scale shall indicate the measured differential pressure in inches of water. The meter shall be a differential pressure type that is diaphragm actuated, and is to be flush mounted on the enclosure door. The meter shall be calibrated to an accuracy of $\pm 2\%$ of span ($\pm 3\%$ of span for 0.5 inch water column magnehelic gauge or $\pm 4\%$ of span for 0.25 inch water column magnehelic gauge).

Labeling

1. An identification label shall be placed on each transducer listing the model number, primary elements served, full scale value, and identifying tag number.

Manufacturer

1. Electronic transducers shall be Paragon Controls Inc. Model [DPT-4005] [DPIT-4005-M] or equal as approved by the Engineer.
2. Naming of a manufacturer does not automatically constitute acceptance of this standard product nor waive the responsibility of the manufacturer to comply totally with all requirements of the proceeding specification.