

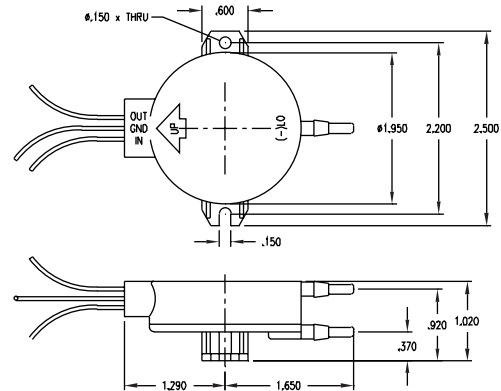
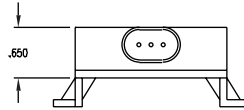


## Series 646 Differential Pressure Transducer

### Specifications - Installation and Operating Instructions



WIRING	
Black	Output
Green	Ground
Red	Supply



#### GENERAL

The Series 646 Differential Pressure Transducer is designed for use with air and compatible dry, inert gases and can accurately measure differential pressure down to  $\pm 0.5''$  H<sub>2</sub>O. The transducer contains a fast response capacitance sensor and a unique isolation system ideal for VAV systems, filter monitoring, HVAC fan control, building pressurization and leak detection systems.

The Series 646 Differential Pressure Transducer features excellent repeatability, low hysteresis, accurate operation over a broad temperature range, and exceptional insensitivity to vibration, and increasing common mode line pressure. The high overpressure protection feature permits a continuous low reference pressure even with a sudden connection failure to a positive atmospheric pressure.

#### MODELS

Model Number	Range	Model Number	Range
646-0	$\pm 0.5''$ H <sub>2</sub> O	646-5	0 to 5'' H <sub>2</sub> O
646-1	0 to 1'' H <sub>2</sub> O	646-6	0 to 10'' H <sub>2</sub> O
646-2	0 to 2'' H <sub>2</sub> O	646-7	$\pm 5.0''$ H <sub>2</sub> O
646-3	$\pm 1.0''$ H <sub>2</sub> O	646-8	$\pm 10.0''$ H <sub>2</sub> O
646-4	$\pm 2.0''$ H <sub>2</sub> O		

#### SPECIFICATIONS

**Service:** Compatible dry gases and air.

**Output:** 0.25 to 4.0  $\pm 0.08$  VDC @ 5.0V supply (0.5 to 4.25  $\pm 0.12$  for  $\pm 0.5''$  range).

**Supply Voltage:** 4.75 to 8.00 VDC.

**Supply Current:** 5 mA DC maximum.

**Load:** 25K $\Omega$  minimum recommended.

**Output Impedance:** <100 $\Omega$ ; short circuit protected.

**Maximum Line Pressure:** 1 psi.

**Maximum Overload Pressure:** High side (positive): 5  $\times$  rated pressure, Low side (negative): 3  $\times$  rated pressure.

**Burst Pressure:** 1.5  $\times$  psi (Hi & Lo sides) for ranges  $\pm 5.0$  to  $\pm 10.0''$  H<sub>2</sub>O; 10  $\times$  rated pressure (Hi side) and 5  $\times$  rated pressure (Lo side) for ranges  $\pm 0.5$  to  $\pm 2.0''$  H<sub>2</sub>O.

**Accuracy (non-linearity):**  $\pm 0.5\%$  of span max.

**Hysteresis and Repeatability:**  $\pm 0.05\%$  of span max.

**Operating Temperature:** 14 to 140°F (-10 to 60°C).

**Compensated Temperature:** 50 to 104°F (10 to 40°C).

**Storage Temperature:** -40 to 203°F (-40 to 95°C).

**Response Time:** 15 msec @ 63% full scale step response change.

**Stability (1 year):**  $\pm 1.0\%$  of span.

**Vibration:** 10G's peak to peak sinusoidal (10 to 500 Hz).

**Shock:** 50G's, 1/2 sin wave, duration 11 msec without damage.

**Thermal Effects:** Zero and span:  $\pm 1.5\%$  of span for ranges  $\pm 5.0$  to  $\pm 10.0''$  H<sub>2</sub>O; Zero and span:  $\pm 3.0\%$  and  $\pm 4.0\%$  of span respectively for ranges  $\pm 0.5$  to  $\pm 2.0''$  H<sub>2</sub>O @ 50 to 104°F (10 to 40°C).

**Materials of Construction:** Graphite filled, nylon housing, 96% of alumina ceramic sensor, silicone seal.

NOTE: transducer housing contains graphite and is electrically conductive and connected to ground lead wire.

**Process Connection:** Slip fit for 1/8" I.D. tubing, barb for 3/16" I.D. tubing.

**Electrical Connection:** Three color-coded leads, 24 AWG, 12" length.

**Weight:** 2.5 oz (0.07 kg).