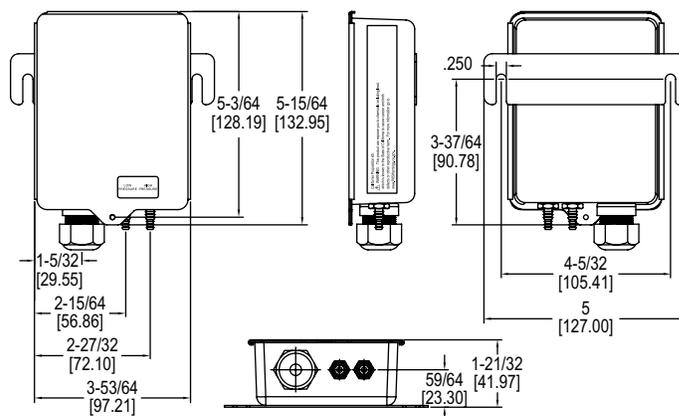




Series IDPT Industrial Differential Pressure Transmitter

Specifications - Installation and Operating Instructions



The **Series IDPT Industrial Differential Pressure Transmitter** features a rugged, water resistant housing and highly stable accuracy for a long service life in most industrial applications. This pressure transmitter utilizes a capacitive pressure sensor on ranges 0 to 0.25 in w.c. to 0 to 1 in w.c. and a piezo sensor on ranges 0 to 2.5 in w.c. to 0 to 10 in w.c., both of which offer accuracy options of 0.25% or 0.5% full-scale. The cap cell allows the IDPT to maintain critical processes in industrial applications. The series offers a 4-20 mA 2-wire version for a loop powered current output as well as a 0-5 V/0-10 V selectable voltage output version.

INSTALLATION

Surface Mounting:

Mount the transmitter on a vertical surface. The pressure sensor measurement is unaffected by orientation, but it is recommended the unit be mounted with the connections facing down to prevent moisture from entering either the pressure ports or the electrical cable entry. Attach the mounting bracket to a flat surface using #6-32 pan head sheet metal screws. Do not over tighten.

SPECIFICATIONS

Service: Clean, dry, compatible gases.

Wetted Materials: Consult factory.

Accuracy: $\pm 0.5\%$ FS standard, $\pm 0.25\%$ FS high accuracy.

Stability: $\pm 0.5\%$ FS per year.

Temperature Limits: -4 to 158°F (-20 to 70°C); Storage: -22 to 176°F (-30 to 80°C).

Compensated Temperature Range: 36 to 135°F (2 to 57°C).

Pressure Limits: 2 psi max.

Thermal Effects: ≤ 1 in w.c.: $\pm 0.015\%$ FS/°F; > 1 in w.c.: $\pm 0.025\%$ FS/°F.

Power Requirements: 10-35 VDC (2-wire), 17-36 VDC isolated 21.6-33 VAC (3-wire).

Output Signal: 4-20 mA DC, 2-wire; 0-5 VDC/0-10 VDC selectable, 3-wire.

Zero and Span Adjustments: Push-buttons accessible by removing the housing cover.

Response Time: 250 ms.

Loop Resistance: 0-1045 Ω , $V_{min}=12V+[(.22A)(RI)]$ (2-wire); Min. load resistance 1 k Ω (3-wire).

Electrical Connection: Screw terminals.

Process Connection: Barbed SS for 3/16" ID tubing.

Enclosure Rating: NEMA 2 (IP11).

Mounting Orientation: Pressure sensor measurement is unaffected by orientation.

Weight: ≤ 1 in w.c.: 0.94 lb (0.43 kg); > 1 in w.c.: 1.08 lb (0.49 kg).

Compliance: CE.

ELECTRICAL

The IDPT transmitter utilizes a **2-wire 4-20 mA Current Output**, or a **3-wire 0-5 V/ 0-10 V Voltage Output**. It is also capable of **Simultaneous Current and Voltage Output**. The power and signals interconnect via a removable European-style four conductor terminal block.

2-Wire 4-20 mA Current Output

CAUTION DO NOT EXCEED SPECIFIED SUPPLY VOLTAGE RATINGS. PERMANENT DAMAGE NOT COVERED BY WARRANTY WILL RESULT. SIMULTANEOUS OUTPUTS ARE NOT DESIGNED FOR AC VOLTAGE OPERATION.

The connections to the transmitter are made through terminals VDC and COM on the terminal block as shown in Figure 1. The terminal block is removable and each of the terminals are labeled next to the terminal block on the circuit board. Polarity is indicated by VDC and COM. See Figure 1.

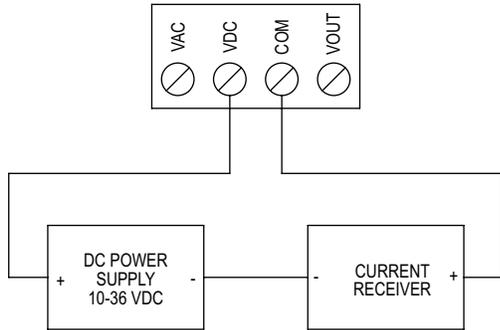


Figure 1

The maximum receiver load resistance (RL) for a given power supply voltage (Vps) is defined by the formula:

$$R_L = \frac{V_{ps} - 10.0}{20 \text{ mA DC}}$$

Shielded 2-wire cable is recommended for control loop wiring. Ground the shield at the power supply end only.

The receiver may be connected to either the negative or positive side of the loop, whichever is most convenient. Should polarity of the transmitter or receiver be inadvertently reversed, the loop will not function properly but no damage will be done to the transmitter.

The maximum length of connecting wire between the transmitter and the receiver is a function of wire size and receiver resistance. That portion of the total current loop resistance represented by the resistance of the connecting wires themselves should not exceed 10% of the receiver resistance. For extremely long runs (over 1,000 feet), it is desirable to select receivers with lower resistances in order to keep the size and cost of the connecting leads as low as possible. In installations where the connecting run is no more than 100 feet, you can use a connecting lead wire as small as No. 22 ga.

3-Wire 0-10 V and 0-5 V Voltage Output

CAUTION DO NOT EXCEED SPECIFIED SUPPLY VOLTAGE RATINGS. PERMANENT DAMAGE NOT COVERED BY WARRANTY WILL RESULT.

The terminal block is removable and each of the terminals are labeled next to the terminal block on the circuit board. Positive polarity is indicated by VOUT. AC/DC selection is made via the terminal block. If the polarity of the transmitter is inadvertently reversed, the unit will not function properly, but no damage will be done to the transmitter.

Selection of using a DC or AC power supply is made via the terminal block.

See Figure 2 for DC wiring.

See Figure 3 for AC wiring.

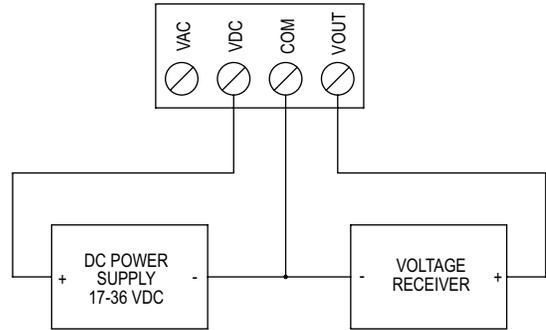


Figure 2: DC wiring

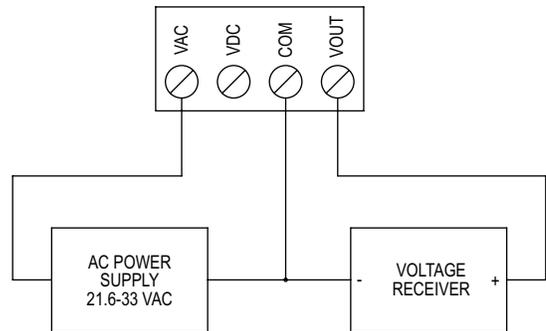


Figure 3: AC wiring

The minimum receiver load is 1 kΩ. The resistance due to the wire should be low compared to the receiver load resistance. While the voltage at the terminal block remains unchanged with a 10 mA current flow, resistive losses in the wiring do cause errors in the voltage delivered to the receiver. For a 1% accurate gage, the resistance of the wires should be less than 0.1% of the value of the receiver load resistance. This will keep the error caused by the current flow below 0.1%.

The output across VOUT and COM will be either 0-5 V, 0-10 V depending on the DIP switch setting. **See DIP Switch Settings Section for more information.**

MAINTENANCE/REPAIR

Upon final installation of the Series IDPT, no routine maintenance is required. The Series IDPT is not field serviceable and should be returned if repair is needed. Field repair should not be attempted and may void warranty.



This symbol indicates waste electrical products should not be disposed of with household waste. Please recycle where facilities exist. Check with your Local Authority or retailer for recycling advice.

WARRANTY/RETURN

Refer to "Terms and Conditions of Sale" in our catalog and on our website. Contact customer service to receive a Return Materials Authorization (RMA) number before shipping the product back for repair. Be sure to include a brief description of the problem plus any additional application notes.