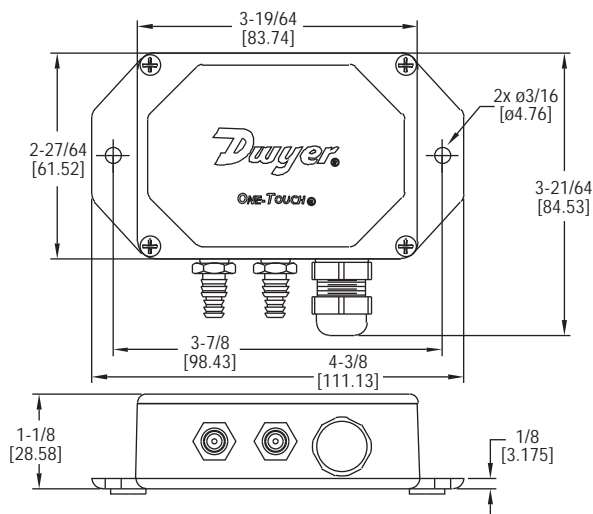




Series 616OT One-Touch® Differential Pressure Transmitter

Specifications - Installation and Operating Instructions



The Series 616OT One-Touch® Differential Pressure Transmitter is an extremely versatile transmitter for monitoring pressure. The Series 616OT senses the pressure of air and compatible gases and sends a standard 4-20 mA output signal. The single button simultaneous calibration of both zero and span reduces product installation and set up time.

INSTALLATION

Mounting:

The transmitter should be mounted on a vertical surface with the connections directed down to prevent moisture from entering either the pressure ports or the electrical cable entry.

Electrical Connection:

2-Wire Operation:



CAUTION: DO NOT EXCEED SPECIFIED SUPPLY VOLTAGE RATINGS. PERMANENT DAMAGE NOT COVERED BY WARRANTY WILL RESULT. 2-WIRE UNITS ARE NOT DESIGNED FOR AC VOLTAGE OPERATION.

SPECIFICATIONS

Service: Air and non-combustible, compatible gases.

Wetted Materials: Consult Factory.

Accuracy: ±1%.

Thermal Effect: ±0.05%/°F (±0.03%/°C).

Stability: ±1% F.S. / year.

Temperature Limits: 0 to 140°F (-18 to 60°C).

Pressure Limits: 1 psi maximum, operation; 10 psi, burst.

Power Requirements: 2-wire, 10 to 35 VDC; 3-wire, 15 to 36 VDC.

Output Signal: 2-wire, 4 to 20 mA; 3-wire; 0 to 10 V.

Response Time: 300 ms.

Zero & Span Adjustments: One digital push button, zero & span calibration.

Loop Resistance: Current output: 1250 Ohm max. Voltage output: min. load resistance 1000 Ohm.

Current Consumption: 40 mA max.

Electrical Connections: Removable European Style Terminal Block for 16 to 26 AWG.

Electrical Entry: Cable gland for 0.114 to 0.250" (2.9 to 6.4 mm) diameter cable.

Process Connections: Barbed, dual size to fit 1/8" (3 mm) and 3/16" (5 mm) I.D. rubber or vinyl tubing.

Enclosure Rating: NEMA 4X (IP65).

Weight: 4.0 oz (115 g).

Electrical Connection:

2-Wire Operation, continued:

The connections to the transmitter are made through a two circuit European style terminal block CONN6 located at the top of the main P.C. board. Polarity is indicated by + and - signs on the P.C. board. Do not connect to (V).

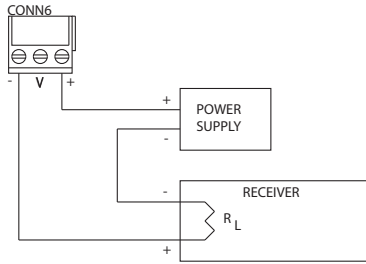


Figure 1

An external power supply delivering 10 to 35 VDC with a minimum current capability of 40 milliamps must be used to power the control loop in which the 616OT transmitter is connected. Refer to Fig. 1 for connection of the power supply, transmitter and receiver. The range of appropriate receiver load resistances (RL) for the power supply voltage available is given by the formula and graph in Fig. 2. Shielded two wire cable is recommended for control loop wiring and the negative side of the loop may be grounded if desired. Note also that the receiver may be connected in 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.

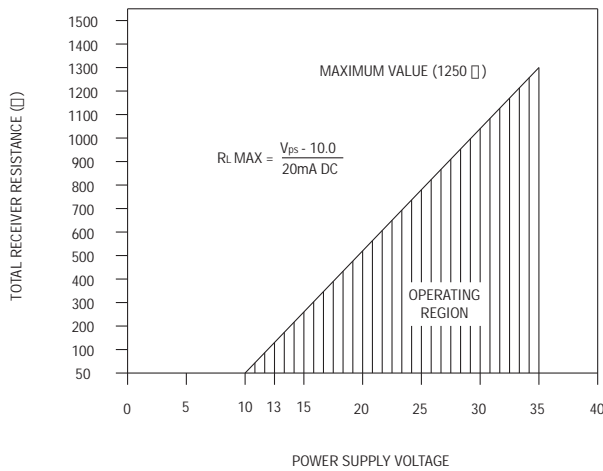


Figure 2

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 higher 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, connecting lead wire as small as No. 22 Ga. can be used.



3-Wire Operation:

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

The connections to the transmitter are made through European style terminal block. Connect the power and signal leads to the corresponding terminals as shown in Fig. 3. When using a DC supply, the positive of the supply should be connected to V(+) and the negative connected to (-). Connecting the leads in reverse will not damage the device but it will not operate. The DC supply should be capable of providing 20 mA or more of current per 616OT transmitter.

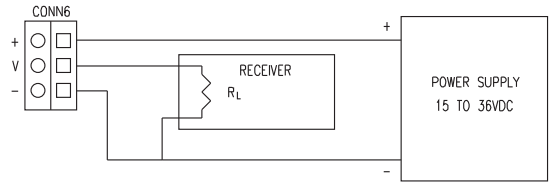


Figure 3

The output of V is 0 to 10 VDC. As much as 10 mA may be drawn from V without affecting accuracy. This limits the minimum load RL connected to Vo to 1 KΩ or higher. Remember to keep the wiring resistance between the output and the receiver RL low compared to value of RL. While the voltage at the terminals remains unchanged with a 10 mA current flow, resistive losses in the wiring do cause errors in the voltage delivered to RL. For a 1% accurate gauge, a good rule of thumb would be to keep the resistance of the leads less than 0.1% of the value of RL. This will keep the error caused by current flow below 0.1%.

To minimize noise in the signal use shielded cable. The common line may also be grounded.

Pressure Connections

Two integral tubing connectors are provided. They are designed to fit 1/8" (3 mm) and 3/16" (5 mm) ID tubing. Connect the high pressure to the High side as shown in Fig. 4. Be sure the pressure ratings of the tubing exceed that of the operating ranges.

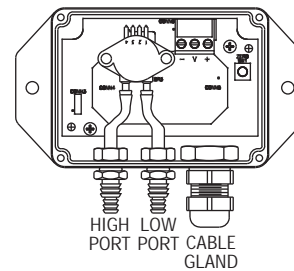


Figure 4

ONE BUTTON PRESSURE CALIBRATION

Leaving the hose barbs vented, press and hold the "Zero" switch for about 4-5 seconds. The zero point should now be set. See Fig.4.

MAINTENANCE

Annual recalibration is suggested. No lubrication or other periodic servicing is required. Keep exterior and cover clean. Occasionally disconnect pressure lines to vent both sides of gauge to atmosphere and re-zero. Do not use solvent to clean transmitter. Use only plastic compatible cleaners or water.

The Series 616OT is not field serviceable and should be returned if repair is needed (field repair should not be attempted and may void warranty). Be sure to include a brief description of the problem plus any relevant application notes. Contact customer service to receive a return goods authorization number before shipping.