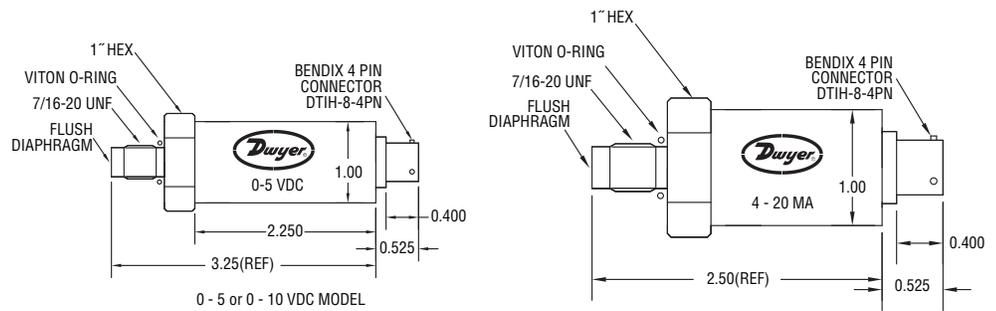




Series FDT Flush Diaphragm Transmitter

Specifications - Installation and Operating Instructions



The Series FDT Flush Diaphragm Transmitter is designed for highly cyclical conditions. This unit has a non-oil filled sensor element that provides resistance to temperature fluctuations. Manufactured from a solid piece of steel, the sensing diaphragm can withstand the most abrasive/cyclical applications. Unit performs well in high cyclical environments with the presence of water-hammering or spiking.

Flush feature greatly reduces chance of leakage. Tough materials allow the unit to withstand harsh process conditions. Advanced manufacturing techniques, extreme environmental burn-in, and thorough residual stress relieving procedures ensure unit will maintain its high performance standard over time.

CAUTION Do not exceed specified supply voltage ratings. Permanent damage not covered by warranty will result. This device is not designed for 120 or 240 volt AC operation. Use only on 8 to 38 VDC.

INSTALLATION

Location

Select a location where the temperature of the transmitter will be between -40 and 200°F (-40 to 93°C). Distance from the receiver is limited only by total loop resistance. The tubing or piping supplying pressure to the unit can be practically any length required but long lengths will increase response time slightly.

Position

The transmitter is not position sensitive. However all standard models are originally calibrated with the unit in a position with the pressure connection downward. Although they can be used at other angles, for best accuracy it is recommended that units be installed in the position calibrated at the factory.

Pressure Connection

Use a small amount of plumbers tape, thread tape or other suitable sealants to prevent leaks. Be sure the pressure passage inside the port is not blocked.

Electrical Connections

Units must "see" the proper excitation to perform within specifications. Insufficient power may prevent the unit from providing the full rated output at the full rated pressure. Electronics can be damaged by electric surges. Surge arresters are suggested for applications where surges are possible. Mechanical isolation may also be required. Electrical termination must be made in a NEMA 4 enclosure. Care must be taken to prevent migration of fluid into the cable jacket. Unless otherwise specified, the unit's electronics should not be exposed to temperatures above 250°F.

Note: Wrench only on the wrench flats for mounting or removing the unit. Do not use the housing or electrical termination for wrenching. The pressure cavities of FDT series unless otherwise specified are manufactured with 15-5 and 316 stainless steels and are suitable for use with all media compatible with those materials. Foreign objects should not be introduced into the pressure cavity. Units must be protected from exposure to transient pressure spikes and pressures over their rated proof pressure range.

CURRENT (4 to 20 mA) OUTPUT OPERATION

An external power supply delivering 8 to 38 VDC with minimum current capability of 40 mA DC (per transmitter) is required to power the control loop. See Fig. A for connection of the power supply, transmitter and receiver. The range of appropriate

SPECIFICATIONS

Service: Compatible liquids and gases, adhesives, slurries, materials that can harden, or where a pressure cavity is not desired.

Wetted Materials: 316 & 15-5 SST.

Accuracy: ±0.5% FSO (includes non-linearity, hysteresis, and repeatability).

Stability: ≤ ±0.25% FSO per year.

Temperature Limits: -40 to 200°F (-40 to 93°C).

Compensated Temperature Limits: 0 to 170°F (-18 to 77°C).

Pressure Limit: 150% FS; Burst: 200% FS.

Thermal Effect: ±1.5% FSO over compensated range.

Power Requirements: 8 to 38 VDC.

Output Signal: FDT-A: 4 to 20 mA DC; FDT-V: 0 to 5 VDC.

Response Time: <1mS.

Loop Resistance: FDT-A: 0-1.5 Ω; FDT-V: ≤ 100 Ω.

Electrical Connections: Bendix 4 pin.

Process Connection: 7/16-20 UNF Male Flush Diaphragm. Optional 1/4" male NPT.

Enclosure Rating: NEMA 4x (IP66).

Mounting Orientation: Mount in any position.

Weight: 2 oz (57 g).

Agency Approvals: CE.

receiver load resistance (RL) for the DC power supply voltage available is expressed by the formula:

$$RL \text{ Max} = \frac{V_{ps} - 8}{20 \text{ mA DC}}$$

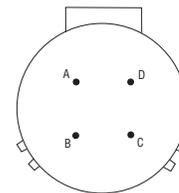
Shielded cable is recommended for control loop wiring.

VOLTAGE (0 to 5 V) OUTPUT OPERATION

(Other output contact the factory) See Fig. A for connection of the power supply, transmitter and receiver.

Standard Wiring				
MODEL	OUTPUT	Power(+)	Power(-)	Signal(+)
FDT-V	0-5 VDC 3 Wire	Pin A	Pin B	Pin C
FDT-A	4-20 mA DC	Pin A		Pin B

Fig. A



MAINTENANCE

After final installation of the pressure transmitter and its companion receiver, no routine maintenance is required. A periodic check of system calibration is suggested. The Series FDT transmitters are not field repairable 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.