SERIES 606 DIFFERENTIAL PRESSURE TRANSMITTER

Specifications – Installation and Operating Instructions

The Dwyer Series 606 Differential Pressure Transmitter is a compact, low cost instrument for measuring and controlling compatible air or gas pressure. Positive, negative or differential pressures are converted to a standard 4-20 mA DC output signal with ±1% full span accuracy.

INSTALLATION

Location – Select a clean, dry, vibration free location protected from oil, solvents, weather and damaging airborne vapors which could attack transmitter housing. Temperature must be within limits shown in SPECIFICATIONS and areas subject to excess EMI/RFI noise should be avoided. Tubing length will not affect accuracy but will increase response time slightly. Arrange tubing to minimize stress on pressure connections. Wire length between transmitter and receiver is limited only by total loop resistance. See figure B.

Position – Series 606 Transmitters are factory calibrated and zeroed in a vertical position (pressure connections pointing down). This orientation assures that any condensation which forms within the tubing will drain away from the instrument. Units will operate properly at any angle but must be zeroed in the final operating position.

Pressure Connections – Two integral barbed tubing connections are provided for use with 1/8" (3MM) I.D. vinyl or rubber tubing. Attach tubing from positive pressure source to port marked HI or from negative (vacuum) source to port marked LO. In either case, opposite port must be vented to atmosphere. For differential pressures, the higher source is connected to the HI port and the lower to the LO port.

Mounting – Attach the Series 606 Transmitter to mounting surface using two #6 screws or bolts through the holes in the lower half of the housing. Do Not Over tighten. Mounting hardware not included.

CONTINUED ON REVERSE
CAUTION: DO NOT EXCEED SPECIFIED SUPPLY VOLTAGE RATING. PERMANENT DAMAGE NOT COVERED BY WARRANTY WILL RESULT. THIS UNIT IS NOT DESIGNED FOR AC LINE VOLTAGE OPERATION.

ELECTRICAL CONNECTIONS

All electrical connections to the Series 606 Transmitters are made to the 3-wire cable on top of housing. See figure A for schematic diagram. An external power supply delivering 18-24 VDC with minimum current capability of 50 mA per unit is required to drive the current loop.

Voltage Input — Series 606 Differential Pressure Transmitters can be easily adapted for receivers requiring 1-5 VDC input. Insert a 250 ohm, 1/2 watt resistor in series with the current loop but in parallel with the receiver input. Locate this resistor as close as possible to the input. Because resistor accuracy directly influences output signal accuracy, we recommend use of a precision ±0.1% tolerance resistor to minimize this effect.

Wire Length — The maximum length of wire connecting transmitter and receiver is a function of wire size and receiver resistance. Wiring should not contribute more than 10% of receiver resistance to total loop resistance. For extremely long runs (over 1000 feet), choose receivers with higher resistances to minimize size and cost of connecting leads. Where wiring length is under 100 feet, lead wire as small as 22 AWG can be used.

MULTIPLE RECEIVER INSTALLATION

An advantage of the standard 4-20 mA DC output signal used in Series 606 transmitters is the compatibility with a wide range of receivers. Devices such as the A-701 Digital Readout, A-702 Digital Readout with alarms, an analog panel meter, a chart recorder and other process control equipment can be operated simultaneously. It is only necessary that all devices be designed for a standard 4-20 mA input, the proper polarity of input connections be observed and the combined receiver resistances must not exceed the maximum for the current loop. If any receiver indicates a negative or downscale reading, the signal input leads are reversed.

Loop Resistance — The range of appropriate receiver load resistance ($R_\text{l}$) for the DC power supply voltage available is expressed by the formula and graph in figure B. Be sure to consider all loop resistance values when choosing a power supply to operate multiple receivers.

Zero Adjust — Each Series 606 Transmitter is factory calibrated to produce a 4 mA signal at zero pressure and 20 mA signal at full span pressure. Full span output is not field adjustable but periodic checks of zero output are recommended. With transmitter connected to its companion receiver, insert an accurate milliammeter in series with the current loop. Reading should be exactly 4 mA with both pressure ports vented to atmosphere. If correction is needed, remove plug on front of unit next to ZERO mark and adjust potentiometer inside. When complete, replace plug and remove milliammeter from circuit.

MAINTENANCE

After final installation of the Series 606 Differential Pressure Transmitter, no routine maintenance is necessary. A periodic check of the zero setting is recommended following the procedure under ZERO ADJUST. Except for this, these transmitters are not field serviceable and should be returned, freight prepaid to the following address if repair is needed. Be sure to include a clear description of the problem plus any application information available.

Dwyer Instruments, Inc.
Attention: Repair Department
55 Ward Street
Wakarusa, IN 46573