Warnings: Read Before Installation

Static Electric Damage – This instrument is susceptible to damage when exposed to static electrical charges. To avoid damage to the transmitter observe the following:

- Ground the body of transmitter BEFORE making any electrical connections.
- When disconnecting, remove the ground LAST.
- The braided shield and drain wire in the cable is not connected to the transmitter body and is not a suitable ground.

For FM Approved Unit – Installation must be in accordance with ANSI/ISA RP 12.6 and Dwyer barrier drawing 01-001006-00 (pages one through four).

Cable Runs – DO NOT run transmitter cable in any conduit containing AC wiring.

Overpressure Damage – Pressure spikes in excess of the rated overpressure capability of the transmitter may cause irreversible electrical and/or mechanical damage to the pressure measuring and containing elements.

Fluid Hammer and Surge Damage – Fluid hammer and surges can destroy any pressure transmitter and must always be avoided. A pressure snubber should be installed to eliminate the damaging hammer effects.

Fluid Hammer occurs when a liquid flow is suddenly stopped as with quick closing solenoid valves. Surges occur when flow begins suddenly as when a pump is turned on at full power or a valve is quickly opened.

Liquid surges are particularly damaging to pressure transmitters if the pipe is originally empty. To avoid damaging surges, lines should remain full (if possible), pumps should be brought up to power slowly and valves opened slowly. To avoid damage from both fluid hammer and surges, a surge chamber should be installed.

Symptoms of the damaging effects of fluid hammer and surge include:

- Pressure transmitter exhibits an output at zero pressure (large zero offset). If zero offset is less than 10% FS user can normally re-zero transmitter, install proper snubber and continue monitoring pressures.
- Pressure transmitter output remains constant regardless of pressure.
- In severe cases there will be no output.

Mounting – The transmitter requires no special mounting hardware and can be mounted in any plane with negligible position error. Although the unit can withstand normal vibration without damage or significant output effect, it is always good practice to mount the transmitter where there is minimum vibration.

Apply Teflon® tape or an equivalent sealant to the NPT pressure fitting threads before installing. When tightening, apply a wrench to the 5/8" hex area next to the pressure connection. DO NOT tighten by using a pipe wrench on the housing.
Power Supply – An external power supply delivering 10-30 VDC with a minimum current capability of 40 mA DC (per transmitter) must be used to power the control loop. See fig. C for connection of the power supply transmitter and receiver.

The range of allowable loop resistance for the DC power supply available is expressed by the formula and graph in fig. D. $V_{min}$ is minimum voltage and $R_{loop}$ is total loop resistance in ohms.

$$V_{min} = 10V + 0.022A \cdot R_{loop}$$

*Includes A 10% Safety Factor

Adjustment Potentiometers – The zero and span pots are accessible through the top of the case. Loosen the four screws and separate the top carefully. The zero pot is on top and the span pot is on the side of the PC board. Connect the braided shield to the guard terminal on the reading instrument (meter, etc.) if available, or to the power supply negative terminal.

Recalibration Instructions:
1. Apply 0% full scale pressure.
2. Set the output using the zero adjust potentiometer.
3. Apply 100% full scale pressure.
4. Set the output using the span adjust potentiometer.
5. Repeat steps 1 through 4 as necessary.

Maintenance – After final installation of the Series 638 Pressure Transmitter and its companion receiver, no routine maintenance is necessary. A periodic check of the zero span settings is recommended following the procedure under Recalibration instructions. Otherwise these transmitters are not field serviceable and should be returned to the factory if repair is needed. Be sure to include a brief description of the problem plus any pertinent application information available.