FAIRCHILD TXI7800/TXI7850
EXPLOSION-PROOF I/P TRANSDUCERS
Installation, Operation and Maintenance Instructions

MAINTENANCE
To clean the Orifice, use the following procedure:
1. Shut off the valve that is supplying air to transducer. It is not necessary to remove the Transducer from the air line.
2. Remove the Orifice Assembly from the unit. For more detailed information see View A.
3. Clean with alcohol and dry with compressed air.
4. Lubricate O-Rings on Orifice Assembly (4) with silicone grease or equivalent lubricant before reassembling.

NOTES:
Parts must be completely dry before reassembling. If the standard maintenance procedure does not correct the trouble, a service kit containing a replacement diaphragm and orifice assembly is available, see Figure 5.

GENERAL INFORMATION
The Model TXI7800/TXI7850 Explosion-Proof I/P Transducer transmits a pneumatic signal which is linearly proportional to a DC input signal from electronic control devices. The Transducer uses low powered microelectronics and pressure feedback control to provide a stable, accurate pneumatic output for the operation of valve actuators.

INSTALLATION
The Model TXI7800/TXI7850 can be mounted directly onto a flat surface using the two tapped mounting holes in the mounting face of the housing. For more information, see Figure 2.

TXI7800/TXI7850, Installation with the "N" Option.
NOTE: For Hazardous Location in Potentially Explosive Atmosphere Installations
1. Tapped exhaust required for installation in Class 1, Division 2/Zone 2 (European Union) classified locations with group D/Group IIA (European Union) gases such as Natural Gas and Methane-Industrial as the pressure supply medium.
2. The explosion-proof pipe nipple seal (N option) supplied with this unit is an integral component of the design safety of this version and must not be removed. Use caution to avoid marring the threads on the pipe nipple which voids the explosion-proof integrity of the device.
3. Gases used as the pressure supply medium in hazardous location applications must be compatible with the elastomer indicated in Materials of Construction.
A mounting Kit is available to mount the TXI7800/TXI7850 on a flat surface or on a 2" pipe. For more information, see Figure 3.

MAINTENANCE
To clean the Orifice, use the following procedure:
1. Shut off the valve that is supplying air to transducer. It is not necessary to remove the Transducer from the air line.
2. Remove the Orifice Assembly from the unit. For more detailed information see View A.
3. Clean with alcohol and dry with compressed air.
4. Lubricate O-Rings on Orifice Assembly (4) with silicone grease or equivalent lubricant before reassembling.

NOTE: Unused IN and OUT Ports are plugged.
For "U" option BSPT
Mounting Kit 19021-2
Includes the following:
Stainless Steel Mounting Bracket
Two M6 X 12mm Screws
2" Pipe Clamp

Mounting Kit 19021-1
Includes the following:
Stainless Steel Mounting Bracket
Two 1/4-20 x 7/16" Screws
2" Pipe Clamp

Figure 3. Mounting Kit 19021-1. (Sold Separately)

Pneumatic Connections
Clean all pipelines to remove dirt and scale before installation.
Apply a minimum amount of pipe compound to the male threads of the fitting only. Do not use teflon tape as a sealant. Start with the third thread back and work away from the end of the fitting to avoid the possibility of contaminating the transducer. Install the transducer in the air line. The inlet and outlet ports are labeled on the side of the transducer. Tighten connections securely. Avoid undersized fittings that will limit the flow through the transducer and cause a pressure drop downstream. For detailed information, see Figure 2. "TXI7800/TXI7850 Outline Dimensions" on page 1.

Electric Connections
Make connections to the Terminal Block through the 1/2-14 NPT Conduit Port in the base of the housing as shown below in Figure 4. "Electrical Connections".

NOTE: Instrument quality air, per ISA Standards S7.3-1981, is required. Use a filter, ahead of the transducer, to remove dirt and liquid in the air line. If an air line lubricator is used, it MUST be located downstream, beyond the transducer. The user is responsible for insuring that the environment in which the unit will be installed, and the operating gas, is compatible with the materials in the transducer.

Wiring in Hazardous Areas
Wiring in hazardous areas should be performed in accordance with Table 1. and any local codes that apply.

<table>
<thead>
<tr>
<th>Country</th>
<th>Agency</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S.</td>
<td>FM</td>
<td>ANSI/ISA RP 12.6</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ANSI/NFPA70</td>
</tr>
<tr>
<td>Canada</td>
<td>CSA</td>
<td>CEC Part1</td>
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<tr>
<td>Europe</td>
<td>ATEX</td>
<td>EN 50 039, EN 60079-14, IEC 60079-14</td>
</tr>
<tr>
<td>Australia</td>
<td>SAA</td>
<td>AS/NZS 3000, AS2381.1</td>
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</tbody>
</table>

Table 1. Hazardous Location Wiring Practices

Intrinsically Safe Connections
Refer to the latest revision of the indicated drawing.

<table>
<thead>
<tr>
<th>Underwriting Group</th>
<th>Drawing Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>FM (Factory Mutual)</td>
<td>EC- 18970</td>
</tr>
<tr>
<td>CSA (Canadian Standards Assoc.)</td>
<td>EC- 18971</td>
</tr>
<tr>
<td>ATEX</td>
<td>EC- 18972</td>
</tr>
<tr>
<td>SAA (Standard Australia Assoc.)</td>
<td>EC- 19271</td>
</tr>
</tbody>
</table>

Figure 4. Electrical Connections.
CALIBRATIONS / ADJUSTMENTS

Equipment Required for Calibration:
• Pneumatic Supply capable of delivering up to 150 psig.
• Current Supply capable of delivering up to 30 mA.
• Pressure Gage capable of a digital readout up to 50 psig with an accuracy of .1%.
• Digital Volt Meter capable of a readout up to 30 mA with an accuracy of .02%.

FULL RANGE OPERATION
Lo/Hi Span Adjustment
Set the Lo/Hi Span switch to the required position for needed output and supplied MA input. For more detail information, see Figure 6 “TXI7800/TXI7850 Calibration Configuration”.

Forward Acting Mode Adjustment
Set Fwd/Rev Mode switch to Forward position.

Forward Acting Calibration
1. Apply the minimum input signal to the Terminal Block and adjust the Zero screw for minimum output pressure.
2. Apply the maximum input signal to the Terminal Block and adjust the Span screw for maximum output pressure.
3. Repeat steps 1-2 until the desired output range is obtained.

Reverse Acting Mode Adjustment
Set Fwd/Rev Mode switch to the Reverse position

Reverse Acting Calibration
1. Apply the maximum input signal to the Terminal Block and adjust the Zero screw for minimum output pressure.
2. Apply the minimum input signal to the Terminal Block and adjust the Span screw for maximum output pressure.
3. Repeat steps 1-2 until the desired output range is obtained.

SPLIT RANGE OPERATION
Lo/Hi Span Adjustment
Set the Lo/Hi Span switch to the required position for needed output and supplied MA input. For more detail information, see Figure 6 “TXI7800/TXI7850 Calibration Configuration”.

Forward Acting Mode Adjustment
Set Fwd/Rev Mode switch to Forward position.

Forward Acting Calibration
1. Apply the minimum input signal to the Terminal Block and adjust the Zero screw for minimum output pressure.
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3. Repeat steps 1-2 until the desired output range is obtained.

Reverse Acting Mode Adjustment
Set Fwd/Rev Mode switch to the Reverse position

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1. Apply the maximum input signal to the Terminal Block and adjust the Zero screw for minimum output pressure.
2. Apply the minimum input signal to the Terminal Block and adjust the Span screw for maximum output pressure.
3. Repeat steps 1-2 until the desired output range is obtained.

Additional Adjustments
Damping Adjustment
The Damping Adjustment is used so that the transducer can be tuned for optimum response and stability in a particular application. For best performance start Damping Adjustment at maximum adjustment (fully clockwise). Gradually turn counterclockwise until slight oscillation occurs and then turn back clockwise until oscillation is minimized. Turn damping adjustment clockwise to increase damping function.

ATEX Directive- Special Conditions for Sale
The enclosure is manufactured from aluminum alloy. In rare cases, ignition sources due to impact and friction sparks could occur. This shall be considered when the equipment is installed in locations that specifically require Group II, category 1G equipment.
HAZARDOUS AREA SPECIFICATIONS
ATEX Directive Nameplates

**Table 1. Trouble-Shooting**

<table>
<thead>
<tr>
<th>Problem</th>
<th>Solution (check)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Output</td>
<td>Supply Pressure</td>
</tr>
<tr>
<td></td>
<td>Clogged Orifice</td>
</tr>
<tr>
<td>Leakage</td>
<td>Connections</td>
</tr>
<tr>
<td>Low or Improper</td>
<td>Zero and Span</td>
</tr>
<tr>
<td>Span Adjust</td>
<td>Adjust Supply</td>
</tr>
<tr>
<td></td>
<td>Pressure Low</td>
</tr>
<tr>
<td>Erratic Operation</td>
<td>DC Signal</td>
</tr>
<tr>
<td></td>
<td>Loose Wires or</td>
</tr>
<tr>
<td></td>
<td>Connections</td>
</tr>
<tr>
<td></td>
<td>Liquid in Air</td>
</tr>
<tr>
<td></td>
<td>Supply</td>
</tr>
</tbody>
</table>

**WARNING:**
Failure of Transducer could result in output pressure increasing to supply pressure possibly causing personal injury or damage to equipment.

**Service Kits for TXI7800/TXI7850**

<table>
<thead>
<tr>
<th>Series</th>
<th>Ranges</th>
</tr>
</thead>
<tbody>
<tr>
<td>TEXI/TAXI</td>
<td>Kit part no. 19268-1 3-15 psig, [0.2-1.0 Bar], (20-100 Kpa)</td>
</tr>
<tr>
<td></td>
<td>Kit part no. 19268-2 3-27 psig, [0.2-1.8 Bar], (20-180 Kpa)</td>
</tr>
<tr>
<td></td>
<td>6-30 psig, [0.4-2.0 Bar], (40-200 Kpa)</td>
</tr>
<tr>
<td>TCXI/TCFX</td>
<td>Kit part no. 19268-1 3-15 psig, [0.2-1.0 Bar], (20-100 Kpa)</td>
</tr>
<tr>
<td></td>
<td>Kit part no. 19268-2 3-27 psig, [0.2-1.8 Bar], (20-180 Kpa)</td>
</tr>
<tr>
<td></td>
<td>6-30 psig, [0.4-2.0 Bar], (40-200 Kpa)</td>
</tr>
<tr>
<td>T*XI</td>
<td>Kit part no. 19268-14 0-30 psig, [0.0-2.0 Bar], (0-200 Kpa)</td>
</tr>
<tr>
<td>T*XI</td>
<td>Kit part no. 19268-15 0-60 psig, [0.0-4.0 Bar], (0-400 Kpa)</td>
</tr>
<tr>
<td>TXI</td>
<td>Kit part no. 19268-16 0-120 psig, [0.0-8.0 Bar], (0-800 Kpa)</td>
</tr>
</tbody>
</table>

**Figure 5. TXI7800/TXI7850 Calibration Configuration**

**LEGAL NOTICE:**
The information set forth in the foregoing Installation, Operation and Maintenance Instructions shall not be modified or amended in any respect without prior written consent of Fairchild Industrial Products Company. In addition, the information set forth herein shall be furnished with each product sold incorporating Fairchild's unit as a component thereof.