The Dwyer 7116D Series Pressure Indicating Transmitter simultaneously provides local indication on a large, easily read 3½ digit liquid crystal display while also converting that pressure into a standard two wire, 4–20 mA signal for ranges from 0–15 to 0–500 PSI. Positive compatible gas pressure is measured to the accuracy of ±0.5% of full scale. The electrical signal and conditioning is produced by a piezoresistive pressure cell for precision measurement of compatible gases and liquids. A 316 stainless steel connection block features convenient ¼˝ female NPT and ½˝ male NPT pressure connection.

**SERIES 7116D ENGLISH MODELS & RANGES**

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Range</th>
<th>Maximum Pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>7116D-G015</td>
<td>0–15.0 PSIG</td>
<td>30 PSIG</td>
</tr>
<tr>
<td>7116D-G030</td>
<td>0–30.0 PSIG</td>
<td>60 PSIG</td>
</tr>
<tr>
<td>7116D-G050</td>
<td>0–50.0 PSIG</td>
<td>100 PSIG</td>
</tr>
<tr>
<td>7116D-G100</td>
<td>0–100.0 PSIG</td>
<td>200 PSIG</td>
</tr>
<tr>
<td>7116D-G500</td>
<td>0–500 PSIG</td>
<td>1000 PSIG</td>
</tr>
</tbody>
</table>

**SERIES 7116D METRIC MODELS & RANGES**

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Range</th>
<th>Maximum Pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>7116D-B001</td>
<td>0–1.00 bar</td>
<td>2.0 bar</td>
</tr>
<tr>
<td>7116D-B002</td>
<td>0–2.00 bar</td>
<td>4.1 bar</td>
</tr>
<tr>
<td>7116D-B004</td>
<td>0–4.00 bar</td>
<td>6.9 bar</td>
</tr>
<tr>
<td>7116D-B007</td>
<td>0–7.00 bar</td>
<td>13.8 bar</td>
</tr>
<tr>
<td>7116D-B040</td>
<td>0–40.0 bar</td>
<td>69.0 bar</td>
</tr>
</tbody>
</table>

**PHYSICAL DATA**

**General**
- **Maximum Pressure:** 2 X maximum range.
- **Media Compatibility:** Air and non-corrosive gases and liquids.
- **Housing:** Polycarbonate.
- **Wetted Parts:** Stainless steel connection block, 316L.
- **Finish:** Black.

**Electrical**
- **Power Supply:** 10-35 VDC - 2 wire.
- **Output Signal:** 4-20 mADC (Limited at 38mADC).
- **Loop Resistance:** DC; 0 - 1250 ohms.
- **Warm-Up:** 10 minutes.
- **Current Consumption:** DC; 38mA max.

**PERFORMANCE AT 70°F (21.1°C)**
- **Zero Output:** 4 mA DC.
- **Full Span Output:** 20 mA DC.
- **Span:** 16 mADC.
- **Accuracy:** (Includes linearity, hysteresis & repeatability): ±0.5% of span.
- **Stability:** 1% F.S./year.

**Environmental**
- **Operating Temperature:** 20°-120°F (-6.7° to 49 C).
- **Thermal Errors:** ±0.02%/°F.

**Mechanical**
- **Weight:** 1 lb., 9 oz. (709 grams).
- **Span and Zero Adjustments:** Potentiometers, accessible from back of gage.
- **Pressure Connections:** ¼˝ female NPT / ½˝ male NPT.
Installation

1. Select a location free from excessive vibration where the temperature limits of 20° to 120°F (-6.7° to 49°C) will not be exceeded. Mounting surface should be vertical to match the position in which all standard gages are calibrated. Avoid locations in direct sunlight which may cause accelerated discoloration of the clear acrylic lens or where exposure to oil mist or other airborne vapors could likewise result in lens damage.

2. See Fig. A for mounting hole instructions.

3. A ¼" NPT female / ½" NPT male pressure connection is furnished to allow you the choice of vertical (from below the gage) piping. When making the pressure connection, use a minimal amount of thread sealant. Too much could block the internal pressure passage. CAUTION: When installing fittings or pipe always use a second wrench on the 7/8" connection block. DO NOT allow torque to be transmitted from the block to the case.

Electrical Connections

CAUTION: DO NOT EXCEED SPECIFIED SUPPLY VOLTAGE RATINGS. PERMANENT DAMAGE NOT COVERED BY WARRANTY WILL RESULT. THIS UNIT IS NOT DESIGNED FOR 120 OR 240 VOLT AC LINE OPERATION.

Electrical connections to the Series 7116D Pressure Indicating Transmitter are made on the backside of the enclosure unit. Feed stripped and tinned leads to the terminal block screws marked 1 and 2. Refer to figure B for locations of the terminal block, span and zero adjustments.

Wire Length - The maximum length of wire connecting transmitter and receiver is a function of wire size and receiver resistance. Wiring should not contribute to more than 10% of receiver resistance to total loop resistance. For extremely long runs (over 1000 feet), choose receivers with higher resistance’s to minimize size and cost of connecting leads. When the wiring length is under 100 feet, lead wire as small as 22 AWG can be used.
Pressure Ranging
Each standard Series 7116D Pressure Indicating Transmitter is factory calibrated to produce 4 mA at zero scale reading and 20 mA at full scale reading. The following procedure should be used if the pressure versus output signal relationship needs to be checked.

1. With the 7116D Pressure Indicating Transmitter connected to the companion receiver, insert an accurate milliammeter in series with the current loop. Full scale range should be approximately 30 mA.
2. Connect a controllable pressure source to one leg of a tee with the second leg connected to the pressure port of the 7116D Pressure Indicating Transmitter and the third leg to a test gage or manometer having an accuracy of 0.125% or better.
3. Apply electrical power to the unit and allow it to stabilize for 10 minutes.
4. Alter the transmitter ZERO ADJUST located on the front of the display (See Fig. A) by pressing the UP (È) or DOWN (Í) switches so that the display is in the middle of its zero pressure reading when no pressure is being applied. i.e. With an UP reading of (0.22) and a DOWN reading of (-0.14), the display would be adjusted so that a reading of (0.04) would be displayed before proceeding to the next step.
5. Again, with no pressure applied to the 7116D Pressure Indicating Transmitter, adjust the TRANSMITTER ZERO control, located through the back of the unit, so that loop current is 4.00 mA. See Fig. A.
6. Apply full range pressure and adjust loop current to 20 mA using the TRANSMITTER SPAN control. See Fig. A.
7. Relieve pressure and allow pressure Indicating Transmitter to stabilize for 2 minutes.
8. Zero and span controls may be slightly interactive, so repeat steps 4 though 7 until zero and full range pressure consistently produce loop currents of 4 and 20 mA respectively.
9. Remove the milliammeter from the current loop and proceed with final installation of the pressure Indicating Transmitter and receiver.

Multiple Receiver Installation
An advantage of the standard 4-20 mA DC output signal used in Series 7116D Pressure Indicating 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 must be observed and the combined receiver resistance’s must not exceed the maximum for the current loop. If the receiver indicates a negative or down scale reading, the signal input leads are reversed.

Maintenance
No lubrication or periodic servicing is required after final installation of the Series 7116D Pressure Indicating Transmitter. A periodic check of calibration is recommended following the procedure under PRESSURE RANGING. Except for this, these transmitters are not field serviceable and should be returned, freight prepaid, to the factory if repair is needed. Be sure to include a clear description of the problem plus any application information available.

Repairs
Field repair should not be attempted and may void warranty. Gages needing calibration or other service should be returned prepaid to:

Dwyer Instruments, Inc.
102 Indiana Highway 212
Michigan City, IN 46360