



Anderson Instrument Co., Inc.

156 Auriesville Road  
Fultonville, NY 12072

Phone: 518-922-5315 or 800-833-0081

Fax: 518-922-8997 or 800-726-6733

# Technical Bulletin

ELH Pressure Transmitter  
Quick Start Installation Guide

**RODEM**<sup>®</sup>  
PROCESS EQUIPMENT  
www.rodem.com 800-543-7312

## Section 1 - Field Wireable Connector Assembly

1. Insert cable through Pressing Screw, Compression Ring, Seal Grommet, and Sleeve as shown below.

2. Strip back 1-1/4" of outer sheathing, cut off any excess wires, shield and ground. Strip off 1/4" insulation from remaining two wires. It is not necessary or recommended to tin the wires.

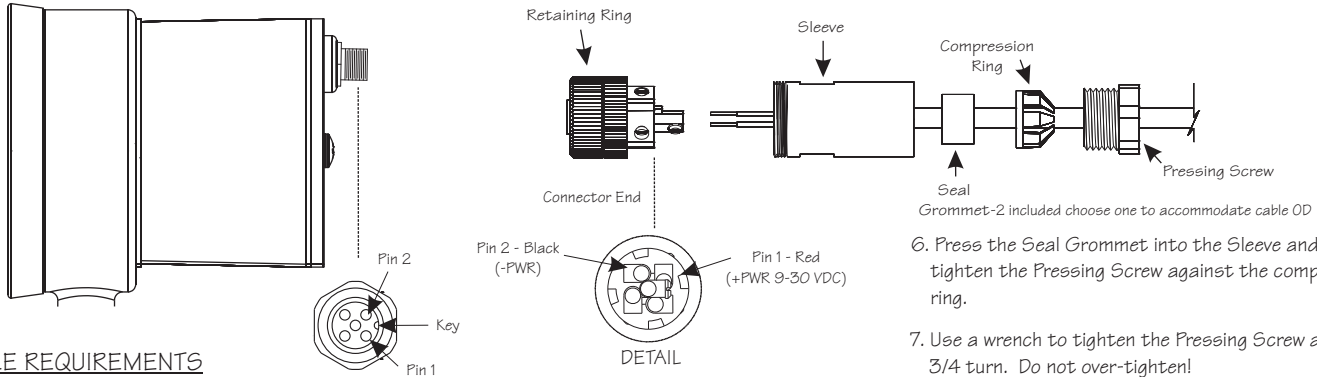
3. Orient Connector end so that center pin connecting screw is horizontal facing right (see detail).

4. Wire LOOP+ (red) wire to top-right terminal, and LOOP- (black) wire to top-left terminal. No connection is made to the center and bottom terminals.

5. Screw on the Sleeve. Hand-tighten only.

6. Press the Seal Grommet into the Sleeve and hand-tighten the Pressing Screw against the compression ring.

7. Use a wrench to tighten the Pressing Screw another 3/4 turn. Do not over-tighten!

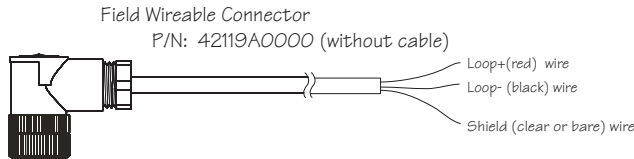


### CABLE REQUIREMENTS

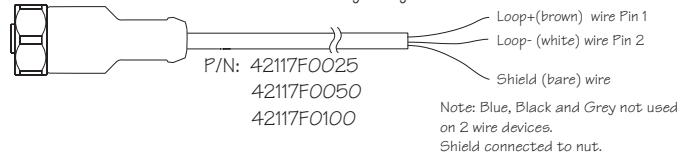
2 conductor, stranded, 18-24 AWG, shielded with ground.  
4-8mm (0.16-0.31") cable sheath OD.

To install connector, simply line up key, press into receptacle, and hand-tighten the retaining ring.

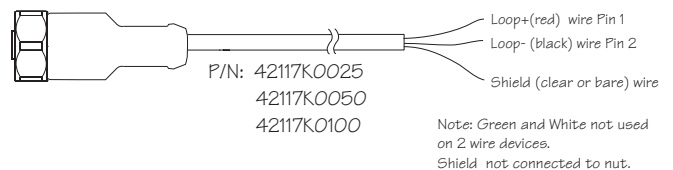
Receptacle pins should be coated with USDA approved dielectric grease to Minimize possibility of corrosion.



### Molded Cord Set - Heavy Duty Shield



### Molded Cord Set



## Section 2 - Gauge Calibration Verification/Re-zero

This Anderson EL-Series Gauge has been factory calibrated to within published specifications using a pressure reference traceable to NIST. Impacts due to drops, rough handling at shipping, etc may impart an offset that can be corrected in the field. If the pointer is visibly outside of the zero band, a re-zero calibration may be desired. The below Re-zero procedures are designed to provide optimum accuracy at the normal operating pressure of the gauge.

### Re-zero Procedure with available pressure standard

Mount the gauge on a test fixture with a variable pressure source and an accurate pressure reference. Raise the test pressure to the normal operating pressure at which the gauge will be used. Insert a 2.5mm or 3/32 hex wrench into the head of the re-zero shaft, located in the upper right corner of the back of the gauge. Carefully rotate the shaft to reposition the pointer to agree with the test reference. Warning: Adjusting more than  $\pm 5\%$  of the span of the gauge may cause damage to the re-zero adjustment mechanism. Return the test pressure to zero before removal of the gauge from test fixture. Note: For offsets greater than  $\pm 5\%$  of the span, return the gauge for factory recalibration or replacement. Caution: Return the test pressure to zero before removal of the gauge from the test fixture.

### Re-zero Procedure without pressure standard

While not as accurate as a calibration with a pressure standard, this procedure will improve the accuracy of a gauge whose needle has moved outside of the zero band while at 0 psig

Confirm gauge is exposed to 0 psig. Insert a 2.5mm or 3/32 hex wrench into the head of the re-zero shaft, located in the upper right corner of the back of the gauge. Carefully rotate the shaft to reposition the pointer to center of the zero band. Warning: Adjusting more than  $\pm 5\%$  of the span of the gauge may cause damage to the re-zero adjustment mechanism

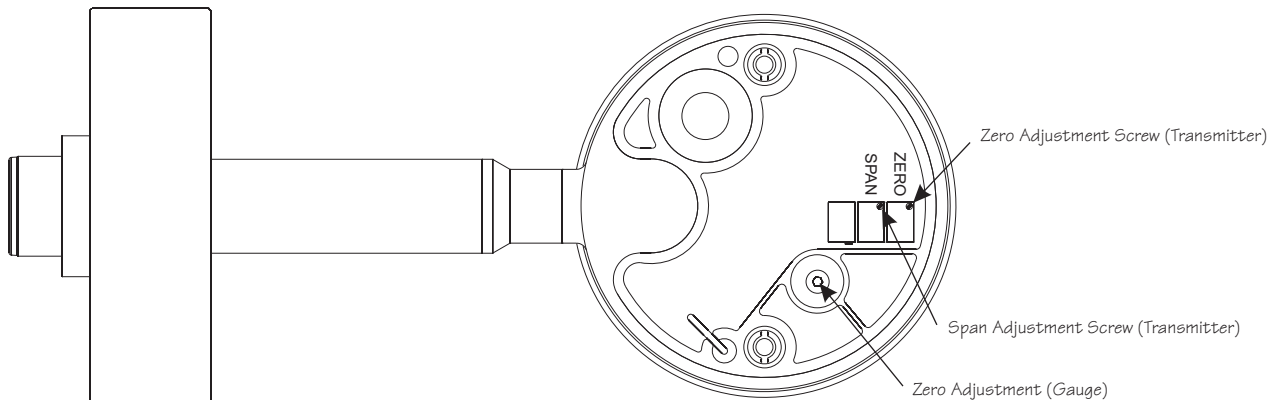
## Section 3 - Transmitter Calibration Re-zero

The optional transmitter integrated with the ELH is factory calibrated to within published specifications using a pressure reference traceable to NIST. While the transmitter is adjustable for zero and span, this is unlikely to be required during normal use for the life of the transmitter. The following procedure is supplied as a reference.

### Equipment required:

Pressure source  
Accurate reference gauge or display  
DC milliamp capable multi meter  
Small flat head screwdriver

- 1) Expose the transmitter to Opsi reference.
- 2) Remove back from transmitter
- 3) Set your multi meter to DC mA and connect in series with the loop
- 4) Adjust the transmitter Zero screw (potentiometer) until 4 mA is seen
- 5) Expose the transmitter to a known pressure source at the top end of the range. If desired, standard range may be turned down up to 10%
- 6) Adjust the transmitter Span screw (potentiometer) until 20 mA is seen.



## Section 4 - Specifications

### Performance Mechanical & Electrical

|                             |  |
|-----------------------------|--|
| Gauge Accuracy:             | Factory Calibrated to +/- 1.5% of full scale, from 10 to 90% of pressure range   |
| Transmitter Accuracy:       | +/- 0.5% of full span  |
| Over-range capability:      | 25% for ranges up to 100 BAR (1.5k PSI)<br>15% for ranges up to 600 BAR (8.7k PSI)<br>10% for ranges up to 16K BAR (23k PSI) |
| Temperature Effect:         | .16% per 10°F process temperature change<br>.25% per 10°F ambient temperature change   |
| Process Temperature Limits: | 25 to 300°F (-4 to 149°C)  |
| Ambient Temperature Limits: | 32 to 140°F (0 to 60°C)  |
| CIP Temperature Limit:      | 300°F (149°C)  |
| SIP Temperature Limit:      | 300°F (149°C)  |
| Stability:                  | Within specified accuracy for 6 months   |
| Decay Rate:                 | 1- 2 seconds   |
| Construction / Finish       |  |
| Diaphragm:                  | C276 Hastelloy   |
| Fitting:                    | 316L stainless steel   |
| Diaphragm and Fitting:      | Welded & polished. Max. Ra=25μ   |
| Spiral Coil:                | Stainless steel  |
| Socket:                     | Stainless steel with integral fill port  |
| Case/Stem:                  | Welded 304 stainless steel (polished)  |

|  |  |
|--|--|
| Dial:                                      | Adhesive-backed printed Mylar in various scales, 90mm diameter minimum   |
| Lens/Dial Plate:                           | Chemical resistant polysulfone, able to withstand 325°F  |
| Bezel:                                     | 304 stainless steel, polished, compression formed to case (non-removable)  |
| Viewing Angle:                             | 100 degrees minimum  |
| Pointer:                                   | Aluminum, black anodized   |
| Operational                                |  |
| Spiral Coil, Tip, and Socket Construction: | Welded connections   |
| Internal Fill:                             | Standard, ETR (extended Temperature range) mineral oil   |
| Case Fill:                                 | Standard, glycerin 100% USP Food Grade   |
| Mechanical Dampening:                      | Standard   |
| Output:                                    | Optional 4-20 mA DC, 2 wire (4 mA at zero pressure & 20 mA at upper range value).                                    |
| Loop Resistance:                           | 0-700 ohms at 24 VDC   |
| Electrical Connection:                     | M12 5Pin quick disconnect receptacle (field wireable connector and cable available).                                 |
| Recommended Cable:                         | 22-24 AWG, foil shielded, 0.17 - 0.26" Cable Sheath OD for use with field wiring connector                           |
| Electrical Protection:                     | Voltage spike and reverse polarity   |
| Operating voltage:                         | 10-40 VDC (Absolute), 24 VDC Nominal regulated or unregulated.   |
| Transmitter Zero Adjustment:               | +/- 10% of span (With back removed)  |
| Pointer Re-zero Adjustment:                | Tamper resistant adjustment, +/- 5% of span. Non interactive with span. External adjustment located on back of case. |