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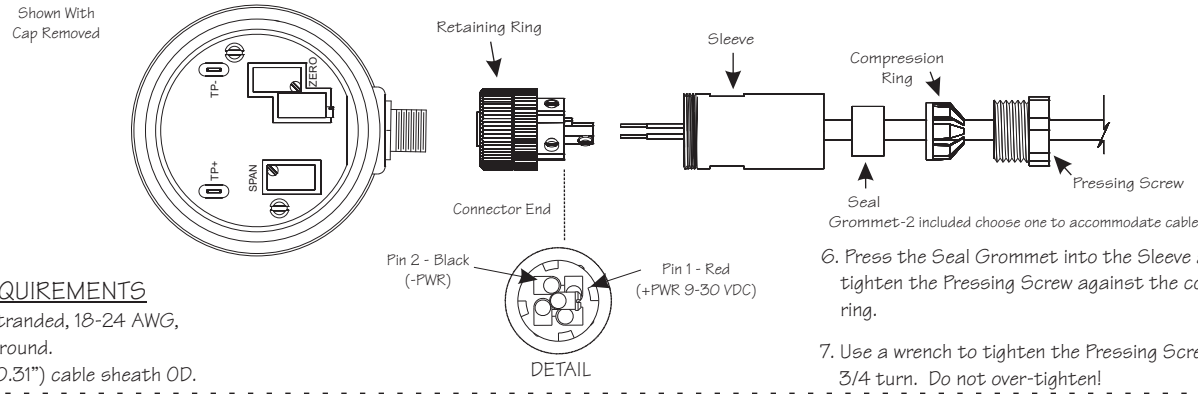
Technical Bulletin

HH Pressure Transmitter
Quick Start Installation Guide

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.



Grommet-2 included choose one to accommodate cable OD

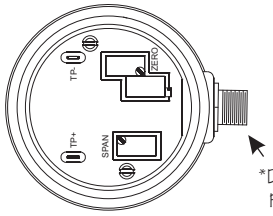
6. Press the Seal Grommet into the Sleeve and hand-tighten the Pressing Screw against the compression ring.
7. Use a wrench to tighten the Pressing Screw another 3/4 turn. Do not over-tighten!

CABLE REQUIREMENTS

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

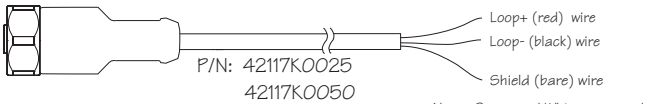
To install connector, simply line up key, press into receptacle, and hand-tighten the retaining ring.

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



*Dielectric Grease
P/N: 5662400000

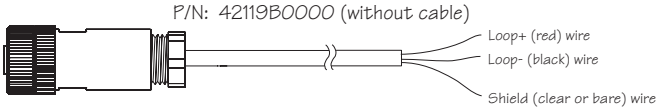
Molded Cord Set



P/N: 42117K0025
42117K0050
42117K0100

Note: Green and White not used

Field Wireable Connector (assembled)
P/N: 42119B0000 (without cable)



Available upgrade kit # 56642A0001
includes: (1) 42119B0000 Connector
(1) 56623A0002 Receptacle
(1) 5662400000 Dielectric grease

Section 2 - Specifications

Excitation:	10-40 VDC (Absolute), 24 VDC Nominal regulated or unregulated
Output:	4-20 mA DC, 2 wire with non-interrupting circuit verification test points
Loop Resistance:	0-700 ohms at 24 VDC
Wiring Connection:	5 pin M12 Quick Disconnect Receptacle
Recommended Cable:	18-24 AWG, foil shielded, and PVC coated. (4-8mm (0.16-0.31") cable sheath OD)
Accuracy:	± 0.5% of full scale
Repeatability:	± 0.3% of full scale
Hysteresis:	± 0.10% of full scale
Linearity:	±0.10% of full scale
Stability:	±0.30% of calibrated range/6 months
Storage Temperature:	-40°C to 65°C (-40°F to 149°F)
Process Temperature Limits:	-1°C to 149°C (30°F to 300°F) (Horizontal mount recommended over 135°C (275°F))
Ambient Temperature Limits:	-18°C to 49°C (0°F to 120°F)
Effect of Temperature Change:	± 0.1 psig/5.5°C (10°F) typical

Over-Range Rating:	Minimum of 2 times base range
Response Time:	200 uSec
Wetted Parts:	316L stainless steel (Ra max. = 25 microinches, 0.6 microns)
Housing Material:	304 stainless steel
Span Adjustment:	± 50% of range, except 15 psi ±10%
Zero Adjustment:	10%
Mounting:	Direct connection
Standards:	Designed and manufactured to sound engineering practices in accordance with Article 3.3 of the PED 97/23/EC
	NEMA 4X
	IP66/67
	CSA B51-03
	3-A
	CE (pending)
Warranty:	1 year

Section 3 - Installation / Calibration Verification

Anderson electronic sensors require very little maintenance. We suggest that the sensor be inspected at 6 month intervals to ensure that it is not being physically abused, moisture is not entering the housing, and that the wiring is sound.

If you feel that the output of the HH transmitter is not correct, calibration of the unit may be required.

Equipment required:
Pressure source
Accurate reference gauge
DC Milliamp Meter (accurate to .01 mA)
Small straight blade screwdriver
Calculator

Calibration - Transmitter
Adjustments to the transmitter are made via the "ZERO" and "SPAN" potentiometers. These two adjustments are non-interactive, meaning changing the zero will not change the span. As general maintenance to the unit, a zero check is recommended at approximately 6 month intervals. If your unit is calibrated at a compound range, you will not see 4.00 mA at atmospheric zero. As reference, you may use the following chart to determine if your unit may require calibration (most common ranges are shown).

Sensor Range	Sensor Reads at Atmospheric Zero	Sensor Range	Sensor Reads at Atmospheric Zero
0-psig - Positive Pressure	4.00 mA	0-Bar - Positive Pressure	4.00 mA
30" Hg - 15 psig	11.92 mA	-1 Bar - 1 Bar	12 mA
30" Hg - 35 psig	8.72 mA	-1 Bar - 2.5 Bar	8.57 mA
30" Hg - 85 psig	6.36 mA	-1 Bar - 6 Bar	6.29 mA
30" Hg - 185 psig	5.18 mA	-1 Bar - 13 Bar	5.14 mA

The output of a properly calibrated transmitter may be calculated by using the following formula:

$$\text{mA Output} \left[16\text{x} \left[\frac{(\text{Known Value - Low End of Range})}{\text{Transmitter Span}} \right] \right] + 4$$

NOTE: For pressure transmitters with compound ranges, the ranges must first be converted to all one type unit of measure. For example, a 30" Hg/0/35 psig unit may be considered to have a range of -14.7 psig-0-35 psig and a span of 49.7 psig (2.036" Hg = 1 psi). Be careful not to lose the (-) sign while performing the calculation of the proper reading.

NOTE: The transmitter should be wired in a complete loop at this point, or on a test bench. Although no interaction between zero and span occurs, when making adjustments you should be as close to the top and bottom transmitter range as possible. This will ensure the best possible linearity in the final signal output.

1. Expose the transmitter to a known zero reference point. If transmitter range starts at atmospheric zero, zero adjust at atmospheric zero. If transmitter is a compound range, you should be as close to sensor zero as possible . You must calculate the expected mA signal (use formula above).

2. Remove cap from transmitter.

3. With your meter set to DC mA, connect the RED (Meter +) lead to the (TP +) terminal. Connect the BLACK (Meter -) lead to the (TP -) terminal.

4. Adjust the transmitter ZERO potentiometer as shown, until you either see 4.00 mA if you are at atmospheric zero, or your expected mA signal for a compound range.

5. Expose the transmitter to a know pressure at the top end of the range. Standard ranges may be turned down to a maximum of 50%.

6. Adjust the transmitter SPAN potentiometer, until you see 20 mA output.