

EVERGREEN TELEMETRY

User Guide S-P-125 PSI Sensing Module Upd 4 August 2016



Software. Use Wrist Reporter Software Revision 1.04T5 or higher/later.

Connecting Hoses. The shutoff valves are integrated into the two connecting hoses.

Manifold. The top of the Sensing Module Manifold has an input port for the Hi side and one for the Lo side. On the bottom are two exhaust ports.

Two Sensors. There is one sensor for the differential pressure between Hi and Lo Ports. There is a second sensor for the gauge pressure between Lo Port and ambient. Hi Gage is calculated as Lo Gage + Diff.

Toggle Valves. The toggle valves are closed when positioned toward the back of the manifold. The two outside Vent Valves correspond to Hi and Lo ports. Pushing them toward the front of the manifold causes fluid to flow straight through from the input to the corresponding exhaust port. The optional clear tubing assembly may be used to direct the exhaust stream into a bucket or drain.

Bypass / Zero / Equalize Toggle Valve. This valve connects the Hi port directly to the Lo port for purging or zeroing.



SENSOR LINK AND OPERATION

Turn on the Wrist Reporter (WR). Wait for the screen to display “Turn on the Modules”. Turn on the Sensing Module.

After a few seconds, the WR will display Link Status showing WR and S-1. At the right are the respective battery levels, ranging from B3 (highest) down to B0.

MEASUREMENT RESULTS

Press V. Three columns of information are displayed: Gage Hi, Gage Lo, and Differential. Each column has two rows of results, each with different units. The two Gage results are displayed in PSI and ftwc. The same units are used for high levels of Differential. At low differential pressures, the differential units will automatically switch to inwc and ftwc.

Features that are coming soon include the ability to force all readings into any type of units, and the ability to input a valve Cv in order to obtain a GPM readout.



CONNECTING and ZEROING and READING

USE VALVES TO PURGE AIR BUBBLES FROM FLUID STREAM

Connect hoses to Hi and Lo Ports. Open shut-off valves located in the hoses. Press the two Vent Valves one at a time to purge air from the lines. Open the Bypass Valve briefly to flush bubbles through the Hi to Lo port connecting path (Optional).

ZEROING THE SENSORS

Before an accurate result can be obtained, the user must manually show the sensors where the zero pressure point is. This is done by manually connecting the Hi and Lo Ports, and telling the Wrist Reporter that the resulting sensor output represents zero. There are two methods for zeroing the sensors in two different situations.

Method One—Zero to Ambient.

Prepare the module as follows. Close both shutoff valves in the hoses. Use the toggle Vent Valves to drain the hoses and eliminate pressure. Open the Bypass Valve to connect Hi to Lo. Open the Vent Valves again to once more relieve any remaining pressure. Now the pressure at both ports is ambient and therefore the pressure across both sensors is zero.

From the reading screen displaying pressures, press O. The screen will display two options: Zero Both Sensors, or Zero the Differential Pressure Sensor Only. Use the Arrow keys to highlight the first option and press S. The two sensors will begin the zeroing process and “PREPARING ZERO” will be displayed. Then “ZEROING” will be displayed. Several seconds may elapse as the Gage Lo and Differential readings approach and finally attain 0.0. When both readings show 0.0, press S to lock in the zero counts.

If the process stops before 0.0 is obtained, press S to lock in the low, non-zero values. Then wait five seconds and repeat the process.

When zeroing has been completed, return the toggle valves to their original state. Then open the shutoff valves in the hoses and begin reading.



Method Two—Zero to Lo Port Pressure.

This procedure is for applications like balancing valves when the Gage / Common pressures are relatively high and the Differential pressure is low. For instance, Gage Hi = 80 PSI; Gage Lo = 79 PSI; Diff = 1 PSI = 2.3 ftwc. This procedure zeroes the Differential Sensor while leaving the Gage Sensor unchanged and therefore able to display accurate Gage results.

Close the Hi shut-off valve in the hose. Leave the Lo shut-off valve in the hose open. Open the Bypass Valve to allow Lo pressure to access both sides of the differential sensor. Now the same pressure is at both ports and across the Differential Sensor, and that pressure is Lo Gage.

From the reading screen displaying pressures, press O. The screen will display two options: Zero Both Sensors, or Zero the Differential Pressure Sensor Only. Select the second option, and press S. The Differential Sensor will begin the zeroing process and “PREPARING ZERO” will be displayed. Then “ZEROING” will be displayed. Several seconds may elapse as the Differential reading approaches and finally attains 0.0. Then press S to lock in the zero counts.

Return the toggle valves to their original state. Open the Shut Off valve on the Lo hose. The display will now show accurate readings for both Gage and Differential.

Changing conditions.

Whenever there is a change in temperature, altitude, or common pressure, the zero point of the sensors will shift, and they must be rezeroed to maintain reading accuracy.

TECH SUPPORT

Contact Pete Secor : 602.574.6192 phone or text;
pete.secor@evergreentelemetry.com email.

ACCESSORIES

Standard accessories include a carrying case, HVAC hoses, and Brass Kit #1.



BRASS KIT #1

Pete's Plug Gauge Adapter 1/8" dia x 1-1/2", 2 ea
bushing, 3/4" male x 1/2" female, 2 ea
bushing, 3/8" male x 1/4" female, 2 ea
bushing, 1/2" male x 1/4" female, 2 ea
bushing, 1" male x 1/4" female, hex, 1 ea
straight adapter 1/4" flare to 1/4" NPT male, 10 ea



Optional Brass Kit # 2 Priced at \$249

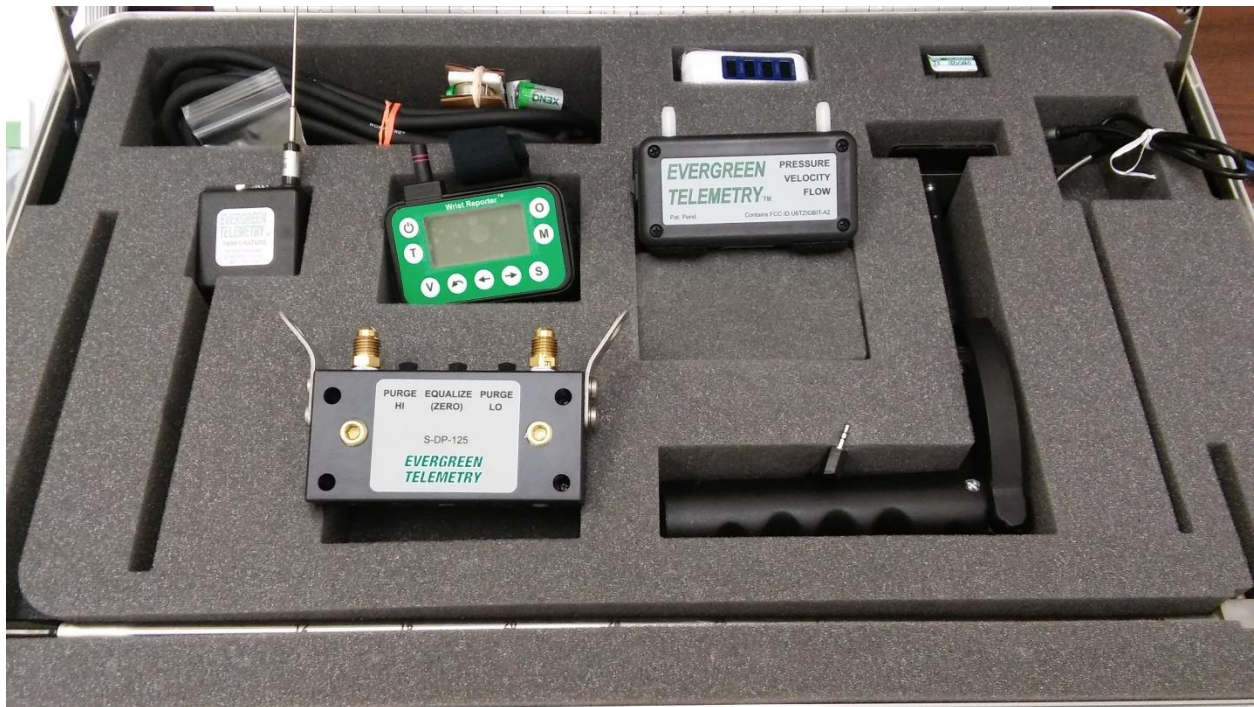
Pete's Plug Gauge Adapter 1/8" dia x 3" probe, 2 ea
Pete's Plug Gauge Adapter 1/16" dia x 1-1/2" probe, 2 ea
Peterson 110--Pete's Test Plug 1/4" MPT, 500 psi, 2 ea
3/4" garden hose swivel to 1/4" flare elbow, 2 ea
3/4" MHT x 1/2" FIP & 3/4" MIP adapter, 1 ea
90 deg elbow, 1/4" flare x 1/4" MPT, 2 ea

CARRYING CASE OPTIONS

First Option. The Sensor is shipped in a Dewalt carrying case that accommodates the Sensor, charging cable, Brass Kit #1, and hoses.

Second Option. Double Stack. The Dewalt carrying cases are designed to fit together, which would allow the balancer to use the second case for wet hoses and brass, retaining the top kit for the Sensor.

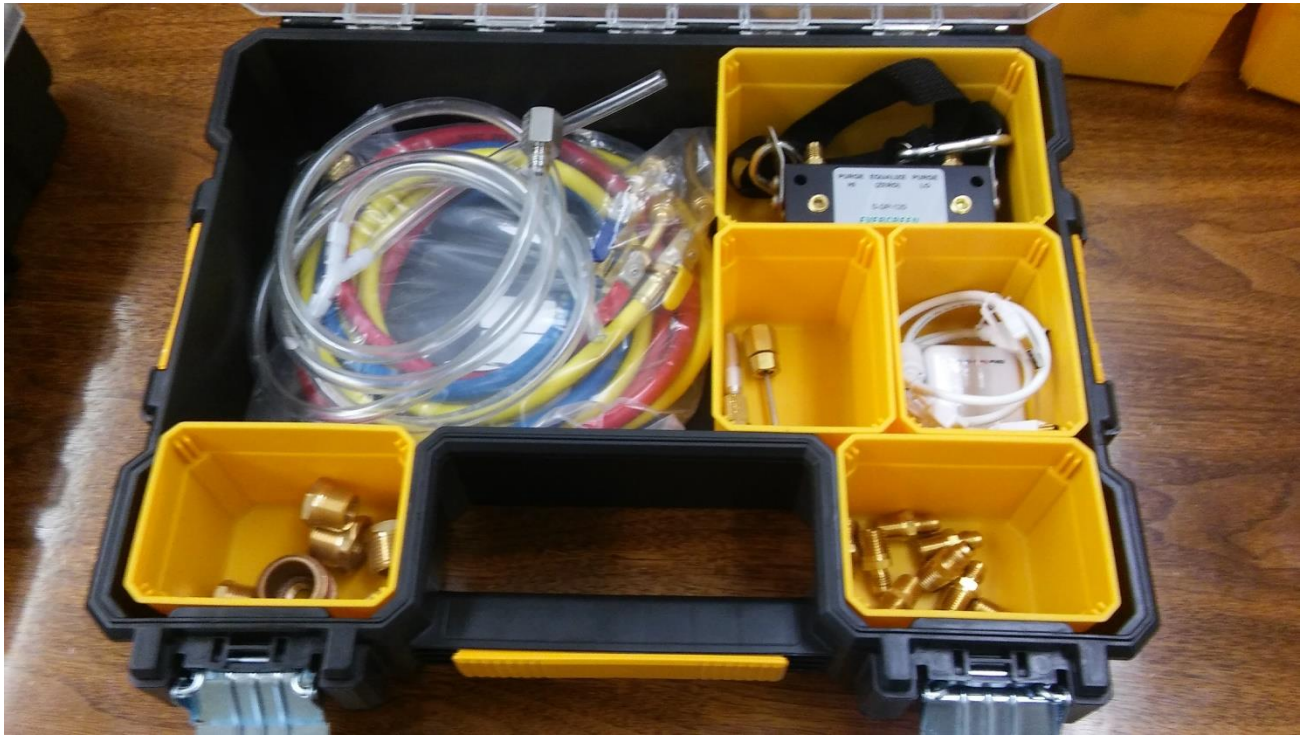
Third Option. Without the brass and hoses, the Sensor fits into a typical TAB Kit case.



Third Case Option: Just Another Sensor in the TAB Kit Carrying Case

Case Option One—Single Dewalt Case is Standard

Shown are the Sensor and standard accessories: battery charger and charging cable; HVAC hoses; exhaust port tube assembly; and Brass Kit #1.



Second Case Option: Double Stack of Dewalt Case

Two identical cases fasten securely. Hoses and other wet objects for the bottom case. Sensor and other dry objects for the top case.

