

8.5 Pressure Sensor Alarm

- A Pressure Sensor Alarm will occur if the PLC is not receiving a 4-20 mA input from the Pressure Sensor, or if there is not 24 VDC power to the Pressure Sensor.

See Figure 8-5.

8.5.1 Pressure Sensor Alarm: Troubleshooting Steps

Steps	Procedures
1.	<p>Check that a Pressure Sensor reading is showing on the Main Screen.</p> <ul style="list-style-type: none"> • If a Pressure Sensor reading is not showing: <ol style="list-style-type: none"> a) There is no 24 VDC power to the Pressure Sensor at the PLC. b) There is no signal from the Pressure Sensor to the PLC. c) Check the Pressure Sensor as shown in Figure 8-5. d) Repair the Pressure Sensor power circuit as needed. e) If the power and signal circuits are OK, replace the Pressure Sensor. f) Control Panel Pressure Sensor Input Test Procedure. See Section 8.5.2 g) Pressure Sensor Test Procedure See Section 8.5.3
•	If the Pressure Sensor Alarm is still active, call a VST Service Technician.

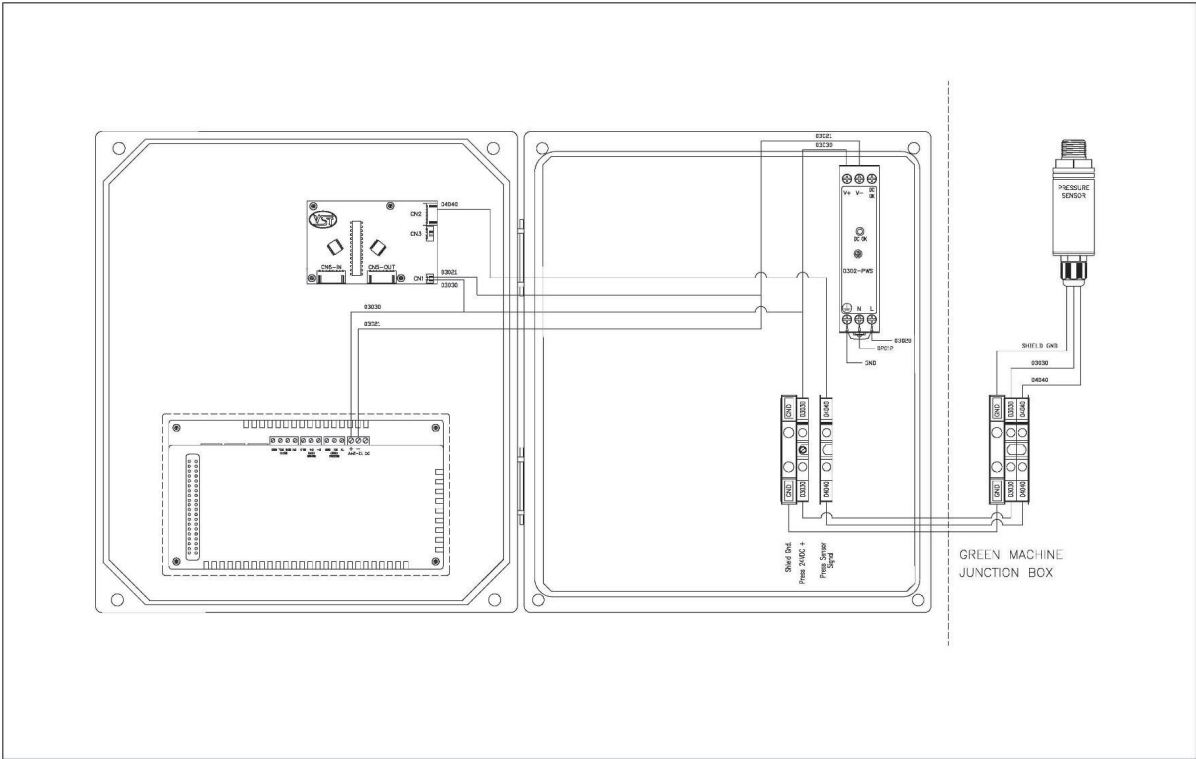


Figure 8-5: Pressure Sensor Wiring Diagram (24VDC Power and 4-20 mA Signal)

8.5.2 Control Panel Pressure Sensor Input Test Procedure

Supplies Needed:

- One 1.5V battery of any size, tape, and two wires

Overview:

- The Pressure Sensor is a 4-20mA device that when connected to the Control Panel input, 04040, produces a voltage between .6 and 3.2 VDC.
- By using a 1.5V battery, you can safely verify that the Control Panel wiring is working properly.
- Below is a simple setup demonstrating how to use a common AAA alkaline battery to perform this test.
- **See Figures 8-6 through 8-11**

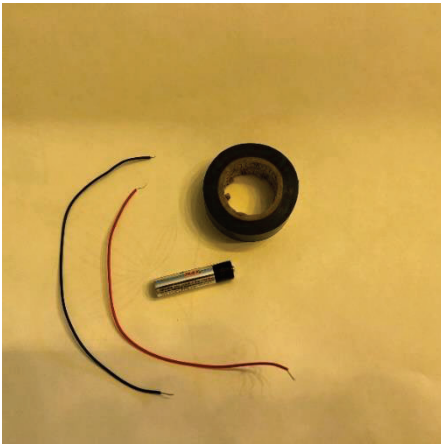


Figure 8-6: Supplies 1.5V battery, tape, and 2 wires

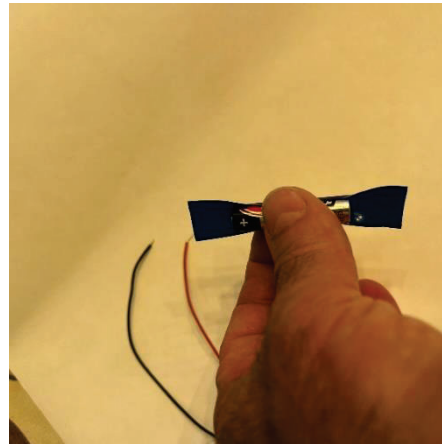


Figure 8-7: Place tape on battery

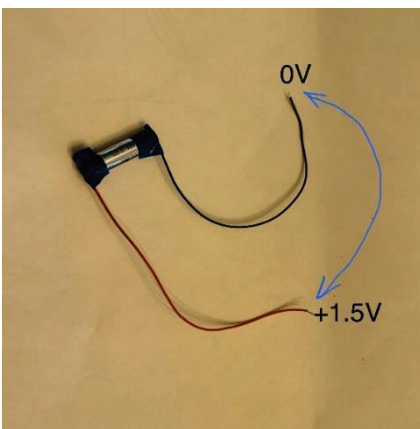


Figure 8-8: Strip wire ends. Tape to ends of battery. Measure voltage on wire ends for 1.5V

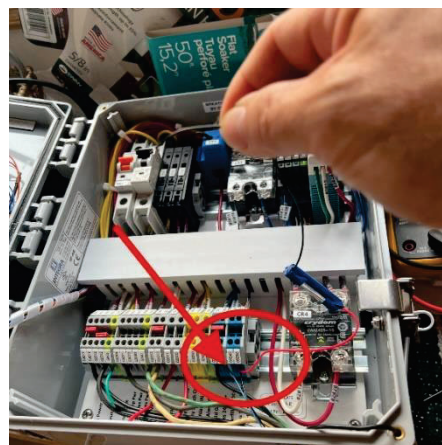


Figure 8-9: Remove the Pressure Sensor and connect batter "+" side to 04040

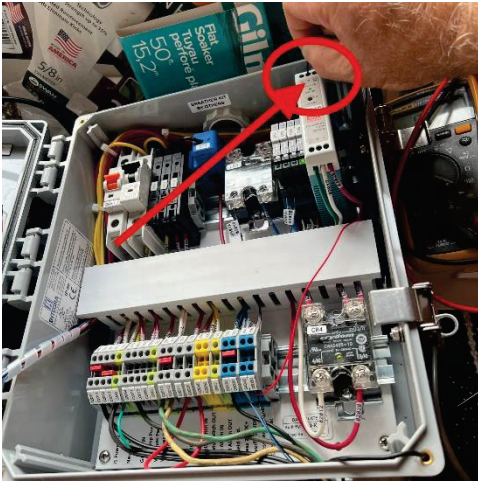


Figure 8-10: Connect battery to “-” side and “V-”

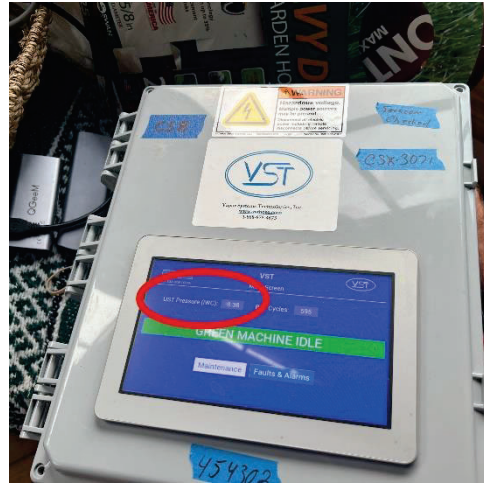


Figure 8-11: UST Pressure should be approx. -8

8.5.3 Pressure Sensor Test Procedure

Overview:

- Using a Digital Multimeter and a 24 VDC supply, you can verify that the Pressure Sensor is functioning properly.
- **Figure 8-12** shows a basic block diagram illustrating how to set up your test.
 - A 4-20mA Pressure Sensor with a range centered at approximately atmospheric pressure will produce 12mA when measuring atmospheric pressure.

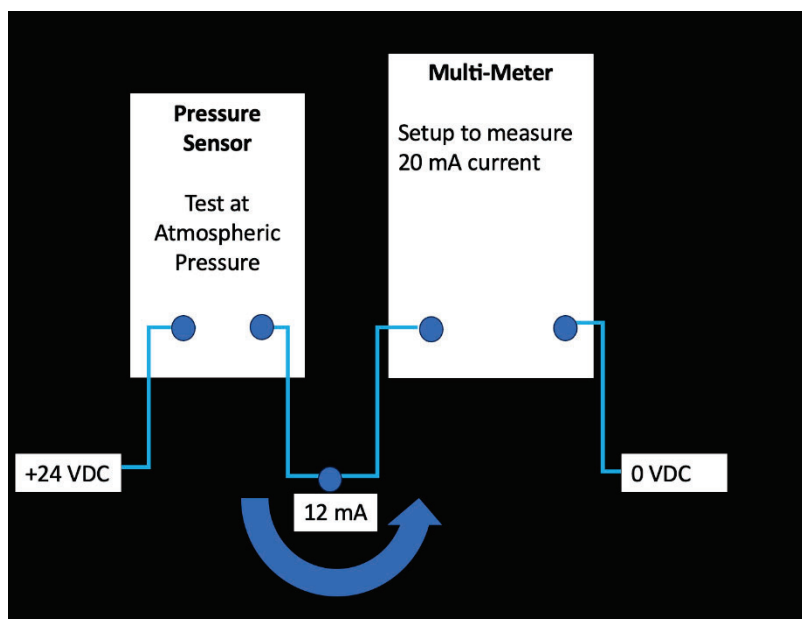


Figure 8-12: Block diagram for setting up Pressure Sensor Test Procedure

- The Pressure Sensor test procedure can be done by removing the Pressure Sensor from the GREEN MACHINE and testing the Pressure Sensor at the Control Panel.
See Figure 8-15.
- **NOTE:** Hazardous vapors may be present at the GREEN MACHINE, therefore it is recommended to remove the Pressure Sensor for safely testing.
- **See Figures 8-13 and 8-14** for examples of setting up typical multimeters to perform this test.

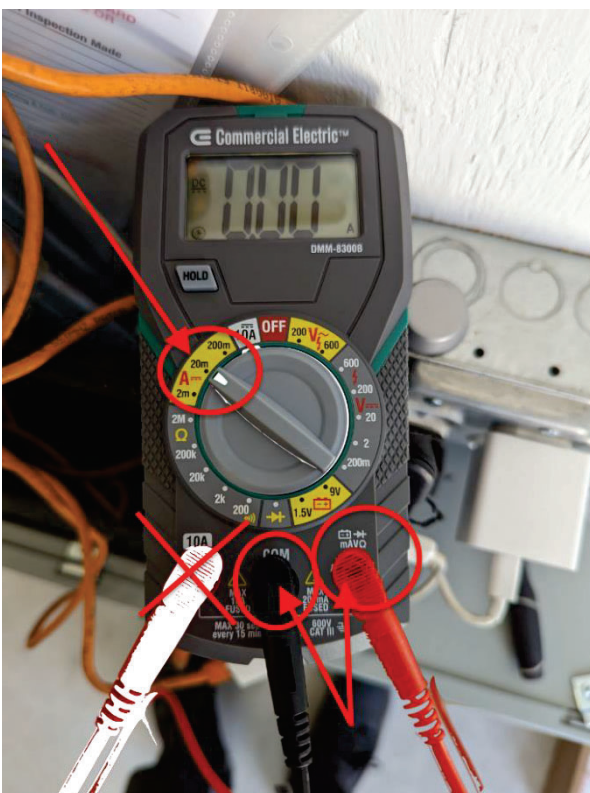


Figure 8-13: Example with Commercial Electric multimeter set-up to measure 4-20mA DC current



Figure 8-14: Example with Fluke multimeter set-up to measure 4-20 mA DC current

See Figure 8-15

1. Connect the Pressure Sensor red wire to the +24 VDC (03030).
2. Connect the Pressure Sensor white wire to the multimeter red test lead.
3. Connect the multimeter black test lead to the V- (0 VDC).
4. The current displayed should be 12mA or 0.012A +/- 0.5 mA.

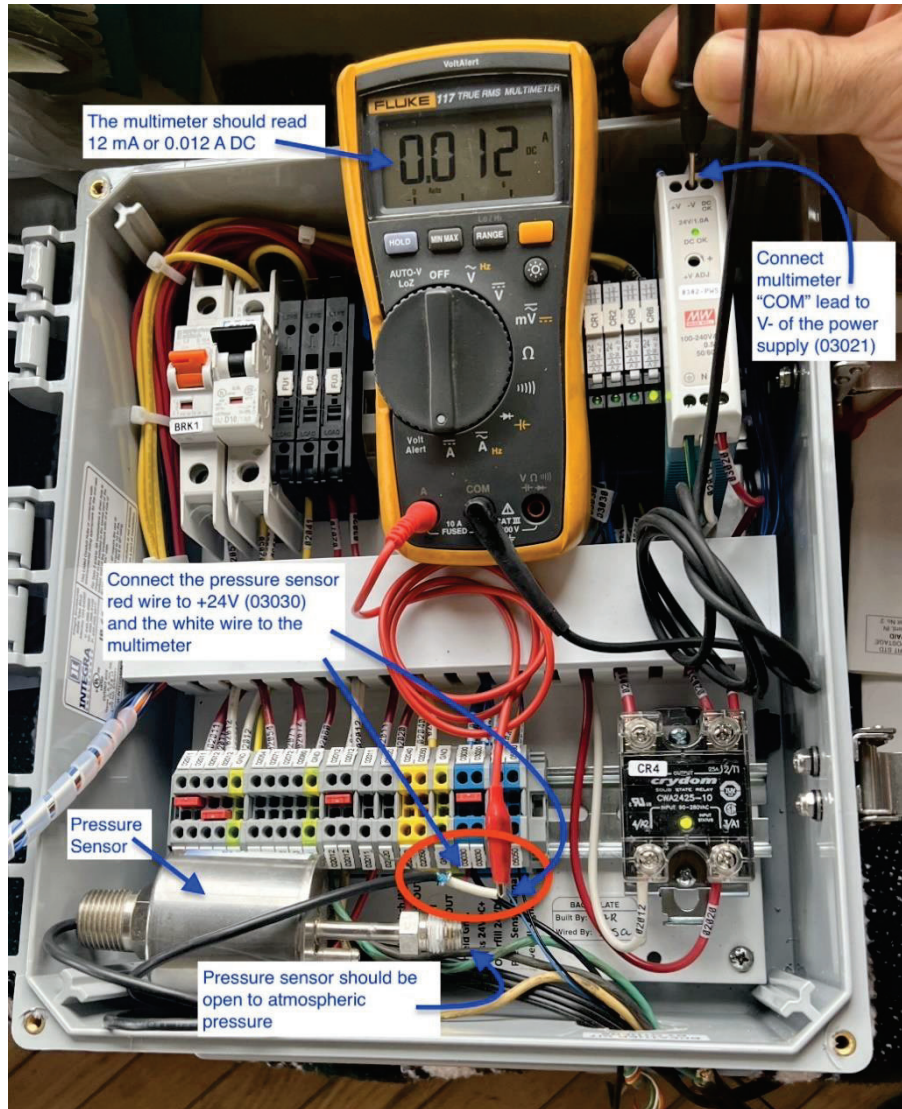


Figure 8-15: Example of Fluke multimeter and Pressure Sensor connection for test