

ISSPRO EV² Series Troubleshooting

All gauges:

1. Check if the gauge pointer homes (moves towards pointer stop) on power-up. You should hear a faint noise from the gauge motor for a moment, and see the pointer move against the pointer stop, then it should move away from the pointer stop to the value the sensor currently indicates.
2. If the gauge homing function does not work, check your ignition input voltage at the pins into the gauge. You should have battery voltage into pin #1, ground at pin #3. Check voltages at the exposed metal portion of the terminal on the orange connector (accessible from the top of the gauge with the connector plugged into the gauge). If you do not see the voltage across those terminals; check for voltage between the actual wires (you can probe the cut ends of the wires). If you do not have voltage across the wires, check your source (vehicle) connection for the wires. If you find voltage at the wires but not at the terminals, check that the wires are sufficiently seated into the orange connector to make electrical contact. If you definitely have power between these two terminals (not just to the wires but to the terminals within the orange connector) but still no homing, then the gauge should be replaced.
3. If your backlighting is not working but the gauge is otherwise functioning, check voltage between the gauge pins 2 & 3 (checking at the exposed metal portion of the terminal on the orange connector). With the dimmer turned up all the way, you should see something close to battery voltage. If you have a 3rd generation (2003 or newer) Dodge, and the gauges dim significantly (more so than the factory dash) when your grid heater cycles, you may have the older software version in your gauges. Check the gauge label for a version number (letter “A” followed by a 3-digit number). The updated lighting is on versions A134 & higher. Some older gauges did not have any version number on the label. If you need the updated lighting software, contact ISSPRO Customer Service to send back for reprogramming.

Standard Pressure Gauges (Boost Pressure, Oil Pressure, Exhaust Backpressure, Trans Pressure, Drive Oil Pressure):

4. If the gauge performs the homing functions of step #1 but the pointer moves to the straight down (6:00) position, the sensor reading is out of range. Perform the following checks in order, with the orange connector plugged in and ignition turned on:
 - a. Checking at the terminals of the orange connector, check the voltage between pin #4 and pin #6. It should be between 4.5 and 5.5 volts. If it is outside this range, the gauge is damaged.
 - b. Check the voltage between the actual wires (rather than the terminals) by probing the ends of the wires, between pin #4 and pin #6. It should be between 4.5 and 5.5 volts. If the voltage is present at the terminals but not the wires, check that the wires are sufficiently seated into the orange connector to make electrical contact.
 - c. Check the voltage between the actual wires (rather than the terminals) by probing the ends of the wires, between pin #5 and pin #6. It should be between 0.5 and 4.5 volts. If it is outside this range, the sensor is damaged.
 - d. Checking at the terminals of the orange connector, check the voltage between pin #5 and pin #6. It should be between 0.5 and 4.5 volts. If it is outside this range but within the range when checking at the wires, check that the wires are sufficiently seated into the orange connector to make electrical contact.
 - e. The value measured at step d above should be as follows:
for 100 psi sensor (all gauges up to 100 psi)-

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|---------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| PSI | 0 | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 | 90 | 95 | 100 |
| Voltage | 0.5 | 0.7 | 0.9 | 1.1 | 1.3 | 1.5 | 1.7 | 1.9 | 2.1 | 2.3 | 2.5 | 2.7 | 2.9 | 3.1 | 3.3 | 3.5 | 3.7 | 3.9 | 4.1 | 4.3 | 4.5 |

For the 175 psi sensor (gauges from 100 to 180 psi except Trans Pressure) –

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|---------|-----|-----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| PSI | 0 | 10 | 20 | 25 | 30 | 40 | 50 | 60 | 70 | 75 | 80 | 90 | 100 | 110 | 120 | 125 | 130 | 140 | 150 | 160 | 170 | 175 |
| Voltage | 0.5 | 0.7 | 1 | 1.1 | 1.2 | 1.4 | 1.6 | 1.9 | 2.1 | 2.2 | 2.3 | 2.6 | 2.8 | 3 | 3.2 | 3.4 | 3.5 | 3.7 | 3.9 | 4.2 | 4.4 | 4.5 |

For the 400 psi sensor (Trans Pressure and Drive Oil Pressure gauges) –

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|---------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| PSI | 0 | 20 | 40 | 60 | 80 | 100 | 120 | 140 | 160 | 180 | 200 | 220 | 240 | 260 | 280 | 300 | 320 | 340 | 360 | 380 | 400 |
| Voltage | 0.5 | 0.7 | 0.9 | 1.1 | 1.3 | 1.5 | 1.7 | 1.9 | 2.1 | 2.3 | 2.5 | 2.7 | 2.9 | 3.1 | 3.3 | 3.5 | 3.7 | 3.9 | 4.1 | 4.3 | 4.5 |

If the voltage is more than 0.4 volts from the values listed above, the sensor is probably faulty and should be replaced.

Rail Pressure Gauges:

5. If the gauge performs the homing functions of step #1 but the pointer moves to the straight down (6:00) position, the sensor reading is out of range. Perform the following checks in order, with the orange connector plugged in and ignition turned on:
 - a. Check that the connection between the factory harness and the gauge harness is correct. Be sure that the truck harness connector is oriented so that its latch engages the angled block on the Rail Pressure harness connector, not the non-angled block on the other side of the connector.
 - b. Check the voltage between the actual wires (rather than the terminals) by probing the ends of the wires, between pin #5 and pin #6. It should be between 0.5 and 4.5 volts. If it is outside this range, the sensor or wiring is damaged.
 - c. Checking at the terminals of the orange connector, check the voltage between pin #5 and pin #6. It should be between 0.5 and 4.5 volts. If it is outside this range but within the range when checking at the wires, check that the wires are sufficiently seated into the orange connector to make electrical contact.

Pyrometers:

6. If the gauge performs the homing functions of step #1 but the pointer moves to the straight down (6:00) position, the sensor reading is out of range. Perform the following checks in order, with the orange connector disconnected from the gauge:
 - a. Using a digital multimeter set on millivolts, measure the voltage between pins 4 & 5 (red and yellow wires), checking at the terminals of the orange connector.
 - b. Check the voltage between the actual wires (rather than the terminals) by probing the ends of the wires, between the red and yellow wires. Your value should be within 0.02 millivolts of the value measured at the terminals in step a. If there is a difference, check the connection between the wires and the connector terminals.
 - c. The values measured above, on a cold engine, with the vehicle interior approximately the same as the exhaust system, should be approximately 0 millivolts. With the engine idling (exhaust gas temperature approximately 300°F) and the vehicle interior at approximately 70°F, you should measure approximately 5.28 millivolts. If there are any problems with these measurements check the wiring to the thermocouple.

Temperature Gauges:

7. If the gauge performs the homing functions of step #1 but the pointer moves to the straight down (6:00) position, the sensor reading is out of range. Perform the following checks in order, with the orange connector disconnected from the gauge:
 - d. Using a digital multimeter set on resistance (ohms), measure the resistance between pins 4 & 5 (green and white wires), checking at the terminals of the orange connector. The resistance value should follow the chart below. If more than 150 ohms off these values, unplug the wiring at the sensor and re-check at the terminals of the sensor. If the value is still more than 150 ohms off, the sensor is defective and should be replaced.

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|------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Temp °F | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 | 130 | 140 | 150 | 160 | 170 | 180 |
| Res (Ohms) | 22.5K | 17.3K | 13.4K | 10.4K | 8.17K | 6.45K | 5.13K | 4.10K | 3.30K | 2.68K | 2.19K | 1.80K | 1.49K | 1.24K |