



CENTROID
PRODUCTS

General Troubleshooting for Centroid Senders

ORDERS ONLY: 386-423-3574 TECH SUPPORT: help@centroidproducts.com or fax: 386-423-3709 website: centroidproducts.com

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Please fill in the blanks in this test rather than summarizing your results separately.

It's much easier to understand that way, and you're less likely to miss a question. **Please email a scan (or cell photo)** of your completed form to help@centroidproducts.com. Or if it's easier, fax to 386-423-3709 and include an email address. You'll get an answer from an engineer within one business day.

1. BACKGROUND

a) What reading are you expecting on your dash now? _____ (eg "1/2" if you think the tank is half full. Dont give a general answer like 'the correct reading'. To evaluate your answers below, I need to know what the gauge reading *should* be now).

b) Where is the display actually reading? _____

c) Gasoline _____ diesel _____ potable water _____ or ? _____

d) Please include a **photo of the sender's head** (or email separately) so I can see the label and adjustments if any _____ (**Important**)

e) If you know the brand of gauge the sender is driving, what is that brand? _____

2. INSTALLED VOLTAGES

For all voltage readings, put the black lead of your voltmeter on the sender's Neg terminal, which is ground. Use the red lead of your voltmeter to measure the other terminals. If a reading is *negative*, show a minus sign with it:

NOTE: if the sender has a 3-pin connector rather than screw terminals, see the footnote at the bottom of this procedure.

a) Pos/Neg= _____ vdc (expected: maybe +12.5vdc; ie battery voltage. If the sender has no Pos terminal, ignore this question)

b) Send/Neg= _____ vdc (expected: a low to medium positive voltage)

c) Alarm/Neg= _____ vdc (if applicable-- most senders dont have an alarm output. Expected: if the alarm light is on, about +0.8vdc. If the alarm light is off, slightly less than the Pos/Neg reading)

d) With the Send wire disconnected at the sender, what does the gauge on the dash read? _____ (expected: E or F) and what is the voltage between the disconnected Send **harness wire** (or in the case of a connector, the empty Send hole of the **harness connector**) and Neg? _____ vdc (expected: higher than when connected) NOTE: I'm having you measure *HARNESS* Send here, as a test of your gauge, not the sender's own output.

e) With the disconnected Send wire touched to Neg (or when there's a connector, with the empty Send hole in the harness connector touched to the Neg hole), what does the gauge on the dash read? _____ (expected: the other end of the dial, unless it is an E0/F5 volt gauge, in which case tests D and E will read empty)

3. OUTSIDE THE TANK

Before taking the sender out of the tank, it's best to label the wires so you get them back on the right terminals. And make a tick mark on the sender head and tank so you get the orientation right when you reinstall.

a) With the sender wires completely reconnected outside the tank, and power on, what is the gauge on the dash reading? _____ (expected: ideally Empty) and what is the Send/Neg voltage _____ vdc

b) For fuel senders, what is the voltage between the inner and outer tubes at the bottom of the sender? _____ vdc (expected: for senders with Full/Empty potentiometers, nominal is 4.5v. For senders without pots, 2.55v. For water senders, the center wire is sealed so you wont be able to do this measurement)

c) What is the distance from the sender mounting surface to the current fuel level _____ inches, or even better, tape a strip of paper to the sender's outer tube and see how many inches of it are wet when you seat the sender and remove it _____ inches. This lets me calculate the expected reading.

FOOTNOTE FOR 3-PIN CONNECTOR: if your sender has a 3-pin connector with red/blk/wht wires, you wont be able to measure to "terminals" as written in the procedure (our normal electrical connections are by screw terminals). Instead:

--Power off

--Take the white clip off the back of the sender's connect so you can pop the pins out and plug them directly into the harness connector, taking care to note first which color in the sender mates to which in the harness. For boats it is usually red->purple, wht->pink, blk->blk.

--Loop a small piece of paper around the middle connection like a "U" to insulate it from the other two pins. That will let you measure voltages on the pins without accidently shorting them to each other.

--As the sender label will say: red=POS, wht=SEND, blk=NEG, for measurements in the above procedure