Please email a scan or cell phone photo of your results to help@centroidproducts.com Or if it is easier, you can fax to 386-423-3709 and include an email address. You will get a reply from an engineer the same business day. Please fill in the blanks rather than summarize your results separately. It’s much easier to follow that way, and you are less likely to leave out important information.

1. BACKGROUND
What is your name? _______________________________

What model year is your coach? [1a]_______________

and what model name? [1b]________________________________ (eg Dynasty, Cheetah, etc)

*If the year of your coach is between 1993 and 2007, then you will have a Centroid Products fuel sender. Typically the senders are accessed via a sort of luggage-compartment door on the driver’s side of the coach. You can remove a couple of screws under the rim of the coach to let you to swing up the door. The head of the sender looks like a hockey puck with 4 electrical terminals. However, some owners have reported needing to access the sender through an opening in the floor inside the coach. I’ve only seen one coach where the tank actually had to be removed to get the sender out due to lack of clearance.*

2. PURCHASING RATHER THAN TROUBLESHOOTING
If troubleshooting seems like too much trouble, buy through the contact below. But if you’re already gotten one replacement, it would be better to troubleshoot. There won’t be multiple bad senders, and the real problem needs to be determined:

We have folks order Monaco senders from Alliance/LazyDays-Ocala (Dottie, 352-330-3800, then extension 3023 while the message is playing; or dottie.purvis@alliancecoach.com). Alliance stocks our senders, has reasonable prices. We’re too busy currently to do small orders. Dottie also knows which Monaco coaches need which senders.

3. LABELING THE WIRES
It’s good advice to label the wires before removing them. Below is a sketch of the terminal layout. Notice the way the Send/Neg/Pos terminals form a shallow "V", while the Alarm terminal is by itself. People get confused when their sender head isn’t pointing the same direction I've drawn it, so I suggest you print this and rotate the paper to be pointing the same way the sender is.

```
<ALARM>
-----LABEL-----
<SEND> <POS>
<NEG>
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Also, make a tick mark on the sender head and the tank prior to removal so you get the orientation right when you reinstall. The sender is held down by 5 mounting screws and looks like a hockey puck with 4 electrical terminals.

4. TROUBLESHOOTING A FUEL READING
[4a] What is the fuel reading doing that you don’t like?
It's important to be specific about what the gauge needle is doing, and when. For example, say "the needle points to F++ regardless of the fuel level" rather than "it's not giving a reading".

[4b] What is the current fraction (eg 1/2) of fuel in your tank?

[4c] Where is the gauge needle currently pointing when power is on?

[4d] Put the black lead of your voltmeter on the sender's NEG terminal. Use the red lead of your voltmeter to measure the other terminals. If a reading is "negative", show a minus sign with it. You can make these measurement with accessory power on-- you don't need to run the engine.

<ALARM>

-----LABEL-----

SEND > POS

<NEG>

Pos/Neg = ___________vdc (expected: maybe +12.5vdc; ie battery voltage)

Send/Neg = ___________vdc (expected: it depends what model of gauge your coach has, but a healthy voltage would be between maybe +0.3vdc and maybe +8vdc)

Alarm/Neg = ___________vdc (expected: is the low-fuel alarm light on___________ and does your Alarm terminal have a wire on it___________? If yes to both questions, then about +0.7vdc. If not but there's a wire, then about the same as Pos/Neg. If there's no wire, then the Alarm voltage will be uncertain).

[4e] On the right side of the Alarm terminal there is typically a small, plastic Empty adjustment screw, and on the left side of the Alarm terminal there is typically a small, plastic Full adjustment screw. Typically undercoating (plus our sealing of the Empty adjustment) will keep you from being able to see these adjustments. But if you can see them, it's typically because someone has dug out and changed the adjustments. Do your adjustments appear to have been dug out? E__________ F______________.

[4f] With the power off, remove the Send wire from the sender. Turn on the power. What is the voltage from the disconnected Send wire to Neg?___________vdc (expected: depends on what model of gauge your coach has. This voltage will help me determine that. You can turn the power off and put the wire back on).

[4i] If it doesn't seem like too much trouble to take the sender out of the tank, there are useful measurements you can take with the sender out and wired, with power on. If you do this test, I suggest first that you first label the wires and make a tick mark on the head as described above.

[4i2] To make sure you have the wires back correctly after reconnecting the sender and turning on power, put the black lead of your voltmeter on the Neg terminal of the sender and record the Pos/Neg ___________vdc and Send/Neg ___________vdc readings as you did previously. Neither reading should be negative, or you have a miswire.

[4i3] With the sender out of the tank and the power on, what is the reading on your fuel gauge?_______________ (expected: ideally E)

[4i3] What is the voltage from the inner tube to the outer tube of the sender at the bottom of the sender?_______________vdc (expected: between 4.2 and 4.8vdc for a CGF-... sender or between 2.35-2.75v for a
CGFP-... sender. If you get lower than the expected range, there is likely to be an algae problem. If you get higher, there is likely to be an internal regulator problem with the electronics).

You can reinstall the sender at this point.