

INSTALLATION INSTRUCTIONS

SHORT SWEEP ELECTRIC FUEL LEVEL GAUGE

2650-1858-77



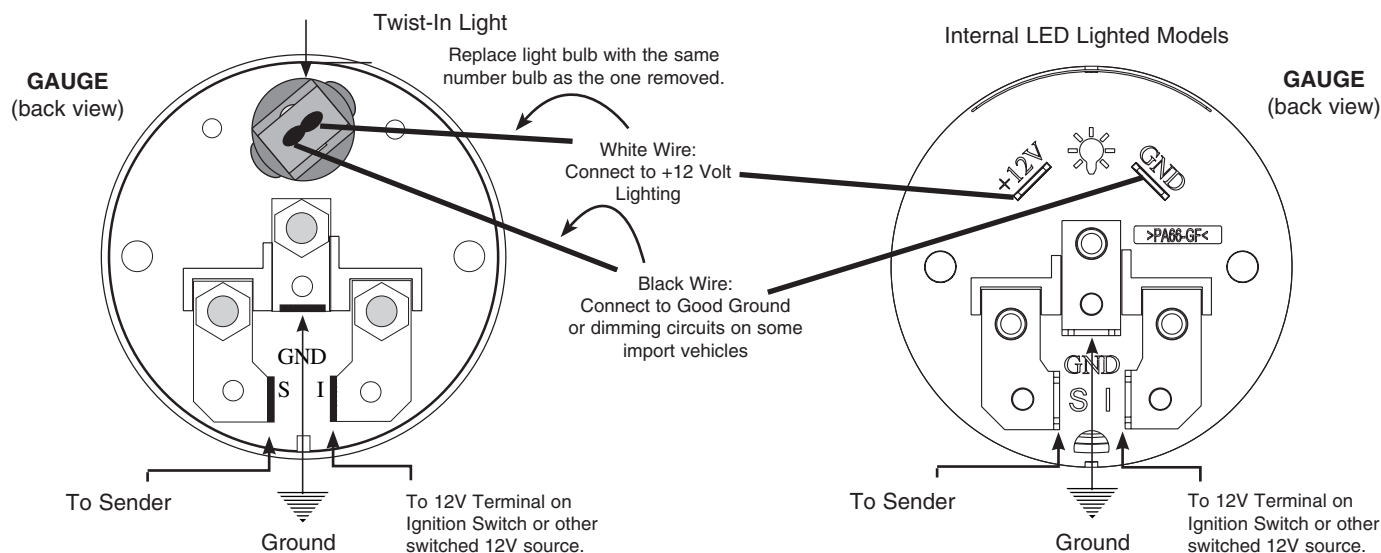
Wiring:

Looking at the rear of the gauge, you will have 3 terminals labeled S, I, & GND. You may use 18g or 20g stranded wire for all fuel level gauge wiring.

- S** = This connects to the sending unit in the fuel tank. ******(See Sending Unit Wiring Section)
- I** = Supply 12v, key on power to this terminal. It is recommended to use a 3 Amp automotive fuse when supplying power to this gauge.
- GND** = Connect this to engine or chassis ground.

Models with **Twist In Light Bulb Socket**, supply dash lighting power to the white wire & supply body or chassis ground to the black wire. Models with **2 Blade Terminals/Internal LED Lighting** at the top of the rear of the gauge, supply dash lighting power to the 12v terminal, and supply body or chassis ground to the GND terminal.

Factory LED lit models may require the Auto Meter **9114 Dimming Module** in order to adequately dim the gauge lighting.



Sending Unit Wiring:

Most sending units will be variable resistance to ground type of senders, and will require 2 wires. You generally have a wiring terminal or wire for signal, and either a 2nd wire or terminal for ground.

Wire the S Terminal of the gauge to the S Terminal of the sender. If your sender has only one terminal, then this terminal will be your signal terminal that the gauge wires to.

You must also make sure that your sender is grounded properly. Some senders will find ground if mounted in a metal tank, but even in these cases you may have to ground the sender. To do so, either run a proven good chassis ground to the 2nd terminal (if equipped) or affix the ground wire to the round mounting flange of the sender.

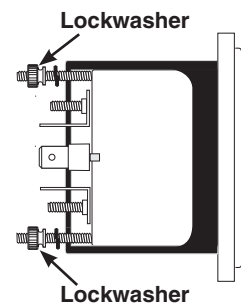
If you have a non-metal tank, you absolutely must run ground to the sender in order for the sender to function properly with the gauge. Many times we recommend you run a grounded wire to your sender, and share it with the same ground you use for grounding your gauge.

Gauge Mounting:

These gauges can be mounted in-dash or in Auto Meter mounting solutions (panels, cups, pods, etc.).

2-1/16" diameter gauges mount in 2-1/16" hole, 2-5/8" diameter gauges mount in a 2-5/8" hole.

Fasten with brackets supplied as shown.



Gauge to Sender Compatibility:

Although all fuel level gauges serve the same general purpose (how much fuel is in the tank), not all fuel level gauges operate on the same resistance range. Many vehicle (and gauge) manufacturers all use their own fuel sender resistance range. Therefore Auto Meter offers gauges in many resistance ranges to accommodate the most popular resistance ranges. Because of this, it is imperative to have the proper gauge to match the sender that you are using. Below is a list of possible sender resistance ranges. You may also write your actual gauge model number and sender resistance range in the Notes section at the end of this instruction for future reference if needed:

(Empty/Full Resistance & General Applications)

0/90 Ohm	Most GM 1965 to 1996 applications.
0/30 Ohm	Most GM 50's to 1964 applications.
240/33 Ohm	Many after market senders, including the Auto Meter 3262 sender.
73/10 Ohm	Most 50's to 1986 Ford applications and Most 60's to late 80's Chrysler applications.
16/158 Ohm	Most 1987 to 2009 Ford applications.

Trouble Shooting and Tech Tips

Gauge goes past Full on power up: On 0/90, 0/30, and 16/158 ohm gauges. Possible causes are
No sender wire connected.
Poor or bad sender wire or wire connection.
Faulty (open circuit) sending unit.
No ground on sending unit.

Gauge goes past Full on power up: On 240/33 & 73/10 ohm gauges. Possible causes are
Sender wire shorted directly to ground.
Sending unit internally shorted to ground.

Gauge stays below Empty on power up: On 0/90, 0/30, and 16/158 ohm gauges. Possible causes are
Sender wire shorted directly to ground.
Sending unit internally shorted to ground.
No fuel in the tank.
Misadjusted sending unit.

Gauge stays below Empty on power up: On 240/33 & 73/10 ohm gauges. Possible causes are
No sender wire connected.
Poor or bad sender wire or wire connection.
Faulty (open circuit) sending unit.
No ground on sending unit.
No fuel in the tank.
Misadjusted sending unit.

Gauge reads backwards: This is simply due to a mismatch between the gauge and the sender. Identify the sender resistance range, and identify the gauge model number to determine its resistance range. Replace either the gauge or the sender to match the other. Swapping wire polarity on the back of the gauge will not solve the problem.

Gauge will not read above E with a couple gallons of fuel in the tank: This is not uncommon. Just like most OEM fuel level gauges, when the gauge pointer is coming down toward Empty, the gauge should read Empty before you actually run out of fuel. Due to various tank designs, tank capacities, and sender measurements, this could be as little as 1 gallon, or as much as 4 to 5 gallons. The average is 2 to 3 gallons.

73/10 ohm gauge reads E way too soon, or does not go above E with several gallons added to the tank: This is most commonly found on reproduction Ford & Chrysler fuel senders made to replace a worn out or faulty original.

If you need to measure the resistance through the sender, here is how to accomplish this:

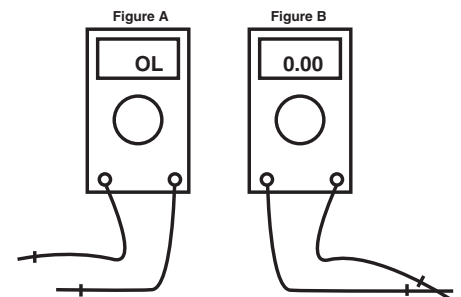
Obtain a digital volt/ohm meter. Most meters will have variable setting to set the meter dial/selection to. Set to 200 (no K or M suffix). If you have a 240/33 ohm sender, you will have to use the next higher selection such as the 2000 or 2K (K stands for x 1,000) setting.

Some ohm meters are what is referred to as "Auto Ranging" When using an auto ranging meter, watch to see if the letter K or letter M appear on the screen when taking your measurements. It should not show K or M for any of the above noted available fuel sender resistance ranges.

It is a good idea to test your ohm meter before testing the sender.

With the two leads not touching anything or each other, note what your ohm meter displays. This could be a variety of things depending on the manufacturer of the meter such as OL, OR, a flashing "1", etc.. Any of these figures represent an open circuit which is the same thing as no connection. (see figure A)

Now touch your leads together. You should get 0.00. You might get something a little higher like 0.5. This is ok, as that is simply the resistance through your leads. (see figure B)

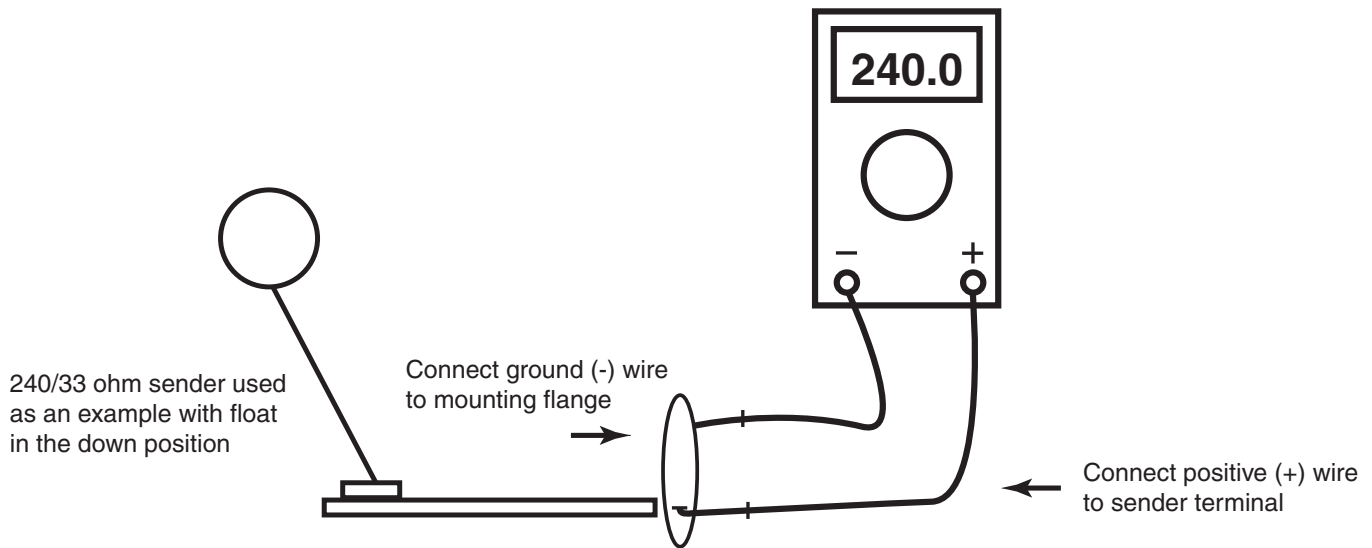


If your sender is in the tank, and you are not going to remove the sender for testing, you want to have a general idea of how much fuel is in the tank. Remove the sender wire off of the gauge (leaving the other end still connected to the sender) and connect the positive of your

ohm meter to the sender wire that you took off of the gauge. Connect the negative of the ohm meter to ground. This will give you your reading at current fuel level. Example, a 1/2 tank of fuel with a 0/90 ohm sender would equal close to 45 ohms. If you get an open circuit indication (like when you held your leads apart when testing the ohm meter), then you are dealing with no connection to the sender, or no ground to the sender, or a faulty sender.

If you get your minimum reading (like what you did when your touched your ohm meter leads together), you are then dealing with a sender wire that is shorted to ground, a sender that is internally shorted to ground, a 0/90 or 0/30 ohm sender that is in an Empty tank of fuel, or a 0/90 or 0/30 ohm sender float that is not floating (sunk to the bottom of the tank).

If you want to bench test your sender, this is done with the sender removed from the tank. You connect the positive of the ohm meter to the sender terminal, and the negative of the ohm meter to either the sender ground, or the sender body (if there is not a dedicated sender ground terminal). You would then slowly exercise the float arm of the sender from Empty to Full while watching the ohm meter to see if the sender resistance range matches what it should be (or to simply identify what the sender is). See figure C. Keep in mind that the fuel level sender is rarely an exact match. You can have several ohms of variance at Empty or at Full as fuel senders are generally not as precise as oil pressure senders as an example.



Notes:

Your Gauge Model Number: _____

Your Sender Resistance Range: E= _____ F= _____