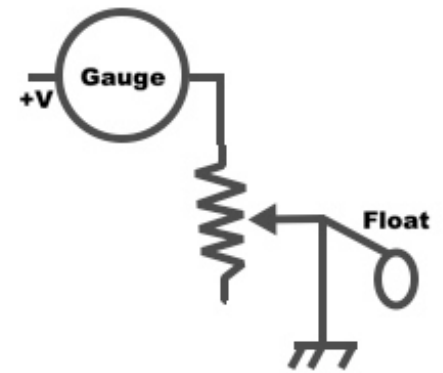


Old School Fuel Gauge

JB

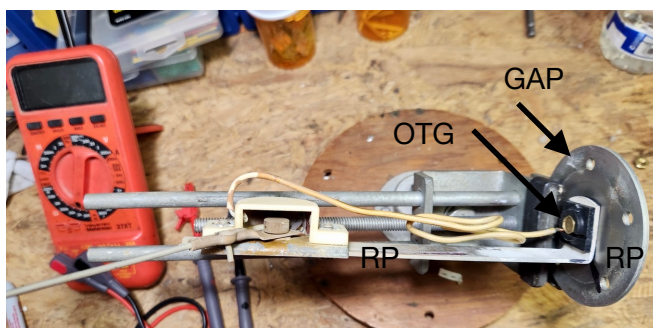


If you understand how an Ohm Meeter works then you have a pretty good idea of how the Old School Fuel Gauges operate. Its actually that simple and once you grasp that principal then trouble shooting them gets a whole lot easier.

You have two choices, begin at the Gauge or at the Fuel Tank depending on which is the easiest to access. The object here is to determine if the issue is with the Gauge or the Sender. By removing the Sender wire from the Gauge and substituting a Resistor (with the other side tied to ground) you can determine if the Gauge is working. By looking at the Table below you can see that by installing a resistor equal to the one half the difference between empty and full you should see approximately half a tank on the Gauge. An example would be a 100 ohm resistor ($240-33$ divided by 2) should show half a tank on a gauge connected to a Universal Sender. If you can't get to the Gauge then you could take the wire off the Sender (at the tank) and connect a resistor there and tie it to ground. Ok, if the Gauge is bad that is a matter of R&R (remove and replace). But what if your Gauge is way off or just erratic. Now the Sender needs a good close look. The first thing to look at is to make sure the Ground to the Sender is good, it should be as close to zero Ohms as possible. If it is not then that needs to be corrected before moving on. The next step would be to remove the wire going to the Gauge and measure the resistance from the Sender output to ground. It should fall somewhere between the values listed on the table below. If it is abnormally high then the Gauge will indicate low fuel in the tank. If it has a very low resistance the tank will appear to be full and most likely the Sender is shorted.

One of the contributing factors to Gauges reading incorrectly over time is the fact that there are a number of mechanical connections in the ground circuit within the sender. As time goes on corrosion sets in and adds a lot of resistance to that ground path. After removing the Sender and cleaning all those corroded mechanical connections I was able to measure the proper resistance readings between the Mounting Flange and the Sender output. So with a little fine sandpaper and a wire brush I was able to resolve the problem. Another potential problem area is the Float that operates the variable resistor. Modern fuels can cause older Cork Floats to water log and now you read empty all the time. Be sure and check to make sure you have a float that really floats!

Resistance Range	OEM Sender
0-30 Ohm	GM 1964 and earlier
0-90 Ohm	GM 1966 and later
75-10 Ohm	Ford 1986 and earlier
16-158 Ohm	Ford 1987 and later
240-33 Ohm	Universal Sender



OTG - Output to the Gauge (stud on Sender)
GAP - Ground Attachment Point
RP - Potential Resistance Point. Anywhere there is a mechanical connection in the ground path you can have corrosion and the resistance associated with it.

Courtesy cruisinkitsap.com Tech Articles.