

Product: Senders	Description Troubleshooting Guide	Date Jan 2005
Type: Electrical		Issue 1

General Information:

This troubleshooting guide is intended to help you with the installation of Siemens VDO Automotive instruments. Please however check the instructions provided within the package the instrument came in for more details.

TEMPERATURE & PRESSURE SENDERS

Do not use Teflon tape on the threads. It will interfere with the sender ground. Sender threads are tapered pipe threads and are self sealing. Temperature senders are most accurate when installed in the intake manifold. It is also acceptable to use the OEM engine manufacturing specified location. Do not use tee adapters or angle adapters for temperature senders since the sender tip or bulb must be immersed in the water flow.

Senders can be tested with an ohm meter that measures from 10 to 2,000 ohms. Connect the positive lead from the tester to the sender terminal and the negative lead to a good ground. The following readings will occur if the sender is operating properly.

Temperature Sender: Cold -700
Hot (250 degrees) -22

Pressure Sender: Engine off – 10 ohms
Engine running 40psi = 105 ohms, 60psi = 152 ohms

FUEL SENDERS

Gauge manufacturers use different ohm ranges when building their fuel senders. The following are typical:

	EMPTY	FULL
VDO Lever Arm (included in instrument kit)	10 ohm	180 ohm
Stewart Warner	240 ohm	33 ohm
G.M. from '65	0 ohm	90 ohm
G.M. pre '65	0 ohm	30 ohm
Ford pre '90	73 ohm	10 ohm
VDO Tube Type	60-90 ohm	0 ohm

VDO makes compatible fuel gauges in some styles. Check the catalogue for the style and part number which matches your sender.

Note: The sender and gauge ohm ranges must match.

FUEL TANK SENDERS

As explained before, there are many different ohm ranges in sending units. Therefore, with an ohmmeter you can check to ascertain if unit is working properly.

VDO No. 226 001 E = 10 ohms F = 180 ohms

An empty tank will read 10 ohms. As you add gas, the ohm reading will go up until the tank is full and reads 180 ohms.

G.M.: Both 0-30 and 0-90. Empty tank will read "0" ohms. As you fill the tank, ohm reading will go up.

Stewart Warner and Ford: Empty tank will read high ohm range (S.W. 240) (Ford 73) and go down as you fill tank.