



Gauge Assembly

– How the Circuit Works

The gauge assembly receives battery voltage at all times through fuse 56 and through fuse 20 ('96-'03) with the ignition switch in ON (II) or START (III). The gauge assembly also receives battery voltage through fuse 55 and the gauge relay with the ignition switch in ON (II) or START (III).

Speedometer and Odometer

The speedometer and odometer drive circuits receive pulses from the vehicle speed sensor (VSS). The pulse rate increases as the vehicle speed increases. This speed signal is converted and displayed by the speedometer, odometer, and trip meter.

Tachometer

The tachometer drive circuit receives pulses at the rate of three pulses per engine revolution from the powertrain control module (PCM). The pulse frequency increases as the engine speed increases. This speed signal is converted and displayed by the tachometer.



WARNING

Do not smoke while working on the fuel system. Keep open flame away from the work area. Drain fuel only into an approved container.

Fuel Gauge

The fuel gauge contains two intersecting coils and a permanent magnet rotor assembly which displays the fuel level even with the ignition switch in the LOCK (0) position. The fuel gauge sensor controls the magnetic field which varies the current to the fuel gauge and causes the gauge pointer to move. The fuel gauge indicates a full tank when the sender resistance is 3.5 to 5 ohms. The fuel gauge indicates a half tank when the sender resistance is 29.5 to 35.5 ohms. The fuel gauge indicates an empty tank when the sender resistance is 105 to 108 ohms.

Engine Coolant Temperature Gauge ('96-'02)

The engine coolant temperature gauge contains two intersecting coils and a permanent magnet rotor assembly which displays the coolant temperature even with the ignition switch in the LOCK (0) position. The coolant temperature sending unit controls the magnetic field which varies the current to the coolant temperature gauge and causes the gauge pointer to move. The coolant temperature gauge indicates hot, 85° C (185° F) to 100° C (212° F), when the sender resistance is 46 to 30 ohms. The gauge indicates cold, 56° C (133° F), when the sender resistance is 137 ohms.

Engine Coolant Temperature Gauge ('03-'04)

The main circuit built into the gauge assembly controls the engine coolant temperature. The main circuit receives its input signal from the Engine Coolant Temperature Sensor (ECT) through the Powertrain Control Module (PCM). The Engine Coolant Temperature Sensor (ECT) is a temperature dependent resistor (thermistor) whose resistance decreases as the coolant temperature increases.

Outside Air Temperature Display

The outside air temperature display receives temperature information from the outside air temperature sensor through the BRN/WHT wire. The gauge assembly converts this signal into a digital display. The climate control system also uses this sensor.

Refer to the Service Manual (Section 23, Electrical) for specific tests or troubleshooting procedures.

