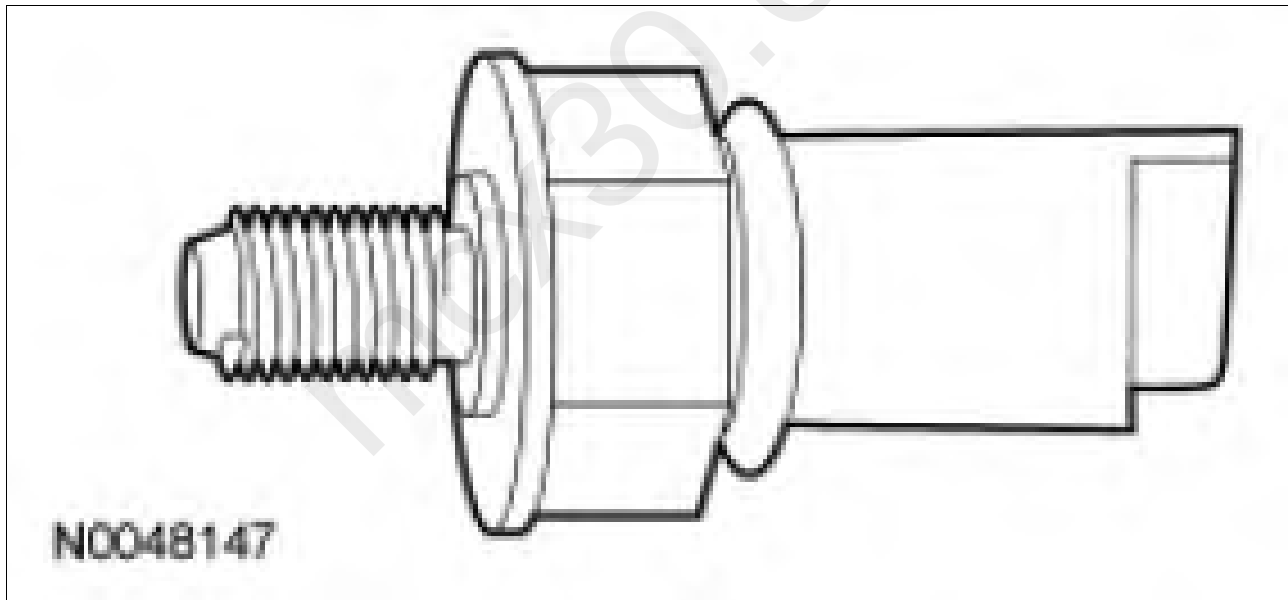


ENGINE CONTROL COMPONENTS > FUEL RAIL PRESSURE (FRP) SENSOR

The FRP sensor is a diaphragm strain gauge device. The FRP sensor measures the pressure difference between the fuel rail and atmospheric pressure. The FRP sensor nominal output varies between 0.5 and 4.5 volts, with 0.5 volts corresponding to 0 MPa (0 psi) gauge and 4.5 volts corresponding to 26 MPa (3771 psi) gauge. The sensor can read vacuum and may lower the output voltage to slightly below 0.5 volts. This condition is normal and is usually the case after several hours of cold soak before the vehicle dome light is turned ON. The FP assembly is energized at the same time the dome light is commanded ON. A disabled or malfunctioning dome light does not affect the FP assembly control.

The FRP sensor is located on the fuel rail and provides a feedback signal to indicate the fuel rail pressure to the PCM. The PCM uses the FRP signal to command the correct injector timing and pulse width for correct fuel delivery at all speed and load conditions. The FRP sensor, along with the fuel volume regulator (part of the fuel injection pump), form a closed loop fuel pressure control system. An electrically faulted FRP sensor results in the deactivation of the fuel injection pump. Fuel pressure to injectors is then provided only by the FP assembly. When the fuel injection pump is de-energized and the injectors are active, the fuel rail pressure is approximately 70 kPa (10 psi) lower than FP assembly pressure due to the pressure drop across the fuel injection pump. Thus, if the FP assembly pressure is 448 kPa (65 psi), then the fuel rail pressure would be approximately 379 kPa (55 psi) if the injectors are active.

Fig 1: Identifying Fuel Rail Pressure (FRP) Sensor



Courtesy of FORD MOTOR CO.

ENGINE CONTROL COMPONENTS > FUEL TANK PRESSURE (FTP) SENSOR

The in tank FTP sensor or the inline FTP sensor measures the fuel tank pressure.