

On vehicles with gasoline direct fuel injection, the high pressure fuel system may be under vacuum after several hours of cold soak. Fuel vapor may collect at the fuel injection pump, causing a long start condition. To prevent this, the fuel pump relay is energized for 1 or 2 seconds, depending on application, as soon as the dome light is commanded ON. This causes the fuel pump control module and the fuel pump to cycle for 1 or 2 seconds and purge any trapped air or fuel vapor from the high pressure fuel system.

POWERTRAIN CONTROL HARDWARE > KEEP ALIVE MEMORY (KAM)

The PCM stores information about vehicle operating conditions in the KAM (a memory integrated circuit chip) and then uses this information to compensate for component variability. The KAM remains powered when the ignition is in the OFF position so the information is not lost.

POWERTRAIN CONTROL HARDWARE > POWER AND GROUND SIGNALS > ACCELERATOR PEDAL POSITION REFERENCE VOLTAGE (APPVREF)

The APPVREF is a consistent positive voltage (5 volts plus or minus 0.5 volt) circuit.

POWERTRAIN CONTROL HARDWARE > POWER AND GROUND SIGNALS > ACCELERATOR PEDAL POSITION RETURN (APPRTN)

The APPRTN is a return path for APPVREF circuit.

POWERTRAIN CONTROL HARDWARE > POWER AND GROUND SIGNALS > ELECTRONIC THROTTLE CONTROL REFERENCE VOLTAGE (ETCREF)

The ETCREF is a consistent positive voltage (5 volts plus or minus 0.5 volt) circuit.

POWERTRAIN CONTROL HARDWARE > POWER AND GROUND SIGNALS > ELECTRONIC THROTTLE CONTROL RETURN (ETCRTN)

The ETCRTN is a return path for ETCREF circuit.

POWERTRAIN CONTROL HARDWARE > POWER AND GROUND SIGNALS > GOLD PLATED PINS

Some engine control hardware has gold plated pins within the connectors and mating harness connectors to improve electrical stability for low current draw circuits and to enhance corrosion resistance. The engine control (EC) components equipped with gold plated terminals vary by vehicle application. Only replace gold plated terminals with new gold plated terminals.