	Symptom	Possibe Causes	Action
P040500	Exhaust Gas Recirculation Sensor A Circuit Low	Exhaust gas recirculation (EGR) valve circuit high resistance EGR valve circuit short circuit to ground EGR valve failure	Refer to the relevant workshop manual section. Check the EGR valve, coolers and pipework. Refer to the electrical guides and check the MAF sensor and circuits. Allow the engine to warm up, switch off and turn the ignition on. Using a data logger function, check the EGR valve angle. Command the valve actuator to 0% then 100% pulse width modulated (PWM) and recheck the values. The angle should range between 5% and 95%. If this is not the case, install a new valve as necessary. Clear the DTCs and test for normal operation.
P040521	Exhaust Gas Recirculation Sensor A Circuit Low	Right-hand exhaust gas recirculation (EGR) sensor circuit low - signal amplitude less than minimum EGR valve position sensor circuit short circuit to ground EGR valve position sensor fault	Check the right-hand EGR sensor and circuits. Refer to the electrical guides. Using a data logger function, check the EGR valve angle. With the ignition on, engine off, command the valve actuator to 0% pulse width modulated (PWM), and then to 100% pulse width modulated (PWM) and recheck the EGR valve angle. The value should range from 0 - 20% to 80 - 95%. If this is not the case, install a new sensor. Clear the DTCs and test for normal operation.
P056200	System Voltage Low	Battery condition/state of charge Battery ground cable high resistance Battery connections loose/corroded Battery current drain Battery power distribution circuits	Check the battery connections and condition and charge as necessary. Refer to the electrical guides and check the battery power supplies to the ECM, etc. Repair/renew as necessary. Refer to the relevant workshop manual section
P056216	System Voltage Low	Battery condition/state of charge Battery ground cable high resistance Battery connections loose/corroded Battery current drain Battery power distribution circuits	Check the battery connections and condition and charge as necessary. Refer to the electrical guides and check the battery power supplies to the ECM, etc. Repair/renew as necessary. Refer to the relevant workshop manual section.
P0A0900	DC/DC Converter Status Circuit High	DC/DC converter circuit low	Clear the DTC. Cycle the ignition, allow power latch and retest. If the DTC resets, refer to the warranty policy and procedures manual if a module is suspect.
P0A0916	DC/DC Converter Status Circuit Low	DC/DC converter less than minimum	Clear the DTCs, turn the ignition off and allow power latch. Check for DTCs. If the DTC resets, suspect the ECM. Refer to the warranty policy and procedures manual if a module is suspect.
P113600	E box fan circuit performance	E box fan circuit short circuit to ground E box fan circuit short circuit to power E box fan circuit high resistance E box fan failure	Check the E box fan and circuits and fan operation. Refer to the electrical guides.
P008772	Fuel rail/system pressure too low	Pressure control valve fault	Refer to the electrical guides and check the PCV actuator circuits and rectify as necessary. Check the resistance of the fuel pressure control valve. If the resistance is not between 0 and 5.4 ohms, install a new high pressure fuel pump (the fuel pressure control valve cannot be serviced separately). Refer to the relevant section of the workshop manual. Clear the DTCs and test for normal operation. Refer to the warranty policy and procedures manual if a high pressure fuel pump is suspect
P008700	Fuel rail/system pressure too low	Fuel rail pressure (FRP) sensor disconnected FRP sensor to ECM sensing circuit short circuit to ground FRP sensor supply circuit high resistance FRP sensor failure Fuel line leak Restricted fuel line Fuel pump module circuit high resistance Fuel pump module circuit short circuit to ground Fuel pump module failure Volume control valve fault Pressure control valve fault	Refer to the electrical guides and check the FRP sensor circuits. For FRP sensor tests, refer to the relevant workshop manual section. Check the low pressure fuel lines for damage or restrictions. Check the fuel pressure. Check the low pressure fuel pump module circuits and operation. Check for fuel rail and high pressure fuel line leaks. Check for VCV and PCV DTCs and rectify as necessary.

P060A00	Internal Control Module Monitoring Processor Performance	ECM - event information - CPU watch dog	Check the ECM circuits and connectors. Refer to the electrical guides. Clear the DTC. Cycle the ignition, allow power latch and retest. If the DTC resets, suspect the ECM. Refer to the warranty policy and procedures manual if a module is suspect.
P060A48	Internal Control Module Monitoring Processor Performance	Engine control module (ECM) monitoring processor performance - supervision software fault ECM circuits short circuit to ground ECM circuits short circuit to power ECM circuits high resistance	Check the ECM circuits. Refer to the electrical guides. Clear the DTC. Cycle the ignition, allow power latch and retest. If the DTC resets, suspect the ECM. Refer to the warranty policy and procedures manual if a module is suspect.
P062D01	Fuel Injector Driver Circuit Performance Bank 1	Fuel injector circuits short circuit to ground Fuel injector circuits short circuit to power Fuel injector circuits high resistance Fuel injector fault	During the following, clear DTCs and recheck after each step. Turn the ignition switch off and wait 20 seconds before turning the ignition back on to recheck DTCs. Check the connections at fuel injectors 1, 2, 3 and 4. Disconnect the injectors and measure the resistance and capacitance of each injector. Resistance should be 180 - 220 Kohms, capacitance should be greater than 3 microfarad at 20°C (68° F). If one or more injectors are outside this range, install new injectors as necessary. Check the injector circuits. Refer to the electrical guides. Rectify as necessary. Clear the DTCs and test for normal operation.
P062D00	Fuel Injector Driver Circuit Performance Bank 1	Injector(s) disconnected Injector circuit high resistance, short circuit to ground, short circuit to power Injector failure ECM failure	Refer to the electrical guides and check the injector circuits. Rectify as necessary. Clear the DTCs and test for normal operation. Refer to the relevant workshop manual section. Refer to the warranty policy and procedures manual if a module is suspect.
P062E01	Fuel Injector Driver Circuit Performance Bank 2	Fuel injector circuits short circuit to ground Fuel injector circuits short circuit to power Fuel injector circuits high resistance Fuel injector fault	During the following, clear DTCs and recheck after each step. Turn the ignition switch off and wait 20 seconds before turning the ignition back on to recheck DTCs. Check the connections at fuel injectors 5, 6, 7 and 8. Disconnect the injectors and measure the resistance and capacitance of each injector. Resistance should be 180 - 220 Kohms, capacitance should be greater than 3 microfarad at 20°C (68° F). If one or more injectors are outside this range, install new injectors as necessary. Check the injector circuits. Refer to the electrical guides. Rectify as necessary. Clear the DTCs and test for normal operation.
P062E00	Fuel Injector Driver Circuit Performance Bank 2	Injector(s) disconnected Injector circuit high resistance, short circuit to ground, short circuit to power Injector failure ECM failure	Refer to the electrical guides and check the injector circuits. Rectify as necessary. Clear the DTCs and test for normal operation. Refer to the relevant workshop manual section. Refer to the warranty policy and procedures manual if a module is suspect.