

Main reasons for failure in Engine Control Modules

Corrosion and moisture:

Corrosion or damage due to moisture is one of the main reasons for ECM failure. Corrosion can enter the ECM through the wiring harness and moisture can enter by a failure in the seals in the ECM itself. This happens over a period of time (5 to 10 years) due to the ECMs exposure to the elements.

Fuel solenoid:

The electronic fuel solenoid is also a main reason for failure in the ECM. The solenoid can cause a short in the ECM due to corrosion in the solenoid or the wire running from the solenoid to the ECM harness. The electronic fuel solenoid is located at the top of the fuel pump. The solenoid seems to fail due to corrosion as fast or faster than the ECM. If your truck is running fine then you shut your engine off and it won't restart then this is a good indication that the starter has shorted out the ECM.

Injector wiring harness:

The third thing that can cause failure in the ECM is the Injector wiring harness or the sensor wiring harness. Once again corrosion or breaks in the internal wiring in the harness can cause a short in the ECM or corrosion can enter the ECM through the wiring harness. Again this is caused by exposure to the elements.

Grounding issues:

Another issue that can cause failure in the ECM is poor grounding. This can be the result of loose or corroded ground wires to the battery or the frame. This is especially problematic in the Celect Plus model.

Starters:

Replacing the starter with the wrong model starter is becoming a big problem with the Celect Plus ECMs. Many starter rebuilders will bypass the override sensor in the starter. The override sensor regulates the voltage going to the ECM so when the override sensor is bypassed you will get voltage problems in the ECM and it can generate fault codes or other problems. If you only started having problems with your ECM after installing a starter then the starter is most likely the root of your problem.

Dead battery cells:

Dead cells in batteries can cause failure in the ECM. Many times a battery is left in the rig long after a cell has died. This affects the grounding in the battery.

Jump start:

If the vehicle has been jump started recently and the cables were connected improperly this can cause a spike in your ECM and cause it to short out. A bad jump can also blow out 2 amps which are located between the ECM and the firewall.

Welding and lightning:

Arc welding on the frame can blow out the ECM as well as lightning strikes. This is not very common but it does happen from time to time.

Identifying the problem:

If your check engine light is on then you should be able to read a fault code from your ECM. The fault codes should help identify where the problem is originating from. You can also check the voltage where the wires come into the ECM harness with a voltmeter. The voltage should be between 9 to 12 volts for optimal usage. Anything 6 or below and you have a problem.