

Cobalt Blues

I took a call on a 2005 Chevrolet Cobalt 2.2 liter engine with automatic transmission for a no-start, no-crank condition. The vehicle had stalled while driving. The vehicle had a history of stalling but normally, it would restart.

When the technician called, there was no communication with the engine control module (ECM) and the Transmission Control Module (TCM). There was communication with the Body Control Module (BCM) and other modules. The BCM had codes for loss of communication with the ECM and TCM. The engine started once while testing, had communication with the ECM and had a code for crank position sensor only. After this initial response, it was back to no ECM or TCM communication.

The security light was on steady. The technician had tried a theft deterrent relearn with no change. Initial testing had found voltage at one output and two input wires at the ignition switch. The technician had already replaced the ignition switch.

We tested voltage at the BCM ignition switch wires to account for all the output circuits' voltage. After the technician tested the resistance and the voltage at the high speed General Motors Local Area Network (GMLAN) terminals at the diagnostic link connector, he removed the insert from the low speed GMLAN splice pack to separate the data lines, as the BCM is on both of these lines.

Since there was still BCM data, I had him test voltage at the ECM and TCM powers and grounds — he found that the ECM had an intermittent voltage supply. Then he traced the circuit back to the underhood fuse block. The wiring and the connectors' condition was not the problem. When he replaced the underhood fuse block, the engine started and ran.

The technician cleared all the modules' codes and then test-drove the vehicle. Job done, right? No, it wasn't. The vehicle stalled while driving when it hit a bump. The engine restarted immediately. This repeated several times.

The problem couldn't be duplicated in the shop. I had him do the old 'tap/tug/wiggle' test on the engine wiring harnesses, control modules, fuse blocks and connectors. The BCM also serves as a fuse block. By starting at the front and working his way back, he found that moving the cables at the battery caused the engine to stall. He then repaired poor connections at the battery cables. The engine still stalled when moving the wiring in the area of the positive battery cables. He found a 50 amp in-line fuse taped over in one of the two positive cables after an in-line connector near the battery. When he removed the tape, he found the fuse was loose in the holder, so he secured the fuse. This fuse supplies battery continuous voltage to the BCM.

He took the vehicle on another test drive and it ran well. This turned out to be a story of multiple failures appearing to be one failure. Most likely it will not be the last time we see these types of problems.

— Written by Bill Petersen, Identifix GM Specialist
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