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2000 Silverado CO235

Recently I was working with a technician from northern Minnesota on a 2000 Silverado. The Anti-lock Brake Light was on and a code C0235 was stored. The tech said that the chart indicated it was a rear speed sensor code but this truck doesn't have rear speed sensors.

This is a good example of different systems sharing information. In this case, the speed sensor on the transmission or transfer case sends a signal to the Powertrain Control Module (PCM), which then uses the reading for transmission shifting and other calculations. It also sends the reading to the dash cluster for speedometer and odometer operation, as well as to the Electronic Brake Control Module (EBCM) for rear speed signal (the rear wheels are on one channel for braking, unlike the front wheels that are controlled on two separate channels).

For the most part, there are two different ways modules share information: 1) By sending the information to another module by way of data line and, 2) By using a dedicated wire, as in the case of this Silverado and the rear speed signal.

On the Silverado, the PCM has a Yellow/Black wire that sends a pulsed voltage signal to the EBCM. The EBCM counts the pulses to determine the rear wheel speed.

Knowing how this information is transferred can help with diagnostics. The trouble code chart directed us to disconnect the EBCM and check voltage on the Yellow/Black wire. That is the clue to the direction the voltage is coming from. Sometimes the sending module will produce a pulsing voltage. Other times the receiving module will send out voltage and the module sending the signal will pulse it to ground (this sounds more confusing than it is). It will be very helpful to skim through the flow chart to try and determine which way the voltage is traveling. Be sure the flow chart is not asking you to check for voltage, only to have the next line say, 'Repair the wire shorted to voltage.'

In the case of the Silverado, the PCM should put out about 10.0 volts to the EBCM. A quick voltage test at the EBCM revealed no voltage on the Yellow/Black wire. Next, the voltage at the PCM was tested and found to be 10.0 volts. Great—a broken wire or bad connection. If there had been no voltage at the PCM as well, we would have tested the Yellow/Black wire for a short to ground or to another wire before condemning the PCM.

Most of today's cars and trucks are using shared information in as many systems as possible. This greatly reduces the cost and complexity of extra sensors, connections and miles of wiring, not to mention it can help shorten diagnostic time like it did on this Silverado. Seeing that the speedometer worked meant not having to check the speed sensor, reluctor, or wires and connections to the PCM.

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