

Wheels: We have an e-mail from H.S. who says “I have a 1999 Buick Regal LS with 46,000 miles and is out of warranty. Last December, three warning lights came on intermittently – service engine soon, trac off, and anti-lock. I had it serviced by a Buick dealer who replaced the left front hub and sensor. The next day the warning lights reappeared. Then the dealer replaced a harness from the sensor assembly. A month later, more warning lights, and the harness was replaced again. Now, more warning lights. I am out \$600 and the problem still exists. Any suggestions? Is there a TSB available for this problem? The dealer mechanic says, no.”

Halderman: I checked for Technical Service Bulletins (TSB) and the service technician is correct. There are none for your vehicle that discuss the ABS system. Unfortunately, wheel speed sensors are a common failure. They “live” in a hazardous area under the vehicle and are subjected to road debris and other possible dangers. The wiring uses very fine copper strands to increase the flexibility. The sensor can be checked for resistance (about 1000 ohms and not shorted to ground). The sensor should also be able to generate at least 100 mV AC if the wheel is spun. My suggestion would be to try to remember when the fault occurs, such as turning left into a driveway or other similar situation. This information will help the service technician verify the problem. After the problem has been verified, the technician should inspect and test all related components. The problem could be a wheel speed sensor on another wheel. It is hard for me to diagnose without knowing the trouble codes. If you lose a wheel speed sensor, the traction control will be disabled and torque limiting will also be disabled.

Wheels: What do you mean by torque limiting?

Halderman: Many vehicles equipped with traction control use the vehicle computer to eliminate the drive wheels from slipping (spinning) when accelerating. Some vehicles, such as Honda/Acura, simply apply the wheel brake to the wheel that is spinning which causes the additional torque to be applied to the drive wheel on the other side of the vehicle. This can occur as rapidly as 20 times per second and is effective at low vehicle speeds (about 25 MPH or less). Many vehicles, such as the reader’s Buick Regal, use the vehicle computer to first reduce engine torque before applying the wheel broke to slow the speed wheel. The vehicle computer can reduce engine torque in several ways including:

- retarding ignition timing
- increasing the amount of exhaust gases to be recirculated into the cylinder
- disabling one or more fuel injectors

If the drive wheel(s) is still spinning during acceleration, the vehicle computer will then command the wheel brake to be applied in short bursts to help the drive wheels gain traction.

Wheels: If the computer reduces engine power, will the driver sense this loss?

Halderman: Yes, the driver will sense that the vehicle is slowing and not accelerating as they think it should. The amber “traction” or “trac” light will come on or flash during the time the computer is trying to restore traction. A noise or vibration will also be heard or felt when the computer is applying the wheel brakes. The driver can prevent all of this intrusive computer activation of the brakes by simply reducing the force on the accelerator.

