

**DTC C1233: RIGHT FRONT WHEEL SPEED SENSOR CIRCUIT OPEN OR SHORTED**

1. Perform diagnostic system check. See DIAGNOSTIC SYSTEM CHECK. After performing diagnostic system check, go to next step.
2. Turn ignition off. Spray right front wheel speed sensor jumper harness thoroughly with a 5 percent saltwater solution (2 teaspoons of salt to 12 ounces of water). Disconnect EBCM/EBTCM connector C1 ("W" body), connector C2 ("J" body, Cutlass and Malibu) or 32-pin connector (Achieva, Alero, Grand Am and Skylark). See **EBCM/EBTCM LOCATION** under REMOVAL & INSTALLATION. Using DVOM, measure resistance between speed sensor signal high circuit and speed sensor signal low circuit of EBCM/EBTCM connector. On "W" body, resistance should be 1020-1137 ohms at 68°F (20°C). On "J" body, Achieva, 1998 Grand Am and Skylark, resistance should be 1530-1870 ohms at 68°F (20°C). On Alero, Cutlass, 1999 Grand Am and Malibu, resistance should be 950-1250 ohms at 68°F (20°C). If resistance falls within this specified range, go to next step. If resistance is not within this specified range, go to step **11**).
3. Using DVOM, measure resistance between speed sensor signal low circuit of EBCM/EBTCM connector (C1, C2 or 32-pin connector) and ground. If resistance is infinite, go to next step. If resistance is not infinite, go to step **14**).
4. Turn ignition on, with engine off. Using DVOM, measure voltage between speed sensor signal low circuit of EBCM/EBTCM connector (C1, C2 or 32-pin connector) and ground. If voltage is not 0-1 volt, go to next step. If voltage is 0-1 volt, go to step **7**).
5. Turn ignition off. Disconnect right front wheel speed sensor at sensor connector. Turn ignition on, with engine off. Using DVOM, measure voltage between speed sensor signal low circuit of EBCM/EBTCM connector (C1, C2 or 32-pin connector) and ground. If voltage is not 0-1 volt, go to step **19**). If voltage is 0-1 volt, go to next step.
6. Using DVOM, measure voltage between speed sensor signal high circuit of EBCM/EBTCM connector (C1, C2 or 32-pin connector) and ground. If voltage is 0-1 volt, go to step **31**). If voltage is not 0-1 volt, go to step **20**).
7. Turn ignition off. Check EBCM/EBTCM connector for poor terminal contact, corrosion or damage which could result in open, short to voltage, or short to ground. If connector is faulty, go to step **27**). If connector is okay, go to next step.
8. Check wiring circuits between wheel speed sensor and EBCM/EBTCM for damage which could result in open, short to voltage or, short to ground between circuits. If wiring is faulty, go to step **21**). If wiring is okay, go to next step.
9. Check wiring connectors between wheel speed sensor and EBCM/EBTCM for damage which could result in open circuit, short to voltage, or short to ground between circuits. If connectors are faulty, go to step **22**). If connectors are okay, go to next step.
10. Reconnect EBCM/EBTCM connector. Reconnect right front wheel speed sensor connector. Install scan tool. Test drive vehicle faster than 15 MPH for at least 30 seconds. Using scan tool, display DTCs. If DTC C1233 sets as current, go to step **30**). If DTC C1233 does not set as current, go to step **31**).
11. Disconnect right front wheel speed sensor directly at sensor connector. Using DVOM, measure resistance of speed sensor signal low circuit of EBCM/EBTCM connector (C1, C2 or 32-pin connector) and right front wheel speed sensor connector. If resistance is 0-2 ohms, go to next step. If resistance is not 0-2 ohms, go to step **23**).
12. Using DVOM, measure resistance of speed sensor signal high circuit between EBCM/EBTCM connector and right front wheel speed sensor connector. If resistance is 0-2 ohms, go to next step. If resistance is not

0-2 ohms, go to step **24**).

13. Using DVOM, measure resistance between terminals of right front wheel speed sensor connector. On "W" body, resistance should be 1020-1137 ohms at 68°F (20°C). On "J" body, Achieva, 1998 Grand Am and Skylark, resistance should be 1530-1870 ohms at 68°F (20°C). On Alero, Cutlass, 1999 Grand Am and Malibu, resistance should be 950-1250 ohms at 68°F (20°C). If resistance falls within this specified range, go to step **31**). If resistance is not within this specified range, go to step **28**).
14. Disconnect right front wheel speed sensor jumper harness connector. Using DVOM, measure resistance between speed sensor signal low circuit of EBCM/EBTCM connector and ground. If resistance is infinite, go to next step. If resistance is not infinite, go to step **25**).
15. Using DVOM, measure resistance between speed sensor signal high circuit of EBCM/EBTCM connector and ground. If resistance is infinite, go to next step. If resistance is not infinite, go to step **26**).
16. Spray right front wheel speed sensor jumper harness thoroughly with a 5 percent saltwater solution (2 teaspoons of salt to 12 ounces of water). Disconnect right front wheel speed sensor directly at sensor connector. Using DVOM, measure resistance between speed sensor signal high circuit of right front wheel speed sensor jumper harness connector and ground. If resistance is infinite, go to next step. If resistance is not infinite, go to step **29**).
17. Using DVOM, measure resistance between speed sensor signal low circuit of right front wheel speed sensor jumper harness connector and ground. If resistance is infinite, go to next step. If resistance is not infinite, go to step **29**).
18. Using DVOM, measure resistance between speed sensor signal high circuit of right front wheel speed sensor connector and ground. If resistance is infinite, go to step **31**). If resistance is not infinite, go to step **28**).
19. Repair short to voltage in speed sensor signal low circuit between EBCM/EBTCM and right front wheel speed sensor jumper harness. If short to voltage is found in right front wheel speed sensor jumper harness, replace jumper harness.
20. Repair short to voltage in speed sensor signal high circuit between EBCM/EBTCM and right front wheel speed sensor jumper harness. If short to voltage is found in right front wheel speed sensor jumper harness, replace jumper harness.
21. Repair wiring circuits between wheel speed sensor and EBCM/EBTCM. If wiring circuit damage is found in right front wheel speed sensor jumper harness, replace jumper harness.
22. Repair wiring connectors between wheel speed sensor and EBCM/EBTCM. If wiring connector damage is found in right front wheel speed sensor jumper harness, replace jumper harness.
23. Repair open or high resistance in speed sensor signal low circuit between EBCM/EBTCM and right front wheel speed sensor. If open or high resistance is found in right front wheel speed sensor jumper harness, replace jumper harness.
24. Repair open or high resistance in speed sensor signal high circuit between EBCM/EBTCM and right front wheel speed sensor. If open or high resistance is found in right front wheel speed sensor jumper harness, replace jumper harness.
25. Repair short to ground in speed sensor signal low circuit between EBCM/EBTCM and right front wheel speed sensor jumper harness. If short to ground is found in right front wheel speed sensor jumper harness, replace jumper harness.
26. Repair short to ground in speed sensor signal high circuit between EBCM/EBTCM and right front wheel speed sensor jumper harness. If short to ground is found in right front wheel speed sensor jumper harness, replace jumper harness.

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27. Replace all faulty terminals or connectors.
28. Replace right front wheel speed sensor.
29. Replace right front wheel speed sensor jumper harness.
30. Replace EBCM/EBTCM. See **ELECTRONIC BRAKE CONTROL MODULE/ ELECTRONIC BRAKE & TRACTION CONTROL MODULE (EBCM/EBTCM)** under REMOVAL & INSTALLATION.
31. Malfunction is not currently present. An intermittent may be caused by a poor connection, rubbed through wire insulation, or a broken wire inside insulation. Frequency of malfunction can be determined by using enhanced diagnostic function of scan tool.