45.6 SPN 84/FMI 21 – EPA10 – GHG14

Vehicle Speed Sensor Erratic

SPN 84/FMI 21	
Description	Vehicle Speed Sensor Erratic
Monitored Parameter	Vehicle Speed Sensor (VSS)
Typical Enabling Conditions	RPM greater than 1500, Torque Demand On
Monitor Sequence	None
Execution Frequency	Continuous when enabling conditions met
Typical Duration	10 Seconds
Dash Lamps	MIL
Engine Reaction	
Verification	RPM greater than 1500, Torque Demand On

1. Are there any battery faults (SPN 168 FMI any) or Controller Area Network (CAN) faults (SPN 625 FMI any) present?
   - 1.a Yes; repair those faults first.
   - 1.b No; Go to step 2.
2. Has the Common Powertrain Controller (CPC) been recently reprogrammed?
   - 2.a Yes; ensure the VSS parameters are configured correctly for the vehicle application. If OK, Go to step 3.
   - 2.b No; Go to step 3.
3. Is the VSS hardwired or transmitted via J1939?
   - 3.a Hardwired; Go to step 4.
   - 3.b J1939; refer to the Application and Installation Manual for the correct parameter configuration. If configuration is correct, refer to Original Equipment Manufacturer (OEM) material for J1939 VSS troubleshooting.
4. Disconnect the VSS harness connector. Refer to OEM literature for location.
5. Inspect the VSS harness connector for bent, spread, or corroded pins.
   - 5.a If pin damage is found, repair as necessary.
   - 5.b If no pin damage is found, Go to step 6.
6. Disconnect CPC connector #3.
7. Measure the resistance between CPC connector #3 pins 13 and 14.
   - 7.a If resistance is less than 1K ohms, repair short between CPC connector #3 pins 13 and 14 and the VSS connector.
   - 7.b If the resistance is greater than 1K ohms, Go to step 8.
8. Measure the resistance between CPC connector #3 pin 13 and the VSS+ harness connection.
   - 8.a If resistance is greater than 1K ohms, repair wire between CPC connector #3 pin 13 and the VSS+ harness connection.
   - 8.b If the resistance is greater than 1K ohms, Go to step 9.
9. Measure the resistance between CPC connector #3 pin 14 and the VSS- harness connection.
   - 9.a If resistance is greater than 10 ohms, repair wire between CPC connector #3 pin 14 and the VSS- harness connection.
   - 9.b If the resistance is greater than 1K ohms, refer to OEM literature for VSS sensor diagnostics.