SPN 132

Suspect Parameter Number (SPN) and Failure Mode Indicator (FMI) Description

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Circuit Description

The engine control module (ECM) compares the mass air flow (MAF) sensor signal to other engine components to determine if the MAF sensor is functioning properly. The ECM compares values from the throttle position sensor (TPS), intake air temperature (IAT), and engine speed to determine if there is a conflict with the MAF sensor. The ECM also compares values from the manifold absolute pressure (MAP), IAT, and engine speed to determine speed density calculations and determines if the MAF signal matches the calculation.

Conditions to Run SPN

SPN 132–2 MAF Sensor Conflict

The SPN runs when the ignition is ON, IAT is valid, TPS is valid, MAF is valid, and engine speed is valid.

SPN 132–7 MAF Sensor/Speed Density Conflict

The SPN runs when the ignition is ON, IAT is valid, MAP is valid, MAF is valid, and engine speed is valid.
Conditions to Set SPN

SPN 132–2 MAF Sensor Conflict

The ECM suspects a fault if the difference between the MAF sensor value and MAF alpha-N calculation is greater than 60,000 g/s and the ratio of the MAF sensor value to the MAF alpha-N calculation is greater than a threshold 1.25 or is less than 0.4.

SPN 132–7 MAF Sensor/Speed Density Conflict

The ECM suspects a fault if the difference between the MAF value and MAF speed density calculation is greater than 65 g/s.

Action Taken When SPN Sets

SPN 132–2 MAF Sensor Conflict

- The ECM will turn ON the malfunction indicator light (MIL)
- 132-2 is a Type B SPN

SPN 132–7 MAF Sensor/Speed Density Conflict

- The ECM will turn ON the malfunction indicator light (MIL)
- 132-7 is a Type B SPN

Diagnostic Reference

- Review Strategy Based Diagnosis for an overview of the diagnostic approach.
- Diagnostic Procedure Instructions provides an overview of each diagnostic category.
- Perform the Diagnostic System Check prior to using this diagnostic.
- Test for intermittent or poor connections.
- Review Schematics and Connector End Views to locate test points.
- Review the SPN Type, Indicator Lamp Definitions, and Conditions to Clear the SPN/Indicator Lamp.
Diagnostic Tips

- Test for intermittent or poor connections.
- Verify the air inlet is properly assembled.
- Test for vacuum leaks

Required Tools

- Terminal Test Probe Kit
- Fused Jumper
- Digital Multi-meter
- High Impedance Test Lamp
- Electronic Service Tool

Circuit Diagnostics

WARNING! To prevent bodily injury or death, stay away from hot engine surfaces and rotating engine components.

1. Verify no other SPNs are present.
   - If other SPNs are present, repair as necessary.
   - If other SPNs are NOT present, go to step 2

2. Verify the air intake system is assembled properly and there are no vacuum leaks.
   - If any of the above conditions are present, repair as necessary.
   - If the above conditions are NOT present, go to step 3

3. Ignition OFF, disconnect the harness connector at the MAF sensor, Ignition ON, verify battery voltage between the MAF sensor voltage supply circuit terminal D and ground.
   - If less than battery voltage, repair the high resistance in the circuit.
If battery voltage, go to step 4

4. Verify less than 5 Ω between the MAF sensor ground circuit terminal E and ground.

- If 5 Ω or greater, repair the high resistance in the circuit.
- If less than 5 Ω, replace the MAF sensor assembly.