

AIR FUEL RATIO (A/F) SENSOR, HEATED OXYGEN SENSOR (HO2S) INSPECTION [L3 Turbo]

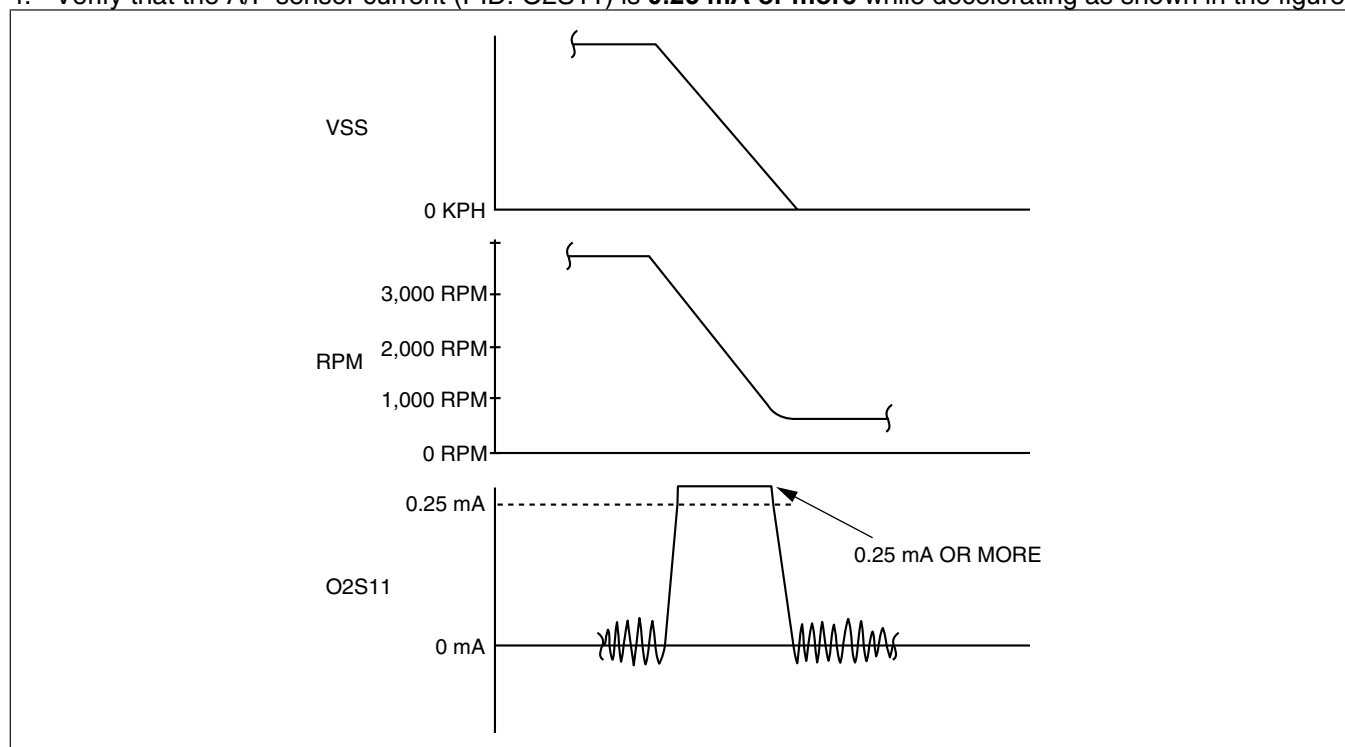
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Note

- Before performing the following inspection, make sure to follow the procedure as indicated in the troubleshooting flowchart. (See HOW TO USE THIS MANUAL.)

A/F Sensor Current Inspection

- Warm up the engine to normal operating temperature.
- Using the M-MDS, monitor the following:
 - Vehicle speed (PID: VSS)
 - Engine speed (PID: RPM)
 - A/F sensor current (PID: O2S11)
- Drive the vehicle and decelerate the engine speed by releasing the accelerator pedal fully when the engine speed is **3,000 rpm or more**.
- Verify that the A/F sensor current (PID: O2S11) is **0.25 mA or more** while decelerating as shown in the figure.



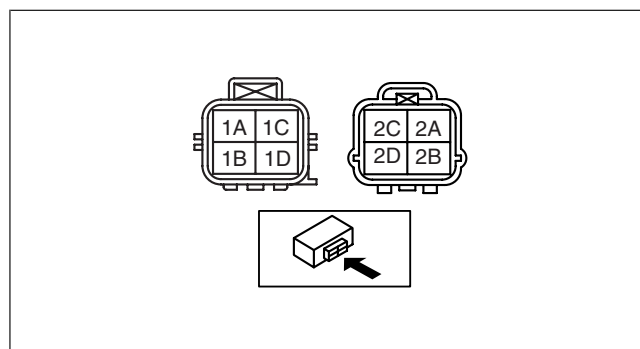
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- If not within the specification, inspect the A/F sensor for an open or short circuit. (See A/F Sensor Circuit Open/Short Inspection.) Then if there is no malfunction in the wiring harness, replace the A/F sensor.

A/F Sensor Heater Resistance Inspection

- Disconnect the A/F sensor connector.
- Measure the resistance between A/F sensor terminals 2B and 2D.
 - If not within the specification, replace the A/F sensor. (See AIR FUEL RATIO (A/F) SENSOR, HEATED OXYGEN SENSOR (HO2S) REMOVAL/INSTALLATION [L3 Turbo].)

A/F sensor heater resistance
1—10 ohms

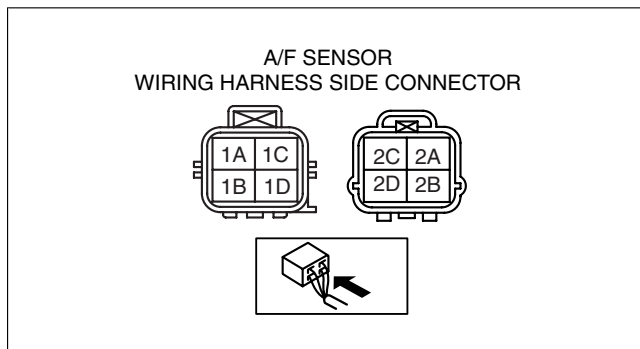


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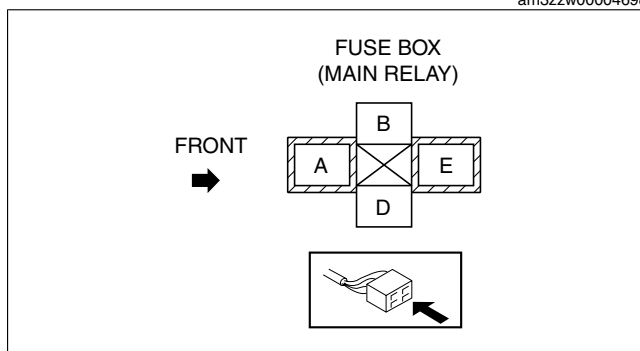
A/F Sensor Circuit Open/Short Inspection

- Disconnect the PCM connector.
- Disconnect the A/F sensor connector.

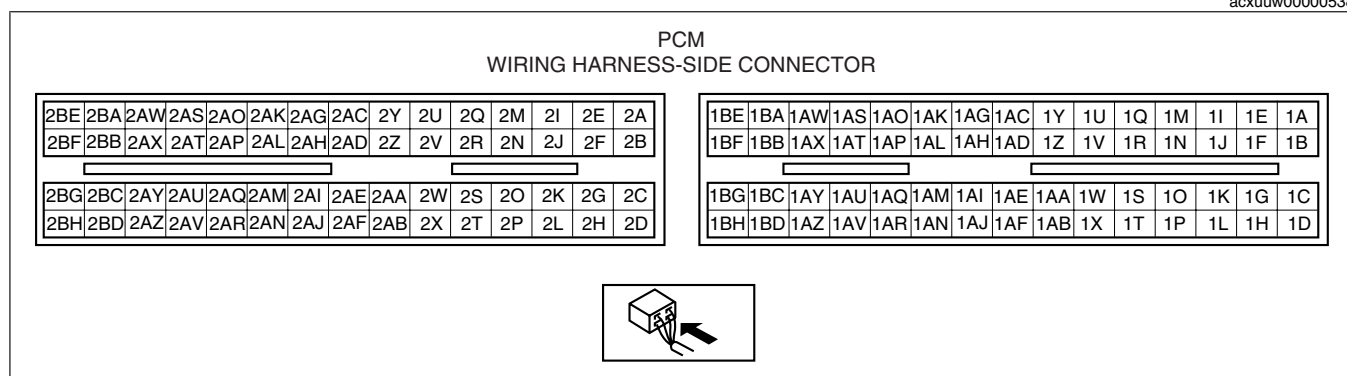
3. Inspect the following wiring harnesses for an open or short circuit. (Continuity inspection)



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Open circuit

- If there is no continuity in the following wiring harnesses, there is an open circuit. Repair or replace the wiring harness.
 - A/F sensor terminal 1A and PCM terminal 2AD
 - A/F sensor terminal 1B and PCM terminal 2AC
 - A/F sensor terminal 1C and PCM terminal 2Z
 - A/F sensor terminal 2A and PCM terminal 2M
 - A/F sensor terminal 2B and main relay terminal A
 - A/F sensor terminal 2C and PCM terminal 2Y
 - A/F sensor terminal 2D and PCM terminal 2C

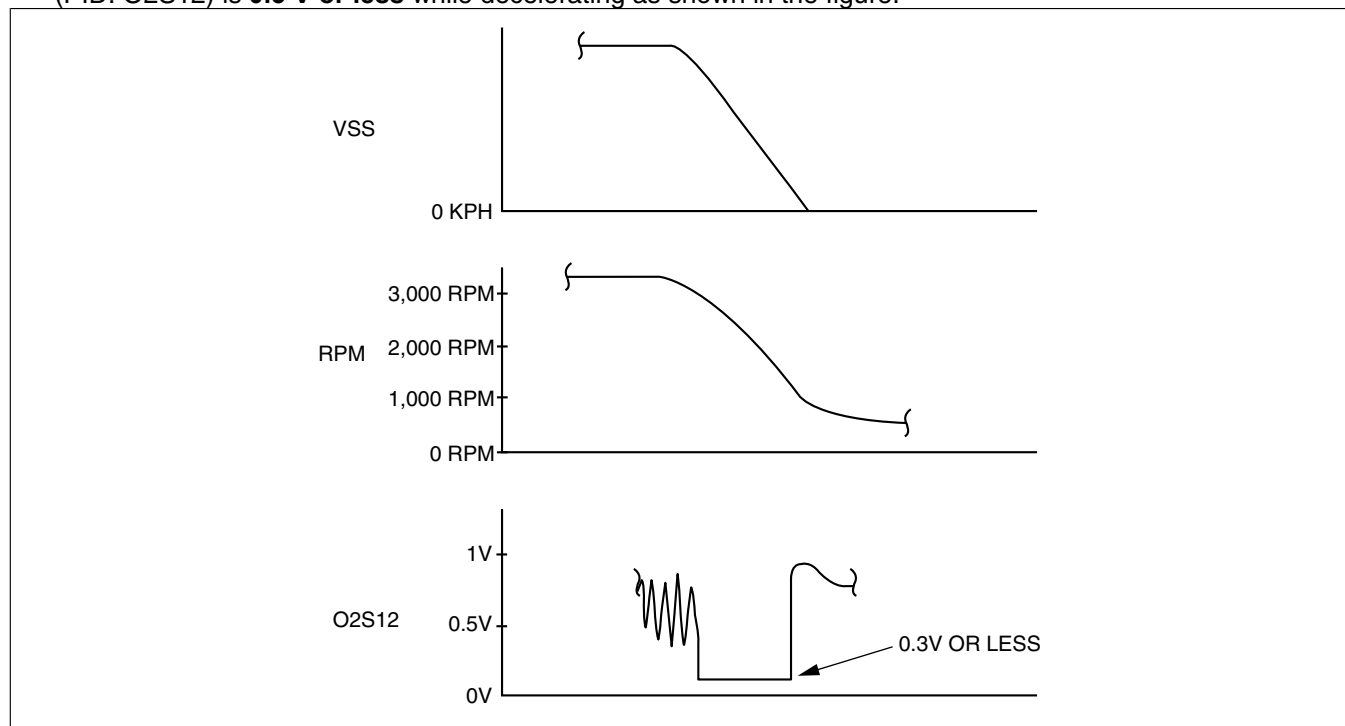
Short circuit

- If there is continuity in the following wiring harnesses, there is a short circuit. Repair or replace the wiring harness.
 - A/F sensor terminal 1A and body ground
 - A/F sensor terminal 1A and power supply
 - A/F sensor terminal 1B and body ground
 - A/F sensor terminal 1B and power supply
 - A/F sensor terminal 1C and body ground
 - A/F sensor terminal 1C and power supply
 - A/F sensor terminal 2A and power supply
 - A/F sensor terminal 2B and body ground
 - A/F sensor terminal 2C and body ground
 - A/F sensor terminal 2C and power supply
 - A/F sensor terminal 2D and body ground
 - A/F sensor terminal 2D and power supply

HO2S Voltage Inspection

1. Warm up the engine to normal operating temperature.

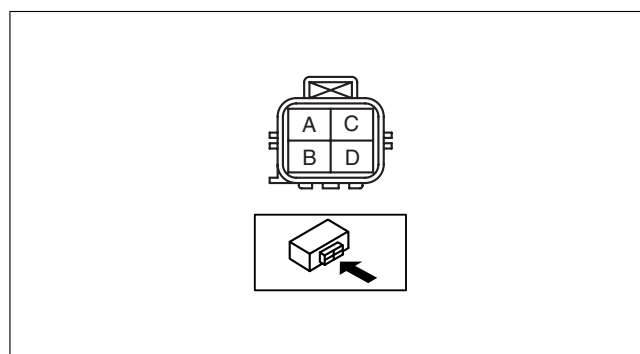
2. Using the M-MDS, monitor the following:
 - Vehicle speed (PID: VSS)
 - Engine speed (PID: RPM)
 - HO2S voltage (PID: O2S12)
3. Drive the vehicle and decelerate the engine speed by releasing the accelerator pedal fully when the engine speed is **3,000 rpm or more**.
4. Verify that the HO2S outputs a voltage of **0.6 V or more**, one time or more, then verify that the HO2S voltage (PID: O2S12) is **0.3 V or less** while decelerating as shown in the figure.



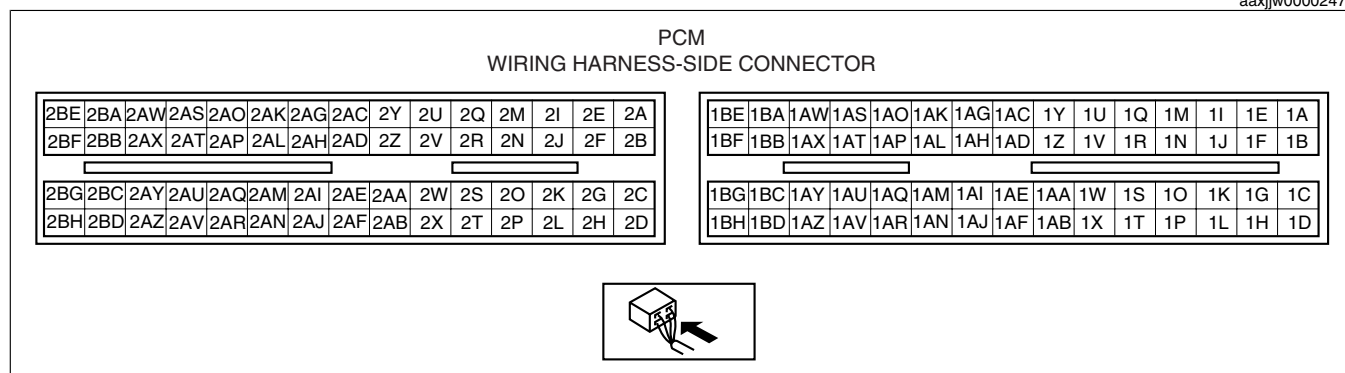
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- If not within the specification, inspect the HO2S for an open or short circuit. (See HO2S Circuit Open/Short Inspection.) Then if there is no malfunction in the wiring harness, replace the HO2S.

HO2S Circuit Open/Short Inspection



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1. Disconnect the PCM connector.
2. Disconnect the HO2S connector.

3. Inspect the following wiring harnesses for an open or short circuit. (Continuity inspection)

Open circuit

- If there is no continuity, there is an open circuit. Repair or replace the wiring harness.
 - HO2S terminal A and PCM terminal 2Q
 - HO2S terminal B and PCM terminal 1BC

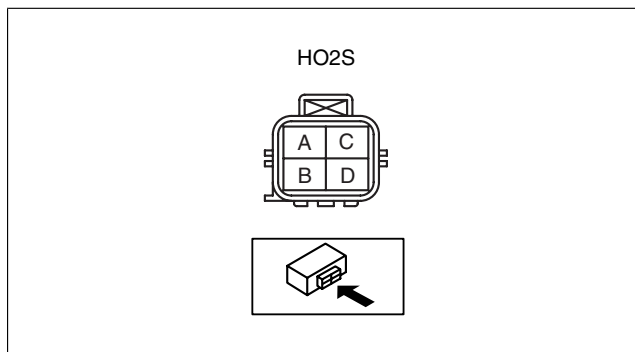
Short circuit

- If there is continuity, there is a short circuit. Repair or replace the wiring harness.
 - HO2S terminal A and body ground
 - HO2S terminal A and power supply
 - HO2S terminal B and power supply

HO2S Heater Resistance Inspection

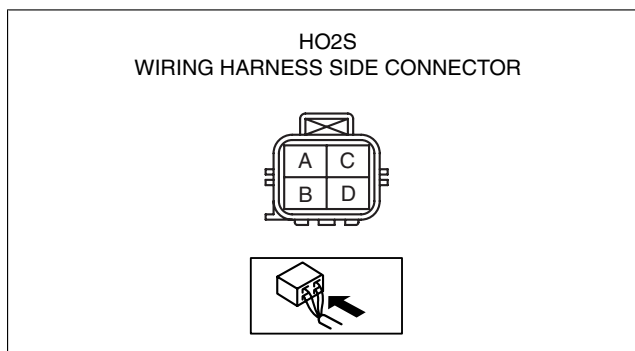
1. Disconnect the HO2S connector.
2. Measure the HO2S resistance between terminals C and D.
 - If not within the specification, replace the HO2S.

HO2S heater resistance
2—50 ohms

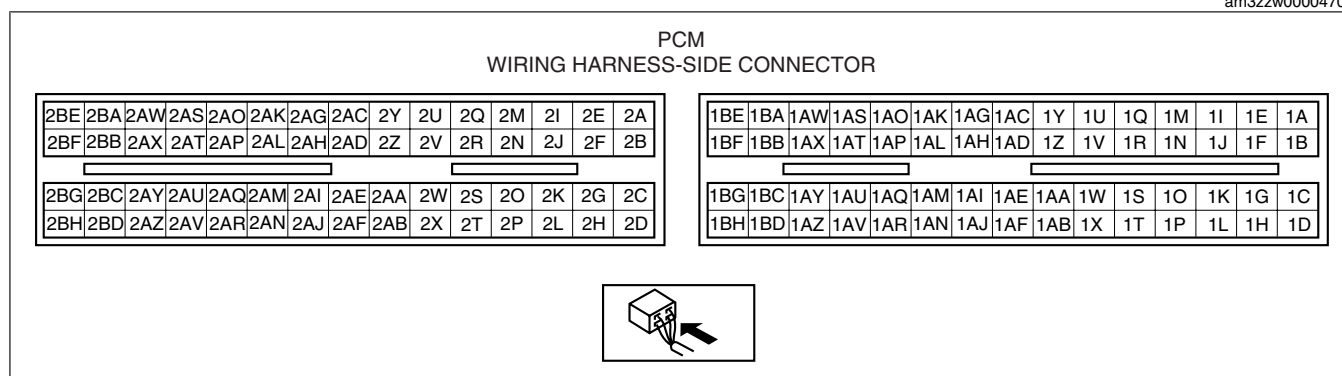


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HO2S Circuit Open/Short Inspection (Heater)



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1. Disconnect the PCM connector.
2. Disconnect the HO2S connector.
3. Inspect the following wiring harnesses for an open or short circuit. (Continuity check)

Open circuit

- If there is no continuity, there is an open circuit. Repair or replace the wiring harness.
 - HO2S terminal C and ignition switch
 - HO2S terminal D and PCM terminal 2D

Short circuit

- If there is no continuity, there is a short circuit. Repair or replace the wiring harness.
 - HO2S terminal A and body ground
 - HO2S terminal B and power supply
 - HO2S terminal B and body ground