

2012 - Mazda6 - Engine

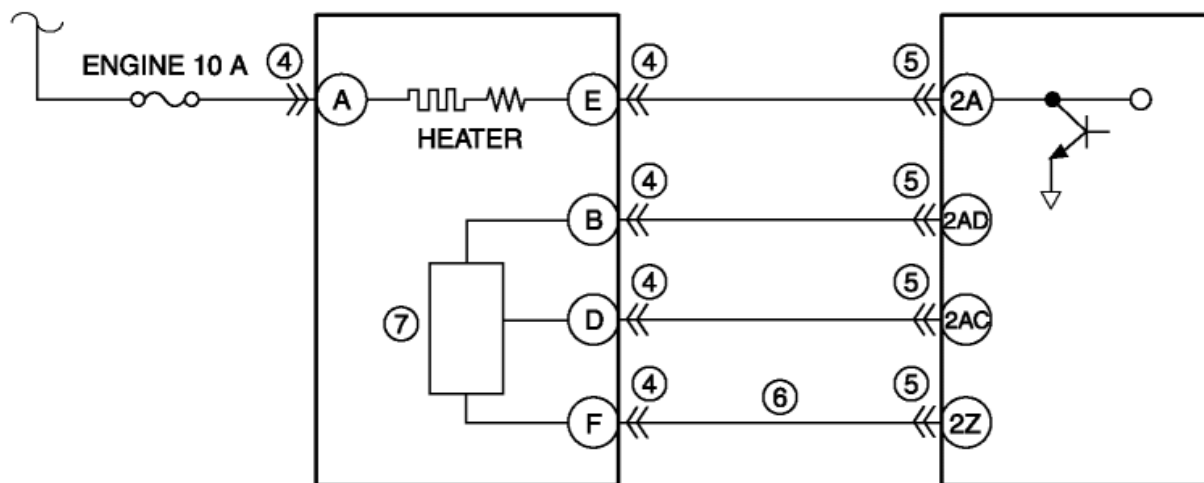
DTC P2243:00 [MZR 2.5]

DTC P2243:00	A/F sensor reference voltage circuit open
DETECTION CONDITION	• The PCM monitors the A/F sensor signal voltage at PCM terminal 2Z. If the either of the following condition is met, the PCM determines that the A/F sensor reference voltage circuit is open. ▪ The PCM terminal 2Z voltage is specified voltage or more for 5 s. ▪ The PCM detects DTC P0030:00 or P0134:00 while the pending code P2243:00 is stored. MONITORING CONDITIONS • EGR System, A/F sensor heater, HO2S heater, A/F sensor, HO2S and TWC Repair Verification Drive Mode • Following conditions are met: ▪ Engine is running or ignition switch is ON ▪ Battery voltage: 11—18 V ▪ A/F sensor element impedance: below 220 ohm Diagnostic support note • This is a continuous monitor (A/F sensor, HO2S). • The MIL illuminates if the PCM detects the above malfunction condition in two consecutive drive cycle or in one drive cycle while the DTC for the same malfunction has been stored in the PCM. • PENDING CODE is available if the PCM detects the above malfunction condition during the first drive cycle. • FREEZE FRAME DATA (Mode 2)/Snapshot data is available. • The DTC is stored in PCM memory.
POSSIBLE CAUSE	• A/F sensor connector or terminal malfunction • PCM connector or terminal malfunction • Open circuit in wiring harness between A/F sensor terminal F and PCM terminal 2Z • A/F sensor malfunction • PCM malfunction

MAIN RELAY
TERMINAL D

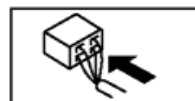
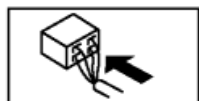
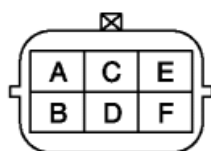
A/F SENSOR

PCM



A/F SENSOR
WIRING HARNESS-SIDE
CONNECTOR

PCM WIRING HARNESS-SIDE CONNECTOR



Diagnostic procedure

STEP	INSPECTION	ACTION
1	IDENTIFY TRIGGER DTC FOR FREEZE FRAME DATA (MODE 2) Is the DTC P2243:00 on FREEZE FRAME DATA (Mode 2)?	Yes Go to the next step. No Go to troubleshooting procedures for DTC on FREEZE FRAME DATA (Mode 2). (See DTC TABLE [MZR 2.5] .)
2	VERIFY FREEZE FRAME DATA (MODE 2)/ SNAPSHOT DATA AND DIAGNOSTIC MONITORING TEST RESULTS HAVE BEEN RECORDED Have the FREEZE FRAME DATA (Mode 2)/snapshot data and DIAGNOSTIC MONITORING TEST RESULTS (A/F sensor, HO2S related) been recorded?	Yes Go to the next step. No Record the FREEZE FRAME DATA (Mode 2)/snapshot data and DIAGNOSTIC MONITORING TEST RESULTS on the repair order, then go to the next step.
3	VERIFY RELATED REPAIR INFORMATION AVAILABILITY - Verify related Service Bulletins and/or on-line repair information availability. - Is any related repair information available?	Yes Perform repair or diagnosis according to the available repair information. • If the vehicle is not repaired, go to the next step. No Go to the next step.
4	INSPECT A/ F SENSOR CONNECTOR CONDITION	Yes Repair or replace the terminal and/or connector, then go

	• Switch the ignition to off. • Disconnect the A/F sensor connector. • Inspect for poor connection (such as damaged/pulled-out pins, corrosion). • Is there any malfunction?	to Step 8.
		No Go to the next step.
5	INSPECT PCM CONNECTOR CONDITION • Disconnect the PCM connector. • Inspect for poor connection (such as damaged/pulled-out pins, corrosion). • Is there any malfunction?	Yes Repair or replace the terminal and/or connector, then go to Step 8. No Go to the next step.
6	INSPECT A/ F SENSOR SIGNAL CIRCUIT FOR OPEN CIRCUIT • A/F sensor and PCM connectors are disconnected. • Inspect for continuity between A/F sensor terminal F (wiring harness-side) and PCM terminal 2Z (wiring harness-side). • Is there continuity?	Yes Go to the next step. No Repair or replace the wiring harness for a possible open circuit, then go to Step 8.
7	INSPECT A/ F SENSOR • Reconnect the A/F sensor and PCM connectors. • Inspect the A/F sensor. (See AIR FUEL RATIO (A/ F) SENSOR INSPECTION [MZR 2.5].) • Is there any malfunction?	Yes Replace the A/F sensor, then go to the next step. (See AIR FUEL RATIO (A/ F) SENSOR REMOVAL/ INSTALLATION [MZR 2.5] .) No Go to the next step.
8	VERIFY DTC TROUBLESHOOTING COMPLETED • Make sure to reconnect all disconnected connectors. • Clear the DTC from the PCM memory using the M-MDS. (See AFTER REPAIR PROCEDURE [MZR 2.5].) • Perform the Drive Mode 03 (EGR System, A/F sensor heater, HO2S heater, A/F sensor, HO2S and TWC Repair Verification Drive Mode). (See OBD-II DRIVE MODE [MZR 2.5].) • Is the PENDING CODE for this DTC present?	Yes Repeat the inspection from Step 1. • If the malfunction recurs, replace the PCM. (See PCM REMOVAL/ INSTALLATION [MZR 2.5].) Go to the next step. No Go to the next step.
9	VERIFY AFTER REPAIR PROCEDURE • Perform the "AFTER REPAIR PROCEDURE". (See AFTER REPAIR PROCEDURE [MZR 2.5].) • Are any DTCs present?	Yes Go to the applicable DTC inspection. (See DTC TABLE [MZR 2.5] .) No DTC troubleshooting completed.

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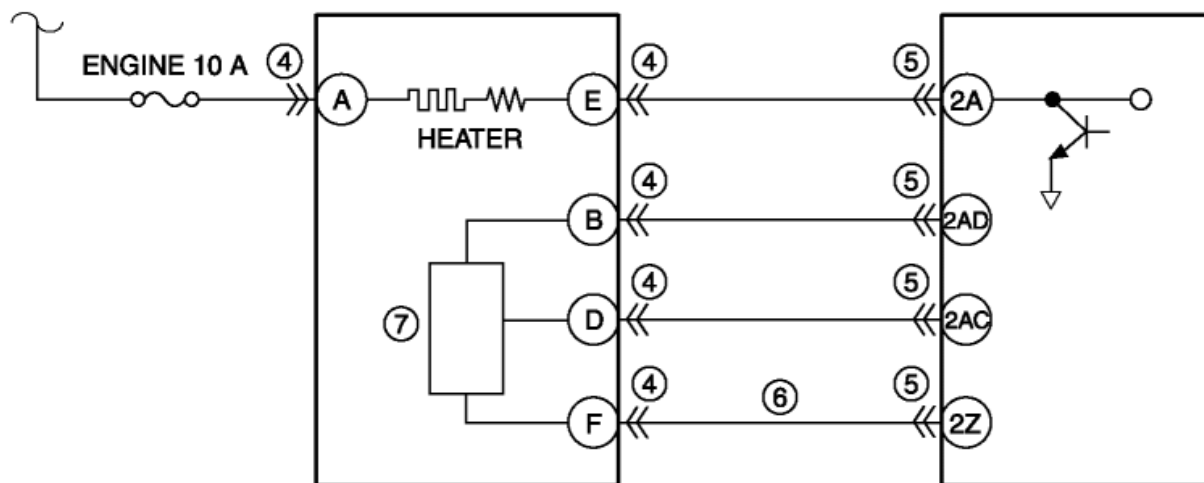
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DETECTION CONDITION	• The PCM monitors the A/F sensor signal voltage at PCM terminal 2Z. If the either of the following condition is met, the PCM determines that the A/F sensor reference voltage circuit is open. ▪ The PCM terminal 2Z voltage is specified voltage or more for 5 s. ▪ The PCM detects DTC P0030:00 or P0134:00 while the pending code P2243:00 is stored. MONITORING CONDITIONS • EGR System, A/F sensor heater, HO2S heater, A/F sensor, HO2S and TWC Repair Verification Drive Mode • Following conditions are met: ▪ Engine is running or ignition switch is ON ▪ Battery voltage: 11—18 V ▪ A/F sensor element impedance: below 220 ohm Diagnostic support note • This is a continuous monitor (A/F sensor, HO2S). • The MIL illuminates if the PCM detects the above malfunction condition in two consecutive drive cycle or in one drive cycle while the DTC for the same malfunction has been stored in the PCM. • PENDING CODE is available if the PCM detects the above malfunction condition during the first drive cycle. • FREEZE FRAME DATA (Mode 2)/Snapshot data is available. • The DTC is stored in PCM memory.
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MAIN RELAY
TERMINAL D

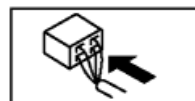
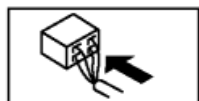
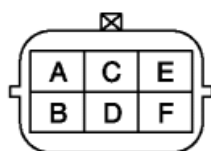
A/F SENSOR

PCM



A/F SENSOR
WIRING HARNESS-SIDE
CONNECTOR

PCM WIRING HARNESS-SIDE CONNECTOR



Diagnostic procedure

STEP	INSPECTION	ACTION
1	IDENTIFY TRIGGER DTC FOR FREEZE FRAME DATA (MODE 2) Is the DTC P2243:00 on FREEZE FRAME DATA (Mode 2)?	Yes Go to the next step. No Go to troubleshooting procedures for DTC on FREEZE FRAME DATA (Mode 2). (See DTC TABLE [MZR 2.5] .)
2	VERIFY FREEZE FRAME DATA (MODE 2)/ SNAPSHOT DATA AND DIAGNOSTIC MONITORING TEST RESULTS HAVE BEEN RECORDED Have the FREEZE FRAME DATA (Mode 2)/snapshot data and DIAGNOSTIC MONITORING TEST RESULTS (A/F sensor, HO2S related) been recorded?	Yes Go to the next step. No Record the FREEZE FRAME DATA (Mode 2)/snapshot data and DIAGNOSTIC MONITORING TEST RESULTS on the repair order, then go to the next step.
3	VERIFY RELATED REPAIR INFORMATION AVAILABILITY - Verify related Service Bulletins and/or on-line repair information availability. - Is any related repair information available?	Yes Perform repair or diagnosis according to the available repair information. • If the vehicle is not repaired, go to the next step. No Go to the next step.
4	INSPECT A/ F SENSOR CONNECTOR CONDITION	Yes Repair or replace the terminal and/or connector, then go

	• Switch the ignition to off. • Disconnect the A/F sensor connector. • Inspect for poor connection (such as damaged/pulled-out pins, corrosion). • Is there any malfunction?	to Step 8.
		No Go to the next step.
5	INSPECT PCM CONNECTOR CONDITION • Disconnect the PCM connector. • Inspect for poor connection (such as damaged/pulled-out pins, corrosion). • Is there any malfunction?	Yes Repair or replace the terminal and/or connector, then go to Step 8. No Go to the next step.
6	INSPECT A/ F SENSOR SIGNAL CIRCUIT FOR OPEN CIRCUIT • A/F sensor and PCM connectors are disconnected. • Inspect for continuity between A/F sensor terminal F (wiring harness-side) and PCM terminal 2Z (wiring harness-side). • Is there continuity?	Yes Go to the next step. No Repair or replace the wiring harness for a possible open circuit, then go to Step 8.
7	INSPECT A/ F SENSOR • Reconnect the A/F sensor and PCM connectors. • Inspect the A/F sensor. (See AIR FUEL RATIO (A/ F) SENSOR INSPECTION [MZR 2.5].) • Is there any malfunction?	Yes Replace the A/F sensor, then go to the next step. (See AIR FUEL RATIO (A/ F) SENSOR REMOVAL/ INSTALLATION [MZR 2.5] .) No Go to the next step.
8	VERIFY DTC TROUBLESHOOTING COMPLETED • Make sure to reconnect all disconnected connectors. • Clear the DTC from the PCM memory using the M-MDS. (See AFTER REPAIR PROCEDURE [MZR 2.5].) • Perform the Drive Mode 03 (EGR System, A/F sensor heater, HO2S heater, A/F sensor, HO2S and TWC Repair Verification Drive Mode). (See OBD-II DRIVE MODE [MZR 2.5].) • Is the PENDING CODE for this DTC present?	Yes Repeat the inspection from Step 1. • If the malfunction recurs, replace the PCM. (See PCM REMOVAL/ INSTALLATION [MZR 2.5].) Go to the next step. No Go to the next step.
9	VERIFY AFTER REPAIR PROCEDURE • Perform the "AFTER REPAIR PROCEDURE". (See AFTER REPAIR PROCEDURE [MZR 2.5].) • Are any DTCs present?	Yes Go to the applicable DTC inspection. (See DTC TABLE [MZR 2.5] .) No DTC troubleshooting completed.