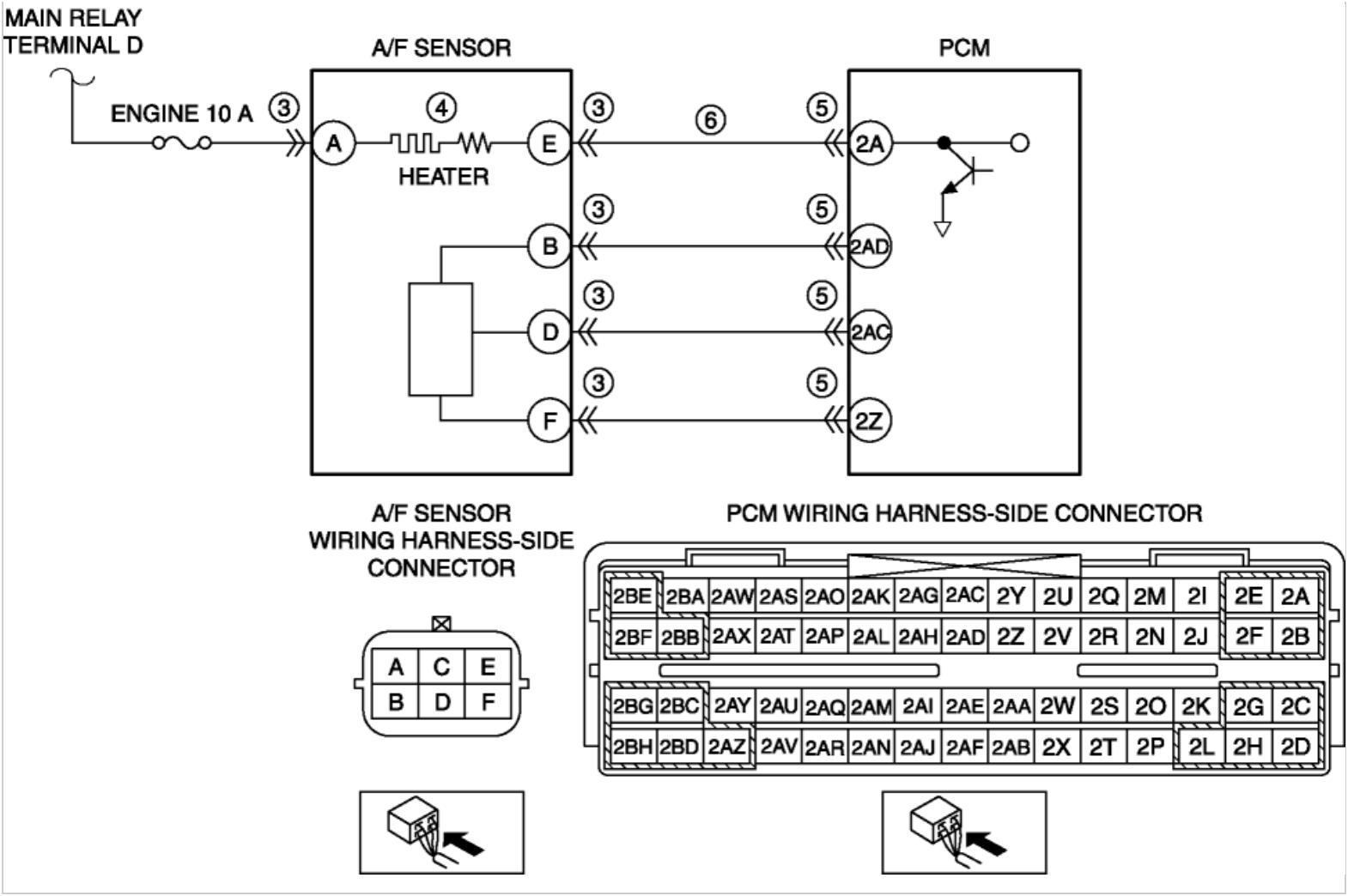
2012 - Mazda6 - Engine

DTC P0032:00 [MZR 2.5]

DTC P0032:00	A/F sensor heater control circuit high input
DETECTION CONDITION	• The PCM monitors the A/F sensor heater output voltage. If the PCM turns the A/F sensor heater on but the A/F sensor heater circuit remains high voltage, the PCM determines that the A/F sensor heater circuit has a malfunction. **Diagnostic support note** • This is a continuous monitor (A/F sensor heater, HO2S heater). • The MIL illuminates if the PCM detects the above malfunction condition in two consecutive drive cycles 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 the PCM memory.
POSSIBLE CAUSE	• A/F sensor connector or terminal malfunction • A/F sensor heater malfunction • PCM connector or terminal malfunction • Short to power supply in wiring harness between A/F sensor terminal E and PCM terminal 2A • PCM malfunction



Diagnostic procedure

STEP	INSPECTION		ACTION
1	**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 heater, HO2S heater 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.
2	**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.
3	**INSPECT A/ F SENSOR CONNECTOR CONDITION** • 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?	Yes	Repair or replace the terminal and/or connector, then go to Step 7.
		No	Go to the next step.

4	**INSPECT A/F SENSOR HEATER** • Inspect the A/F sensor heater. (See **AIR FUEL RATIO (A/F) SENSOR INSPECTION [MZR 2.5]**.) • Is there any malfunction?	Yes	Replace the A/F sensor, then go to Step 7. (See **AIR FUEL RATIO (A/F) SENSOR REMOVAL/INSTALLATION [MZR 2.5]**.)
		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 7.
		No	Go to the next step.
6	**INSPECT A/F SENSOR HEATER CONTROL CIRCUIT FOR SHORT TO POWER SUPPLY** • A/F sensor and PCM connectors are disconnected. • Switch the ignition to ON (engine off). • Measure the voltage between A/F sensor terminal E (wiring harness-side) and body ground. • Is there any voltage?	Yes	Repair or replace the wiring harness for a possible short to power supply, then go to the next step.
		No	Go to the next step.
7	**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 KOEO or KOER self test. (See **KOEO/KOER SELF TEST [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.
8	**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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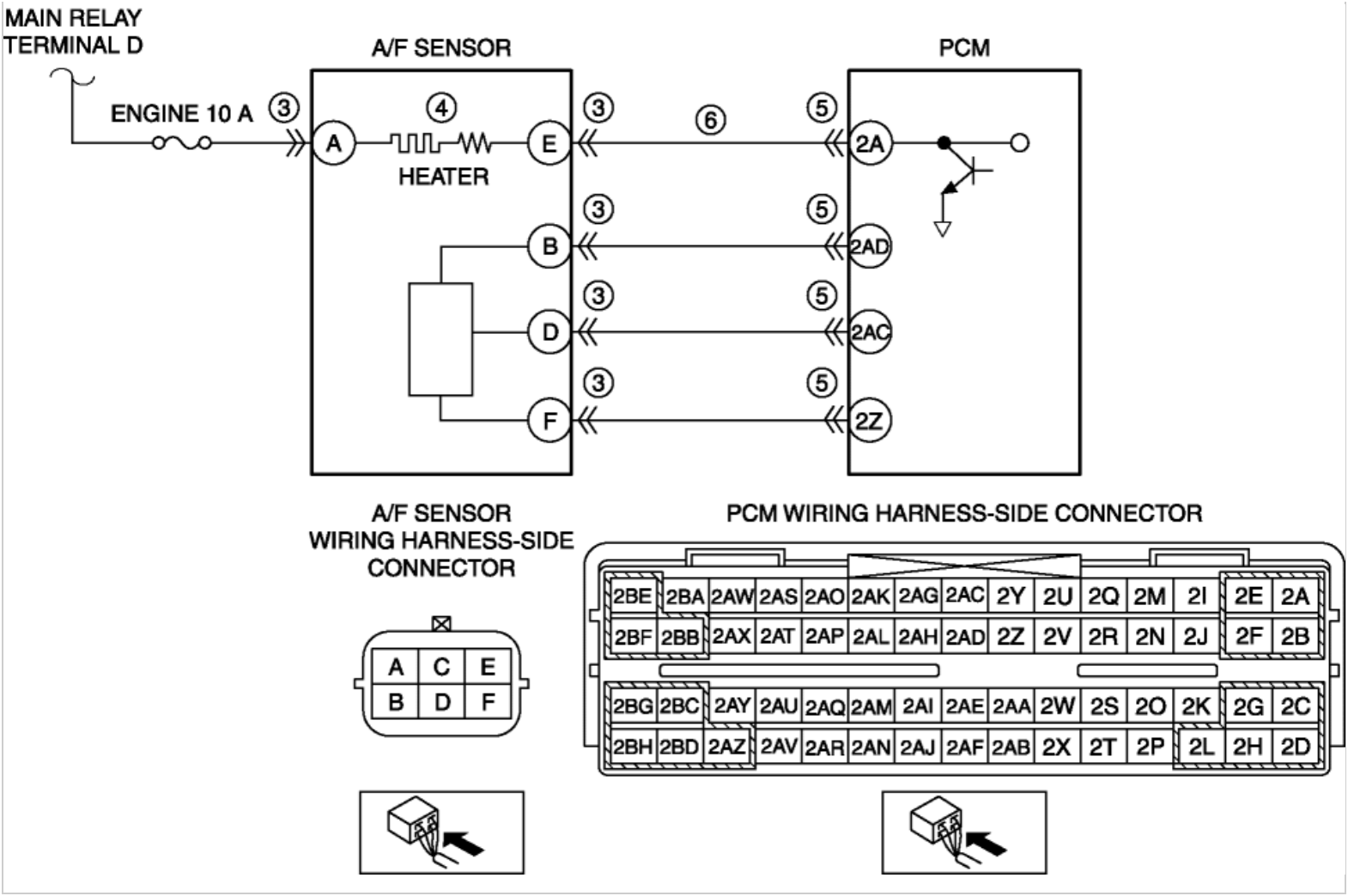
DTC P0032:00 [MZR 2.5]

DTC P0032:00	A/F sensor heater control circuit high input
DETECTION CONDITION	• The PCM monitors the A/F sensor heater output voltage. If the PCM turns the A/F sensor heater on but the A/F sensor heater circuit remains high voltage, the PCM determines that the A/F sensor heater circuit has a malfunction. **Diagnostic support note** • This is a continuous monitor (A/F sensor heater, HO2S heater). • The MIL illuminates if the PCM detects the above malfunction condition in two consecutive drive cycles 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 the PCM memory.
POSSIBLE CAUSE	• A/F sensor connector or terminal malfunction • A/F sensor heater malfunction • PCM connector or terminal malfunction • Short to power supply in wiring harness between A/F sensor terminal E and PCM terminal 2A • PCM malfunction



Diagnostic procedure

STEP	INSPECTION		ACTION
1	**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 heater, HO2S heater 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.
2	**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.
3	**INSPECT A/ F SENSOR CONNECTOR CONDITION** • 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?	Yes	Repair or replace the terminal and/or connector, then go to Step 7.
		No	Go to the next step.

4	**INSPECT A/F SENSOR HEATER** • Inspect the A/F sensor heater. (See **AIR FUEL RATIO (A/F) SENSOR INSPECTION [MZR 2.5]**.) • Is there any malfunction?	Yes	Replace the A/F sensor, then go to Step 7. (See **AIR FUEL RATIO (A/F) SENSOR REMOVAL/INSTALLATION [MZR 2.5]**.)
		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 7.
		No	Go to the next step.
6	**INSPECT A/F SENSOR HEATER CONTROL CIRCUIT FOR SHORT TO POWER SUPPLY** • A/F sensor and PCM connectors are disconnected. • Switch the ignition to ON (engine off). • Measure the voltage between A/F sensor terminal E (wiring harness-side) and body ground. • Is there any voltage?	Yes	Repair or replace the wiring harness for a possible short to power supply, then go to the next step.
		No	Go to the next step.
7	**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 KOEO or KOER self test. (See **KOEO/KOER SELF TEST [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.
8	**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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