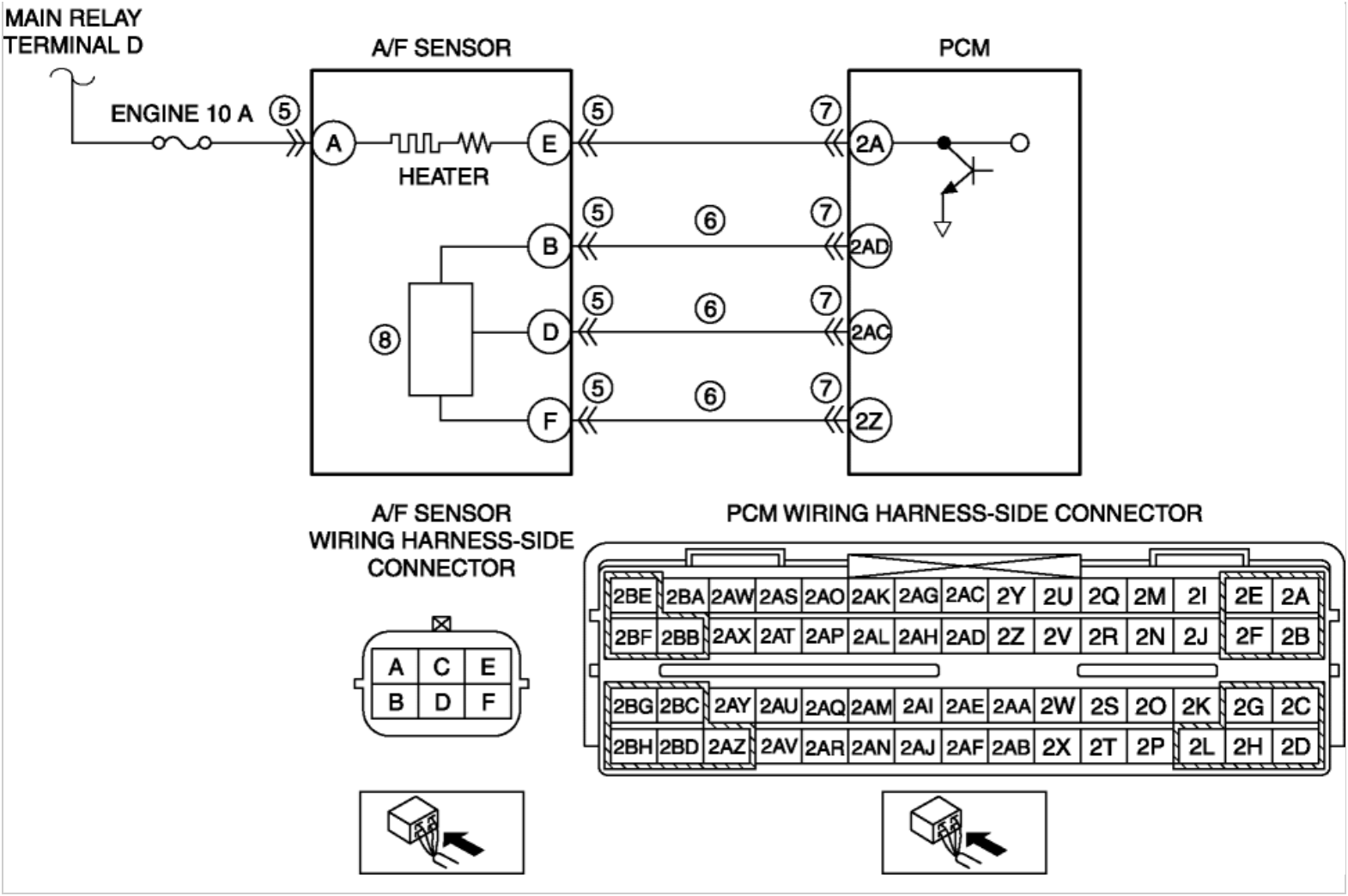
2012 - Mazda6 - Engine

DTC P0131:00 [MZR 2.5]

DTC P0131:00	A/F sensor circuit low input
DETECTION CONDITION	• The PCM monitors the input voltage from the A/F sensor while the engine is running. If the input voltage is **below 1.2 Vfor 1 s**, the PCM determines that the A/F sensor circuit voltage is low. **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 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 • Short to ground in wiring harness between A/F sensor terminal B and PCM terminal 2AD • Short to ground in wiring harness between A/F sensor terminal D and PCM terminal 2AC • Short to ground in wiring harness between A/F sensor terminal F and PCM terminal 2Z • PCM connector or terminal malfunction • A/F sensor malfunction • PCM malfunction



Diagnostic procedure

STEP	INSPECTION		ACTION
1	**IDENTIFY TRIGGER DTC FOR FREEZE FRAME DATA (MODE 2)** • Is the DTC P0131:00 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	**VERIFY RELATED PENDING OR STORED DTC**	Yes	Go to the applicable DTC inspection.

	• Switch the ignition to off, then to the ON (engine off). • Verify the pending code or stored DTCs using the M-MDS. (See **ON-BOARD DIAGNOSTIC TEST [MZR 2.5]**.) • Are any other DTCs present?		(See **DTC TABLE [MZR 2.5]**.)
		No	Go to the next step.
5	**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 9.
		No	Go to the next step.
6	**INSPECT A/F SENSOR CIRCUIT FOR SHORT TO GROUND** • A/F sensor connector is disconnected. • Inspect for continuity between the following terminals and body ground: ▪ A/F sensor terminal B (wiring harness-side) ▪ A/F sensor terminal D (wiring harness-side) ▪ A/F sensor terminal F (wiring harness-side) • Is there continuity?	Yes	If the short to ground circuit could be detected: • Repair or replace the wiring harness for a possible short to ground. If the short to ground circuit could not be detected: • Replace the PCM (short to ground in PCM internal circuit). (See **PCM REMOVAL/INSTALLATION [MZR 2.5]**.) Go to Step 9.
		No	Go to the next step.
7	**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 9.
		No	Go to the next step.
8	**INSPECT A/F SENSOR** • Reconnect all disconnected 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.
9	**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.
10	**VERIFY AFTER REPAIR PROCEDURE**	Yes	Go to the applicable DTC inspection.

	Perform the “AFTER REPAIR PROCEDURE”. (See **AFTER REPAIR PROCEDURE [MZR 2.5]**.) • Are any DTCs present?		(See **DTC TABLE [MZR 2.5]**.)
		No	DTC troubleshooting completed.

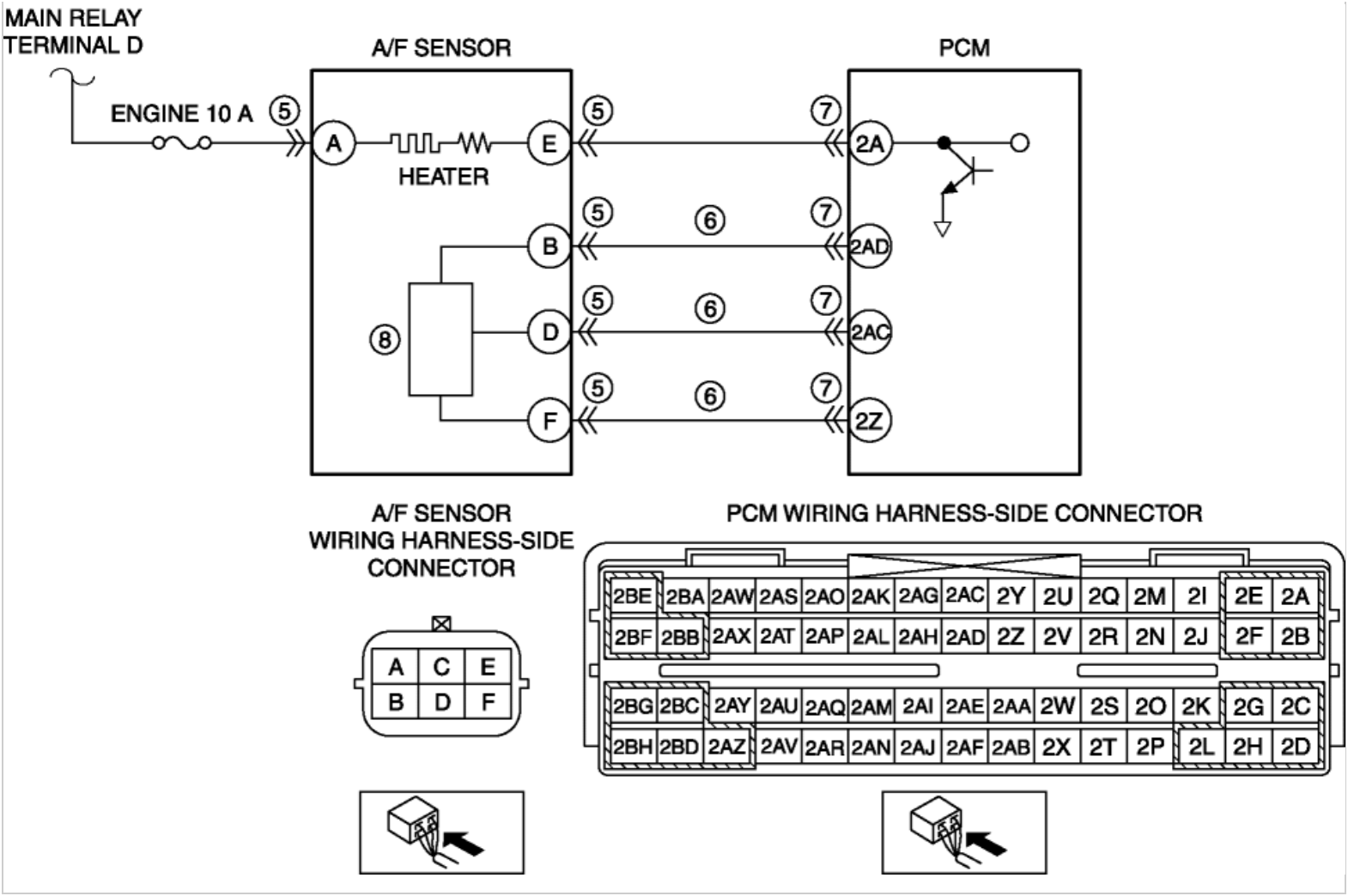
< Previous **Next >**

Back to Top

2012 - Mazda6 - Engine

DTC P0131:00 [MZR 2.5]

DTC P0131:00	A/F sensor circuit low input
DETECTION CONDITION	• The PCM monitors the input voltage from the A/F sensor while the engine is running. If the input voltage is **below 1.2 Vfor 1 s**, the PCM determines that the A/F sensor circuit voltage is low. **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 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 • Short to ground in wiring harness between A/F sensor terminal B and PCM terminal 2AD • Short to ground in wiring harness between A/F sensor terminal D and PCM terminal 2AC • Short to ground in wiring harness between A/F sensor terminal F and PCM terminal 2Z • PCM connector or terminal malfunction • A/F sensor malfunction • PCM malfunction



Diagnostic procedure

STEP	INSPECTION		ACTION
1	**IDENTIFY TRIGGER DTC FOR FREEZE FRAME DATA (MODE 2)** • Is the DTC P0131:00 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	**VERIFY RELATED PENDING OR STORED DTC**	Yes	Go to the applicable DTC inspection.

	• Switch the ignition to off, then to the ON (engine off). • Verify the pending code or stored DTCs using the M-MDS. (See **ON-BOARD DIAGNOSTIC TEST [MZR 2.5]**.) • Are any other DTCs present?		(See **DTC TABLE [MZR 2.5]**.)
		No	Go to the next step.
5	**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 9.
		No	Go to the next step.
6	**INSPECT A/F SENSOR CIRCUIT FOR SHORT TO GROUND** • A/F sensor connector is disconnected. • Inspect for continuity between the following terminals and body ground: ▪ A/F sensor terminal B (wiring harness-side) ▪ A/F sensor terminal D (wiring harness-side) ▪ A/F sensor terminal F (wiring harness-side) • Is there continuity?	Yes	If the short to ground circuit could be detected: • Repair or replace the wiring harness for a possible short to ground. If the short to ground circuit could not be detected: • Replace the PCM (short to ground in PCM internal circuit). (See **PCM REMOVAL/INSTALLATION [MZR 2.5]**.) Go to Step 9.
		No	Go to the next step.
7	**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 9.
		No	Go to the next step.
8	**INSPECT A/F SENSOR** • Reconnect all disconnected 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.
9	**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.
10	**VERIFY AFTER REPAIR PROCEDURE**	Yes	Go to the applicable DTC inspection.

	Perform the “AFTER REPAIR PROCEDURE”. (See **AFTER REPAIR PROCEDURE [MZR 2.5]**.) • Are any DTCs present?		(See **DTC TABLE [MZR 2.5]**.)
		No	DTC troubleshooting completed.

< Previous **Next >**

Back to Top