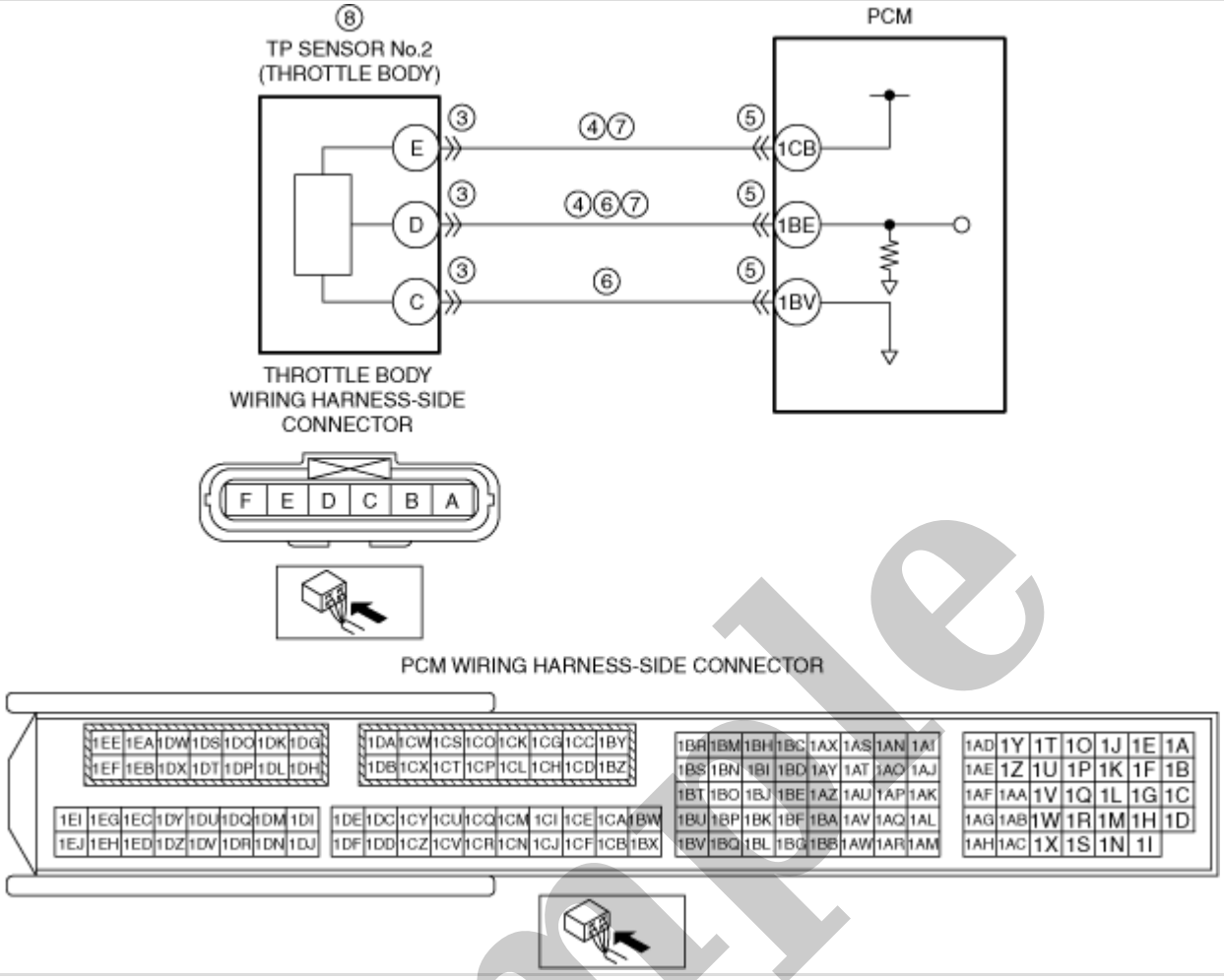
Your Ultimate Source for OEM Repair Manuals

FactoryManuals.net is a great resource for anyone who wants to save money on repairs by doing their own work. The manuals provide detailed instructions and diagrams that make it easy to understand how to fix a vehicle.

1992 MAZDA Xedos 6 OEM Service and Repair Workshop Manual

Go to manual page

DTC P0222:00	TP sensor No.2 circuit low input



Caution

• Verify the malfunction symptom according to not only the PID value but also the symptom troubleshooting.

Related PIDs

Item (definition)	Unit/Condition	Definition	Condition/Specification (Reference)
TP2	%	Throttle valve position No.2	• Accelerator pedal released: Approx. 22% • Accelerator pedal fully depressed: Approx. 92%
	V	TP sensor No.2 voltage	• Accelerator pedal released: Approx. 3.92 V • Accelerator pedal fully depressed: Approx. 0.41 V

Diagnostic Procedure

STEP	INSPECTION	RESULTS	ACTION
10	VERIFY AFTER REPAIR PROCEDURE • Perform the "AFTER REPAIR PROCEDURE". (See AFTER REPAIR PROCEDURE [PCM (SKYACTIV-G 2.5T)].) • Are any DTCs present?	Yes	Go to the applicable DTC inspection. (See DTC TABLE [PCM (SKYACTIV-G 2.5T)].)
		No	DTC troubleshooting completed.

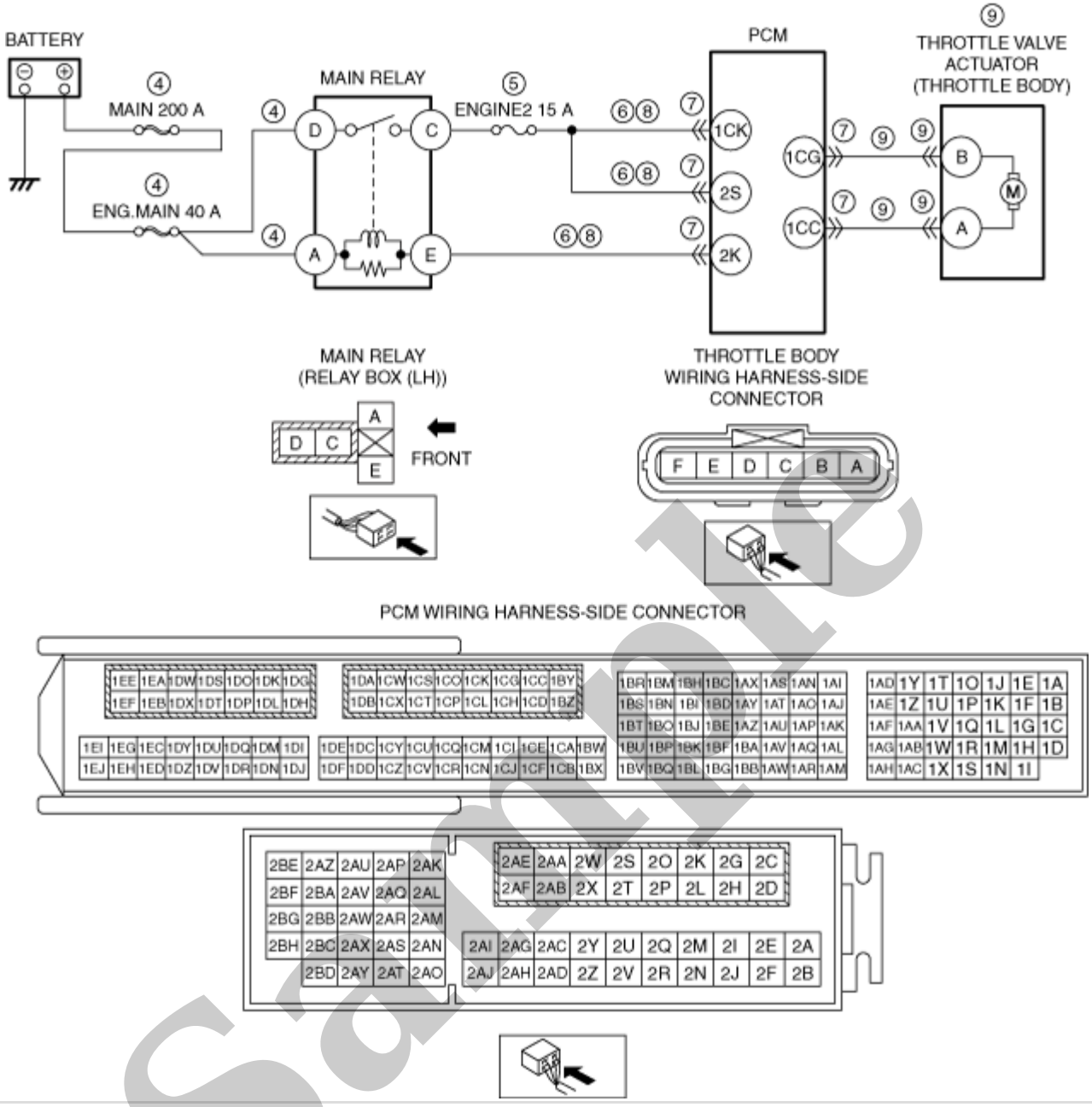
STEP	INSPECTION	RESULTS	ACTION
7	**INSPECT TP SENSOR No.2 SIGNAL CIRCUIT FOR SHORT TO POWER SUPPLY** • Switch the ignition off. • Disconnect the throttle body connector. • Access the TP2 PID using the M-MDS. (See ON-BOARD DIAGNOSTIC TEST [PCM (SKYACTIV-G 2.5T)].) • Verify the TP2 PID value. • Is the TP2 PID value 5 V or B+?	Yes	Refer to the wiring diagram and verify whether or not there is a common connector between throttle body terminal D and PCM terminal 1BE. **If there is a common connector:** • Determine the malfunctioning part by inspecting the common connector and the terminal for corrosion, damage, or pin disconnection, and the common wiring harness for a short to power supply. • Repair or replace the malfunctioning part. **If there is no common connector:** • Repair or replace the wiring harness which has a short to power supply. Go to Step 9.
		No	Go to the next step.
8	**INSPECT TP SENSOR No.2 GROUND CIRCUIT FOR OPEN CIRCUIT** • Verify that the throttle body connector is disconnected. • Switch the ignition off. • Disconnect the PCM connector. • Inspect for continuity between throttle body terminal C (wiring harness-side) and PCM terminal 1BV (wiring harness-side). • Is there continuity?	Yes	Replace the throttle body, then go to the next step. (See INTAKE-AIR SYSTEM REMOVAL/INSTALLATION [SKYACTIV-G 2.5T].)
		No	Refer to the wiring diagram and verify whether or not there is a common connector between throttle body terminal C and PCM terminal 1BV. **If there is a common connector:** • Determine the malfunctioning part by inspecting the common connector and the terminal for corrosion, damage, or pin disconnection, and the common wiring harness for an open circuit. • Repair or replace the malfunctioning part. **If there is no common connector:** • Repair or replace the wiring harness which has an open circuit. Go to the next step.
9	**VERIFY DTC TROUBLESHOOTING COMPLETED** • Always reconnect all disconnected connectors. • Clear the DTC from the PCM memory using the M-MDS. (See CLEARING DTC [PCM (SKYACTIV-G 2.5T)].) • Perform the KOEO or KOER self test. (See KOEO/KOER SELF TEST [PCM (SKYACTIV-G 2.5T)].) • Is the same Pending DTC present?	Yes	Repeat the inspection from Step 1. • If the malfunction recurs, replace the PCM. (See PCM REMOVAL/INSTALLATION [SKYACTIV-G 2.5T].) Go to the next step.
		No	Go to the next step.
10	**VERIFY AFTER REPAIR PROCEDURE** • Perform the "AFTER REPAIR PROCEDURE". (See AFTER REPAIR PROCEDURE [PCM (SKYACTIV-G 2.5T)].) • Are any DTCs present?	Yes	Go to the applicable DTC inspection. (See DTC TABLE [PCM (SKYACTIV-G 2.5T)].)
		No	DTC troubleshooting completed.

STEP	INSPECTION	RESULTS	ACTION
4	INSPECT THROTTLE BODY CONNECTOR CONDITION • Switch the ignition off. • Disconnect the throttle body connector. • Inspect for poor connection (such as damaged/pulled-out pins, corrosion). • Is there any malfunction?	Yes	Repair or replace the connector and/or terminals, then go to Step 10.
		No	Go to the next step.
5	INSPECT THROTTLE VALVE ACTUATOR CIRCUIT FOR SHORT TO GROUND • Verify that the throttle body connector is disconnected. • Inspect for continuity between the following terminals (wiring harness-side) and body ground: — Throttle body terminal B — Throttle body terminal A • Is there continuity?	Yes	Disconnect the PCM connector and inspect the wiring harness for short to ground. • If the short to ground circuit could be detected in the wiring harness: — Refer to the wiring diagram and verify whether or not there is a common connector between the following terminals: • Throttle body terminal B–PCM terminal 1CG • Throttle body terminal A–PCM terminal 1CC **If there is a common connector:** • Determine the malfunctioning part by inspecting the common connector and the terminal for corrosion, damage, or pin disconnection, and the common wiring harness for a short to ground. • Repair or replace the malfunctioning part. **If there is no common connector:** • Repair or replace the wiring harness which has a short to ground. • If the short to ground circuit could not be detected in the wiring harness: — Replace the PCM (short to ground in the PCM internal circuit). (See PCM REMOVAL/INSTALLATION [SKYACTIV-G 2.5T].) Go to Step 10.
		No	Go to the next step.
6	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 connector and/or terminals, then go to Step 10.
		No	Go to the next step.

STEP	INSPECTION	RESULTS	ACTION
1	RECORD VEHICLE STATUS AT TIME OF DTC DETECTION TO UTILIZE WITH REPEATABILITY VERIFICATION Note • Recording can be facilitated using the screen capture function of the PC. • Record the FREEZE FRAME DATA/snapshot data on the repair order.	–	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 BRAKE SWITCH CONNECTOR CONDITION • Switch the ignition off. • Disconnect the brake switch connector. • Inspect for poor connection (such as damaged/pulled-out pins, corrosion). • Is there any malfunction?	Yes	Repair or replace the connector and/or terminals, then go to Step 10.
		No	Go to the next step.

STEP	INSPECTION	RESULTS	ACTION
5	**INSPECT BRAKE SWITCH No.1 SIGNAL CIRCUIT FOR SHORT TO GROUND** • Verify that the brake switch connector is disconnected. • Inspect for continuity between brake switch terminal D (wiring harness-side) and body ground. • Is there continuity?	Yes	Disconnect the PCM connector and inspect the wiring harness for short to ground. • If the short to ground circuit could be detected in the wiring harness: — Refer to the wiring diagram and verify whether or not there is a common connector between brake switch terminal D and PCM terminal 2G. **If there is a common connector:** • Determine the malfunctioning part by inspecting the common connector and the terminal for corrosion, damage, or pin disconnection, and the common wiring harness for a short to ground. • Repair or replace the malfunctioning part. **If there is no common connector:** • Repair or replace the wiring harness which has a short to ground. • If the short to ground circuit could not be detected in the wiring harness: — Replace the PCM (short to ground in the PCM internal circuit). (See PCM REMOVAL/INSTALLATION [SKYACTIV-G 2.5T].) Go to Step 10.
		No	Go to the next step.
6	**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 connector and/or terminals, then go to Step 10.
		No	Go to the next step.
7	**INSPECT BRAKE SWITCH No.1 SIGNAL CIRCUIT FOR SHORT TO POWER SUPPLY** • Verify that the brake switch and PCM connectors are disconnected. • Switch the ignition ON (engine off). **Note** **• Another DTC may be stored by the PCM detecting an open circuit.** • Measure the voltage at the brake switch terminal D (wiring harness-side). • Is the voltage 0 V?	Yes	Go to the next step.
		No	Refer to the wiring diagram and verify whether or not there is a common connector between brake switch terminal D and PCM terminal 2G. **If there is a common connector:** • Determine the malfunctioning part by inspecting the common connector and the terminal for corrosion, damage, or pin disconnection, and the common wiring harness for a short to power supply. • Repair or replace the malfunctioning part. **If there is no common connector:** • Repair or replace the wiring harness which has a short to power supply. Go to Step 10.

DTC P2101:00	Throttle valve actuator control motor circuit range/performance problem



Diagnostic Procedure

STEP	INSPECTION	RESULTS	ACTION
1	RECORD VEHICLE STATUS AT TIME OF DTC DETECTION TO UTILIZE WITH REPEATABILITY VERIFICATION Note • Recording can be facilitated using the screen capture function of the PC. • Record the FREEZE FRAME DATA/snapshot data on the repair order.	–	Go to the next step.

STEP	INSPECTION	RESULTS	ACTION
5	INSPECT ENGINE2 15 A FUSE • Remove the ENGINE2 15 A fuse. • Inspect the ENGINE2 15 A fuse. • Is there any malfunction?	Yes	If the fuse is blown: • Refer to the wiring diagram and verify whether or not there is a common connector between the following terminals: — Main relay terminal C–PCM terminal 1CK — Main relay terminal C–PCM terminal 2S If there is a common connector: — Determine the malfunctioning part by inspecting the common connector and the terminal for corrosion, damage, or pin disconnection, and the common wiring harness for a short to ground. — Repair or replace the malfunctioning part. If there is no common connector: — Repair or replace the wiring harness which has a short to ground. — Replace the fuse. If the fuse is damaged: • Replace the fuse. Go to Step 10.
		No	Reinstall the ENGINE2 15 A fuse, then go to the next step.

DTC P2109:00 [PCM (SKYACTIV-G 2.5T)]

SM2896573

id0102s870800

DTC P2109:00	TP sensor minimum stop range/performance problem
DETECTION CONDITION	• If the fully-close throttle position is 5.1 ° or lower, or 15.9 ° or more (even though fully-closed throttle position learning is finished), the PCM determines there is a malfunction. Diagnostic support note • This is a continuous monitor (CCM). • The check engine light illuminates if the PCM detects the above malfunction condition during the first drive cycle. • FREEZE FRAME DATA/Snapshot data is available. • DTC is stored in the PCM memory.
FAIL-SAFE FUNCTION	• Restricts the upper limit of the engine speed. • Stops the drive-by-wire control (throttle valve is open at approx. 8 ° by return spring force).
POSSIBLE CAUSE	• Throttle body connector or terminals malfunction • Short to ground in wiring harness between the following terminals: — Throttle body terminal B—PCM terminal 1CG — Throttle body terminal A—PCM terminal 1CC • PCM connector or terminals malfunction • Short to power supply in wiring harness between the following terminals: — Throttle body terminal B—PCM terminal 1CG — Throttle body terminal A—PCM terminal 1CC • Open circuit in wiring harness between the following terminals: — Throttle body terminal B—PCM terminal 1CG — Throttle body terminal A—PCM terminal 1CC • Throttle valve malfunction • Throttle valve actuator malfunction • PCM malfunction