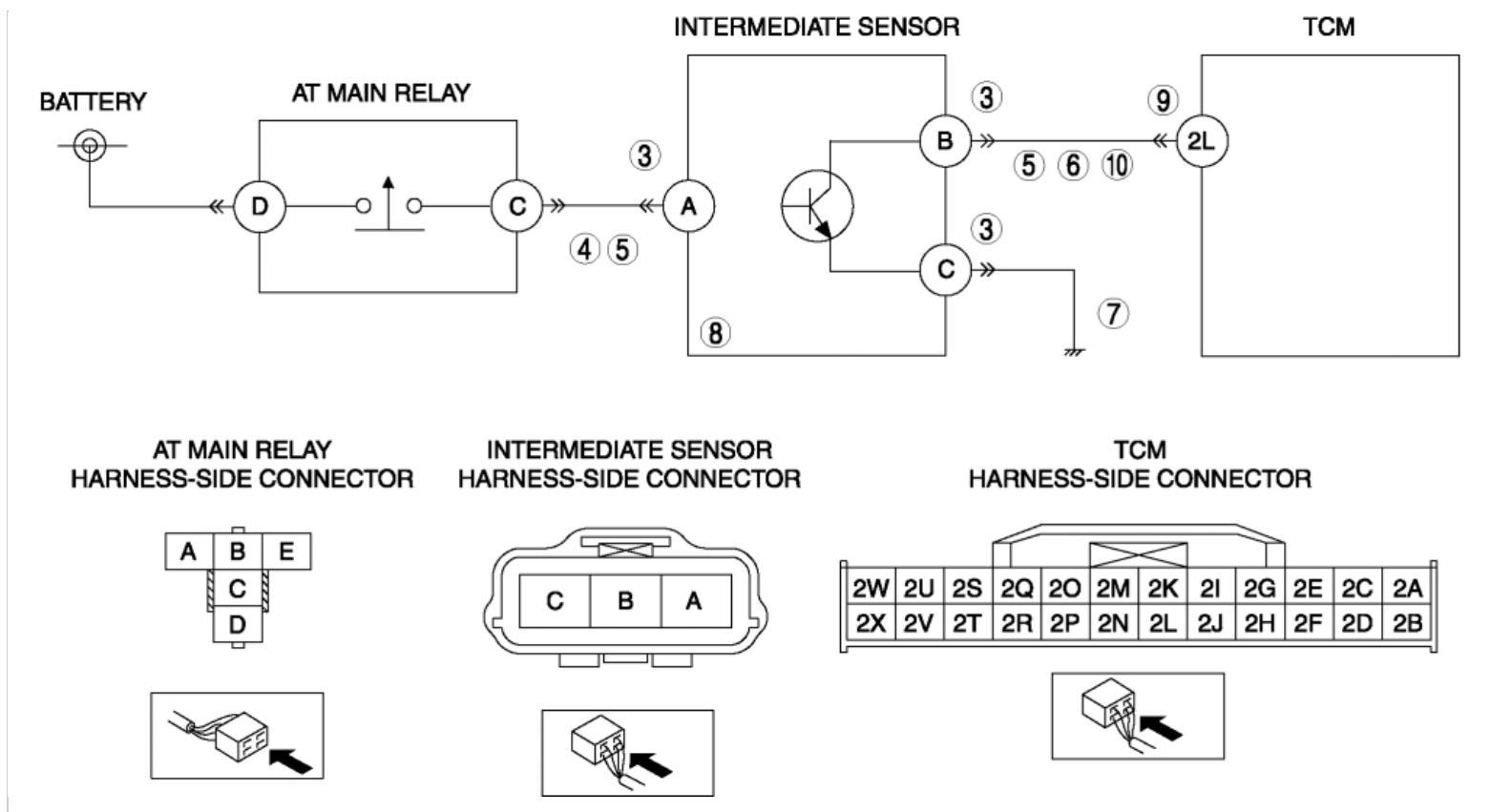


2012 - Mazda6 - Transmission/ Transaxle

DTC P0791:00 [FS5A-EL]

DTC P0791:00	Intermediate sensor circuit malfunction
DETECTI ON CONDI TI ON	• The TCM detects no signal from the intermediate sensor for 4.5 s when the following conditions are met. ▪ D or M position ▪ Vehicle speed: 40 km/h {25 mph} or more Diagnostic support note • The MIL illuminates if the TCM detects the above malfunction condition during the first drive cycle. • The AT warning light illuminates. • PENDING CODE is available. • FREEZE FRAME DATA is available. • The DTC is stored in the TCM memory.
POSSI BLE CAUSE	• Intermediate sensor connector or terminal malfunction • Open circuit in wiring harness between intermediate sensor terminal A and AT main relay terminal C • Short to GND in wiring harness between intermediate sensor terminal A and AT main relay terminal C • Short to GND in wiring harness between intermediate sensor terminal B and TCM terminal 2L • Short to power supply in wiring harness between intermediate sensor terminal B and TCM terminal 2L • Open circuit in wiring harness between intermediate sensor terminal C and body GND • Intermediate sensor malfunction • TCM connector or terminal malfunction • Open circuit in wiring harness between intermediate sensor terminal B and TCM terminal 2L • TCM malfunction



Diagnostic procedure

STEP	INSPECTION	ACTION
1	VERIFY FREEZE FRAME DATA HAS BEEN RECORDED Has the FREEZE FRAME DATA been recorded on the repair order?	Yes Go to the next step.
		No Record the FREEZE FRAME DATA 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 INTERMEDIATE SENSOR CONNECTOR FOR POOR CONNECTION - Switch the ignition off. - Disconnect the intermediate sensor connector. - Inspect for poor connection (such as damaged/pulled-out pins, corrosion) - Is there any malfunction?	Yes Repair or replace the terminal, then go to Step 11.
		No Go to the next step.
4	INSPECT INTERMEDIATE SENSOR POWER CIRCUIT FOR OPEN CIRCUIT - Switch the ignition to ON (Engine off). - Measure the voltage between intermediate sensor terminal A (wiring harness-side) and body GND. - Is the voltage B+?	Yes Go to the next step.
		No Repair or replace the wiring harness for a possible open circuit, then go to Step 11.
5	INSPECT INTERMEDIATE SENSOR CIRCUIT FOR SHORT TO GND Switch the ignition off.	Yes Repair or replace the wiring harness for a possible short to GND, then go to Step 11.

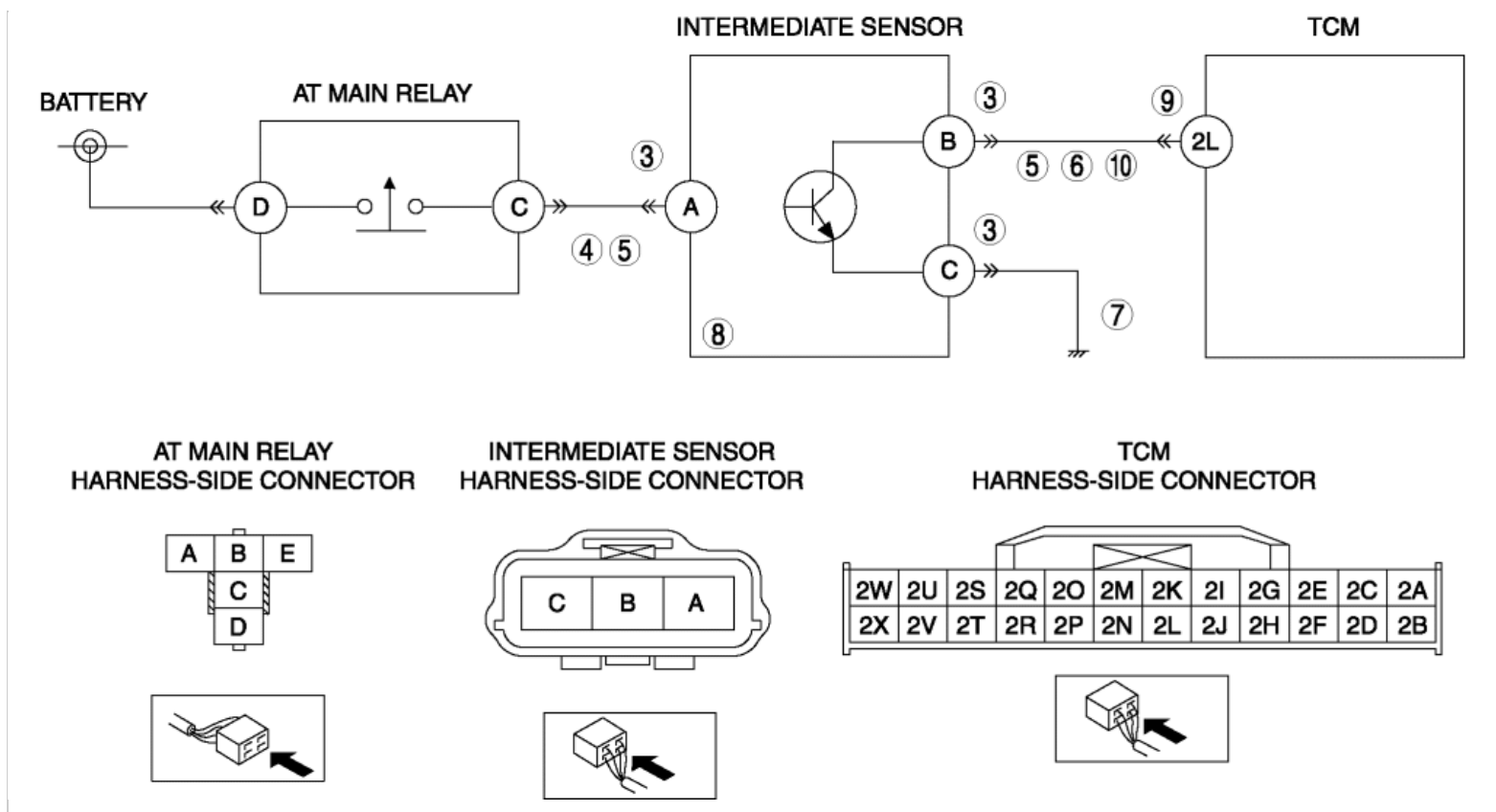
	- Inspect for continuity between the following circuits: - Intermediate sensor terminal A (wiring harness-side) and body GND - Intermediate sensor terminal B (wiring harness-side) and body GND - Is there continuity?	No	Go to the next step.
6	INSPECT INTERMEDIATE SENSOR SIGNAL CIRCUIT FOR SHORT TO POWER SUPPLY - Switch the ignition to ON (Engine off). - Measure the voltage between intermediate sensor terminal B (wiring harness-side) and body GND. - Is the voltage B+ ?	Yes	Repair or replace the wiring harness for a possible short to power supply, then go to Step 11.
		No	Go to the next step.
7	INSPECT INTERMEDIATE SENSOR GND CIRCUIT FOR OPEN CIRCUIT - Switch the ignition off. - Inspect for continuity between intermediate sensor terminal C (wiring harness-side) and body GND - 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 11.
8	INSPECT INTERMEDIATE SENSOR - Inspect the intermediate sensor. (See INTERMEDIATE SENSOR INSPECTION [FS5A-EL] .) - Is there any malfunction?	Yes	Replace the intermediate sensor, then go to Step 11. (See INTERMEDIATE SENSOR REMOVAL/ INSTALLATION [FS5A-EL] .)
		No	Go to the next step.
9	INSPECT TCM CONNECTOR FOR POOR CONNECTION - Switch the ignition off. - Disconnect the TCM connector. - Inspect for poor connection (such as damaged/pulled-out pins, corrosion) - Is there any malfunction?	Yes	Repair or replace the terminal, then go to Step 11.
		No	Go to the next step.
10	INSPECT INTERMEDIATE SENSOR CIRCUIT FOR OPEN CIRCUIT - Switch the ignition off. - Inspect for continuity between the intermediate sensor terminal B (wiring harness-side) and TCM terminal 2L (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 the next step.
11	VERIFY TROUBLESHOOTING OF DTC P0791:00 COMPLETED - Make sure to reconnect all the disconnected connectors. - Clear the DTC using the M-MDS. - Perform the following procedure to ensure that the DTC has been resolved: - Drive the vehicle under the following conditions for 4.5 s or more. - D or M position - Vehicle speed: 40 km/h {25 mph} or more - Is the same DTC present?	Yes	Replace the TCM, then go to the next step. (See TCM REMOVAL/ INSTALLATION [FS5A-EL] .)
		No	Go to the next step.
12	VERIFY NO DTCs ARE PRESENT Perform the "Reading DTCs Procedure". (See ON-BOARD DIAGNOSTIC SYSTEM DTC INSPECTION [FS5A-EL] .)	Yes	Go to the applicable DTC inspection. (See ON-BOARD DIAGNOSTIC SYSTEM DTC TABLE [FS5A-EL] .)

	• Are any DTCs present?		No DTC troubleshooting completed.
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2012 - Mazda6 - Transmission/ Transaxle

DTC P0791:00 [FS5A-EL]

DTC P0791:00	Intermediate sensor circuit malfunction
DETECTI ON CONDI TI ON	• The TCM detects no signal from the intermediate sensor for 4.5 s when the following conditions are met. ▪ D or M position ▪ Vehicle speed: 40 km/h {25 mph} or more Diagnostic support note • The MIL illuminates if the TCM detects the above malfunction condition during the first drive cycle. • The AT warning light illuminates. • PENDING CODE is available. • FREEZE FRAME DATA is available. • The DTC is stored in the TCM memory.
POSSI BLE CAUSE	• Intermediate sensor connector or terminal malfunction • Open circuit in wiring harness between intermediate sensor terminal A and AT main relay terminal C • Short to GND in wiring harness between intermediate sensor terminal A and AT main relay terminal C • Short to GND in wiring harness between intermediate sensor terminal B and TCM terminal 2L • Short to power supply in wiring harness between intermediate sensor terminal B and TCM terminal 2L • Open circuit in wiring harness between intermediate sensor terminal C and body GND • Intermediate sensor malfunction • TCM connector or terminal malfunction • Open circuit in wiring harness between intermediate sensor terminal B and TCM terminal 2L • TCM malfunction



Diagnostic procedure

STEP	INSPECTION	ACTION
1	VERIFY FREEZE FRAME DATA HAS BEEN RECORDED Has the FREEZE FRAME DATA been recorded on the repair order?	Yes Go to the next step.
		No Record the FREEZE FRAME DATA 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 INTERMEDIATE SENSOR CONNECTOR FOR POOR CONNECTION - Switch the ignition off. - Disconnect the intermediate sensor connector. - Inspect for poor connection (such as damaged/pulled-out pins, corrosion) - Is there any malfunction?	Yes Repair or replace the terminal, then go to Step 11.
		No Go to the next step.
4	INSPECT INTERMEDIATE SENSOR POWER CIRCUIT FOR OPEN CIRCUIT - Switch the ignition to ON (Engine off). - Measure the voltage between intermediate sensor terminal A (wiring harness-side) and body GND. - Is the voltage B+?	Yes Go to the next step.
		No Repair or replace the wiring harness for a possible open circuit, then go to Step 11.
5	INSPECT INTERMEDIATE SENSOR CIRCUIT FOR SHORT TO GND Switch the ignition off.	Yes Repair or replace the wiring harness for a possible short to GND, then go to Step 11.

	- Inspect for continuity between the following circuits: - Intermediate sensor terminal A (wiring harness-side) and body GND - Intermediate sensor terminal B (wiring harness-side) and body GND - Is there continuity?	No	Go to the next step.
6	INSPECT INTERMEDIATE SENSOR SIGNAL CIRCUIT FOR SHORT TO POWER SUPPLY - Switch the ignition to ON (Engine off). - Measure the voltage between intermediate sensor terminal B (wiring harness-side) and body GND. - Is the voltage B+ ?	Yes	Repair or replace the wiring harness for a possible short to power supply, then go to Step 11.
		No	Go to the next step.
7	INSPECT INTERMEDIATE SENSOR GND CIRCUIT FOR OPEN CIRCUIT - Switch the ignition off. - Inspect for continuity between intermediate sensor terminal C (wiring harness-side) and body GND - 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 11.
8	INSPECT INTERMEDIATE SENSOR - Inspect the intermediate sensor. (See INTERMEDIATE SENSOR INSPECTION [FS5A-EL] .) - Is there any malfunction?	Yes	Replace the intermediate sensor, then go to Step 11. (See INTERMEDIATE SENSOR REMOVAL/ INSTALLATION [FS5A-EL] .)
		No	Go to the next step.
9	INSPECT TCM CONNECTOR FOR POOR CONNECTION - Switch the ignition off. - Disconnect the TCM connector. - Inspect for poor connection (such as damaged/pulled-out pins, corrosion) - Is there any malfunction?	Yes	Repair or replace the terminal, then go to Step 11.
		No	Go to the next step.
10	INSPECT INTERMEDIATE SENSOR CIRCUIT FOR OPEN CIRCUIT - Switch the ignition off. - Inspect for continuity between the intermediate sensor terminal B (wiring harness-side) and TCM terminal 2L (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 the next step.
11	VERIFY TROUBLESHOOTING OF DTC P0791:00 COMPLETED - Make sure to reconnect all the disconnected connectors. - Clear the DTC using the M-MDS. - Perform the following procedure to ensure that the DTC has been resolved: - Drive the vehicle under the following conditions for 4.5 s or more. - D or M position - Vehicle speed: 40 km/h {25 mph} or more - Is the same DTC present?	Yes	Replace the TCM, then go to the next step. (See TCM REMOVAL/ INSTALLATION [FS5A-EL] .)
		No	Go to the next step.
12	VERIFY NO DTCs ARE PRESENT Perform the "Reading DTCs Procedure". (See ON-BOARD DIAGNOSTIC SYSTEM DTC INSPECTION [FS5A-EL] .)	Yes	Go to the applicable DTC inspection. (See ON-BOARD DIAGNOSTIC SYSTEM DTC TABLE [FS5A-EL] .)

	• Are any DTCs present?		No DTC troubleshooting completed.
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