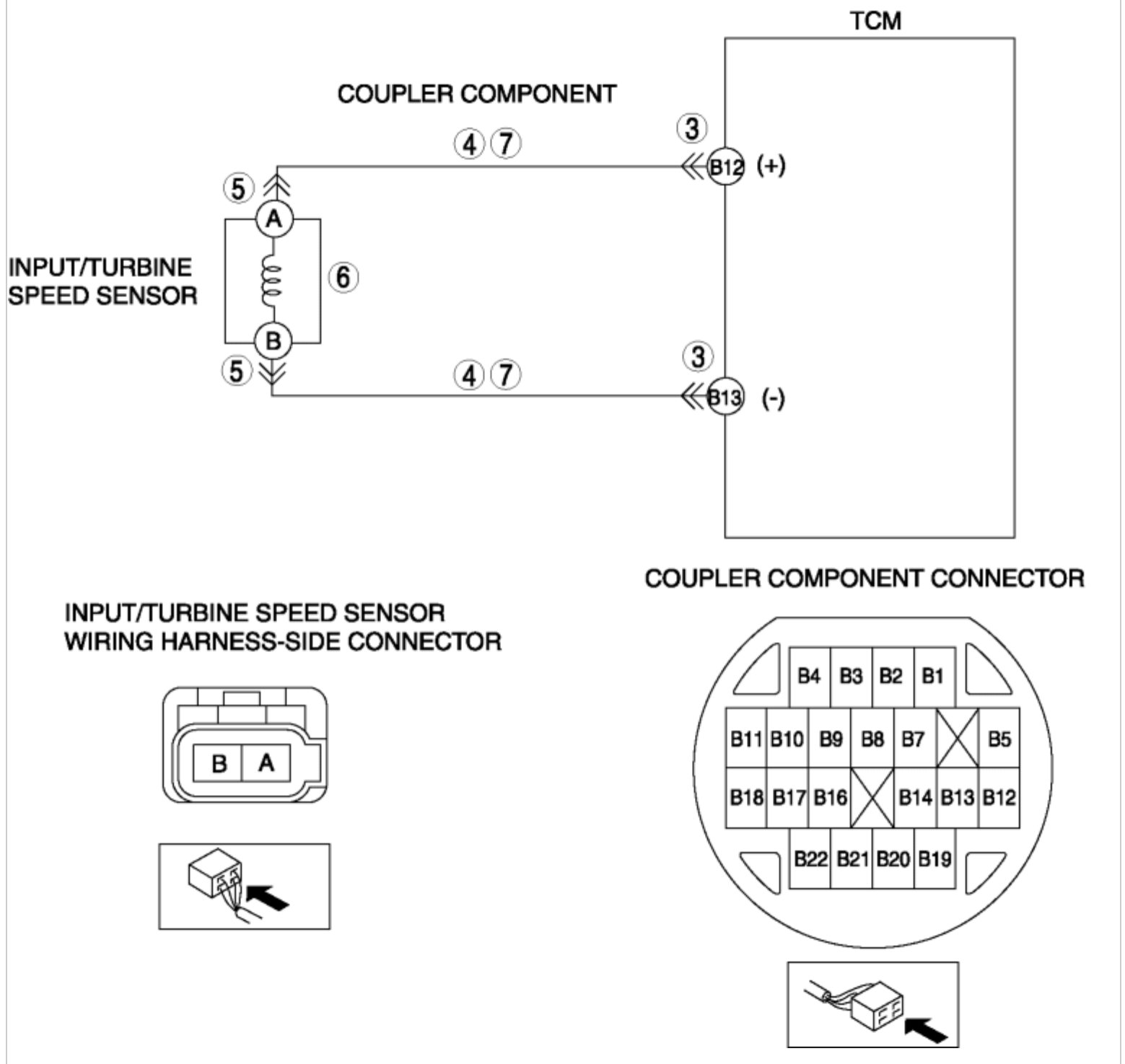


2012 - Mazda6 - Transmission/ Transaxle

DTC P0717:00 [AY6A-EL]

DTC P0717:00	Input/turbine speed sensor circuit no signal
DETECTION CONDITION	• Conditions: Engine running, TCM communication normal, driving in D position, vehicle speed over 20 km/h {12 mph} • Circumstances: Input/turbine speed sensor signal not input with VSS 24 pulse • Time period: Determined after 500 consecutive times 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 not available. • FREEZE FRAME DATA is available. • The DTC is stored in the TCM memory.
FAIL-SAFE FUNCTION	• Emergency mode 3
POSSIBLE CAUSE	• Coupler component connector or terminal malfunction • Short to GND in wiring harness between input/turbine speed sensor terminal A and TCM terminal B12 • Short to GND in wiring harness between input/turbine speed sensor terminal B and TCM terminal B13 • Input/turbine speed sensor connector or terminal malfunction • Input/turbine speed sensor malfunction • Open circuit between input/turbine speed sensor terminal A and TCM terminal B12 • Open circuit between input/turbine speed sensor terminal B and TCM terminal B13 • 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.

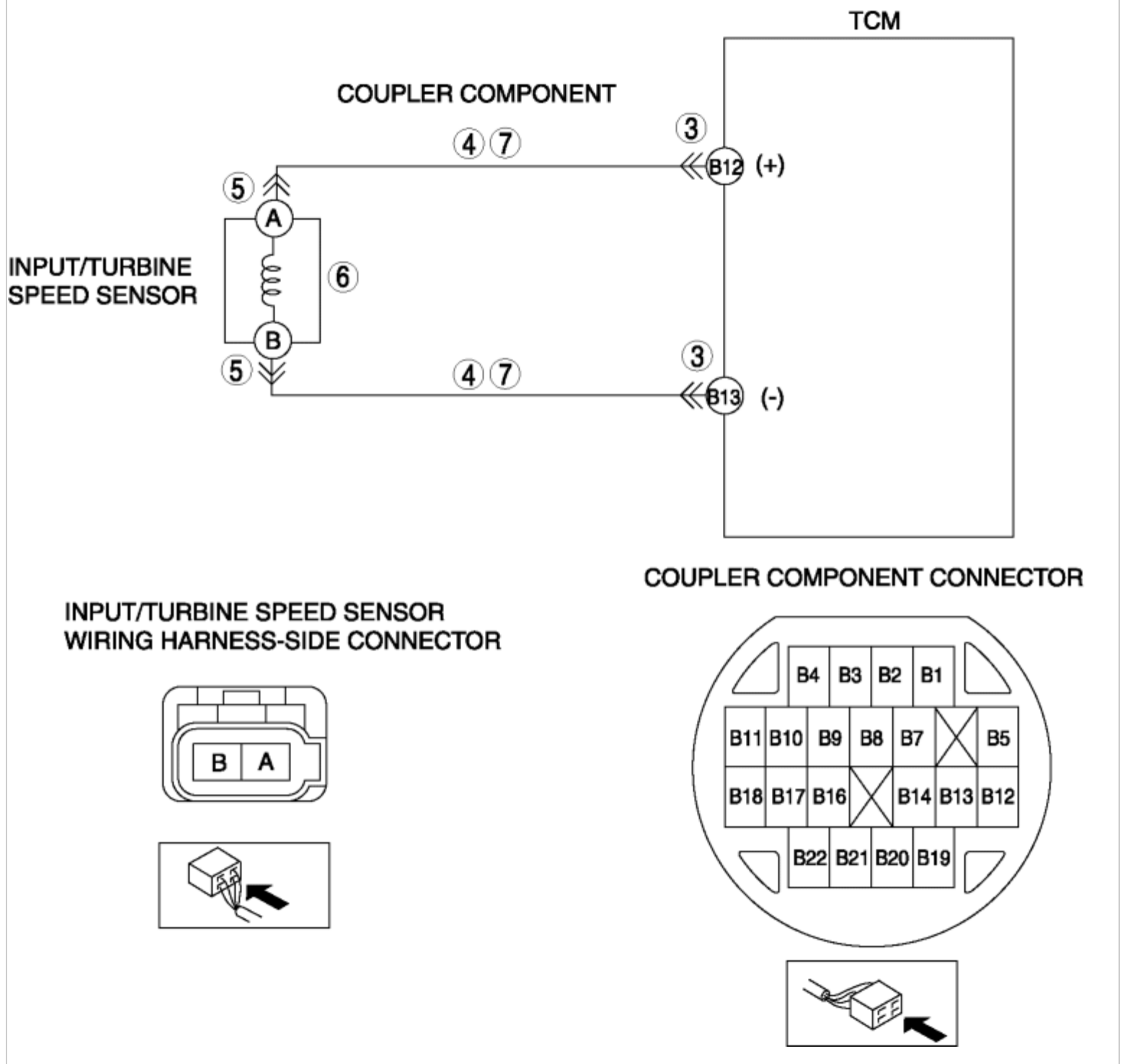
2	VERIFY RELATED REPAIR INFORMATION AVAILABILITY • Verify related Service Bulletins and/or on-line repair information availability. • Is any related repair information available?	Yes Perform repair or diagnosis according to the available repair information. • If the vehicle is not repaired, go to the next step. No Go to the next step.
3	INSPECT COUPLER COMPONENT CONNECTOR FOR POOR CONNECTION • Switch the ignition OFF (LOCK). • Remove the TCM. (See TCM REMOVAL/ INSTALLATION [AY6A-EL].) • 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 8. No Go to the next step.
4	INSPECT INPUT/ TURBINE SPEED SENSOR CIRCUIT FOR SHORT TO GND • Switch the ignition OFF (LOCK). • Inspect for continuity between the following circuits: ▪ Coupler component terminal B12 (wiring harness-side) and body GND ▪ Coupler component terminal B13 (wiring harness-side) and body GND • Is there continuity?	Yes Repair or replace the wiring harness for a possible short to GND, then go to Step 8. No Go to the next step.
5	INSPECT INPUT/ TURBINE SPEED SENSOR CONNECTOR FOR POOR CONNECTION • Switch the ignition OFF (LOCK). • Disconnect the input/turbine speed 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 8. No Go to the next step.
6	INSPECT INPUT/ TURBINE SPEED SENSOR • Inspect the input/turbine speed sensor. (See INPUT/ TURBINE SPEED SENSOR	Yes Replace the input/turbine speed sensor, then go to Step 8. (See INPUT/ TURBINE SPEED

	INSPECTION [AY6A-EL] .) Is there any malfunction?	SENSOR REMOVAL/ INSTALLATION [AY6A-EL] .)
		No Go to the next step.
7	INSPECT INPUT/ TURBINE SPEED SENSOR CIRCUIT FOR OPEN CIRCUIT - Switch the ignition OFF (LOCK). - Inspect for continuity between the following circuits: - Input/turbine speed sensor terminal A (wiring harness-side) and coupler component terminal B12 (wiring harness-side) - Input/turbine speed sensor terminal B (wiring harness-side) and coupler component terminal B13 (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.
8	VERIFY DTC TROUBLESHOOTING 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: - Start the engine. - Warm up the engine to normal operating temperature. - Drive the vehicle, two separate times, in D position at 20 km/h {12 mph} or more for 150 s or more. - Is the same DTC present?	Yes Replace the TCM, then go to the next step. (See TCM REMOVAL/ INSTALLATION [AY6A-EL] .) No Go to the next step.
9	VERIFY NO DTCs ARE PRESENT - Perform the "Reading DTCs Procedure". (See ON-BOARD DIAGNOSTIC SYSTEM DTC INSPECTION [AY6A-EL] .) - Are any DTCs present?	Yes Go to the applicable DTC inspection. (See ON-BOARD DIAGNOSTIC SYSTEM DTC TABLE [AY6A-EL] .) No DTC troubleshooting completed.

2012 - Mazda6 - Transmission/ Transaxle

DTC P0717:00 [AY6A-EL]

DTC P0717:00	Input/turbine speed sensor circuit no signal
DETECTION CONDITION	• Conditions: Engine running, TCM communication normal, driving in D position, vehicle speed over 20 km/h {12 mph} • Circumstances: Input/turbine speed sensor signal not input with VSS 24 pulse • Time period: Determined after 500 consecutive times 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 not available. • FREEZE FRAME DATA is available. • The DTC is stored in the TCM memory.
FAIL-SAFE FUNCTION	• Emergency mode 3
POSSIBLE CAUSE	• Coupler component connector or terminal malfunction • Short to GND in wiring harness between input/turbine speed sensor terminal A and TCM terminal B12 • Short to GND in wiring harness between input/turbine speed sensor terminal B and TCM terminal B13 • Input/turbine speed sensor connector or terminal malfunction • Input/turbine speed sensor malfunction • Open circuit between input/turbine speed sensor terminal A and TCM terminal B12 • Open circuit between input/turbine speed sensor terminal B and TCM terminal B13 • 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.
3	INSPECT COUPLER COMPONENT CONNECTOR FOR POOR CONNECTION • Switch the ignition OFF (LOCK). • Remove the TCM. (See TCM REMOVAL/ INSTALLATION [AY6A-EL].) • 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 8. No Go to the next step.
4	INSPECT INPUT/ TURBINE SPEED SENSOR CIRCUIT FOR SHORT TO GND • Switch the ignition OFF (LOCK). • Inspect for continuity between the following circuits: ▪ Coupler component terminal B12 (wiring harness-side) and body GND ▪ Coupler component terminal B13 (wiring harness-side) and body GND • Is there continuity?	Yes Repair or replace the wiring harness for a possible short to GND, then go to Step 8. No Go to the next step.
5	INSPECT INPUT/ TURBINE SPEED SENSOR CONNECTOR FOR POOR CONNECTION • Switch the ignition OFF (LOCK). • Disconnect the input/turbine speed 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 8. No Go to the next step.
6	INSPECT INPUT/ TURBINE SPEED SENSOR • Inspect the input/turbine speed sensor. (See INPUT/ TURBINE SPEED SENSOR	Yes Replace the input/turbine speed sensor, then go to Step 8. (See INPUT/ TURBINE SPEED

	INSPECTION [AY6A-EL] .) Is there any malfunction?	SENSOR REMOVAL/ INSTALLATION [AY6A-EL] .)
		No Go to the next step.
7	INSPECT INPUT/ TURBINE SPEED SENSOR CIRCUIT FOR OPEN CIRCUIT - Switch the ignition OFF (LOCK). - Inspect for continuity between the following circuits: - Input/turbine speed sensor terminal A (wiring harness-side) and coupler component terminal B12 (wiring harness-side) - Input/turbine speed sensor terminal B (wiring harness-side) and coupler component terminal B13 (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.
8	VERIFY DTC TROUBLESHOOTING 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: - Start the engine. - Warm up the engine to normal operating temperature. - Drive the vehicle, two separate times, in D position at 20 km/h {12 mph} or more for 150 s or more. - Is the same DTC present?	Yes Replace the TCM, then go to the next step. (See TCM REMOVAL/ INSTALLATION [AY6A-EL] .) No Go to the next step.
9	VERIFY NO DTCs ARE PRESENT - Perform the "Reading DTCs Procedure". (See ON-BOARD DIAGNOSTIC SYSTEM DTC INSPECTION [AY6A-EL] .) - Are any DTCs present?	Yes Go to the applicable DTC inspection. (See ON-BOARD DIAGNOSTIC SYSTEM DTC TABLE [AY6A-EL] .) No DTC troubleshooting completed.

