

DTC P0715 [FN4A-EL]

B3E050219090W13

DTC P0715	Input/turbine speed sensor circuit malfunction
DETECTION CONDITION	<ul style="list-style-type: none"> When all conditions below are satisfied and 0.7 s or more have passed. <ul style="list-style-type: none"> - D or M range of TR switch input - Driving vehicle at vehicle speed of 40 km/h {25 mph} or more - Input/turbine speed sensor signal not input <p>Diagnostic support note:</p> <ul style="list-style-type: none"> This is a continuous monitor (CCM). The MIL illuminates if the PCM detects the above malfunction conditions during the first drive cycle. A PENDING CODE is not available. FREEZE FRAME DATA is available. The AT warning light illuminates. The DTC is stored in the PCM memory.
POSSIBLE CAUSE	<ul style="list-style-type: none"> Input/turbine speed sensor malfunction Short to ground in wiring harness between input/turbine speed sensor terminal A and PCM terminal 1K (Z6)/1Q (LF) Short to ground in wiring harness between input/turbine speed sensor terminal B and PCM terminal 1O (Z6)/1M (LF) Open circuit in wiring harness between input/turbine speed sensor terminal A and PCM terminal K (Z6)/1Q (LF) Open circuit in wiring harness between input/turbine speed sensor terminal B and PCM terminal 1O (Z6)/1M (LF) Damaged connectors between input/turbine speed sensor and PCM PCM malfunction

INPUT/TURBINE SPEED SENSOR WIRING HARNESS-SIDE CONNECTOR

PCM WIRING HARNESS-SIDE CONNECTOR

Diagnostic procedure

STEP	INSPECTION		ACTION
1	VERIFY FREEZE FRAME DATA HAS BEEN RECORDED • Has the FREEZE FRAME DATA been recorded?	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	VERIFY CURRENT INPUT SIGNAL STATUS • Turn the ignition switch to the LOCK position. • Start the engine. • Measure the frequency of input/turbine speed sensor using a oscilloscope. - IG ON: 0 Hz - Idle: Within 320-374 Hz (P, N position) • Are frequencies of input/turbine speed sensor within specifications?	Yes	Go to the intermittent concern troubleshooting procedure. (See INTERMITTENT CONCERN TROUBLESHOOTING [ZJ, Z6].) (See INTERMITTENT CONCERN TROUBLESHOOTING [LF].)
		No	Go to the next step.
4	INSPECT INPUT/TURBINE SPEED SENSOR CONNECTOR FOR POOR CONNECTION • Turn the ignition switch to the LOCK position. • Disconnect the input/turbine speed sensor connector. • Inspect for poor connection (such as damaged/pulled-out pins, corrosion). • Is the connection normal?	Yes	Go to the next step.
		No	Repair or replace the connector and/or terminals, then go to Step 10.
5	INSPECT INPUT/TURBINE SPEED SENSOR RESISTANCE • Measure the resistance between the input/turbine speed sensor terminals (part-side). • Is the resistance within 250-600 ohms between input/turbine speed sensor terminals (part-side)? (See INPUT/TURBINE SPEED SENSOR INSPECTION.)	Yes	Go to the next step.
		No	Replace the input/turbine speed sensor, then go to Step 10. (See INPUT/TURBINE SPEED SENSOR REMOVAL/INSTALLATION.)
6	INSPECT INPUT/TURBINE SPEED SENSOR • Remove input/turbine speed sensor. • Is there iron powder stuck on input/turbine speed sensor? (See INPUT/TURBINE SPEED SENSOR REMOVAL/INSTALLATION.)	Yes	Clean the input/turbine speed sensor, then go to Step 10.
		No	Go to the next step.
7	INSPECT PCM CONNECTOR FOR POOR CONNECTION • Disconnect the PCM connector. • Inspect for poor connection (such as damaged/pulled-out pins, corrosion). • Is the connection normal?	Yes	Go to the next step.
		No	Repair or replace the connector and/or terminals, then go to Step 10.
	INSPECT INPUT/TURBINE SPEED SENSOR CIRCUIT FOR OPEN CIRCUIT	Yes	Go to the next step.

8	<ul style="list-style-type: none"> Inspect the following input/turbine speed sensor terminals (wiring harness-side) and PCM terminals (wiring harness-side): <ul style="list-style-type: none"> - A and 1K (Z6)/1Q (LF) - B and 1O (Z6)/1M (LF) Is there continuity? 	No	Repair or replace the wiring harness, then go to Step 10.
9	INSPECT INPUT/TURBINE SPEED SENSOR CIRCUIT FOR SHORT TO GROUND <ul style="list-style-type: none"> Inspect input/turbine speed sensor terminal (wiring harness-side) and body ground. <ul style="list-style-type: none"> - A and body ground - B and body ground Is there continuity? 	Yes	Repair or replace the wiring harness, then go to the next step.
		No	Go to the next step.
10	VERIFY TROUBLESHOOTING OF DTC P0715 COMPLETED <ul style="list-style-type: none"> Make sure to reconnect all the disconnected connectors. Clear the DTC from the memory using the WDS or equivalent. Drive the vehicle a vehicle speed 40 km/h {25 mph} or more for 0.7 s or more. Is the same DTC present? 	Yes	Replace the PCM, then go to the next step. (See PCM REMOVAL/INSTALLATION [ZJ, Z6].) (See PCM REMOVAL/INSTALLATION [LF].)
		No	Go to the next step.
11	VERIFY AFTER REPAIR PROCEDURE <ul style="list-style-type: none"> Perform the "After Repair Procedure". (See AFTER REPAIR PROCEDURE [FN4A-EL].) Are any DTCs present? 	Yes	Go to the applicable DTC inspection.
		No	DTC troubleshooting completed.