

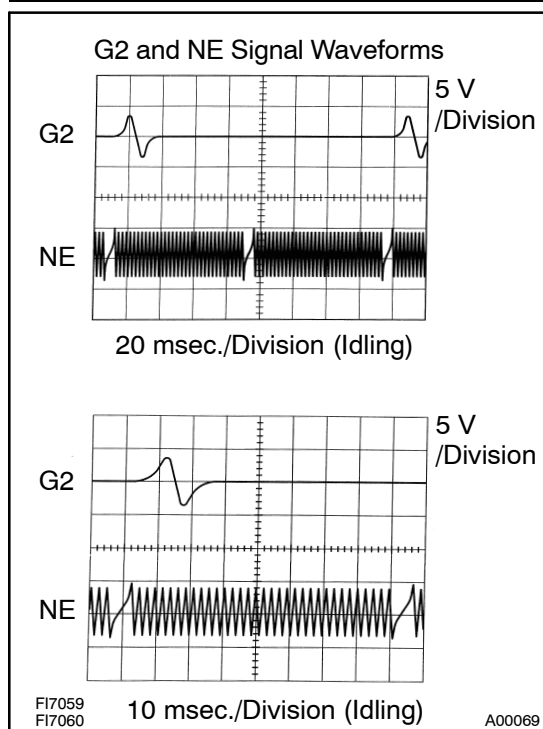
DTC	P0335	Crankshaft Position Sensor "A" Circuit
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DTC	P0339	Crankshaft Position Sensor "A" Circuit Intermittent
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CIRCUIT DESCRIPTION

The crankshaft position sensor system consists of a crankshaft position sensor plate and a pick-up coil. The sensor plate has 34 teeth and is installed on the crankshaft. The pick-up coil is made of an iron core and magnet. The sensor plate rotates and as each tooth passes through the pick-up coil, a pulse signal is created. The pick-up coil generates 34 signals for each engine revolution. Based on these signals, the ECM calculates the crankshaft position and engine RPM. Using these calculations, the fuel injection time and ignition timing are controlled.

DTC No.	DTC Detecting Condition	Trouble Area
P0335	No crankshaft position sensor signal to ECM during cranking (2 trip detection logic)	• Open or short in crankshaft position sensor circuit • Crankshaft position sensor • Signal plate • ECM
	No crankshaft position sensor signal to ECM with engine speed 600 rpm or more (2 trip detection logic)	
P0339	In condition (a), (b) and (c), when no crankshaft position sensor (NE) signal is input for 0.05 sec. or more. : (1 trip detection logic) (c) Engine revolution 1000 rpm or more (d) STA signal is OFF (e) 3 sec. or more has lapsed after STA signal is switched from ON to OFF.	



Reference: Inspection using the oscilloscope.

The correct waveform is as shown.

Tester Connection	Specified Condition
G2+ (E7-27) – G2- (E7-32)	Correct waveform is as shown
NE+ (E7-25) – NE- (E7-24)	

MONITOR DESCRIPTION

If there is no signal from the crankshaft sensor even though the engine is revolving, the ECM interprets this as a malfunction of the sensor.

MONITOR STRATEGY

Related DTCs	P0335	Crankshaft position sensor range check or rationality
Required sensors/components	Main sensors/components	Crankshaft position sensor
	Related sensors/components	Engine speed sensor
Frequency of operation	Continuous	
Duration	Case 1: 4.7 sec. Case 2: 0.016 sec. Case 3: 2 rev x 5 times	
MIL operation	Case 1: 2 driving cycles Case 2, 3: 1 driving cycle	
Sequence of operation	None	

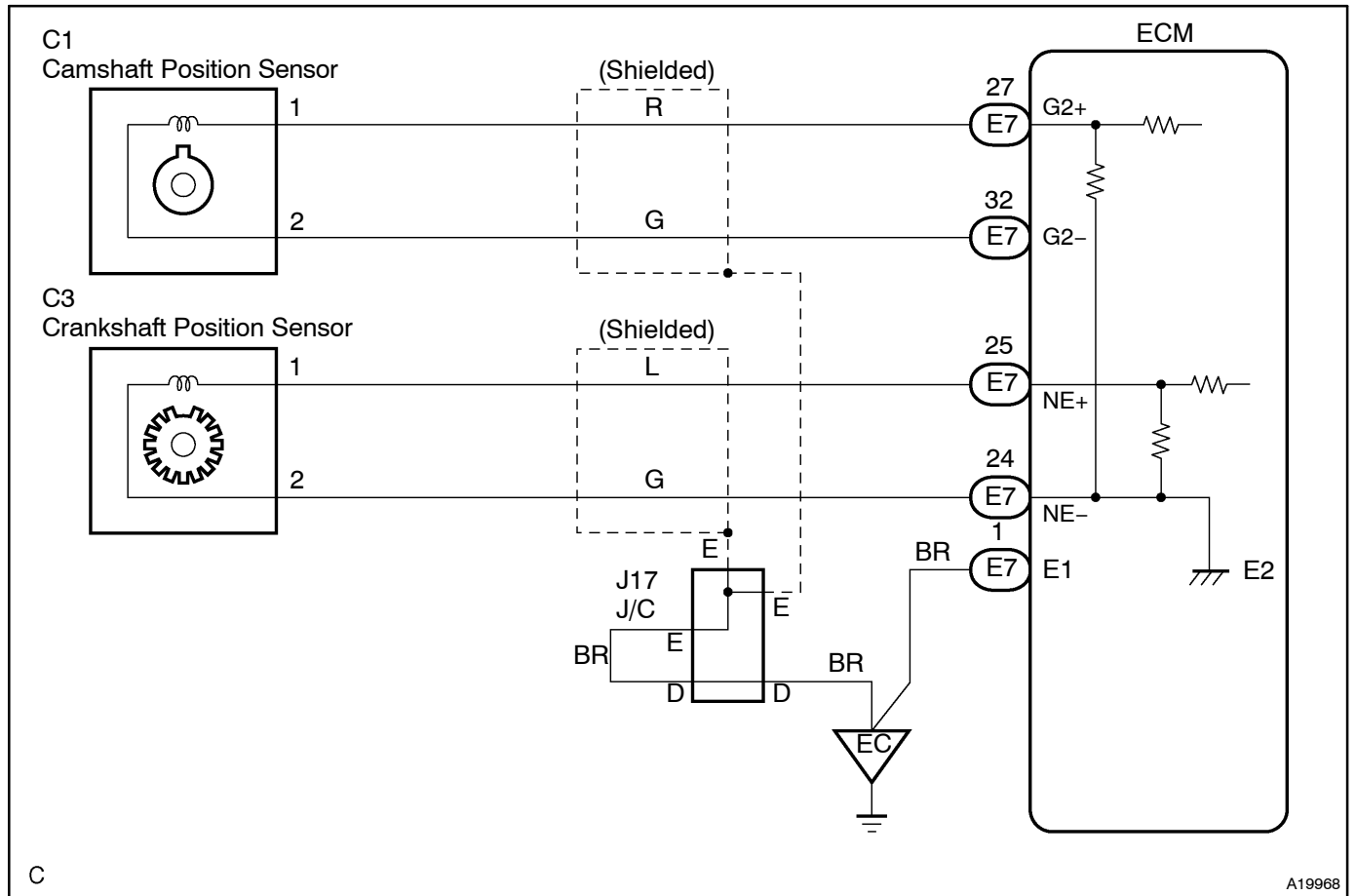
TYPICAL ENABLING CONDITIONS

Item	Specification	
	Minimum	Maximum
The monitor will run whenever the following DTCs are not present	See "List of disable a monitor" (on page DI-3)	
Case 1:		
Starter	ON	
Minimum battery voltage while starter ON	-	11 V
Case 2:		
Engine speed	600 rpm	-
Starter	OFF	
Time after starter ON to OFF	3 sec.	-
Case 3:		
Time after starter ON to OFF	0.3 sec.	-
Number of camshaft position sensor signal pulse	1	
Battery voltage	7 V	-
Minimum battery voltage while starter ON	-	11 V

TYPICAL MALFUNCTION THRESHOLDS

Detection Criteria	Threshold
Case 1:	
Engine speed signal	No signal for 4.7 sec.
Case 2:	
Engine speed signal	No signal for 0.016 sec.
Case 3:	
Number of crankshaft position sensor signal pulse	17 or more and 29 or less

WIRING DIAGRAM



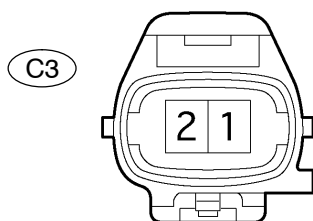
INSPECTION PROCEDURE

HINT:

- Read freeze frame data using the hand-held tester or the OBD II scan tool. Freeze frame data records the engine conditions when a malfunction is detected. When troubleshooting it is useful for determining whether the vehicle was running or stopped, the engine was warmed up or not, the air-fuel ratio lean or rich, etc. at the time of the malfunction.
- READ VALUE OF HAND-HELD TESTER OR OBD II SCAN TOOL
- (a) Connect the hand-held tester or the OBD II scan tool to the DLC3.
- (b) Start the engine and push the hand-held tester or the OBD II scan tool main switch ON.
- (c) Select the item "DIAGNOSIS / ENHANCED OBD II / DATA LIST / ALL / ENGINE SPD".
- The engine speed can be confirmed in DATA LIST using the hand-held tester or OBD II scan tool. If there is no NE signals from the crankshaft position sensor despite the engine revolving, the engine speed will be indicated as zero. If voltage output of the crankshaft position sensor is insufficient, the engine speed will be indicated as lower RPM (than the actual RPM).

1 Check resistance of crankshaft position sensor.

Component Side



Crankshaft Position Sensor

A21026

PREPARATION:

Disconnect the C3 crankshaft position sensor connector.

CHECK:

Measure the resistance between terminals 1 and 2.

OK:

Tester Connection	Specified Condition
1 – 2	985 to 1,600 Ω at cold
	1,265 to 1,890 Ω at hot

NOTICE:

"Cold" and "Hot" shown above mean the temperature of the coils themselves. "Cold" is from -10°C (14°F) to 50°C (122°F) and "Hot" is from 50°C (122°F) to 100°C (212°F).

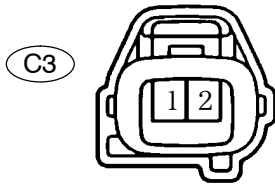
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Replace crankshaft position sensor.

OK

2 Check for open and short in harness and connector between ECM and crankshaft position sensor.

Wire Harness Side



Crankshaft Position Sensor

A21027

PREPARATION:

- Disconnect the C3 crankshaft position sensor connector.
- Disconnect the E7 ECM connector.

CHECK:

Measure the resistance between the wire harness side connectors.

OK:

Tester Connection	Specified Condition
Crankshaft position sensor (C3-1) - NE+ (E7-25)	Below 1 Ω
Crankshaft position sensor (C3-2) - NE- (E7-24)	Below 1 Ω
Crankshaft position sensor (C3-1) or NE+ (E7-25) - Body ground	10 k Ω or higher
Crankshaft position sensor (C3-2) or NE- (E7-24) - Body ground	10 k Ω or higher

NG

Repair or replace harness or connector.

OK

3 Check sensor installation (crankshaft position sensor).

CHECK:

Check the crankshaft position sensor installation.

NG

Tighten sensor.

OK

4	Inspect teeth of sensor plate.
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PREPARATION:

Remove the crankshaft angle sensor plate (See page [EM-15](#)).

CHECK:

Check the teeth of sensor plate.

NG**Replace sensor plate.****OK****Replace ECM (See page [SF-60](#)).**