

DTC**P0617****Starter Relay Circuit High****DESCRIPTION**

While the engine is being cranked, the positive battery voltage is applied to terminal STA of the ECM. If the ECM detects the Starter Control (STA) signal while the vehicle is being driven, it determines that there is a malfunction in the STA circuit. The ECM then illuminates the MIL and sets the DTC.

This monitor runs when the vehicle is driven at 20 km/h (12.4 mph) for over 20 seconds.

DTC No.	DTC Detection Conditions	Trouble Areas
P0617	When conditions (a), (b) and (c) met, positive (+B) battery voltage 10.5 V or more applied to ECM for 20 seconds (1 trip detection logic) (a) Vehicle speed 20 km/h (12.4 mph) or more (b) Engine speed 1,000 rpm or more (c) STA signal ON	• Park/Neutral Position (PNP) switch • Starter relay circuit • Ignition switch • ECM

MONITOR STRATEGY

Related DTCs	P0617: Starter signal
Required Sensors/Components (Main)	STARTER relay, PNP switch, Clutch start switch and Ignition switch
Required Sensors/Components (Related)	Vehicle Speed Sensor (VSS), Crankshaft Position (CKP) sensor
Frequency of Operation	Continuous
Duration	20 seconds
MIL Operation	Immediate
Sequence of Operation	None

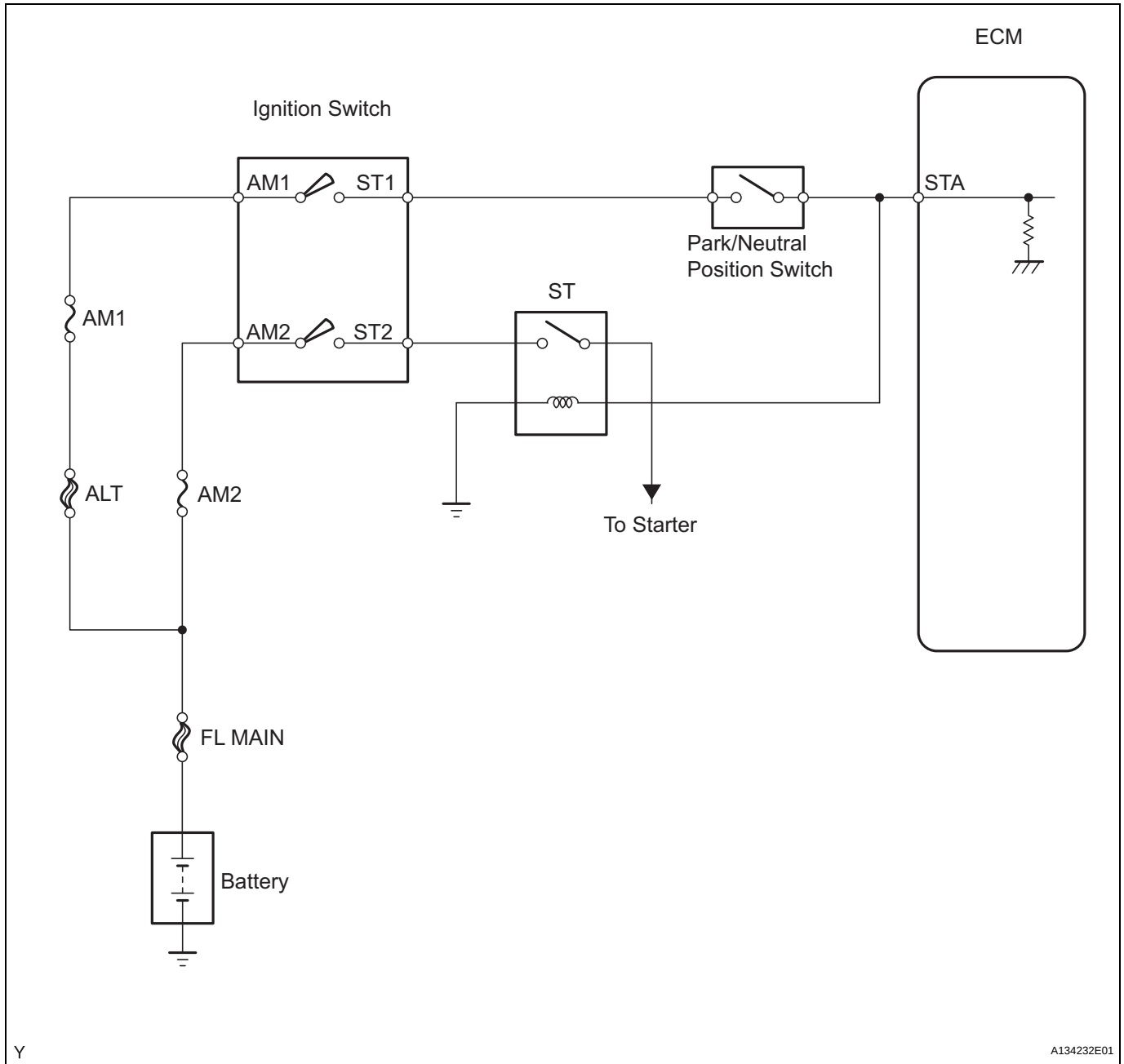
TYPICAL ENABLING CONDITIONS

Monitor runs whenever following DTCs not present	None
Battery voltage	10.5 V or more
Vehicle speed	20 km/h (12.43 mph) or more
Engine speed	1,000 rpm or more

TYPICAL MALFUNCTION THRESHOLDS

Starter signal	ON
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WIRING DIAGRAM



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INSPECTION PROCEDURE

HINT:

- The following troubleshooting flowchart is based on the premise that the engine is cranked normally. If the engine will not crank, proceed to the problem symptoms table (see page [ES-24](#)).
- Read freeze frame data using the intelligent tester. Freeze frame data records the engine condition when malfunctions are detected. When troubleshooting, freeze frame data can help determine if the vehicle was moving or stationary, if the engine was warmed up or not, if the air-fuel ratio was lean or rich, and other data from the time the malfunction occurred.

1

READ VALUE USING INTELLIGENT TESTER (STARTER SIGNAL)

- Connect the intelligent tester to the DLC3.
- Turn the ignition switch ON and turn the tester ON.

- (c) Select the following menu items: DIAGNOSIS / ENHANCED OBD II / DATA LIST / PRIMARY / STARTER SIG.
- (d) Check the value displayed on the tester when the ignition switch is turned to the ON and START positions.

OK

Ignition Switch Positions	STARTER SIG
ON	OFF
START	ON

OK

CHECK FOR INTERMITTENT PROBLEMS

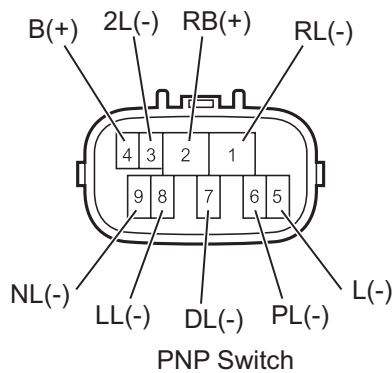
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ES

2

INSPECT PARK/NEUTRAL POSITION SWITCH ASSEMBLY

Component Side:



- (a) Disconnect the B26 PNP switch connector.
- (b) Measure the resistance when the transmission gear selector lever is moved to each position.

Standard resistance

Gear Selector Lever Positions	Tester Connections	Specified Conditions
P	2 - 6, 4 - 5	Below 1 Ω
R	1 - 2	Below 1 Ω
N	2 - 9, 4 - 5	Below 1 Ω
D	2 - 7	Below 1 Ω
2	2 - 3	Below 1 Ω
L	2 - 8	Below 1 Ω

- (c) Reconnect the PNP switch connector.

OK

Go to step 5

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3

REPLACE PARK/NEUTRAL POSITION SWITCH ASSEMBLY

NEXT

4

READ VALUE USING INTELLIGENT TESTER (STARTER SIGNAL)

- (a) Connect the intelligent tester to the DLC3.
- (b) Turn the ignition switch ON and turn the tester ON.
- (c) Select the following menu items: DIAGNOSIS / ENHANCED OBD II / DATA LIST / PRIMARY / STARTER SIG.
- (d) Check the value displayed on the tester when the ignition switch is turned to the ON and START positions.

OK

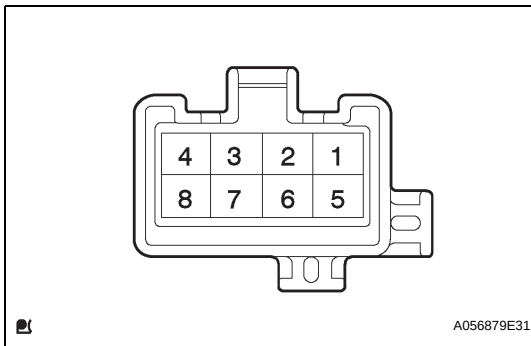
Ignition Switch Positions	STARTER SIG
ON	OFF

Ignition Switch Positions	STARTER SIG
START	ON

OK

SYSTEM OK

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5 INSPECT IGNITION OR STARTER SWITCH ASSEMBLY

- (a) Disconnect the E3 ignition switch connector.
(b) Check the resistance.

Standard resistance

Tester Connections	Ignition Switch Positions	Specified Conditions
All Terminals	LOCK	10 k Ω or higher
2 - 3	ACC	Below 1 Ω
2 - 3, 2 - 4, 6 - 7	ON	
1 - 2, 2 - 4, 6 - 7, 7 - 8	START	

- (c) Reconnect the ignition switch connector.

OK

Go to step 7

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6 REPLACE IGNITION OR STARTER SWITCH ASSEMBLY

NEXT

7 READ VALUE USING INTELLIGENT TESTER (STARTER SIGNAL)

- (a) Connect the intelligent tester to the DLC3.
(b) Turn the ignition switch ON and turn the tester ON.
(c) Select the following menu items: DIAGNOSIS / ENHANCED OBD II / DATA LIST / PRIMARY / STARTER SIG.
(d) Check the value displayed on the tester when the ignition switch is turned to the ON and START positions.

OK

Ignition Switch Positions	STARTER SIG
ON	OFF
START	ON

OK

SYSTEM OK

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ES

8

REPAIR OR REPLACE HARNESS OR CONNECTOR (PNP SWITCH - STA TERMINAL OF ECM)

NEXT

9

CHECK WHETHER DTC OUTPUT RECURS

- (a) Connect the intelligent tester to the DLC3.
- (b) Turn the ignition switch ON.
- (c) Turn the tester ON.
- (d) Clear DTCs (see page [ES-35](#)).
- (e) Drive the vehicle at more than 20 km/h (12.43 mph) for over 20 seconds.
- (f) Select the following menu items: DIAGNOSIS / ENHANCED OBD II / DTC INFO / CURRENT CODES.
- (g) Read DTCs.

Result

Display (DTC Output)	Proceed To
P0617	A
No DTC	B

B

SYSTEM OK

A

REPLACE ECM

ES