

DTC	P0617	Starter Relay Circuit High
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MONITOR DESCRIPTION

While the engine is being cranked, the battery positive voltage is applied to terminal STA of the ECM. If the vehicle is being driven and the ECM detects the starter control signal (STA), the ECM concludes that the starter control circuit is malfunctioning. The ECM will turn on the MIL and a DTC is set.

DTC No.	DTC Detection Condition	Trouble Area
P0617	When all conditions (a), (b) and (c) are satisfied for 20 seconds with battery (+B) voltage 10.5 V or more (a) Vehicle speed $\geq$ 20 km/h (12.4 mph) (b) Engine revolution $\geq$ 1,000 rpm (c) STA signal ON	• Park/neutral position switch • Starter relay circuit • Ignition switch • ECM

MONITOR STRATEGY

Related DTCs	P0617	Starter signal error
Required sensors/components	Main sensors/components	Starter signal
	Related sensors/components	Vehicle speed sensor, Engine speed sensor
Frequency of operation	Continuous	
Duration	20 sec.	
MIL operation	Immediate	
Sequence of operation	None	

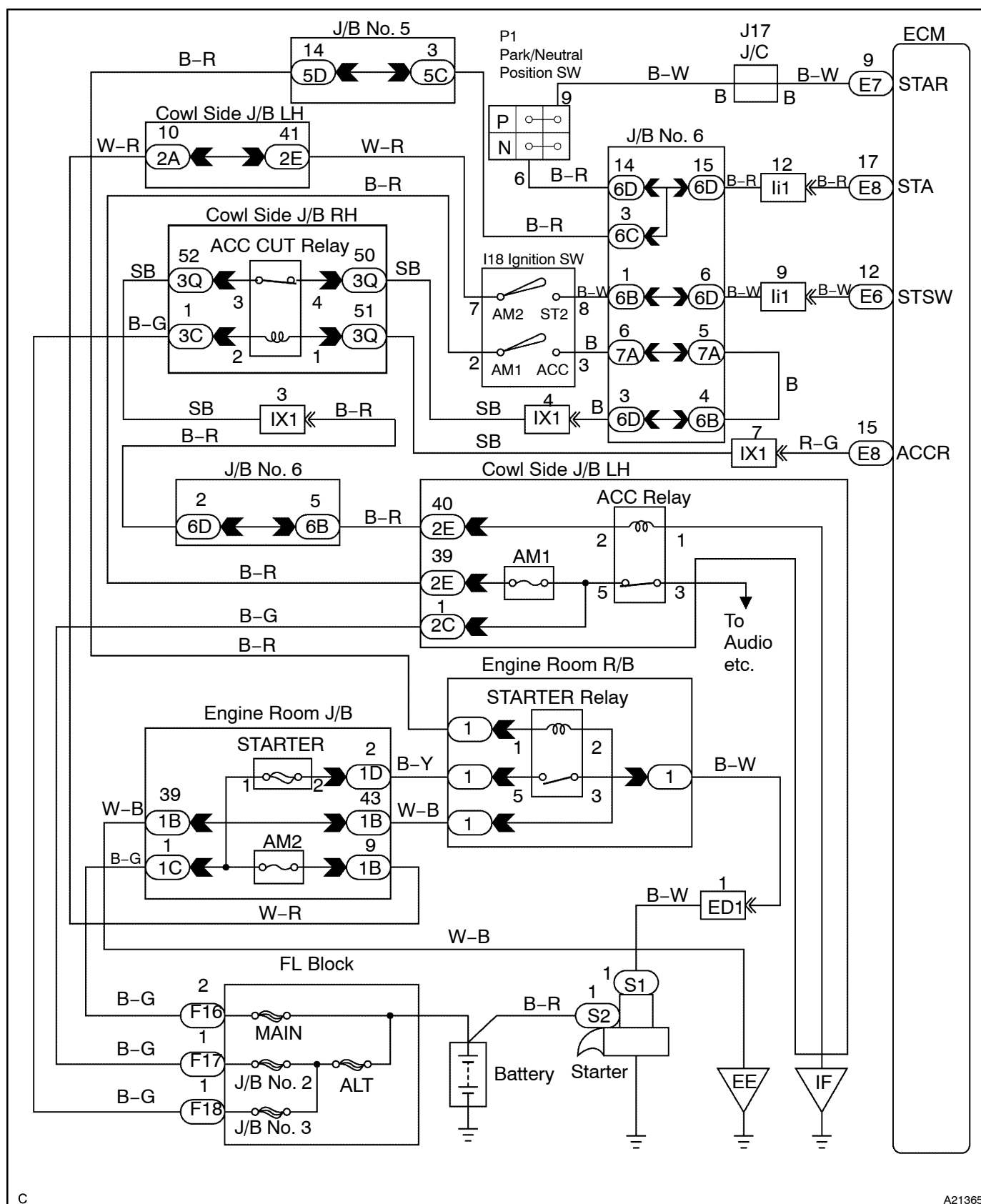
TYPICAL ENABLING CONDITIONS

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)	
Battery voltage	10.5 V	–
Vehicle speed	20 km/h (12.4 mph)	–
Engine speed	1,000 rpm	–

TYPICAL MALFUNCTION THRESHOLDS

Detection Criteria	Threshold
Starter signal	ON (at "more than 20 km/h (12.4 mph) and more than 1,000 rpm")

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, freeze frame data can help determine if the vehicle was running or stopped, if the engine was warmed up or not, if the air-fuel ratio was lean or rich, as well as other data from the time when a malfunction occurred.

Hand-held tester:

1	Connect hand-held tester, and check STA signal.
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PREPARATION:

- (a) Connect the hand-held tester to the DLC3.
- (b) Turn the ignition switch ON, and push the hand-held tester main switch ON.
- (c) Enter the following menus: DIAGNOSIS / ENHANCED OBD II / DATA LIST / ALL / STARTER SIG.

CHECK:

Read the STA signal on the hand-held tester while the starter operates.

OK:

Ignition Switch Position	ON	START
STA Signal	OFF	ON

OK

Go to step 5.

NG

2	Check park/neutral position switch (See page DI-410).
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NG

**Replace park/neutral position switch.
Go to next step 5 after the replacement.**

OK

3	Check ignition switch (See page BE-30).
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NG

**Replace ignition switch.
Go the next step 5 after the replacement.**

OK

4 Connect hand-held tester, and check STA signal.

PREPARATION:

- (a) Connect the hand-held tester to the DLC3.
- (b) Turn the ignition switch ON, and push the hand-held tester main switch ON.
- (c) Enter the following menus: DIAGNOSIS / ENHANCED OBD II / DATA LIST / ALL / STARTER SIG.

CHECK:

Read the STA signal on the hand-held tester while the starter operates.

OK:

Ignition Switch Position	ON	START
STA Signal	OFF	ON

NG

Repair or replace harness or connector.

OK

5 Check DTC reoccur.

PREPARATION:

- (a) Connect the hand-held tester to the DLC3.
- (b) Turn the ignition switch ON and hand-held tester main switch ON.
- (c) Clear DTC (See page [DI-3](#)).
- (d) Drive the vehicle more than 40 km/h (25 mph) for 20 seconds or more.

CHECK:

Check DTC reoccur.

RESULT:

Display (DTC output)	Proceed to
P0617	A
No DTC output	B

A

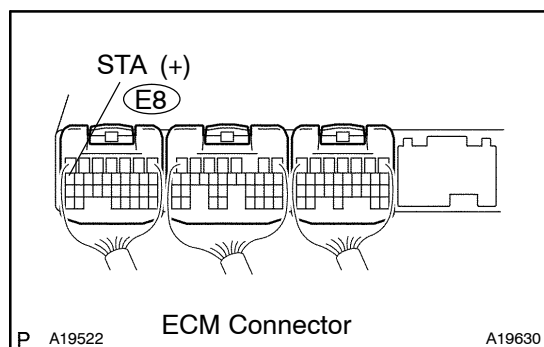
Replace ECM (See page [SF-60](#)).

B

Check for intermittent problems (See page [DI-3](#)).

OBD II scan tool (excluding hand-held tester):

- | | |
|----------|---|
| 1 | Check voltage between terminal STA of ECM connector and body ground. |
|----------|---|

**PREPARATION:**

Turn the ignition switch ON.

CHECK:

Measure the voltage between terminal STA of the ECM connector and the body ground, while cranking the engine (ignition switch START position) and while not engine cranking the engine (ignition switch position ON).

OK:**Voltage:**

6 V or more (ignition switch START position)

0 V (ignition switch ON position)

OK

Go to step 5.

NG

- | | |
|----------|--|
| 2 | Check park/neutral position switch (See page DI-410). |
|----------|--|

NG

**Replace park/neutral position switch.
Go to next step 5 after the replacement.**

OK

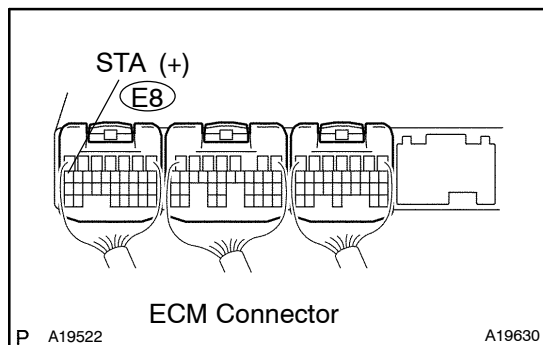
- | | |
|----------|--|
| 3 | Check ignition switch (See page BE-30). |
|----------|--|

NG

**Replace ignition switch.
Go to next step 5 after the replacement.**

OK

4 Check voltage between terminal STA of ECM connector and body ground.



PREPARATION:

Turn the ignition switch ON.

CHECK:

Measure the voltage between terminal STA of the ECM connector and the body ground, while cranking the engine (ignition switch START position) and while not engine cranking the engine (ignition switch position ON).

OK:

Voltage:

6 V or more (ignition switch START position)

0 V (ignition switch ON position)

NG

Repair or replace harness or connector.

OK

5 Check DTC reoccur.

PREPARATION:

- Connect the OBD II scan tool to the DLC3.
- Turn the ignition switch ON and hand-held tester main switch ON.
- Clear DTC (See page [DI-3](#)).
- Drive the vehicle more than 40 km/h (25 mph) for 20 seconds or more.

CHECK:

Check DTC reoccur.

RESULT:

Display (DTC output)	Proceed to
P0617	A
No DTC output	B

A

Replace ECM (See page [SF-60](#)).

B

Check for intermittent problems (See page [DI-3](#)).