DTC	P0617	Starter Relay Circuit High

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 will be set.

DTC No.	DTC Detecting Condition	Trouble Area
P0617	When conditions (a), (b) and (c) are met and the battery (+B) voltage 10.5 V or more is applied for 20 seconds: (a) Vehicle speed greater than 12 mph (20 km/h) (b) Engine revolution greater than 1,000 rpm (c) STA signal ON	• Short in PNP switch assembly circuit • PNP switch assembly • Ignition switch • ECM

ES

MONITOR STRATEGY

Related DTCs	P0617: Starter Signal
Required sensors / components (Main)	Starter Relay, PNP Switch
Required sensors / components (Related)	Crankshaft Position Sensor, Vehicle Speed Sensor
Frequency of operation	Continuous
Duration	20 seconds
MIL operation	Immediate
Sequence operation	None

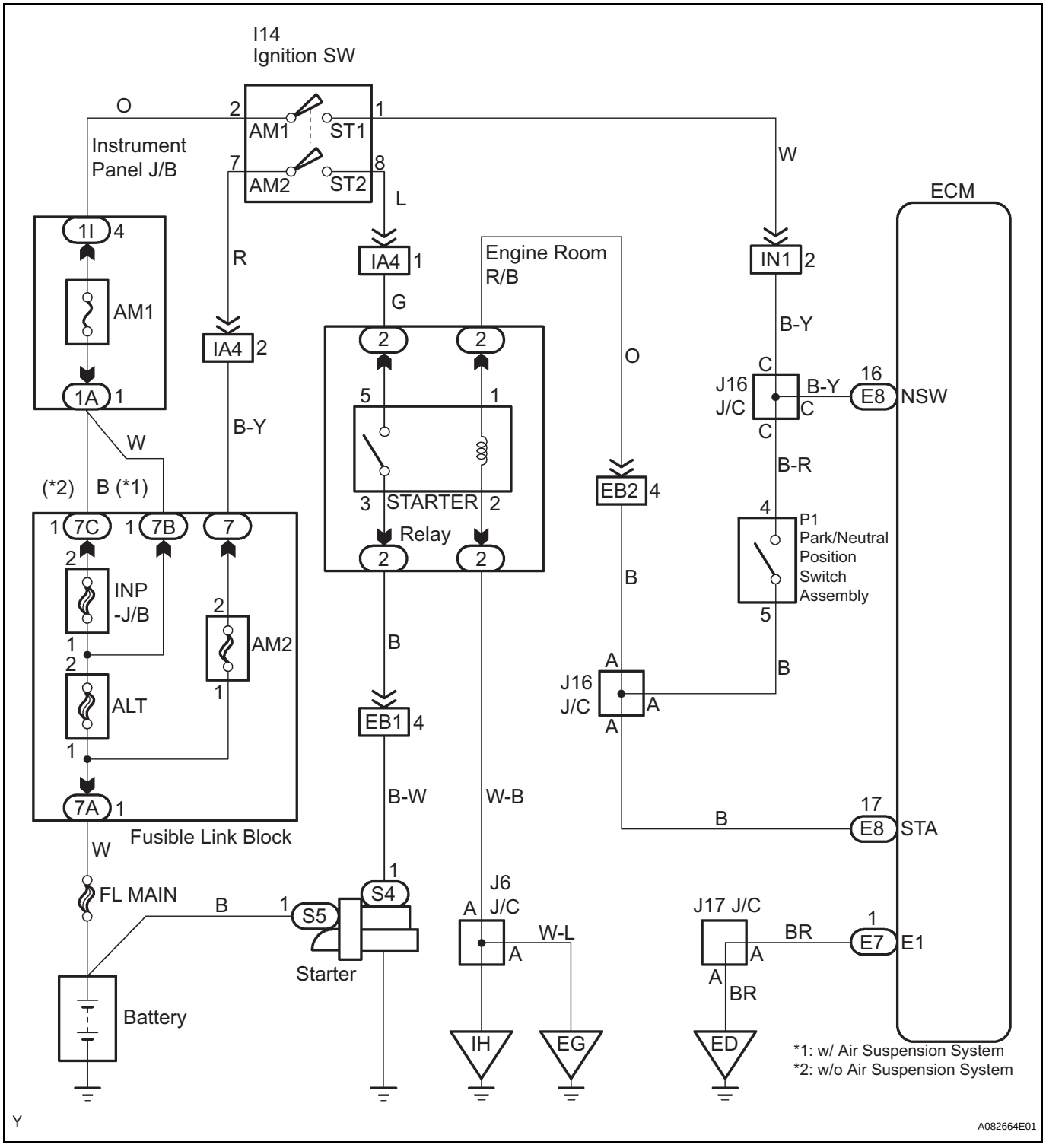
TYPICAL ENABLING CONDITIONS

The monitor will run whenever these DTCs are not present	None
Battery voltage	10.5 V or more
Vehicle speed	12.4 mph (20 km/h) or more
Engine RPM	1,000 rpm or more

TYPICAL MALFUNCTION THRESHOLDS

Starter signal	ON

WIRING DIAGRAM



HINT:
Read freeze frame data using the intelligent tester or the OBD II scan tool. The ECM records vehicle and driving condition information as freeze frame data the moment a DTC is stored. 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, and other data from the time the malfunction occurred.

1	READ VALUE OF INTELLIGENT TESTER (STARTER SIGNAL)

(a) Connect the intelligent tester to the DLC3.
(b) Turn the ignition switch ON and push the intelligent tester main switch ON.
(c) On the intelligent tester, enter the following menus: DIAGNOSIS / ENHANCED OBD II / DATA LIST / ALL / STARTER SIG. Read the values.

Result

Ignition Switch Condition	ON	START
STA Signal	OFF	ON

OK → **REPLACE ECM**

NG

2	INSPECT PARK/NEUTRAL POSITION SWITCH ASSEMBLY

OK:

When shift lever is the N position, the PNP switch is ON.

When shift lever is the D position, the PNP switch is OFF.

NG → **REPLACE PARK/NEUTRAL POSITION SWITCH ASSEMBLY (GO TO NEXT STEP 3 AFTER REPLACEMENT)**

OK

3	READ VALUE OF INTELLIGENT TESTER (STARTER SIGNAL)

(a) Connect the intelligent tester to the DLC3.
(b) Turn the ignition switch ON and push the intelligent tester main switch ON.
(c) On the intelligent tester, enter the following menus: DIAGNOSIS / ENHANCED OBD II / DATA LIST / ALL / STARTER SIG. Read the values.

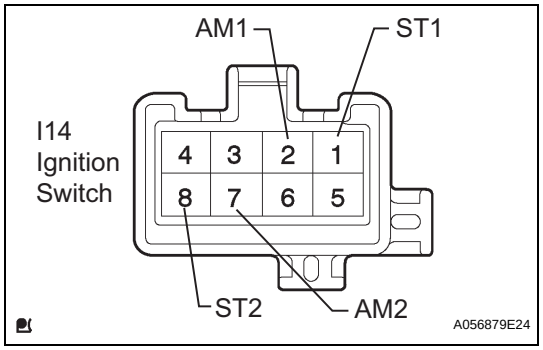
Result

Ignition Switch Condition	ON	START
STA Signal	OFF	ON

OK → **SYSTEM OK**

NG

4 INSPECT IGNITION OR STARTER SWITCH ASSEMBLY



(a) Measure the resistance of the ignition switch terminals.
Standard resistance

Switch Condition	Tester Connection	Specified Condition
LOCK	1 - 2 7 - 8	10 kΩ or higher
START	1 - 2 7 - 8	Below 1 Ω

NG → **REPLACE IGNITION OR STARTER SWITCH ASSEMBLY (GO TO NEXT STEP 5 AFTER REPLACEMENT)**

OK

5 READ VALUE OF INTELLIGENT TESTER (STARTER SIGNAL)

(a) Connect the intelligent tester to the DLC3.
(b) Turn the ignition switch ON and push the intelligent tester main switch ON.
(c) On the intelligent tester, enter the following menus: DIAGNOSIS / ENHANCED OBD II / DATA LIST / ALL / STARTER SIG. Read the values.
Result

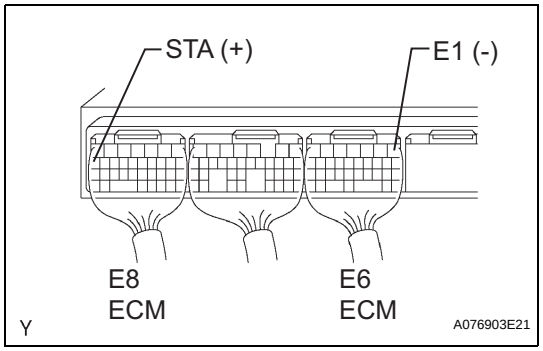
Ignition Switch Condition	ON	START
STA Signal	OFF	ON

OK → **SYSTEM OK**

NG

REPAIR OR REPLACE HARNESS OR CONNECTOR

1 INSPECT ECM (STA VOLTAGE)



(a) Turn the ignition switch ON.
(b) Measure the voltage of the ECM connectors.
Standard voltage

Tester Connection	Condition	Specified Condition
E8-17 (STA) - E7-1 (E1)	Ignition switch ON	0 V
E8-17 (STA) - E7-1 (E1)	Engine cranking	6 V or more

OK → **REPLACE ECM**

NG

2	INSPECT PARK/NEUTRAL POSITION SWITCH ASSEMBLY

OK:

When shift lever is the N position, the PNP switch is ON.

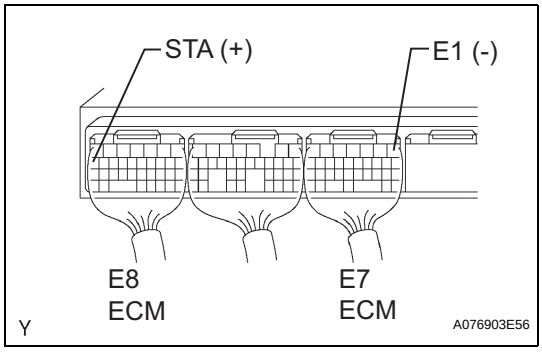
When shift lever is the D position, the PNP switch is OFF.

NG → **REPLACE PARK/NEUTRAL POSITION SWITCH ASSEMBLY (GO TO NEXT STEP 3 AFTER REPLACEMENT)**

ES

OK

3	INSPECT ECM (STA VOLTAGE)



(a) Measure the voltage of the ECM connectors.

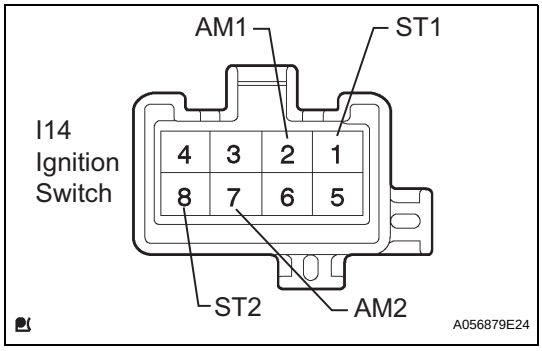
Standard voltage

Tester Connection	Condition	Specified Condition
E8-17 (STA) - E7-1 (E1)	Ignition switch ON	0 V
E8-17 (STA) - E7-1 (E1)	Engine cranking	6 V or more

OK → **SYSTEM OK**

NG

4	INSPECT IGNITION OR STARTER SWITCH ASSEMBLY



(a) Measure the resistance of the ignition switch terminals.

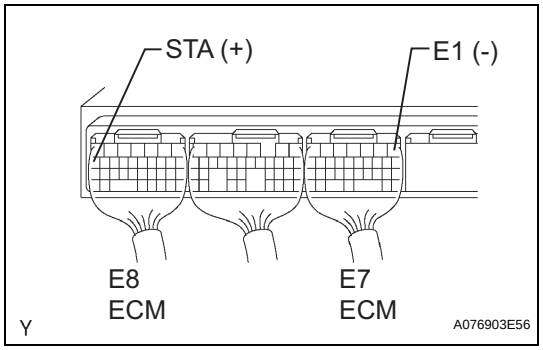
Standard resistance

Switch Condition	Tester Connection	Specified Condition
LOCK	1 - 2 7 - 8	10 kΩ or higher
START	1 - 2 7 - 8	Below 1 Ω

NG → **REPLACE IGNITION OR STARTER SWITCH ASSEMBLY**

OK

5	CHECK ECM (STA VOLTAGE)



(a) Measure the voltage of the ECM connectors.
Standard voltage

Tester Connection	Condition	Specified Condition
E8-17 (STA) - E7-1 (E1)	Ignition switch ON	0 V
E8-17 (STA) - E7-1 (E1)	Engine cranking	6 V or more

OK → **SYSTEM OK**

NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

ES