

DTC	P0510	Closed Throttle Position Switch Malfunction
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CIRCUIT DESCRIPTION

Refer to Throttle/Pedal Position Sensor/Switch "A" Circuit Malfunction on page [DI-39](#).

DTC No.	DTC Detecting Condition	Trouble Area
P0510	The closed throttle position switch does not turn ON or OFF even once when the vehicle is driven (2 trip detection logic)	<ul style="list-style-type: none"> • Open or short in closed throttle position switch circuit • Closed throttle position switch • ECM

HINT:

After confirming DTC P0510 use the LEXUS hand-held tester to confirm the closed throttle position switch signal from "CURRENT DATA".

Throttle Valve	Closed throttle position switch signal	Malfunction
Fully Closed	OFF	Open Circuit
Fully Open	ON	Short Circuit

WIRING DIAGRAM

Refer to page [DI-39](#) for the WIRING DIAGRAM.

INSPECTION PROCEDURE

HINT:

If DTC P0110, P0115 and P0120 are output simultaneously, E2 (sensor ground) may be open.

LEXUS hand-held tester

1	Connect the LEXUS hand-held tester and read CTP switch signal.
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PREPARATION:

- Connect the LEXUS hand-held tester to the DLC3.
- Turn ignition switch ON and push the LEXUS hand-held tester main switch ON.

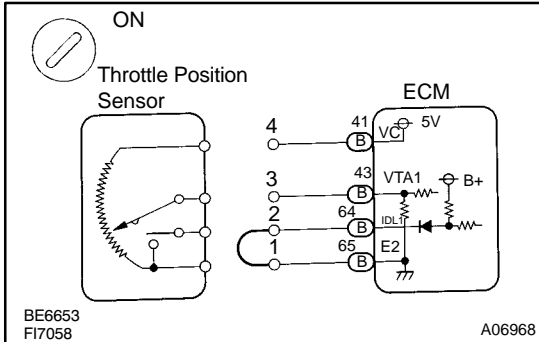
CHECK:

Read CTP switch signal on the LEXUS hand-held tester.

RESULT:

Throttle Valve	Closed throttle position switch signal	Malfunction
Fully Closed	OFF	Open Circuit: Go to step 2.
Fully Open	ON	Open Circuit: Go to step 4.

2 Check for open in harness or ECM.



PREPARATION:

- Connect the LEXUS hand-held tester to the DLC3.
- Disconnect the throttle position sensor connector.
- Connect sensor wire harness terminals between terminals 1 and 2.
- Turn ignition switch ON.

CHECK:

Read CTP switch signal on the LEXUS hand-held tester.

OK:

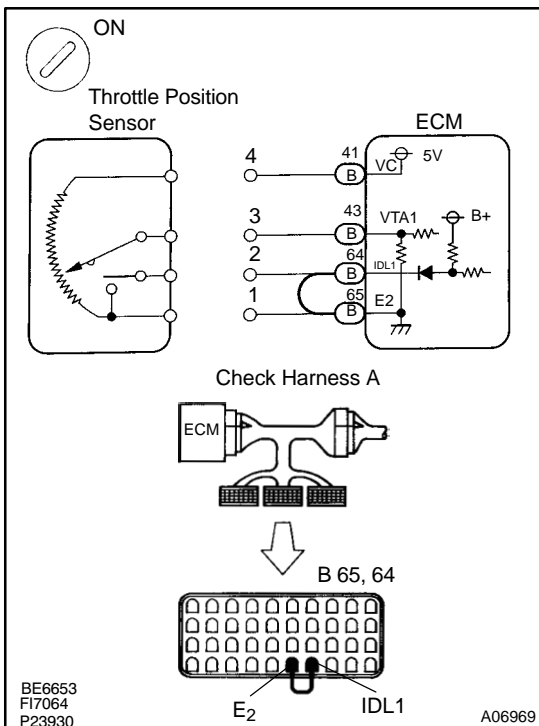
CTP switch signal: ON

OK

Confirm good connection at sensor.
If OK, replace throttle position sensor.

NG

3 Check for open in harness or ECM.



PREPARATION:

- Connect Check Harness A (See page DI-18).
- Connect between terminals IDL1 and E2 of ECM connector.

HINT:

Throttle position sensor connector is disconnected.

Before checking, do a visual check and contact pressure check for the connector (See page IN-29).

- Turn ignition switch ON.

CHECK:

Read CTP switch signal on the LEXUS hand-held tester.

OK:

CTP switch signal: ON

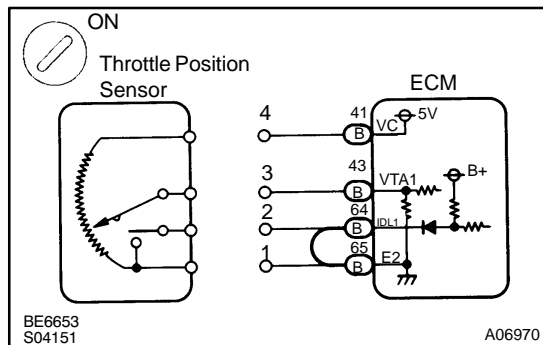
OK

Open in harness between ECM and throttle position sensor, repair or replace harness.

NG

Confirm connection at ECM.
If OK, replace ECM.

4 Check for short in harness or ECM.



PREPARATION:

- Connect the LEXUS hand-held tester to the DLC3.
- Disconnect the throttle position sensor connector.
- Turn ignition switch ON.

CHECK:

Read CTP switch signal on the LEXUS hand-held tester.

OK:

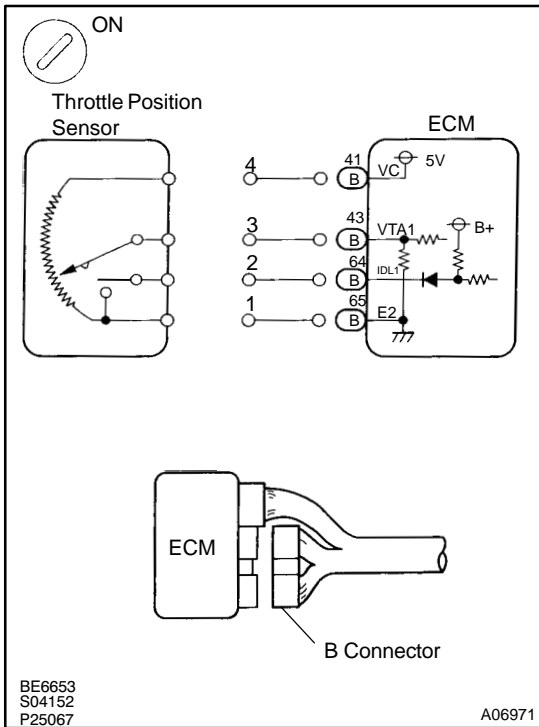
CTP switch signal: OFF

OK

**Confirm good connection at sensor.
If OK, replace throttle position sensor.**

NG

5 Check for short in harness or ECM.



PREPARATION:

- (a) Disconnect the B connector from ECM
(See page [DI-18](#)).

HINT:

Throttle position sensor connector is disconnected.

- (b) Turn ignition switch ON.

CHECK:

Read CTP switch signal on the LEXUS hand-held tester.

OK:

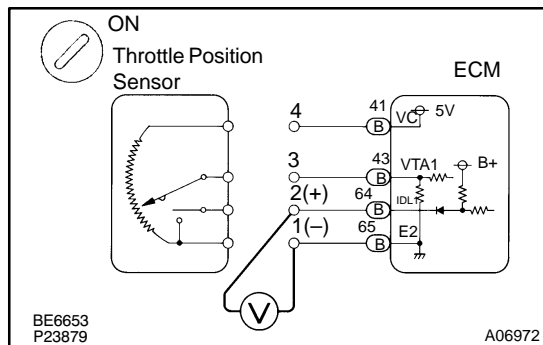
CTP switch signal: OFF

OK

Short in harness between ECM and throttle position sensor, repair or replace harness.

NG

**Confirm connection at ECM.
If OK, replace ECM.**

OBDII scan tool (excluding LEXUS hand-held tester)**1 Check for open and short in harness or ECM.****PREPARATION:**

- (a) Disconnect the throttle position sensor connector.
- (b) Turn ignition switch ON.

CHECK:

Measure voltage between terminals 1 and 2 of throttle position sensor connector.

OK:

Voltage: 9 – 14 V

OK

**Confirm good connection at sensor.
If OK, replace throttle position sensor.**

NG

2 Check for open and short in harness and connector between throttle position sensor and ECM (See page [IN-29](#)).

NG

Open or short in harness between ECM and throttle position sensor.

OK

**Confirm connection at ECM.
If OK, replace ECM.**