

DTC	P0510	Closed Throttle Position Switch Malfunction
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CIRCUIT DESCRIPTION

Refer to DTC P0120 on page [DI-35](#).

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)	• 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 the CURRENT DATA.

Throttle Valve	Closed Throttle Position Switch Signal	Malfunction
Fully closed	OFF	Open circuit
Fully open	ON	Short circuit

WIRING DIAGRAM

Refer to DTC P0120 on page [DI-35](#).

INSPECTION PROCEDURE

HINT:

If DTC P0110, P0115, P0116, P0120 and P0121 are output simultaneously E2 (sensor ground) may be open.

LEXUS hand-held tester:

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

- Remove the fuse cover on the instrument panel.
- Connect OBD II scan tool or LEXUS hand-held tester to the DLC3.
- Turn the ignition switch ON and OBD II scan tool or LEXUS hand-held tester main switch ON.

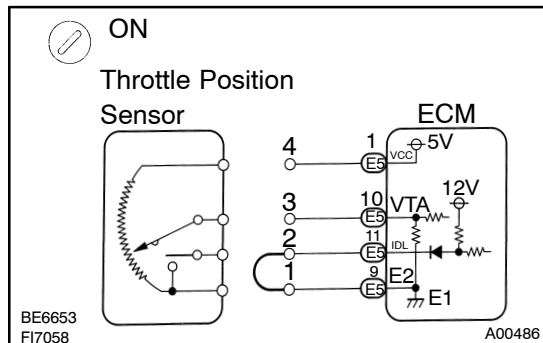
CHECK:

Read the CTP switch signal on 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	Short circuit: Go to step 4

2 Check for open in harness or ECM.



PREPARATION:

- Disconnect throttle position sensor connector.
- Connect sensor wire harness terminals between terminals 1 and 2.
- Turn the ignition switch ON.

CHECK:

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

OK:

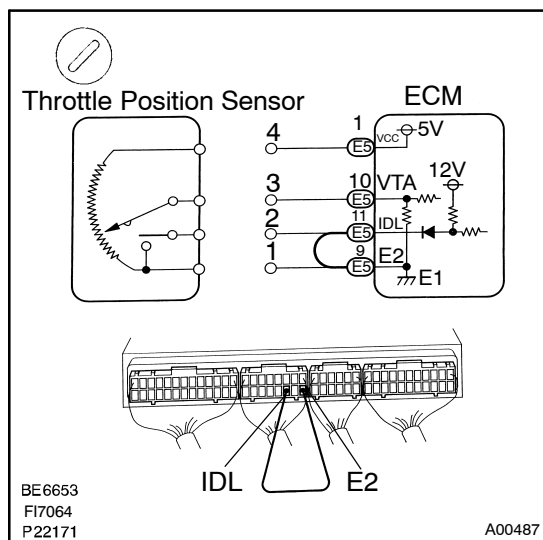
CTP switch signal: ON

OK

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

NG

3 Check for open in harness or ECM.



PREPARATION:

- Remove instrument panel speaker NO.1 panel (See page [SF-63](#)).
- Connect between terminals IDL and E2 of ECM.

HINT:

Throttle position sensor connector is disconnected.

Before checking, do a visual check and contact pressure check for connector (See page [IN-27](#)).

CHECK:

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

OK:

CTP switch signal: ON

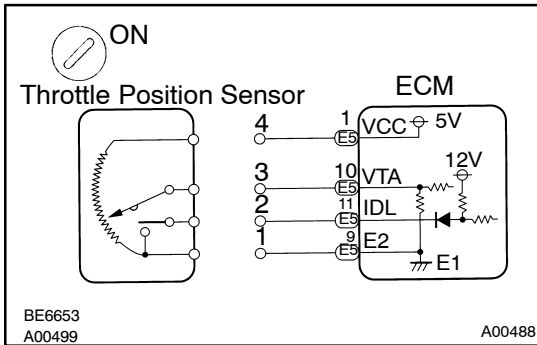
OK

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:

- Disconnect throttle position sensor connector.
- Turn the ignition switch ON.

CHECK:

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

OK:

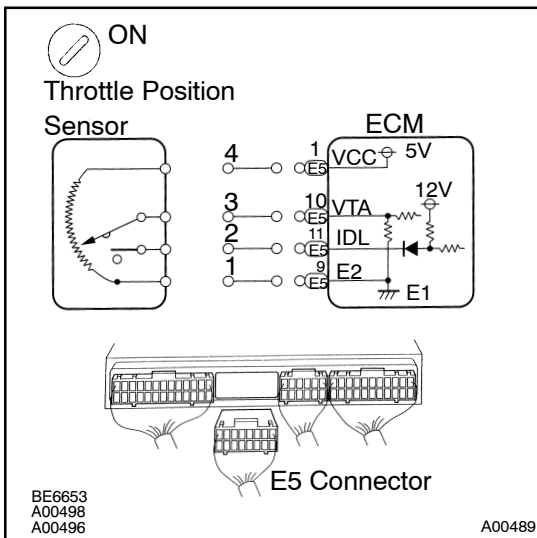
CTP switch signal: OFF

OK

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

NG

5 Check for short in harness or ECM.



PREPARATION:

- Remove instrument panel speaker NO.1 panel (See page [SF-63](#)).
- Disconnect E5 connector of ECM.
- Turn the ignition switch ON.

HINT:

Throttle position sensor connector is disconnected.

- Disconnect E5 connector of ECM.

CHECK:

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

OK:

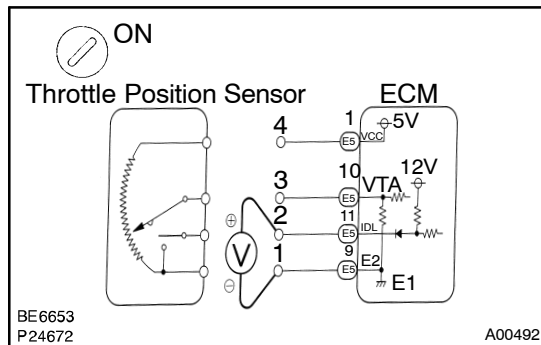
CTP switch signal: OFF

OK

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

NG

Confirm connection at ECM.
If OK, replace ECM.

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

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

CHECK:

Measure the 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-27).

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

OK

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