DI5PP–02

DTC	P0510	Closed Throttle Position Switch Malfunction

CIRCUIT DESCRIPTION

Refer to DTC P0120 (Throttle/Pedal Position Sensor/Switch ”A” Circuit Malfunction) 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 TOYOTA 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 DTC P0120 (Throttle/Pedal Position Sensor/Switch ”A” Circuit Malfunction) on page DI–35 for WIRING DIAGRAM.

INSPECTION PROCEDURE

HINT:

If DTCs P0110 (Intake Air Temp. Circuit Malfunction), P0115 (Engine Coolant Temp. Circuit Malfunction), P0120 (Throttle/Pedal Position Sensor/Switch ”A” Circuit Malfunction) are output simultaneously, E2 (Sensor Ground) may be open.

TOYOTA hand–held tester

1	**Connect the TOYOTA hand–held tester and read CTP switch signal.**

PREPARATION:

(a) Remove the fuse cover on the instrument panel.
(b) Connect OBD II scan tool or TOYOTA hand–held tester to the DLC3.
(c) Turn ignition switch ON and OBD II scan tool or TOYOTA hand–held tester main switch ON.

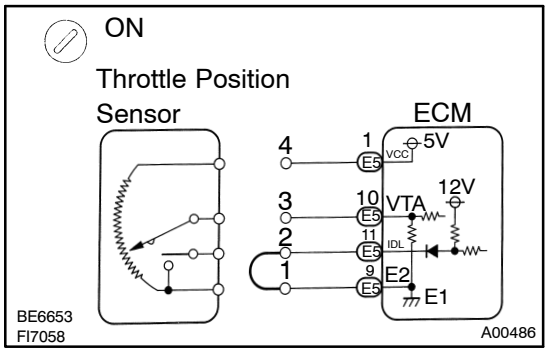
CHECK:

Read CTP switch signal on TOYOTA 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:

(a) Disconnect throttle position sensor connector.

(b) Connect sensor wire harness terminals between terminals 1 and 2.

(c) Turn ignition switch ON.

CHECK:

Read CTP switch signal on TOYOTA hand–held tester.

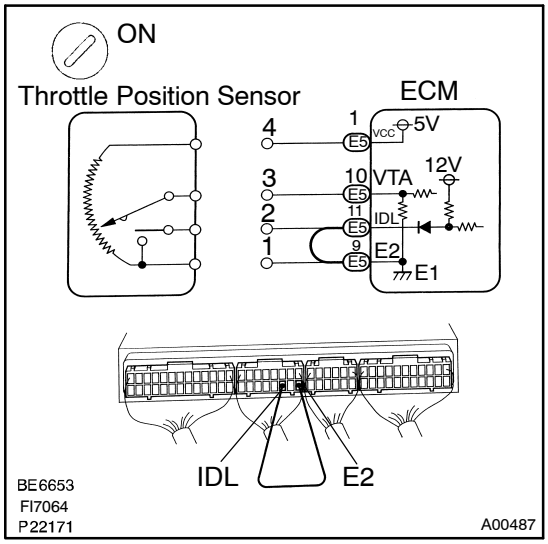
OK:

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:

(a) Remove instrument panel speaker No.1 panel (See page SF–65).

(b) 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–28).

(c) Turn ignition switch ON.

CHECK:

Read CTP switch signal on TOYOTA hand–held tester.

OK:

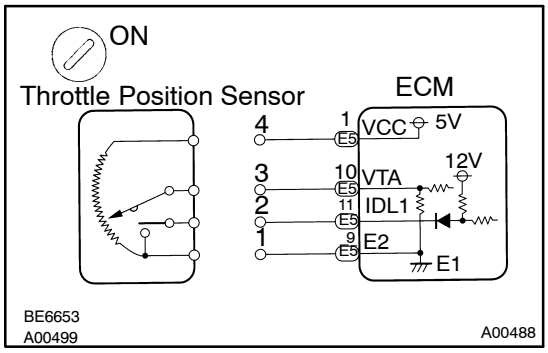
CTP switch signal: ON

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

NG

Confirm connection at ECM.
If OK, replace ECM (See page IN–28).

4	Check for short in harness or ECM.



PREPARATION:

(a) Disconnect throttle position sensor connector.

(b) Turn ignition switch ON.

CHECK:

Read CTP switch signal on TOYOTA hand–held tester.

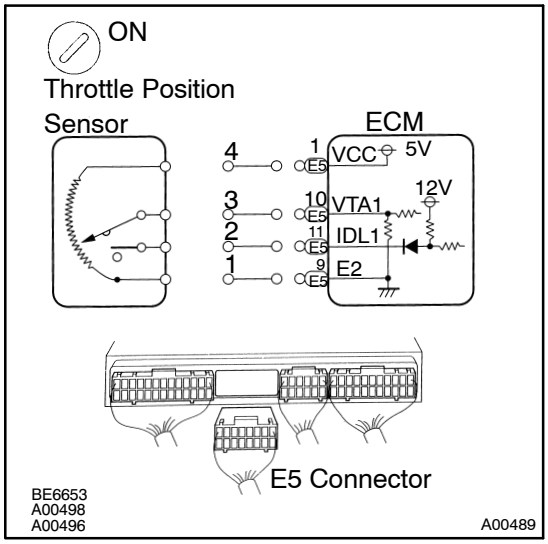
OK:

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) Remove instrument panel speaker No.1 panel (See page SF–65).

(b) Disconnect E5 connector of ECM.

HINT:

Throttle position sensor connector is disconnected.

(c) Turn ignition switch ON.

CHECK:

Read CTP switch signal on TOYOTA hand–held tester.

OK:

CTP switch signal: OFF

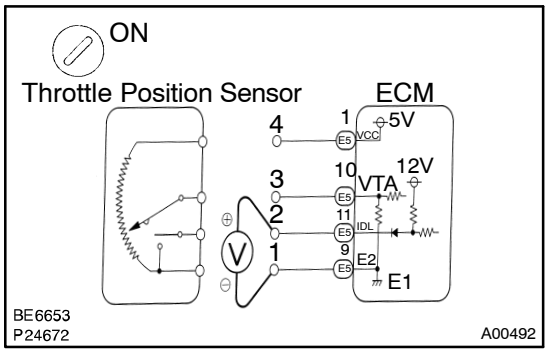
OK	Short in harness between ECM and throttle position sensor, repair or replace harness.

NG

Confirm connection at ECM.
If OK, replace ECM (See page IN–28).

OBD II scan tool (excluding TOYOTA hand–held tester)

1	**Check for open and short in harness or ECM.**



PREPARATION:

(a) Disconnect 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–28).**

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

OK

Confirm connection at ECM.
If OK, replace ECM (See page IN–28).