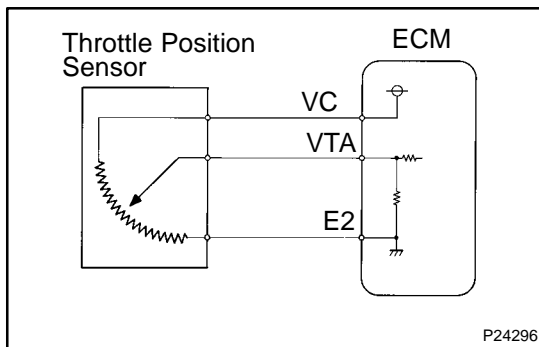


DTC	P0120	Throttle Pedal position Sensor/Switch "A" Circuit (w/o ETCS)
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DTC	P0122	Throttle Pedal position Sensor/Switch "A" Low Input (w/o ETCS)
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DTC	P0123	Throttle Pedal position Sensor/Switch "A" High Input (w/o ETCS)
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CIRCUIT DESCRIPTION



HINT:

This is the procedure of throttle position sensor (w/o ETCS). The throttle position sensor is mounted in the throttle body and detects the throttle valve opening angle. When the throttle valve is fully closed, a voltage of approximately 0.3 – 1.0 V is applied to terminal VTA of the ECM. The voltage applied to terminals VTA of the ECM increases in proportion to the opening angle of the throttle valve and becomes approximately 2.7 – 5.2 V when the throttle valve is fully opened. The ECM judges the vehicle driving conditions these signals input from terminals VTA and uses them as one of the conditions to decide the air-fuel ratio correction, power increase correction and fuel-cut control, etc.

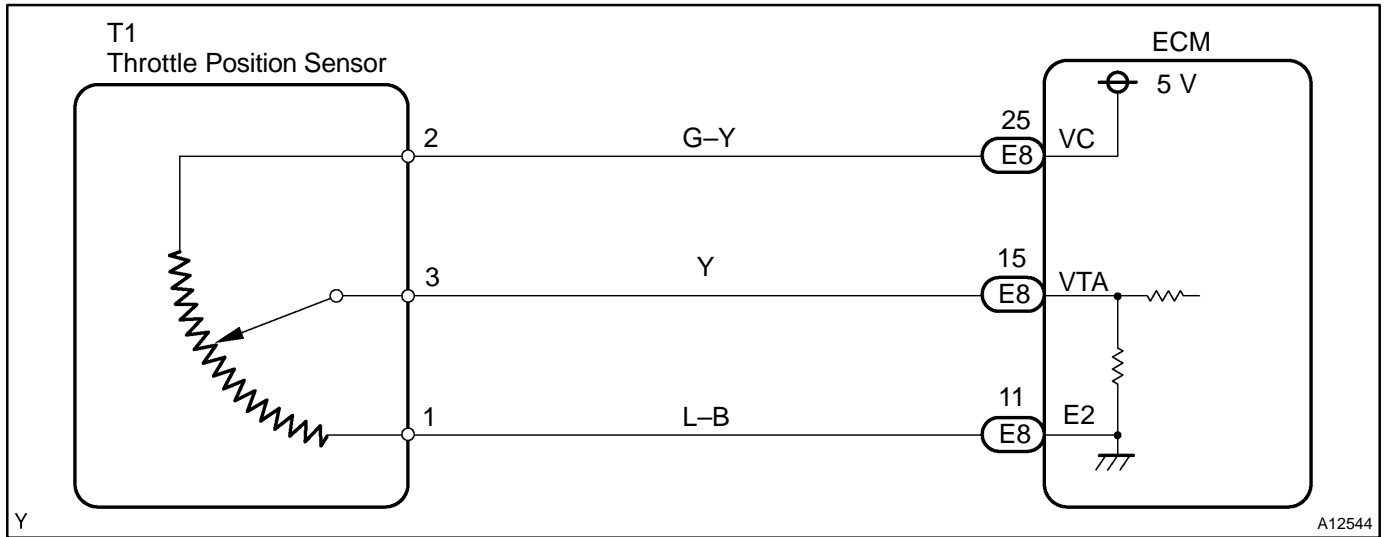
DTC No.	DTC Detection Condition	Trouble Area
P0120	Condition (a) or (b) continues: (a) VTA < 0.1 V (b) VTA > 4.9 V	<ul style="list-style-type: none"> • Open or short in throttle position sensor circuit • Throttle position sensor • Wire harness • ECM
P0122	(a) VTA < 0.1 V	
P0123	(b) VTA > 4.9 V	

HINT:

After confirming DTC P0120, P0122, P0123 use the hand-held tester or the OBD II scan tool to confirm the throttle valve opening percentage and closed throttle position switch condition.

Throttle valve opening position expressed as percentage		Trouble Area
Throttle valve fully closed	Throttle valve fully open	
0 %	0 %	<ul style="list-style-type: none"> • VC circuit open • VTA circuit open or short
Approx. 100 %	Approx. 100 %	<ul style="list-style-type: none"> • E2 circuit open

WIRING DIAGRAM

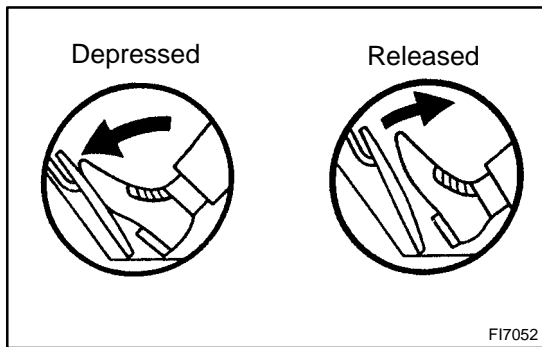


INSPECTION PROCEDURE

HINT:

- If different DTCs that are related to different systems are output simultaneously while terminal E2 is used as a ground terminal, terminal E2 may be open.
- Read freeze frame data using the hand-held tester or the OBD II scan tool, as freeze frame data records the engine conditions when a malfunction is detected. When troubleshooting, it is useful for determining whether the vehicle was running or stopped, the engine was warmed up or not, the air-fuel ratio was lean or rich, etc. at the time of the malfunction.

1 Connect hand-held tester or OBD II scan tool, and read throttle valve opening percentage.



PREPARATION:

- Connect the hand-held tester or the OBD II scan tool to the DLC3.
- Turn the ignition switch ON and push the hand-held tester or the OBD II scan tool main switch ON.

CHECK:

Read the throttle valve opening percentage.

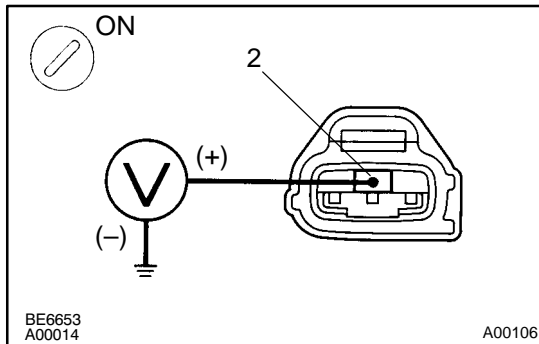
OK:

Accelerator pedal (Throttle valve)	Throttle valve opening position expressed as percentage
Fully Release (Fully open)	Approx. 75 %
Fully depress (Fully closed)	Approx. 10 %

OK Check for intermittent problems (See page DI-218).

NG

2 Check voltage between terminal 2 of throttle position sensor connector and body ground.



PREPARATION:

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

CHECK:

Measure the voltage between terminal 2 of the throttle position sensor connector and the body ground.

OK:

Voltage: 4.5 – 5.5 V

NG

Go to step 5.

OK

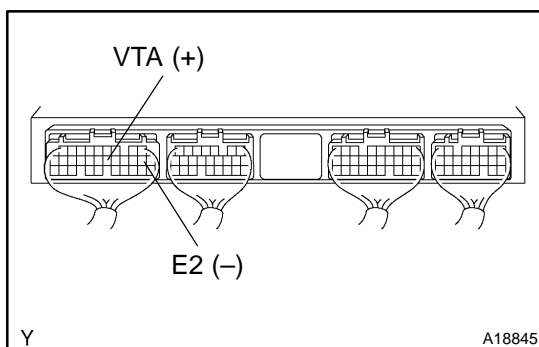
3 Check throttle position sensor (See page SF-33).

NG

Replace throttle position sensor.

OK

4 Check voltage between terminals VTA and E2 of ECM connector.



PREPARATION:

- (a) Remove the glove compartment (See page SF-63).
- (b) Turn the ignition switch ON.

CHECK:

Measure the voltage between terminals VTA and E2 of the ECM connector.

OK:

Accelerator pedal (Throttle valve)	Voltage
Fully depress (Fully closed)	0.3 – 1.0 V
Fully Release (Fully open)	2.7 – 5.2 V

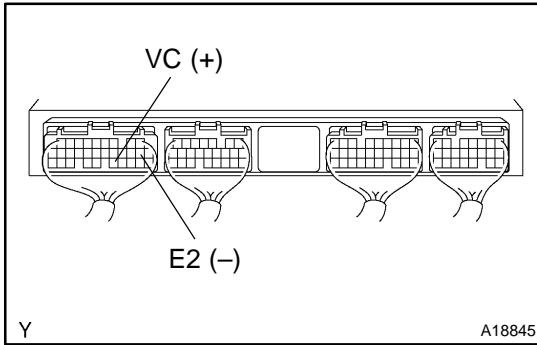
NG

Check for open and short in harness and connector in VTA circuit between ECM and throttle position sensor (See page IN-28).

OK

Check and replace ECM (See page [IN-28](#)).

5 Check voltage between terminals VC and E2 of ECM of connector.



PREPARATION:

- (a) Remove the glove compartment (See page [SF-63](#)).
- (b) Turn the ignition switch ON.

CHECK:

Measure the voltage between terminals VC and E2 of the ECM connector.

OK:

Voltage: 4.5 – 5.5 V

NG

Check and replace ECM (See page [IN-28](#)).

OK

Check for open in harness and connector in VC circuit between ECM and throttle position sensor (See page [IN-28](#)).