

DTC	P2102	Throttle Actuator Control Motor Circuit Low
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DTC	P2103	Throttle Actuator Control Motor Circuit High
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CIRCUIT DESCRIPTION

Throttle motor is operated by the ECM and it opens and closes the throttle valve.

The opening angle of the throttle valve is detected by the throttle control motor and sensor which is mounted on the throttle body and it provides feedback to the ECM to control the throttle motor in order to the throttle valve opening angle properly in response to driving condition.

If this DTC is stored, the throttle valve is locked at a certain opening angle. Also, the whole electronically controlled throttle operation is cancelled until the system returns to normal and the ignition switch is turned OFF.

DTC No.	DTC Detection Condition	Trouble Area
P2102 P2103	Conditions (a) and (b) continue for 2 seconds: (a) Throttle control motor output duty $\geq$ 80 % (b) Throttle control motor current $<$ 0.5 A	• Open or short in throttle control motor and sensor circuit • Throttle control motor and sensor • ECM
	Throttle control motor current $\geq$ 10 A	
	Condition (a) continues for 0.6 seconds: (a) Throttle control motor current $\geq$ 7 A	

WIRING DIAGRAM

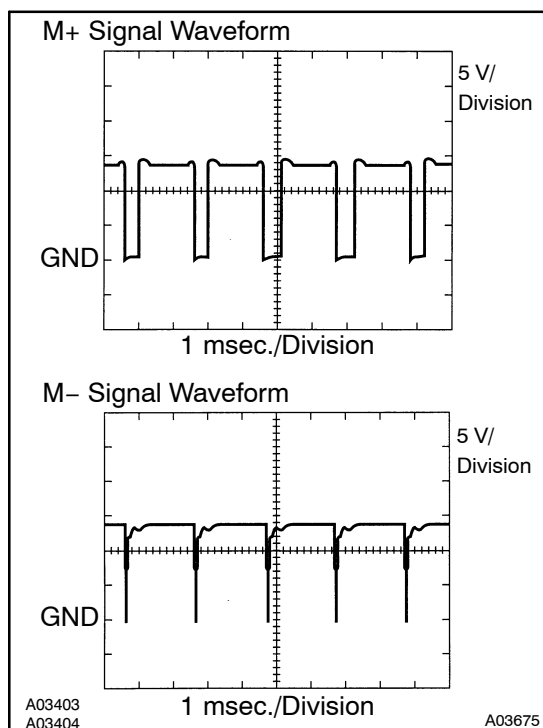
Refer to DTC P0120 on page [DI-55](#).

INSPECTION PROCEDURE

HINT:

Read freeze frame data using hand-held tester or the OBD II scan tool, as freeze frame data records the engine conditions when a malfunction is detected. When troubleshooting, this 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 Check throttle control motor and sensor circuit.



When not using hand-held tester:

PREPARATION:

- Connect the oscilloscope between terminals M+ or M- and E1 of the ECM connectors.
- Start the engine.

CHECK:

Check the waveform between terminals M+ or M- and E1 of the ECM connector when the engine is idling.

OK:

The correct waveforms are as shown.

HINT:

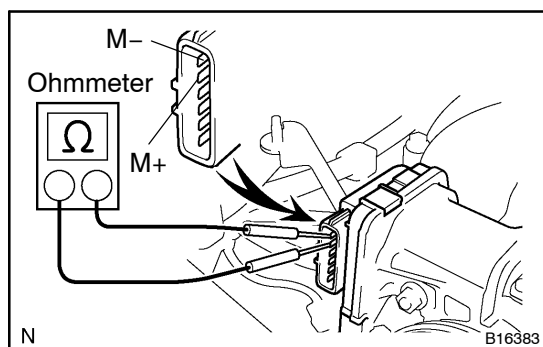
The waveform frequency varies depending on the throttle opening.

OK

Check and replace ECM (See page [IN-36](#)).

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2 Check throttle control motor and sensor.



PREPARATION:

Disconnect the throttle control motor and sensor connector.

CHECK:

Measure the resistance between terminals 1 and 2 of the throttle control motor.

OK:

Resistance: 0.3 – 100 Ω at 20°C (68°F)

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Replace throttle body (See page [SF-33](#)).

OK

3	Check for open and short in harness and connector between throttle control motor and sensor and ECM (See page IN-36).
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Repair or replace harness or connector.

OK

Check and replace ECM (See page [IN-36](#)).