

DTC	P0100	Mass or Volume Air Flow Circuit
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DTC	P0102	Mass or Volume Air Flow Circuit Low Input
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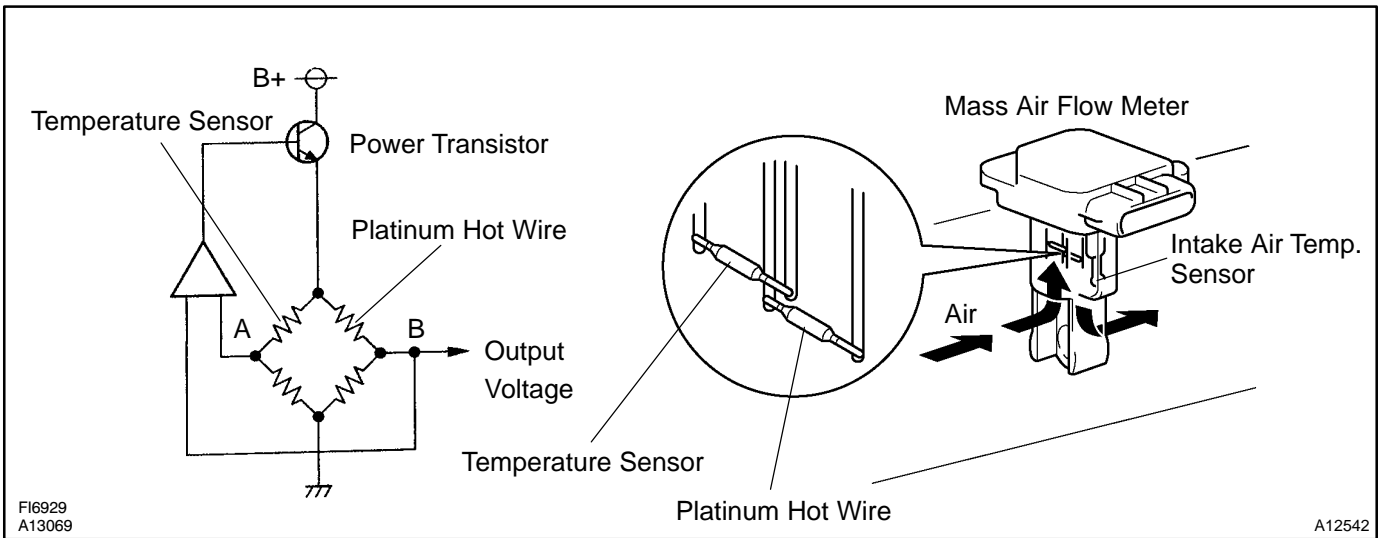
DTC	P0103	Mass or Volume Air Flow Circuit High Input
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CIRCUIT DESCRIPTION

The mass air flow meter uses a platinum hot wire. The hot wire air flow meter consists of a platinum hot wire, temperature sensor and a control circuit installed in a plastic housing. The hot wire air flow meter works in principle that the hot wire and temperature sensor located in the intake air bypass of the housing detect any changes in the intake air temperature.

The hot wire is maintained at the set temperature by controlling the current flow through the hot wire. This current flow is then measured as the output voltage of the air flow meter.

The circuit is constructed so that the platinum hot wire and temperature sensor can provide a bridge circuit with the power transistor, and controlled so that the potential of A and B can remain equal in order to maintain the set temperature.



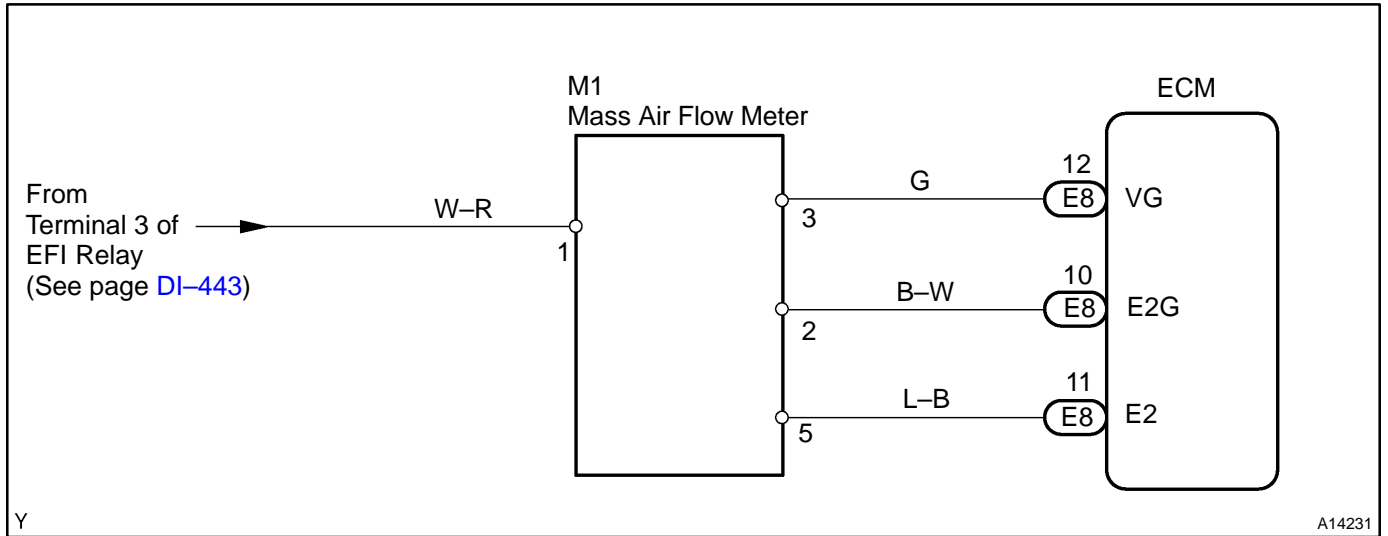
DTC No.	DTC Detecting Condition	Trouble Area
P0100	Open or short in mass air flow meter circuit with more than 3 sec. engine speed 4,000 rpm or less	<ul style="list-style-type: none"> • Open or short mass air flow meter circuit • Mass air flow meter • ECM
P0102	Open in mass air flow meter circuit with more than 3 sec. engine speed 4,000 rpm or less	
P0103	Short in mass air flow meter circuit with more than 3 sec. engine speed 4,000,rpm or less (+B circuit)	

HINT:

After confirming DTC P0100,P0102 or P0103 use the hand-held tester orOBD II scan tool to confirm the mass air flow ratio from the "DIAGNOSIS/ENHANCED OBD II/DATA LIST/ALL".

Air Flow Value (g/s)	Malfunction
Approx. 0.0	<ul style="list-style-type: none"> • Mass air flow meter power source circuit open • VG circuit open or short
271.0 or more	<ul style="list-style-type: none"> • E2G 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 OBD II scan tool or hand-held tester, and read value of mass air flow rate.
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PREPARATION:

- Connect the OBD II scan tool or the hand-held tester to the DLC3.
- Turn the ignition switch ON and push the OBD II scan tool or the hand-held tester main switch ON.
- Start the engine.
- Select the item "DIAGNOSIS/ENHANCED OBD II/DATA LIST/ALL/MAF".

CHECK:

Read the mass air flow rate on the OBD II scan tool or the hand-held tester.

RESULT:

Mass Air Flow Rate (g/s)	Proceed to
0.0	Type I
1 ≤ Mass Air Flow Rate ≤ 270.0 or more (*1)	Type II
271.0 or more	Type III

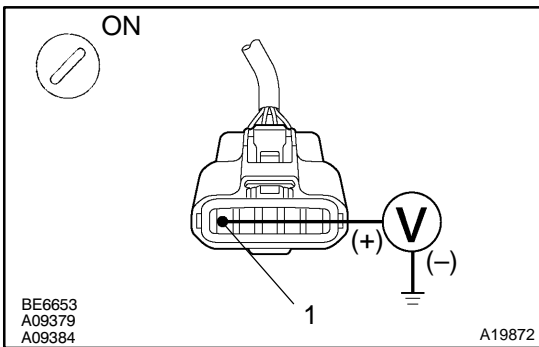
*1: Read the mass air flow rate on the OBD II scan tool or the hand-held tester.

Type II Check intermittent problems (See page [DI-218](#)).

Type III Go to step 5.

Type I

2 Check voltage of mass air flow meter power source.



PREPARATION:

- (a) Disconnect the mass air flow meter connector.
- (b) Turn the ignition switch ON.

CHECK:

Measure the voltage between terminal 1 of the mass air flow meter connector and the body ground.

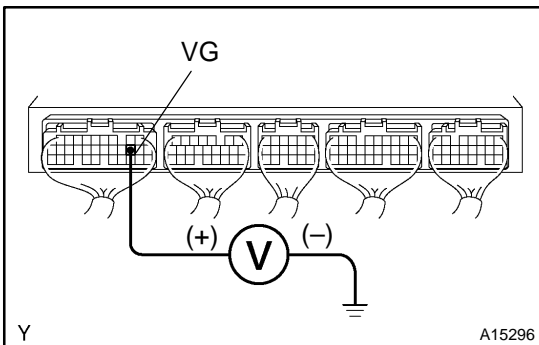
OK:

Voltage: 9 – 14 V

NG Check for open in harness and connector between EFI main relay (Marking: EFI) and mass air flow meter (See page [IN-28](#)).

OK

3 Check voltage between terminal VG of ECM connector and body ground.



PREPARATION:

- (a) Remove the glove compartment (See page [SF-63](#)).
- (b) Start the engine.

CHECK:

Measure the voltage between terminal VG of the ECM connector and the body ground while the engine is idling.

OK:

Voltage:
0.5 – 3.0 V (P or N position and A/C switch OFF)

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

NG

- 4 Check for open and short in harness and connector between mass air flow meter and ECM (See page [IN-28](#)).**

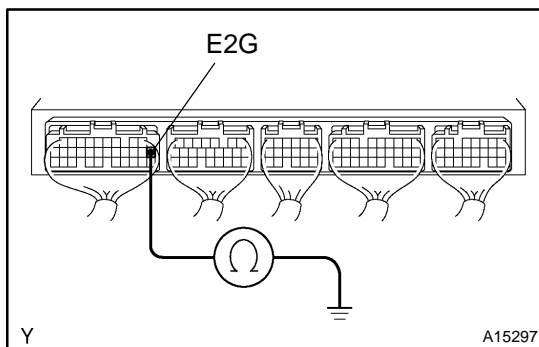
NG

Repair or replace harness or connector.

OK

Replace mass air flow meter.

- 5 Check continuity between terminal E2G of ECM connector and body ground.**



PREPARATION:

Remove the glove compartment (See page [SF-63](#)).

CHECK:

Check the continuity between terminal E2G of the ECM connector and the body ground.

OK:

Continuity (1 Ω or less)

NG

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

OK

- 6 Check for open in harness and connector between mass air flow meter and ECM (See page [IN-28](#)).**

NG

Repair or replace harness or connector.

OK

Replace mass air flow meter.