DTC	P2118/89	THROTTLE ACTUATOR CONTROL MOTOR CURRENT RANGE/PERFORMANCE

CIRCUIT DESCRIPTION

The ETCS (Electronic Throttle Control System) has a dedicated power supply circuit. The voltage (+BM) is monitored and when the voltage is low (less than 4 V), the ECM concludes that the ETCS has a fault and a current to the throttle actuator is cut.
When the voltage becomes unstable, the ETCS becomes unstable. For this reason, when the voltage is low, the current to the actuator is cut. If repairs are made and the system has returned to normal, turn the ignition switch to OFF. The ECM then allows the current to flow to the actuator and the actuator can be restarted.
HINT:
This ETCS does not use a throttle cable.

DTC No.	DTC Detection Condition	Trouble Area
P2118/89	Open in ETCS power source circuit	• Open in ETCS power source circuit • ETCS fuse • ECM

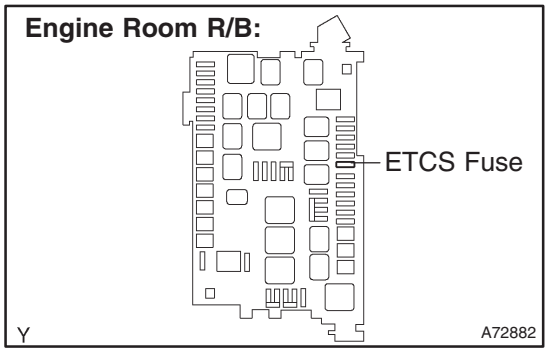
WIRING DIAGRAM

Refer to DTC P2102 on page 05–143.

INSPECTION PROCEDURE

HINT:
Read freeze frame data using the intelligent tester II. Freeze frame data record the engine condition when malfunctions are detected. When troubleshooting, freeze frame data can help determine if the vehicle was moving or stationary, if the engine was warmed up or not, if the air–fuel ratio was lean or rich, and other data from the time the malfunction occurred.

1	CHECK FUSE(ETCS FUSE)

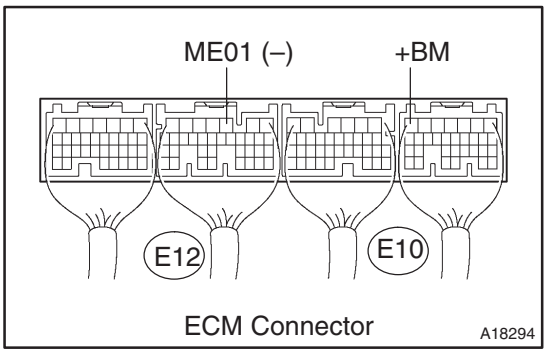


(a) Remove the ETCS fuse from the engine room R/B.
(b) Check the ETCS fuse resistance.
Standard: Below 1 Ω
(c) Reinstall the ETCS fuse.

NG → **CHECK FOR SHORT IN ALL HARNESSES AND COMPONENTS CONNECTED TO FUSE, AND REPLACE FUSE**

OK

2 INSPECT ECM(+BM VOLTAGE)



(a) Measure the voltage according to the value(s) in the table below.

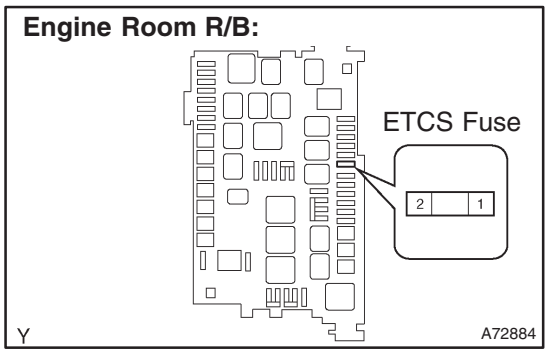
Standard:

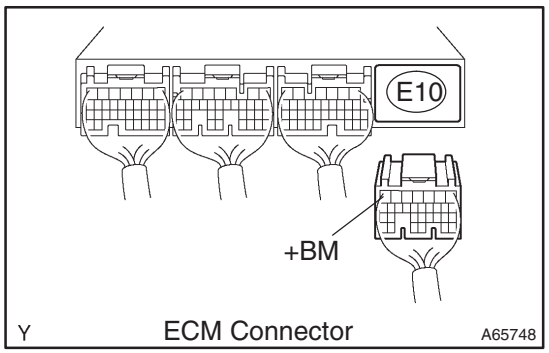
Tester Connection	Specified Condition
+BM (E10–7) – ME01 (E12–3)	9 to 14 V

OK → **REPLACE ECM (See page 10–12)**

NG

3	CHECK HARNESS AND CONNECTOR(ECM – ETCS FUSE, ETCS FUSE – BATTERY)





(a) Check the harness and connectors between the ETCS fuse and ECM.
  (1) Remove the ETCS fuse from the engine room R/B.
  (2) Disconnect the E10 ECM connector.
  (3) Measure the resistance according to the value(s) in the table below.

Standard (Check for open):

Tester Connection	Specified Condition
ETCS fuse (2) – +BM (E10–7)	Below 1 Ω

Standard (Check for short):

Tester Connection	Specified Condition
ETCS fuse (2) or +BM (E10–7) – Body ground	10 kΩ or higher

  (4) Reinstall the ETCS fuse.
  (5) Reconnect the ECM connector.

(b) Check the harness and connector between the ETCS fuse and battery cable.
  (1) Remove the ETCS fuse from the engine room R/B.
  (2) Disconnect the battery negative cable.
  (3) Measure the resistance according to the value(s) in the table below.

Standard (Check for open):

Tester Connection	Specified Condition
Battery positive cable terminal – ETCS fuse (1)	Below 1 Ω

Standard (Check for short):

Tester Connection	Specified Condition
Battery positive cable terminal or ETCS fuse (1) – Body ground	10 kΩ or higher

  (4) Reinstall the ETCS fuse.
  (5) Reconnect the battery cable.

NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

CHECK AND REPLACE ENGINE ROOM RELAY BLOCK