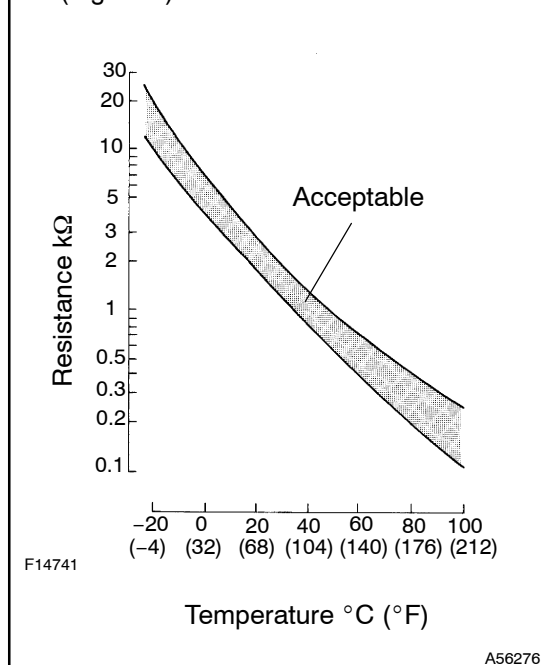


DTC**P0180****FUEL TEMPERATURE SENSOR "A"
CIRCUIT****CIRCUIT DESCRIPTION**

(Figure 1)



The fuel temperature sensor monitors the fuel temperature. A thermistor built into the sensor changes the resistance value according to the fuel temperature. The lower the fuel temperature is, the greater the thermistor resistance becomes, and the higher the temperature is, the lower the resistance becomes (see figure 1).

The fuel temperature sensor is connected to the ECM. The 5 V power source voltage in the ECM is applied to the fuel temperature sensor from terminal THF via resistor R. The resistor R and the fuel temperature sensor are connected in series. When the resistance value of the fuel temperature sensor changes in accordance with the fuel temperature, the voltage at terminal THF also changes. Based on this signal, the ECM corrects the pressure control compensation of the supply pump and errors.

DTC No.	DTC Detection Condition	Trouble Area
P0180	Open or short in fuel temperature sensor circuit for 0.5 seconds (1 trip detection logic)	<ul style="list-style-type: none"> • Open or short in fuel temperature sensor circuit • Fuel temperature sensor • ECM

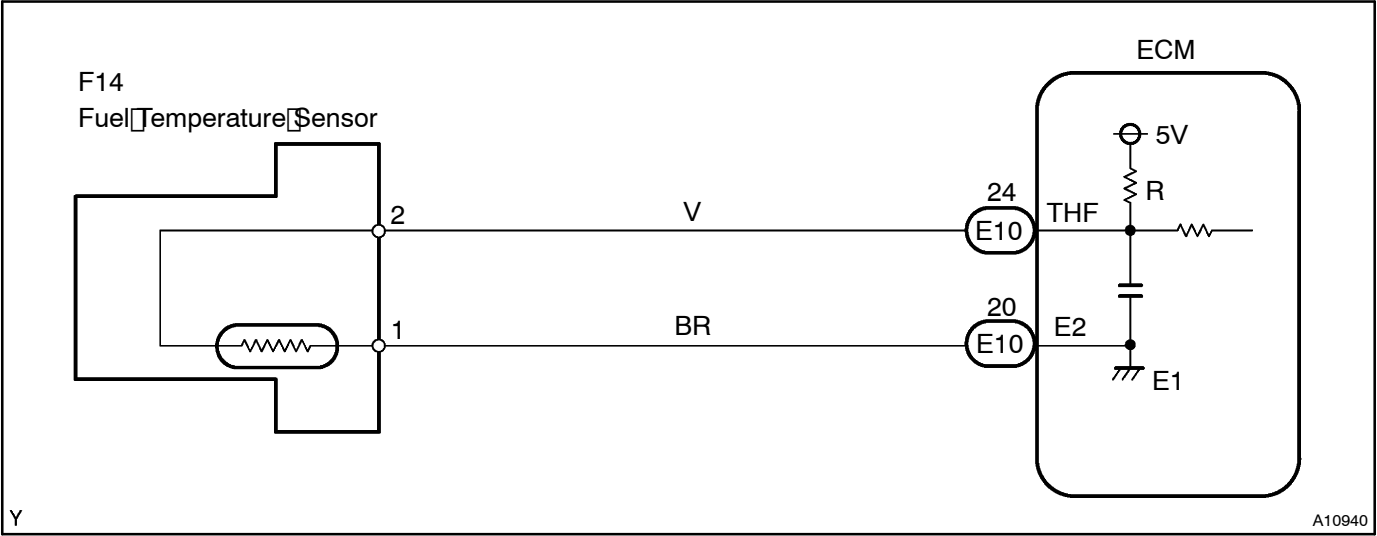
HINT:

When DTC P0180 is detected, check the fuel temperature by selecting Powertrain / Engine and ECT / Data List / Fuel Temp on the intelligent tester II.

Reference:

Temperature Displayed	Malfunction
-40°C (-40°F)	Open circuit
140°C (284°F) or more	Short circuit

WIRING DIAGRAM



INSPECTION PROCEDURE

HINT:

- If different DTCs related to different systems that have terminal E2 as the ground terminal are output simultaneously, terminal E2 may have an open circuit.
- 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, and other data from the time the malfunction occurred.

1 READ VALUE OF INTELLIGENT TESTER II (FUEL TEMPERATURE)

- (a) Connect the intelligent tester II to the DLC3.
- (b) Turn the ignition switch to ON and turn the intelligent tester II ON.
- (c) Select the following menu items: Powertrain / Engine and ECT / Data List / Fuel Temp.
- (d) Read the value.

Temperature: Same value as the actual fuel temperature.

Result:

Temperature Displayed	Proceed To
-40°C (-40°F)	A
140°C (284°F) or more	B
OK (Same as actual fuel temperature)	C

HINT:

- If there is an open circuit, the intelligent tester II indicates -40°C (-40°F).
- If there is a short circuit, the intelligent tester II indicates 140°C (284°F) or more.

B

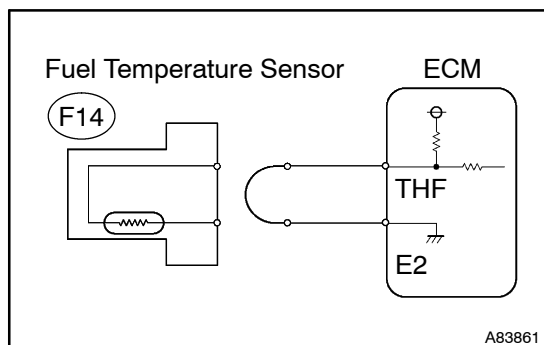
Go to step 4

C

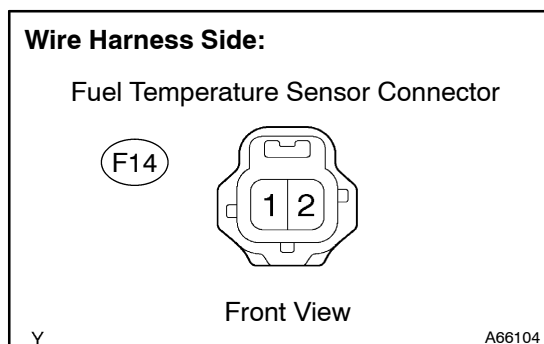
CHECK FOR INTERMITTENT PROBLEMS
(See page 05-440)

A

2 READ VALUE OF INTELLIGENT TESTER II(CHECK FOR OPEN IN WIRE HARNESS)



- Disconnect the F14 fuel temperature sensor connector.
 - Connect terminals 1 and 2 of the fuel temperature sensor wire harness side connector.
 - Connect the intelligent tester II to the DLC3.
 - Turn the ignition switch to ON and turn the intelligent tester II ON.
 - Select the following menu items: Powertrain / Engine and ECT / Data List / Fuel Temp.
 - Read the value.
- Standard: 140°C (284°F) or more**
- Reconnect the fuel temperature sensor connector.

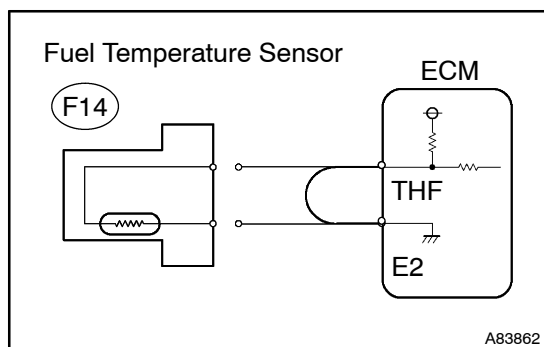


OK

CONFIRM GOOD CONNECTION AT SENSOR. IF OK, REPLACE FUEL TEMPERATURE SENSOR

NG

3 READ VALUE OF INTELLIGENT TESTER II(CHECK FOR OPEN IN ECM)

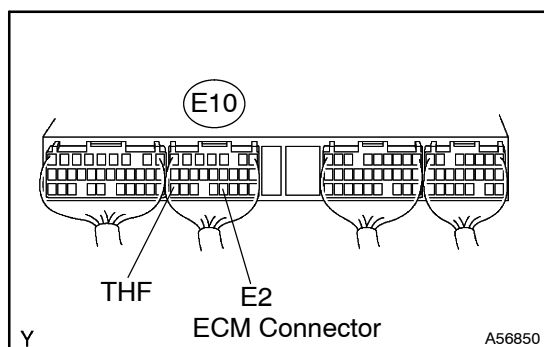


- Disconnect the F14 fuel temperature sensor connector.
- Connect terminals THF and E2 of the E10 ECM connector.

HINT:

Before checking, do a visual and contact pressure check on the ECM connector.

- Connect the intelligent tester II to the DLC3.
 - Turn the ignition switch to ON and turn the intelligent tester II ON.
 - Select the following menu items: Powertrain / Engine and ECT / Data List / Fuel Temp.
 - Read the value.
- Standard: 140°C (284°F) or more**
- Reconnect the fuel temperature sensor connector.



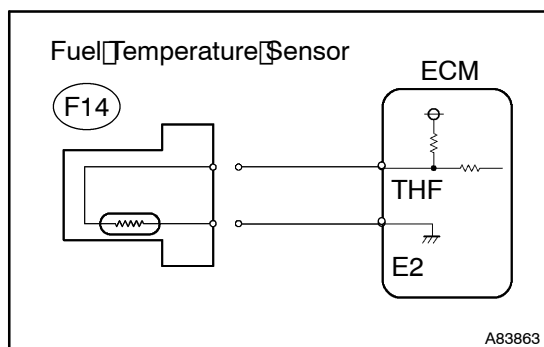
OK

REPAIR OR REPLACE HARNESS OR CONNECTOR

NG

CONFIRM GOOD CONNECTION AT ECM. IF OK, REPLACE ECM (See page 10-30)

4 READ VALUE OF INTELLIGENT TESTER (CHECK FOR SHORT IN WIRE HARNESS)



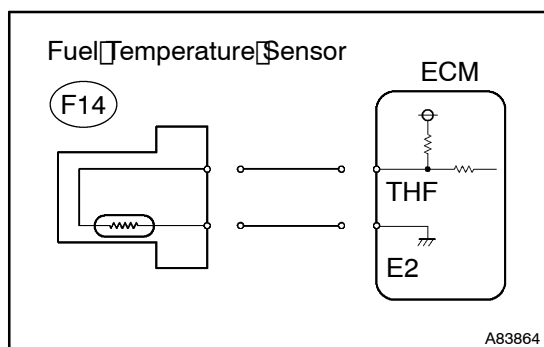
- Disconnect the F14 Fuel Temperature Sensor connector.
- Connect the Intelligent Tester II to the DLC3.
- Turn the Ignition switch to ON and turn the Intelligent Tester II ON.
- Select the following menu items: Powertrain / Engine and ECT / Data List / Fuel Temp.
- Read the value.
Standard: -40°C (-40°F)
- Reconnect the Fuel Temperature Sensor connector.

OK

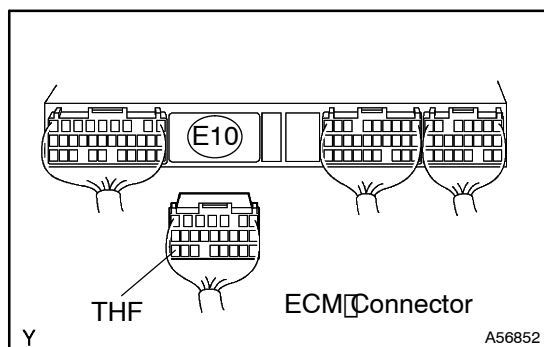
REPLACE FUEL TEMPERATURE SENSOR

NG

5 READ VALUE OF INTELLIGENT TESTER (CHECK FOR SHORT IN ECM)



- Disconnect the F14 Fuel Temperature Sensor connector.
- Disconnect the E10 ECM connector.
- Connect the Intelligent Tester II to the DLC3.
- Turn the Ignition switch to ON and turn the Intelligent Tester II ON.
- Select the following menu items: Powertrain / Engine and ECT / Data List / Fuel Temp.
- Read the value.
Standard: -40°C (-40°F)
- Reconnect the Fuel Temperature Sensor connector.
- Reconnect the ECM connector.



OK

REPAIR OR REPLACE HARNESS OR CONNECTOR

NG

REPLACE ECM (See page 10-30)