

DTC

B1411/11

Room Temperature Sensor Circuit

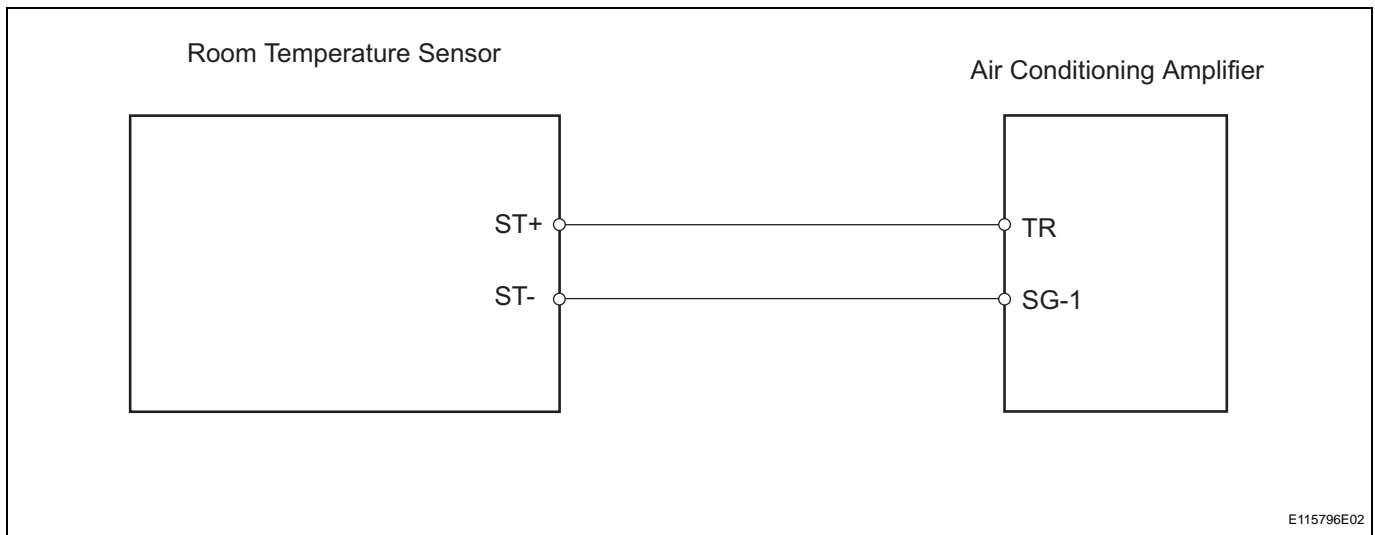
DESCRIPTION

The room temperature sensor is installed in the instrument panel to detect the room temperature and control the heater and air conditioner AUTO mode. The resistance of the room temperature sensor changes in accordance with the room temperature. As the temperature decreases, the resistance increases. As the temperature increases, the resistance decreases.

The air conditioning amplifier applies a voltage (5 V) to the room temperature sensor and reads voltage changes as changes in the resistance of the room temperature sensor.

DTC No.	DTC Detection Condition	Trouble Area
B1411/11	Open or short in room temperature sensor circuit	<ul style="list-style-type: none">Room temperature sensorHarness and connector between room temperature sensor and air conditioning amplifierAir conditioning amplifier

WIRING DIAGRAM



AC

INSPECTION PROCEDURE

1

READ VALUE OF INTELLIGENT TESTER (ROOM TEMP)

- Connect the intelligent tester (with CAN VIM) to the DLC3.
- Turn the ignition switch ON and turn the intelligent tester main switch ON.
- Select the item below in the DATA LIST, and read the value displayed on the intelligent tester.

Air conditioning amplifier

Item	Measurement Item / Display (Range)	Normal Condition	Diagnostic Note
ROOM TEMP	Room temperature sensor / Min.: -6.5°C (20.3°F) Max.: 57.25°C (135.05°F)	Actual room temperature is displayed	Open circuit: -6.5°C (20.3°F) Short circuit: 57.25°C (135.05°F)

OK:

The display is as specified in the normal condition column.

Result

Result	Proceed to
NG	A
OK (Checking from the PROBLEM SYMPTOMS TABLE)	B
OK (Checking from the DTC)	C

B

PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

C

REPLACE AIR CONDITIONING AMPLIFIER ASSEMBLY

A

2

INSPECT COOLER THERMISTOR (ROOM TEMPERATURE SENSOR)

(a) Remove the room temperature sensor.

(b) Measure the resistance of the sensor.

Standard resistance

Tester Connection	Condition	Specified Condition
1 (ST+) - 2 (ST-)	10°C (50°F)	3.00 to 3.73 kΩ
1 (ST+) - 2 (ST-)	15°C (59°F)	2.45 to 2.88 kΩ
1 (ST+) - 2 (ST-)	20°C (68°F)	1.95 to 2.30 kΩ
1 (ST+) - 2 (ST-)	25°C (77°F)	1.60 to 1.80 kΩ
1 (ST+) - 2 (ST-)	30°C (86°F)	1.28 to 1.47 kΩ
1 (ST+) - 2 (ST-)	35°C (95°F)	1.00 to 1.22 kΩ
1 (ST+) - 2 (ST-)	40°C (104°F)	0.80 to 1.00 kΩ
1 (ST+) - 2 (ST-)	45°C (113°F)	0.65 to 0.85 kΩ
1 (ST+) - 2 (ST-)	50°C (122°F)	0.50 to 0.70 kΩ
1 (ST+) - 2 (ST-)	55°C (131°F)	0.44 to 0.60 kΩ
1 (ST+) - 2 (ST-)	60°C (140°F)	0.36 to 0.50 kΩ

NOTICE:

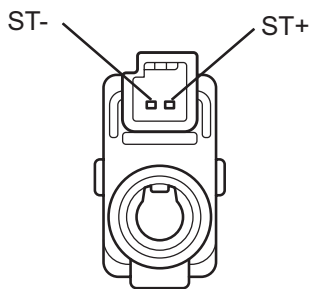
- Touching the sensor even slightly may change the resistance value. Be sure to hold the connector of the sensor.
- When measuring, the sensor temperature must be the same as the ambient temperature.

HINT:

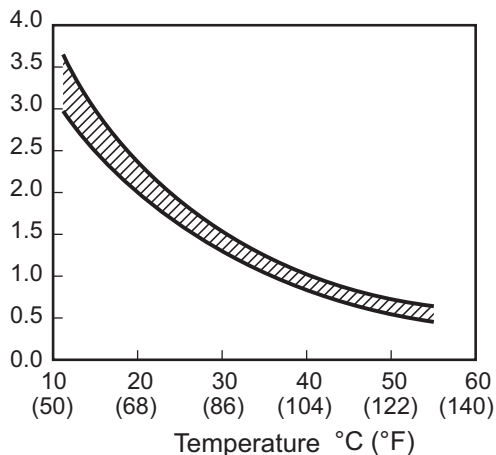
As the temperature increases, the resistance decreases (see the graph).

NG

REPLACE COOLER THERMISTOR (ROOM TEMPERATURE SENSOR)



Resistance (kΩ)



E117004E05

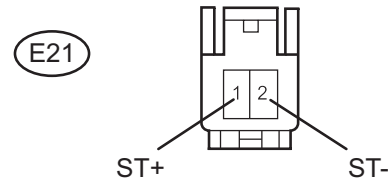
OK

3

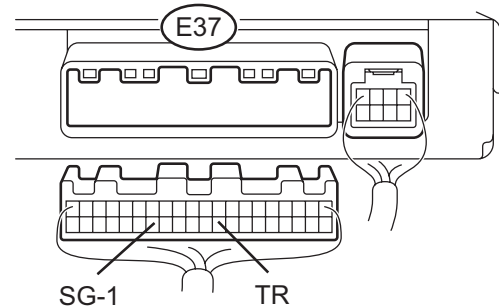
CHECK WIRE HARNESS (ROOM TEMPERATURE SENSOR - AIR CONDITIONING AMPLIFIER)

Wire Harness Side

Room Temperature Sensor



Air Conditioning Amplifier



E115797E03

- (a) Disconnect the E21 sensor connector.
- (b) Disconnect the E37 amplifier connector.
- (c) Measure the resistance of the wire harness side connectors.

Standard resistance

Tester Connection	Specified Condition
E21-1 (ST+) - E37-29 (TR)	Below 1 Ω
E21-2 (ST-) - E37-34 (SG-1)	Below 1 Ω
E21-1 (ST+) - Body ground	1 M Ω or higher
E21-2 (ST-) - Body ground	1 M Ω or higher

NG

REPAIR OR REPLACE HARNESS AND CONNECTOR

OK

AC

REPLACE AIR CONDITIONING AMPLIFIER ASSEMBLY