

DTC	B1411	ROOM TEMPERATURE SENSOR CIRCUIT
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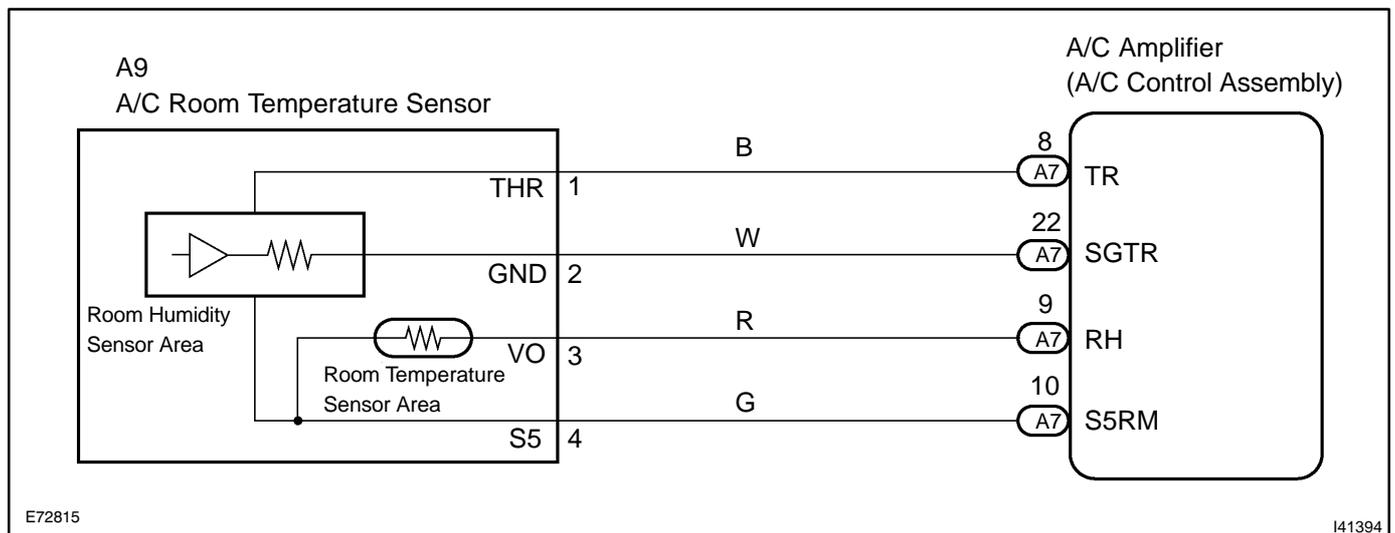
CIRCUIT DESCRIPTION

The A/C room temperature sensor is installed in the instrument panel to detect the room temperature and control the heater and air conditioner "AUTO" function. The resistance of the A/C 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 A/C amplifier applies voltage (5V) to the A/C room temperature sensor and reads voltage changes as the resistance of the A/C room temperature sensor changes. This sensor also sends appropriate signals to the A/C amplifier. The room temperature sensor is integrated with the room humidity sensor.

DTC No.	Detection item	Trouble Area
B1411	Open or short in room temperature sensor circuit	<ul style="list-style-type: none"> • A/C room temperature sensor • Harness or connector between cooler A/C room temperature sensor and A/C amplifier • A/C amplifier

WIRING DIAGRAM



INSPECTION PROCEDURE

1 READ VALUE ON HAND-HELD TESTER

- (a) Connect the hand-held tester to DLC3.
- (b) Turn the power switch ON and push the hand-held tester main switch ON.
- (c) Select the item below in the DATA LIST, and read the display on the hand-held tester.

DATA LIST / AIR CONDITIONER:

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 in the circuit: -6.5°C (20.3°F) Short in the circuit: 57.25°C (135.05°F)

OK:

The display is as specified in the normal condition.

Result:

NG	A
OK (Checking from the PROBLEM SYMPTOM TABLE)	B
OK (Checking from the DTC)	C

B

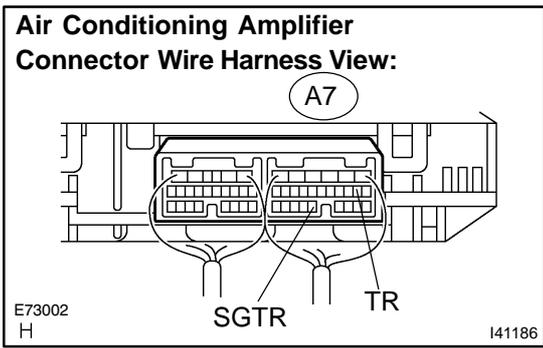
**PROCEED TO NEXT CIRCUIT INSPECTION
SHOWN IN PROBLEM SYMPTOMS TABLE
(SEE PAGE 05-1268)**

C

**REPLACE AIR CONDITIONING AMPLIFIER
(SEE PAGE 55-47)**

A

2 INSPECT AIR CONDITIONING AMPLIFIER(TR - SG-5)



- (a) Remove the A/C amplifier with connectors still connected.
- (b) Measure the voltage according to the value(s) in the table below.

Standard:

Tester connection	Condition	Specified condition
A7-8 (TR) - A7-22 (SGTR)	Power switch ON (ON) at 25 °C (77 °F)	1.8 to 2.2 V
A7-8 (TR) - A7-22 (SGTR)	Power switch ON (ON) at 40 °C (104 °F)	1.2 to 1.6 V

HINT:

As the temperature increases, the voltage decreases.

Result:

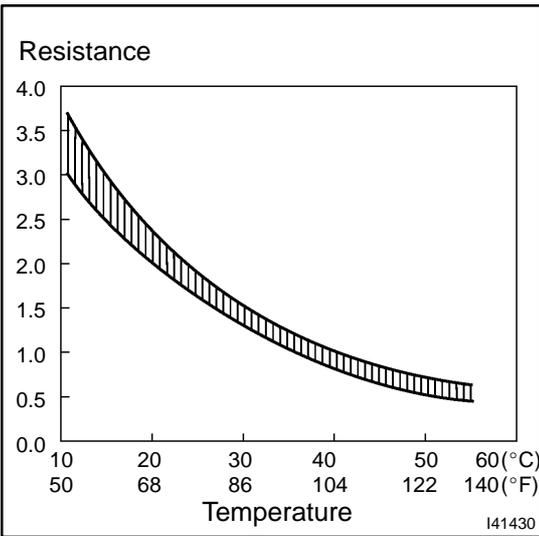
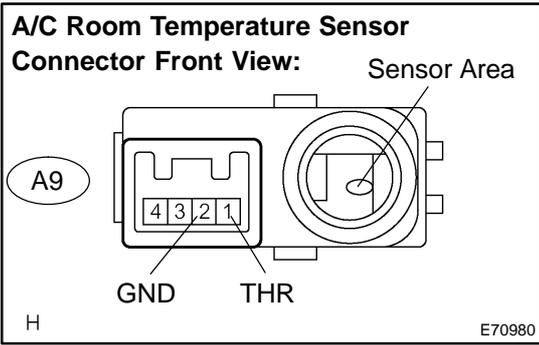
NG	A
OK (Checking from the PROBLEM SYMPTOMS TABLE)	B
OK (Checking from the DTC)	C

B → **PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE (SEE PAGE 05-1268)**

C → **REPLACE AIR CONDITIONING AMPLIFIER (SEE PAGE 55-47)**

A

3 INSPECT A/C ROOM TEMPERATURE SENSOR



- (a) Remove the A/C room temperature sensor.
- (b) Disconnect the connector from A/C room temperature sensor.
- (c) Measure the resistance according to the value(s) in the table below.

Standard:

Tester connection	Condition	Specified condition
A9-1 (THR) – A9-2 (GND)	10°C (50°F)	3.00 to 3.73 kΩ
A9-1 (THR) – A9-2 (GND)	15°C (59°F)	2.45 to 2.88 kΩ
A9-1 (THR) – A9-2 (GND)	20°C (68°F)	1.95 to 2.30 kΩ
A9-1 (THR) – A9-2 (GND)	25°C (77°F)	1.60 to 1.80 kΩ
A9-1 (THR) – A9-2 (GND)	30°C (86°F)	1.28 to 1.47 kΩ
A9-1 (THR) – A9-2 (GND)	35°C (95°F)	1.00 to 1.22 kΩ
A9-1 (THR) – A9-2 (GND)	40°C (104°F)	0.80 to 1.00 kΩ
A9-1 (THR) – A9-2 (GND)	45°C (113°F)	0.65 to 0.85 kΩ
A9-1 (THR) – A9-2 (GND)	50°C (122°F)	0.50 to 0.70 kΩ
A9-1 (THR) – A9-2 (GND)	55°C (131°F)	0.44 to 0.60 kΩ
A9-1 (THR) – A9-2 (GND)	60°C (140°F)	0.36 to 0.50 kΩ

NOTICE:

- Even slightly touching the sensor 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.

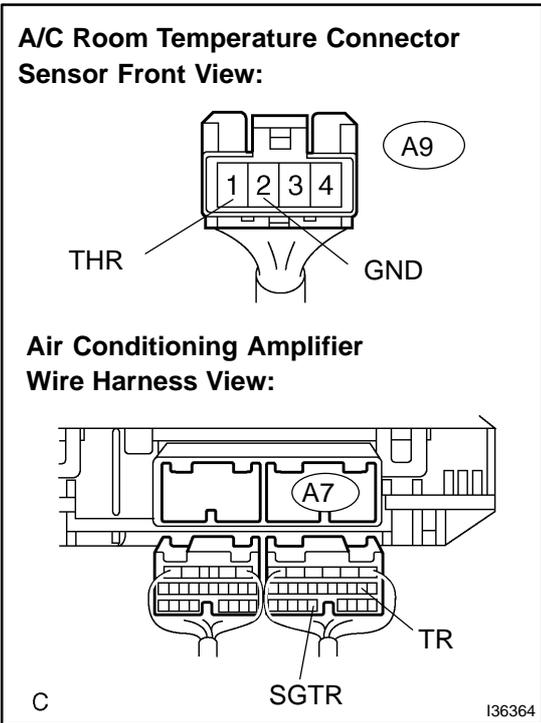
HINT:

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

NG → **REPLACE A/C ROOM TEMPERATURE SENSOR**

OK

4 CHECK HARNESS AND CONNECTOR(A/C ROOM TEMPERATURE SENSOR – AIR CONDITIONING AMPLIFIER) (SEE PAGE 01-47)



- (a) Disconnect the connector from A/C room temperature sensor and A/C amplifier.
- (b) Measure the resistance according to the value(s) in the table below.

Standard:

Tester connection	Condition	Specified condition
A7-8 (TR) – A9-1 (THR)	Always	Below 1 Ω
A7-22 (SGTR) – A9-2 (GND)	Always	Below 1 Ω
A7-8 (TR) – Body ground	Always	10 kΩ or higher
A7-22 (SGTR) – Body ground	Always	10 kΩ or higher

NG REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE AIR CONDITIONING AMPLIFIER (SEE PAGE 55-47)