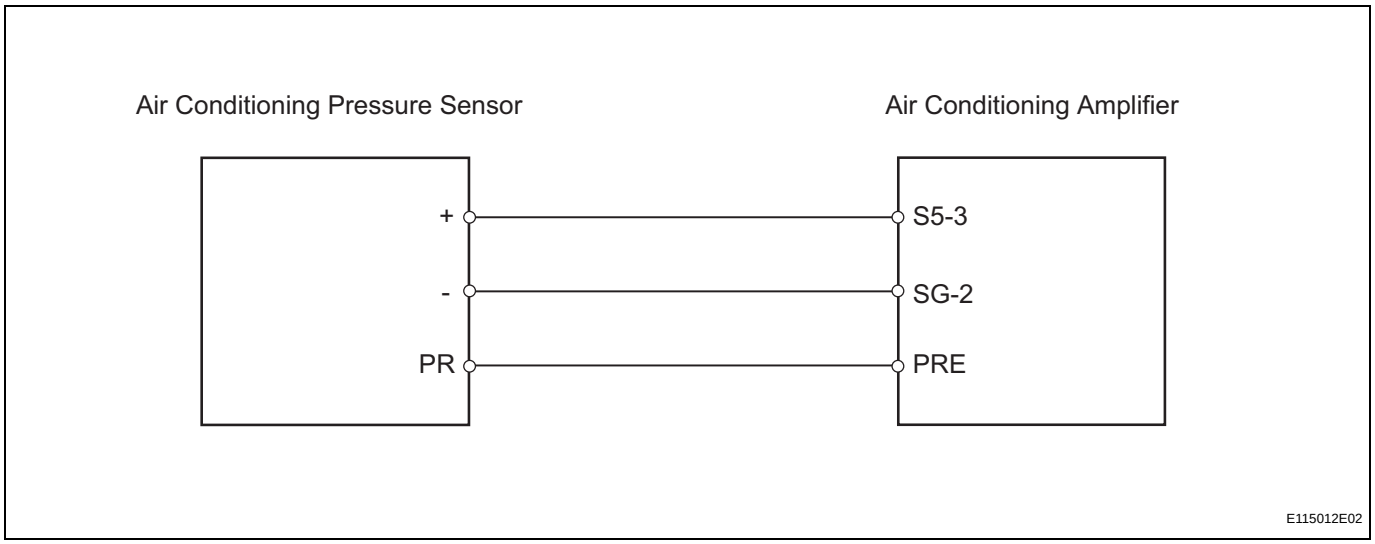
DTC	B1423/23	Pressure Sensor Circuit

DESCRIPTION

This DTC is output when the refrigerant pressure is either extremely low (0.19 MPa [2.0 kgf/cm^2, 28 psi] or less) or extremely high (3.14 MPa [32.0 kgf/cm^2, 455 psi] or more). The air conditioning pressure sensor, which is installed on the pipe of the high pressure side, detects the refrigerant pressure and sends refrigerant pressure signals to the air conditioning amplifier. The air conditioning amplifier determines the pressure from the signals in accordance with the sensor characteristics, and controls the compressor accordingly.

DTC No.	DTC Detection Condition	Trouble Area
B1423/23	Open or short in air conditioning pressure sensor circuit	• Air conditioning pressure sensor • Harness and connector between air conditioning pressure sensor and air conditioning amplifier • Air conditioning amplifier

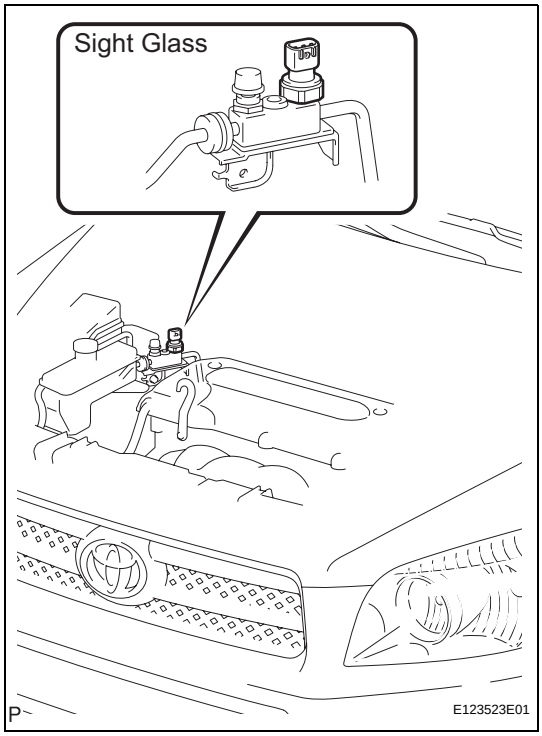
WIRING DIAGRAM



AC

INSPECTION PROCEDURE

1	CHECK REFRIGERANT



(a) Check the sight glass of the cooler unit refrigerant liquid pipe.

(1) Prepare the vehicle in accordance with the chart below.

Item	Condition
Engine Speed	1,500 rpm
Vehicle Doors	Fully open
Temperature Setting	MAX COLD
Blower Speed	HI
A/C Switch	ON

(2) Compare the sight glass to the following chart.

Item	Symptom	Amount of Refrigerant	Corrective Procedures
1	Bubbles visible	Insufficient*	1. Check for gas leakage and repair if necessary 2. Add refrigerant until bubbles disappear
2	No bubbles visible	Empty, insufficient or too much	Refer to items 3 and 4
3	No temperature difference between compressor inlet and outlet	Empty or nearly empty	1. Check for gas leakage with gas leak detector and repair if necessary 2. Add refrigerant until bubbles disappear
4	Considerable temperature difference between compressor inlet and outlet	Correct or too much	Refer to items 5 and 6
5	Refrigerant becomes clear immediately after A/C turned OFF	Too much	1. Drain or discharge refrigerant 2. Bleed air and supply proper amount of purified refrigerant
6	Refrigerant foams and then becomes clear immediately after A/C turned OFF	Correct	-

HINT:

*: If the ambient temperature is higher than usual but cooling is sufficient, bubbles in the sight glass are permissible.

NG → **CHARGE REFRIGERANT**

OK

2	READ VALUE OF INTELLIGENT TESTER (REG PRESS SENS)

(a) Connect the intelligent tester (with CAN VIM) to the DLC3.
(b) Turn the ignition switch ON and turn the intelligent tester main switch ON.
(c) 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
REG PRESS SENS	Regulator pressure sensor / Min.: 0 MPaG Max.: 3.187 MPaG	Actual regulator pressure is displayed	-

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

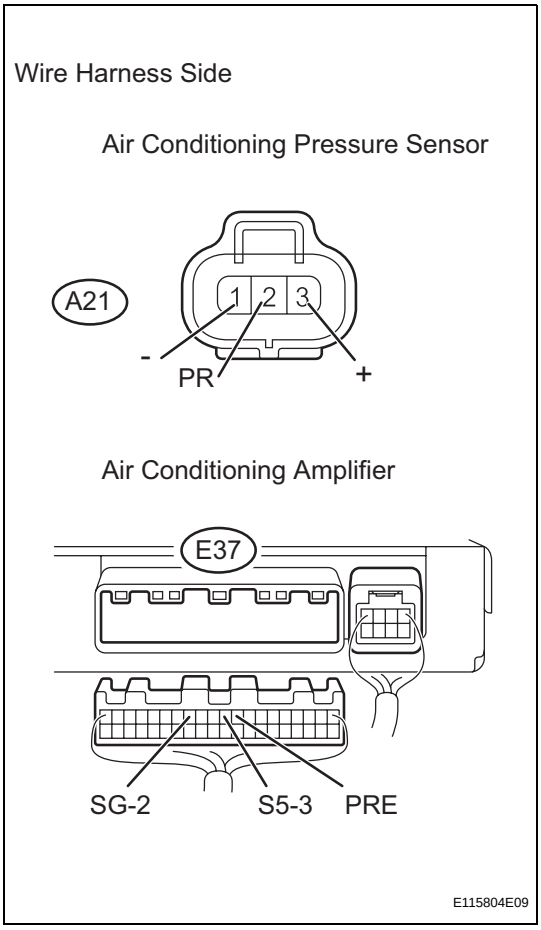
B → PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

C → REPLACE AIR CONDITIONING AMPLIFIER

A

AC

3 CHECK WIRE HARNESS (PRESSURE SENSOR - AIR CONDITIONING AMPLIFIER)



(a) Disconnect the A21 pressure sensor connector.
(b) Disconnect the E37 amplifier connector.
(c) Measure the resistance of the wire harness side connectors.

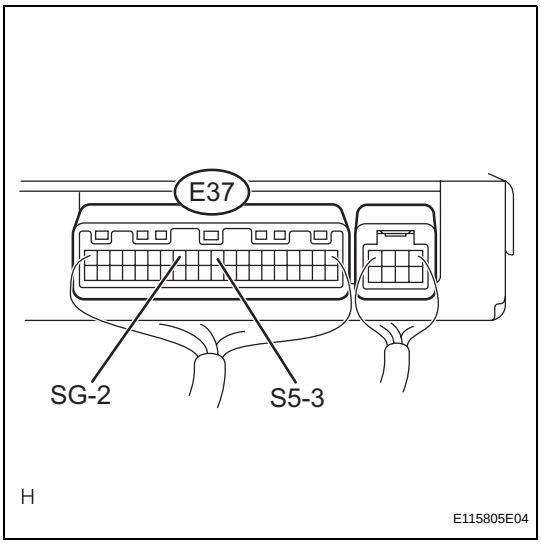
Standard resistance

Tester Connection	Specified Condition
A21-3 (+) - E37-10 (S5-3)	Below 1 Ω
A21-2 (PR) - E37-9 (PRE)	Below 1 Ω
A21-1 (-) - E37-13 (SG-2)	Below 1 Ω
A21-3 (+) - Body ground	1 MΩ or higher
A21-2 (PR) - Body ground	1 MΩ or higher
A21-1 (-) - Body ground	1 MΩ or higher

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

OK

4 CHECK AIR CONDITIONING AMPLIFIER



(a) Remove the air conditioning amplifier with its connectors still connected.
(b) Measure the resistance of the wire harness side connector.

Standard resistance

Tester Connection	Specified Condition
E37-13 (SG-2) - Body ground	Below 1 Ω

(c) Turn the ignition switch ON.
(d) Measure the voltage of the wire harness side connector.

Standard voltage

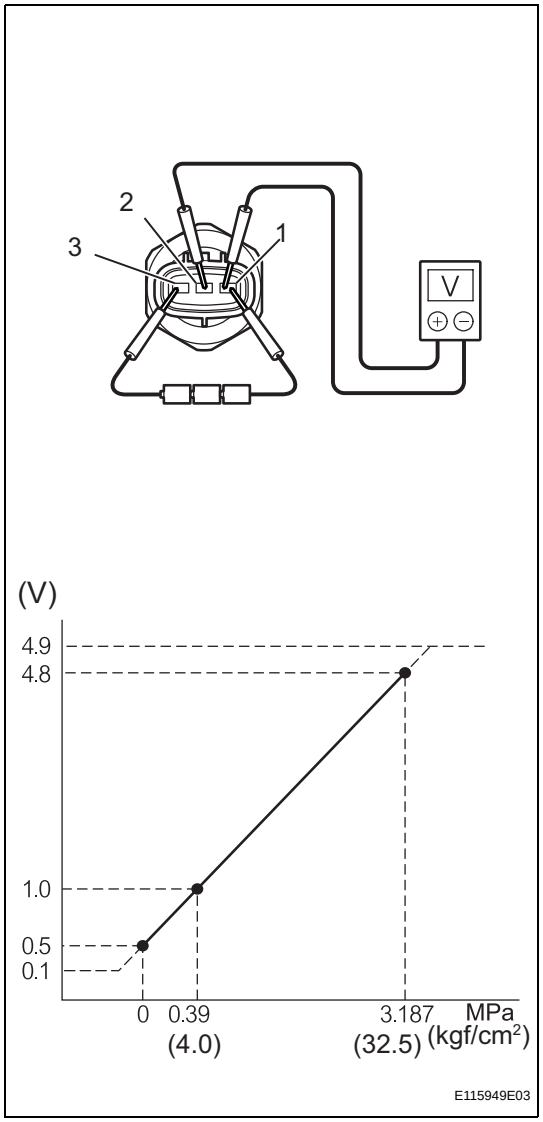
Tester Connection	Specified Condition
E37-10 (S5-3) - E37-13 (SG-2)	4.5 to 5.5 V

NG → **REPLACE AIR CONDITIONING AMPLIFIER**

OK

AC

5	**INSPECT AIR CONDITIONING PRESSURE SENSOR**



(a) Turn the A/C switch ON.
(b) Disconnect the A21 sensor connector.
(c) Connect the three 1.5 V dry cell batteries' positive (+) lead to terminal 3 and the negative (-) lead to terminal 1. Then connect the voltmeter's positive (+) lead to terminal 2 and the negative (-) lead to terminal 1. Measure the voltage.

OK:

The voltage changes in accordance with the refrigerant pressure as shown in the graph.

NG → **REPLACE AIR CONDITIONING PRESSURE SENSOR**

OK

REPLACE AIR CONDITIONING AMPLIFIER

AC