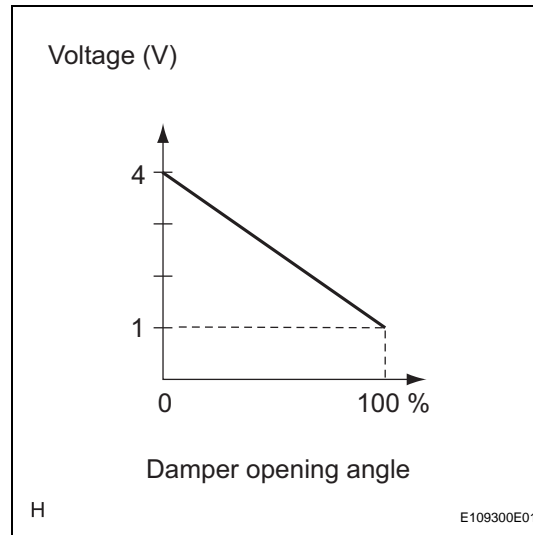


DTC

B1431/31

Air Mix Damper Position Sensor Circuit (Passenger Side)**DESCRIPTION**

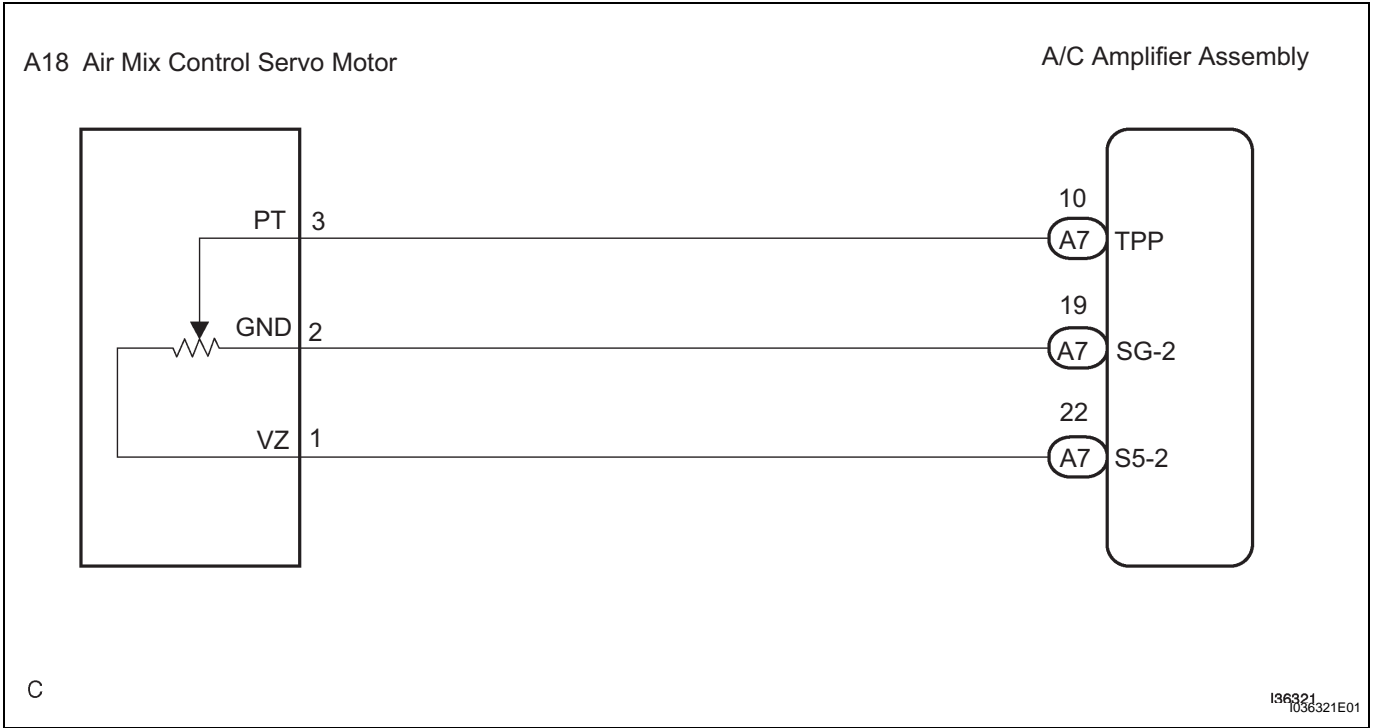
This sensor detects the position of the air mix control servo motor (air mix damper) and sends the appropriate signals to the A/C amplifier assembly. The position sensor is built in the air mix control servo motor arm moves.

It outputs voltage (5 V) that is input to terminal 1 (VZ) and terminal 3 (PT) via the variable resistor, and then to the A/C amplifier assembly.

The A/C amplifier assembly reads the arm position with the input voltage from the position sensor.

DTC No.	DTC Detecting Condition	Trouble Area
B1431/31	Open or short in power source circuit in air mix damper position sensor circuit.	<ul style="list-style-type: none"> Air mix control serv motor (air mix damper position sensor) Harness and connector between air mix control servo motor and A/C amplifier assembly A/C amplifier assembly

WIRING DIAGRAM



AC

1 READ VALUE OF INTELLIGENT TESTER

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

DATA LIST / AIR CONDITIONER

Item	Measurement Item / Display (Range)	Normal Condition	Diagnostic Note
A/M DAMP POS-P	Air mix damper position (Passenger side) / min.: -14% max.: 113.5%	Damper is at "MAX. COOL": -5% Damper is at "MAX. HOT": 105%	-
A/M DAMP TARG-P	Air mix damper target position (Passenger side) / min.: -14% max.: 113.5%		

OK:
The display is as specified in the normal condition.

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**

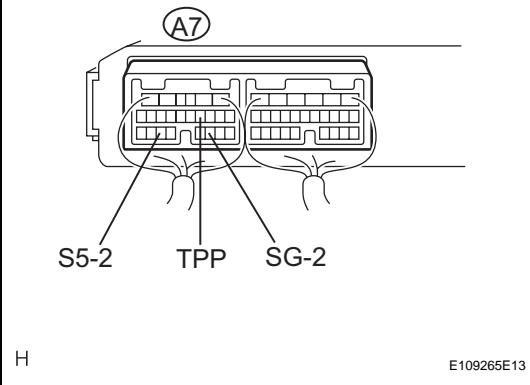
C REPLACE AIR CONDITIONING AMPLIFIER ASSEMBLY

A

2 INSPECT AIR CONDITIONING AMPLIFIER ASSEMBLY

AC

A/C Amplifier Assembly
Connector Wire Harness View:



- (a) Remove the A/C amplifier assembly with the connectors still connected.
- (b) Change the set temperature to activate the air mix servomotor.
- (c) Measure the voltage according to the value(s) in the table below.

Standard voltage

Tester connection (Symbols)	Condition	Specified condition
A7-10 (TPP) - A7-19 (SG-2)	Ignition switch ON MAX. HOT position	0.82 to 0.88 V
A7-10 (TPP) - A7-19 (SG-2)	Ignition switch ON MAX. COOL position	4.12 to 4.18 V
A7-22 (S5-2) - A7-19 (SG-2)	Ignition switch ON	4.5 to 5.5 V
A7-22 (S5-2) - A7-19 (SG-2)	Ignition switch OFF	Below 1 V

HINT:

As the set temperature increases, the voltage decreases gradually without interruption.

Result

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

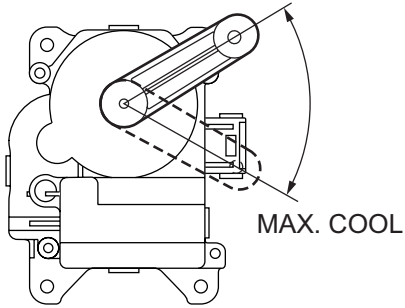
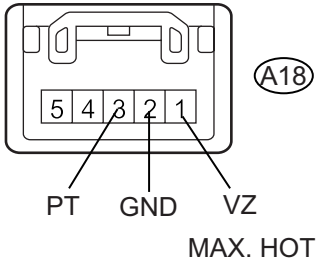
B PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE

C REPLACE AIR CONDITIONING AMPLIFIER ASSEMBLY

A

3 INSPECT AIR MIX CONTROL SERVO MOTOR

Air Mix Control Servo Motor Connector Front View:



H

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- (a) Remove the air mix control servo motor.
- (b) Disconnect the connector from the air mix control servo motor.
- (c) Measure the resistance according to the value(s) in the table below.

Standard resistance

Tester connection (Symbols)	Condition	Specified condition
A18-1 (VZ) - A18-2 (GND)	Always	4.2 to 7.8 kΩ

- (d) Measure the resistance according to the value(s) in the table below.

Standard resistance

Tester connection	Condition	Specified condition
A18-3 (PT) - A18-2 (GND)	MAX. COOL position	3.5 to 6.5 kΩ
A18-3 (PT) - A18-2 (GND)	MAX. HOT position	0.7 to 1.3 kΩ

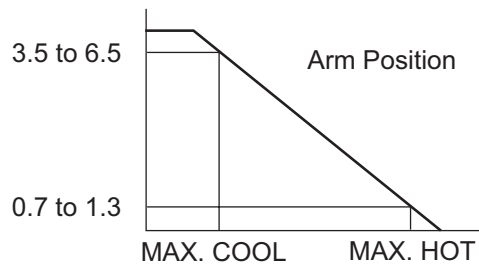
- (e) As the air mix control servo motor moves from cool side to hot side, the resistance decreases gradually without interruption.

HINT:

For details regarding operation of the servo motor (See page AC-80).

NG REPLACE AIR MIX CONTROL SERVO MOTOR

Resistance



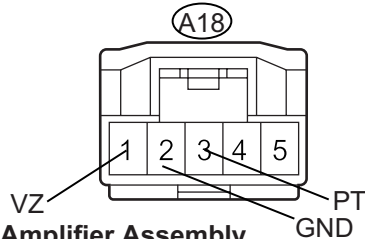
H

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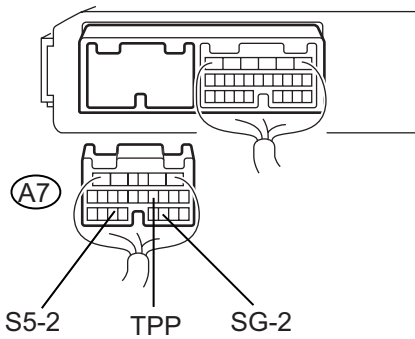
OK

4 CHECK HARNESS AND CONNECTOR (AIR MIX CONTROL SERVO MOTOR - A/C AMPLIFIER ASSEMBLY)

Air Mix Control Servo Motor Connector Front View:



A/C Amplifier Assembly Connector Wire Harness View:



H

E109216E09

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

Standard resistance

Tester connection (Symbols)	Condition	Specified condition
A7-10 (TPP) - A18-3 (PT)	Always	Below 1 Ω
A7-19 (SG-2) - A18-2 (GND)	Always	Below 1 Ω
A7-22 (S5-2) - A18-1 (VZ)	Always	Below 1 Ω
A7-10 (TPP) - Body ground	Always	10 kΩ or higher
A7-19 (SG-2) - Body ground	Always	10 kΩ or higher
A7-22 (S5-2) - Body ground	Always	10 kΩ or higher

NG

REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE AIR CONDITIONING AMPLIFIER ASSEMBLY

AC