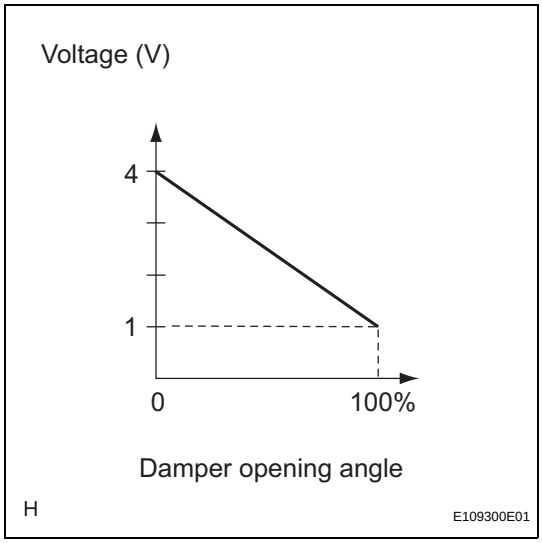
| DTC | B1431/31 | Air Mix Damper Position Sensor Circuit (Passenger Side) |
|---|---|---|

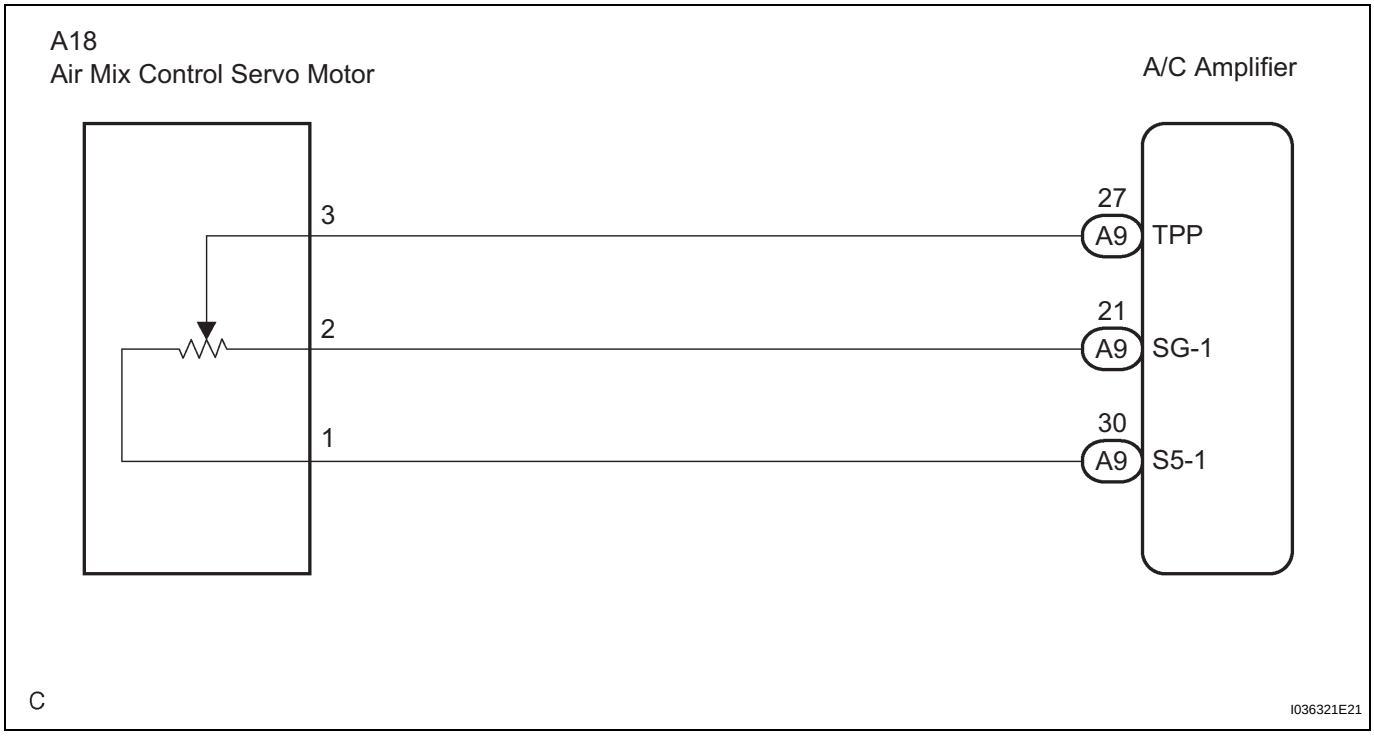
## DESCRIPTION




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. The position sensor is built in the air mix control servo motor. The position sensor's resistance changes as the air mix control servo motor arm moves.
It outputs voltage (5 V) that is input to terminal 1 and terminal 3 via the variable resistor, and then to the A/C amplifier.
The A/C amplifier determines the arm position based on the input voltage from the position sensor.

| DTC No. | DTC Detection Condition | Trouble Area |
|---|---|---|
| B1431/31 | Open or short in power source circuit in air mix damper position sensor circuit. | • Air mix control servo motor (air mix damper position sensor)<br>• Harness or connector between air mix control servo motor (air mix damper position sensor) and A/C amplifier<br>• A/C amplifier |

## WIRING DIAGRAM




AC

## INSPECTION PROCEDURE

| 1 | READ VALUE OF INTELLIGENT TESTER |
|---|---|

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

**DATA LIST / AIR CONDITIONER**

| Tester Display | Measurement Item/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%<br>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 column.**

**Result**

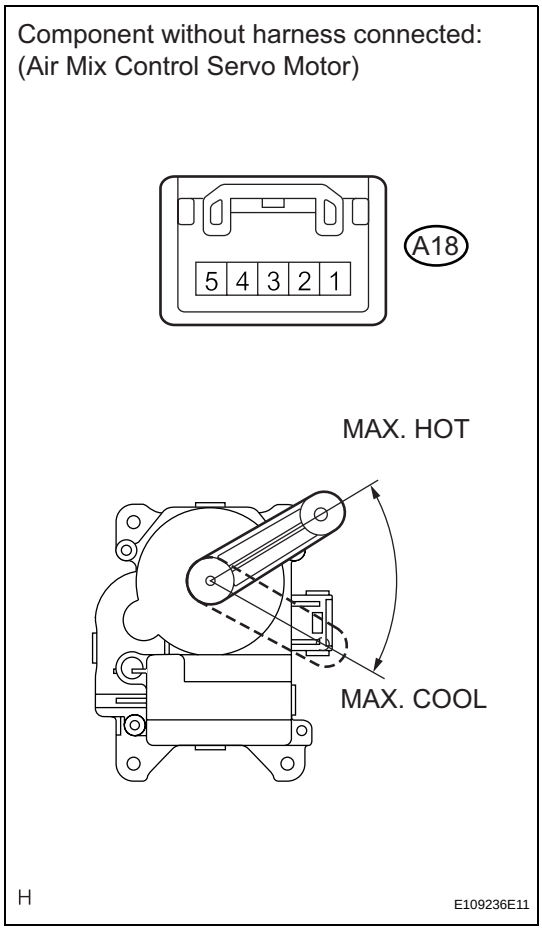
| Result | Proceed to |
|---|---|
| NG | A |
| OK (When troubleshooting according to the PROBLEM SYMPTOMS TABLE) | B |
| OK (When troubleshooting according to the DTC) | C |

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

C → **REPLACE A/C AMPLIFIER**

A

## 2 INSPECT AIR MIX CONTROL SERVO MOTOR




(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.

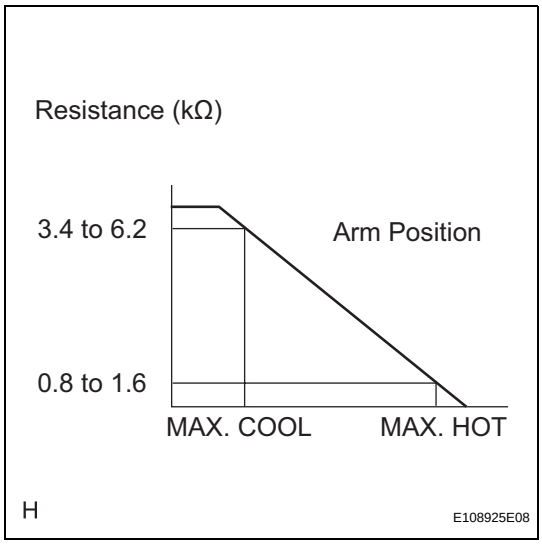
**Standard resistance**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| A18-1 - A18-2 | 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 - A18-2 | MAX. COOL position | 3.4 to 6.2 kΩ |
| A18-3 - A18-2 | MAX. HOT position | 0.8 to 1.6 kΩ |



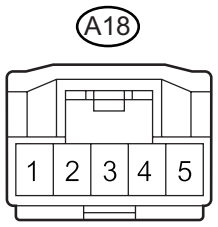

(e) As the air mix control servo motor moves from the cool side to the hot side, the resistance decreases gradually without interruption.

NG → **REPLACE AIR MIX CONTROL SERVO MOTOR**

OK

| 3 | CHECK HARNESS AND CONNECTOR (AIR MIX CONTROL SERVO MOTOR - A/C AMPLIFIER) |
|---|---|

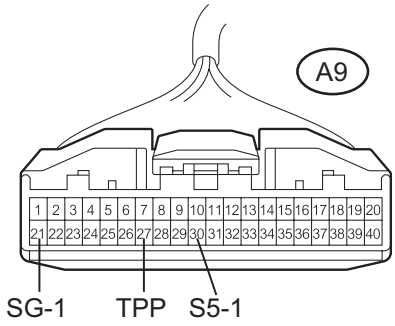
Front view of wire harness connector:
(to Air Mix Control Servo Motor)




E145121E03

(a) Disconnect the connector from the A/C amplifier.

Front view of wire harness connector:
(to A/C Amplifier)




H

E143742E35

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

**Standard resistance**

| Tester Connection | Condition | Specified Condition |
|---|---|---|
| A9-27 (TPP) - A18-3 | Always | Below 1 Ω |
| A9-21 (SG-1) - A18-2 | Always | Below 1 Ω |
| A9-30 (S5-1) - A18-1 | Always | Below 1 Ω |
| A9-27 (TPP) - Body ground | Always | 10 kΩ or higher |
| A9-21 (SG-1) - Body ground | Always | 10 kΩ or higher |
| A9-30 (S5-1) - Body ground | Always | 10 kΩ or higher |

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

**OK**

**REPLACE A/C AMPLIFIER**