

<b>Last Modified:</b> 12-04-2024	6.11:8.1.0	<b>Doc ID:</b> RM10000000290ZS
<b>Model Year Start:</b> 2023	<b>Model:</b> Prius	<b>Prod Date Range:</b> [12/2022 - ]
<b>Title:</b> HEATING / AIR CONDITIONING: AIR CONDITIONING SYSTEM (for HEV Model): P007011; Ambient Temperature Sensor Circuit Short to Ground; 2023 - 2024 MY Prius [12/2022 - ]		

<b>DTC</b>	<b>P007011</b>	<b>Ambient Temperature Sensor Circuit Short to Ground</b>
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## DESCRIPTION

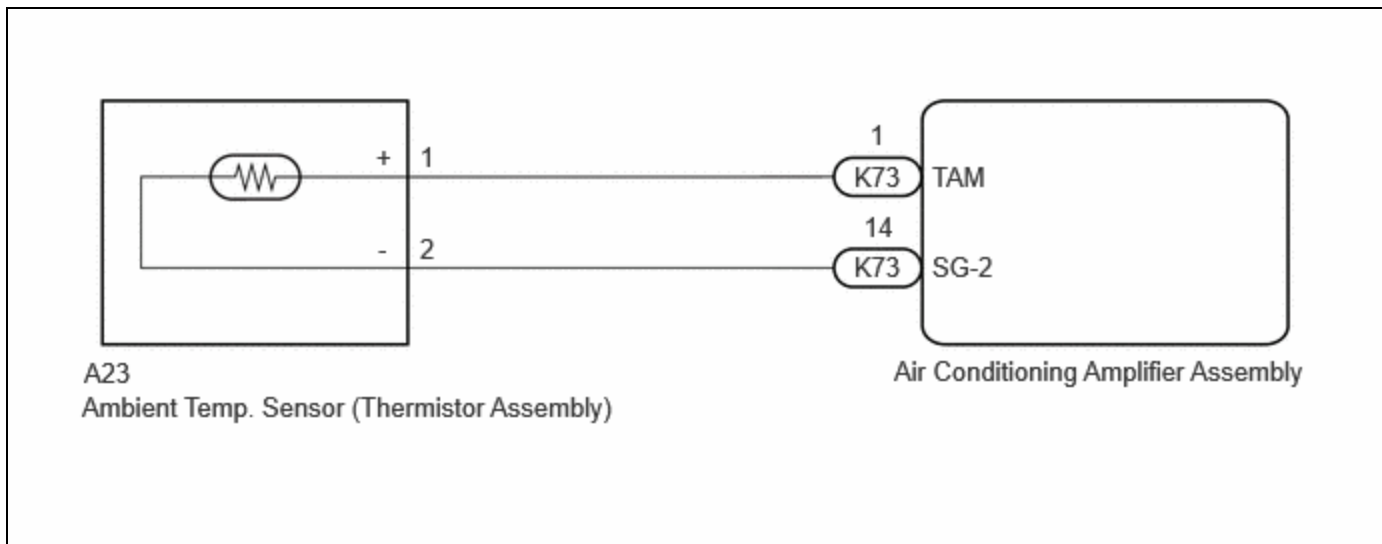
The ambient temp. sensor (thermistor assembly) is installed in front of the cooler condenser assembly to detect the ambient temperature, which is used to control the air conditioning system. This sensor is connected to the air conditioning amplifier assembly and detects fluctuations in the ambient temperature. This data is used for controlling the cabin temperature. The sensor sends a signal to the air conditioning amplifier assembly. The resistance of the ambient temp. sensor (thermistor assembly) changes in accordance with the ambient temperature. As the temperature decreases, the resistance increases. As the temperature increases, the resistance decreases.

The air conditioning amplifier assembly applies voltage to the ambient temp. sensor (thermistor assembly) and reads voltage changes due to changes in the resistance of the ambient temp. sensor (thermistor assembly).

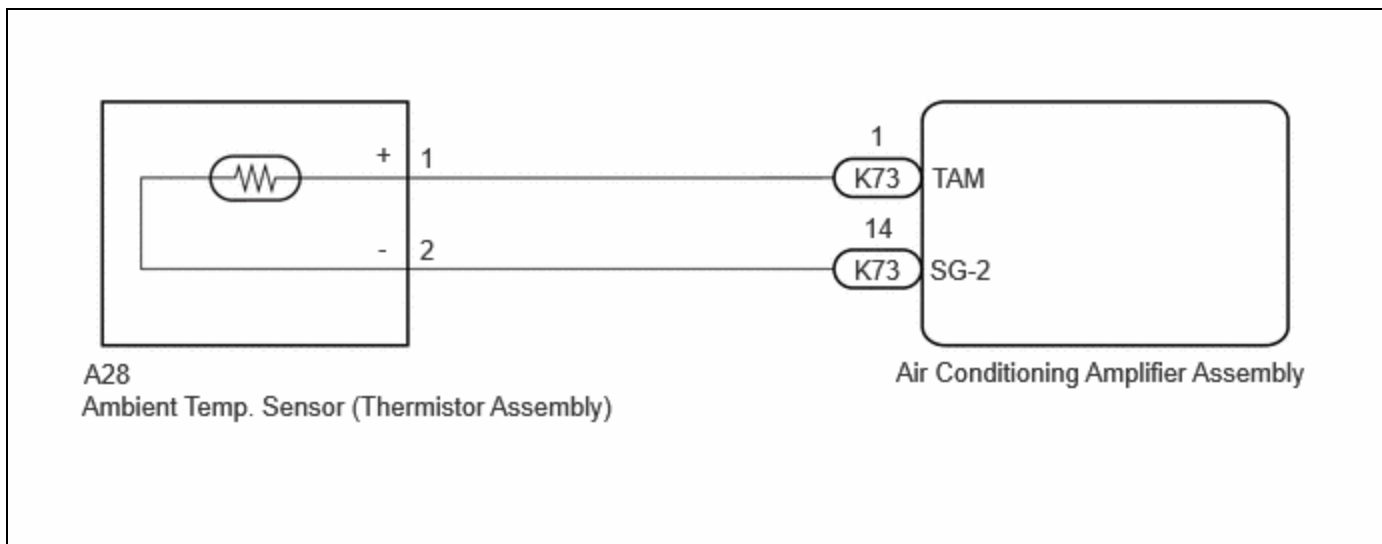
DTC NO.	DETECTION ITEM	DTC DETECTION CONDITION	TROUBLE AREA	MEMORY	DTC OUTPUT FROM	PRIORITY
P007011	Ambient Temperature Sensor Circuit Short to Ground	Diagnosis Condition: Ignition switch ON  Malfunction: Short (GND) in ambient temperature sensor circuit  Detection Time: Continuously for 4 seconds or more	<ul style="list-style-type: none"> <li>Ambient temp. sensor (Thermistor assembly)</li> <li>Harness or connector</li> <li>Air conditioning amplifier assembly</li> </ul>	Memorized	Air Conditioner	A

## WIRING DIAGRAM

**for 2ZR-FXE:**



for M20A-FXS:



## PROCEDURE

### 1. CLEAR DTC

(a) Clear the DTCs.

**Body Electrical > Air Conditioner > Clear DTCs**

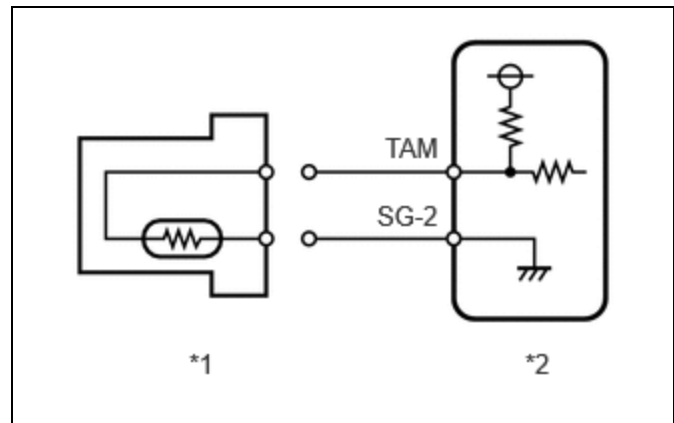
### NEXT



### 2. CHECK FOR DTC

Pre-procedure1

(a) Turn the ignition switch off.



(b) Disconnect the ambient temp. sensor (thermistor assembly) connector.

*1	Ambient Temp. Sensor (Thermistor Assembly)
*2	Air Conditioning Amplifier Assembly

(c) Turn the ignition switch to ON and wait for 4 seconds or more.

Procedure1

(d) Check for DTCs.

**Body Electrical > Air Conditioner > Trouble Codes**

RESULT	PROCEED TO
P007015 is output	A
P007011 is output	B

Post-procedure1

(e) None

**A** ▶ **REPLACE AMBIENT TEMP. SENSOR (THERMISTOR ASSEMBLY)**

**B**  
▼

<b>3.</b>	<b>CONFIRM MODEL</b>
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RESULT	PROCEED TO
for 2ZR-FXE	A
for M20A-FXS	B

**B**  **GO TO STEP 5**

**A**  


<b>4.</b>	<b>CHECK HARNESS AND CONNECTOR (AMBIENT TEMP. SENSOR (THERMISTOR ASSEMBLY) - AIR CONDITIONING AMPLIFIER ASSEMBLY)</b>
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Pre-procedure1

- (a) Disconnect the A23 ambient temp. sensor (thermistor assembly) connector.
- (b) Disconnect the K73 air conditioning amplifier assembly connector.

Procedure1

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

Standard Resistance:



[Click Location & Routing\(A23,K73\).](#)

[Click Connector\(A23\).](#)

[Click Connector\(K73\).](#)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION	RESULT
A23-1 (+) or K73-1 (TAM) - Other terminals and body ground	Always	10 kΩ or higher	kΩ
A23-2 (-) or K73-14 (SG-2) - Other terminals and body ground	Always	10 kΩ or higher	kΩ

Post-procedure1

- (d) None

**OK**  **REPLACE AIR CONDITIONING AMPLIFIER ASSEMBLY**

Click here 

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

**5. CHECK HARNESS AND CONNECTOR (AMBIENT TEMP. SENSOR (THERMISTOR ASSEMBLY) - AIR CONDITIONING AMPLIFIER ASSEMBLY)**

Pre-procedure1

- (a) Disconnect the A28 ambient temp. sensor (thermistor assembly) connector.
- (b) Disconnect the K73 air conditioning amplifier assembly connector.

Procedure1

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

Standard Resistance:



- [Click Location & Routing\(A28,K73\).](#)
- [Click Connector\(A28\).](#)
- [Click Connector\(K73\).](#)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION	RESULT
A28-1 (+) or K73-1 (TAM) - Other terminals and body ground	Always	10 kΩ or higher	kΩ
A28-2 (-) or K73-14 (SG-2) - Other terminals and body ground	Always	10 kΩ or higher	kΩ

Post-procedure1

- (d) None

**OK** ► REPLACE AIR CONDITIONING AMPLIFIER ASSEMBLY

Click here

**NG** ► REPAIR OR REPLACE HARNESS OR CONNECTOR

