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<b>Subject:</b> <b>DISPLAY SHOWS INACCURATE AMBIENT TEMPERATURE</b>	<b>Bulletin No:</b> 09-023/14
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## BULLETIN NOTE

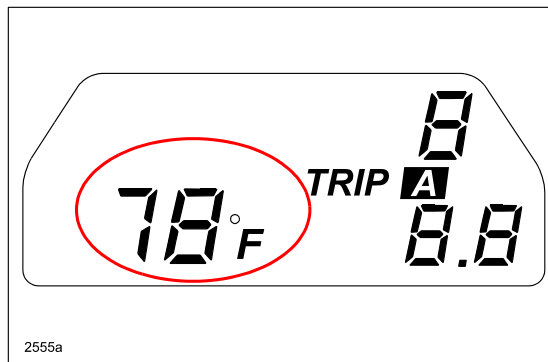
- This bulletin supersedes the previous bulletin 09-018/13, issued on 06/04/2013, 09-015/11, issued on 06/13/2011. The APPLICABLE MODEL(S)/VINS has been revised.
- Changes are noted below in Red beside the change bar.

## APPLICABLE MODEL(S)/VINS

2011-2014 Mazda2	2003-2015 Mazda6	2007-2014 Mazda CX-9
2004-2014 Mazda3	2013-2015 Mazda CX-5	2009-2015 Mazda MX-5
2012-2014 Mazda5	2007-2012 Mazda CX-7	2004-2011 Mazda RX-8

## DESCRIPTION

Some customers may complain that the ambient temperature display is not accurate, or it takes too long for the display to show actual temperature.



When you encounter a customer with this concern, first verify the condition when the customer noticed this symptom. If the condition is similar to the following “CONTROL LOGIC OF AMBIENT TEMPERATURE” or “DIFFERENCE BETWEEN THE TEMPERATURE DISPLAY AND OTHERS”, advise the customer that this is a normal characteristic of the vehicle and not a malfunction.

If the condition does not meet the following and the sensor malfunction is suspected, make sure to inspect the sensor according to MS3 online or Workshop Manual (section 09-22 AMBIENT TEMPERATURE SENSOR INSPECTION).

Replace the sensor only when it fails the Workshop Manual inspection.

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## CONTROL LOGIC OF AMBIENT TEMPERATURE

- The ambient temperature display is NOT always equal to the reading of the temperature sensor mounted in front of the vehicle.
- Under certain conditions, the sensor reading is adjusted in order to avoid false high reading due to heat from engine and/or road surface.
- The ambient temperature display is adjusted during the following conditions shown below.
- Due to this adjustment, the temperature on the display may temporarily differ from actual.

## EXAMPLE OF CONDITIONS WHEN SENSOR READING IS ADJUSTED

Condition 1 - Engine coolant temp when ignition switch (IG) is on

Condition	Low engine temp	High engine temp
Display temperature	Actual sensor reading	The last temperature recorded when IG was off
Note		Note: The threshold of the engine temp differs depending on car model, but it is approx. 122-140°F (50-60°C)
Reason for adjustment		Especially in summer, display may show false high temperature due to heat from street.

Condition 2 - Vehicle Speed

Condition	Low vehicle speed	High vehicle speed
Display temperature	The last temperature recorded	Actual sensor reading
Note	The threshold of the vehicle speed differs depending on car model, but it is approx. 3-15mph (5-25km/h)	

Condition 3 - Ambient temperature change

Condition	Low ambient temp	High ambient temp
Display temperature	Gradually changes to actual sensor reading	Immediately changes to actual sensor reading
Note	When moved from garage/indoor parking lot to outside, it may take long to show actual ambient temperature.	
Reason for adjustment	Under certain conditions, the sensor reading is adjusted in order to avoid false reading.	

**NOTE:**

- When M-MDS is connected, the ambient temperature shown on M-MDS is the actual temperature sensor value; however, in some cases, it may not match the instrument cluster display because the value may be adjusted. Do NOT attempt repair due to this difference.
- If temperature sensor connector is disconnected then connected, the recorded temperature is lost and the display starts to show actual sensor reading regardless of the condition. Sometimes it is misjudged that the symptom is fixed by the sensor replacement, but actually, the display has reset and now shows actual sensor reading because the connector was disconnected. So the sensor is not the root cause.

**DIFFERENCE BETWEEN THE TEMPERATURE DISPLAY AND OTHERS**

If the vehicle's temperature display does not match an external temperature display (such as a bank sign showing outside temperature), this is because the external temperature display does not always show the temperature around the vehicle.