

Technical Service Bulletin

Mazda North American Operations
Irvine, CA 92618-2922



Subject: 09-018/17 - DISPLAY SHOWS INACCURATE AMBIENT TEMPERATURE	Bulletin No.: 09-018/17
	Last Issued: 05/22/2017

BULLETIN NOTES

This bulletin supersedes the previously issued bulletin(s) listed below: The changes are noted in Red.

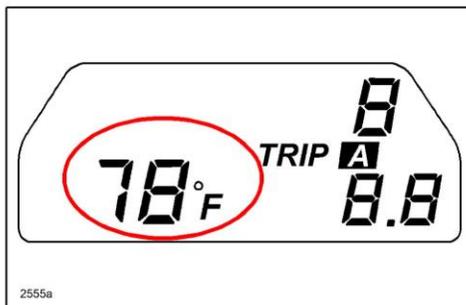
Previous TSBs:	Date(s) Issued:
09-023/14	05/20/2014
09-018/13	06/04/2013
09-015/11	06/13/2011

APPLICABLE MODEL(S)/VINS

2011-2017Mazda2	2003-2017Mazda6	2007-2012 Mazda CX-7	2004-2011 Mazda RX-8
2004-2017Mazda3	2016-2017Mazda CX-3	2007-2017Mazda CX-9	
2012-2017Mazda5	2013-2017Mazda CX-5	2009-2017Mazda MX-5	

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.



CONSUMER NOTICE: The information and instructions in this bulletin are intended for use by skilled technicians. Mazda technicians utilize the proper tools/equipment and take training to correctly and safely maintain Mazda vehicles. These instructions should not be performed by "do-it-yourselfers." Customers should not assume this bulletin applies to their vehicle or that their vehicle will develop the described concern. To determine if the information applies, customers should contact their nearest authorized Mazda dealership. Mazda North American Operations reserves the right to alter the specifications and contents of this bulletin without obligation or advance notice. All rights reserved. No part of this bulletin may be reproduced in any form or by any means, electronic or mechanical---including photocopying and recording and the use of any kind of information storage and retrieval system ---without permission in writing.

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 MGSSonline or Workshop Manual (section 09-22 AMBIENT TEMPERATURE SENSOR INSPECTION).

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

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)	

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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.

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