



# Technical Service Bulletin

---

## 17 Range display (distance to empty) in the on-board computer

17 20 06 2028440/5 July 8, 2020. Supersedes Technical Service Bulletin Group 17 number 19-98 dated August 30, 2019 for reasons listed below.

Model(s)	Year	VIN Range	Vehicle-Specific Equipment
All	2005 - 2021	All	Not Applicable

## Condition

REVISION HISTORY		
Revision	Date	Purpose
5	-	Revised header (Corrected Elsa display issue) Revised <i>Condition</i> (Added information) Revised <i>Technical Background</i> (Added information)
4	08/30/2019	Revised header (Added model years)
3	12/10/2015	Revised header (Added model years)

### The customer states of one or more of the following issues:

- When the vehicle is completely refueled, the vehicle range (“distance to empty”) that is displayed is different than the vehicle range that was displayed the last time the vehicle was completely refueled.
- The displayed vehicle range drops inconsistently.
- After the vehicle is refueled, the displayed vehicle range does not change for a long period of time.
- When the vehicle is driven on hilly roads for a long period of time, the displayed vehicle range suddenly changes by a significant amount.
- The instrument cluster displays a fuel range of zero miles before the fuel tank is completely empty.
- Upon refueling at a displayed fuel range of zero miles, the fuel tank accepts fewer gallons than what is shown in the owner’s manual capacity chart.

### Workshop findings:

- There are no DTCs related to fuel senders stored in the instrument cluster control module, J285 (address word 0017).
- This condition does not involve or affect the accuracy of the fuel level indicator, but only the estimated distance to empty display on the on-board computer.



# Technical Service Bulletin

---

## Technical Background

The primary purpose of the vehicle range display is to help prevent the vehicle from running out of fuel. As soon as the fuel gauge needle enters the red zone (well before the tank is empty), an audible warning and a low fuel indicator light activate, and the vehicle range display may show 0 miles (see owner's manual for reserve fuel capacity volume).

The average and instant consumption figures shown in the on-board computer are not used for calculating the range. Instead, the range is calculated using an internal weighted value. Two different calculation methods (filter algorithms) are used for determining the range display.

### **For vehicles older than model year 2009:**

Only consumption figures of the last 50 kilometers (31 miles) are included in the calculation. The last kilometer has the most weight and the first kilometer has the lowest.

If the vehicle is driven efficiently right before the vehicle is refueled, the displayed vehicle range could be much higher than it was after the previous fill-up. Conversely, if the vehicle is driven aggressively right before the vehicle is refueled, the displayed vehicle range could be much lower than it was after the previous fill-up.

### **For vehicles from model year 2009 and newer:**

A gradual driving profile is built from the last 50 kilometers (31 miles) and from the last 500 kilometers (310 miles). The short-term consumption figures over the last 50 kilometers (31 miles) and the long-term figures over 500 kilometers (310 miles) are included in the calculation, which is also based on the tank volume. With this method, the range display can only rise when the vehicle is driven efficiently for extended periods, resulting in a more accurate vehicle range.



**Tip:** In both methods, the range display after fill-up depends on the driving style before fill-up, so the range displayed after fill-up will not always be the same. In addition, the displayed vehicle range does not refer to the whole tank volume; it only indicates a trend based on the short-term to medium-term fuel consumption.

To ensure mobility, a small amount of fuel is still available when a fuel range of zero miles is initially displayed. Additionally, the fuel range is calculated based on the most recent driving style. Therefore, the actual amount of fuel remaining may vary when a fuel range of zero is initially displayed.

## Production Solution

Not applicable.

## Service

Explain the *Technical Background* to the customer.



# Technical Service Bulletin

---

## Warranty

This TSB is informational only and is not applicable to any Audi Warranty.

## Additional Information

All parts and service references provided in this TSB (2028440) are subject to change and/or removal. Always check with your Parts Department and/or ETKA for the latest information and parts bulletins. Please check the Repair Manual for fasteners, bolts, nuts, and screws that require replacement during the repair.

©2020 Audi of America, Inc. All rights reserved. Information contained in this document is based on the latest information available at the time of printing and is subject to the copyright and other intellectual property rights of Audi of America, Inc., its affiliated companies and its licensors. All rights are reserved to make changes at any time without notice. No part of this document may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, nor may these materials be modified or reposted to other sites without the prior expressed written permission of the publisher.