Fuel Level Unchanged After Refueling

Topic number	LI47.00-N-069565
Version	3
Function group	47.00 - General
Date	3/10/25
Validity	MODEL 907 with OM654, OM651, or OM642
Reason for change	LI Take Over

Complaint

The customer reports that the fuel gauge shows inaccurate readings or remains unchanged after refueling.

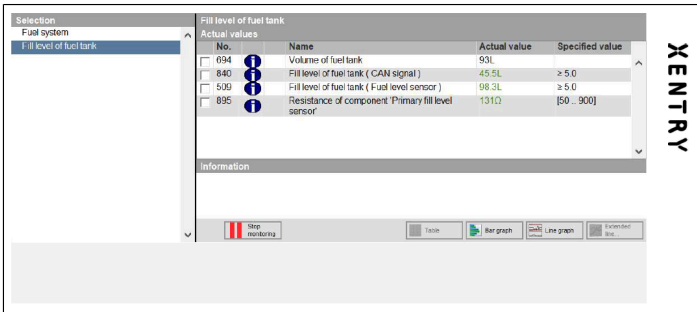
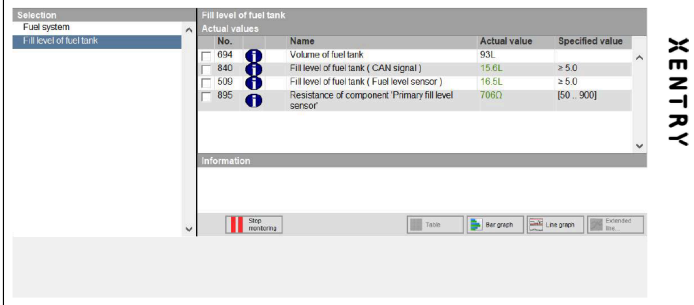
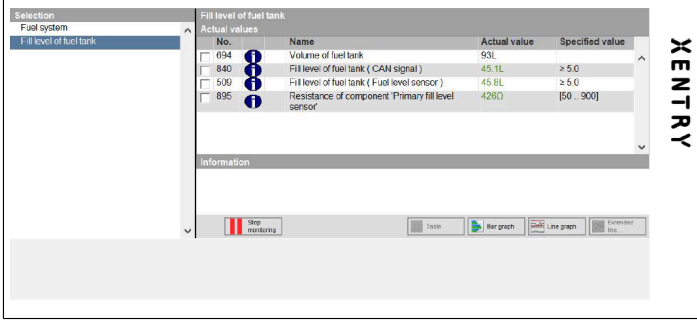
WIS-References		
Document number	Title	Note
AD00.00-S-2000-04E	Connect STAR DIAGNOSIS and read out fault memory	

Cause

A. The FSCU fails to detect a refueling event.

B. The Fuel Level Sensor provides incorrect readings.

Attachments	
File	Description
Stuck Level Sensor.jpg 	Level Sensor Stuck on Pickup Tube
FSCU Calculation Error.png	FSCU Calculation Error

	
Level Sensor Stuck 1.png 	Level Sensor Stuck 1
Level Sensor Stuck 2.png 	Level Sensor Stuck 2

Remedy

A. The FSCU fails to detect a refueling event.

NOTE: This issue arises when the CAN network does not enter sleep mode during refueling events. Several factors may contribute to this failure: leaving the vehicle running, keeping the ignition switch on, or turning it on during fueling; aftermarket modifications that prevent the CAN network from entering sleep mode; or a calculation error within the Fuel Supply Control Unit (FSCU). The vehicle registers a new "refueling event" only when the FSCU detects a change in fuel level via the Fuel Level Sensor in the tank, which occurs after the CAN network has gone into sleep mode. This discrepancy can be seen in the FSCU's actual values of the level sensor, where the CAN level significantly differs from the Level Sensor readings. Refer to the attachments for examples.

1. Inspect the FSCU's actual values of the level sensor within XENTRY.

- If the 'Fill Level of Fuel Tank (CAN Signal)' and 'Fill Level of Fuel Tank (Fuel Level Sensor)' do not match, proceed to step 2. If they match but the fuel level reading is incorrect, move on to remedy B.

2. Ask the client whether they refuel with the vehicle running or if they turn on the ignition switch during fueling.

3. Check the vehicle for any aftermarket, modified, or upfitted components, including a diesel-burning generator, that could be preventing the CAN network from entering sleep mode.

4. Disconnect the battery ground located near the accelerator pedal and verify if the vehicle still has power.

- If the vehicle remains powered, an upfit or modification is incorrectly wired, keeping the CAN network active.

5. If no issues are found during the previous steps, proceed with the following:

- Reset the fuel level: Navigate to FSCU -> Special Procedures -> Reset Fuel Gauge (Password: TankReset).

B. The Fuel Level Sensor provides incorrect readings.

NOTE: This issue can be identified in the FSCU's actual values of the level sensor, where both the CAN and level sensors consistently show similar readings. Refer to the attachments for examples.

1. Remove the fuel tank.

2. Carefully take off the Low-Pressure Fuel Pump lock ring for inspection.

3. Examine the fuel level sensor for any signs of sticking, a bent pickup tube, misrouted wiring, or hoses. Refer to the attachments for examples.

4. Remove the low-pressure fuel pump and test the resistance of the level sensor from minimum to maximum.

- If any issues are found during the above inspections, replace the Low-Pressure Fuel Pump along with the Level Sensor.

NOTE: If the vehicle has less than 2500 miles, the issue was found during PDI, or the vehicle was produced at the Charleston Plant after 11/15/2024, please open an IFQ case with photos of your findings, but continue with your repairs.

If the vehicle returns after completing either of the previous repairs, please open a TIPS case routed to the Powertrain Inbox and include the following information:

- Reference this LI

- Current Quick Test results

- CDI & FSCU control unit logs

- Actual values of the FSCU fill level

- Details of the previous repair

WIS-References		
Document number	Title	Note
AR47.20-D-7000TSF	Remove/install fuel pump and fill level sensor	

Disclaimer

NOTE: The information contained in this document is intended for use by trained, professional technicians with the knowledge to properly and safely perform diagnosis and repairs on Mercedes-Benz vehicles, using Mercedes-Benz approved tools and equipment. It informs service technicians about conditions that could occur in certain vehicles and provides information that could assist in proper vehicle diagnosis, service, or repair. It does not indicate that a defect is present in any vehicle referenced in this document nor does it imply warranty coverage. DO NOT assume that a symptom or condition, or a described cause of a symptom or condition, affects any particular vehicle or groups of ve-

hicles, or that a described repair applies to any particular vehicle or groups of vehicles. There can be multiple causes resulting in the same or similar symptoms or conditions described in this document, and trained professional service technicians must use their diagnostic skills to make evaluations on a case-by-case basis. The information contained in this document does not guarantee warranty coverage nor does it extend the vehicle's warranty in any way.

Symptoms
Communication/information > Information display > Displays > Fuel level gauge > Shows too high a value
Communication/information > Information display > Displays > Fuel level gauge > Shows too little
Communication/information > Information display > Displays > Fuel level gauge > Malfunction
Communication/information > Information display > Displays > Fuel level gauge > inexact
Communication/information > Information display > Displays > Fuel level gauge > Shows empty

Operation numbers/damage codes				
Op. no.	Operation text	Time	Damage code	Note
474001	Fuel tank (1) Drain/fill Observe accident prevention regulations	ZM (.1 to .4)		Time to drain fuel tank if needed during inspection.
477000	Fill level Sensor, Fuel Tank		4700650	Shows incorrect readings
540650	On-board power supply voltage Maintain (when checking/testing and troubleshooting)			
541011	Perform quick test			