

Fuel Level Unchanged After Refueling

Topic number	LI47.00-N-069565
Version	5
Function group	47.00 - General
Date	6/16/26
Validity	MODEL 907 with OM654, OM651, or OM642
Reason for change	Remedy Update


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 Fuel Supply Control Unit (FSCU) fails to detect a refueling event
- B. The Fuel Level Sensor provides incorrect readings due to mechanical interference or installation issues

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

	XENTRY	
<p>Level Sensor Stuck 1.png</p>	XENTRY	<p>Level Sensor Stuck 1</p>
<p>Level Sensor Stuck 2.png</p>	XENTRY	<p>Level Sensor Stuck 2</p>
<p>Correct Install.MOV</p> <p>Wrong Install.MOV</p>		<p>Video 1 (Correct Install)</p> <p>Video 2 (Wrong Install)</p>

Remedy

NOTE: Do not replace the low-pressure fuel pump or fuel level sensor unless instructed by an approved TIPS case. A TIPS case must be opened before any pump or fuel level sensor replacement is performed.

Remedy A. The FSCU fails to detect a refueling event

NOTE: This condition occurs when the CAN does not enter sleep mode during a refueling event. The FSCU requires the CAN network to enter sleep and then detect a change in fuel level in order to register a valid refueling event. If this does not occur, the displayed fuel level may remain unchanged even after the tank has been filled. Common contributing factors include refueling the vehicle with the engine running, switching the ignition on during refueling, or the presence of aftermarket or upfitter-installed electrical equipment that prevents the CAN network from entering sleep mode.

First visit (Cause A)

1. Inspect FSCU actual values in XENTRY for fuel level.

- If “Fill Level of Fuel Tank (CAN Signal)” and “Fill Level of Fuel Tank (Fuel Level Sensor)” differ significantly, continue diagnosis under Cause A.

XENTRY Tips

- If both values are close, proceed to Cause B.
2. Ask the client whether they refuel with the vehicle running or if they turn on the ignition switch during fueling.
 - Document customer fueling behavior. If the vehicle is routinely fueled with ignition on or engine running, correct operating behavior and recheck after the next refuel.
 3. Check the vehicle for aftermarket, modified, or upfitted components (including diesel-burning generators) that could be preventing CAN sleep.
 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 and is keeping the CAN network active.
 5. If no issues are found during the previous steps, perform the FSCU reset procedure in XENTRY:
 - FSCU, Special Procedures, Reset Fuel Gauge (Password: TankReset).
 6. Recheck level sensor behavior after refueling event.
 7. Release the vehicle.

Important Diagnostic Note

Do not rule out mechanical causes even if CAN-related irregularities are observed.

If the root cause cannot be clearly confirmed or the issue persists after completing Cause A, proceed to Cause B.

Second visit (Cause A)

If the vehicle returns for the same concern after the first-visit steps above were completed, open a TIPS case routed to the Powertrain Inbox and include the required documentation listed in the "Repeat Visit / Escalation Requirements" section of this LI. Do not replace the low-pressure fuel pump or fuel level sensor unless instructed by the TIPS case.

Remedy B. The Fuel Level Sensor provides incorrect readings due to mechanical interference or installation issues

NOTE: This condition may be present when the CAN and fuel level sensor values appear consistent, but the displayed fuel level is incorrect, does not update after refueling, or becomes fixed at a specific value. In field cases, this may present as the fuel level remaining at approximately half full or not increasing beyond that range after refueling. The most common root cause is mechanical interference affecting the fuel level sensor float. This can occur when the float contacts the pickup tube, fuel lines, or internal wiring, or when components within the fuel tank are misrouted. In particular, improper routing or positioning of the pickup tube can restrict movement of the float arm, causing it to become stuck above or below the tube and resulting in a fixed or incorrect fuel level reading.

First visit (Cause B)

1. Remove the fuel tank.
2. Carefully remove the low-pressure fuel pump lock ring for inspection.
3. Examine the fuel level sensor for signs of sticking, interference, a bent pickup tube, misrouted wiring, or hoses. Refer to attachments for examples.
4. Adjustment only. No parts replacement on the first visit.
 - Only if the fuel level sensor is found to be stuck on fuel lines, wiring, or the pickup tube, correct routing as needed, adjust the sensor position, and reinstall.

XENTRY Tips

- Do not replace the low-pressure fuel pump or the level sensor during the first visit for Cause B unless instructed by a TIPS case.

5. Installation caution (prevent repeat sticking):

- When installing the low-pressure fuel pump module, ensure the pickup tube does not become stuck on the bottom of the fuel tank. If the pickup tube is forced against the bottom of the tank, the level sensor arm or float can bind and cause an incorrect fuel level reading.
- Please review Video 1 (Correct Install) and Video 2 (Wrong Install) before installation.

6. Reassemble per WIS and verify fuel level reading and FSCU actual values after installation.

IFQ note (updated clean point)

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 01/14/2025, open an IFQ case with photos of your findings, but continue with your repairs.

Second visit (Cause B)

If the vehicle returns for the same concern after completing the first-visit checks and adjustment, open a TIPS case routed to the Powertrain Inbox and include the required documentation listed below. Do not replace the low-pressure fuel pump or fuel level sensor unless instructed by the TIPS case.

Repeat Visit / Escalation Requirements (Applies to Cause A and Cause B)

If the vehicle returns after completing the applicable first-visit remedy steps, open a TIPS case routed to the Powertrain Inbox and include:

- Reference this LI
- Current Quick Test results
- CDI and FSCU control unit logs
- FSCU actual values of fill level (CAN and Level Sensor values)
- Details of the previous repair actions and results

Parts control: A TIPS case must be opened if a low-pressure fuel pump or fuel level sensor replacement is being considered. No pump replacement is permitted unless instructed by the TIPS case.

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 vehicles, 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	H		Time to drain fuel tank if needed during inspection.
477000	Fill level Sensor, Fuel Tank	H	4700650	Shows incorrect readings
540650	On-board power supply voltage Maintain (when checking/testing and troubleshooting)	H		
541011	Perform quick test	H		