

Range complaint – voltage difference of cells too great

Topic number	LI54.10-P-069138
Version	3
Function group	54.10 - Battery, power supply, voltage converter
Date	12/19/25
Validity	Model 453.#91 (smart electric drive)
Reason for change	Documents for transportability assessment removed as they are available in XENTRY

Complaint

The following symptoms with electrical range:

- Displayed electrical range is implausible for charging process (SOC) .
- Displayed electrical range reduces rapidly after short period of driving.
- High-voltage battery can no longer charge.

Cause

The voltage difference (maximum cell voltage minus minimum cell voltage) within the high-voltage battery is too great (> 100 mV). In an extreme case, no individual cell voltages are displayed in the Battery Management System (BMS) anymore (signal not available).

Remedy

Replace high-voltage battery.

Note on analysis for transportability:

The transportability assessment should be conducted promptly, as the high self-discharge level means that an assessment at a later stage may no longer be possible.

Conduct the transportability assessment using the diagnostic system, to do so, select menu item "Special procedures" -> see also WISnet AR54.10-P-1140SRE, operation step 2.

The procedure, if no individual cell voltages can be read out (signal not available - SNA), is also described in the diagnosis procedure.

WIS-References		
Document number	Title	Note
AR54.10-P-1140-SRE	Remove/install high-voltage battery	

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 > Trip computer > Driving time is imprecisely/incorrectly displayed
Communication/information > Information display > Trip computer > Fuel consumption is imprecisely/incorrectly displayed
Overall vehicle > Power supply > High-voltage on-board electrical system > High-voltage battery > Malfunction
Overall vehicle > Power supply > High-voltage on-board electrical system > High-voltage battery > Display message

Control unit/fault code	
Control unit	Fault text
N82/2 - Battery management system (BMS) (BMS453)	P0DE616 - The cell voltages of the hybrid/high-voltage battery module are too low. The limit value for electrical voltage has not been attained.
	P0DE717 - The cell voltages of the hybrid/high-voltage battery module are too high. The limit value for electrical voltage has been exceeded.

Operation numbers/damage codes				
Op. no.	Operation text	Time	Damage code	Note
541153	REPLACE HIGH-VOLTAGE BATTERY		540H0TQ	