

General Information to High-voltage battery calibration

Topic number	LI54.10-N-078161
Version	1
Function group	54.10 - Battery, power supply, voltage converter
Date	8/8/24
Validity	eSprinter 2.0
Reason for change	

Complaint

IC message:

- "Unable to calibrate battery, see Operator's Manual."
- "Calibrate battery to ensure max. range is achieved, start charging process up to 100%". Remedy: Standard calibration is necessary.
- "Calibrate battery to ensure max. range is achieved, charging time extension: start XX min AC charging up to 100%". Remedy: Special calibration is necessary.
- "Battery calibration necessary, start AC charging up to 100% for state of charge: max. 15%; outside temperature: min. 15 °C". Remedy: Special calibration is necessary.

Cause

The eSprinter 2.0 (model series 907) is equipped with a high-voltage battery with LFP (lithium iron phosphate) technology.

This stands out in comparison to the NMC technology (lithium nickel manganese cobalt oxide) through its particularly long service life

but it has to be calibrated regularly to achieve a precise SOC and range forecast.

Ideally, along with the automatic calibration, a special calibration should also be conducted 2 times a year.

Remedy

Automatic/standard calibration of high-voltage battery

Conducted automatically during every charging process up to 100% and it does not need to be triggered.

Requirements for special and manual calibration:

- The driver can wait for the calibration-related extended charging time to be completed.
- The outside temperature is at least 15 °C.
- The state of charge is less than 15%.
- High-voltage battery charged up to 100%.

XENTRY Tips

- With automatic calibration the high-voltage battery has to be charged with AC. With manual calibration, DC charging is also an option.
- Check if a departure time is preset that is reached before the end of the charging time (including charging time extension) and, where possible, deactivate it.
- Check if the maximum state of charge is set to 100%.
- Check if, during calibration, an electrical consumer was used or if the power supply was switched on.
- Where possible, avoid any strong cooling of the vehicle or re-arrange the time of the calibration until the weather conditions are more favorable.

Perform special calibration

After confirming the special calibration in the IC, this is then performed during the next charging process. Do not interrupt the calibration, even if the charging process pauses. The charging time can be extended.

Calibration is completed when the IC message appears: "Battery calibration successful, max. battery capacity and range restored" or "Unable to calibrate battery, see Owner's Manual".

If the calibration cannot be successfully completed, check the above-mentioned requirements are met and then start the calibration again.

If the calibration fails again, run a manual calibration.

Manual calibration of high-voltage battery

The high-voltage battery can be manually calibrated if the automatic calibration repeatedly fails or if it is not possible to charge using alternating current (AC).

The above-mentioned requirements apply.

- Park the vehicle in the immediate vicinity of a charging station with a minimum output of 11 kW. However, do not connect it yet to the charging station.
- Leave the vehicle parked there for at least 6 hours.
- During the 6 hour non-operational time, the vehicle must not be started or moved. The doors must remain closed and the electrical consumers or pre-entry climate control must not be active.
- After the 6 hour non-operational time has elapsed, connect the vehicle to the charging station.
- During the charging process, electrical consumers can be active and the power supply can be switched on.
- Fully charge the vehicle up to a 100% state of charge: Calibration is completed when the 100% state of charge is reached.

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

XENTRY Tips

Communication/information > Information display > Displays > Multifunction display > Multifunction display, error messages > Drivetrain - Malfunction (white warning message)

Overall vehicle > Power supply > High-voltage on-board electrical system > High-voltage battery > Display message

Operation numbers/damage codes

Op. no.	Operation text	Time	Damage code	Note
			54719TQ	