

Combustion engine could no longer be started, only electric driving possible

Topic number	LI15.40-P-077947
Version	2
Function group	15.40 - Generator
Date	9/18/24
Validity	Model series 290, model series 206, model series 254, model series 223 (P3 hybrids with SA code ME10)
Reason for change	Validity adapted. Model series 192 and model series 232 added.

Complaint

Combustion engine could no longer be started, only electric driving possible

Attachments	
File	Description
HVRSG-GI_Seriennummer.png	Adhesive label with serial number
	
Prüfung Sicherung B im HV-Protokoll.PNG	Test of fuse B in the high-voltage event log
Fuse Aux Fuse Main Fuse Die elektrische Sicherung ist nicht in Ordnung. Die elektrische Sicherung ist in Ordnung.	

Cause

High-voltage belt-driven starter-alternator faulty

Remedy

Requirement:

Prior to the implementation of the test work, it must be ensured that the person carrying out this work has successfully completed the qualification "T1716F Diagnosis at high voltage level 4" and the vehicle-specific training.

Note:

In order to check whether the high-voltage belt-driven starter-alternator is faulty, please carry out the test below.

If the fault "P0E2F00 The electrical fuse B for the high voltage has a malfunction" is stored in the N82/10 BMS control unit, the HV protocol must be checked to see whether the fuse for the auxiliary consumers is defective. In this case, the high-voltage battery must be replaced after the short circuit has been eliminated. (See attachment)

The faulty high-voltage belt-driven starter-alternator must always be sent back via the existing return delivery process for analysis.

Check:

Please disconnect the high-voltage plug at the high-voltage belt-driven starter-alternator and connect test adapter 000 589 94 63 00. Measure resistance HV+ to HV-.

If the final measurement result is between 0–1 ohm, the high-voltage belt-driven starter-alternator with the short circuit must be replaced.

If either one of or both the fault codes P0C0B16 and P0C0B17 are saved in the high-voltage belt-driven starter-alternator control unit G2/3, please replace the high-voltage belt-driven starter-alternator, since no short circuit can be measured here and this therefore concerns a hardware defect.

Please check the serial number on the silver adhesive label below the SW number on the front of the high-voltage belt-driven starter-alternator.

Example: 2314300044 (the first 10 digits, see attachment)

Important note: If the number is greater than 2329100027, a TIPS case must be created.

In this instance, please attach the following documents to the TIPS case:

- Quick test
- High-voltage event log
- Picture of the silver adhesive label on the front of the high-voltage belt-driven starter-alternator (serial number)
- Attach the measurement results with pictures

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
Overall vehicle > Power supply > Alternator > Function > Overvoltage
Power generation > Engine management > Starter motor > Function > Defective
Power generation > Engine management > Engine start/stop > Does not start
Overall vehicle > Power supply > High-voltage on-board electrical system > High-voltage battery > Display message

Control unit/fault code	
Control unit	Fault text
G2/3 - Starter-alternator (SG-EM) (HVRSGG10_AMG)	P0BEE00 - The current sensor for phase W of electric machine A has a malfunction. _
	P0BEA00 - The current sensor for phase V of electric machine A has a malfunction. _
	P0BE600 - The current sensor for phase U of electric machine A has a malfunction. _
G2/3 - Starter-alternator (SG-EM) (HVRSGG10_AMG)	P0C0B16 - The power supply of the high-voltage on-board electrical system for inverter 'Electric machine A' has an open circuit. The limit value for electrical voltage has not been attained.
	P0C0B17 - The power supply of the high-voltage on-board electrical system for inverter 'Electric machine A' has an open circuit. The limit value for electrical voltage has been exceeded.
	P0D2E00 - Sensor 'Voltage of high-voltage on-board electrical system' in control unit 'Electric machine A' has a malfunction. _
N82/10 - Battery management system (BMS) (BMS10P-B01_AMG)	P0E2F00 - Electrical fuse B for the high voltage has a malfunction. _

Operation numbers/damage codes				
Op. no.	Operation text	Time	Damage code	Note
155103	Replace belt-driven starter-alternator		1520C92	Engine removal not necessary