HV DC/DC converter N83/1 BUCK mode fluctuations result in ESP warning message

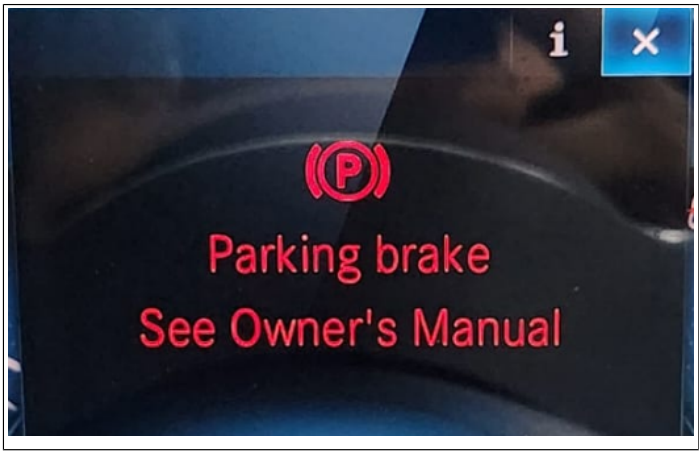
Topic number	LI42.45-P-079407
Version	1
Function group	42.45 - Electronic stability program (ESP)
Date	6/12/25
Validity	243 EQB
Reason for change	adaption of font LI prep for US market

Complaint

Instrument cluster warning lamp and/or warning message for brake system, EPB, ESP (yellow or red) and possibly 12 V battery (red)

Different combinations of the following DTCs present in the ESP: B23AA77, B23AB77, B23D177 and in part (C100BE0, C100BE1, B23AA1B, B23D152)

Attachments	
File	Description
DCDC KAMAYA Parkbremse Meldung KI DE.jpg 	Warning message EPB, German
DCDC KAMAYA Parkbremse Warnmeldung rot englisch.png	Warning message EPB, English



Cause

Due to a reduction in resistance at the HV voltage divider, the DC/DC converter measures an incorrect HV voltage.

Regulation of the 12 V output voltage therefore becomes unstable. I.e. the output voltage starts to fluctuate and the output current starts to jump instead of slowly regulating to the currently requested value.

The EPB position is calculated by the voltage and the current. Since these fluctuate, the ESP control unit loses its position and sets the DTCs.

Remedy

Check of the DC/DC converter via XENTRY Diagnosis:

- Compare the serial number of the DC/DC converter with a list of potentially affected parts in XENTRY -> DC/DC converter N83/1 -> Special Processes.
- If the evaluation comes back as defective - Replace the DC/DC converter and inspect the EPB for Subsequent complaint, defect.

- If the evaluation comes comes back not affected:

  Actuate BUCK mode for approx. 30 s
- The output current normally jumps to a high value (e.g. 100 A) and then falls slowly to the current specified value e.g. 50 A and then only changes slowly and in small increments.
- In the event of this fault cause, the output current is subject to strong fluctuations/jumps (multiple 1-10 A) (see videos in attachment).
- In the event of strong fluctuations and the S/N not identified in the Special Process, please open a TIPS case and attach print out of DC/DC special procedure and buck mode actual values.

Subsequent complaint, defect on the EPB:

- Check of the actuators and brake caliper piston
- Manually extend and retract the piston on the brake caliper completely using the suitable socket
- If the piston sticks at a certain point, the rotation force increases significantly
- If the brake caliper piston sticks, the brake caliper has to be replaced
- If the retaining ring of the actuator is broken, the actuator has to be replaced
- In XENTRY, edit the stored test instructions of the remaining DTCs

Attachments	
File	Description

EPB Aktuator Sicherungsring gebrochen.jpg  	Actuator, retaining ring (possible defect)
DCDC 243 XENTRY BUCK mode Ausgangsschwankungen edited.mp4	BUCK mode fluctuations
DCDC Ausgangswert ok edited.mp4	BUCK mode ok

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
Chassis/suspension > Brake system > Parking brake > Indicator lamp > Parking brake > lit
Overall vehicle > Power supply > Battery/On-board electrical system > Battery/on-board electrical system display message > Battery/Alternator - Serviced Required

Control unit/fault code	
Control unit	Fault text
N30/4 - Electronic stability program (ESP®) (ESP177)	B23D152 - The brake calipers have a malfunction. The component has not been put into operation. B23AA1B - The left brake caliper has a malfunction. The limit value for resistance has been exceeded. C100BE1 - The electric parking brake has a malfunction. _

	C100BE0 - The electric parking brake has a malfunction. – B23D177 - The brake calipers have a malfunction. The commanded position cannot be reached. B23AB77 - The right brake caliper has a malfunction. The commanded position cannot be reached. B23AA77 - The left brake caliper has a malfunction. The commanded position cannot be reached.

Operation numbers/damage codes				
Op. no.	Operation text	Time	Damage code	Note
		0.000 H	54720	