

Engine start/stop inoperative or engine starts up at random or 12 V on-board electrical system voltage too low

Topic number	LI54.10-P-049241
Version	3
Design group	54.10 Battery, voltage supply, voltage converter
Date	05-09-2011
Validity	Models 221.095 and 221.195 (HYBRID)
Reason for change	Software version (10.20.00) of DC/DC converter corrected.

Complaint:

The following complaints can occur in combination with the fault code P1C7000 "The resistance of the electrical line from control unit N83/1 (DC/DC control unit) to ground point W3/9 is too high" in the DC/DC converter control unit:

1. In the start/stop function the engine starts up again by itself at random or after a period of 20 s
2. The charge level of the 12 V on-board electrical system battery is undershot multiple times and undervoltage faults are stored in the fault memory.

Cause:

The contact of the ground line between the DC/DC converter and the vehicle body is inadequate.

1. The contact surface of the ground line on the housing of the DC/DC converter may be oxidized.
2. The ground point on the longitudinal member in the right front wheel arch may be partially painted over.
3. The charge level of the 12 V on-board electrical system battery may be insufficient.

Remedy:

1. Connect Star Diagnosis and check software release of DC/DC converter control unit; install new software if necessary. The software version must be 10.20.00 or higher.
2. Access the DC/DC converter control unit and run the item "Check resistance of ground line" under menu item "Actuations". If the displayed measurement value is not OK, work through all the subsequent steps of the test and repeat the measurement.

Note: The test procedure ends when the required measurement value is obtained.

3. Then access the driver-side SAM control unit and perform SCN coding under menu item "Initial startup".

Note: The SCN coding implements a new charging characteristic for the 12 V alternator which optimizes the charging process of the 12 V on-board electrical system.

Attachments	
File	Designation
Bild Masseanschluss Spannungswandler unten rechts.pdf	Picture - Voltage converter bottom right
Bild Masseanschluss L_ngstr_ger.pdf	Picture - Ground connection on longitudinal member

Symptoms
Battery/on-board electrical system indicator lamp / Overall vehicle / Power supply / Battery charge indicator/consumer shutoff / Illuminates red / Battery/On-board electrical system /
Battery/on-board electrical system display message / Overall vehicle / Low voltage Charge battery / Power supply / Battery/On-board electrical system /
Engine start/stop / Power generation / Engine management / Does not start /
Engine start/stop / Power generation / Engine management / No automatic engine start /
Engine start/stop / Power generation / Engine management / Engine does not turn off /
Engine start/stop / Power generation / Engine management / Engine starts without obvious cause /

Control unit/fault code		
Control unit	Fault code	Fault text
SG-DDW-DC/DC converter control unit (HVDCDC221)	P1C7000	The resistance of the electrical line from component N83/1 (DC/DC converter control module) (terminal 31) to ground point W3/9 (DC/DC converter ground connection (right front wheel arch)) is too high.

Parts							
Part number	ES1	ES2	Designation	Quantity	Note	EPC	Non-EPC
A 221 540 23 34			Electrical wiring harness	1	Replace according to condition of component.	X	