

Red Warning Message "Vehicle Electrical System Faulty" in the Instrument Cluster - Incorrect Diagnosis of the Insulation Measurement in the High-Voltage Battery (97/25)

Model Line: **Panamera E-Hybrid (YAA/YAB)
Cayenne E-Hybrid (9YA/9YB)**

Model Year: **As of 2024**

Concerns: **High-voltage battery control unit (BECM)**

Cause: **The customer complains about the red warning message "Vehicle electrical system faulty – stop vehicle safely" lighting up in the instrument cluster. The vehicle remains ready to drive without functional restrictions. If the bus idle is restored after this, the warning message is no longer available.**

The following fault memory entry is stored in the fault memory of the high-voltage battery control unit (BECM):

- **B1A7BF0** - Voltage monitoring, short circuit to plus (00A010)

Cause: The insulation measurement is carried out by the high-voltage battery control unit (BECM) within 5 seconds when the vehicle wakes up; the insulation measurement is cancelled and deemed invalid by changing mode during this time.

Three invalid insulation measurements in succession can lead to the aforementioned complaint.

Action: In the event of a customer complaint, re-program the high-voltage battery control unit (BECM) using the Porsche Tester.



Information

The minimum programming requirement is the Porsche Tester software release: **43.700.050** (or higher).

Required tools

- Tools:
- **P90999 - Porsche Tester 4**
 - Battery charger with a current rating of **at least 90 A** and a **current and voltage-controlled charge map** for lithium starter batteries, e.g. **VAS 5908 battery charger 90 A**. For further information about the battery chargers to be used, see the corresponding Workshop Manual. ⇒ *Workshop Manual '270689 Charging vehicle electrical system battery'*

Re-programming the high-voltage battery control unit (BECM)

Work Procedure: 1 Re-programming the high-voltage battery control unit (BECM).

The basic work procedure for control unit programming is described in the Workshop Manual.

⇒ *Workshop Manual '9X00IN Basic instructions and procedure for control unit programming using the PIWIS Tester'*

Specific information on control unit programming during this action:

Required Porsche Tester software release:	43.700.050 (or higher)
Type of control unit programming:	Control unit programming using the ' Automatic programming ' function of the control unit: "High-voltage battery (BECM)" control unit – "Coding/Programming" menu – "Automatic programming" function.
Programming sequence:	Read and follow the information and instructions on the Porsche Tester during the guided programming sequence. During the programming sequence, the control unit is re-programmed and then automatically re-coded . Do not interrupt the programming and coding process. Backup documentation for the re-programmed software releases starts after programming.
Programming duration:	Programming takes up to 17 minutes , depending on equipment.
Software programmed during this action:	▪ High-voltage battery control unit (BECM) Software release: 0207 (or higher) Following control unit programming, the software release can be read out from the respective control unit using the Porsche Tester in the menu ⇒ 'Extended identifications'.
Procedure if error messages appear during the programming sequence:	⇒ <i>Workshop Manual '9X00IN Basic instructions and procedure for control unit programming using the PIWIS Tester'</i>
Procedure in the event of termination of control unit programming:	Repeat control unit programming by restarting programming.

- 2 Read out and delete all control unit fault memories.
- 3 Exit the diagnostic application, switch off the ignition and disconnect **P90999 - Porsche Tester 4** from the vehicle.
- 4 Switch off and disconnect the battery charger.
⇒ *Workshop Manual '270689 Charging vehicle electrical system battery'*

Labor position and PCSS encryption

Labor position:

APOS	Labor operation	I No.
27942541	Re-programming the high-voltage battery control unit (BECM)(Panamera)	
27942541	Re-programming the high-voltage battery control unit (BECM) (Cayenne)	

PCSS encryption:

Location (FES5)	27080	High-voltage battery control unit
Damage type (SA4)	1134	Programming error

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