Software Update of Various Control Units: Software Network VR28.13 SQ4 (46/26)

Model Line: **Macan Electric (XAB)**

Model Year: **As of 2024 up to 2025**

Concerns: **Software update (software network VR28.13 SQ4)**

Cause: In the event of customer complaints regarding vehicle functions or repairs and replacement of Macan Electric components, software optimizations (VR28.13 SQ4) are available for various control units.

An overview of the new features is provided in the section ⇒ *Technical Information 'Overview of new features from the software update'*.

Action: The update may **only be carried out in the event of complaints or when repairing or replacing components** , even if the Porsche Tester displays deviations in the integration test for affected control units (**red** integration test). This procedure is a **temporary exception** that is expected to be lifted **in 06/2026** with the next integration update.

- Re-program the affected vehicle using the Porsche Tester on software network VR28.13 SQ4
- Update Owner's Manual in the PCM – **only valid for vehicles in the USA (C02)**.

Information

The minimum programming requirement is the Porsche Tester software release: **44.100.010** (or higher).

Checklist: Due to the high number of programming steps **incorrectly** carried out as part of the last software update, a checklist was created to improve the overview of the work to be carried out. This can be used as a tool at the start and for support during the update.
The checklist **must be** completed, signed and attached to the PQIS quality line in the PCSS.
For checklist, see: ⇒ *Technical Information 'Checklist'*

Supporting Videos: For a better overview of the work to be carried out, several supporting videos have been created for individual work steps.
The supporting videos are available in PCSS: ⇒ *Workshop Manual '9X00IN10 Electrical system – general information (implementation of a software network update)'*

Required tools

Tools:

- Porsche Tester **P90999 - Porsche Tester 4**
- Battery charger with a current rating of **at least 90 A**, e. g. **VAS 5908 - 90 A battery charger**. For further information about the battery chargers to be used, see the corresponding Workshop Manual. ⇒ *Workshop Manual '270689 Charging vehicle electrical system battery'*
- **USB storage medium, Type C (for on-board Owner's Manual update)**

Update to software network VR28.13 SQ4

NOTICE

Sitting inside the vehicle during the update

- **Update cancelled by automatic ignition activation**

⇒ **Avoid sitting inside the vehicle during the update.**

NOTICE

The specified update process was not followed

- **Update cancellation**
- **Destruction of control units**

⇒ **Observe and follow the procedures displayed for the update and instructions for the Porsche Tester**

⇒ **Do not switch the ignition on/off without instruction from Porsche Tester**

⇒ **Repeat the programming only if a failed update is displayed on the Porsche Tester**

Information

Vehicle update – general information

The entire control unit network is checked for necessary updates in order to ensure fault-free functioning of the vehicle. For this purpose, the following preparations are to be made:

- Latest release on available on Porsche Tester 4 and PiUS
- Vehicle is fully constructed
- **To prevent potential faults due to insufficient data transfer, carry out the software update using a cable (between VCI and Porsche Tester). Only if sufficient WLAN availability is ensured in the workshop can a wireless update be performed**
- The user must be logged into the Porsche Tester 4 in the PPN
- Vehicle must be supported with an external charger
- Seat heating and seat ventilation are not active
- Place the original hand-held transmitter in the emergency start tray (see Workshop Manual)

For this update procedure, the respective vehicle no longer needs to be in transport mode.

Procedure for new vehicles with active transport protection:
Perform **"Vehicle handover"** routine according to the Porsche Tester instructions **to deactivate transport protection**.

Always make sure: to answer the question “Is this a new vehicle?” asked by the Tester with **No**!

As a result, no complete vehicle commissioning is carried out and only transport protection can be deactivated.

Work Procedure: 1 Observe preconditions for control unit programming.
⇒ *Technical Information '9X10IN Basic instructions and procedure for control unit programming using the PIWIS Tester Information'*

Information

An **active** Internet connection with the Porsche Tester must be ensured.

The technician **must** log in to PPN with the Porsche Tester.

The Porsche Tester must not be charged using the cigarette lighter.

Information

Before starting the diagnosis, it is essential for an ignition change to be performed on the vehicle.
After starting the diagnosis, the VCI is automatically initialized and the control unit data is loaded.

For additional information on the programming procedure and when the process is aborted, see ⇒ *Technical Information '9X10IN Additional information on control unit programming and coding'*.

2 Update the software of various control units on software network VR28.13 SQ4.

2.1 Start new logging via P2 .

2.2 Press F3 to start the integration test in the control unit overview.

The required updates are then automatically displayed for the respective vehicle in accordance with the integration test.

2.3 Start the software update with ‘Campaign’ F5 (if not available, start the ‘Repair’ function with F8) and program it according to the menu guidance.

Information

Due to overload of the onboard tester, an interruption may occur intermittently in the step “Onboard tester downloads update”.
In this case, the Porsche Tester will automatically restart the entire update process.
No intervention by the user is required!

After the update has been completed, a corresponding confirmation is displayed on the Porsche Tester. All affected control units should now be successfully programmed or checked in the results view showing the control units and their status.

Information

If deviations from the target network are still detected after programming, programming is repeated automatically up to two times. The deviations detected are displayed on the Porsche Tester. If deviations still persist despite automatically repeated programming, programming must be started again using the Porsche Tester. If the deviations cannot be corrected, Technical Support must be contacted.

Information

The entire **update process** for this action takes **approx. 70 minutes** depending on the equipment.
However, the download speed of the update package depends on the performance of the local network and can vary accordingly.

Information

During the update process, all displays in the vehicle (instrument cluster, central display and passenger display) are occasionally switched off. The programming process is still ongoing at these times. **The ignition must not be switched on/off** as this can result in the destruction of the control units.

During the update, a buzzing of the acoustic simulator will sound several times. This noise is normal and indicates an ongoing update of the HCP1 drive and chassis main control unit (J1312).

If Wi-Fi coverage is insufficient, the connection between the Porsche Tester and VCI can be interrupted (battery charge indicator at the top right inactive on the Tester display). The vehicle will nevertheless continue programming **independently**. In the meantime, no entry may be made on the Porsche Tester, and the programming must not be restarted. In this case, the update progress can still be checked in the vehicle in the front display and control panel (R238) by going to the **"Messages" (RPC+)** tile.

Update progress on central display

NOTICE

Switch ignition on/off in the event of faults in the HCP4 body electronics main control unit (J519)

- **Destruction of control units**

⇒ **Do not switch the ignition on/off after completing the update if faulty HCP4 (J519) programming and coding is displayed.**

If the main HCP4 body electronics control unit (J519) has a programming and coding error in the results view after programming is completed, follow the corresponding procedure in the section ⇒ *Technical Information '9X10IN Additional information on control unit programming and coding'*.

For specific information on control unit programming during this campaign, see the table below.

Required Porsche Tester software release:	**44.100.010** (or higher)
Type of control unit programming:	Start control unit programming in the integration test using the 'Campaign' function F5 on the Porsche Tester (if not available, start the 'Repair' function with F8).
Programming sequence:	Read and follow the **information and instructions on the Porsche Tester** during the guided programming sequence. **Do not interrupt the programming and coding process.** A backup documentation process for the re-programmed software releases starts as soon as programming and coding is complete.
Programming time (up to):	**70 minutes**
Control units programmed as part of this campaign:	See ⇒ *Technical Information '9X10IN Overview of the new features of the software update'*
Procedure if error messages appear during programming sequence:	⇒ *Technical Information '9X10IN Basic instructions and procedure for control unit programming using the PIWIS Tester Information'*
Procedure in the event of a termination in the control unit programming:	**Continue the campaign sequence to the end and, once it is completed, perform the integration test again and restart the programming.** Specific information on how to proceed if aborted: ⇒ *Technical Information '9X10IN Additional information on control unit programming and coding'*

3 After the software update is complete, perform a vehicle bus idle.

Information
A bus idle is always required upon completion of a software update.
The duration of the required bus idle, however, depends on the number and type of control units previously updated.
Therefore, please always note the information on the duration of the required bus idle in this Technical Information.

3.1 Return to the control unit overview by pressing F11 .

3.2 End vehicle's readiness for operation (ignition off). Central computer (PCM) screen switches off.

3.3 Wait **10 minute** with the driver's door open.

4 **Only relevant for vehicles with country code USA (C02):** Update the Owner's Manual in the PCM. For more information, see ⇒*Workshop Manual '9X10IN Diagnostic system: Perform vehicle handover'* (Install Onboard Owner's Manual section)

5 Review the vehicle's readiness for driving.

5.1 Establish readiness for operation (ignition on).

5.2 Operate the footbrake and keep it pressed.

5.3 Use the selector lever to successively engage driving gears D and R. The selected gear must be displayed in the gear indicator on the instrument cluster.

5.4 Activate the parking lock via button P.

6 End readiness for operation (ignition off) and restore it after waiting approx. 30 seconds (ignition on).

7 Re-teaching the rear lid:

7.1 Select control unit for rear-end electronics (J393).

7.2 Open **"Service/Maintenance"** menu.

7.3 Select the menu item **"Teach rear lid"** and execute it, following the Tester instructions.

7.4 If teaching of the rear lid fails, close the rear lid again and repeat teaching by pressing F8 .

Information
After teaching the rear lid, the opening height of the rear lid individually set by the customer is reset.
The original customer setting must be restored after performing the software update.
Once this update has been carried out, the corresponding customers must be informed that the learning values have been reset.
To do this, use the prepared supplementary sheet (available in PPN).

8 Add service intervals.

8.1 Determine the date and mileage/km (total distance) of the last maintenance from the vehicle history in the Porsche Central Service System (PCSS) documentation.
If no service has yet been carried out, determine the dates of the vehicle handover.

8.2 HCP3 Infotainment main control unit **(J794)** – Open the instrument cluster.

8.3 Open **"Service/Maintenance"** menu.

8.4 Select menu item **Add service interval** and carry it out. State the date of the last service and the total distance as previously determined. For vehicles without previous service, enter the vehicle handover dates. Then follow the additional instructions in the Tester.

9 Reading out and deleting fault memories

Information

Due to the vehicle diagnosis and programming status of new vehicles, fault memory entries that do not represent an actual fault may be stored.
These entries can usually be deleted after the vehicle handover is complete and after a test drive.

The following fault memory entries are always stored as part of a vehicle diagnosis with the Porsche Tester and do not represent an actual fault.

Control unit	Fault code	Description
Various control units	B184C00	Protection of vehicle diagnostics, activation active
Main control unit for gateway HCP5 (J1273)	U17A000	Diagnostic filter, access protection deactivated
Drive and chassis main control unit HCP1 (J1312)	C140DF0	Vehicle Protected Environment (VPE), vehicle protection activated

For other valid fault codes, see ⇒ *Technical Information '9X10IN Valid fault codes after update to the incremented software network VR28.13 SQ4'*.

9.1 Press F7 to call up the additional menu on the Porsche Tester.

9.2 Select and confirm the menu item **"Read/delete all fault memories"** and confirm.

9.3 Press F8 to delete the displayed fault memory entries.

10 **For new vehicles only** – commission the vehicle; for this, carry out the **"Vehicle handover"** routine in full according to the Porsche Tester instructions.

11 Create a Vehicle Analysis Log (VAL) using the Porsche Tester. To do this, press F7 to access the additional menu and select the creation of the protocol.
Mark the created vehicle analysis log with the attribute "Post-VAL" and return it using the Porsche Tester after the campaign has been carried out.

12 End logging and attach to PRMS ticket in the event of a fault.

13 End the diagnostic application. Switch off ignition. Disconnect the Tester from the vehicle.

14 Switch off and disconnect the battery charger.

Information

The GPS link is re-established during the test drive. In addition, the tire settings need to be checked and reset if necessary.

The activities during and after the test drive do **not** need to be carried out by a technician.

15 Carry out the test drive, then restore the customer settings.

16 Complete the checklist and attach it to the PQIS process line. ⇒ *Technical Information '9X10IN Checklist'*

Labor position and PCSS encryption

Labor position:

APOS	Labor operation	I No.
98002540	Update to software network VR28.13 SQ4	
98002541	Carry out update to software network VR28.13 SQ4 and update the Owner's Manual in the PCM – vehicles with country of delivery USA (C02)	

PCSS encryption:

Location (FES5)	98000	System network for HCP main control unit
Damage type (SA4)	9739	Software update to increase customer satisfaction

Overview of the new features of the software update

Overview:

Function	Description
Acoustics and indications	▪ Optimization of the calculation logic for dynamic service intervals
Battery charge	▪ Improved Plug & Charge: Increased reliability when starting the charging process automatically at compatible charging pedestals

Infotainment system	▪ Reliable availability of the central display: Improved system robustness ensures that the touch function of the central display is available without interruption after starting the vehicle
My Porsche app	▪ New function for opening and locking the charge port door directly from the app ▪ Improvement of data transmission for a more accurate display of the remaining range in the My Porsche app
Driver assistance systems	▪ **(USA)** Adjustment of the wheel tilt function in the intelligent ParkAssist: The special wheel tilt function was removed to ensure consistent and reliable system behavior regardless of the gradient of the respective parking space. The digital Owner's Manual has been adapted accordingly ▪ Reduced warning and information messages: Adjustments reduce unnecessary or intermittent messages so that relevant warning and information messages can be perceived more clearly ▪ More stable behavior of ParkAssist: System improvements ensure a more reliable function of ParkAssist
Comfort systems	▪ Improved smartphone charging: The wireless charging function supports smartphones – even with a protective case – more reliably and reduces charging interruptions ▪ Adjustments to the tailgate function: Ensures uniform opening and locking of the rear lid ▪ Harmonized side window control: More reliable and consistent behavior of the automatic side window functions in everyday driving, including the prevention of unintentional window movements

Back to the introduction ⇒ *Technical Information '9X10IN Software update of various control units: Software network VR28.13 SQ4 (46/26)*'.

Additional information on control unit programming and coding

Information

If individual programming or rework procedures could not be carried out correctly, please refer to the Workshop Manual for the basic procedure for control unit programming with the PIWIS tester ⇒ *Technical Information '9X10IN Basic information and procedure for control unit programming with the PIWIS tester Information*'.

In the event of a fault, **always** create a log with the PIWIS tester during programming with P2 .

Work Procedure:

General:			
Fault indication	**Cause**	**Source of fault**	**Remedial action**
After the first update cycle, one or more control units with **coding are required** or **programming is required**	The affected control unit was not successfully programmed or coded	Vehicle	▪ Restart update by pressing F8 ▪ After successful implementation, continue with work step 5

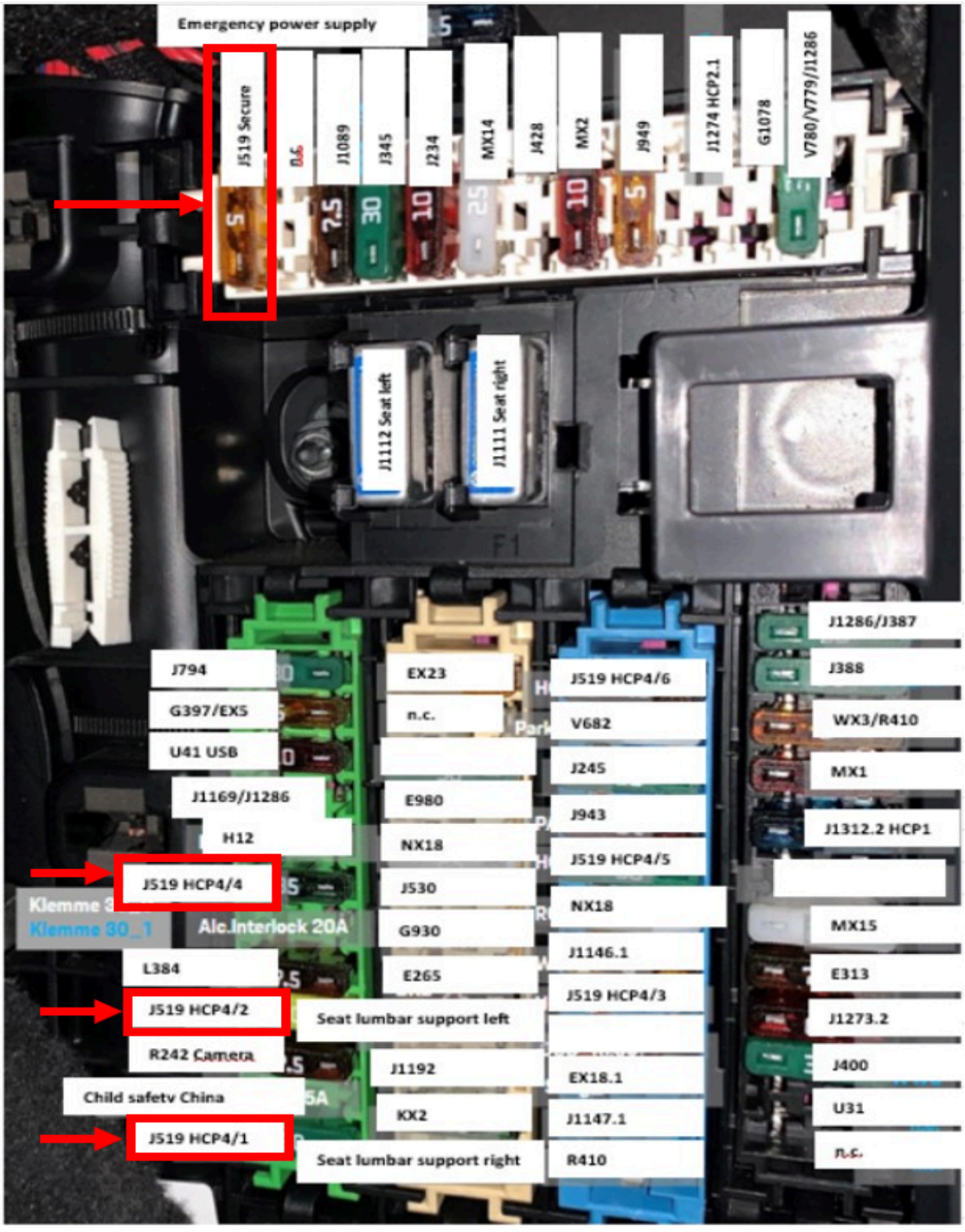
Before the update:			
Fault indication	**Cause**	**Source of fault**	**Remedial action**
Diagnostic application crashes or the VCI connection has been aborted (the diagnosis has no information on battery voltage – see the battery symbol at the top right on the Tester display)		VCI has poor Wi-Fi connection	▪ Restart Tester, connect VCI with cable and try again ▪ or: ensure that Wi-Fi connection is stable, moving vehicle to a suitable position in workshop if necessary

During the update:			
Fault indication	**Cause**	**Source of fault**	**Remedial action**
Diagnostic application crashes or the VCI connection has been aborted (the diagnosis has no information on battery voltage – see the battery symbol at the top right on the Tester display)		Diagnostic application	▪ Checking the update progress in the vehicle is mandatory ▪ **No ignition change during update** ▪ Do not restart the Tester until **the update** has been completed in the vehicle (tile “Messages” --> Installation “successful”) ▪ When the update is concluded in the vehicle, verify that the update is complete. For this purpose, start control

			unit programming in the integration test using the 'Campaign' function F5 on the Porsche Tester (if not available, start the 'Repair' function with F8)
Implementation of vehicle update immediately after starting not successful, **Vehicle update failed** error message	Date/time in vehicle after disconnecting/re-connecting 12-V battery (terminal 30) incorrect. As a result, no software update can be performed	Vehicle	Correct the date/time in the vehicle: ▪ Open **"Control unit overview"** ▪ Open **"Gateway HCP5"** main control unit ▪ Open **"Service/Maintenance"** menu ▪ Select menu item **"Set time"** and execute
HCP2 driver assistance main control unit (J1274) reports a **"Code signing fault"** and a communication error for **the Sub System Driver Assistance control unit in the results view**	The affected control unit was not successfully programmed	Vehicle	▪ End the integration test with F12 ▪ Open **"Control unit overview"** ▪ Open main control **"Driver assistance HCP2"** ▪ Open **"Coding"** menu ▪ Menu item **"Driver assistance main control unit HCP2 (J1274): Programming control unit individually (without coding) after faulty update"** ▪ After successful programming of the control unit in the integration test, re-start using the 'Campaign' function F5 (if not available, start the 'Repair' function with F8) ▪ After this has been performed successfully, continue with work step 4

The **Main control unit for gateway HCP5 (J1273)** logs into the programming checksum calculation with a hardware check and the value **"NEGRESP"**	Affected control unit was not successfully programmed, programming aborted after 20%-30%	Vehicle	▪ End the integration test with F12 ▪ Open **"Control unit overview"** ▪ Open **"Gateway HCP5"** main control unit ▪ Open **"Coding"** menu ▪ Menu item **"Control unit for gateway HCP5 (J1273): Programming control unit individually (without coding) after faulty update"** ▪ After successful programming of the control unit in the integration test, re-start using the 'Campaign' function F5 (if not available, start the 'Repair' function with F8) ▪ After this has been performed successfully, continue with work step 4
The progress of the vehicle update is shown on the Porsche Tester **only from approx. 30% completion**. This can be up to 30 minutes after the download	Diagnostic service (RPC+) will not forward the progress of the update to the Tester until it is approx. 30% complete	Vehicle	▪ Correct behavior, no intervention necessary ▪ Wait until the progress is displayed
HCP4 body electronics main control device (J519) reports programming and coding errors in the results view	The affected control unit was not successfully programmed and coded	Vehicle	**Do not perform an ignition change!** This results in the destruction of the control unit. Remove fuses ▪ J519 HCP4/1 ▪ J519 HCP4/2 ▪ J519 HCP4/4 ▪ J519 Secure Pull, wait 30 seconds and plug it back in correctly. **The fuses have different parameters and must be reinserted at exactly the same**

			location; for the correct fuse positions, see: ⇒*Fuse positions* Select **"Special function"** in the additional menu Enter campaign code: **HCP4_ERROR_KD2** and follow the Tester instructions ▪ **Please note!** HCP4 is therefore programmed, but not coded – **do not perform an ignition change!** ▪ After successful programming of the control unit in the integration test, re-start using the 'Campaign' function F5 (if not available, start the 'Repair' function with F8) ▪ After this has been performed successfully, continue with work step 4


Emergency power supply
J519 Secure
J1089
J345
J234
MX14
J428
MX2
J949
J1274 HCP2.1
G1078
V780/V779/J1286
J1112 Seat left
J1111 Seat right
J794
G397/EXS
U41 USB
J1169/J1286
H12
J519 HCP4/4
Klemme 30_1
Alc.Interlock 20A
L384
J519 HCP4/2
R242 Camera
Child safety China
J519 HCP4/1
EX23
n.c.
E980
NX18
J530
G930
E265
Seat lumbar support left
J1192
KX2
Seat lumbar support right
J519 HCP4/6
V682
J245
J943
J519 HCP4/5
NX18
J1146.1
J519 HCP4/3
EX18.1
J1147.1
R410
J1286/J387
J388
WX3/R410
MX1
J1312.2 HCP1
MX15
E313
J1273.2
J400
U31
n.c.

HCP4 body electronics main control unit (J519) - front-end electronics	B1303F1	Rear lid proximity sensor (J938), not taught	▪ Disconnect and reconnect the plug at the rear disconnection point for the proximity sensor ▪ Then read out and delete the fault memory again
Charging communication 2 (J1246)	U19B200	Motor drive flap power supply 2 (VX87), received error value	▪ Move the charge port doors by hand twice ▪ Then read out and delete the fault memory again
HCP4 body electronics main control unit (J519) - front-end electronics	U206200.	Intelligent ParkAssist High, function restriction	▪ Implement bus idle for 15 min ▪ Then read out and delete the fault memory again
Drive and chassis main control unit HCP1 (J1312)	C147596 P1DBD00	For C147596 – oil pump control internal fault For P1DBD00 – rear axle oil pump, engine speed deviation	▪ Implement bus idle for 15 minutes. ▪ Then read out and delete the fault memory again
Only for vehicles with the following equipment: **Lane Change Assist (M-No. 7Y8):**		Fault: Lane Change Assist (M-No. 7Y8) not functioning after programming	Reinitialize Lane Change Assist. ▪ Implement bus idle for 10 minutes. ▪ Switch on ignition. ▪ Fold out and fold in side mirrors. ▪ Carry out a test drive at **over 60 km/h / 38 mph** and check Lane Change Assist. If Lane Change Assist is faulty or not working, repeat the process.

Valid fault codes after the incremented software network VR28.13 SQ4

Control unit	Fault code	Description	Remedial action
Brake electronics (J104)	C13F7F1	Bedding-in function, active	▪ Valid fault memory entry after vehicle handover

Front camera (R242)	B200FF2	Implausible signal	▪ After the test drive: Fault memory entry, passive
Front camera (R242)	U12EF00	Front camera for driver assistance systems, implausible signal	▪ After the test drive: Fault memory entry, passive
Front camera (R242)	U147C00	External communication (J949), implausible signal	▪ After the test drive: Fault memory entry, passive
Front camera (R242)	U198C00	Road graph, received fault value	▪ After the test drive: Fault memory entry, passive
Drive and chassis main control unit HCP1 (J1312)	U045D00	Driver assistance main control unit HCP2 (J1274), ETHERNET data bus driver assistance, implausible signal	▪ After the test drive: Fault memory entry, passive
Driver assistance main control unit HCP2 (J1274)	B200FF2	Road graph, received fault value	▪ After the test drive: Fault memory entry, passive

Checklist

Checklist:

Work step:	**Scope:**	**Completed:**
The checklist only refers to the Technical Information (TI) **46/26**. A different checklist from another action may **not** be used.		
1. Battery charger set to charging mode and charging process on charger activated?	All	
2. Ignition switched off and on again?	All	
3. VCI and Porsche Tester 4 connected to one other (with cable or Wi-Fi with good network quality)?	All	
4. Has the user logged into PPN on the Porsche Tester?	All	
5. Seat heating and seat ventilation not active?	All	
6. Original remote control in emergency start tray **(position noted)**?	All	
7. Logging in the diagnostic tester started?	All	

8. **Only for new vehicles**: Vehicle handover performed in part **as described in section "Update on software network VR28.13 SQ4"** in order to deactivate transport protection?	New vehicles
9. In the control unit overview, F3 pressed to start the integration test and then F5 pressed to select the 'Campaign' function?	All
10. Bus idle performed for 10 minutes?	All
11. Update Owner's Manual in the PCM	**Only for vehicles with country of delivery USA (CO2):**
12. Vehicle's readiness for driving checked?	All
13. Fault memory read out and erased?	All
14. Rear lid taught?	All
15. Customer informed that the original customer setting for the rear lid opening height has been reset and must be restored (service advisor)?	All
16. **Only for new vehicles**: Vehicle handover completed?	New vehicles
17. Adding service interval?	All
18. Vehicle Analysis Log created?	All
19. Campaign entered in the Warranty and Maintenance logbook?	All
20. **During the test drive**: 20.1 GPS reconnected? 20.2 Tire settings checked and adjusted if necessary?	All
VIN:	
Dealer number:	