

Symptom: Brakes - Error Message "Brake System Fault" Appears: Re-programming PSM Control Unit (SY 160/19)

Model line: **Macan (95B)**

Model Year: **As of 2019 up to 2020**

Subject: **PSM control unit**

- Symptom:
- A brake system fault is indicated at times by the white warning message "Fault - Service necessary – Driving permitted" on the multi-function display in the instrument cluster.
 - The fault memory entry "OD2602 - Vacuum sensor – below lower limit value" can also be stored in the fault memory of the PSM control unit.
 - Pedal force and braking power are unchanged.



Information

If there is a problem in relation to pedal force and/or braking power, the remedial action described below is not relevant and will not correct the problem.

In this case, the cause must first be found and corrected separately.

Cause: Due to the new generation of engines with modified components used for Macan vehicles from model year 2019 onwards, vacuum monitoring by the PSM control unit may be too sensitive particularly after the engine is restarted using Start/Stop and after pressing the brake pedal during the previous Stop phase (e.g. because the "Hold" function was activated).

The fault symptom can occur in certain geographical and/or climatic conditions (e.g. driving at sea level and/or in high-pressure weather conditions).

Remedial Action: In the event of a customer complaint and if the PSM software version is less than "0530", re-program the PSM control unit.



Information

The total time required for control unit programming is **approx. 4 minutes**.

Date of Introduction: New software version "0530" used from:

Date	November 25, 2019
VIN	WP1AA2959LLB09246 WP1ZZZ95ZLLB36773

Required tools

- Tools:
- **9900 - PIWIS Tester 3** with installed PIWIS Tester software **version 39.050.000** (or higher)
 - **Battery charger** with a current rating of **at least 90 A**, e.g. **Battery charger 90A**.

Preparatory work

NOTICE

Fault entry in the fault memory and control unit programming aborted due to undervoltage.

- **Increased current draw during diagnosis or control unit programming can cause a drop in voltage, which can result in one or more fault entries and the abnormal termination of the programming process.**
- ⇒ **Before getting started, connect a suitable battery charger with a current rating of at least 90 A to the jump-start terminals.**

NOTICE

Control unit programming will be aborted if the WLAN connection is unstable.

- **An unstable WiFi connection can interrupt communication between the PIWIS Tester and the vehicle communication module (VCI). As a result, programming may be aborted.**
- ⇒ **During control unit programming, always connect the PIWIS Tester to the vehicle communication module (VCI) via the USB cable.**

NOTICE

Control unit programming will be aborted if the driver's key is not recognized

- **If the driver's key is not recognized in vehicles with Porsche Entry & Drive, programming cannot be started or will be interrupted.**
- ⇒ **Switch on the ignition using the original driver's key. To do this, replace the control unit in the ignition lock with the original driver's key if necessary.**

Work Procedure: 1 Carry out general preliminary work for control unit programming as described in ⇒ *Workshop Manual '9X00IN Basic instructions and procedure for control unit programming - section on "Preliminary work"*.

Re-programming PSM control unit

Work Procedure: 1 The basic procedure for programming a control unit is described in the Workshop Manual ⇒ *Workshop Manual '9X00IN Basic instructions and procedure for control unit programming - section on "Programming"*.

Specific information on control unit programming in the context of this Technical Information:

Required PIWIS Tester software version:	39.050.000 (or higher)
Type of control unit programming:	Control unit programming using the " Campaign " function in the Additional menu on the PIWIS Tester by entering a programming code.
Programming code:	J5T3U
Programming sequence:	Read and follow the information and instructions on the PIWIS Tester during the guided programming sequence. During the programming sequence, the PSM control unit is re-programmed and then re-coded automatically. Do not interrupt programming.
Programming time (approx):	4 minutes
Software version programmed during this campaign:	0530 Following control unit programming, the software version can be read out of the PSM control unit in the ⇒ 'Extended identifications' menu using the PIWIS Tester.
Procedure in the event of error messages appearing during the programming sequence:	⇒ <i>Workshop Manual '9X00IN Basic instructions and procedure for control unit programming - section on "Fault finding"</i> .
Procedure in the event of abnormal termination of control unit programming:	Repeat control unit programming by restarting programming.

Concluding work

Work Procedure: 1 Read out and erase the fault memories of all control units.

- 1.1 Press **•F7** in the control unit selection screen ('Overview' menu) to call up the Additional menu.

- 1.2 Select the function "Read all fault memories and erase if required" and press •F12" ('Next') to confirm your selection ⇒ *Erasing fault memories*.

The fault memories of the control units are read out.

- 1.3 Once you have read out the fault memories, check the fault memory entries.



Information

If control units are found to have faults that are **not** caused by control unit programming, these must first be **found and corrected**. This work must be invoiced using a separate warranty claim.

- 1.4 Press •F8" to delete fault memory entries.

- 1.5 Press •F12" ('Yes') in response to the question as to whether you really want to delete all fault memory entries.

The faults stored in the fault memories of the various control units are deleted.

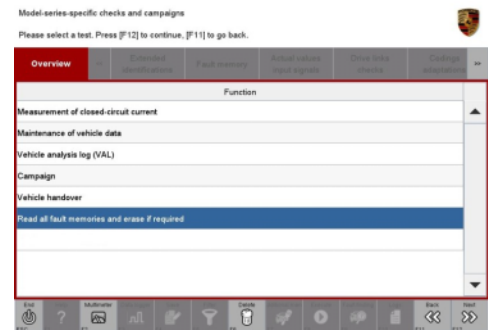


Information

If fault memory entries for individual control units cannot be deleted, proceed as follows:

- Switch off the ignition.
- Disconnect the PIWIS Tester diagnostic connector from the diagnostic socket.
- Lock the vehicle using the driver's key.
- Wait approx. 1 minute before unlocking the vehicle again.
- Start the engine, leave it running for a short time and then stop it again.
- Switch off the ignition and wait approx. 10 seconds before switching it back on again.
- Plug the PIWIS Tester diagnostic connector into the diagnostic socket again and restore communication with the vehicle.
- Read out the fault memory again and delete any fault memory entries that are stored.

- 1.6 Once you have erased the fault memories, select the '**Overview**' menu to return to the control unit selection screen ⇒ *Control unit selection*.



Erasing fault memories

2 Perform PSM sensor calibration.

2.1 Select the **'PSM'** control unit in the control unit selection screen ('Overview' menu) and press •F12" ('Next') to confirm your selection.

2.2 Once the PSM control unit has been found and is displayed in the overview, select the **'Maintenance/repairs'** menu.

2.3 Select **'PSM sensor calibration'** in the menu and press •F12" ('Next') to confirm ⇒ *PSM sensor calibration*.

2.4 Select **'Calibrate axial-acceleration sensor'** in the PSM sensor calibration overview and press •F12" ('Next') to confirm your selection ⇒ *PSM sensor calibration*.

2.5 Comply with the displayed preconditions and press •F8" ('Execute') to confirm.

2.6 Follow the instructions on the PIWIS Tester while the axial-acceleration sensor is being calibrated.

Once calibration is completed successfully, a tick will appear in the "Result" box for the axial-acceleration sensor on the PIWIS Tester display.

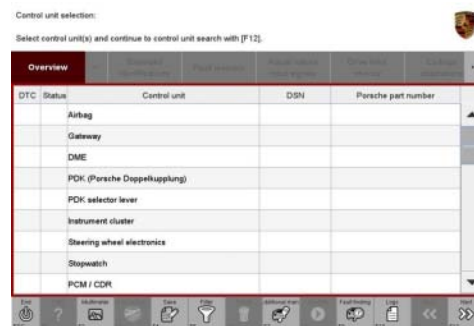
If calibration of the axial-acceleration sensor is **not** completed successfully, calibration must be **repeated**.

2.7 Press •F12" ('Next') to confirm successful calibration.

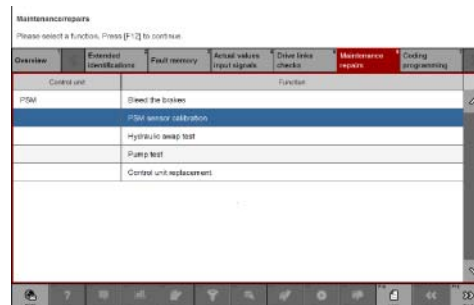
2.8 Select **'Lateral-acceleration sensor'** in the PSM sensor calibration overview and proceed in the same way as for steps 2.5 to 2.7 in order to calibrate the lateral-acceleration sensor.

2.9 Select **'Calibrate pressure sensors'** in the PSM sensor calibration overview and proceed in the same way as for steps 2.5 to 2.7 in order to calibrate the pressure sensors.

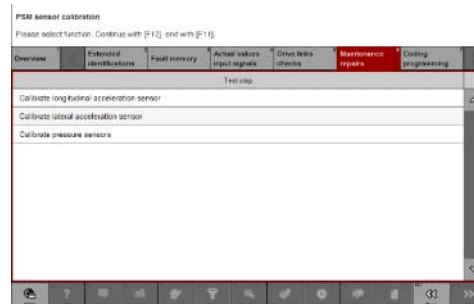
2.10 Press •F11" ('Back') to return to the start page of the **'Maintenance/repairs'** menu.



Control unit selection



PSM sensor calibration



PSM sensor calibration

- 3 Select the 'Overview' menu and press •F11“ ('Back') to return to the control unit selection screen.
- 4 Switch off the ignition.
- 5 Disconnect the PIWIS Tester from the vehicle.
- 6 Switch off and disconnect the battery charger.

Invoicing

Invoicing: For documentation and warranty invoicing, enter the labor operation and PQIS coding specified below in the warranty claim:

APOS	Labor operation	I No.
45302500	Programming hydraulic unit	

PQIS coding:

Location (FES5)	45620	PSM control unit
Damage type (SA4)	1143	Programming error

References: ⇒ *Workshop Manual '9X00IN Basic instructions and procedure for control unit programming'*

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