PIWIS Tester II - Diagnostics

Operating Manual

Sales Mode v3.0.0

Contents

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1 Foreword

1.1 Information about the manual

This manual describes operation of the PIWIS Tester II Diagnostics (PT2G Diagnostics) for Sales mode (V-mode).
It is intended for the operating personnel at the test station.

The menu details and operating concept described in this manual are provided as examples. The actual content of the display screens depends on programming by PTTD and may differ from the examples shown.

1.2 Documentation references

Information on installation and setup of the diagnostic software is provided in the installation instructions.

1.3 Syntax representation

`Monospaced type`	Commands, command additions, parameter inputs, display outputs
Italics	Names of directories, files, devices, programs
Function group	Function group button or button of a function group that must be pressed, e.g. Overview .
<Button>	Button or button combination that must be pressed, e.g. <F1>.
"Text"	Text to be entered

1.4   Pictograms

This symbol is used to highlight information about things that have a significant influence on problem-free operation of the system.

Information:

This symbol is used to highlight important content. Information is provided here in addition to the instructions contained in the manual.

2 General safety notes

2.1 Intended use

Diagnostic application:

The PAG diagnostic application is used for communication with control units. It is used as a sales tester and as a tool in development and allows the user to search for, identify, code and program control units, read the event memory, execute services directly by PDU input, perform complex operations, adjust drive links and run routines.

Content:

This document provides an operating overview of the PAG diagnostic application. The functions and menus of the user interface are described in detail.

Target group:

The target group is the users of the diagnostic software.

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3 Basic components

3.1 Graphical user interface

The diagnostic application has a graphical user interface. The elements of this interface are shown in Figure 1. The function or meaning of each element on this interface is explained in Table 1.
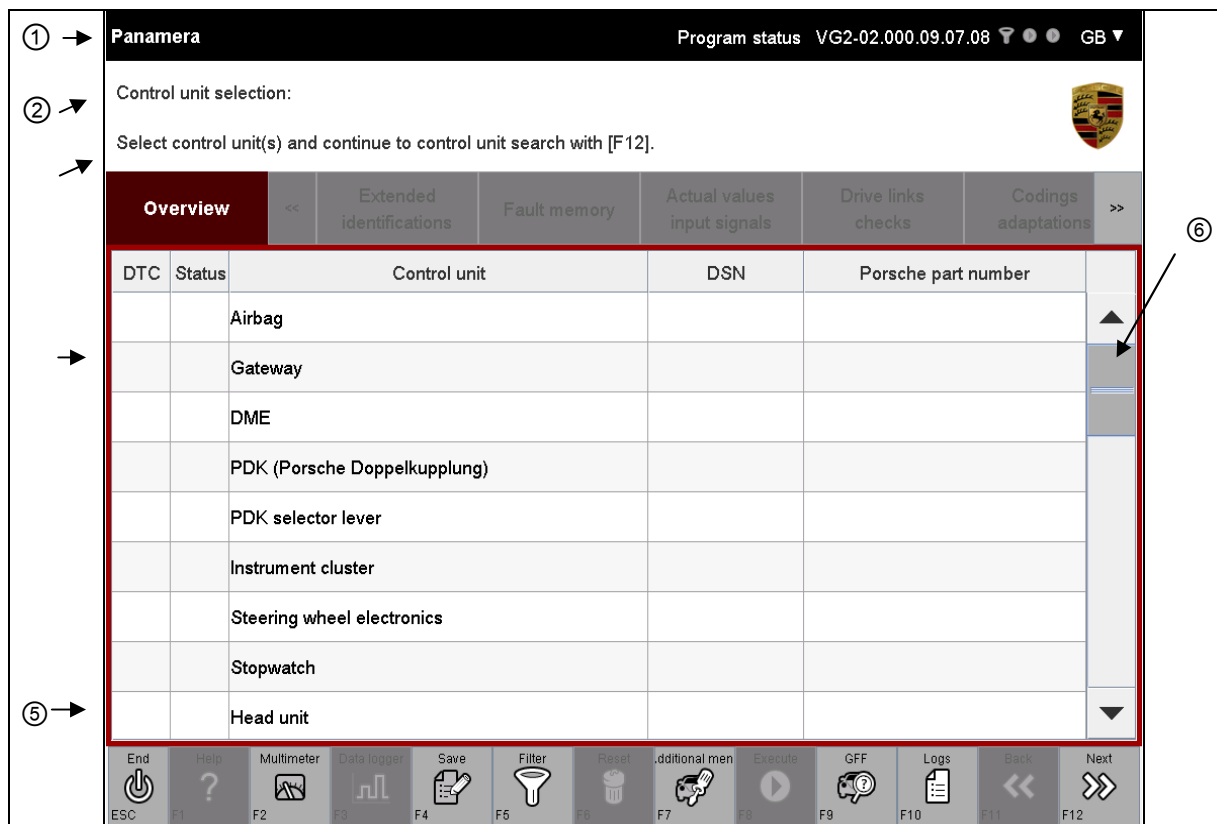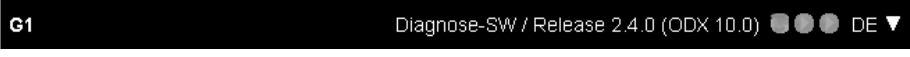
Figure 1: Elements on the graphical user interface (GUI) of the diagnostic application

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Element	Description
① **Title bar**	

| G1 | | Diagnose-SW / Release 2.4.0 (ODX 10.0) ● ● ● DE ▼ |

1	2	3	4a	4b	4c	5

Display order in the **title bar** (from left to right):

1. The used ODX project name or vehicle type is displayed first (e.g. **G1**). If the ODX data has been modified after installation, this is indicated by a ⚠ icon in front of the project name.

2. The application mode is shown directly on the right next to the project name in the form of a text. The following application modes can be displayed:
   - no display in Standard mode or
   - View mode or
   - Simulation mode
   Note: View mode and Simulation mode can never be active simultaneously.

3. The version number (release information) of the diagnostic application is displayed on the right next to this.

4. Three status icons are then displayed (from left to right):
   4a) Filter active / inactive.
   > If a filter is active, this is indicated by a 🔽 icon.
   > The icon is greyed out if no filter is active.
   4b) Background processing (data logger) active/inactive.
   > If the data logger is active, this is indicated by a ⊙ icon.
   > If the data logger is not active, the icon is greyed out.
   4c) Simulation started/stopped/recording.
   > If simulation has been started, this is indicated by a ⊙ icon.
   > If simulation data is being recorded, this is indicated by 🔴 a icon.
   > The icon is greyed out if simulation is stopped.

5. The icon for language selection is displayed on the far right: the current language is output as an abbreviation, followed by a triangular icon, which indicates the availability of other options.

| ② **Info area** | Tips and information on using the elements shown in the screen are provided in the **Info area**. The content of the **Info area** depends on the current status of the diagnostic application.
In addition to information, this area is also used to display warnings about possible incorrect system operation. |

Element	Description

③ **Menu bar**	The available function groups of the current diagnostic application are displayed in the **menu bar**. The function groups also show the possible actions that can be selected. The activated function group is highlighted in colour to improve clarity for the user. The following function groups are available:
	
	  1. Overview
	  2. Extended identification
	  3. Fault memory
	  4. Actual values/Input signals
	  5. Drive links/Tests
	  6. Coding/Adaptation
	  7. Maintenance/Repair
	  8. Programming
	
	The function groups are identified in this manual by a frame around the respective function group name.

④ **Working area**	The content of the individual display screens is shown in the **working area**. The content is displayed either in text form (e.g. in the form of a list) or as a symbol (e.g. as a graphic representation). The content shown depends on the selected action and the current status of the diagnostic application. The current **working area** is also highlighted by a coloured frame, like the current function group in the menu bar.
⑤ **Control bar**	The actions that can be performed on the basis of the operating options available in the current context are shown in the **control bar**. The possible actions are displayed as icons and are based on the current status of the diagnostic application. Some of the possible actions are available for all screens. The buttons in the control bar are identified with greater than/less than symbols (<>)in this manual. Example: The F1 button is represented by the character combination <F1>.
⑥ **Scroll bar**	Using the scroll bar, you can move up and down the screen if the data to be displayed exceeds the available display area.

Table 1: Description of the user interface elements

3.2   Function groups

A number of function groups are available in the menu bar (also see Figure 1 and Table 1). The function of each function group is described briefly below. A detailed description of operation of the respective function group is provided in section 8.

| Overview | << | Extended identifications | Fault memory | Actual values input signals | Drive links checks | Codings adaptations | >> |
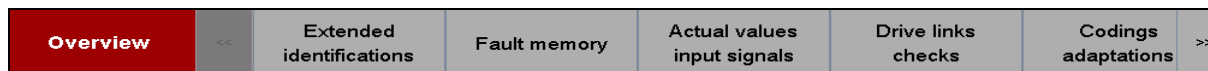
Figure 2: Function groups in the menu bar

Function group	Description
Overview	The result of the last control unit search is displayed in table form by selecting the Overview function group.
Extended identification	The extended identifications of previously selected control units are displayed by selecting the function group Extended identification .
Fault memory	In the Fault memory function group, you can display the fault memory entries and environmental data of the respective fault memory for a selection of control units. It is also possible to delete all or individual fault memory entries of the control units.
Actual values Input signals	The actual values and input signals of control units can be displayed in the Actual values/Input signals function group.
Drive links Tests	In the Drive links/Tests function group, it is possible to change the parameters of drive links or run test routines. The results of this change are logged and displayed.
Coding Adaptation	In the Coding/Adaptation function group, it is possible to read the coding of control units and also to change the coding if the user has the corresponding permissions.
Maintenance Repair	In the function group Maintenance/Repair , it is possible to carry out operations that are required for commissioning certain control units and functions.
Programming	In the Programming function group, it is possible to program a control unit by means of flash jobs.

Table 2: Description of function groups

3.3   Control bar

Depending on the current display content, the control bar displays different actions that you can carry out. These actions are graphically displayed as icons. If an action is available for selection, the icon is shown in light grey colours. You can then perform the desired action by pressing the button. If an action cannot be selected, the icon is shown in dark grey colours and it is not possible to press the button. A distinction is made between generally valid icons and action-specific icons. Action-specific icons are displayed in the control bar instead of the generally valid icons.

3.3.1   Control bar: Generally valid icons

The functions of the generally valid icons are described in Table 3. These icons identify actions that are available across all function groups.

Button	Label	Icon	Description
ESC	**End**		The application is ended by pressing the <ESC> button. A system query makes sure that you do not want to exit the application unintentionally. The check query is displayed as a pop-up window above the working area. After the application has been ended, you are returned to the point from which you launched the application.
F1	**Help**		Context-sensitive help is displayed for the currently selected element by pressing the <F1> button. The help text is displayed in a pop-up window. The <F1> button is currently active only for individual elements.
F2	**Multimeter**		A connection is set up with an analogue measuring device by pressing the <F2> button. The application for analogue measurement is started and is given priority over the diagnostic application during the measurement runtime.
F3	**Data logger**		Pressing the <F3> button starts the data logger of the diagnostic application. This function continuously reads measured values from a selected control unit and displays these in a time-over-values graph. The values are displayed in the working area of the application.
F4	**Save**		You can save a communication log or working log by pressing the <F4> button.
F5	**Filter**		Pressing the <F5> button opens a menu in which you define and apply your own search filters. This allows you to restrict the number and type of elements displayed (measured values, identifications, routines, drive links, etc.).

Button	Label	Icon	Description
F6	Delete		Pressing the <F6> button deletes the current selection of elements listed in the working area. Previously marked elements are no longer marked after pressing the <F6> button. In addition, any activated function groups and control bar buttons are deactivated again.
F7	Veh. funct.		Pressing the <F7> button displays a list of general vehicle functions, e.g. measurement of closed-circuit current.
F8	End		A context-dependent action is executed by pressing the <F8> button. For a more detailed list of the possible actions, see section 3.3.2.
F9	GFF		Pressing the <F9> button starts guided fault finding.
F10	Logs		A selection window is displayed above the button after pressing the <F10> button. The following selection options are offered: • Log types • Communication log: The communication log overview screen is displayed if you select the Communication log option. The requests sent and the responses received from the control units since the start of logging are displayed here in a list.
F11	Back		You can return to the previous screen by pressing the <F11> button.
F12	Next		You can move to the next screen by pressing the <F12> button.

Table 3: Generally valid icons

3.3.2 Control bar: Action-specific icons

An action-specific icon is displayed if an action can be performed in a function group that is not sufficiently described by one of the generally valid icons. You can then perform the action in the usual way by pressing the corresponding button.

The specific buttons for the respective function groups are described at the start of the corresponding sections.

3.4   System messages

The diagnostic application informs you about possible operations, queries any decision-relevant actions and also issues warnings if abnormal conditions exist or if you are about to perform an action that represents a safety risk for the control unit.

3.4.1   Message texts

Text output of help information largely takes place in the Info area of the screen. You are supported here with instructions and information to help you use the diagnostic application.

3.4.2   Icons

Messages or warnings can also be indicated by icons. The functions and meanings of the icons are summarised in Table 4.

Status displays	
Icon	**Description**
	This icon is displayed in the working area of various functions and function groups: • Extended identification : The icon indicates a write error and is displayed in the column `Changes`. • Coding/Adaptation : The icon indicates a write error and is displayed in the `Changes` column. • Maintenance/Repair : The icon indicates an invalid value for a start condition and is displayed in the `Status` column. • General vehicle functions: The icon indicates that a fault has occurred in control unit communication or that the control unit could not be addressed. • Communication log: The icon indicates that a fault has occurred in control unit communication or that the control unit could not be addressed.
	This icon is displayed in the working area of various functions and function groups: • Coding/Adaptation : • Extended identification • General vehicle functions (e.g. maintenance of the vehicle order) The icon indicates that the user has changed a value by entering his own value. The icon is displayed in the `Changes` column in the working area of the screen.

Status displays	
Icon	**Description**
⚠	This icon is displayed in the working area of various functions and function groups: • Coding/Adaptation : • Extended identification • General vehicle functions (e.g. maintenance of the vehicle order) The icon indicates that an entered value does not meet the specified requirements with respect to format, length, etc. The icon is displayed in the `Changes` column in the working area of the screen.
✓	This icon is displayed in the working area of various functions and function groups: • Extended identification : The icon indicates that an identification has been successfully written. • Coding/Adaptation : The icon indicates that a coding has been successfully written. • Fault memory : The icon indicates an active fault memory entry • General vehicle functions (e.g. maintenance of the vehicle order).
?	This icon is displayed in the working area in the Overview function group: The icon indicates that no variant has been found for a control unit in the control unit search. For this reason, the basic variant is displayed by the system.
!	This icon is displayed in the working area in the Overview function group: The icon indicates that there is a fault memory entry for the respective control unit.
⬅	This icon is displayed in the working area of the communication log function. The icon indicates that the listed entry is a system request to a control unit.
➡	This icon is displayed in the working area of the communication log function. The icon indicates that the listed entry is a control unit response to the system.

Table 4: System messages

Language version	
Icon	**Description**
▽	This icon is displayed in the title bar of the working window of the diagnostic application. If you click on this icon, a drop-down menu is displayed in which you can select the desired language version. The currently set language is highlighted in grey and cannot be selected.

Table 5: Language version

4 Hierarchical display structure
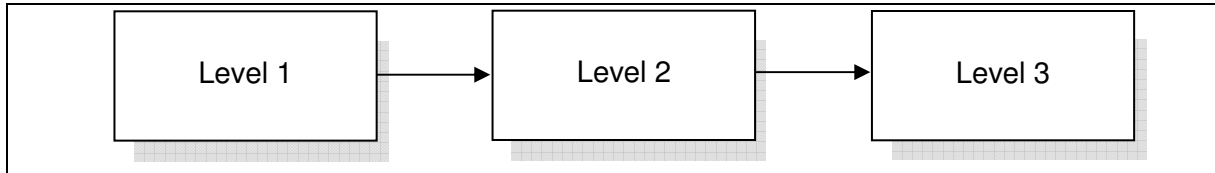
Figure 3: Function groups in the menu bar

The menu structure of the diagnostic application is hierarchical and has three levels. This is shown schematically in Figure 3. A detailed description of the individual processes is provided in sections 4.1ff and 8.

Level 1: The user enters the diagnostic application via the first level. This level displays a control unit overview with a list of all the control units of the ODX project.

Level 2: The second level contains the overview screens of the respective function groups.

Level 3: The third level generally shows the details or possible actions for elements that were selected in the overview screens on the second level.

The following subsections describe the possible interaction paths that you can select as the user of the diagnostic application. Navigation in the branches of the menu tree is possible by means of the <F11> and <F12> navigation buttons.

It is also possible to access a screen on the second level from any screen via the function groups in the menu bar. This is indicated by a wide grey arrow on the respective screens.

The individual navigation branches are described in more detail below.

4.1   Control unit list/overview
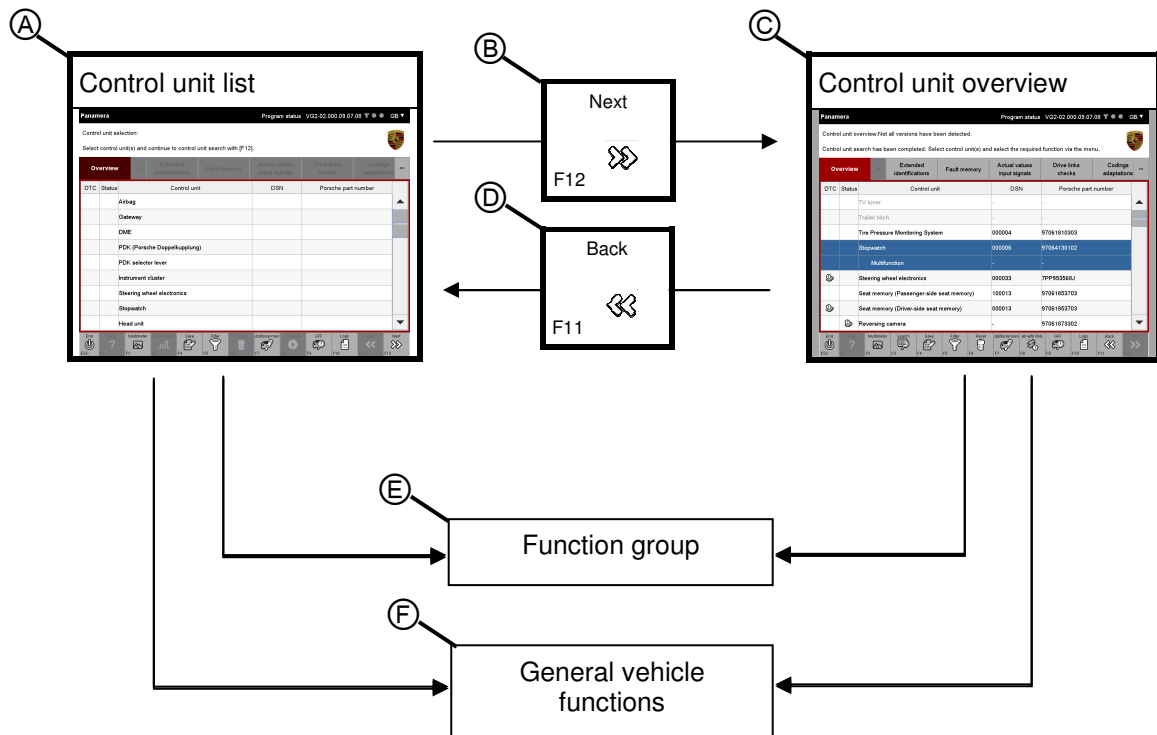
Figure 4: Screen navigation in the control unit list/control unit overview

When the application is started, the control units of the ODX project are displayed in the control unit list (**A**). A control unit search is started by pressing the <F12> button (**B**).
The control unit overview (**C**) then shows a list of control units with the control units marked that it was possible to address in the search. Control units that could not be addressed are greyed out.
By pressing the <F11> (**D**) button, you can return to the control unit list.

If you select at least one control unit in the control unit list or control list overview, you can select a function group from the menu bar (**E**).

Selection-independent access to the general vehicle functions (**F**) is possible in the control bar.

4.2   Extended identifications
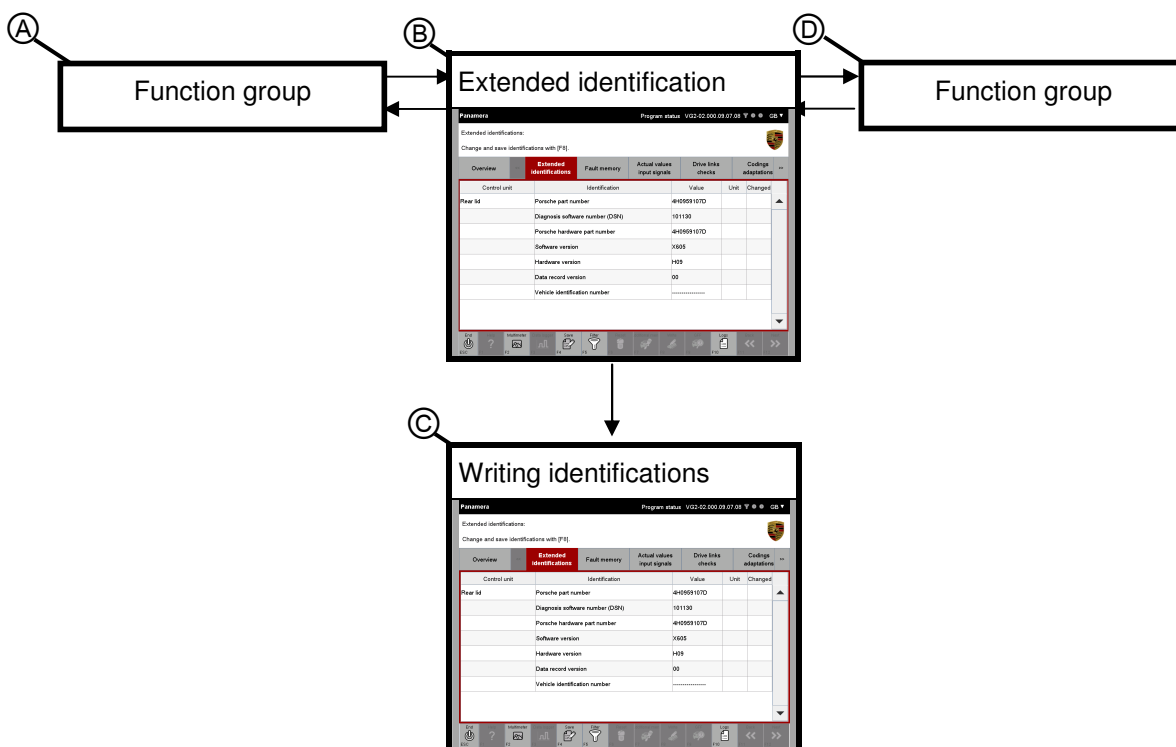
Figure 5: Screen navigation for extended identifications

If you have selected at least one control unit in a different function group (**A**), you can access the screen for display of the identifications of the selected control unit by selecting the function group Extended identification (**B**).
You can write identifications here (**C**).
You can also call up a different function group by pressing a function group button in the menu bar (**D**).

4.3 Fault memory

Figure 6: Screen navigation for fault memory

If you have selected at least one control unit in another function group (**A**), you can access an overview of the fault memory entries (**B**) by selecting the function group | Fault memory |. Here you can view the environmental data (**D**) for a fault memory after selecting an entry and pressing the <F12> (**C**) button.
If you press the <F11> button (**E**) in the environmental data screen, you return to the screen with the fault memory entries (**B**).
You can delete the fault memory (**F**) and also access another function group by selecting a function group button in the menu bar (**G**).

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4.4 Actual values/Input signals
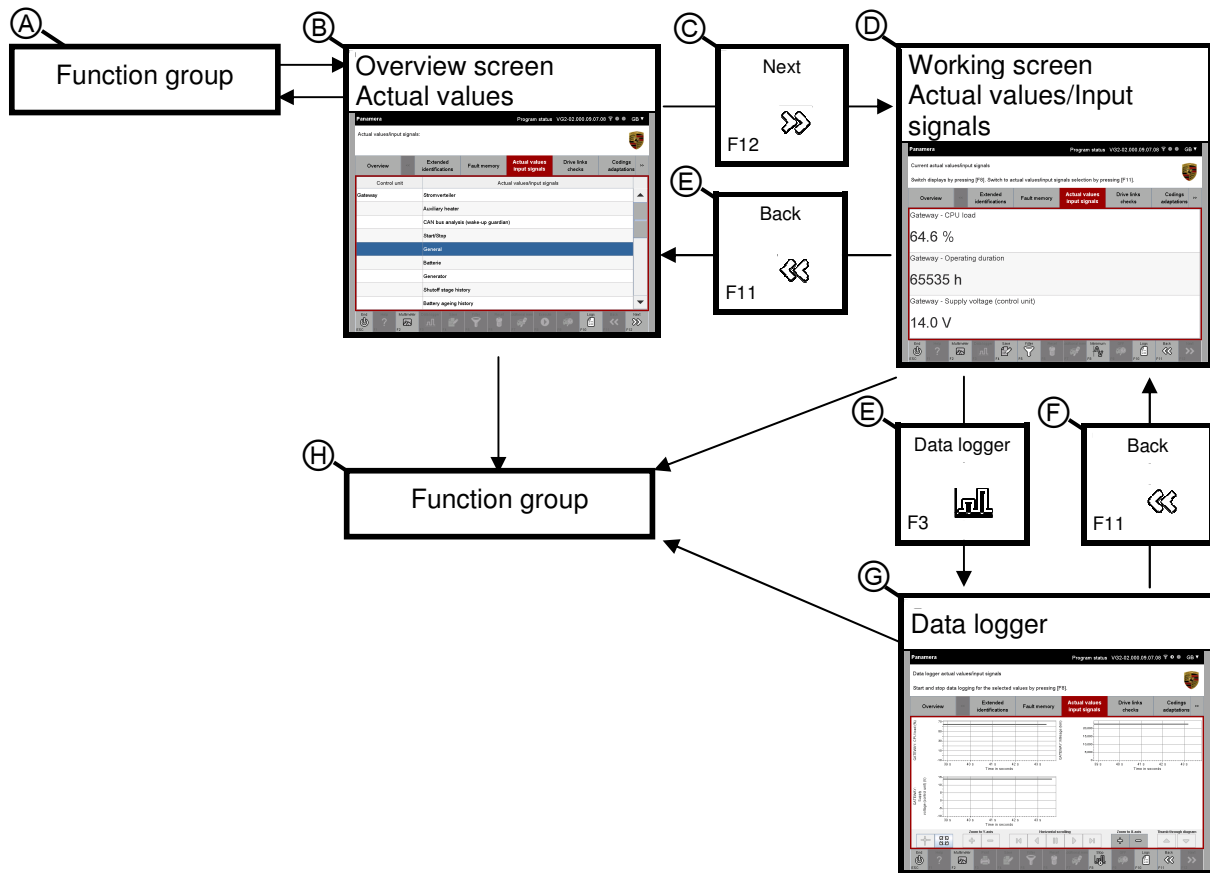
Figure 7: Screen navigation for Actual values/Input signals, including data logger

If you have selected at least one control unit in another function group (**A**), you can access an overview of the actual values or input signals (**B**) by selecting the function group Actual values/Input signals .

If you have selected at least one actual value/input signal, you can access a detail screen for the respective actual values and input signals (**D**) by pressing the <F12> button (**C**).

If you press the <F11> button (**E**) in the detail screen for the actual values/input signals, you return to the list of actual values/input signals (**B**).

In the working screen of the Actual values/Input signals function group, you can call up the data logger (**G**) by pressing the <F3> button (**E**) after selection of at least one value.

If you press the <F11> button in the data logger, you return to the working screen of the actual values/input signals (**F**).

In addition, you can also call up a different function group (**H**) by selecting one of the function group buttons in the menu bar.

4.5 Drive links/Tests
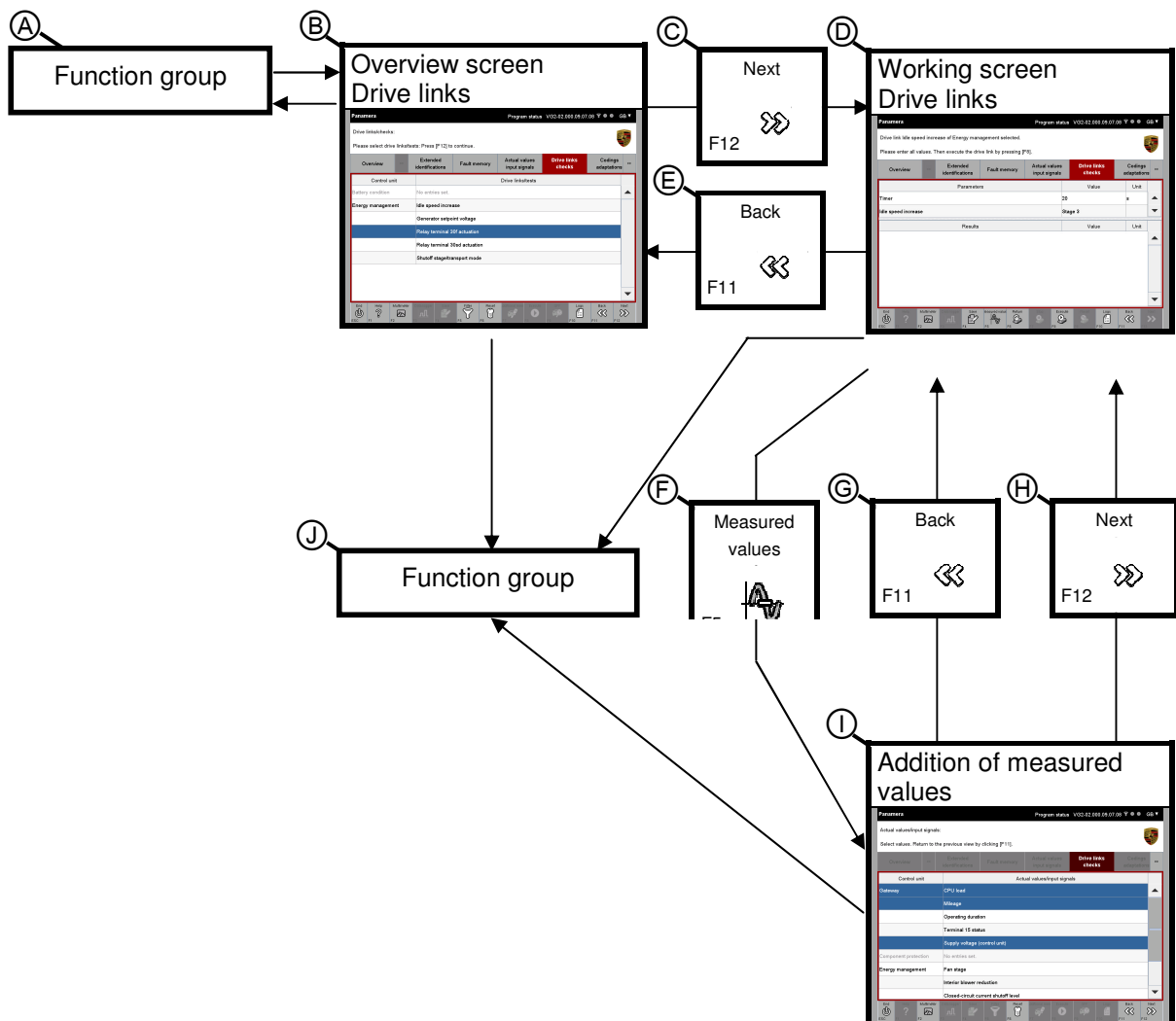
Figure 8: Screen navigation of drive links/tests

If you have selected at least one control unit in another function group (**A**), you can access an overview of the available drive links and routines (**B**) by selecting the Drive links/Tests function group.

If you have selected at least one drive link, you can access a detail screen – the working screen of the function group– by pressing the <F12> button (**C**). In this screen, you can then change the parameters of a drive link.

If you press the <F11> button (**E**) in the detail screen, you return to the overview of the drive links and routines (**B**).

In the detail screen (**D**), you can access a further selection screen by pressing the <F5> button (**F**). Here you can then add new measured variables to the result area of the detail screen (**I**).

If you press the <F12> button (**H**) in this screen, you accept the selection and return to the

detail screen.

If you press the <F11> button (**G**) in this selection screen, you cancel the selection and return the detail screen.

In addition, you can call up another function group (**J**) by selecting one of the function group buttons in the menu bar.

4.6   Coding/Adaptation
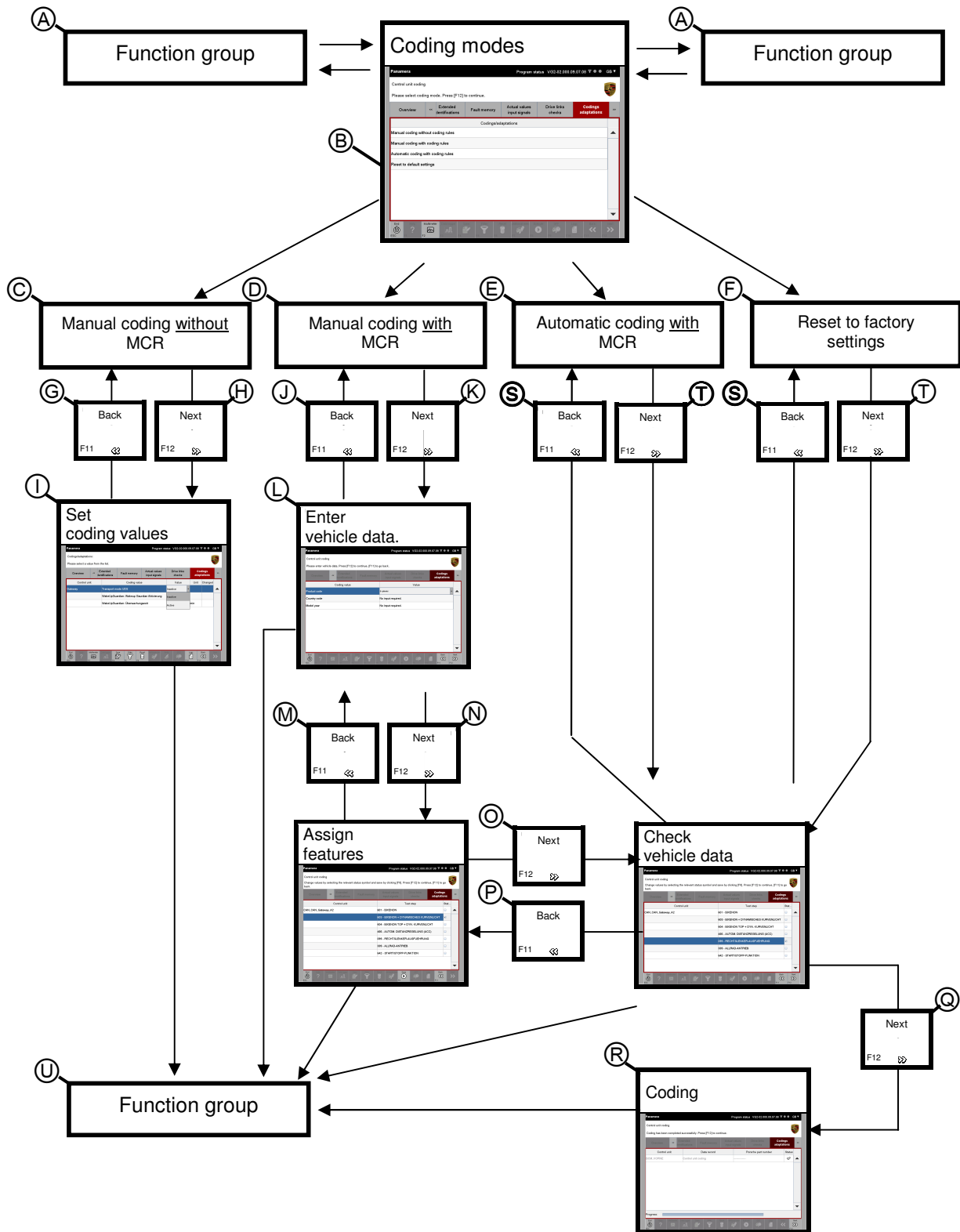
Figure 9: Screen navigation for coding/adaptation

If you have selected at least one control unit in another function group (**A**), you can access the list of coding modes (**B**) by selecting the � Coding/Adaptation ⎭ function group.
You can access the different working screens after selection of a coding mode:

- If you have selected manual coding without MCR (**C**) and confirmed this with <F12> (**H**), you can now set and write coding values (**I**). You can return to the list of coding modes with <F11> (**G**).

- If you have selected manual coding with MCR (**D**) and confirmed this with <F12> (**K**), you must enter the vehicle data in the screen that is then displayed (**L**). You can return from here to the list of coding modes with <F11> (**J**).
  When you have entered the vehicle data, you can access a screen for assignment of the valid equipment features by pressing <F12> (**N**). If you press the <F11> button (**M**) in this screen, you return to the vehicle data input screen.
  After you have assigned the equipment features, you then access a screen where you confirm that the vehicle data is correct by pressing <F12> (**O**). If you press the <F11> button (**P**) in the confirmation screen, you return to the screen in which you have to assign the valid equipment features.
  If you confirm that the data is correct with <F12> (**Q**), the codings are then written (**R**).

- If you have selected one of the automatic coding modes (Automatic coding with MCR or Reset to factory settings) and confirmed this with <F12> (**T**), you must confirm the vehicle data with <F12> (**Q**) (back to list of coding modes with <F11> (**S**)). The codings are then written (**R**).

In addition, you can also call up a different function group by selecting one of the function group buttons in the menu bar (**U**).
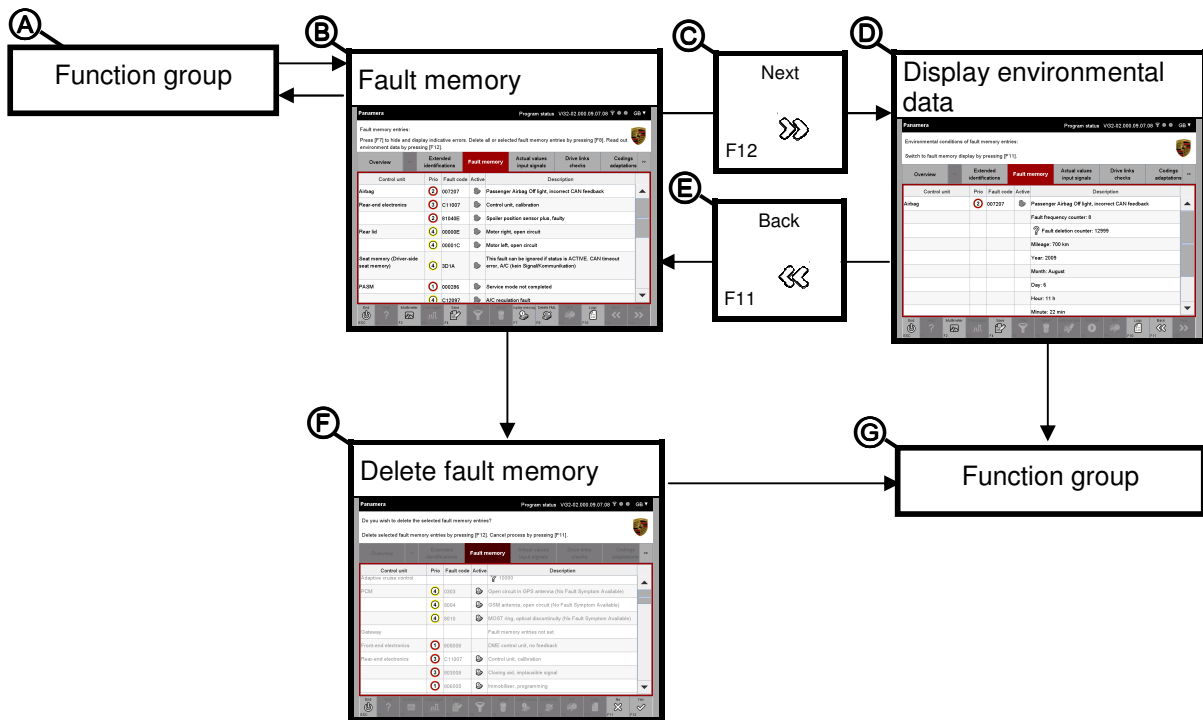
4.7   Maintenance/Repair
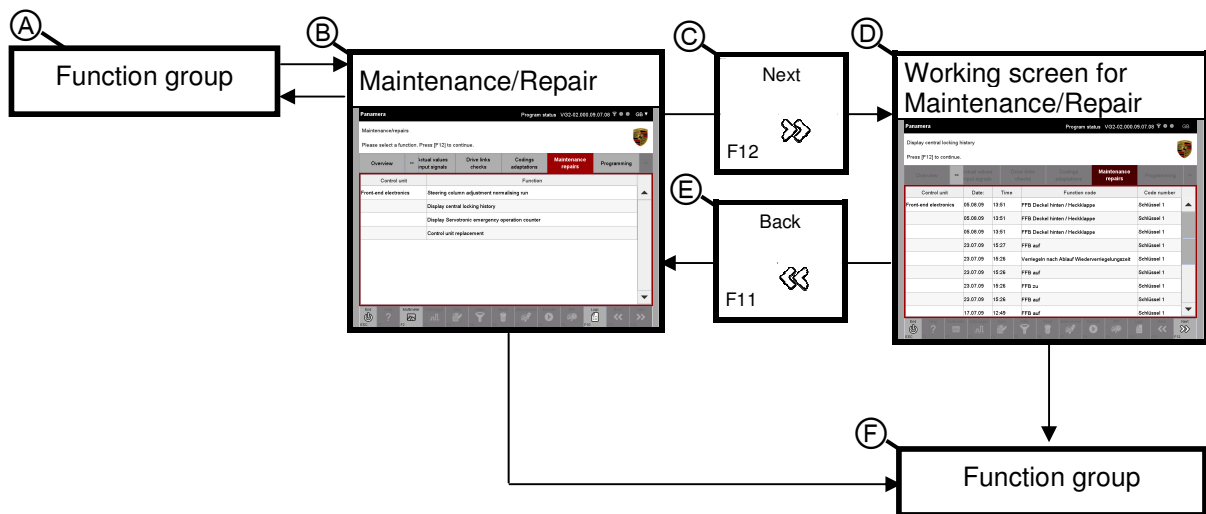
Figure 10: Screen navigation for Maintenance/Repair

If you have selected at least one control unit in another function group (**A**), you can access the list of control unit-specific processes (**B**) by selecting the ⌷Maintenance/Repair⌷ function group.

After you have selected a process in the list of control unit-specific processes, you can access a detail screen (**D**) by pressing the <F12> button (**C**). You are then guided through the respective process in the detail screen.

When you are in the detail screen, you can return to the list of control unit-specific processes (**B**) by pressing the <F11> button (**E**).

In addition, you can also call up a different function group by selecting one of the function group buttons in the menu bar (**D**).

4.8 Programming
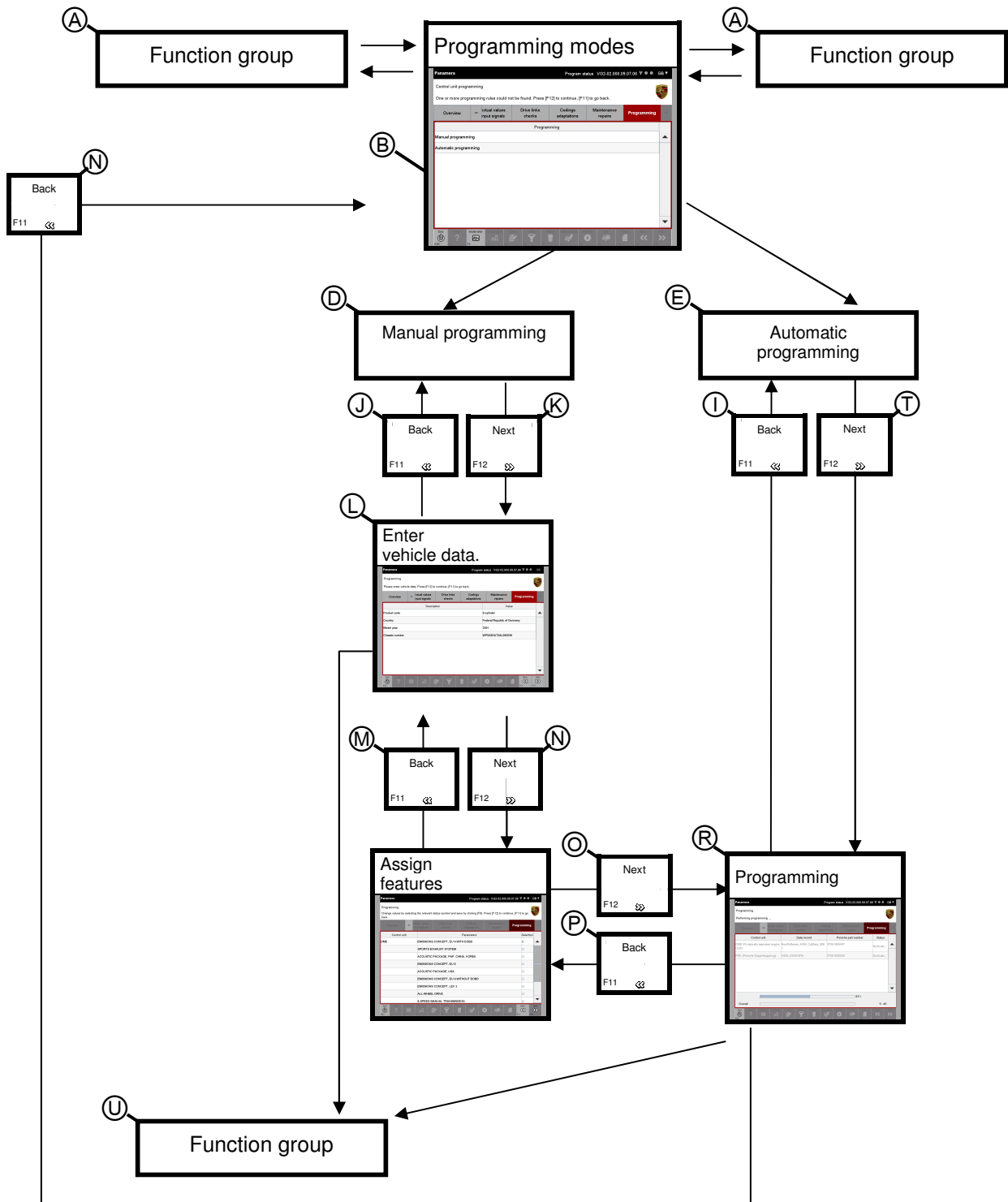
Figure 11: Screen navigation for Programming

If you have selected at least one control unit in another function group (**A**), you can access the list of programming modes (**B**) by selecting the ⌐Programming¬ function group.
You can access the different working screens after selection of a programming mode:

- If you have selected manual programming (**D**) and confirmed this with <F12> (**J**), you must enter the vehicle data in the next screen (**K**). You can return from here to the list of programming modes with <F11> (**I**).
  When you have entered the vehicle data, you can access a screen for assignment of the equipment features by pressing <F12> (**N**). If you press the <F11> button (**M**) here, you return to the vehicle data input screen.
  After you have assigned all equipment features, you access the programming screen (**R**) by pressing <F12> (**O**).

- If you have selected automatic programming (**E**) and confirmed this with <F12> (**T**), you then access the programming screen (**R**).

In addition, you can also call up a different function group by selecting one of the function group buttons in the menu bar (**U**).

Special procedure after programming:

If control unit programming was not successful, you can return to the overview of programming modes by pressing <F11> (**X**). If programming was successful, the <F11> button is deactivated and you must press one of the function buttons in order to use other functions of the diagnostic application.

5   Application modes

Before the individual setting options are described in section 6, this section first provides an overview of the different application modes and display parameters.

5.1   Basic application modes

Three basic application modes are available in which you can run the diagnostic application. These are as follows:

- Standard mode:
  In this mode, communication with the vehicle takes place via a connected VCI (Vehicle Communication Interface). The control units, values, parameters and responses to requests displayed in the diagnostic application are based on communication with the control units installed in the vehicle. All values and responses are read directly from the vehicle on request, i.e. during the runtime.

  When should I select this mode?
  You should select this mode if you want to test a real vehicle or perform software settings on the vehicle.

- Simulation mode:
  In this mode, control unit communication is simulated with previously recorded data. The limiting factor here is the database of recorded control unit communication, since only the control unit responses are reproduced that have been previously recorded. It is not possible to generate control unit responses that are not included in the previously recorded simulation data!

  If you perform the same steps in simulation mode as when recording the data, you will receive the same responses that you received at the time of recording. The simulation data therefore represents a real control unit for the steps performed.

  When should you select this mode?
  You should select this mode if you need the simulation data instead of control unit communication during the runtime. This is necessary, for example, if you wish to test the diagnostic application with updated ODX data.

- View mode.
  There is no communication with the vehicle via a VCI in this mode. Unlike in simulation mode, no previously recorded control unit responses are displayed. Instead, the menus, sub-structures and labels in accordance with the ODX calibration are shown. The following restrictions therefore apply:

  - All fault memories are displayed in the ⌐Fault memory⌐ function group.
  - Default values are displayed instead of real actual values in the ⌐Actual values/Input signals⌐ function group.
  - In function groups where requests can be sent by means of an input, no control unit response is shown in the response field.

When should I select this mode?:
You should select this mode if you would like to view different calibrations for different control unit variants.

i Activation of the corresponding application mode by means of the control application:
►see section 6.3.2.

5.2 Self-test mode

Self-test mode allows you to check whether the relevant software components are consistent when the diagnostic application is started, i.e. to check whether the installed components are fault-free and working together without any problems. The restrictions stated below apply.

The following data areas are checked when you activate self-test mode:

- executable parts of the diagnostic application (Diagnostic application, MCD Kernel , PDU, Tools, JAVA Runtime Environment)

- configuration data

- generic and control-unit specific processes

- project-specific ODX data

- plug-ins

The test is performed in relation to a target definition that is generated during the setup process.

Restrictions:
Since self-test mode performs the test in relation to a target definition that was created during the setup process, the following restrictions apply:
- Additional ODX projects or user-specific processes that were added subsequently and have therefore not been qualified as part of a complete setup cannot be checked for consistency.
- ODX projects modified by PDX installer are also identified as changed by the self-test mode.

In addition, only the inconsistent area is identified, but not the individual changes, missing or added component.

Activation of the self-test mode by means of the control application:
►see section 6.3.2.

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6   Control application

The control application allows you to influence the behaviour of the diagnostic application. In the control application, the possible setting options are shown in a graphical user interface. It is possible to make changes here by simply clicking on the corresponding options.

All settings can be saved with the exception of the version information. The diagnostic application is then started with the parameters defined in the control application.

> **ⓘ**   **Note on permanent storage:**
> If you have changed and saved the settings, the diagnostic application will be executed with these parameters from this point on.

> **ⓘ**   The settings made in the control application are not deleted or changed by a setup or new installation.

The section first describes how you launch the control application. It then describes the elements contained in the control application and how you can make settings in the application.

6.1   Starting the control application

Start the control application from the basic system. Please refer to the corresponding documentation for information on operating the PORSCHE basic system.

6.2 Elements of the control application

The graphical user interface of the control application is similar to that of the diagnostic application.
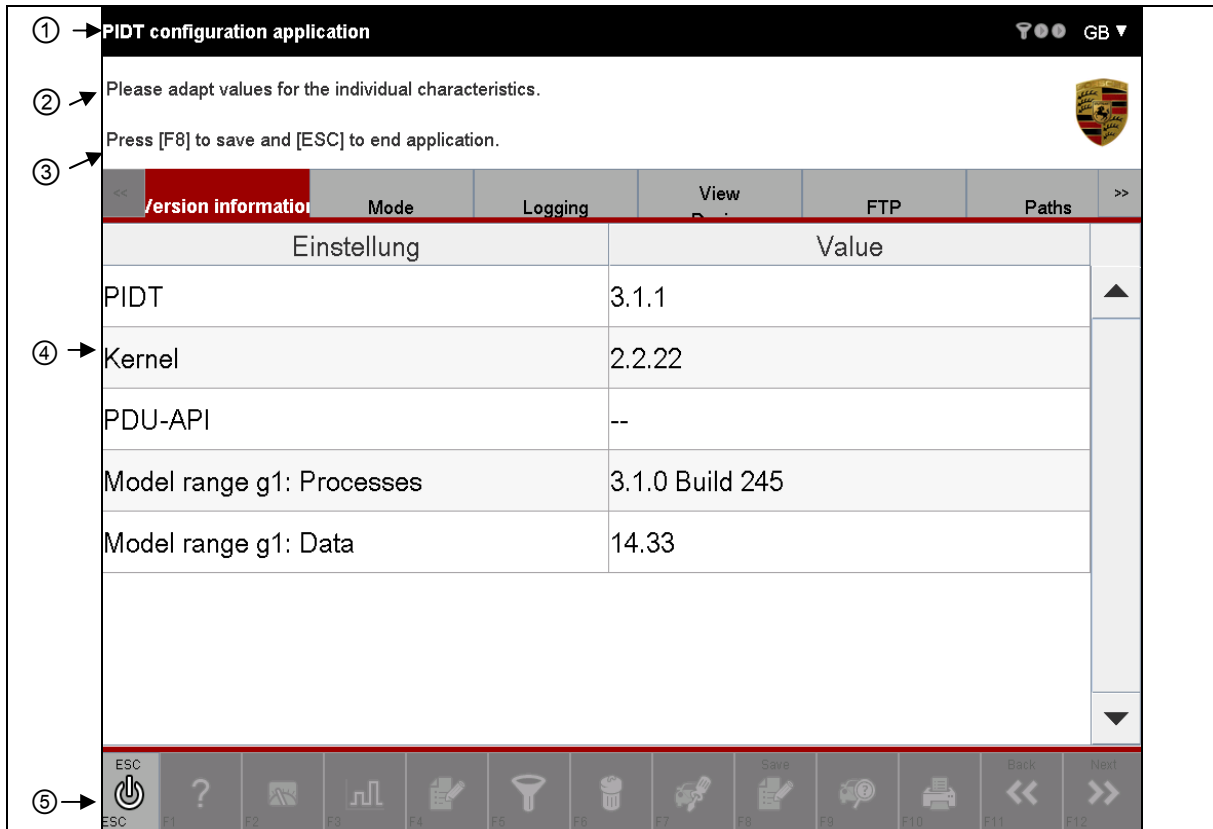
Figure 12: Elements on the graphical user interface (GUI) of the control application

Element	Description
① **Title bar**	The title bar shows you that you are in the control application. Like in the diagnostic application, the drop-down menu for language selection is available on the right.
② **Info area**	The Info area contains information on operation as well as on the available setting options.

Element	Description
③ **Menu bar**	In contrast to the diagnostic application, the menu bar does not display any function groups (see section 3.2) but shows setting option categories instead. The following categories are available: 1. Version information 2. Mode 3. Logs 4. Display/Design 5. FTP 6. Paths 7. Miscellaneous
④ **Working area**	You can make the necessary settings in the working area. The elements are listed in a table. Example: The first column contains the permitted and displayable setting options. In the second column you can enter values or make settings in a drop-down menu if these can be changed. You cannot change the values displayed for the version information.
⑤ **Control bar**	The following buttons are active in the control bar: • <ESC> (End): Ends the control application • <F8> (Save): If values can be changed, any changes made to these settings can be saved with this button.

6.3 Categories

6.3.1 Version information

Information on the most important installed components of the diagnostic application is displayed in the │Version information│ category. These values cannot be edited or changed.

The following data is displayed:

- Version number of the currently installed Diagnostic application

- Version number of the MCD kernel used

- Version number of the PDU-API

- Version numbers for the installed model ranges and processes.

1. Start the control application
   ►see section 6.1

2. As the default setting, the content of the │Version information│ category is displayed when the control application is started.

   If you have selected a different category before, select the category │Version information│ in the menu bar.
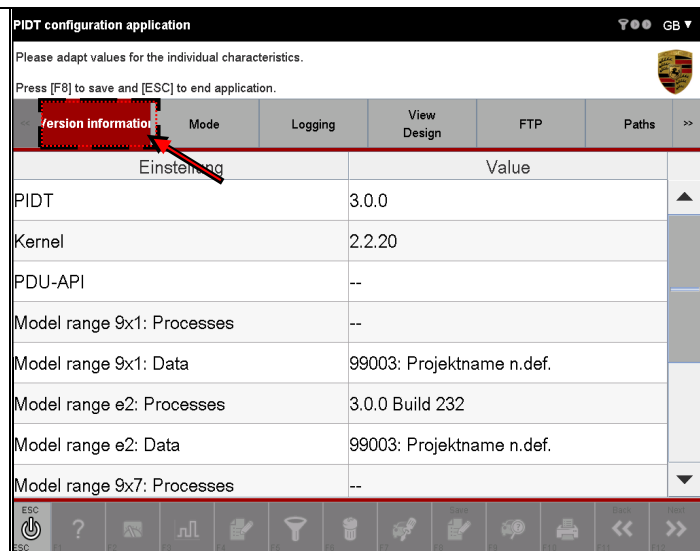
6.3.2   Mode

In the ⌐Mode⌐ category, you can set the basic application modes (display type) and the self-test mode.

6.3.2.1   Calling up the Mode category

> **i** For an overview of the individual modes and their meaning:
> ►see section 5.

1. Start the control application
    ►see section 6.1

2. Select the category ⌐Mode⌐ in the menu bar by clicking on the category.
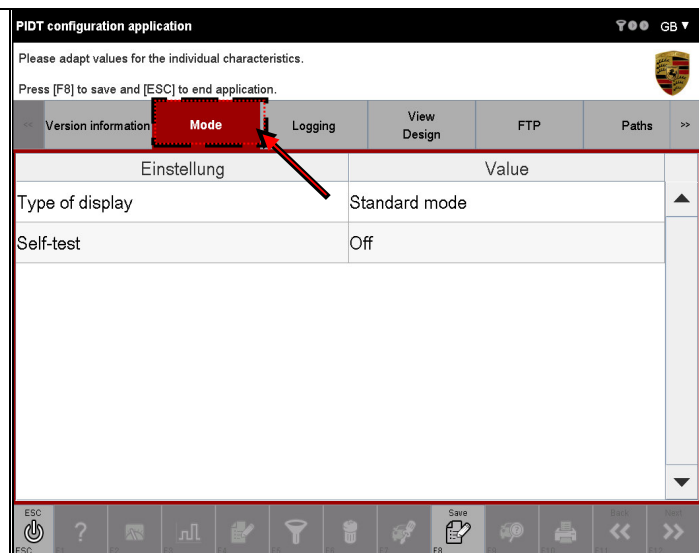
6.3.2.2   Display type

You can set the basic application mode by means of this parameter. For further information on the basic application mode: see section 5.1.

When you have saved the corresponding setting, the diagnostic application will then be started with this configuration from this point on.

Restriction for simulation mode

If you wish to start the diagnostic application in simulation mode, a simulation file must have been created before in the diagnostic application.

Default setting:

Display type: ► `Standard mode`.

---

1. Start the control application and select the category `Mode` in the menu bar:
    ►see section 6.3.2.1

---

2. Click next to the entry `Display type` in the field `Value` (A) and select the corresponding entry in the drop-down menu that then opens by clicking on the corresponding option once (B). The following modes are available:
    - `Standard mode`
    - `View mode`
      The application is used without VCI
    - `SIM mode` Simulation mode

---
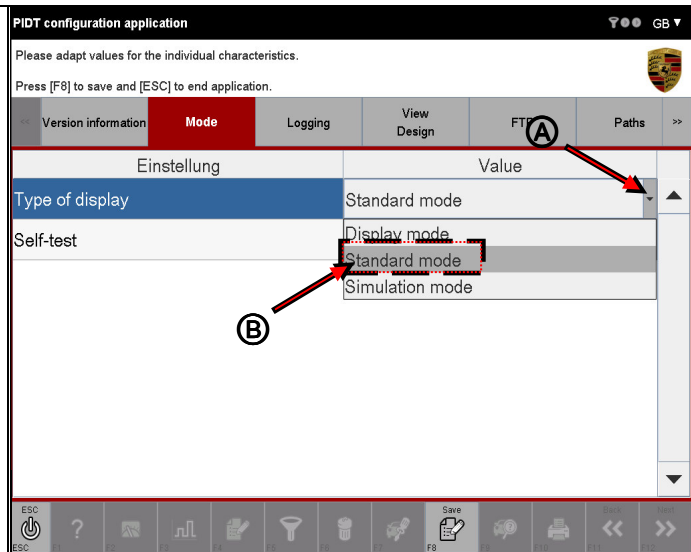
3. Save the setting by pressing the <F8> button.

6.3.2.3   Self-test mode

You can set the self-test mode by means of this parameter. For further information on the self-test mode: see section 5.2.

When you have saved the corresponding setting, the diagnostic application will then be started with this configuration from this point on.

| **i** | **Default setting:**
Self-test mode: ► `Off`. |

---

1. Start the control application and select the category ⎣Mode⎦ in the menu bar:
    ►see section 6.3.2.1

---

2. Click next to the entry `Self-test` in the field `Value` (A) and select the corresponding entry in the drop-down menu by clicking on the corresponding option once (B). The following options are available:

    - `Off`
      The self-test will then not be performed when the application is started

    - `On`
      The self-test is performed when the application is started

PIDT configuration application					📶●● GB ▼
Please adapt values for the individual characteristics.					
Press [F8] to save and [ESC] to end application.					
Version information	**Mode**	Logging	View Design	FTP	Paths	>>

Einstellung	Value Ⓐ
Type of display	Standard mode
Self-test	Off ▾
	Off
	On

Ⓑ

---

3. Save the setting by pressing the <F8> button.

6.3.3   Logs

In the ⌈Logs⌉ category, you can make settings for the communication log and user log.

6.3.3.1   Calling up the Logs category

1. Start the control application
    ►see section 6.1

2. Select the category ⌈Logs⌉ in the
    menu bar by clicking on the
    category.
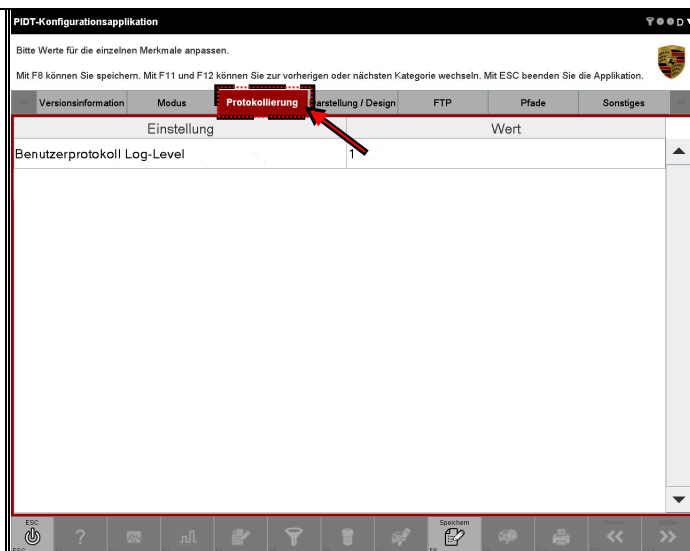
6.3.3.2   Log level of the user log

This setting option allows you to change the log level of the user log. The basic log level is
defined when the diagnostic installation is installed. It is not possible to select a lower setting
in the control application than was predefined during installation.
The log level defines the scope of data that is recorded for the user log. A higher level
corresponds to a larger data scope.
You can set the log level in the control application. The log levels 1=normal or 2=full are
normally available.
No entry is offered in the control application if log level 0=off was set during installation. In
other words, if it was defined during installation that no user log is to be produced, it is not
possible to activate the log function via the control application.

When you have saved the corresponding setting, the diagnostic application will then be
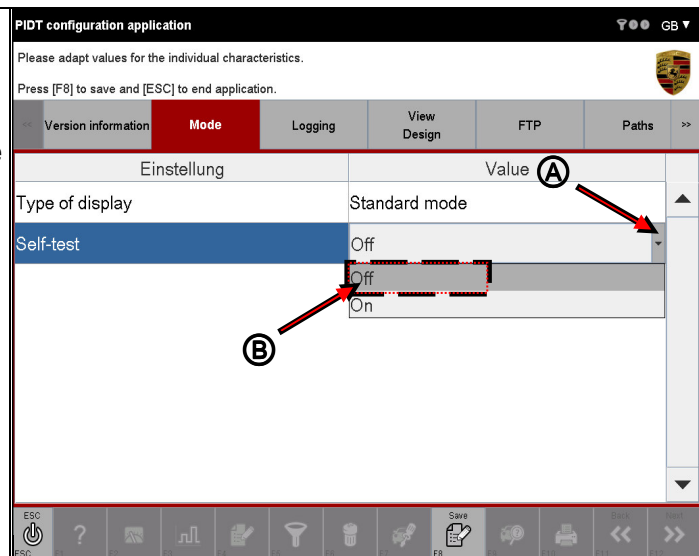started with this configuration from this point on.

ℹ️ This option is available only if the user log was activated during installation.

1. Start the control application and select the category ⌊Logs⌋ in the menu bar:
   ►see section 6.3.3.1

2. Click next to the entry `Log level for user log` in the field `Value` (A) and select the corresponding entry in the drop-down menu by clicking on the corresponding option once (B). The following options are available:
   • 1
   • 2
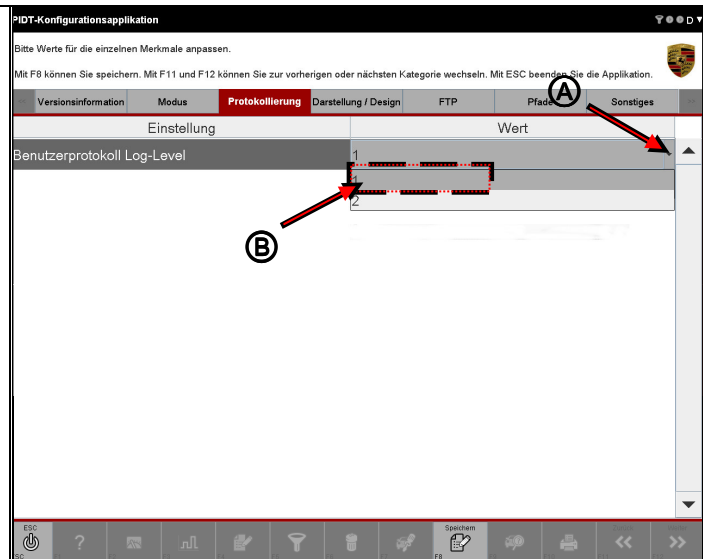
3. Save the setting by pressing the <F8> button.

6.3.4   Display/Design

You can define settings that relate to the appearance of the application in the Display/Design category.

6.3.4.1   Calling up the Display/Design category

1.   Start the control application
     ►see section 6.1

2.   Select the category
     Display/Design in the menu bar
     by clicking on the category.

6.3.4.2   Colour scheme in the data logger

This setting allows you to change the colour of the curves that are displayed in the data logger of the diagnostic application. For further information on the data logger:
see section 8.4.4.
In the data logger, it is possible to display a maximum of four curves in a graph. You can define a colour for each of the four curves that can be shown in a graph so that they can be distinguished from each other more easily.

When you have saved the corresponding setting, the diagnostic application will then be started with this configuration from this point on.

> **i**
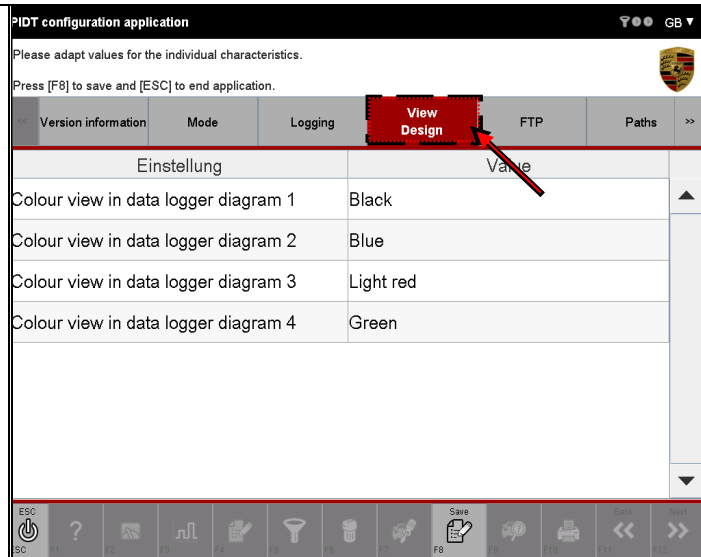>
> **Default setting:**
> Colour scheme in data logger graph 1: ► `Black`
> Colour scheme in data logger graph 2: ► `Blue`
> Colour scheme in data logger graph 3: ► `Light Red`
> Colour scheme in data logger graph 4: ► `Green`

1. Start the control application and select the category | Display/Design | in the menu bar:
   ►see section 6.3.4

2. Click next to the entry `Colour scheme in data logger graph 1` in the field `Value` (A) and select the corresponding entry in the drop-down menu by clicking on the corresponding option once (B).
   The following options are available:
   - `Black`
   - `Blue`
   - `Light Red`
   - `Green`
   - `Yellow`
   - `White`
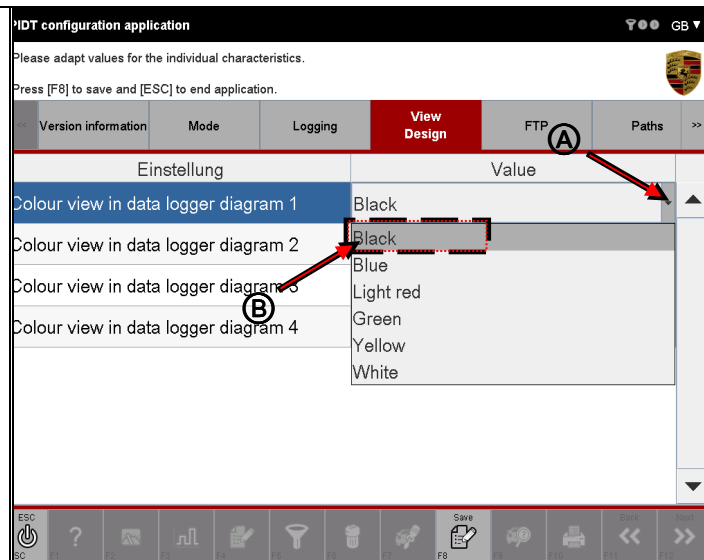
3. Repeat input for the following entries:
   `Colour scheme in data logger graph 2`
   `Colour scheme in data logger graph 3`
   `Colour scheme in data logger graph 4`
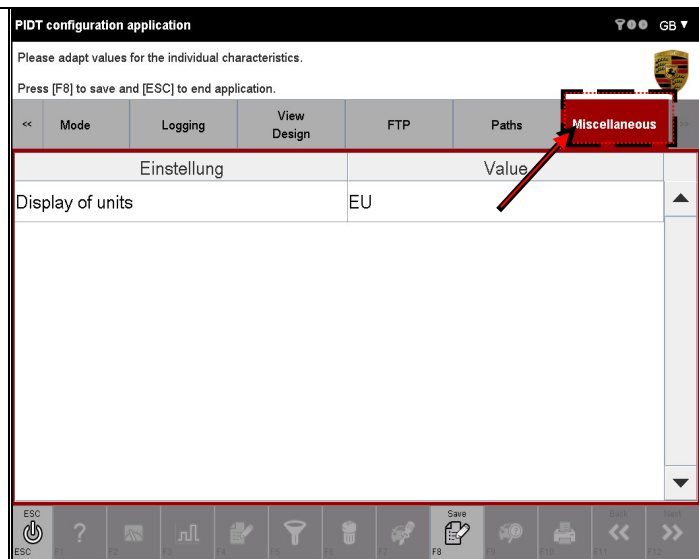
4. Save the setting by pressing the <F8> button.

6.3.5 Miscellaneous

Settings that cannot be assigned to the other categories are summarised in the
Miscellaneous category.

6.3.5.1 Calling up the Miscellaneous category

1. Start the control application
   ►see section 6.1

2. Select the category
   Miscellaneous in the menu bar
   by clicking on the category.

6.3.5.2   Display of units

This setting allows you to change the display form of the units by selecting a units family in the diagnostic application.

Example:
If you would like to have the unit "km/h" displayed in "mph", change the display form for units to US. Corresponding conversion of the values then also takes place.

This setting is independent of the active language, which can be selected by means of the ▼ icon (see section 9.6).

When you have saved the corresponding setting, the diagnostic application will then be started with this configuration from this point on.

> **i**   **Default setting:**
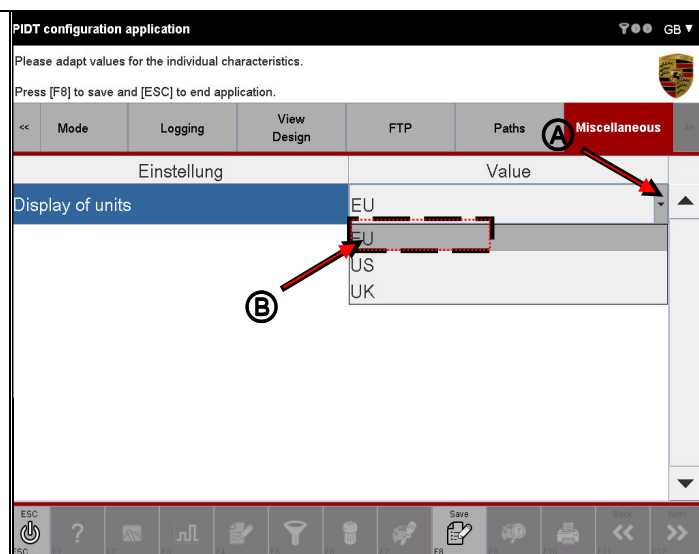> Display of units: ► EU

1.   Call up the Miscellaneous category:
      ►see section 6.3.5.1

2.   Click next to the entry Display of units in the field Value (A) and select the corresponding entry in the drop-down menu by clicking on the corresponding option once (B).
      The following options are available:
      • EU
      • US

3.   Save the setting by pressing the <F8> button.

7   Starting the diagnostic application

Selecting the basic application mode and defining other settings

1. First set the corresponding basic application mode (Standard mode, View mode, Simulation mode) as well as all other parameters by means of the control application.
    ►see section 6

Selecting the model range

First you must select a valid model range. This is selected in the PORSCHE basic system before starting the diagnostic application.

After starting the basic system, you can select the corresponding vehicle model ranges under the menu item `Diagnosis`. The diagnostic application is then started with the data of the selected model range.

Please refer to the corresponding documentation for information on operating the PORSCHE basic system.

The following steps describe the basis procedure.

2. Start the basic system. The general interface is displayed where you can make basic settings.
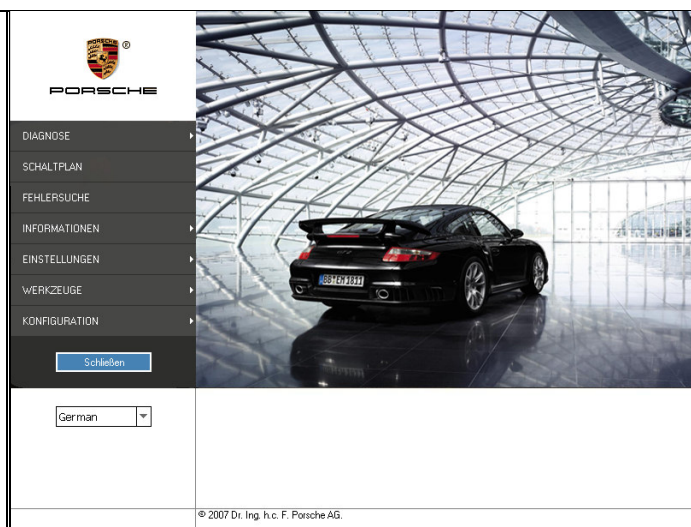
3. Select the corresponding model range under the menu item Diagnosis.

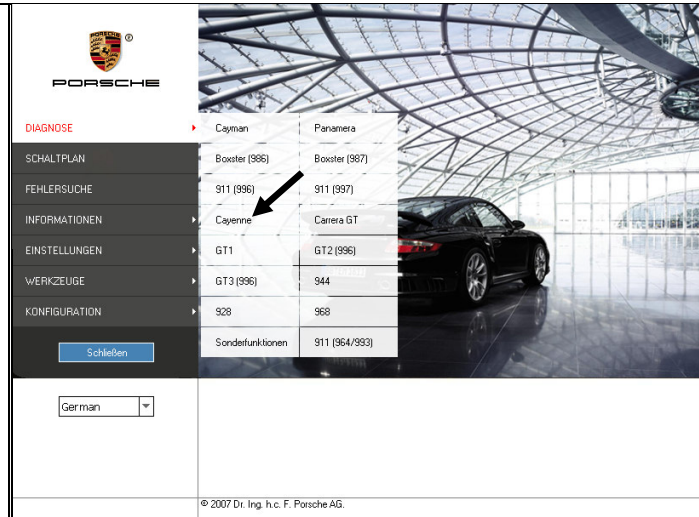   As an example, the `Cayenne` model range was selected here.

4. After selection of the model range, the application is started with the data valid for this model range.

8   Operation

General operation of the diagnostic operation is described below. Each sub-section deals with one function group of the diagnostic application. A description is provided on how to use the individual function groups and which actions you can perform within a function group.

i **Note on View mode:**

A description of the special procedure View mode is provided in section 8.1.3. Restrictions apply for this mode that affect operation as described in section 8. These are listed in a table and must be observed when operating the application.

i **Note on operation:**

Section 9 describes how you can adapt the interface to your needs and what restrictions/differences apply for operation if groups are displayed.

8.1 Control unit list / Control unit overview

This section describes how you can display the control units installed in the vehicle in a control unit overview by means of a control unit search.

The basis for this is an existing ODX project in which the control unit-specific data is stored. The system must check whether a control unit of the project is installed in the vehicle and what variant this is.

After a user action, the diagnostic application first performs a control unit search. The list of all or selected control units and their status is then shown in the control unit overview.

8.1.1 Action-specific buttons for this function group

Control unit overview			
Button	**Label**	**Icon**	**Description**
F8	**All with fault memory**		All control units that have a fault memory entry are selected by pressing the <F8> button.

8.1.2 Process with vehicle communication

1. After the application has been started successfully, the list of control units for the respective ODX project is displayed in a control unit list.
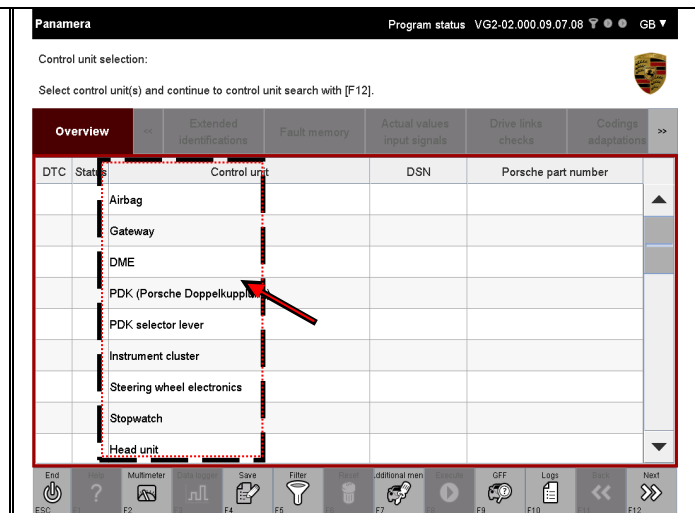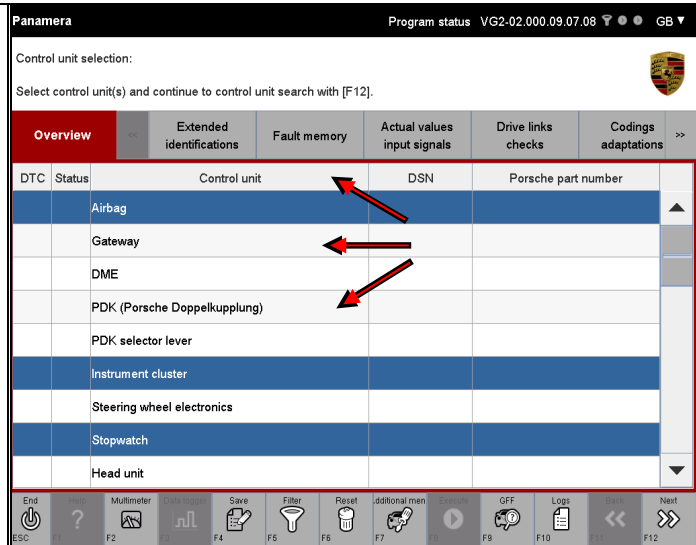

There are two possibilities for selection of control units:

Variant 1: Selection of a number of control units

2. Select the desired control units by marking them.

   If you would like to deselect a selected control unit again, click again in the corresponding line.
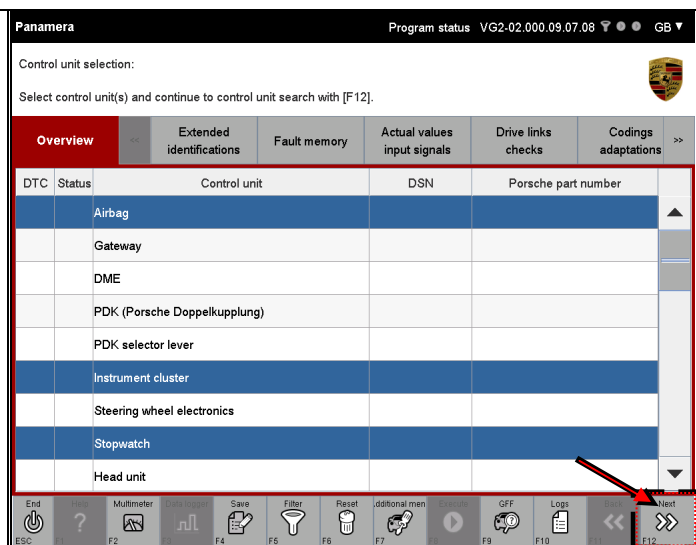

3. The complete selection can be cancelled again by pressing the <F6> button.
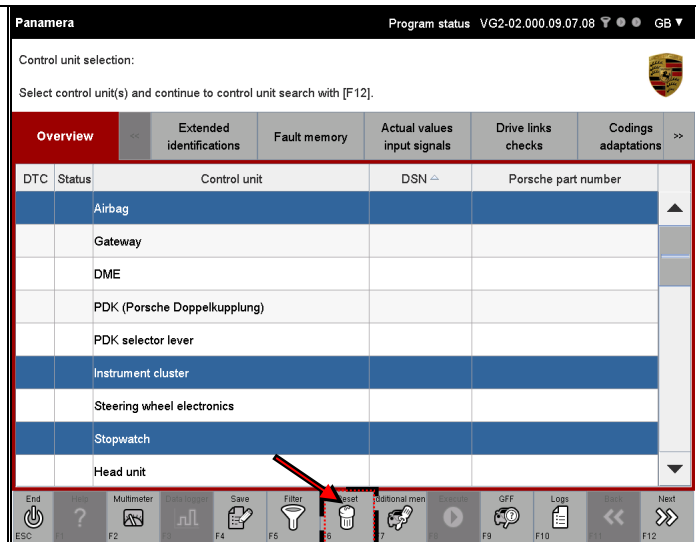
4. Then press the <F12> button to start the control unit search.

   The system now checks which control units or selected control units of the project can be addressed.
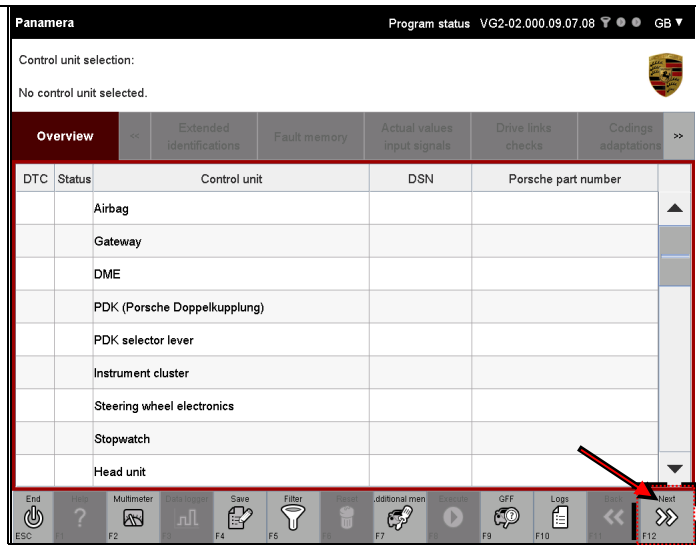
Variant 2: Selection of all control units

5. If you would like to perform a control unit search for all control units, press the <F12> without previously selecting a control unit.

    The system then checks which control units or selected control units of the project can be addressed.

Display of search results

> The list of addressable control units is then displayed in the control unit overview. Depending on which selection variant you have selected, the list is displayed similarly to the list form shown in step 6 or step 7.
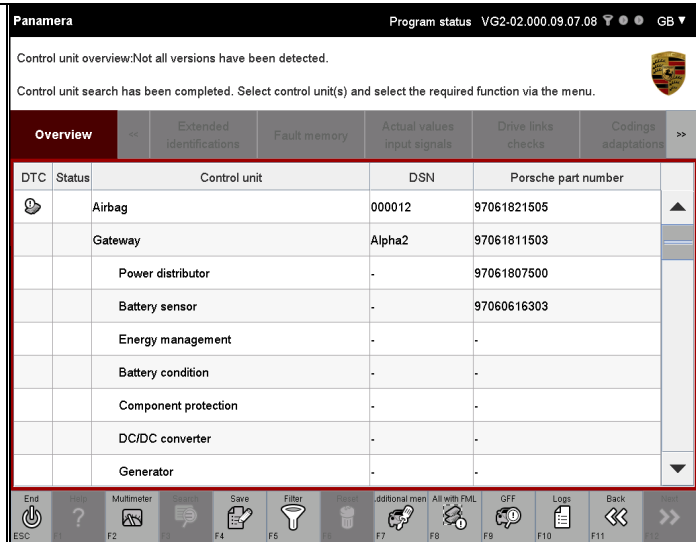
6. Display with previous selection (variant 1):

    Control units that were previously selected in the control unit list and are addressable are already preselected in the control unit overview.
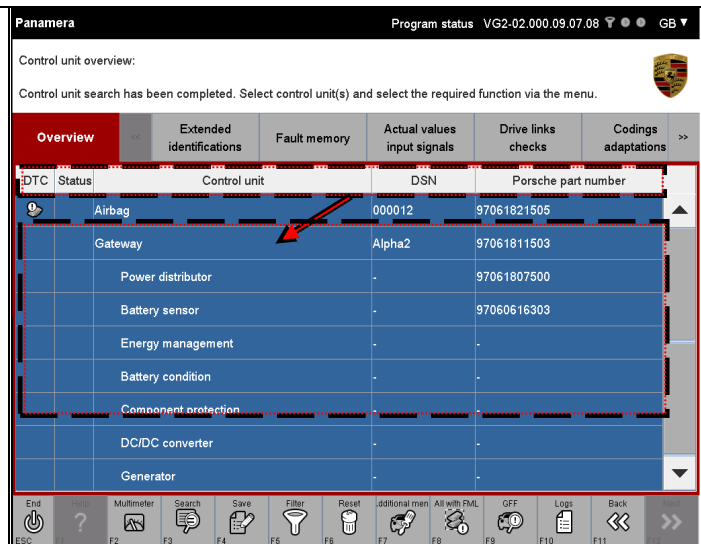
7. Display without previous selection (variant 2):

   All addressable control units are displayed. The control units are not marked.

Panamera			Program status VG2-02.000.09.07.08 GB ▼

Control unit overview:Not all versions have been detected.

Control unit search has been completed. Select control unit(s) and select the required function via the menu.

| Overview | << | Extended identifications | Fault memory | Actual values input signals | Drive links checks | Codings adaptations | >> |

DTC	Status	Control unit	DSN	Porsche part number
🐖		Airbag	000012	97061821505
		Gateway	Alpha2	97061811503
		Power distributor	-	97061807500
		Battery sensor	-	97060616303
		Energy management	-	-
		Battery condition	-	-
		Component protection	-	-
		DC/DC converter	-	-
		Generator	-	-

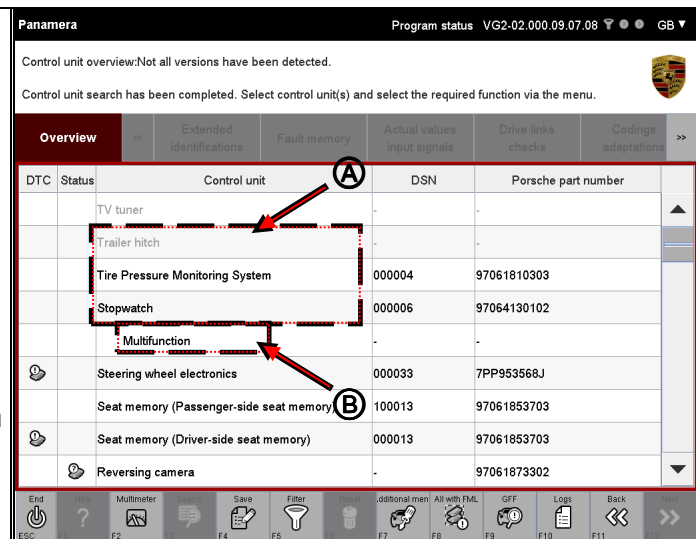| End | Help | Multimeter | Search | Save | Filter | Reset | Additional men | All with FML | GFF | Logs | Back | Next |
| ESC | F1 | F2 | F3 | F4 | F5 | F6 | F7 | F8 | F9 | F10 | F11 | F12 |

Note on display:

ℹ️

Control units for which no variant is detected are identified by a 🐖 icon in the `Status` column. The data of the basic variant is displayed for control units that are labelled in this way.

Control units that have a fault memory entry are identified by a 🐖 icon in the `DTC` column.

---

8. If it should not be possible to establish communication with a control unit, this is indicated by dashes in the list after the control unit name (A). These control units are greyed out and cannot be selected.

   Subcomponents of control units (so-called ECU-subcomponents) are shown indented below the respective control unit (B). You can work with these subcomponents in the same way as with the regular control units (also see additional information below).

Panamera			Program status VG2-02.000.09.07.08 GB ▼

Control unit overview:Not all versions have been detected.

Control unit search has been completed. Select control unit(s) and select the required function via the menu.

| Overview | << | Extended identifications | Fault memory | Actual values input signals | Drive links checks | Codings adaptations | >> |

DTC	Status	Control unit	DSN	Porsche part number
		TV tuner	-	-
		Trailer hitch	-	-
		Tire Pressure Monitoring System	000004	97061810303
		Stopwatch	000006	97064130102
		Multifunction	-	-
🐖		Steering wheel electronics	000033	7PP953568J
		Seat memory (Passenger-side seat memory)	100013	97061853703
🐖		Seat memory (Driver-side seat memory)	000013	97061853703
🐖		Reversing camera	-	97061873302

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| End | Help | Multimeter | Search | Save | Filter | Reset | Additional men | All with FML | GFF | Logs | Back | Next |
| ESC | F1 | F2 | F3 | F4 | F5 | F6 | F7 | F8 | F9 | F10 | F11 | F12 |

Note on display of subcomponents

If a higher-order control unit has subcomponents and you select a higher-order control unit and then change to a different function group or function, all subcomponents are implicitly selected as well.

However, if you mark a subcomponent or several subcomponents and then change to another function group or function, any further action will be performed only for this selection.

Example:

You select the control unit `Gateway` and change to another function group. In addition to the main control unit `Gateway`, the following subcomponents are then also displayed in this function group:

```
Battery condition,
Main fuse box,
Intelligent battery sensor,
Electric energy management (eEM)
```

In contrast, if you have selected only the subcomponent `Intelligent battery sensor` and change to another function group, only this element is made available for a further action in this function group.

Next steps

9. Now select the control units for which you would like further information from the list of control units.

   If you would like to deselect a selected control unit again, click in the corresponding line once more (A).

   The complete selection can be cancelled again by pressing the <F6> button (B).

Notes on selectability of function groups

i
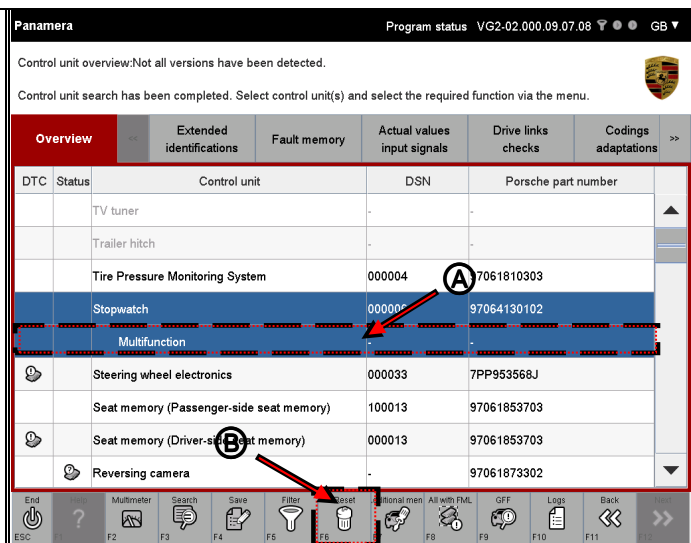
Selectability of function groups:

- All function groups are available if you have selected at least one control unit or one subcomponent.
- No function group can be selected if you have not made an explicit selection.

Notes on selectability of all control unit with fault memories

10. Press the <F8> button if you wish to select all control units that have a fault memory entry.

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8.1.3 Process without vehicle communication (special procedure for View mode)

If diagnosis if performed in View mode, there is no communication with the vehicle via a VCI. The variant detection process that normally takes place as part of the control unit search is omitted as there is no vehicle communication.

In order to nevertheless access the data on the respective control unit variant, you must select the variant in the control unit list. Proceed as follows:

Variant 1: Selection of a number of control units

1. Click in the `Control unit (A)` column for the respective control unit and select a control unit variant for each control unit via a drop-down menu (B).

    If you would like to have the basic variant displayed for the respective control unit, select the first/top entry in the drop-down menu.

    The complete selection can be cancelled again by pressing the <F6> button.
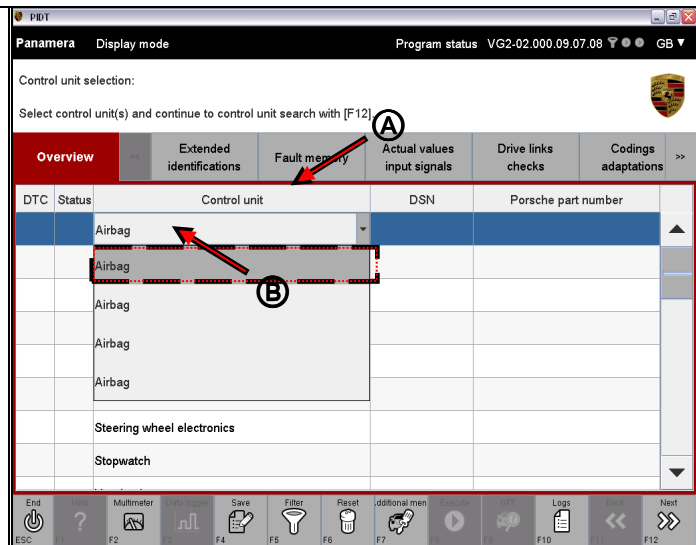
2. Then press the <F12> button.
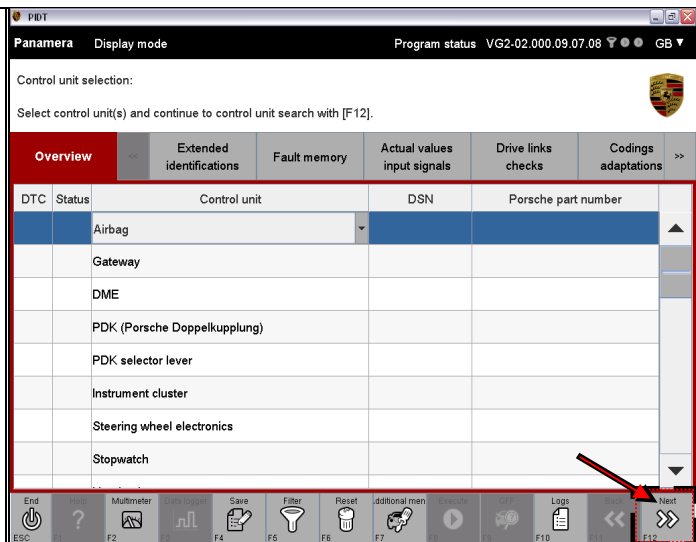
3. All selected control unit variants or control unit basic variants are displayed.
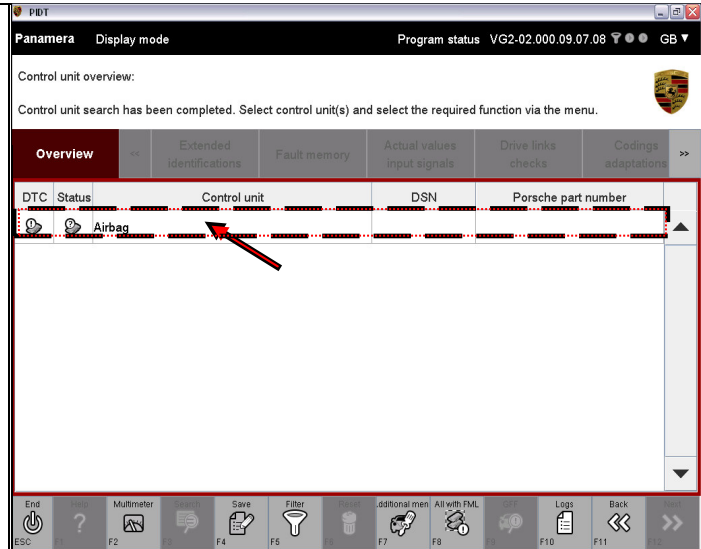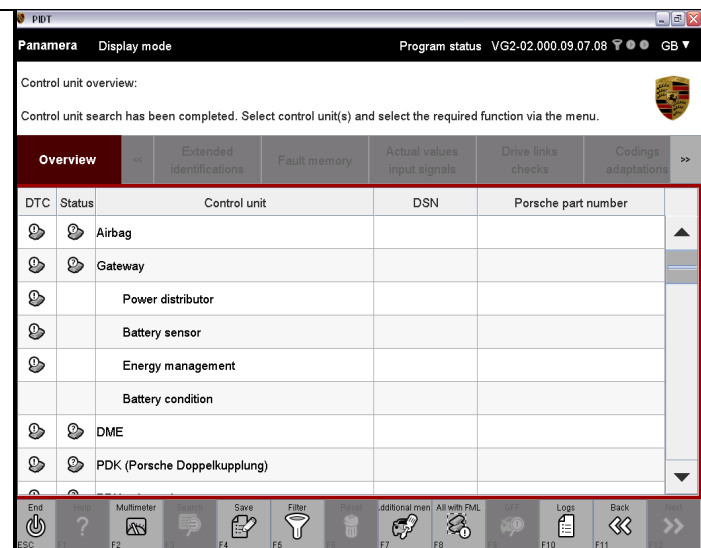

Variant 2: Selection of all control units

4. Do not select a control unit if you would like to have the basic variant displayed for all control units.

   Then press the <F12> button.
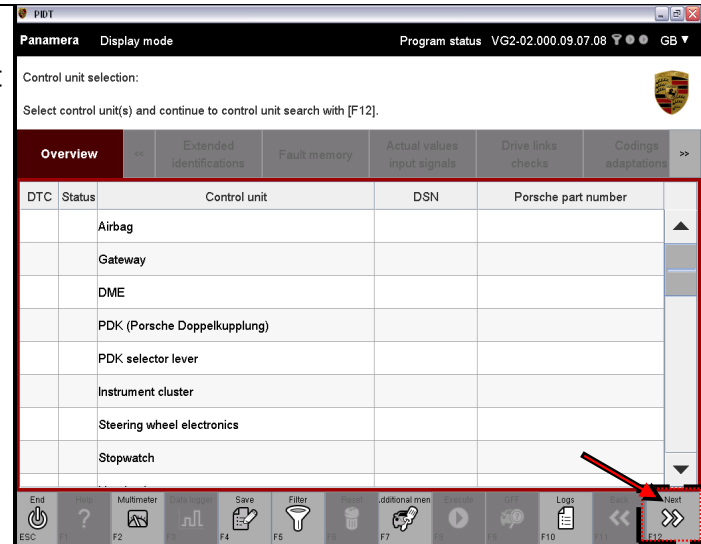
5. The control unit basic variants are displayed.

6. The functions described in section 8.2 ff are then available, with the following restrictions:

Restrictions:

No control unit communication is set up since no VCI is connected.
The following operating restrictions must therefore be observed:

- All fault memories are displayed in the Fault memory function group. Since each control unit has a fault memory entry, all control units are selected in the control unit overview by pressing the <F8> button.

- Default values are displayed instead of real actual values in the Actual values/Input signals function group.

- In function groups where requests can be sent by means of an input, no control unit response is shown in the response field.

8.2 Extended identifications

In the ⏐ Extended identification ⏐ function group, you can display additional identification information for a control unit or several control units. This section describes how you can display the extended identifications and also change the values of the extended identifications.

8.2.1 Action-specific buttons

Extended identification			
Button	**Label**	**Icon**	**Description**
F8	**Write**		The identifications are written for selected control units by pressing the <F8> button.

8.2.2 Display of extended identifications

1. Call up and display the list of installed control units and select the desired control units:
   ►see section 8.1

2. Select the function group ⏐ Extended identifications ⏐ in the menu bar

   The extended identifications are then displayed in a list for the selected control units.
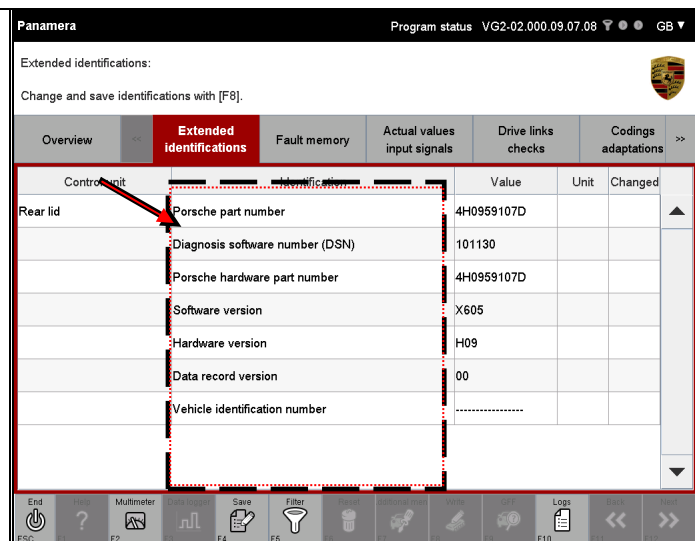
8.2.3   Changing and writing the extended identifications

1. Call up the display of extended identifications:
    ►see section 8.2.2.

2. If you would like to change the values of the identifications, first enter the new value of the corresponding identification in the value field (A).
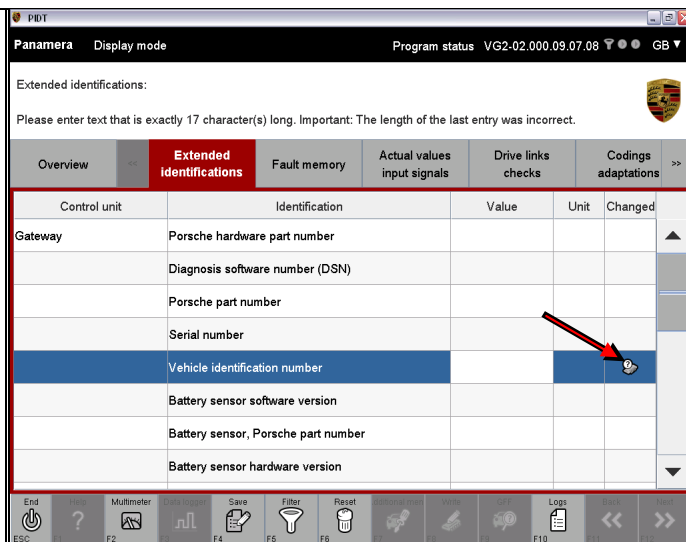
    Tips on input are provided in the Info area (B).

    If you have changed a value, this is indicated by the ✎ icon in the "Changes" column (C).
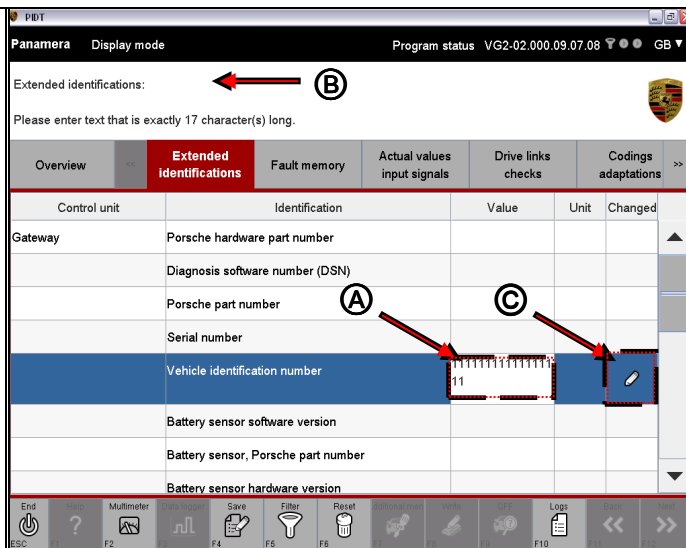
Note and tip:

3. If the value input is not correct, e.g. if the format of the value is not correct, this is indicated by the ⟲ icon in the `Changes` column and the original value is entered in the value field again.

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Restoring the original value:

If you would like to reverse your input, there are two possibilities:

- Enter the original value of the identification in the value field again. The ✐ icon next to the value field remains in this case.
- Select the |Overview| function group, select the desired control unit again and call up the list of extended identifications once more by selecting the |Extended identification| function group again. All value changes that you have made are discarded.

Next steps:

4. After you have changed the values of the identifications, press the <F8> button to write the changed values.

After writing:

5. If a value for an identification is not written successfully, this is indicated by the ⊕ icon in the `Changes` column.

   If it is not possible to read the full message text in the information area due to lack of space, you can display this by clicking on `Details` (B).

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Details of error description:

In some cases, the values are checked only when the identifications are written, e.g. if the texts are too long. Information on the reason why it was not possible to write the data is displayed in the information area after display of the permitted input value.

The information area is updated only after changing the selection of the identification value marked with an error icon.

Example: If an identification value with an error is already selected, the error description is not displayed directly. The error reason is displayed in the Info area only after this line has been deselected, e.g. by selecting a different entry, and then selected again.

Some values of the extended identifications are not written in the current status of the control unit display even though no problems are indicated. The reason for this is that the control unit has responded positively to a value request but has not written the value. This may be due to a flash memory problem of the control unit, for example.

In addition, there are also identifications for which the value is defined by the runtime system. This is the case for some date information, for example. The date can be changed, but a different value, e.g. the current date, is written.

8.3 Fault memory

This section describes how to display the fault memories of a number of control units. It also describes how you can delete the individual fault memory contents of a control unit and how you can display the environmental data for a fault memory entry or several fault memory entries.

8.3.1 Action-specific buttons

Fault memory			
Button	**Label**	**Icon**	**Description**
F8	**Delete fault memory**		A previously selected fault memory is deleted by pressing the <F8> button. A system query then asks for confirmation by the user.
Decision question			
Button	**Label**	**Icon**	**Description**
F11	**No**		By pressing the <F11> button, you cancel an action with a confirmation query, e.g. you do not wish to delete a fault memory as originally specified. The <F11> button shown here is displayed only in combination with the form of the <F12> button shown below.
F12	**Yes**		By pressing the <F12> button, you confirm an action with confirmation query, e.g. you wish to delete a fault memory. The <F12> button shown here is displayed only in combination with the form of the <F11> button shown above.

8.3.2 Icons

Display of a fault memory entry	
Icon	**Description**
	Task: Display of a critical fault. This icon indicates faults that affect driving readiness and necessitate a workshop visit. Priority 1: A fault is present that has a significant influence on vehicle availability. The vehicle can then no longer be driven. Check the elements marked by the icon and rectify the fault.

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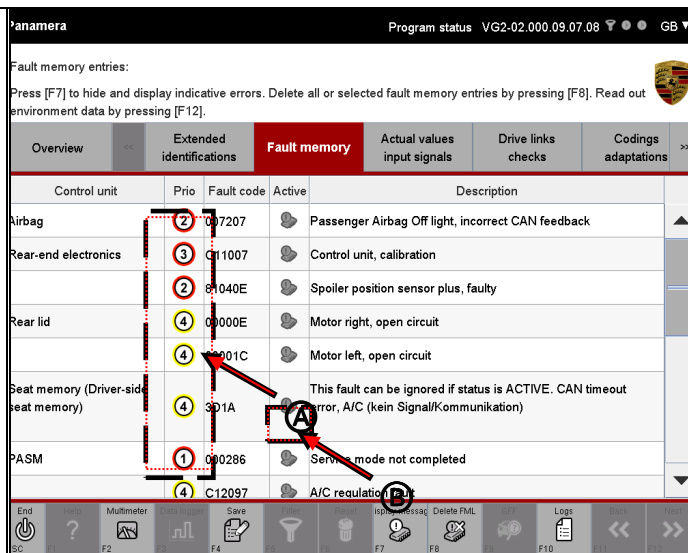| Display of a fault memory entry	
Icon	**Description**
②	Task: Display of a critical fault. This icon indicates faults that affect driving readiness and necessitate a workshop visit. Priority 2: A fault is present that requires an immediate workshop visit.
③	Task: Display of a serious fault. This icon indicates faults that require a service appointment in the workshop. Priority 3: A fault is present that does not require an immediate workshop visit, but can be combined with a service appointment.
④	Task: Display of a serious fault. This icon indicates faults that require a service appointment in the workshop. Priority 4: A fault is present that leads to display of a recommended action before the start of a journey. The vehicle availability may be restricted.
⑤	Task: Display with information character. This icon identifies faults that are due to wear. Priority 5: A fault is present that does not influence vehicle availability or a fault is present that does not have any relevance for system repair for the After Sales Service. Display of the fault is intended to assist you in fault rectification and fault analysis in the After Sales Service.
⑥	Task: Display with information character. This icon identifies faults that are due to wear. Priority 6: A fault is present that influences the wear condition of the vehicle or individual components and is therefore relevant for the After Sales Service.
⑦	Task: This icon represents general information. Priority 7: This indicates a fault that influences a comfort function but does not have any influence on vehicle availability and is not relevant for system repair in the After Sales Service.
⑧	Task: This icon represents general information. Priority 8: General information

8.3.3 Display of fault memory

1. Call up and display the list of installed control units and select the desired control units:
   ►see section 8.1

2. Select the function group Fault memory in the menu bar. A fault memory list of the control unit is displayed.

   The severity or priority of the fault is indicated by different traffic light symbols (see section 8.3.2).

   If a fault memory is active, this is indicated by the 🐌 icon (B).

   If a fault memory entry is present but is inactive, this is indicated by the 🐌 icon.

i The fault memory list is updated cyclically. This means that individual fault memories can change the activity status.

8.3.4   Display of the environmental data

1. Select the ‾Fault memory‾ function group and call up the display of the fault memory content:
    ►see section 8.3.3.

2. Mark the corresponding fault code for which you would like to display the environmental data (A).

    If you would like to deselect a selected fault code again, click in the corresponding line again. The complete selection can be cancelled again by pressing the <F6> button.

    Then press the <F12> button (B).
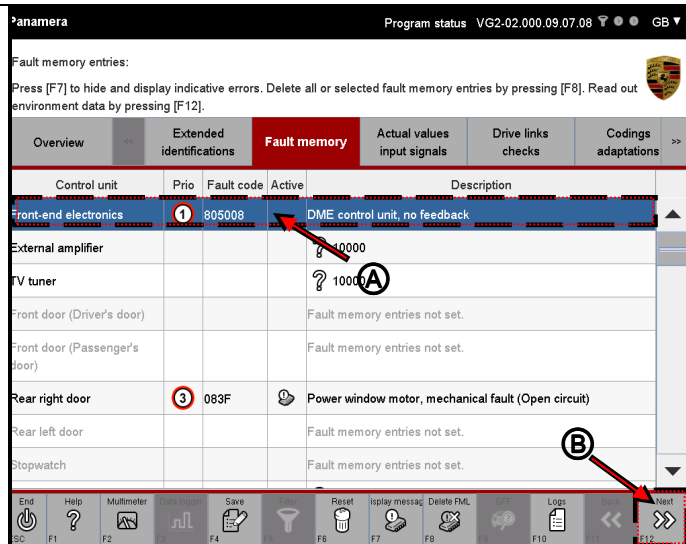
3. The environmental data of the fault memory entry is then displayed.
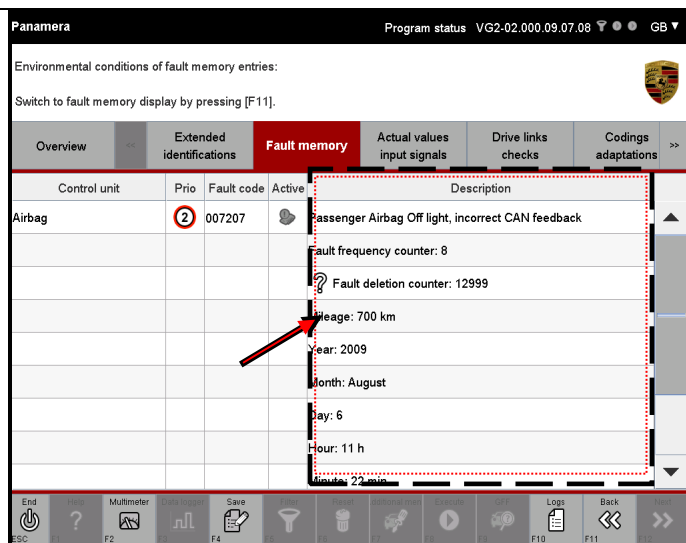
4. You can return to the fault memory list again by pressing the <F11> button.

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8.3.5 Deleting fault memory entries

1. Select the Fault memory function group and call up the display of the fault memory content:
   ►see section 8.3.3.

2. To delete an entry, first mark the corresponding fault code.

   If you would like to deselect a selected fault code again, click again in the corresponding line.

   The complete selection can be cancelled again by pressing the <F6> button.

   If you would like to delete all the fault memory entries of the displayed control units, do not make any selection.
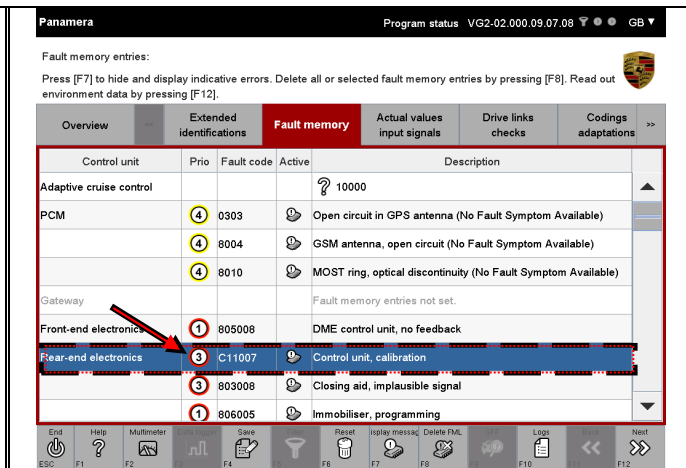
3. Then press the <F8> button.
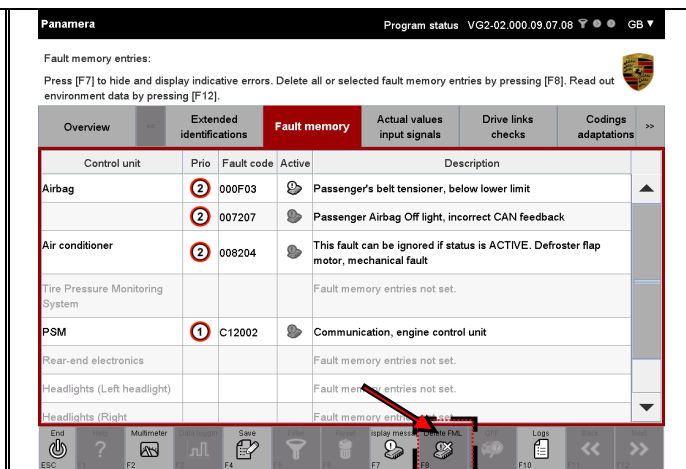
4. A selection is displayed in which you must confirm deletion of the selected fault memory entries (A). You have the following selection options (B):
    - Cancel the operation with <F11>. You then return to the list of fault codes.
    - Confirm with <F12> that you wish to delete the fault code.
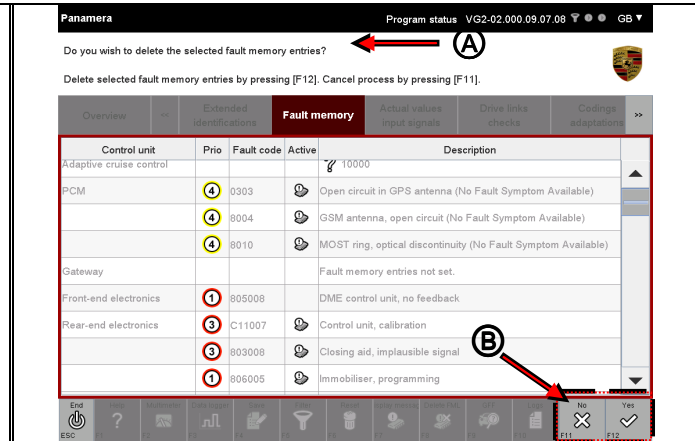
5. If you would like to delete the fault code, confirm the query by pressing the <F12> button. The selected fault memory is then deleted. Fault memory entries which could not be deleted are displayed in the Info area.
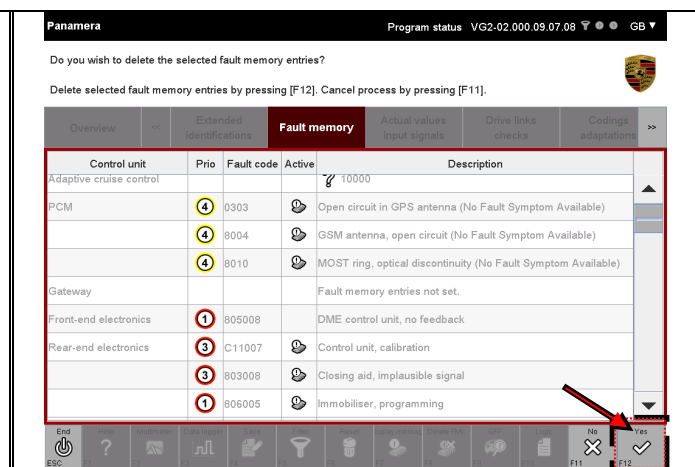
After deletion:

| i | An updated list of fault codes is displayed automatically after deletion of the fault code (see next screenshot).
Please note:
If the conditions for fault display still exist, it may occur that the fault is displayed again after deletion due to cyclical reading of the fault memory. |

6. Updated list of fault memories.
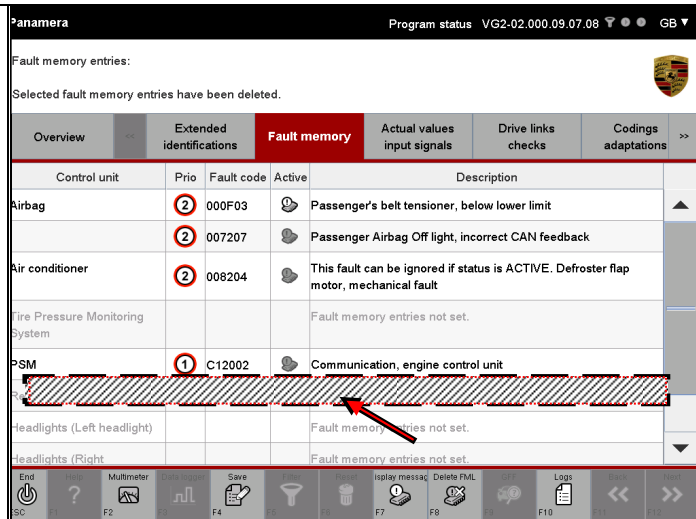
| i | If an error has occurred when deleting a fault memory, the application will inform you about this in the Information area. |

8.4   Actual values/Input signals

This section describes how to display the actual values and input signals of control units. It also describes how you can change the display form of the values (current value, minimum, maximum). There is also a description of how you can graphically display the measured values using the data logger.

## 8.4.1   Action-specific buttons for this function group

Actual values / Input signals / Data logger			
Button	**Label**	**Icon**	**Description**
F3	**Data logger**		Pressing the <F3> button calls up the data logger screen.
F3	**Print**		The data logger graphs are printed out by pressing the <F3> button.
F8	**Start**		Pressing the <F8> button starts data recording by the data logger.
F8	**Stop**		Pressing the <F8> button stops data recording by the data logger.
F8	**Value**		Pressing the <F8> button changes the value display to the current actual value.
F8	**Minimum**		Pressing the <F8> button changes the value display to the current minimum value.
F8	**Maximum**		Pressing the <F8> button changes the value display to the current maximum value.

8.4.2   Displaying measured values

1.   Call up and display the list of installed control units and select the desired control units:
     ►see section 8.1

2. Select the function group Actual values/Input signals in the menu bar.

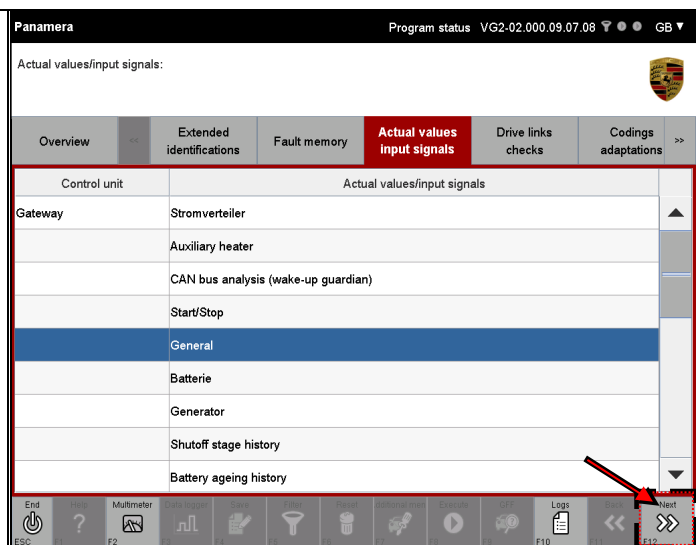   A list of the measured values and input signals for the selected control units is displayed.
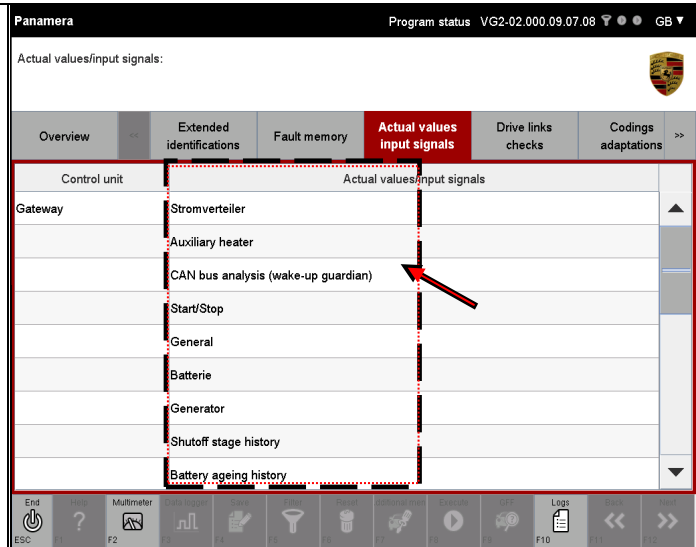
3. Mark the measured values and input signals in the list for which you would like to display the values.

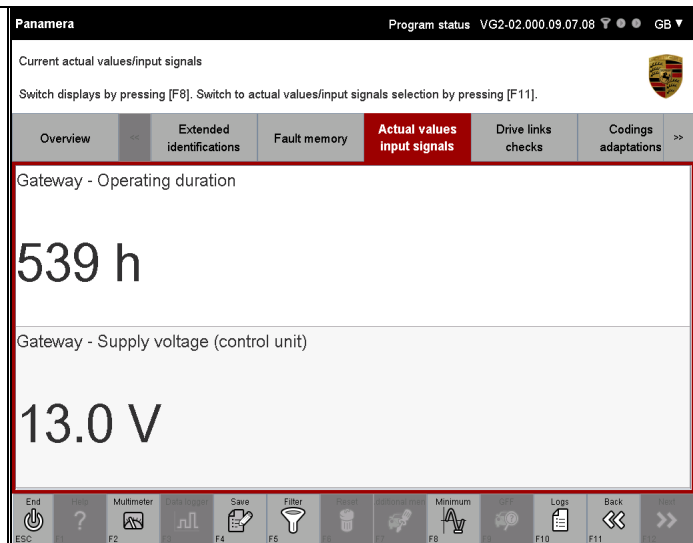   If you would like to deselect a selected input signal again, click once more in the corresponding line.

   The complete selection can be cancelled again by pressing the <F6> button.
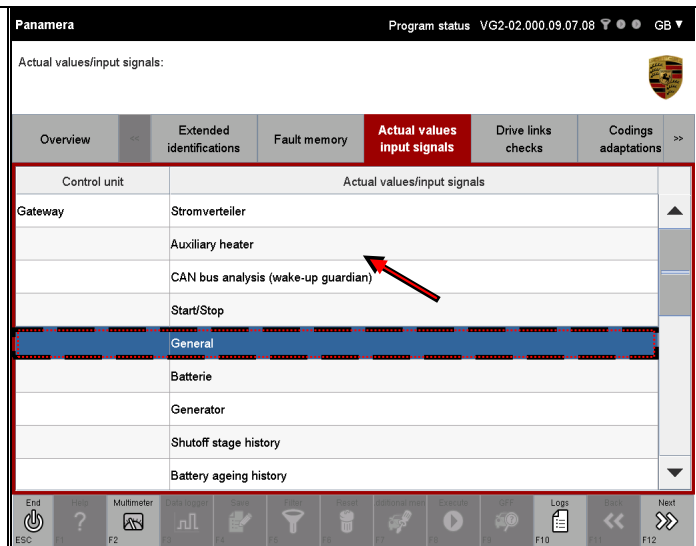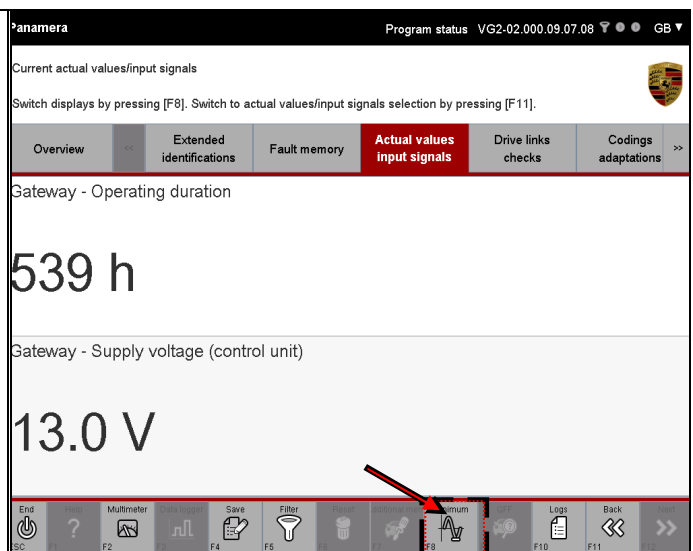

4. Then press the <F12> button.

5. A list of the current measured values is displayed.
    The values are read continuously.

Panamera   Program status VG2-02.000.09.07.08 GB ▼

Current actual values/input signals

Switch displays by pressing [F8]. Switch to actual values/input signals selection by pressing [F11].

| Overview | << | Extended identifications | Fault memory | Actual values input signals | Drive links checks | Codings adaptations | >> |

Gateway - Operating duration

539 h

Gateway - Supply voltage (control unit)

13.0 V

End | Help | Multimeter | Data logger | Save | Filter | Reset | additional meas | Minimum | OFF | Logs | Back | Next
ESC | | F2 | | F4 | F5 | | | F8 | | F10 | F11 |

---

6. You can select the following display modes for measured values with the <F8> button:

    - ![Value icon] Value
      This selection displays the currently read actual value.

    - ![Minimum icon] Minimum
      This selection displays the minimum value of the read values.

    - ![Maximum icon] Maximum
      This selection displays the maximum value of the read values.

Panamera   Program status VG2-02.000.09.07.08 GB ▼

Current actual values/input signals

Switch displays by pressing [F8]. Switch to actual values/input signals selection by pressing [F11].

| Overview | << | Extended identifications | Fault memory | Actual values input signals | Drive links checks | Codings adaptations | >> |

Gateway - Operating duration

539 h

Gateway - Supply voltage (control unit)

13.0 V

End | Help | Multimeter | Data logger | Save | Filter | Reset | additional meas | Minimum | OFF | Logs | Back | Next
ESC | | F2 | | F4 | F5 | | | F8 | | F10 | F11 |

What does "Minimum" or "Maximum" mean here?

The following relationship is valid on the basis of the physically supplied values of the respective addressed control unit:

- The minimum is either the smallest lexical value (in a character string), the smallest number (for a number) or FALSE (for Boolean values). The validity range and reference variable is the duration of the initiated measurement.

- The maximum is either the largest lexical value (in a character string), the largest number (for a number) or TRUE (for Boolean values). The validity range and reference variable is the duration of the initiated measurement.

- The value is the current lexical value (in a character string), the current number (for a number) or TRUE or FALSE (for Boolean values).

Value updates:

The value display for the elements "Value", "Minimum" or "Maximum" is updated cyclically every 250 milliseconds.

Depending on the selected display mode, the column heading for the Value column changes to `Value`, `Minimum` or `Maximum`.

8.4.3   Different display types (display of 1, 2, 3, 4 and more values)

i   Depending on the number of parameters to be displayed, the display automatically changes to an enlarged display mode.
The following figures show how the display changes.
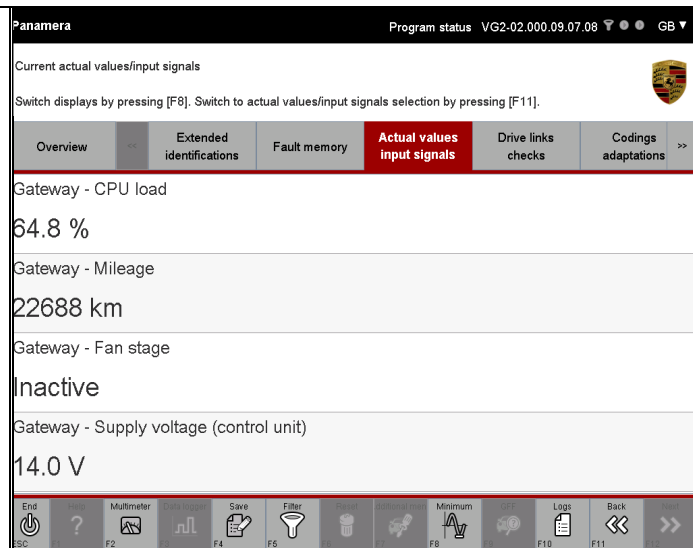
1. Display of **one** parameter.
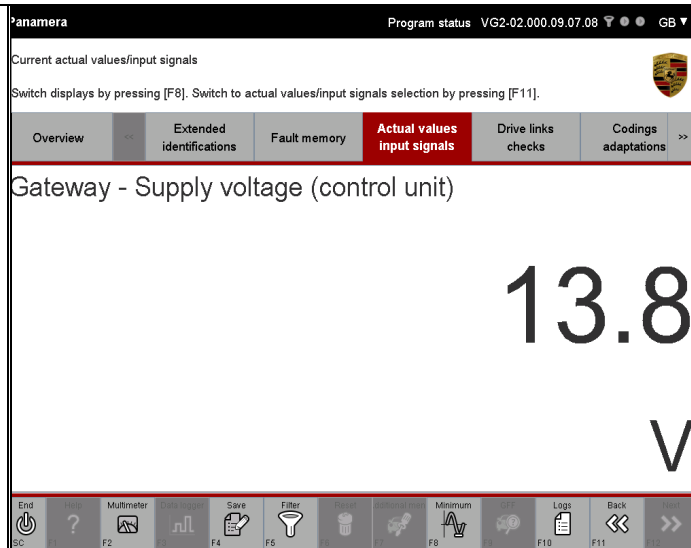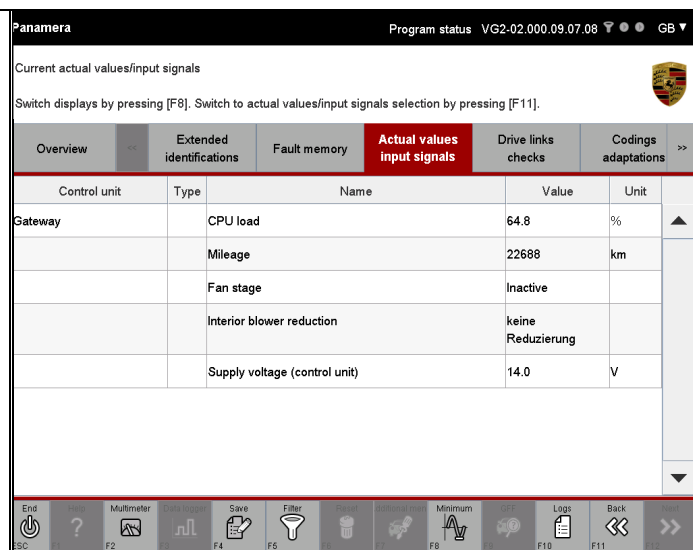

2. Display of **two** parameters.
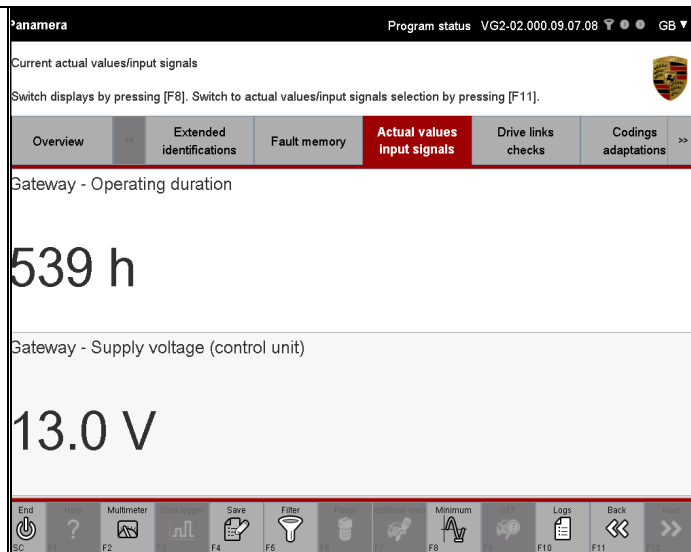
3. Display of **three** parameters.	Panamera — Program status VG2-02.000.09.07.08 — GB ▼ Current actual values/input signals Switch displays by pressing [F8]. Switch to actual values/input signals selection by pressing [F11]. Overview / Extended identifications / Fault memory / **Actual values input signals** / Drive links checks / Codings adaptations Gateway - CPU load **64.6 %** Gateway - Operating duration **65535 h** Gateway - Supply voltage (control unit) **14.0 V** End / Multimeter / Save / Filter / Minimum / Logs / Back
4. Display of **four** parameters.	Panamera — Program status VG2-02.000.09.07.08 — GB ▼ Current actual values/input signals Switch displays by pressing [F8]. Switch to actual values/input signals selection by pressing [F11]. Overview / Extended identifications / Fault memory / **Actual values input signals** / Drive links checks / Codings adaptations Gateway - CPU load **64.8 %** Gateway - Mileage **22688 km** Gateway - Fan stage **Inactive** Gateway - Supply voltage (control unit) **14.0 V** End / Multimeter / Save / Filter / Minimum / Logs / Back
5. Display of **more than four** parameters.	Panamera — Program status VG2-02.000.09.07.08 — GB ▼ Current actual values/input signals Switch displays by pressing [F8]. Switch to actual values/input signals selection by pressing [F11]. Overview / Extended identifications / Fault memory / **Actual values input signals** / Drive links checks / Codings adaptations (see table below) End / Multimeter / Save / Filter / Minimum / Logs / Back

Table in screen 5:

Control unit	Type	Name	Value	Unit
Gateway		CPU load	64.8	%
		Mileage	22688	km
		Fan stage	Inactive	
		Interior blower reduction	keine Reduzierung	
		Supply voltage (control unit)	14.0	V

8.4.4   Data logger

The graphical representation of the data logger is an additional display form for measured values in the ⌐Actual values/Input signals¬ function group. The data logger can display several values simultaneously. The display mode is selected when the data logger is started. Detailed values can be read off at the cursor position by means of a marking cursor (marker). The time and value axes are automatically scaled; they can also be manually scaled. Measured values recorded by the data logger can be saved and then displayed graphically again later on by means of the log selection `Measured value log`.

This section describes how to display the measured data of actual values using a data logger. It also describes how you can change the display form of the measured values and also change the displayed value range. The section also describes how you can save the recorded data of the data logger in a measured value log.

8.4.4.1   Calling up the data logger and starting recording

Note: Maximum number of measured curves

The following conditions apply for the maximum number of measured curves that can be displayed depending on the display mode:

- `All measured values in one graph`: 4 curves
- `Individual graphs under each other`: 8 curves, whereby 4 curves are displayed at the same time on one page
- `Two graphs next to each other`: 8 curves, whereby 4 curves are displayed at the same time on one page

Note on colour scheme:

If you have selected the display type `All measured values in one graph`, each measured value curve is displayed in a different colour to permit differentiation of the measured values. A specific colour can be assigned to each curve in the control application:

►see section 6.3.4.2

1. Select the function group ⌐Actual values/Input signals¬ in the menu bar and select the measured variables that you would like to display in a graph:
    ►see section 8.4.2 and section 8.4.3.

2. The working screen first displays
the parameters for which you have
selected the measured values.
Now select the parameters that
you wish to display graphically (A).

Press the <F3> button (B).
Selection options are then offered
in a window above the <F3>
button in which you can select the
graph form. The following variants
are available:
   - `All measured values in`
     `one graph`
   - `Individual graphs under`
     `each other`
   - `Two graphs next to each`
     `other`

In the example, the option `Two`
`graphs next to each other`
was selected.
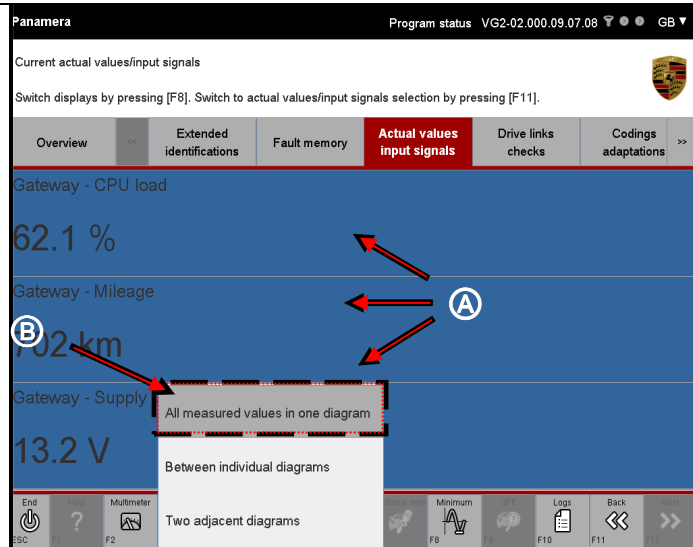
3. Press the <F8> button to start
data logger recording.
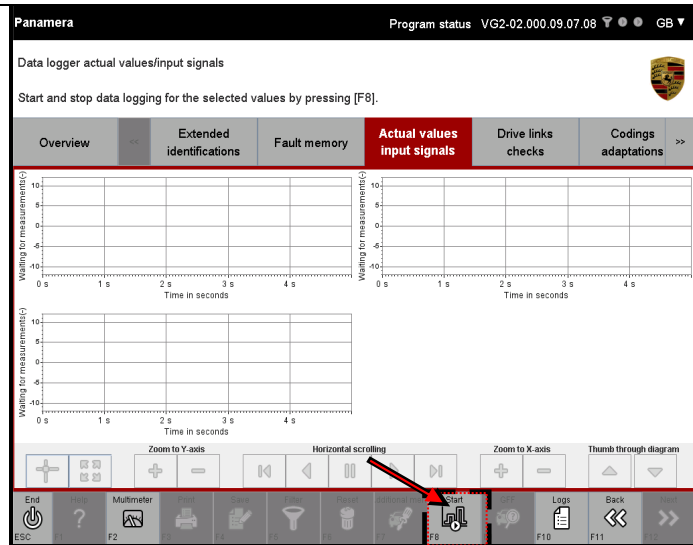
4. The data of the selected parameters is now read out of the control units and displayed
graphically. If the right edge of the graph is reached upon insertion of a measured
value, the graph is shifted to the left by a certain percentage of the visible screen width.

Note on axis labelling/units

- The X-axis label is always time. The time values are the seconds since the start of measurement.
- The Y-axis label depends on the selected measured variable

Note: Display in the title bar

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A ⊙ icon is displayed in the title bar as long as data logger recording is active.

The following actions are possible:

Variant 1: Exit data logger during recording

5. You can exit the data logger during recording in order to perform actions in other function groups. The <F3> button is then active and has the label `Data logger`.
If you would like to call up the data logger again from another function group, press the <F3> button (Data logger).
Please note the instructions about adding new measured values to the measured value recording of the data logger:
►see section 8.4.4.2

Variant 2: Stop recording

6. You can stop measured value recording in the data logger again:
►see section 8.4.4.3

8.4.4.2   Adding new measured values to the measured value recording

If you have exited the data logger with running measured value recording, the <F3> button (Data logger) is activated in the control bar.

The following restrictions apply if you wish to add new measured values to the measured value recording:

Note: System behaviour if the selection is not changed

If you have not changed the measured value selection, i.e.

- you have not selected any additional measured values for measured value recording or
- you have not deselected any existing measured values

and you then call up the data logger again by pressing the <F3> button, the currently running data logger will be displayed again.

Note: System behaviour if the selection is changed

If, on the other hand, you have changed the selection, e.g. by

- adding new measured values to the current selection
- selecting a different set of measured values of a different actual value

and then call up the data logger again by pressing the <F3> button, measured value recording of the old data logger is stopped and discarded.
A new data logger is then displayed instead with the new measured values of the current selection.

You must explicitly start measured value recording again by pressing the <F8> button (Start).

For information on starting recording in the data logger:
►see section 8.4.4.1

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8.4.4.3   Stopping recording

Note

It can occur that measured value recording is stopped by an action performed in another function group, e.g. in the | Programming | function group.

You can recognise that the data logger has stopped by the fact that ...

- ...measured value recording is not running
- ...the START/STOP button <F8> has the label START.

---

1. Call up the data logger:
    ►see section 8.4.4.1

    Or:

    If you have previously exited the data logger while measured value recording is running and have not changed the selection, press the <F3> button (data logger). Also refer to the information in section 8.4.4.2.

2. Stop measured value recording by pressing the <F8> button.
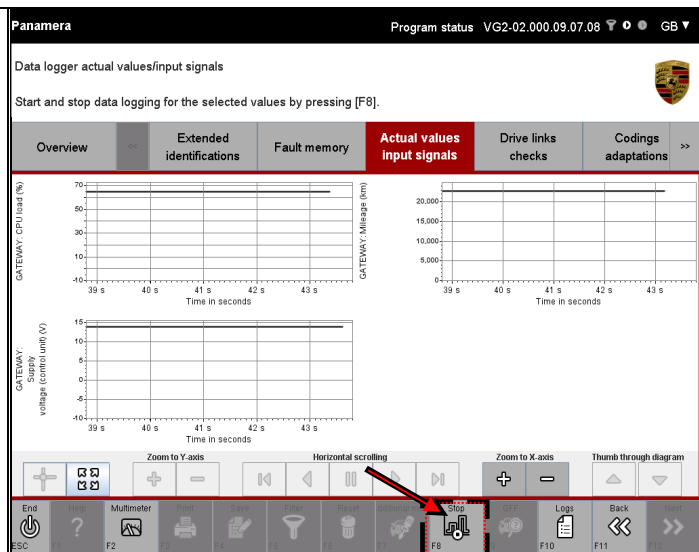
8.4.4.4   Possible actions / Icons

Various options are available that allow you to change the display representation of the graphs. These options can be selected by pressing the respective button:

Icon	Description
	Marker (see section 8.4.4.5)
	Delete marker (see section 8.4.4.6)
	Auto-scaling: The display range of the coordinate system is adapted to the value range of the curve.
	Scaling the x- or y-axis: The display range of the coordinate system is enlarged.
	Scaling the x- or y-axis: The display range of the coordinate system is reduced.
	Horizontal scrolling: The display range jumps to the value x=0.
	Horizontal scrolling: The display range scrolls to the left.
	Horizontal scrolling: The display range scrolls quickly to the left.
	Horizontal scrolling: Stops scrolling
	Horizontal scrolling: The display range scrolls to the right.
	Horizontal scrolling: The display range scrolls quickly to the right.

Icon	Description
▷❙	Horizontal scrolling: The display range jumps to the last recorded value.
△	Page graphs: Page to next graph.
▽	Page graphs: Page to previous graph.

Table 6: Data logger functions

8.4.4.5   Set marker

> ℹ️ It is possible to set a marker and display the x and y values of a point on the curve.
>
> If you have chosen a representation in which several graphs are displayed, the marker that you have set in the desired graph is automatically transferred to all other graphs at the same x-axis intercept.

1. Click on the marker button (represented by the ✛ icon).
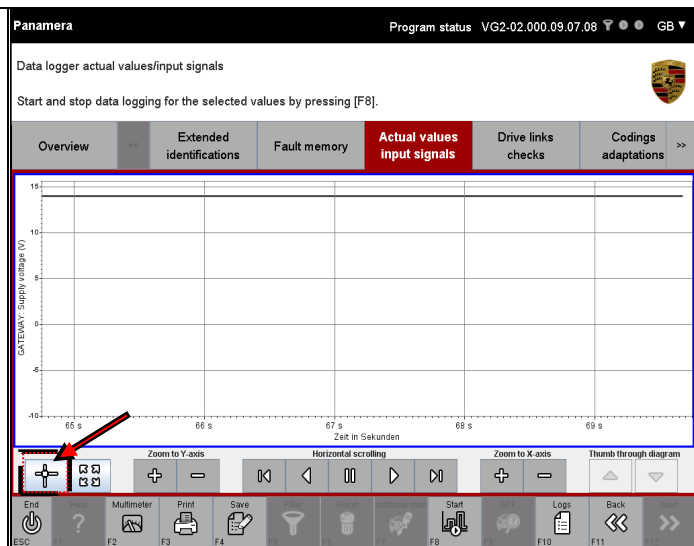
2. Then mark a point on the curve (the x-axis intercept is decisive here).
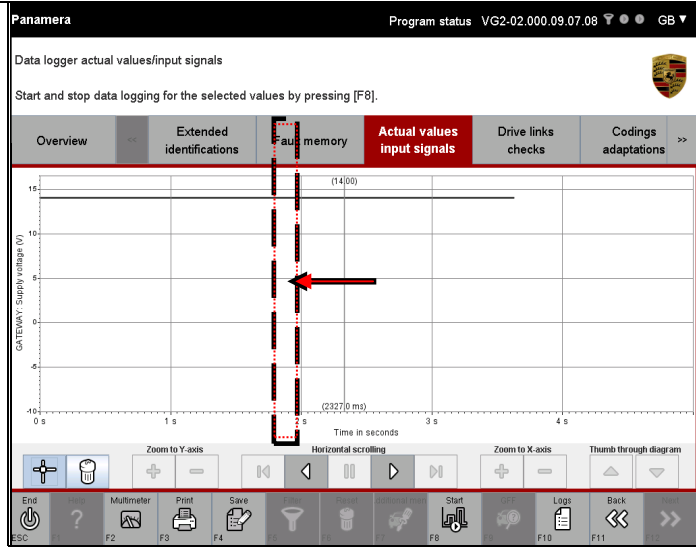
3. The x and y values of the intersection point of the marker axis and recorded curve are output as a numerical value at the marker.
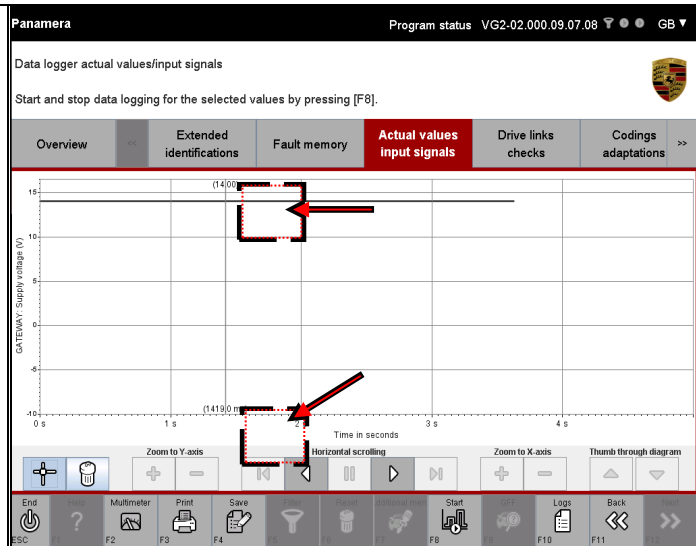
Move marker:	

	You can move the marker in x-direction with the scroll buttons. The following navigation options are available:

◁	Marker is moved to left (-x).
▷	Marker is moved to right (+x).

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Note on setting and moving the marker in several graphs:

4. If you set the marker in one graph, the x-position will be transferred to the other graphs.

    If you then move the marker, it will be moved by the same amount in all other graphs.
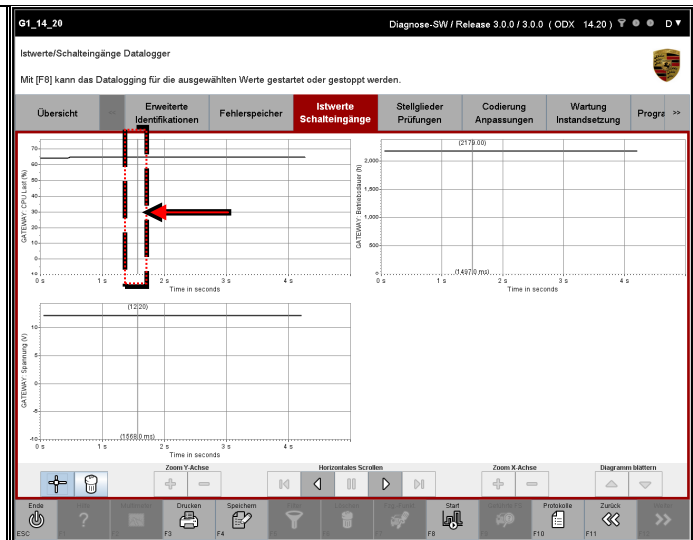
Next steps:

5. In order to end the marker function, press the marker button again (represented by the ✛ icon). You can then use the data logger in the usual way.

8.4.4.6   Delete marker

| i | You can delete a set marker again if wished – including all marker copies in other graphs. Do this as follows: |

1.   Call up the data logger and press the marker button:
     ►see previous section 8.4.4.5

2.   Press the "Delete marker" button
     (represented by the 🗑 icon).

     All set markers are deleted.

["

8.4.4.8   Permanently saving current measured value log

You can finally save the temporarily saved measured value log (see section 8.4.4.7) in the General Report Management function. The measured value log is zipped when saved.

1. Press the <F10> button.
   If it is not possible to select the button, first navigate to one of the function groups (e.g. Overview) and then press the <F10> button.

2. A button menu is displayed with a list of options.

   Select the log type `Measured value log`.
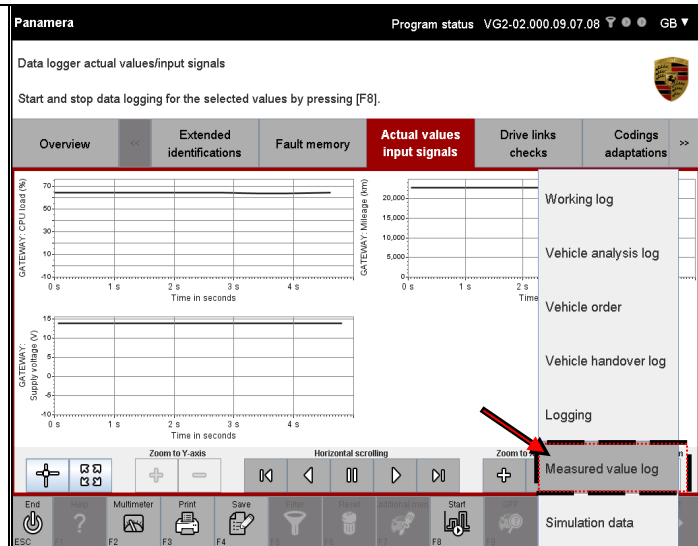
3. A list of the measured value logs is displayed. The current measured value log is at the top.

   Select the current measured value log, for example, by clicking in the corresponding line. This step is not necessary if it is already marked (A).

   Enter a name. A name is already suggested in the name field. You can change this name if wished (B).

   To save the temporarily stored measured value log under the name you have chosen, press the Save button (C).
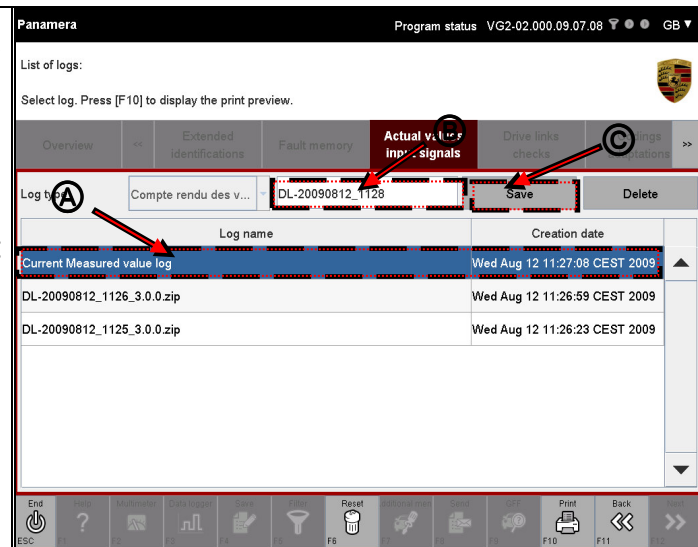
8.4.4.9 Retrieving and displaying saved measured value logs

In the General Report Management function, you can call up measured value logs that were created by the data logger in the |Actual values/Input signals| function group
(see section 8.4).

ℹ️

Note: Function reduction

Since only the measured value curve is displayed in the called-up data logger screen, it is not possible to start a new measured value recording in this screen. The <F8> is therefore greyed out.

For information on recording a new measured value curve:
►see section 8.4.4.1

ℹ️

Other possible actions

You can return to the General Report Management area again by pressing <F11>.
You can also jump directly to one of the other function groups by means of the menu bar. The data of the control units that are currently in the selection is then displayed.

You can print out the measured value log with <F3>:
►see section 8.4.4.10

1. Press the <F10> button.
   If it is not possible to select the button, first navigate to one of the function groups (e.g. Overview) and then press the <F10> button.

2. A button menu is displayed with a list of several options.
   Select the log type `Measured value log`.
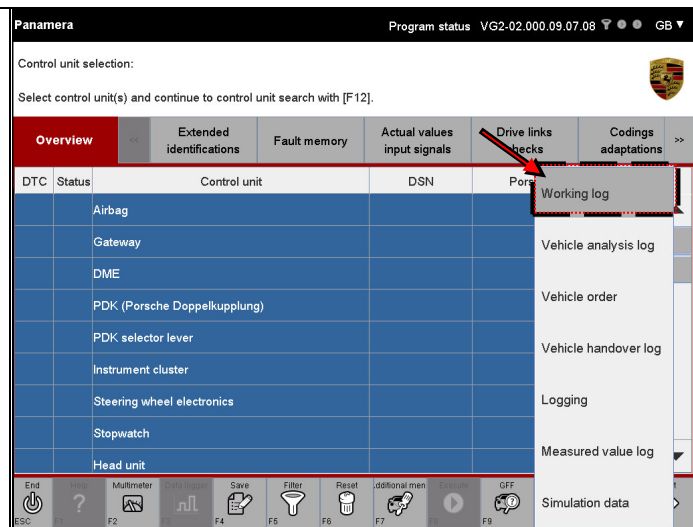
3. Select a measured value log from the list (A) and then press the <F10> button (B).
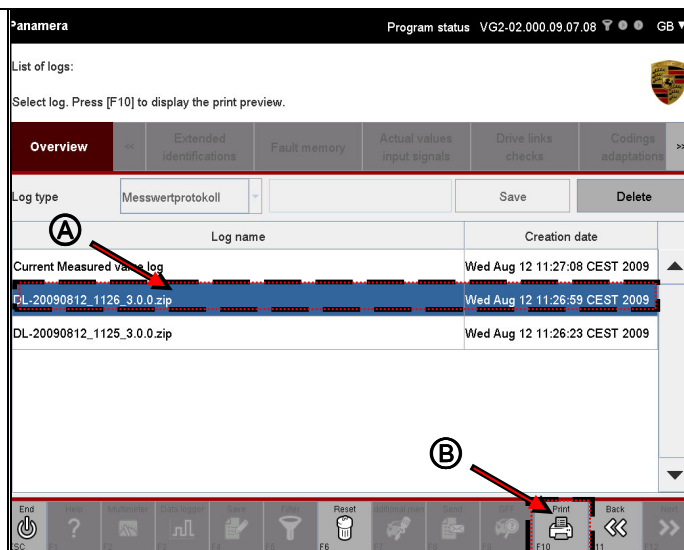
4. The measured value curve(s) are displayed in a function-reduced data logger (refer to introductory note of this chapter).

   In the logged data, you can now ...
   • ... use the scroll and marking functions of the data logger or
   • ... print out the log by means of <F3> (further information is provided in the following section 8.4.4.10).

8.4.4.10   Printing out graph(s)

Note on print dialogue:

Printout takes place immediately via the default printer of the operating system.

Notes on output format:

The printout format is DIN A4 landscape.

The number of graphs printed out per sheet corresponds to the number of graphs on the display, i.e.:

- If you have chosen the display mode `All measured values in one graph`, only one printout is produced.

- If you have chosen a display mode in which measured value recording takes place in several graphs, the same number of graphs is printed out on one sheet as the number of graphs shown on each display page. The graphs currently displayed on the screen are printed out in each case. If you would like to print out graphs that are displayed on the following screen page, you must first navigate to this page before you press the Print button.

Only the graph (consisting of marker if present, axis labels, units and measured value curve) is printed out in each case.

Prerequisite:

You can…:

- ...print out the current measured value log directly. Measured value recording must have been stopped beforehand (see section 8.4.4.3). The Print button is available only after this.

- ...retrieve a temporarily stored or saved measured value log via the General Report Management function and then display this (see section 0) and print it out on the data logger interface.

1. Press the <F3> button to print out the graphs.
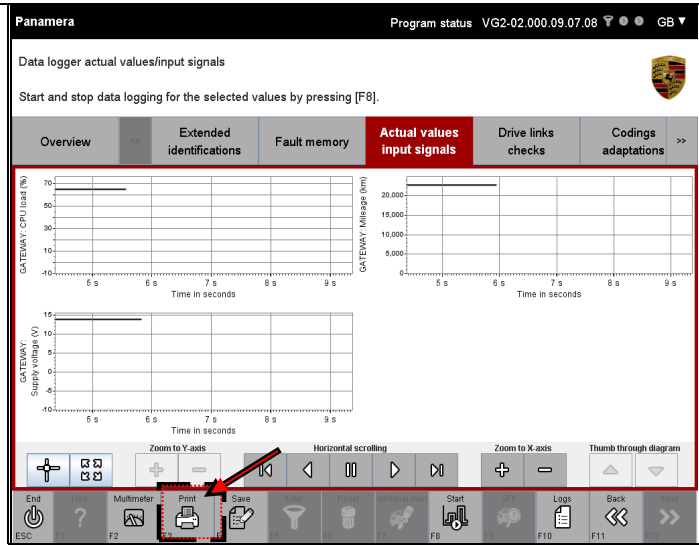
8.5 Drive links/Tests

This section describes how to display the drive links of a number of control units. It also describes how you can change the parameters of these drive links and how you can run test routines for individual control units.
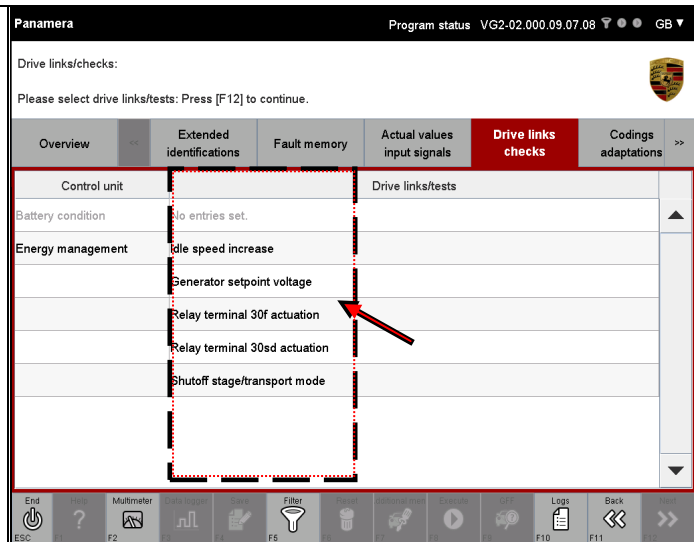
8.5.1 Action-specific buttons for this function group

Drive links / Tests			
Button	**Label**	**Icon**	**Description**
F5	**Measured values**		Measured values can be selected in an additional selection screen by pressing the <F5> key. These values are then displayed additionally in the result area of the drive links/routines.
F6	**Return**		Control over a selected drive link is returned to the corresponding control unit by pressing the <F6> button. The parameter of the drive link is then determined by the control unit.
F7	**Freeze**		The current routine is stopped by pressing the <F7> button. Pressing the <F7> button again starts the routine again.
F8	**Start**		Pressing the <F8> button starts a previously selected **test routine**.
F8	**Execute**		Pressing the <F8> button sets a previously selected **drive link**.
F8	**Stop**		Pressing the <F8> button starts a previously selected test routine.
F9	**Reset**		Pressing the <F9> button resets the current values to a default value.

8.5.2   Display of drive links/tests

1. Call up and display the list of installed control units and select the desired control units:
►see section 8.1

2. Select the function group Drive links/Tests in the menu bar. A list of the drive links of the control unit is displayed.

Panamera		Program status	VG2-02.000.09.07.08	GB ▼

Drive links/checks:

Please select drive links/tests: Press [F12] to continue.

Overview	<<	Extended identifications	Fault memory	Actual values input signals	**Drive links checks**	Codings adaptations	>>

Control unit	Drive links/tests	
Battery condition	No entries set.	
Energy management	Idle speed increase	
	Generator setpoint voltage	
	Relay terminal 30f actuation	
	Relay terminal 30sd actuation	
	Shutoff stage/transport mode	

End	Help	Multimeter	Data logger	Save	Filter	Reset		Execute	GPS	Logs	Back	Menu
ESC	F1	F2	F3	F4	F5					F10	F11	

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8.5.3 Changing parameters / Calling up test routines

1. Call up and display the list of drive links and routines:
    ►see section 8.5.2

2. Mark the drive link in the list for which you would like to change the value or for which you would like to call up a test routine (A).

    If you would like to deselect a selected drive link again, click in the corresponding line again.

    The complete selection can be cancelled again by pressing the <F6> button (B).
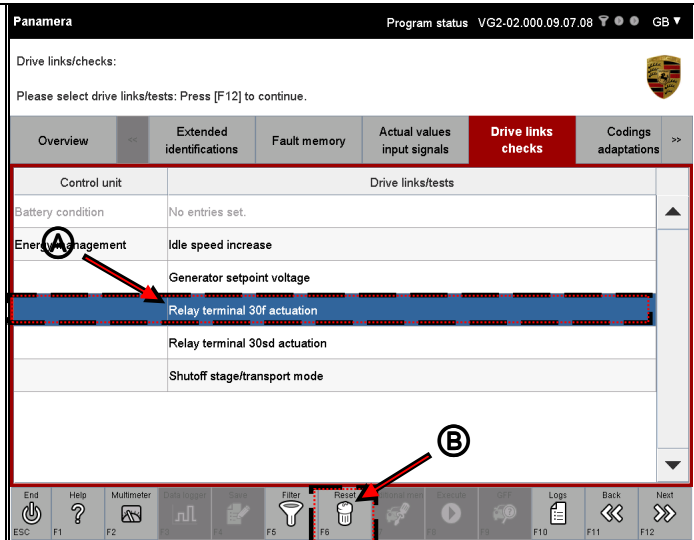
3. Then press the <F12> button.
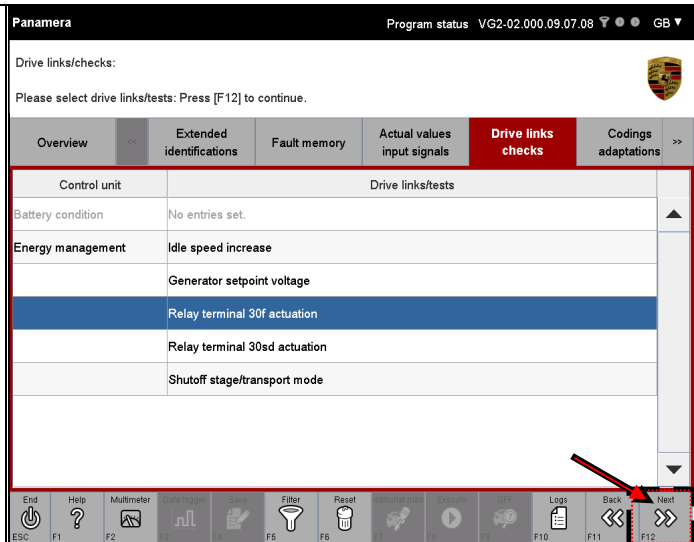
4. The available editable values for the selected drive link or test routines are displayed in the top part of the current screen.
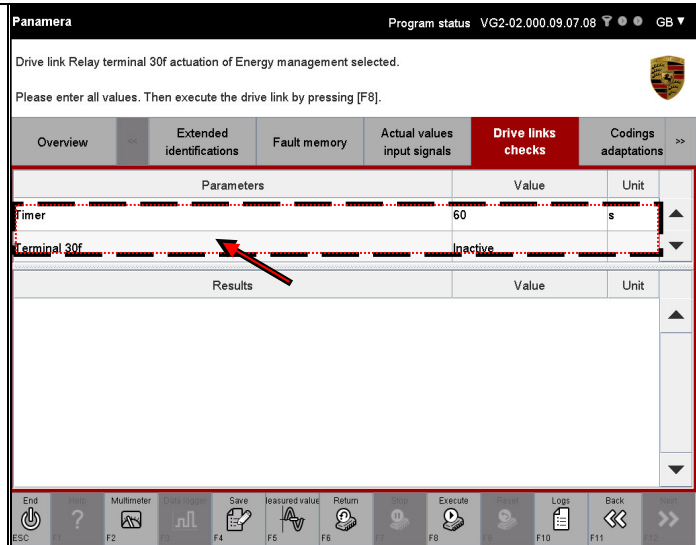
Variant 1: Changing the parameter by means of a drop-down menu

5. If the test routine should have fixed values, you can select the desired value from a menu by clicking in the corresponding value field.
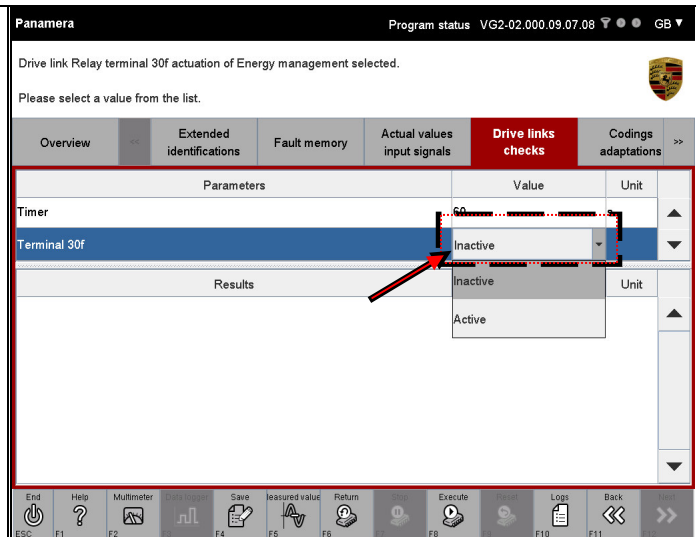
6.   The value is then transferred to the value field of the test routine.
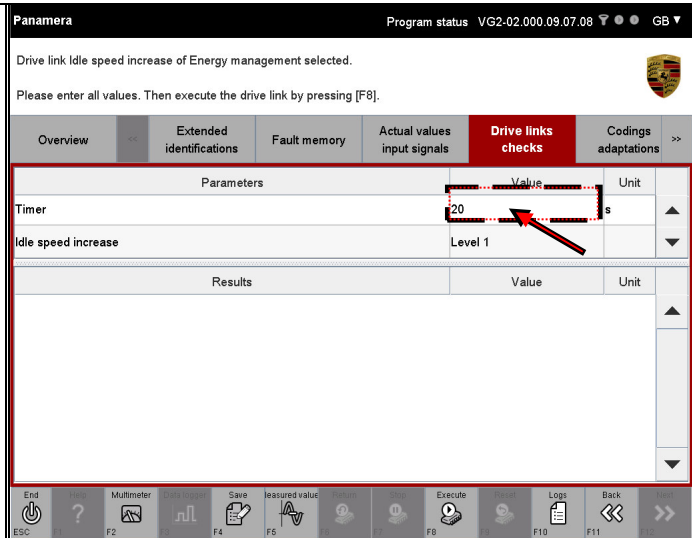
Variant 2: Changing the parameter by manual input

7.   If the value should not have fixed values, it is also possible to change the value by means of manual input.

To do this, click in the value field of the test routine and enter the desired value.
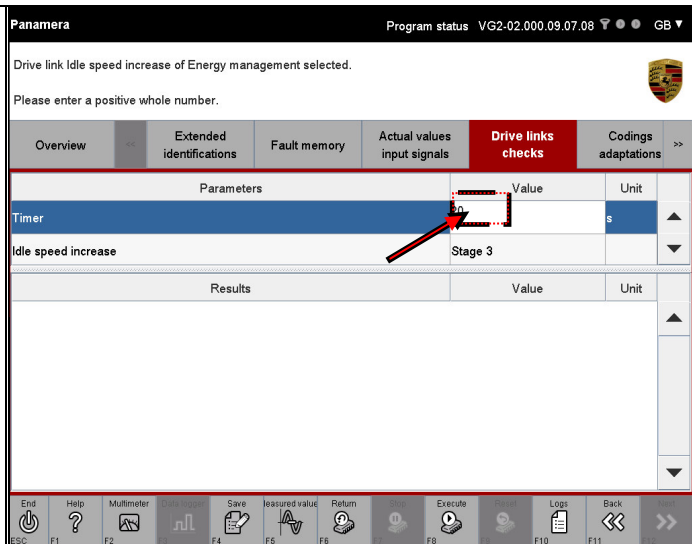
ℹ If a drive link does not have a parameter, it is not possible to select the value field.

Next steps

8. Press the <F8> button to start the test routine or set the parameter value.

Press the <F8> button again to stop the operation again.
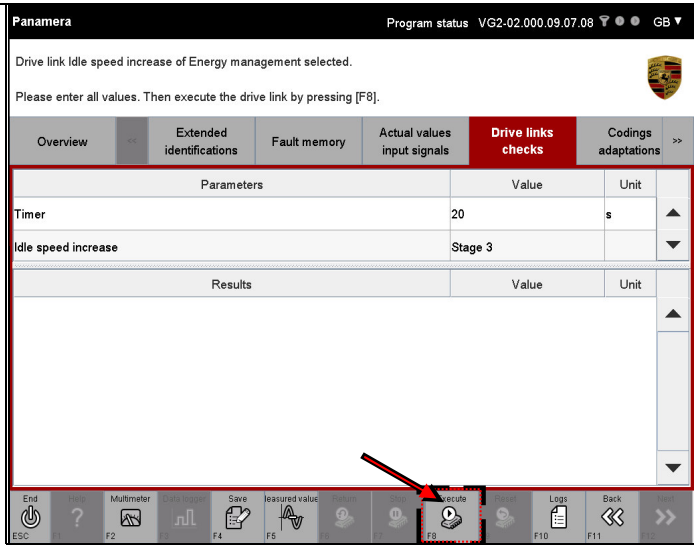
9. The result of the action is displayed in the bottom area of the current screen.
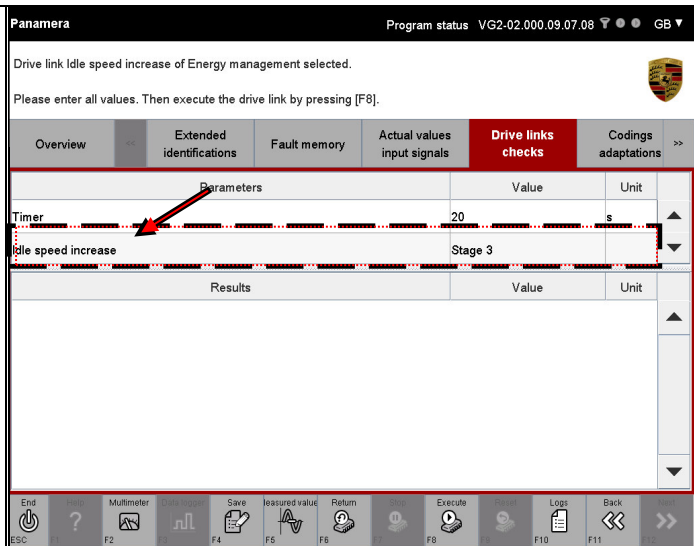
8.5.4   Set drive links

> There is no difference between the operating procedures for value input of drive links and test routines. The only difference is that different buttons are available in the control bar.

1. Enter the corresponding values for the respective parameters. For information on the various possibilities for value input, see section 8.5.3.

2. Set the drive link by pressing the <F8> button.

3. The additional possible actions are displayed in the control bar.

   The following other buttons are available:

   - Return:
     Control of the drive link is returned to the control unit by pressing the <F6> button.

   - Freeze:
     The current position of the drive link is saved by pressing the <F7> button.

   - Reset:
     The drive link is reset to a default value by pressing the <F9> button.
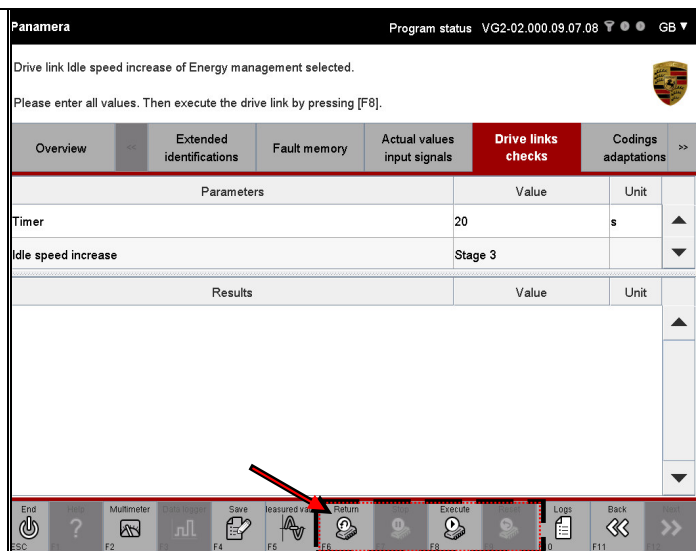
4. The result of setting the drive link is displayed in the bottom area of the screen. The information area also informs you which action (Freeze, Reset, Return, Execute) the current result value refers to.

The <F8> button additionally remains active so that you can set the drive link again if you have changed an input parameter.

8.5.5 KWP2000LP functionality

If the selected drive link has a KWP2000LP communication protocol, the test sequence is performed in a different way in the Drive links/Tests function group:

After you have selected a drive link and started the test routine with the <F8> button, you can call up the next function for this drive link with the <F12> button and work through the test sequence successively.

8.5.6 Combined display of actual values and drive links/tests

> **i**
>
> It is possible to extend result display in the working screen for drive links/tests. In addition to the results of the drive link test or routine execution, it is also possible to display the values of individual measured variables that were stored for the corresponding drive link in the result area.
>
> To do this, it is first necessary to select the additional measured values that are to be displayed in a reduced actual value screen.

1. Press the <F5> button (Measured values) in the working screen.
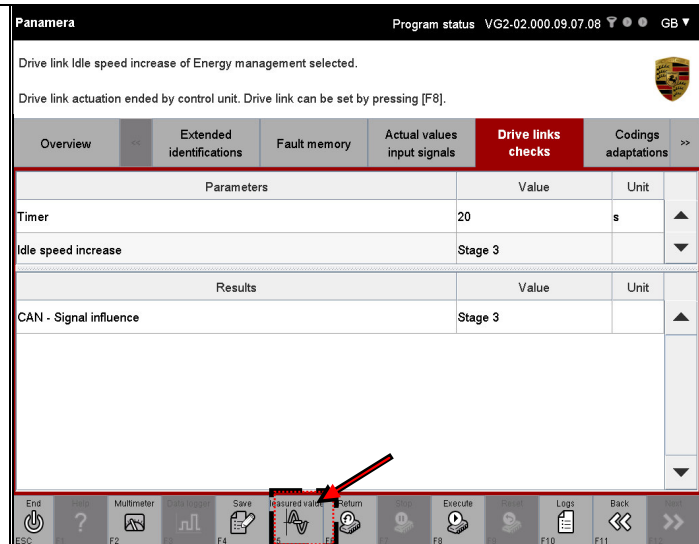
> **i**
>
> The following selection screen is visually identical with the screen for the actual values/input signals, but with some restrictions:
>
> • It is not possible to call up a different function group.
> • The functionality of the Actual values/Input signals function group is restricted to selection and deselection of measured variables.

2. All measured variables of the control units previously selected in the control unit list or control list overview are displayed. Individual measured variables are already marked for the drive link/routine previously selected in the Drive links/Tests function group.

   Now click on the measured variables for which you would like to additionally have the measured values displayed.
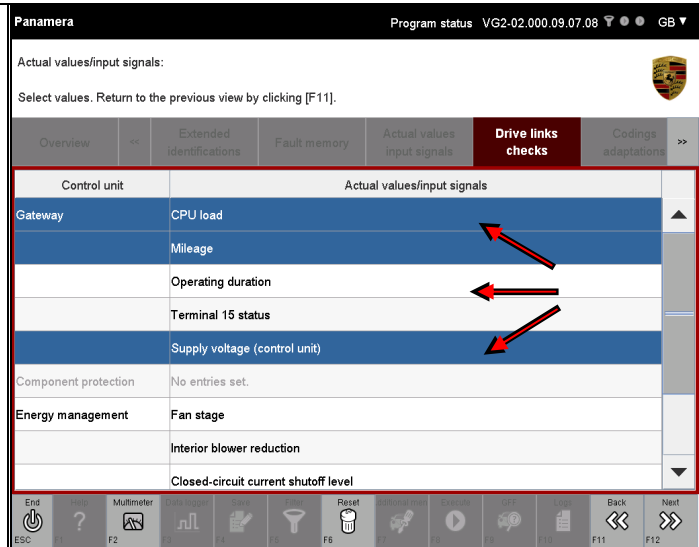
ⓘ The preselection cannot be deleted. However, you can add further measured variables to this preselection as required.

---

3. Then press the <F12> button to accept the selection and return to the screen for the Drive links/Tests .

   If you do not wish to accept the selection, press the <F11> button. You then also return to the Drive links/Tests screen but without displaying any additional measured values. Any selection made is discarded.
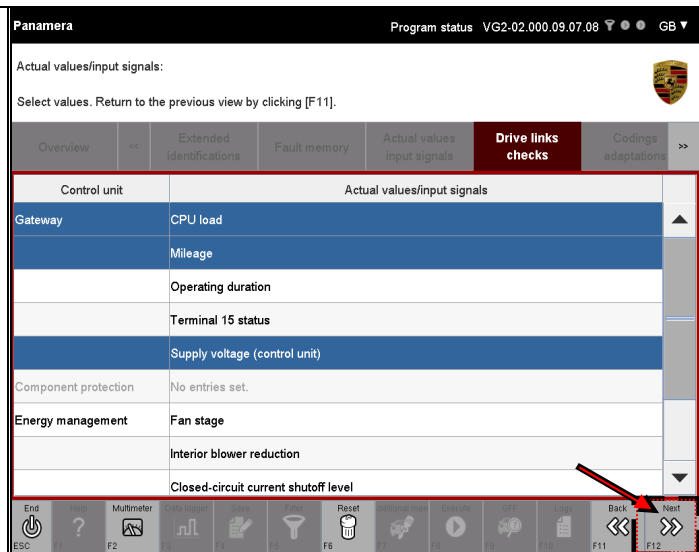
ⓘ The selection made is stored in a user-specific filter when confirmed with <F12>. This filter is stored even after ending the diagnostic application or after a new installation. If you call up the same control unit again at a later point in time, the selections last made in the selection screen will be displayed again – depending on which control units were selected in the control unit list and control unit overview.
If you have selected fewer or other control units in the control unit overview, you will be offered either fewer or different selections.

8.6 Coding/Adaptation

This section describes how you can write coding values. You can choose between manual and automatic coding. For this reason, a description is provided first of how to select and activate a coding mode. Depending on the selected coding mode, you can then perform coding automatically or first manually set individual coding values before writing them.

8.6.1 Action-specific buttons for this function group

Coding / Adaptation			
Button	**Label**	**Icon**	**Description**
F8	**Write**		A coding is written by pressing the <F8> button.

8.6.2 Display of coding modes

1. Call up and display the list of installed control units and select the desired control units: ►see section 8.1

2. Select the function group Coding/Adaptation in the menu bar. A list of the possible coding modes is displayed.
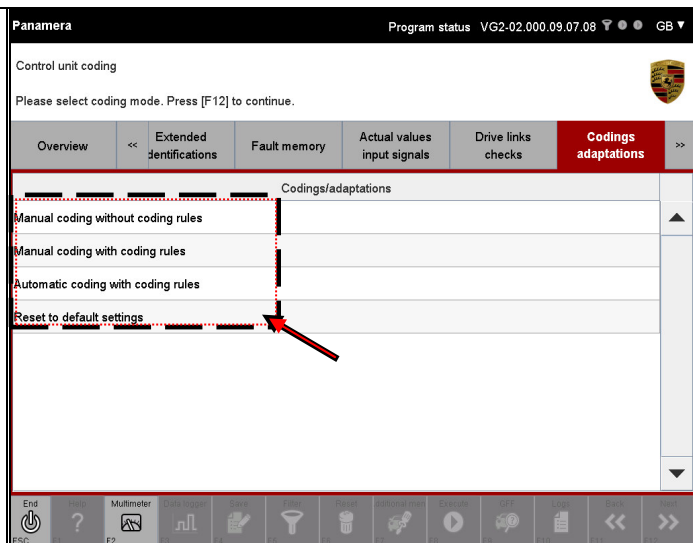
8.6.3   Manual coding without MCR

In the coding mode `Manual coding without MCR`, you must set and code the individual coding values yourself, since no MC rules (machine-readable coding rules) are evaluated.

1. Call up and display the list of coding modes:
   ►see section 8.6.2.

2. Select the coding mode `Manual coding without MCR rules` (A) and confirm the selection with <F12> (B).
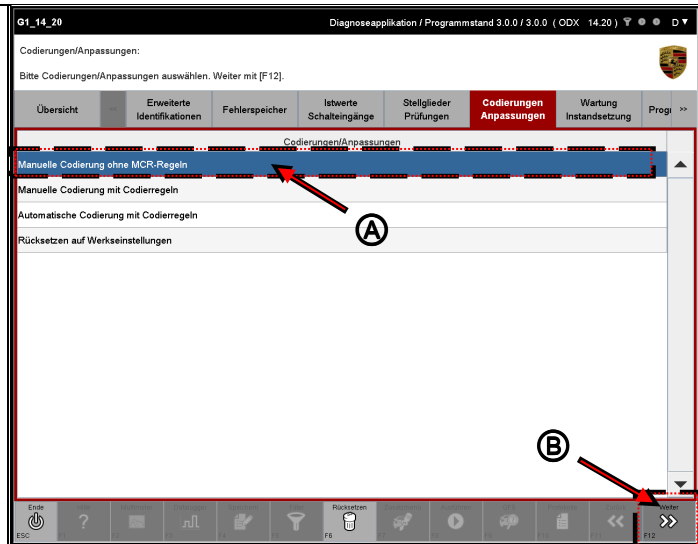
3. You can now select either individual or all coding values (A). Confirm the selection with <F12> (B).
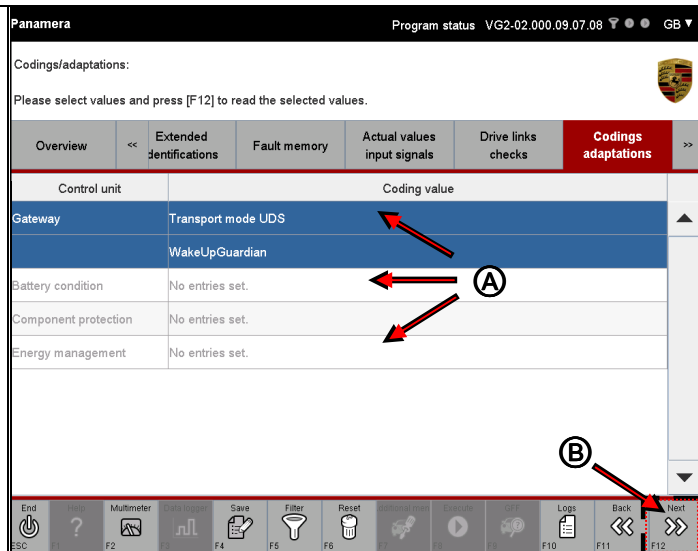
> **i** All coding values of the control unit were selected for the display representation and description below. For this purpose, all elements in the list were marked and this selection then confirmed with <F12>.

4. A list with the possible coding values for the control unit is displayed.
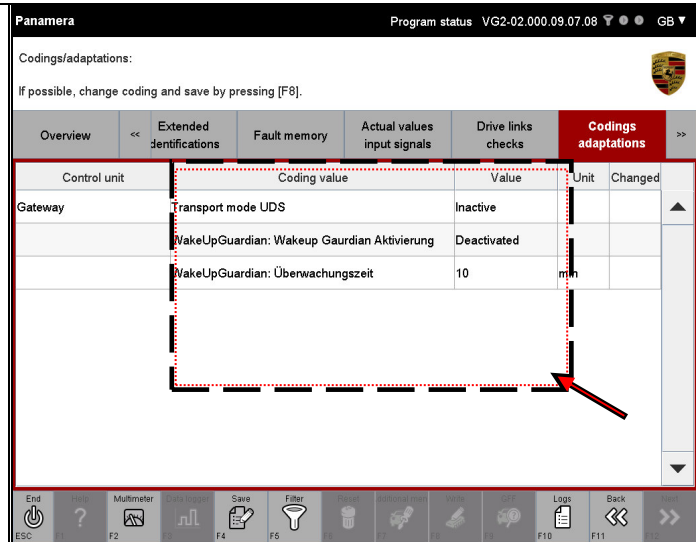
Depending on the coding mode, you can change the coding value in two different ways:

Variant 1: Changing the coding value by means of a drop-down menu

5. If the coding value can be changed and if the selected coding has several fixed coding values, these values are listed in a selection box.

    Click in the value field of the coding (A).

    Select the coding value that you would like to write from the values offered in the open drop-down menu (B).
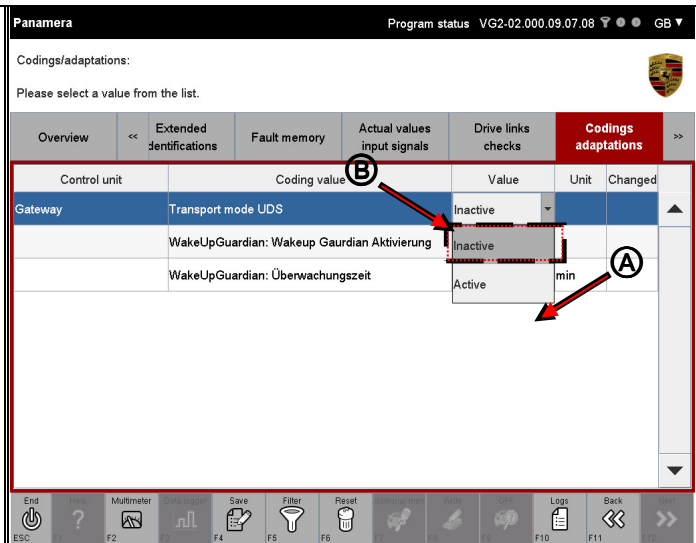
6. A change in the value is indicated by the ✎ icon in the `Changes` column.
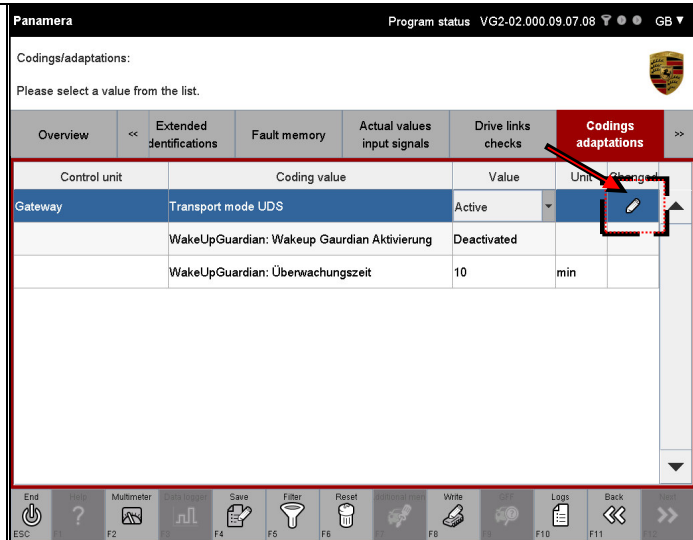
Variant 2: Changing the coding value by manual input

7. If it is possible to change the coding value but this is not available by means of a drop-down box, the value can be changed by clicking in the coding value field and then entering the desired coding value manually (A).

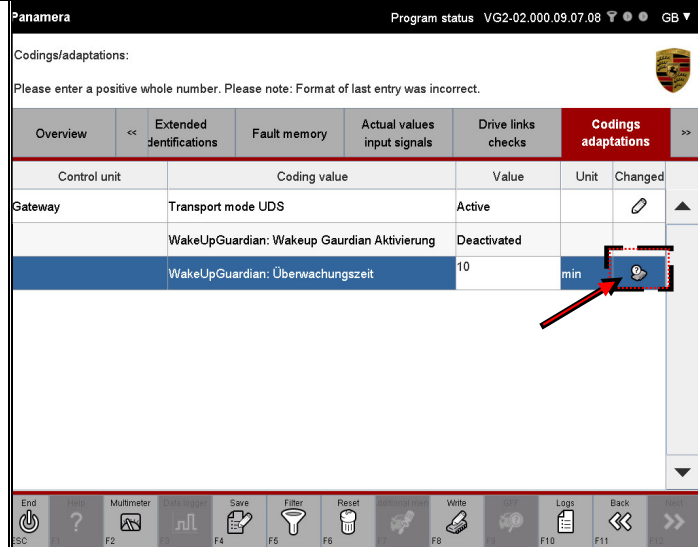   Help for input is provided in the Info area (B).
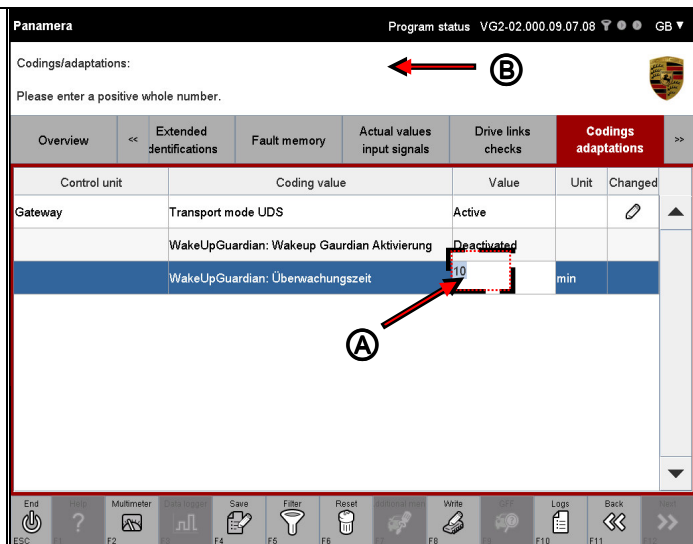
8. A change in the value is indicated by the ✎ icon in the `Changes` column.
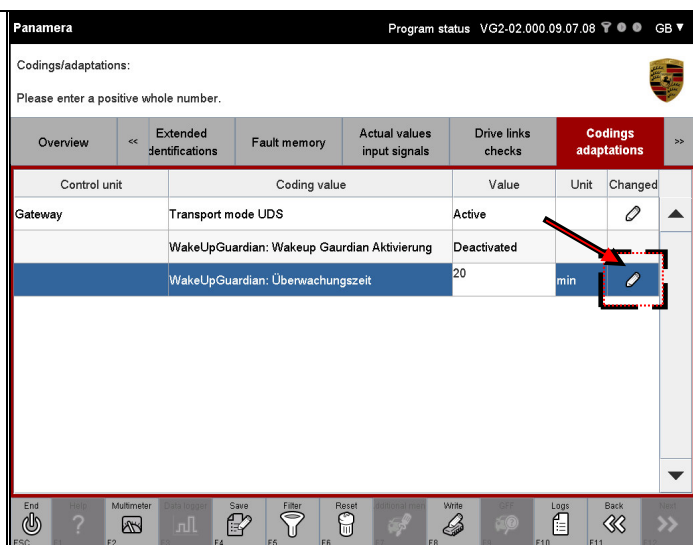
Note and tip:

9. If the value input is not correct, e.g. if the format of the value is not correct, this is indicated by the 🐌 icon in the `Changes` column and the original value is entered again.

ℹ️

**Restoring the original value:**

If you would like to reverse your input, there are two possibilities:

- Enter the original value of the coding in the value field again. The ✏️ icon next to the value field remains in this case.
- Select a different function group, e.g. Overview , and then activate the Coding/Adaptation function group again. All value changes that you have made are discarded.

Next steps:

10. Press the <F8> button to write the changed coding value.
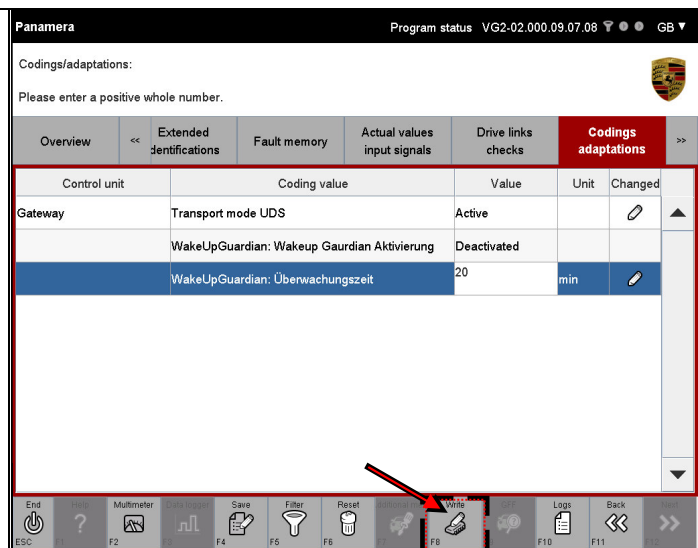
After writing:

11. Successful writing of the new value is indicated by a ✔ icon.
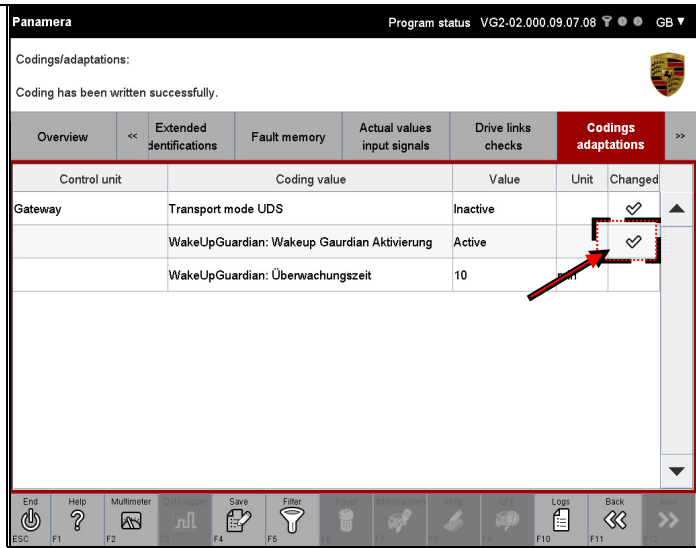
12. If a value for an coding is not written successfully, this is indicated by the ⚠ icon in the `Changes` column.

If it is not possible to read the full message text in the information area due to lack of space, you can display this by clicking on `Details`.
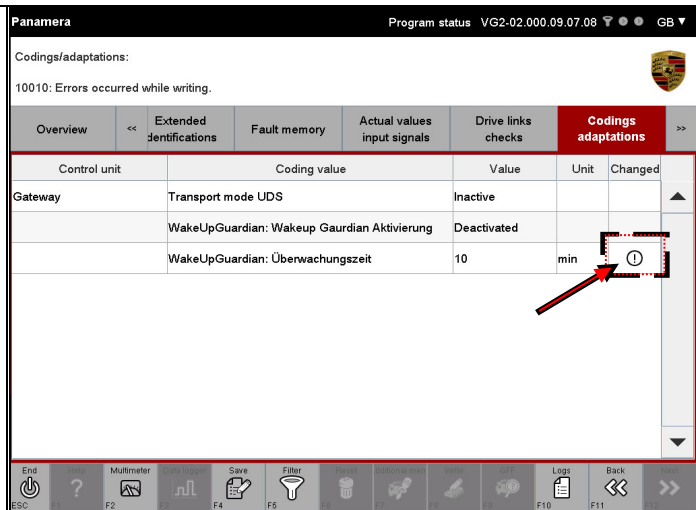
Details of error description:

In some cases, the values are checked only when the codings are written, e.g. if the texts are too long. Information on the reason why it was not possible to write the data is displayed in the Info area after display of the permitted input value.

The Info area is updated only after changing the selection of the coding value marked with an error icon.

Example: If a coding value with an error is already selected, the error description is not displayed directly. The error reason is displayed in the Info area only after this line has been deselected and then selected again.

Some coding values are not written in the current status of the control unit display even though no problems are indicated. The reason for this is that the control unit has responded positively to a value request but has not written the value. This may be due to a flash memory problem of the control unit, for example.

The value is defined by the runtime system. This is the case for some date information, for example. The date can be changed, but the entered value is replaced by the runtime system upon writing.

8.6.4 Manual coding with coding rules

In the coding mode `Manual coding with coding rules`, the required data that is written to the control unit is determined by selection of equipment features. Before this, it is additionally necessary to manually enter some vehicle data. The data to be written is then automatically written to the control unit after confirmation.
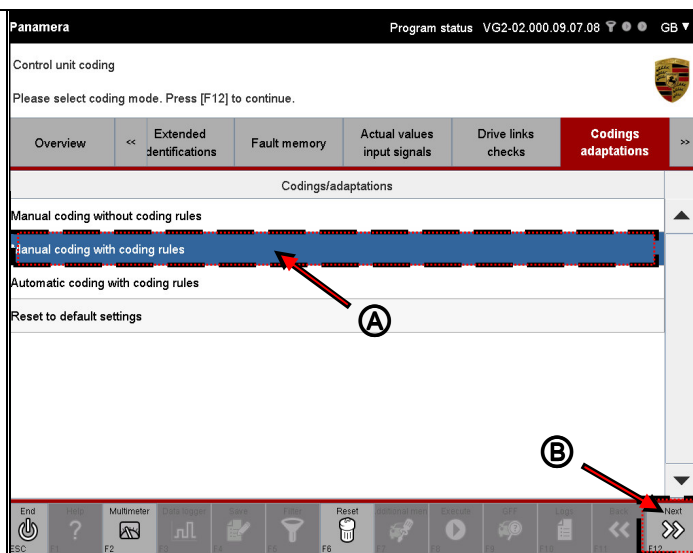
> **i** You must enter the following data in one of the following steps:
> ►Product code,
> ►Country code,
> ►Model year
> Make sure that you have the required information ready.

1. Call up and display the list of coding modes:
   ►see section 8.6.2.

2. Select the coding mode `Manual coding with MC rules` (A) and confirm your selection by pressing the <F12> button (B).

3. You must now enter the following data:
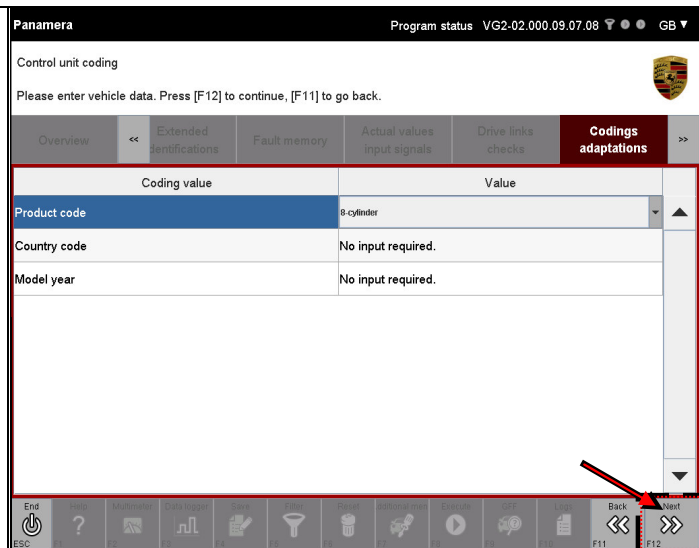   - Product code
    - Country code
    - Model year

    To do this, click in the corresponding input field in the `Value` column and enter the value.
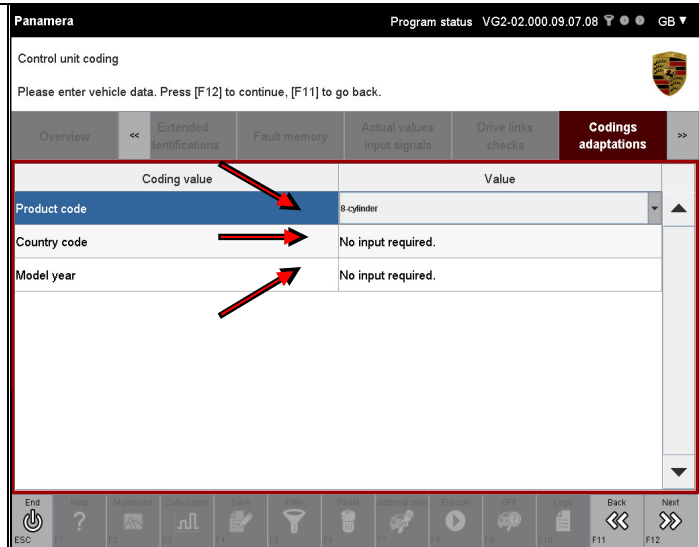
4. When you have entered all the values, confirm your input by pressing <F12>.

    If you would like to cancel the operation, press the <F11> button. You will then return to the list of coding modes.

ℹ️   In the next screen, you must assign the valid equipment features for the control units in the selection.

In the example, the control unit CAN_CAN_Gateway was selected.

Proceed as follows:

Select feature:

5. In order to mark a feature as being present, click in the corresponding field of the `Status` column.
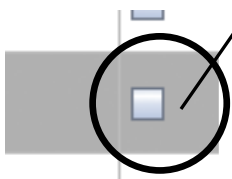
   A tick is shown in the checkbox if you have marked a feature as present.

Deselect feature:

6. If you would like to deselect a feature again, click on the corresponding feature again. The tick in the checkbox is then removed.


Next steps:

7. Press the <F8> button to save the selection of features for later coding. The selection is stored only temporarily. No data is written to the control unit in this step.

   If you would still like to make changes to your selection, click in the corresponding status field again.
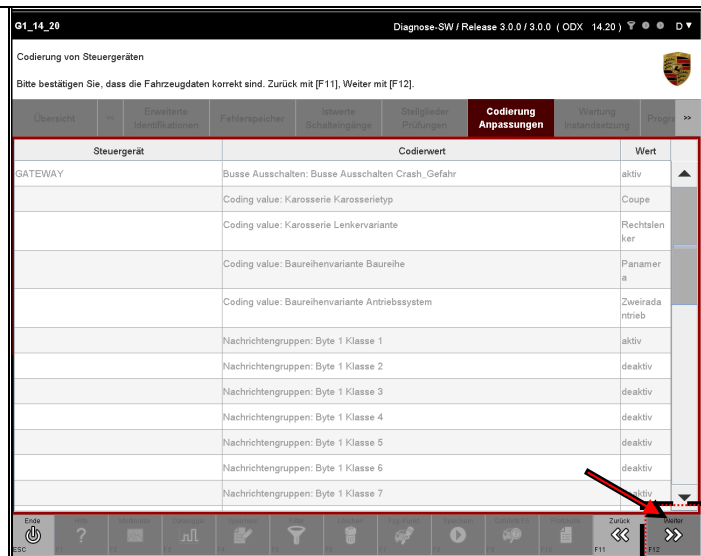
8. If you have assigned and saved at least one feature, the <F12> button (Next) becomes active.

   Press the <F12> button.
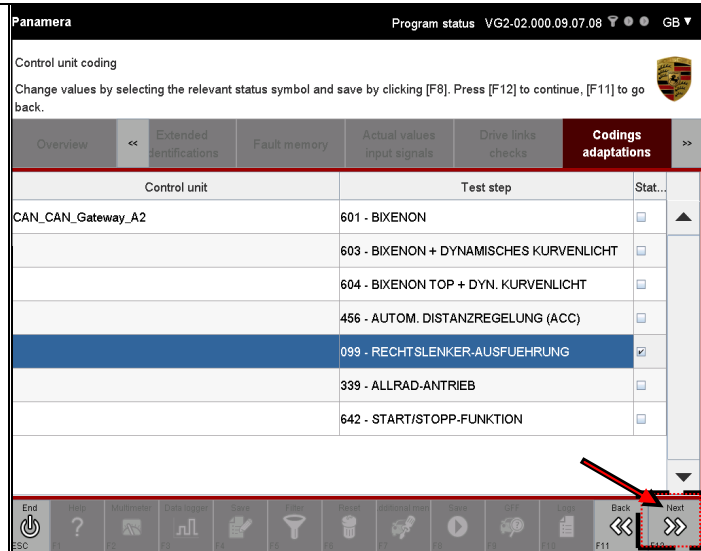
9. You must now confirm that the vehicle data is correct.
   You have the following selection options:
   • You can return to feature input by pressing <F11> and can change the data there.
   • Confirm that the vehicle data is correct with <F12>.

10. Coding is started after you confirm that the vehicle data is correct with <F12> (see previous step).

    A progress bar at the bottom of the screen informs you about the status of coding. The elapsed time is displayed on the right of the status bar where appropriate (A).
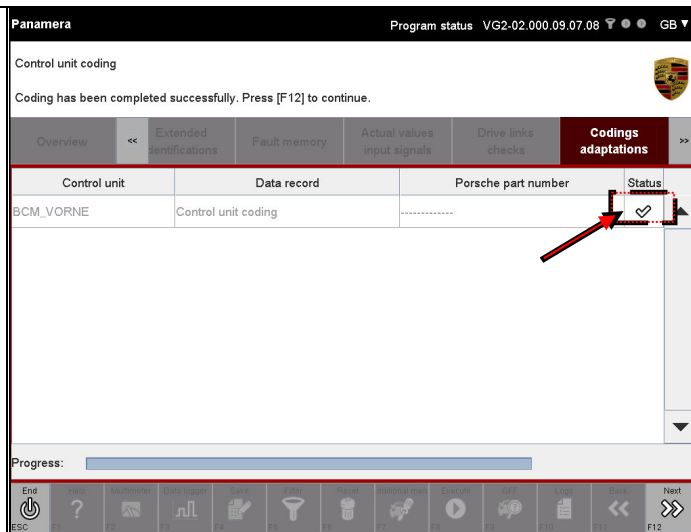
    Control units that are currently being coded are identified by the ⌖ icon. (B)
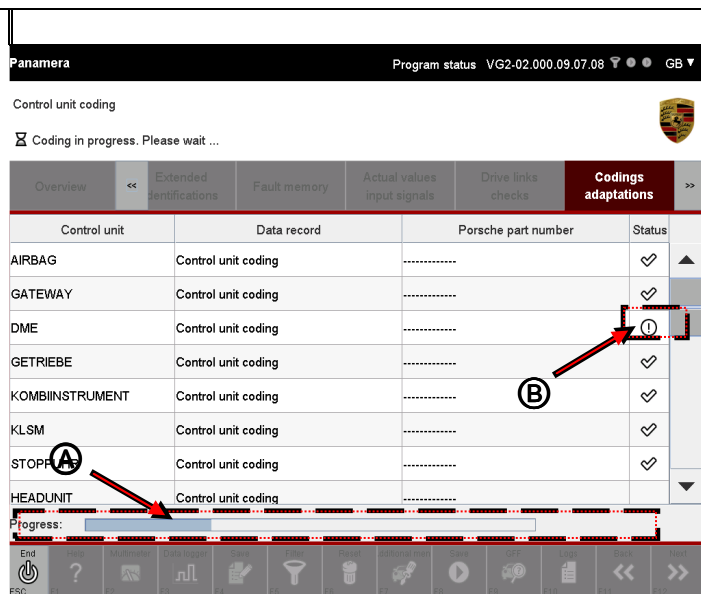
After writing:

11. If coding of the control units was successful, a ✓ icon is displayed in the `Status` column for each element.

    If an error has occurred during coding of a control unit, this is indicated by a
    ⊕ icon in the Status column next to the control unit for which coding was unsuccessful.


12. After coding, you can change to a different function group via the menu bar.

8.6.5 Automatic coding with coding rules

In contrast to manual coding, you cannot set any features or coding values yourself in the coding mode `Automatic coding with coding rules`. The required data to be coded is then determined automatically. You must only confirm that the data is correct. Coding then starts automatically. All the necessary vehicle data (product code, country code, model year) is read out of the vehicle beforehand.

1. Call up and display the list of coding modes:
   ►see section 8.6.2.

2. Select the coding mode `Automatic coding with MCR rules` and confirm your selection by pressing the <F12> button.
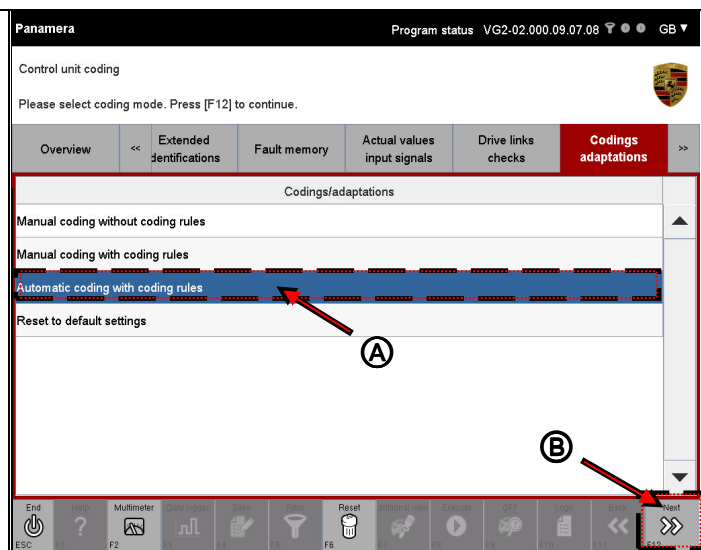

3. The vehicle data is displayed. You must only confirm that the data is correct (A). You have the following selection options (B):
   - Cancel the operation with <F11>. You then return to the list of coding modes.
   - Press <F12> to confirm that the displayed vehicle data is correct.
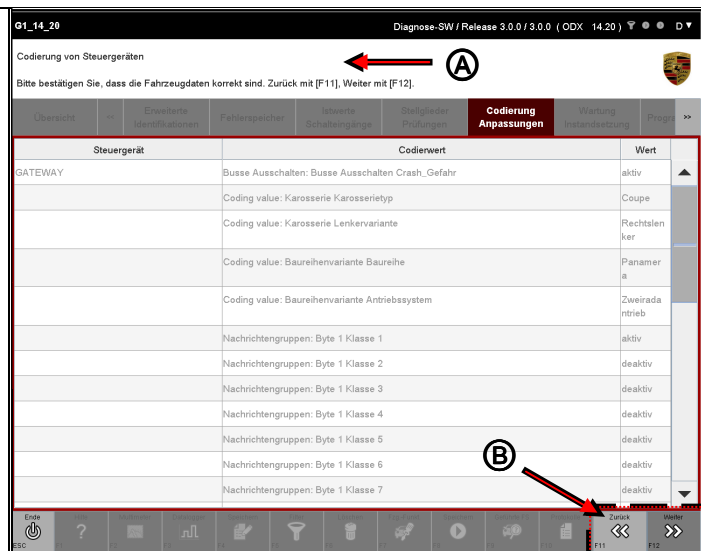
4. Coding is started after you confirm that the vehicle data is correct with <F12> (see previous step).

   A progress bar at the bottom of the screen informs you about the status of coding.
   The elapsed time is displayed on the right of the status bar where appropriate (A).

   Control units that are currently being coded are identified by the 🖉 icon (C).
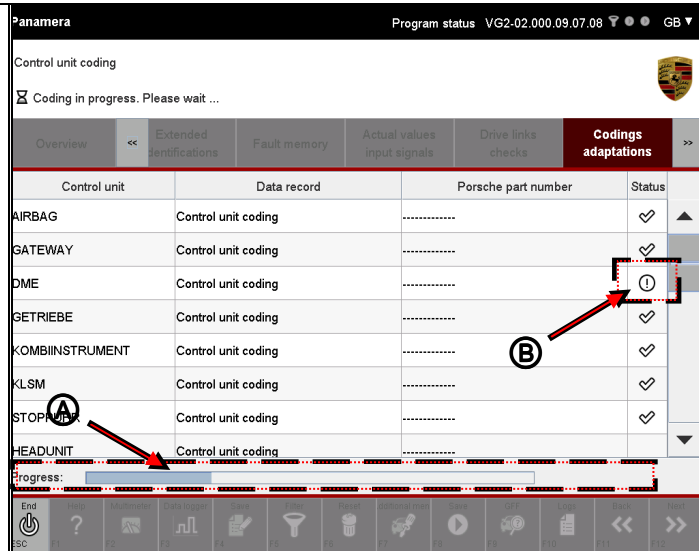
After writing:

5. If coding of the control units was successful, a ✓ icon is displayed in the `Status` column for each element.

   If an error has occurred during coding of a control unit, this is indicated by a ⚠ icon in the Status column next to the control unit for which coding was unsuccessful.
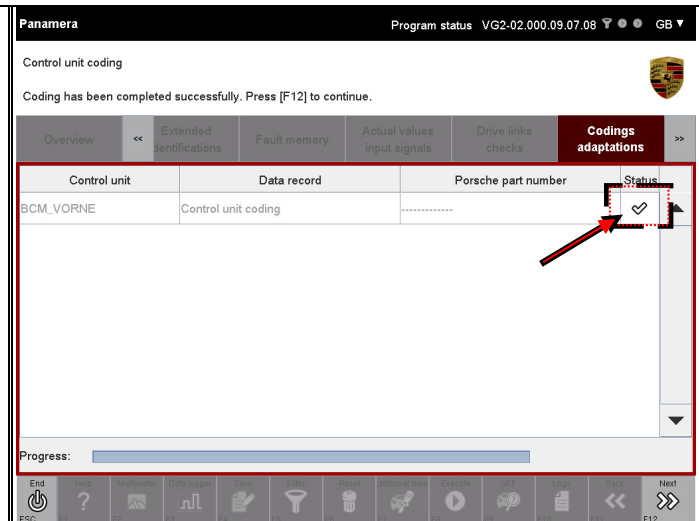
6. After coding, you can change to a different function group via the menu bar.

8.6.6   Reset to factory settings

Operation for the coding mode `Reset to factory settings` does not differ from operation for the coding mode `Automatic coding with coding rules` apart from the different selection in the selection screen for the coding modes.

The two modes differ only by the fact that different data sets are written to the control unit.

For further information on content and operation:

►see section 8.6.5.

8.7 Maintenance/Repair

This section describes how to perform the processes that are required for commissioning certain control units and functions.

In the ⎡Maintenance/Repair⎤ function group, you can call up control unit-specific operating processes. Control unit-specific processes are processes that cannot be generically realised from the ODX data. They are guided processes that are tailored for a specific control unit.

The actual processes are described only as examples in this section since the diagnostic application provides instructions for the respective process in the form of message texts.

8.7.1 Calling up the function group

1. Call up and display the list of installed control units and select the desired control units:
   ►see section 8.1

2. Select the ⎡Maintenance/Repair⎤ function group.

3. A list is displayed with the processes that are available for the selected control units.

   If there is no specific process for the selected control unit, no process is displayed in the list.
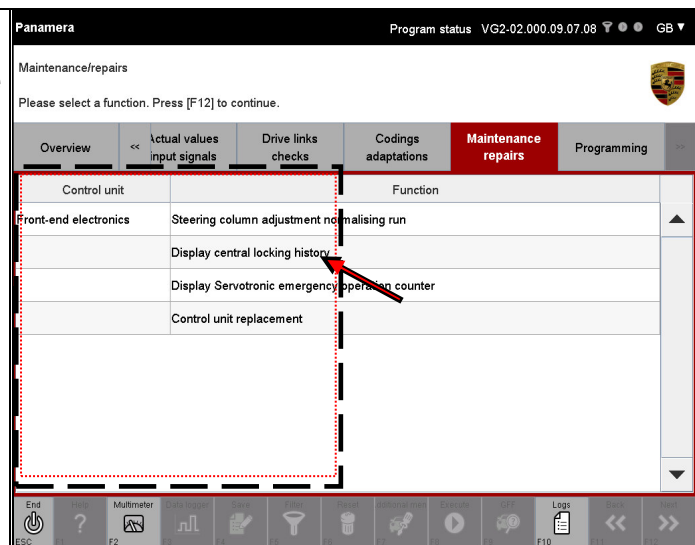
8.7.2 Example: Control unit replacement

The function of control unit replacement is offered for all control units in the
Maintenance/Repair function group. If you select this function, all relevant codings and
information for control unit replacement are first read and stored in a file. The data of this file
can then be written again to a new control unit. This allows you to write the codings at a later
point in time.

Note on replacement:

The control unit to be replaced must be replaced by a control unit of the same
ECU variant type since it may be necessary to copy coding values that are
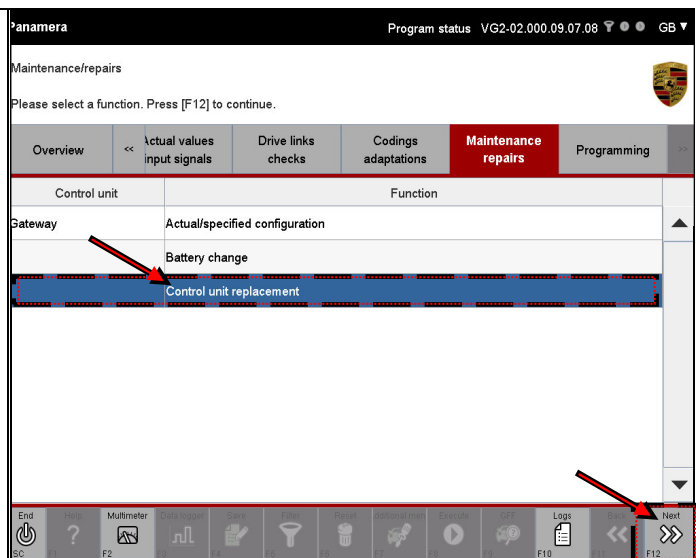variant-specific.

8.7.2.1 Calling up the function for control unit replacement

The control unit CAN_CAN_Gateway was selected for the following steps and
subsections.

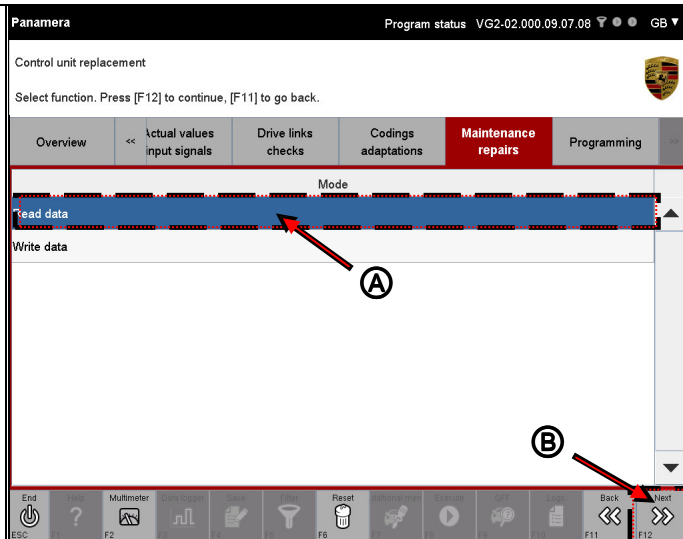1. Call up the Maintenance/Repair function group:
   ►see section 8.7.1

2. In the `Function` column, select
   the function `Control unit`
   `replacement` for the
   corresponding control unit (A) and
   press the <F12> button (B).

8.7.2.2   Control unit replacement: Read data

1. Call up the function for control unit replacement:
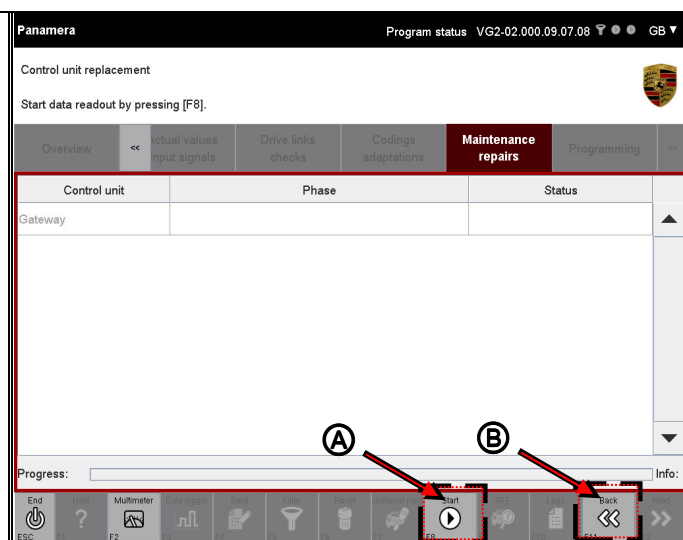   ►see section 8.7.2.1

2. Select the mode `Read data` (A)
    and press the <F12> button (B).

3. The working screen for control unit
    replacement is displayed. Press
    the <F8> button to start data
    readout (A).

    You can return to the list of modes
    for control unit replacement with
    <F11> (B).

    –Observe the following note.

> ℹ️ **Note on cancelling the readout operation:**
>
> If you have started the readout operation and would like to cancel it, press the <F8> after the start of reading.
>
> The data for this control unit is then not stored temporarily in a file for subsequent or later writing.
>
> You must perform the read operation again if you wish to write data relevant for control unit replacement to the new control unit at a later point.

4. The relevant data of the control unit is read out. A progress bar informs you about the status of the readout process (A).

    If data readout was successful, this is indicated by a icon in the working area (B).

    Press the <F12> button when the readout process has been completed (C). You then return to the modes list for the control unit replacement function.
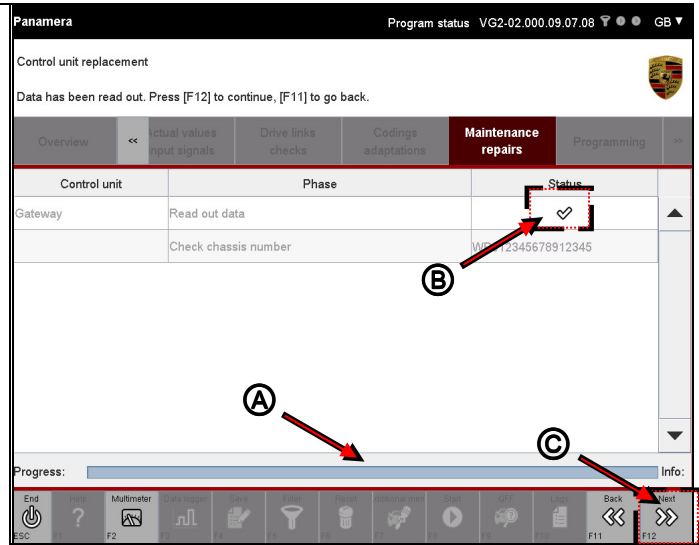
Behaviour of the application in the event of write operation cancellation or error

If you have aborted the readout operation or an error has occurred, a ⚠ icon is displayed in the Status column.
Then press the <F11> button to return to the modes list of the `Control unit replacement` function.

8.7.2.3   Control unit replacement: Write data

Precondition:

You must have read out the relevant data for the respective control unit:
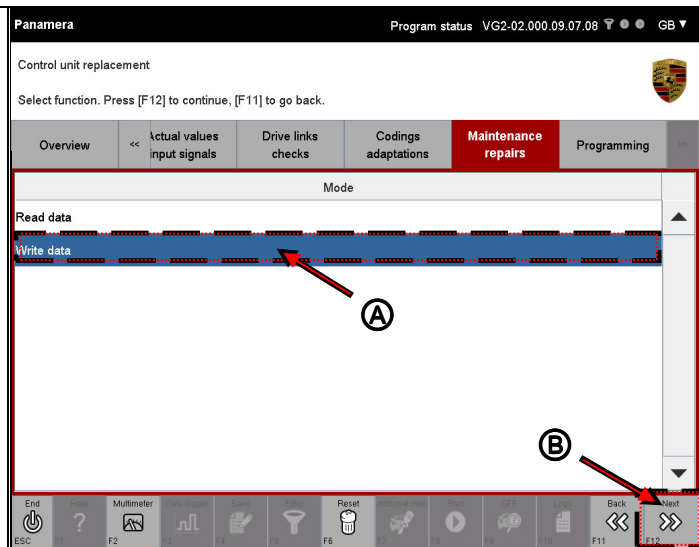
►see section 8.7.2.2

Note on writing data:

Only basic data is written if no valid file with control unit data is present or if the read-out chassis numbers do not agree. The VIN-B and the production number are then assigned default values.

---

1. Call up the function for control unit replacement:
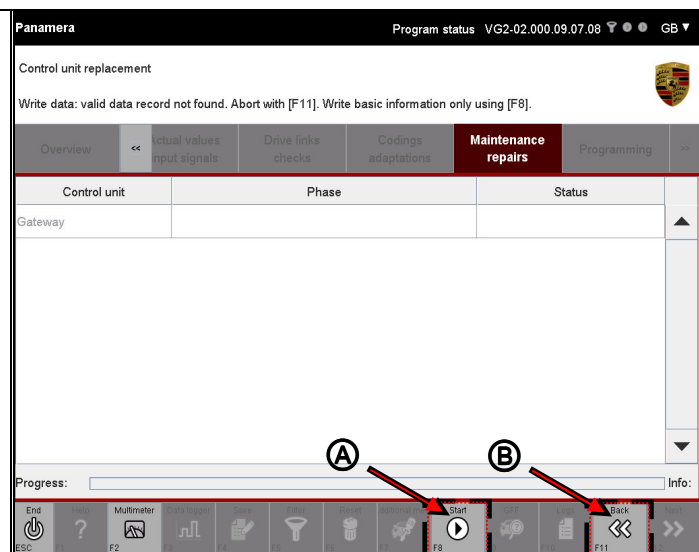   ►see section 8.7.2.1

2. Select the mode `Select data` (A) and press the <F12> button (B).

3. The working screen for control unit replacement is displayed. Press the <F8> button to start data writing (A).

   You can return to the list of modes for control unit replacement with <F11>.

   Observe the following note:

Warning on cancellation of write operation:

If you have started the write operation and would like to cancel it, press the <F8> button after the start of writing.

Cancellation of the write operation means that the data records stored by the `Read data` mode will not be completely written.
This will result in an incompletely flashed control unit. The control unit must be completely flashed in order to continue using it.

To completely flash the control unit,...

• ...repeat the operation or

• ...program the control unit manually
(function group | Extended identification | or | Coding/Adaptation |).

---

4. The relevant data of the control unit is written. A progress bar informs you about the status of the write process (A).

If data writing was successful, this is indicated by a ✓ icon in the working area (B)

Press the <F12> button after the write process has been completed (C).
You then return to the modes list of the control unit replacement function.
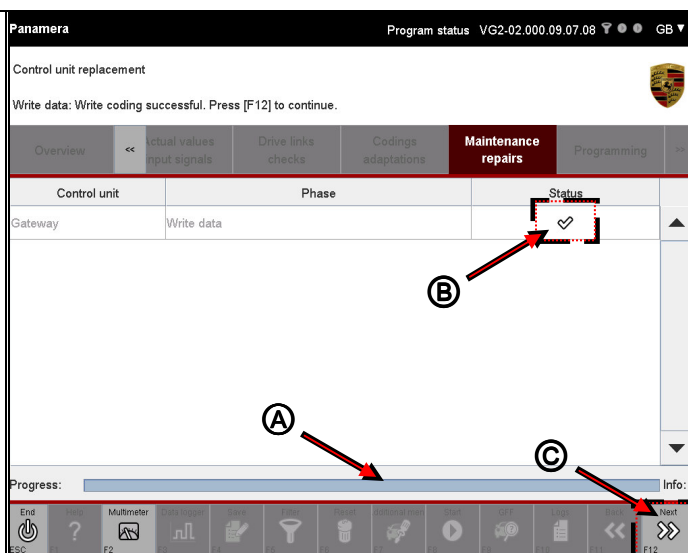
Behaviour of the application in the event of write operation cancellation or error

The following write errors are possible:

• non-writable codings due to read errors

• the write operation was stopped prematurely by pressing the <F8> button (Stop)

• Only basic data has been written

In these cases, a ☺ icon is displayed in the Status column. Then press the <F11> button (B) to return to the modes list of the `Control unit replacement` function.

8.8 Programming

This section describes how you can program a control unit. A description is provided first of how to select and activate a programming mode. Depending on this selection, control unit programming then takes place either automatically or manually. The procedure for programming a control unit is therefore similar to that for coding a control unit in the Coding/Adaptation function group (see section 8.6).

8.8.1 Action-specific buttons for this function group

Vehicle data input			
Button	**Label**	**Icon**	**Description**
F8	**Save**		The assigned equipment features are stored temporarily by pressing the <F8> button.
Programming			
Button	**Label**	**Icon**	**Description**
F8	**Save**		A selected control unit is programmed by means of a flash job by pressing the <F8> button.

8.8.2 Display of programming modes

Note on availability:

Not all programming modes will be offered if no data record with flash rules has been stored for the selected control unit.
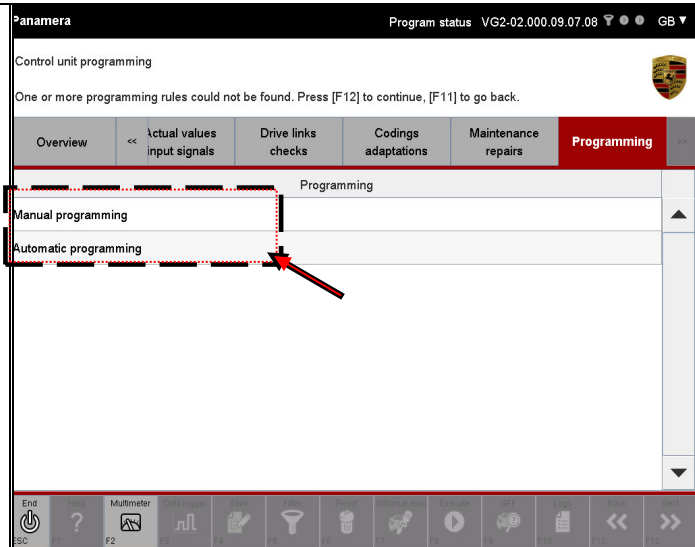
1. Call up the display of installed control units and select a control unit:
   ►see section 8.1.

   The control unit PDCC was selected in the following example.

2. Select the function group
   ⎡Programming⎤ in the menu bar.

   A list of the possible programming
   modes is displayed.

8.8.3 Manual programming

The option `Manual programming` is available if a data record with flash rules has been
stored for the control unit. The manual programming operation consists of two parts:

1. Determination of a valid flash rule

2. Control unit programming

---

1. Determination of a valid flash rule:

ⓘ
What happens?
In the following steps, you must first enter a number of data items and then
select or deselect various equipment features. This data is used to determine
whether a valid flash rule exists in the data record stored for the control unit. If
no valid flash rule is present, you cannot program the control unit and the
programming process is aborted.

ⓘ
Required data:
You must enter the following data in one of the following steps:
►Product code
►Country code
►Model year
►Chassis number
Make sure that you have the required information ready.

1. Call up and display the list of possible programming modes:
    ►see section 8.8.2
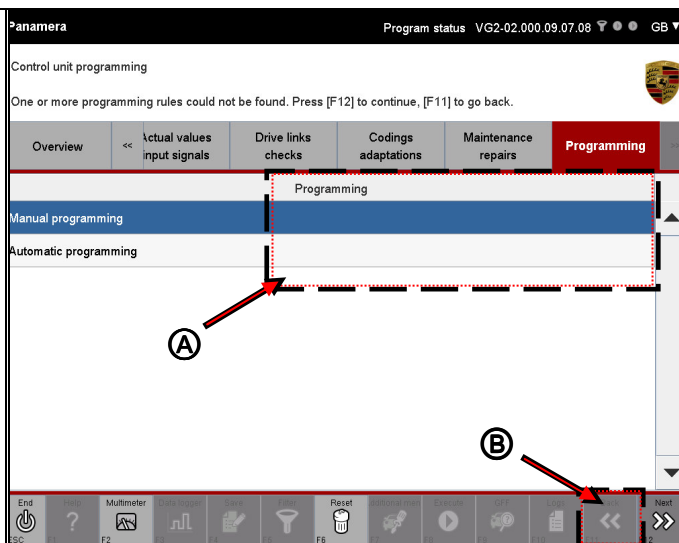
2. Select the programming mode
    `Manual programming` (A) and
    press the <F12> button (B).
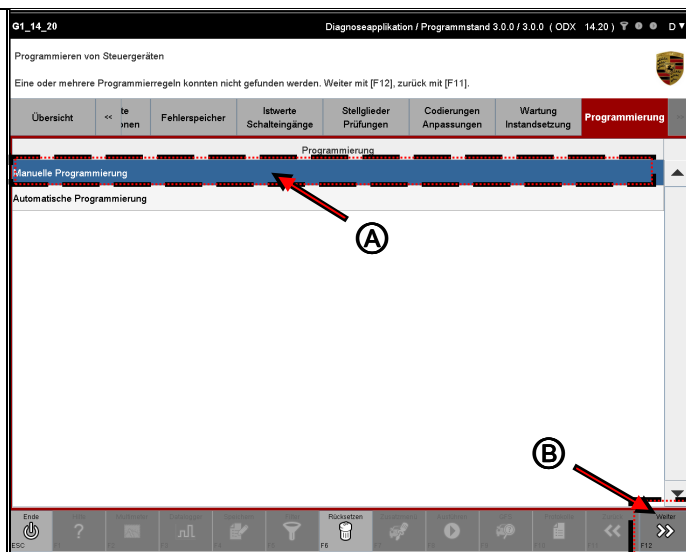
3. You must first enter the vehicle
    data.

    To do this, click in the
    corresponding input field in the
    `Value` column and enter the value
    or select it from a drop-down box
    (A).

    If you would like to cancel manual
    programming, press the <F11>
    button. You will then return to the
    list of programming modes (B).

4. When you have entered all the values, confirm your input by pressing <F12>.

If you would like to cancel manual programming, press the <F11> button. You will then return to the list of programming modes.
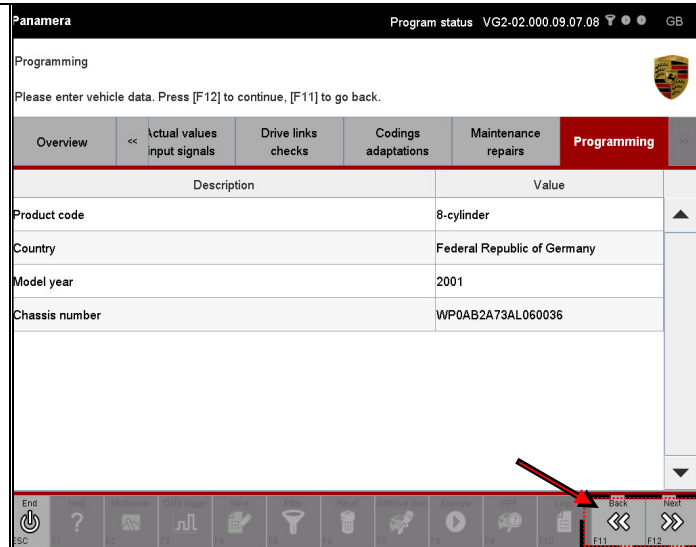
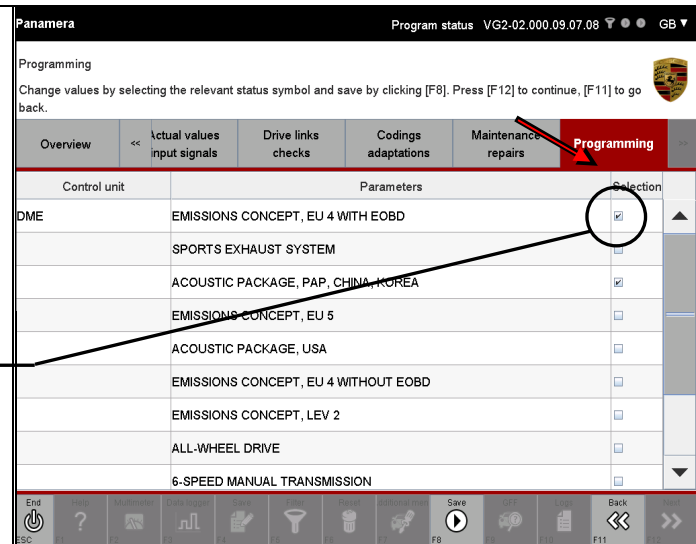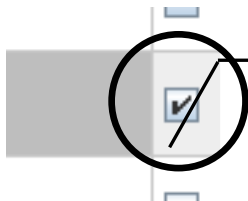In the next screen, you must assign the valid equipment features for the control units in the selection.

In the example, the control unit PDCC was selected.
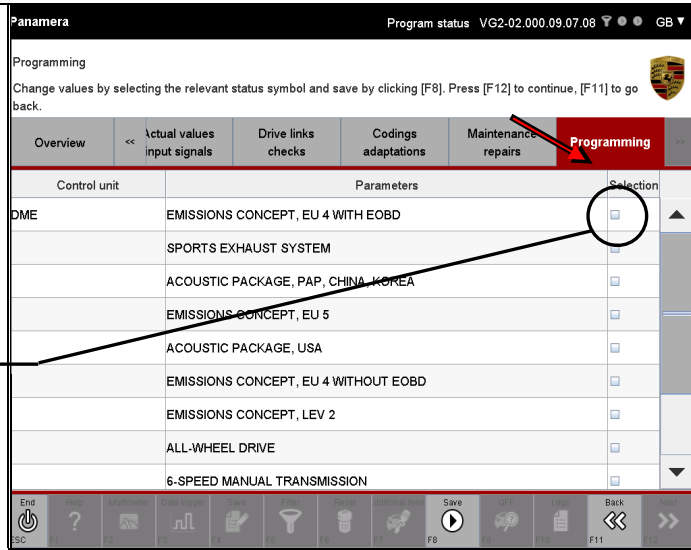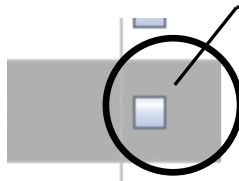
Proceed as follows:

Select feature:

5. In order to mark a feature as being present, click in the corresponding field of the `Status` column.

A tick is shown in the checkbox if you have marked a feature as present.

Deselect feature:

6. If you would like to deselect a feature again, click on the corresponding feature again. The tick in the checkbox is then removed.


Next steps:

7. Press the <F8> button to save the selection of features for later programming. The selection is stored only temporarily. No data is written to the control unit in this step.

   If you would still like to make changes to your selection, click in the corresponding status field again.

8. If you have assigned and saved at least one feature, the <F12> button (Next) becomes active.
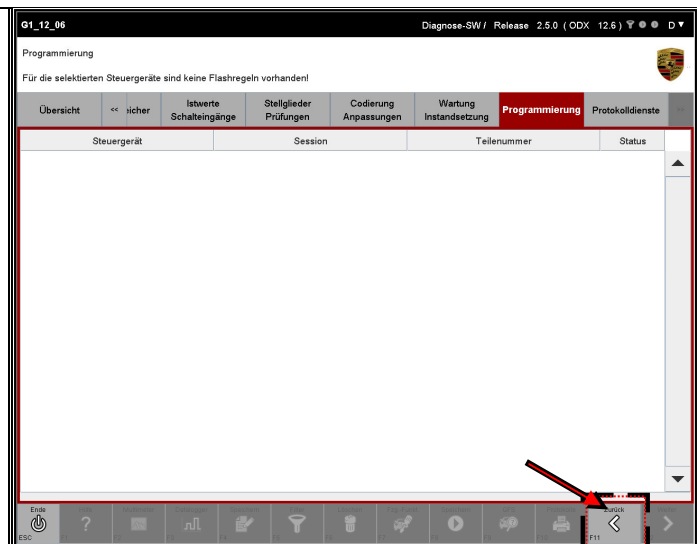
   Press the <F12> button.
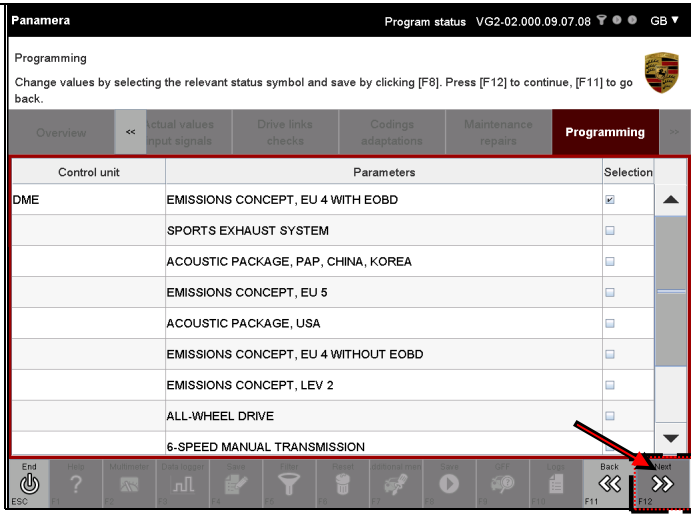
Exception: No suitable rules were found:

	i	If no valid flash rules are found on the basis of the entered data and selected features, programming is aborted at this point. The following screen is then displayed:

9. You can return to the list of programming modes with <F11>.

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2. Control unit programming

Note on screen content:

If a valid flash rule was found, all control units are displayed in the next screen together with their available data containers, which are needed for execution of this flash rule.

It is possible that other control units will also be displayed in the working area in addition to the control units in the selection, i.e. in addition to the control units that you selected beforehand. These control units must then also be flashed so that a consistent data status is ensured.

The programmable data containers are listed in the Session column.

When the screen is called up, the software version of the control unit software is automatically checked. For this purpose, the software version of the control unit software is compared with the software version of the data container listed in the working area. The result of this check is output in the `Status` column.

The following cases are distinguished in the version check:

- Not current: The software of the control unit is not up-to-date. The software in the data container is more recent than the software in the control unit.
- Current: The versions of the software programmed in the control unit and the software in the data container are identical.
- More recent: The version of the software in the control unit is newer than the version that has been stored in the data container.

Please note:

It is not possible to flash only a selection of data containers. All data containers listed in the working area are always flashed since there may be dependencies between the software versions of different control units.

---

10. Press the <F8> button to start programming.

    You return to the list of programming modes with <F11>.
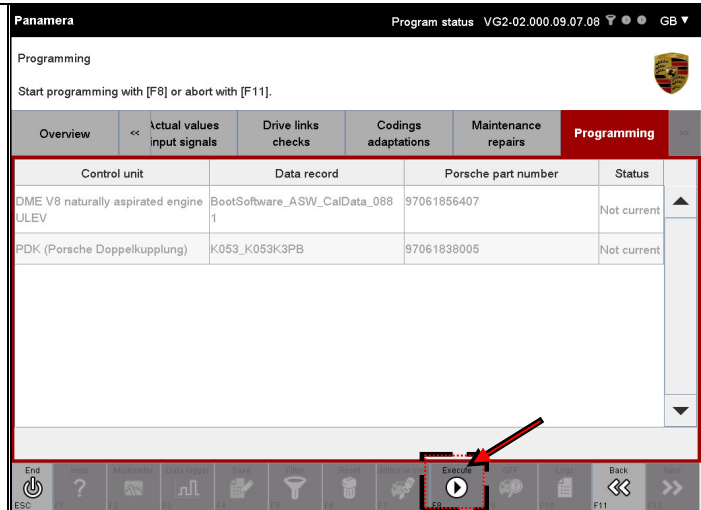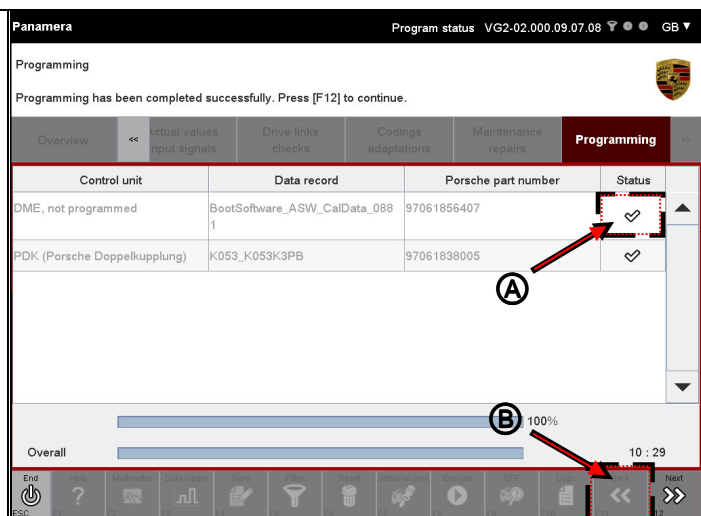
11. Two progress bars inform you about the status of programming:

    The top progress bar shows the progress in execution of a flash session (A).

   The bottom bar shows the overall progress of programming (B).
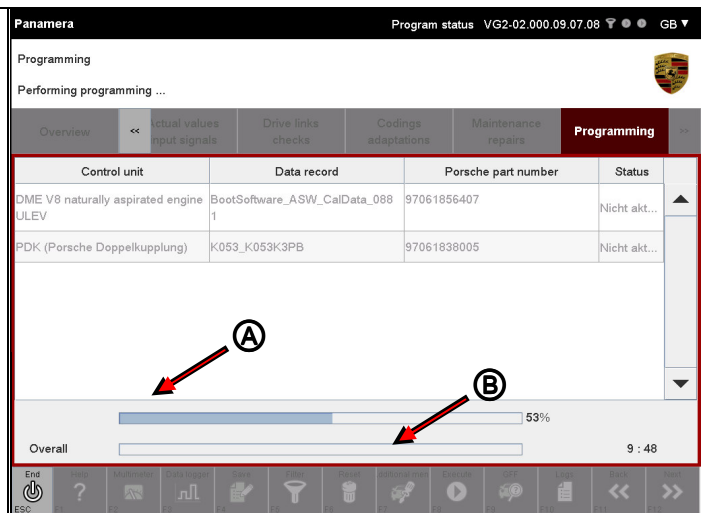
After writing:

12. If programming was successful, a ✓ icon is displayed in the Status column after each control unit (A).

   You can return to the list of programming modes with <F11> (B).

Error when programming several control units:

13. If an error has occurred when programming a control unit, this is indicated by a ⚠ icon in the Status column next to the control unit for which programming has been unsuccessful (A).

If you would like to continue programming for the next control unit nevertheless, you must confirm this. You have the following selection options (B):

- Cancel the operation with <F11>. You then return to the list of programming modes.
- Confirm with <F12> that you wish to continue programming. The next control unit is then programmed.
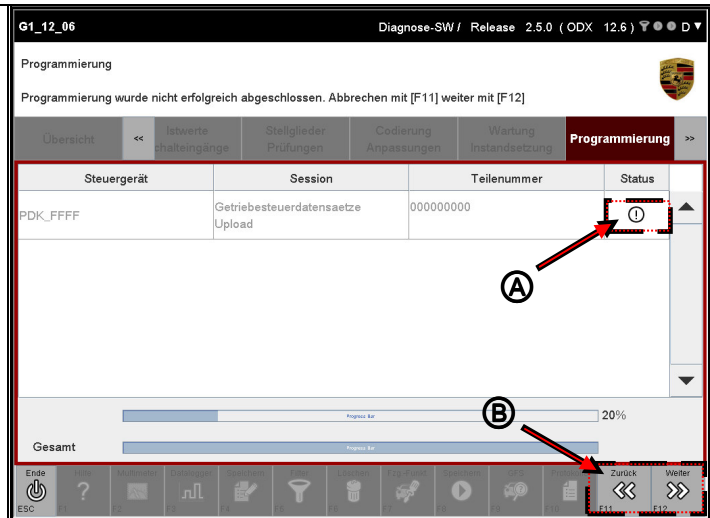
8.8.4   Automatic programming

The aim of automatic programming is to determine the correct flash container(s) for the specific vehicle on the basis of the data from the vehicle order without any further selection by the user (where possible) and to program one or more control units after confirmation by the user.

> **Note on status:**
>
> The version status of the flash session is displayed in the Status column. The following statuses are possible:
>
> - Not current: The software of the control unit is not up-to-date. The software that is to be written to the control unit is more recent.
> - Current: The software version of the control unit is the same as that of the flash session.
> - More recent: The software version of the control unit is more recent than the flash session to be written. Please note that flashing of the session may lead to problems with the control units in this case.

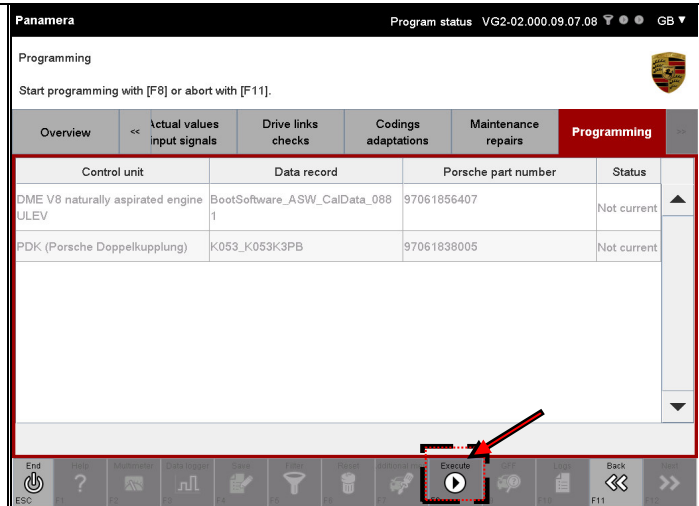1. Call up and display the list of possible programming modes:
    ►see section 8.8.2

2. Select the programming mode `Automatic programming` (A) and press the <F12> button (B).
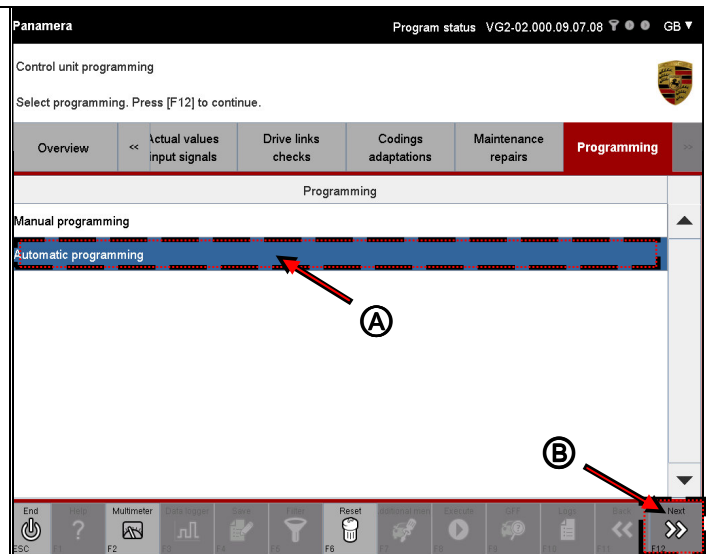
3. All the control units for this flash rule are displayed together with their flash sessions (A).

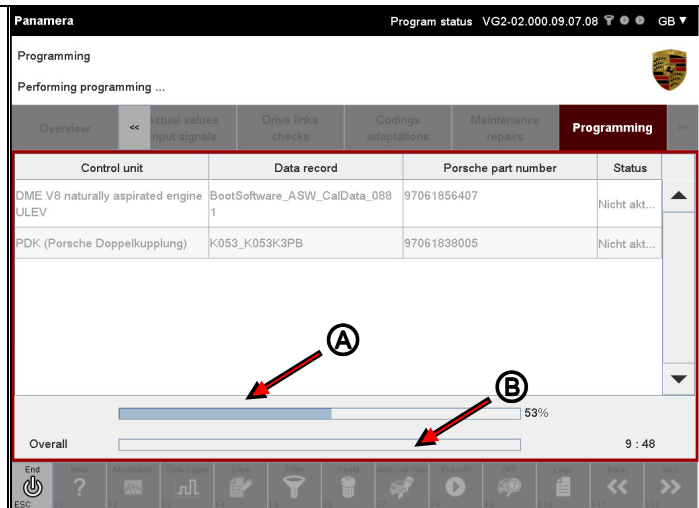   Press the <F8> button to start programming (B).

   You can return to the list of programming modes with <F11>.

Control unit	Data record	Porsche part number	Status
DME V8 naturally aspirated engine ULEV	BootSoftware_ASW_CalData_088 1	97061856407	Not current
PDK (Porsche Doppelkupplung)	K053_K053K3PB	97061838005	Not current

4. Two progress bars inform you about the status of programming:

   The top progress bar shows the progress in execution of a flash session (A).

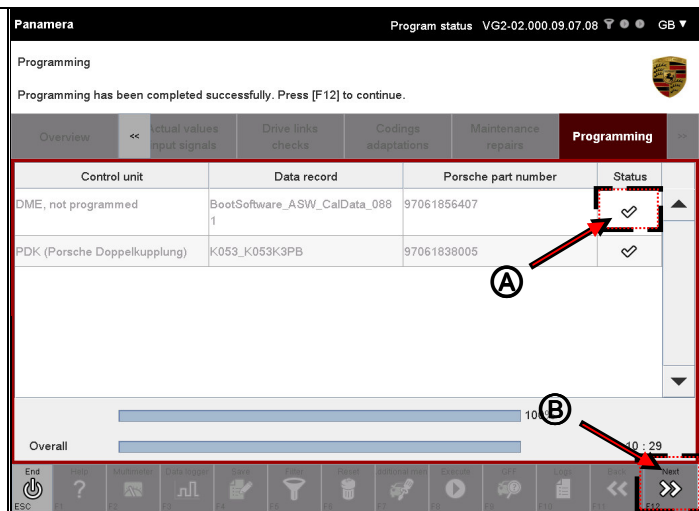   The bottom bar shows the overall progress of programming (B).

Control unit	Data record	Porsche part number	Status
DME V8 naturally aspirated engine ULEV	BootSoftware_ASW_CalData_088 1	97061856407	Nicht akt...
PDK (Porsche Doppelkupplung)	K053_K053K3PB	97061838005	Nicht akt...

53%

Overall 9 : 48

After writing:

5. If programming was successful, a ♡ icon is displayed in the Status column after each control unit (A).

   You can return to the list of programming modes with <F12> (B).

Control unit	Data record	Porsche part number	Status
DME, not programmed	BootSoftware_ASW_CalData_088 1	97061856407	✓
PDK (Porsche Doppelkupplung)	K053_K053K3PB	97061838005	✓

100%

Overall 10 : 29

Error during programming:

6. If an error has occurred when programming a control unit, this is indicated by a ⊙ icon in the Status column next to the control unit for which programming has been unsuccessful (A).

    If you would like to continue programming for the next control unit nevertheless, you must confirm this. You have the following selection options (B):

    •   Cancel the operation with <F11>. You then return to the list of programming modes.
    •   Confirm with <F12> that you wish to continue programming. The next control unit is then programmed.

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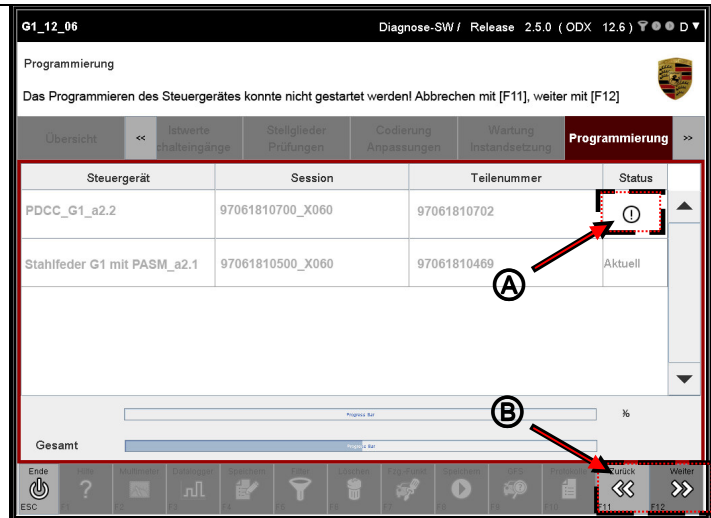
8.9 General vehicle functions (F7)

This section describes how you can call up the general vehicle functions of the diagnostic application. It also describes how you can use these functions.
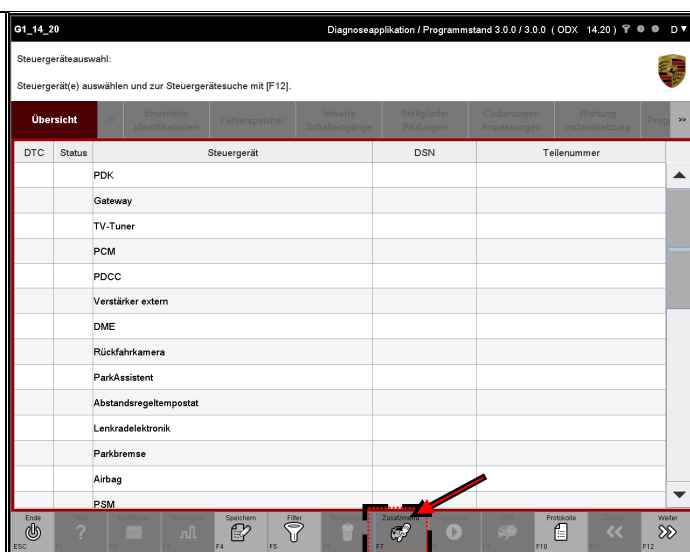
The diagnostic application guides you through the respective functions and assists you when working through the individual steps.

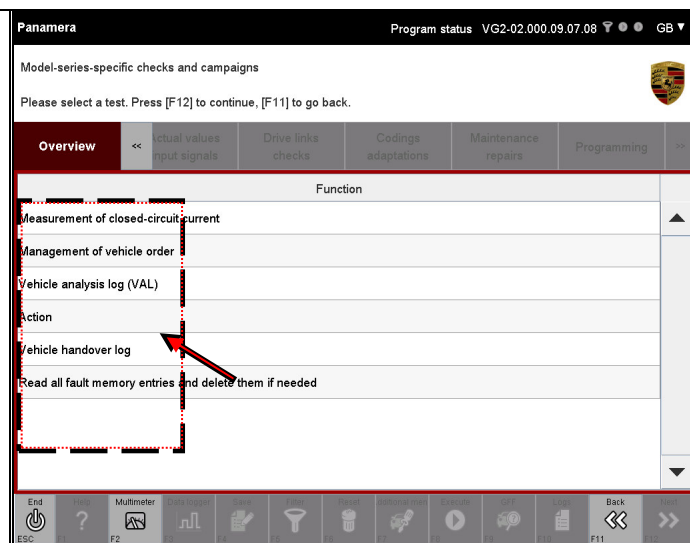### 8.9.1 Calling up the general vehicle functions

> **i** You can call up the general vehicle functions only from the control unit list or control unit overview. The function is deactivated in all other function groups.

1. Press the <F7> button.

2. The list of general vehicle functions is displayed.

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8.9.2 Vehicle analysis log (VAL)

This section describes how you can create, print out and where appropriate also send a vehicle analysis log. It is possible to create two different types of vehicle analysis log:

- AS VAL: After Sales vehicle analysis log

- OBD VAL

8.9.2.1 Action-specific buttons for this function group

| Button	Label	Icon	Description
F10	**Print**		When you press the <F10> button, the application is called up that you have defined for opening XML files. This may be a web browser, for example. If the application used for displaying the files has a print dialogue, you can print out the VAL using this application.

8.9.2.2 Icons

Status displays when reading data out of the control units	
Icon	**Description**
	The icon is displayed in the Status column and indicates that the corresponding control unit is currently being processed.
	The icon is displayed in the Status column and indicates that processing of the corresponding control unit has been completed.
	The icon is displayed in the Status column and indicates that an error has occurred for this control unit.

8.9.2.3 Calling up and starting the vehicle analysis log function

1. Call up and display the list of installed control units and press the <F7> button to call up the general vehicle functions
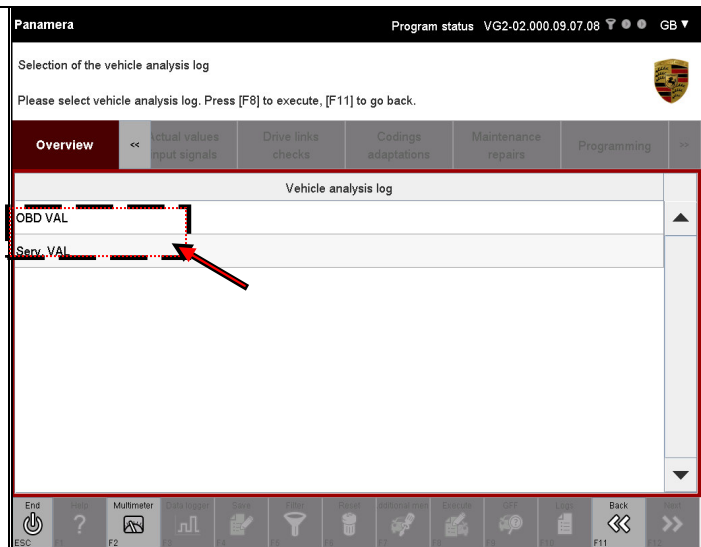   ►see section 8.9.1

2. Select the entry Vehicle analysis log (A) and confirm the selection by pressing the <F12> button (B).

   You can return to the control unit overview or control unit list with <F11> (B).
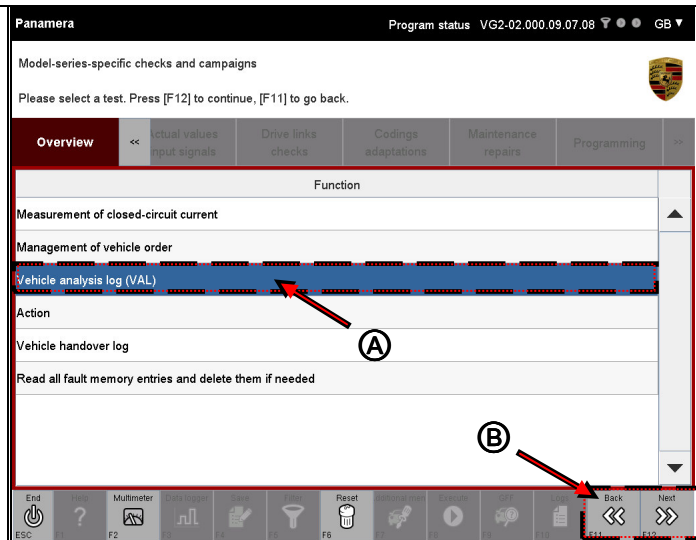
3. The possible VAL types that can be created are displayed in a list:

   • AS VAL
   • OBD VAL

8.9.2.4   Creating an AS VAL

> ℹ️ You must enter or check the following information in one of the following steps:
> ►Chassis number.
> Make sure that you have the required chassis number ready.

1. Call up and display the list of installed control units and press the <F7> button to call up the general vehicle functions. Then select the entry `Vehicle analysis log`:
    ►see section 8.9.2.3.

2. Select the entry `AS VAL` (A) and confirm your selection by pressing the <F8> button (B).

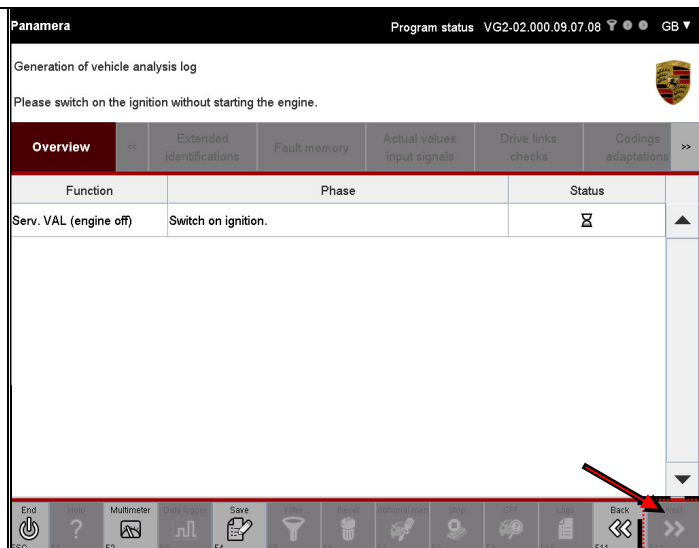   You can return to the list of general vehicle functions with <F11> (C).
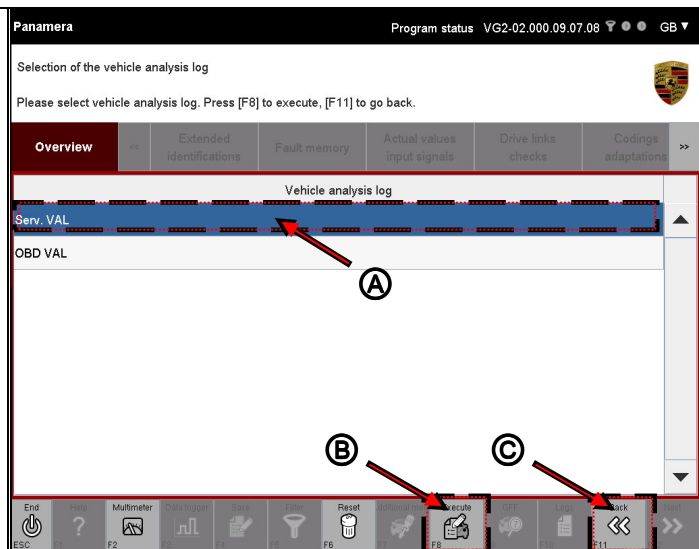
3. Observe the instructions in the information area and perform any actions necessary.

4. Press the <F12> button.
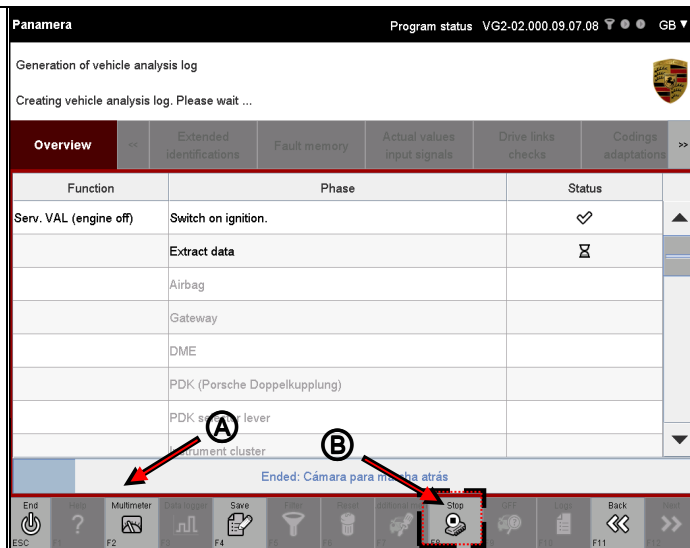
    You can return to the list of VAL types with <F11>.

    Pressing <F8> cancels the operation.
    Press the <F11> button to subsequently return to the list of VAL types.

5. The AS VAL is created. This operation is shown by a progress bar at the bottom of the working area.

    Cancel the operation with <F8> (A).
    Press the <F11> button to subsequently return to the list of VAL types.

Note on display:

- Control units to which communication is currently being set up and whose data is being read are identified with a ⌛ icon in the Status column.
- Control units for which the readout process has been successfully completed are identified with a ✓ icon in the Status column.
- Control units to which it was not possible to set up communication or where a communication error has occurred are identified with a ⓘ icon in the Status column.
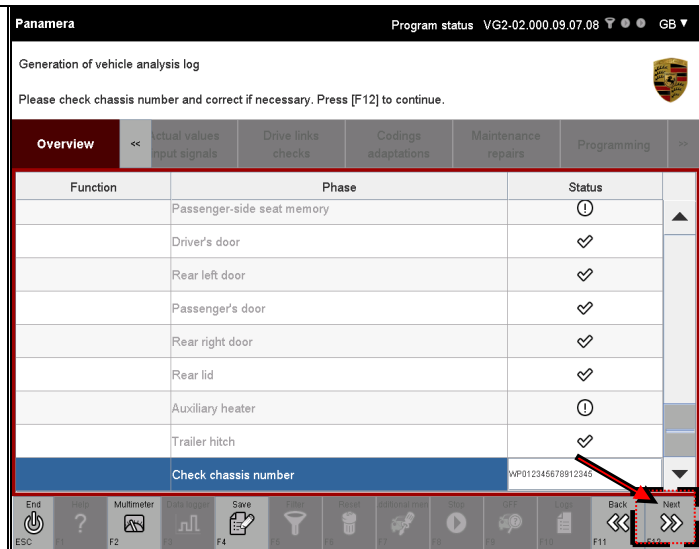
Entering or checking the chassis number

If all the necessary control unit data has been read out, you must check the chassis number or manually enter or correct the chassis number as necessary.

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Variant 1: Chassis number is correct

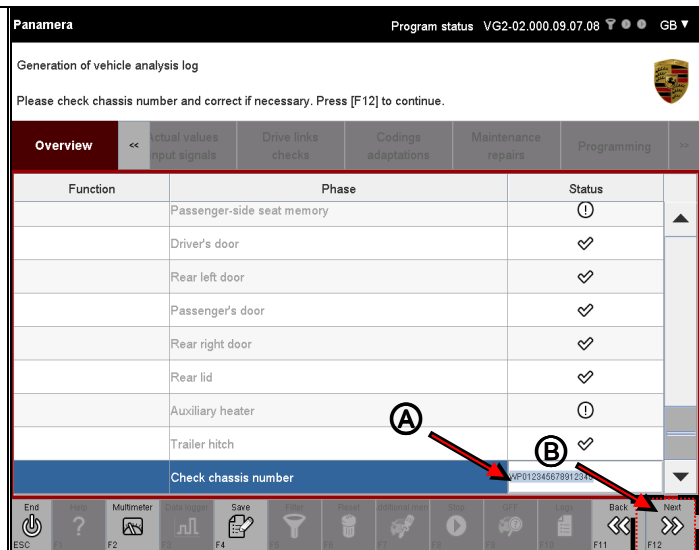6. If the chassis number is correct, simply press the <F12> button.

Variant 2: Correction or input of the chassis number

7. If the entered chassis number is not correct or missing, it must be manually corrected or entered.

    To do this, click in the field next to the entry `Check chassis number`.

    Correct the entry or enter a number (A).

    Confirm your input by pressing the <F12> button (B).
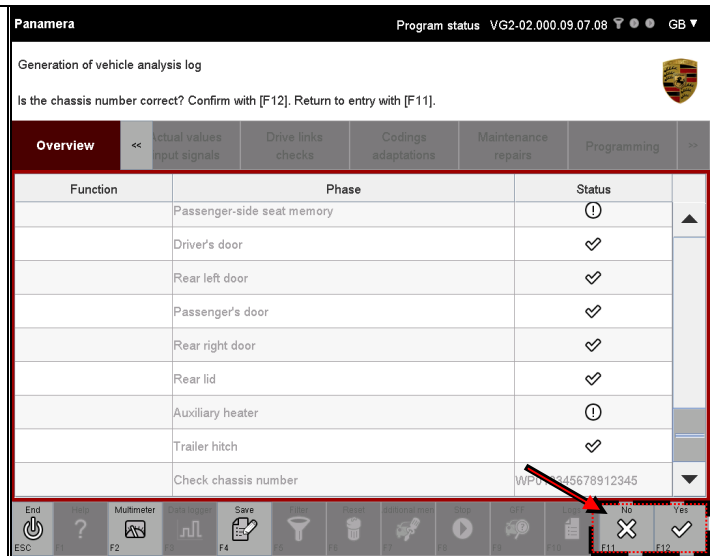
Next steps

8. You are then asked again to confirm that the chassis number is correct (A).

   You have the following selection options (B):
   • You cancel the operation with <F11>. You then return to the input screen and correct the chassis number again.
   • By pressing <F12>, you confirm that the displayed chassis number is correct.

9. The VAL is written if you have pressed the <F12> button and confirmed that the chassis number is correct. Another selection screen is then displayed.

   You have the following selection options:
   • You can return to the list of VAL types with <F11>.
   • By pressing <F12>, you can access the General Report Management area where you can view and print out the created VAL.
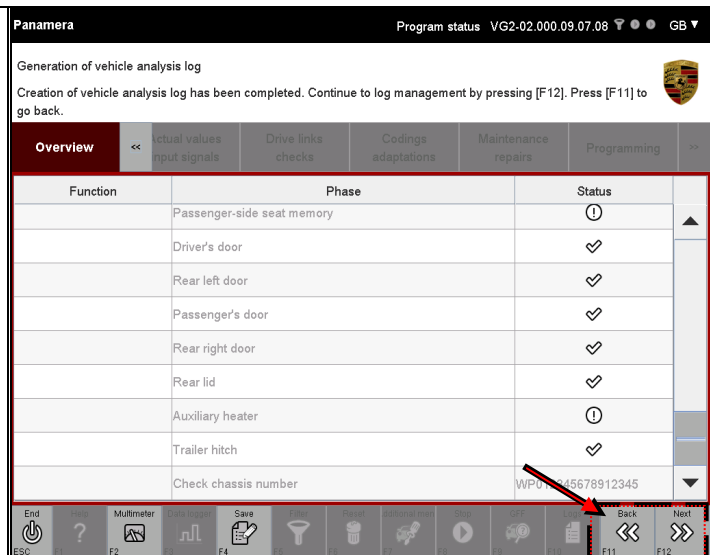
10. If you press the <F12> button, the General Report Management function is called up. The log type Vehicle analysis log is preselected here.

    All previously created VALs are listed in the table of the working area.

    The last-created Send VAL is listed first, and the last AS VAL is below this.
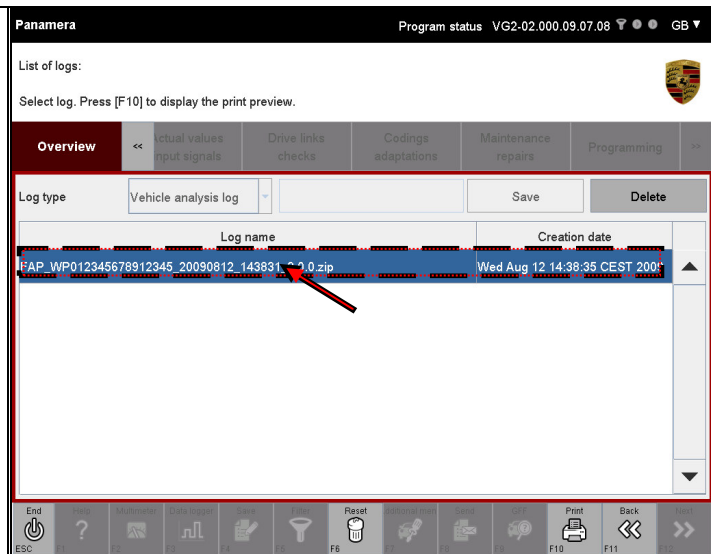
Additional information:

In addition to the possibility of calling up the list of vehicle analysis logs after creation of the log, you can also access the list from one of the function groups by means of the <F10> button. For a more detailed description of this access method:

►see section 0

8.9.2.5 Creating an OBD VAL

1. Call up and display the list of installed control units and press the <F7> button to call up the general vehicle functions. Then select the entry `Vehicle analysis log`:
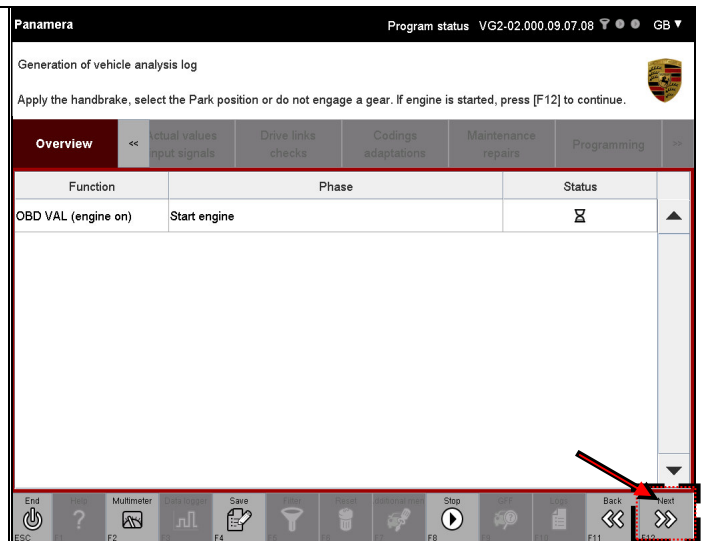   ►see section 8.9.2.3.

2. Select the entry `OBD VAL` (A) in the list of vehicle analysis logs and confirm your selection by pressing the <F8> button (B).

   You can return to the list of general vehicle functions with <F11> (C).
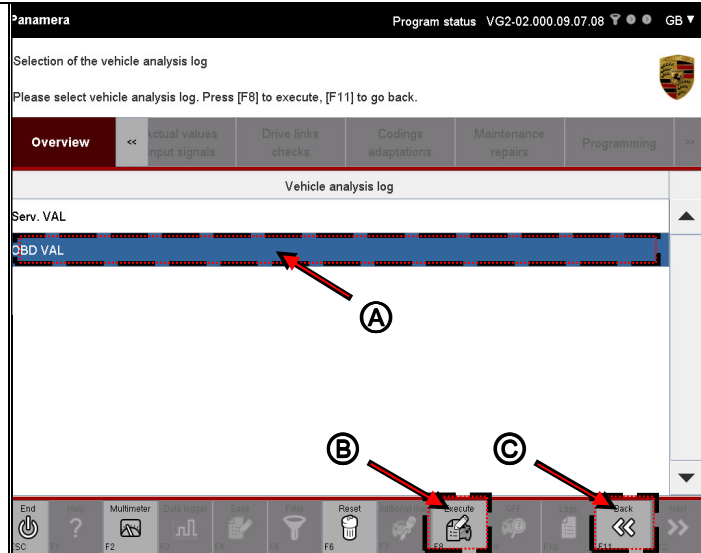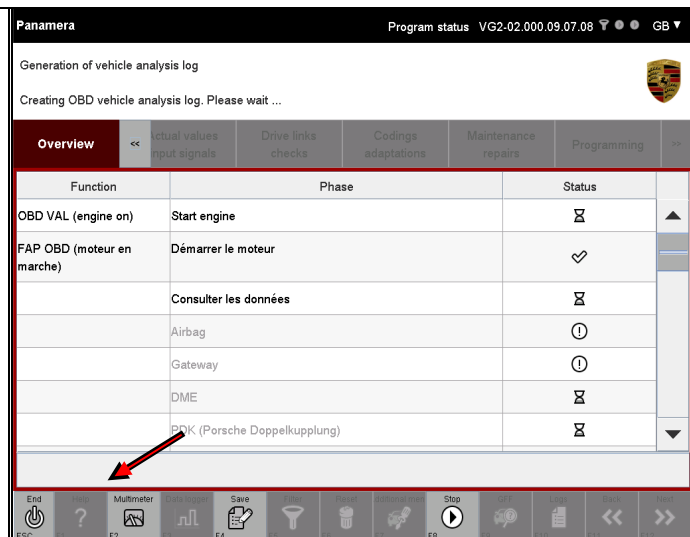
3. Observe the instructions in the information area and perform any actions necessary.

4. Then press the <F12> button.

5. The OBD VAL is created. The status of the operation is indicated by a progress bar at the bottom of the working area.

Note on display:

i

- Control units to which communication is currently being set up and whose data is being read are identified with a ⧗ icon in the `Status` column.
- Control units for which the readout process has been successfully completed are identified with a ✓ icon in the `Status` column.
- Control units to which it was not possible to set up communication or where a communication error has occurred are identified with a ⓘ icon in the `Status` column.

6. When all data has been polled, you must check or enter the vehicle data in the same way as for the AS VAL. For further information on this:
    ►see section 8.9.2.4, steps 6 to 10 , pages 179 - 180.

8.9.2.6 VAL: Display of vehicle analysis log list

If you have not directly accessed the General Report Management area after creating the vehicle analysis log, you still have the option of displaying the VAL list.

|	
i	Both AS VALs and OBD VALs are displayed in the list of saved VALs. The respective VAL types can be recognised by the prefix: • The AS VAL has the prefix FAP (VAL). • The OBD VAL has the prefix OBD_FAP (OBD_VAL).

1. Press the <F10> button.
   If it is not possible to select the button, first navigate to one of the function groups (e.g. Overview) and then press the <F10> button.

2. A button menu is displayed with a list of options.
   Select the log type `Vehicle analysis log`.
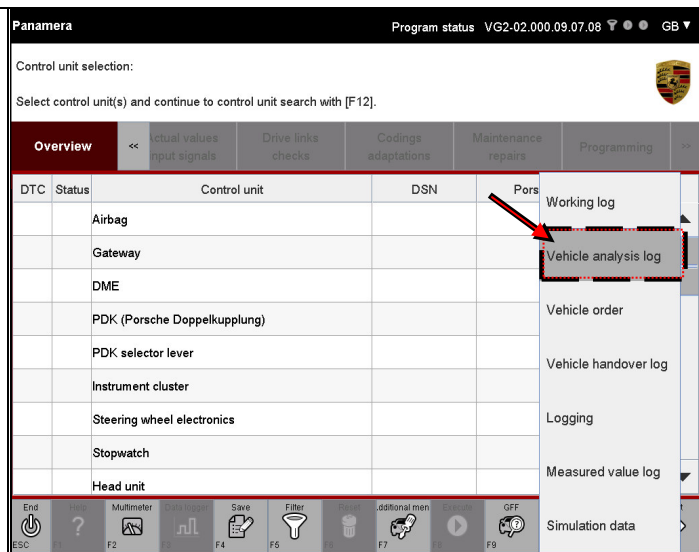
3. A list with all vehicle analysis logs is displayed.
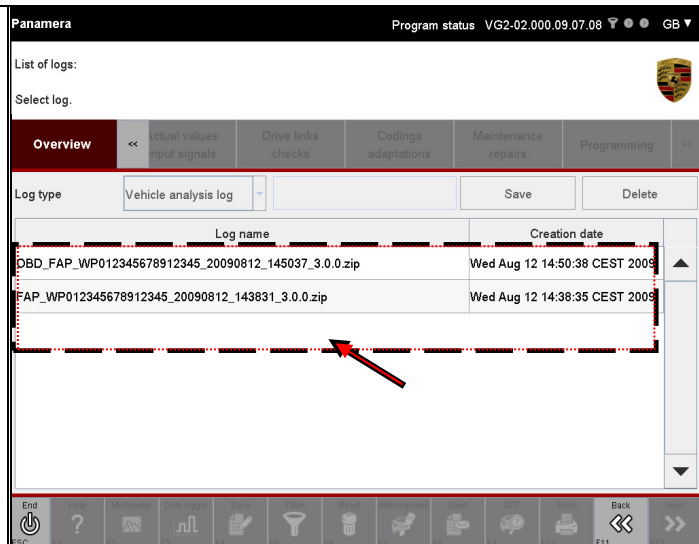
8.9.2.7   VAL: Print

The selected VALs are not printed out via the diagnostic application but via an application that displays the logs. If this application has a print dialogue and a correspondingly configured printer is connected, you can print out the VAL via this application.

Contact your system administrator for configuration of the file link and setting up the printer if necessary.

1.   Call up and display the list of vehicle analysis logs:
     ►see section 0

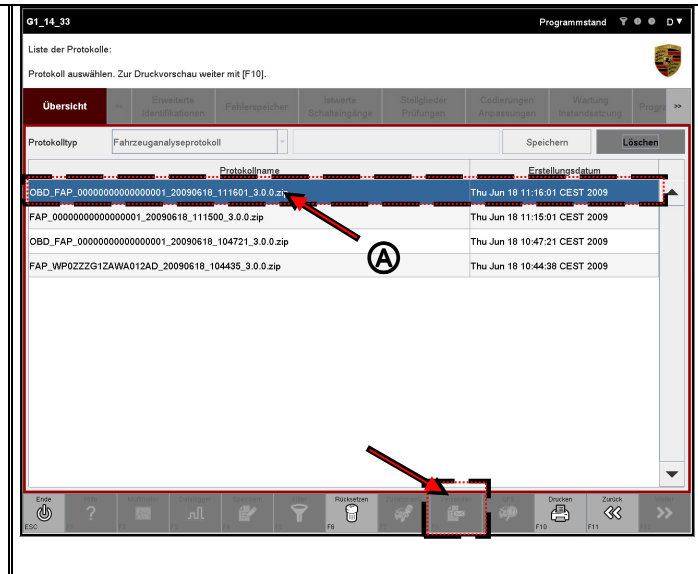2.   Select the VAL that you wish to print out (A) and press the <F10> button (B).
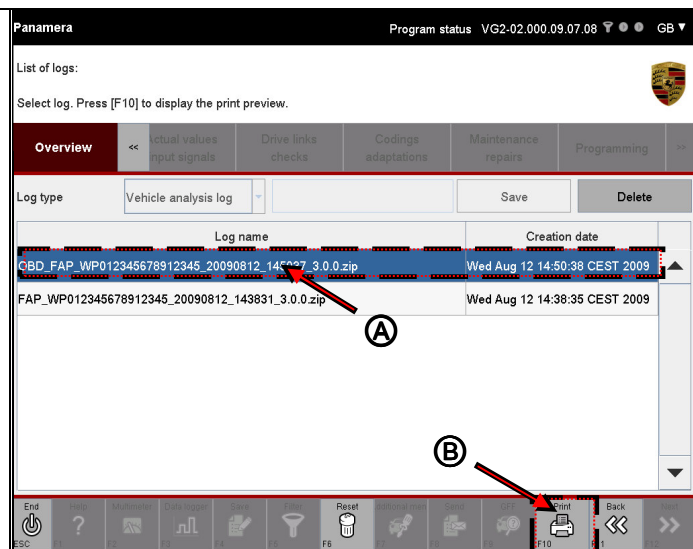
3.   The application for log display is launched.

8.9.2.8 VAL: Delete

1. Call up and display the list of vehicle analysis logs:
   ►see section 0

2. Select the log that you wish to delete (A) and press the <F8> button (B).

3. You must confirm deletion of the VALs. The following selection options are available:
   • Cancel the operation with <F11>. You then return to the list of VALs.
   • You confirm deletion of the VALs with <F12>.
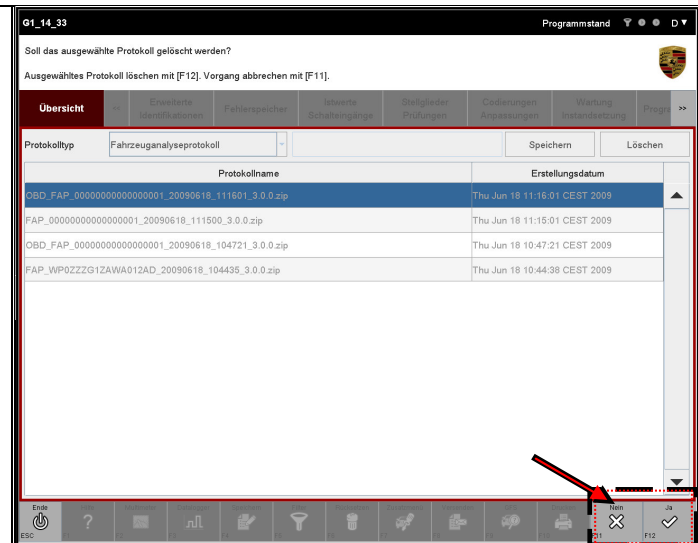
8.9.3 Maintenance of the vehicle order

Maintenance of the vehicle order takes place in several steps. In a first step, you must check the mandatory data that has been read from the vehicle and then enter or adapt the data as required. In a further step, you must then assign various equipment features. If you have changed at least one data item/feature, you can then write the assigned data to the control unit.

#### 8.9.3.1 Action-specific buttons for this function group

For assignment of equipment features			
Button	**Label**	**Icon**	**Description**
F8	**Write**		The equipment features are initially stored temporarily by pressing the <F8> button.
After summary of assigned equipment features			
Button	**Label**	**Icon**	**Description**
F8	**Write**		The vehicle order is written to the control unit by pressing the <F8> button.

8.9.3.2 Vehicle order

1. Call up and display the list of installed control units and press the <F7> button to call up the general vehicle functions
   ►see section 8.9.1

2. Select the entry `Maintenance of the vehicle order` (A) in the list of general vehicle functions and confirm the selection by pressing the <F12> button (B).

   You can return to the control unit overview or control unit list with <F11> (B).
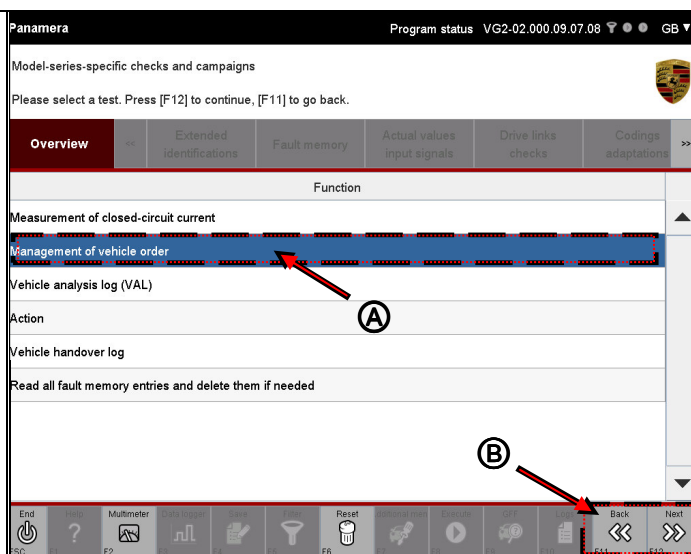
Note on screen content:

As the first step, the mandatory data is read out of the gateway and engine control units, compared and then displayed in the next screen. The following data is displayed:

►Order type
►Chassis number
►Transmission type
►Country code
►Engine number
►Engine type
►Transmission serial number
►Installation regulation

All values can be edited and can be stored temporarily with <F8> (Save). No data is written to the control unit.

Note: Editability

If the data in the two control units (gateway and engine control units) is inconsistent, this is indicated by a 🔧 icon in the `Changes` column for the corresponding data item. You may change this data, but do not have to. When the data is finally written to the control unit, a correction is always made and data consistency established.

If the gateway control unit supplies an invalid value for the mandatory data, the text "invalid value" is displayed in the corresponding cell of the `Value` column.

Entries that have been identified as an "invalid value" must be assigned a valid value before you can write the vehicle order (also see following note: Invalid values).

Note: Invalid values

If there is at least one invalid value for an entry, the <F8> button, which allows you to temporarily save the changed values in the working screen, is not available. However, you can still access the next screen with <F12> in order to successively display the other equipment features.

In this case, final writing of the data after assignment of the equipment features is not possible due to the invalid data in the initial screen in which you have to enter and check the mandatory data. A corresponding message is then displayed in the information area.

Mandatory data: Vehicle description

3. The vehicle data is read out from the vehicle and displayed. Inconsistent data is identified with a ⚙ icon in the `Changes` column.
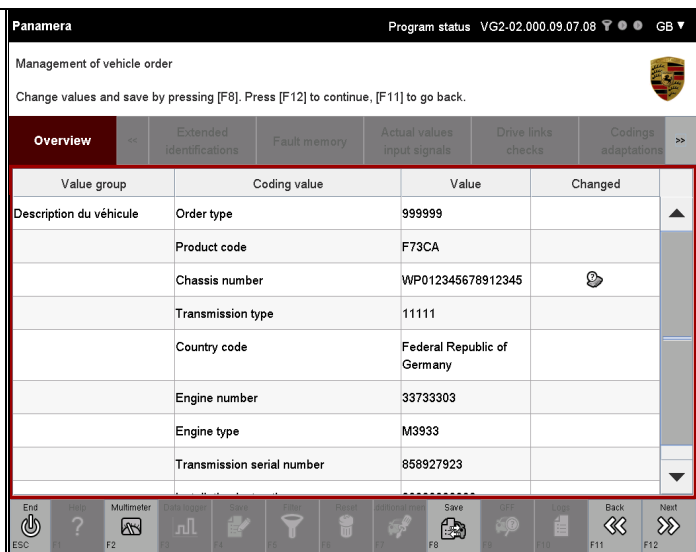

4. You can change the data manually. To do this, click in the corresponding field of the `Value` column and enter the corresponding data.

Depending on type and definition, the change may also be made by means of a drop-down menu (see figure).
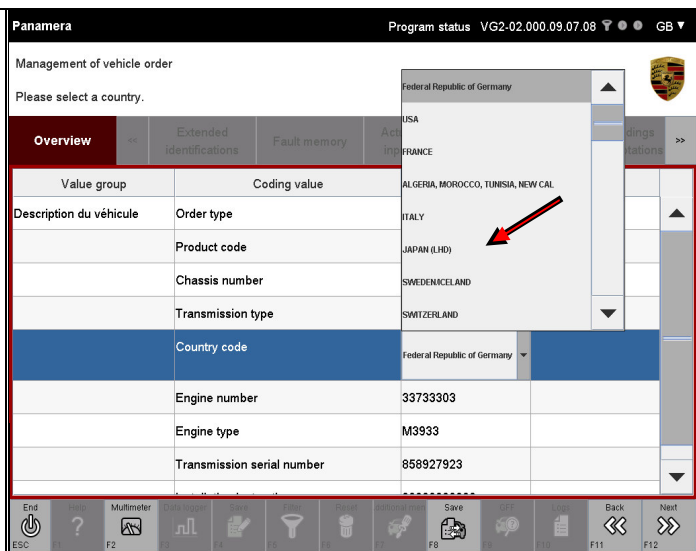
5. If you have changed an entry, this is indicated by the ✎ icon next to the changed entry in the `Changes` column (A).
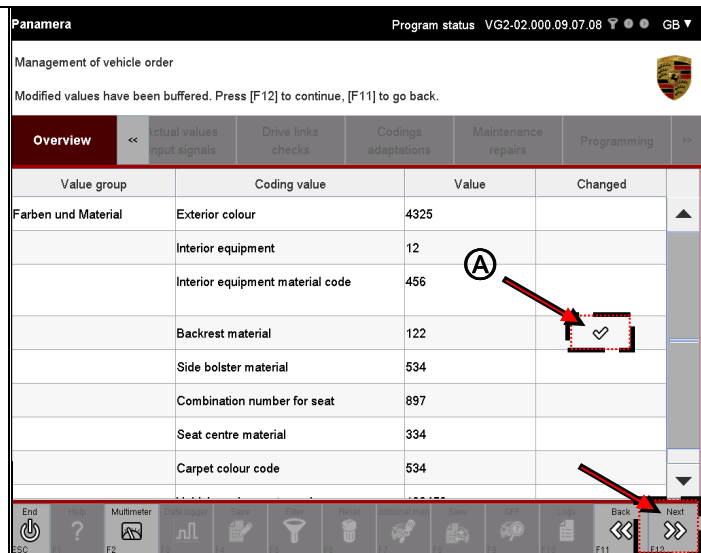
    Press the <F8> button to save the change temporarily (B).
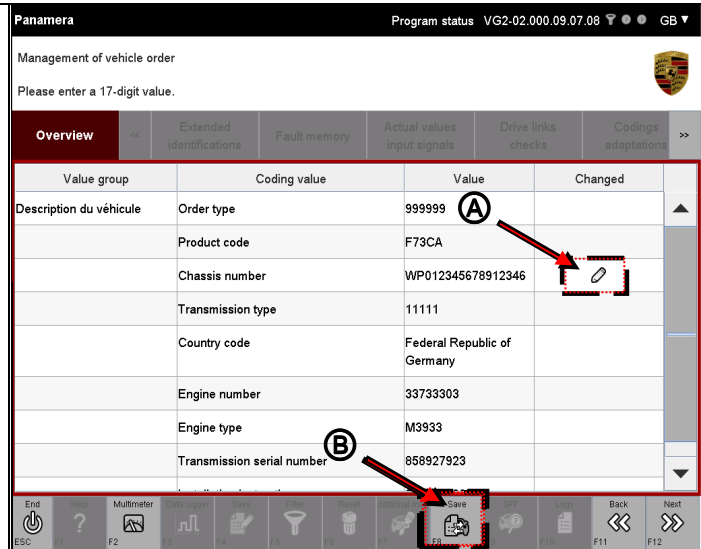
6. Changed and temporarily saved data is identified with a ✓ icon. Inconsistent data is also identified with this icon since it will be changed in a subsequent write operation (A).
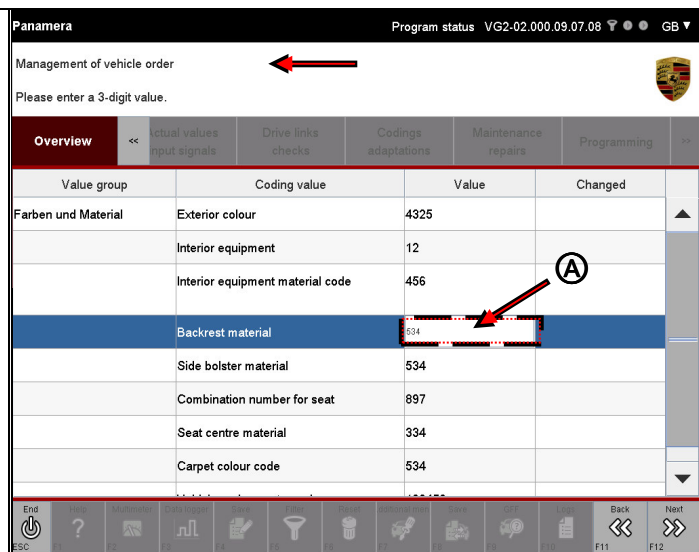
    Press the <F12> button (B).

    You can return to the list of general vehicle functions with <F11>.
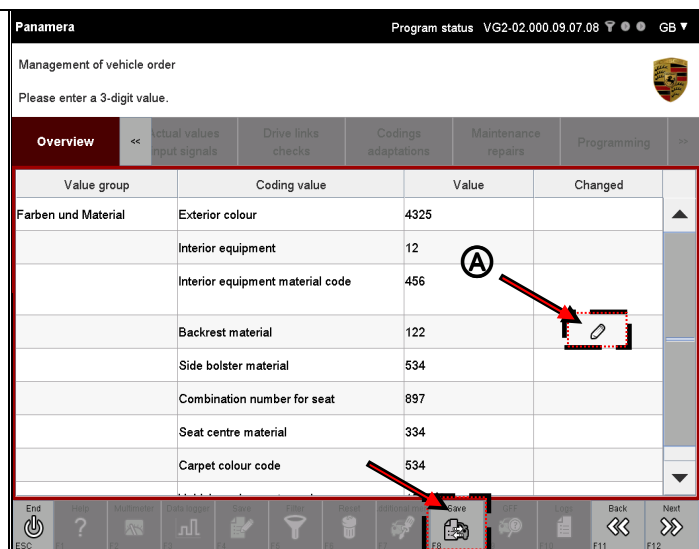
Colour and material

7. Click in the corresponding field of the `Value` column and enter the corresponding data (A). Corresponding help for input is provided in the information area (B).	*(screen image)*

8. If you have changed an entry, this is indicated by the ✎ icon next to the changed entry in the `Changes` column (A). Press the <F8> button to save the change temporarily (B).	*(screen image)*

9. Changed and temporarily saved data is identified with a ✅ icon. Inconsistent data is also identified with this icon since it will be changed in a subsequent write operation (A). Press the <F12> button (B). You can return to the vehicle description with <F11>.	*(screen image)*
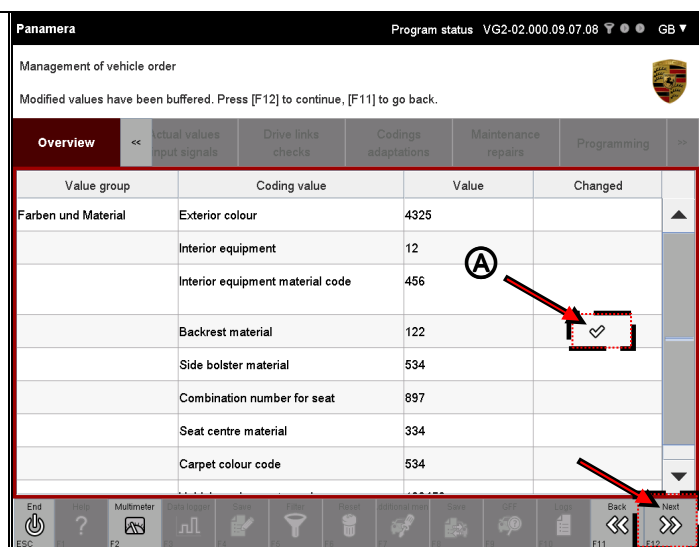
X numbers

Note on screen content:

The equipment features of the value group
"X numbers" are displayed in the next screen.

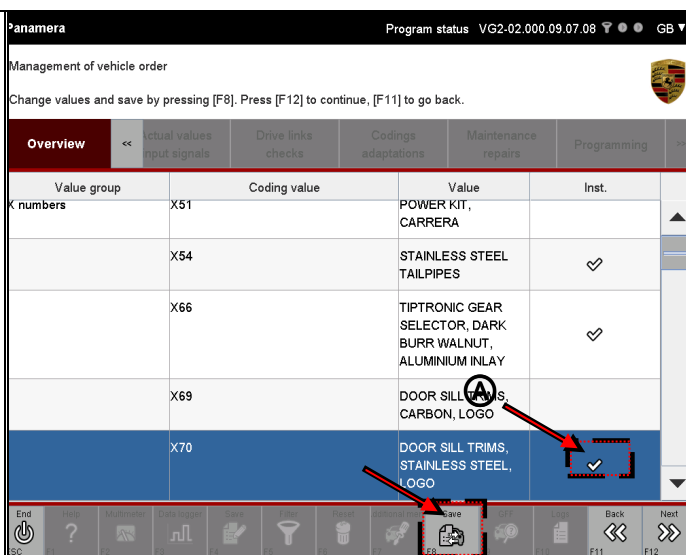A feature comprises three entries:

- X number (e.g. X51, X70 etc.) in the column `Coding value`.

- Designation of the feature in the column `Value`.

- Presence of the feature in the vehicle order in the column `Installed`. If a feature is set, this is indicated by a ⍻ icon. If the feature is not set, the cell is empty.

10. In order to define the presence of an equipment feature, click in the corresponding cell of the `Installed` column.

If you have selected a feature that was previously identified as not installed, this is identified in the corresponding entry of the `Installed` column with a ⍻ icon.

If you have deselected a feature that was previously identified as installed, the icon is deleted and the corresponding cell of the `Installed` column is empty (A).

Press the <F8> button to temporarily save the equipment list of the X numbers (B).

11. Press the <F12> button.

You can return to the list of colours and materials with <F11>.

M numbers

i

Note on screen content:

The equipment features of the value group
"M numbers" are displayed in the next screen.

A feature comprises three entries:

- M number (e.g. 001, 026 etc.) in the column `Coding value`.

- Designation of the feature in the column `Value`.

- Presence of the feature in the vehicle order in the column `Installed`. If a feature is set, this is indicated by a ✓ icon. If the feature is not set, the cell is empty.
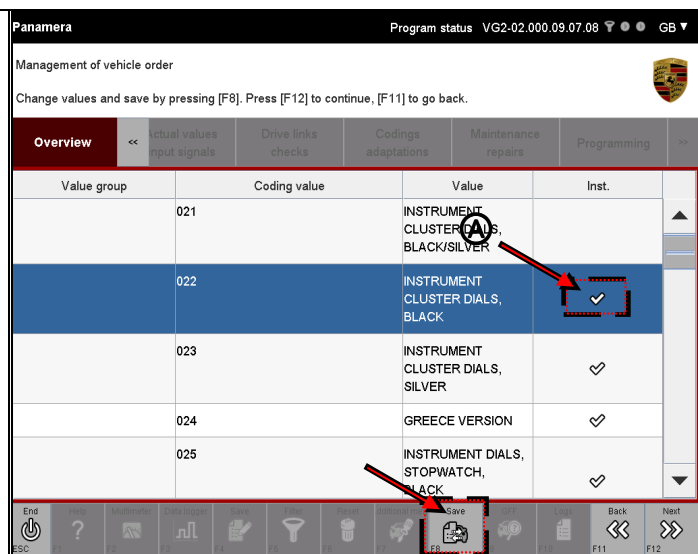
---

12. In order to define the presence of an equipment feature, click in the corresponding cell of the `Installed` column.

    If you have selected a feature that was previously identified as not installed, this is identified in the corresponding entry of the `Installed` column with a ✓ icon.

    If you have deselected a feature that was previously identified as installed, the icon is deleted and the corresponding cell of the `Installed` column is empty (A).

    Press the <F8> button to temporarily save the equipment list of the M numbers (B).

---

13. Press the <F12> button.

    You can return to the list of X numbers with <F11>.

Z numbers

Note on screen content:

The equipment features of the value group
"Z numbers" are displayed in the next screen.

A feature comprises three entries:

- Z number (e.g. 001, 026 etc.) in the column `Coding value`.
- Designation of the feature in the column `Value`.
- Presence of the feature in the vehicle order in the column `Installed`. If a feature is set, this is indicated by a ✓ icon. If the feature is not set, the cell is empty.

14. In order to define the presence of an equipment feature, click in the corresponding cell of the Installed column.

    If you have selected a feature that was previously identified as not installed, this is identified in the corresponding entry of the `Installed` column with a ✓ icon.

    If you have deselected a feature that was previously identified as installed, the icon is deleted and the corresponding cell of the `Installed` column is empty (A).

    Press the <F8> button to temporarily save the equipment list of the Z numbers (B).
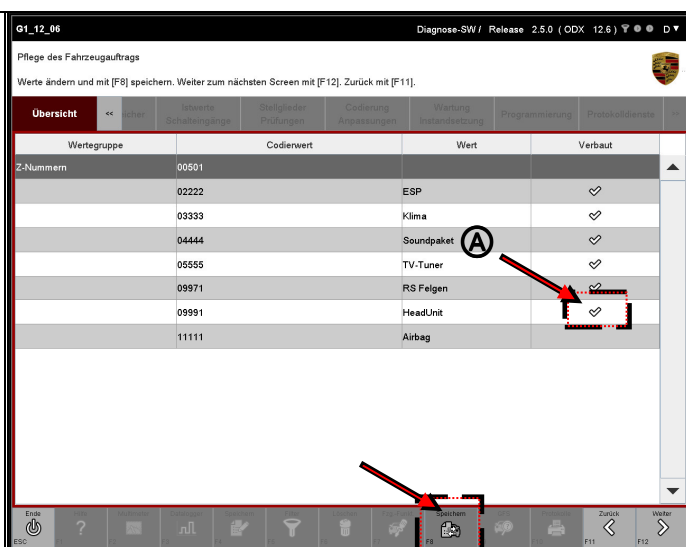
15. Press the <F12> button.

    You can return to the list of M numbers with <F11>.

Summary of results

> **Note on screen content:**
>
> All the set equipment features – i.e. all features that have a ✅ icon - of all value groups (X numbers, M numbers, Z numbers) are displayed in an overview in the next screen.

16. The following selection options are available:
    - Press <F8> to write the vehicle order to the vehicle (A).
    - Press the <F11> button to return to the equipment features of the Z numbers (B).
    - Press the <F12> button to exit vehicle order maintenance and to return to the list of general vehicle functions (B).
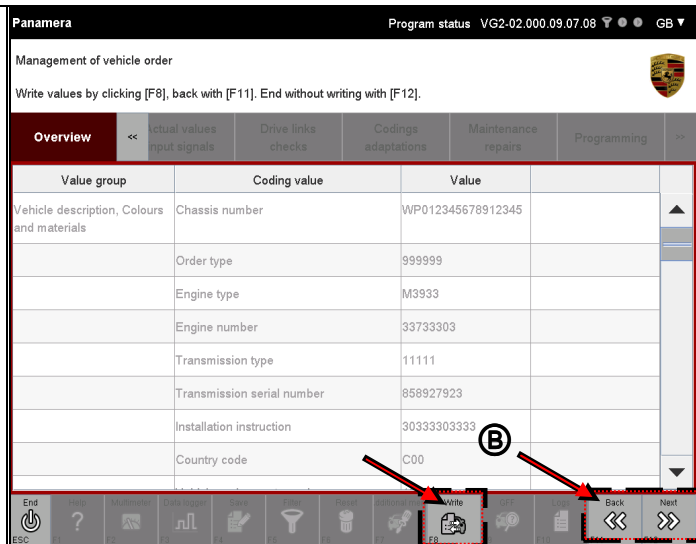
Special case: Exiting the vehicle order with the <F12> button

17. If you have pressed the <F12> button, you will be informed that data is present that has not yet been written. The following selection options are available:
    - Press <F11> to cancel the operation. You then return to the summary of results (B).
    - Press <F12> to confirm that you wish to exit vehicle order maintenance. You will then return to the list of general vehicle functions (B).
    - Press <F8> to write the vehicle order to the control unit (A).
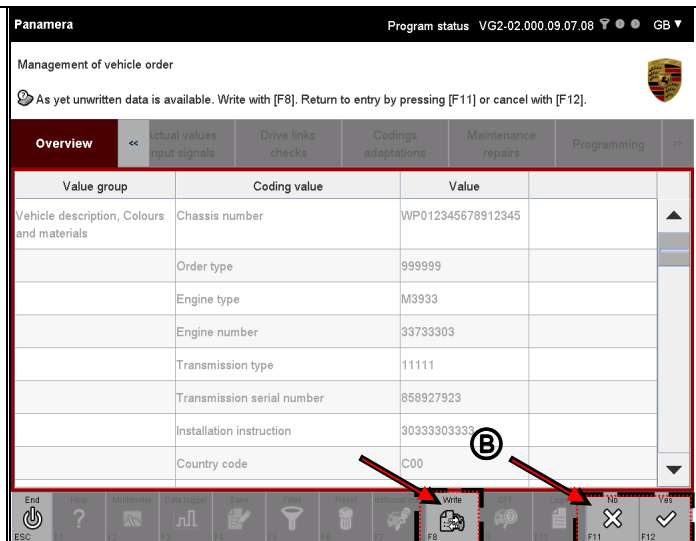
8.9.4 Vehicle handover log

Within the scope of the general vehicle functions, you can also create a vehicle handover log. Upon vehicle handover, all control units are activated from transport mode and checked for fault entries. In addition, a number of basic settings in the vehicle are coded. This process takes place automatically.

This section describes how you create a vehicle handover log and how you can print and delete logs.

8.9.4.1 Creating a vehicle handover log

1. Call up and display the list of installed control units and press the <F7> button to call up the general vehicle functions
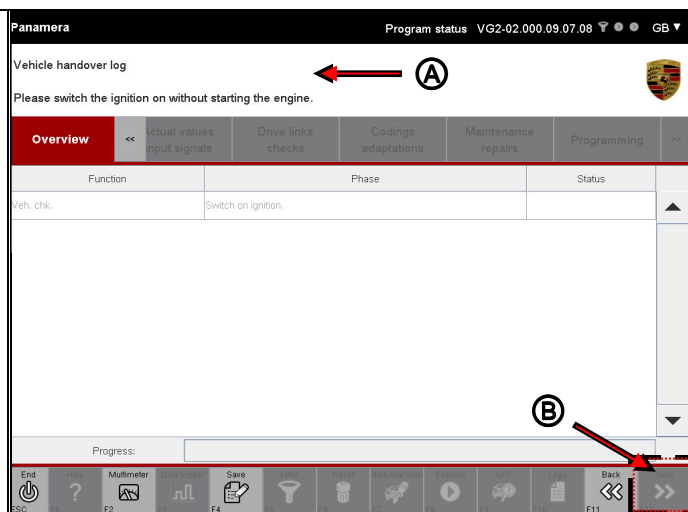►see section 8.9.1

2. Select the entry `Vehicle handover log` (A) in the list of general vehicle functions and confirm the selection by pressing the <F12> button (B).

   You can return to the control unit overview or control unit list with <F11> (B).
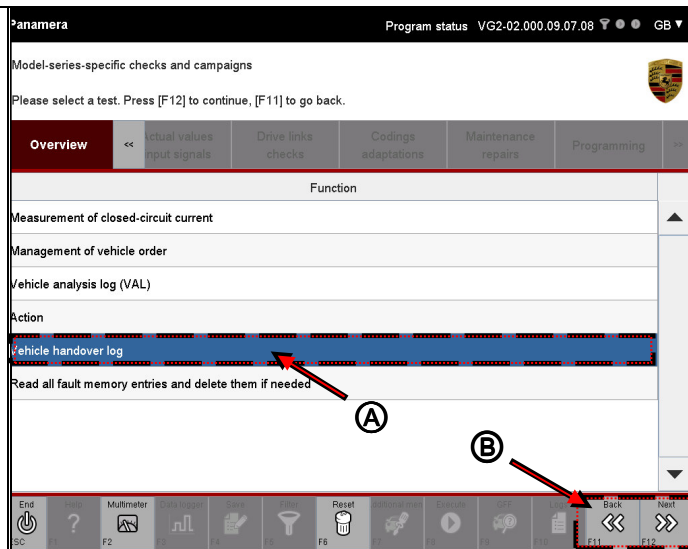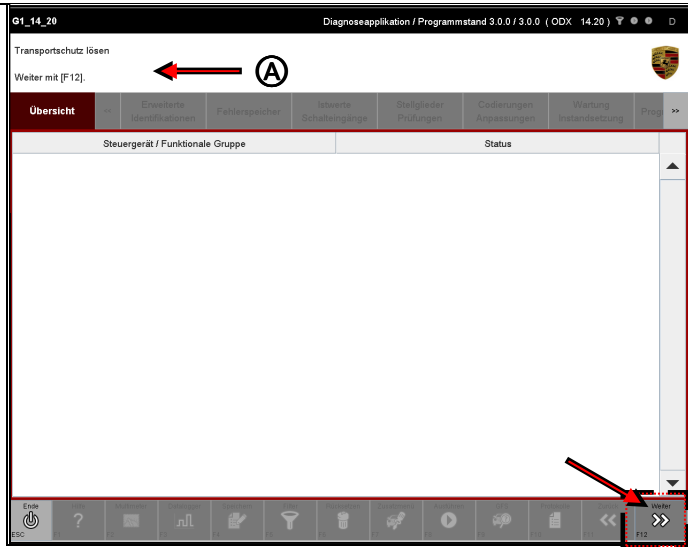

3. Observe the first instruction in the information area and carry out the corresponding action (A).

   Confirm your action by pressing <F12> (B).

4. Observe the next instruction in the information area (A)

    Confirm the message by pressing <F12> (B).

5. Service requests are then sent to various control units and functional groups (UDS, KWP2000). The result of the actions is displayed in the Status field (A).
   - If the service has been performed successfully, this is indicated by a ✓ icon.
    - If execution of the service was not successful, this is indicated by a ⊕ icon. In this case, a corresponding message is displayed additionally in the information area.

    Press the <F12> button if all actions have been performed successfully (B).
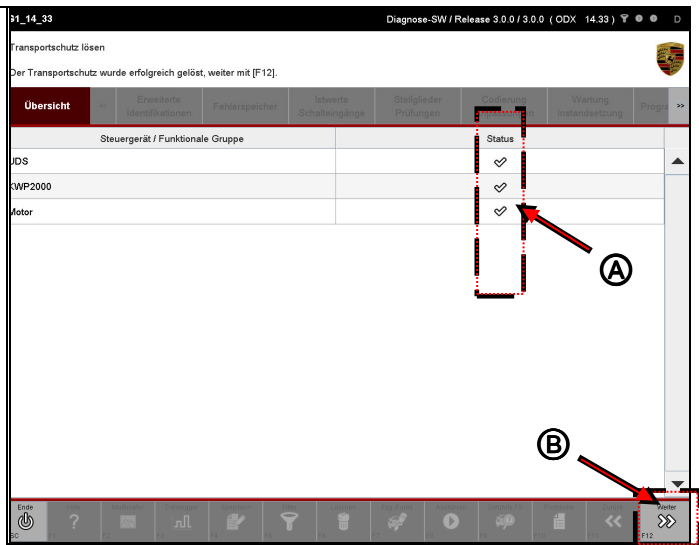
6. The required data is read out of the control units and written.
A check is performed of whether all control units can be addressed.

A progress bar informs you about the status of vehicle handover log creation. The bar maximum value is determined on the basis of the number of control units to be processed plus the pre-processing and post-processing steps. The status bar length can therefore "jump" during processing and does not visualise actual progress (A).
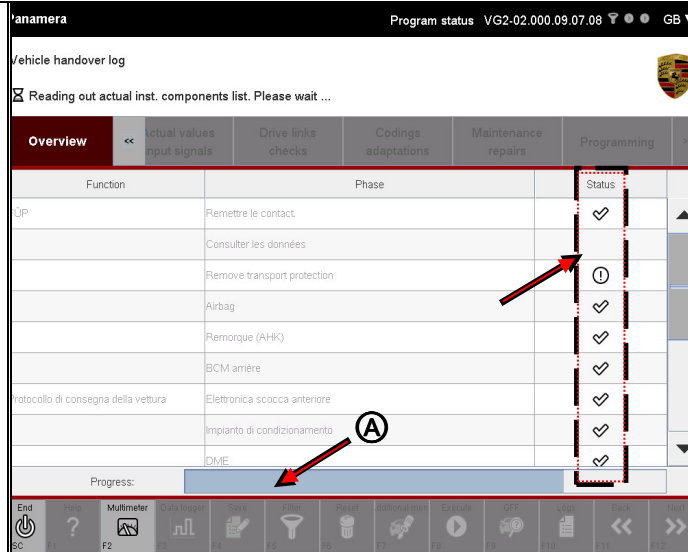
Note on display:

- Control units to which communication is currently being set up and whose data is being read are identified with a ⌛ icon in the `Status` column.
- Control units for which the readout process has been successfully completed are identified with a ✓ icon in the `Status` column.
- Control units to which it was not possible to set up communication or where a communication error has occurred are identified with a ⓘ icon in the `Status` column.

7. A query screen is then displayed which asks you whether the vehicle is a new vehicle.
You have the following selection options:
- Press <F8> to confirm that it is a new vehicle (▶continue with step 8)
- Press <F12> to define the vehicle as a used vehicle (▶continue with step 12)

| **Option: Yes, it is a new vehicle** |

Note on operating sequence:

If the vehicle is a new vehicle, the following additional steps are necessary in which certain information is requested and saved about the new vehicle and the work performed on the new vehicle.
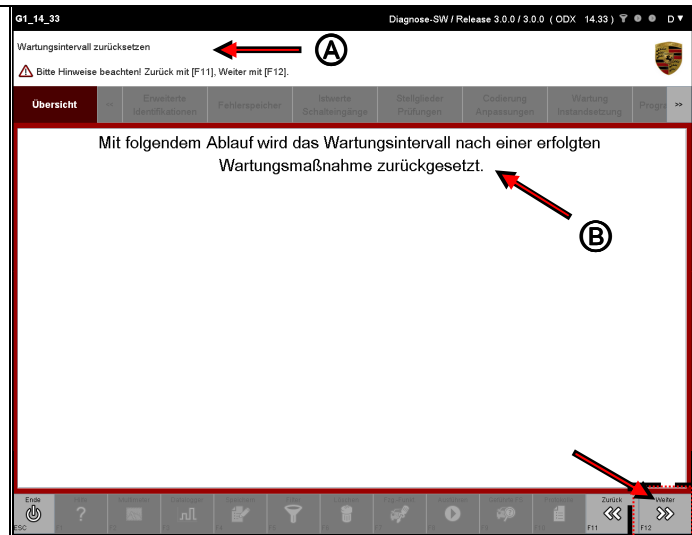
If the vehicle is a used vehicle, the steps 8 to 11 are skipped and the operating sequence is continued with step 12.

8. If you have confirmed the selection with <F8>, a further screen is displayed.
    Observe the messages in the information area (A) and in the working area (B).

    Confirm the message with <F12> (C)

   You can return to the new vehicle query with <F11>.

9. If you have confirmed the message, you must define the work that has been performed on the new vehicle (A).
The following selection options are available:
- Major maintenance
- Minor maintenance
- Oil service

The corresponding maintenance interval is reset by your selection.

In the "Performed" column, click the corresponding box next to the work activity that you have performed on the vehicle (B).
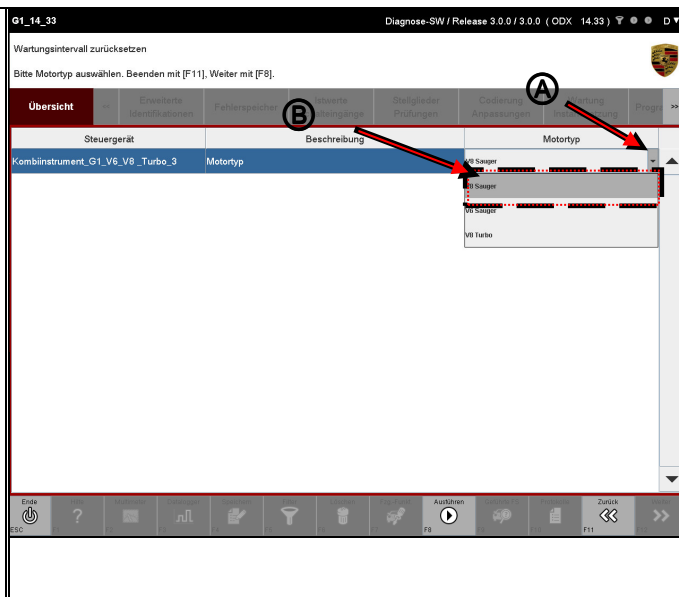
Note: The activity is deselected again if you click on the box again.

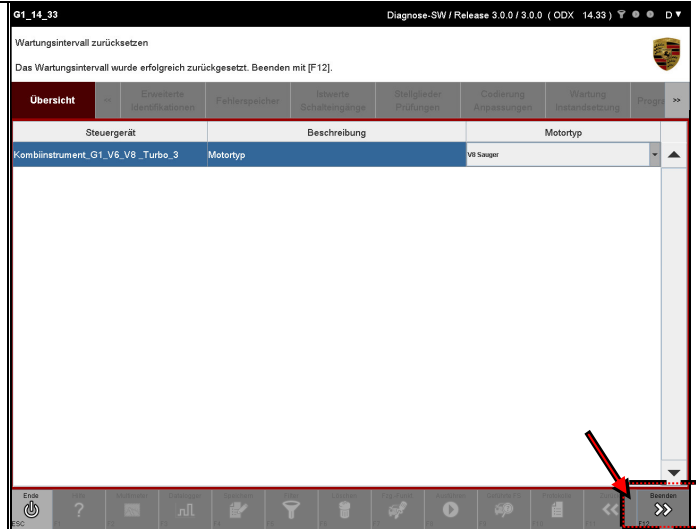Confirm your input by pressing the <F12> button (C).
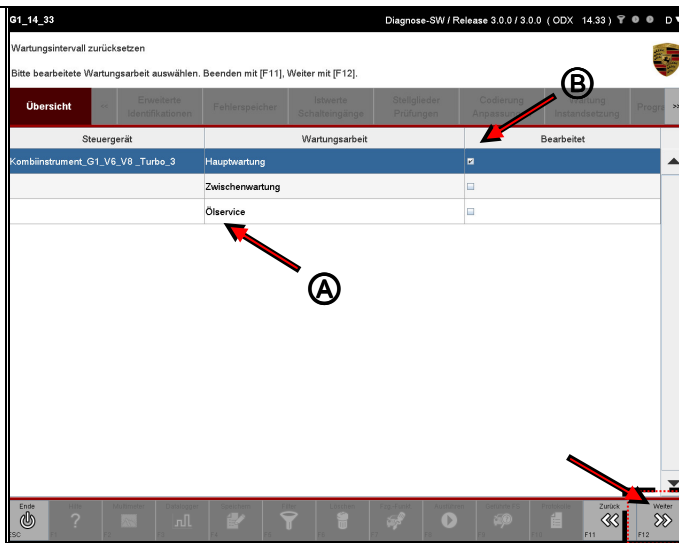
10. Next, you must define the engine type that is installed in the new vehicle.

Click in the field Engine type (A) and select the engine type that is installed in the vehicle by means of the drop-down menu that then opens (B).

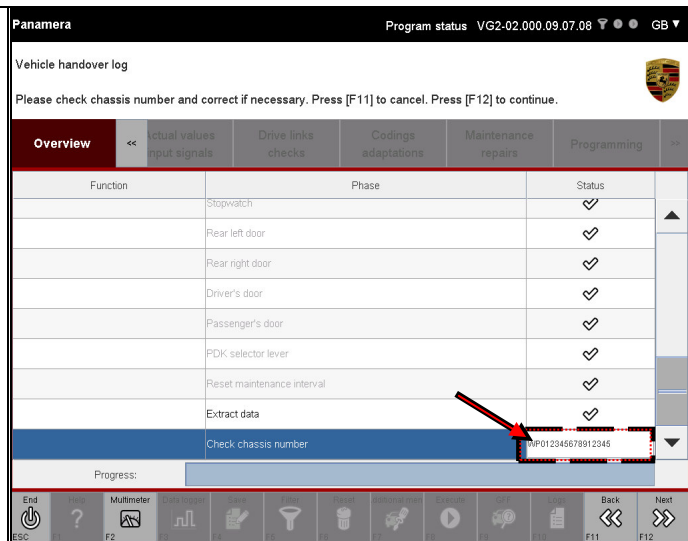11. Confirm your input with <F12>.

Next steps:

Note on remaining operating sequence:
The next steps apply to both new and used vehicles.
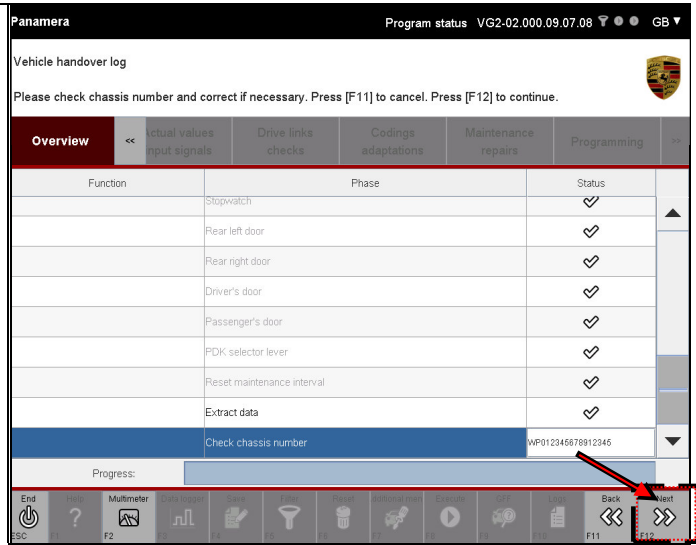
---

12. You must check the chassis
number when all the requested
data has been provided.

First scroll in the list to the entry
`Chassis number`.
If the number is not correct, you
must correct it.

To do this, click in the field
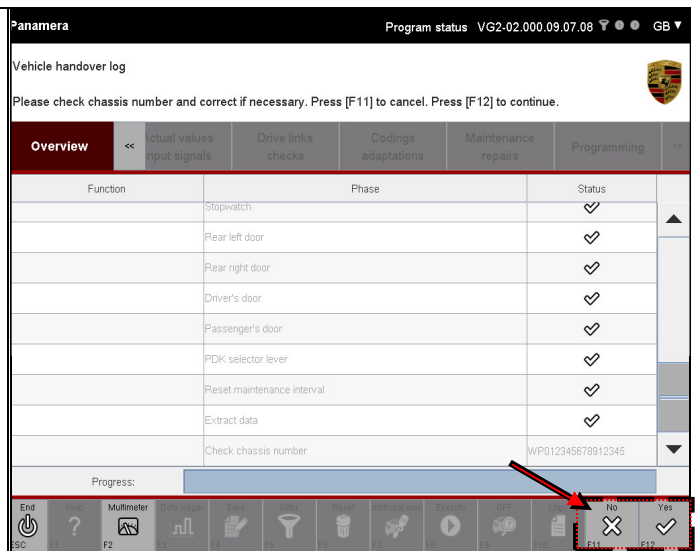`Status` and change the entry.

13. After you have checked or corrected the chassis number, press the <F12> button.

14. You must then check once more that the chassis number is correct. The following selection options are available:
   - Press <F11> to return to the input screen for the chassis number.
    - Press <F12> to confirm that the number is correct.

15. After you have confirmed that the chassis number is correct with <F12>, a further selection screen is displayed.

    The following selection options are available:
    - Press <F11> to return to the list of general vehicle functions.
    - By pressing <F12>, you can access the General Report Management area where you can view and print out the created vehicle handover log.
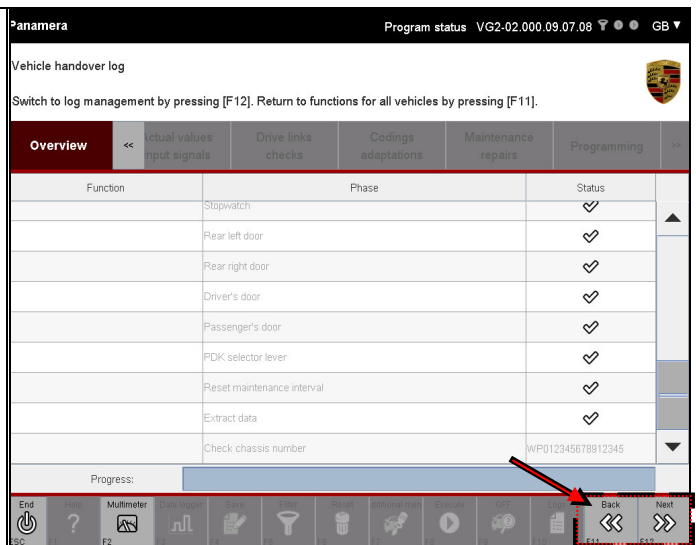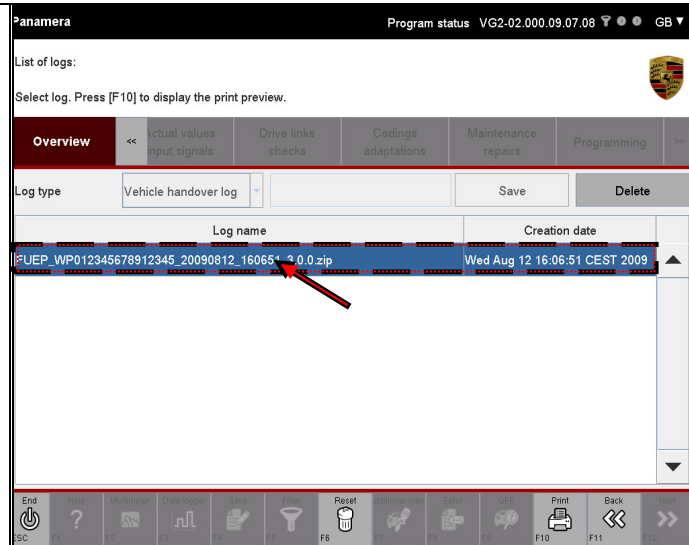
16. If you press the <F12> button, the
General Report Management
function is called up. The log type
`Vehicle handover log` is
preselected here.

All previously created vehicle
handover logs are listed in the
table of the working area.

The last-created vehicle handover
log is listed first.

Further information:

In addition to the possibility of calling up the list of vehicle handover logs after
creation of the log, you can also call up the list from one of the function groups
by means of the <F10> button. For a more detailed description of this access
method:

►see section 8.9.4.2

8.9.4.2 Vehicle handover log: Display of vehicle handover log list

If you have not directly accessed the General Report Management area after creating the vehicle handover log, you still have the option of displaying the vehicle handover log list.
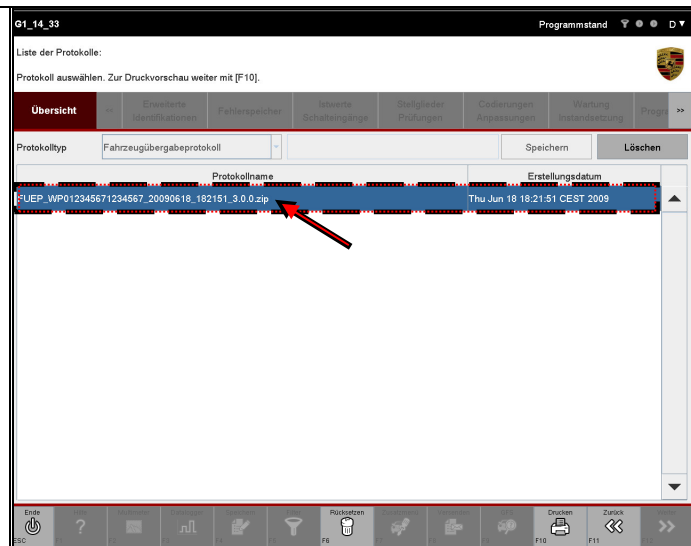
1. Press the <F10> button.
   If it is not possible to select the button, first navigate to one of the function groups (e.g. Overview) and then press the <F10> button.

2. In the button menu, select the log type `Vehicle handover log`.
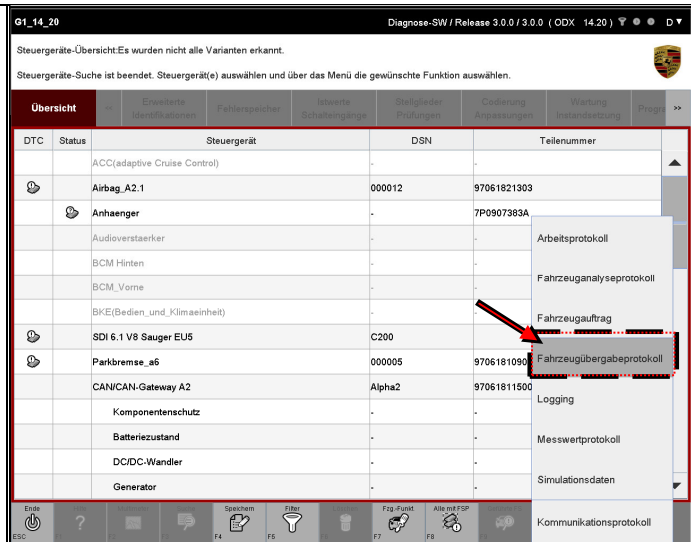
3. All previously created vehicle handover logs are listed in the table of the working area.

   The last created vehicle handover log is listed first.

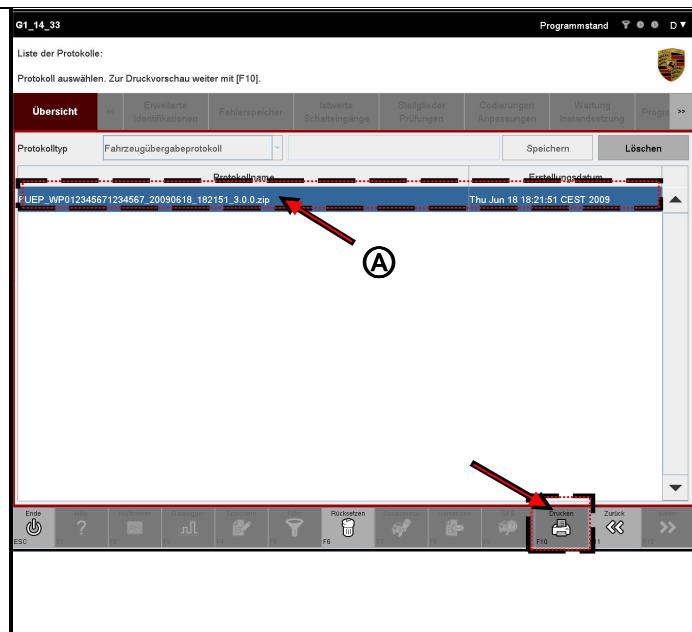### 8.9.4.3   Vehicle handover log: Print

ℹ️

The selected vehicle handover logs are not printed out via the diagnostic application but via an application that displays the logs. If this application has a print dialogue and a correspondingly configured printer is connected, you can print out the vehicle handover log via this application.
Contact your system administrator for configuration of the file link and setting up the printer if necessary.

---

1. Call up and display the list of vehicle handover logs:
   ►see section 8.9.4.2

2. Select the vehicle handover log that you would like to print out (A) and press the <F10> button (B).

   Press <F6> if you wish to cancel the selection.

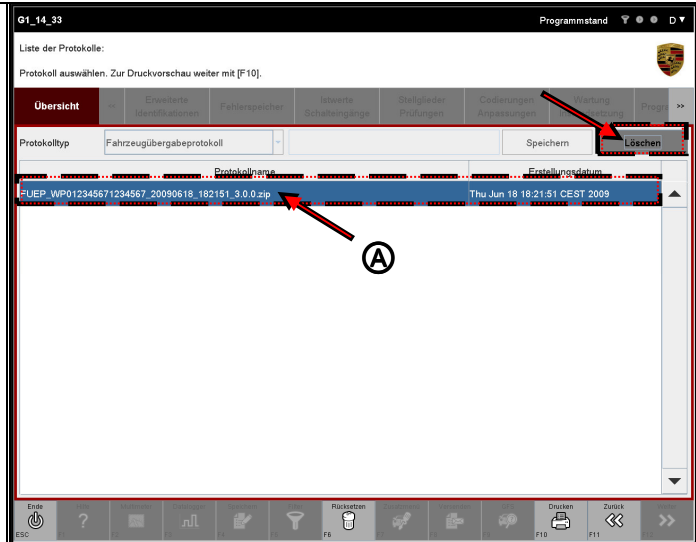   You can return to the screen from which you called this function by pressing <F11>.

3. The application for log display is launched.

8.9.4.4   Vehicle handover log: Delete

1. Call up and display the list of vehicle handover logs:
    ►see section 8.9.4.2

2. Select the log you wish to delete (A) and press the `Delete` button (B).

3. You must confirm deletion of the vehicle handover logs. The following selection options are available:
    • Cancel the operation with <F11>. You then return to the list of vehicle handover logs.
    • You confirm deletion of the vehicle handover logs with <F12>.
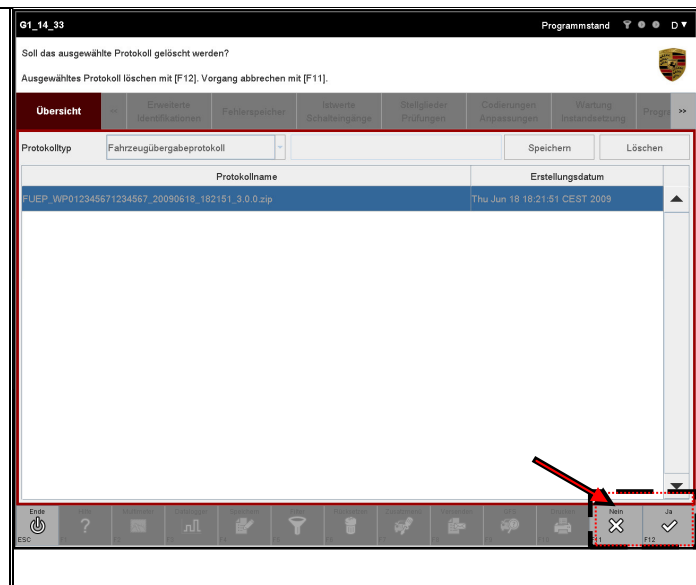
8.9.5   Action (action coding)

Coding of a control unit by means of action coding differs from the standard coding process (see section 8.6) in that you only have to enter an action number. The coding process then takes place automatically.

> **Required data:**
> You must enter the following data in one of the following steps:
> ►Action number
> Make sure that you have the required information ready.

1. Call up and display the list of installed control units and press the <F7> button to call up the general vehicle functions
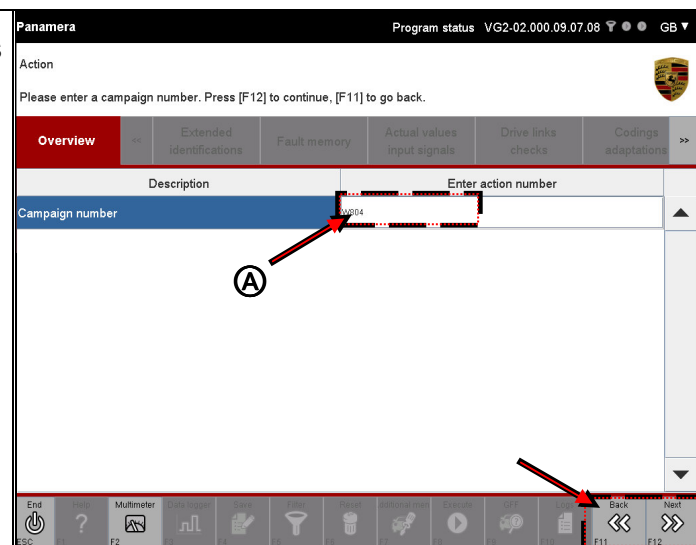   ►see section 8.9.1

2. Select the entry `Action coding` (A) in the list of general vehicle functions and confirm the selection by pressing the <F12> button (B).

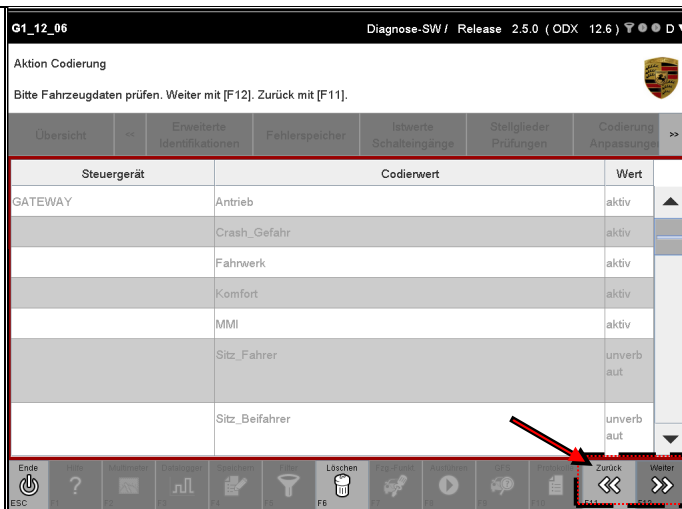   You can return to the control unit overview or control unit list with <F11> (B).
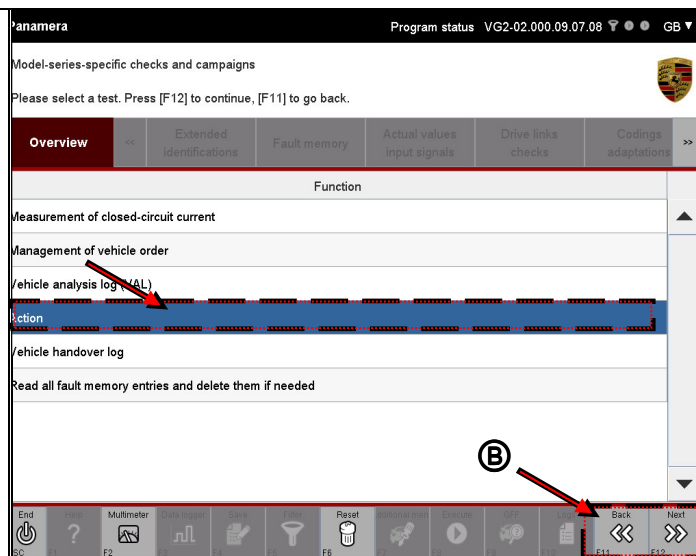
3. Enter the action number and press the <F12> button

    You can return to the list of general vehicle functions with <F11>.

4. Now check the vehicle data. Confirm that the data is correct with <F12>.

   You can access the list of general vehicle functions with <F11>.

5. Coding of the control unit takes place in the next steps.

   A progress bar at the bottom of the screen informs you about the status of coding. The elapsed time is displayed on the right of the status bar where appropriate (A).

   Successful coding is indicated by the ✓ icon (B).

   If coding was not successful, this is indicated by the ⊘ icon.

   Press the <F12> button to return to the list of general vehicle functions or select one of the function group buttons.

PAG_Diagnoseapplikation_V-Modus_v3_0_0_BD_D290608
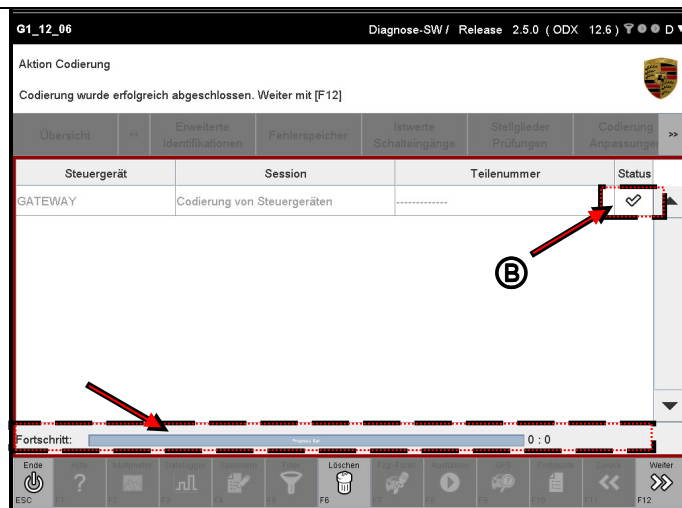
8.10 Working log

The information displayed on the screen can be saved in a so-called working log.
The working log is created by pressing a button on the control bar and is successively extended by renewed button operation in other functions or function groups or if the content of the working area changes. This section describes how you create a working log – initially as a temporary log.

> **i** You can display, print out, permanently save and delete working logs in the General Report Management area. For further information on General Report Management:
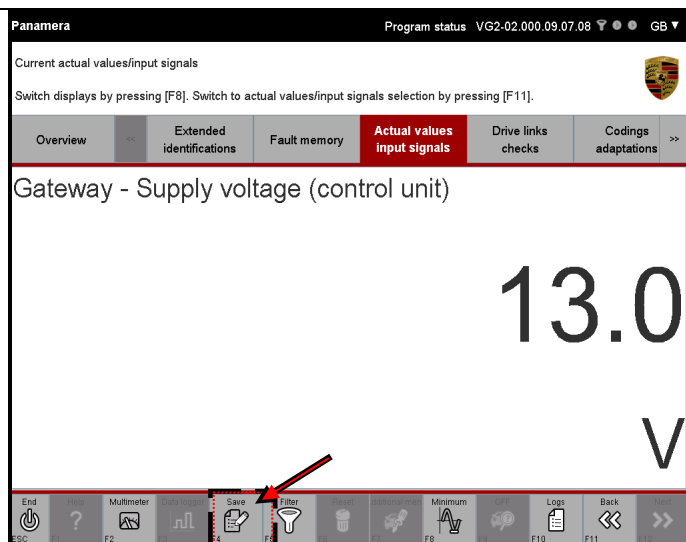> ►see section 8.10.2.

8.10.1 Working log: Creating a temporary working log

1. Call up and display the list of installed control units and select the desired control units:
   ►see section 8.1

2. Select a function group or function.

3. Press the <F4> button to temporarily save the information currently shown on the screen in a working log.


4. If you would also like to save information in other screens, change to the corresponding screen and press the <F4> button there again. The recorded information is then transferred to the same working log. The working log is extended by the new content until it is finally closed/saved.
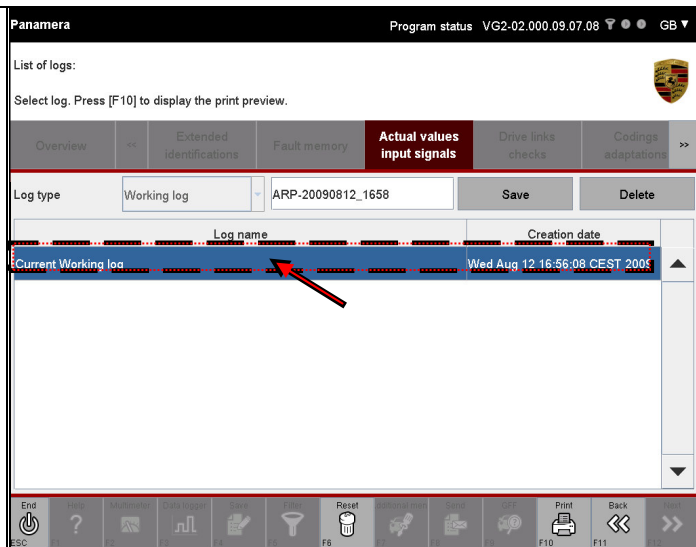
8.10.2 Working log: Displaying the working log list

1. Press the <F10> button.
   If it is not possible to select the button, first navigate to one of the function groups (e.g. Overview) and then press the <F10> button.

2. A button menu is displayed with a list of several options.
   Select the log type `Working log`.
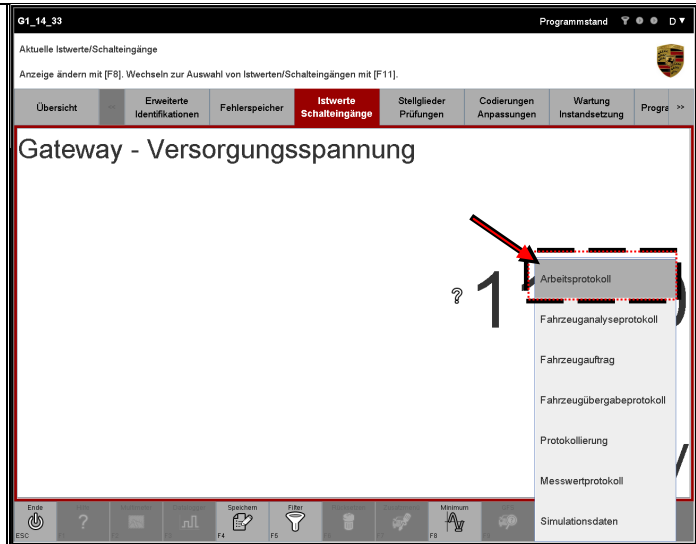
3. A list is displayed with all working logs.
   The temporarily saved log is always shown first.

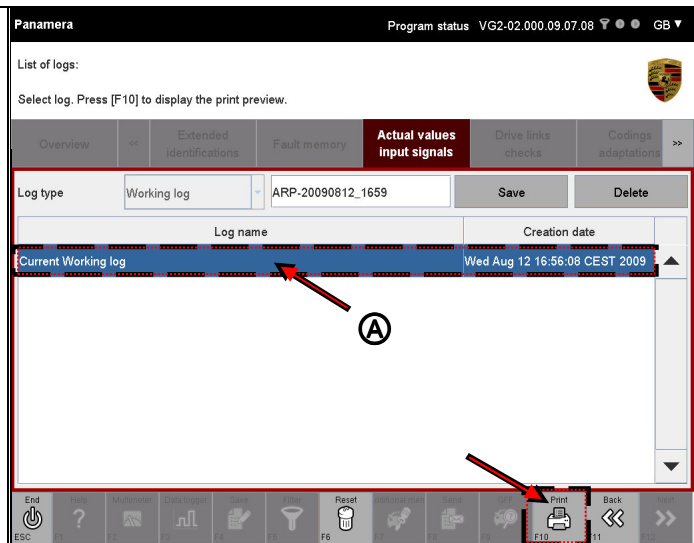### 8.10.3 Working log: Displaying and printing a working log

> ℹ In order to print out a log, a suitable printer must be connected to the tester that has been correspondingly configured.

1. Call up and display the list of working logs:
   ►see section 8.10.2.

2. Mark the logs you wish to print out (A) and then press the <F10> button (B).

3. All the marked logs are listed in a preview window.

   The following options are available in the window (A):

   - 🖶, <F3> button:
     Print log
   - ◁◀, <F9> button:
     Jump to first page
   - ◁, <F10> button:
     Jump to previous page
   - ▷, <F11> button:
     Jump to next page
   - ▶▷, <F12> button:
     Jump to last page
   - ⏻, <ESC> button:
     Close window.

   The **Zoom** function also allows you to adapt the display size of the log (B).

4. To print the log, press the Print button, represented by the 🖶 icon.

8.10.4   Working log: Saving a working log

i	You can locally save the temporarily stored working log.

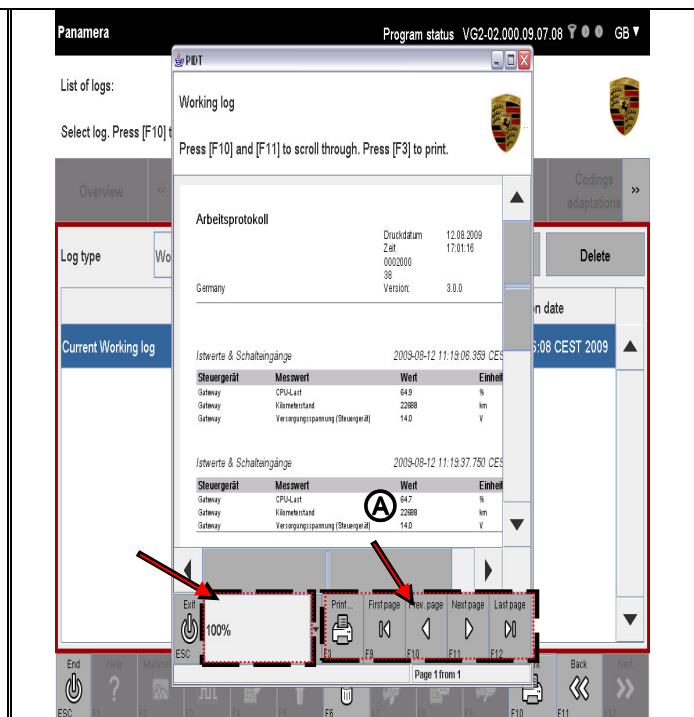1. Call up and display the list of working logs:
   ►see section 8.10.2.

2. Mark the temporarily stored working log (A).

   Enter the desired name under which the working log is to be saved (B) and press the `Save` button (C).

8.10.5   Working log: Deleting a working log

1. Call up and display the list of working logs:
   ►see section 8.10.2.

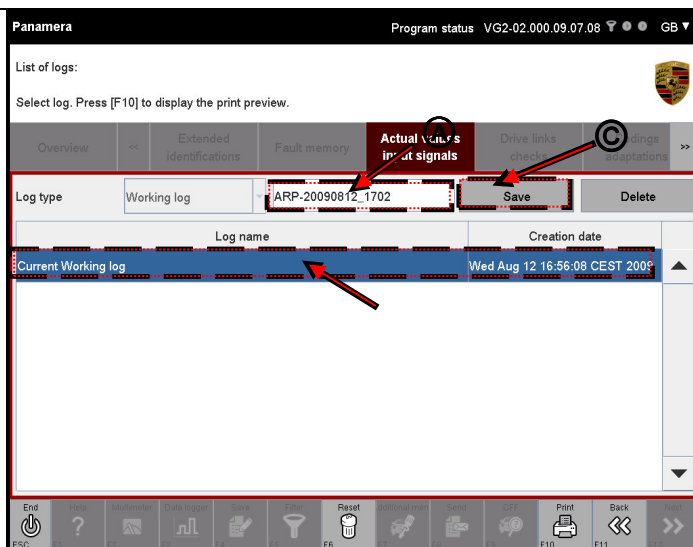2. Mark the desired working logs (A) and press the Delete button (B).
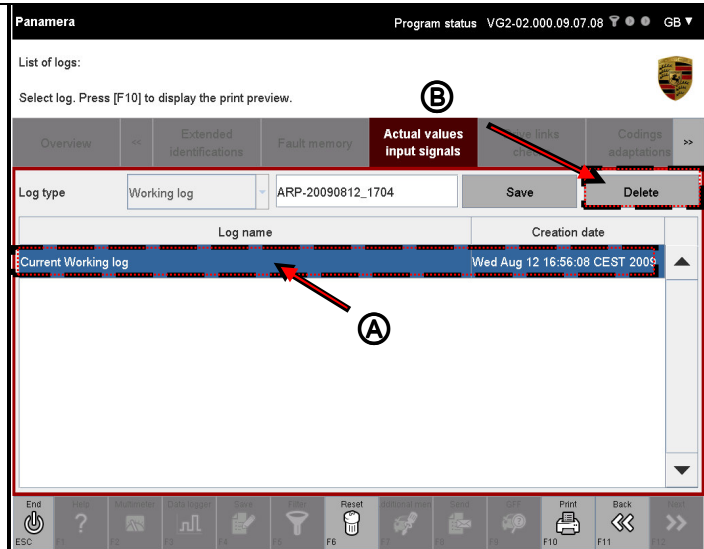
3. A selection is displayed in which you must confirm deletion of the selected working logs (A). You have the following selection options (B):
   - Cancel the operation with <F11>. You then return to the list of working logs.
   - Pressing <F12> confirms that you wish to delete the selected working logs.
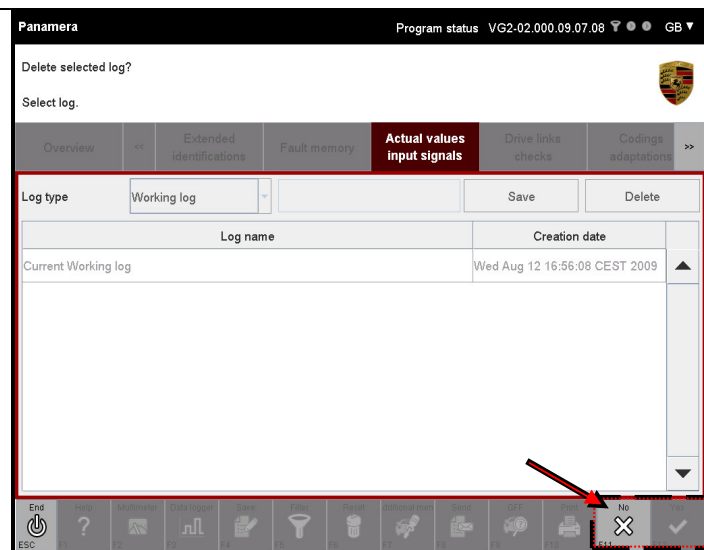
Next steps:

4. If you have confirmed the query with <F12>, the selected log is deleted and the list of working logs is updated.
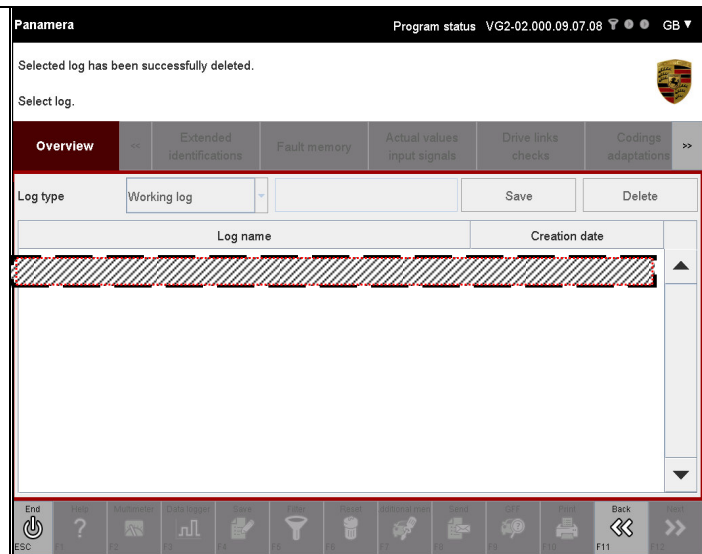
8.11   Logging

Logging serves the purpose of providing first level support for initial analysis in the event of a fault.

The diagnostic application supports two different logging modes for first level support:

- Basic logging (default)

- Extended logging

With extended logging, more comprehensive information is stored in the log files as required for more detailed fault analysis.

This section describes how you can activate and deactivate extended logging.

8.11.1.1   Logging: Displaying the log function

1. Press the <F10> button.
    If it is not possible to select the button, first navigate to one of the function groups
    (e.g. Overview) and then press the <F10> button.

2. A button menu is displayed with a list of options.
    Select the entry Logging.
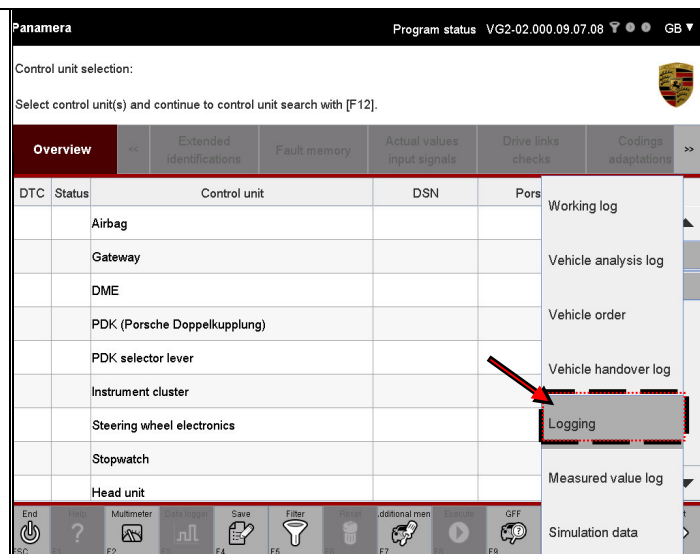
3. Information on the current logging operation is displayed.

   The diagnostic application is run with basic logging as the default setting.
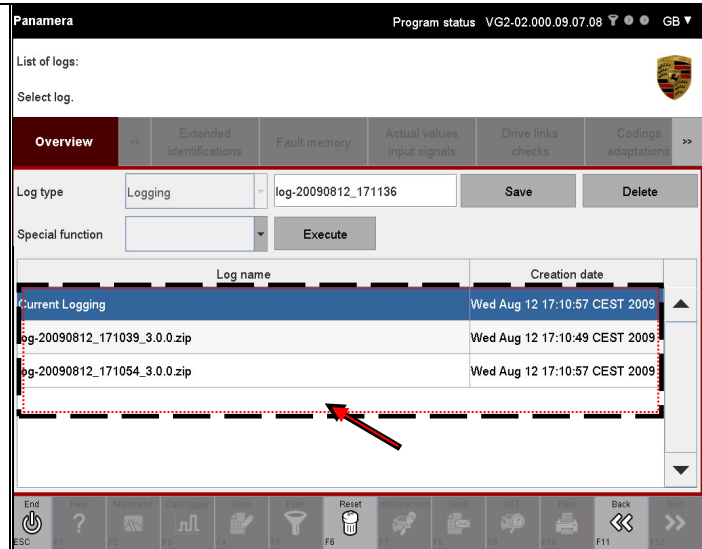
8.11.1.2   Logging: Switching the logging depth

> **i** The changed logging mode (i.e. "basic logging" or "extended logging") is active for the logging function as from switchover.

1. Call up the `Logging` function:
   ►see section 8.11.1.1.

2. Set the mode `Extended logging`:

   In the drop-down menu under `Special functions`, select the entry `Extended logging`.
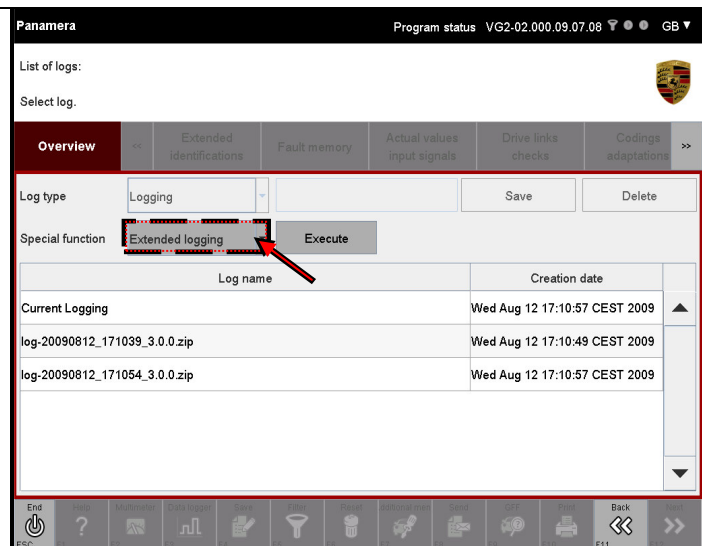
3. Set the mode
    `Basic logging`:

    In the drop-down menu under
    `Special functions`, select the
    entry `Basic logging`.
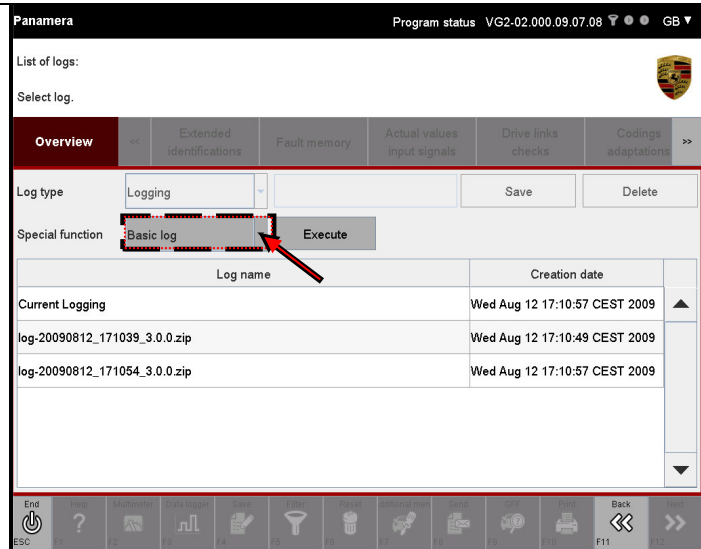
8.11.1.3 Logging: Saving the current log

1. Call up the `Logging` function:
    ►see section 8.11.1.1.

2. Select the current log (A).

    Change the name generated by
    the system if appropriate (B).

    To save the current log under the
    different name, press the Save
    button (C).
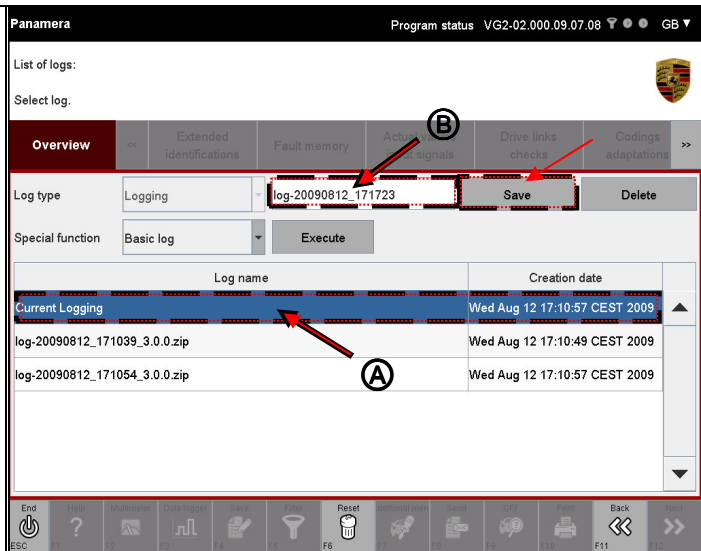
3. The selected log is zipped and included as an entry in the log list (A).

    A new logging operation is started immediately. This is then displayed above the previously saved log as `Current log` (B).
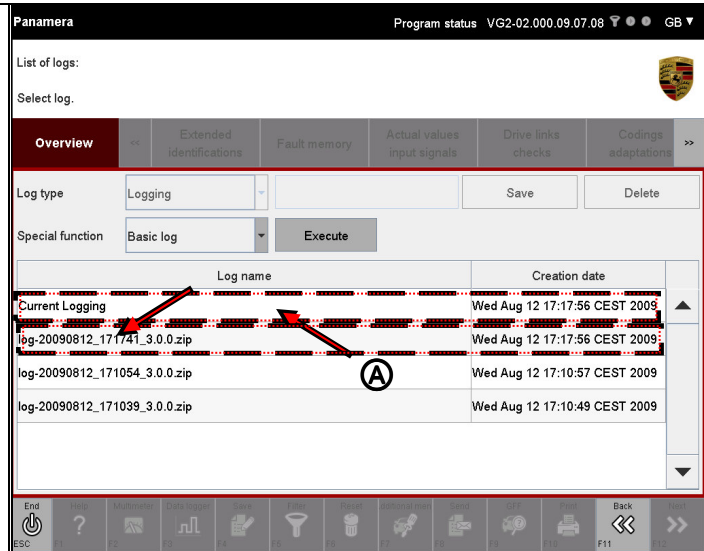
8.11.1.4   Logging: Deleting the "current" log

In the `Logging` function, you can delete the current log if wished. A new current log is then created immediately after the previous current log has been deleted. You can recognise this by the creation date of the current log.

You cannot delete any saved logs.

1. Call up the `Logging` function:
    ►see section 8.11.1.1.

2. Select the current log (A) and then press the Delete button (B).
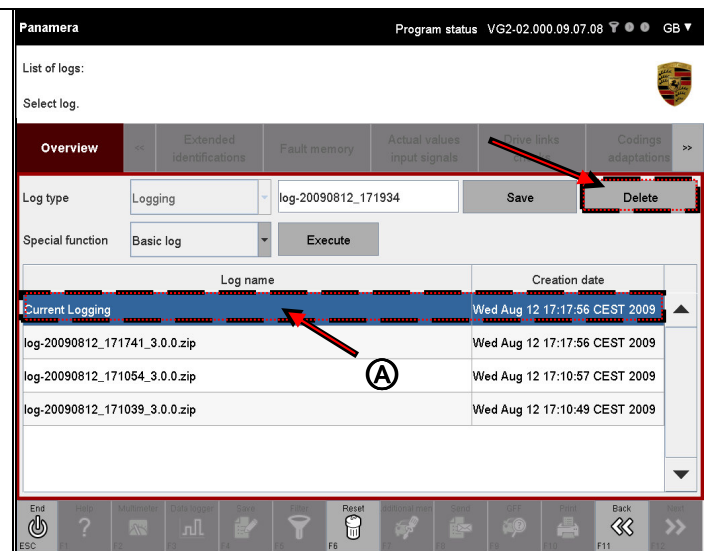
3. A selection is displayed in which you must confirm deletion of the current log (A). You have the following selection options (B):
    *   Cancel the operation with <F11>. You then return to the list of logs.
    *   Confirm with <F12> that you wish to delete the current log.
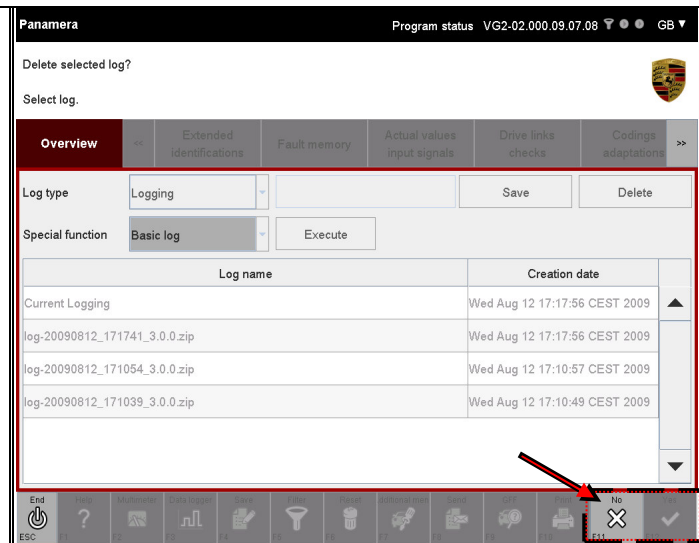
4. The current log is deleted if you confirm the selection with YES by pressing the <F12> button. A new logging operation is then starting immediately. The logging depth depends on the logging mode (basic logging or extended logging) set under `Special functions`.

8.12 Displaying the simulation data function

1. Press the <F10> button.
   If it is not possible to select the button, first navigate to one of the function groups
   (e.g. | Overview |) and then press the <F10> button.

2. A button menu is displayed with a list of options.
   Select the entry `Simulation data`.
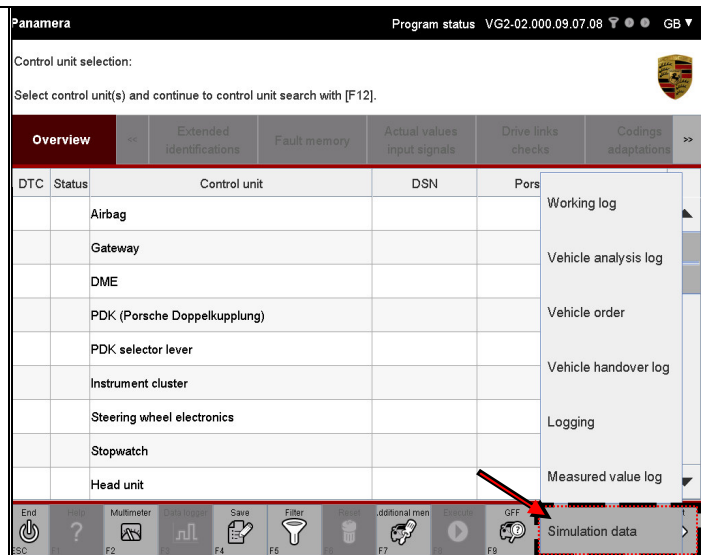
3. A list with all the already saved simulation data records is displayed.
   The list is empty if no records have been saved yet.
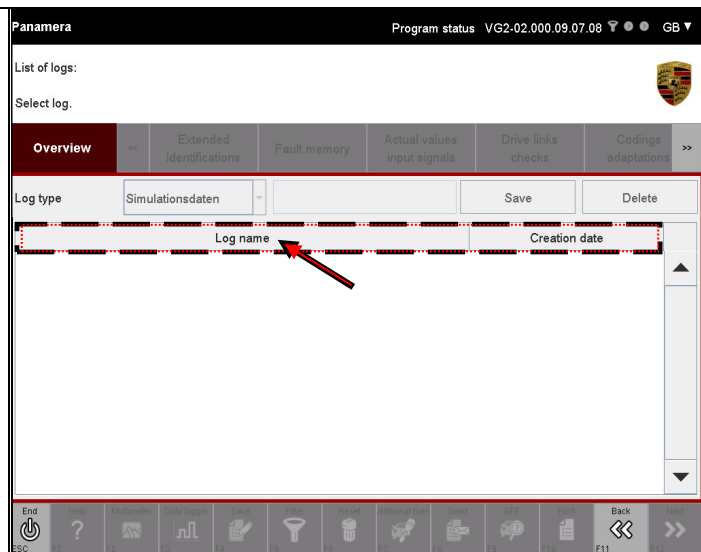
8.13   Filter

This section describes how you can use the filter function of the diagnostic application. This includes descriptions of how you can create and delete filters, activate and deactivate filters, assign filter properties (edit filters) and reset filter properties.

When all display-relevant processes of the application have been completed (e.g. overview screen complete, etc.), you can call up the filter function from the following function groups:

- Overview

- Extended identification

- Actual values/Input signals

- Drive links/Tests

- Coding/Adaptation

It is **not** possible to define filter properties for the following function groups or functions:

- Fault memory

- Environmental data (part of the function group Fault memory)

- Log services

- Programming

- Maintenance/Repair

Behaviour of the filter function in the application:

►Filters are defined generally across control units and individually for the respective function group. In other words:
The filter function allows you to create a separate filter for each function group. The applied filters are not combined with each other and the view of a filter function is restricted to the respective function group. Filters are applied on the basis of previously marked elements that are assigned to the respective filter as properties in a selection screen.

►New filters for a specific list view can be created and applied independently of the currently active filter. In other words:
If a different filter is activated for the same list view, the previously active filter is automatically deactivated.

►Different filters can be active at the same time for different function groups or list views. This means that you can keep a separate filter active for each function group or list view. These filters do not mutually interfere with each other (see comment above). The common basis is only the number of control units in the selection.

►If a filter is active, this is indicated by the 🍸 icon in the title bar of the respective function group. Whether an icon is displayed or not is function group-specific. In other words:
If you change, for example, from the filtered Overview to a different function group in which no filter is active, the icon is not displayed in the title bar in the other function group.
The icon indicates only that a filter is active or not active in the respective function group. Filters that are active in other function groups – this also includes the control unit overview or control unit list – are not represented by an icon in the current screen.

►Filters remain active until they are explicitly deactivated or until you end the diagnostic application. No filters are active after a new start of the diagnostic application.

Saving the filter settings:

Filters are saved beforehand in the event of new installation of the PT2G Diagnostics software.

Restriction: On what levels and in which screens can filters be used?

If the filter function is called up, filtering takes place only for the elements on the first and second levels (see section 4). These are as follows:

- Elements that are displayed when the respective function group is called up (e.g. drive links).
- Elements that are displayed as a result of a subsequent further selection (e.g. selection of drive links).

Function groups that have operating options on the third level (e.g. Actual values/Input signals) can be filtered only in the elements on the second level.

Example: In the function group Actual values/Input signals , for example, it is not possible to filter according to individual measured values that are displayed on the working screen of the function group and are cyclically updated. It is possible only to filter on the basis of the elements in the overview screen of the function group, i.e. according to actual values/input signals.

If you are in the working screen where the measured values are displayed and press the <F5> button to assign properties to a filter, the display will not show the screen with the measured values where you started but the overview of actual values/input signals that is displayed when you call up the function group.

Note on description in section:

The filter function is described on the basis of an example in this section: Starting from the control unit overview, a filter is defined that filters three control units. Only these control units are then displayed.

The filter function for other elements, e.g. extended identifications, actual values or input signals, drive links, etc is identical to the procedure described here.

However, please also observe the note on filter restrictions above!

8.13.1   Action-specific buttons for this function group

Filter			
Button	**Label**	**Icon**	**Description**
F8	**Write**		This icon is displayed in the control bar when the filter function is called up. Filter properties are assigned to a filter by pressing the <F8> button.

8.13.2   Calling up the filter function

1. Call up one of the function groups from which you can start the filter function
    (see introduction to this section).
    Call up and display the list of installed control units, for example:
    ►see section 8.1.

2. Then press the <F5> button.
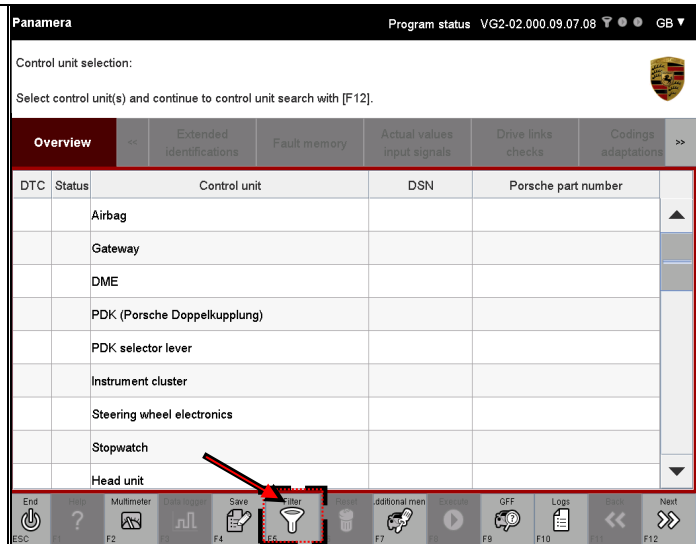
3. A list of the available filters is displayed.

    The list is empty if no filter has been defined yet.

PAG_Diagnoseapplikation_V-Modus_v3_0_0_BD_D290608
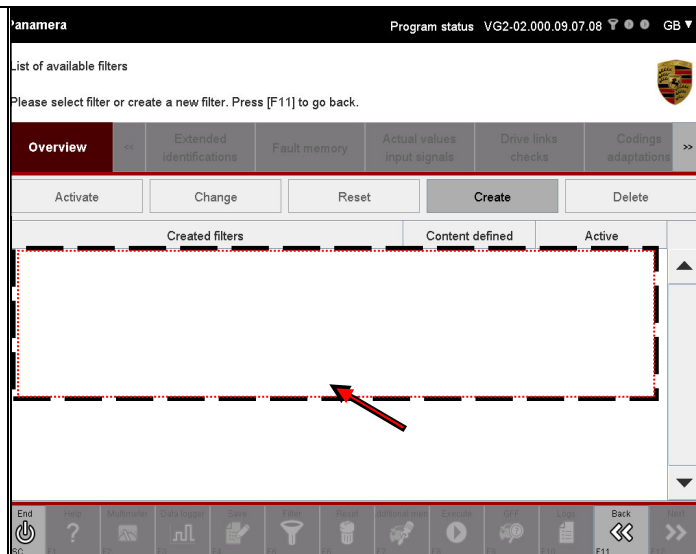
8.13.3   Creating a filter

This section describes how you can define filter properties. The filter properties of a filter are defined in a screen in which you can mark or deselect several entries.

i

Note on filter behaviour:

If you have selected several control units and do not define a filter condition for all control units, the following behaviour applies after activation of the filter and return to the function group:

- Only the elements that were marked are displayed for the control units for which filter conditions were defined.
- The control units for which no filter conditions were defined are either not displayed or are marked to indicate that no entries are set.
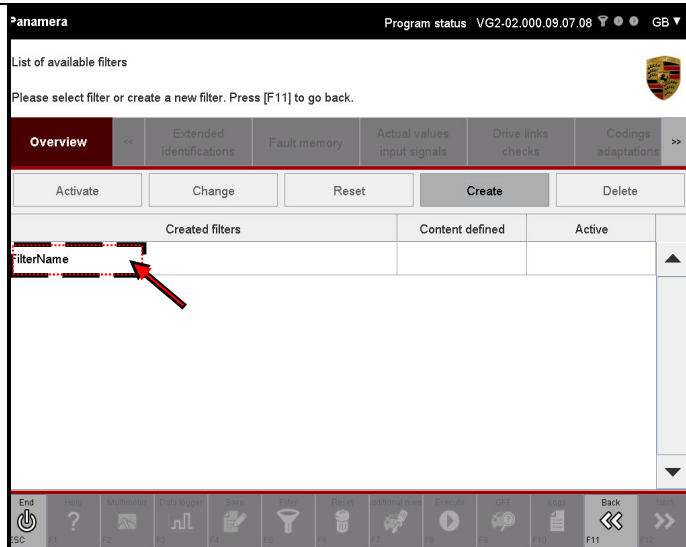
The filter is therefore a restrictive filter.

1. If you have not already done so: Call up the filter function by pressing the <F5> button.
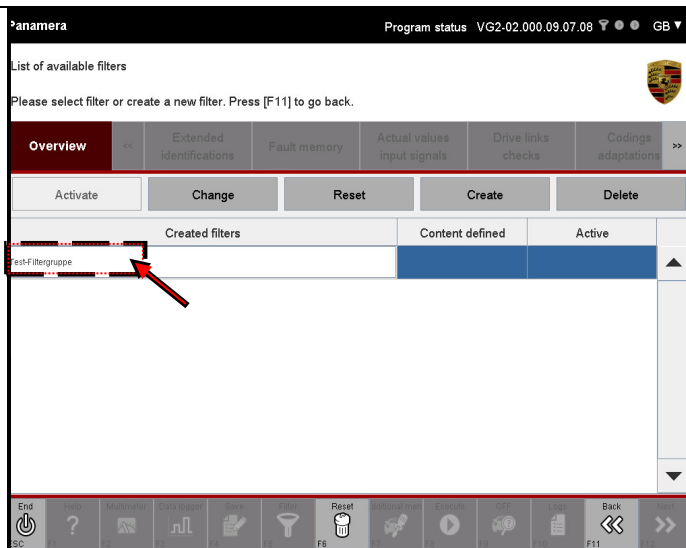
2. Press the
   Create button.
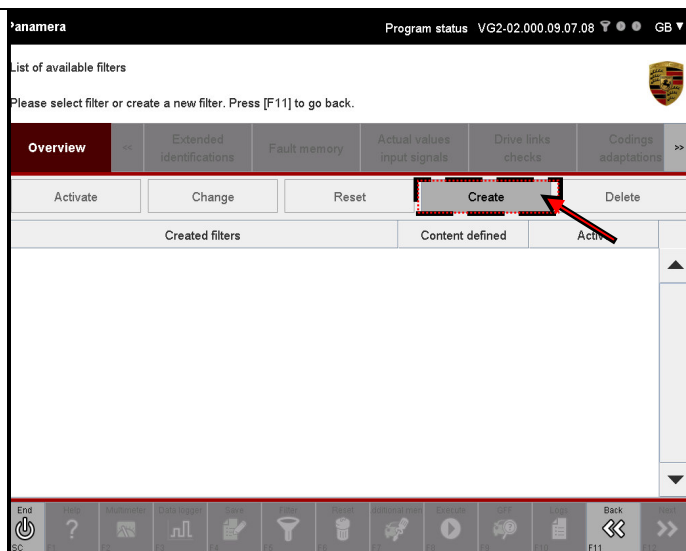
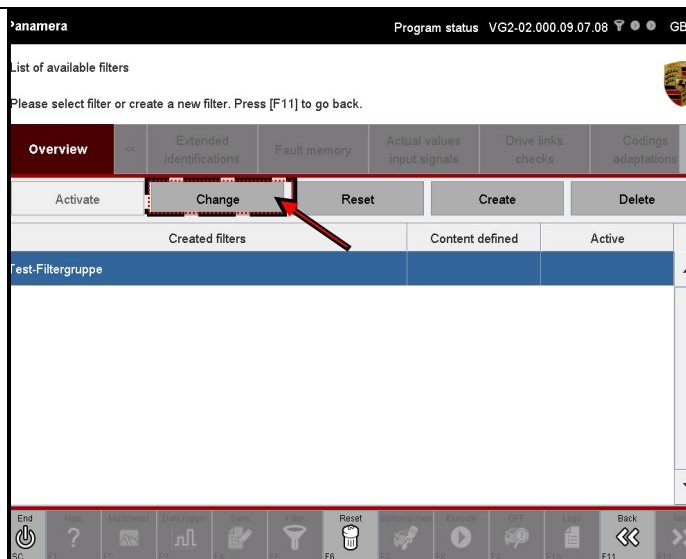3. A new filter is created with the default name.

4. Now assign a suitable name to the filter.

    To do this, click in the name field of the filter and enter the desired name.

   In the example, the name `Test filter group` was chosen.

5. Press the `Edit` button to assign the necessary properties to the filter and to select the elements that are to be filtered.

6. A selection screen is displayed in which you can define the filter properties. In this case, elements of the function group Overview are displayed.

   Select the elements that you would like to filter (A).
   Then press the <F8> button to save the selection (B).
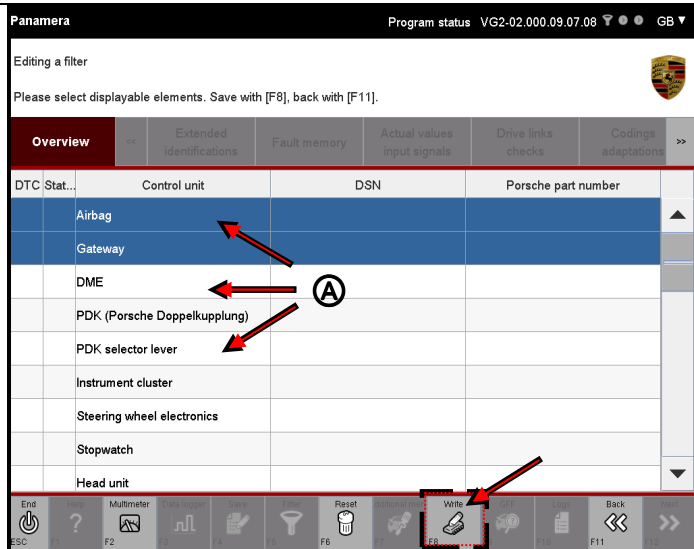
7. Then press the <F11> button to return to the list of available filters.
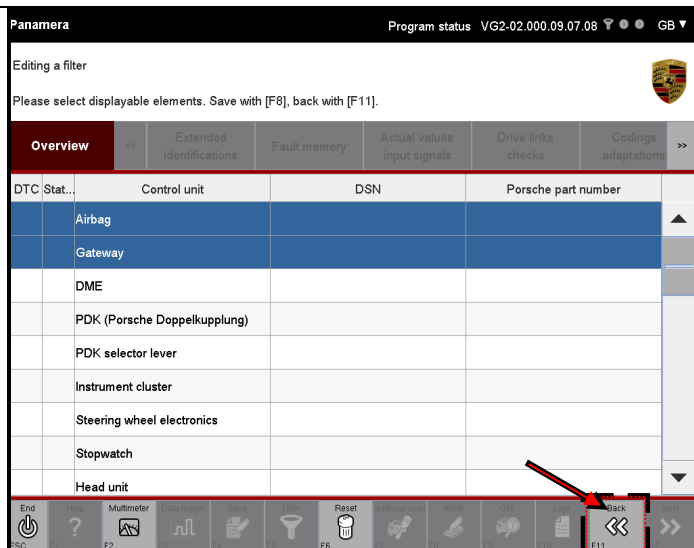
8. Properties were assigned to the filter by your selection.

   This is indicated by a ✓ icon in the `Current filter defined` column.

8.13.4   Activating a filter

Prerequisite:

A filter must have been created before it can be activated:
►see section 8.13.3.

Note on activating a filter:
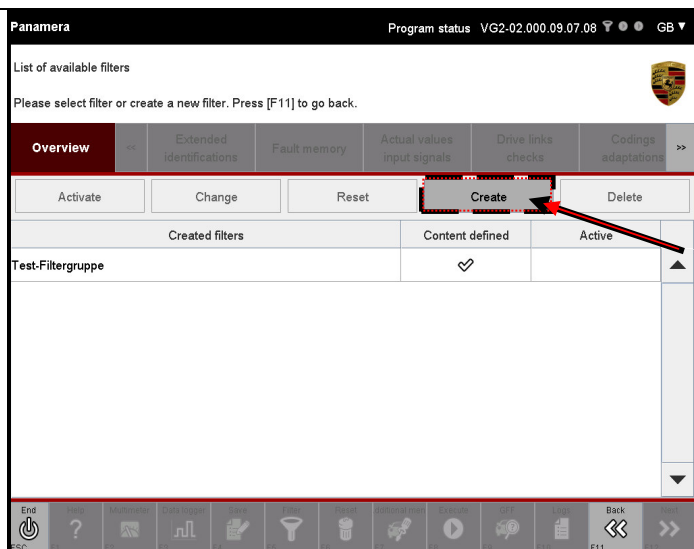
The filter <u>cannot</u> be activated if no elements have been marked beforehand in the filter conditions, i.e. if no restriction has been defined (see section 8.13.3).

If you activate a filter, all the other filters for this function group or list view will be deactivated.

1.   If you have not already done so: Call up the filter function by pressing the <F5> button.

2.   Select the desired filter (A) and then press the Activate button (B).
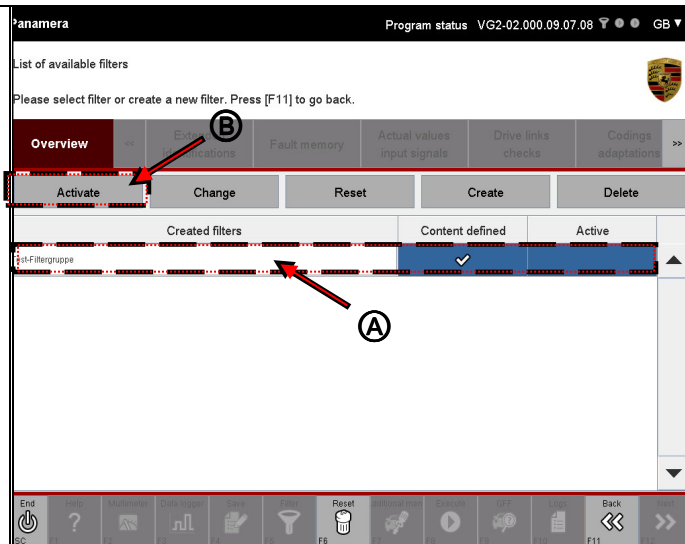
3. The current filter is now activated.

   This is indicated by a ⊕ icon in the `Active` column.

Result for above example filter:

---
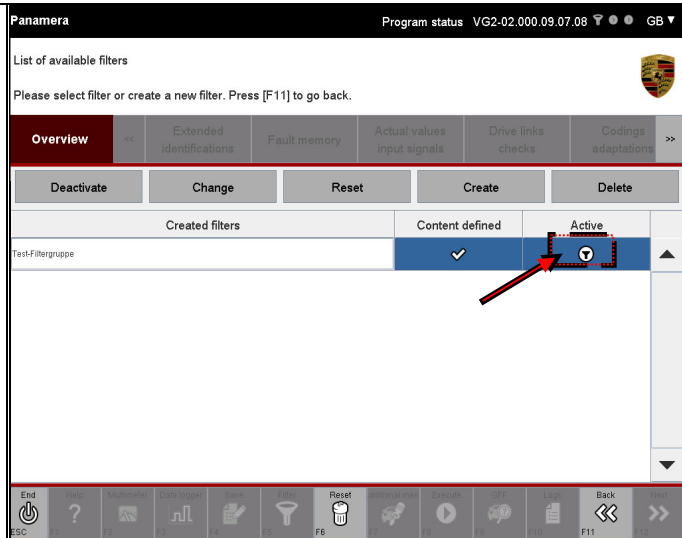
4. Press the <F11> button to return to the screen from which you called up the filter function.
   In this case, this was the control unit overview.

---
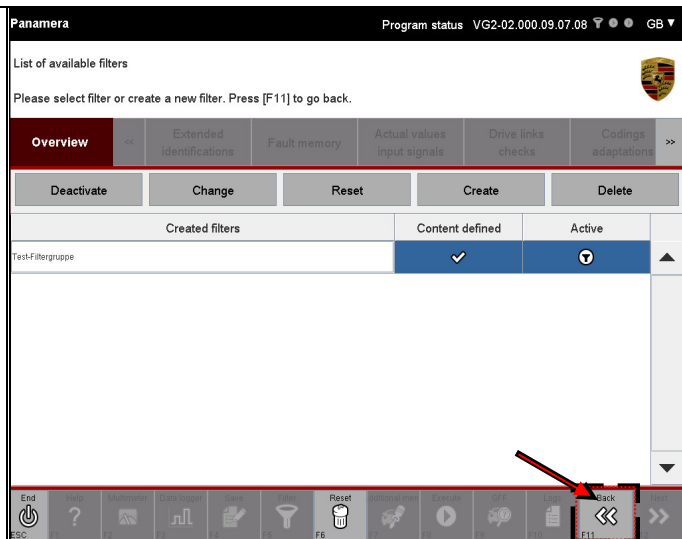
5. A filtered control unit overview is displayed.

   Only the elements marked in the filter are displayed.

Note: Display in the title bar

| G1_12_06 | Diagnose-SW / Release 2.5.0 (ODX 12.0) ▼ ● D ▼ |
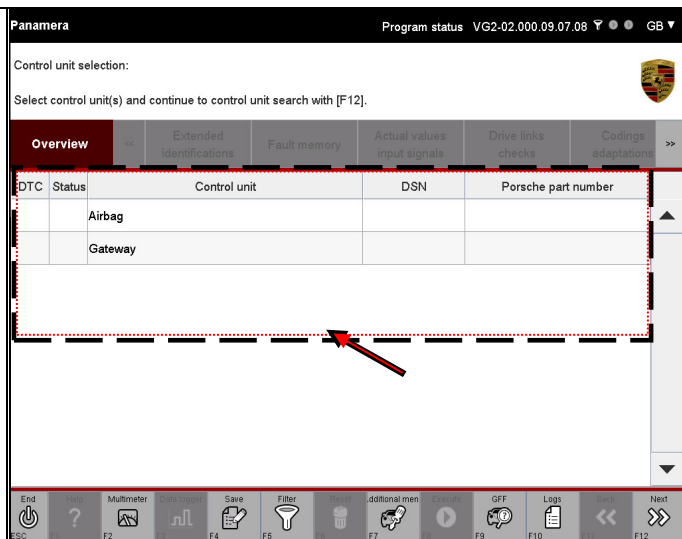
A ▼ icon is displayed on the right in the title bar as long as the filter is active in the function group or list view.

8.13.5 Changing the filter

Prerequisites:

- A filter has already been activated:
  ►see section 8.13.4
- More than one filter is defined in the list of possible filters.
- The filters are not empty and can therefore be activated.

Note on example in this section:

Two filters were defined:

- Test filter group. Filters the control unit overview according to the control units `Airbag` and `Gateway`.
- Test filter group – Test version 2. Filters the control unit overview according to the control units `Combined steering column module` and `PSM`.

1. Initial situation:
   The control unit overview is filtered using the filter
   `Test filter group.`

   Press the <F5> button to access the list of possible filters.
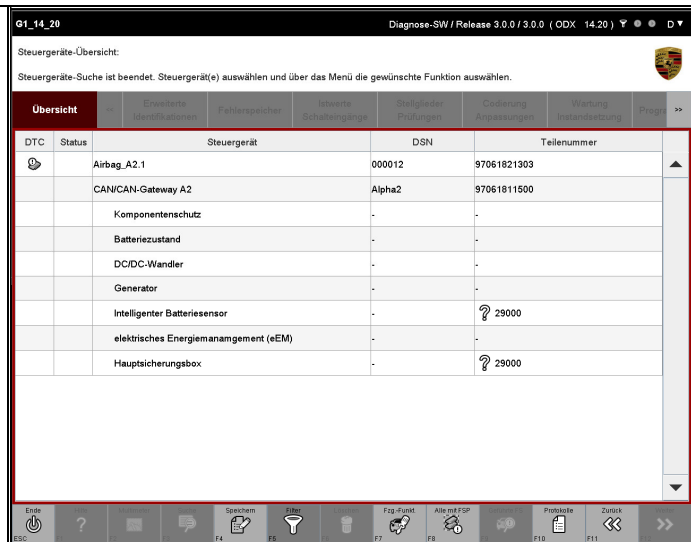
2. In the list of possible filters, the active filter is displayed by the ⊤ icon in the `Active` column.
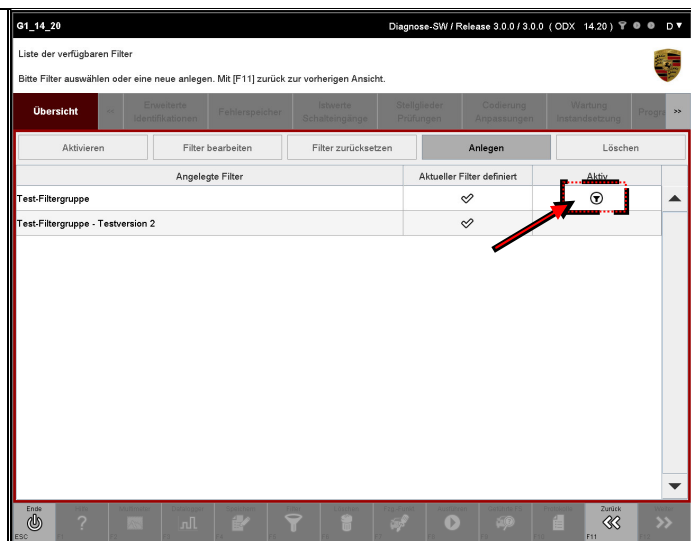
3. Select a different filter that you wish to apply for this function group (A).
Activate the new filter by pressing the `Activate` button (B).
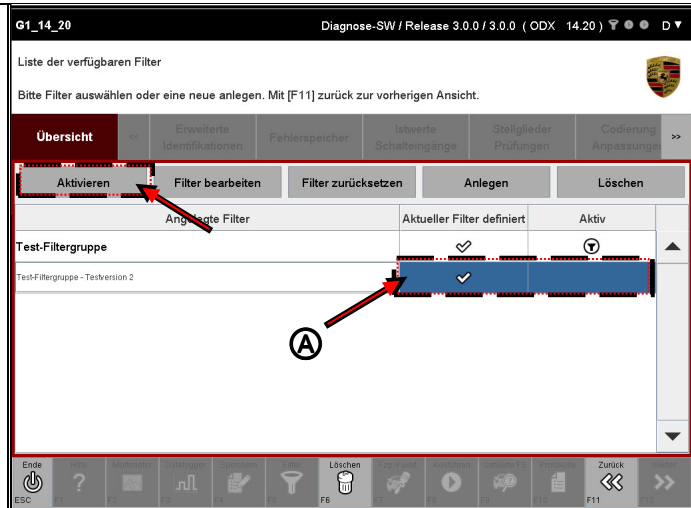
4. In the list of possible filters, the new/changed active filter is displayed by the ⊤ icon in the `Active` column.
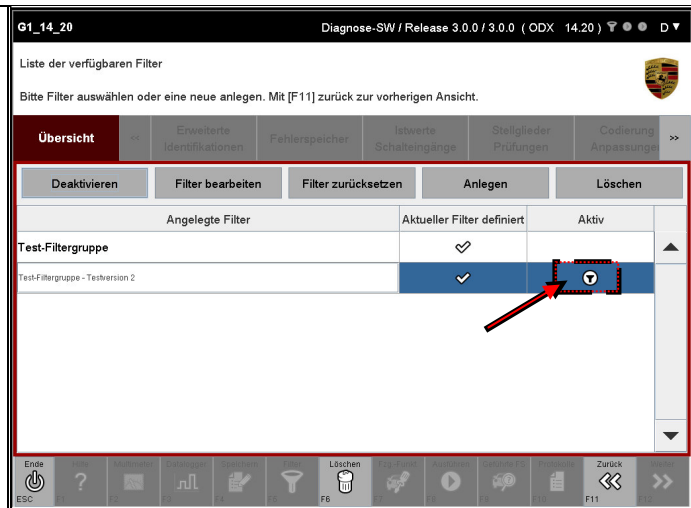
Result for above example filter:

5. The new list screen is generated when you return to the function group by means of <F11>.

In this example, the control unit overview is now filtered according to the control units `Combined steering column module` and `PSM`.
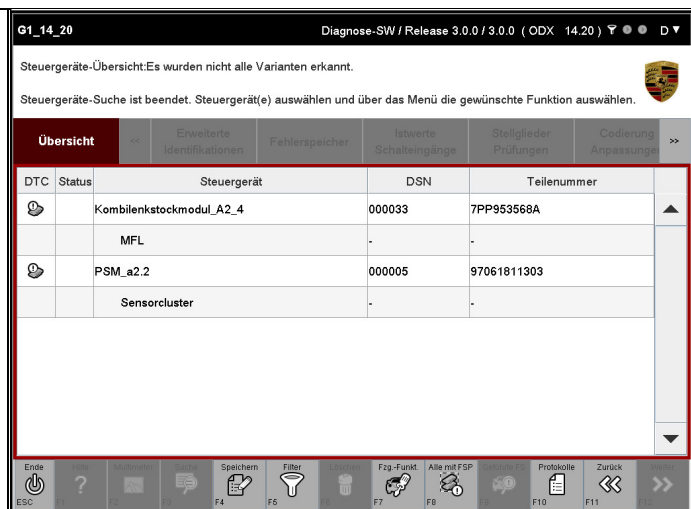
8.13.6 Deactivating a filter

Prerequisite:

A filter must have been created before it can be deactivated:
►see section 8.13.3.

The filter must also have been activated:
►see section 8.13.4.

1. If you have not already done so: Call up the filter function by pressing the <F5> button.

2. Select the desired active filter (A) and then press the Deactivate button (B).

Next steps:

Function groups Extended identification , Actual values/Input signals , Drive links/Tests and Coding/Adaptation :

In order to access an updated view of the filtered elements, press the <F11> button in the filter group list.

Note and special case:

Function group Overview :

- The screen is updated normally if you have performed a control unit search without preselection (see section 8.1), since all control units are available for filtering.

- If you have made a preselection in the control unit list by selecting individual control units and have then initiated a control unit search, only the control units selected in the preselection are displayed in the control unit overview.

  As a result, not all control units are displayed in the control unit overview, but only some of them.

  An empty control unit overview will be displayed if you have created and activated a filter in the control unit overview that should display control units that are not in this reduced control unit overview.

  In order to display the desired control units of the filter, you must first switch to the control unit list and then perform another control unit search in order to update the control unit overview.

Example:

Assumption: You would like to select the control unit `Rear lid`. The filter "Test filter group" filters according to the control units `Airbag` and `Gateway`.

Prerequisite: In the control unit list, only the control units `Airbag`, `Parking brake` and `Gateway` were selected beforehand and a control unit search was performed only for these. The control units displayed in the control unit overview are therefore limited to these control units.

Filter activation After activation of the filter, only the control units and sub-components of the control units `Airbag` and `Gateway` are displayed from the reduced control unit overview. You continue working as normal with these control units.

Problem: You deactivate the filter and wish to select the rear lid control unit. However, only the control units `Airbag`, `Parking brake` and `Gateway` are displayed, since this is the restricted control unit overview that you previously preselected in the control unit list.

Solution: The control unit overview must be updated. The following steps explain how you can do this.

3. First press the <F11> button in the
    filter list.
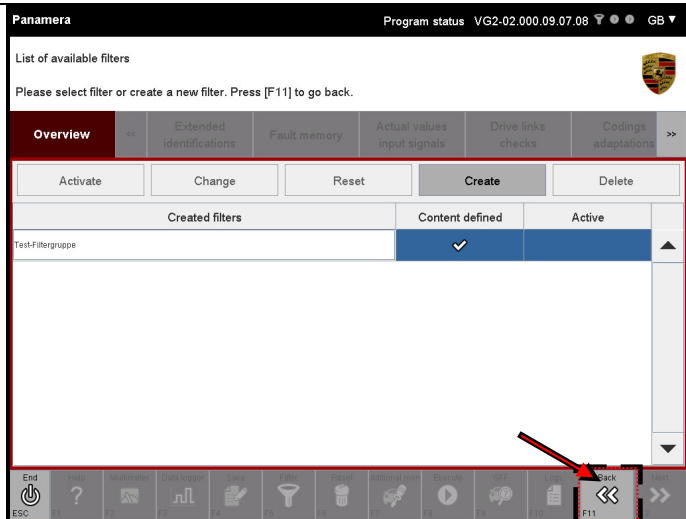
4. An incomplete control unit
    overview is displayed.

    Then press the <F11> button
    again to access the control unit list.
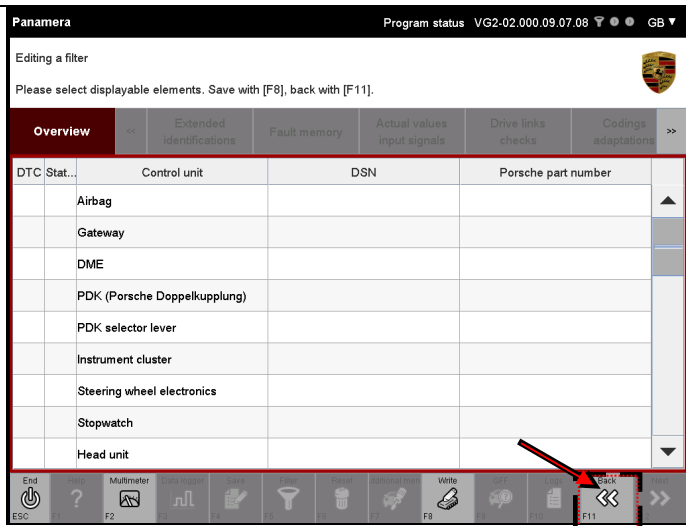
5. By pressing <F12>, you can now perform a control unit search with the filtered control
    units as normal (for a more detailed description, see section 8) or, if at least one of the
    control units is selected, you can select one of the function groups.

8.13.7   Editing a filter

Prerequisite:

A filter must have been created before it can be edited:
►see section 8.13.3.

---

1. If you have not already done so: Call up the filter function by pressing the <F5> button.

---

2. Select the desired filter group (A) and press the `Edit` button (B).
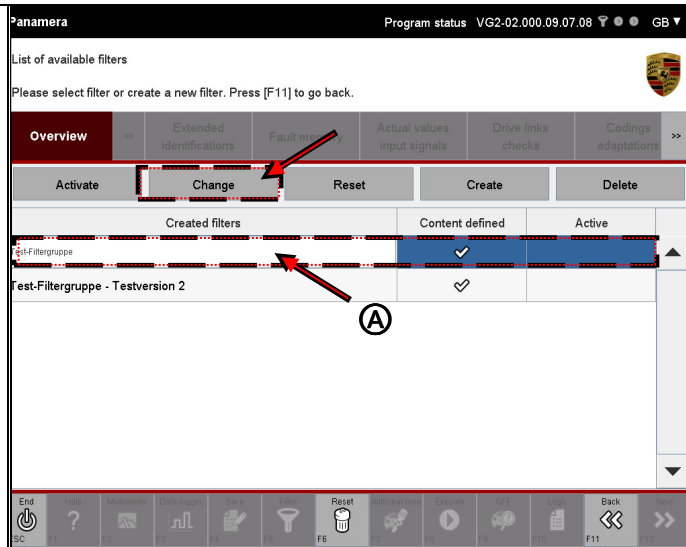
3. A list with the entries selected for the filter group is displayed.
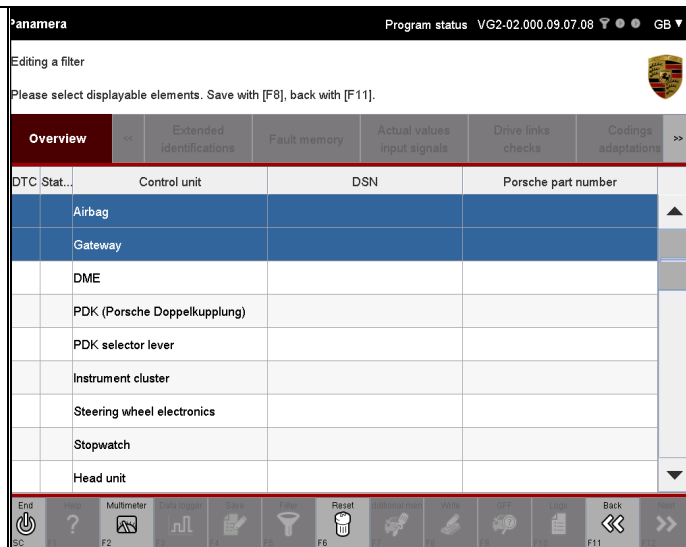
4. Change the selection (A). In the example, the control unit `Gateway` was deselected and the control units `Parking brake,` `ParkAssist` and `Transmission` were selected.

   Save the changed selection by pressing the <F8> button (B).
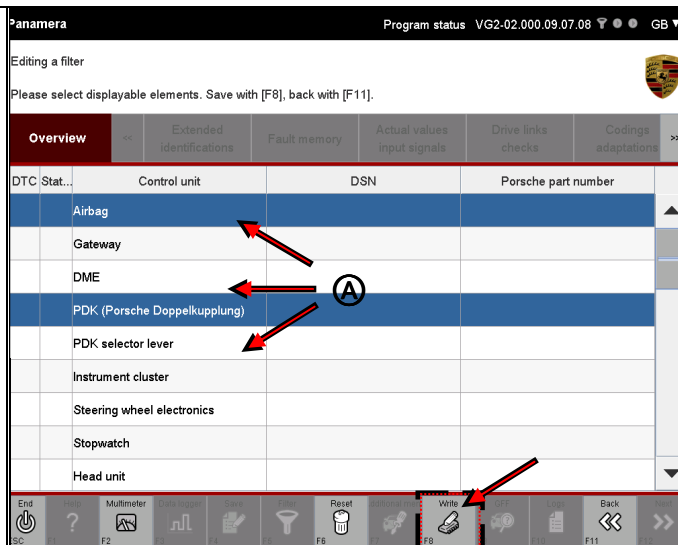
5. Then press the <F11> button to return to the list of available filter groups.

Next steps:

Function groups Extended identification , Actual values/Input signals , Drive links/Tests and Coding/Adaptation :

In order to access an updated view of the filtered elements, press the <F11> button in the filter group list.

| **Note and special case:** |

Function group Overview :

- The screen is updated normally if you have performed a control unit search without preselection (see section 8.1), since all control units are available for filtering.

- If you have made a preselection in the control unit list by selecting individual control units and have then initiated a control unit search, only the control units selected in the preselection are displayed in the control unit overview.

    As a result, not all control units are displayed in the control unit overview, but only some of them.

    An empty control unit overview will be displayed if you have created and activated a filter in the control unit overview that should display control units that are not in this reduced control unit overview.

    In order to display the desired control units of the filter, you must first switch to the control unit list and then perform another control unit search in order to update the control unit overview.

Example:

Assumption: You would like to select the control unit `Rear lid`. The filter "Test filter group" filters according to the control units `Airbag` and `Gateway`.

Prerequisite: In the control unit list, only the control units `Airbag`, `Parking brake` and `Gateway` were selected beforehand and a control unit search was performed only for these. The control units displayed in the control unit overview are therefore limited to these control units.

Filter activation After activation of the filter, only the control units and sub-components of the control units `Airbag` and `Gateway` are displayed from the reduced control unit overview. You continue working as normal with these control units.

Problem: You deactivate the filter and wish to select the rear lid control unit. However, only the control units `Airbag`, `Parking brake` and `Gateway` are displayed, since this is the restricted control unit overview that you previously preselected in the control unit list.

Solution: The control unit overview must be updated. The following steps explain how you can do this.

6. First press the <F11> button in the filter group list.
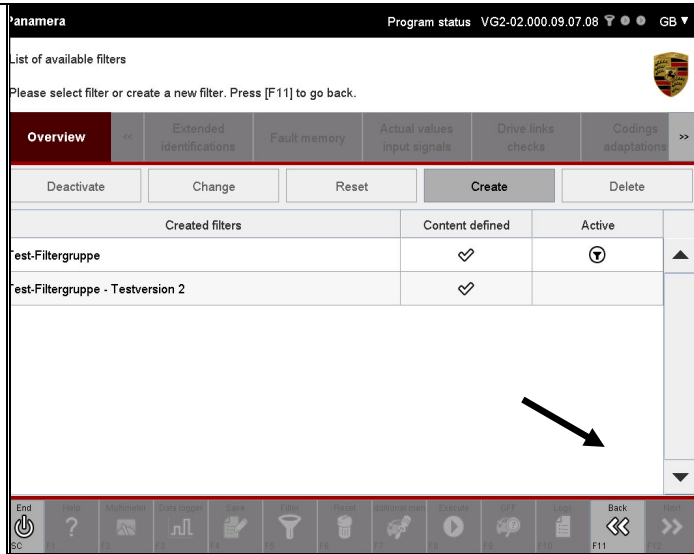
7. An incomplete control unit overview is displayed.

    Then press the <F11> button again to access the control unit list.

    The control unit list is updated and is extended by the newly inserted control unit names that were previously selected in the filter.
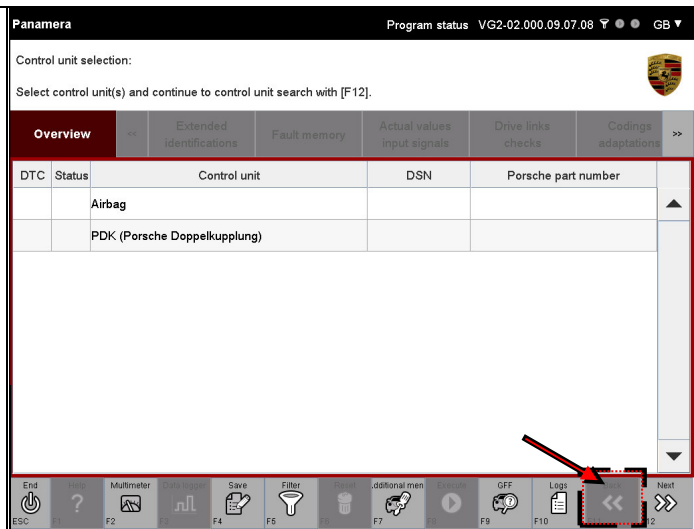
8. By pressing <F12>, you can now perform a control unit search with the filtered control units as normal (for a more detailed description, see section 8) or, if at least one of the control units is selected, you can select one of the function groups.

8.13.8   Resetting a filter

If you would like to assign new selection properties to a filter without changing the name or would like to delete the filter, you can do this by resetting the filter. The filter is "empty" after resetting, i.e. it does not contain any elements for subsequent display.

Note on filter behaviour:

►There may be filter conditions for this filter that are defined for control units that are not in the current control unit selection or that are not contained in the respective control unit variant.
If you would like to nevertheless reset the filter conditions and therefore also reset the filter condition of the control units not in the selection, you must explicitly confirm this. <u>All</u> filter conditions are then reset.

►If you reset a filter, it will be additionally deactivated since it is empty.

Prerequisite:

A filter must have been created before it can be reset:
►see section 8.13.3.

1.   If you have not already done so: Call up the filter function by pressing the <F5> button.

2.   Mark the desired filter whose filter properties you would like to reset (A) and press the `Reset` button (B).
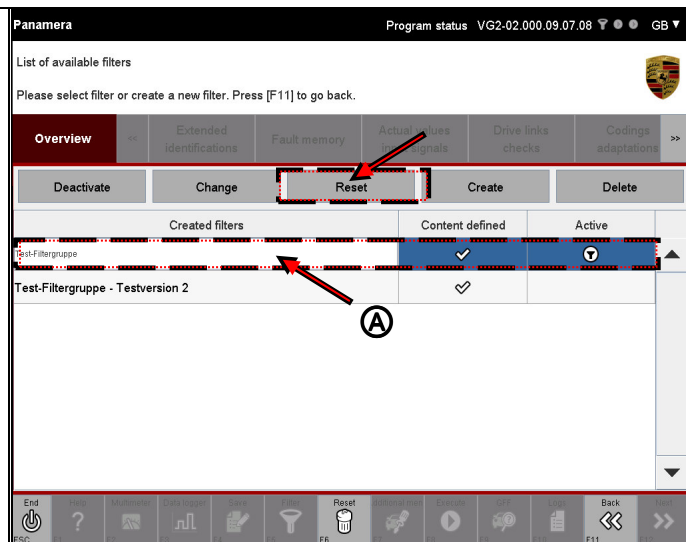
3. No properties are now assigned to the filter (no icon `Current filter defined`) (**A**).

    The filter is also deactivated (no icon in the `Active` column) (**B**).

4. You can now assign new properties to the filter in the usual way.
    ► see section 8.13.3.

8.13.9 Deleting a filter

If you do not just wish to delete the filter properties (reset the filter) but wish to delete the complete filter (filter properties including name), select the option `Delete`.

Note on deleting filter properties:
If the filter contains conditions for control units that are not included in the selection, you must explicitly confirm deletion. The complete filter is deleted after confirmation.
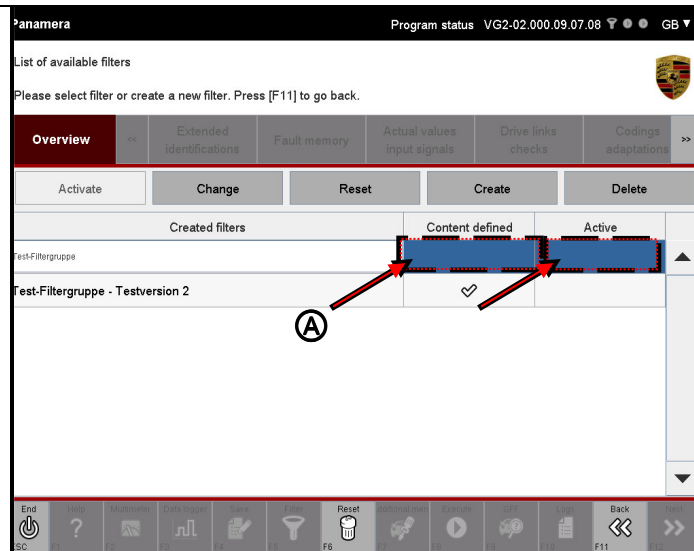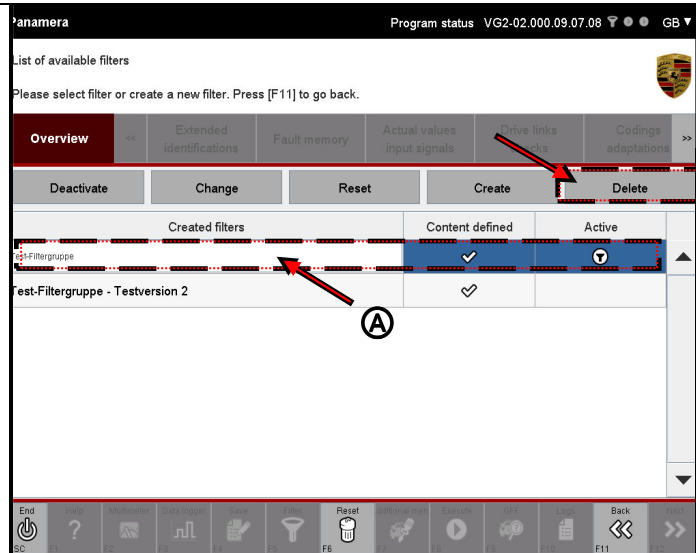
Prerequisite:
A filter must have been created before it can be deleted:
► see section 8.13.3.

1. If you have not already done so: Call up the filter function by pressing the <F5> button.

2. Select the filter that you wish to delete (A) and then press the `Delete` button (B).

3. You must now confirm deletion of the filter. The following selection options are available:
   - Cancel the operation with <F11>. You then return to the list of filters.
   - Confirm with <F12> that you wish to delete the filter.
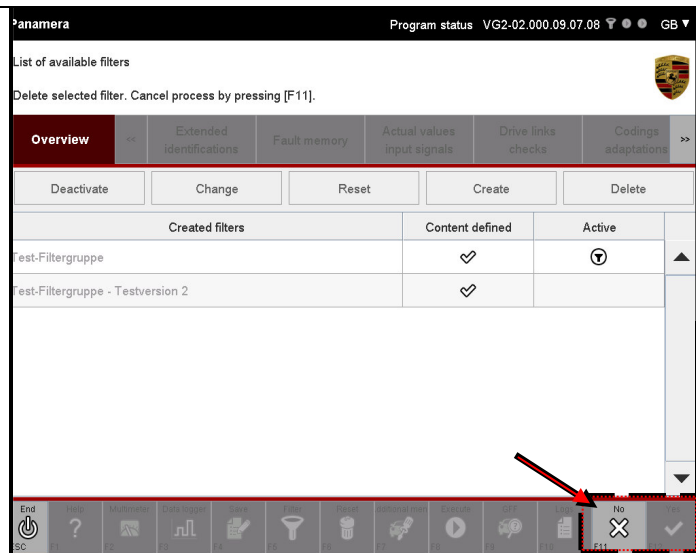
Special procedure

4. If filter properties are defined for control units that are not included in the current selection, you must explicitly confirm deletion once more. The following selection options are available:
   - Cancel the operation with <F11>. You then return to the list of filters.
   - Confirm with <F12> that you wish to delete the filter.

After deletion

5. After deletion, the filter is deleted from the list of saved filters (A).

You can return to the screen from which you called up the filter function with <F11> (B).
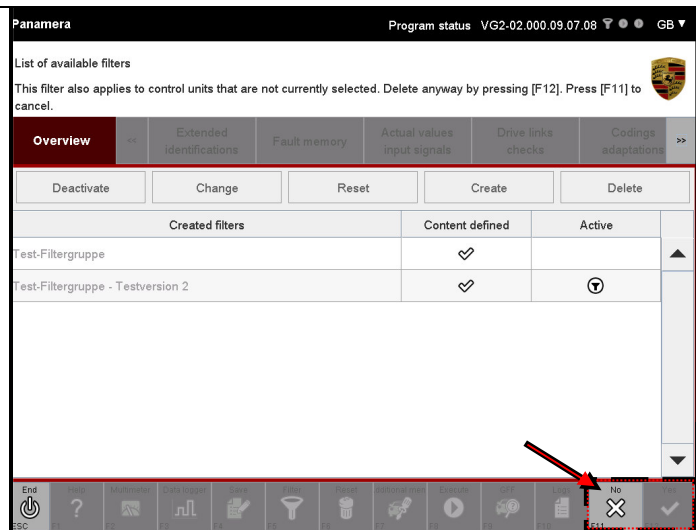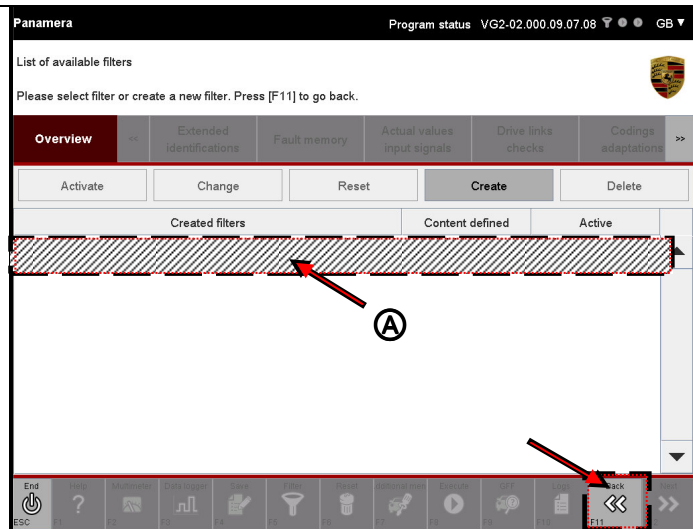
8.14 Guided Fault Finding (GFF, <F8>)

You can call up Guided Fault Finding from within the diagnostic application. Guided Fault Finding is not part of the diagnostic application and will therefore not be described here. Further information on the operating principle and user interaction options of this function is provided in the corresponding documentation for Guided Fault Finding.

> **i** Guided Fault Finding can be called up only from the control unit overview.

1. Press the <F8> button.

   The Guided Fault Finding application is then started.
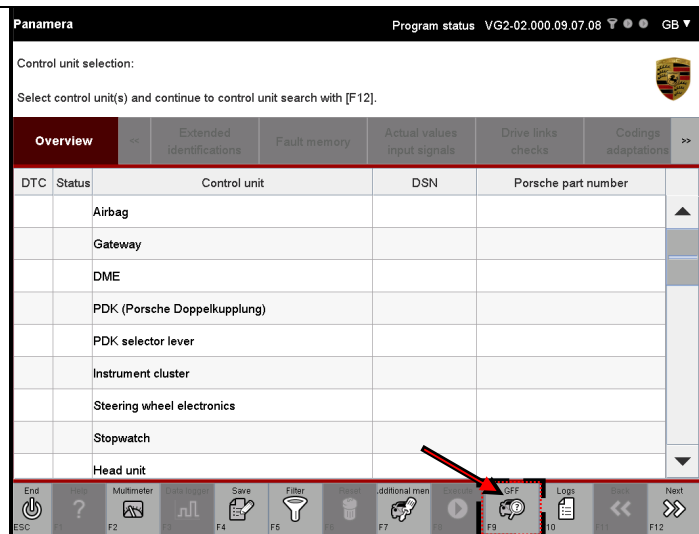
2. The diagnostic application is displayed again after this function has been ended.

8.15 Measuring equipment (multimeter, <F2>)

You can call up the measuring equipment application from within the diagnostic application. The measuring equipment application is not part of the diagnostic application and is therefore not described here.
Further information on the operating principle and user interaction options of this function is provided in the documentation of the measuring equipment software.

1. Press the <F2> button. The measuring equipment application is started and is displayed on top.	
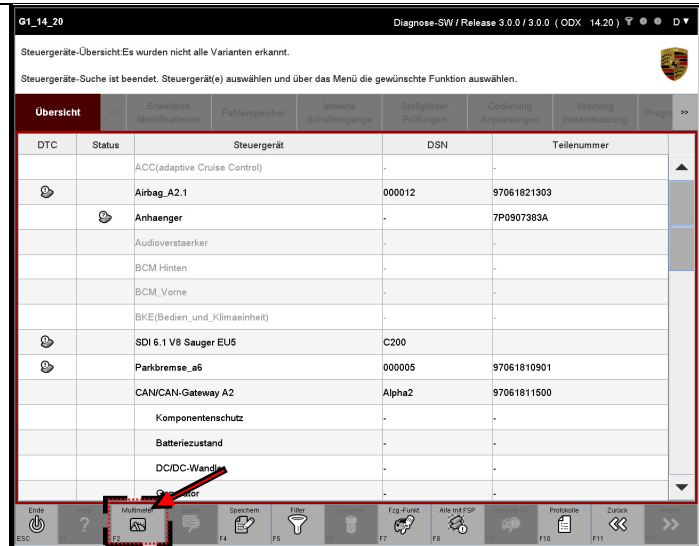
2. The diagnostic application is displayed again after this function has been ended.

9   Special features of the interface

9.1   Displaying groups

In the diagnostic application, diagnostic elements can be displayed both directly and in groups. If groups have been defined previously, operation deviates from the steps described in section 8 since it is not possible to directly click on and select the corresponding element. Instead, the corresponding group must be selected first. The following examples illustrate the operating procedure.

Example 1: Selection of several groups

1st grouping level	2nd grouping level	3rd grouping level	
Group_Miscellaneous> —F12→	►Group_Miscellaneous	Element 1 —F12→	Parameter 1
Group_InstallationList> —F12→	►Group_Body> —F12→	Element 2 —F12→	Parameter 2
		Element 3 —F12→	Parameter 3
		Element 4 —F12→	Parameter 4
		Element 5 —F12→	Parameter 5
	Group_Transmission> —F12→	Element 6 —F12→	Parameter 6
		Element 7 —F12→	Parameter 7

If you have selected several groups and some of these contain sub-groups, the individual elements are not displayed until the selection does not contain any more sub-groups.
For the case shown in the example, this results in the following: If you select both *Group_Miscellaneous* and *Group_InstallationList*, *Group_Miscellaneous* is not resolved in the 2nd grouping level since the *Group_InstallationList* still contains additional sub-groups (*Group_Body* and *Group_Transmission*).

If you select all groups of the 2nd grouping level (i.e. *Group_Miscellaneous*, *Group_Body* and *Group_Transmission*) and press <F12>, all elements are then displayed. Since there are no further groups, the content of *Group_Miscellaneous* is then also displayed.

The parameters are displayed after selection and then pressing <F12>.
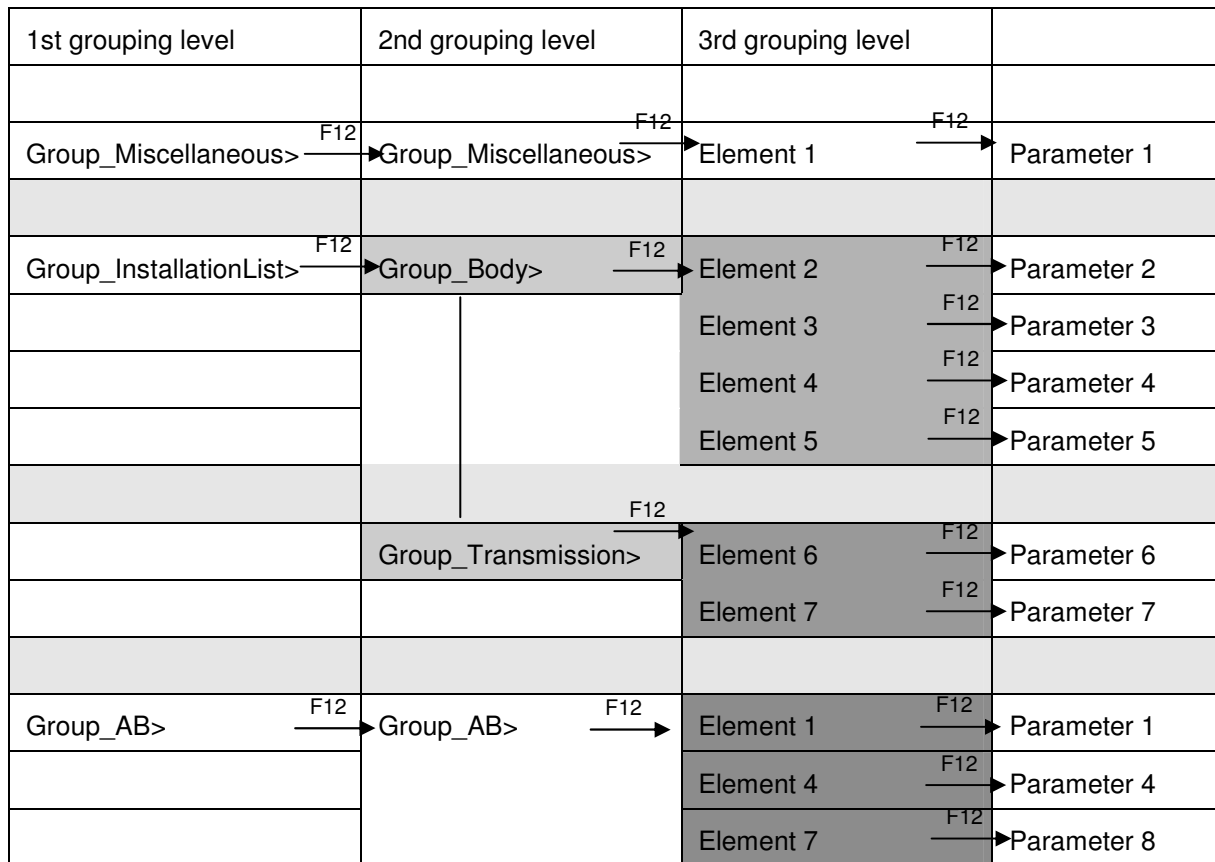
Example 2: The group ALL

1st grouping level	2nd grouping level	3rd grouping level	
ALL> $\xrightarrow{F12}$	►Element 1		
	Element 2		
	Element 3		
	Element 4		
	Element 5		
	...		
Group_AB			

If groups exist, you can display all elements of the group *ALL* by selecting this group and pressing <F12>. This generally includes all elements of the respective function group.

The following restrictions apply for the group *ALL*:

- The content of the group *ALL* is generated generically for the respective operating mode. The behaviour in the respective operating modes may therefore differ for the group.

- If the group *ALL* exists and there are also other groups, the operating behaviour shown in example 2 applies.

- If the group *ALL* does not exist and there are also other groups, the operating behaviour shown in example 1 applies.

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Example 3: Elements that are present in several groups

1st grouping level	2nd grouping level	3rd grouping level	
Group_Miscellaneous> —F12→	→Group_Miscellaneous> —F12→	Element 1 —F12→	Parameter 1
Group_InstallationList> —F12→	→Group_Body> —F12→	Element 2 —F12→	Parameter 2
		Element 3 —F12→	Parameter 3
		Element 4 —F12→	Parameter 4
		Element 5 —F12→	Parameter 5
	Group_Transmission> —F12→	Element 6 —F12→	Parameter 6
		Element 7 —F12→	Parameter 7
Group_AB> —F12→	→Group_AB> —F12→	Element 1 —F12→	Parameter 1
		Element 4 —F12→	Parameter 4
		Element 7 —F12→	Parameter 8

As a result of elements being copied to individual groups, it may occur that elements are displayed several times in the 3rd grouping level – or lower, depending on the number of grouping levels (see *Group_AB*).

If all these elements are selected, all parameters will also be displayed several times in the next screen.

9.2 Search for diagnostic elements

It is possible to search the ODX data of the control units for services and parameters. The <F3> button is available for this purpose in the control unit overview after selection of at least one control unit.
It is then possible to enter a search term in the general vehicle search screen. The search is then performed for the control units in the selection.

This section describes how you can call up the general vehicle search function and search for diagnostic elements.

i

Note on calling up the general vehicle search function:
You can call up the `General vehicle search` function only from the control unit overview. The search function cannot be called up from the control unit list, from other function groups or from the working screens of other functions. At least one control unit must be selected.

i

Note on search area:
The search area comprises a number of function groups.
You can search for services and parameters in the following function groups:

- Extended identification

- Actual values/Input signals

- Drive links/Tests

- Coding (here only in the coding mode `Manual coding without MCR`)

In the search area Maintenance/Repair , it is not possible to search for individual ODX elements, but a search can be performed for the functions displayed in the test list:

It is **not** possible to perform a search for elements in the following function groups and functions:
- Fault memory
- Programming
- Log services
- General vehicle functions (<F7>)

1. Call up and display the list of installed control units and navigate to the control unit overview:
   ►see section 8.1

2. Select the desired control units for which you wish to perform a search in the ODX data (A) and press the <F3> button (B).
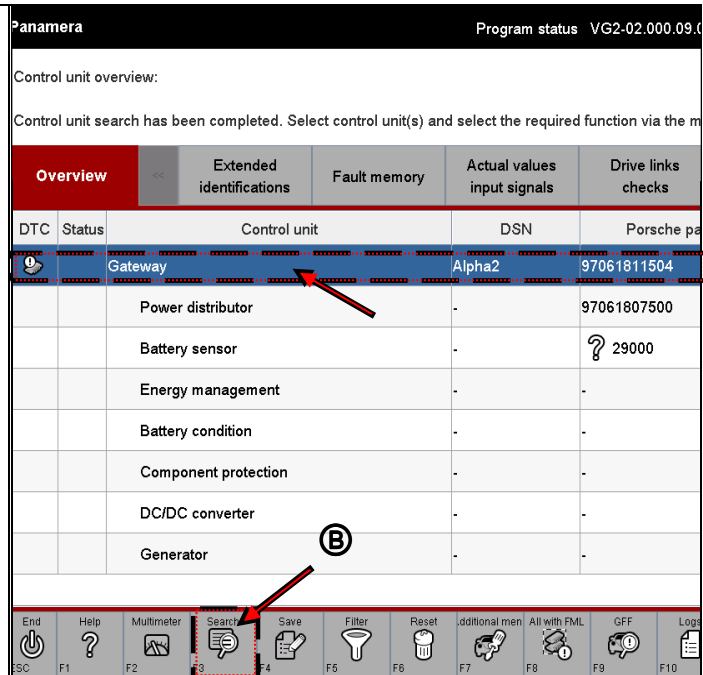

Note on search term input:
When entering search terms, you can also use the following placeholders
- * : The asterisk is a placeholder for any number of characters
- ? : The question mark is a placeholder for an individual character

3. The general vehicle search screen is displayed.
Enter a search term (A), select the desired search area (B) and press the Start button (C).

The status of the search is shown by a progress bar (D).

i
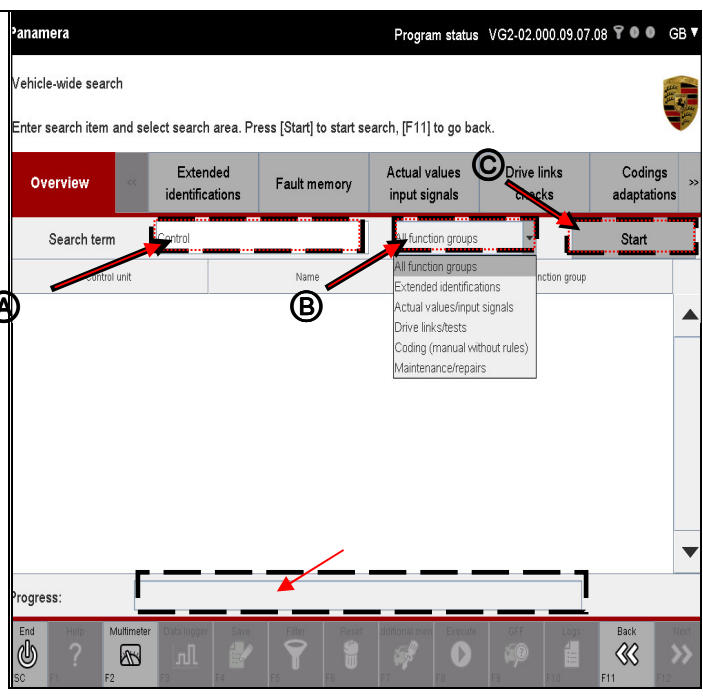
Note on selection of entries in the result list:

You can select only one element.

4. Select the desired entry (A) and press the <F12> button (B).

i
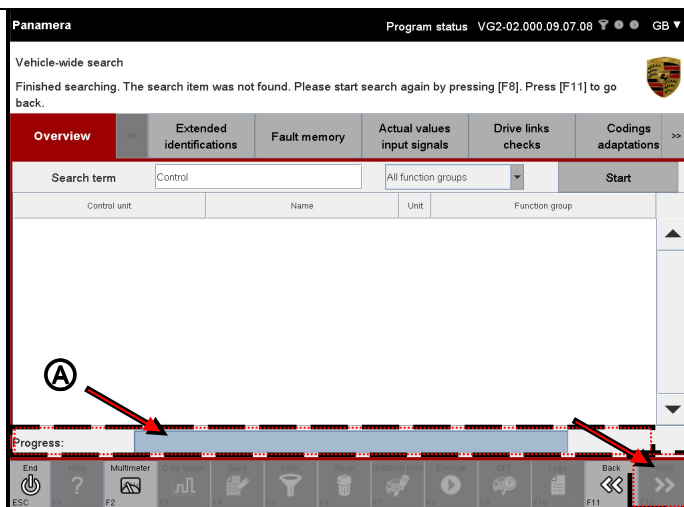
Note on display in the respective function group:

The following display behaviour is valid, depending on the function group in which the found element occurs.

- Extended identification :
  The **working screen** of the function group is called up.
  All elements of the control units in the selection are displayed. The elements selected in the general vehicle search are already marked. You can execute diagnostic services directly in the working screen.

- All other function groups in which a search can be performed with the general vehicle search function.
  The **overview screen** of the respective function group is displayed. All elements of the control units in the selection are displayed in the overview screen. The elements selected in the general vehicle search function are preselected, i.e. marked. By pressing <F12> (Next), you can change to the working screen of the function group with the preselected elements and execute diagnostic services there.

i

Note on display behaviour if groups exist in the function group then selected:

The screen of the first grouping level is displayed after selection of one or more elements of a function group and confirmation with <F12>. The groups that contain the elements selected in the general vehicle search function are already marked (for information on group display, also see section 9.1).

Note on other possible actions in the called-up function group:

You can also call up a different function group by selecting one of the function group buttons in the menu bar. The elements belonging to the control units selected in the control unit overview are then displayed in the function group that is then called up – independently of the elements selected in the general vehicle search.

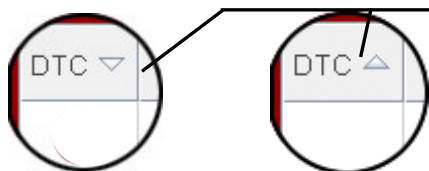# 9.3 Changing the column sorting

9.3.1 Simple sorting

ℹ️ It is possible to change the sorting direction of the displayed data. As already familiar from Office programs, this is done by clicking on the respective column header.

Column sorting is described below using the control unit overview as an example.

1. Sorting according to control units with a fault memory entry.

   To do this, click on the column header until the arrow points in the desired sorting direction.

9.3.2 Cancelling sorting selection

ℹ️ If you would like to cancel sorting again, simply click on the column header as often as required until the arrow for indicating the sorting direction disappears again. The elements in the working area are then displayed unsorted again.

9.3.3   Nested sorting

It is possible to combine two sorting directions with each other. Do this as follows:

- First perform pre-sorting in a column. The displayed elements in this column are then sorted according to this first sorting attribute in the usual way (see examples above).

- Then sort according to a second attribute by clicking on the second column header. Sorting then takes place within the already pre-sorted range.

Example: You wish to sort control units with fault memory entries according to part number.

1. First perform sorting according to control units that have a fault memory entry.

   To do this, click on the column header of the `DTC` column.

   The sorting direction for the first attribute is indicated by a large triangle.

2. Then sort according to the part number.

   To do this, click on the column header of the `Part number` column.

   The sorting direction for the second attribute is indicated by a small triangle.
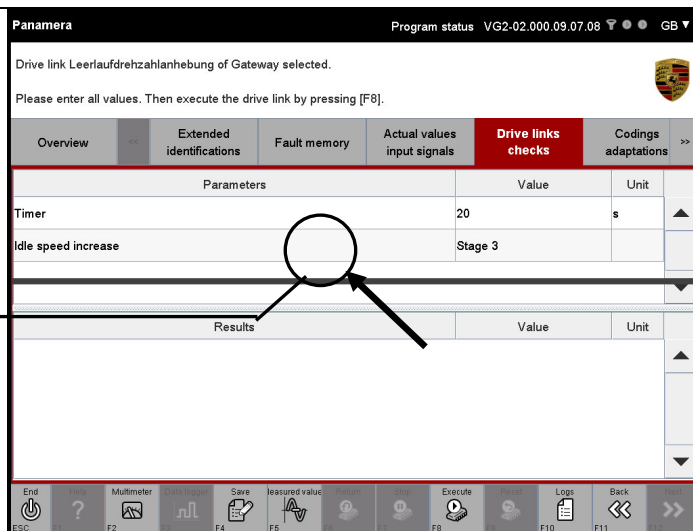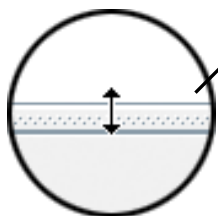
9.4   Moving the dividing line

> **i** In split screens, it is possible to move the dividing line between the two working areas. This is described below using the function group Drive links/Tests as an example.

1. Move the mouse cursor over the dividing line, press the primary mouse button and hold.

    If you are working with a touchscreen, press the touchscreen at the position of the dividing line.

2. Then drag the dividing line in the desired direction.
    Keep the primary mouse button pressed or leave your finger on the touchscreen when dragging the line.
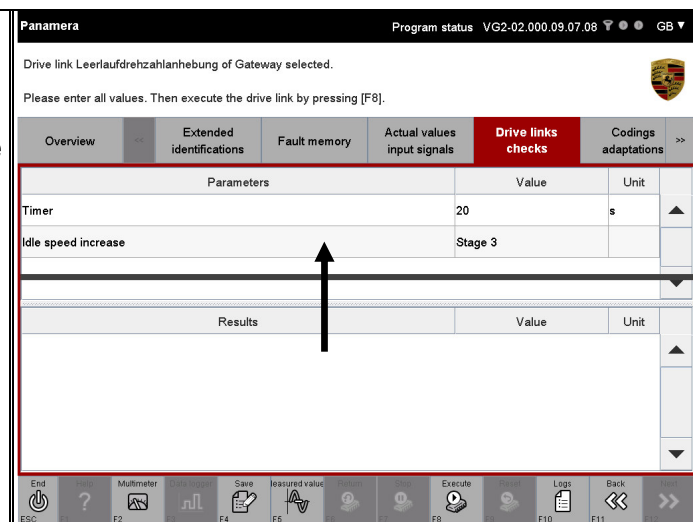
3. Release the primary mouse button at the desired position or lift your finger off the touchscreen.

9.5   Producing screenshots

In addition to copying the content of the working area, it is also possible to copy a complete image of the application (graphics, text, table structure, shading, frames, etc) by means of a screenshot.

> **i** Make sure that the diagnostic application is displayed on top and is therefore running in the active window.

Variant 1:

1. Press the key combination <ALT> + <Print Screen> on your keyboard.
    The screenshot produced in this way can be integrated as an image in another application (e.g. Microsoft WORD).

Variant 2:

2. By pressing the key combination <CTRL> + <P>, you can also save a screenshot on the hard disk. The target directory in which the screenshot is saved is the `workspace` directory of the diagnostic application.

9.6 Language version

It is possible to select other language versions so that you can use the software with an interface in the desired language. The language can be changed in two ways:

1. By means of the Porsche basic system, which transfers the language version to the diagnostic application by means of a transfer parameter. The corresponding language version is then automatically set when the application is started.
2. During the application runtime: Here you can switch the language version with just a few clicks by means of an icon in the title bar of the display window.

The procedure for switching the language version with the icon during the application runtime is described below.

Please note: Time required for switching version

Switching of all texts to the desired target language can take up to 20 seconds.

Please note: Language mix for display content

In some cases, it is possible that no displayable text has been defined for the selected language version. In this case, the test is automatically displayed in a "default language" or, if this has not been defined, the developer text is displayed. A number, the text ID, is displayed if this also has not been defined.

1. Find the following icon at the top right in the title bar:

   ▼

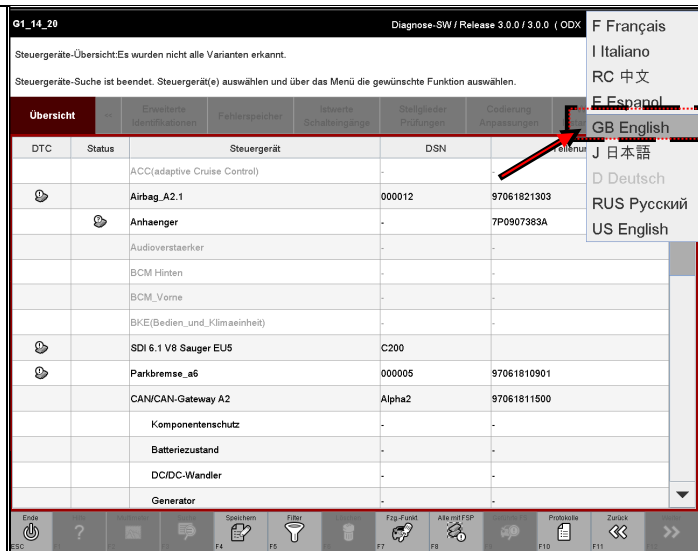   Click on the icon with the primary mouse button.

   If you are using a touchscreen, touch the corresponding position on the touchscreen.
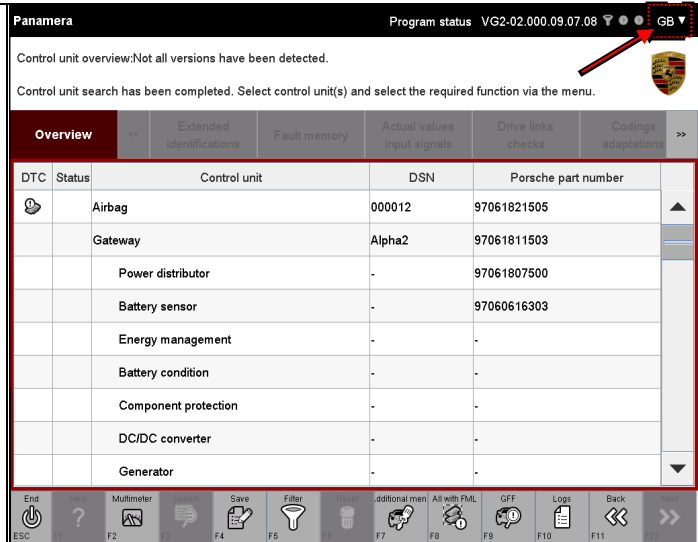
2. A drop-down menu appears in which you can set the desired language.
   The available languages are displayed in a list.

   Click on the corresponding language version.

   The drop-down menu now disappears and the language is set.

Aborting selection:

If you would like to exit the drop-down menu without setting a new language version, simply click in an empty area of the working screen.

9.7   Context-sensitive help

It is possible to display information on elements in the working area. The <F1> button (Help) is available in the control bar for this purpose.

> **ℹ Note:**
>
> In order to call up the Help function, you must have selected only one element. The <F1> button is not active if more than one element is selected.

1. Select an element (A) and press the <F1> button (Help) (B).

> **ℹ Note on display:**
>
> If you click on an element that is marked with a ❔ icon and a fault code and then press the <F1> button, a button menu is displayed first. This button menu has two options:
>
> *   Help.
>   Click the Help option if you wish to call up a help text for the selected control unit.
> *   Fault message.
>   Click the Fault message option if you wish to obtain a detailed fault message.
>
> If only a fault code is specified in the column, a detailed fault message can be obtained by clicking on <F1>.
>
> If there is no fault code in the column, an information text for the respective control unit is displayed by pressing <F1>.

2. The available information is displayed in a pop-up window.

   Press the OK button to close the window and return to the working screen.