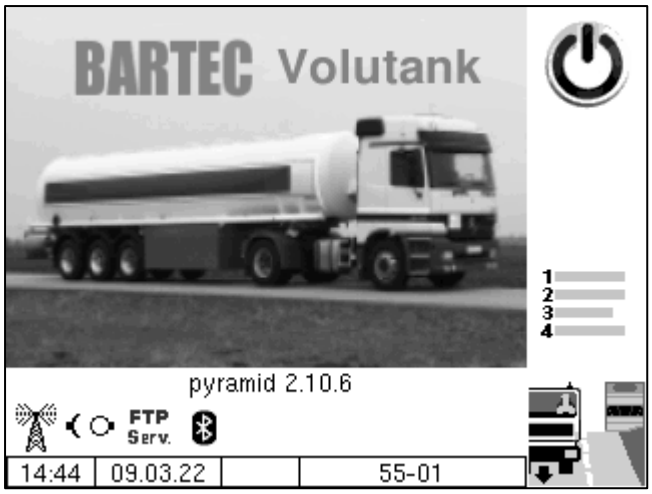
PETRO 3003

VOLUTANK

(incl. SAFE and SPDS)

Configuration



Softwareversion pyramid 2.10.X

SAK 110807

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Exclusion of liability	BARTEC BENKE GmbH and its vicarious agents only assume liability in the case of deliberate acts or gross negligence. The extent of liability in such a case is limited to the value of the order placed with BARTEC BENKE GmbH. BARTEC BENKE accepts no liability for any damage resulting from non-observance of the safety regulations or from non-compliance with the operating instructions or operating conditions. Secondary damage is excluded from the liability.

EU-Declaration of conformity	We, BARTEC BENKE GmbH, Schulstraße 30, D-94239 Gotteszell, hereby declare, that this product is in compliance with the essential requirements of the relevant EU-directives. The EU-Declaration of conformity for this product can be obtained from BARTEC BENKE GmbH, Schulstraße 30, D-94239 Gotteszell, gotteszell@bartec.com.

Waste disposal	Make sure that the product described here is disposed of in an environmentally sound manner. Observe the national and local safety regulations.

Overview of the most important innovations in the software *pyramid*

Software version	*Modification of compulsory calibration modules*	*Change*
2.10.13		Collector Parameter/Pump Delay Fast Drain Collector internal in the main menu SAFE Parameter/SAFE Bypassing/Bypass with Code/Comp-ASS-PID SAFE Parameter/SAFE Bypassing/ Bypass with Code/Comp-PID Print Parameter/"Bypass ASS/PID"
2.10.11		Control Parameter/Sampling Delay
2.10.9		Extension SAFE Parameter/SAFE Bypassing/Bypass PID Loading Allowed/Back-ground Additional Functions/Cleaning
2.10.4		Hardware/Dipsticks/Dip Parameter/Stop Direct Outlet Flow Extension SAFE Parameter/SAFE Bypassing/Bypass with Code/3002-PID Extension SAFE Parameter/SAFE Bypassing/Bypass Unload Count Control Parameter/2 Empty Tests/x min Softkey to switch off on the basic screen Email function extended to - Quantity control - Emergency unlock cabinet doors - Attention Control
2.10.3		Serbian language
2.10.2		Additional Functions/Self Filling from Trailer
2.9.3		Collector Parameter/Trailer Draining End
2.8.0		Control Parameter/Sampling Time Sampling (Output log. 104) SAFE Configuration/PID Check Extended Software Options TDA+
2.5.22		Office Configuration/FTL Conditions/Disconnect-Timeout
2.7.3		SAFE Parameter/Opticontrol/Background
2.7.1		SAFE Parameter/Opticontrol Service Menu/Test Interface Print Parameter/+Product summation Print Parameter/Oil company
2.5.17		Payment obligated Software options SPD minitrailer Simultaneous delivery (direct flow / collector) Automatic configuration backup to CF card Program Parameter/Contingentnumber Unlocking the cabinet flap after entering the driver number (without GPS customer base)
2.5.7		Program Parameter/Direct discharge
2.3.1		Program Parameter/Select delivery product Additivation Office Configuration/FTL Conditions/With order Preset - apply Attention monitoring Automatic tilt correction (output 102/103)
2.2.1	✓	Hardware configuration/Dipsticks/PIF Parameter/Floater Type Linear temperature conversion: Extension to 3 decimal places Extension SAFE Bypassing /Bypass with code – 3002 Extension of the Metrological Products/Compensation mode with "GTL" Automatic calculation of floater immersion depth
2.1.42		Office Configuration/FTL Conditions/ Delete Preset with Code
2.1.28		Office Configuration/FTL Conditions/ Time Synchronisation TVE
2.1.23		Extension of the outputs
2.1.22		Remote Update Menu / SSL encryption

2.1.21		Extension of outputs and inputs
2.0.9		Collector parameter / Start after OFP-Release
2.0.8	✓	Extension for Rigid - trailer combination Program Parameter / Truck Type Collector parameter / Pump Sump Draining Collector parameter / Collector Volume Trailer Extension of outputs and inputs 8-fold Output-Interface
1.24.7		Y-tube gas compensation
1.24.6		Remote Update Menu / SSL encryption
1.24.3		Program Parameter / Enter customer number
1.24.0		Slovenian language Extension: SAFE-Parameter/SAFE Configuration/ Quality Control Program Parameter/ Check Hose FTL Conditions / FTL Delivery
1.23.1		Extension: Control Parameter/ Automatic Switch Off
1.23.0		Selection Parameter Print Out: completely or calibration data only, User defined loading ticket possible
1.22.1		Control Parameter / Max. Simultan. Deliveries
1.22.0	✓	Monitoring the emptying angle during collector delivery.
1.21.12		Control Parameter / Prod. Quant. Contr. Pipe
1.21.11		Control Parameter / Automatic Switch Off
1.21.9		Extensions for service tool
1.21.5		Service menu/ Clean Up Filesystem Office Communication/FTP Parameter/FTP Configuration
1.21.4		The average temperature is added to the Information window during calibration.
1.21.3		Program Parameter / Journal at Tour End Collector Parameter/ Gravitation Delivery, / Stop Delivery x%∗Flow
1.21.2		System Parameter/Language Danish SPD Conditions/ Comp. Load Valves Hardware/Epson TM/ Print mode, Printer type, Printer Driver
1.20.3		Control Parameter/ Reduce Direct Delivery
1.20.1		SPD Conditions/ Comp. Empty Valves
1.20.0		Program Parameter/ Default Company on Empty, SPD Conditions/ Print Compartment State
1.16.X		Print screen function, Options for Company change
1.15.X	✓	ExTIGER (inclination independent full hose for delivery of small quantities)
1.14.X		8 dipsticks
1.13.X		I/O 24
1.12.X		Shell
1.11.X		Journal with errors
1.10.X		Mixmatrix- Oil Company Preset
1.8.X	✓	Full hose
1.7.X		VOLUTANK, SAFE, SPD integrated into the same software, FTL connection
1.5.X		SPD
1.4.X		SAFE
1.3.X	✓	VOLUTANK, collector, SPD (cabinet doors only)
1.2.X	✓	VOLUTANK, collector
1.1.X		VOLUTANK

If the update modifies compulsory calibration modules, a message will appear in the event display every time the system is restarted until the version numbers of these modules have been updated.
To update the version numbers of the software modules, the version test must be exited with the calibration switch open.

1 About this manual

The configuration instructions contain important information, safety instructions and test certificates which are necessary for the correct functioning of the device in operation.
The configuration instructions are intended for all persons involved in the assembly, installation, commissioning and maintenance of the product.

The illustrations in this manual are intended to illustrate the information and descriptions. They cannot always be transferred unchanged and may differ slightly from the actual design of the device.
BARTEC BENKE GmbH reserves the right to make technical changes at any time.
BARTEC BENKE GmbH is under no circumstances responsible or liable for any indirect or consequential damages resulting from the use, operation or application of this manual.

Please read the configuration instructions carefully before using the product.

This document must be kept by the user for the entire life of the product.

Signs and symbols

The following characters and symbols are used in this manual to highlight passages that need special attention.

Notes
This arrow indicates special features to be observed during operation.

Warning
This symbol draws your attention to passages that, if not followed or followed inaccurately, may result in damage to or destruction of parts of the system or loss of data.

Danger!
This symbol marks passages that, if not followed, endanger the health or life of humans.

License requirement!
This symbol indicates menus or individual parameters that are only available if a corresponding option requiring a license has been activated.

General information within the text is marked with a frame.

2 Safety precautions

The operator of the system is responsible for observing all the regulations in force for the storage, transportation and loading/unloading of combustible liquids.

Regulations and provisions lose none of their validity when the system is operated with PETRO 3003 units.

PETRO 3003 units are built with due consideration to the regulations currently in force and left the factory in perfect condition. Their installation and maintenance are to be entrusted to properly trained specialists only.

- Make sure that the data and operating conditions specified by BARTEC BENKE are observed.
- Follow the instructions for operating and servicing the units.
- If you discover any signs of damage or breakage on any parts of the system or if the system's safe operation cannot be guaranteed for any other reason, do not start the system or, if already in operation, shut down the system immediately.
  Notify your maintenance department.
- Get in touch with our service specialists if you discover any faults or defects during operation or if you have cause to doubt that the units are working properly.
- PETRO 3003 units are not a replacement for a tanker vehicle's safety equipment or for a user's own safety measures (e.g. overfill protection).

To comply with water legislation provisions of the Water Resources Act (WHG) and the compliance of the Immission Control (20. BImSchV) in Germany, the system VOLUTANK 3003 offers the following security devices when configurated according to the VdTÜV certificate TÜ.AGG and the VdTÜV information sheet:

- Overfill prevention system (AS) to prevent overfilling
- Filling hose protection (ASS) for preventing leakage of fluids
- Vapor return system (GP) for monitoring the gas recirculation
- Death man key and emergency stop function (ANA)

The measuring system may only be operated for applications that are subject to legal metrological control in the respective EU member state if the nominal operating conditions specified in the EU type examination certificate are met.

3 Basics

The PETRO 3003 system can be used to monitor, record and control all operations and operating processes for loading and unloading petroleum vehicles. The system is extremely flexible and can be adapted to meet different requirements using the variable range of hardware components.

Software options

For the software from version pyramid 2.5.X, various options are only available after purchasing a corresponding license (see section 4.2.12).

When updating from an older software version without options which require a license, all options used up to that point remain active.

Various functions can be configured and combined with each other using the pyramid 2.10.X software.

„VOLUTANK“: Electronic dipsticks are used in the measuring system to record the quantities when the products are loaded or delivered. *For quantity recording a turbine measuring system („Ex-TIGER“) can be installed in addition.This does not make any difference in the operation of the system. The operation is the same as a delivery via collector.*

„SAFE“ The quality assurance system prevents products from being mixed during loading or delivery.

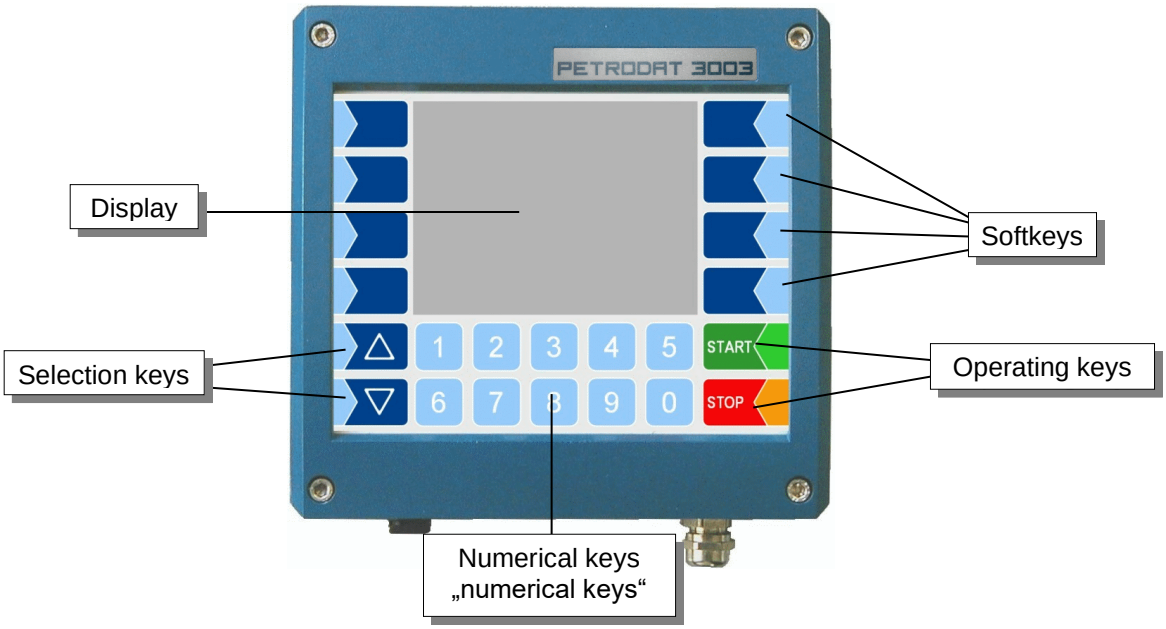
„SPDS“: The Sealed Parcel Delivery System is used to seal loads electronically on petroleum vehicles and monitor inputs. This ensures that the product arrives at the customer's premises in the same quantity and quality that was present during loading.

Further options for operating the measuring system in combination with the basic functions, see section 4.2.12.

How to start up the system and to operate the vehicle equipment depends on the vehicle type and the therefore valid operating instructions.

3.1 Operating unit (HMI)

The operating unit (HMI) acts as the central control and information unit for the entire system. Communication between the operating unit and other components within the system takes place via USB or, in the case of P-NET devices, via P-NET.



3.1.1 Keypad

The system can be operated using the touch-sensitive keys on the operating unit (touch screen with numerical keys, selection keys, softkeys and operating keys) as well as key functions that are shown on the display depending on the situation. The functions of the softkeys are controlled by the software according to the current operating status.

3.1.2 Display

A graphical screen designed as a touch screen is used to display all information. In addition to the touch-sensitive keyboard, various functions can also be operated directly using controls on the display surface.
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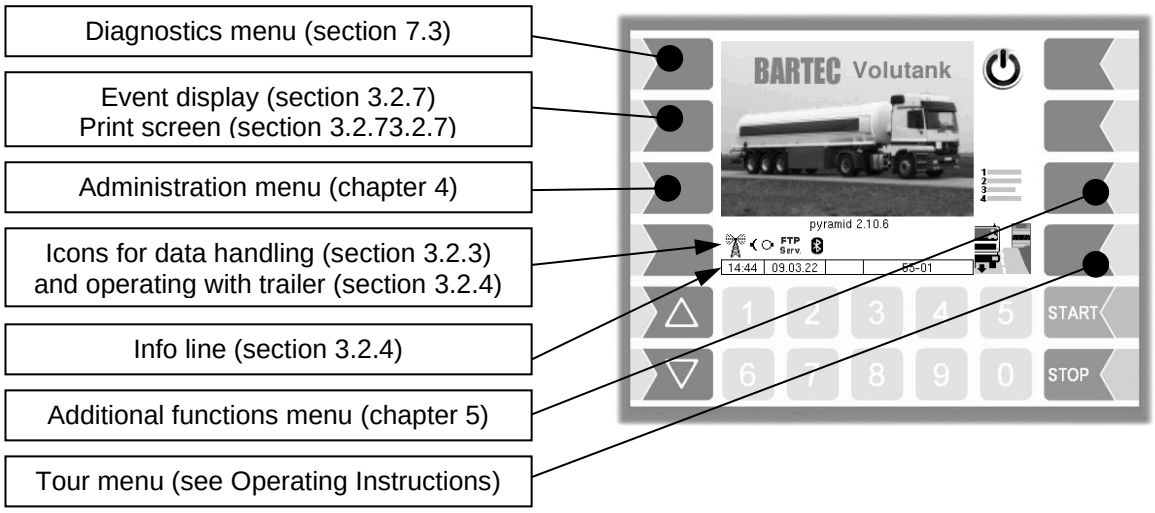
3.2 Operation concept

3.2.1 The software user interface

The controller software is constantly evolving.
A different software version or configuration may cause the screen displays on your system to differ slightly from the illustrations in this document.

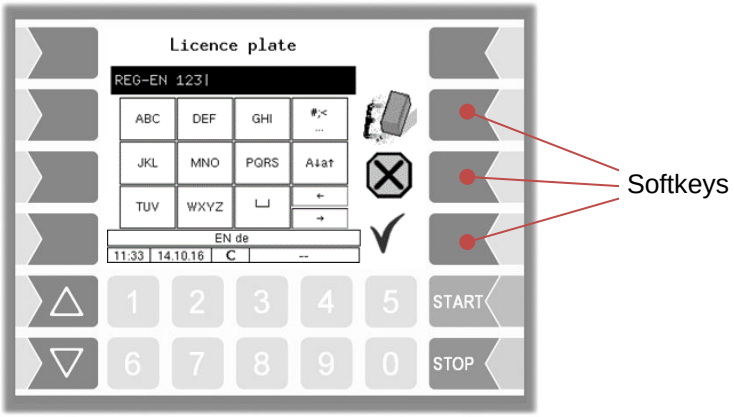
An overview of the structure of the configuration menu together with instructions on how to access the appropriate password level in each particular case can be found at page 147 and following

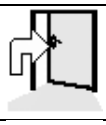
When the system is started up, the main menu appears on the display.
You can access the various displays or operating modes using the softkeys to the left and right of the display.



3.2.2 Softkeys

The softkeys can be assigned to various functions, the current meaning of which is indicated by symbols (see page 12).
Depending on the current operating status, additional softkeys may be available. These are then labeled in plain text for the respective function.
All keys are touch-sensitive, meaning that you don't need to press them but simply have to touch them.



Symbol	Meaning	Effect
	Confirm/ Accept	A selected menu is opened. A selected parameter setting is confirmed.
	Close menu	The menu that is currently open is closed and the system switches to the next menu up in the hierarchy.
	Cancel	The menu that is currently open is closed and the system switches to the next menu up in the hierarchy. Any settings or entries that have been made are discarded.
	Edit	An entry or selection dialog is opened for the selected parameter.
	Correct	The character to the left of the cursor in an entry dialog is deleted.
	Accept, save	The menu that is currently open is closed. All settings/entries that have been made (including those in lower level menus) are accepted and saved. **All changes are only saved if you exit the menu or entry dialog using this softkey!**
	Additional functions menu	The Additional Functions menu is opened.
	Start tour	A tour is started (load/deliver product).
	Load	The Loading menu is opened.
	Delivery	The Delivery menu is opened.
	Emergency delivery	If a hardware fault would normally prevent delivery, the faulty hardware can be bypassed.
	Simultaneous collector delivery	If delivery via a collector is selected, the delivery takes place from all selected compartments simultaneously.
	Sequential collector delivery	If delivery via a collector is selected, the delivery takes place from the selected compartments sequentially in a selectable order.
	Bypass	SAFE components are bypassed.
	Pre-set quantity	The dialog for entering a pre-set quantity is opened.
	Change page	If the displayed information extends over more than one page, you turn to the next page.

Symbol	Meaning	Effect	
	Start delivery	The delivery process is started from the selected compartment.	
	No removal of residues	Automatic residue removal at the end of dispensing or after rinsing is deactivated, the collector remains filled when the specified amount is reached.	
	Removal of residues	Residues are automatically removed from the collector at the end of the dispensing.	
	Save	The data for a delivery is saved.	
	End order, print	The current delivery order is ended and the delivery note or invoice is printed.	
	Password input	The window for entering the password is opened (Driver-, User- or Service-Password).	
	Change User password	The User password (configuration level 2) can be changed.	
	Start download	The software download from the BARTEC server is started (Service menu).	
	Cancel download	The software download from the BARTEC server is cancelled (Service menu).	
	Send/receive	Communication is started manually with the message box (service function for configuring office communications).	
	Print preview	Displays a preview of the document to be print.	
	Print	Prints the selected or displayed data.	
	Edit product assignment	After entering the service code, you can assign the products from all products which are configured during load mapping.	
	Show Information	Information about missing SAFE components will be displayed.	
	Request to the BARTEC server	A license request is sent to the BARTEC server.	
	Disconnect mini trailer	Disconnects the logical connection to the mini trailer.	With activated software option *SPD mini trailer*.

Symbol	Meaning	Effect	
	Connect mini trailer	Establishes the logical connection to the mini trailer.	With activated software option *SPD mini trailer*.
	Switch off the system	The System will be shut down and switched off	

Additional softkeys may be available depending on the current status. These are then labeled for the respective function in plain text.

3.2.3 Icons for data handling

The following icons are used to monitor the data handling and will appear in the display above the info line.

Symbol	Meaning
	Response data is provided for transmitting
	Modem is switched on
	Modem is switched on, connection has been established
	Receiving data
	Sending data
	Online Service connection via FTP server is active
	Bluetooth interface is active
	Bluetooth connection established
	Scheduled data available
	Scheduled data processed

3.2.4 Operation with trailer

For operation with a trailer, the vehicle must be configured as a tanker (see section 4.2.2 Program Parameter / Truck Type: rigid and the logical output 62 must be activated (Logical outputs and inputs see section 7.2).

In addition to the data handling icons, the following symbols can be displayed:

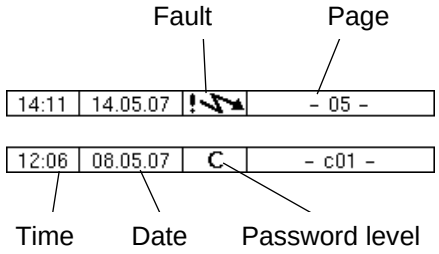
Symbol	Meaning
	Trailer logically docked
	Communication with trailer available
	Communication with trailer interrupted
	Trailer logically undocked
	Delivery from the trailer

When attaching or detaching the trailer, you must log it on or off in the Additional Functions Menu (see section 5.9).

3.2.5 Info line

The info line shows the date and time, information about the operating status and the software page number.

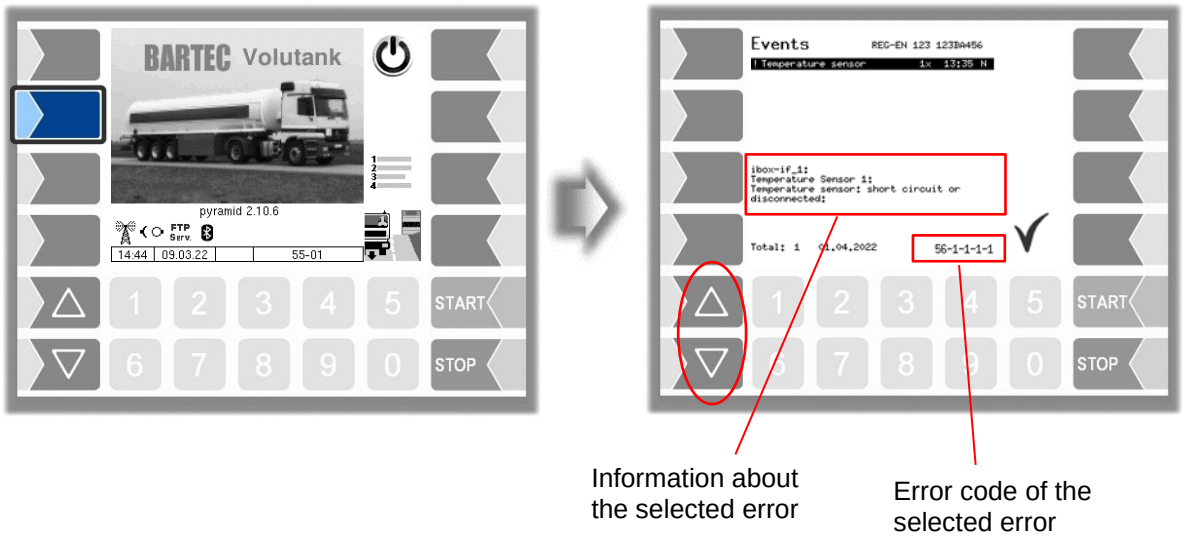
Examples



3.2.6 Event display

Important error or fault messages are displayed directly on the display.
The second softkey left of the display is used to open the event display, which shows all operating statuses and faults (touch briefly).

You use the softkey ✓ to acknowledge messages that are displayed.
The “Event display” is automatically closed after 20 seconds.
Error messages are not deleted until the cause of the error has been removed. The fault symbol is displayed in the info line during this time.



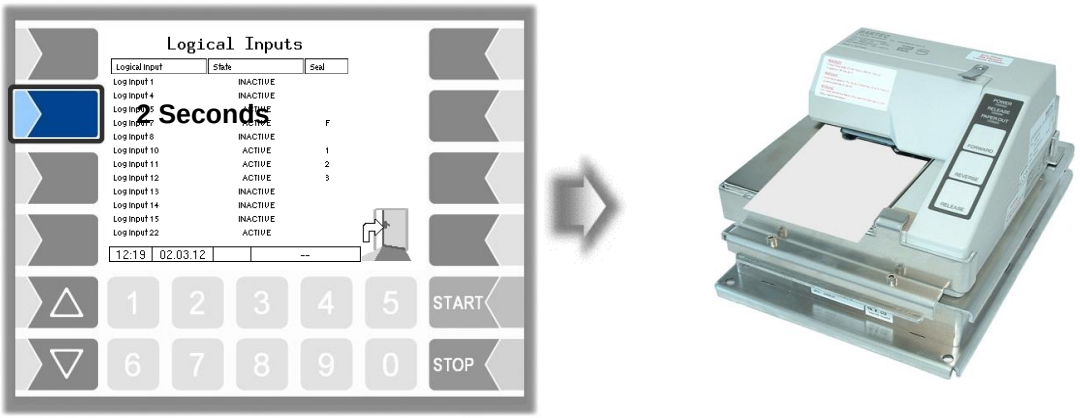
Maybe in the event display more than one error are displayed.
Use the arrow-keys to select the individual messages.
For the currently selected error, more information and an error code are displayed (see also section 6.1, page 142).

3.2.7 Print screen

When you touch the second softkey from the top left of the display at least for two seconds, the current screen will be printed.

This function requires the installation of the slip printer (EPSON TM). If there is another or no printer installed, a screenshot is taken. The screenshot can be accessed via the "3003 Service Tool".

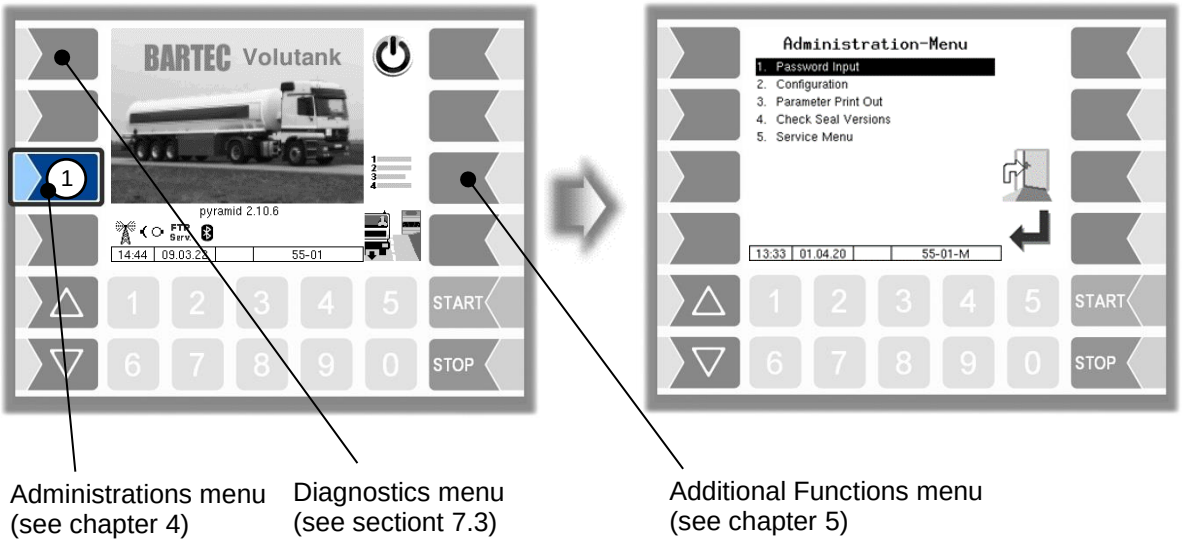
There is a separate instruction manual for the 3003 Service Tool.



3.3 Operating the menus

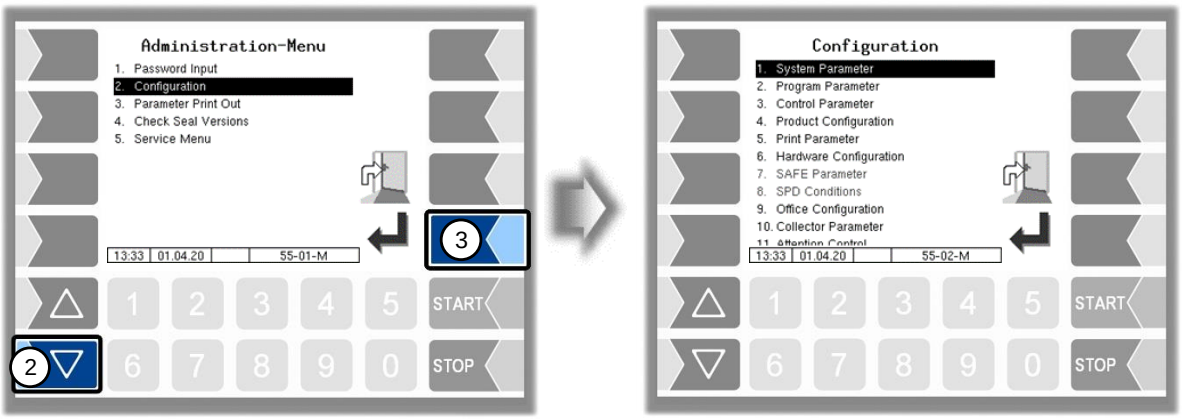
3.3.1 Opening a menu

1. Touch the corresponding softkey to open the desired menu.



2. Use the selection keys ▽ and △ to select the menu you wish to open. The selected menu is highlighted with a black bar.
3. Touch the “Confirm/Accept” softkey to open the menu.

You can also open the desired menu directly using the corresponding numerical key.

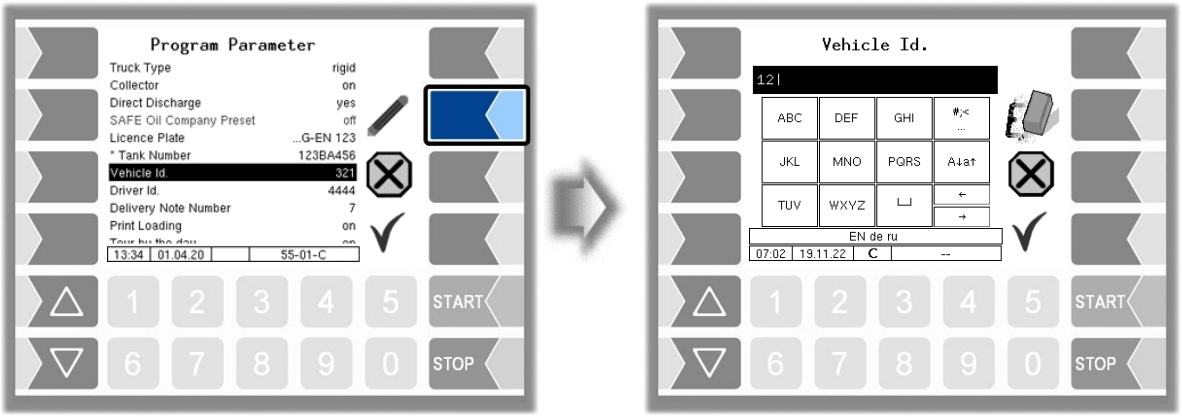


If the menu contains further submenus, you can open the required submenu in the same way.

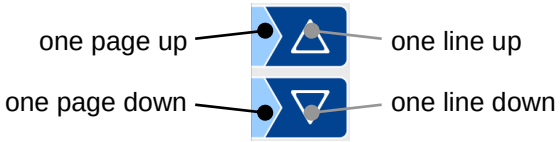
3.3.2 Editing parameters

1. Use the selection keys ▽ and △ to select the parameters you wish to edit. The selected parameter is highlighted with a black bar.
2. Touch the “Edit” softkey to open the edit window (entry or selection dialog).

The “Edit” softkey is only available if you are authorised to edit the selected parameter in the current password-protected configuration level (see section 4.1).

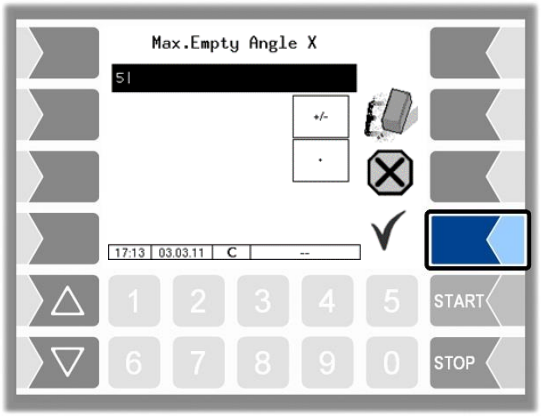


If not all entries in menus or lists can be displayed in the screen, you can use the selection keys to scroll lines or pages.



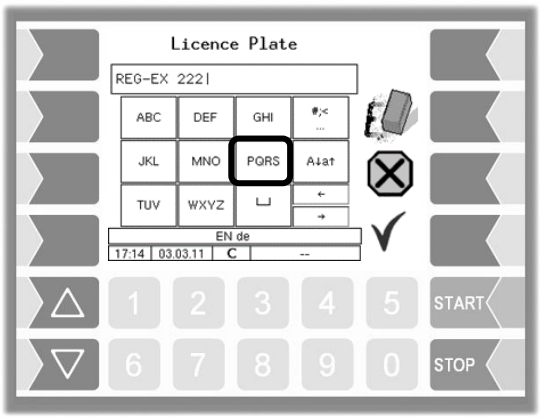
Numerical entries

Numerical entries are entered using the keys below the display.
If you need to make any corrections, you can use the softkey with the rubber symbol. When you touch this softkey, the character to the left of the cursor is deleted.
If a parameter must be entered with a positive or negative value or with decimal places, you can use the sign softkey [+/-] or [.].
Confirm your entry using the “Confirm/Accept” softkey“.



Alphanumerical entries

Letters are entered using the keys that are shown on the display. To enter a letter, simply touch the corresponding key. The keys are assigned up to four characters. You determine which character appears in the input line by pressing the key the appropriate number of times in quick succession.
You can enter a blank with the [␣] key.

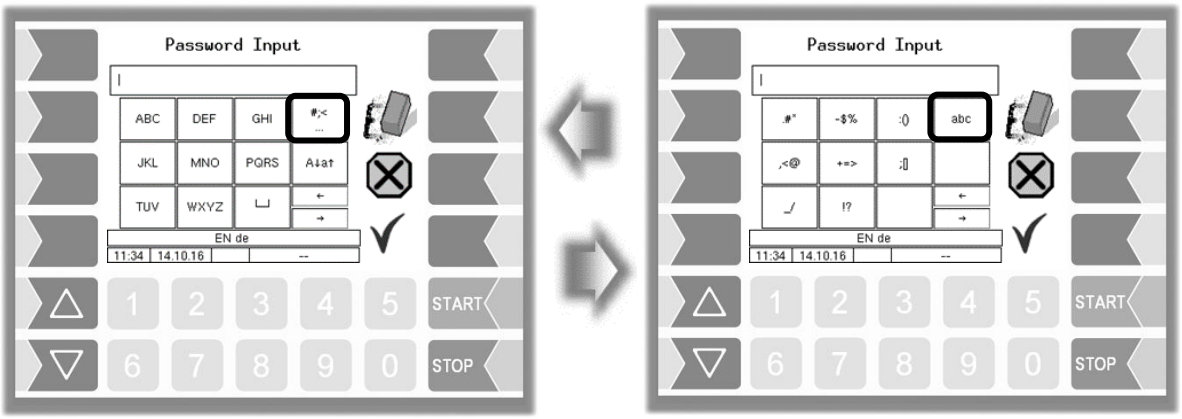


Shift key

You can use the [A↓a↑] key to switch from upper case to lower case letters and vice versa.

Special characters

If special characters need to be entered, you can use the [#;<] key to switch the key assignment to the special character level. You can switch back to letters using the same key, which is now labelled [abcä] .

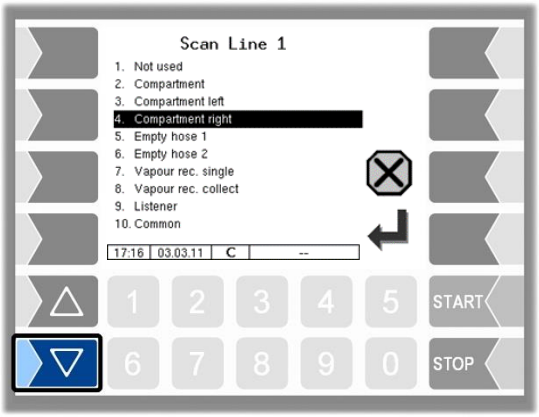


Once you have finished making your entry, touch the “Confirm/Accept” softkey“.

Selection lists

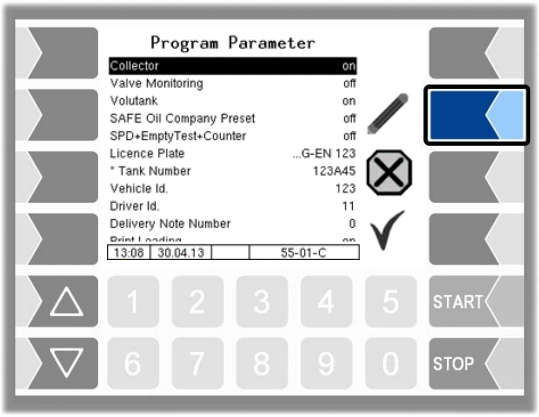
Selection lists are available for certain parameter settings.
Select the required setting using the selection keys [▽] and [△] .
The selected setting is highlighted with a black bar.
Confirm your selection using the “Confirm/Accept” softkey.

You can also select the desired setting directly using the corresponding numerical key.



Alternatives

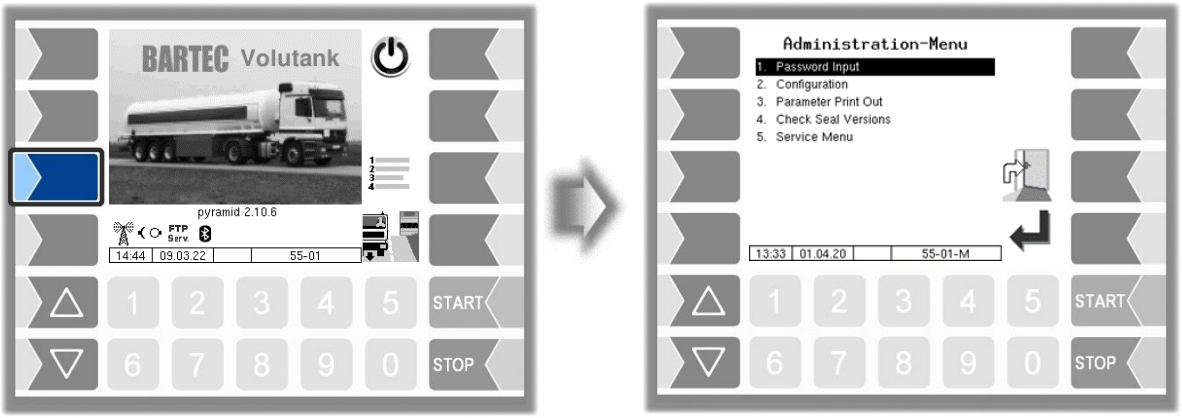
In the case of parameters for which only two alternative settings are possible, e.g. Yes / No or On / Off, the change is made when you touch the "Edit" softkey. With the number key 0 the settings are switched off (no), with any other number keys they are switched on again (yes).



After changing the selected parameter, the next line is automatically highlighted.

4 Administration-menu

The third softkey down, to the left of the display, is used to open the Administration menu.
The Administration menu contains submenus which can be used to configure the system and access various functions.



4.1 Password protection

The software configuration is protected by passwords and the seal switch. This permits access to various configuration options.
The mark of the password level currently accessible is indicated by a letter in the info line of the display.
Each password level includes all lower password levels.

Password level	Mark	Access
0: No password		Read only
1: Driver password	D	Time, language, driver number
2: User password	U	Operating parameters
3: Service password	S	Software parameters not subject to statutory calibration
4: Open seal switch	C	All parameters

4.1.1 Password levels

No password

If you don't enter a password, you can only open the configuration menus without making any changes.

Driver passwort

The driver password is the sum of the day, month and hour (as shown on the display).

Driver password = day + month + hour

Example

*Date: **21**. **03**. 2020, **07**:28 h*
*Dirver password= 21 + 3 + 7 = **31***

User password

The user password is the vehicle fleet manager's password. You can define the user password yourself (see page 26). Once you have entered the user password, you can change configuration data that is not subject to statutory calibration, such as activating or deactivating various options and hardware modules.
Upon delivery, the user password is "bartec".

The user password can consist of letters or numbers.

Attention:
The user password may only consist of digits if you want to use the following functions:
- Company change (see section 4.2.2 Program Parameter / Change Company with Code) ,
- SAFE Bypassing by entering code (see section 4.2.7.2 SAFE-Bypassing / Bypass with Code)

Change Company with Code / Bypass with Code ⇨ 3002 / 3002-PID:

Example

Calculation 3002 Code (only possible with numeric user password)

Code = driver password x (user password + 1) + user password

*Driver password = **31**, user password = **120***
*Code = 31 x 121 + 120 = **3871***

Bypass with Code ⇨ Comp-ASS-PD / Comp-PID:

The Compartment-day-code is valid for the whole day, vehicle number and user password must be numerical

Example

Code = (Day + Month + Vehicle number) x (User password + Compartment number + 1) + User password

*Date: **21**. **03**. 2020 07:28 o'clock*
*Vehicle number = **3***
*User password = **120***
*Compartment number = **3***

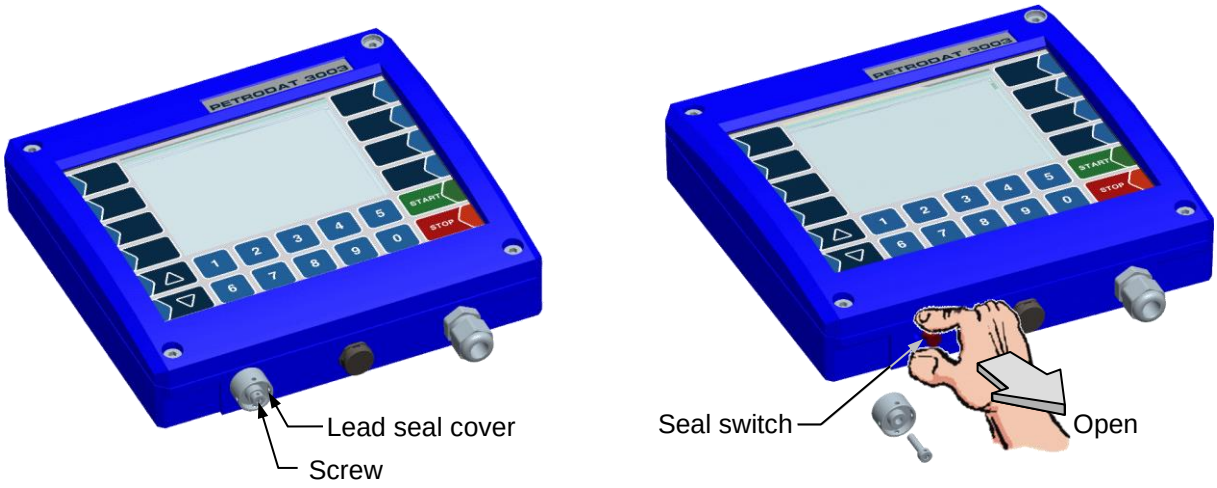
*Compartment-day-code = (21 + 3 + 36) x (120 + 3 + 1) + 120 = **6320***

Service password

The service password allows you to access software parameter settings that are not subject to statutory calibration.
The service password is created and changed periodically in accordance with a special mode. The service password is only revealed to authorised service personnel.

Seal switch

Opening the seal switch allows you to access all parameters, including those subject to statutory calibration.
The seal switch is located at the bottom of the operating unit, below the lead seal cover. The screw for the lead seal cover is sealed with lead.
To open the seal switch, you must remove the lead, unscrew the screw and remove the lead seal cover. You can then open the seal switch by pulling it downwards.

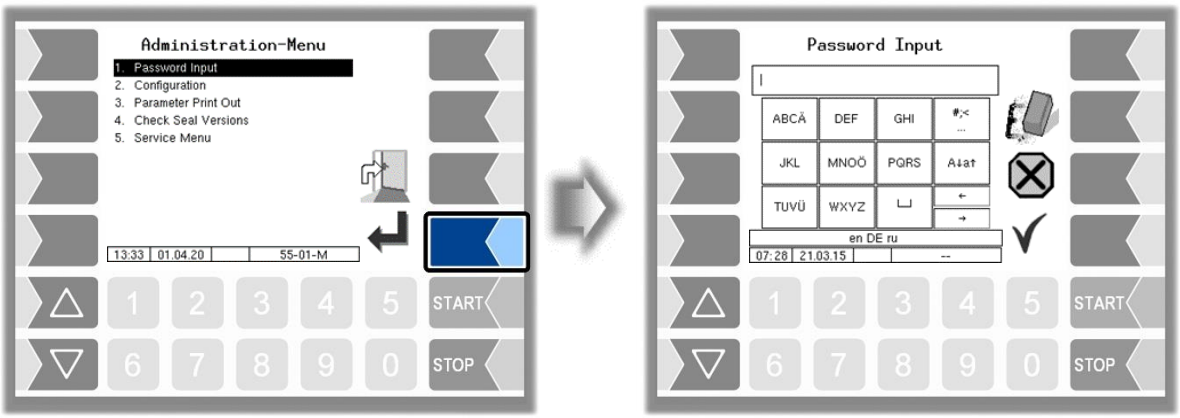


If sealed data should be changed, the calibration switch must be opend.
Whenever the seal switch is opened, re-calibration by an official office, for which a charge will be made, is compulsory!

4.1.2 Entering the password

- Confirm the „Password Input“ item from the Administration menu.

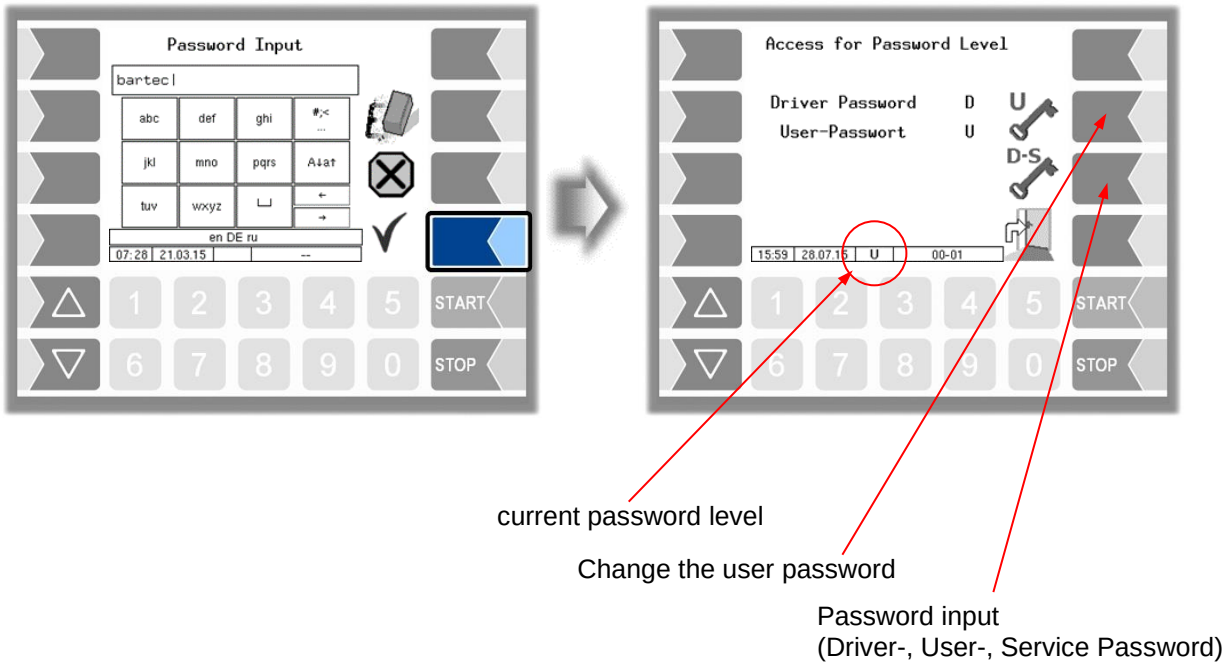
You can enter the password in the following window (Alphanumerical entries – see page 20).



- Once you have entered the full password, touch the “Confirm/Accept” softkey.

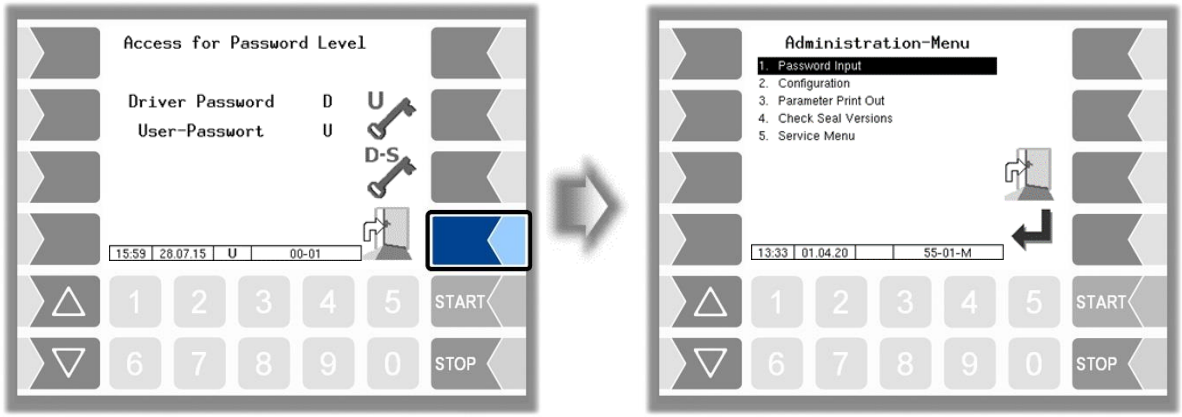
The system then shows the password levels that you can access. All higher password levels include access to the password levels below them.
The highest password level at any time is shown in the info line:

D : Driver password level	1	
U : User password level	2	(D)
S : Service password level	3	(U, D)
C :Open seal switch	4	(S, U, D)

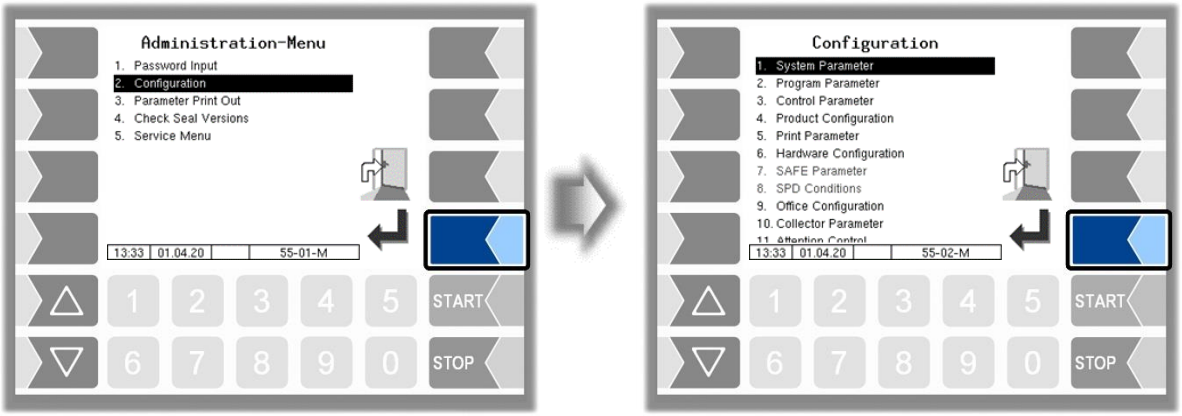


After you have entered the password for user level or a higher level, the softkey for changing the user password is activated. You can enter a new user password after touching this softkey.
The user password can be composed of letters or numbers.

- Touch the  softkey to return to the menu selection.



4.2 Configuration



In the Configuration menus, the software for the system is customised to the respective operating conditions and the installed hardware by entering various parameters.

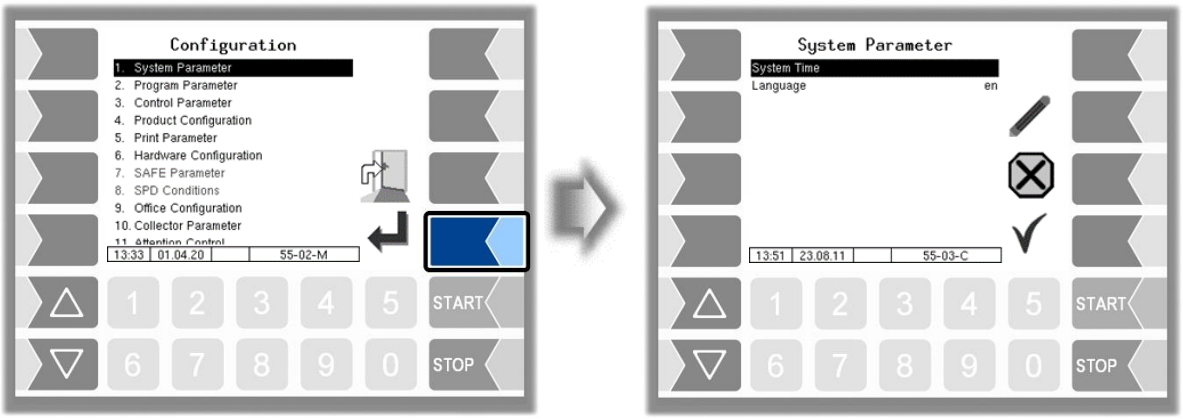
Some menus or individual parameters are only available if a software option requiring a license has been activated (see section 4.2.12). These parameters are shown in gray if they are not available.
In the text you will be informed, if access to menus or individual parameters depend on software options that require a license.

An overview of the structure of the configuration menu can be found in section 7.1 of the Appendix. The password level, which allows access, is also noted there.

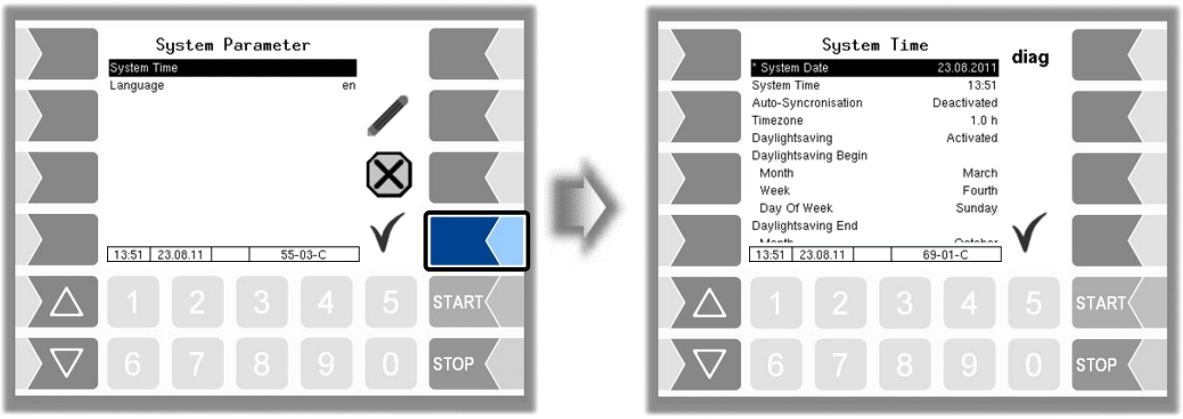
Parameters that are subject to statutory calibration are marked with an asterisk ✳ prefixed.

If an "M" is in front of the parameter, this parameter can be controlled by the "SAFE company settings (Mix Matrix)". Depending on the selected company has a change of these parameter settings no effect (see section 5.6).

4.2.1 System Parameter



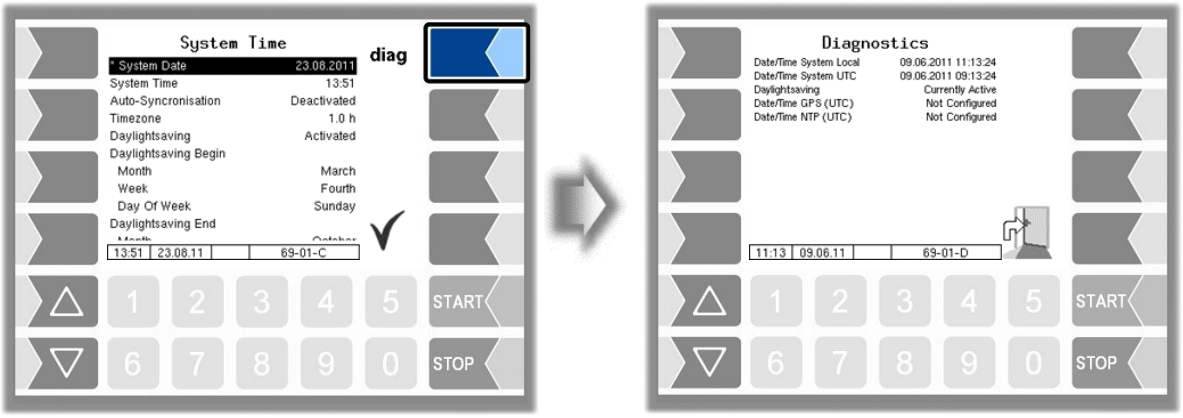
4.2.1.1 System Time



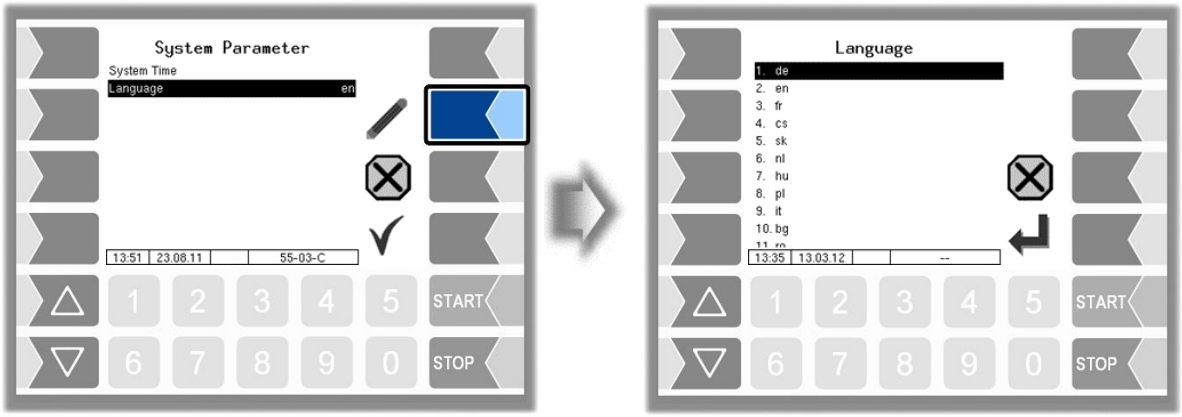
System Time			
	C	*System Date	Change the date setting
	U	System Time	Change the time setting
		Auto-Synchronisation	Activate/deactivate the automatic clock synchronisation via GPS or GPRS.
		Timezone	Set the time zone by entering the deviation from UTC
		Daylightsaving	Activate/deactivate the summertime settings
		Daylightsaving Begin	
		Month	Month when summertime begins
		Week	Week when summertime begins
		Day of Week	Weekday when summertime begins
		Daylightsaving End	
		Month	Month when summertime ends
		Week	Week when summertime ends
		Day of Week	Weekday when summertime ends

If you change the date or time setting, will the system automatic be rebooted.

Diagnostics



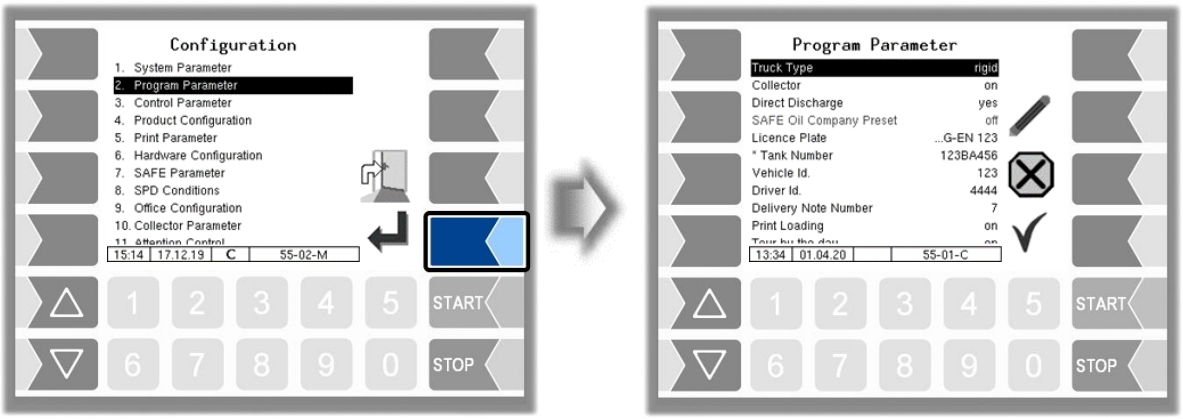
4.2.1.2 Language



Language			
	D	Language	Select the display language de (German) en (English) fr (French) cs (Czech) sk (Slowak) nl (Dutch) hu (Hungarian) pl (Polish) sr (Serbian) it (Italian) bg (Bulgarian) ro (Romanian) hr (Croatian) ru (Russian) da (Danish) sl (Slowenian) sv (Swedish)

If you change the language setting, will the system automatic be rebooted.

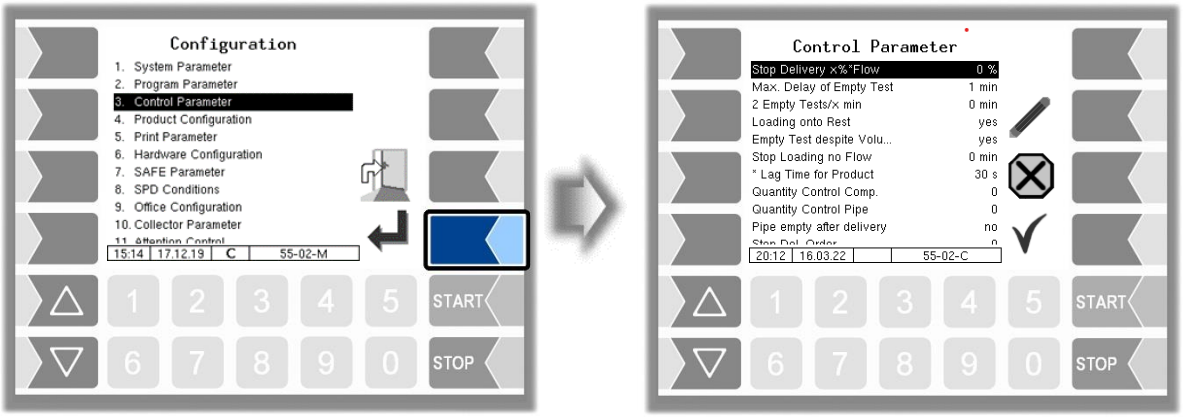
4.2.2 Program Parameter



Program Parameter			
		Truck Type	1. rigid (Trailer control) 2. tractor (no function) 3. semitrailer (Standard vehicle) 4. drawbar (Trailer)
		Collector	off: no delivery via collector on: Delivery from the individual compartments is possible via a collector, either pumped or unpumped. ExTiger: Measuring system TIGER is included. *Configuration of the outputs for collector vehicles, see table Logical Outputs and Inputs, section 7.2.*
		Direct Discharge	yes: Delivery via direct outflow is possible no: Direct outflow delivery can not be started. *(for vehicles that only have collector deliver)*
	U	SAFE Oil Company Preset Available when the licensed option 26 ***Shift matrix*** is enabled (see section 4.2.12).	off: Company selection is disabled manually: Company selection can be done in the Additional Functions menu (see section 5.6). autom.: Before loading is automatically prompted to select the company. *If there is no loading within one hour after selecting the company, you must select the company again before loading.* A company change can take place always after entering the service password (or the seal switch is opend). The company change will be logged!
		Change Company with Code *(available when „SAFE Oil Company Preset“ is activated.)*	off: You can select a company without entering a code. always: You must always enter a code, when selecting a company. loaded: You must enter a code only when selecting a company before loading. The code is formed from the numerical user password and the driver password. (see section 4.1.1) *Code = Driver password x (User password + 1) + User password* *Example* *Date: **21**. **03**. 2020, **07**:28 o'clock* *Driver password = 21 + 3 + 7 = **31*** *User password = **120*** *Code = 31 x 121 + 120 = **3871***

		Default Company on Empty *(available when „SAFE Oil Company Preset“ is activated.)*	When the rigid is empty, it will be switched to the company, whose number is entered here (see section 5.6). When entering 0 the company will not be changed.
		Number Compartments *(available only when „Volutank“ is set to „no“)*	Number of compartments in the vehicle
		Licence Plate	Vehicle registration
	C	*Tank Number	Number of the tank truck container. If a number is input here, it will be compulsorily printed at the delivery note.
	U	Vehicle Id.	No. of the vehicle
	D	Driver Id.	Internal driver number
	U	Delivery Note Number	Start number for sequential delivery note numbering
		(M) Print Loading	If this option is activated, a ticket is printed after loading
		Tour by the day	yes: A new tour is automatically started at each date change.
	C	*Netherlands	yes: After a change in a software module is no loading or deliver process possible without recalibration.
	U	Journal at Tour End	Journal with Errors: The journal with errors will automatically be printed when the tour is finished. No: At the end of the tour, no automatic journal printing is performed. Standard Journal: The tour journal will automatically be printed when the tour is finished.
		Check Truck	yes: When starting a tour, the driver must enter his number and confirm that he has performed the vehicle inspection. For each start of an order or loading the driver number must entered again.
		Check Hose	0…99 s For the specified duration, a note text for the double-sided check of the hose connection is displayed. 0: no display of the text.
		Enter customer number	yes: When starting an order, the dialog for entering the customer number is displayed.
		Contingentnumber	yes: A contingent number must be entered before loading.

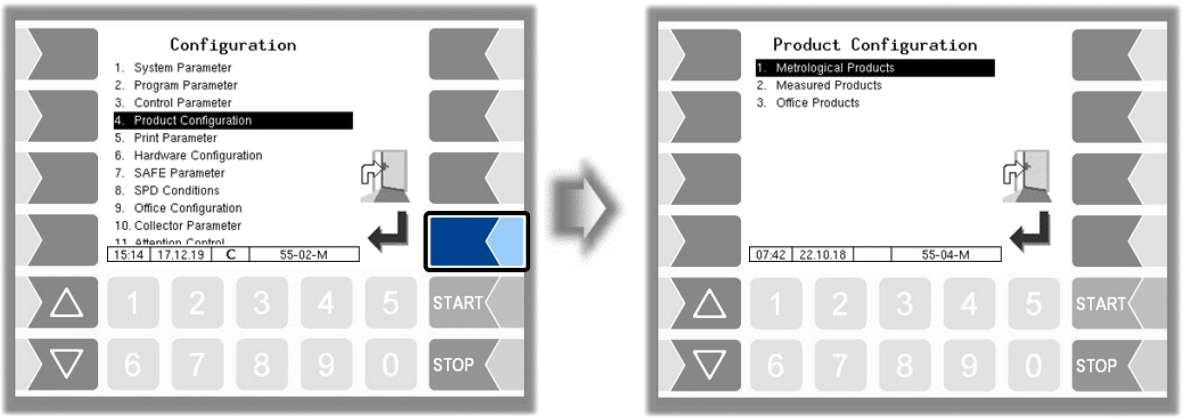
4.2.3 Control Parameter



Control-Parameter			
	U	Stop Delivery x%*Flow	The delivery stops at x% of the output flow before reaching the preset quantity (compensation of stop delay).
		(M) Max. Delay of Empty Test	Before loading, an empty test must have taken place within the configured time. 0: empty test not required. *Default setting: 60 min.*
		2 Empty Tests/x min	A maximum of 2 empty tests are allowed within the configured time.
		(M) Loading onto Rest	no: There must not be any residual quantity in the compartment before loading. yes: A residual quantity of the same product is permitted in the compartment during loading. All empty: There must be no residual quantity in the collector or in any of the compartments during loading
		Empty Test despite Volume	yes: The empty-test is also performed when still product is detected in the compartment.
		(M) Stop Loading no Flow	Loading is automatically ended if no dipstick movement is detected during the configured time (in minutes). *Default setting: 30 min.*
	C	*Lag Time for Product	The "Empty" compartment status is only displayed if the wet leg sensor notifies "empty" for the configured time (in seconds). *Default setting: 60 s.*
	U	(M) Quantity Control Comp.	Permitted quantity difference in the compartment. The quantity control is performed at the start and end of the tour, the start and end of the order and the start of delivery for the compartments that are still closed. If 0 is entered here, the quantity is not checked. *Default setting: 50 l.*
		(M) Quantity Control Pipe	Permitted quantity difference in the pipe below the foot valve. The quantity control is performed at the start of the order. If 0 is entered here, the quantity is not checked. *Default setting: 5 l.* ⚠ During the pipe test, the dispensing valves (e.g., API) must not be opened manually (bottom valves are opened).
	S	Pipe empty after delivery	No: Pipeline remains full after partial delivery Yes: At the end of collector and direct flow deliveries the pipeline must be empty. Mandatory: To finish delivery calibrated, both WLS have to signal dry . *After exiting the Control Parameter, a second*

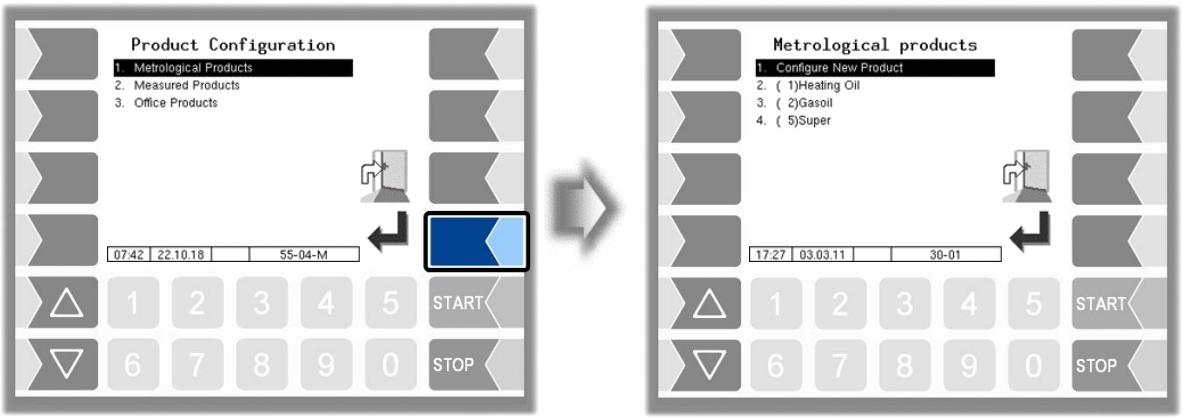
			page for entering a compartment related volume is displayed.
	U	Stop Del. Order	No. of the logical input, that finishes a delivery order.
		Stop Load Order	No. of the logical input, that finishes a loading order.
		(M) Print Exclamation mark	yes: In the case of quantity control errors, an exclamation mark is printed on the delivery ticket to the left of the product name.
		Load: open BV manually	Off: When loading, the bottom valves are opened automatically. Opening and closing via “number keys” is <u>not</u> possible. On: When loading, the bottom valves are opened automatically; they can be opened and closed via “number keys”. On+Start: When loading, the bottom valves will not open automatically, they must be opened and closed again using the ~~via~~ “number keys”. ⚠ *All bottom valves can be closed with the STOP-Softkey regardless of the current setting.*
		Empty w/o Compressed Air	yes: The compartment state "Empty" is also reported, when compressed air is missing. no: In case of empty compartment is the compartment state "Empty" only reported, when compressed air is available.
		Reduce Direct Delivery	Quantity before reaching the pre-set quantity at which the direct outlet is throttled. The actual cut-off quantity is added to this quantity depending on the flow rate (see Control Parameter „Stop Delivery x%xFlow“). ⇨*Throttling for collector deliveries is fixed at 100 l.*
	U	Automatic Switch Off	After the selected time (0, 12, 24, 36, 48 hours) has elapsed, the system is switched off automatically if no operation is performed (tour start, tour end, start order, start loading, opening the administration menu, starting additional functions). A message will be displayed 1 minute before the shutdown. The shutdown can be prevented with the "Abort" softkey and the timer can be restarted. A message will be displayed when you switch on again after automatic shutdown. If you select 0, no automatic shutdown occurs.
		Prod. Quant. Contr. Pipe	Here you can enter the number of a metrological product for which the quantity control in the pipe is extended to 3 minutes. With a simultaneously configured output log. 104, the extended quantity control is deactivated. If configurated product is loaded, sampling function ist shown in additional menu. If “0” is configured no loading product is used.
		Sampling Time	After the configured time has elapsed, sampling ends automatically.
		Sampling Delay	After this time has elapsed (in seconds), output 104 is switched on for the configured time "Sampling Time".
		Max. Simultan. Deliveries	Maximum number of deliveries that can be made simultaneously (1...6) *Standard: 3*
	C	*Demo Mode	Demo mode for demonstration purposes

4.2.4 Product Configuration

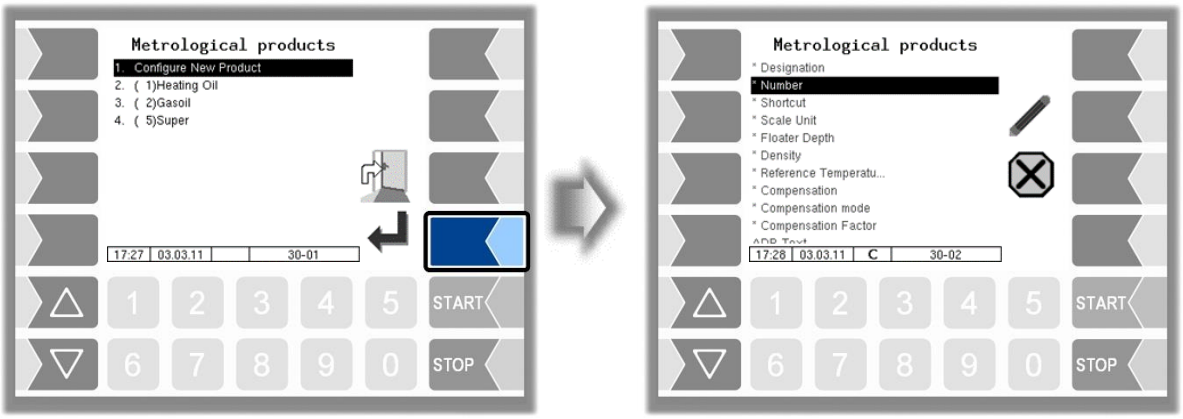


4.2.4.1 Metrological Products

Metrological products are products that are measured using the quantity meter / dipstick during loading or delivering). The configuration of the metrological products is protected by the seal switch.
The basic product parameters are configured here.
The metrological products form the basis for the measured products that are delivered (see section 4.2.4.2).



- Confirm “Configure New Product” to configure a new product.



You must first enter the product number. Values have already been defined in accordance with the FTL standard for product numbers 1 to 10.
If you type in one of these numbers, a data record consisting of the product designation and the short product name is entered automatically (see table „**Product designations and densities**“ on page 36). This data can be overwritten with other data if required.

Metrological products				
		*Designation	Product designation (max. 30 characters)	
		*Number	Product number	(1…10 preassigned to DIN EN14116)
		*Shortcut	Short product name	
		*Scale Unit	Unit for the measured quantity	
		*Density	Product density at 15°C (see table „Product **designations and densities**“ on page 36).	
		*Reference Temperature	Basic temperature for the temperature volume conversion.	
		*Compensation	Activate/deactivate temperature compensation	
	C	*Compensation mode	Specifies the conversion mode *(1)Heating oil/ diesel/gasoline*: Conversion in accordance with DIN 51 757, method B *(2)Lubricants*: Conversion in accordance with DIN 51 757, method D *(3)Liquid gases*: Conversion in accordance with DIN 51 757, method X *(4)Linear*: Conversion method with constant compensation factor k_{OE} (the set value for Compensation Factor) *(5)GTL*: Conversion method for paraffinic diesel fuels from synthesis or hydrogenation processes.	
		*Compensation Factor	Compensation factor for a product that is not compensated based on density (linear compensation mode) (see table „Relative density change factor k0E“ page 37).	
	U	ADR Text	Entry of the ADR text that is to be printed on the delivery ticket for this product.	
	U C(1)	Product Group	Product group 1: Heating oil products 2: Diesel products > 2: Any other product groups e.g.: 3: Gasoline products	

(1) when Program parameter / Collector: → ExTiger

Entering the float immersion depth deviation is no longer necessary from software version 2.2.X. From this version, the immersion depth is calculated based on the density and the configured floater.

The immersion depth deviations given in the following tables apply to the Type floater type 6706-109.

Product designations and densities
for temperature volume conversion according to DIN 51757 (PTB method 2).
This conversion method is permitted only for pure products!

No.	Product	Short name	Density [g/l]	Immersion depth difference [mm] (Parameter Floater Depth)
1	Heating oil	H-OIL	846	1,12
2	Gasoil	GO	836	1,22
3	Petrol unleaded	UNL	741	2,17
4	Super leaded	SL	749	2,05
5	Super unleaded	SUL	749	2,07
6	Super plus	S98U	753	1,99
7	Petroleum	PET	807	1,55
8	A-1	J1	801	1,53
9	Bio-gasoil RME	RME	836/883(1)	0,84
10	Heating oil with additives	Hadd	846	1,12

(Status: 05.03. 2019)

(1) From software version 2.2.X the immersion depth is calculated based on the density and the configured floater. For bio-gasoil, the real density value 883g/l must therefore be configured.
The fictitious density value of 836g/l is not permissible.

Method 1 with a density change factor k0E (bio-gasoil: 0,85) should therefore be selected for the temperature volume conversion.

Products without a number (no FTL standard)
Immersion depth difference

Product	Immersion depth difference [mm] (Parameter Floater Depth)
Water	0,00
Petrol E50	1,84
Petrol E85	1,69
Super E10	2,08
Petrol E80	1,71
Ethanol	1,61
GTL A	1,47
GTL B	1,38
GTL C	1,28
GTL D	1,67
GTL E	1,77
GTL F	2,01
GTL G	2,07
GTL H	2,64
Harnstoff	-2,30
AVGAS	2,41

Relative density change factor k_{0E}
For the linear temperature conversion (PTB method 1)
Conversion method for products with bio components and pure products!
The input is possible with 3 decimal places.

Products	k_{0E} [1/°C · 10^{-3}]
Gasoil / Bio-gasoil	0,85
Petroleum	0,91
Jet-Fuel	0,93
Petrol range 1: 0 to 20 % Ethanol blending	1,21
Petrol range 2: 80 to 100 % Ethanol blending	1,14
Naphta	1,29
Heating oil / Bio-heating oil	0,84
Normal petrol / Super petrol	1,21

(Status: July 2016)

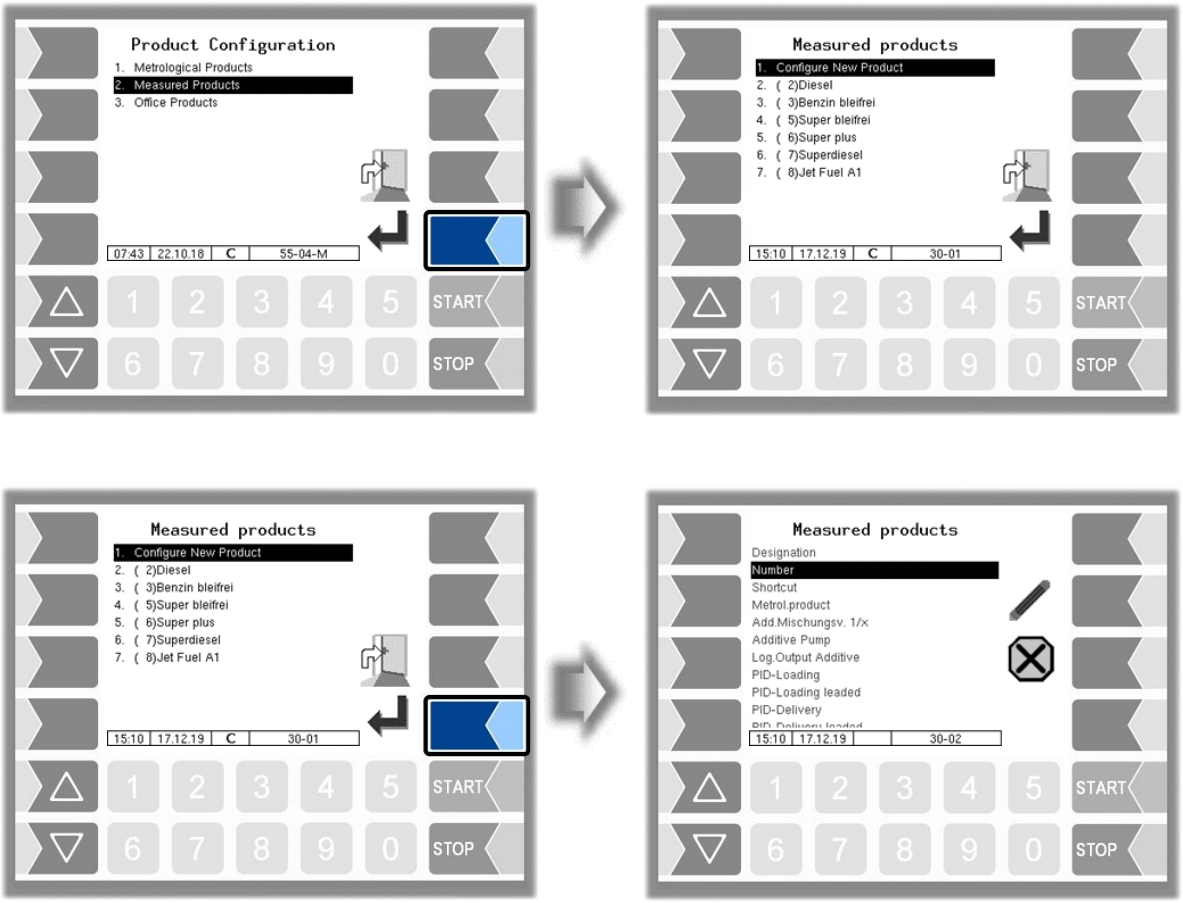
Relative density change factor k_{0E}
For the linear temperature conversion (PTB method 1)
Conversion method for GTL products!
The input is possible with 3 decimal places.

Products	k_{0E} [1/°C · 10^{-3}]
GTL A	0,81
GTL B	0,78
GTL C	0,75
GTL D	0,86
GTL E	0,89
GTL F	0,97
GTL G	0,97
GTL H	1,18

(Status: 28.02.2019)

4.2.4.2 Measured Products

Loadings and deliveries are only possible when "Measured products" have been configured.
You can use metrological products that have already been configured (see section 0) as a basis for configuring theese products.
In this way, for instance, products that are mixed with different additives can be configured under different product names products.



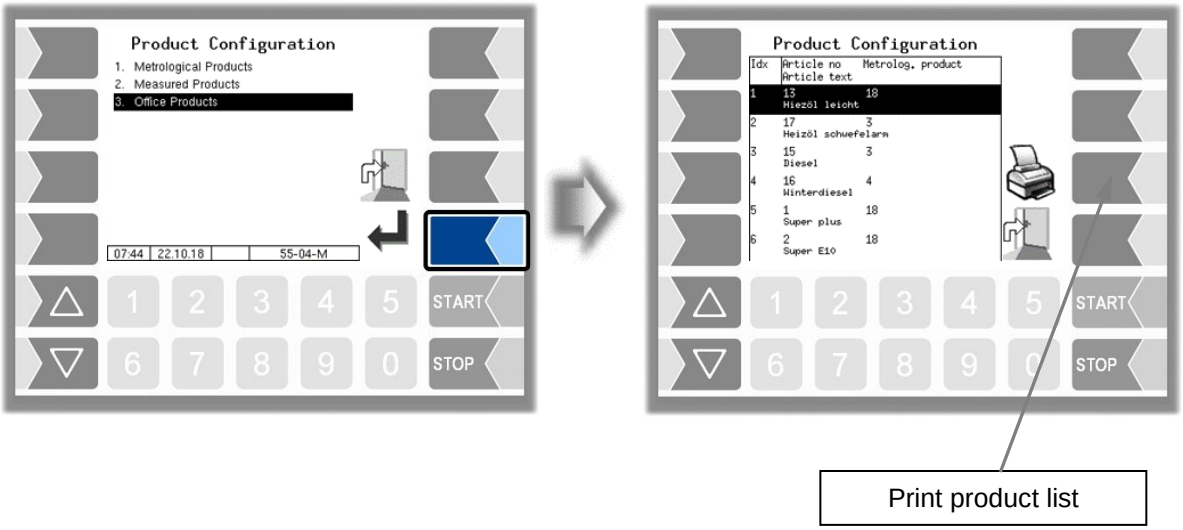
Measured products			
	U	Designation	Product designation (max. 30 characters)
		Number	Product number
		Shortcut	Short product name
		Metrol. product	Base product (metrological product no.)
		Add.Mischungsv. 1/x	Mixing ratio, X = volume of the main product, to which 1 liter of additive is added. *Additivation is only carried out if a mixing ratio is configured here!*
		Additive pump	Selection of the additive pump for the product (0 = none, 1, 2) see section *4.2.6.17*
		Log. Output Additive	Logical output for compartment changeover for additivation (23…26; 0: no compartment changeover)
		PID-Loading	Product ID for loading tag
		PID-Loading leaded	Additional information “leaded” in the PID (depending on configuration also valid for lead substitute, see section 4.2.7.2*)*
		PID-Delivery	Product ID for delivery tag
		PID-Delivery leaded	The leaded product is delivered using the same PID (depending on configuration also valid for lead substitute, see section *4.2.7.2)*
		Solenoids-Loading	Magnetic code for loading
		Solenoids-Delivery	Magnetic code for delivery
		Oil company	No. of the oil company to which the product is assigned under the entered designation (see also section 5.6 Konzern auswählen).

Product IDs for product recognition using tags (PIDs) and product IDs for product recognition using magnetic codes for loading and delivery			
Product	**PID**	**Magnetic code delivery**	**Magnetic code loading**
Vegetable oil	67		
Heating oil	69	2	2
Heating oil SA	71		
Diesel	68		
Truck Diesel	76	4	
Bio Diesel	72	2	
Diesel V-Power	70	20	20
Diesel Ultimate			
Diesel HGV	66		
Diesel with 5-20% added bio-gasoil	79		
Petrol unleaded (92)	92	3	3
Super 95	95	5	5
Super Plus 98	98	6	6
Super Plus 98 lead substitute			
Ultimate unleaded	99		
V-Power (99)			
V-Power (100)	100		
Methyl alcohol	80		
Ethyl alcohol (taxed)	81		
Ethyl alcohol (tax-free)	82		
E10 (95 petrol with 5-20% added ethyl alcohol)	83		
E50 (95 petrol with 21-74% added ethyl alcohol)	84		
E85 (95 petrol with 75-98% added ethyl alcohol)	85		

If the product is identified by means of a magnetic code and a tag, the tag (PID) identification takes priority.

The detailed configuration of the products is printed on the Parameters Print out (see section 4.3).

4.2.4.3 Office-Products

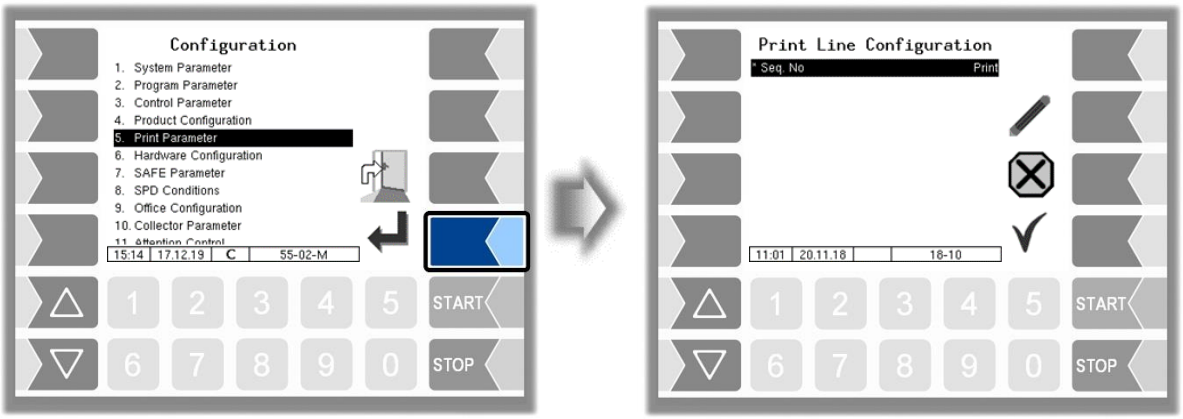


The products specified by the office are displayed.
The product list can be printed.

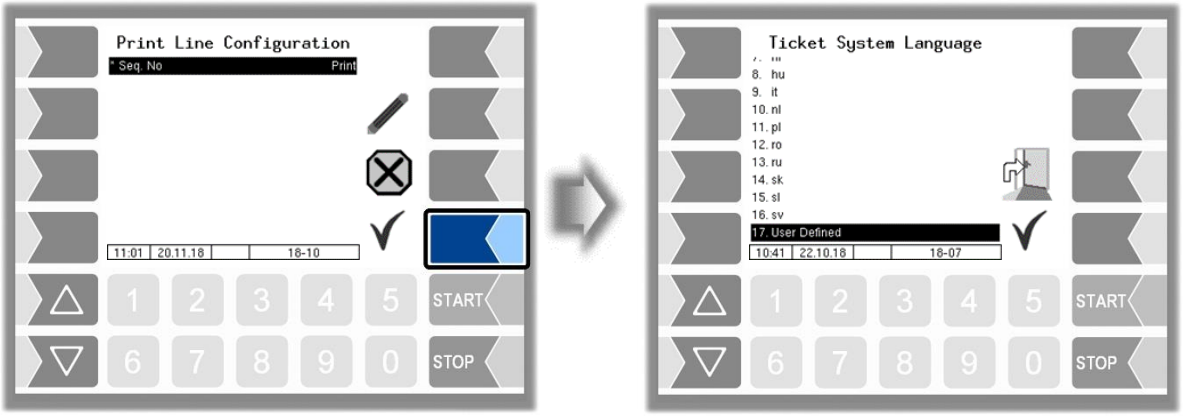
As soon as office products are available on the system, the products under the menu „*Measured Products*" (see section 4.2.4.2) can no longer be used. The office products have priority. In this case measured products are only necessary for adding PID-Information and additivation info.

The products specified by the office can be removed from the system: *Office Configuration / Deleting data → Master and Schedule data* (see section 4.2.9.2).

4.2.5 Print Parameter



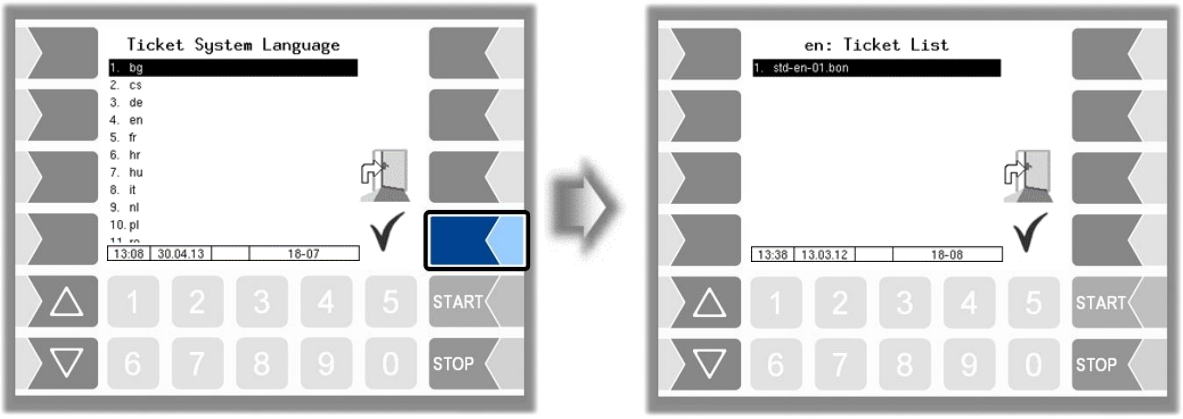
First you can specify whether a sequential number is to be printed on the tickets (only when the seal switch is open).



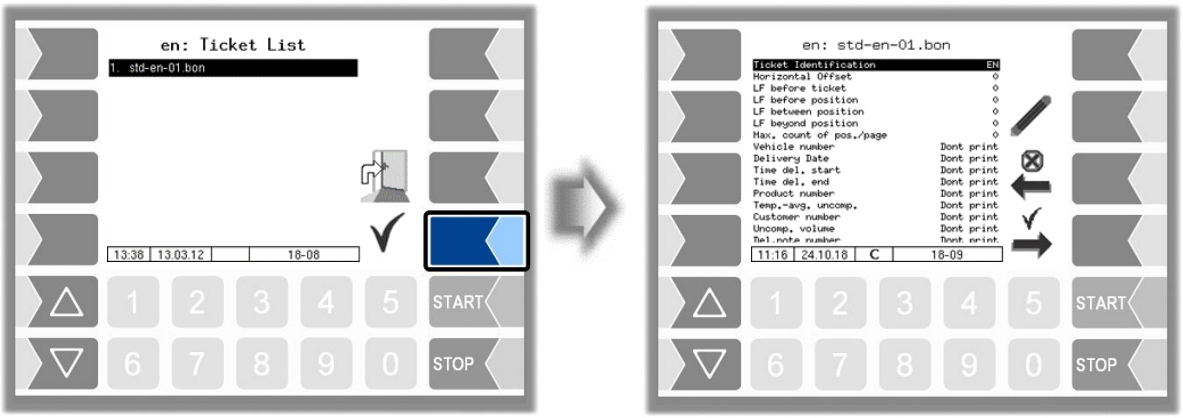
Select the ticket language from the available languages.

When choosing “User Defined”, a company-specific ticket is set.
This ticket will be provided by BARTEC with a company-specific layout and in the desired language (“B3i format“).

The creation of a company-specific layout is subject to a fee.



The layout for the tickets is preset in the default forms.
You can configure the content of the ticket and save it under a name of your choice.



Using the softkey, you can configure another ticket based on the default form and save it under another name (ticket identification).

Select a parameter and touch the softkey to make changes.

If you do not enter a ticket identification, the entry is ended when you press the softkey.

The softkey aborts the ticket configuration.

If several tickets have already been configured, you can scroll through them using the and softkeys.

Ticket Configuration				
		Ticket Identification		Name of the ticket selection
		Horizontal Offset		Number of blanks, calculated from the left-hand margin
		LF before ticket		Number of blank lines at the beginning of the ticket
		LF before position		Number of lines above the items, calculated from the top of the page
		LF between position		Number of blank lines between the items
		LF beyond position		Number of lines below the items
		Max. count of pos./page		Number of items until a page break is inserted
	U	Vehicle number	2	Internal fuel tank truck number
		Delivery Date	3	Date of delivery
		Time del. start	4	Time at the start of delivery
		Time del. end	5	Time at the end of delivery
		Product number	6	Number of the delivered product
		Temp.-avg. uncomp.	7	Temperature average for uncompensated delivery
		Customer number	8	Number of the customer
		Uncomp. volume	9	Delivered volume based on the current temperature
		Del. note number	10	Type of the ticket („Delivery Note“) and number
		GGVS text	11	Product-specific reference to the relevant item of the Dangerous Goods Directive (ADR)
		Time meter reading s.	12	Time and meter reading at the start of delivery
		Driver number	13	Internal driver number
		Preset quantity	14	Preset quantity
		Vehicle registration	15	Configured vehicle registration
		Ticket allocation	16	The internal tour number and the internal order number are printed as the ticket number.
	S	Seal information	18	The following line is printed for all measured products: “Data from calibrated equipment is marked with asterisks ✳”
	U	Summarize products		All items with the same product are summarised as one item.
		Product group		The uncompensated volume of configured group 1-products is not printed.
		Sealed[(1)]	24	The state of the sealing is printed.
		+Product summation		Product sum is printed at the end of the ticket
		Oil company		Selected Oil company is printed (requirement: shift matrix)
		Bypass ASS/PID		Bypassing ASS and/or PID

[(1)] Will not be printed for TIGER-deliveries.

Delivery Note Nº (see page 31 Program Parameter/Delivery Note Number)
Vehicle Nº (see page 31, Program Parameter/Vehicle Id.)

Will be printed when Program Parameter/Enter customer number is set to *Yes* (see section 4.2.2) or when using GPS-Receiver + customer database.

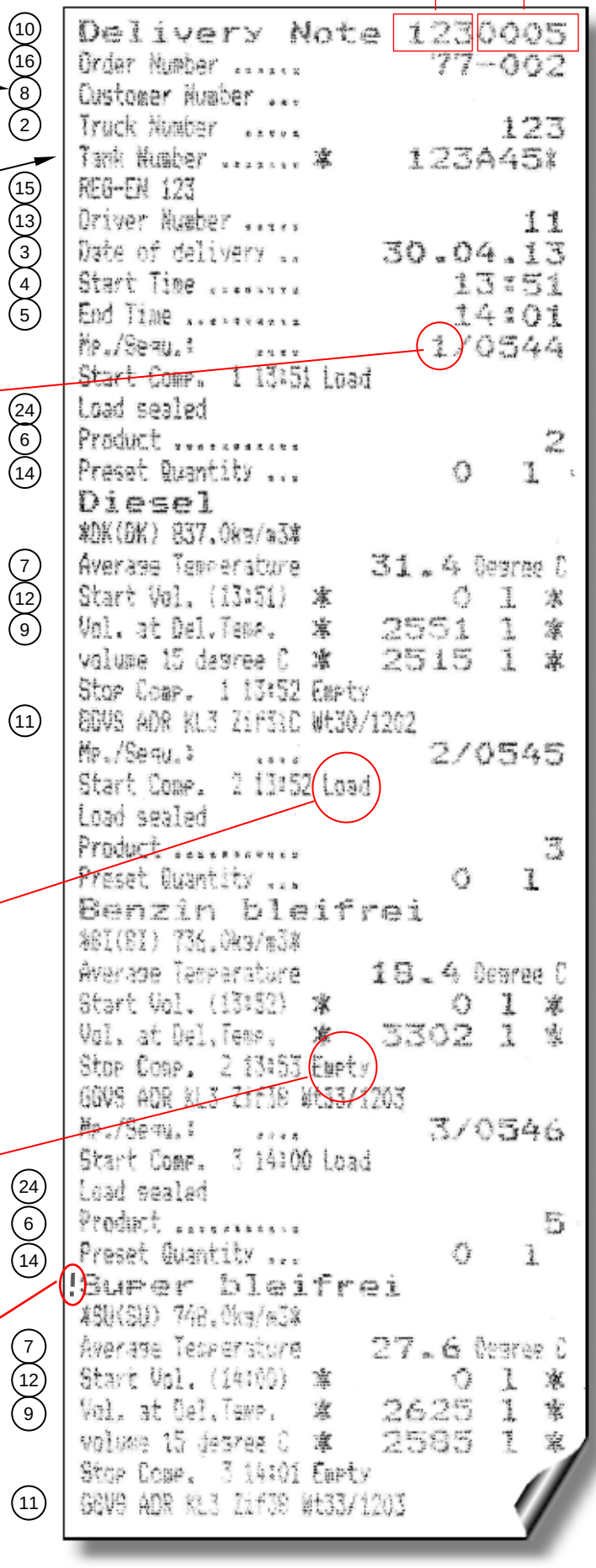
Will be printed when under Program parameter/Tank Number a number is entered (see section 4.2.2)

(1) Instead of the compartment number (here 1), a „T“ and the counter number will be printed on a separate line if delivery is via TIGER.

In the lines for start delivery or end of delivery is the compartment status printed.
If „Summarize products“ is enabled, only the abbreviation will be printed.

Status		
Load	L	(after loading was not yet started a delivery)
Volume	V	(Residual quantity, wet leg sensor still wetted)
Rest	R	(Compartment empty, wet leg sensor not wetted, but lag time not yet expired)
Empty	E	(Compartment empty)
	X	Print no compartment and sealed status on tiger delivery(1)

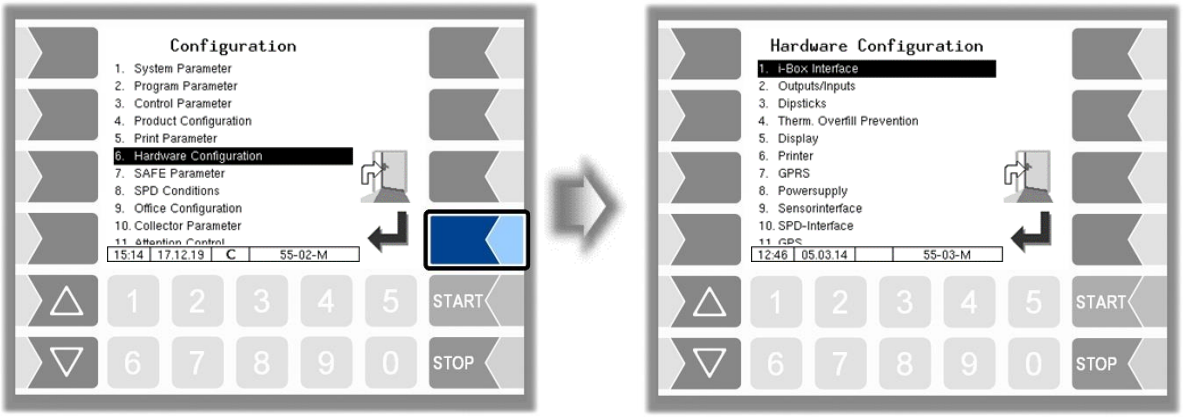
see page 32 **Fehler! Verweisquelle konnte nicht gefunden**



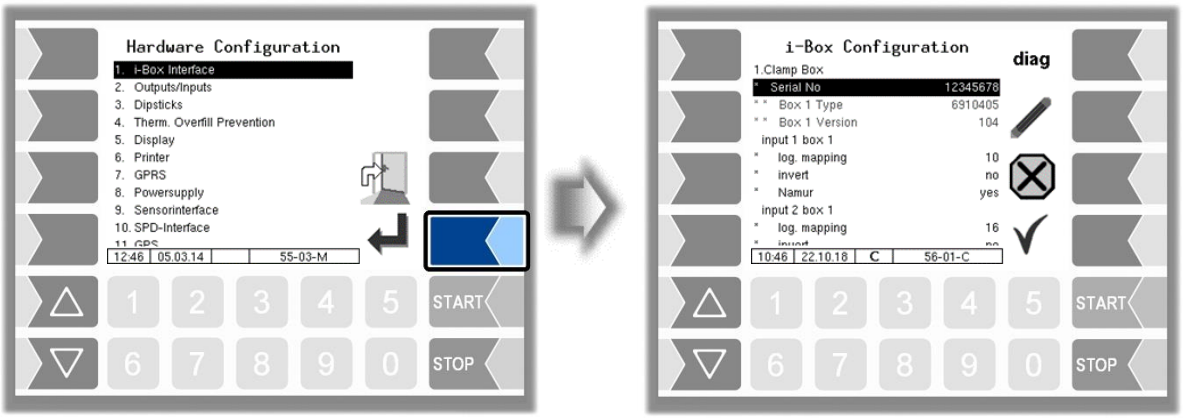
Example Delivery note

(1) from version 1.24.13, 2.5.23, 2.7.6 and 2.9.4

4.2.6 Hardware Configuration



4.2.6.1 i-Box Interface



i-Box Configuration				
C	**1. Clamp Box** (wet leg sensors, temperature sensors)			
	*serial no	Serial no. of the clamp box		
	Box 1 Type	displays the Box Type		
	Box 1 Version	displays the Box Version		
	Input 1. (...16.) Box 1			
	*log. mapping	Assignment in the software		
	*invert	Yes: The switching behaviour is inverted No: The switching behaviour is not inverted		(1)
	*Namur	Yes: A Namur sensor is attached at the input. No: An NC/NO contact is attached at the input.		
	temperature sensor 1 (...6)			
	*log. mapping	Assignment of the temperature sensor to the compartment		
	*calib. 0/-195°C	Resistance at 0°C or -195°C	(*Default: 100)*	(2)
	*calib. 50/-80°C	Resistance at 50°C or -80°C	(*Default: 119,4)*	
		[(2)] Depending on the sensor used (0 to 50°C or -195 to -80 °C)		

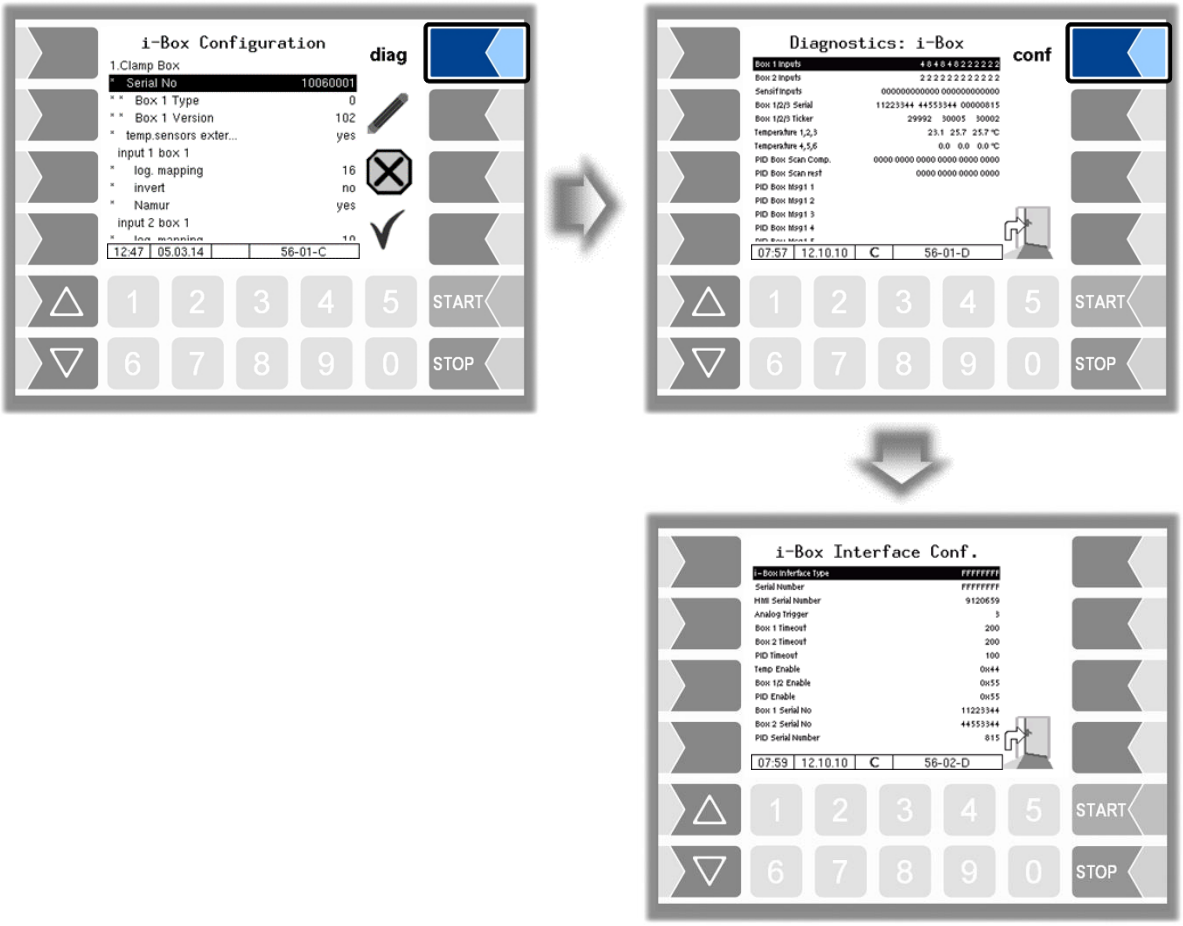
	S	**2. Clamp Box** (Tank identification sensors)		
		serial no	Serial no. of the clamp box	
		OFP-Plug Magnets	Yes: The magnetic code product ID in the limit-sensor-plug is active. *The inputs 1…12 are not displayed when „OFP-Plug Magnets“ is set to “Yes”.* No: The magnetic code product ID in the limit-sensor-plug is not active, the inputs are otherwise available for configuration.	
		Box 2 Type	displays the Box Type	
		Box 2 Version	displays the Box Version	
		input 1 (...18) Box 2 (13. ...18. if the parameter “*OFP-plug magnets*” is set to „Yes“)		
		log. mapping	Assignment in the software	
		invert	Yes: The switching behaviour is inverted No: The switching behaviour is not inverted	(1)
		Namur	Yes: A Namur sensor is attached at the input. No: An NC/NO contact is attached at the input.	
		PID clamp box		
		serial number	Serial no. of the clamp box	
		Type	displays the Box Type	
		Version	displays the Box Version	
		LOG-Level	Specifies the scope of the entries in the log file (by entering the bit significance) 0: No entries 1: Temperature sensors 2: PID 4: Residual quantity sensors 8: Tank identification sensors	
		firmware-Version	Displays the Firmware version of the interface board.	
		driver version	Displays the Driver version of the interface board.	

(1) For checking the switching behavior see section 7.3.2 “Diagnostics of the logic inputs and outputs“.

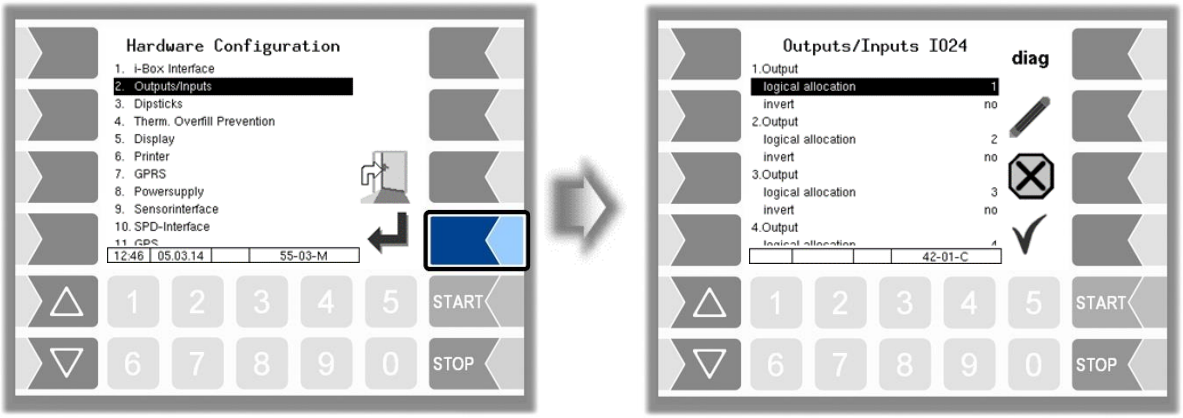
Diagnostics

The diagnostics function is used to check the statuses of the temperature sensors, the PID scan cables and the inputs of the wet log sensors (service function). During proceeding an order, you can start the i-Box diagnostics in the diagnostics menu (see appendix, section 7.3).

A description of the i-box diagnostics can be found in the appendix, section 7.3.1.



4.2.6.2 Outputs / Inputs



The number of outputs and inputs depends on the installed interface board.

Outputs/Inputs IO24			
	S	1. (...n.) Output	
		logical allocation	Assignment of outputs in the software
		invert	yes: (The switching behaviour is inverted) no: (The switching behaviour is not inverted)
		1. (...n.) Input	
		logical allocation	Assignment of inputs in the software
		invert	yes (The switching behaviour is inverted) no (The switching behaviour is not inverted)
		resting state	low: PNP high NPN
		LOG-Level	Specifies the scope of the entries in the log file (by entering the bit significance) 0: No entries 1: Entries for outputs 2: Entries for inputs 4: Other accesses
		firmware version	Firmware version
		driver version	Driver version

Logic outputs can be configured several times for the I/O-16 or I/O-24 interface.

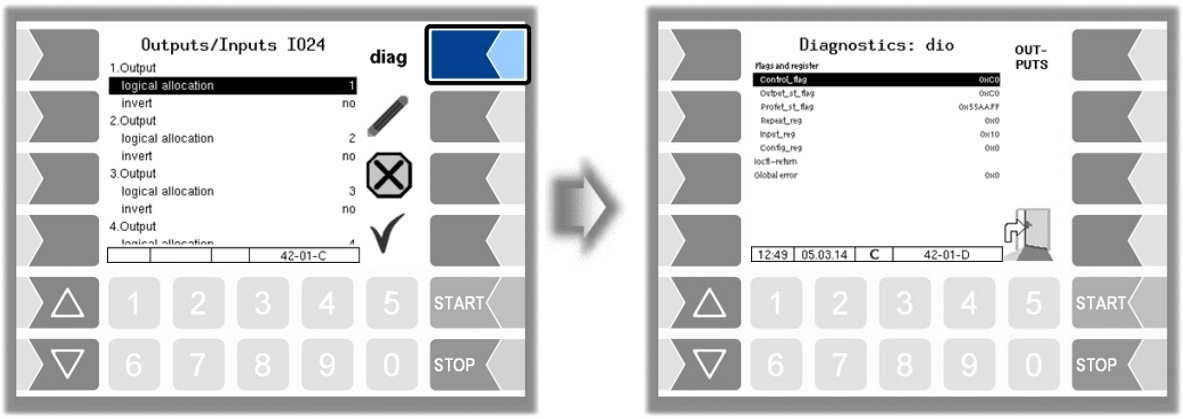
Each logical input can only be configured once. Multiple configuration is not possible.

A list of recommended assignment of all inputs and outputs can be found in Appendix, section 7.2.

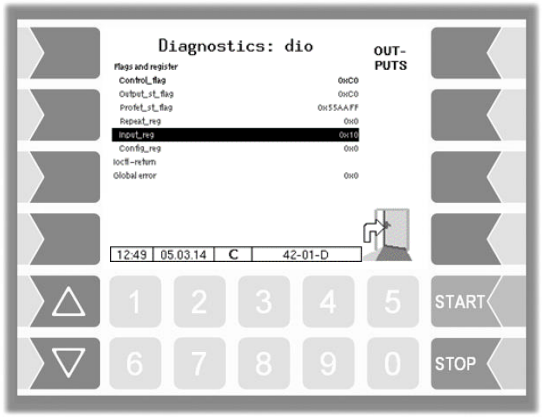
Input diagnostics

Using the diagnostics function, you can check the function of the inputs.

- Touch the diag softkey.

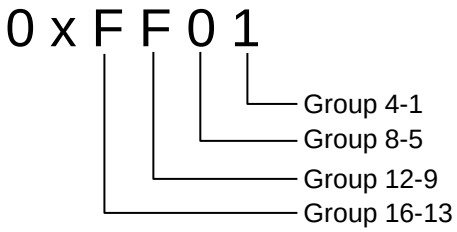


The “Input_reg” line shows the current status of the inputs as a hexadecimal value. After converting this value to a binary number, you can read out the statuses of all inputs.



Example *An example of an interface board with 16 inputs.*

The 16 inputs are displayed in four groups.



Presentation of group 4-1 (example):

	16	15	14	13	
	12	11	10	9	
	8	7	6	5	
Inputs (Status „0“ or „1“)	**4**	**3**	**2**	**1**	**Presentation (Group)**
	0	0	0	0	0
	0	0	0	1	1
	0	0	1	0	2
	0	0	1	1	3
	0	1	0	0	4
	0	1	0	1	5
	0	1	1	0	6
	0	1	1	1	7
	1	0	0	0	8
	1	0	0	1	9
	1	0	1	0	A
	1	0	1	1	B
	1	0	1	1	C
	1	1	0	0	D
	1	1	1	0	E
	1	1	1	1	F

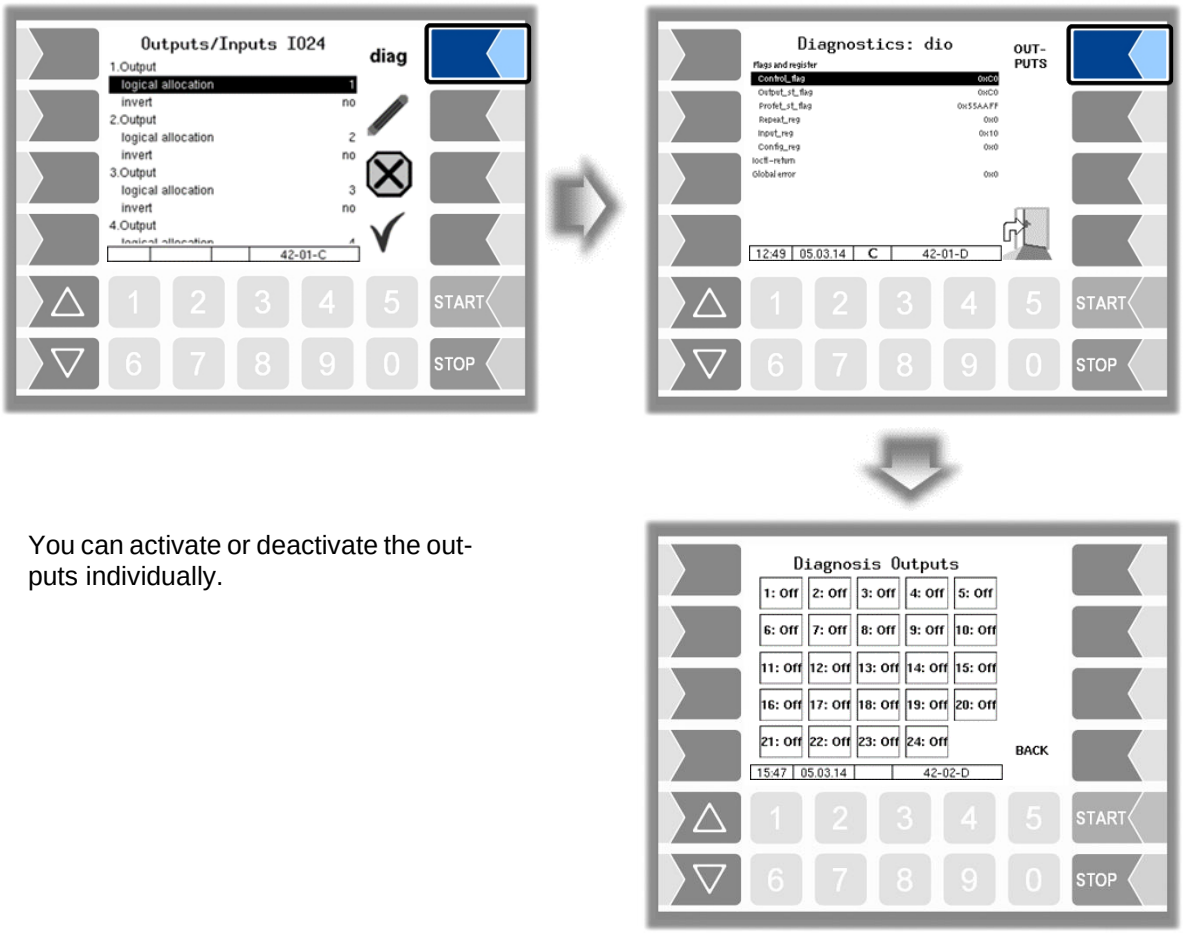
Status	„0“≙ Low,	„1“≙ High
„High-side“ configuration	„0“ ≙ not 24 V,	„1“ ≙ 24 V
„Low-side“ configuration	„0“ ≙ not connected to ground,	„1“ ≙ 0 V

The example above shows the hexadecimal value FF01.
The corresponding binary number is 1111 1111 0000 0001.
This means that inputs 1 and 9 - 16 currently have the status “1” while inputs 2-8 have the status “0”.

Output diagnostics

- Use the diag softkey to open the diagnostics window.
- Then use the OUTPUTS softkey to open the service function for testing the outputs of the I/O box.

This feature is available only after entering the current service password or open calibration switch.



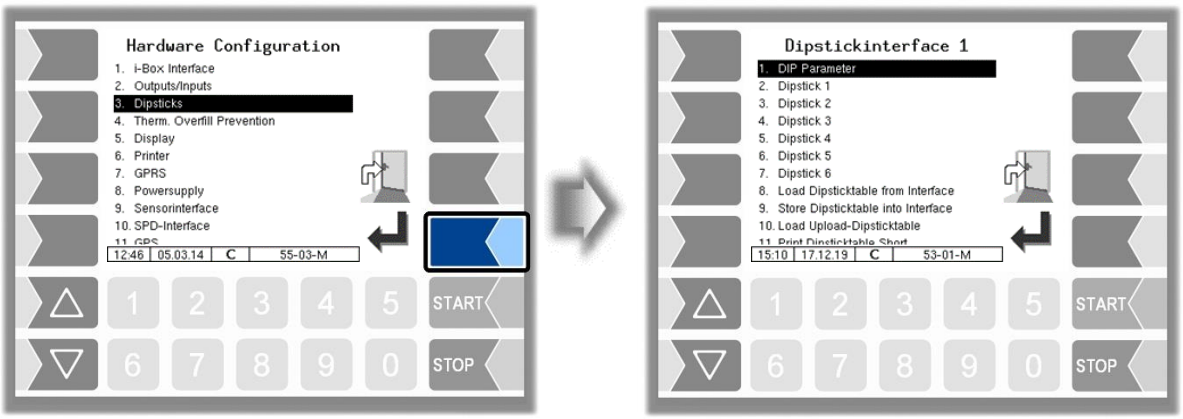
You can activate or deactivate the outputs individually.

The outputs set in the Diagnosics menu are not reset until you exit the „Diagnostics“ window.

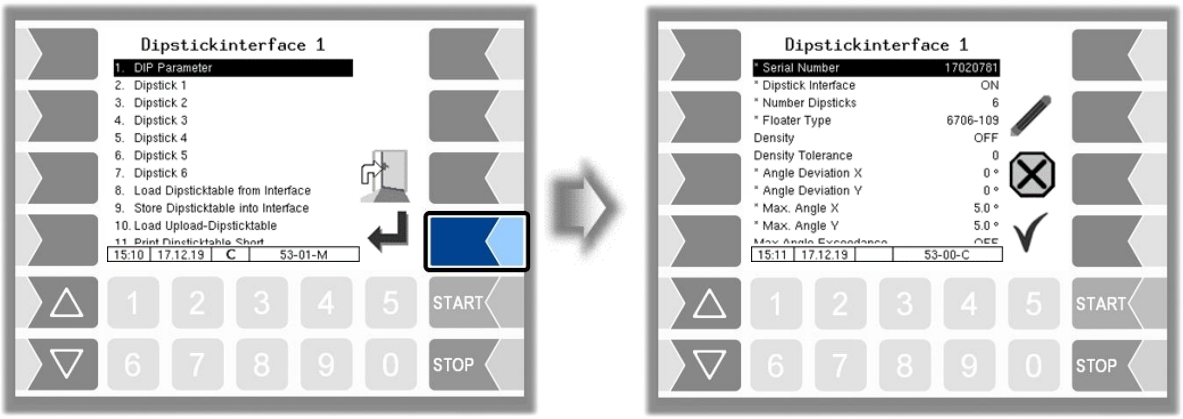
Use the upper left softkey to open a diagnostics menu (see section 7.3). In this diagnostics menu, you can open a diagnostic window in which the current switching states of the inputs and outputs are displayed (see section 7.3.2).

4.2.6.3 Dipsticks

Available when the licensed option 17 ***VOLUTANK 3003*** is enabled (see section 4.2.12).



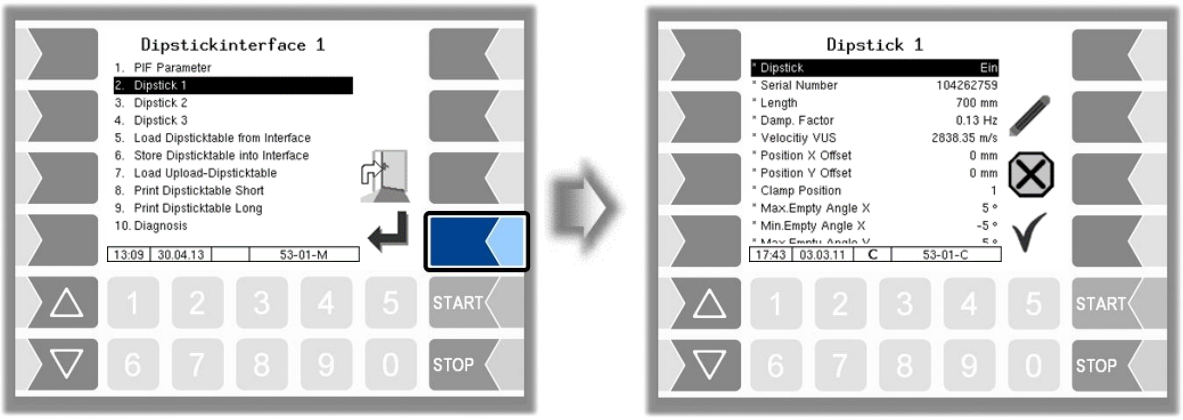
DIP Parameter



Dipstickinterface			
	C	*Serial number	Serial number of the dipstick interface according to the rating plate.
		*Dipstick Interface	Activates or deactivates the dipstick interface
		*Number Dipsticks	Number of dipsticks used (compartments)
		*Floater Type	6706-109 Float for liquids with dynamic viscosity 6706-111 Float for aqueous urea solutions
	S	Density	ON: Activates the density measurement. The density is measured at the start of the order and compared with the configured density value. *Attention, this option is only possible in connection with additional hardware (float type 6706-106).*
		Density Tolerance	This value specifies the permissible deviation of the product density from the density configured during the calibration procedure. The density is measured at the start of the order and compared with the configured value. If the density deviation exceeds the configured value, a message to this effect is displayed.. (*Default: 50)*

	C	*Angle Deviation X	Installation angle of the inclination sensor (deviation from horizontal) in the longitudinal direction
		*Angle Deviation Y	Installation angle of the inclination sensor (deviation from horizontal) in the transverse direction
		*Max. Angle X	Maximum longitudinal angle at which the system is approved for calibrated deliveries
		*Max. Angle Y	Maximum transverse angle at which the system is approved for calibrated deliveries
	U	Max. Angle Exceedance	ON: If the maximum angle is exceeded (max. angle X/Y), only uncalibrated delivery is permitted. OFF: If the maximum angle is exceeded (max. angle X/Y), no deliveries are permitted.
		Stop Level Diff.	In compartment 1, delivery stops x mm before the start level for unmeasured delivery is reached. You are asked whether the complete remaining quantity can still be delivered; if not, the measurement is considered to be uncalibrated.
	C	*Reduce Level Offset	When delivering, the pump is throttled x mm above the minimum level of the segment. When delivering via ***collector in parallel mode***, the bottom valve of the relevant segment will be closed, when the level falls below the level configured here (x mm above the minimum level of the compartment). Only when falling below the level in the last compartment, the pump is throttled.
	U	Drain Level Offset	To ensure emptying by automatic angle adjustment, an output is set, x mm above the minimum level, according to the configured compartment inclination to the front (output log. 102) or to the rear (output log. 103).
	S	Flow Values	Number of dipstick values that are used to determine the flow (6-30).
		Stop Direct Outlet Flow	Flow monitoring with direct outlet gravity. If the flow is reduced by x% compared to the current average flow, the delivery stops.
		*Firmware Version	Firmware version
		*Tab. Serial Number	Serial number in the dipstick table
		*Tab. Version	Version of the dipstick table
		*Tab. Checksum	Checksum in the dipstick table
		*Internal Seal Counter	The seal counter is read by the connected unit and incremented each time a setting subject to statutory calibration is changed. The entries are checked by the software prior to each delivery. If they do not match the target values (e.g. after changing the dipstick interface), no delivery is possible. In this case, you must open this Configuration menu in order to change the entries.
		*Internal Seal Counter	not relevant

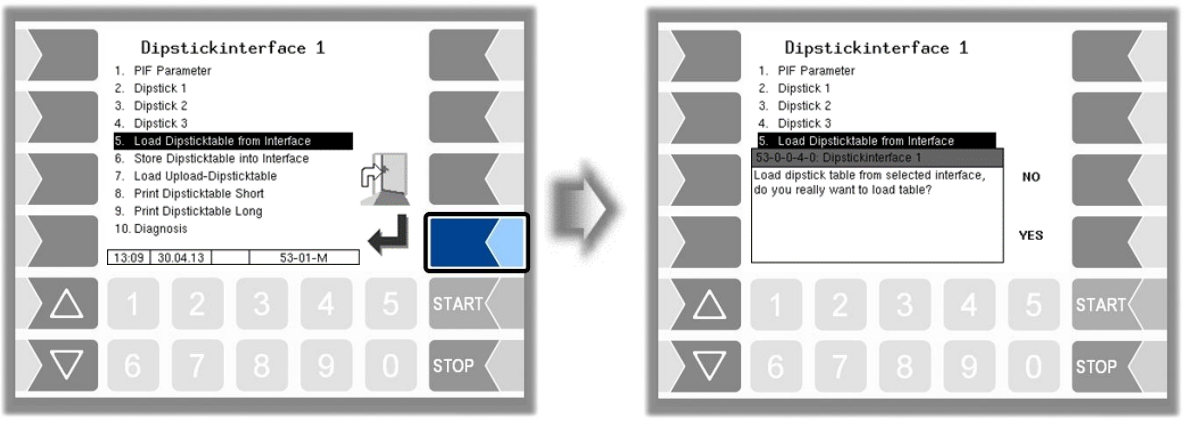
Dipstick



Dipstick 1 (...n)				
	C	*Dipstick		Activate/deactivate the dipstick
		*Serial Number		Serial number of the dipstick
		*Length		Nominal length of the dipstick (in mm) according to the rating plate
		*Damp. Factor		Measured value damping factor (prevents abrupt jumps in measured values caused by the fluid's strong proper movement), *Default 0.13 Hz*
		*Velocity VUS		Velocity of the impulse (marked on the dipstick cable)
		*Position X Offset		Difference between the actual dipstick position in the longitudinal direction and the position on which the dipstick table is based.
		*Position Y Offset		Difference between the actual dipstick position in the transverse direction and the position on which the dipstick table is based.
		*Clamp Position		Position at which the dipstick is attached to the dipstick interface (1…8).
		*Max. Empty Angle X		Maximum longitudinal angle at which the compartment and the pipeline will still run dry.
		*Min. Empty Angle X		Minimum longitudinal angle at which the compartment and the pipeline will still run dry.
		*Max. Empty Angle Y		Maximum transverse angle at which the compartment and the pipeline will still run dry.
		*Min. Empty Angle Y		Minimum transverse angle at which the compartment and the pipeline will still run dry.
		*Pipe Volume		Capacity of the pipe system from the foot valve to the collector valve or direct discharge in litres
	U	*Maximum Volume		Maximum fill volume of the compartment in litres
	C	*Minimum Delivery		Minimum delivery quantity for calibrated deliveries
		*Install. Bottom Up		Bottom-up installation of the dipstick
		*PIN		If the dipstick is replaced, you will be prompted to enter a PIN code; this code is supplied by BARTEC BENKE. If the PIN code is not entered correctly, the dipstick can´t be activated. The PIN code is noted in the associated test certificate of the dipstick.
		Floater		
			*Immersion Depth	Float correction value (see test protocol for the floater)
	S		Density Balance	Deviation of the floater from the density floater (see test protocol for the density floater)
			*Act. Reference Posit.	Current reference position
			*Reference Position	registered reference position
	C	*Linearization 1 (…n)*		
			*Length	Values according to the preliminary test certificate for the dipstick
			*Correction	

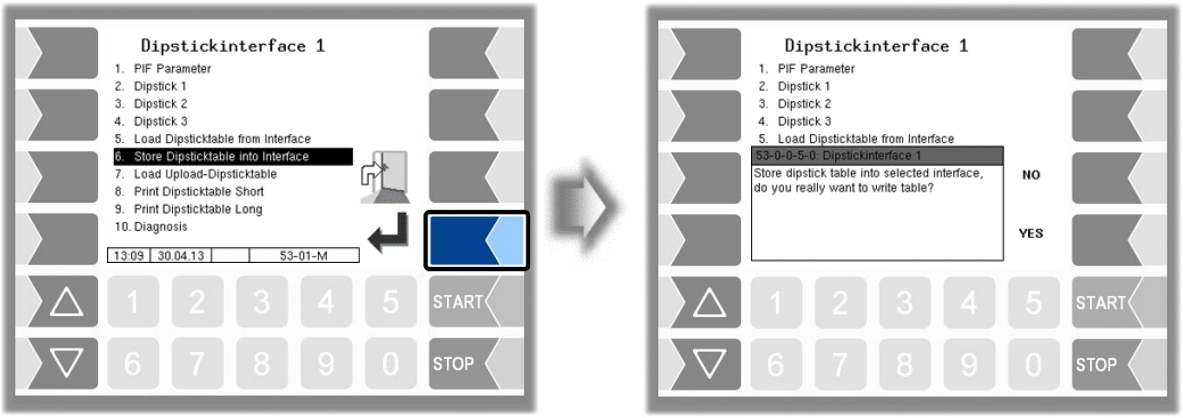
Load Dipsticktable from Interface

The dipstick table is saved in the dipstick interface as well as in the calibration memory of the "Display and operating unit Ex-i, Bluetooth" (HMI). The software checks whether these two tables are identical.



You can use this function to load the dipstick table from the dipstick interface into the calibration memory. This is necessary if the HMI is replaced, for example.

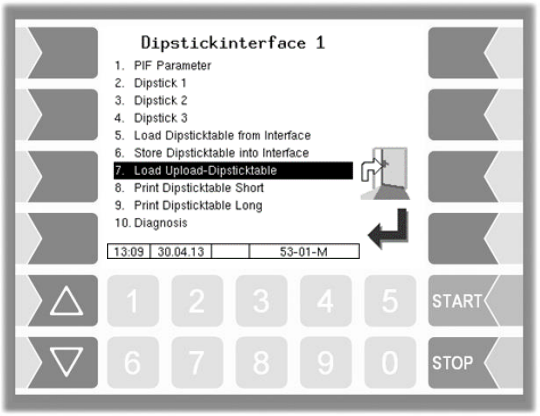
Store Dipsticktable into Interface



The dipstick table stored in the calibration memory is written to the dipstick interface. This is necessary if the dipstick interface is replaced, for example. Once the dipstick table has been loaded into the dipstick interface, it is available to the dipsticks again.

The dipstick table must always be stored both in the dipstick interface and in the calibration memory.

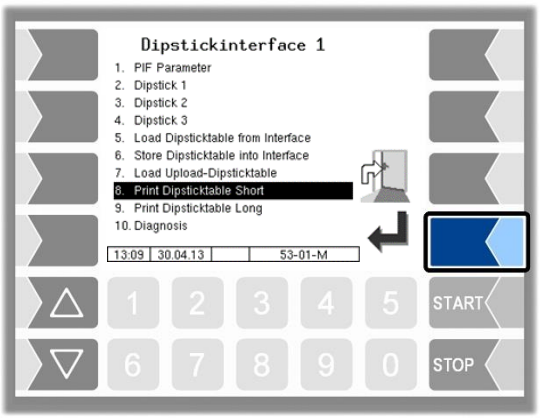
Load Upload- Dipsticktable



This function allows a dipstick table that was received via the 3003-service tool to be loaded and then stored in the dipstick interface and the calibration memory.

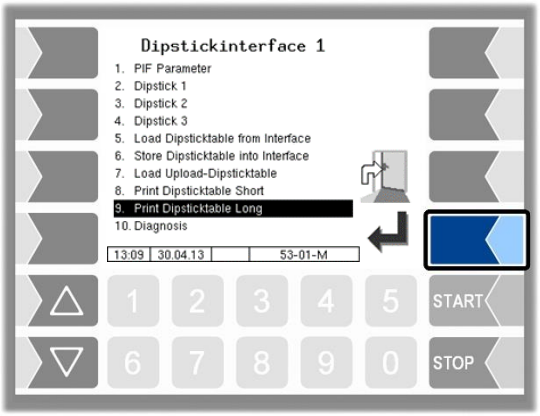
After activating a new dipstick table, the previous one remains saved. If required, the old dipstick table can be accessed via this menu.

Print Dipsticktable Short



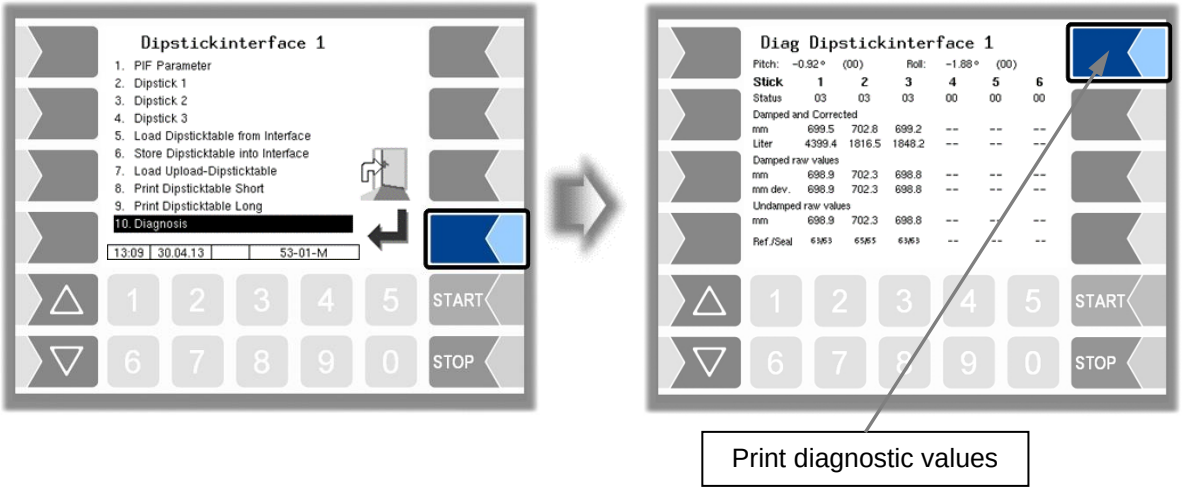
Only the calibration table data that is relevant for calibration is printed.

Print Dipsticktable Long



The complete calibration table is printed.

Diagnose



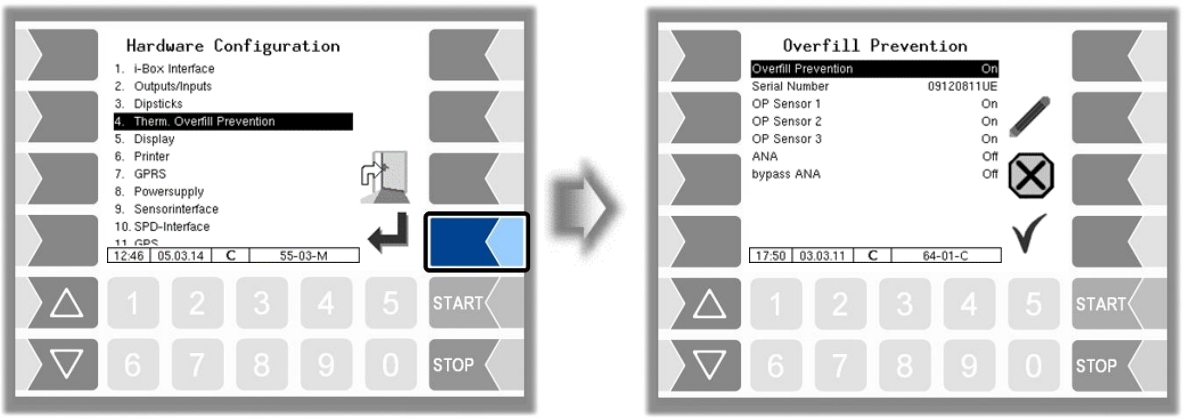
The diagnostics function of the dipstick interface allows the parameters to be checked and any necessary corrections made (service function).
To exit the Diagnostics window, touch the STOP button.
You can print the diagnostic values using the softkey in the top right.

During proceeding an order, you can start the diagnostics of the dipstick interface in the diagnostics menu (see appendix, section 7.3).

A description of the diagnostics of the dipstick interface can be found in the appendix, section7.3.3.

4.2.6.4 Thermical Overfill Prevention

Thermical overfill prevention can be configured with monitoring of up to three limits.



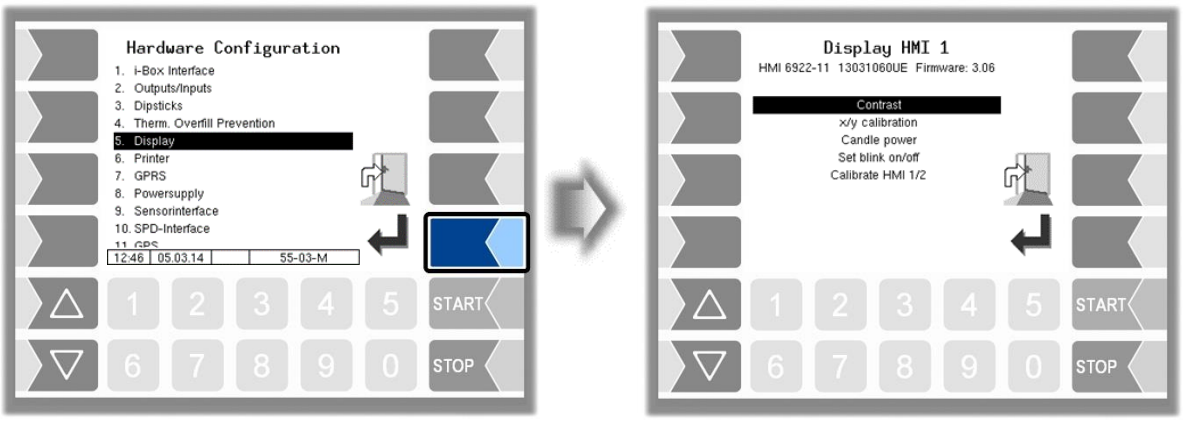
Overfill Prevention			
	S	Overfill Prevention	Switching the Overfill Prevention On or Off
		Serial Number	Serial Number (see type plate)
		OP Sensor 1	Switching On or Off the respective channel of the overfill protection *The number of available OP sensors depends on the installed hardware..*
		OP Sensor 2	
		OP Sensor 3	
		ANA	On: deathman key with emergency stop („ANA“) is active ✱ Off deathman key with emergency stop („ANA“) is not active ✱
		bypass ANA	On: ANA cannot be bypassed ✱ Off: ANA can be bypassed ✱

✱ permitted setting in accordance with VdTÜV certificate TÜ.AGG.465-14

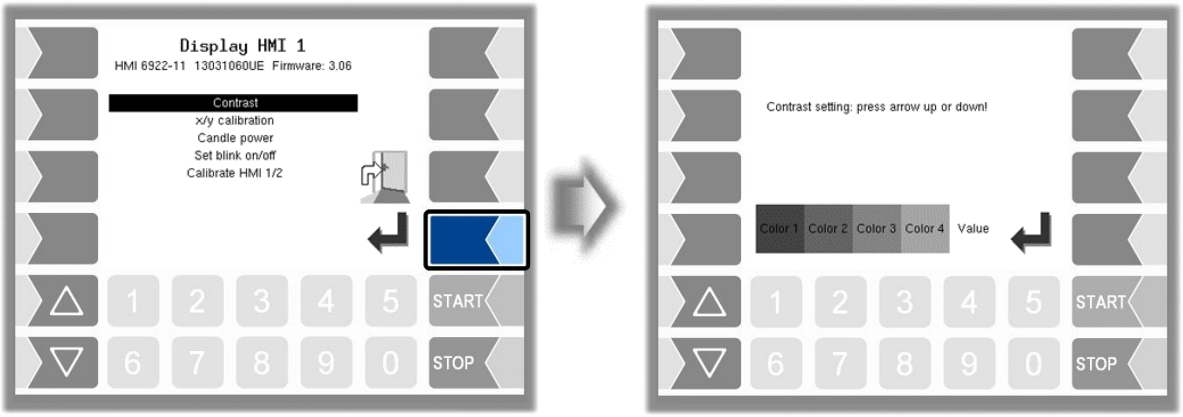
Only one overfill prevention (optical or thermical) can be used on the system.

4.2.6.5 Display

This menu is used to set and calibrate the touch screen display.
The touch screen is already calibrated when the system is delivered. It is only necessary to calibrate the touch screen if the display is difficult to read or if the system does not respond correctly to touch.



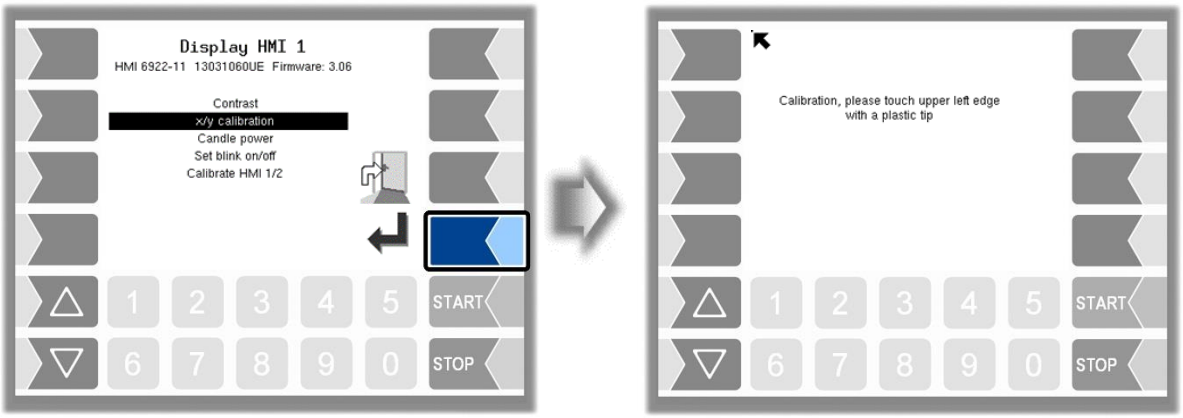
Contrast



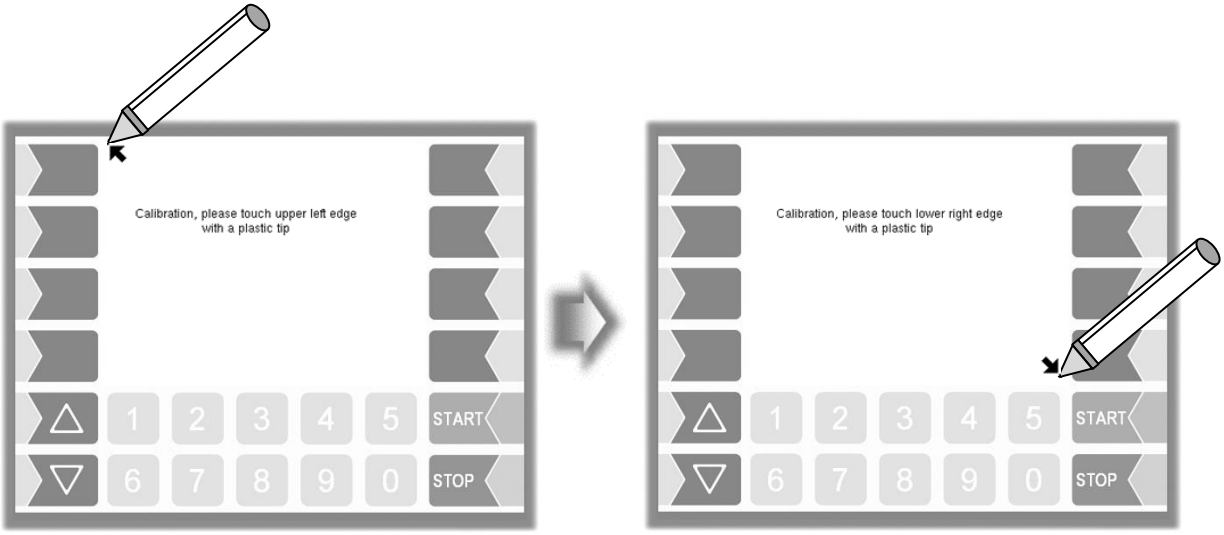
- Use the selection keys ▽ and △ to set the contrast to the required value and touch the “Confirm” softkey (default: 50).

x/y Calibration

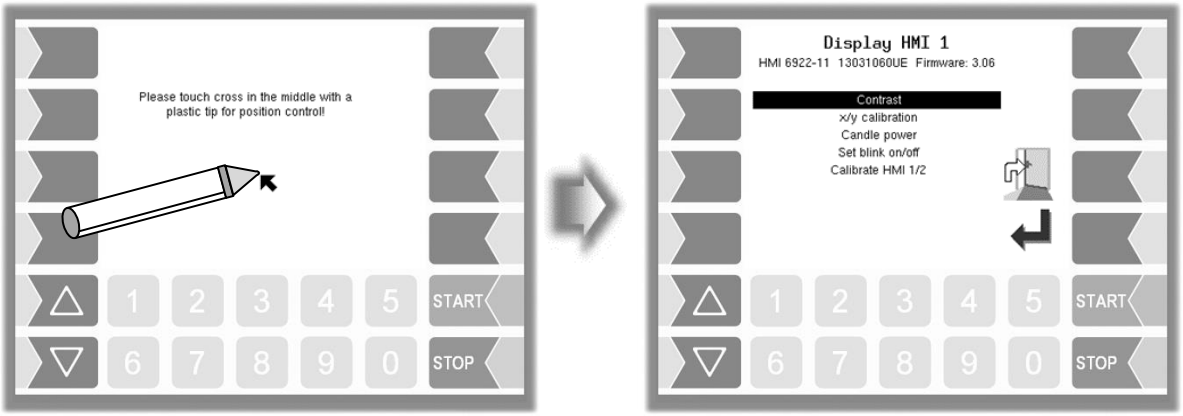
The x/y calibration function is used to redefine the display coordinates. These determine the position of the keys on the touch screen.
Follow the instructions on the display.



- Touch the top left-hand corner of the display. You should preferably do this using a pointed plastic object that cannot scratch the display.
- Then touch the bottom right-hand corner of the display.



- Next, touch the point that appears in the centre of the display.

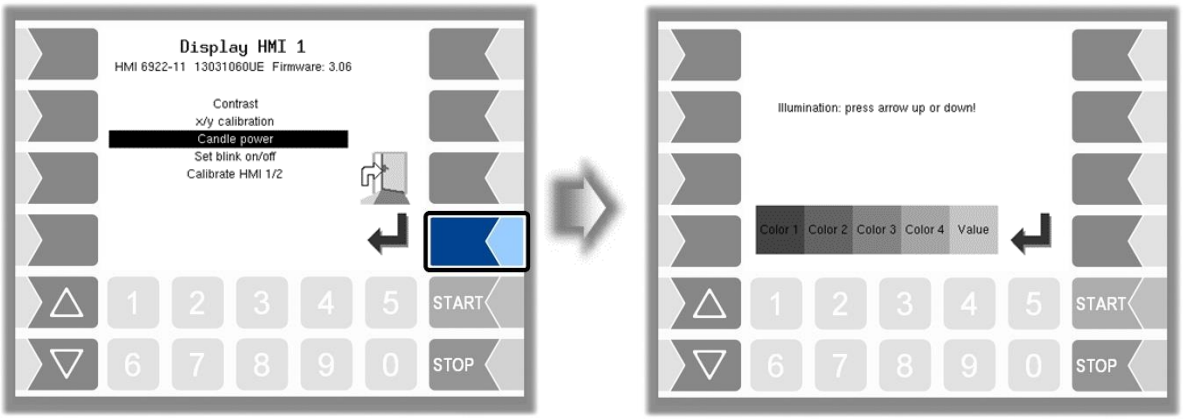


The coordinates of the touch screen have now been defined.

If the touch screen is not calibrated satisfactorily, you may have to repeat the procedure several times.

Never turn off the system during calibration!

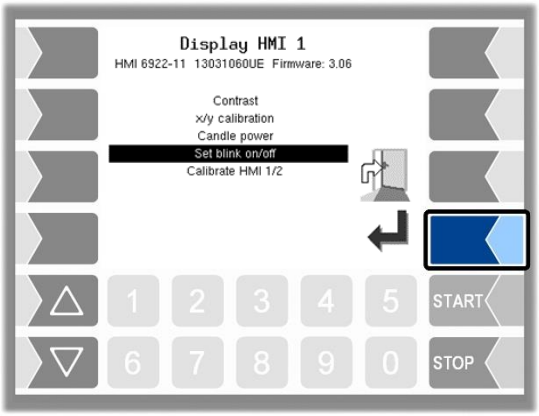
Candle power



- Use the selection keys ▽ and △ to set the brightness of the display to the required value and touch the “Confirm” softkey (default: 25).

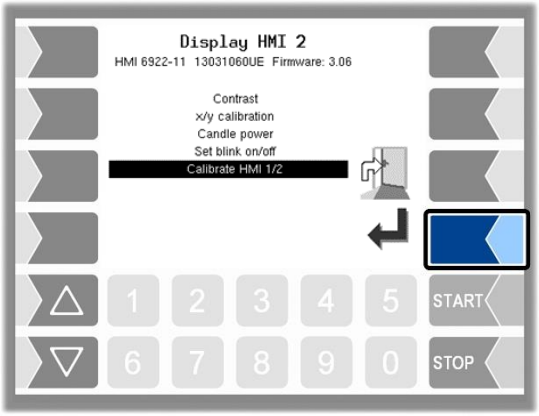
Set blink on/off

This is where you define whether the display should blink once each time you touch it or change without blinking.
The setting takes effect as soon as you confirm the menu option!



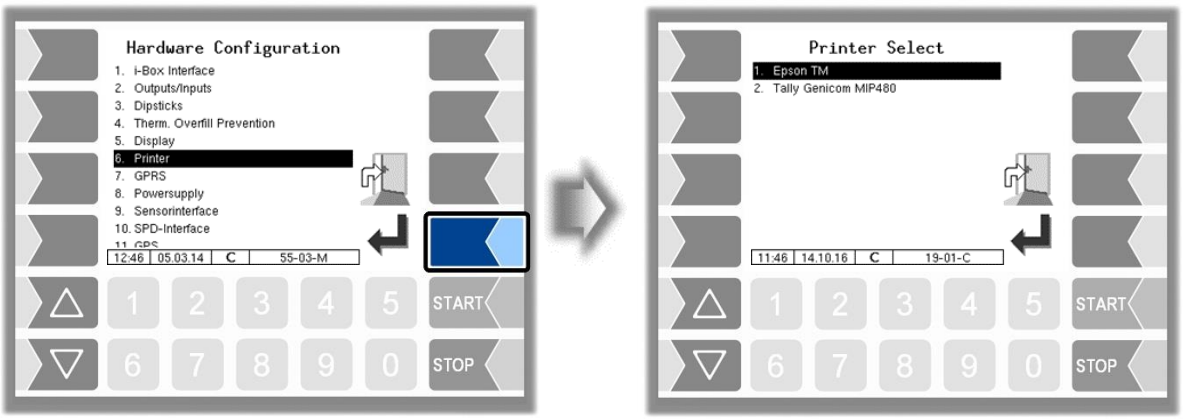
Calibrate HMI 1/2

Two HMI display units can be installed for displaying information.
When you confirm this menu option, you switch from calibrating “Display HMI 1” to calibrating “Display HMI 2” or vice versa.
The following then appears in the title:
Display HMI 1 or
Display HMI 2.



4.2.6.6 Printer

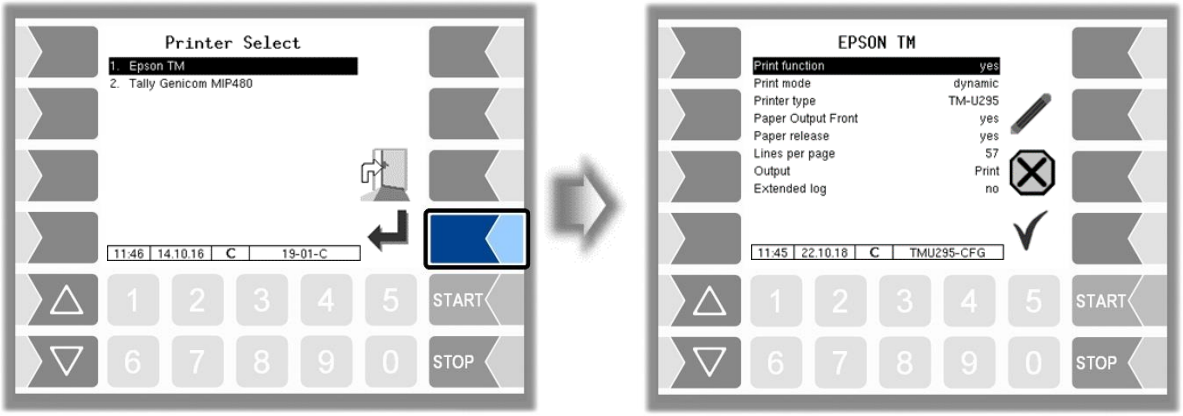
First select which printer type is to be used as the default printer.



Then you can configure the parameters for the selected printer.

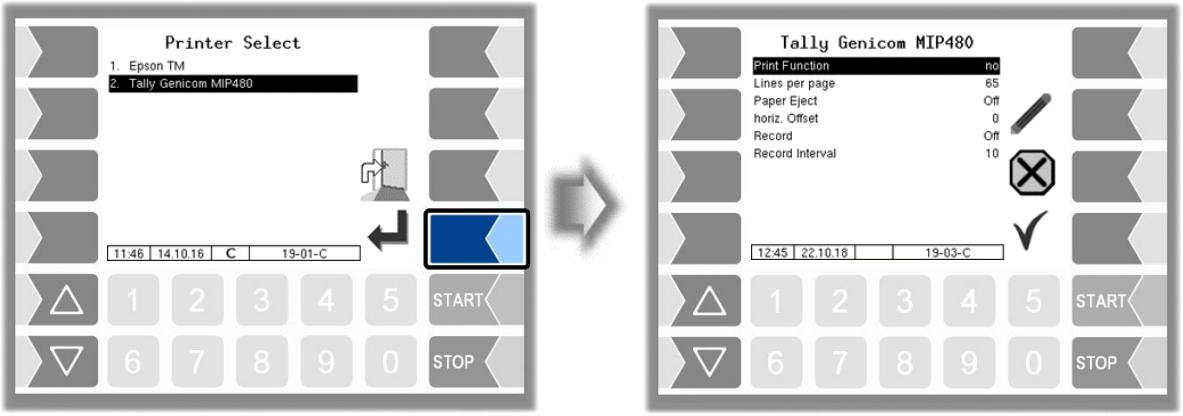
Only one printer must be activated, otherwise the print function can not be ensured!

Epson TM



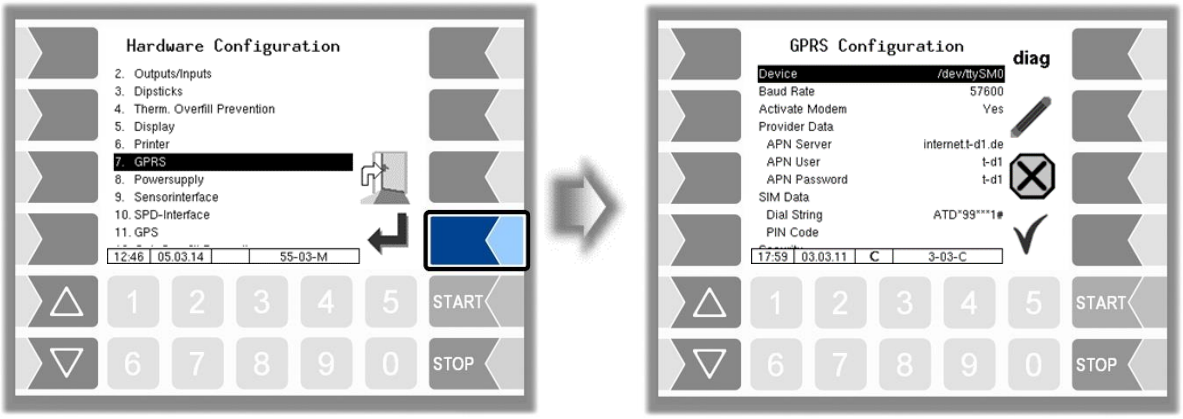
EPSON TM				
	U	Print Function	yes Printer activated no Printer deactivated	
		Print mode	dynamic Print mode according to printer type lines (transfer dynamic or line-wise) *(Default: lines)*	
		Printer type	TM-U295 TM-U220 Select the printer type used TM-T88 *(Default: TMU-295)*	
		Paper Output Front	yes The paper is output at the front. no The paper is output at the back.	***only TM-U295***
		Paper release	yes The paper is released after printing. no The paper is not released after printing.	
		Lines per page	Number of lines (including the footer) to the end of a page when parameters are printed. If 0 is entered here, there are no page breaks (default: 54).	
		Output	Prrint: Print job is sent to the printer. File: Print is saved in a file and is ready for processing (truck).	
		Extended log	yes: Communication between the printer and the system 3003 is stored.	

Tally Genicom MIP 480



Tally Genicom MIP 480			
	U	Print Function	yes: Printer activated no: Printer deactivated
		Lines per page	Number of lines (including the footer) to the end of a page when single pages are printed (journal and parameter printing). If 0 is entered here, there are no page breaks *(default value: 65)*.
		Paper Eject	on: The paper is ejected off: The paper remains in the printer and can be printed on
		horiz. Offset	horizontal offset for perforated paper (*default setting: 12 characters*) -no effect on delivery note and invoice-
		Record	On: Communication between the printer and the system 3003 is stored.
		Record Interval	Storage duration of the recordings (*default setting 10 days*)

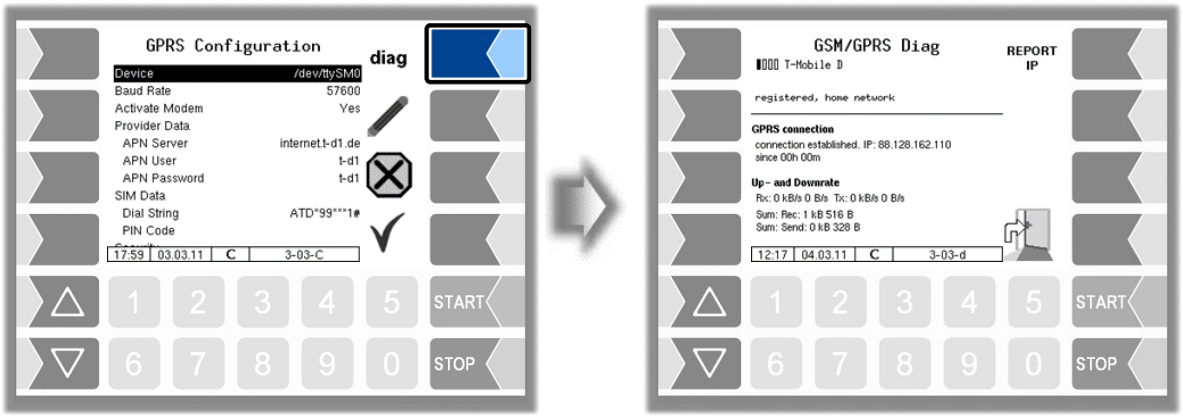
4.2.6.7 GPRS



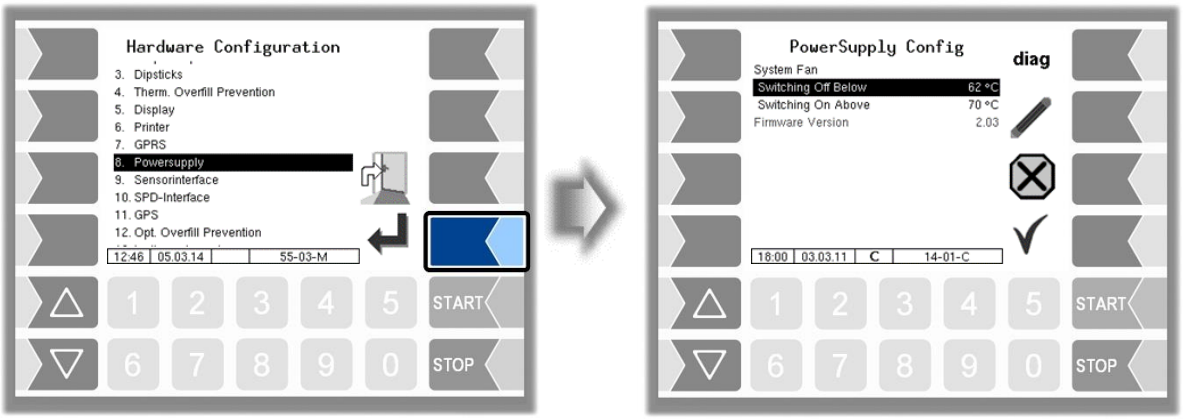
GPRS Configuration				
	S	Device	Interface (default: /dev/ttySM0)	
	U	Baud Rate	57600 (default)	
	D	Activate Modem	Yes: Modem activated No: Modem not activated, the modem can be switched on and off in the diagnostics menu (see section 7.3.5)	
	U	Provider data		
		APN-Server	Provider's dial-in server	*Setting depends on the SIM card used*
		APN user	Provider for accessing the selected server	
		APN password	Password for accessing the selected server	
		SIM data		
		Dial String	Entry of the dial string (Default: ATD*99***1#) When the system starts dialling, the configured number is dialled.	
		PIN Code	PIN for SIM card ⚠ The PIN must be entered here before the SIM card is inserted. **Turn off the system before inserting the SIM card!**	
		Security		
		Report IP To BARTEC	Yes: IP address is sent to BARTEC with each dial up connection. No: IP address will not be sent.	

After changing GPRS configuration parameters (e.g. the PIN Code) you must save the changes by leaving the configuration menu. Only when you open the configuration again you can check whether the system is on-line by using the diag softkey (see page 67).

The diag softkey can be used to access a service function for diagnosing the GRPS unit.
The diagnostics window can also be opened in the diagnostics menu. The diagnostic functions are described there (see section 7.3.4).



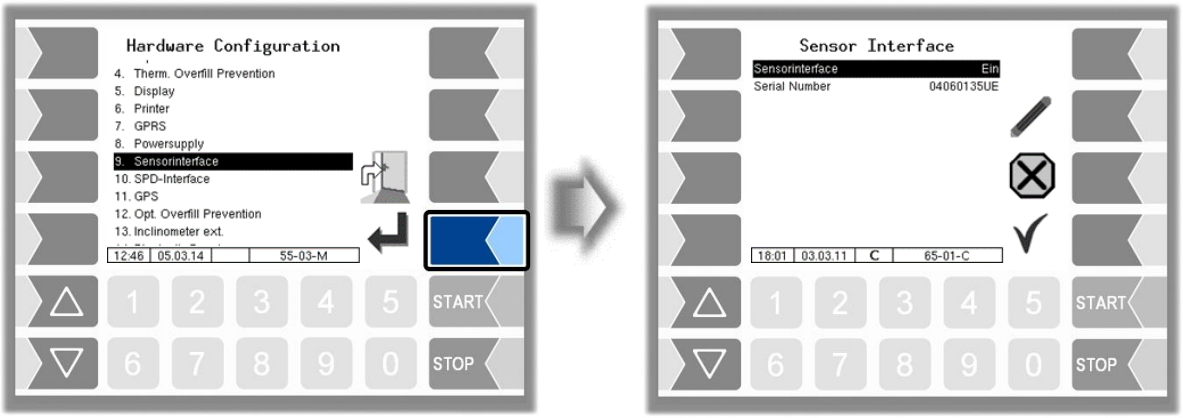
4.2.6.8 Power Supply



Power Supply Config			
	S	System Fan (no function when using a power supply without fan)	
		Switching Off Below	Temperature at which the fan is switched off
		Switching On Above	Temperature at which the fan is switched on
		Firmware Version	Displays the firmware version

The diag softkey can be used to access a service function for diagnosing the power supply.

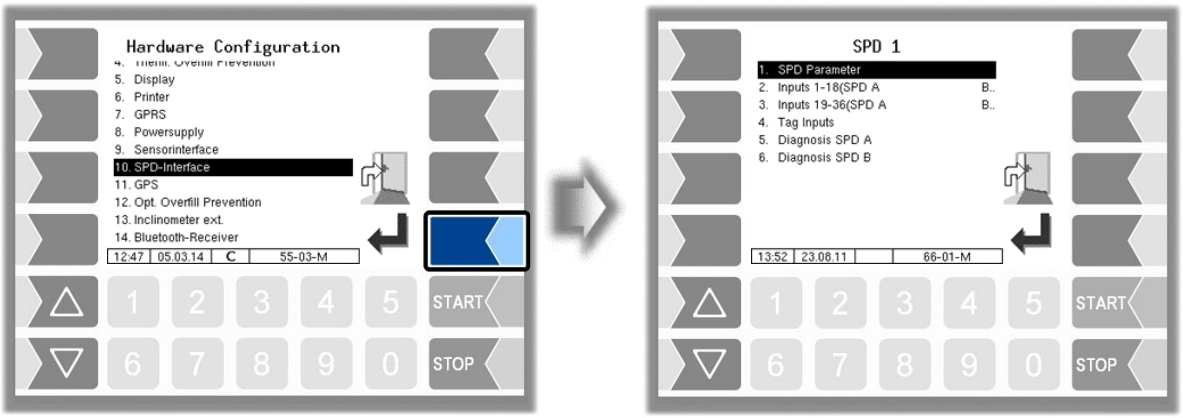
4.2.6.9 Sensor Interface



Sensor-Interface			
	S	Sensorinterface	Activates or deactivates the sensor interface
		Serial Number	Serial number of the sensor interface according to the rating plate

4.2.6.10 SPD-Interface

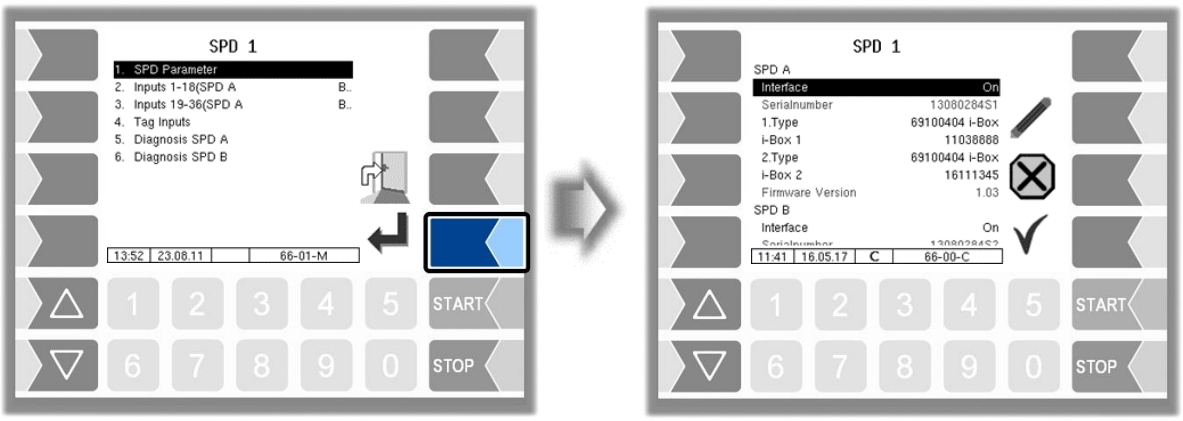
Available when the licensed option 18 ***SPDS 3003*** or 31 ***SPDS 3003 Standalone*** is enabled (see section 4.2.12).



SPD Parameter

(with configuration of i-boxes)

The SPD plug-in card is configured here. Various components (e.g. i-boxes or tag readers) can be connected to the plug-in card. Only components of the same type can be attached to one plug-in card.

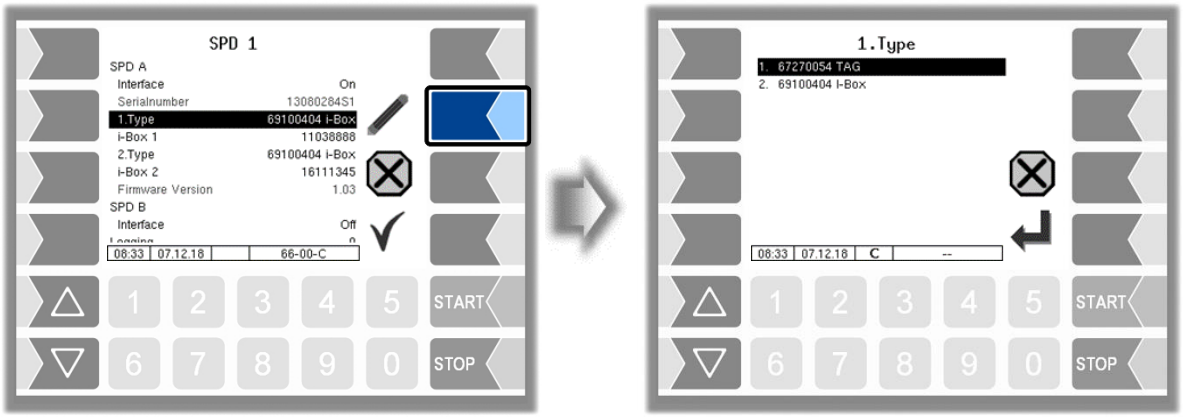


SPD Parameter			
		SPD A (B)	
		Interface	Activate/deactivate the interface
		Serialnumber	Serial number of the plug-in card
		1. Type	Type of the connected component
		i-Box 1	Serial number of the connected component
		2. Type	Type of the connected component
	S	i-Box 2	Serial number of the connected component
		Firmware Version	Firmware version of the plug-in card
		Logging	Recording of diagnostic values in the log file 0: no recording 1: Diagnostic values of inputs 8: Diagnostic values of SPD-Hardware (SPD-Interface, I-Box Namur, TAG-Reader) 9: Diagnostic values of inputs + SPD-Hardware

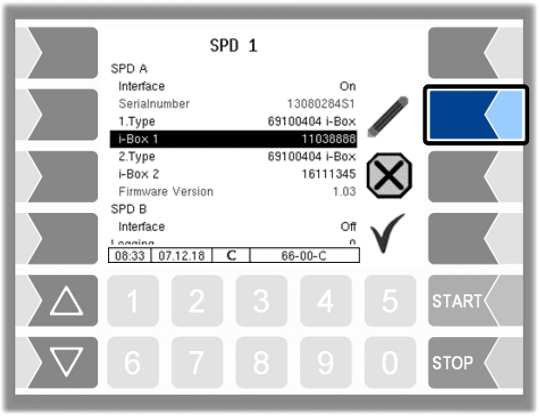
Change of components

If a component connected to the respective interface is replaced, it must be registered in the software, this means you must update the type and serial number.

- Select the line "Type".
- Touch the "Edit" softkey.
- In the following window, select the type with the arrow keys.

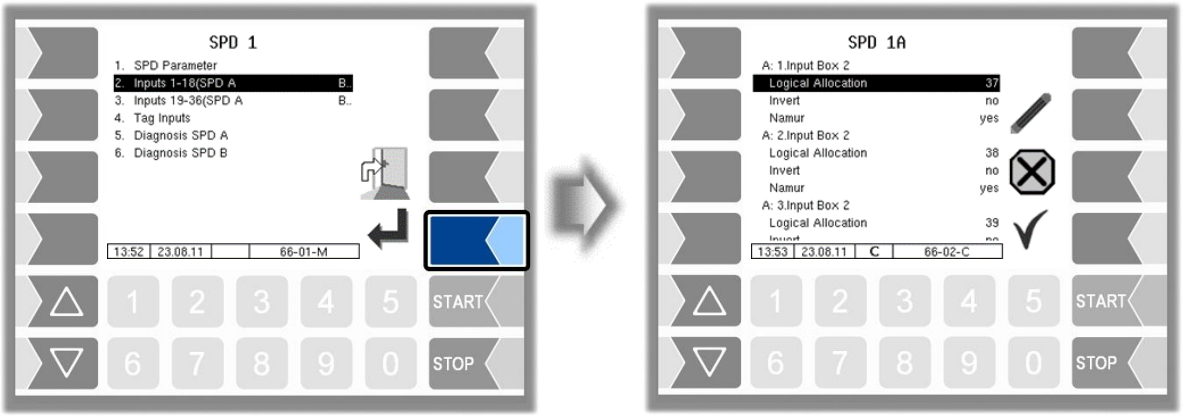


- Select the line in which the serial number is displayed.
- Touch the "Edit" softkey. The serial number of the connected component is read in again.



Inputs 1-x

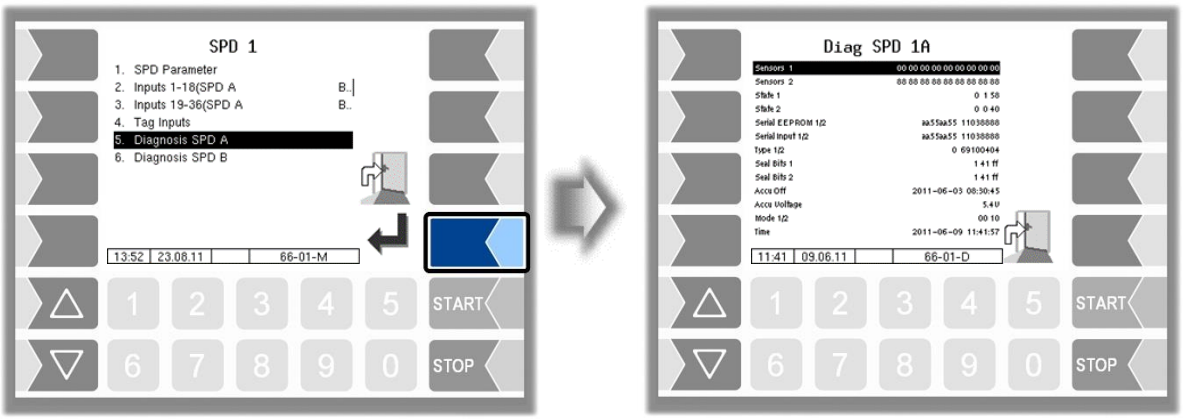
Configuration of the inputs to be monitored.



SPD 1A				
		SPD A: 1. (…x.) Input Box 1 (2)		
			logical Allocation	Assignment in the software
	U		Invert	Yes: The switching behaviour is inverted No: The switching behaviour is not inverted
			Namur	Yes: A Namur sensor is attached at the input. No: An NC/NO contact is attached at the input.

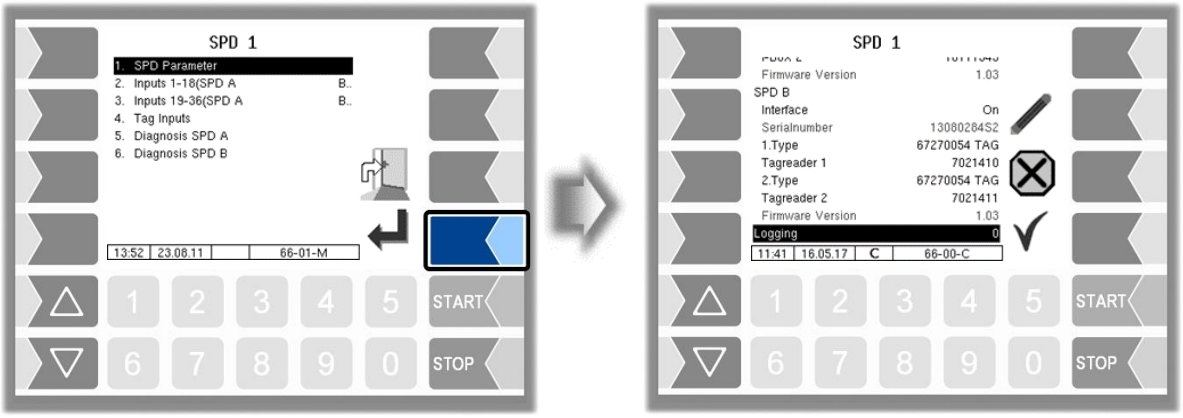
Diagnosis SPD A (B)

Displays current sensor states for diagnostic purposes.



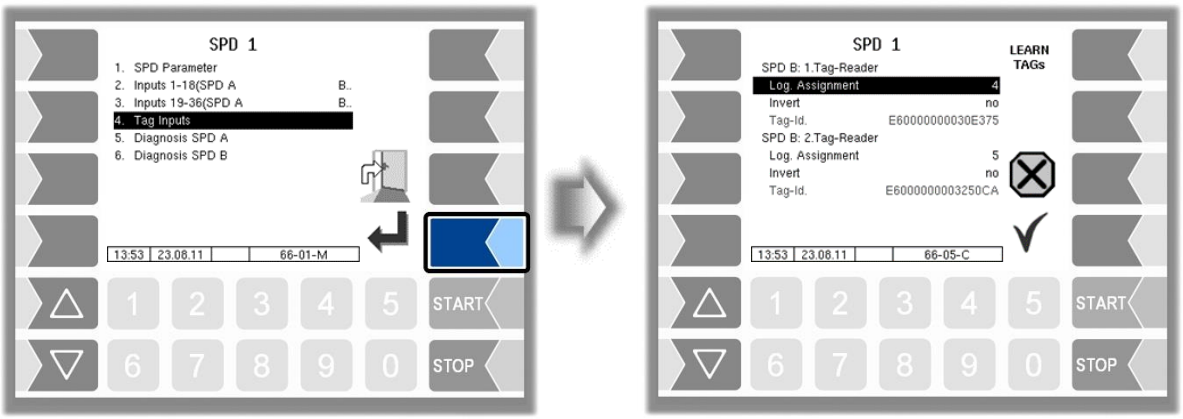
You can open the SPD-Diagnostics also in the diagnostics menu. Notes to the SPD diagnosis can be found there (s. Appendix, section 7.3.11.

SPD Parameter (with tag configuration)



SPD Parameter			
	S	SPD A (B)	
		Interface	Activate/deactivate the interface
		Serialnumber	Serial number of the plug-in card
		1. Type	Type of the connected component
		Tag Reader 1	Serial numbers of the connected components
		2. Type	Type of the connected component
		Tag Reader 2	Serial numbers of the connected components
		Firmware Version	Firmware version of the plug-in card
		Logging	Recording of diagnostic values in the log file 0: no recording 1: Diagnostic values of inputs 8: Diagnostic values of SPD-Hardware (SPD-Interface, I-Box Namur, TAG-Reader) 9: Diagnostic values of inputs + SPD-Hardware

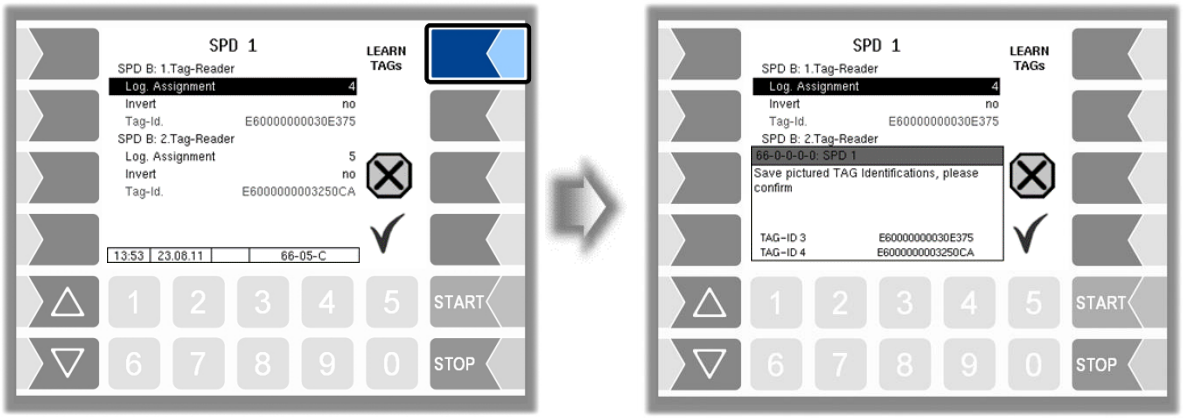
TAG Inputs



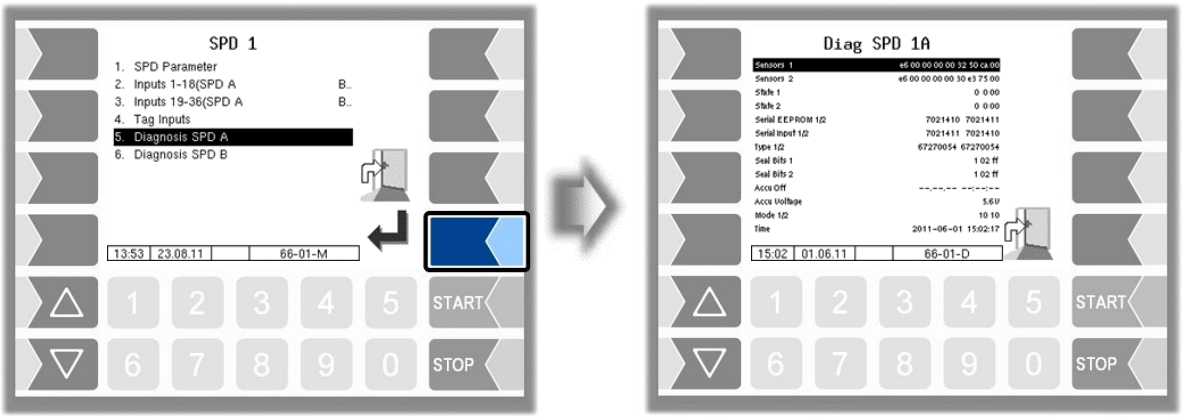
SPD 1			
		SPD A (B) 1. (2.) Tag Reader	
	U	logical number	Assignment in the software
		Invert	Yes: The switching behaviour is inverted No: The switching behaviour is not inverted
		Tag-Id.	Tag number that has been “learned” (see page 73)

“Learning” tags

After the tags have been installed, they have to be “learned”.
Touch the **LEARN TAGS** softkey and place the tags in the appropriate reading position (e.g. closed cabinet hatches).
The TAG-Numbers will be read and displayed. This process can take up to 30 seconds. Then touch the with ✓ softkey to save the displayed TAG information.



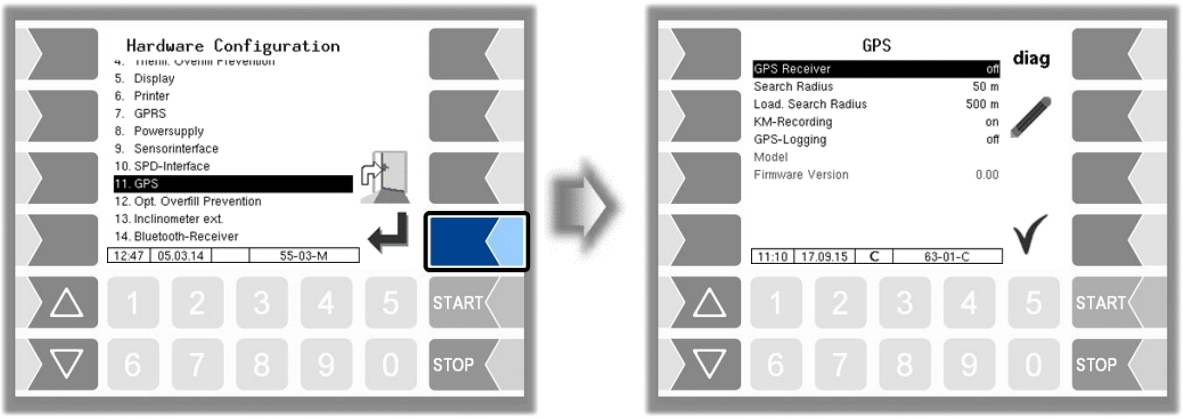
Diagnosis SPD A (B)



Displays the current sensor statuses for diagnostic purposes.

You can open the SPD-Diagnostics also in the diagnostics menu. Notes to the SPD diagnosis can be found there (see Appendix, section 7.3.11).

4.2.6.11 GPS

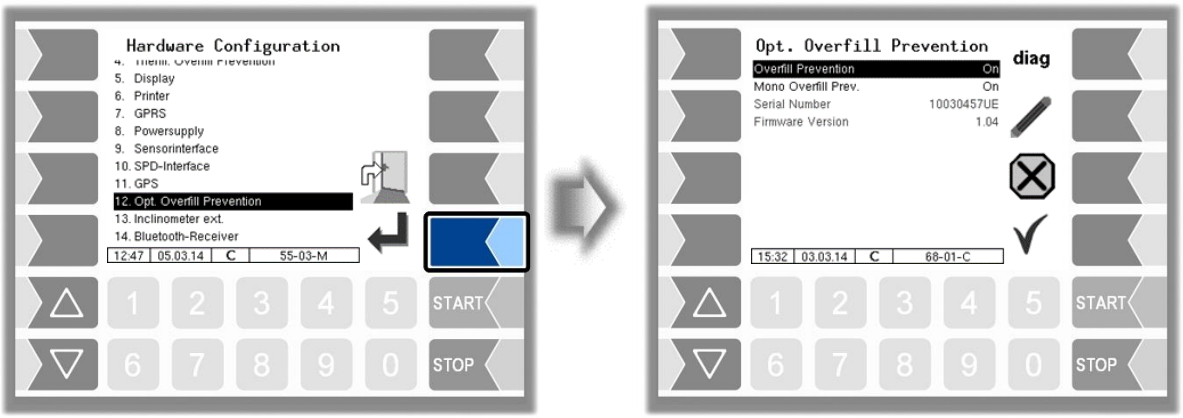


GPS				
	U	GPS Receiver	Activate/deactivate the GPS receiver	
		Search Radius	For deliveries with activated customer database, are all delivery points (petrol stations), that are within the configured radius, displayed for selection. *(Default: 50 m).* If 0 is entered, the cabinet door (output log. 12) is unlocked after the driver number has been entered. Emergency unlocking (see section 5.7) is not necessary.	
		Load Search Radius	When loading, with activated customer database, all loading points which are located within the configured radius, are displayed for selection. *(Default: 500 m).*	
		KM-Recording	*-without function-*	
		GPS-Logging	When getting GPS data, this will be recorded in EMF log for diagnostic purposes.	*Activate only after consultation with BARTEC service!*
		Model	Model version	
		Firmware Version	Firmware version	

Diagnostics

If the GPS receiver is turned on, the softkey diag for checking the GPS connection is available.
You can also run the GPS diagnostics in the diagnostics menu (see section 7.3.9).

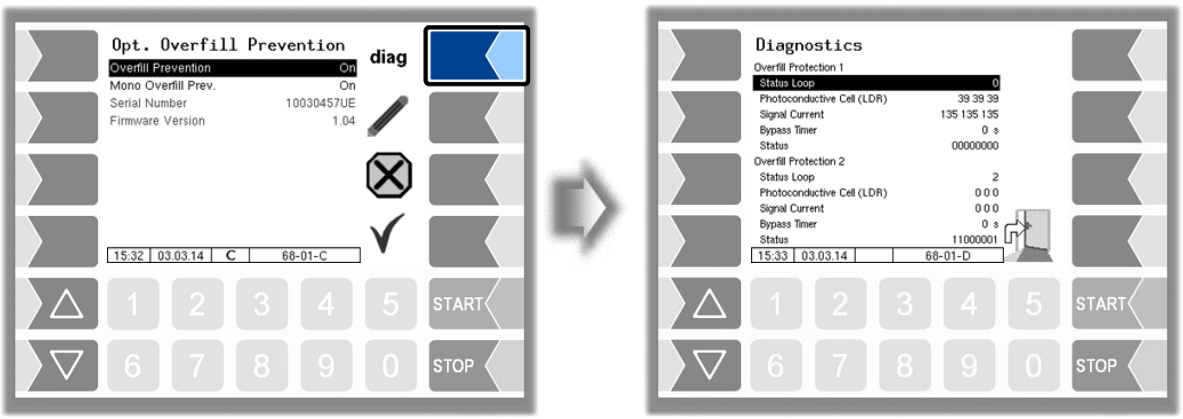
4.2.6.12 Optical Overfill Prevention



Opt. Overfill Protection			
	S	Overfill Prevention	Activate/deactivate overfill prevention
		Mono-Overfill Prev.	On: The overfill protection monitors one delivery Off: The overfill protection can monitore two deliveries simultaneously (dual function)
		Serial Number	Serial number of the overfill prevention device
		Firmware Version	Firmware version of the overfill prevention device

Diagnostics

With the Softkey diag you can call up a diagnostic tool for the overfill prevention.
If you have any questions, please contact the BARTEC BENKE service.

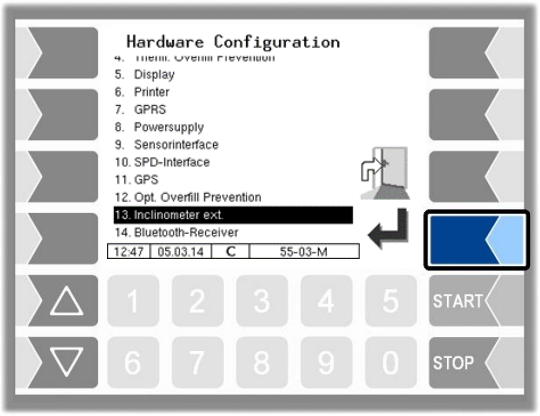


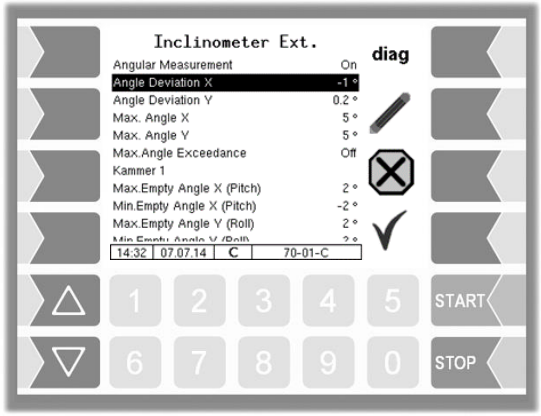
Only one overfill prevention (optical or thermical) can be used on the system.

4.2.6.13 External inclinometer

If there is no dipstick interface you can connect an external inclination sensor for tilt measurement.

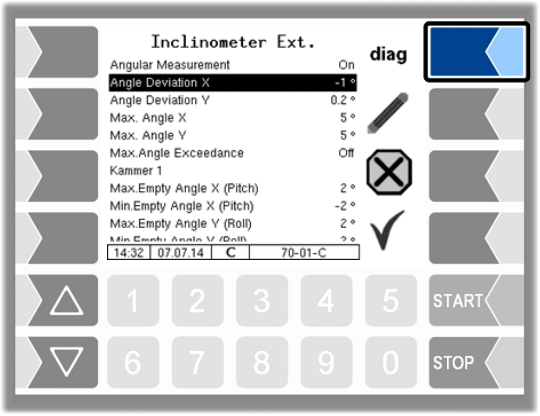
The external inclinometer may only be activated if the licensed option 17 VOLUTANK 3003 is not enabled (see section 4.2.12)!

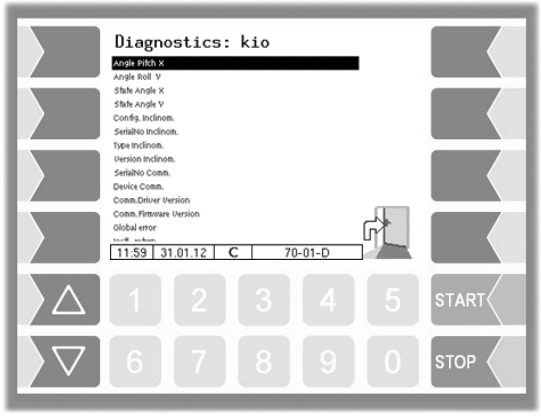




Inclinometer Ext.			
	S	Angular Measurement	Activate/deactivate the angle measurement
		Angle Deviation X	Installation angle (deviation from vertical) in the longitudinal direction
		Angle Deviation Y	Installation angle (deviation from vertical) in the transverse direction
		Max. Angle X	Maximum longitudinal angle at which the system allows deliveries.
		Max. Angle Y	Maximum transverse angle at which the system allows deliveries
		Max. Angle Exceedance	ON: If the maximum angle is exceeded (max. angle X/Y), deliveries are permitted. OFF: If the maximum angle is exceeded (max. angle X/Y), no deliveries are permitted.
		Kammer 1 (…8) (Compartment)	
		Max.Empty Angle X (Pitch)	Upper limit of the pitch angle, which ensures the emptying of the compartment.
		Min. Empty Angle X (Pitch)	Lower limit of the pitch angle, which ensures the emptying of the compartment.
		Max. Empty Angle Y (Roll)	Upper limit of the roll angle, which ensures the emptying of the pipes.
		Min. Empty Angle Y (Roll)	Lower limit of the roll angle, which ensures the emptying of the pipes.

Diagnostics

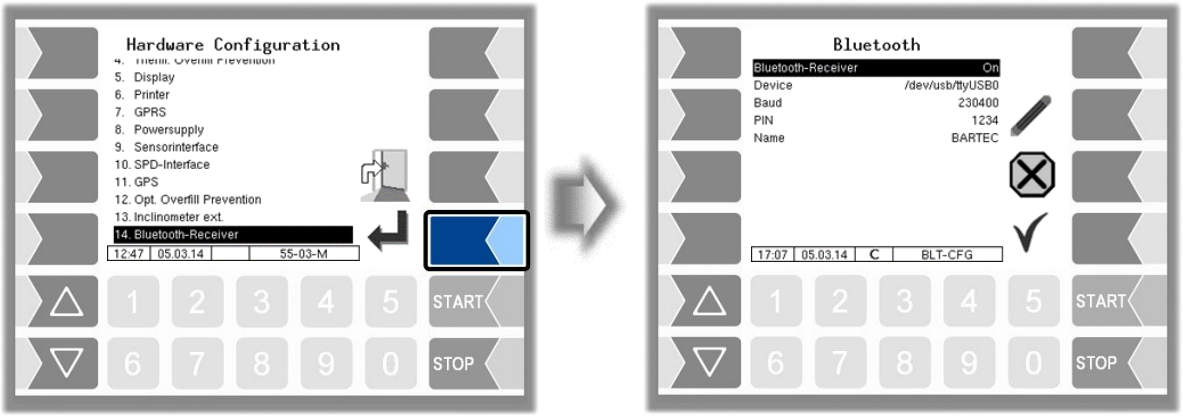




The diagnostics window can also be opened in the diagnostics menu (see section 7.3.13).

4.2.6.14 Bluetooth-Receiver

The Bluetooth interface is used to connect the 3003 service tool.



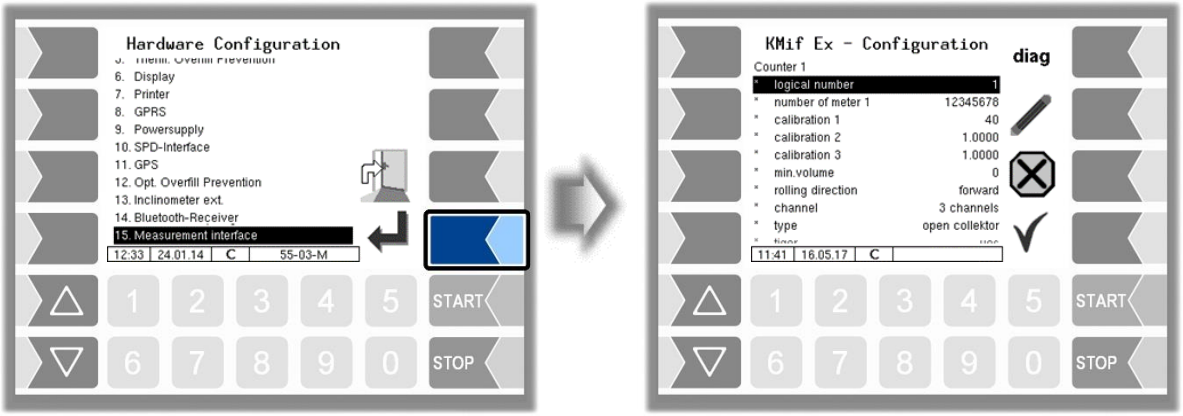
Bluetooth			
	S	Bluetooth-receiver	activate/deactivate the bluetooth-receiver
		Device	Interface designation (/dev/usb/ttyUSB0)
		Baud	Baud Rate Selection *(Default: 230400)*
		Pin	access code
		Name	Name of the application (e.g. Nº of the tank)

The Bluetooth Interface has to be activated in the service menu (see section 4.5.16).

4.2.6.15 Measurement Interface

Avialable when the licensed option 22 ***TIGER Ex*** is enabled (see section 4.2.12)

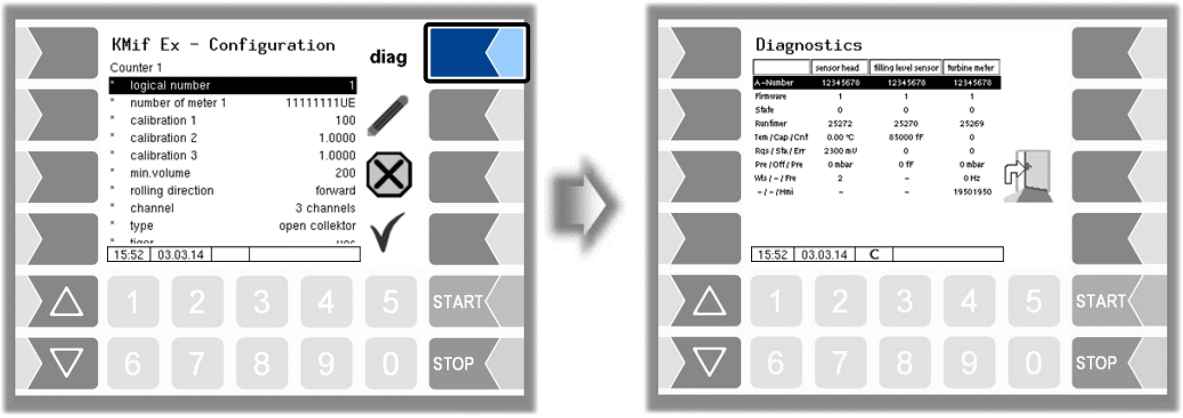
(*Program Parameter/Collector →ExTiger must be enabled.)*



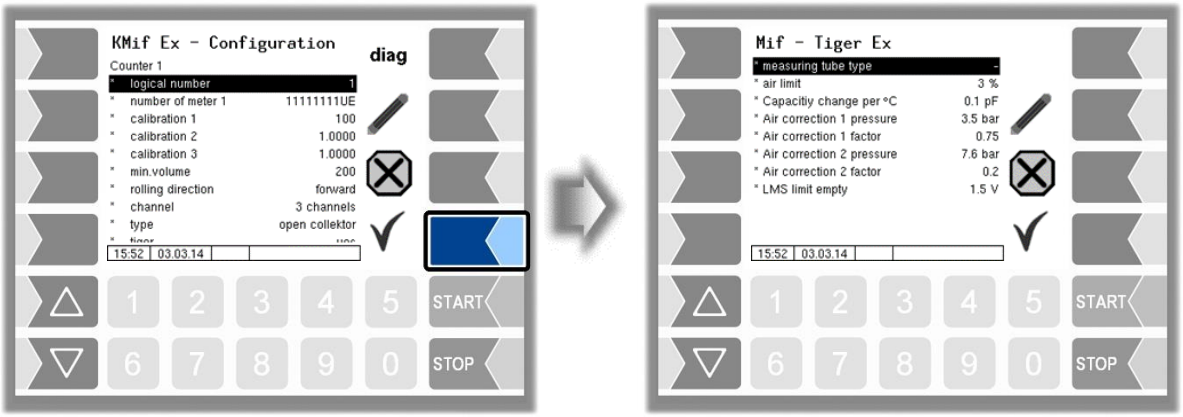
KMif Ex-Configuration				
	Counter 1			
		logical number	logical allocation of the counter within the system (with Ex-Tiger: 1)	
		number of Meter 1 (2)	A-No of the measuring section resp. manufacturers no. of the measuring chamber	
		calibration 1 calibration 2 calibration 3	The calibration factor determines how many pulses produce a liter (or configured unit) of the product. The calibration factor is defined during the calibration of the system. You can configure three calibration factors for different product groups.	
		min. volume	Minimum delivery volume, under which the delivery is not certified.	
		rolling direction	**foreward** If no changes were made at the pulse counter, "forward" corresponds to the factory setting, that means clockwise rotation is positive counting. *(Default)* backward: Counting of the rotating direction is reversed.	
C		channel	2 channels **3 channels** ∗ *(required setting for pyramid)*	channel type
		type	**open collector** ∗ *(required setting for pyramid)* Faure Herman current namur Promass/Hoffer	counter type
		tiger	yes Measuring system TIGER will be used	
		dynamic calibration	no no dynamic calibration yes there are used 5 correction factors for 5 flow rates.	
		1. (… 5.) flow 1. (… 5.) correction	5 correction factors for 5 flow rates can be set for dynamic calibration (see calibration protocol)	
		ref.-temperature	Temperature of the product during calibration (see calibration protocol)	
		K1, K2	calibration factors for viscosity change based on the reference temperature (see calibration protocol)	
	Temperatur sensor 1			
		log. mapping	Assignment of the temperature sensor to the compartment (with ExTiger: 9)	
		calib. 0/-195°C	Resistance at 0°C or -195°C *(Default: 100)*	(2)
		calib. 50/-80°C	Resistance at 50°C or -80°C *(Default: 119,4)*	(2)
			(2) Depending on the sensor used (0 to 50°C or -195 to -80 °C)	
	1. Input			
S		logical allocation	logical allocation of the input	
		invert	yes: The switching behaviour is inverted. no: The switching behaviour is not inverted.	
		resting state	low: positive switching high negative switching	
		namur	yes: A namur sensor is connected to the input. no: An NC/NO is connected to the input	
	* A-Number sensor head		displays the A-Number of the sensor head	
	* A-Number filling level sensor		displays the A-Number of the filling level sensor	
	* A-Number turbine meter		displays the A-Number of the turbine meter	
	* Firmware sensor head		displays the firmware version of the sensor head	
	* Firmware filling level sensor		displays the firmware version of the filling level sensor	
	* Firmware turbine meter		displays the firmware version of the turbine meter	

Diagnostics

This diagnostic function, you can also run in the diagnostics menu.
Explanations to the diagnostics, see there (section 7.3.12).

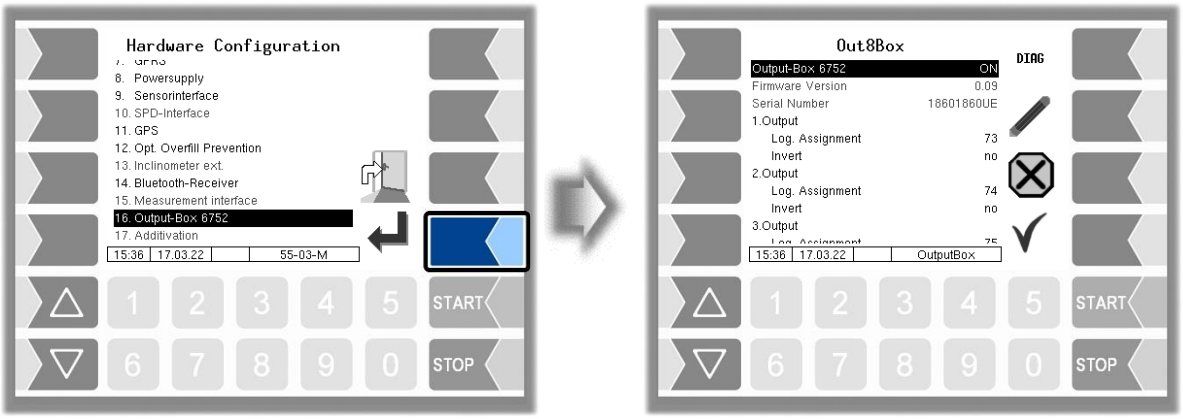


If the parameter “tiger“ is set to “yes” you must then set the according parameters.



Measurement Interface Tiger Ex		*Default values resp. recommended values are prited in brackets.*	
	C	Measuring tube type	- : Measuring tube with filling level sensor 1st generation *(= Default)* ‚A: Measuring tube with filling level sensor 2nd generation
		air limit	If this proportion of air in % is exceeded stops the delivery *(Default value: 3%)*
		Capacity change per /°C	capacity change of the filling level sensor in pF/°C *(Default value 0,1)*
		Air correction 1 pressure	1st Correction value for compensation of measurement errors caused by air in the product. *(Default value: 3,5 bar)*
		Air correction 1 factor	Factor for weighting of the first correction value. *(Default value: 0,75)*
		Air correction 2 pressure	2nd Correction value for compensation of measurement errors caused by air in the product. *(Default value: 7,6 bar)*
		Air correction 2 factor	Factor for weighting of the second correction value. *(Default value: 0,2)*
		LMS limit empty	Voltage threshold at which the empty detection sensor "empty" reports *(Default value: 1,5 V)*

4.2.6.16 Output Box 6752



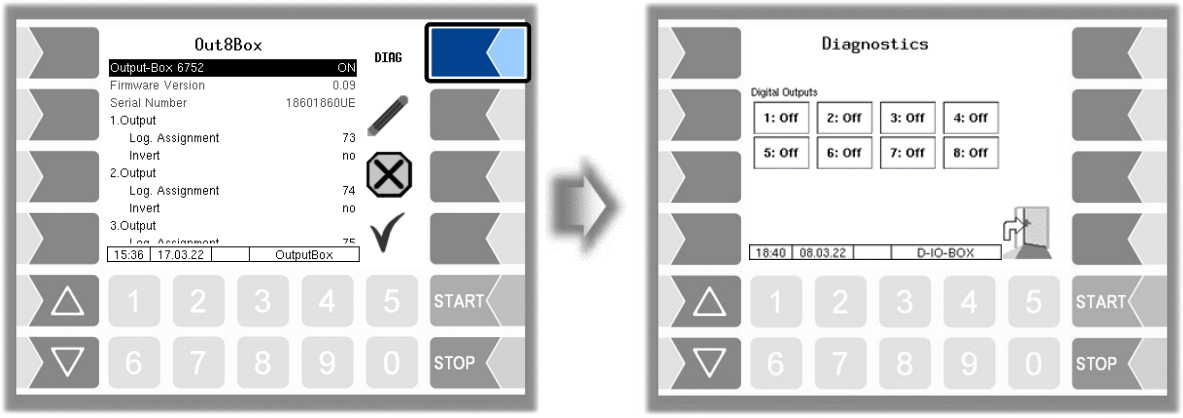
Out 8 Box				
	Output Box 6752	On/Off		
	Firmware Version	Displays the firmware version of the Output Box		
	Serial number	Displays the serial number of the Output Box		
	1. (…8.) (*Output*)			
	Log. Assignment	Assignment of outputs in the software see section 7.2.		
	Invert	Yes: The switching behaviour is inverted No: The switching behaviour is not inverted		(1)

(1) Zu Prüfung des Schaltverhaltens s. Abschnitt 7.3.2 „Diagnostics of the logic inputs and outputs“.

Diagnostics

- Open the diagnostic window with the DIAG softkey.

This feature is available only after entering the current service password or with open calibration switch.

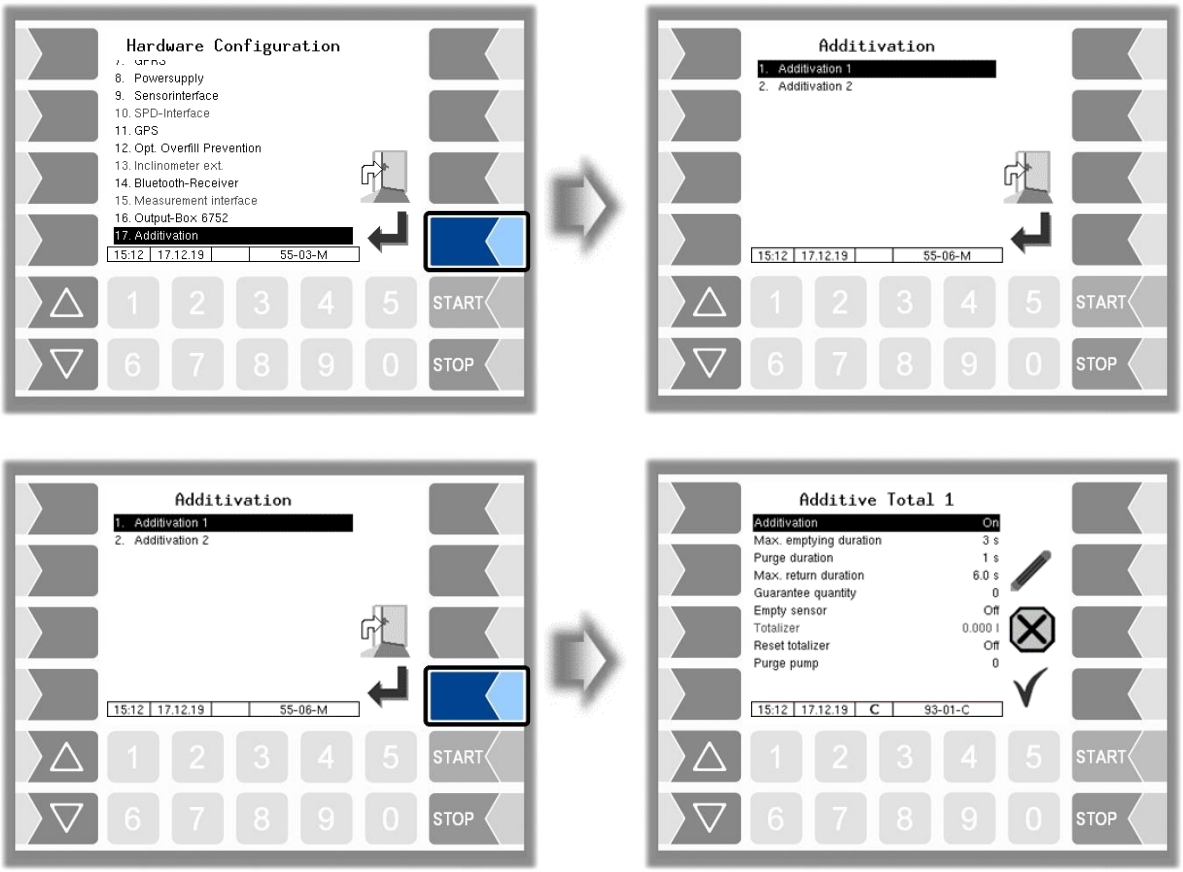


You can switch the outputs on and off individually.
The outputs set in the diagnostics are reset when you exit the "Diagnostics" window.

4.2.6.17 Additivation

Available when the licensed option 28 ***Product selection delivery*** is enabled (see section 4.2.12).

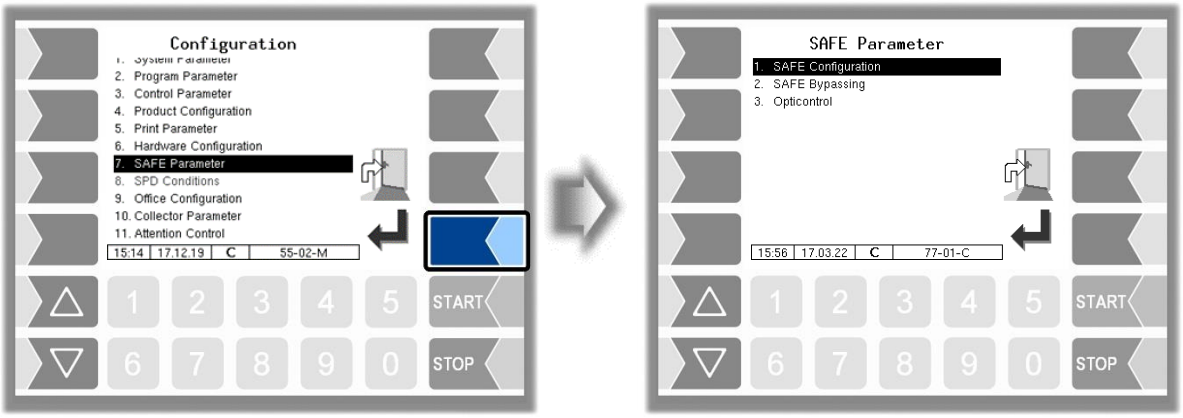
Two additive pumps can be configured to add additives. You can select the appropriate additive pump in the configuration of the measured products (see section 4.2.4.2 Measured Products).



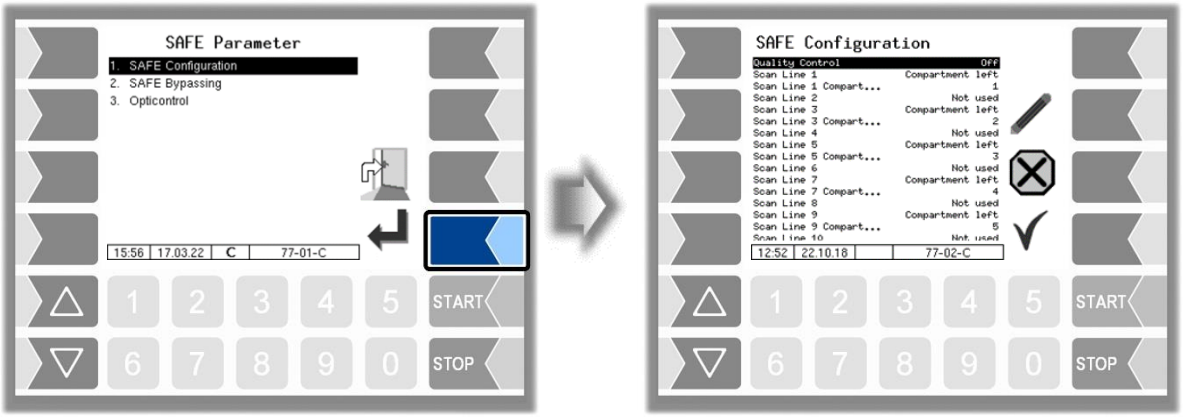
Additive Total 1 (2)			
U	Additivation	Switch the additive device on and off	
S	Max. emptying duration	Time to empty and refill the piston	(2 s)
	Purge duration	Time to empty the piston	(0,5 s)
	Max. return duration	Time for a test cycle run	(6 s)
	Guarantee quantity	When delivering with a preset quantity this Quantity guarantees that the entire additive quantity is delivered to the customer tank, taking into account the length of the line.	
	Empty sensor	On: Empty signal sensor available	
	Totalizer	Display of the additive totalizer	
U	Reset totalizer	On → Clearing the additive totalizer	
	Purge pump	Venting the additivation device After confirming an entered venting quantity, the venting starts.	

4.2.7 SAFE Parameter

Available when the licensed option 19 ***SAFE 3003*** or 32 ***SAFE 3003 Stand alone***.is enabled (see section 4.2.12).



4.2.7.1 SAFE Configuration

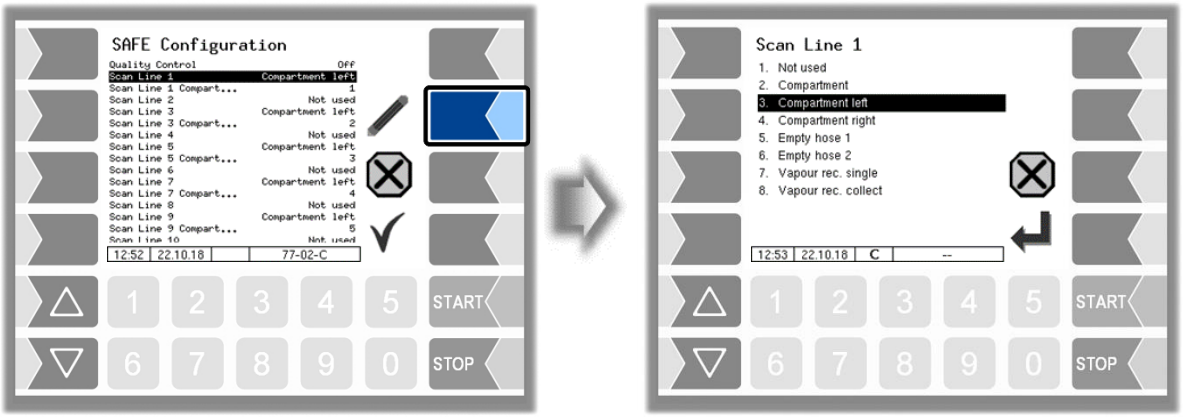


SAFE Configuration			
		Quality Control	Off: Quality assurance disabled PID: SAFE functionalities with PID are activated Manual: Product check via a database table, with manual entry of the tank number PID+Manual Product check via PID or via the database table. The product check via PID has priority.
	U	Scan Line ...	logical assignment of the scan line
		Scan Line ... Compartment	consecutive compartment number
		PID Connect Delay	Duration for which the PID must be permanently present during loading in order adopting the PID information *Default: 3 s*
		PID Signal Damping	Damping level of PID shutdown for interruption of product hose and vapor recovery hose connections low ✱ middle high
		PID Check Extended	No: Standard PID Check

			Start: Permanent: Start+Perm.:	If the delivery released and the flow rate exceeds 50l/min, a PID must be readable. The Listener will be ignored. The PID must be readable at least every 20 seconds with an existing Listener connection. If the Listener connection is interrupted, it is switched back to 3 seconds Both conditions are checked.

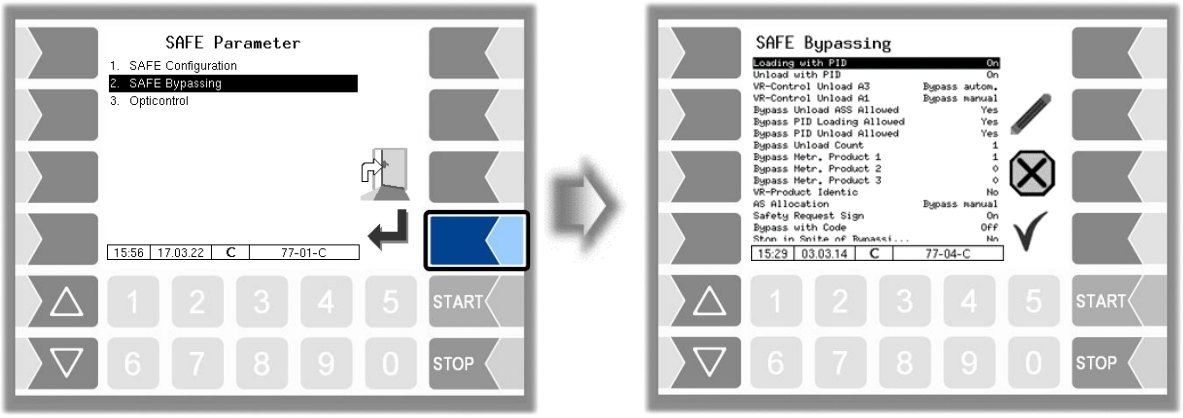
✱ permitted setting in accordance with VdTÜV certificate TÜ.AGG.465-14

Assignment of scan lines



Select the assignment from the list.

4.2.7.2 SAFE-Bypassing



SAFE Bypassing				
	U	(M) Loading with PID	On: Off:	Loading using the product recognition The product recognition is bypassed during loading
		(M) Unload with PID	On: Off:	Deliveries using the product recognition The product recognition is bypassed during delivery

		(M) VR-Control Unload A3	Must Be: The vapour recovery monitor <u>cannot</u> be bypassed. ✱ Bypass manual: The vapour recovery monitor can be manually bypassed when A3 products are delivered. ✱ Bypass autom: The vapour recovery monitor is automatically bypassed when A3 products are delivered. ✱
		(M) VR-Control Unload A1	Must Be: The vapour recovery monitor <u>cannot</u> be bypassed. ✱ Bypass manual: The vapour recovery monitor can be manually bypassed when A1 products are delivered. ✱ Bypass autom: The vapour recovery monitor is automatically bypassed when delivering A1 products.
		(M) Bypass Unload ASS Allowed	Yes: The filler hose protection is allowed to be bypassed during delivery. ✱ No: The filler hose protection is <u>not</u> allowed to be bypassed during delivery. ✱
		(M) Bypass PID Loading Allowed	No: Bypassing the product recognition system ist not permitted. Yes: The product recognition system is allowed/not allowed to be bypassed during loading. *A query is displayed before each manual start of the loading: "Should product detection be bypassed?"* Background: If a pid is read when loading is bypassed, this is accepted or the current loading is interrupted.
		(M) Bypass PID Unload Allowed	The product recognition system is allowed/not allowed to be bypassed during loading.
	U	(M) Bypass Unload Count	Number of simultaneous deliveries that may be done with bypass. 0: no bypass ✱ 1: one delivery with bypass ✱ 2: two simultaneous deliveries with bypass ✱ Entry from <2 to maximum of 6: Up to 6 simultaneous deliveries with bypassing.
		(M) Bypass Metr. Product 1 (2, 3)	Product number of the metrological product for which the quality assurance system is automatically bypassed during delivery.
		(M) Bypass Metr. Product 2	Product number of the metrological product for which the quality assurance system is automatically bypassed during delivery.
		(M) Bypass Metr. Product 3	Product number of the metrological product for which the quality assurance system is automatically bypassed during delivery. A list of a maximum of 18 products can be entered commas separated.
		(M) VR-Product Identic	Yes: The vapour recovery hose and the product in the compartment must have the same product identification (with SAFE according to CEN). No: The vapour recovery hose and the product in the compartment need not have the same product identification.

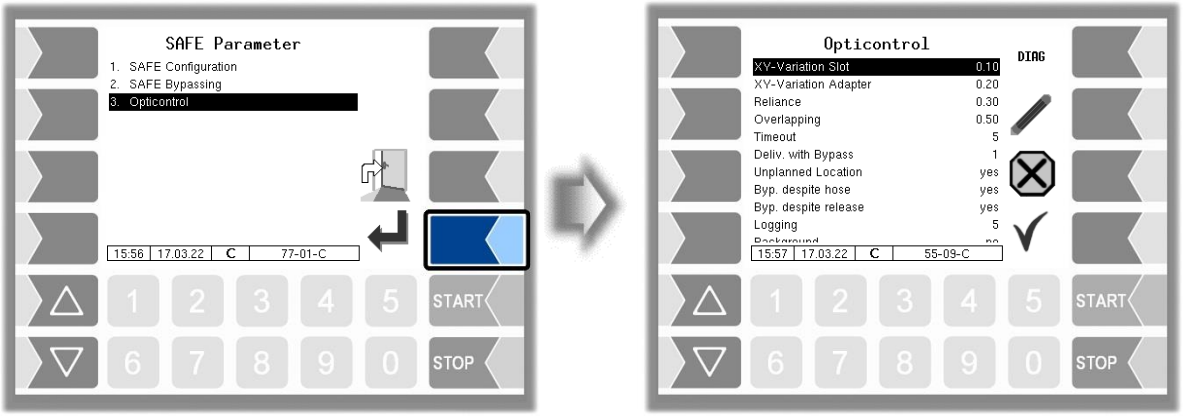
		(M) AS Allocation	Must Be: The assignment of the overfill prevention with listener must be done, otherwise no delivery is allowed. ✱ Bypass manual: If there is no listener assignment, you can choose if the overfill prevention should be bypassed. ✱ No: The assignment of the listener connection to the overfill protection must not be present, bypassing is done automatically (by SAFE at CEN).
		(M) Safety Request Sign	On: The position of the soft key for confirming the safety query changes randomly to avoid an unconscious acknowledgment.✱
		(M) Bypass with Code	Off: Bypassing with code is disabled. Load: Bypassing with code is allowed during loading. Unload: Bypassing with code is allowed during delivering. Load+ Unload: Bypassing with code is allowed during loading and delivering. *When a quality safe system component shall be bypassed, a 4 digits code is generated and displayed. The driver must this code send to the office via OBC. If the office permits bypassing, a response code is sent back. To enable the bypassing this response code must be entered at the operating unit.*
			3002: When delivering, bypassing can be done after inputting a code, which is formed from the numeric (3002) user password and the driver password. Bypass deliveries are limited to one hour in this case. 3002-PID: The code entry is required for a delivery with missing PID and magnet. Another bypass requires no code entry. *Code = Driver password x (User password + 1) + User password* Example *Date: **21**. **03**. 2020, **07**:28 o'clock* *Driver password = 21 + 3 + 7 = **31*** *User password = **120*** *Code = 31 x 121 + 120 = **3871***

			Comp-ASS-PID: Bypassing ASS or PID must be entered for each delivery a “Compartment-day-code” Comp-PID: Only Bypassing PID you must be entered for each delivery a “Compartment-day-code” *The Compartment-day-code is valid for the whole day, vehicle number and user password must be numerical* *Code = (Day + Month + Vehicle number) x (User password + Compartment number + 1) + User password* *Example* *Date: **21**. **03**. 2020, 07:28 o'clock* *Vehicle number = **36*** *User password = **120*** *Compartment number = **3*** *Compartment-day-code = (21 + 3 + 36) x (120 + 3 + 1) + 120 = **6320***
		(M) Stop in Spite of Bypassing	Yes: The delivery will be stopped if a not matching product code is red after starting a delivery with PID bypassing. No: The delivery will not be stopped if a not matching product code is red after starting a delivery with PID bypassing.
		(M) VR-AS Allocation	Off: The assignement of the vapor return to the overfill prevention will not be checked. Bypass manual: If no vapor return can be assigned to the overfill prevention, bypassing can be done manually. ❋
		(M) Lead is L.Substitute	Yes: The PID of leaded gasoline is valid for lead substitute (see section 4.2.4.2 *PID-Loading leaded* and *PID-Delivery leaded*).

❋ permitted setting in accordance with VdTÜV certificate TÜ.AGG.465-14

4.2.7.3 Opticontrol

Activate only after consultation with BARTEC service!

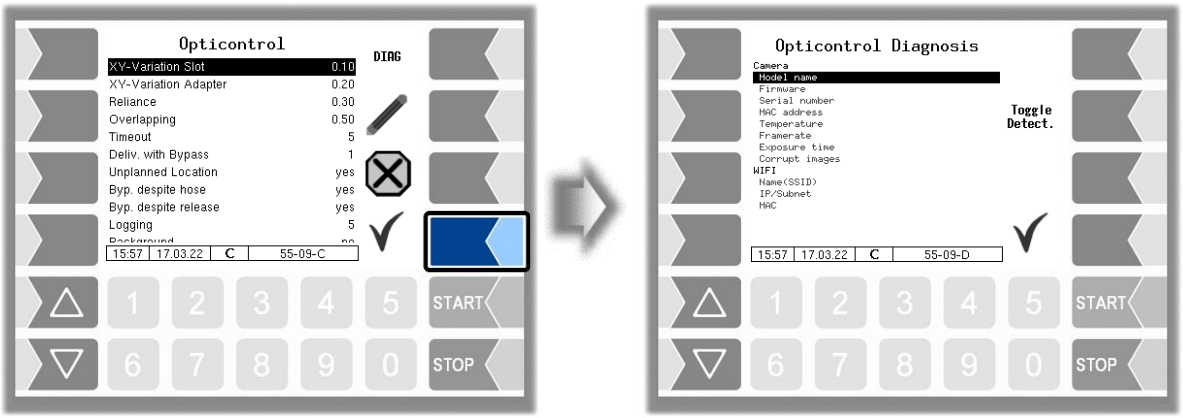


Opticontrol			
	U	XY-Variation Slot	Allowed positional variation for a detected petrol station slot. Compensates minor movement of the camera/vehicle. Higher values allow more movements before the detection status is invalidated. The value is relative to camera FOV. Value: 0.0 – 0.5 *(Default: 0.10)*
		XY-Variation Adapter	Allowed positional variation for a detected petrol adapter within a slot. Similar rules apply as for variation of slots. Value: 0.0 – 0.5 *(Default: 0.20)*
		Reliance	Detection threshold for slots. Higher values mean more accurate slot detection. But the slot detection rate is potentially lower. Lower values allow less accurate slot detection. The slot detection rate is potentially higher. Value: 0.0 – 0.9 *(Default: 0.30)*
		Overlapping	Depending of adapter positioning, some regions of the detected adapters may visually overlap. Higher parameter values allow larger overlapping areas for a better distinction of two adjacent adapters. Value: 0.0 – 0.5 *(Default: 0.50)*
		Timeout	Timeout for detected slot or adapter. Invalidate an already detected slot or adapter if there was no new detection of them after this duration. Timeout will be highlighted with an hourglass in the delivery status window. Timed out adapters/slots do not allow delivery start. Value: 0 – 99s *(Default: 5)*
		Deliv. with Bypass	Allowed deliveries at the same time if at least one delivery was started via bypass. Value: 0 – 6 *(Default: 1)*
		Unplanned Location	Allow delivery at unplanned or unknown location. **Opticontrol support is not active at unknown locations.**

	Disabled: Delivery at unknown locations is not allowed. Manual bypass: Delivery at unknown locations is allowed after performing a manual bypass. Automatic bypass: Delivery at unknown locations is not restricted. *(Default: Disabled)*
Byp. despite hose	Allow delivery bypass despite detection of a wrongly connected hose or more than one free connected hoses Value: no/yes *(Default: no)*
Byp. despite release	Allow delivery bypass despite detection of one single correctly connected hose. Value: no/yes *(Default: no)*
Logging	Level of detail of logging. BARTEC internal maintenance parameter. *(Default: 0x0)*
Background	Operational mode of the Opticontrol system. Background: Passive data acquisition mode, without any assistance or detection. In this mode, the Opticontrol will automatically record pictures, positions and additional process data during petrol deliveries and/or during filling. BARTEC will use the acquired data for training or improvement of the Opticontrol capabilities. Hybrid: Mixed operational mode with active detection capabilities on known locations combined with the data collection of the “Background” mode. Detection: Pure detection/support mode of the Opticontrol. Process data collection is limited to productive/service purposes. Image data collection is disabled. *(Default: Background)*
Camera	
License key	License key of the Opticontrol camera (see delivered supplementary sheet)
WIFI	
Activate WIFI	Activates the WIFI hotspot on the Opticontrol system. A successful activation will be highlighted via a dialog message.
Password	Password for the WIFI hotspot of the Opticontrol system Minimal length 8 characters. Maximal length 40 characters.
ANr	ANr of the connected Opticontrol unit.

Diagnose

- Rufen Sie mit dem Softkey DIAG das Diagnosefenster auf.

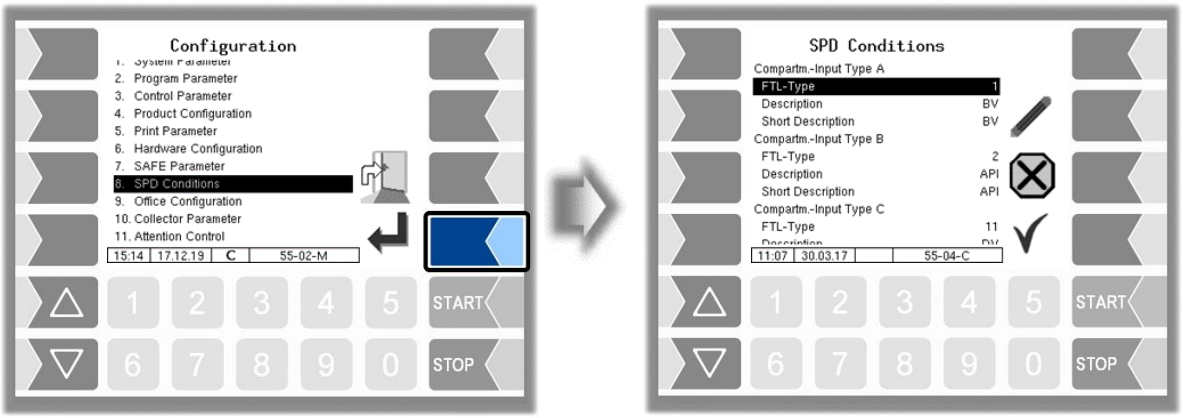


System	
ANr	ANr of the connected Opticontrol unit.
SW version	Opticontrol application version.
Start time	Startup time of the Opticontrol unit.
Camera	
Model Name	Model name of the camera connected to the Opticontrol unit.
Firmware	Current firmware version of the camera
Serial number	Serial number of the camera.
MAC address	MAC address of the camera.
Temperature	Current temperature of the camera in °C.
Framerate	Image captures per second.
Exposure time	Current sensor exposure time. This may vary depending on the lighting conditions.
Corrupt images	Amount of corrupted images delivered. A large number of corrupt images may indicate a faulty cable or connection.
WIFI	
Name(SSID)	Name of the WIFI hotspot of the Opticontrol unit.
IP/Subnet	IP address and subnet of the Opticontrol unit within the WIFI network.
MAC	MAC address of the WIFI hotspot.

The “Toggle Detect” button on the right side of the diagnosis menu switches the detection functionality on or off. This is used for BARTEC internal tests only.

4.2.8 SPD Conditions

Available when the licensed option 18 ***SPDS 3003*** or 31 ***SPDS 3003 Stand alone*** is enabled (see section 4.2.12).



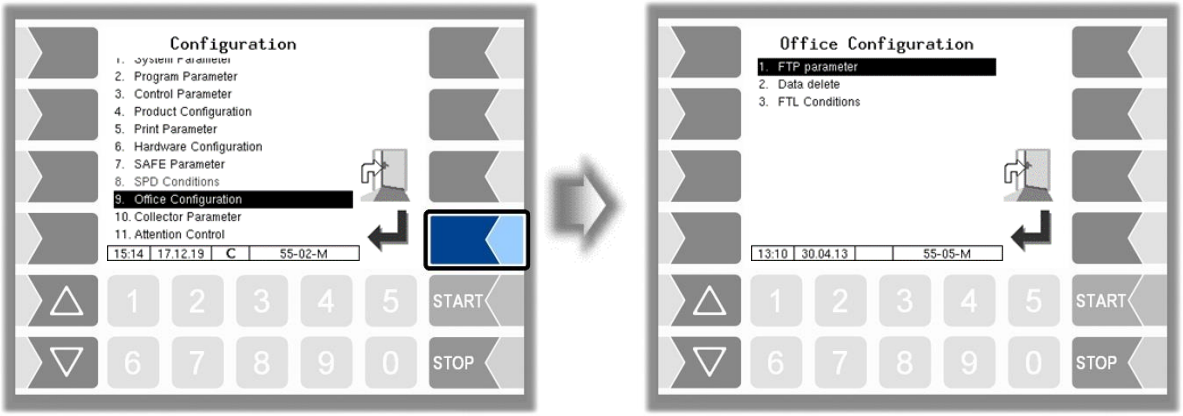
SPD Conditions			
		Compartm.-Input Type A (B, C, D, E) *(broken seal in respective compartment)*	
		FTL-Type	Assignment of the sensor type to the input according to FTL table
		Description	Description of the sensor
		Short Description	Short description of the sensor
		Common-Input 1 (…2) *(broken seal in any compartment)*	
		Log. Input	Logical No. of the Common Input
		FTL-Type	Assignment of the sensor type
		Description	Description of the sensor
		Short Description	Short description of the sensor
		Free Input 1 (…5) *(recording only; no broken seal)*	
		Log. Input	Logical No. of the Free Input *(use logical inputs 25…30)*
		FTL-Type	Assignment of the sensor type
		Description	Description of the sensor
		Short Description	Short description of the sensor
	U	Sealing	Off: The seal state is not displayed in the vehicle and not reported to the office. It is only recorded. Office: The seal state is not displayed in the vehicle, but reported to the office Truck: The seal state is displayed in the vehicle and reported to the office.
		Rest at Broken Seal	yes: If broken seal is detected, the compartment state is automatically set to „REST“.
		Comp. Empty Valves	Determination of the valves, which must be open for the change of the compartment status when delivering. none: The compartment status change is carried out independently of the state of the valves. BV: Bottomvalve API+DV: API und DV BV+API+DV: Bottomvalve + API + DV

		Comp. Load Valves	Determination of the valves, which must be open for the change of the compartment status when loading none: The compartment status change is carried out independently of the state of the valves. BV: Bottomvalve API+DV: API und DV BV+API+DV: Bottomvalve + API + DV
		Print Compartment State	yes: The compartment state will be printed before every loading and every delivery. *(only if "Sealing" is not set to "Off")*

Extract from Table 13 of the FTL, Index 42 (ACC_STAT)

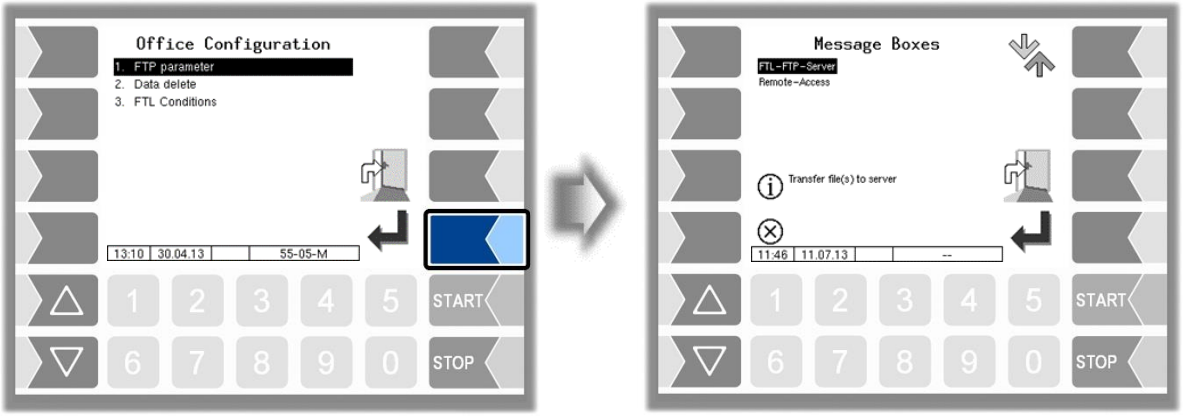
FTL-Type No.	Description
1	Foot valve
2	API-Coupling
3	Hatch covers, Compartment lid
7	Control cabinet door
11	Through valve (Direct delivery)
23	Pump
25	Handbrake
101	logical input BARTEC
102	logical output BARTEC

4.2.9 Office Configuration



4.2.9.1 FTP-Parameter

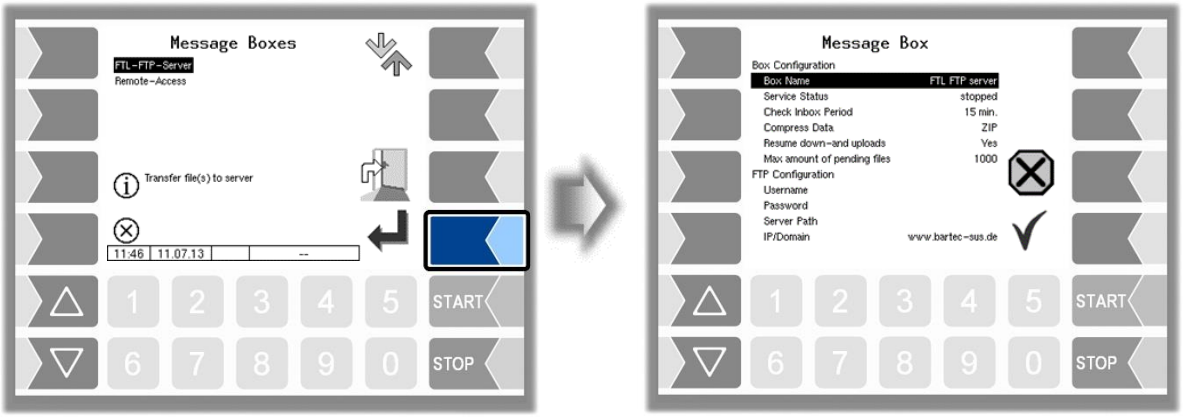
FTL scheduled, return and service data is transmitted via an FTP server. Here you can configure the message boxes for this purpose.



If there are several message boxes to choose from, you can select the required message box using the ▽ and △ keys.

Office connection (FTL-FTP-Server)

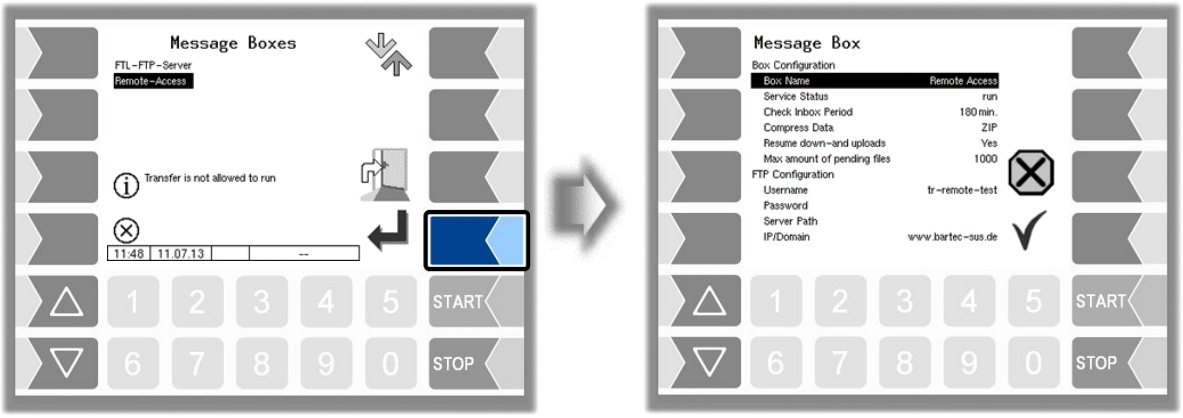
To use the office connection, the message box must be configured for access via FTL FTP server



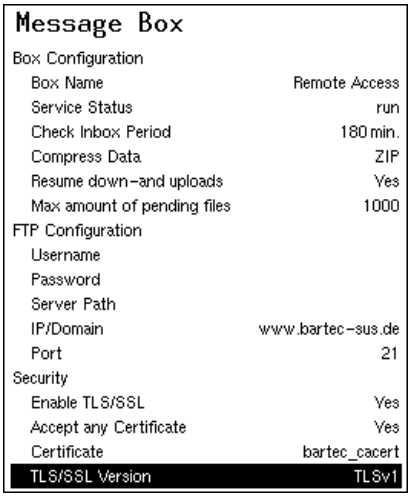
Message Box			
	U	Box Configuration	
		Box Name	Name of the message box
		Service Status	run: Data transmission option on stopped: Data transmission option off *(Notice: Changes in the service status are only applied after a system restart)*
		Check Inbox Period	Time after which the system checks whether any data is waiting to be transmitted to the vehicle. This check is also performed every time data is sent. *(Default: 15)*
		Compress Data	ZIP: The data to be sent is compressed ZIP formatted GZIP: The data to be sent is compressed GZIP formatted No: The data to be sent is not compressed *(default setting)*
		Resume down- and uploads	Yes: The server supports the Resume function (resumption if transmission is incomplete) No: The server does not support the Resume function
		Max. amount of pending files	Maximum number of files that have not yet been transferred. *(Default: 1000)*
		FTP Configuration	
		Username	Username on the FTP-Server
		Password	Password on the FTP-Server
		Server Path	Directory path for the data access on the FTP-Server *No entry is necessary in the default setting*
		IP/Domain	Address of the data server
		Port	FTP port of the data server
		Security	
		Enable TSL / SSL	Yes Data encryption No: No data encryption *(Standard: Yes)*
		Accept any Certificate	Yes Any certificate is accepted No Only the registered certificate is accepted *(Standard: Yes)*
		Certificate	Here you select the certificate
		TSL / SSL Version	Here you select the encryption type (TLSv1 or SSLv3) *(Standard: TLSv1)*

Online Service Funktion (Remote Access)

To obtain the Software licenses (see section 4.2.12) or for using the online service function (see section 4.5.15 and 7.3.10) configure the access here.



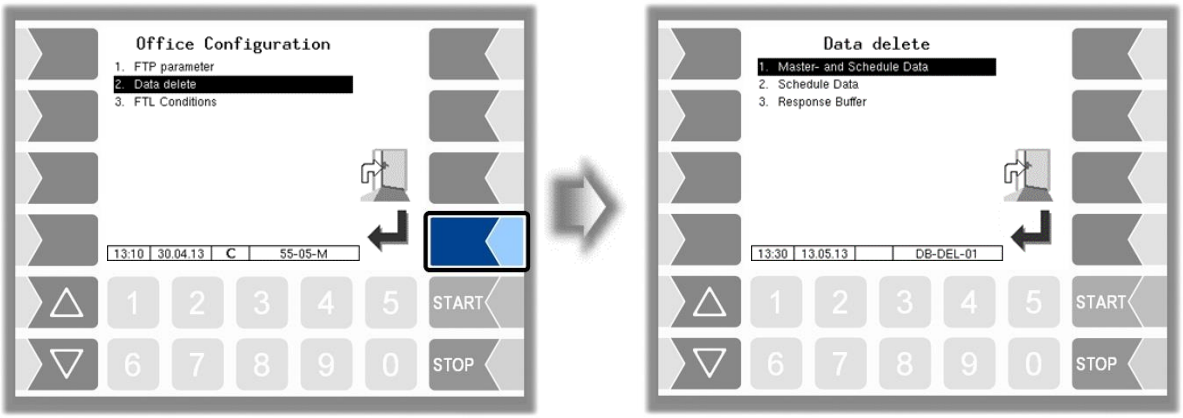
Set the parameters to the values shown here.
The encryption for the network protocol is set by default to TLSv1. Keep this setting!
If "TLSv1" is not selected for this setting in connection with the IP / domain "www.bartec-sus.de", change this setting accordingly.



Username and password must be unique for each system

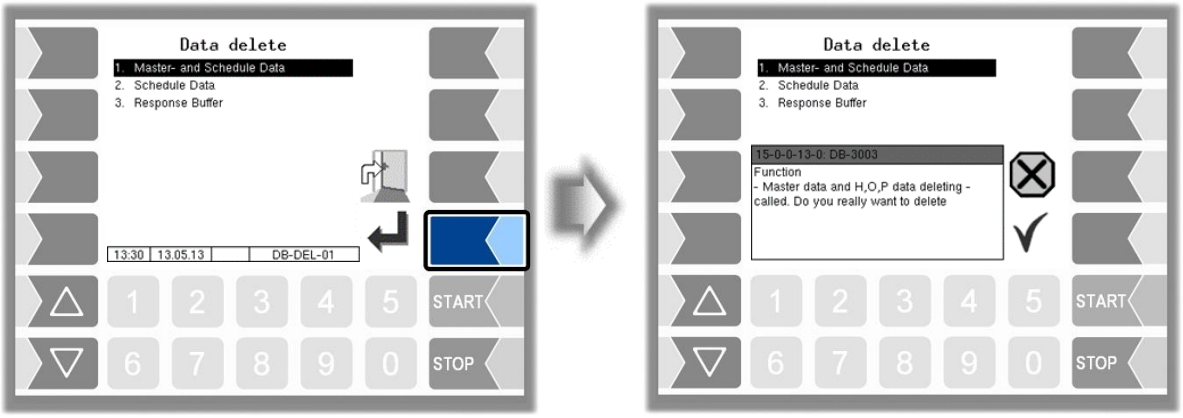
4.2.9.2 Data delete

To delete data, the user password or higher must be entered.

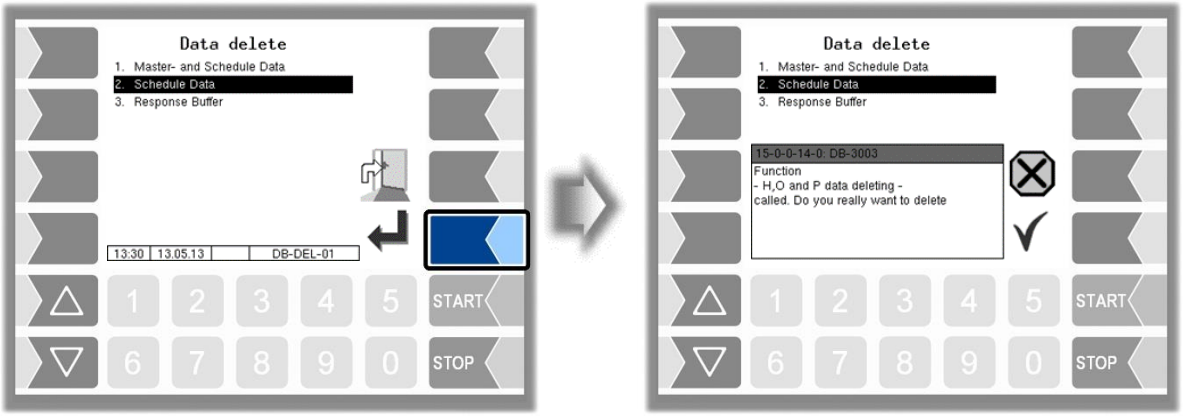


You can delete several data selectively.
Select the data to be deleted. After confirming a safety query the selected data will be deleted.

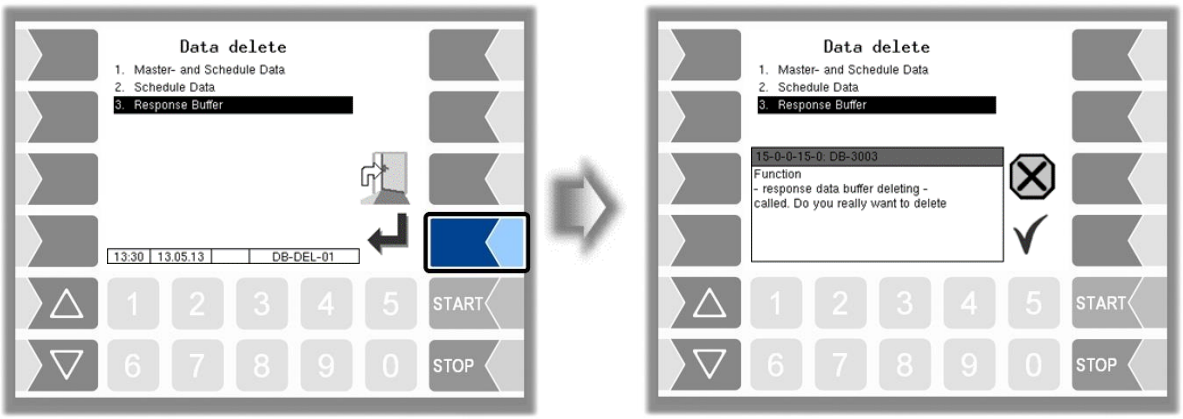
Master and Schedule Data



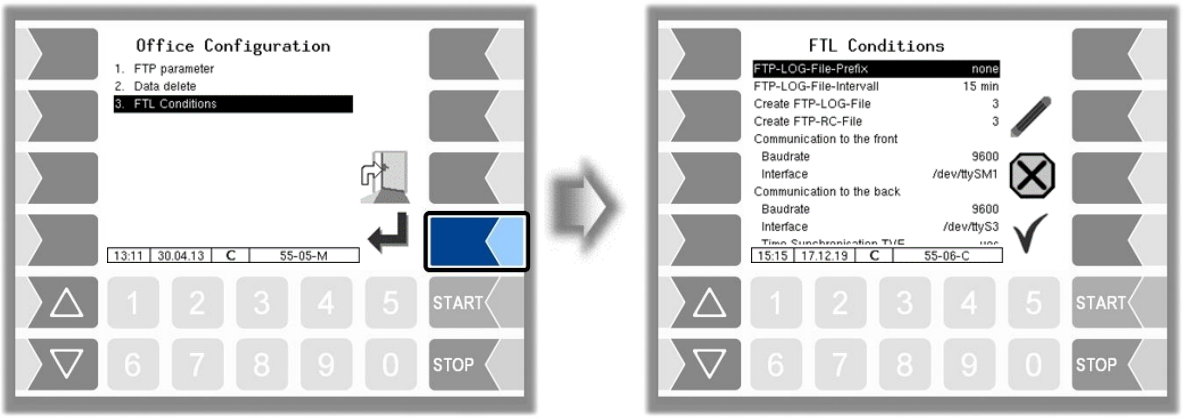
Scheduled Data



Response Buffer



4.2.9.3 FTL Conditions

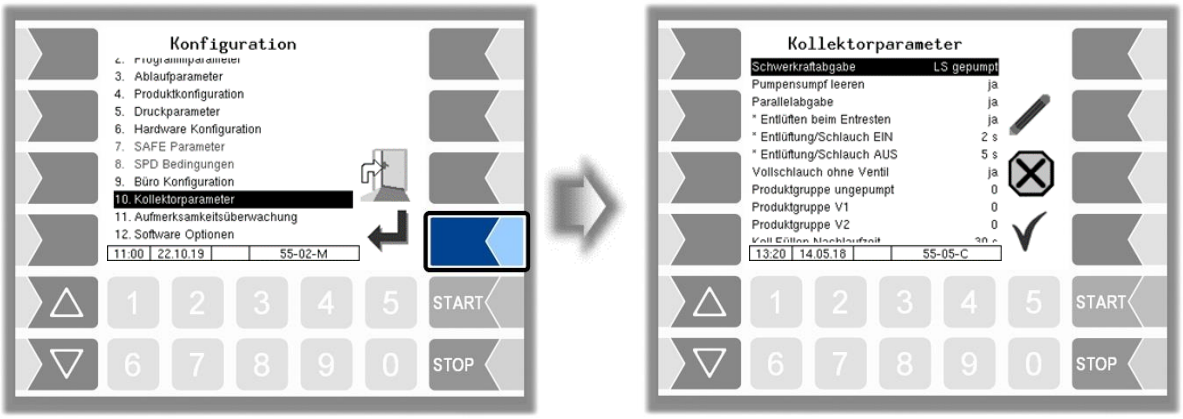


FTL Conditions				
	S	FTP-LOG-File Prefix(1)	String that appears before each line in the LOG file.	*Set only when FTP transfer is enabled (see page 94, FTP-/ Service Status set to "run") and the modem is switched on (see page 66 GPRS, Activate Modem:yes).*
		FTP-LOG-File-Interval(1)	Time in minutes, after which a LOG file is transferred to the FTP server.	
		Create FTP-LOG-File(1)	0: There is no logfile transfer. 1: The logfile is transferred after finishing a tour. 2: The logfile is transferred after finishing an order. 3: The logfile is transferred after finishing an order and after finishing a tour.	
		Create FTP-RC-File(1)	0: RC-File will not be transmitted (tour-, order-, position data). 1: RC-File will be transmitted when the tour is finished. 2: RC-File will be transmitted when the order is finished. 3: RC-File will be transmitted when the tour and the order are finished.	
		Communication to the front (1) *(Communication between the measuring system and the external on-board computer (OBC) or from the measuring system in the trailer to the measuring system in the truck.)*		
		Baudrate	Baud rate for the interface to the external OBC **setting: 9600**	*Set only if an Onboard Computer is used or if a communication between the measuring system of the trailer and rigid is used!*
		Interface	Here you select the interface to the external OBC **for OBC: /dev/ttySM1** **for communication from trailer to truck: /dev/ttyS3**	
		Communication to the back (1) *(Communication from the rigid to the trailer.)*		
		Baudrate	Baud rate for the interface to the trailer **setting: 9600**	*Adjust only if a measuring system is used on the trailer!*
		Interface	Here you select the interface to the trailer **setting: /dev/ttyS3**	
	U	Time Synchronisation TVE	yes: When the system starts, the time between rigid and trailer is synchronized	
		Pump-Timeout	If communication with the trailer is interrupted, the pump on the rigid stopped after this time. *(Default 10 s)*	
		Disconnect-Timeout	If no response is sent from the trailer within the configured time, a dialog is displayed whether the trailer should be physically uncoupled.	

			If “0” is configured you will be asked again after one minute. (Default: 60 sec.)
		FTL Delivery	no: Communication between the system and the On Board Computer is unchanged. (No change is required for an existing On Board Computer connection). *(Default)* yes Communication occurs with extended FTL record.
	U	LOG Output Filter	Filter for entering entries of standard outputs in the FTL log file (hexadecimal format) 0: No entries 1: Entries
		LOG Period	Period for which the log file is saved (*default: 20 days)*
		LOG GPS Interval	The GPS coordinates are saved after the time entered here in minutes has elapsed.
		FTL-LOG in BARTEC-LOG	Yes:Entries from FTL-logfile will also be written to the BAR-TEC-logfile
		With Order Preset (1)	1: no: No ordering via OBC 2: only show: The specified order is displayed, no restrictions on the delivery. If a delivery order exists, loading can also be started. 3: apply: Upon delivery, the position is selected and the hose selection is limited by the specification. The specified product is checked. 4: no prod. Only the compartment number must be specified in the scheduled data. A product check is not carried out. No delivery is possible without specifying a compartment number.
		Order-Id. Input	Yes: The order number is to enter when the order is finished.
		OBC-Diagnostics (1)	Yes:The communication between OBC and counter will be logged.
		Delete Preset with Code (1)	yes:Scheduled data can only be deleted after entering a numeric user password *(see Calculation 3002 Code , page 24)*
	S	Test OBC-Interface	The connection via the OBC interface is tested. This test can also be carried out in the service menu and is described there (see section 4.5.18).

(1) Available when the licensed option 24 ***GPRS/UMTS Online Funktion*** is enabled (see section 4.2.12).

4.2.10 Collector Parameter



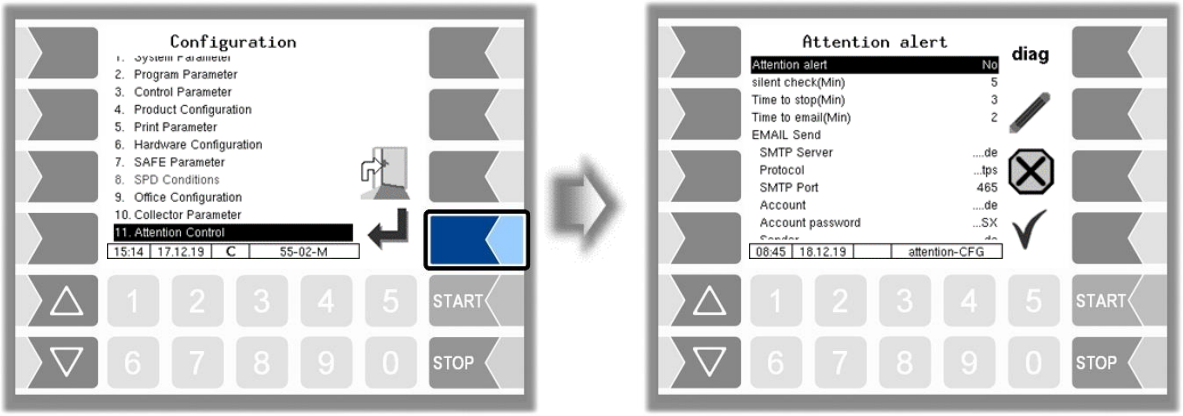
Collector Parameter			
	U	Gravitation Delivery	DH pumped: pumped delivery DH un-/pumped: unpumped + pumped delivery DH unpumped: unpumped delivery } allowed delivery via dry hose
		Pump Sump Draining	yes: if there is a pump sump, which should be emptied when removing the residue.
		Parallel Delivery	yes: the simultaneous delivery from several compartments is allowed
	C	*Deairing in Draining (1)	yes: to reduce the pressure during removing the residue is periodically vented, according to the following two parameters
		*Deairing/Hose ON (1)	Venting (output log. 19) is active for the specified duration during removing the residue. *Default setting: 2 sec.*
		*Deairing/Hose OFF (1)	Venting (output log. 19) is not active for the specified duration during removing the residue. *Default Haar: 5 sec.* *Default Niehüser 10 sec.*
	U	Wet hose without valve (1)	yes: There is no additional wet hose valve in the system *If no wet hose valve is present, only one wet hose can be used.* no: The system contains an additional wet hose valve *Default: no*
		Product group no pump	Products of the product group with this number may only be delivered unpumped.
		Prod. group Wethose 1 (1)	Products of the product group with this number are to be delivered via wet hose 1.
		Prod. group Wethose 2 (1)	Products of the product group with this number are to be delivered via wet hose 2.
	S	Coll.Filling Rundown	Delay time after filling the collector with the pump till opening the D-valve resp. wet hose valve (the collector-wetleg sensor must report “wet” for at least this time). *Default setting: 30 sec.*
		Coll.Filling Lead Time (1)	Time for filling the collector with gravity, only then the pump starts. (parameter Coll.Filling Rundown) *Default setting: 30 sec.*
		Coll.Filling Max. Time (1)	Maximum time for filling the collector. Then starts the WLS Delay Time. *Default setting: 120 sec.*
		WLS Delay Time (1)	Delay time of the wet leg sensor. The state of the sensor is not evaluated during this time. *Default setting: 20 sec.*
	C	*Dry Hose Rundown	When all compartments are empty and the collector-wetleg sensor reports “empty” this time starts If the WLS remains dry during this time, the delivery will be finished. *Default: 30 sec.*
		*Collector Volume	on the rigid: collector volume of the tanker (e.g., 30 liters) on the trailer: Collector volume of the trailer

		* Collector Volume Total	Collector contents on delivery from the trailer via the rigid. Value must be configured identically on the trailer and the rigid.
	U	Stop Delivery x%xFlow	The delivery stops at x% of the initial flow before reaching the preset quantity, with quantity measurement via TIGER Ex (compensation of stop delay).
		Stop Del.. x%*Flow Dipst.	The delivery stops at x% of the initial flow before reaching the preset quantity when quantity is sensed by dipsticks.
		Flowlimit low	The pump will be throttled if the flow falls below this value (output log. 39 off) at 0 = 50 l/min output log 7
		Flowlimit high	The pump power is increased if the flow exceeds this value (output log. 39 on) at 0 = 50 l/min output log 7
		Start after OFP-Release	yes: The state of the overfill prevention device is only checked after filling the pipes.
		Collector Valves direct	yes: When the outputs 73 to 80 are switched on is the collector separator valve directly activated without any further conditions.
		Draining without Pump 61 (1)	yes: special residue removal variant, pump sump.
		Flushing to Trailer (1)	yes: The content of the wet hose can also be flushed back into a segment of the trailer
	C	Tiger-Parameter	
		* Remaining Volume Draining (2)	Not countable residual quantity in the measuring tube between meter turbine and empty signal sensor. *(Default setting: 3 l)*
		* Air counts Draining End (2)	The parameter sets the threshold for detecting the empty state by the filling level sensor. *(Default setting: 40%)*
		* Break Draining, Open BV (2)	Time for which the foot valve is opened up to 6 times, to run out the accumulated product. If zero, the foot valves are open during the whole draining *(Default setting: 5 sec)*
	S	Trailer Draining End	Time until WLS log. 22 reports wet when filling out of trailer during draining of tiger wet hose delivery. If WLS is dry after this time, it is supposed that trailer is empty. (*Default: 20 sec.)*

(1) Available when the licensed option 21 ***Wet hose delivery 3003*** is enabled (see section 4.2.12).

(2) Available when "Ex-Tiger" is active - *Program Parameter/Collector →ExTiger*

4.2.11 Attention monitoring



See also section 6.2.

Attention alert				
		Attention alert	Yes:	
		silent check (Min)	After expiring of this time - a small notification window appears in the display.	
		Time to stop (Min)	After expiring of this time, counted from displaying the small window, a big notification window appears. Current deliveries are stopped.	
		Time to email (Min)	After expiring of this time, counted from displaying the big notification window an e-mail is sent.	
		EMAIL Send		
	U	SMTP Server	Data of the Outgoing mail server	*These entries are only completely visible during editing.*
	U	Protocol		
	U	SMTP Port		
	U	Account		
	U	Account password	Password of the sending account	
	U	Sender	E-mail address of the sender (e.g. of the vehicle)	
		EMAIL Receiver		
		Monitoring	Recipient e-mail address of the monitoring email. *If the monitoring function is triggered after a timeout, an email will be sent to this recipient. Current deliveries will be stopped.*	
		Alarm	Recipient email address for the alarm function. *If an alarm trigger device is present (input log. 90), current deliveries will be stopped when it is activated and an email will be sent to this address.*	

If the output log. 101 is configured, this output is activated as soon as the attention alarm is triggered or the alarm trigger device is actuated.

Examples

Monitoring
Date=06.04.2022 14:22:32
Truck number=123
Customer number=
GPS=48.958986,12.974939
http://maps.google.de/maps?q=48.958986,12.974939&t=h&z=12&om=0

The structure of an email to one ot the two recipient addresses is identical:

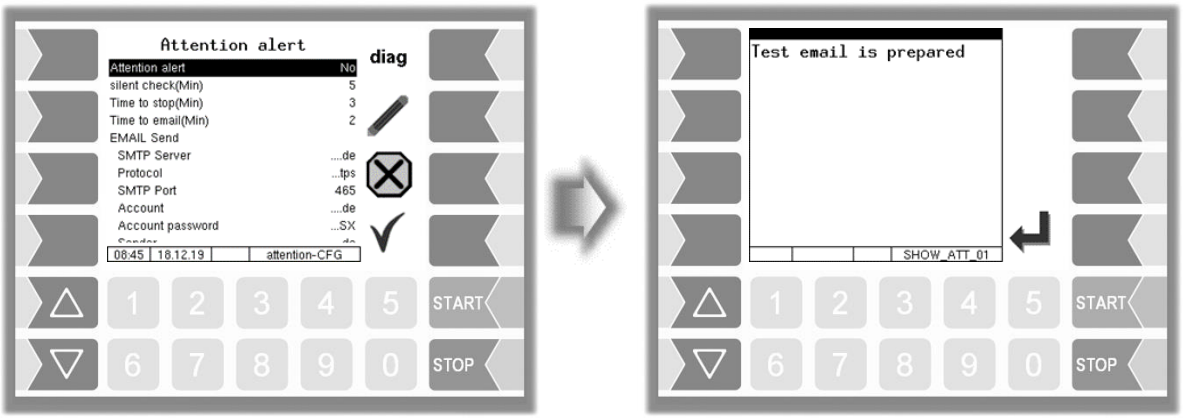
Monitoring	E-mail subject (Monitoring or ALARM)
Date=06.04.2022 14:22:32	Time when the email was generated on the vehicle
Truck number=123	Am Fahrzeug konfigurierte Fahrzeugnummer
Customer number=	If the vehicle has a customer database, the customer number is displayed here. Otherwise the customer number remains empty.
GPS=48.958986,12.974939	Vehicle number configured on the vehicle
http://maps.google.de/maps?q=48.958986,12.974939&t=h&z=12&om=0	Link to Google Maps with the GPS coordinates, so the location can be displayed on Google Maps with a web browser.

Diagnostics

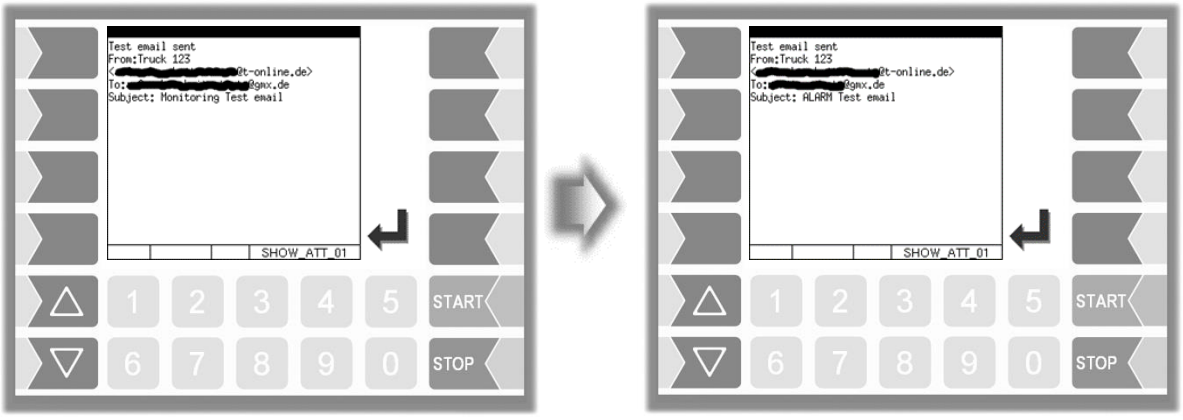
You can check the communication of the attention monitoring by email.

- Touch the diag softkey.
- Confirm sending the E-Mail in the following window.

A test e-mail is then sent to the configured address for monitoring (parameter "*Monitoring*") and after that to the configured address for the alarm function (parameter "*Alarm*").



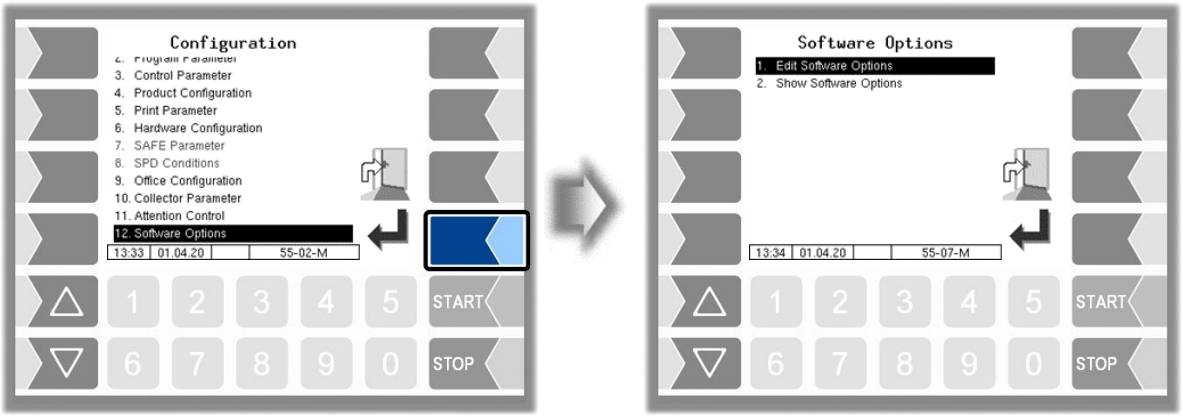
Only when the email has been sent will a confirmation for it appear on the display.
If this is not the case, please check the connection data and whether the hardware is ready for operation.



4.2.12 Software Options

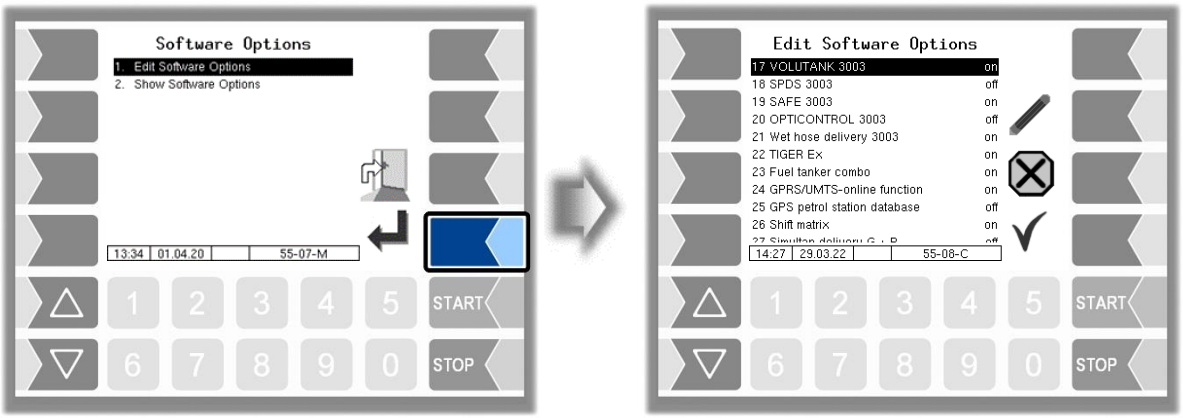
With the software options, the measuring system can be expanded with various functions. The purchase of appropriate licenses is required for the permanent use of these options. A vehicle-specific remote account is created for the software options. The options purchased are enabled, but must be activated with a license file. For this you need to send a license request to the BARTEC server (see *Sending a license request*, page 107).

When a vehicle receives a software update to version 2.5.X or higher, all options used up to that point, which have become license required with the new software version, are automatically licensed and can still be used.



4.2.12.1 Edit Software Options

All available software options can be activated and deactivated in this menu.



Options for which there is no license can be activated and tested for a period of 5 days during which the system is active.
The remaining term of this test license is displayed in the "Software Options" window (see section 4.2.12.2).

Edit Software Options			
	U	17 VOLUTANK 3003	Dipstick volume measurement
		18 SPDS 3003	Valve monitoring with recording, sealing *(can only be combined with options 17 and 32)*
		19 SAFE 3003	Quality assurance for loading and delivery *(can only be combined with option 17)*
		20 OPTICONTROL 3003	Optical SAFE in combination only with 17 and optional 19 for delivery
		21 Wet hose delivery 3003	Dipstick with wet hose delivery
		22 TIGER Ex	Measuring system TIGER Ex *only together with option 17*
		23 Fuel tanker Combo	Dipstick rigid & trailer with automatic control of trailer during pumped delivery from the trailer over the rigid
		24 GPRS/UMTS-online function	Office connection, reading out data from and data pre-set for TVE1 (must be activated for working with OBC!)
		25 GPS petrol station database	Automatic localization of the petrol stations via GPS and display of the associated customer data.
		26 Shift matrix	Company-specific requirement for the deliveries / by-passes
		27 Simultan delivery G+P	Simultaneous delivery via direct outflow and collector delivery
		28 Product selection delivery	Product selection for delivery (mandatory with additive pump) Option enabled: The delivery mapping is active. The product to be delivered can be changed before delivery via the delivery mapping. The load mapping is not active outside the loading. Option not enabled: The load mapping is active. The product cannot be changed before delivery without calling up the loading mapping again.
		29 TVE1 – TVE2 communication	TVE1 TVE2 shared printer, office connection TVE2
		30 SPD minitrailer	Single compartment trailer, only possible in connection with rigid with option 18. Options 17 and 19 must not be activated.
		31 SPDS 3003 Stand alone	Valve monitoring with recording (only without option *19 SAFE* or *17 VOLUTANK*)
		32 SAFE 3003 Stand alone	Quality assurance for loading and delivery (optionally with option *18 SPDS 3003*)
		33 OPTICONTROL Stand alone	Optical SAFE Standalone without VOLUTANK and possibly 18 SPDS
		34 TDA+	TDA+ BARTEC specific log data and office evaluation for monitoring the contents of the compartment.
		35 Special Option 1	Special option that may only be switched on by BARTEC Service
		36 Flowrate control gravity	The flow in direct gravity is monitored and delivery switched off if the flow collapses.
		37 SAFE 3003 light	product recognition without grade recognition only via product class

For rigid and trailer combination:
23, 24 and 29 only need to be configured and certified on the rigid.

Configuration of software options

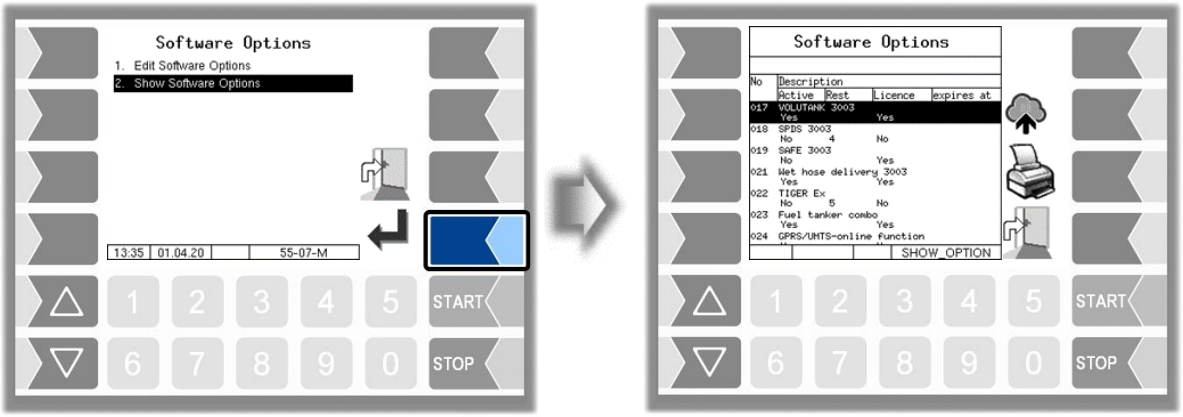
Most of the software options require additional parameter settings. Access to these parameters is only possible if the corresponding software option has been activated. As long as an option is not activated, these parameters are usually not available and are shown in gray.

In the manual, this symbol indicates that access to menus or individual parameters depends on software options that require a license.

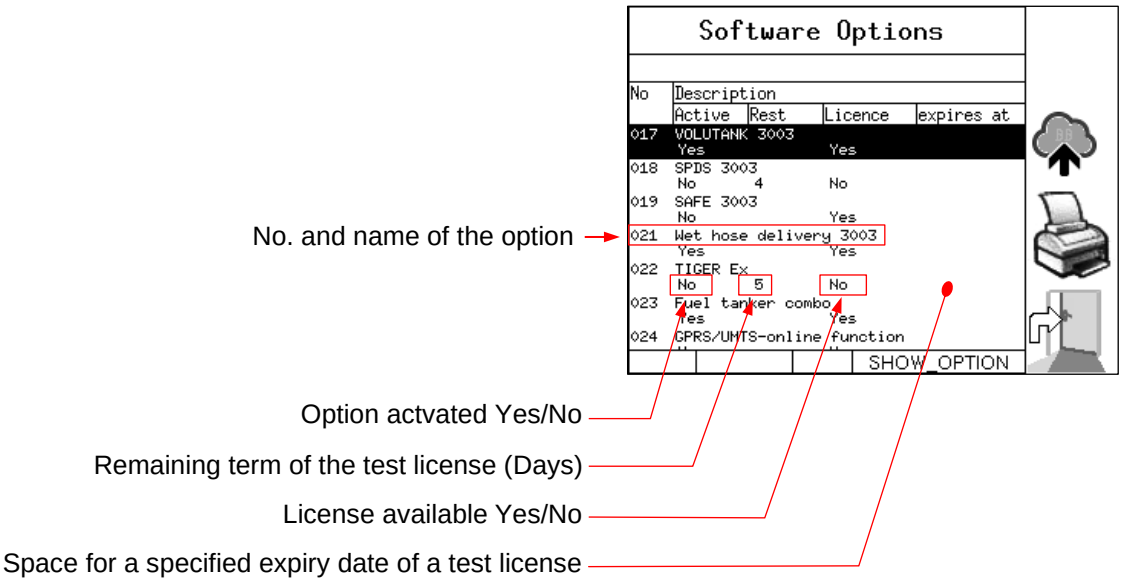
Software-Option	Required parameters	
17 VOLUTANK 3003	Hardware Configuration/Dipsticks (see section 4.2.6.3)	
18 SPDS 3003	Hardware Configuration/SPD-Interface (see section 4.2.6.10) SPD Conditions (see section 4.2.8)	
19 SAFE 3003	SAFE Parameter (see section 4.2.7)	
20 OPTICONTROL 3003	SAFE Parameter/Opticontrol (see section 4.2.7.3)	
21 Wet hose delivery 3003	Collector Parameter (see section 4.2.10) Deairing in Draining, Deairing/Hose ON/OFF, Wet hose without valve, Prod. group Wethose 1/2, Coll.Filling Lead Time, Coll.Filling Max. Time, WLS Delay Time, Draining without Pump 61, Flushing to Trailer	
22 TIGER Ex	Hardware Configuration/Measurement Interface (see section 4.2.6.15)	
23 Fuel tanker Combo	Additional Functions Menu within a tour / Transfer from Trailer Additional Functions Menu within a tour / Flush Wet hose to Trailer	(see Operating instructions)
24 GPRS/UMTS-online function	FTL (see section 4.2.9.3) FTP-LOG-File Prefix, FTP-LOG-File-Interval, Create FTP-LOG-File, Create FTP-RC-File, Communication to the front With Order Preset OBC-Diagnostics Delete Preset with Code	
25 GPS petrol station database	Hardware Configuration/GPS (see sectiont 4.2.6.11) GPS Receiver Search Radius Load Search Radius	
26 Shift matrix	Program Parameter / SAFE Oil Company Preset (see section 4.2.2), Program Parameter / Change Company with Code (see section 4.2.2)	
27 Simultan delivery G+P		
28 Product selection delivery	Hardware Configuration/Additivation (see section 4.2.6.17)	
29 TVE1 – TVE2 communication	FTL (see section 4.2.9.3) *Communication to the front* Baudrate TVE Interface TVE *Communication to the back* Baudrate TVE Interface TVE Time Synchronisation TVE Timeout FTL Delivery	
30 SPD minitrailer		
31 SPDS 3003 Stand alone	Hardware Configuration/SPD-Interface (see section 4.2.6.10) SPD Conditions (see section 4.2.8)	

32 SAFE 3003 Stand alone	SAFE Parameter (see section 4.2.7)
33 OPTICONTROL Stand a-lone	SAFE Parameter/Opticontrol (see section 4.2.7.3)
34 TDA+	
35 Special Option 1	
36 Flowrate control gravity	Hardware Configuration/Dipsticks/DIP Parameter (see section 4.2.6.3)
37 SAFE 3003 light	

4.2.12.2 Show Software Options



This menu displays a list of all software options and their current status.



The "Software Options" window is automatically displayed if an activated option is not yet licensed:

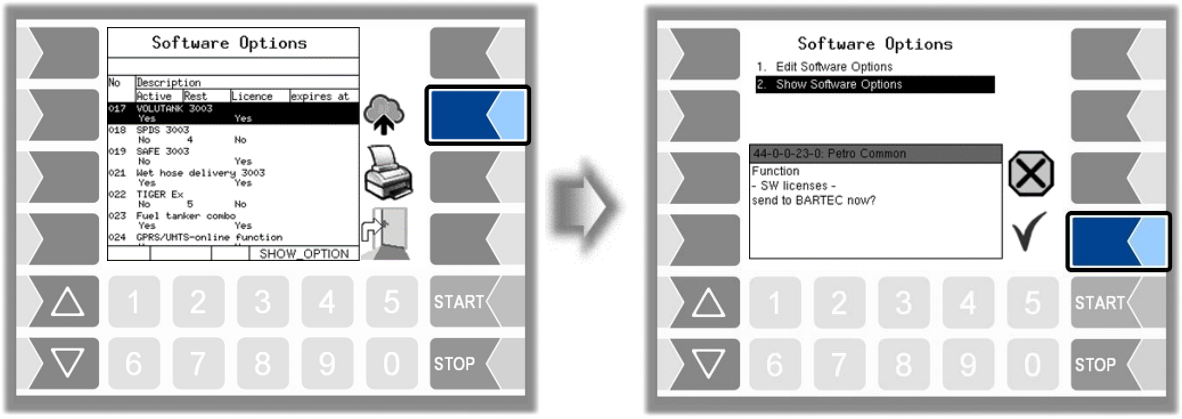
- Every time the system is started
- outside of a delivery

every 15 minutes, if the remaining term of an activated option has not yet expired,

every 5 minutes, if the remaining term of an activated option has expired.

Sending a license request

- First activate all desired software options before you send a license request to the BARTEC server.
- Make sure that a valid remote access is configured on the system (see page 95).
- Touch the softkey  .
  Confirm the following query.



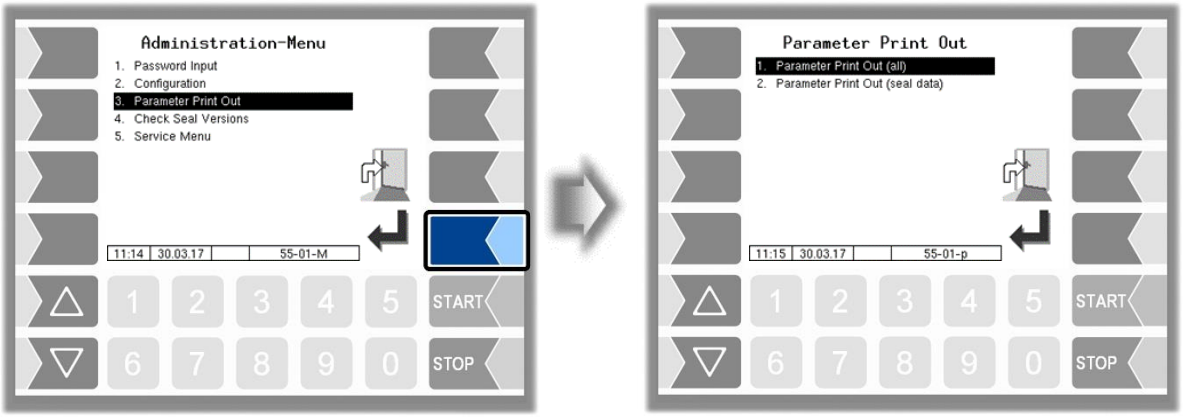
If there is a license file for the selected options for the vehicle on the server, this is automatically read in when the GPRS connection is established (depending on the setting of the parameter Check Inbox Period of the message box -see page 94).
After reading the license file, the selected software options can be used.

After a software update, first switch to the new software version and only then send the license request. Otherwise the license file will not be processed!

If you have any questions regarding the acquisition of licenses for software options, please contact the BARTEC BENKE sales department.
If you have technical problems that should arise in connection with software options, please contact the BARTEC BENKE service.

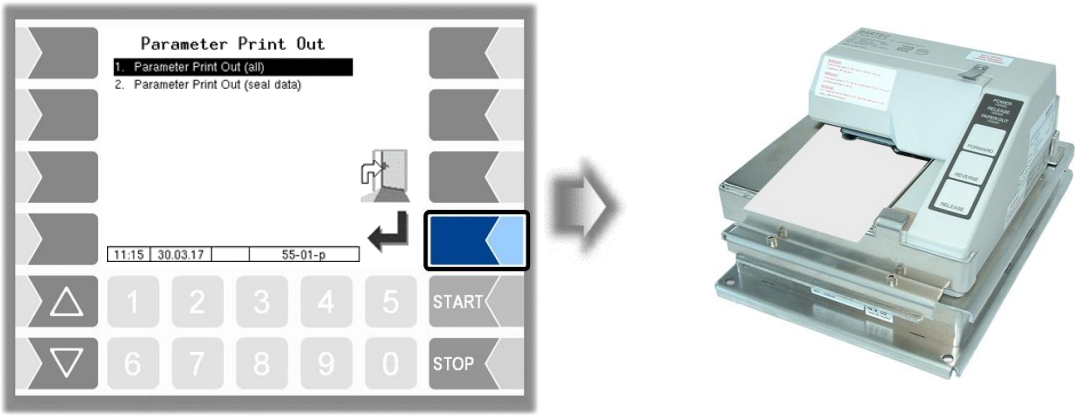
4.3 Parameter Print Out

- Select the “Parameter Print Out” menu from the administration menu.



- Select whether to print the parameters completely or only the calibration relevant data.

The current settings for the configuration parameters are output to the configured printer.



Meaning of the abbreviations for the product configuration on the parameter print

Metrological Products

P	Product number
U	Unit
Cal	Calibration factor
D	Density
BT	Basic temperature
CMo	Compensation mode
CFac	Compensation factor
C	Product compensated
Pg	Product group
Short	Shortcut

1 : Heating oil/diesel/ gasoline
2 : lubricating oils
3 : liquid gas
4 : linear
5 : GTL

P	Product number
SW-L	Floater depth (omitted from version 2.5.X)
Product	Product name

Measured Products

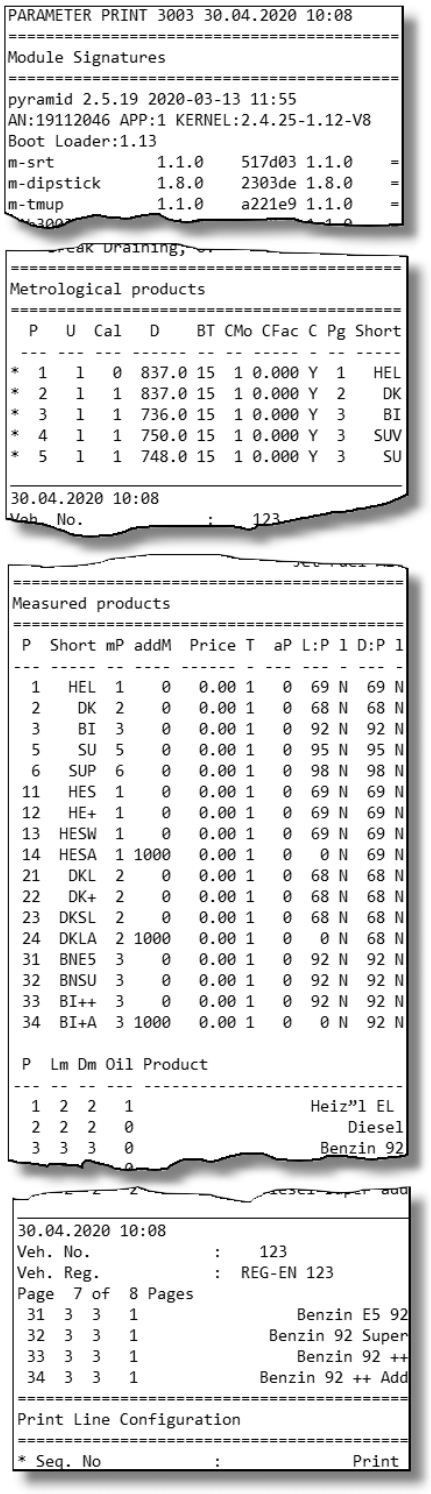
P	Product number
Short	Shortcut
mP	Allocation for metrological product
addM	Additive mixing ratio
Price	Price
T	Tax
aP	Additional product
L:P	Load PID
l	Load PID leaded
D:P	Delivery PID
l	Delivery PID leaded

P	Product number
Lm	Load magnet
Dm	Delivery magnet
Oil	Oil company
Product	Product name

General

Y	Yes
N	No

Example parameter



```
PARAMETER PRINT 3003 30.04.2020 10:08
==========================================
Module Signatures
==========================================
pyramid 2.5.19 2020-03-13 11:55
AN:19112046 APP:1 KERNEL:2.4.25-1.12-V8
Boot Loader:1.13
m-srt           1.1.0    517d03 1.1.0    =
m-dipstick      1.8.0    2303de 1.8.0    =
m-tmup          1.1.0    a221e9 1.1.0    =
```

```
==========================================
Metrological products
==========================================
  P   U  Cal   D    BT CMo CFac C Pg Short
 --- --- --- ------ -- -- ----- - -- -----
*  1   1   0  837.0 15  1 0.000 Y  1   HEL
*  2   1   1  837.0 15  1 0.000 Y  2    DK
*  3   1   1  736.0 15  1 0.000 Y  3    BI
*  4   1   1  750.0 15  1 0.000 Y  3   SUV
*  5   1   1  748.0 15  1 0.000 Y  3    SU
```

```
30.04.2020 10:08
Veh. No.            :    123
```

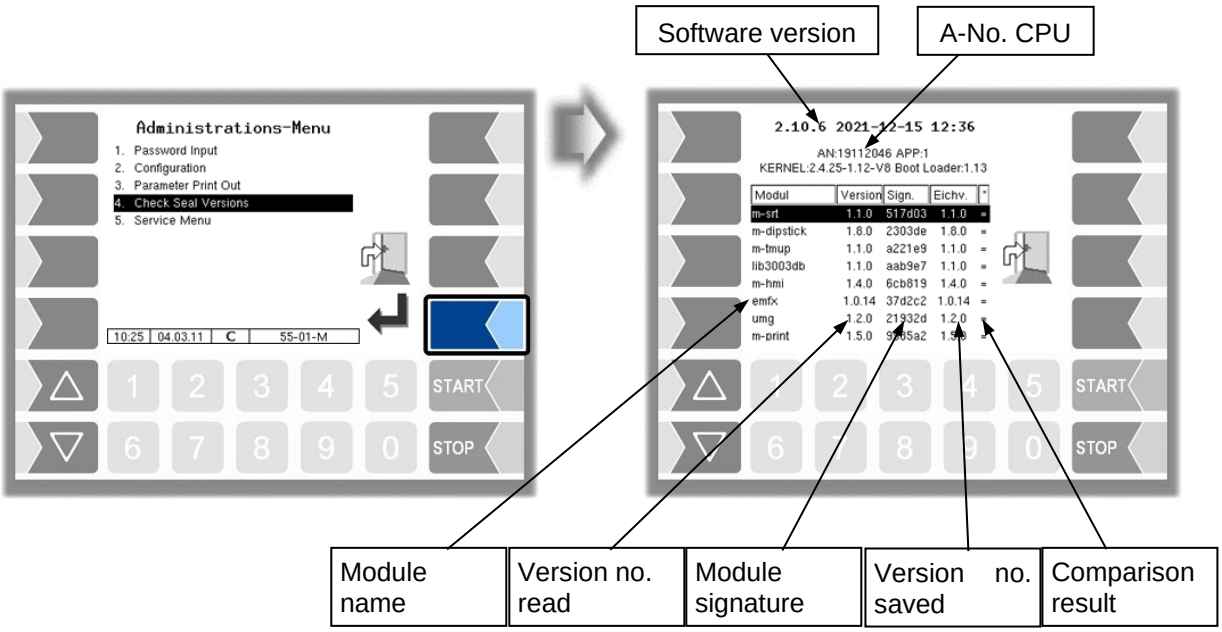
```
==========================================
Measured products
==========================================
 P  Short mP addM  Price T  aP L:P l D:P l
--- ----- -- ---- ------ - --- --- - --- -
  1   HEL  1    0   0.00 1   0  69 N  69 N
  2    DK  2    0   0.00 1   0  68 N  68 N
  3    BI  3    0   0.00 1   0  92 N  92 N
  5    SU  5    0   0.00 1   0  95 N  95 N
  6   SUP  6    0   0.00 1   0  98 N  98 N
 11   HES  1    0   0.00 1   0  69 N  69 N
 12   HE+  1    0   0.00 1   0  69 N  69 N
 13  HESW  1    0   0.00 1   0  69 N  69 N
 14  HESA  1 1000   0.00 1   0   0 N  69 N
 21   DKL  2    0   0.00 1   0  68 N  68 N
 22   DK+  2    0   0.00 1   0  68 N  68 N
 23  DKSL  2    0   0.00 1   0  68 N  68 N
 24  DKLA  2 1000   0.00 1   0   0 N  68 N
 31  BNE5  3    0   0.00 1   0  92 N  92 N
 32  BNSU  3    0   0.00 1   0  92 N  92 N
 33  BI++  3    0   0.00 1   0  92 N  92 N
 34  BI+A  3 1000   0.00 1   0   0 N  92 N

 P  Lm Dm Oil Product
--- -- -- --- ----------------------------
  1  2  2   1                    Heiz”l EL
  2  2  2   0                       Diesel
  3  3  3   0                    Benzin 92
```

```
30.04.2020 10:08
Veh. No.            :    123
Veh. Reg.           :  REG-EN 123
Page  7 of  8 Pages
 31  3  3   1                 Benzin E5 92
 32  3  3   1              Benzin 92 Super
 33  3  3   1                 Benzin 92 ++
 34  3  3   1           Benzin 92 ++ Add
==========================================
Print Line Configuration
==========================================
* Seq. No           :             Print
```

4.4 Check Seal Versions

This menu shows the data that is relevant for calibration:
- Software version
- Serial no. of the CPU, application type, kernel no.
- Version comparison of the software modules subject to calibration.

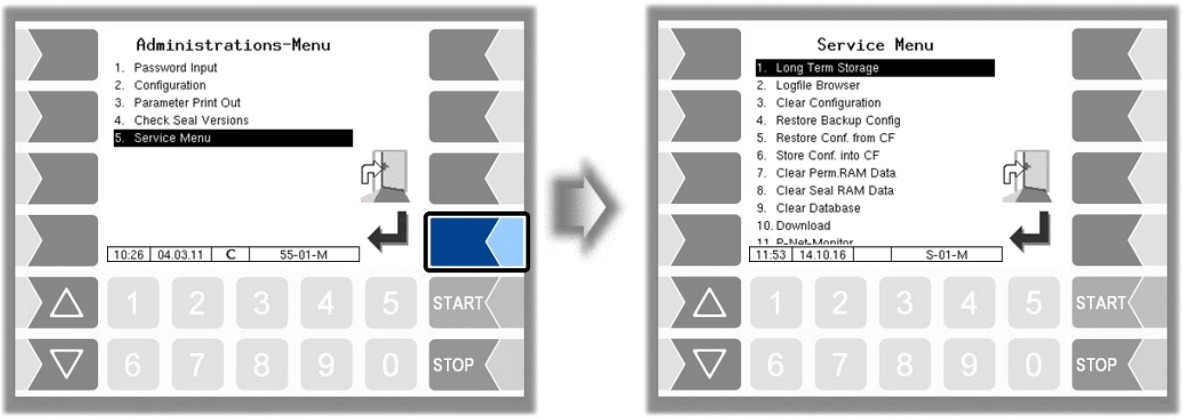


The current version of all modules must be identical to the calibration version.
Every time the system is started, all software modules are checked. If any incorrect versions are found, a message is displayed. If necessary, you are prompted to recalibrate. However, product delivery is still possible unless the changes are extensive. In this case, calibration is required first.

If you close the Seal Versions Check while the seal switch is open, will the saved version numbers be updated and the corresponding message is deleted.

If the version check is exited with the seal switch open, the saved version numbers are updated and the corresponding message is deleted.

4.5 Service Menu



The service password or an open calibration switch is sometimes required to access the functions in the service menu.

Without entering a password
- Long Term Storage,
- Logfile-Browser,
- Temperature Compensation,
- Parameter Print Out Service,
- Activate Online-Service,
- Bluetooth ON,

With entering a service password
- Clear Configuration
- Restore Backup Config,
- Restore Config from CF
- Store Configuration into CF
- Clear Permanent RAM date
- Download
- P-Net-Monitor
- Block P-Net
- Clean Up Filesystem
- Test Interface

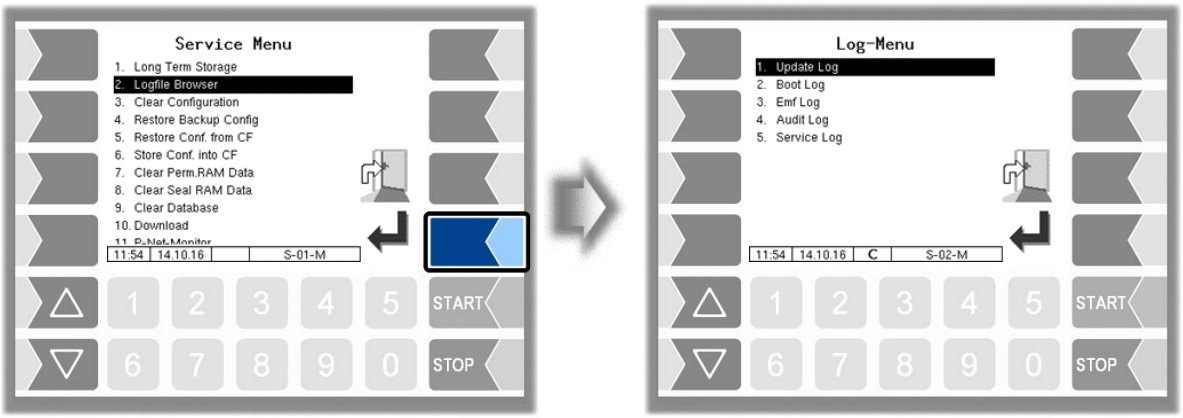
Only the calibration switch is open:
- Clear Seal RAM Data,
- Clear Database,

4.5.1 **Long Term Storage** (3 months storage)

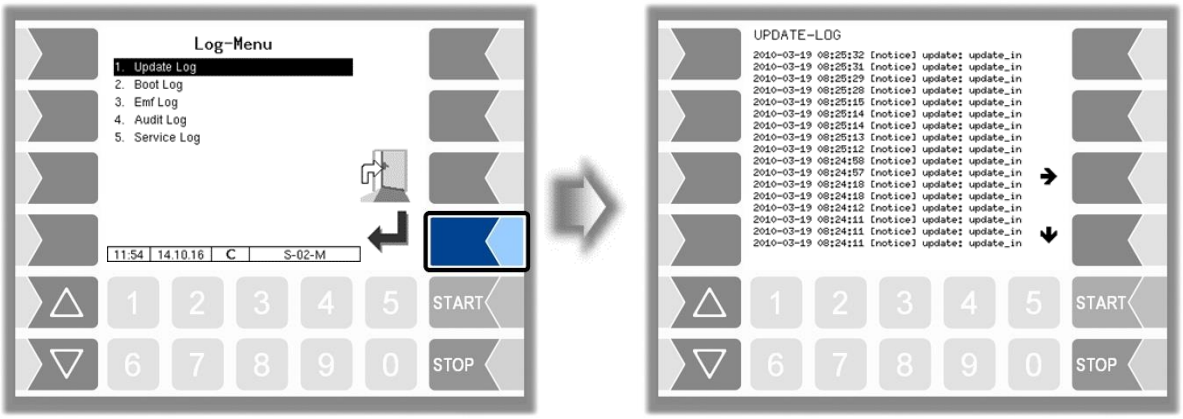
Long Term Storage stores the tour data for three months. Within this time, you can view or print duplicates of the documents.
You can open the *Long term storage* also in the *Additional functions menu*. How to use this feature is described there (see section 5.3).

4.5.2 Logfile Browser

The logfile browser allows you to view all saved log entries. The information about the processes is shown in text format and can be read directly on the display.

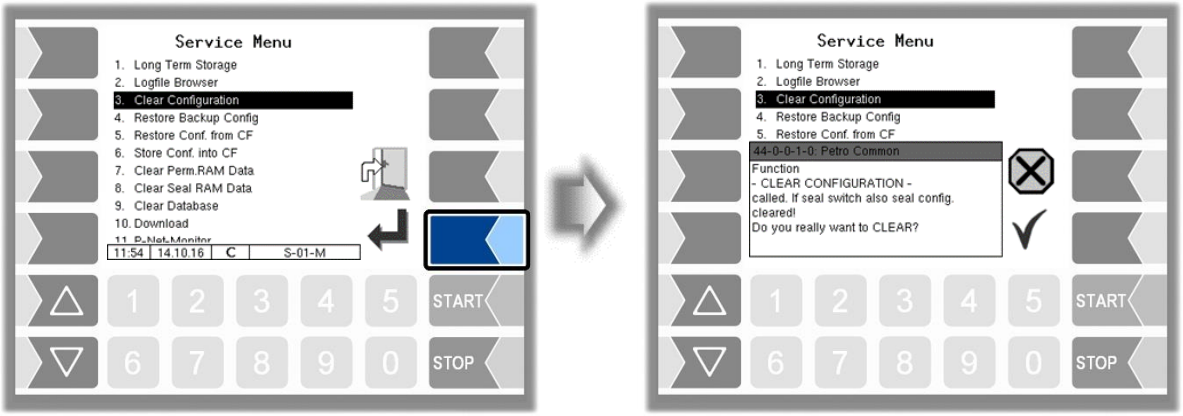


Update Log:	Log entries about updates and update attempts
Boot Log:	Boot messages, boot scripts
Emf Log:	Log output from the various applications
Audit Log:	Log entries about all parameter changes
Service Log:	Log entries for service and diagnostics



Within the log window, you can move the displayed content to the left, right, up or down using the arrow softkeys.
You close the log window with the STOP key.

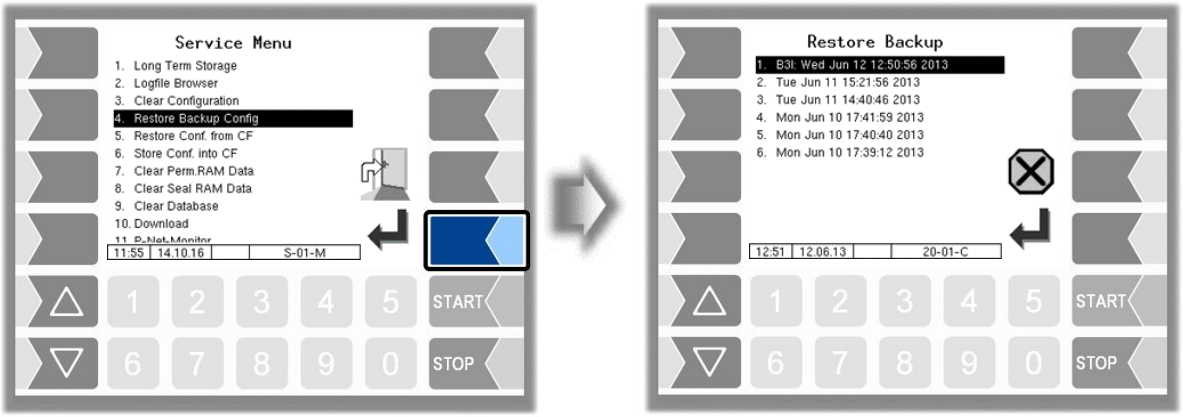
4.5.3 Clear Configuration



When you confirm the prompt, all parameter settings **not subject to statutory calibration** are cleared.

When the seal switch is opened will also the parameter settings subject to statutory be cleared!

4.5.4 Restore Backup Config

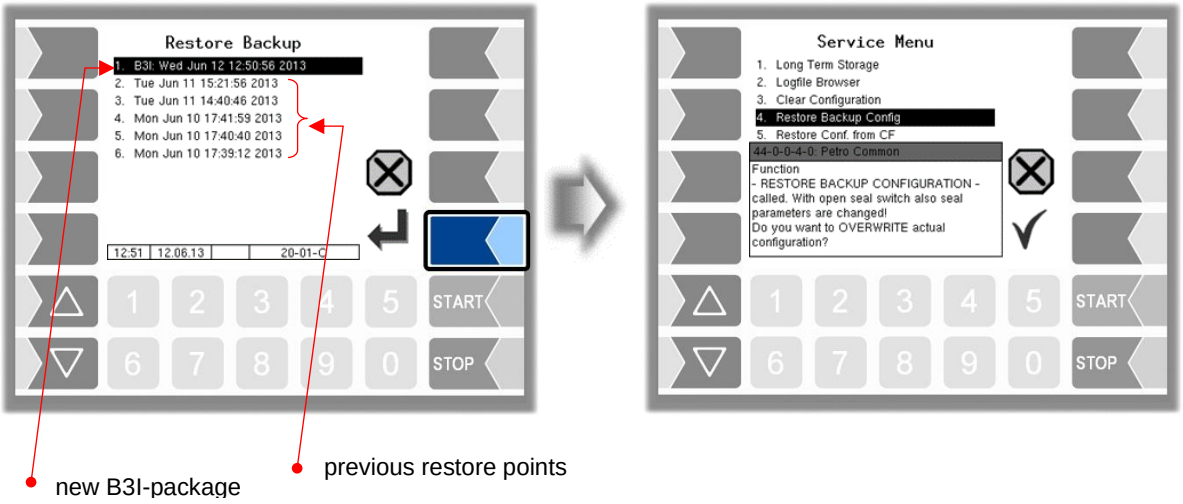


Restore points can be saved in the system, which can be accessed again in this menu.

The external PC software "3003 Servicetool" generates a compressed file format that is supplied as "B3I package".

When loading a B3i package or before importing data of an existing restore point new restore points are created.

Access to the configuration file can be done via GPRS online or via a network cable.



new B3I-package

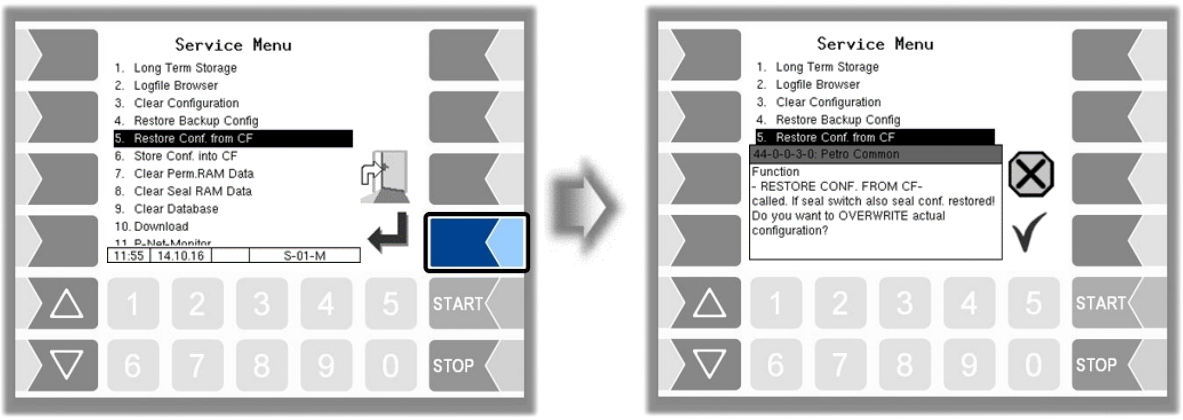
previous restore points

After confirming the B3I package, the configuration is adopted and a restore point is created with the current configuration.
The saved restore points can be used to switch back to a previous configuration.

When the seal switch is opened will also the parameter settings subject to statutory be overwritten!

There is a separate manual for the 3003-Servicetool.

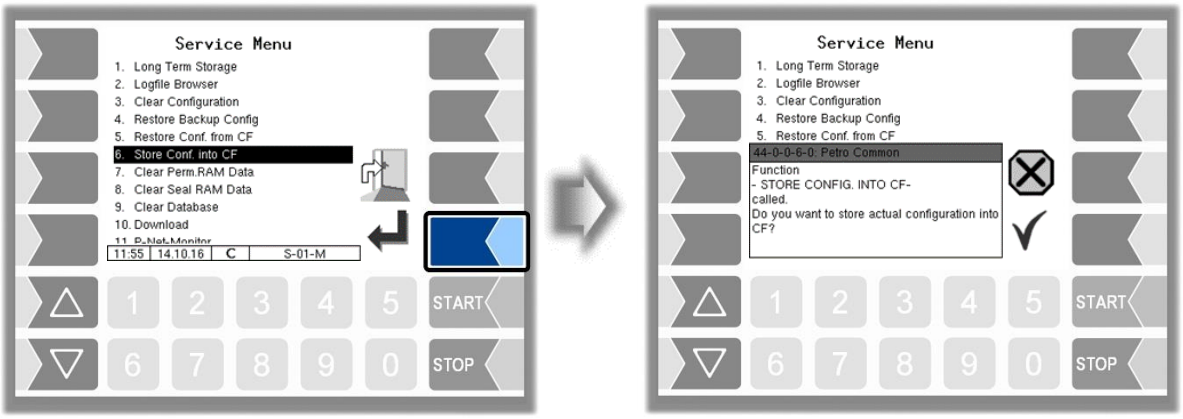
4.5.5 Restore Configuration from CF



When you confirm the prompt, the configuration of parameters saved at the CF-card (see section 4.5.6) is loaded. The existing parameter settings are overwritten.

When the seal switch is opened will also the parameter settings subject to statutory be overwritten!

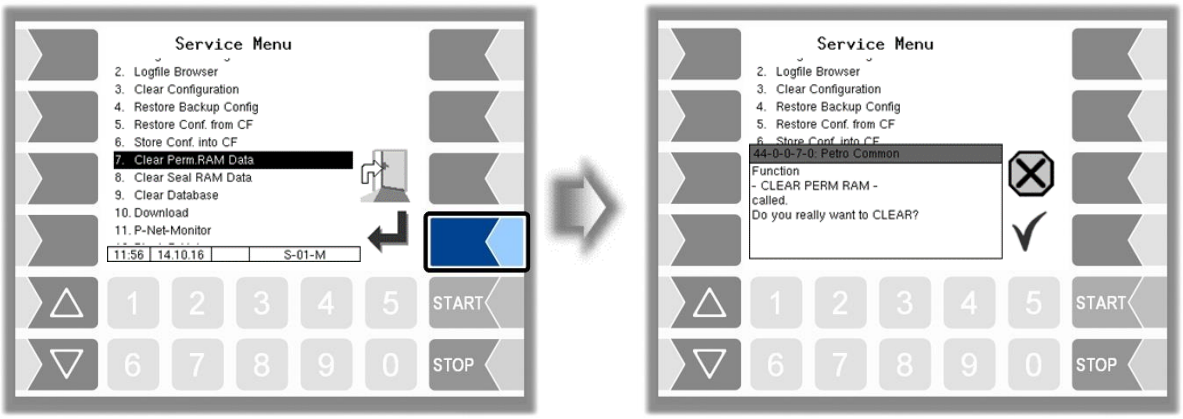
4.5.6 Store Configuration into CF



When you confirm the prompt, the existing configuration of parameters will be saved to the CF-card. The saved configuration can be reloaded later (see section 4.5.5).

Regardless of the calibration switch, all parameters (including those relevant to calibration) are saved on the CF card.

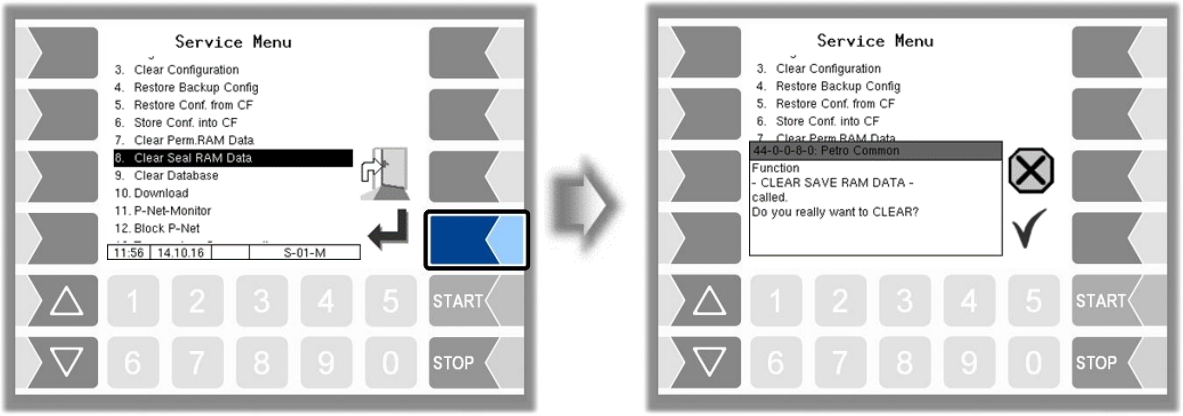
4.5.7 Clear Permanent RAM data



When you confirm the prompt, the contents of the RAM are cleared (data for the last delivery)!

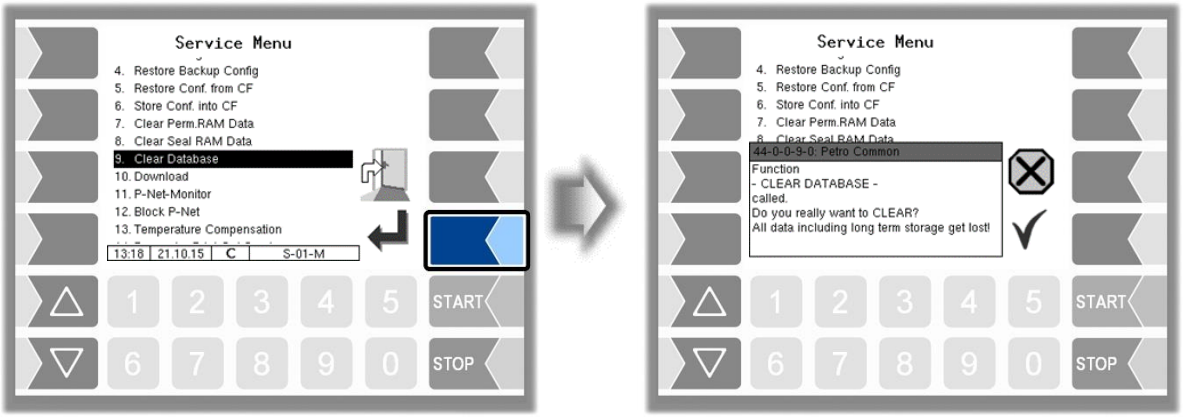
See also section 7.3.8.

4.5.8 Clear Seal RAM Data



When you confirm the prompt, the contents of the RAM sector that are subject to statutory calibration (e.g. totalizer counts) are cleared).
Only possible with open seal switch!

4.5.9 Clear Database

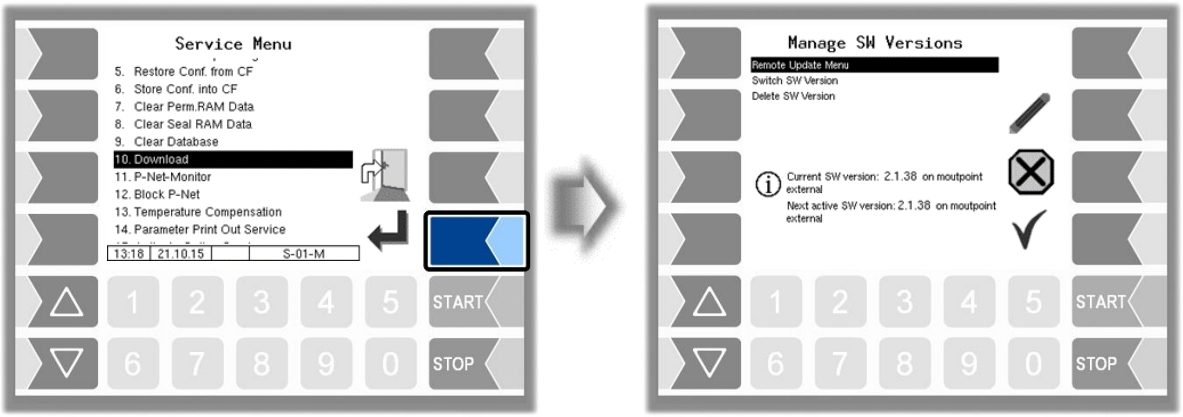


When you confirm the prompt, all data (order data, scheduled data) is cleared from the database.
Only possible with open seal switch!

4.5.10 Download

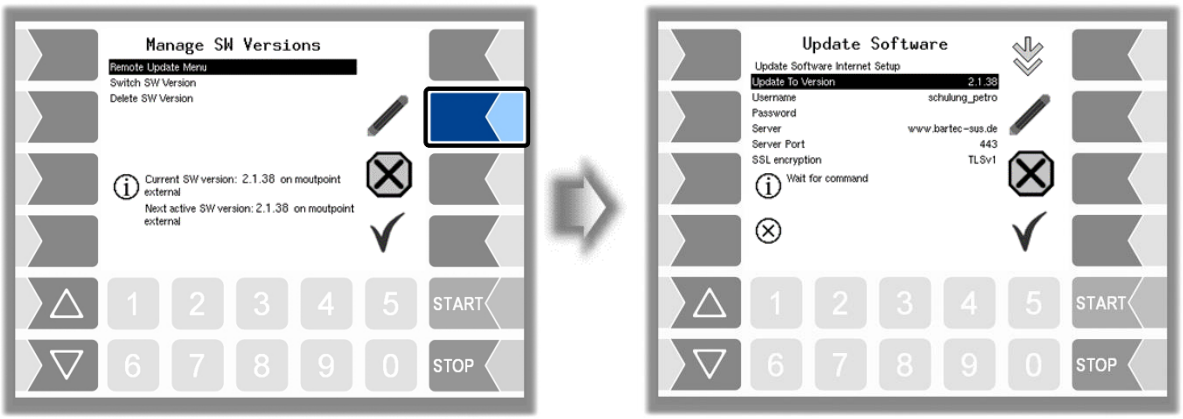
For software updates, this menu is available.

If the update modifies software modules that are subject to statutory calibration, a message will appear in the event display every time the system is rebooted, as long as the version numbers of these modules have not been updated. To update the version numbers of the software modules, you must exit the menu (see section 4.4) with the calibration switch open.



4.5.10.1 Remote Update Menu

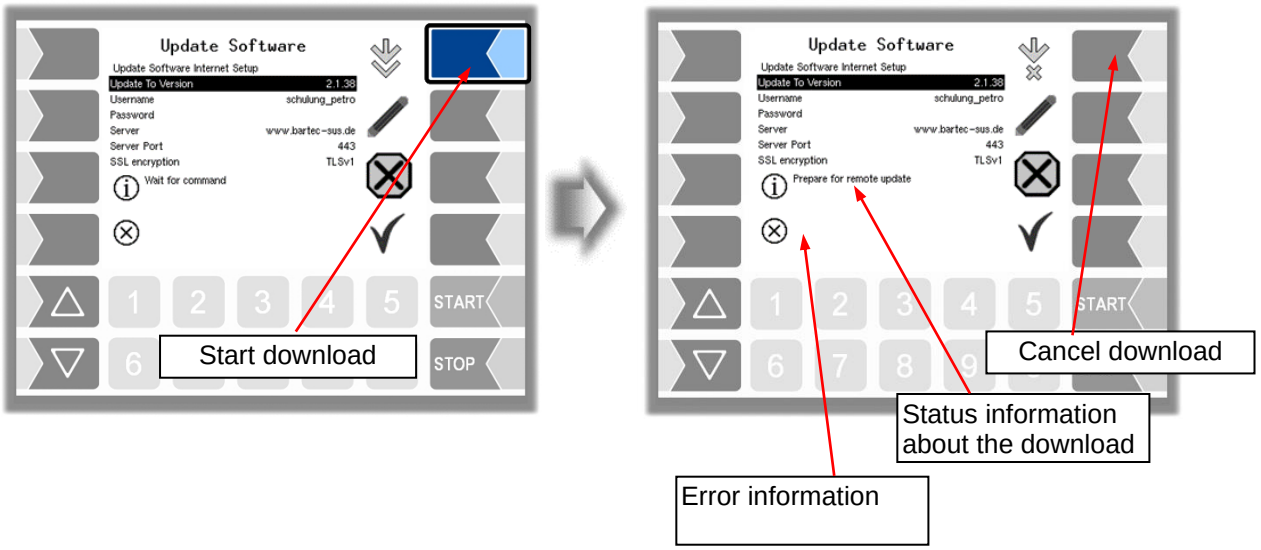
This menu option allows you to download a new program version of the controller software from the BARTEC server via a GPRS connection.



Update to Version: Here you can enter the number of the software version to be downloaded.

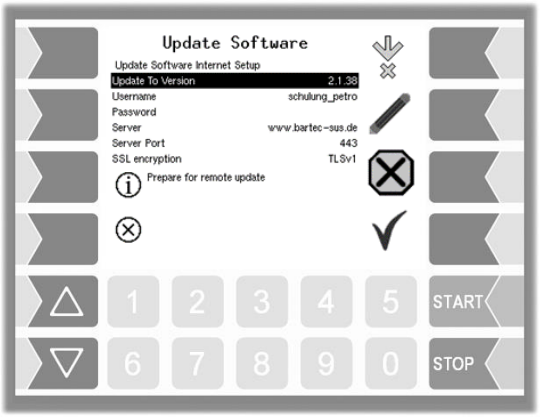
Username and Password for the download are assigned by BARTEC and must be entered manually.

SSL encryption: If the selection *SSLv3 / TLSv1* is available select *TLSv1*. If you have any questions, please contact the BARTEC BENKE service.

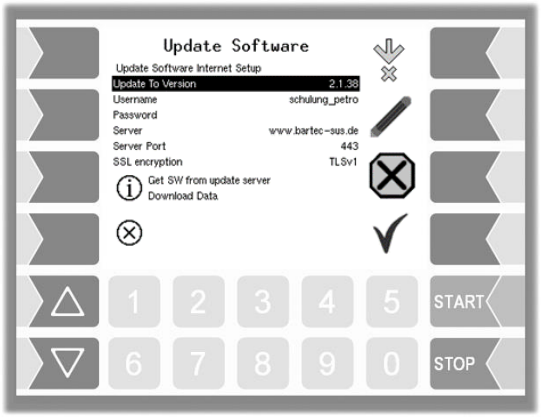


If the download is interrupted, for instance because the connection to the server is interrupted, it is automatically restarted after 5 minutes and resumed at the point at which it was interrupted.

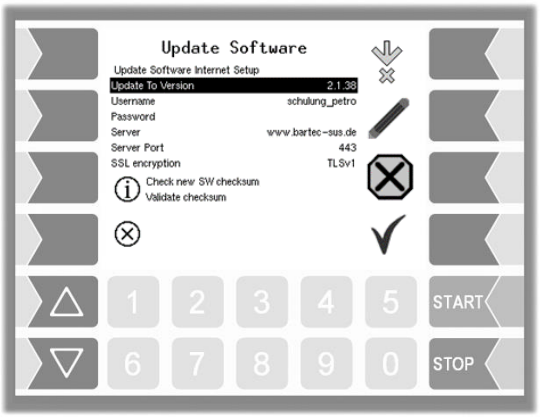
If the download is interrupted manually, the data that was already downloaded is deleted. The download must be restarted if necessary.



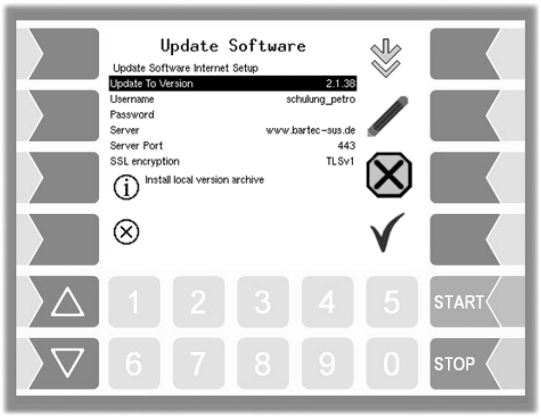
Connection to Server is established



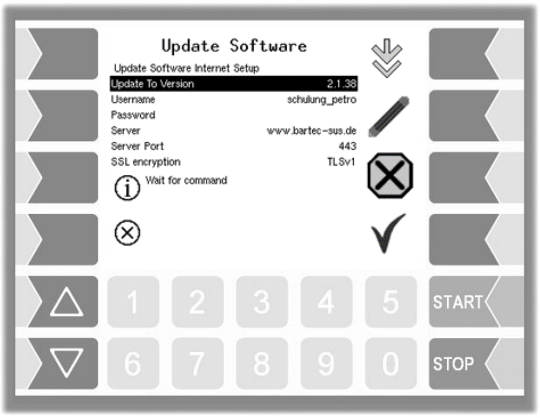
Data is downloaded



Compressed data downloaded successfully. Checksums Server-Client compared.



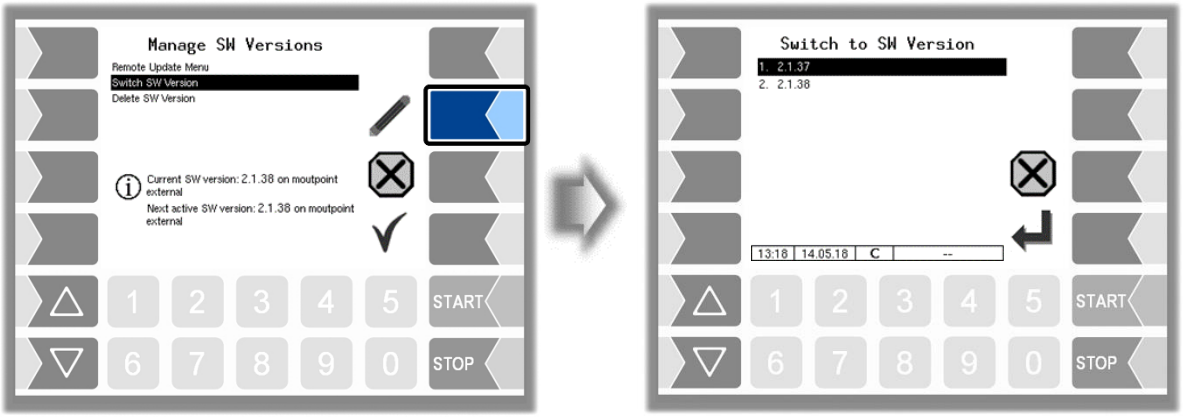
Unzipping and installing files



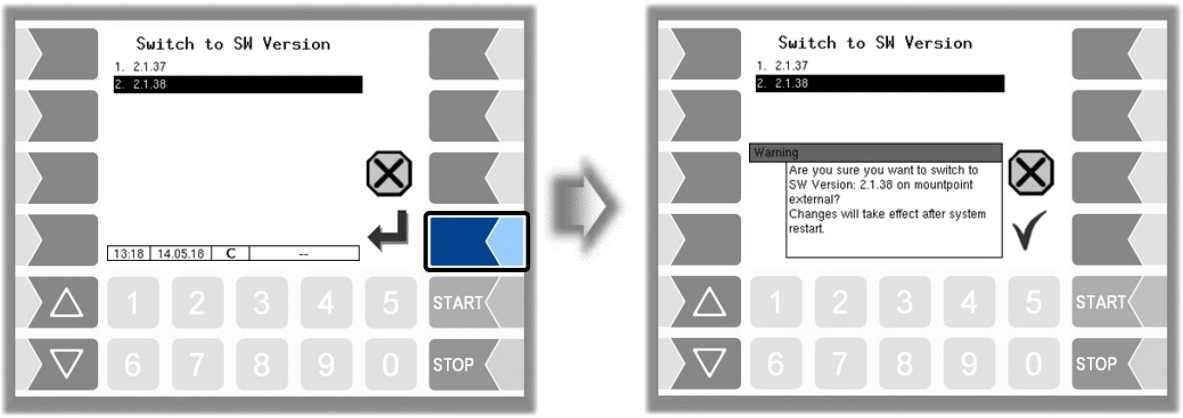
Files unzipped successfully and download completed.

4.5.10.2 Switch Software Version

After downloading a new software version, you can switch to the new version.



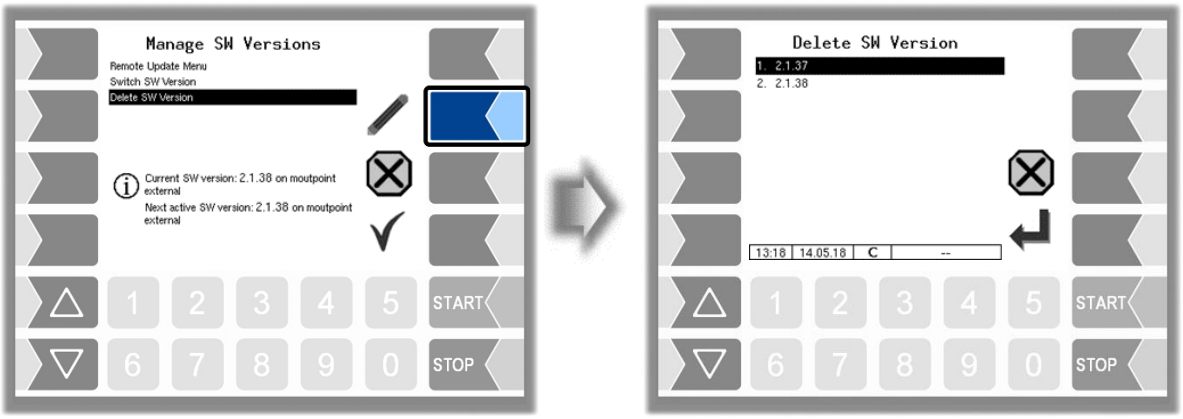
- Select the software version and touch the “confirm” softkey“.



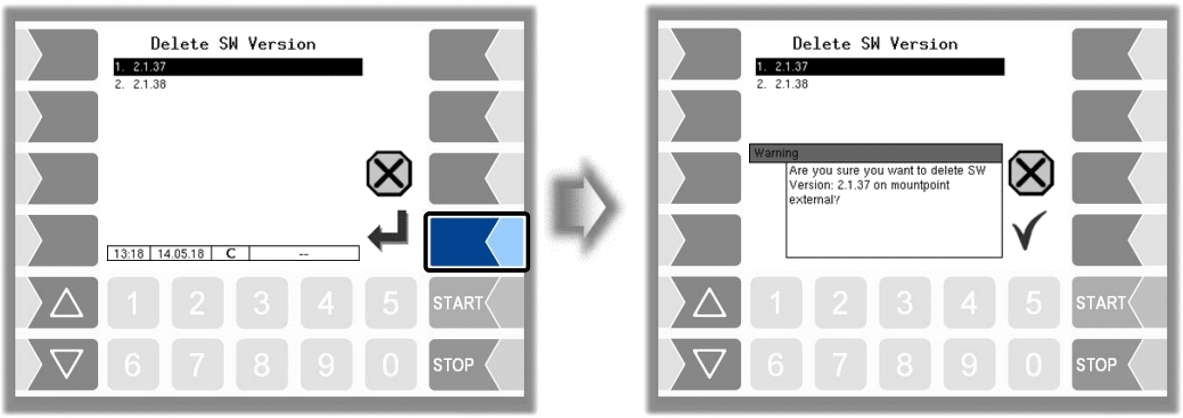
- Confirm the security query.
- When leaving the service menu, the system is automatically rebooted.

The new software version is available only after restarting the system.

4.5.10.3 Delete Software Version



If several software versions are stored, you can delete the versions which are no longer needed.

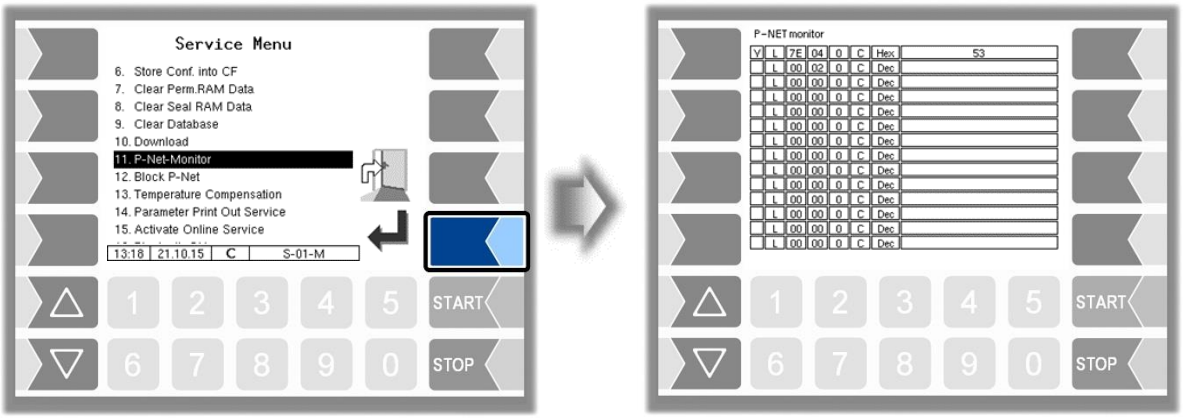


After confirming the safety query, the selected version is deleted.

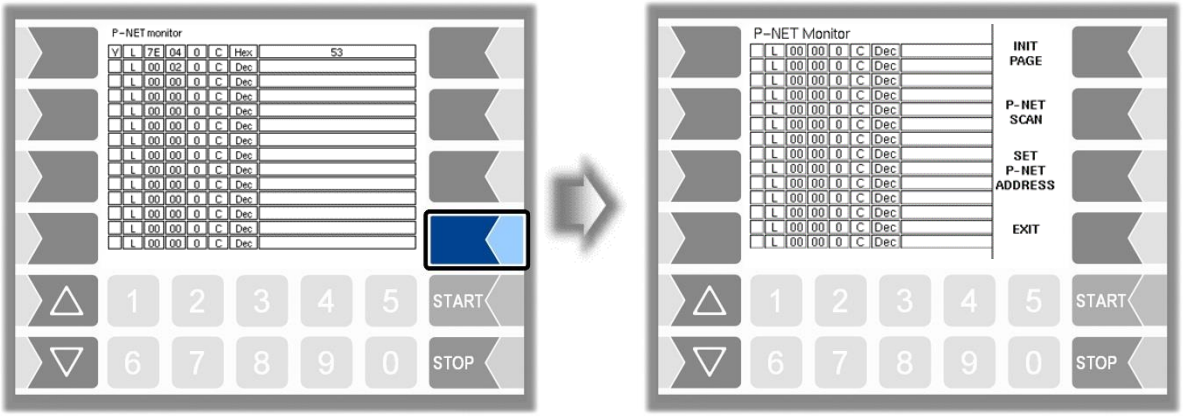
The currently active software version cannot be deleted!

4.5.11 P-Net-Monitor

The P-Net-Monitor is a service function for diagnostic of P-Net devices.
For more details contact BARTEC BENKE service please.



To display the functions of the P-Net monitor, touch one of the four softkeys on the right-hand side.



INIT PAGE:
Restore the default settings of the P-Net monitor.

P-NET SCAN:
You can perform a P-Net scan for diagnostic purposes. The address (hexadecimal), P-Net ID number, version, serial number and manufacturer's code are displayed in separate lines for all connected P-Net devices.

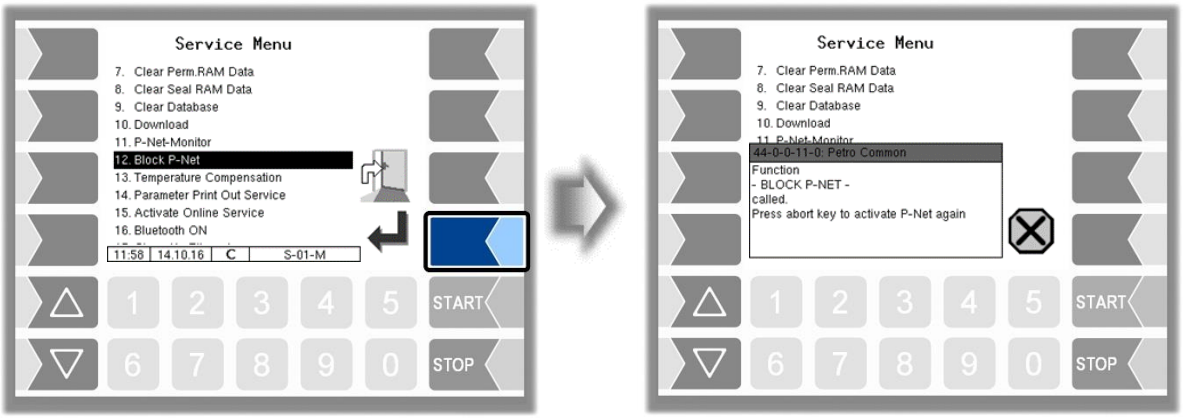
SET P-NET ADDRESS:
After entering the serial number (A no.) of a hardware component, you can assign a new P-NET slave address for this device.
The serial number must be complete, in other words it must be entered together with the appropriate suffix (e.g. UE).

EXIT:
Exit the P-Net Monitor.

4.5.12 Block P-Net

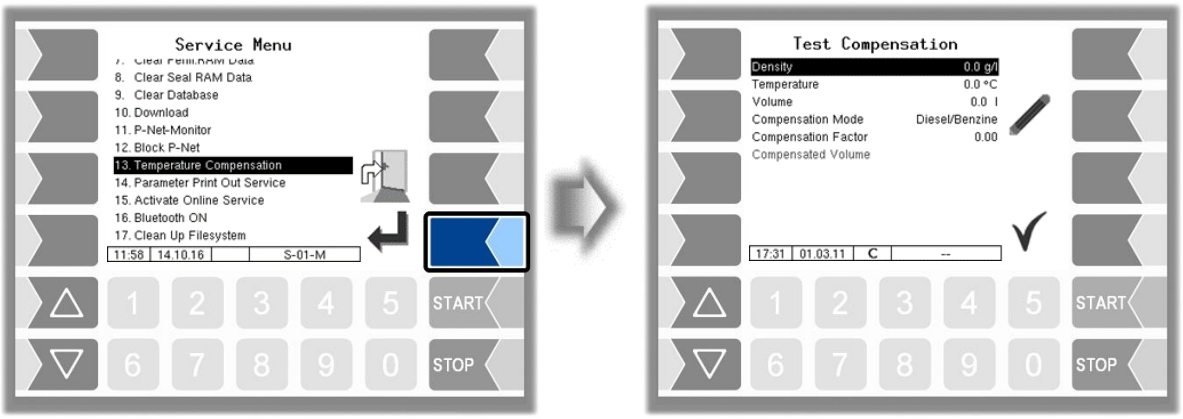
When gauging with a gauging device of the 3002-series, the communication between the gauging device and the PETRO 3003 system is via P-Net.
In this case you must deactivate the P-Net interface to the other P-Net users the gauging procedure.
After the P-Net interface to the P-Net users has been activated again, the system must be restarted.

The P-Net must be blocked before connecting the gauging device!

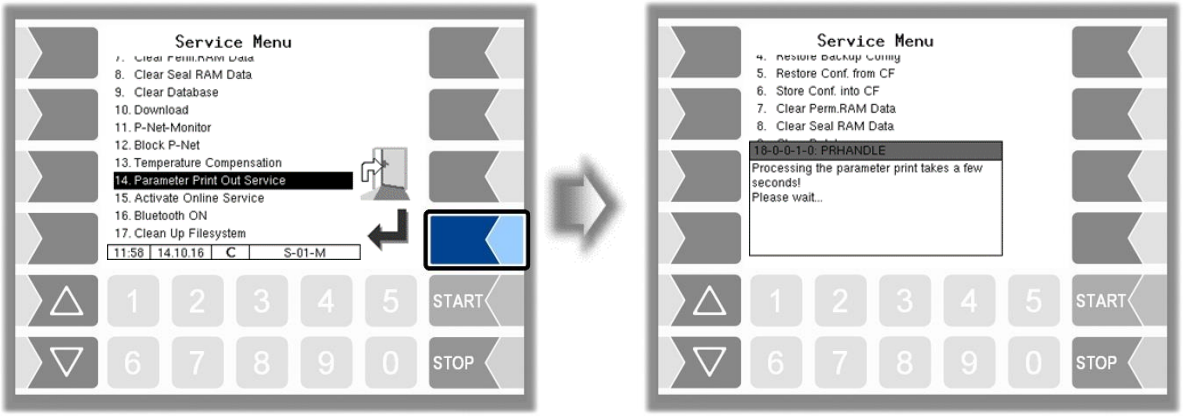


4.5.13 Temperature Compensation

This menu is required solely for testing the temperature compensation for the precheck by the Office of Weights and Measure.

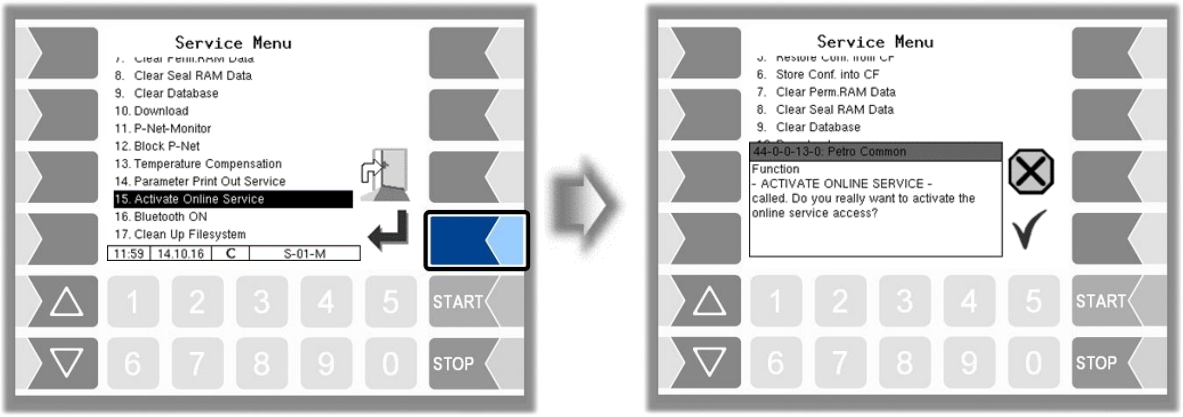


4.5.14 Parameter Print Out Service



If a parameter print out for service purpose is required, you can use this function to print a parameter print out in German language regardless of the current system language.

4.5.15 Activate Online-Service



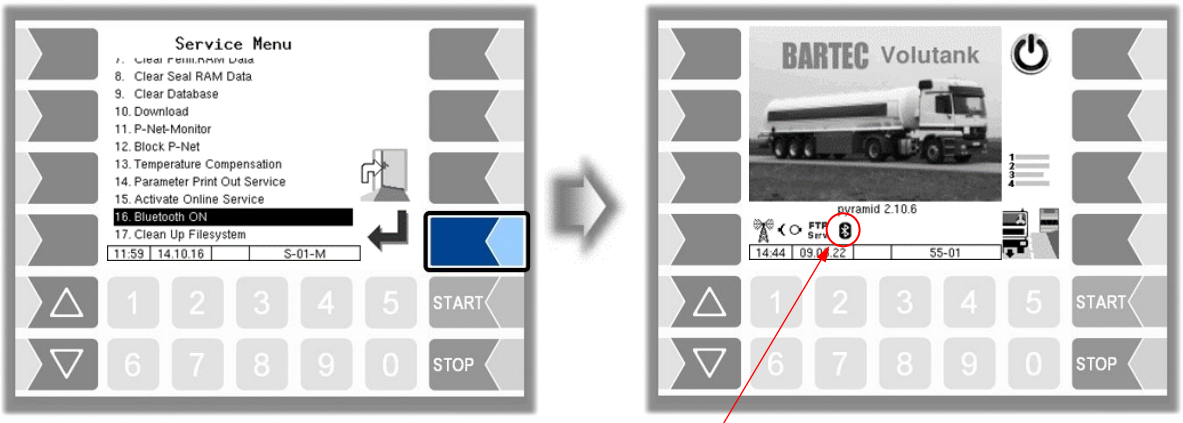
After activating the online service, you allow the BARTEC BENKE-Service access to service information of the vehicle. This allows downloading journals, log files etc. Access is via an FTP server. The connection is activated for 3 minutes, in which the access to the data needs to be started. The connection is automatically terminated when there is no access for 3 minutes.
The online service can also be activated in the diagnostics menu (see section 7.3.10).
The active connection to the FTP server is displayed in the main screen.

The online service can be activated only if the access is configured (see section 4.2.9.1 /

Online Service Funktion).

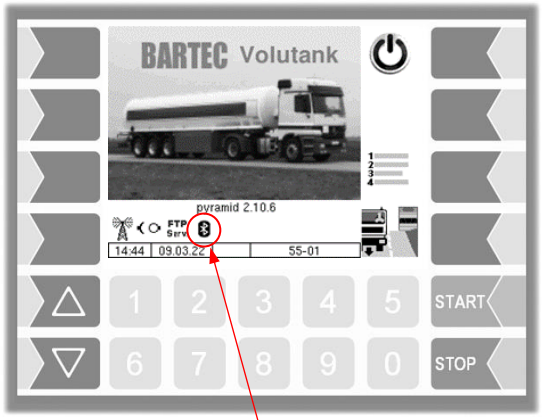
4.5.16 Activate Bluetooth

When a Bluetooth receiver is configured (see section 4.2.6.14), you can activate the Bluetooth interface here.



If the Bluetooth interface is enabled, it is displayed by a symbol.

With the BARTEC service tool can be established a connection and accessed to the software.

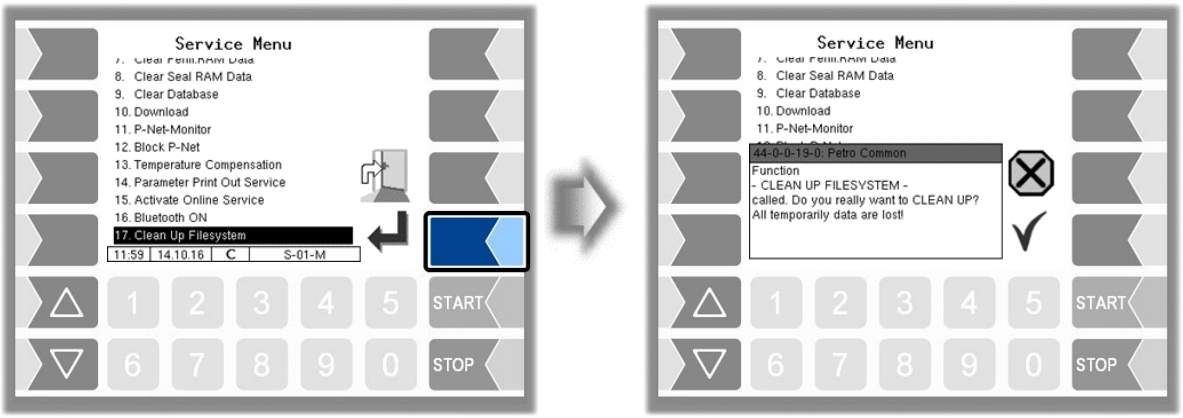


When a connection is established, this symbol is displayed.

4.5.17 Clean Up Filesystem

When 80% of the internal memory capacity is exhausted, a message is displayed.

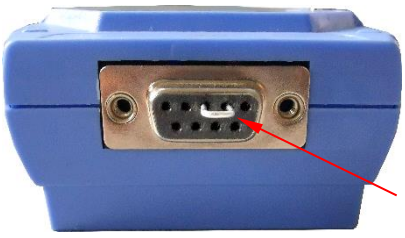
With the menu option “Clean Up Filesystem”, you can manually delete data that is not required (transfer data, temporary data) at any time to prevent memory overflow.



Already generated response data that are not yet transmitted, may be deleted!

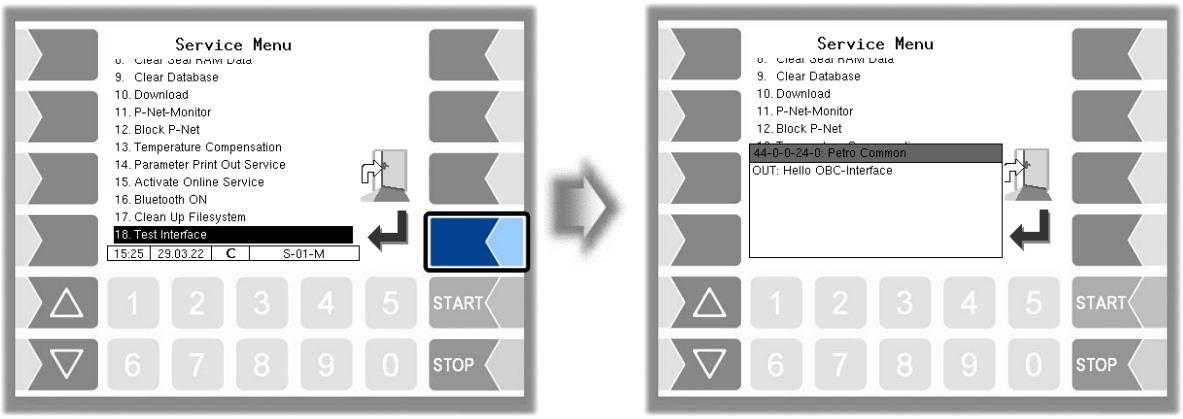
4.5.18 Test Interface

The communication between the rigid and trailer via the OBC interface (Communication to the Front, see section 4.2.7.5) can be checked with this function. To do this, the two data lines TxD and RxD of the connection cable must be bridged so that the data sent by the system can be sent back.

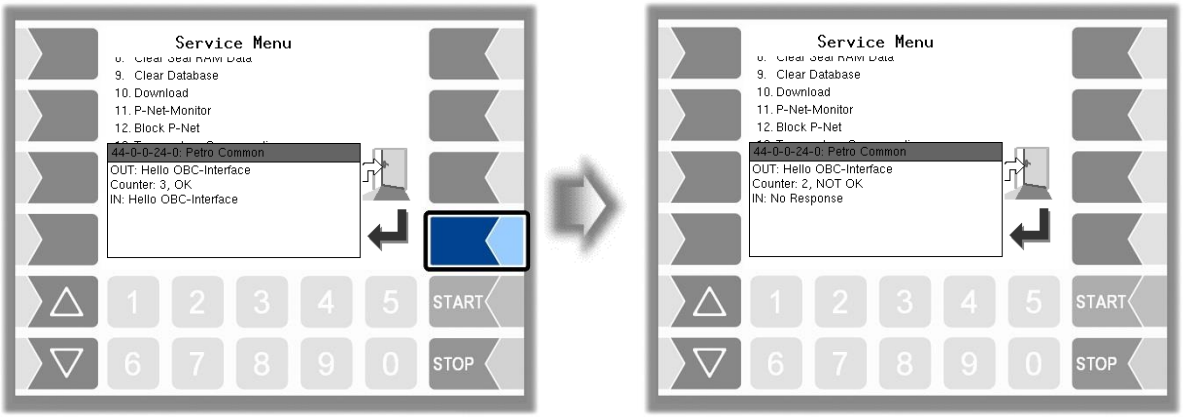


Bridging between TxD and RxD

The result of the test is displayed on the screen.
The test can also be performed in the menu *Office Configuration/FTL* after entering the service password (see section 4.2.9.3).



Data is being sent

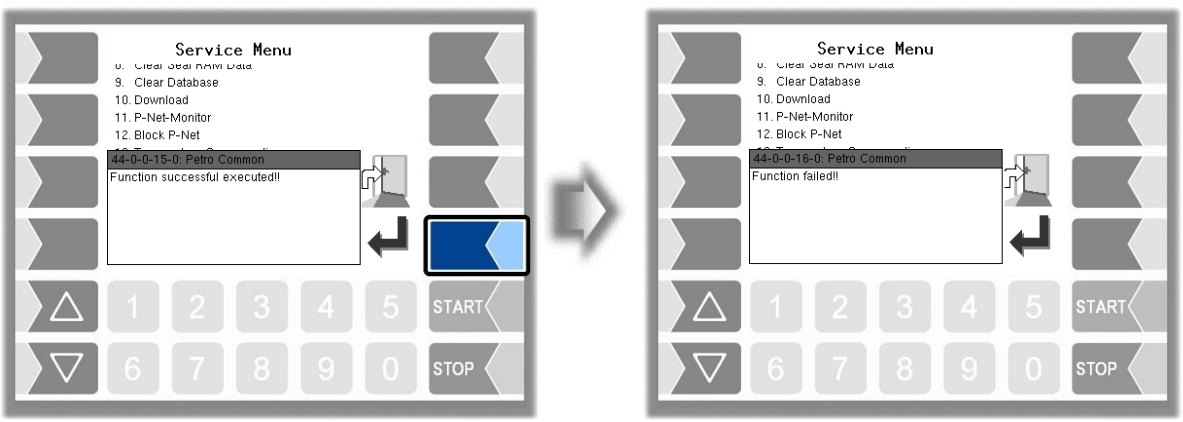


Response via OBC interface

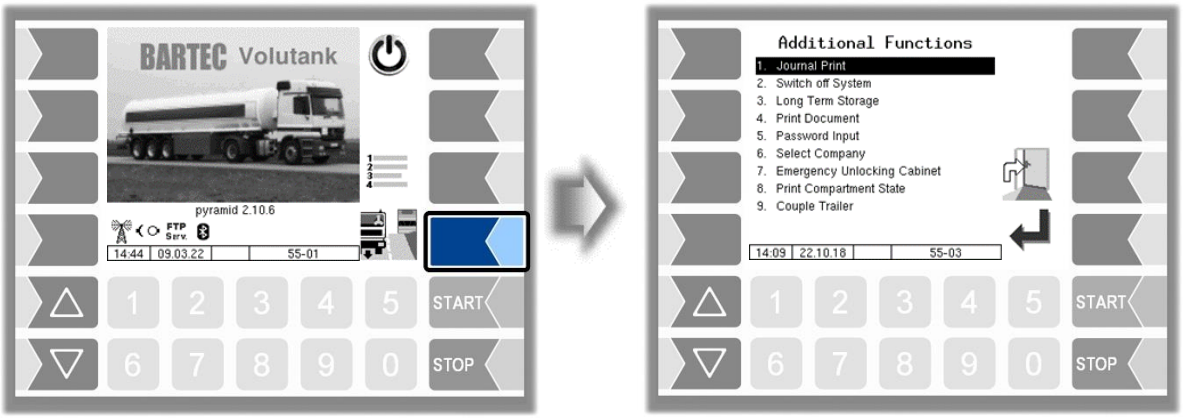
No response via OBC interface

After exiting the test window, it is displayed whether the test could be carried out.

If the message "Function failed!" appears, the interface is not ready for operation and the system must be restarted.
Only when the response "Function successfully executed" is displayed, the interface can be used again after leaving.



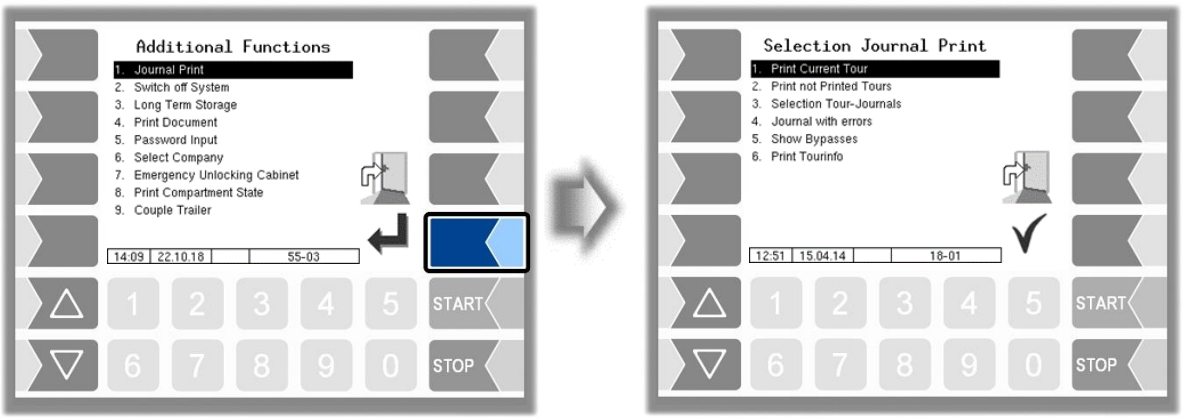
5 Additional Functions Menu (outside a tour)



Within a tour, the Additional Functions menu contains additional menu items, depending on the configuration.
These menus are described in the operating instructions.

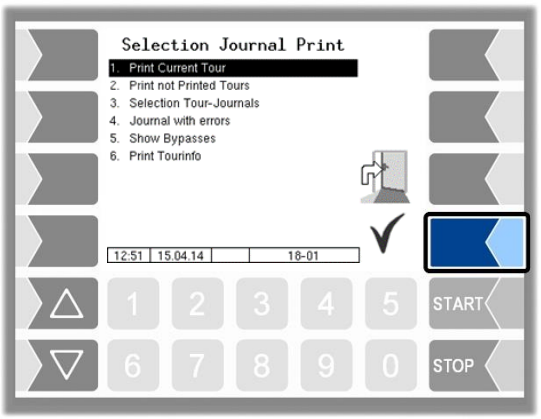
5.1 Journal Print

The journal print function allows you to print out the stored tour data.



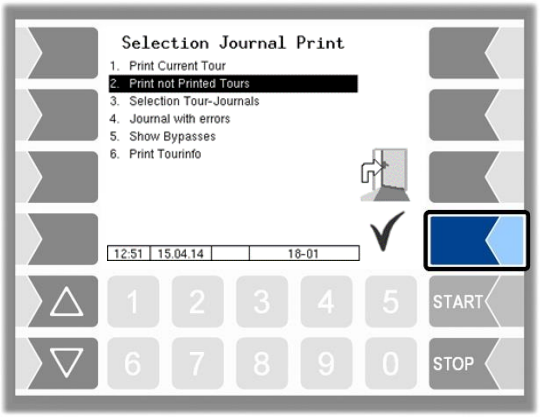
Further selections are possible in the journal print submenu.

5.1.1 Print Current Tour



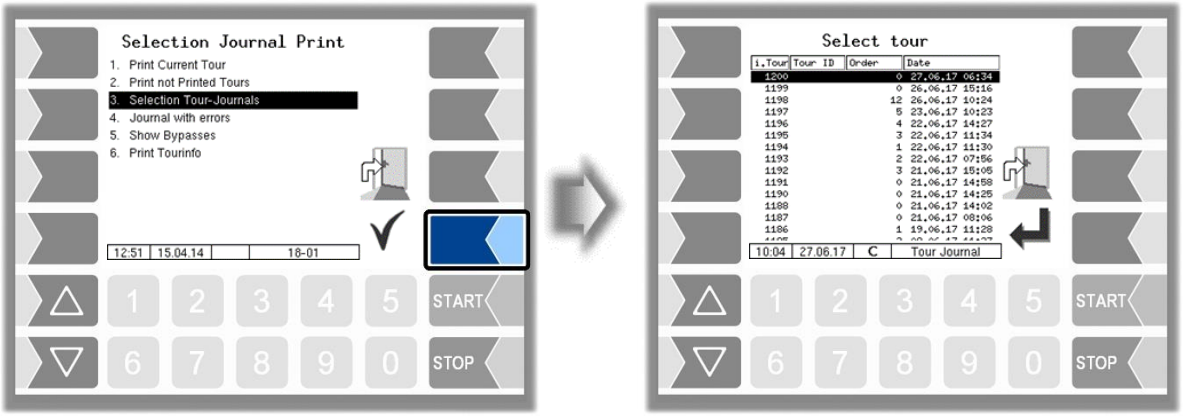
The data for the current (last) tour is printed.

5.1.2 Print not printed Tours

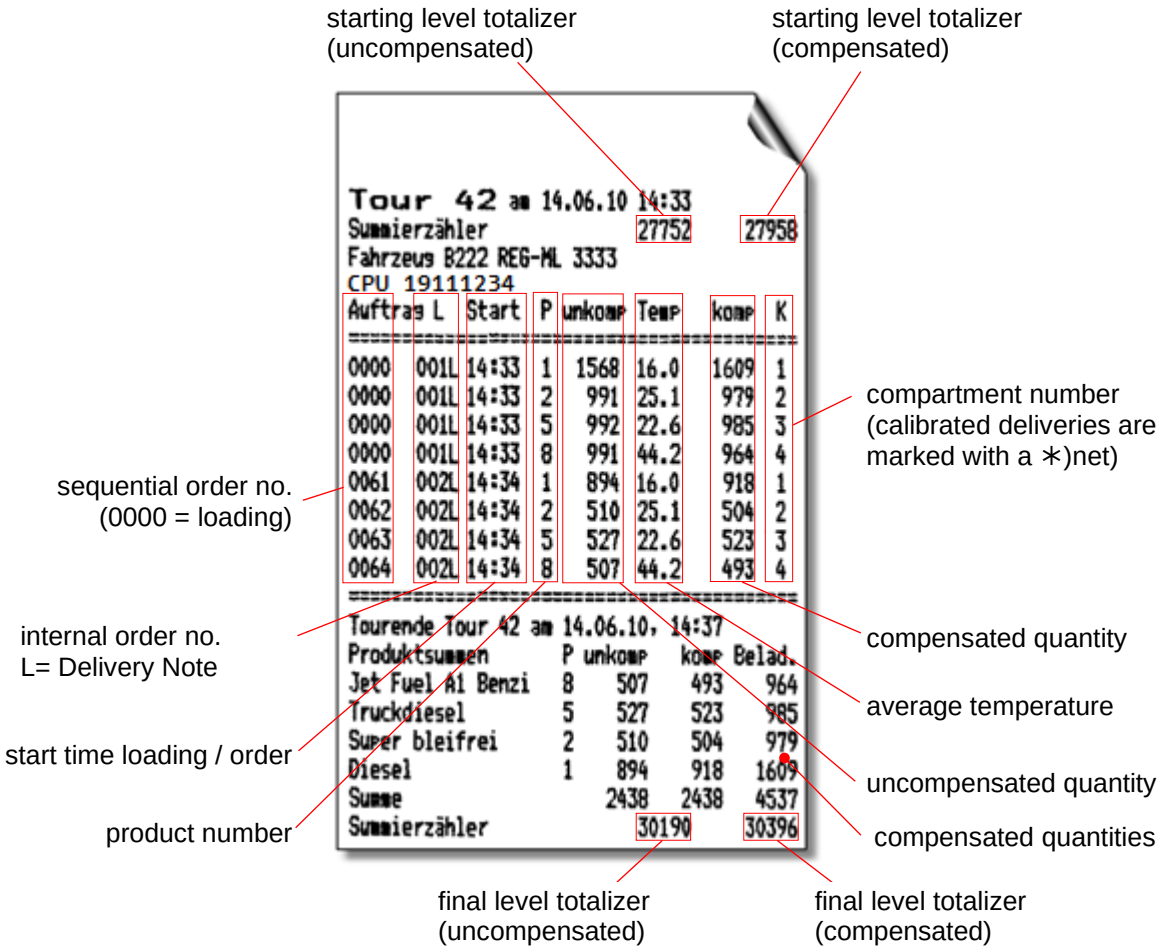


The data for all stored tours that have not yet been printed is printed.

5.1.3 Selection Tour-Journals



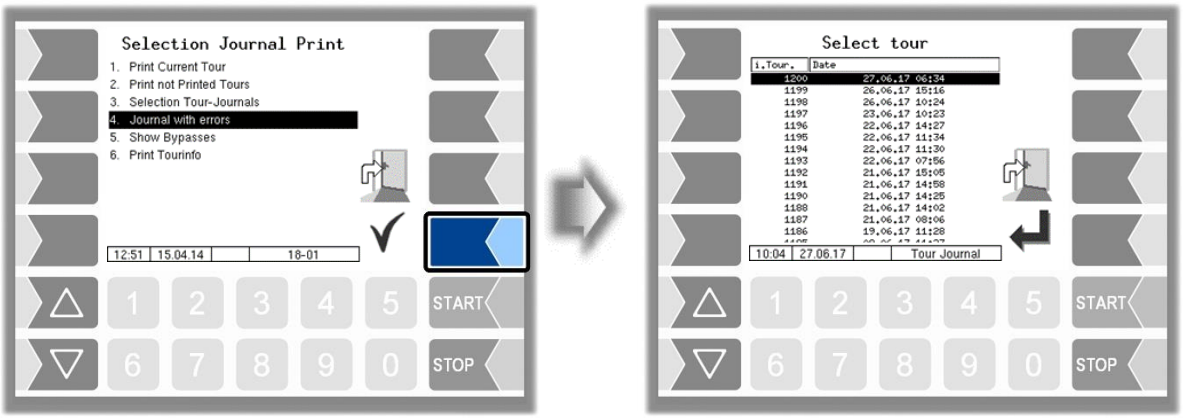
You can use the date and the tour start time to select the tour for which you want to print data. Loadings are listed in the tour journal with the order number 0000.



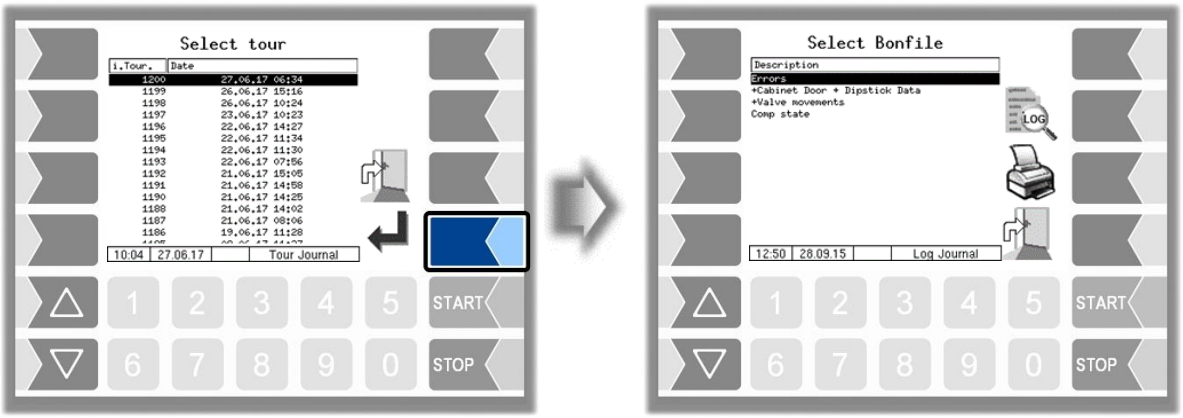
Example Journal Print

5.1.4 Journal with errors

In this menu you can select from the stored log journals. The log-journals also contain all recorded errors. The number of days for which data is stored depends on the parameter LOG Period in the FTL menu, (Default setting: 20 days).



- First select the tour from which a log journal shall be displayed or printed.

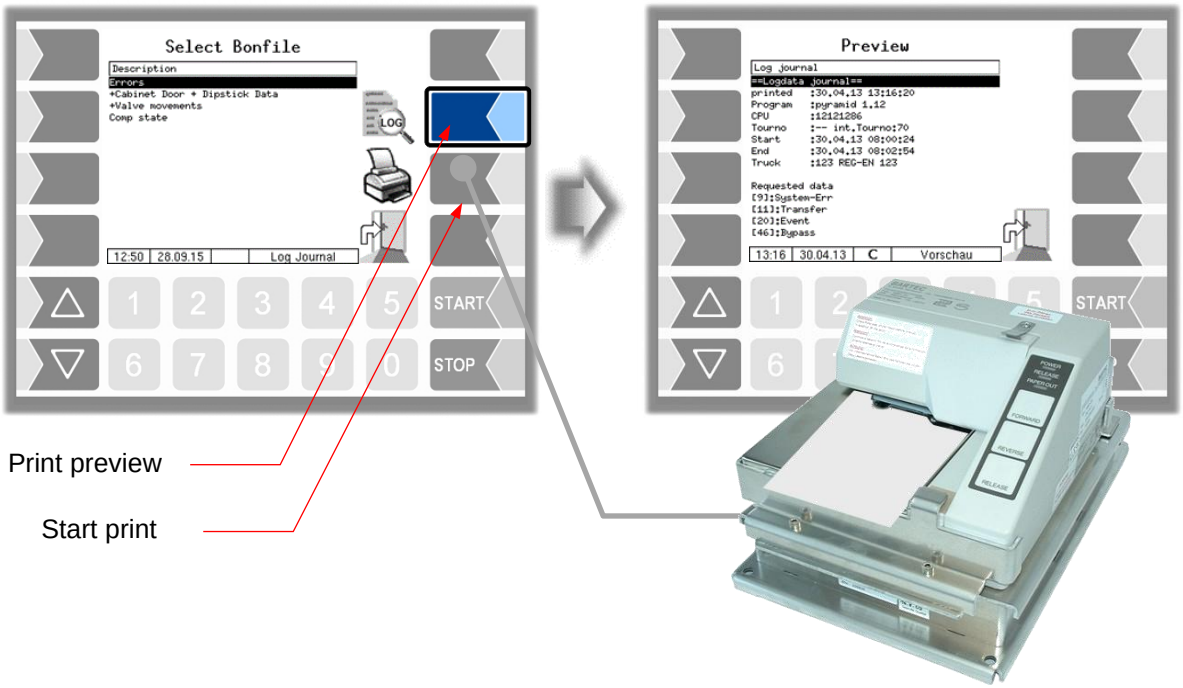


- Then select the contents of the log journal based on the bonfile.

Bonfile	*Content*
Errors	Log journal with recorded errors
+Cabinet Door +Dipstick Data	Log journal with recorded errors + movements of the cabinet doors and dipstick data (bearings) *
+Valve movements	Log journal with recorded errors + movements of the cabinet doors and dipstick data + valve movements
Comp. state	recorded compartment states (Compartment History)

* *If there is GPS data, it will only print from here.*

- By touching the "Print Preview" softkey you can view the selected log data on the display. Use the arrow keys to scroll the screen
- By pressing the "Print" Softkey is the log journal printed on the configured printer.



Reportings from SAFE-components

State of inputs

State of the wetleg sensors

Dipstick data
C: compartment number
Prd: product-no. metrological product (measured product)
VT: quantity uncompensated
V15: quantity compensated

```
==Logdaten Journal==
gedruckt  :05.01.15 15:04:43
Programm  :pyramid 1.16.23
CPU       :12072056
Tournr    :-- int.Tournr:4033
Start     :03.01.15 05:01:46
Ende      :03.01.15 05:25:37
Fahrzeug  :REG BB 123

angeforderte Daten
[9]:System-Err
[11]:Transfer
[13]:Peilung
[20]:Event
[40]:Kammerstatus
[42]:Zugriffsstatus
[46]:Umgehung

          Nr K Prd     VT    V15    Tm
05:01:46 Status Eingänge Beginn
05:01:46 log. Eingang 1 auf
05:01:46 Schrankklappe links zu
05:01:46 Schrankklappe rechts zu
05:01:46 Druck 6 zu
05:01:46 K 1 RMS 10 benetzt
05:01:46 K 2 RMS 11 benetzt
05:01:46 K 3 RMS 12 benetzt
05:01:46 K 4 RMS 13 benetzt
05:01 K 1 Beladen
05:01 K 2 Beladen
05:01 K 3 Beladen
05:01 K 4 Beladen
05:01:46 Status Eingänge Ende
05:01 Peilung:K 1 Prd 3 (5) VT 7031 l
05:01 Peilung:K 2 Prd 3 (5) VT 13006 l
05:01 Peilung:K 3 Prd 5 (11) VT 3613 l
05:01 Peilung:K 4 Prd 2 (2) VT 11986 l
05:01:49 Status Eingänge Beginn
05:01:49 log. Eingang 1 auf
05:01:49 Schrankklappe links zu
05:01:49 Schrankklappe rechts zu
05:01:49 Druck 6 zu
05:01:49 K 1 RMS 10 benetzt
05:01:49 K 1 RMS 11 benetzt
```

```
05:12 K
05:12 Umgehung:K 1 GP Auto
05:12 K 1 Rest
05:21:17 K 4 RMS 13 trocken
05:21 K 4 Rest
05:21 55-0-1-22-0 Pyramide Kammer 1 GWG
      %d Tank voll
05:21:24 K 2 RMS 11 trocken
05:21 K 2 Rest
05:21 K 4 Leer
05:21 K 2 Leer
05:22 *1824 4   2  11986  12082   5.5
05:22 K 4 Leer
05:22 55-0-1-21-0 Pyramide Kammer 1 GWG
      %d beim Aufheizen oder Tank voll
05:23 *1825 2   3  13007  13195   2.9
05:23 K 2 Leer
05:23:16 K 1 RMS 10 trocken
05:23 K 1 Rest
05:23 K 1 Leer
05:24 *1827 1   3   7031   7132   3.1
05:24 K 1 Leer
05:24 Peilung:K 1 Prd 3 (5) VT 0 l
05:24 Peilung:K 2 Prd 3 (5) VT 0 l
05:24 Peilung:K 3 Prd 5 (11) VT 0 l
05:24 Peilung:K 4 Prd 2 (2) VT 0 l
05:24:03 Abgabe Ende
05:25 Peilung:K 1 Prd 3 (5) VT 0 l
05:25 Peilung:K 2 Prd 3 (5) VT 0 l
05:25 Peilung:K 3 Prd 5 (11) VT 0 l
05:25 Peilung:K 4 Prd 2 (2) VT 0 l
-----------------------------------------
Produktsumme
 Prd        Abgabe          Beladung
       unkomp     komp   unkomp     komp
   2    11986    12082        0        0
   3    20038    20327        0        0
   5     3612     3665        0        0
   ------------------------------------
        35636    36074        0        0
Seite 2/    2
```

Product-Nº. measured product
metrological product

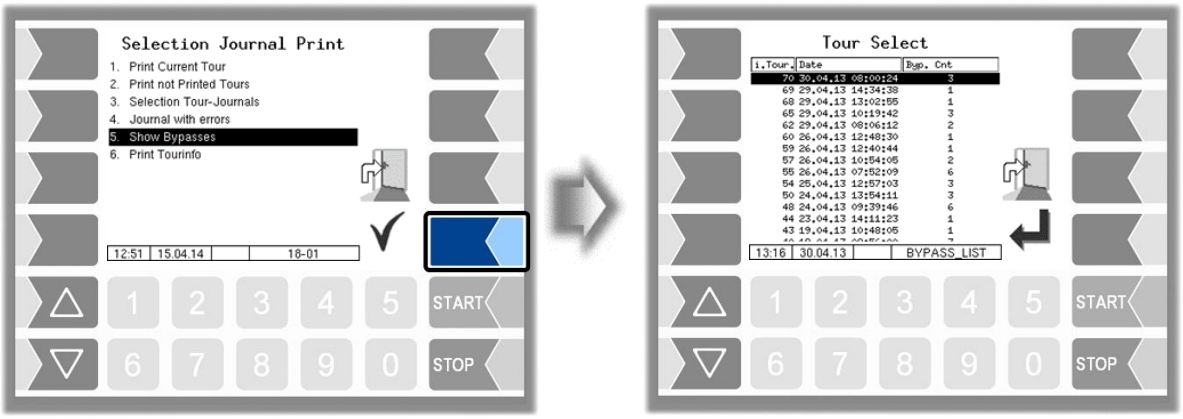
Example journal with errors (+Cabinet Door +Dipstick

```
Kammerstatus
Tournr    :-- int.Tournr:21
Start     :28.09.15 15:39:14
Fahrer    :11
Fahrzeug  :1 REG-EN 123
28.09.15
15:39 Start Beladung 1 Leer
      Diesel
15:39 Start Beladung 2 Leer
      Diesel
15:39 Start Beladung 3 Leer
      Diesel
15:40 Ende Beladung 1 Beladen
      versiegelt
15:40 Ende Beladung 2 Beladen
      versiegelt
15:40 Ende Beladung 3 Beladen
      versiegelt
15:42 Start Abgabe 1 Beladen
      Diesel
      versiegelt
15:42 Start Abgabe 2 Beladen
      Diesel
      versiegelt
15:42 Start Abgabe 3 Beladen
      Diesel
      versiegelt
15:43 Ende Abgabe 1 Leer
      versiegelt nach Lieferung
15:43 Ende Abgabe 2 Leer
      versiegelt nach Lieferung
15:43 Ende Abgabe 3 Leer
      versiegelt nach Lieferung
```

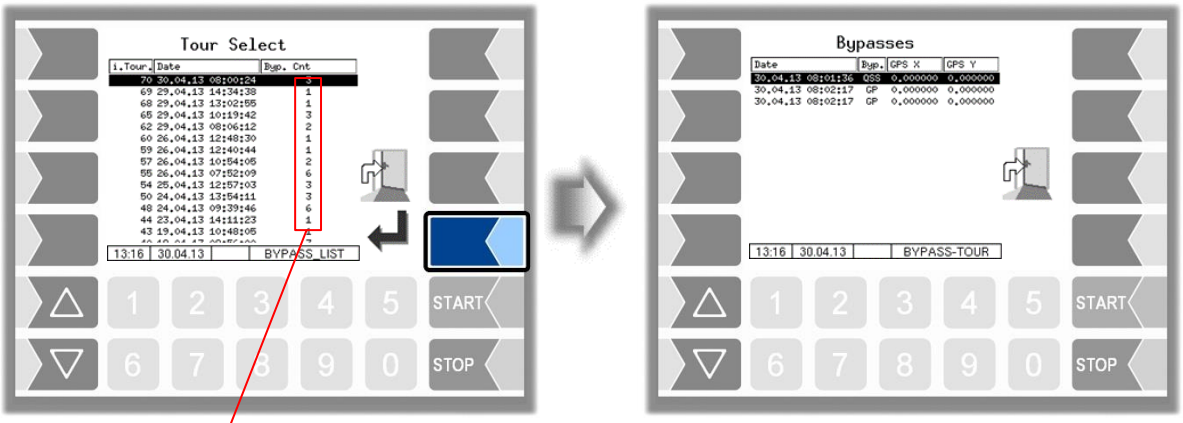
Example Compartment state

5.1.5 Show Bypasses

Use this menu item to display the performed bypasses of the quality safe system SAFE.

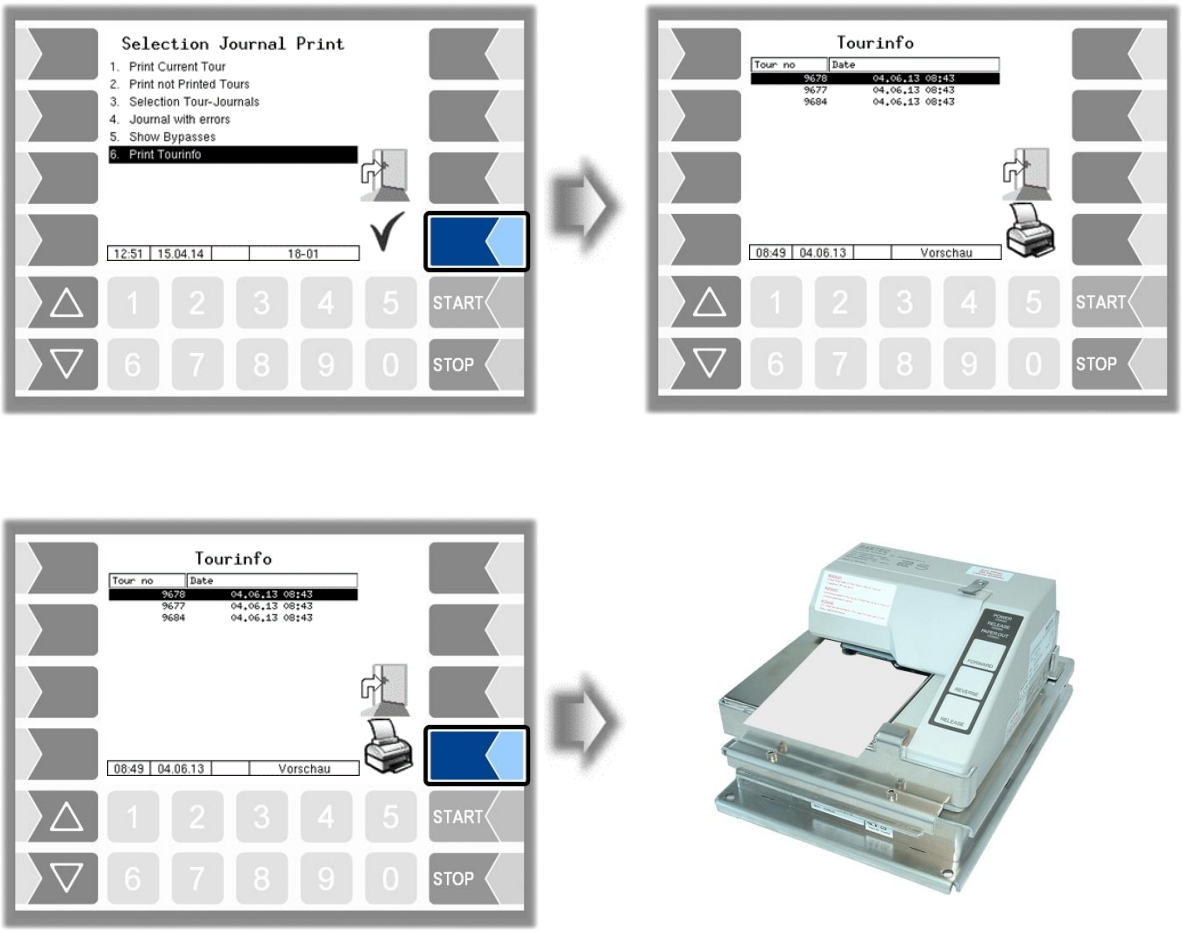


Select and confirm a tour. Details of the bypassing during this tour are displayed: date, time, SAFE module which was bypassed. If a GPS module is installed, additionally the corresponding position data is displayed.



Number of bypasses performed in the tour

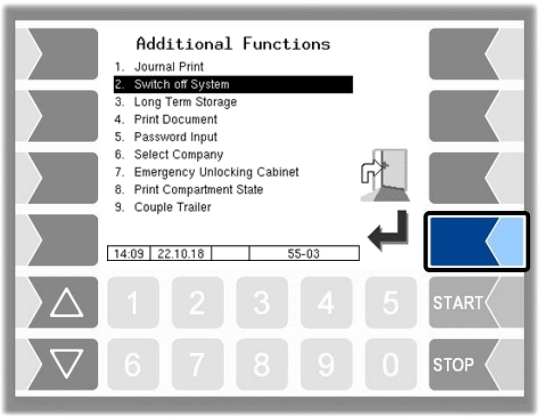
5.1.6 Print Tourinfo



When working with an office connection, the presetted info tour data of the last 7 days are stored. You can select a tour here and output the information about the selected tour produced by the office on the printer.

5.2 Switch off System

- Select the “Switch off System” menu item from the Additional Functions menu. The system is switched off properly, shutting down all modules.

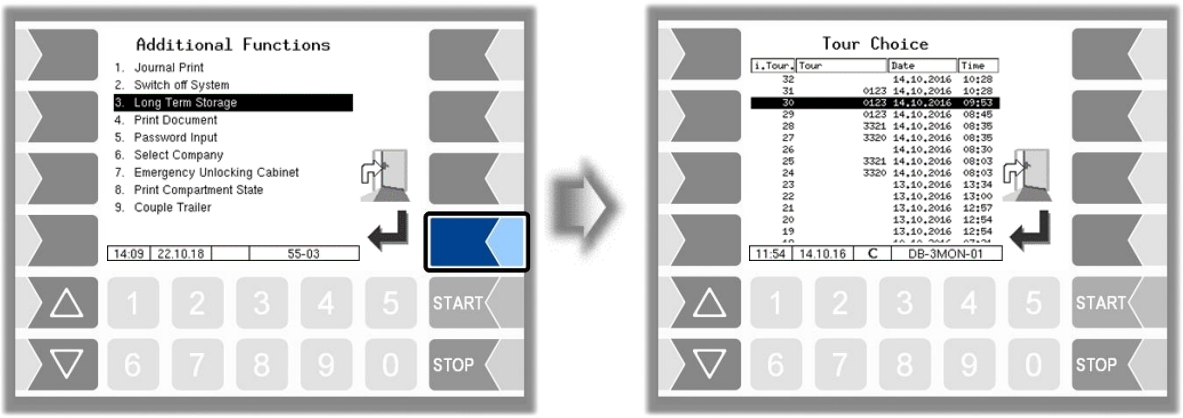


Even after “Switch off System“, voltage is present.
Always turn off the main power switch for maintenance!
The main switch may not be switched off until the system has been fully shut down properly!

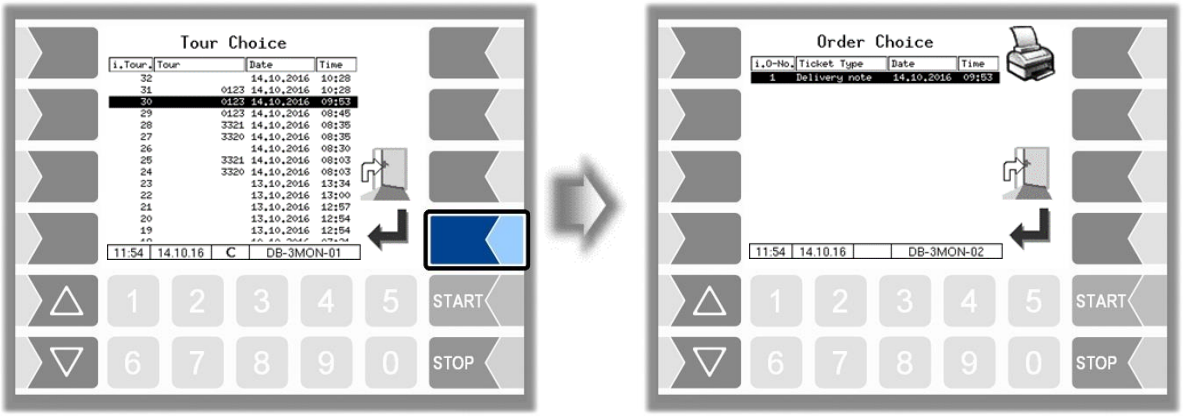
5.3 Long Term Storage (3 months storage)

You can open the *Long term storage* also in the Service menu (see section 4.5.1).

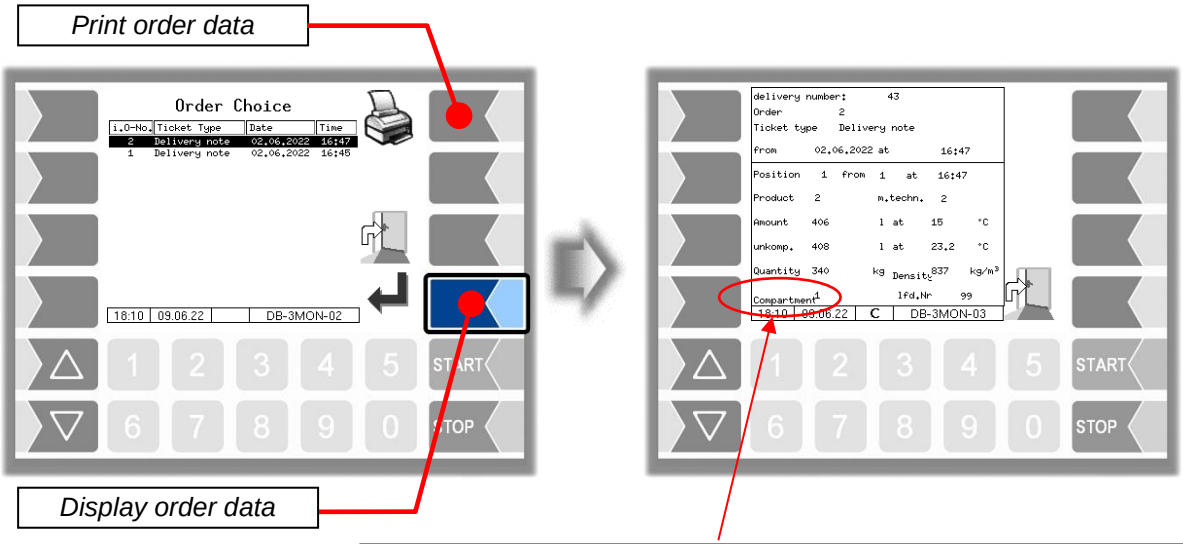
Long Term Storage stores the tour data for three months. Within this time, you can view or print duplicates of the documents.



- Select a tour.



- Select an order within the tour.



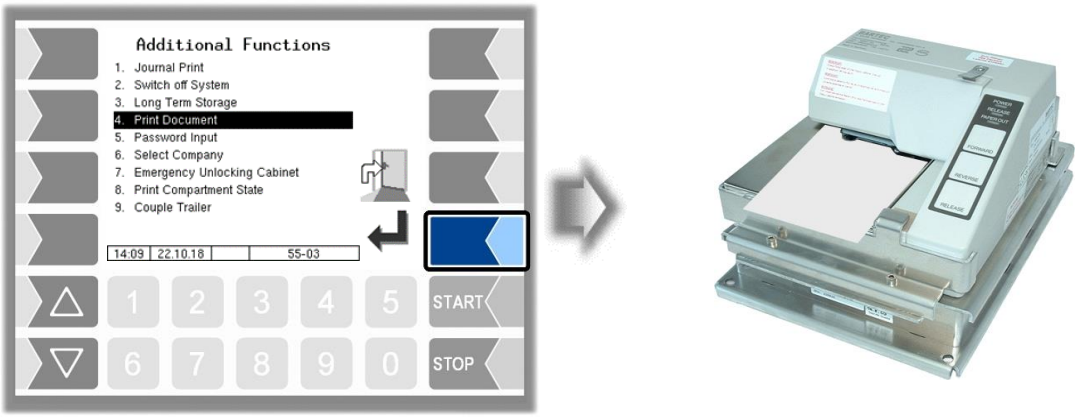
For TIGER deliveries, the counter number is displayed or printed.
(from version 1.24.13,2.5.13, 2.7.6 und 2.9.4)

If the order contains more than two items, you can select the required item using the ▽ and △ keys.

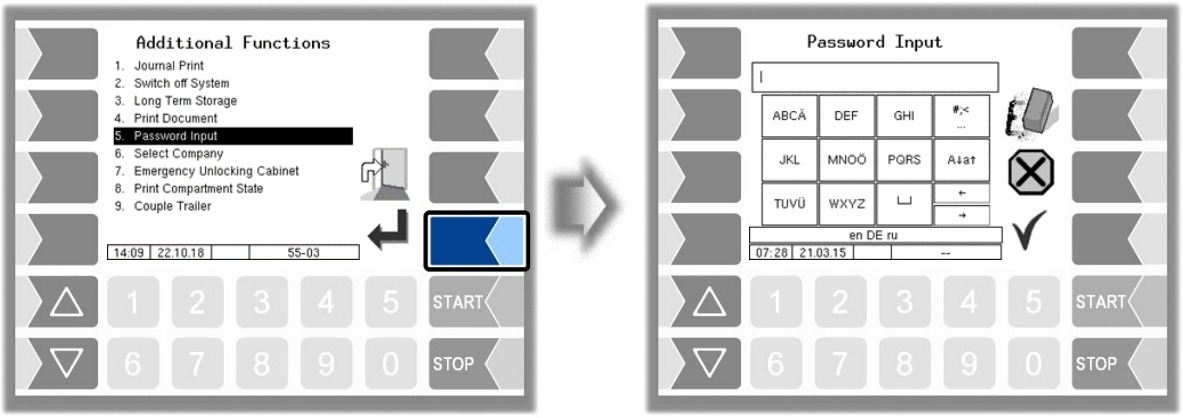
The print is a duplicate of the original document.

5.4 Print Document

You can print as many duplicates of the delivery note as you like for the last order. The duplicate differs from the original only in that the word “Duplicate” and the duplicate's sequential number are output at the start of the printout.
You can print duplicates of older orders using the long-term memory (see section5.3).



5.5 Password Input



Entering a service password allows you to open the delivery menu once if an error occurs. This is intended for trained service personal only. After that, the product can also be changed in the loading mapping, although the compartment is not empty. The password is entered as described in section 4.1.2.

5.6 Select company

In order to be able to use this function, BARTEC must create a company-specific B3i file.

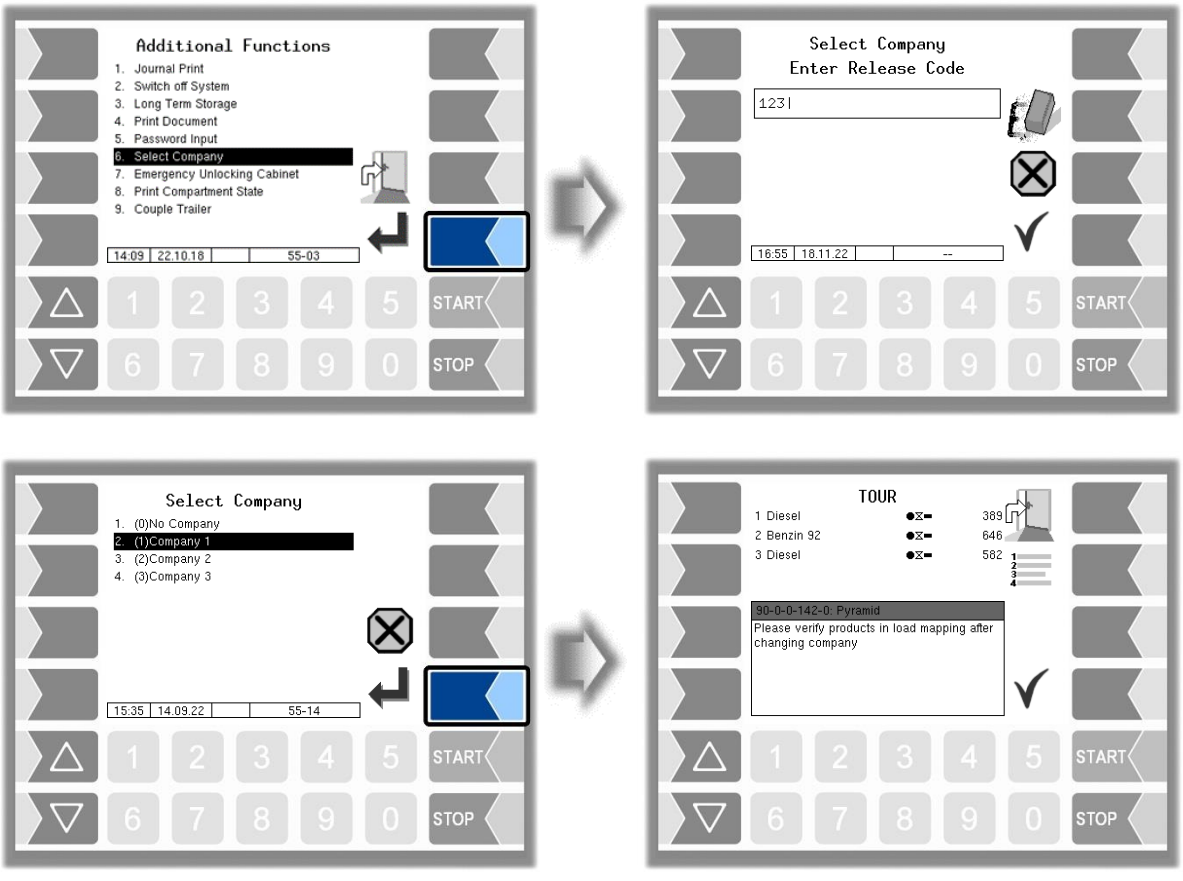
If the truck carries products for several oil companies you can choose the company here. You can determine several **options for company select** in the configuration menu (see section 4.2.2).

- The menu item "Select company" is not available if the company selection is disabled in the configuration
  (Program Parameter / SAFE Oil Company Preset: „no“).
- With manual company selection you can select the company in the additional menu *(Program Parameter / SAFE Oil Company Preset: „manual“).*
- With automatic company selection is automatically prompted to select the company before loading
  (Program Parameter / SAFE Oil Company Preset: „autom.“).
- The vehicle can be automatically converted to a specified group as soon as it is empty

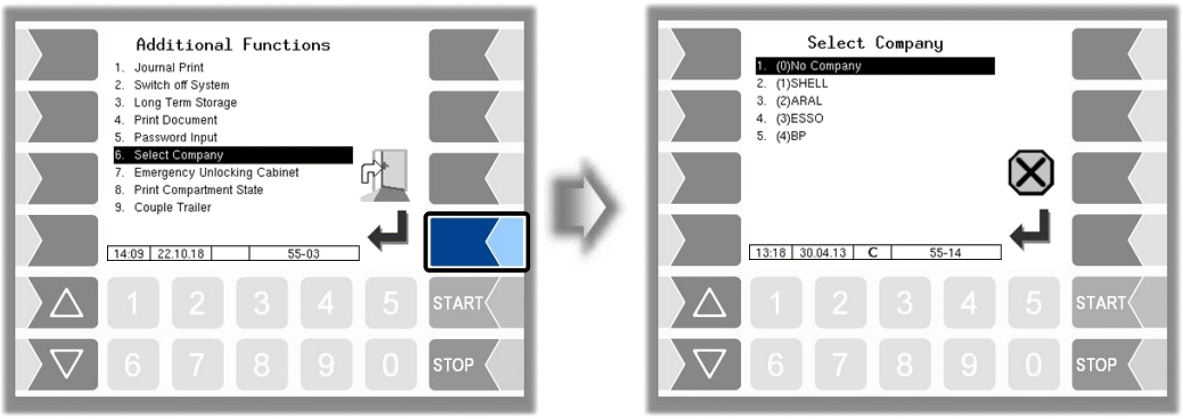
  (Program Parameter / Default Company on Empty).

For the company selection the **entry of a code** can **additionally** be required For this purpose various options are configurable (see section 4.2.2):

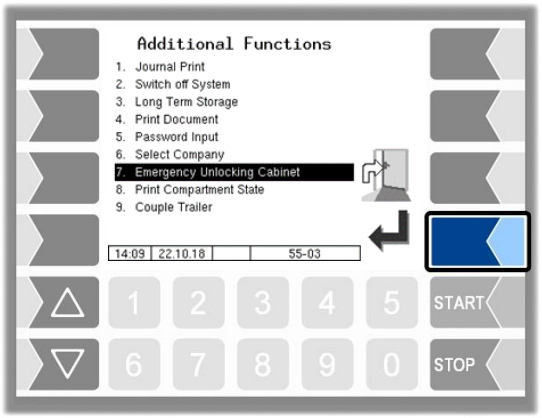
- You can select a company without entering a code
  (Program Parameter / Change Company with Code: „off“).
- You must always enter a code, when selecting a company *(Program Parameter / Change Company with Code: „always“).*
- Only in the company selection in the loaded state, a code must be entered *(Program Parameter / Change Company with Code: „loaded“).*



A company change is possible at any time after entering the password (or with the seal switch open).
After changing the company, you must also change the loaded products matching the selected company.
The company change will be logged!



5.7 Emergency Unlocking Cabinet



Via the output log. 12 " Shell cabinet hatch unlocking" the cabinet doors are unlocked when customer data has been found for the current GPS coordinates.

If no position can be determined using GPS data (GPS defective or not configured) or for the current location no GPS coordinates are stored or if for other reasons an unplanned order is to start, the cabinet door can only be opened after emergency unlocking.

An unplanned order can only be carried out after emergency unlocking.

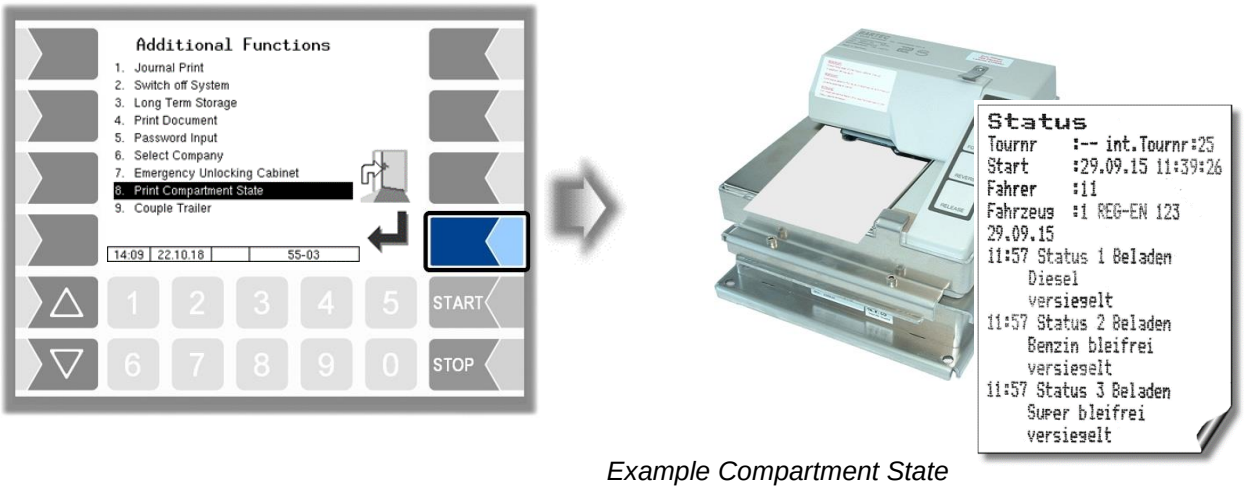
When unlocking, a 15-minute timer starts. Within this time the locking remains open. After this time the cabinet doors will be locked again when they get closed.
Emergency unlocking will be recorded.

An emergency unlocking is not required if the search radius of the GPS receiver is set to 0 (see section 4.2.6.11).

5.8 Print Compartment State

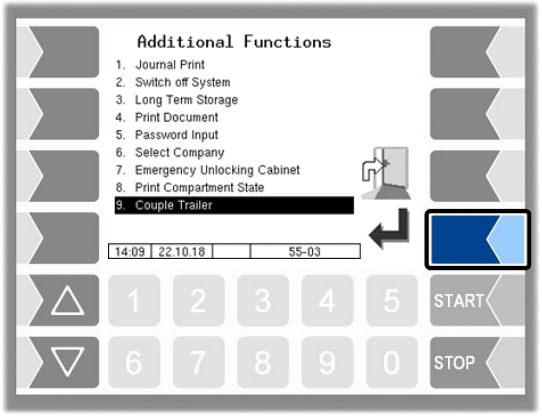
Available when the licensed option 18 ***SPDS 3003***
or 31 ***SPDS 3003 Stand alone*** is enabled (see section 4.2.12).

The current compartment status is printed.



Example Compartment State

5.9 Docking/undocking a trailer



When operating with a trailer, it must be logged on or off here. In the start window, the icons for trailer operation are displayed (see section 3.2.4).

In order to ensure a proper system flow, the trailer must be logged off here if the rigid is to be operated without a trailer.

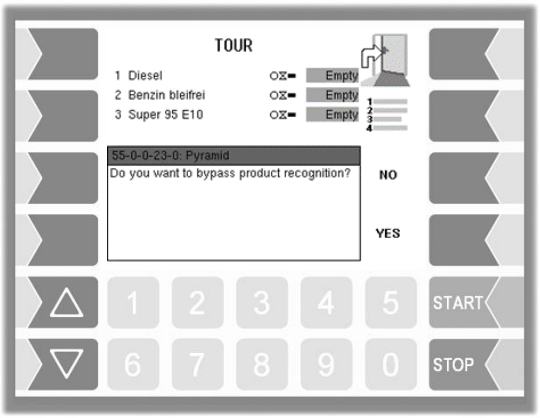
6 System monitoring

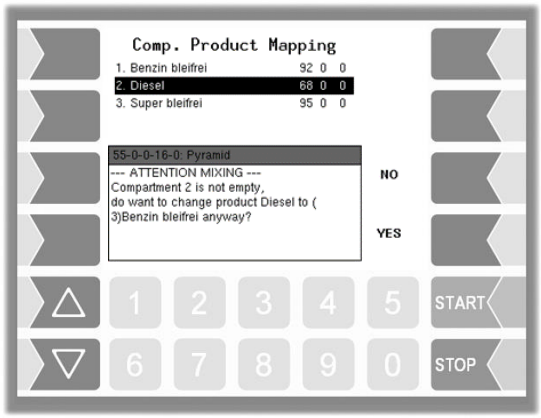
The measuring system is constantly monitored for reliability and fulfilment of the quality criteria.

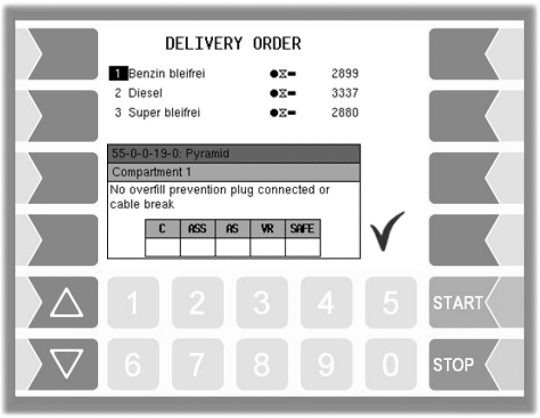
6.1 Display of malfunctions

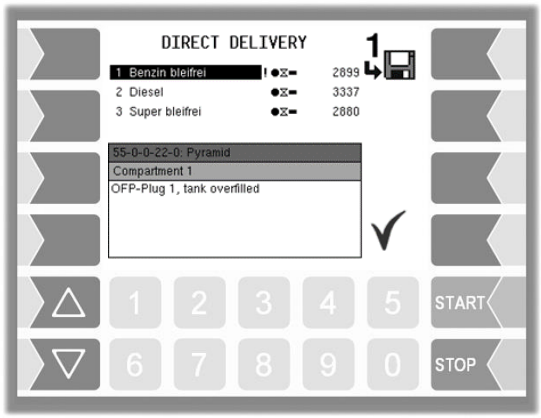
All operating statuses and results that are connected to safety and product quality are shown on the display in plain text and must be acknowledged by the operator.

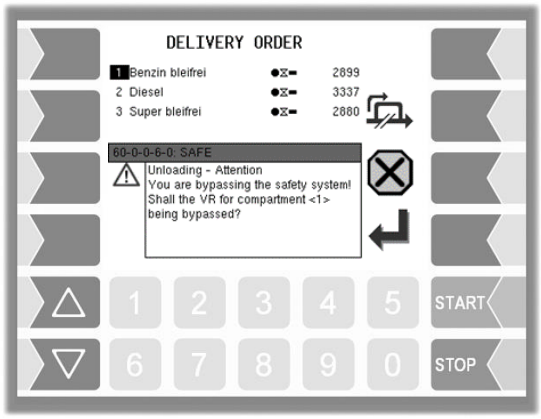
Examples









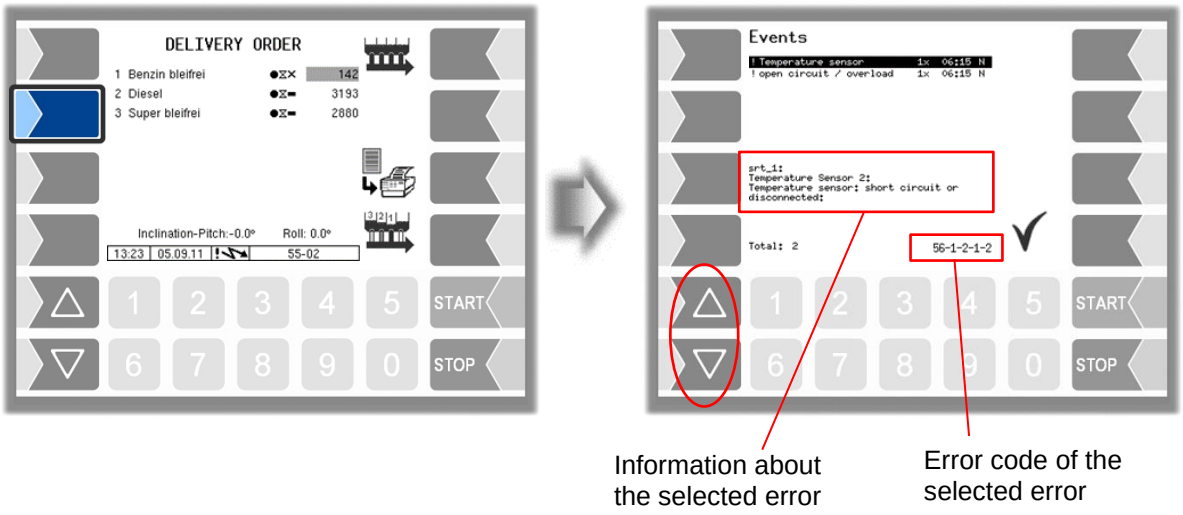


If an error occurs during an active delivery, causing this delivery to be interrupted, the event display window containing the relevant error message appears for 20 seconds.

You use the ✓ softkey to acknowledge messages that are displayed in this window. The “Events” window is automatically closed after 20 seconds.

The error symbol is then displayed in the information line as long as the error is still present.

For more information on an error displayed in the information line, you can open the event display manually.
Error messages are not cleared until the cause of the error has been removed.
As long as the error is still active, an exclamation mark is displayed next to the error message.



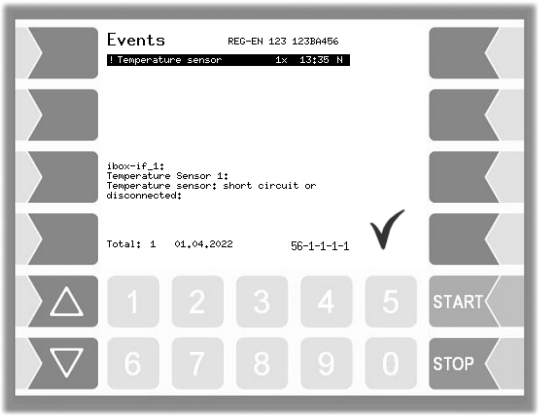
Maybe in the event display more than one error are displayed.
Use the arrow-keys to select the individual messages.

If you request help with an error from your service centre, you must enter the five numbers that are displayed at the bottom right of the Events window. These help the service center to pinpoint the error.

Use the arrow-keys to select the individual messages. So you can note the several error codes.

If the seal switch is open, the event display does not appear for 20 seconds if an error occurs. In this case, you must open the event display manually.

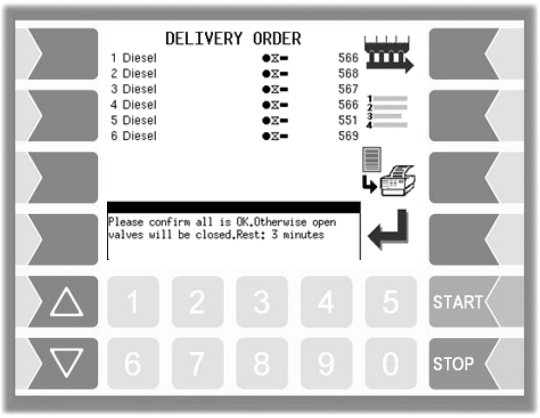
If an error occurs which prohibits a calibrated or compensated measurement, the delivery can only take place as an uncalibrated or uncompensated delivery.



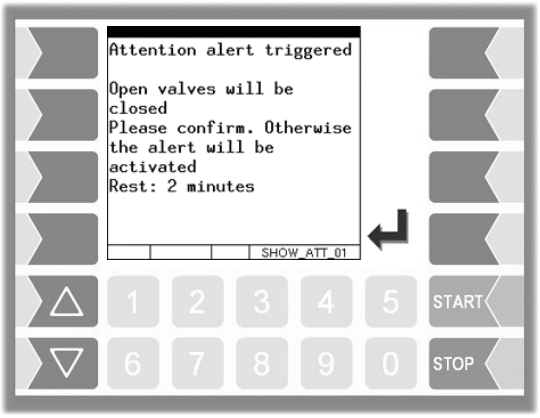
If an error occurs which prohibits a measured delivery, the bottom valve is closed and the delivery thus stopped. In this case, the delivery can not be continued.

6.2 Attention monitoring

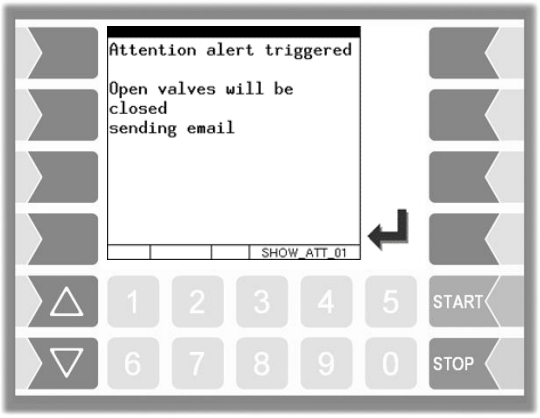
Attention monitoring can be configured to increase safety during operation. It is checked whether actions are carried out on the measuring system within certain time intervals.
Monitoring takes place as long as an order is being processed.



E.g. If the system is not operated within 25 minutes (1), a small notification window appears on the display.



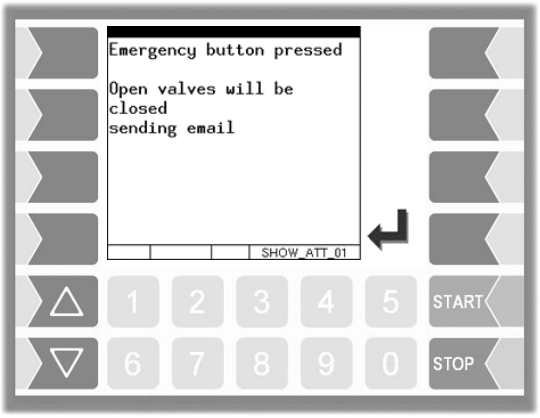
If no operation is found after further 5 minutes (1), a large notification window is displayed. If a delivery is in progress, it will be stopped.



If no operation takes place after further 2 minutes (1), an e-mail is sent to a specified address and output log. 101 is activated if this is configured.

(1) *The specified values are default settings for configurable times (see section 4.2.11).*

6.3 Alarm trigger device



An alarm trigger device (emergency button) can be installed independently of the attention monitoring. When activated, current deliveries are stopped, an e-mail is sent to a specified address and output log. 101 is activated if this is configured.

7 Appendix

7.1 Overview of the Configuration menu

The following overview should help you to locate individual parameters within the Configuration menus.

The software configuration is protected by passwords and the seal switch. This permits access to various configuration options.
The password level currently accessible is indicated by a letter in the info line of the display. Each password level includes all lower password levels.

Password level	**Indicator**	**Access**
0: No password		Read only
1: Driver password	D	Time, language, driver number
2: User password	U	Operating parameters
3: Service password	S	Software parameters not subject to statutory calibration
4: Open seal switch	C	All parameters

In this overview, the indicator of the configuration level is shown next to the menu name. It is generally also valid for all submenus.
Exceptions are mentioned under the relevant submenus.

1: System Parameter U

System Time U		Language D
*System Date	C	de (German)
System Time	D	en (English)
Auto-Synchronisation		fr (French)
Timezone		cs (Czech)
Daylightsaving		sk (Slowak)
Daylightsaving Begin		nl (Dutch)
Month		hu (Hungarian)
Week		pl (Polish)
Day of Week		it (Italian)
Daylightsaving End		bg (Bulgarian)
Month		ro (Romanian)
Week		hr (Croatian)
Day of Week		ru (Russian)
		da (Danish)
		sl (Slowenian)
		sv (Swedish)
		sr (Serbian)

2: Program Parameter U

Truck Type		
Collector		
Direct Discharge		
SAFE Oil Company Preset		
Change Company with Code		
Default Company on Empty		
Number Compartments		
Licence Plate		
*Tank Number	C	
Vehicle Id.		
Driver Id.	D	
Delivery Note Number		
(M) Print Loading ∗		
Tour by the day		
*Netherlands	C	
Journal at Tour End		
Check Truck		
Check Hose		
Enter customer number		
Contingentnumber		

3: Control Parameter U

Stop Delivery x%ˣFlow		
(M) Max. Delay of Empty Test ∗		
2 Empty Tests/x min		
(M) Loading onto Rest		
Empty Test despite Volume		
(M) Stop Loading no Flow ∗	C	
*Lag Time for Product		
(M) Quantity Control Comp..∗		
(M) Quantity Control Pipe ∗	S	

Pipe empty after delivery
Stop Del. Order
Stop Load Order
(M) Print Exclamation mark ∗
Load: open BV manually
Empty w/o Compressed Air
Reduce Direct Delivery
Automatic Switch Off
Prod. Quant. Contr. Pipe
Sampling Time
Sampling Delay
Max. Simultan. Deliveries C
*Demo Mode

4: Product Configuration C

Metrological Products	Measured Products U
Designation	Designation
Number	Number
Shortcut	Shortcut
Scale Unit	Metrol. product
Density	Add.Mischungsv. 1/x
Reference Temperature	Additive pump
Compensation	Log. Output Additive
Compensation mode	PID-Loading
Compensation Factor	PID-Loading leaded
ADR Text U	PID-Delivery
Product Group U	PID-Delivery leaded
witht Ex-Tiger C	Solenoids-Loading
	Solenoids-Delivery
	Oil company

Office Products

5: Print Parameter U

Seq. No. C

Ticket Identification
Horizontal Offset
LF before ticket
LF before position

LF between position
LF beyond position
Max. count of pos./page
Vehicle number
Delivery Date
Time del. start
Time del. end
Product number
Temp.-avg. uncomp.
Customer number
Uncomp. volume
Del. note number
GGVS text
Time meter reading s.
Driver number

Preset quantity
Vehicle registration
Ticket allocation
Seal information S
Summarize products
Product group
Sealed*
+Product summation
Oil company

6: Hardware Configuration S

i-Box-Interface

1. Clamp Box C

serial no
Box 1 Type
Box 1 Version
input 1 (...16) Box 1
log. mapping
invert
Namur
temperature sensor 1 *(...8)*
log. mapping
calib. 50/-80°C
calib. 0/-195°C

2. Clamp Box

serial no
OFP-Plug Magnets
Box 2 Type
Box 2 Version
input 1 (...18) Box 2
log. mapping
invert
Namur

PID clamp box

serial number
Type
Version
LOG-Level
firmware-Version
driver version

Outputs/Inputs IO24

1. (...n.) Output
logical allocation U
invert
1. (...n.) Input
logical allocation
invert U
resting state
LOG-Level
firmware version
driver version

Dipsticks C

PIF Parameter

Serial number
Dipstick Interface
Number Dipsticks
Floater Type
Density S
Density Tolerance S
Angle Deviation X
Angle Deviation Y
Max. Angle X
Max. Angle Y
Max. Angle Exceedance U

Dipstick 1 (…n)

Dipstick
Serial Number
Length
Damp. Factor
Velocity VUS
Position X Offset
Position Y Offset
Clamp Position
Max. Empty Angle X
Min. Empty Angle X
Max. Empty Angle Y

6: Hardware Configuration S

- Stop Level Diff. U
- Reduce Level Offset
- Drain Level Offset U
- Flow Values S
- Stop Direct Outlet Flow
- Firmware Version
- Tab. Serial Number
- Tab. Version
- Tab. Checksum
- Internal Seal Counter
- Internal Seal Counter

Load Dipsticktable from Interface

Store Dipsticktable into interface

Load Upload Dipsticktable

Print Dipsticktable Short

Print Dipsticktable Long

Diagnostics

Thermical Overfill Prevention S
- Overfill Prevention
- Serial Number
- OP Sensor 1 (2, 3)
- ANA
- bypass ANA

Display S
- Contrast
- x/y Calibration
- Candle power
- Set blink on/off
- Calibrate HMI 1/2

Printer Select U

Epson TMU
- Print Function
- Print mode
- Printer type
- Paper Output Front
- Paper release
- Lines per page
- Output
- Extended log

Tally Genicom MIP 480
- Print Function
- Lines per page
- Paper Eject
- horiz. Offset
- Record D
- Record Interval D

GPRS U
- Device S
- Min. Empty Angle Y
- Pipe Volume
- Maximum Volume U
- Minimum Delivery
- Install. Bottom Up
- PIN

Floater
- Immersion Depth
- Density Balance S
- Act. Reference Posit.
- Reference Position

Linearization 1 (…n)
- Length
- Correction

6: Hardware Configuration S

Baud Rate

Activate Modem D
Provider data
APN Server
APN user
APN password
SIM data
Dial String
PIN Code
Security
Report IP To BARTEC

Power Supply S
System Fan
Switching Off Below
Switching On Above
Firmware Version

Sensor Interface S
Sensorinterface
Serial Number

SPD Interface S

SPD Parameter
SPD A (B)
Interface
Serialnumber
1. (2.) Type
i-Box 1 (2) / Tag-Reader 1 (2)
Firmware Version
Logging

Inputs 1-x
SPD A (B) (1…x)
logical Allocation
Invert
Namur

Tag Inputs
SPD A (B) (1/2)
logical number U
Invert U
Tag-Id.

Diagnosis SPD A (B)

GPS U
GPS Receiver
Search Radius
Load Search Radius
KM-Recording
GPS-Logging
Model
Firmware Version

Optical Overfill Prevention S
Overfill Prevention
Mono-Overfill Prev.
Serial Number
Firmware Version

6: Hardware Configuration S

External inclinometer S

Angle Deviation X
Angle Deviation Y
Max. Angle X
Max. Angle Y
Max. Angle Exceedance
Angle Deviation X
Kammer 1 (…8) (Compartment)
- Max.Empty Angle X (Pitch)
- Min. Empty Angle X (Pitch)
- Max. Empty Angle Y (Roll)
- Min. Empty Angle Y (Roll)

Bluetooth Receiver U

Bluetooth-receiver
Device
Baud
Pin
Name

Measurement-Interface C

Counter 1(KMif)

logical number
number of Meter 1 (2)
calibration 1
calibration 2
calibration 3
min. volume

rolling direction
channel
type
dynamic calibration
1. (… 5.) flow
1. (… 5.) correction
ref.-temperature
K1, K2

Mif – Tiger Ex C

Measuring tube type
air limit
Capacity change per /°C
Air correction 1 pressure
Air correction 1 factor
Air correction 2 pressure
Air correction 2 factor
LMS limit empty

Output-Box 6752

Output Box
Firmware Version
Serial number
1 (…8) Output

Temperature sensor 1

log. mapping
calib. 0/-195°C
calib. 50/-80°C

Input 1 S

logical allocation

invert
resting state
namur
A-Number sensor head
A-Number filling level sensor
A-Number turbine meter
Firmware sensor head
Firmware filling level sensor
Firmware turbine meter

6: Hardware Configuration	S	Log. Assignment
		Invert
		Additivation 1 (2) S
		Additivation U
		Max. emptying duration
		Purge duration
		Max. return duration
		Guarantee quantity
		Empty sensor
		Totalizer
		Reset totalizer U
		Purge pump
7: SAFE Parameter	U	SAFE Configuration U
		Quality Control
		Scan Line ...
		Scan Line ... Compartment
		PID Connect Delay
		PID Signal Damping
		PID Check Extended
		SAFE Bypassing U
		Loading with PID
		Unload with PID
		VR-Control Unload A3
		VR-Control Unload A1
		Bypass Unload ASS Allowed
		Bypass PID Loading Allowed
		Bypass PID Unload Allowed
		Bypass Unload Count
		Bypass Metr. Product 1 (2, 3)
		VR-Product Identic
		AS Allocation
		Safety Request Sign
		Bypass with Code
		Stop in Spite of Bypassing
		VR-AS Allocation
		Lead is L.Substitute
		Opticontrol U
		XY-Variation Slot
		XY-Variation Adapter
		Reliance
		Overlapping
		Timeout
		Deliv. with Bypass
		Unplanned Location
		Byp. despite hose
		Byp. despite release
		Logging
		Mode

Camera
License key
IFI
Activate WIFI
Password
ANr.

8: SPD Conditions U

Compartm.-Input Type A (B, C, D, E)
FTL-Type
Description
Short Description
Common-Input 1 (…2)
Log. Input
FTL-Type
Description
Short Description
Free Input 1 (…5)
Log. Input
FTL-Type
Description
Short Description
Sealing
Rest at Broken Seal
Comp. Empty Valves
Comp. Load Valves
Print Compartment State

Büro Konfiguration U

9: Office Configuration U

FTP Parameter S

FTL-FTP-Server Remote Access
Box Configuration
Box Name
Service Status
Check Inbox Period
Compress Data
Resume down and upload
Max. amount of pending files
FTP Configuration
Username
Password
Server Path
IP/Domain
Port
Security
Enable SSL
Accept any Certificate
Certificate
TSL/SSL Version

Data delete U
Master and Schedule Data

Scheduled Data
Response Buffer

FTL Conditions
FTP-LOG-File Prefix(1)
FTP-LOG-File-Interval(1)
Create FTP-LOG-File(1)
Create FTP-RC-File(1)
Communication to the front
Baudrate
Interface
Communication to the back
Baudrate
Interface
Time Synchronisation TVE C
Pump-Timeout C
Disconnect-Timeout C
FTL Delivery C
LOG Output Filter C
LOG Period C
LOG GPS Interval C
FTL-LOG in BARTEC-LOG C
With Order Preset (1) C
Order-Id. Input C
OBC-Diagnostics (1)
Delete Preset with Code (1)
Test OBC-Interface

10: Collektor Parameter C

Gravitation Delivery C
Pump Sump Draining C
Parallel Delivery C
Deairing in Draining (1)
Deairing/Hose ON (1)
Deairing/Hose OFF (1)
Wet hose without valve (1) C
Product group no pump C
Prod. group Wethose 1 (1) C
Prod. group Wethose 2 (1) C
Coll.Filling Rundown S
Coll.Filling Lead Time (1) S
Coll.Filling Max. Time (1) S
WLS Delay Time (1) S
Dry Hose Rundown
Collector Volume
Collector Volume Total
Stop Delivery x%^{x}Flow C
Stop Del.. x%*Flow Dipst. C
Flowlimit low C
Flowlimit high C
Start after OFP-Release C
Collector Valves direct C
Draining without Pump 61 (1) C
Flushing to Trailer (1) C
Tiger-Parameter

Remaining Volume Draining (2)
Air counts Draining End (2)
Break Draining, Open BV (2)
Trailer Draining End S

11: Attention monitoring U

Attention alert

silent check (Min)
Time to stop (Min)
Time to email (Min)
EMAIL Sender
SMTP Server
Protocol
SMTP Port
Account
Account password
Sender
EMAIL Empfänger
Monitoring
Alarm

12: Software Options U

Edit Software Options	Show Software Options
17 VOLUTANK 3003	Display of status of Sofware Options
18 SPDS 3003	
19 SAFE 3003	
20 OPTICONTROL 3003	
21 Wet hose delivery 3003	
22 TIGER Ex	
23 Fuel tanker Combo	
24 GPRS/UMTS-online function	
25 GPS petrol station database	
26 Shift matrix	
27 Simultan delivery G+P	
28 Product selection delivery	
29 TVE1 – TVE2 communication	
30 SPD minitrailer	
31 SPDS 3003 Stand alone	
32 SAFE 3003 Stand alone	
33 OPTICONTROL Stand alone	
34 TDA+	
35 Spezial Option 1	
36 Flowrate control gravity	
37 SAFE light	

7.2 Logical Outputs and Inputs

Logical Outputs

log. N°.	*Explanation, Function*
1	Bottom valve 1
2	Bottom valve 2
3	Bottom valve 3
4	Bottom valve 4
5	Bottom valve 5
6	Bottom valve 6
7	D-valve completely open
8	D-valve reduced
9	Collection valve Direct flow delivery
10	Collection valve collector delivery
11	Collector- separator valve (KP)
12	Cabinet doors unlocking
13	Ventilation when bypassing the vapor return of diesel products
14	Left control cabinet door, Direct flow (active=left)
15	Switching the compressed air to the bottom valves during an empty test
16	Signal: cabinet door open
17	Pump
18	Output for self- filling
19	Ouput for venting when filling the collector (E1)
20	Right control cabinet door, Direct flow (active= right)
21	Wet hose 1
22	Wet hose 2
23	Dry hose 1
24	Dry hose 2
25	Ventilation for collector when removing residues
26	Tilt valve
27	Signal output for loading
28	free
29	Signal output for delivery order
30	Output for thin residue removal line at wet hose delivery without TIGER
31	Bottom valve compartment 7
32	Bottom valve compartment 8
33	A-valve (Delivery via Tiger)
34	Bypass pump
35	thin residue removal line to wet hose 1
36	thin residue removal line to wet hose 2
37	Separator valve dry hose / wet hose (see input 3)
38	flushing wet hose
39	switches **on** when exceeding the upper limit flow rate („flowlimit low"), switches **off** when falling below the lower limit flow rate („flowlimit high")
40	free
41	Switzerland: second bottom valve dual overfill prevention, compartment 1
42	Switzerland: second bottom valve dual overfill prevention, compartment 2
43	Switzerland: second bottom valve dual overfill prevention, compartment 3
44	Switzerland: second bottom valve dual overfill prevention, compartment 4
45	Switzerland: second bottom valve dual overfill prevention, compartment 5
46	Switzerland: second bottom valve dual overfill prevention, compartment 6
47	Switzerland: second bottom valve dual overfill prevention, compartment 7
48	Switzerland: second bottom valve dual overfill prevention, compartment 8
49	Throttle collector delivery
50	pumping over

log. N°.	***Explanation, Function***	
51	Throttling the direct delivery from compartment 1	Alternative use as ventilation outputs in conjunction with optical overfill prevention, for product class 2
52	Throttling the direct delivery from compartment 2	
53	Throttling the direct delivery from compartment 3	
54	Throttling the direct delivery from compartment 4	
55	Throttling the direct delivery from compartment 5	
56	Throttling the direct delivery from compartment 6	
57	Throttling the direct delivery from compartment 7	
58	Throttling the direct delivery from compartment 8	
59	Dry hose 3, gravity collector	
60	Dry hose 4, gravity collector	
61	Pump sump	
62	Suction pipe big, to the trailer (HSG)	
63	Rigid suction line, small (HSK)	
64	Ouput for venting the collector when filling or removing residues at delivery from trailer, E2	
65	Compartment 1	Selective activation of the compartment at “Pipe empty after delivery”
66	Compartment 2	
67	Compartment 3	
68	Compartment 4	
69	Compartment 5	
70	Compartment 6	
71	Compartment 7	
72	Compartment 8	
73	Compartment 1	Compartment-specific switching, collector (on) / direct delivery (off)
74	Compartment 2	
75	Compartment 3	
76	Compartment 4	
77	Compartment 5	
78	Compartment 6	
79	Compartment 7	
80	Compartment 8	
81	Exit for venting the trailer-rigid suction line	
82	Compartment 1 alternative output for BV 1	Compartment related return pump line
83	Compartment 2 alternative output for BV 2	
84	Compartment 3 alternative output for BV 3	
85	Compartment 4 alternative output for BV 4	
86	Compartment 5 alternative output for BV 5	
87	Compartment 6 alternative output for BV 6	
88	Compartment 7 alternative output for BV 7	
89	Compartment 8 alternative output for BV 8	
90	Output for internal removal residues back to a compartment	
91	Output delivery active	
92	free (internal assigned)	
93	free (internal assigned)	
94	free (internal assigned)	
95	Additive tank compartment 1	The outputs can be set as required for products with additives.
96	Additive tank compartment 2	
97	Additive tank compartment 3	
98	Additive tank compartment 4	
99	Output for activating a stroke at the additive device 1	
100	Output for activating a stroke at the additive device 2	
101	Attention alarm	
102	Output for compartments that are tilted forward	
103	Output for compartments that are tilted backward	
104	Sampling	

Logical Inputs

log. Nº.	*Explanation, Function*	
1	Delivery-Stop	
2	Automatic start of the loading order	
3	WLS for a separated dry hose	
4	Monitoring right cabinet door	
5	Monitoring left cabinet door	
6	Monitoring Compressed air	
7	WLS delimitation point to the wet hose	
8	Scully-Input when self filling	
9	Input for blocking all transactions	
10	API WLS Compartment 1	10
11	API WLS Compartment 2	11
12	API WLS Compartment 3	12
13	API WLS Compartment 4	13
14	API WLS Compartment 5	14
15	API WLS Compartment 6	15
16	WLS2 Compartment 1	16
17	WLS2 Compartment 2	17
18	WLS2 Compartment 3	18
19	WLS2 Compartment 4	19
20	WLS2 Compartment 5	20
21	WLS2 Compartment 6	21
22	Main WLS collector	
23	free	23
24	free	24
25	Free inputs for FTL-recording SPD	25
26		26
27		27
28		28
29		29
30		30
31	Compartment 1	sealing type A compartment 1…6 (usually BV)
32	Compartment 2	
33	Compartment 3	
34	Compartment 4	
35	Compartment 5	
36	Compartment 6	
37	Compartment 1	sealing type B compartment 1…6 (usually API)
38	Compartment 2	
39	Compartment 3	
40	Compartment 4	
41	Compartment 5	
42	Compartment 6	
43	Compartment 1	sealing type C compartment 1…6 (usually DV)
44	Compartment 2	
45	Compartment 3	
46	Compartment 4	
47	Compartment 5	
48	Compartment 6	

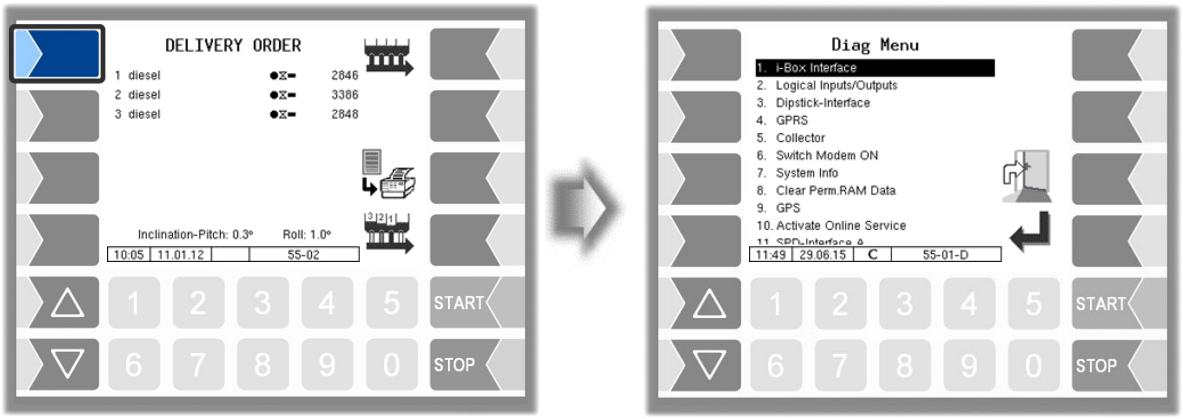
Logical Inputs

log. Nº.	***Explanation, Function***	
49	Compartment 1	sealing type D compartment 1…6 (usually DD)
50	Compartment 2	
51	Compartment 3	
52	Compartment 4	
53	Compartment 5	
54	Compartment 6	
55	Compartment 1	sealing type E compartment 1…6
56	Compartment 2	
57	Compartment 3	
58	Compartment 4	
59	Compartment 5	
60	Compartment 6	
61	second collector WLS (SLOVNAFT: “empty”)	
62	Self filling	
63	API WLS Compartment 7	WLS (see input log. 10-15)
64	API WLS Compartment 8	
65	WLS2 Compartment 7	WLS (see input log. 16-21
66	WLS2 Compartment 8	
67	Compartment 7	sealing type A (usually BV)
68	Compartment 8	
69	Compartment 7	sealing type B (usually API)
70	Compartment 8	
71	Compartment 7	sealing type C (usually DV)
72	Compartment 8	
73	Compartment 7	sealing type D (usually DD)
74	Compartment 8	
75	Compartment 7	sealing type E
76	Compartment 8	
77	External overfill prevention	
78	WLS for collector gravity delivery via L3	
79	WLS for collector gravity delivery via L4	
80	WLS for the trailer suction pipe to the rigid at the highest point	
81	WLS for the pump sump	
82	WLS collector (for tilt function when emptying)	
83	free (internal assigned)	
84	Input for additive pump 1 piston position DOWN	
85	Input for additive pump 1 piston position ABOVE	
86	Input for additive pump 2 piston position DOWN	
87	Input for additive pump 2 piston position ABOVE	
88	Input for empty signal-sensor of additive pump 1	
89	Input for empty signal-sensor of additive pump 2	
90	Alarm button input for sending an e-mail using the attention monitoring function	

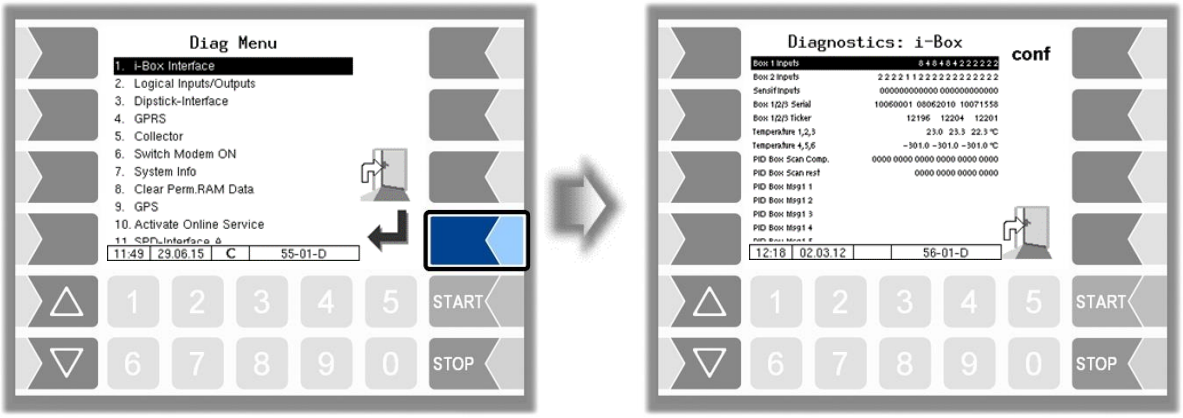
7.3 Diagnostics menu

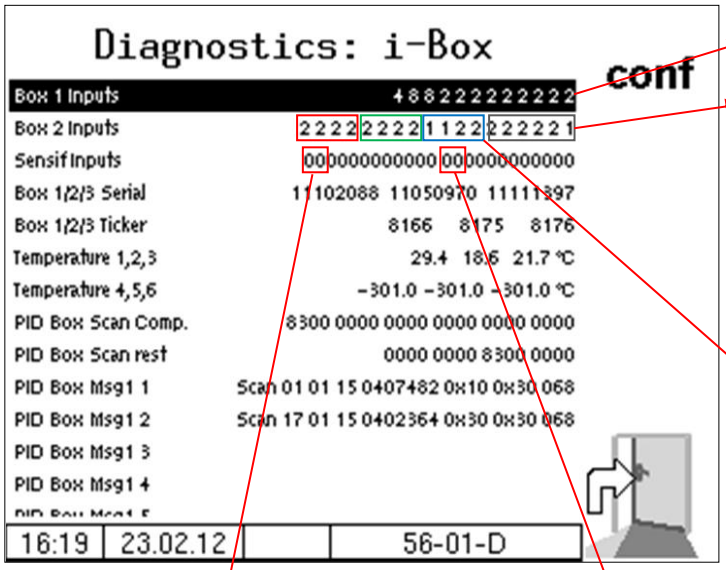
You can use the upper left softkey to open a diagnostics menu. This service function allows the service professionals to perform a specific diagnosis on individual installed components.
You can open the diagnostic menu either outside of a tour, within a tour or within an order.

Menu items that are not available according to the respective system configuration are shown in gray and cannot be selected.



7.3.1 i-Box Diagnostics





Wetlegensensor or sensors at input 1…12 of the i-Box Namur plus **Sensors at input 13…18 of the interface-board Namur (i-Box PID/Namur)**			
Namur: yes		Namur: no	
1	short circuit	1	closed
2	Interruption	2	open
4	wetted / closed		
8	not wetted / open		

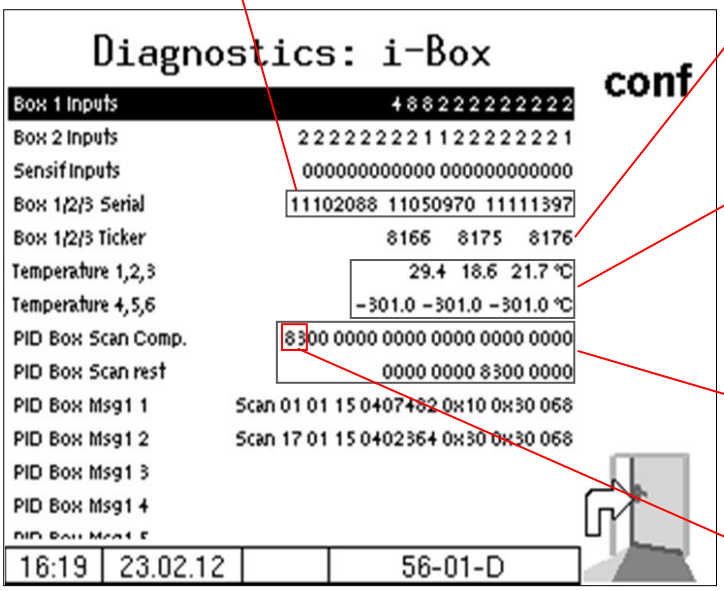
NOTE! Not identical with software „pair“.

Magnetic identifiers limit sensor (each 4 digits) OFP 1 OFP 2 OFP 3		**Mag-netic code**
2222	not connected	
2211	super E10 (formerly super unleaded)	5
2121	V-power diesel	20
2112	super plus	6
1221	super E5 (formerly petrol unleaded)	3
1212	truck diesel	4
1122	diesel	2
1111	Shell diagnostics	

State Product ID sensor 1-6 (each 2 digits)	
00	ok
01	sensor current too high
02	sensor current too low or no sensor connected
03	too many magnets detected or reed contact permanent closed
04	too few magnets detected or reed contact does not close

Product ID sensor (each 2 digits)		**Mag-netic code**
03	diesel	2
05	Super E5 (formerly petrol unleaded)	3
06	*formerly super leaded*	4
09	super E10 (formerly super unleaded)	5
0a	super plus (6)	6
0c	V-power diesel (20)	20

Serial numbers of the i-Boxes
e.g.: Box 1: Interface board Namur Plus (11102088)
Box 2: Interface board Namur (11050970)
Box 3: Interface board PID (11111397)



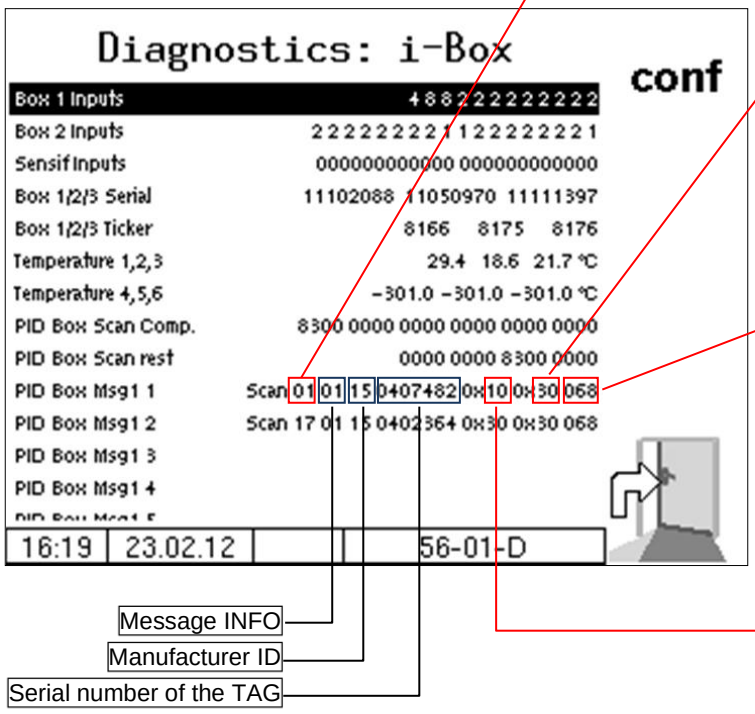
Ticker (Packet data counter)
If a counter is standing still, there is no communication with the respective board.

Temperature sensor 1…6 (°C)
e.g.: Temperature sensor 1 = 29,4 °C Temperature sensor 4, 5, 6 not connected

Scan-Lines 1 to 20 (each 2 digits)		
2X	Listener OFP 1	∗1
4X	Listener OFP 2	
8X *	Listener OFP 3 *In the example the PID-information is red via OFP 3 and scan line1.*	
6X	Listener OFP 1+2	∗2
aX *	Listener OFP 1+3	
cX *	Listener OFP 2+3	
eX *	Listener OFP 1+2+3	
X1	Contact without PID-Info /Com	
X3	Contact with PID-Info	

∗1 *May only be read on one of the product couplings, otherwise there is probably a short circuit between the product couplings.*

∗2 *inadmissible, probably short circuit (Exception: Multiple assignment of gas displacement connection)*



Scan lines 1 to 20 (Example: Scan line 1 and 17)	
01	Compartment 1, left (1)
02	Compartment 2, left (1)
03	Compartment 3, left (1)
04	Compartment 4, left (1)
05	Compartment 5, left (1)
06	Compartment 6, left (1)
07	Compartment 1, right (1)
08	Compartment 2, right (1)
09	Compartment 3, right (1)
10	Compartment 4, right (1)
11	Compartment 5, right (1)
12	Compartment 6, right (1)
17	Single vapour recovery
18	Single vapour recovery
19	Single vapour recovery
20	Common vapour recovery
(1)	Compartment assignment may be different depending on configuration!

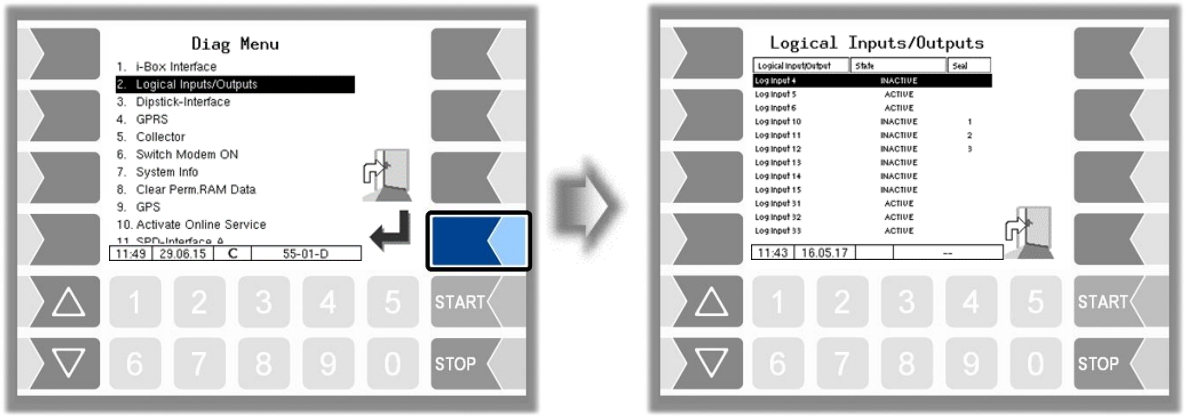
Product quality	
0x	all qualities
1x	A I – Product
2x	A II – Product
3x	A III – Product
x0	all qualities
x1	leded
x2	unleded
x3	Fuel with lead substitute

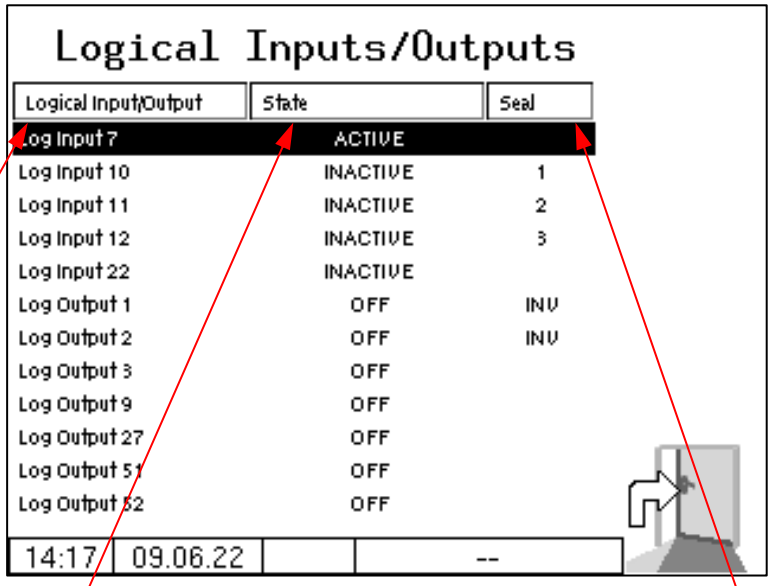
PID-Information	
00	no information (possibly Common vapour recovery)
68	Diesel
69	Heating oil
70	V-Power Diesel
72	Bio-Diesel
92	Super E 5 (formerly Petrol)
95	Super E 10 (formerly Super E 5)
98	Super plus

Tag type	
10	Petrol station product-TAG
20	Depot product-TAG
30	Petrol station gas-TAG
40	Depot gas-TAG

In the configuration menu you can start the i-Box diagnostics by touching the **diag** softkey (see page 47).

7.3.2 Diagnostics of the logic inputs and outputs (Software „pyramid“)





Logical Input

Logical number of input and output (characterized by Input or Otput);
all configured inputs and outputs are displayed.

State

The status of the inputs and outputs is displayed.

Eingänge	
ACTIVE	Valve is closed, wetleg sensor wetted
INACTIVE	Valve is open wetleg sensor not wetted
SHORT CIRCUIT	Short circuit at the input
OPEN CIRCUIT	Open circuit at the input (=no switch connected) (*Namur only*)
Ausgänge	
OFF	Output not activated
ON	Output activated

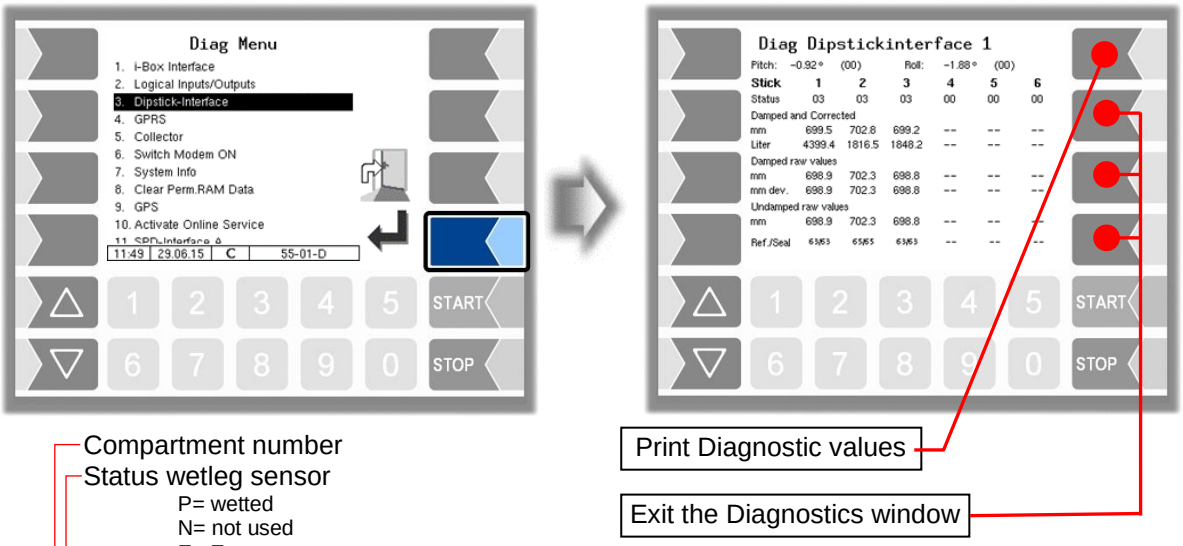
Seal

Displays SPD inputs.

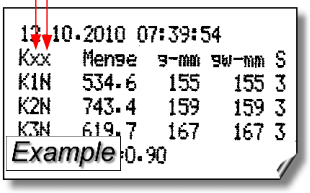
1, 2, 3, …	Compartment number that corresponds to the logical input
A	common input (manipulation of this input effects breaking the seal on all compartments)
F	free input (only monitoring/ recording, with manipulation no seal breaking)
INV	Output inverted

The diagnosis „Logical Input/Output“ is only updated within a delivery order. Outside of an order, the correct states may not be displayed!

7.3.3 Diagnostics of the dipstick interface



Compartment number
Status wetleg sensor
P= wetted
N= not used
E= Error



In the configuraton menu you can start the diagnostics of the dipstick interface by touching the **diag** softkey (see page 57).

- You can print the diagnostic values using the softkey in the top right.
- To exit the Diagnostics window, touch one of the lower softkeys right of the display.

Pitch = angle X (pitch angle) positive values: backward tilt
Roll = angle Y (bank angle) positive values: tilt to the left (seen from the rear)

Diag Dipstickinterface 1

Pitch: 0.72° (00) Roll: 1.02° (00)

Stick	1	2	3	4	5	6	7	8
Status	03	03	03	03	00	00	00	00
Damped and Corrected								
mm	238.9	287.8	362.8	348.2	--	--	--	--
Liter	238.9	287.8	362.8	348.2	--	--	--	--
Damped raw values								
mm	238.9	287.8	362.8	348.2	--	--	--	--
mm dev.	238.9	287.8	362.8	348.2	--	--	--	--
Undamped raw values								
mm	238.9	287.8	362.8	348.2	--	--	--	--
Ref.Act	653	654	655	656	--	--	--	--
Ref.Seal	653	654	655	656	--	--	--	--

Status dipstick:
01 = Measurement ok
02 = Measurement stable
03 = Measurement ok and stable
08 = More or less stops occurred
10 = Reference position has changed by more than 25 mm
80 = no dipstick connected

Status inclinometer:
00 = Measurement ok
80 = no inclinometer connected

Stick: dipstich no.

Reference position
current/stored value in mm

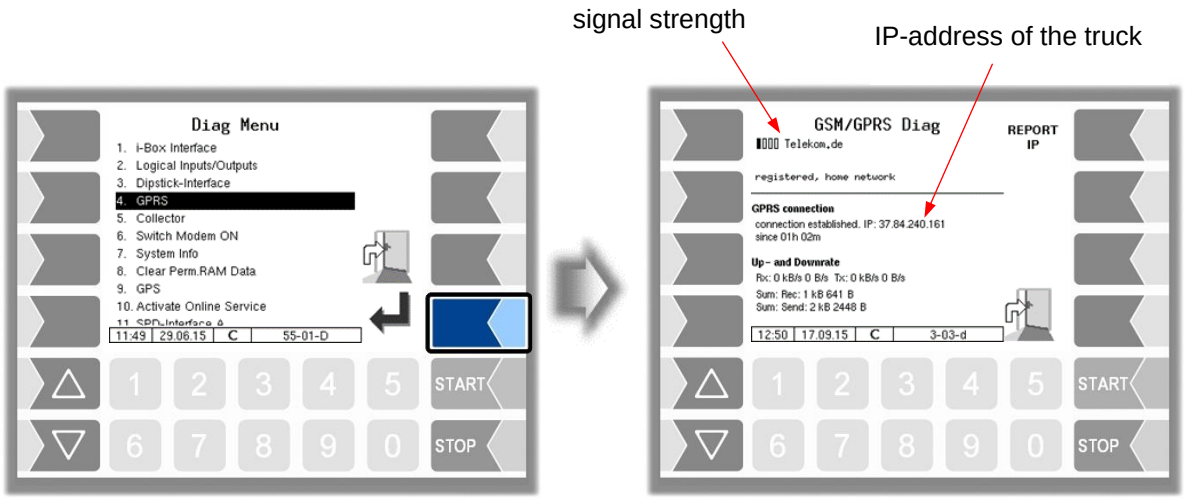
Undamped raw values
undamped level in mm, without angle correction, without displacement of the dipstick from the volumetric center

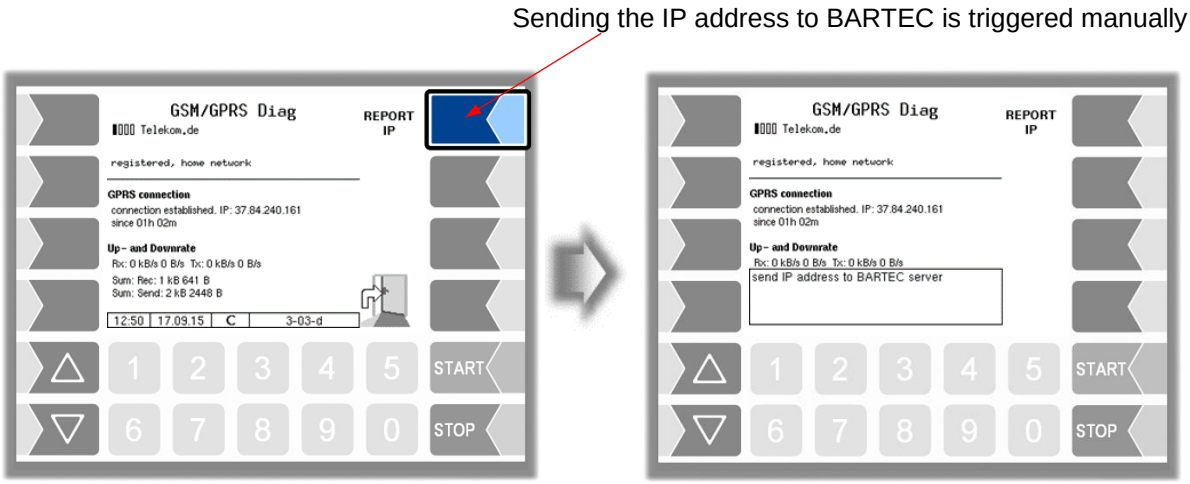
Damped raw values (≙ g-mm on the print)
mm = damped level in mm, without angle correction, without displacement
mm dev. = damped level in mm, without angle correction, with displacement

Damped and Corrected (≙ gw-mm on the print)
damped level in mm or liter, with angle correction and displacement of the dipstick from the volumetric center

7.3.4 Diagnostics GPRS (Modem)

Service function for diagnosing the gprs unit.





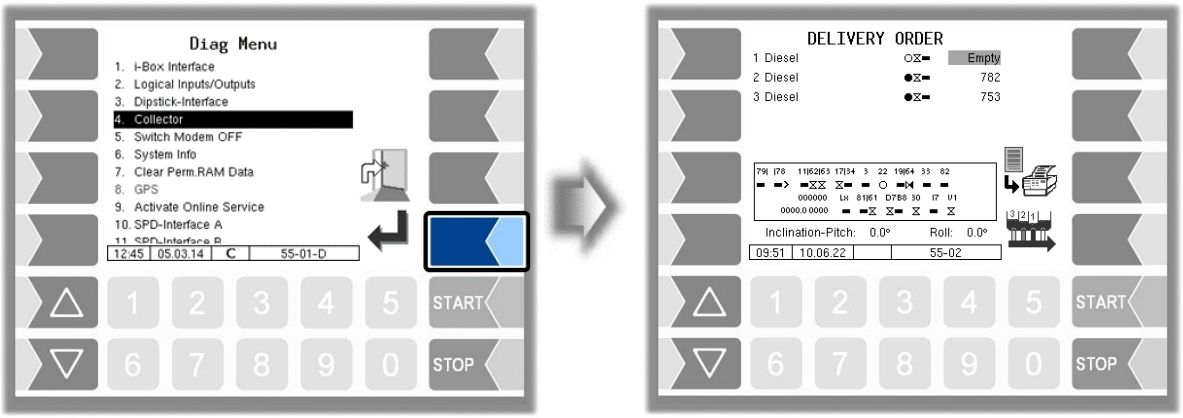
The GPRS diagnostics can also be opened in the configuration menu of the GPRS unit (see section 4.2.6.7).

7.3.5 Diagnostics of the collector

Service function

Available only when *Program Parameter/Collector is set to “on” or “ExTiger“*!

(Wet hose delivery)

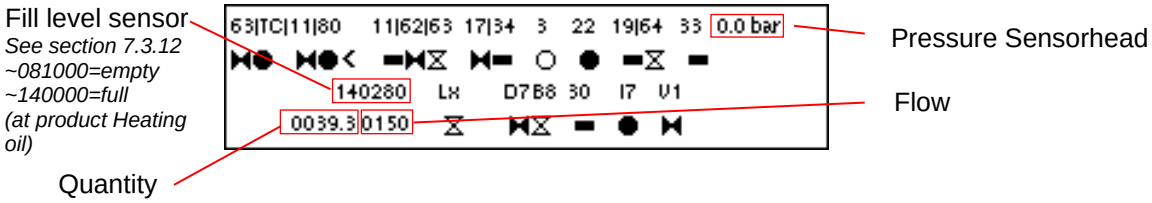


This diagnostic window remains visible until it is deactivated via the diagnostic menu.

Meaning of the symbols	
	Left of the arrow: outputs or inputs configured on the trailer
	Right of the arrow: outputs or inputs configured on the rigid
	Valve open
	Valve closed
	Valve physically closed but inverted, that means logically open
	Valve physically open but inverted, that means logically closed
	Output or residual quantity sensor not configured
	Residual quantity sensor dry
	Residual quantity sensor wetted

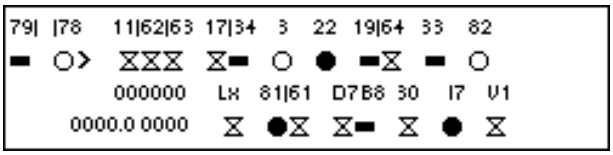
In the line above the symbols for valves or residual quantity sensors are displayed the numbers of the assigned outputs or inputs.

Diagnostics for deliveries from rigid and trailer



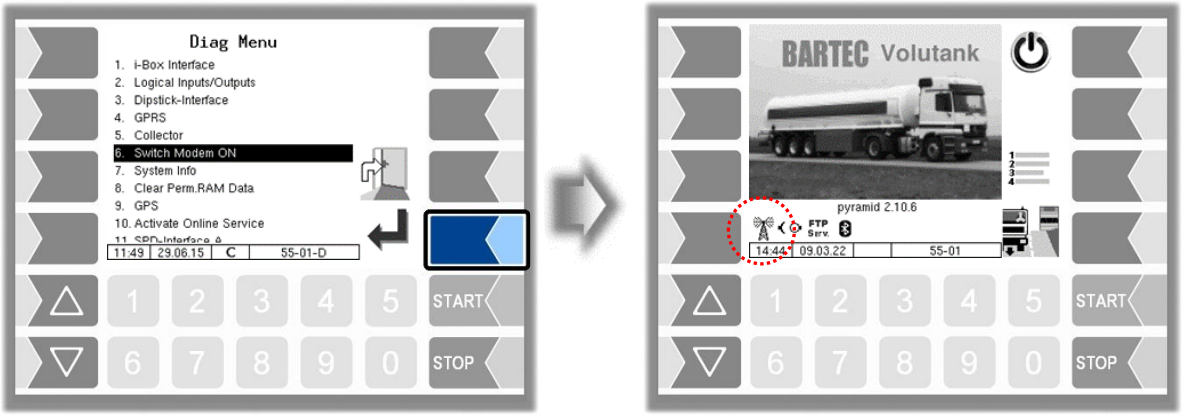
Inputs and outputs shown in the diagnostics window		
63	Output	Truck suction line, small (HSK) **<**
TC	Input	Main residual quantity sensor „collector empty“ on the trailer
11	Output	Collector- separator valve (KP) **<**
80	Input	Wet leg sensor for the trailer suction pipe to the rigid at the highest point **<**
11	Output	Collector- separator valve
62	Output	Suction pipe big, to the trailer (HSG)
63	Output	Truck suction line, small (HSK)
17	Output	Pump
34	Output	Bypass pump
3	Input	Wet leg sensor for a separated dry hose
22	Input	Main Wet leg sensor collector
19	Output	venting when filling the collector (E1)
64	Output	venting the collector when filling or removing residues at delivery from trailer, E2
33	Output	A-valve (Delivery via Tiger)
Lx	Output	Dry hose 1/2
D7	Output	D-Valve (D)
B8	Output	D-Valve Bypass (B)
30	Output	thin residue removal line at wet hose delivery without TIGER
I7	Input	Wet leg sensor delimitation point to the wet hose
V1	Output	Wet hose valve (alternatively V2 or V3)

Diagnostics for deliveries only from the rigid



Inputs and outputs shown in the diagnostics window		
79	Input	Wet leg sensor for collector gravity delivery via L4
78	Input	Wet leg sensor for collector gravity delivery via L3
11	Output	Collector- separator valve (KP)
62	Output	Suction pipe big, to the trailer (HSG)
63	Output	Truck suction line, small (HSK)
17	Output	Pump
34	Output	Bypass pump
3	Input	Wet leg sensor for a separated dry hose
22	Input	Main Wet leg sensor collector
19	Output	venting when filling the collector (E1)
64	Output	venting the collector when filling or removing residues at delivery from trailer, E2
33	Output	A-valve (Delivery via Tiger)
82	Input	Wet leg sensor collector
Lx	Output	Dry hose ½
81	Input	Wet leg sensor for the pump sump
61	Output	Pump sump
D7	Output	D-Valve (D)
B8	Output	D-Valve bypass (B)
30	Output	thin residue removal line at wet hose delivery without TIGER
I7	Input	Wet leg sensor delimitation point to the wet hose
V1	Output	Wet hose valve (alternatively V2 or V3)

7.3.6 Switch Modem ON and OFF



This menu item is omitted, is when the modem is enabled in the GPRS configuration (see section 4.2.6.7).
Only if the modem is configured but not activated in the GPRS configuration, the modem can be switched on or off, when confirming this menu option.

The operating status of the modem is displayed by icons.


Modem switched on

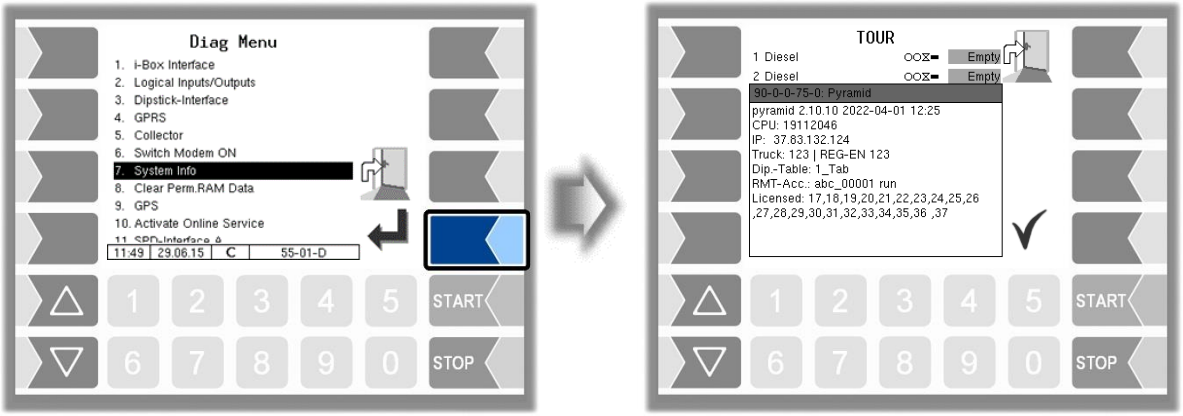

Modem switched on, connection established


Receiving data


Sending data

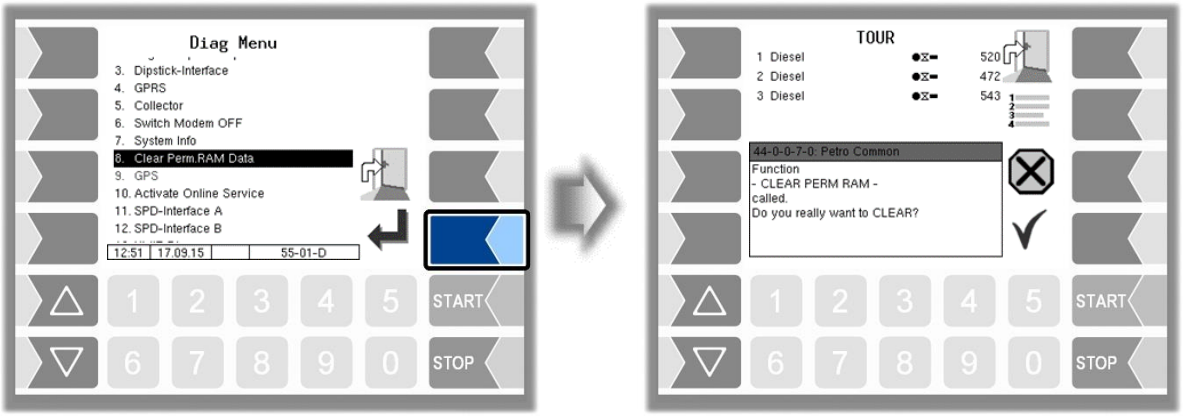
7.3.7 System Info

The menu item is used to display system data.



When confirming this menu item, the system information is displayed.

7.3.8 Clear Permanent RAM Data

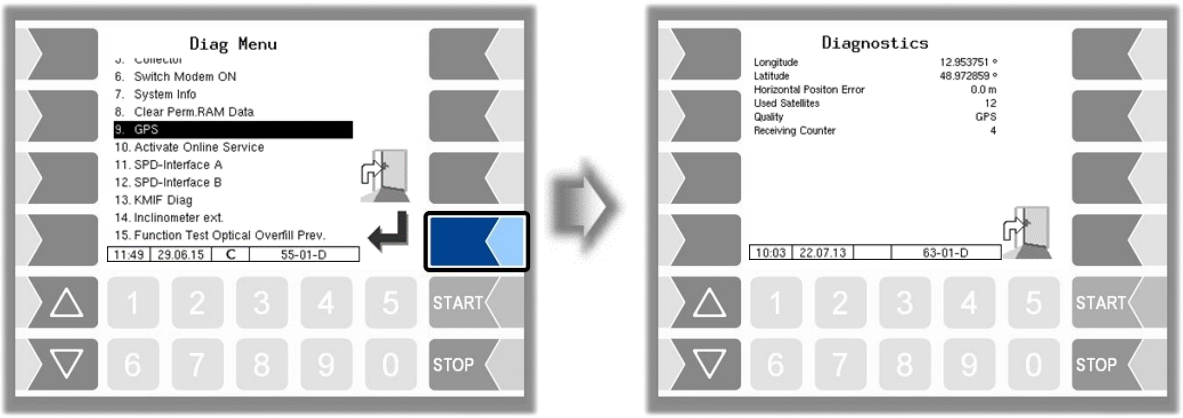


When you confirm the prompt, the contents of the RAM are cleared (data of the last delivery, state of the program)!

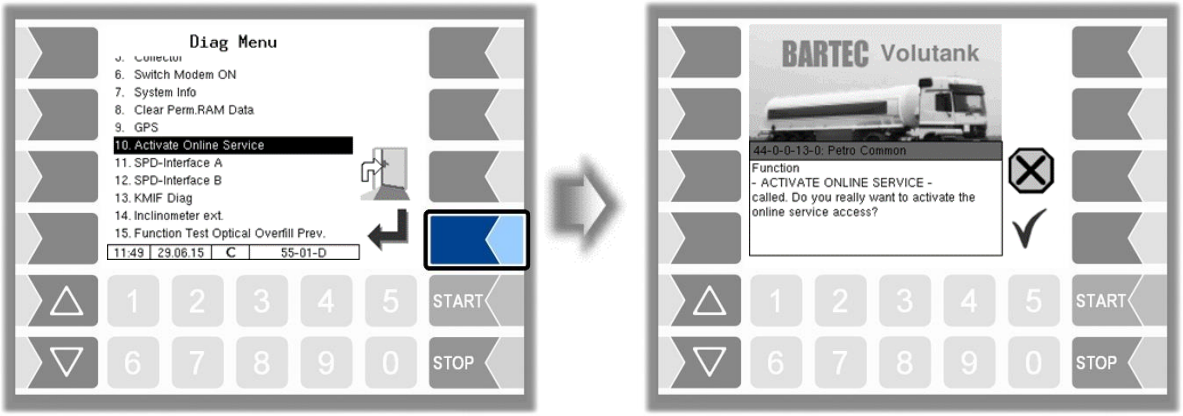
See also section 4.5.7.

7.3.9 GPS-Diagnostics

With the GPS diagnostics you can check the GPS connection.
You can also run the GPS diagnostics in the configuration menu for the GPS receiver when the GPS receiver is turned on (see section 4.2.6.11).



7.3.10 Activate Online Service

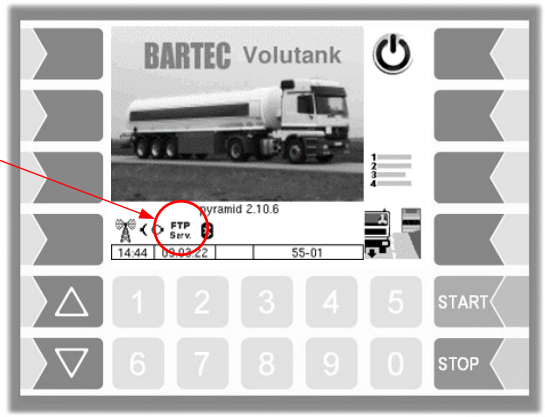


The online service can be activated only if the access is configured (see section 4.2.9.1 /

Online Service Funktion).

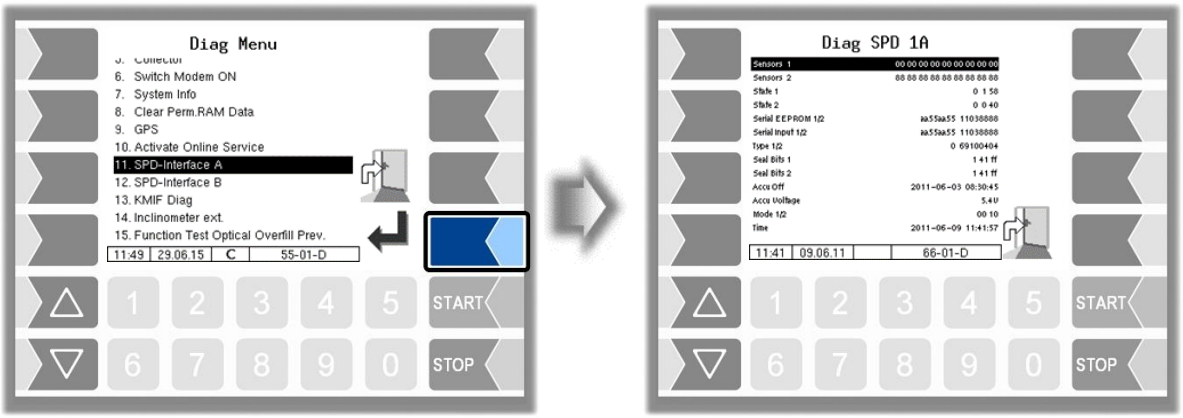
After activating the online service, you allow the BARTEC BENKE-Service access to service information of the vehicle. This allows downloading journals, log files etc. Access is via an FTP server. The connection is activated for 3 minutes, in which the access to the data needs to be started. The connection is automatically terminated when there is no access for 3 minutes.
The online service can also be activated in the diagnostics menu (see section 4.5.15).

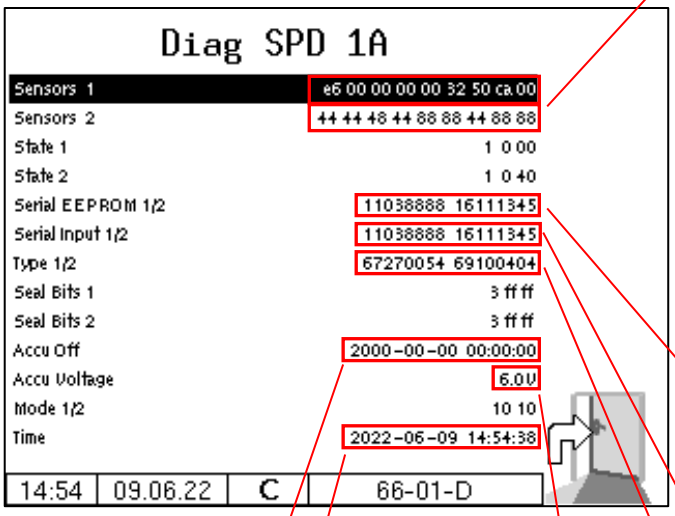
The active connection to the FTP server is displayed in the main screen.



7.3.11 Diagnostics SPD

You can run the SPD-Diagnostics also in the Administration menü (see section 4.2.6.10).





TAG information or Namur sensors(1) (1)**depending on the connected device**			
Namur sensors at i-Box 1 or i-Box 2 (Input 1 – 18 or Input 19 - 36)			
Namur: yes		Namur: no	
1	short circuit	1	closed
2	Interruption or not connected	2	open
4	Wetted or closed		
8	Not wet or open		
Read TAG information from TAG reader1 or TAG reader 2			
e6 xx xx xx xx xx xx xx	read TAG information		
00 00 00 00 00 00 00 00	no TAG read, (cabinet door open?)		

Stored serial number device 1 / 2	
aa55aa55	no device connected (or device defective)
c3c3c3c3	Software option „Minitrailer“ is activated (from firmware version 1.04)

serial number currently being read device 1 / 2	
aa55aa55	no device connected (or device defective)

Device type currently being read device 1 / 2	
67270054	TAG reader
69100404	i-Box
0	no device connected (or device defective)

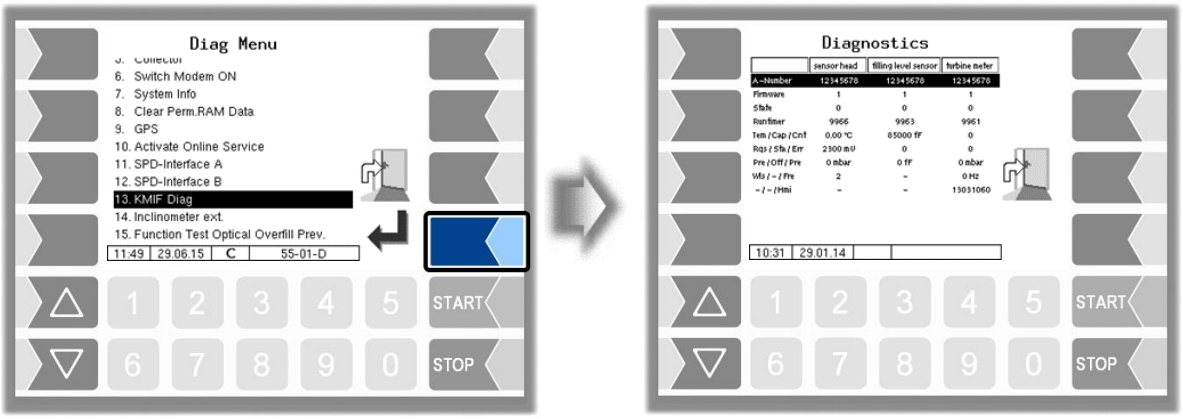
Accumulator shutdown
Time of the last accumulator shutdown

Time
Time setting currently stored in the SPD-interface (must be identical with the system time)

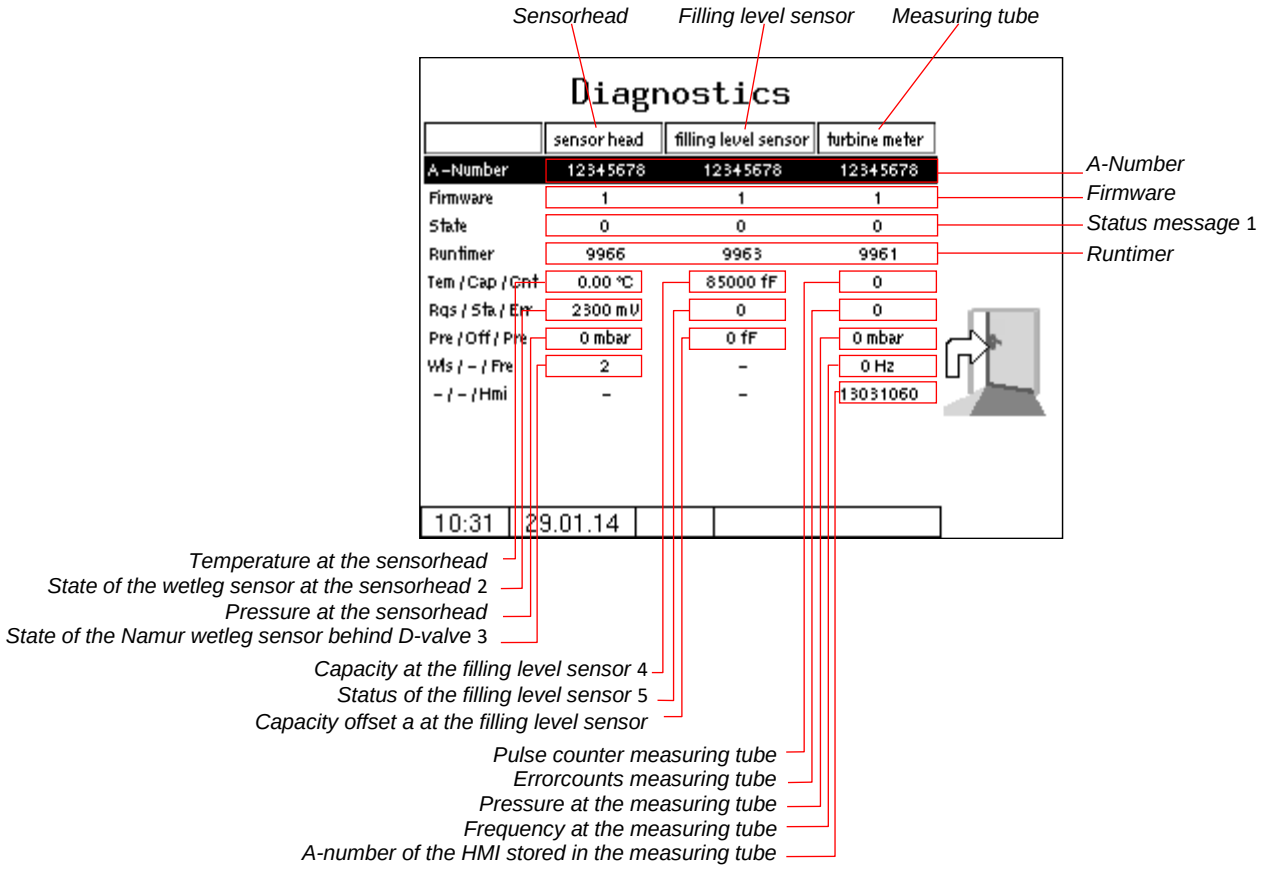
Accumulator voltage	
8.2 V	no accumulator connected
5.x V	accumulator connected

7.3.12 Diagnostics of the Measurement Interface

(Only available when „Ex-Tiger“ is active - Program Parameter/Collector →ExTiger)
This diagnostic function, you can also run in the configuration menu of the measurement interface (see page 79).



In the diagnostics window, the current data of the three components of the measurement system are displayed (sensorhead, filling level sensor, measuring tube).



If necessary, submit the displayed diagnostic values for evaluation to the BARTEC BENKE Service.

1 *Status message*

sensor head	
0	OK
1	Error when comparing the sent and the calculated checksum.
2	Temperature sensor fault (no sensor connected or broken cable) simultaneously, a temperature value of 300 ° C is sent.
4	Pressure sensor fault (no sensor connected or broken cable) simultaneously, a temperature value of 300 ° C is sent.
filling level sensor	
0	OK
1	Error when comparing the sent and the calculated checksum.
turbine meter	
0	OK
1	Error when comparing the sent and the calculated checksum.
2	Pulse counter error (Error in the evaluation of the Hall elements).
4	Pressure sensor fault (no sensor connected or broken cable) simultaneously, a temperature value of 300 ° C is sent. *The Ex-measuring tube is not equipped with a pressure sensor from series "A".*

2 *Status of the Residual Quantity Sensor at the sensor head*

~120 mV ≙ empty	~2200 mV ≙ full

3 *Status of the Namur- Residual Quantity Sensor behind Inline Valve*

1	short circuit
2	interruption
4	wetted / closed
8	not wetted / open

4 *capacitance value at the filling level sensor*

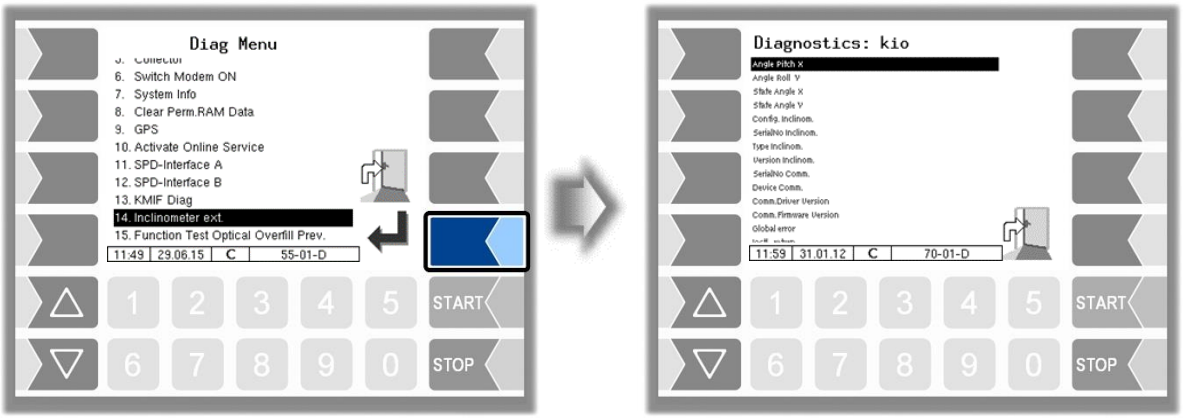
~081000 ≙ empty	140000 ≙ full (*Heating oil*)

5 *Status of the des filling level sensor (Status bits of the capacitance sensor module)*

0	no error
2	Timeout error in the capacitance measurement Sensor 1
20	internal error, Sensor 1

7.3.13 Diagnostics of the external inclinometer

In the diagnostics window you can call up the current values of external deviation measurement.

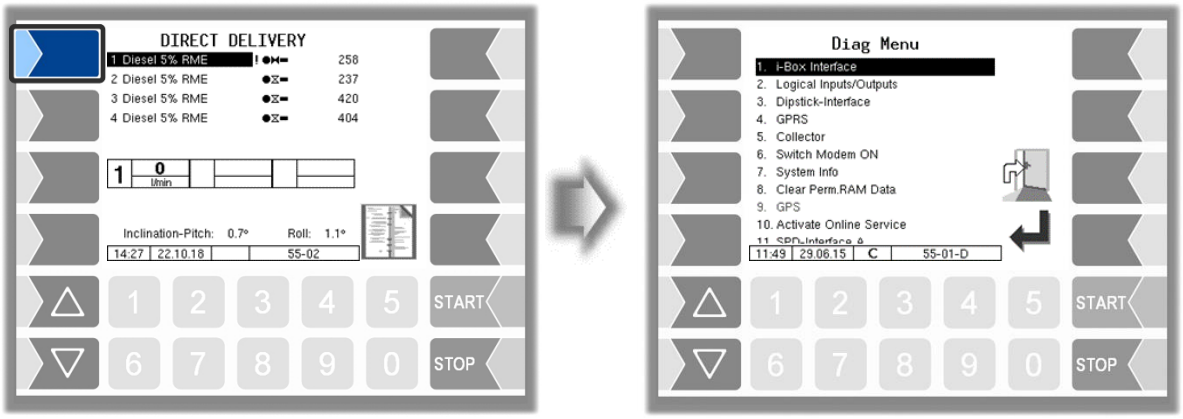


The diagnostics of the external deviation measurement can also be opened in the configuration menu (see section 4.2.6.13).

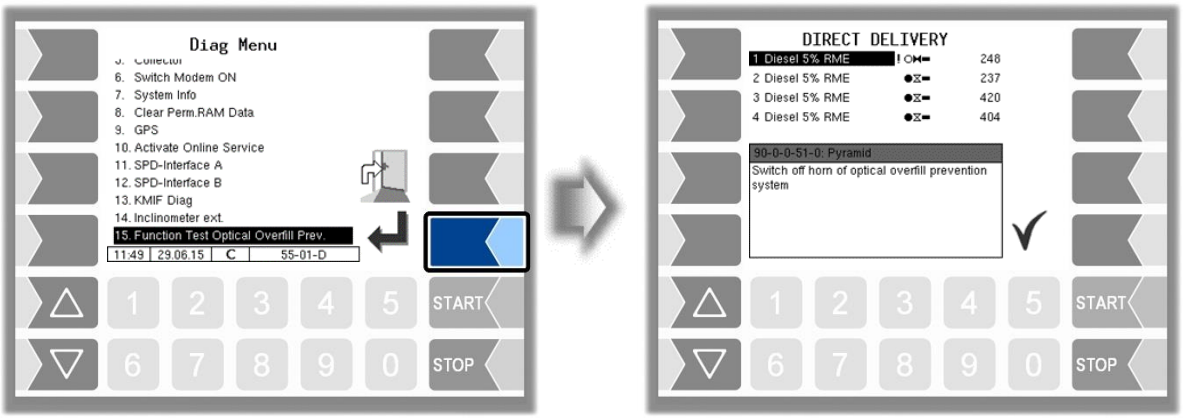
7.3.14 Testing the function of the Optical overfill protection

During a delivery, you can check the function of the optical overfill protection.

- Open the diagnostics menu.



- Confirm the menu item 15.
  The delivery will be stopped and the horn is switched on.

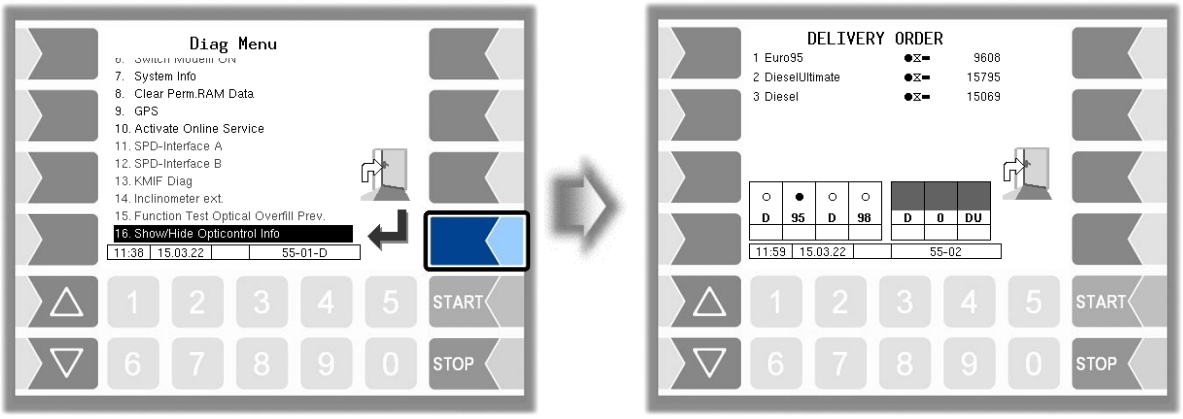


- Confirm the displayed message. The horn will be switched off and the delivery continues.

7.3.15 Show/Hide Opticontrol Info

Shows the current diagnosis of the Opticontrol.

Only use this function if requested by BARTEC-BENKE Service!



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