PETRO 3003

Measurement System

TIGER A1, A3 / COMP / CHEM / LPG / LUBOIL

Configuration

Software version pair 1.20.X

SAK 120815

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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 *pair*

Software-version	***Modification of compulsory calibration modules***	***Innovation***
1.20.2		LPG: new parameter "Autostart after air ingress"
1.20.1		COMP: Wet hose / bypass 3 possible
1.20.0	✓	Operating mode LUBOIL
1.19.8		CHEM: Additivation
1.19.4		TVE1 – TVE2 communikation, shared printer
1.19.0		COMP: Serial delivery (Counter selection), Language Slovenian
1.18.4		Extension for LPG Extension Outputs and Inputs (Dry run protection)
1.17.12		Language Czech
1.17.8		Additional Functions / Self filling (new output log 43)
1.17.1	✓	GTL Products Outputs and inputs under calibration protection
1.16.32		Extension Outputs and Inputs (COMP Power levels, flow reduction) CHEM control parameter/Reduce del. x % *flow
1.16.30		Extension COMP New Outputs and Inputs (COMP Residual removing) Program Parameter/Netherlands
1.16.25	✓	Modification of the calibration required module (*only for Ex-Tiger-Variant)
1.16.24		Extension CHEM control parameter/ Filling Extension Program Parameter/Operation mode/COMP-CHEM
1.16.22		Control Parameter /Draining Program Parameter/Operation mode CHEM control parameter
1.16.18		Control Parameter/Preset in mind
1.16.14		Extensions CHEM Special function / Emptying and filling the CHEM measuring system
1.16.5		Output for pump control (log. 22) Controp parameter/ Minimum filling pressure
1.16.3	✓	Modification of the calibration required module (*only for CHEM variant) Product configuration/Metrological Produkts/Meter (type of counter) Operation mode CHEM Office configuration/FTL Parameter/FTL Delivery Extension SAFE Parameter/SAFE Configuration/Quality Control Additional Functions/Start Data Transfer
1.15.1		Operation mode COMP Control Parameter/ Release delay Control Parameter/Throttle Hose selection based on configured outputs Office configuration/Office parameter/ Order Start-Dialog
1.13.2		Selection Print parameter (completely or only the calibration relevant data) Office configuration/FTL Parameter/OBC printout
1.13.1		Double additivation, multiple additivation Program Parameter/User Extension of outputs and inputs (Additivation) Hardware/IO-Box 6753 New operation type: “Rinsing”
1.12.2		Program parameter/ Change Prices Office
1.12.X		Building site delivery via Baustellenbelieferung über handheld terminal/TAG
1.11.9		Service menu/ Clean Up Filesystem
1.11.5		Extensions for “3003 Service Tool” functionalities
1.10.X		A4-printer EPSON LQ 590-6863-7 Program parameter/ Allowed Deviation Program parameter/Building site option Wireless Overfill Prevention

1.8.3		Print screen (event key 2s) Safe Parameter/ PID Signal Damping Safe Parameter /PID Connect Delay
1.8.1		Optical overfill prevention (Switzerland)
1.7.7		Hardware/printer/Tally Genicom MIP 480/horiz. Offset FTP Remote Access
1.7.5		Hardware/Printer/Epson TMU 295/Record Hardware/ Printer /Epson TMU 295/Record Interval Hardware/ Printer / Tally Genicom MIP / Record Hardware/ Printer / Tally Genicom MIP / Record Interval
1.7.1	✓	Ex-Tiger Hardware I/O 24 Interface Control parameter/Flow control FTL Conditions/ Order Printed Dialog FTL Conditions /OBC-Diagnostics FTL Conditions /TDL- Payment Mode

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 operating instructions are part of the product and must be kept in the immediate vicinity of the measuring system. The personnel for assembly, operation and maintenance must have access to it at all times.
Following the instructions in this manual is important for correct functioning of the measuring system during operation.

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 GmbH reserves the right to make technical changes at any time.
BARTEC 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 Operating 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.

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.

For safe installation and commissioning, the knowledge of the safety instructions and warnings in this service manual and their strict compliance are essential.

Careful handling and consistent adherence to instructions can help to prevent accidents, injuries and property damage.

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).

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.

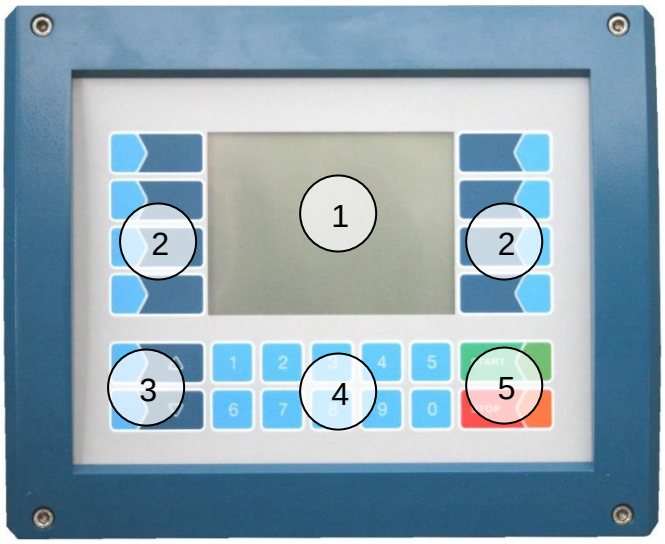
3 Basics

The PETRO 3003 system can be used to monitor, record and control all operations and operating processes for loading and unloading petroleum vehicles.
The Software PAIR is used to control product deliveries and to record the data of this process. TIGER 3003 is used for products of hazard classes A1 and A3 with and without additives, liquid chemicals and aqueous urea solutions, pressurized liquefied gases and lubricating oils.

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

The operating unit acts as the central control and information unit for the entire system.
The compact controller (in vehicles with "TIGER A3") or the HMI (in vehicles with „TIGER A1“, „COMP“, „LPG“ or „LUBOIL“) is used as the operating unit. Both operating units are possible for the "CHEM" variant.
The operation is the same for both devices.



Compact-Controller Typ 6942-10 (A3)

HMI Typ 6922-10/11 (A1)

1	Display
2	Softkeys
3	Selection keys
4	Numerical keys
5	Operating keys

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. The liquid crystal display is clearly visible in the dark and even in bright sunlight.

3.2 Operating concept

3.2.1 The software user interface

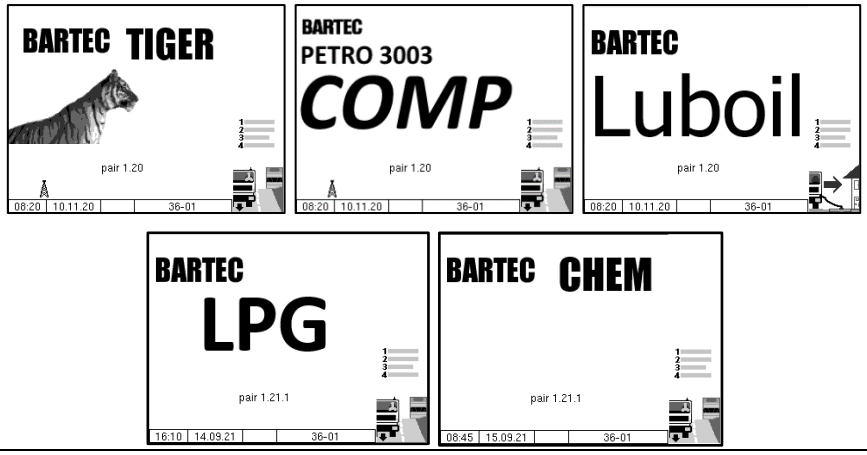
Due to differences between software releases and/or configurations, the displays illustrated in this document may differ slightly from the displays on your system.

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 119 and following.

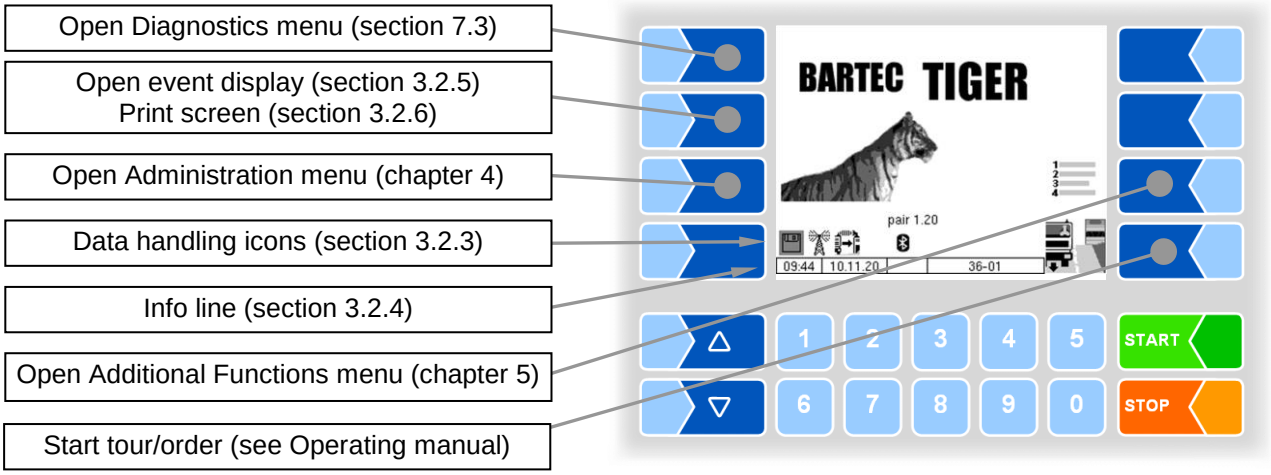
When the system is started up, the main menu appears on the display.

The start screen of the main menu is different in the various operating modes:

Depending on the selected operation mode, one of the following start screens is displayed.

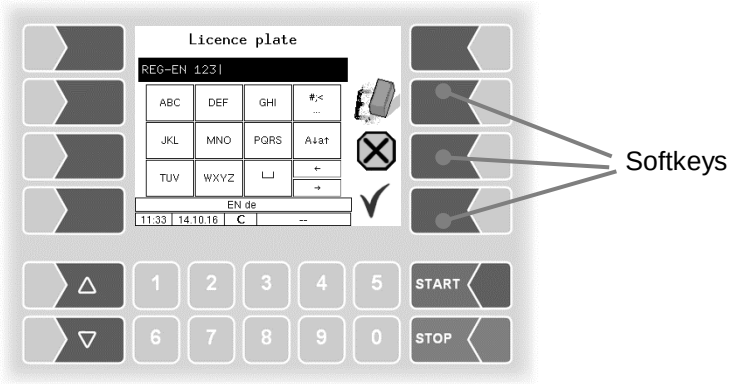


You can access the various displays or operating modes using the softkeys to the left and right of the display.



3.2.2 Softkeys

The softkeys can be assigned various functions, the current meaning of which is indicated by symbols. 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!**
	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.
	Process abort, print	The current operation is aborted without delivery, a blank delivery note is printed.
	Start residue removing	If residue removing is not started automatically you can start it manually.

Symbol	Meaning	Effect
	Start delivery	The delivery process is started, the system is filled.
	unmeasured delivery	Opens the dialog for unmeasured delivery of products.
	Enter password	Opens the dialog for entering the password (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).
	Additional functions menu	The Additional Functions menu is opened.
	Start tour	A tour is started (with active tour handling)
	Start order	The menu for starting orders is opened (Tour handling is not active)
–>2	Select page	If a window has multiple pages, you can display the corresponding page.
?	Show Information	Information about missing SAFE components will be displayed. *(when using dry hose delivery with Ex-TIGER and SAFE)*
	Bypass	SAFE components are bypassed. *(when using dry hose delivery with Ex-TIGER and SAFE)*
	Venting	The measuring system is vented (LUBOIL)

Depending on the current operating state, further softkeys can be available. These are then labeled for the respective function in the plain text.

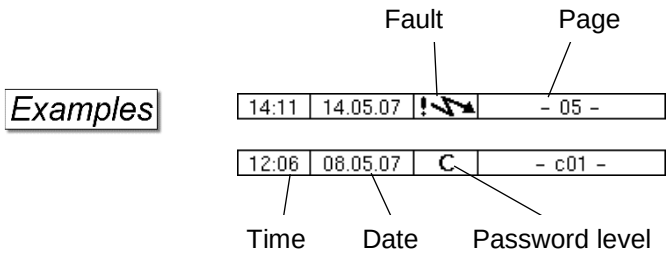
3.2.3 Data handling icons

The following icons are used to monitor the data handling and are displayed on 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

3.2.4 Info line

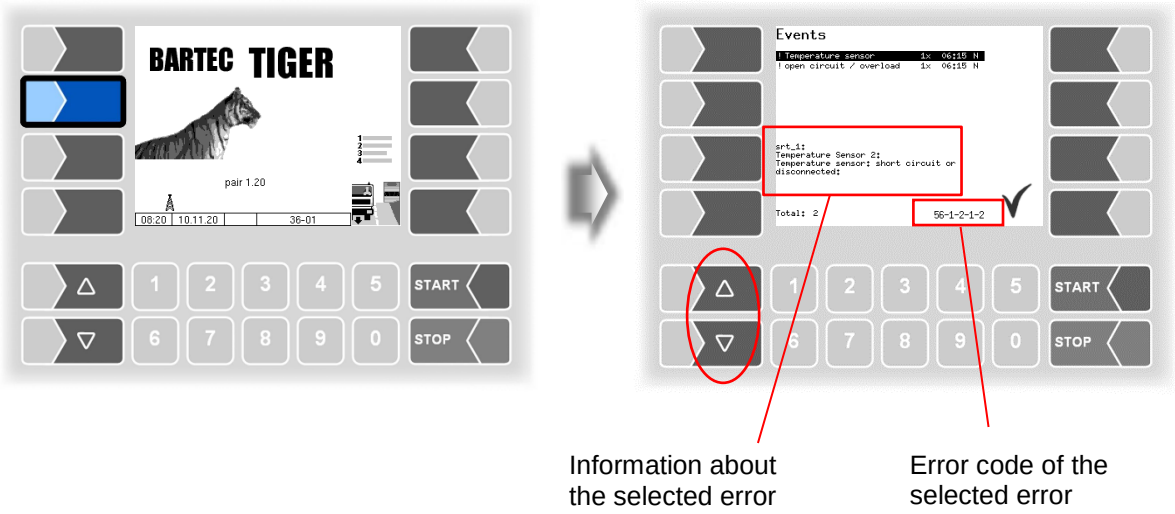
The info line shows the date and time, information about the operating status and the software page number.



3.2.5 Event display

Important error messages are displayed directly in the display if the calibration switch is closed.
You can open the event display with the 2nd softkey left of the display. Here are all operating states and faults displayed.

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.



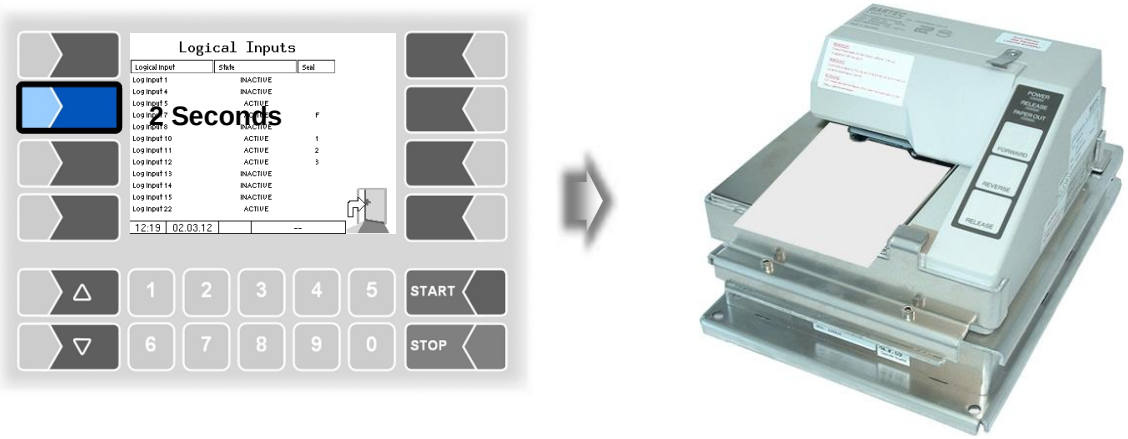
Maybe in the event display more than one error are displayed.
Use the arrow-keys to select the individual messages.
For the currently selected error, more information and an error code are displayed (see also section 6, page 118).

3.2.6 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.

The slip printer (EPSON TM) must be installed for this function. If a different printer type or no printer is installed, a screenshot is saved on the system. You can access the screenshot via the software "3003 Service Tool".

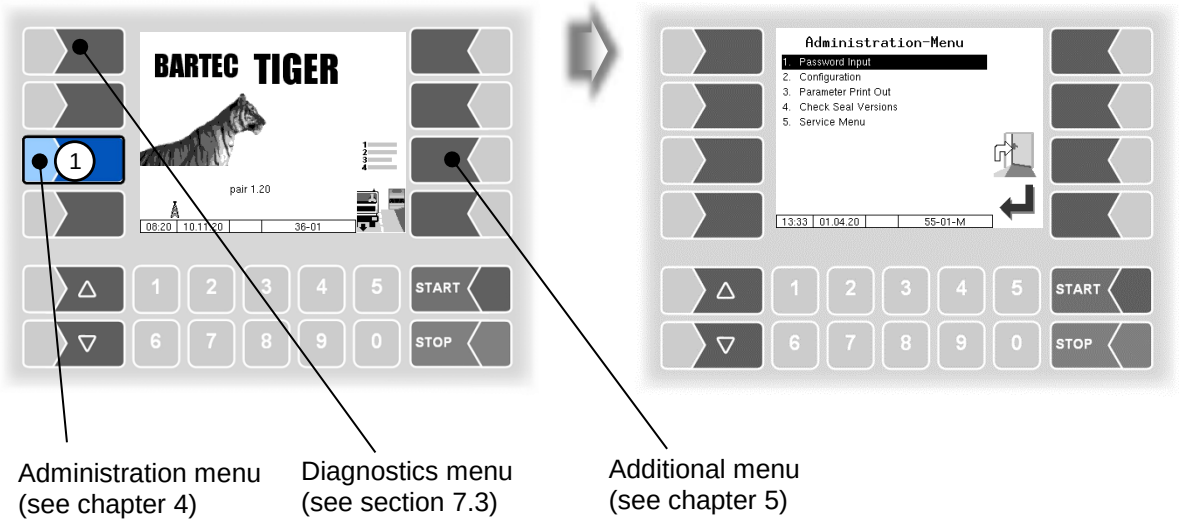
There is a separate manual for the program "3003 Service Tool".



3.3 Operating the menus

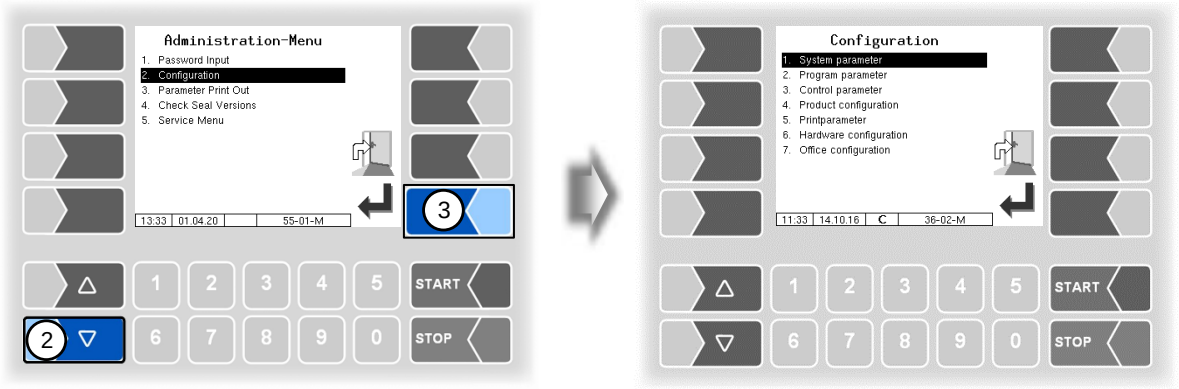
3.3.1 Opening a menu

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.

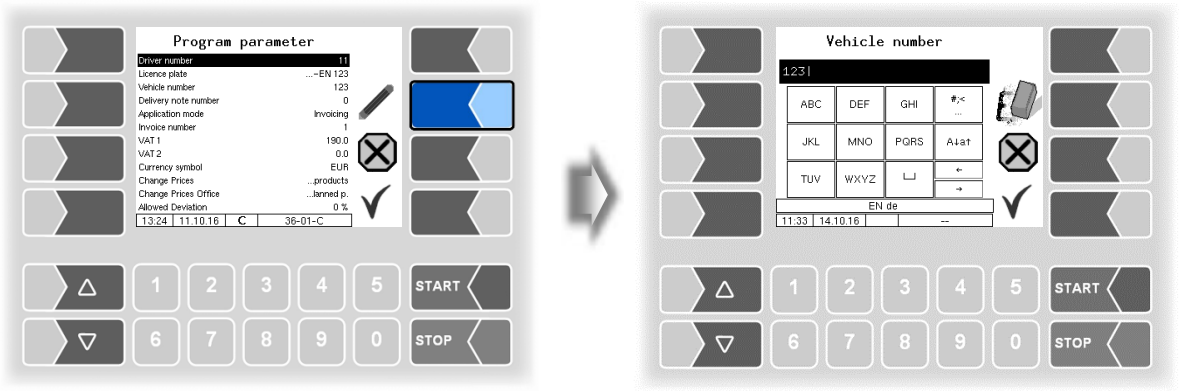


If the menu contains further submenus, you can open the required submenu in the same way.

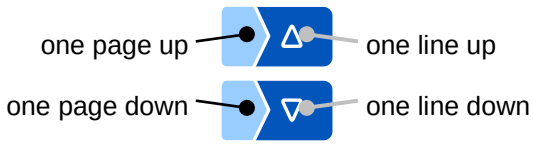
3.3.2 Editing parameters

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).

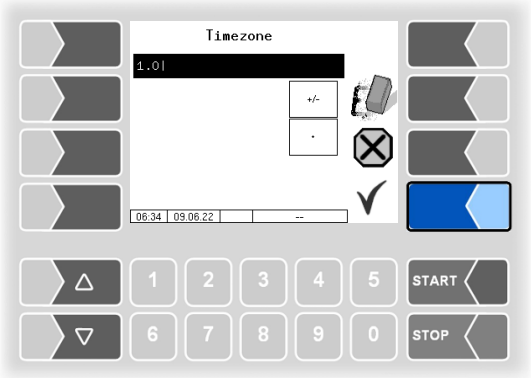


If not all entries in menus or lists can be displayed in the screen, you can use the selection keys to scroll lines or pages.



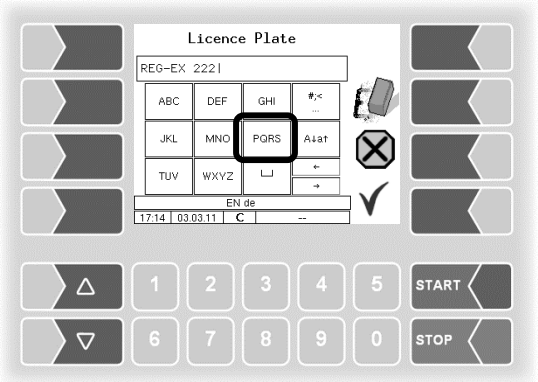
Numerical entries

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 decimal point, you can use the [+/-] softkey or the dot softkey .
Confirm your entry using the “Confirm” 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 bypressing the key the appropriate number of times in quick succession.
You can enter a blank with the [␣] key.

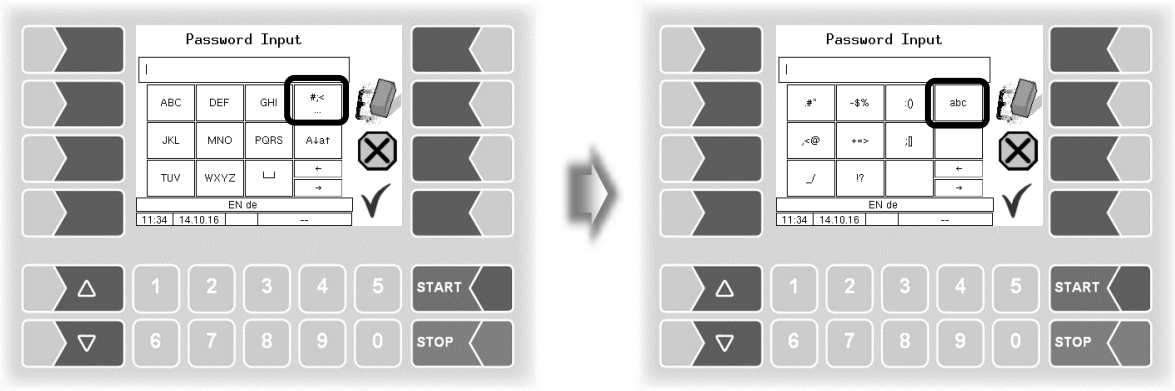


Shift key

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 [abc] .

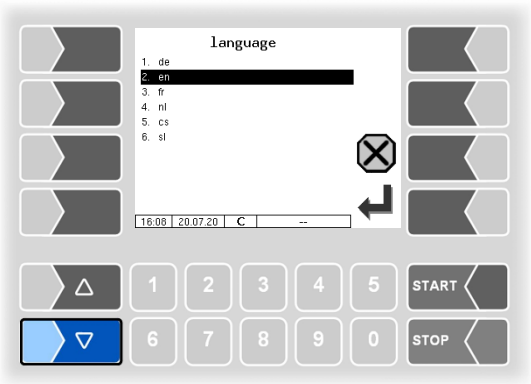


Once you have finished making your entry, touch the “Confirm” softkey.

Selection lists

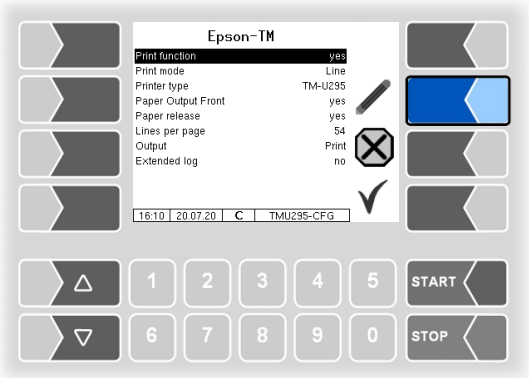
Selection lists are available for certain parameter settings.
Select the required setting using the selection keys [▽] and [△] .
The selected setting is highlighted with a black bar.
Confirm your selection using the “Confirm” softkey.

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



Alternatives

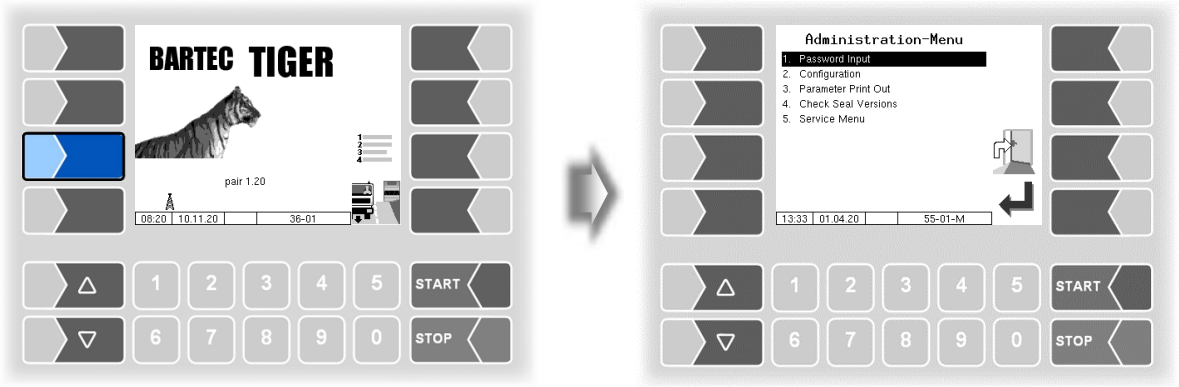
In the case of parameters for which only two alternative settings are possible, e.g. Yes / No or On / Off, the change is made when you press the "Edit" softkey. With the number key 0 the settings are switched off (no), with any other number keys they are switched on again (yes).



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 (Hidden Softkey). 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,
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 password

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*
*Driver 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.

Numeric user password
A user password consisting of digits, is formed with the aid of a user code.

User password = driver password x (user code + 1) + user code

Example *Driver password = **31**, user code = **120***
*User password = 31 x 121 + 120 = **3871***

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 on the board in the control unit.

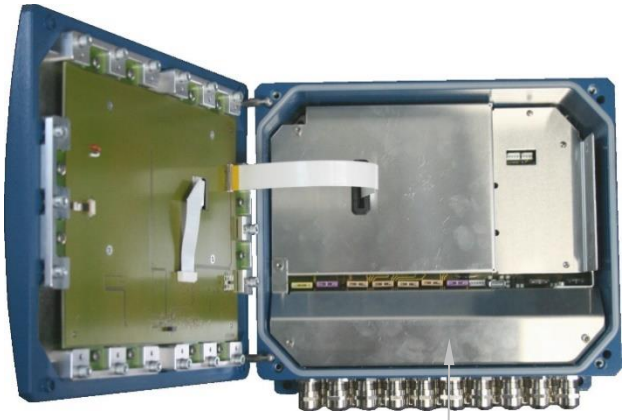
If calibration data is to be changed, the calibration switch must be opened.
Whenever the seal switch is opened, re-calibration by an official office, for which a charge will be made, is compulsory!

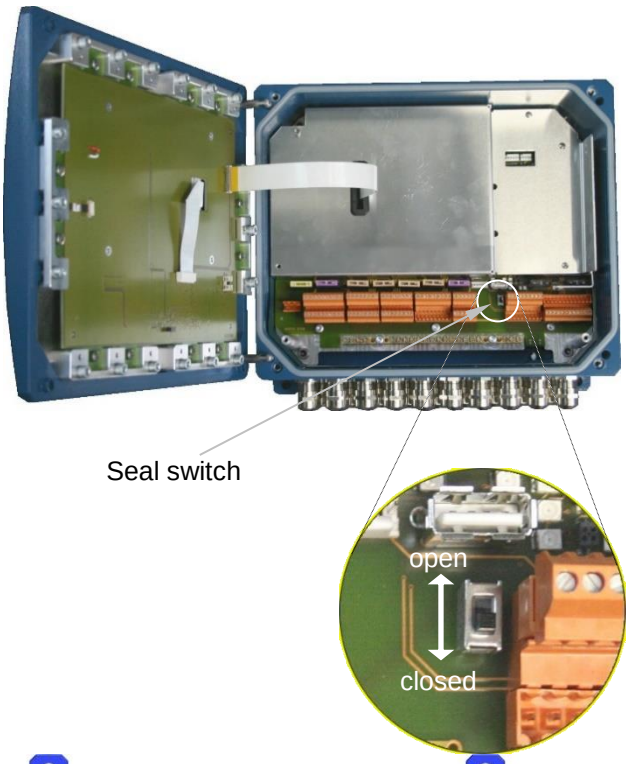
Compact Controller

The seal switch is located on the board in the compact controller.

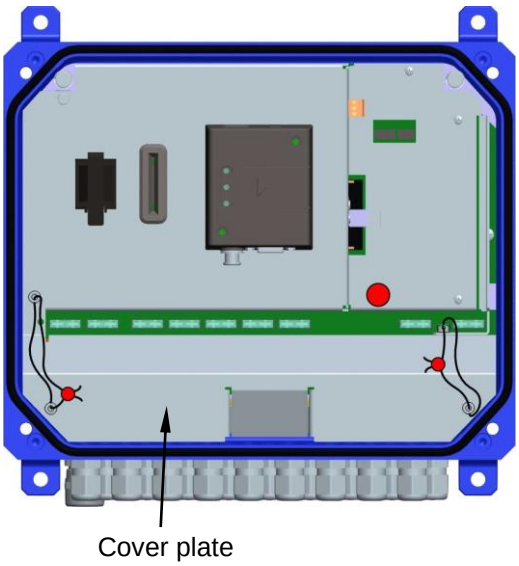
- Loosen the four screws of the upper part of the operating unit and open it up.
- Remove the seal, loosen the screws of the cover plate and remove the cover plate (only necessary for the older version).

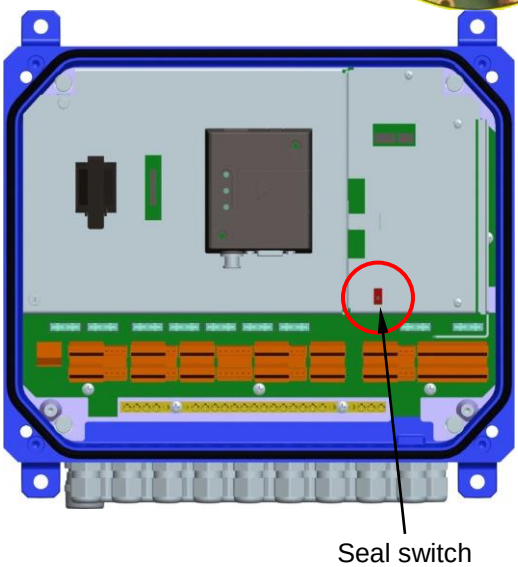
Older version





New design



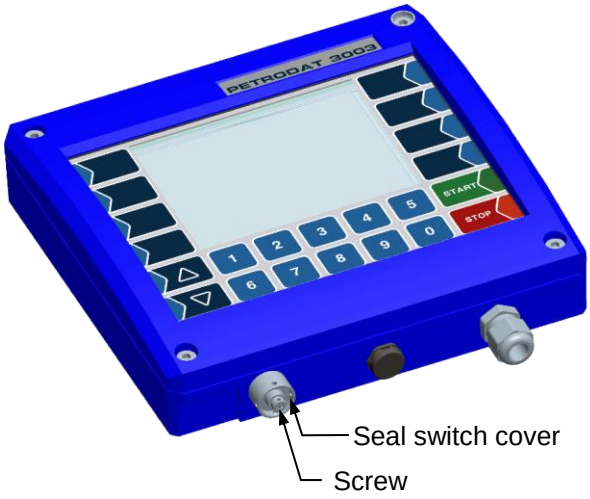


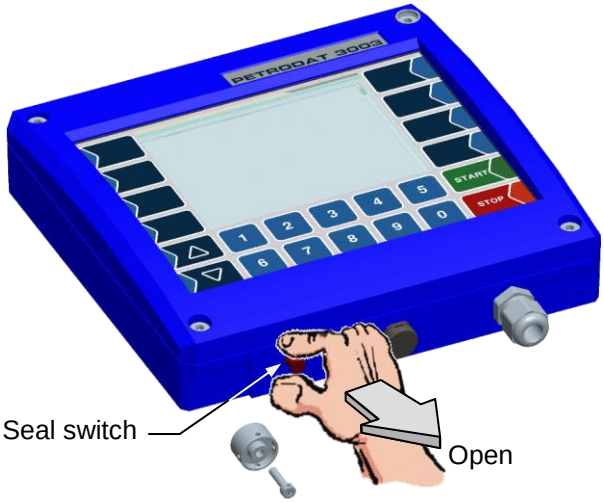
Seal switch open:
Access to metrologically relevant parameters possible.

Seal switch closed:
Access to metrologically relevant parameters <u>not</u> possible.

HMI

The seal switch is located on the bottom of the control unit under the seal switch cover. The screw of the seal switch cover has a lead seal. To open the seal switch, you must loosen the seal and remove the seal switch cover. Then you can open the seal switch by pulling it down.

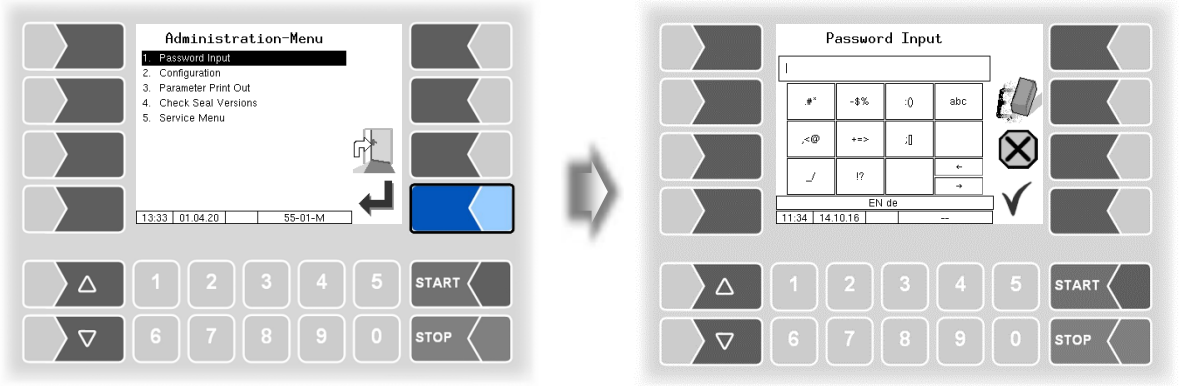




4.1.2 Entering the password

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

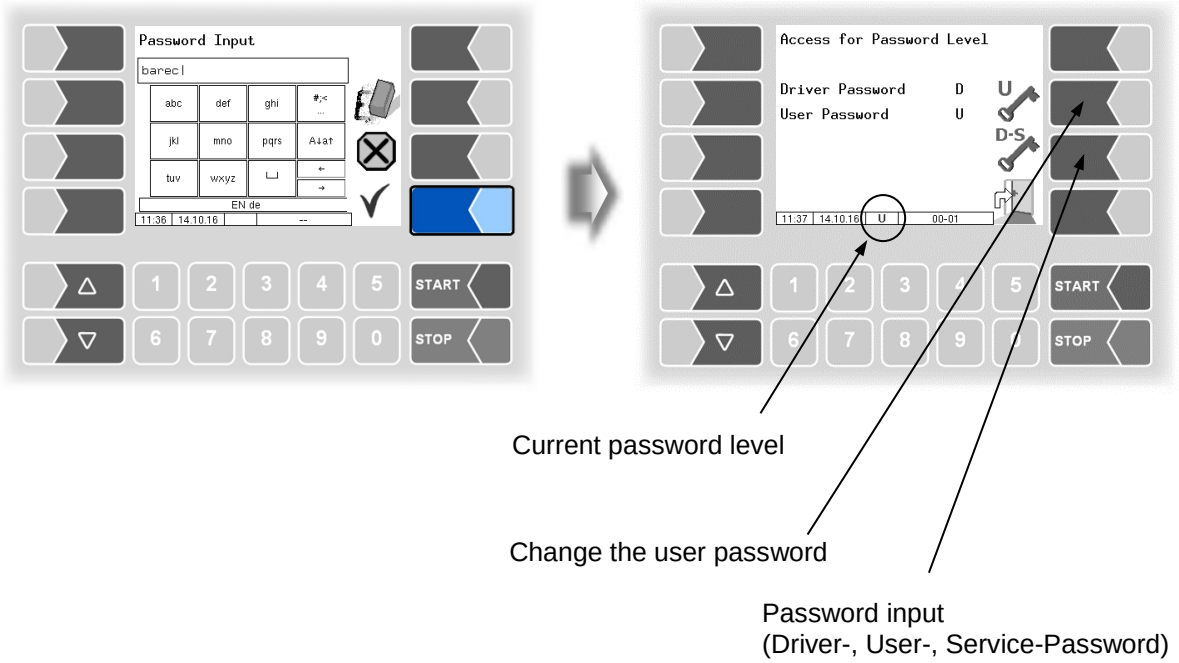
You can enter the password in the following window (Alphanumerical entries see page 18).



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

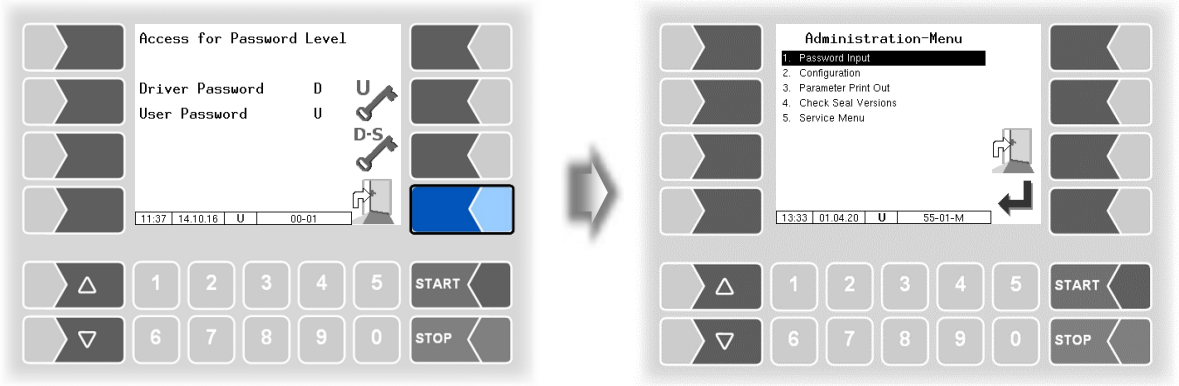
The system then shows the password levels that you can access. All higher password levels include access to the password levels below them.
The highest password level at any time is shown in the info line:

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

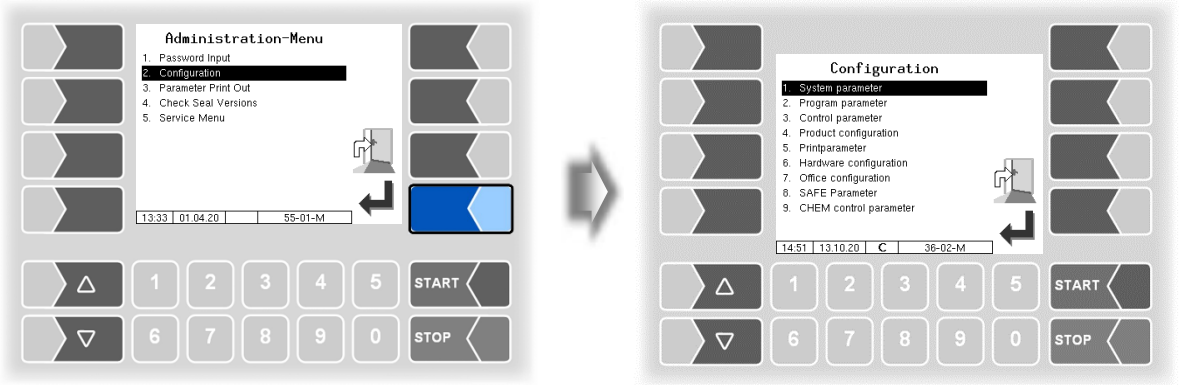


After you have entered the password for level 2 or a higher level, the softkey for changing the user password is activated. You can enter a new user password after touching this softkey.
The user password can be composed of letters or numbers.

Touch the  softkey to return to the menu selection.



4.2 Configuration

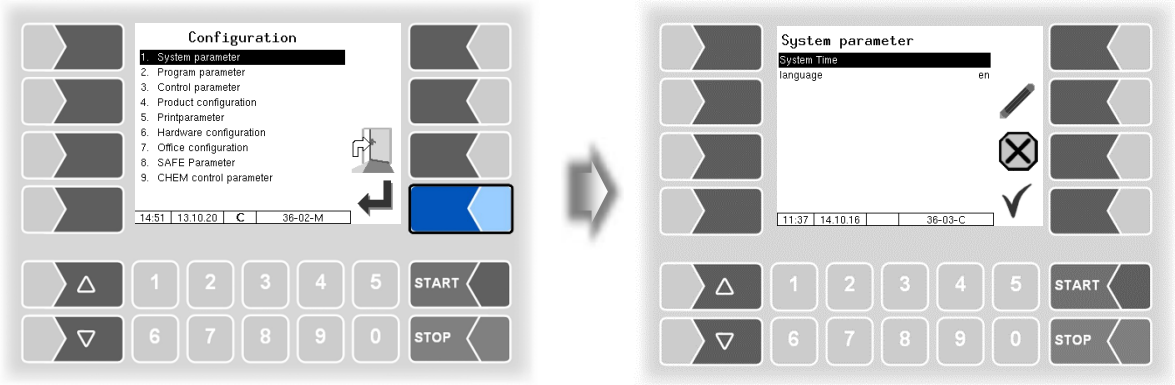


In the Configuration menus, the software for the system is customised to the respective operating conditions and the installed hardware by entering various parameters.

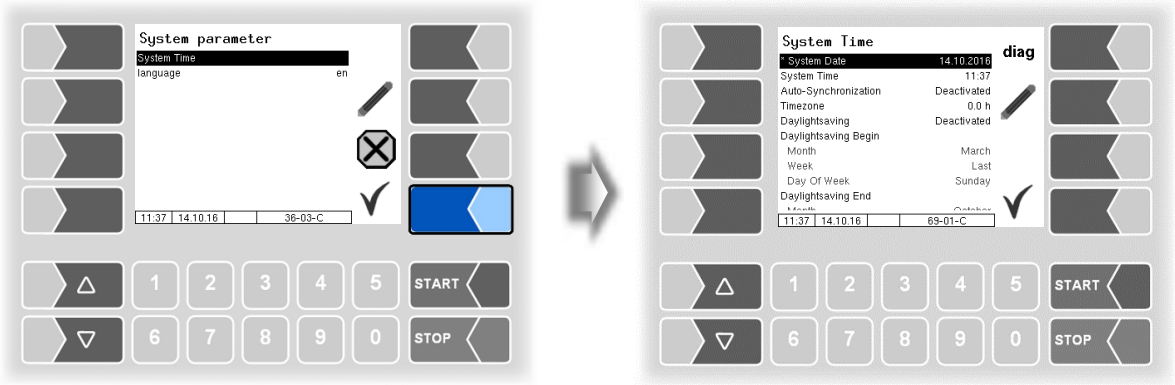
Parameters that are subject to statutory calibration are marked in the display with an asterisk prefixed.

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.

4.2.1 System parameter



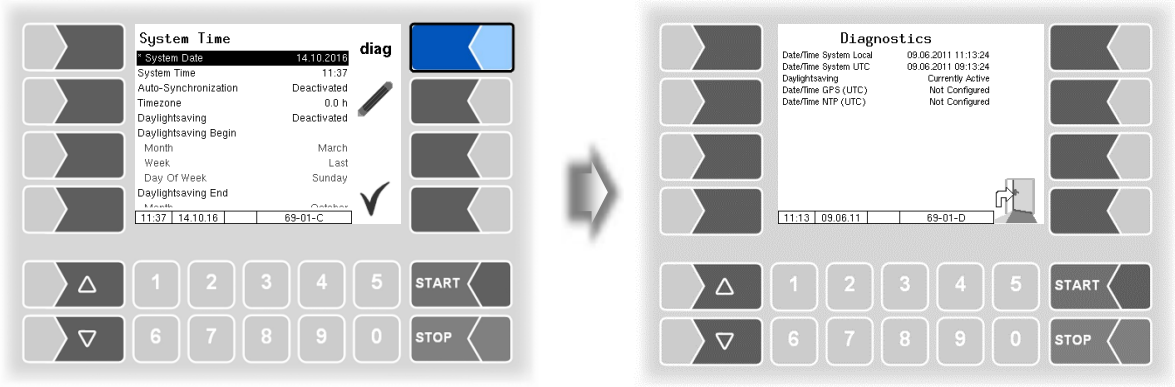
4.2.1.1 System Time



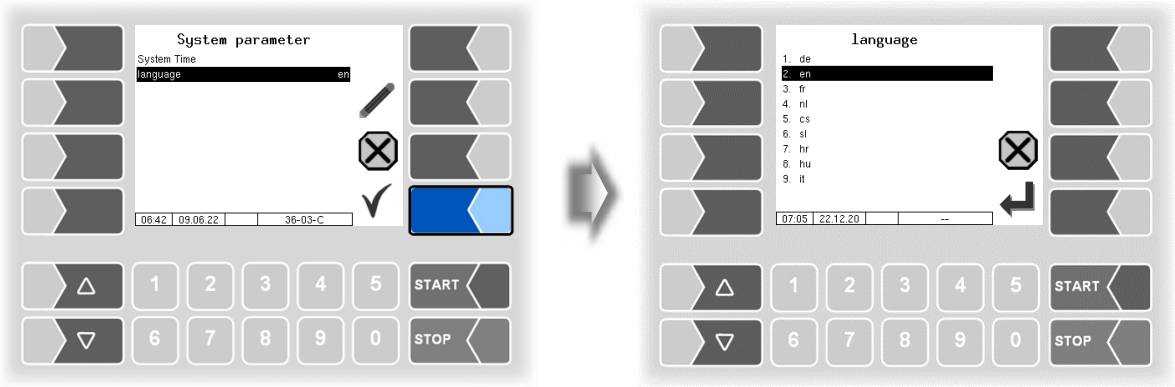
System Time			
	C	*System Date	Change the date setting
	D	System Time	Change the time setting
		Auto-Synchronisation	Activate/deactivate the automatic clock synchronisation via GPS or GPRS.
		Timezone	Set the time zone by entering the deviation from UTC
		Daylightsaving	Activate/deactivate the summertime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



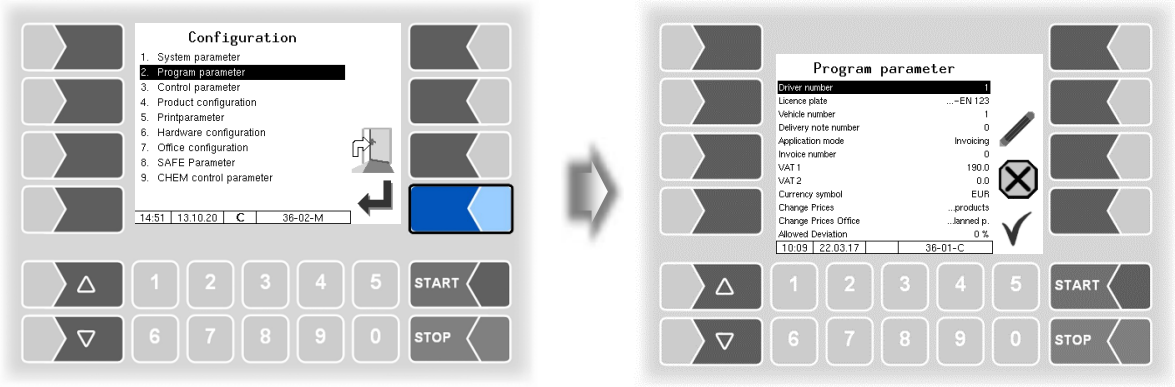
4.2.1.2 Language



Language			
	D	Language	Select the display language de (German) en (English) fr (French) nl (Dutch) cs (Czech) sl (Slovenian) hr (Croatian) hu (Hungarian) it (Italian) sr (Serbian) pl (Polish) bg (Bulgarian) ro (Romanian) et (Estonian)

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

4.2.2 Program parameter

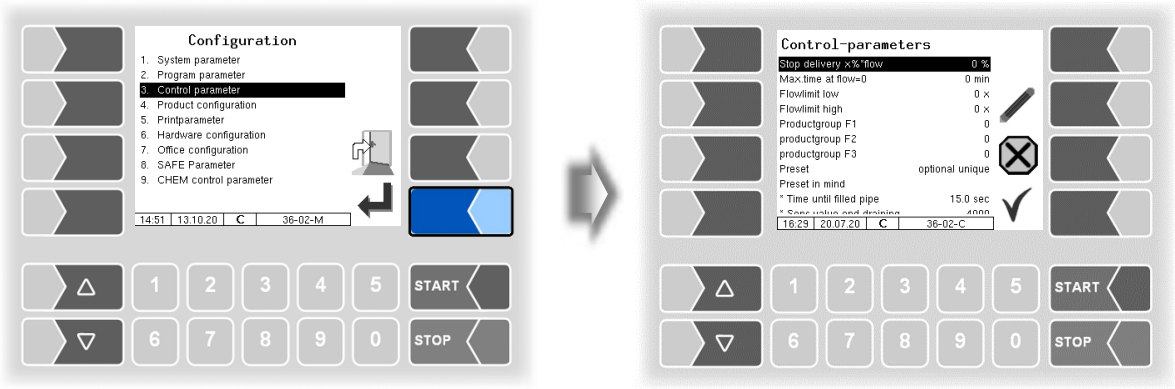


Program-parameter			
U	Driver number	Internal driver number	
	Licence plate	Vehicle registration	
	Vehicle number	No. of the vehicle	
	Delivery note number	Start number for sequential delivery note numbering (max. input 9999) *Delivery note number on the printout: vehicle number (3-digit) + consecutive numbering (4 digits)*	
	Application mode	Basic version (without invoicing) Invoicing (with invoicing)	
	Invoice number	initial number of invoices (max. input 9999) *Invoice number on the printout: vehicle number (3-digit) + consecutive numbering (4 digits)* *(only available if program mode = invoice)*	
	VAT 1	Amount of VAT 1	Which of the two VAT rates applies to a product is defined in the product configuration (see section 4.2.4.2).
	VAT 2	Amount of VAT 2	
	Currency symbol	Specifying the currency for the invoice	
	Change Prices	all products The driver is allowed to change the prices of all products. measured prod. The driver is allowed to change the prices of measured products only. no change The driver is not allowed to change prices	
	Change Prices Office	Planned prod.: The driver is allowed to change prices for products from scheduled deliveries. Unplanned p.: The driver is allowed to change prices for products from not scheduled deliveries. Un-/planned p.: The driver is allowed to change prices for products from scheduled and not scheduled deliveries.	
	Allowed Deviation	[%] If the delivered quantity is more than x% less than the ordered quantity is automatically switched to the output of a delivery note It is always considered each item individually; partial deliveries therefore always cause a switch to the delivery note output.	
	Building Site Option	on: enables the refuelling of construction vehicles within an unscheduled tour. The identification of the vehicles to be fuelled can also be done via a TAG reader (depending on the equipment).	

	U	Operation Mode	Tiger Semitrailer COMP: Tiger-CHEM: COMP-CHEM: LPG: Luboil:	Installation of the pump at the lowest point without pump control ~~Tiger:~~ Installation of the pump with pump control for a controlled filling start process Measuring Interface Mif for quantity registration, the start screen shows „COMP“. TIGER system combined with PETRO CHEM (for AdBlue delivery) or PETRO CHEM stand alone (configuration without TIGER). PETRO COMP combined with PETRO CHEM (for AdBlue delivery) Measuring system for gases liquefied under pressure Measuring system for lubricants
		User	BARTEC HK LF MY	Selection of the operating company of the system. The logo of the operating company appears in the start screen. Instructions for changing the configuration parameters are available in an additional document.
	C	Netherlands	yes:	After a change in a software module, no loading or dispensing process is possible without re-calibration. *Only available with Operation Mode COMP and COMP-CHEM*.

4.2.3 Control Parameter

Control Parameter for Operation Mode CHEM see section 4.2.9.
Control Parameter for Operation Mode LPG see section 4.2.10.



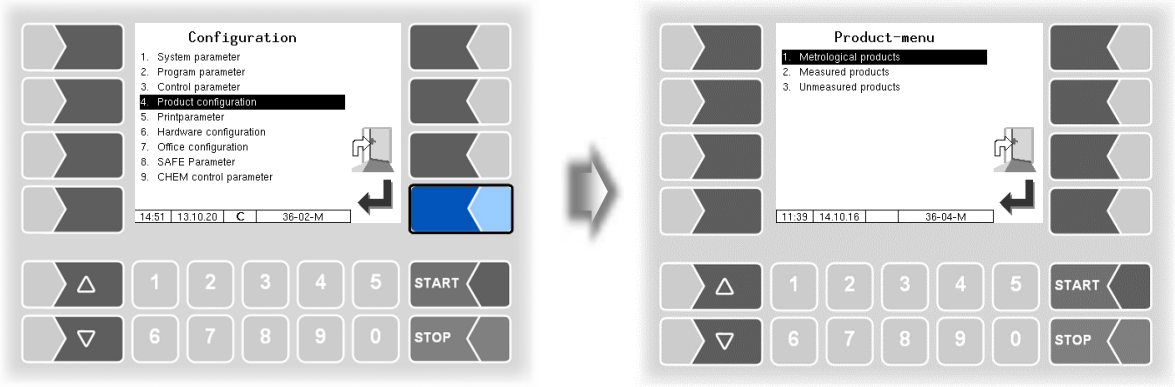
Control Parameter *Default values or recommended values are in brackets.*		
U	Stop Delivery x%*Flow	The delivery stops at x% of the output flow before reaching the preset quantity (compensation of stop delay).
	Max. time at flow=0	The delivery is automatically finished when expiring that time without detecting flow (minutes).
	Flowlimit low	The pump will be throttled if the flow falls below this value (log. Output 8 off)
	Flowlimit high	The pump power is increased if the flow exceeds this value (log. Output 8 on)
	Productgroup F1	product group permitted for full hose 1
	Productgroup F 2	product group permitted for full hose 2
	Productgroup F 3	product group permitted for full hose 3
	Preset	optional unique You can preset a quantity before starting a delivery. by force unique You must preset a quantity before starting a delivery. optional repeatedly You can preset a new quantity when continuing the delivery after reaching the first preset quantity. by force repeatedly You must preset a new quantity when continuing the delivery after reaching the first preset quantity.
	Preset in mind	Automatic repetition of the preset quantity, e.g. for filling systems. If the preset quantity has been reached and the delivery is continued, the previously entered preset quantity is repeated as a new preset quantity (without a new input dialog). *Only in connection with Preset: repeatedly.*
C	*Time until filled pipe (1)	Time delay when starting residue removal, for determining the highest FLS* value. This value corresponds to the state „full pipe“. (*15 seconds*)
	*Sens. value end draining (1)	final criterion for residue removal FLS*-value “empty pipe” (*4000, Ex:90000*)
	* % Air stop draining (1)	Residue removal will be stopped if the air content increases by this value. The time “Time until filled pipe” is waited. If the value rises again by half of the initial value will be continued until reaching the value “Sens. value end draining“. (1.0 %)
	*Open Time Vx (1)	Opening time of the valve hose during pumping from FLS* to WLS*. (0.5 seconds)

		*Close Time Vx (1)	Delay time for the repeated opening of the hose valve when pumping from FLS* to the WLS*. (12 seconds)
		*Draining final (1)	Max. time that can elapse after reaching the “Sens· value end draining“ (13 seconds). Residue removal will stop if WLS* doesn´t detect „empty“.
		*Draining flow (1)	Minimum flow when removing residuals. When reaching that value will be switched to the small removal pump.
		*Remaining volume draining (1)	Uncountable amount remaining in the measuring pipe between the meter turbine and wetleg sensor. (Default: 3 liters)
		*Total volume draining (1)	Volume in the pipe system between bottom valve and hose valve. The entered amount is taken into account when a delivery with quantity presetting is done. (ca. 50 liters)
		*End filling time wet (1)	The wetleg sensor must be at least the configured time be wetted, that the filling end is detected. (Default: 10 seconds)
			In variant “Semitrailer Tiger“: also for controlling the cycle time for filling start gravity / pumped
	U	Minimum filling pressure (1)	Set this parameter only in consultation with the service personnel. (Defaultt: 0,0)
	C	*Air on Delay (1)	Delay time for bleeding (sec). This prevents that bleeding is triggered by any air bubbles in the product. (2 seconds)
		*Air counts start deairing (1)	The parameter sets the threshold for detecting the empty state by the FLS. (4000, Ex: 90000)
		*Rest press. m-tube draining (1)	After residue removal with compressed air is bleeded until this pressure is undershot. (0,3 bar)
		*Pressure during draining (1)	Pressure during residue removal. (0.8 bar)
		*End criterion draining (1)	Pressure for removing residuals from measuring pipe. (0.3 bar)
		*Runback-limit	When reaching that quantity, the release valve is closed. (backstop). When entering 0, this function is inactive. (5 liters)
	S	Flow-Control (1)	If the flow decreases by the configured value [%], the filling start process is restarted. (Default value: 0) *for centrifugal pump and rear cabinet: 50%)*
	U	Throttle	x liters before reaching the preset quantity will output 18 activated for throttling. (Default: 50 liters)
		Release delay	The pump enabling is delayed by the configured time. (Operation modes COMP and LUBOIL only). (Default: 10 seconds)
	S	Draining (1)	ON Measured draing per tiger (only available in the A3 version).

* *FLS: Filling Level Sensor, WLS:Wetleg Sensor*

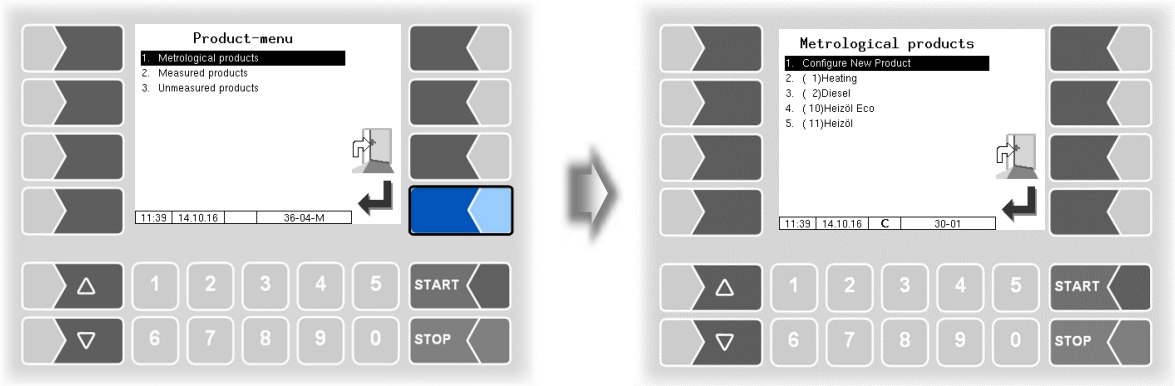
(1) *When using the operation mode "COMP", these parameters are not available and are shown in gray*.

4.2.4 Product Configuration

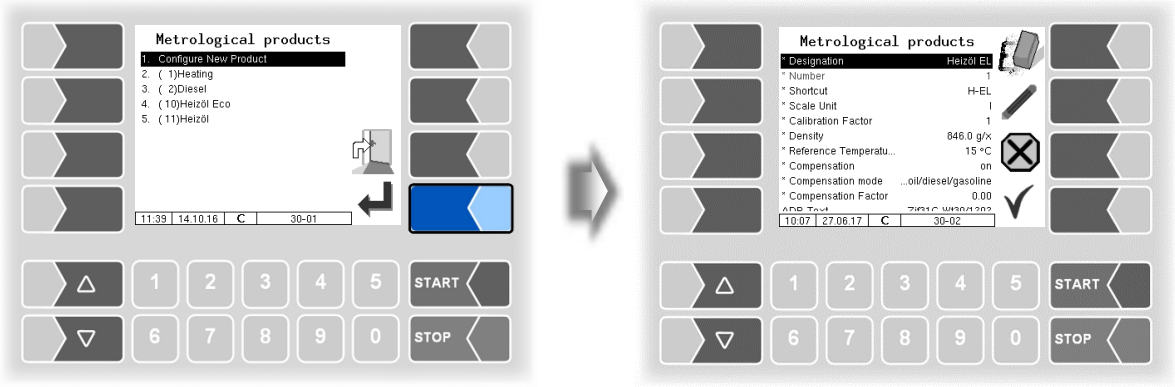


4.2.4.1 Metrological Products

Metrological products are products that can be measured using the quantity meter. 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 EN 14116 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. This data can be overwritten with other data if required.

Metrological products				
	C	*Designation	Product designation (max. 30 characters)	(1...10 pre-assigned according to EN 14116)
		*Number	Product number (selectable 1 ... 99)	
		*Shortcut	Short product name (max. 4 characters)	
		*Scale Unit	Unit for the measured quantity (So that a space is printed between the quantity and the unit of measurement, a leading space must be added here)	
		*Calibration factor	Calibration factor that is valid for the product. The calibration factors are defined in the configuration of the measurement interface (see section 4.2.6.1).	
		*Density	Average product density at 15°C	
		*Reference Temperature	Temperature to which the quantity is converted	
		*Compensation	Switching the temperature compensation on or off	
		*Compensation mode	Specifies the conversion mode *Fuel oil/diesel/gasoline*: Conversion in accordance with DIN 51 757, method B *Lubricants:* Conversion in accordance with DIN 51 757, method D *Liquid gases:* Conversion in accordance with DIN 51 757, method X *Linear:* Conversion method with constant compensation factor (the set value for Compensation Factor) *GTL:* Conversion method for paraffinic diesel fuels from synthesis or hydrogenation processes	
		*Compensation Factor	Compensation factor for product that is not compensated based on density (linear compensation mode)	
	U	ADR Text	Entry of the ADR text that is to be printed on the delivery ticket for this product.	
	C	*Product Group	Product group for wet hoses to restrict the product selection to product groups. 0: Allow all product groups 1: Fuel oil products > 1: Any products that are allowed to be delivered using the same wet hose, e.g.: 2: Diesel products, 3: petrol products *When operating A3-TIGER, the "Product group" parameter can be changed after entering the user password.*	
		Ex-TIGER	1 ≙ Heating oil products 2 ≙ Gasoil products 3 ≙ Petrol products	
	S	Meter	Counter type that may be used to deliver the product. 1: COMP/LPG or TIGER 2: CHEM 3: Luboil	
		Meter no.	logical number of the configured meter With the "COMP" and "Luboil" operation mode, the product can be permanently assigned to a counter. If you enter "0", the counter must be selected in the "Start transaction" window. For all other operation modes enter "0" here.	

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

No.	Product	Short name	Density [g/l]
1	Heating oil	H oil	846
2	Gasoil	GO	836
3	Petrol unleaded	UNL	741
4	Super leaded	SL	750
5	Super unleaded	SUL	749
6	Super plus	S98U	753
7	Petroleum	PET	807
8	A-1	J1	801
9	Bio-gasoil RME	RME	836
10	Heating oil with additives	Hadd	846

(Status: July 2016)

Relative density change factor k_{0E}
For the linear temperature conversion (PTB method 1)
Conversion method for products with bio components and pure products!

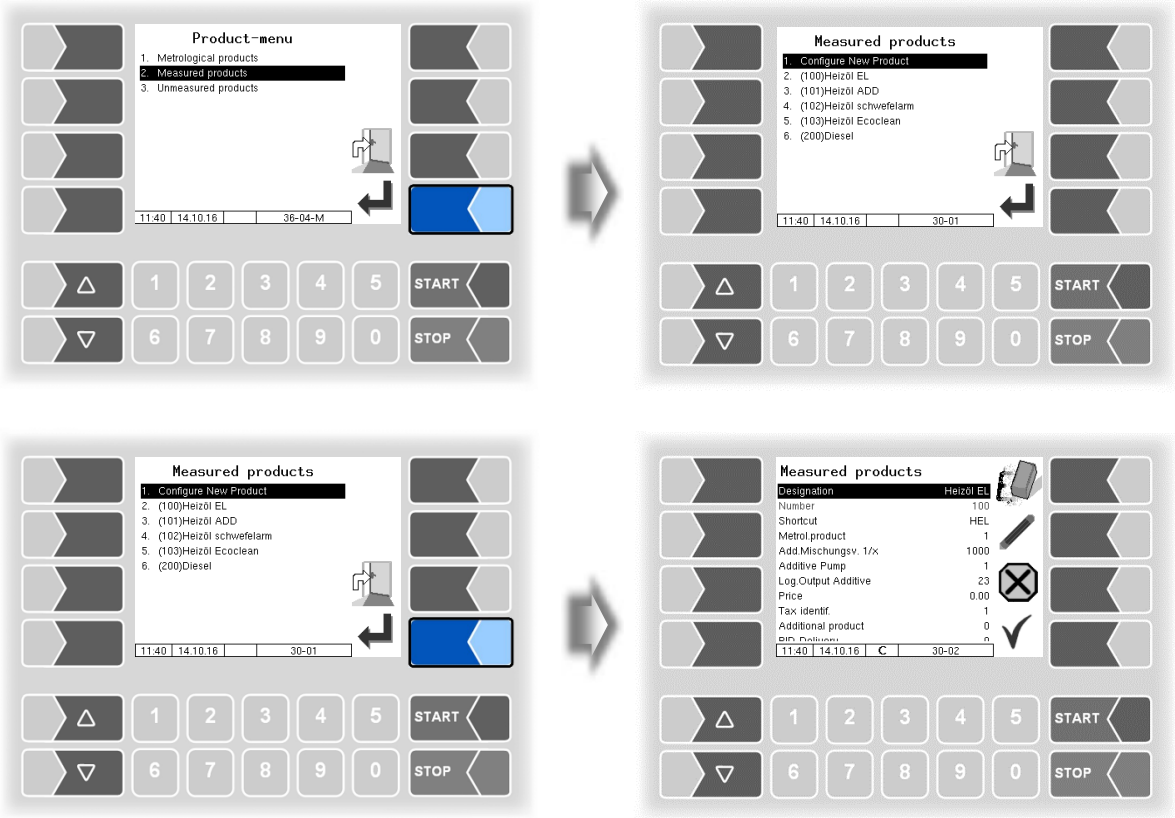
Products	k_{0E} [1/°C · 10^{-3}]
Gasoil / Bio-gasoil	0,85
Petroleum	0,91
Jet-Fuel	0,93
Petrol range 1: 0 to 20 % Ethanol blending	1,21
Petrol range 2: 80 to 100 % Ethanol blending	1,14
Naphta	1,29
Heating oil / Bio-heating oil	0,84
Normal petrol / Super petrol	1,21

(Status: July 2016)

If the delivery of AdBlue® is intended, this product must be configured as a metrological and a measured product. Only the entry of the product desig-nation and the assignment of the counter type 2 (MID) are important.

4.2.4.2 Measured Products

On the basis of already configured metrological products (see section 4.2.4.1), here you configure the actual products which will be delivered.
In this way, for instance, products that are mixed with different additives can be configured under different product names and define prices for them.



Measured products			
	U	Designation	Product designation (max. 30 characters)
		Number	Product number (selectable 1…999)
		Shortcut	Short product name (max 4 characters)
		Metrol. product	Base product (metrological product no.)
		Add. Mischungsv. 1/x	Mixing ratio, X=quantity of the main product to which 1 litre of additive is added. *An additive is only added if a mixing ratio is configured here!*
		Additive pump	Selection of the additive pump for the product (0=none, 1, 2) *see section 4.2.6.10*
		Log. Output Additive	logical output for tank changeover to additive (23…26) (see page 52)
		Price	Product price per 100 Liters
		Tax identif.	Configured VAT rate applying to this product (1 or 2, see section 4.2.2)
		Additional product	configured surcharge (unmeasured product), applying to this product (see section 4.2.4.3)
		PID-Delivery(1)	Product-ID for delivery-TAG
		PID-Delivery leaded(1)	The leaded product is delivered using the same PID (depending on configuration also valid for lead substitute, see also section *4.2.8.2 "Lead is L.Substitute")*
		Solenoids-Delivery(1)	Magnetic code for delivery

(1) *Only relevant if the system is equipped with SAFE.*

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		
Bioethanol E50	84		
Bioethanol E85	85		
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		
E50 (95 petrol with 75-98% added ethyl alcohol)	85		

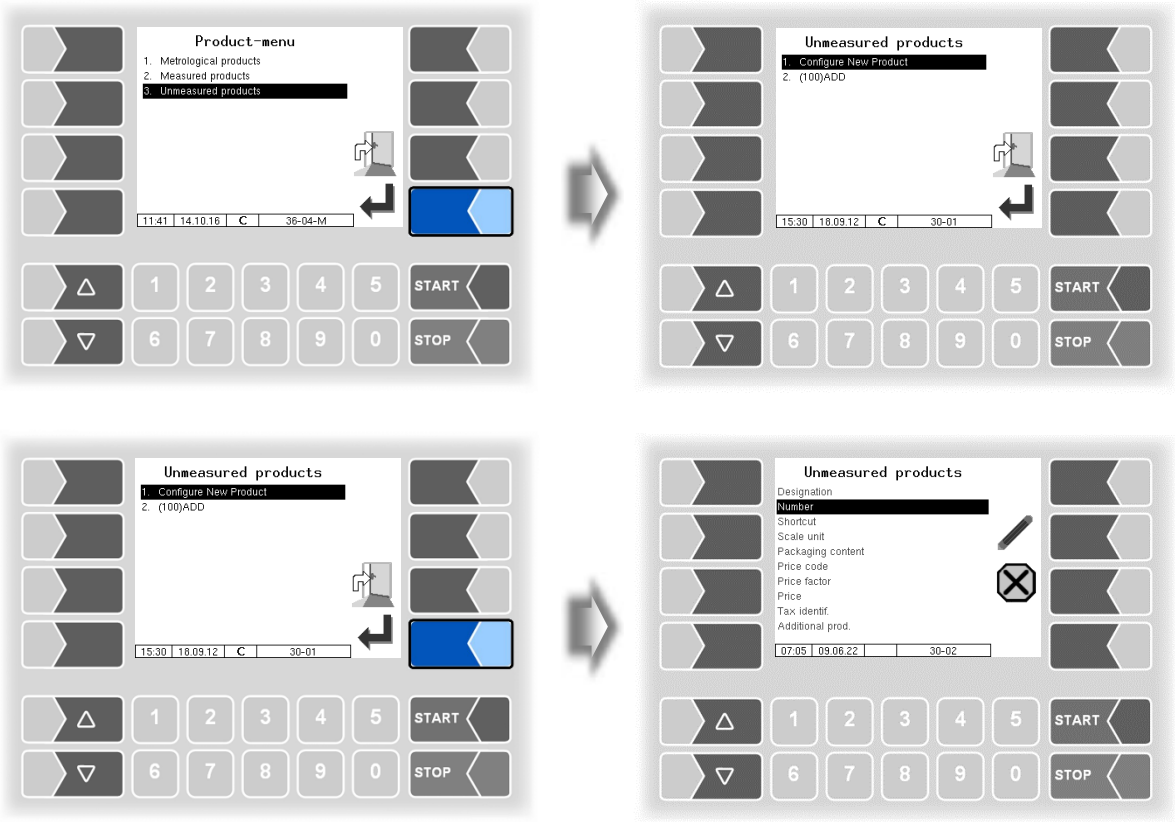
If the product is identified by means of a magnetic code and a tag, the tag (PID) identification takes priority.

Magnetic code loading not supported in software "pair".

The detailed configuration of the products is printed on the Parameters Print out (see section 4.2.11).

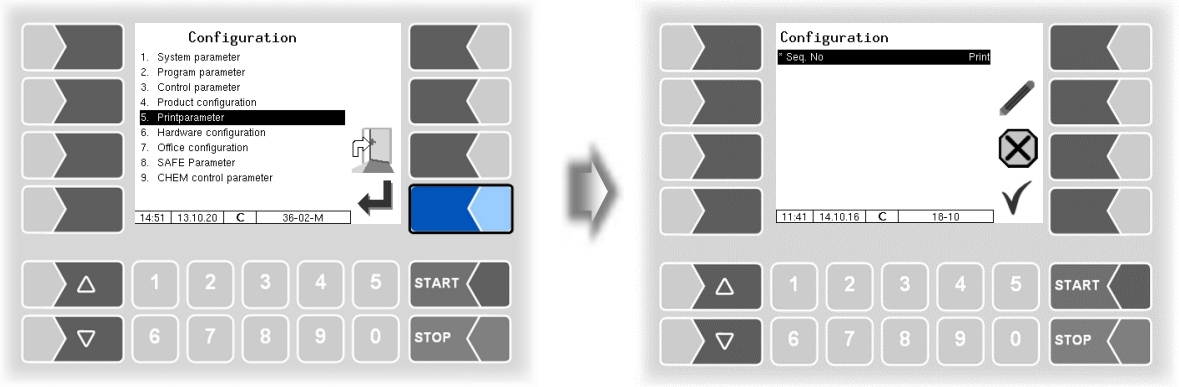
4.2.4.3 Unmeasured products

As unmeasured products you can configure any products which are supplied as packages or by piece. Surcharges (e.g. dangerous goods surcharge) must also be configured here as unmeasured product. If an unmeasured product is configured, the "Unmeasured delivery" softkey is available when executing delivery orders.

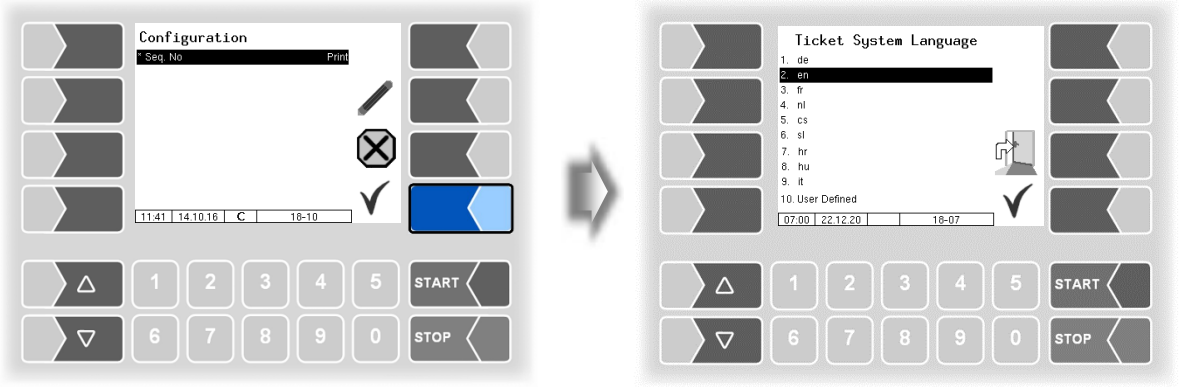


Unmeasured products			
	U	Designation	Product designation (max. 30 characters)
		Number	Product number (selectable 100 … 999)
		Shortcut	Short product name (max. 4 characters)
		Scale unit	Unit for the measured quantity (So that a space is printed between the quantity and the unit of measurement, a leading space must be added here)
		Packaging content	Number of pieces per package.
		Price code	Piece: Net price per piece. (price per package, when a package content is set). Quantity: Net price for the specified amount (piece or package • contents • number) Fixed price: fixed product price
		Price factor	The price factor specifies to how many units the price is relating (pieces or units).
		Price	Net price of the product
		Tax identif.	Configured VAT rate applying to this product (1 or 2, see section 4.2.2)
		Additional prod.	no: The product is not displayed in the selection list of surcharges when ending an order. yes: The product is displayed in the selection list of surcharges when ending an order.

4.2.5 Print parameter



First you can specify whether a sequential number is to be printed on the tickets.

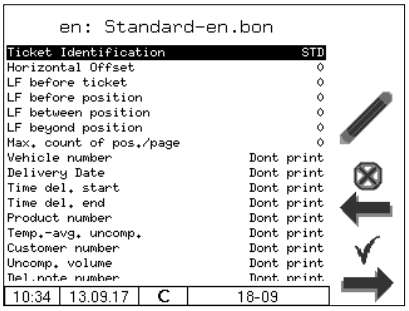


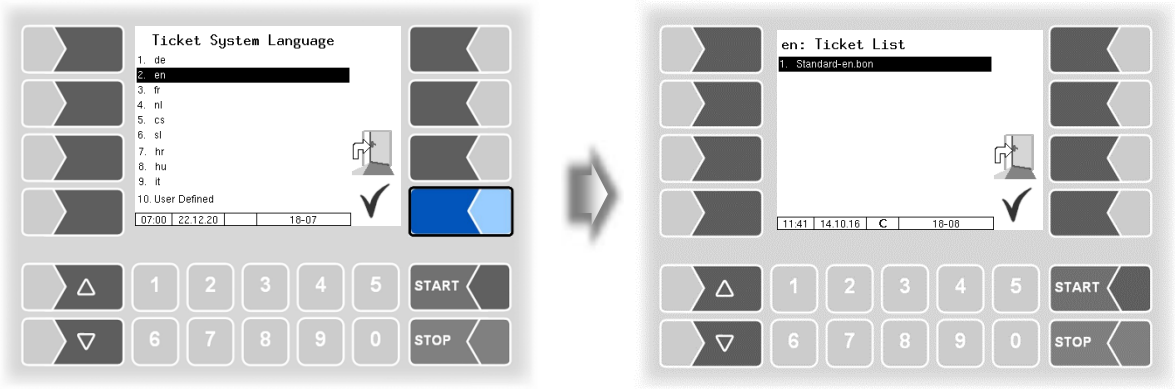
Select the ticket language from the available languages.

Under "User Defined" you set a company specific ticket .
This ticket is created and provided by BARTEC BENKE with a company-specific layout ("B3i format"). It includes the company specific layout and language. The ticket can be installed on the vehicle via PC software "3003 Service Tool".

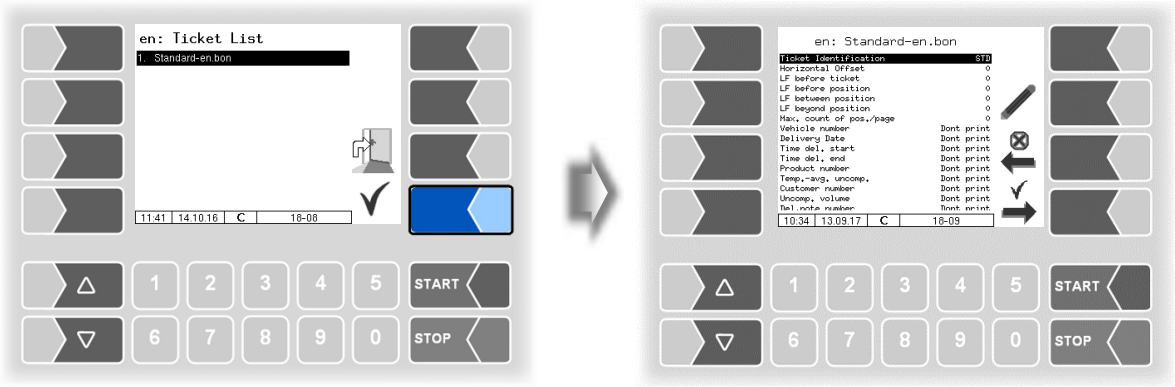
You can configure several tickets.
The ticket selection is only available to the driver when a name has been assigned under “Ticket Identification” (see page 41).

With only one configured receipt, there is no receipt selection for the driver after submission.





The layout for the tickets is set 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).

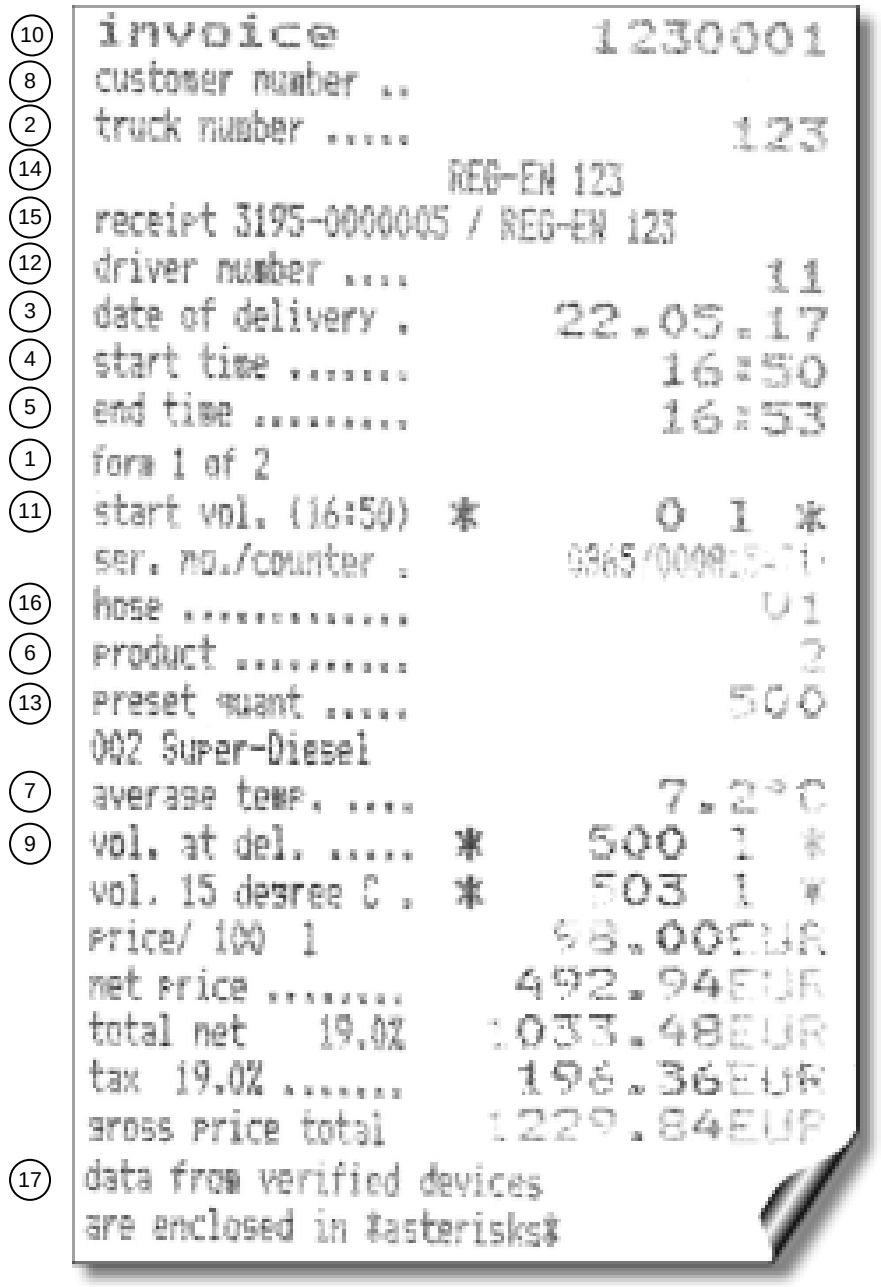
Select a parameter and touch the softkey to make changes.

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 soft-keys.

Ticket Configuration				
U	Ticket Identification			Name of the ticket for selection from the ticket list; name visible to the driver after delivery.
	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		1	Number of items until a page break is inserted
	Vehicle number		2	Internal fuel tank truck number "Program parameters / vehicle 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	Number of the delivery note *vehicle number (3-digit) + consecutive numbering (4 digits)*
	Time meter reading s.		11	Time and meter reading at the start of delivery
	Driver number		12	Internal driver number "Program parameters / driver number"
	Preset quantity		13	Preset quantity (or the sum of the preset quantities if a delivery is resumed)
	Vehicle registration		14	Configured vehicle registration "Program parameters / vehicle registration number"
	Ticket allocation		15	The internal tour number and the internal order number are printed as the ticket number. (4-digit TourNr, 7-digit order number)
	Delivery hose		16	Hose selected for delivery
S	Seal information		17	The following line is printed for all measured products: “Data from calibrated equipment is marked with asterisks ✳”
U	Product group			The uncompensated volume of configured group 1-products is not printed.



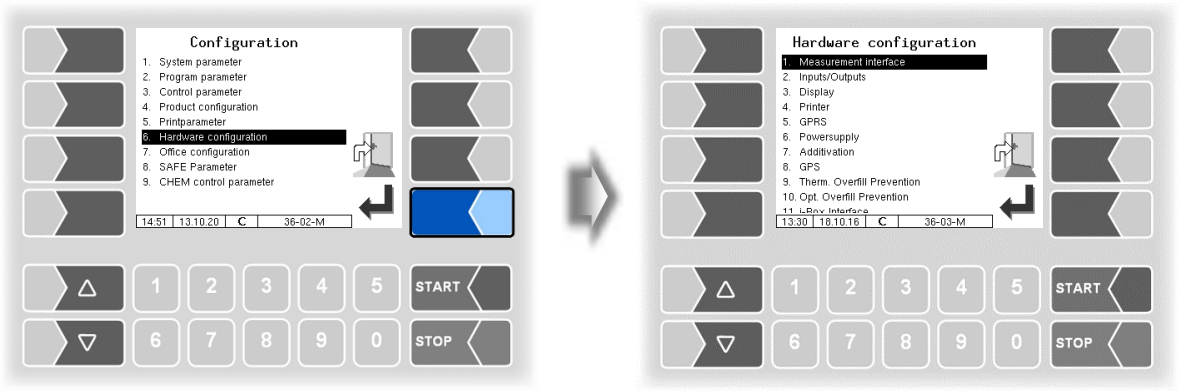
Example Invoice

```
delivery note 1230005
customer number ..
truck number .....                123
                  REG-EN 123
receipt 134-0000002 / REG-EN 123
driver number ....                 11
date of delivery .         15.02.22
start time .......            15:28
end time .........            15:29
start vol. (15:28)  *          0 l *
ser. no./counter .    0041/0012345678
hose .............                W1
product ..........                 2
preset quant .....                 0
002 Diesel
average temp. ....          33.4°C
vol. at del. .....  *    2260 l *
vol. 15 degree C .  *    2224 l *
data from verified devices
are enclosed in *asterisks*
```

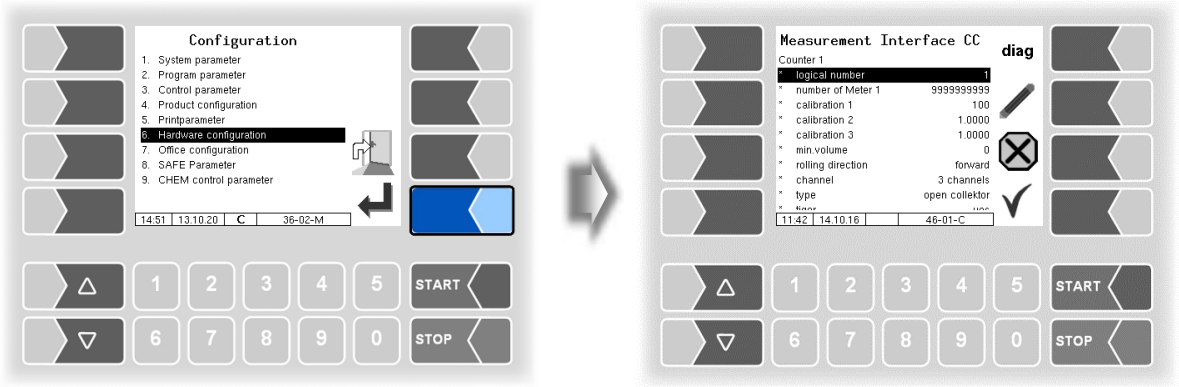
Example: Delivery note

4.2.6 Hardware Configuration

The figures apply to the compact controller and the HMI.
Depending on the equipment variant (e.g. Tiger A3, Ex-Tiger etc. or compact controller, basic module) the configuration differs in some points.
The user interface of the HMI is shown at the relevant text passages.



4.2.6.1 Measurement Interface (TIGER)



Measurement Interface CC

Counter 1

logical number	logical allocation of the counter within the system	
number of Meter 1 (2)	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; below this volume the delivery is not calibrated. *for volumes <200 L one decimal place is displayed and printed* *for volumes <20 L two decimal places is displayed and printed*	
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. backward: Counting of the rotating direction is reversed.	
channel	2 channels **3 channels**	channel type
type	**open collector** Namur Faure Herman Promass/Hoffer current	counter type
tiger	**YES** Measuring system TIGER will be used	
dynamic calibration	NO the calibration factor is not used **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.	*according to the test protocol*
ref.-temperature	Temperature of the product during calibration	
K1, K2	calibration factors for viscosity change based on the reference temperature	

Temperature sensor 1 (2) (temperature sensor 2 is not configurable)

log. mapping	Assignment of the temperature sensor *(Standard: 1)*	
calib. 0/-195°C	Resistance at 0°C or -195°C	(2)
calib. 50/-80°C	Resistance at 50°C or -80°C	

(2) Depending on the sensor used (0 to 50°C or -195 to -80 °C)

The diag softkey opens a service function for reading the data from the measurement interface

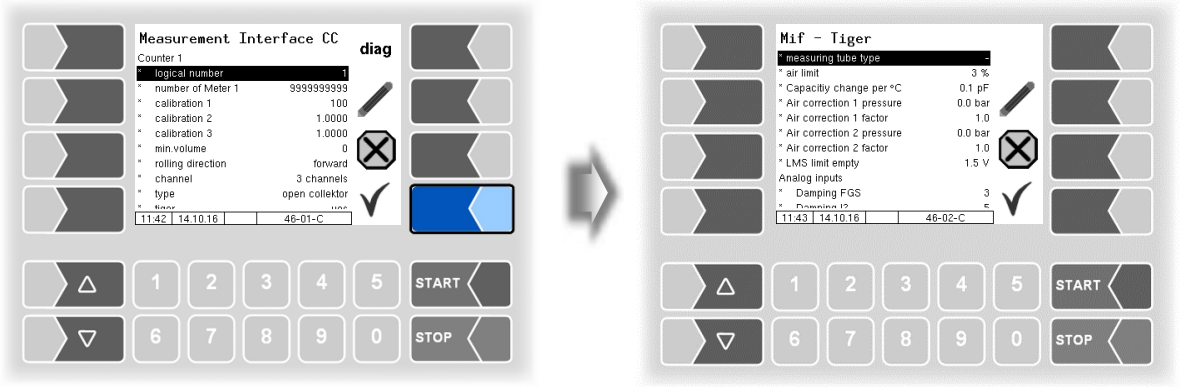
1. (…9.) Input Configuration of the inputs see page 47 and section 7.2.1

logical allocation	logical allocation of the input e.g.: in the software means input log. 5 the overfill prevention. The overfill prevention is connected to input 3 . In the configuration of input 3 must be set the logical allocation 5.	
invert	Yes: The switching behaviour is inverted No: The switching behaviour is not inverted	
resting state	low: positive switching high negative switching	
pic trigger	*Default:* ***10***	Hardware specific parameter,
analog input trigger	*Default:* ***1***	Do not change the set values.!
firmware version	displays the firmware version	
driver version	displays the driver version	

The diag softkey opens a service function for testing of the inputs´ functions.

bold: default values

After configuring the measurement interface, special parameters must be set for the TIGER measurement interface.



Mif - Tiger		*Default values or recommended values are in brackets.*		
	C	measuring tube type	- : measuring tube with filling level sensor 1st generation ‚A: measuring tube with filling level sensor 2nd generation	
		air limit	The delivery stops if the proportion of air is exceeded *(Default: 3%)*	
		Capacity change per °C	Capacity change of the filling level sensor in pF/°C *(Default: 0.1)*	
		Air correction 1 pressure	1. Correction value for compensating measurement faults, caused by air in the product. *(Default: 3.5 bar)*	
		Air correction 1 factor	Factor for the weighting of the 1st correction value. *(Default: 0.75, Ex-TIGER 0.6)*	
		Air correction 2 pressure	2. Correction value for compensating measurement faults, caused by air in the product. *(Default: 7.6 bar)*	
		Air correction 2 factor	Factor for the weighting of the 2nd correction value. *(Default: 0.2)*	
		LMS limit empty	Voltage threshold at which the wetleg sensor "empty" reports *(1.5 V)*	
		Analog inputs		
		Damping FGS	Damping of the measured values for current inputs	Filling level sensor *(3)*
		Damping I2		*pressure sensor (5)*
		Damping I3		*pressure sensor (5)*
		Damping LMS	Damping of the measured values for voltage inputs	*wetleg sensor (5)*
		Damping U1		*(5)*
		Damping U2		*(5)*

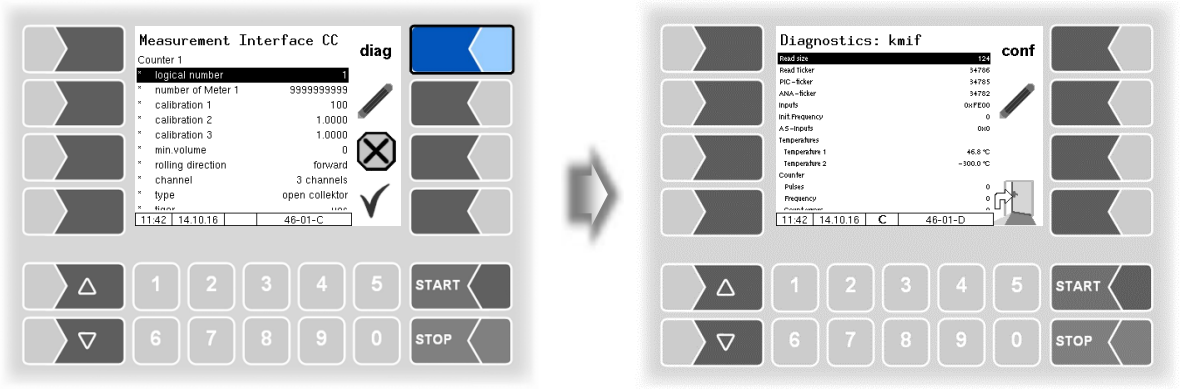
Configuration of the inputs

The allocation of the inputs can individually be configured.

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

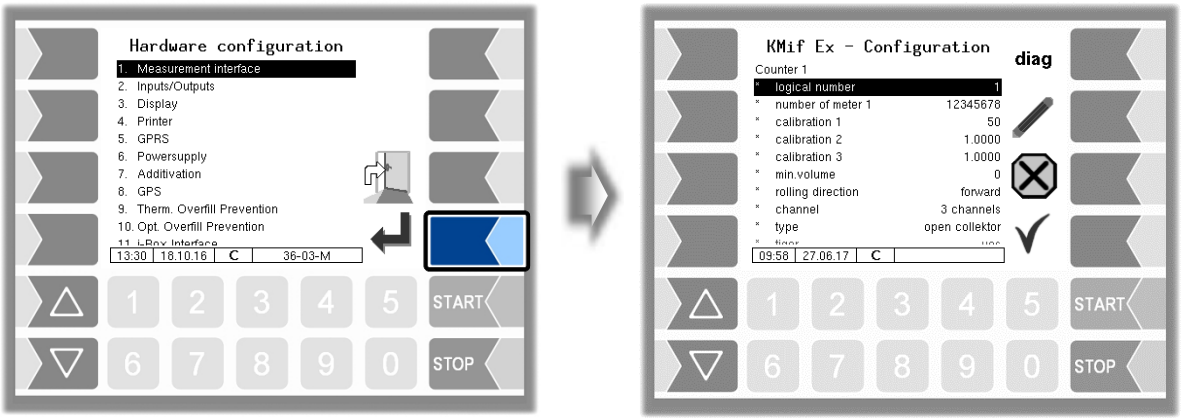
Diagnostics

The diagnostic function of the measurement interface, you can also start in the diagnostic menu. Notes to the diagnosis, you will find there (see section 7.3.3).



4.2.6.2 Measurement Interface (Ex-TIGER)

For vehicles equipped with "Ex-TIGER", the HMI is used as the control unit instead of the compact controller. The outputs and inputs are configured on the interface card (see section 4.2.6.5).

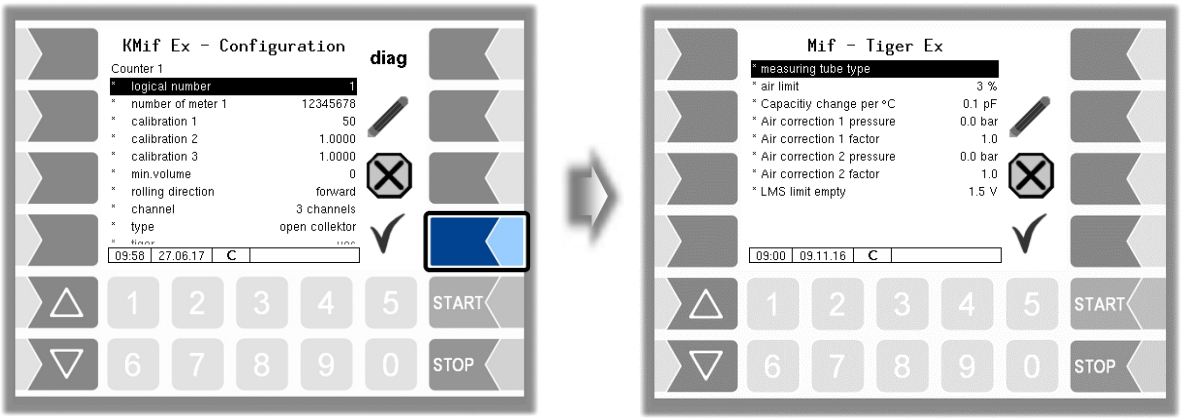


KMif Ex - Configuration				
	Counter 1			
C	logical number	logical allocation of the counter within the system		
	number of Meter 1	manufacturers no. of the TIGER measuring tube		
	calibration 1	The calibration factor determines how many pulses produce a liter (or configured unit) of the product. The calibration factor is defined during the calibration of the system.		
	calibration 2 calibration 3	You can configure three calibration factors for different product groups.		
	min. volume	Minimum delivery volume; below this volume the delivery is not calibrated. *for volumes <200 L one decimal place is displayed and printed* *for volumes <20 L two decimal places is displayed and printed*		
	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. backward: Counting of the rotating direction is reversed.		
	channel	2 channels **3 channels** (TIGER)		Channel type
	type	**open collector** (TIGER) Faure Herman current namur Promass/Hoffer		Counter type
	tiger	YES Measuring system TIGER will be used		
	dynamic calibration	NO only the calibration factor is not used **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.		*according to the test protocol*
	ref.-temperature	Temperature of the product during calibration		
	K1, K2	calibration factors for viscosity change based on the reference temperature		

		Temperature sensor 1 (2) (temperature sensor 2 is not configurable)		
		log. mapping	Assignment of the temperature sensor	
		calib. 0/-195°C	Resistance at 0°C or -195°C	(2)
		calib. 50/-80°C	Resistance at 50°C or -80°C	
		(2) Depending on the sensor used (0 to 50°C or -195 to -80 °C)		
		1. Input	Configuration of the inputs see page 47 and section 7.2.1.	
	C	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: A NO/NC is connected to the input.	
		*A-Number sensor head	Displays the serial number of the sensor head	
		*A-Number filling level sensor	Displays the serial number of the filling level sensor	
		*A-Number turbine meter	Displays the serial 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	

bold: default values

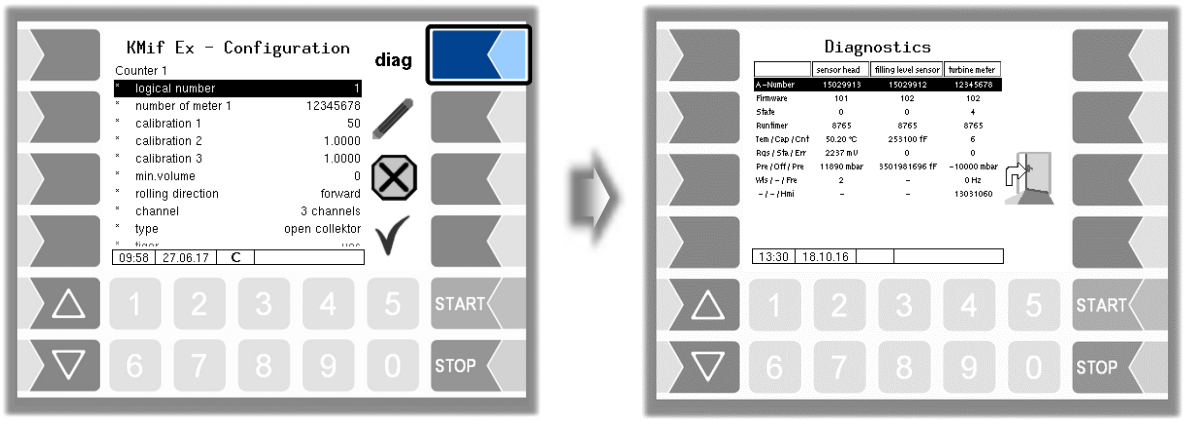
After configuring the measurement interface, special parameters must be set for the Ex-TIGER measurement interface.



Mif – Tiger Ex		*Default values or recommended values are in brackets.*	
	C	measuring tube type	- : measuring tube with filling level sensor 1st generation ‚A: measuring tube with filling level sensor 2nd generation
		air limit	The delivery stops if the proportion of air is exceeded *(Default: 3%)*
		Capacity change per °C	Capacity change of the filling level sensor in pF/°C *(0.1)*
		Air correction 1 pressure	1. Correction value for compensating measurement faults, caused by air in the product. *(Default: 3.5 bar)*
		Air correction 1 factor	Factor for the weighting of the 1st correction value. *(Default: 0.75, Ex-TIGER 0.6)*
		Air correction 2 pressure	2. Correction value for compensating measurement faults, caused by air in the product. *(Default: 7.6 bar)*
		Air correction 2 factor	Factor for the weighting of the 2nd correction value. *(Default: 0.2)*
		LMS limit empty	Voltage threshold at which the wet leg sensor "empty" reports *(Default: 1.5 V)*

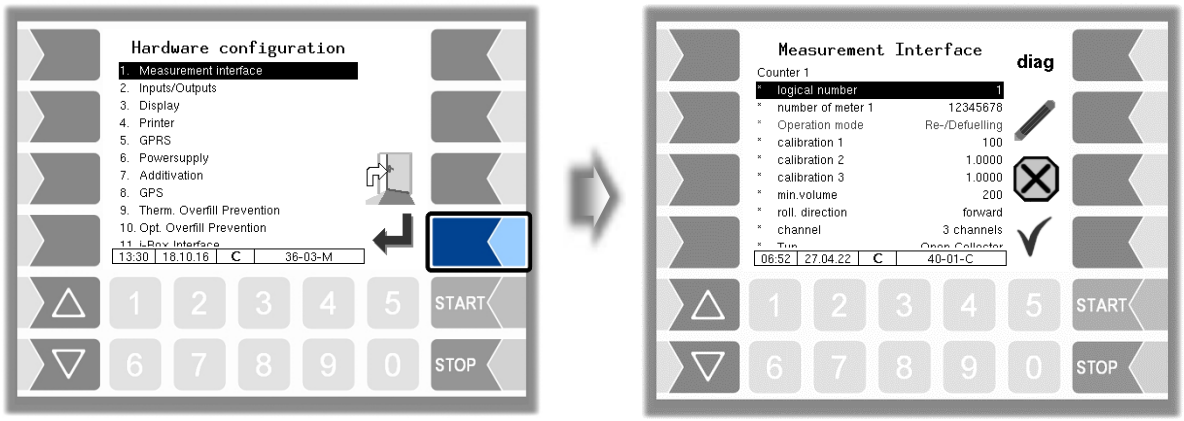
Diagnostics

The diagnostic function of the measurement interface, you can also start in the diagnostic menu. Notes to the diagnosis, you will find there (see section 7.3.4).



4.2.6.3 Measurement Interface (COMP/LPG)

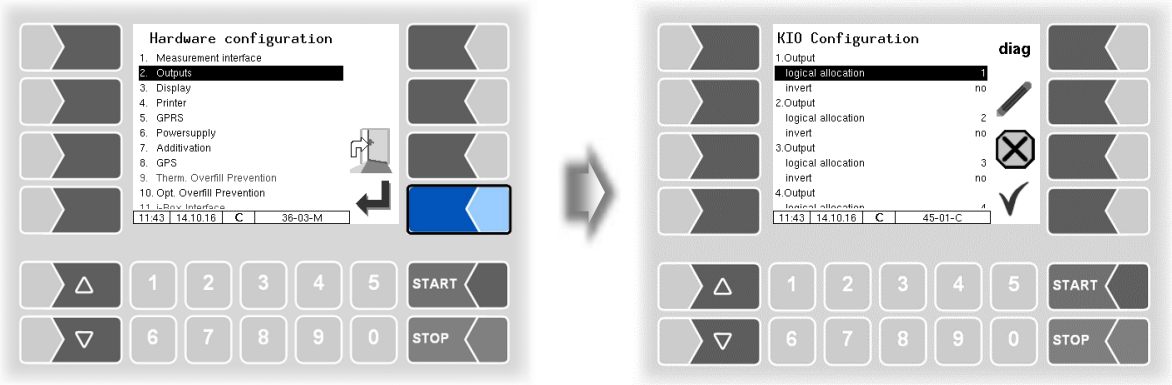
(Program parameter/Operation Mode/COMP/see page 30)



Measurement Interface (Mif)				
	C	**Counter 1 (2)**		
		*logical number	logical allocation of the counter within the system	
		*number of meter 1 (2)	Manufacturer number of the measuring chamber. Entering umlauts is not allowed; max. 10 digits (alphanumeric)	
		Operation mode	Re-/Defuelling	
		*calibration 1	The calibration factor indicates the number of pulses per liter (or configured unit) of the product. The calibration factor is determined during calibration of the system.	
		*calibration 2 *calibration 3	Three calibration factors can be configured for different product groups.	
		*min. volume	Minimum delivery volume; below this volume the delivery is not calibrated. *for volumes <200 L, a decimal place is displayed and printed* *for volumes <20 L, two decimal places are displayed and printed*	
		*rolling direction	foreward If no changes have been made to the pulse generator (factory setting), the foreward rotation (right rotation) means positive counting. backward: The counting of the respective direction of rotation is reversed.	
		*channel	2 channels 3 channels	No. of channels

		*type	open collector Current with monitoring current wihout monitoring	namur Promass 64	Type of coun-ter
		*dyn. calibration	no only the calibration factor is used yes 5 correction factors for 5 flow rates are used.		
		*1. (… 5.) flow *1. (… 5.) correction	With dynamic calibration, correction factors can be entered for 5 flow rates		
		*Ref.-Temperatur	Temperature of the mediums during calibration		
		*K1, K2	Calibration factors for the viscosity change relative to the reference temperature		
		Temperature sensor 1 (2)			
		*logical number	Assignement for the temperature sensor		
		*calibration 0/-195°C	Resistance value at 0 °C or -195 °C	depending on the type of sensor (0...50 °C or -195...-80 °C)	
		*calibration 50/-80°C	Resistance value at 50 °C or -80 °C		
		*circulation delay	Interval for sensor interrogation *(default: 5)*		
	S	*Logging	Yes: recording of additional data for diagnostic purposes		
		firmware version	display of the firmware version		
		driver version	display of the driver version		
The diag softkey starts a service function for reading the data from measurement interface.					

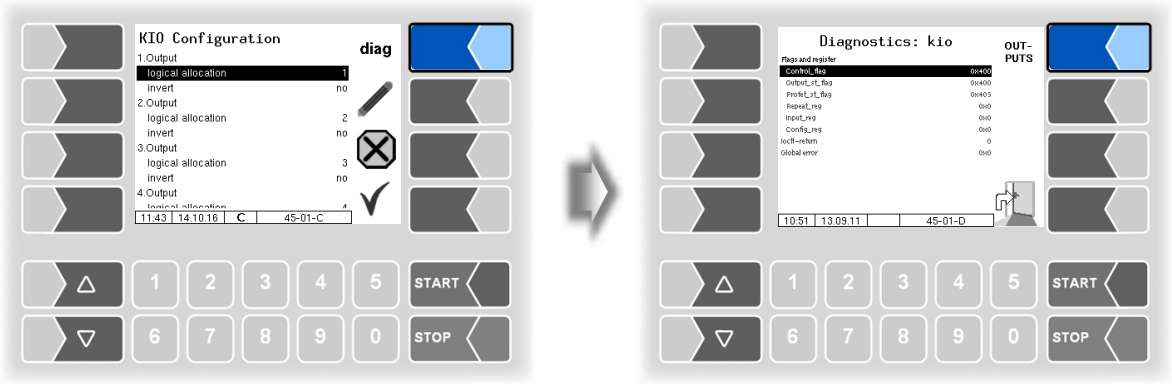
4.2.6.4 Outputs (Compact-Controller)



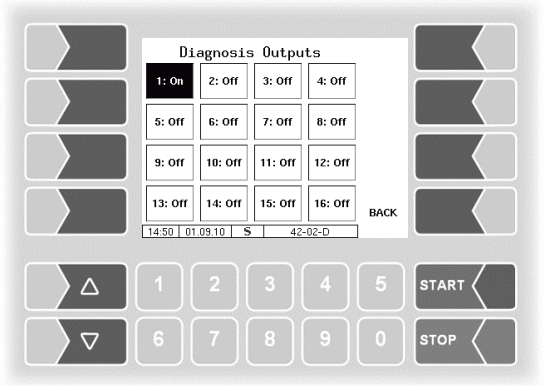
KIO Configuration			
		1. (...16.) Output	Output configuration see page 52
	C	*logical allocation	Assignment of outputs in the software
		*invert	yes: (The switching behaviour is inverted) no: (The switching behaviour is not inverted)
		firmware version	Firmware version
		driver version	Driver version
The diag softkey opens a service function for testing of the outputs´ functions.			

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.



You can activate or deactivate the outputs individually.



The outputs set in the Diagnosis menu are not reset until you exit the "*KIO Configuration"* window.

Configuration of the outputs

The assignment of the outputs is freely configurable.

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

Outputs 9, 10, 12, 14, 15, 20 und 21 are only needed if residue removal function is installed.

For residue removal back to the compartment use output 21 (not 12!)

If an MID is installed, additional inputs and outputs are required (see section 7.2.2).

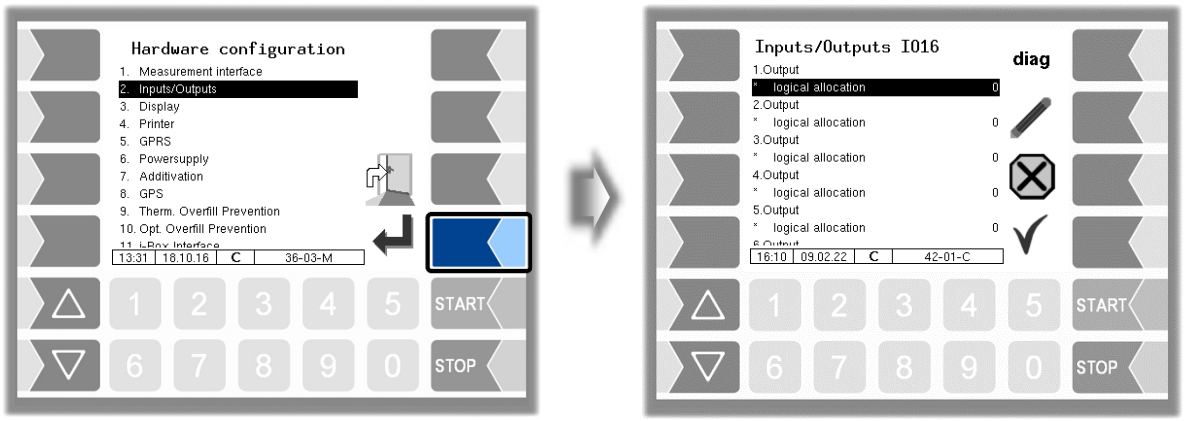
The solenoid valves are 24 V versions with a power consumption of max. 200 mA.

The output voltage is stabilized, EMC technically fused against the on-board voltage, to make sure all control tasks. Therefore, connections to other potentials must always be galvanic decoupled e.g. by using additional relays.

4.2.6.5 Outputs and Inputs IO8 / IO 16

For vehicles with a basic module, 8 or 16 outputs are available, depending on the hardware equipment.

A list of all outputs and inputs can be found in the Appendix, section 7.2

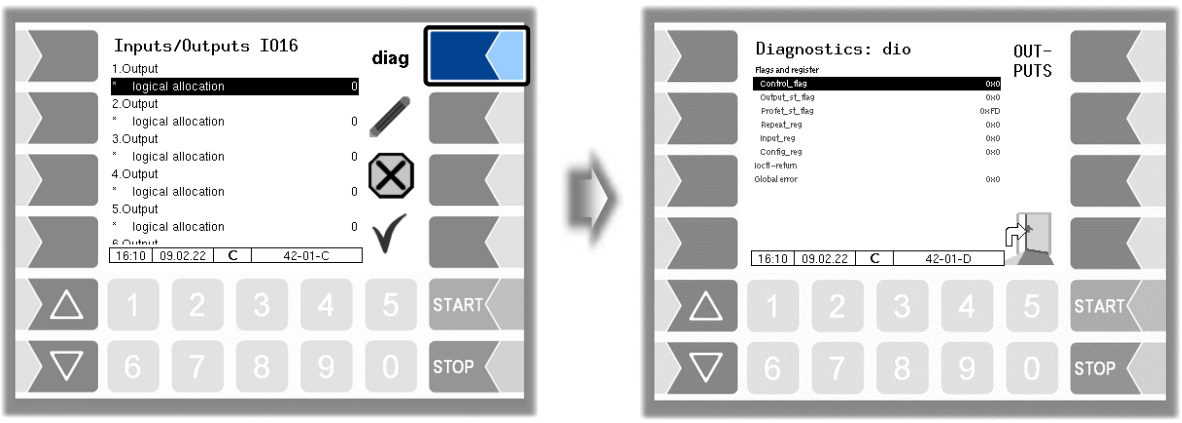


Inputs/Outputs				
	C	1. (...n.) Output		
			*logical allocation	logical allocation of the outputs (see section 7.2.1)
			*invert	Yes: The switching behaviour is inverted No: The switching behaviour is not inverted
		1. (...n.) Input		
			*logical allocation	logical allocation of the outputs (see page 47 and section 7.2.1)
			*invert	Yes: The switching behaviour is inverted No: The switching behaviour is not inverted For checking the switching behavior see section 7.3.2 “Diagnostics of the logic inputs and outputs“.
			*resting state	low: positive switching high: negative switching
		*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

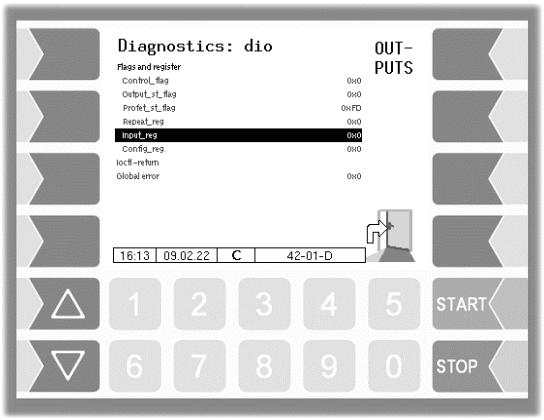
Input diagnostics

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.

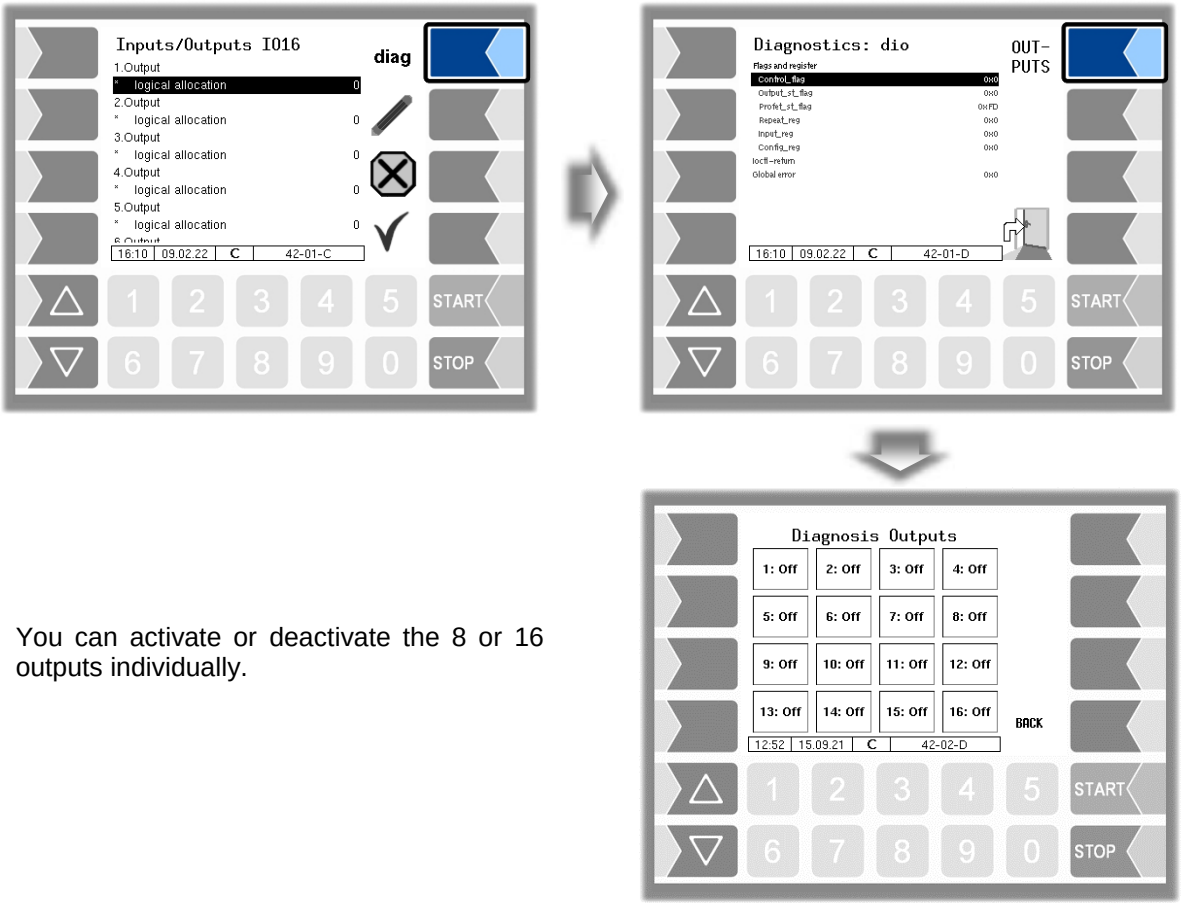


Explanation of this diagnostic function, see page 143.

Diagnostics of the Outputs

- Use the diag softkey to open the diagnostics window.
- Then use the OUTPUTS softkey to open the service function for testing the outputs.

This function is only available after entering the service password or with the calibration switch open



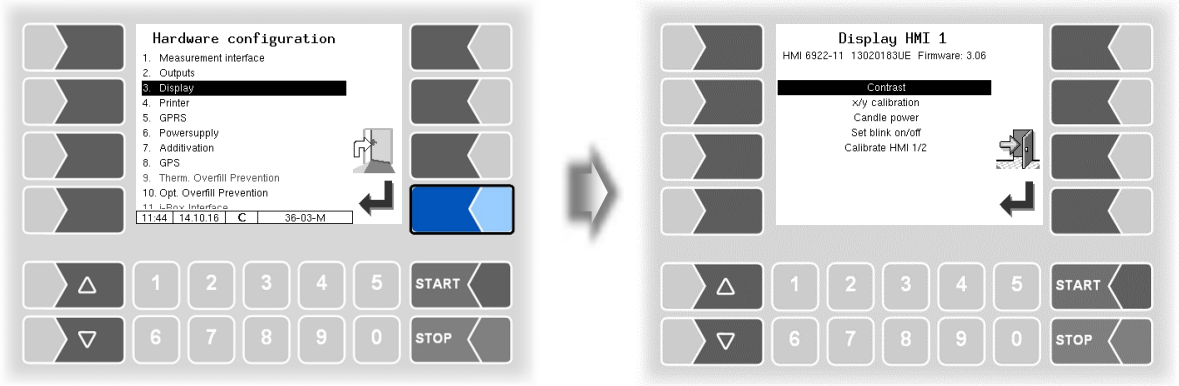
You can activate or deactivate the 8 or 16 outputs individually.

The outputs set in the Diagnosics menu are not reset until you exit the *"Inputs/Outputs"* window.

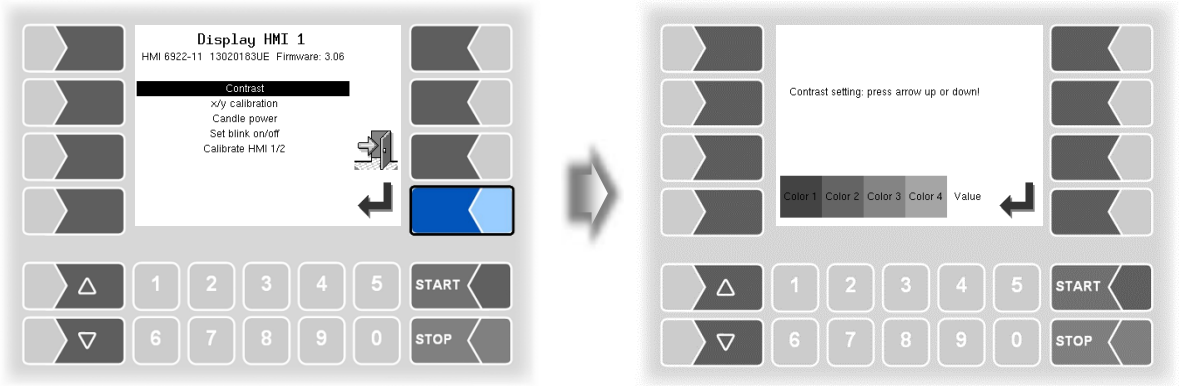
In the diagnostics menu, you can open a diagnostic window in which the current switching states of the inputs and outputs are displayed (see section 7.3.2).

4.2.6.6 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.



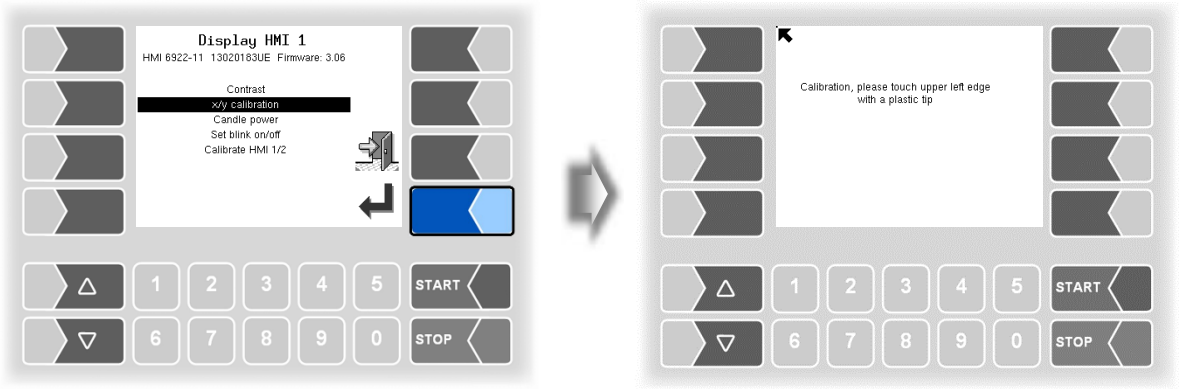
Contrast



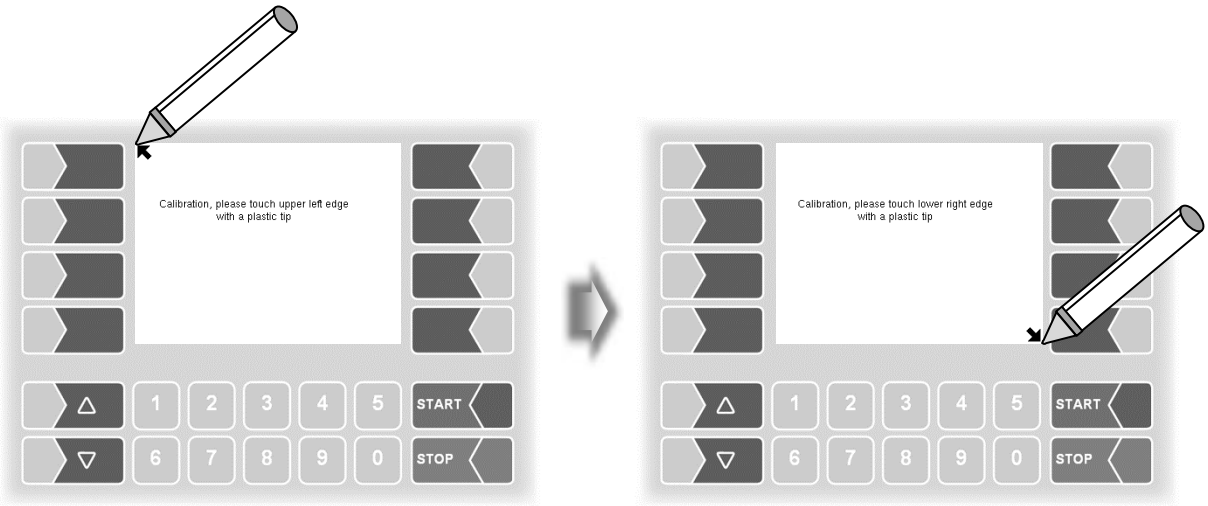
Use the selection keys ▽ and △ to set the contrast to the required value and touch the “Confirm” softkey *(Standard value HMI: 50 // Standard value compact controller: 55).*

x/y calibration

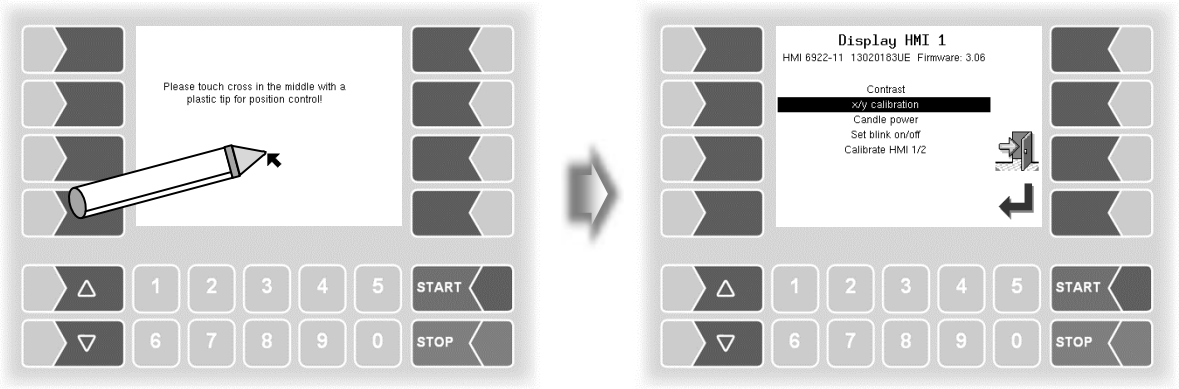
The x/y calibration function is used to redefine the display coordinates. These determine the position of the keys on the touch screen.
Follow the instructions on the display.



- 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 on the display.

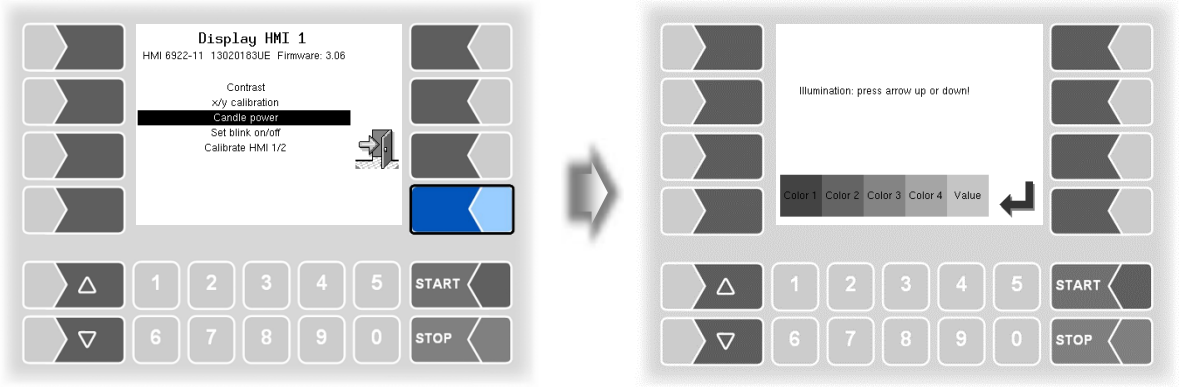


The coordinates of the touch screen have now been defined.

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

Never switch off the system during the calibration!

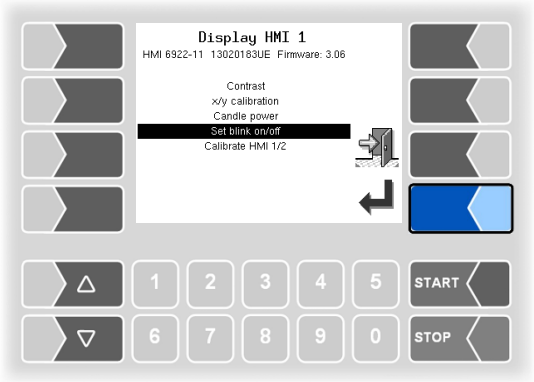
Candle power



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

Set blink on/off

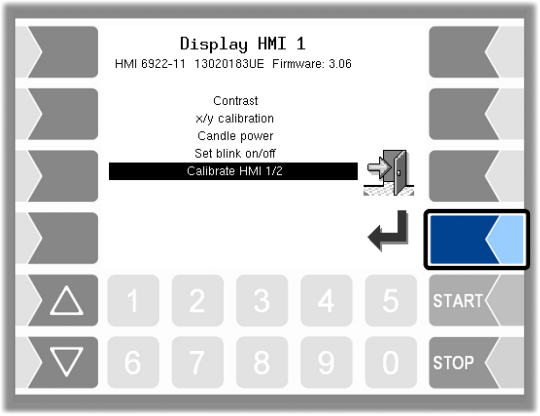
This is where you define whether the display should blink once each time you touch it or change without blinking.
The setting takes effect as soon as you confirm the menu option!



Calibrate HMI 1/2

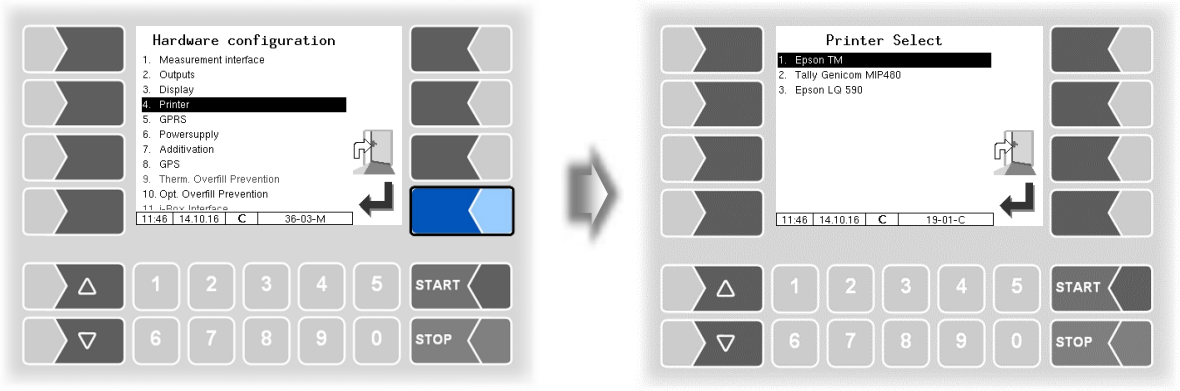
Two HMI display units can be installed for displaying information.
When you confirm this menu option, you switch from calibrating “Display HMI 1” to calibrating “Display HMI 2” or vice versa.
The following then appears in the title:
Display HMI 1 or
Display HMI 2.

(In measuring systems with compact controller without function!)



4.2.6.7 Printer

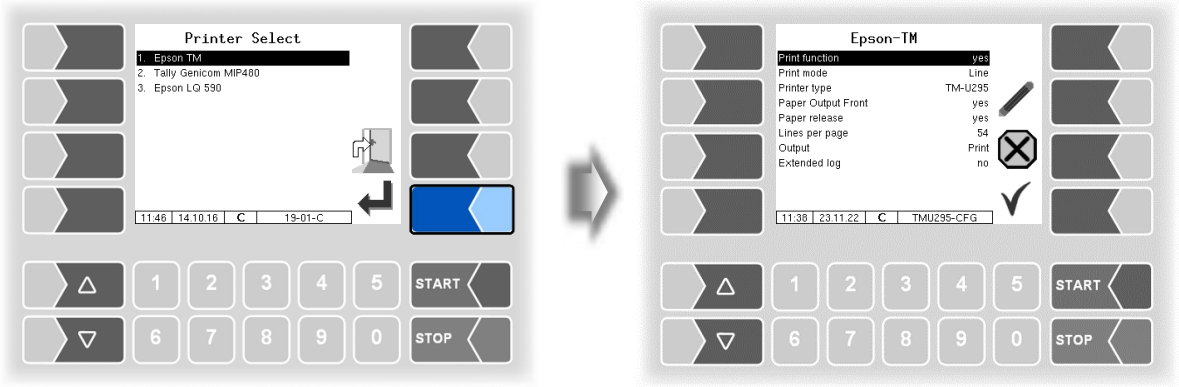
First select which printer type is to be used as the default printer.



Then you can configure the parameters for the selected printer.

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

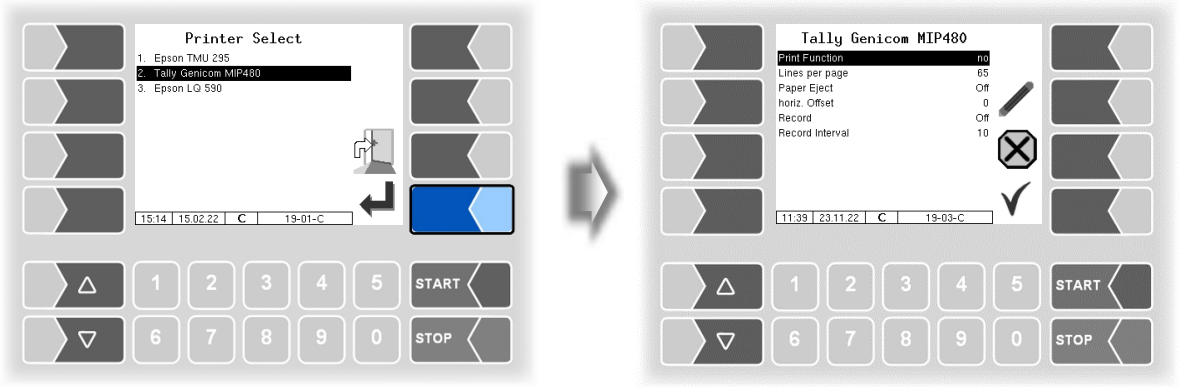
Epson TM



EPSON TM				
U	Print Function	yes Printer activated no Printer deactivated		
	Print mode	dynamic Print mode according to printer type (transfer dynamic or line-wise) **lines ∗**		
	Printer type	**TM-U295 ∗** TM-U220 Select the printer type used TM-T88		
	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. (only for diagnosis)		

∗ Default values

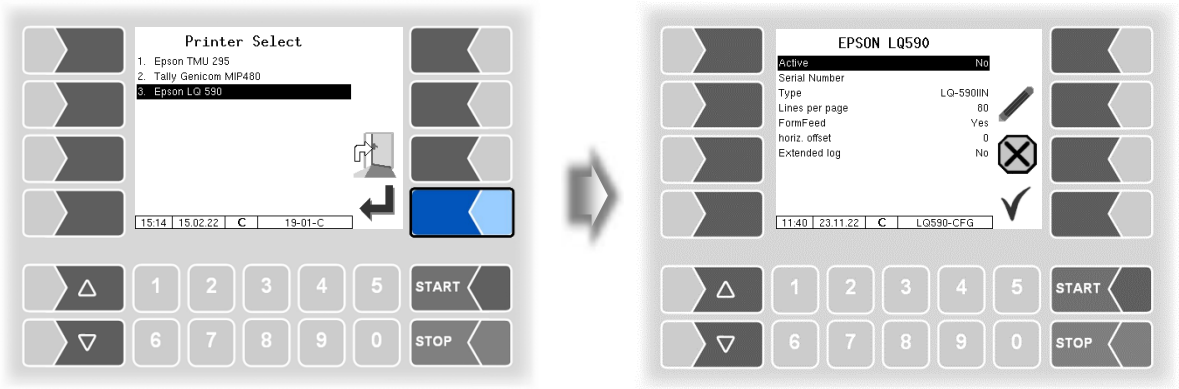
Tally Genicom MIP 480



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 *(Standard 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 (for diagnostic purposes only).
		Record Interval	Storage duration of the recordings (*default setting 10 days*)

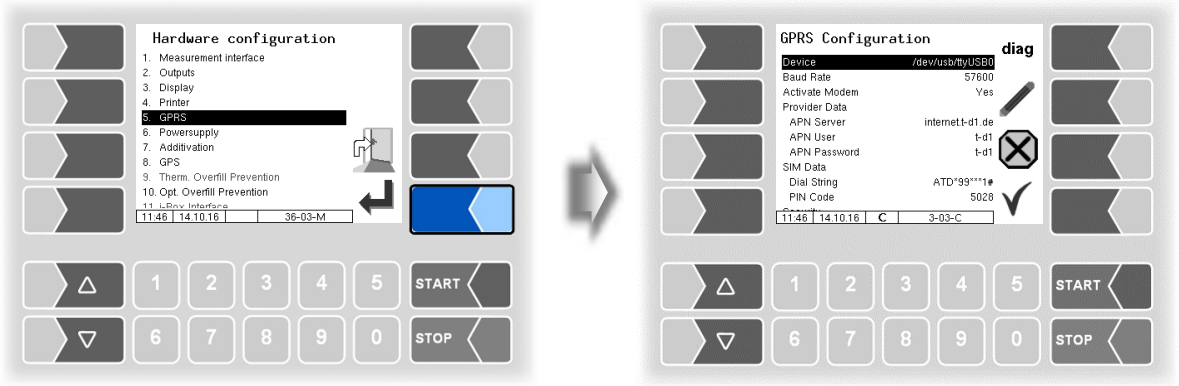
Epson LQ 590

(Available when the compact controller is used.)



Epson LQ 590				
		Active	Yes: printer enabled No: printer disabled	
		Serial Number	Serial number of the printer	
		Type	LQ-590 LQ-590 IIN	Select the printer type used
	U	Lines per page	Number of lines (including the footer) to the end of a page for single sheet printing when parameters or journals are printed. If 0 is entered here, there are no page breaks. *(Standard value: 54)*	
		Form Feed	Yes: The paper is ejected No: 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-	
		Extended log	Yes: Communication between the printer and the system 3003 is stored (for diagnostic purposes only).	

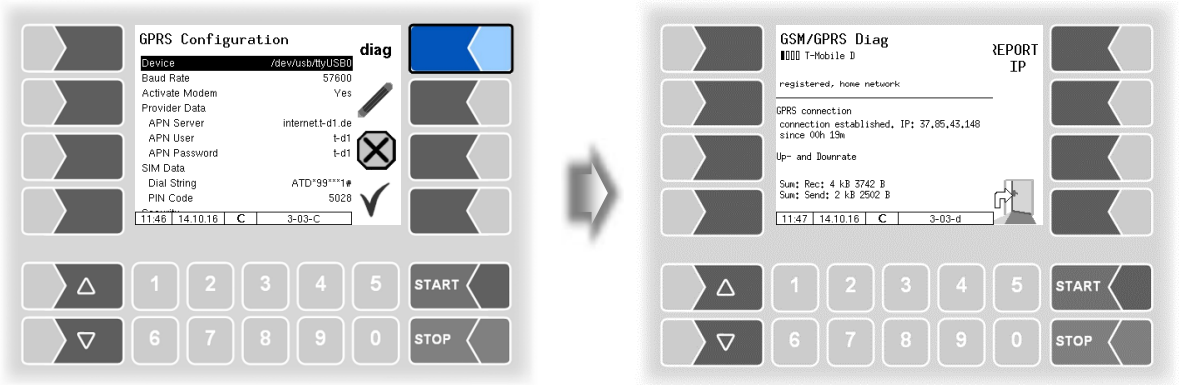
4.2.6.8 GPRS



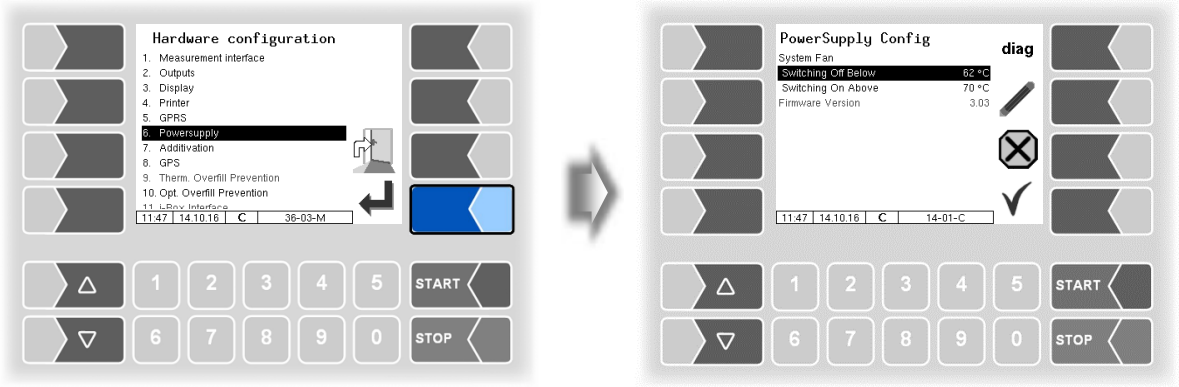
GPRS Configuration				
	S	Device	Interface (default: /dev/usb/ttyUSB0 for compact controller /dev/ttySM0 for Ex-hardware)	
	U	Baud Rate	57600 (default)	
	D	Activate Modem	Yes: Modem activated No: Modem not activated; the modem can be switched on and off in the diagnostics menu (see section 7.3.6).	
	U	Provider data		
		APN-Server	Provider's dial-in server	*Settings depend on the SIM card.*
		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 When the system starts dialling, the configured number is dialled (*ATD*99***1#*).	
		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 BENKE 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 online by using the diag softkey (see page 65).

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 7.3.5).



4.2.6.9 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 in C°
		Switching On Above	Temperature at which the fan is switched on in C°
		Firmware Version	Displays the firmware version

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

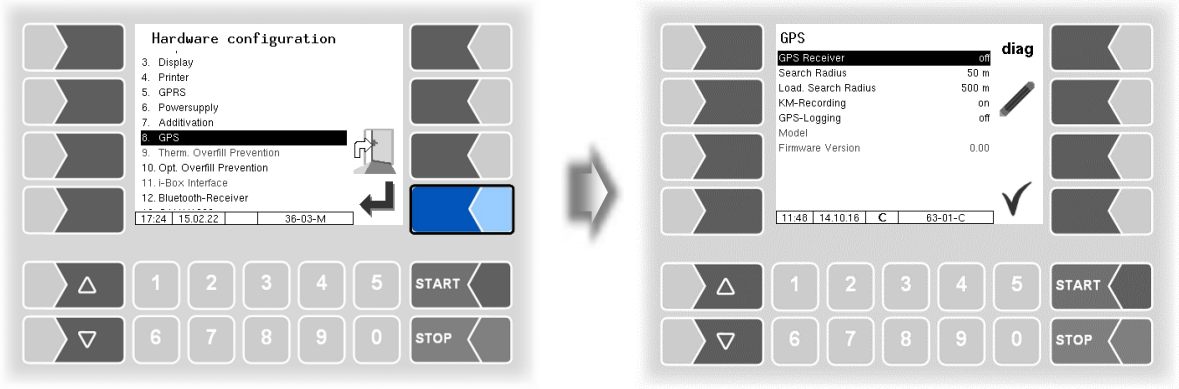
4.2.6.10 Additivation

Two additive pumps can be configured for the admixture of additives. In the configuration of the measured products, you can select the appropriate additive pump (see section 4.2.4.2).

(Not available on Operation Mode LPG.)

BARTEC Additivation 1/2			
	U	Additivation	Switching the additivation unit ON or OFF
	S	Serial number	Serial number (A-number) of the der additivation unit
		Calibrate	Calibration of the additivation unit - after starting put in quantity to deliver, - deliver the quantity into a measuring vessel, - put in the actually delivered quantity
		Bleed	Bleeding the additivation unit - after starting put in the desired bleeding quantity, - start bleeding
		Additiv totalizer	displays the Additiv totalizer
	D	Clear totalizer?	ON → clears the Additiv totalizer
	S	Guarantee quantity	Quantity that guarantees for delivery with a preset quantity, that the total additive amount is delivered into the “customers” tank, taking into account the length of the pipe.
		Firmware version	Displays the Firmware version

4.2.6.11 GPS



GPS			
	U	GPS Receiver	Activate/deactivate the GPS receiver
		Search Radius	*-without function-*
		Load. Search Radius	*-without function-*
		KM-Recording	*-without function-*
		GPS-Logging	When querying the GPS data, these are recorded in the Emf log file for diagnostic purposes. Activate only after consulting BARTEC Service.
		Model	Model version
		Firmware Version	Firmware version

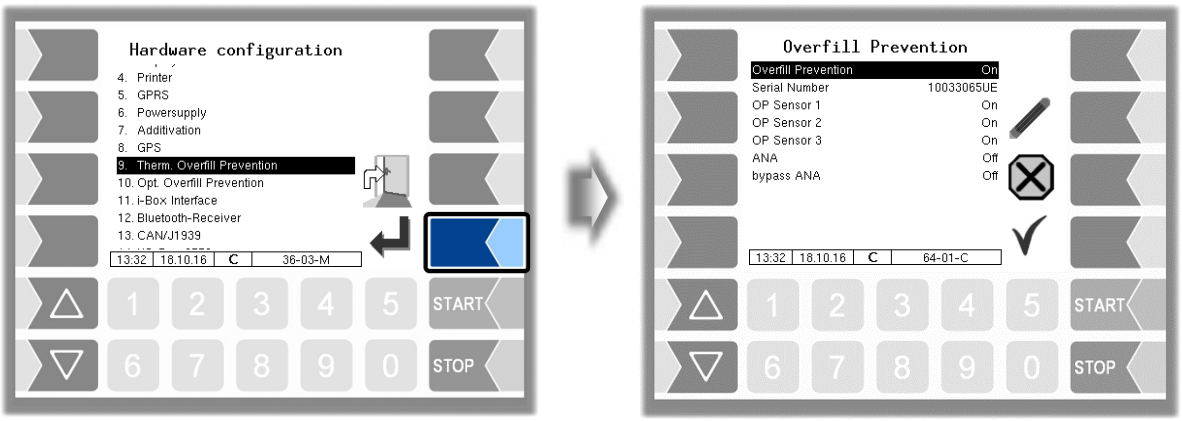
Diagnostics

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 Thermical Overfill Prevention

(Not available with "A3-TIGER", LPG)

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



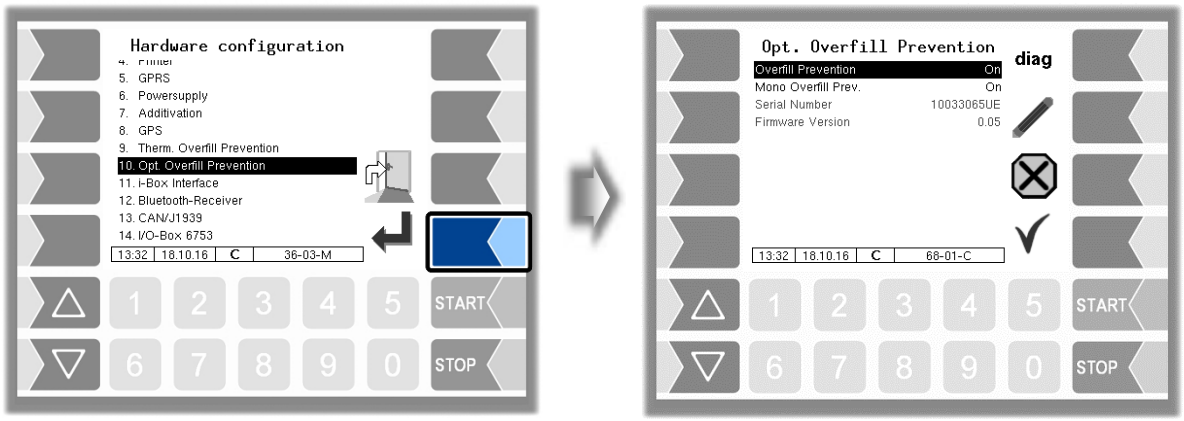
Overfill Prevention			
	S	Overfill Prevention	Switching the Overfill Prevention On or Off
		Serial Number	Serial Number (see type plate)
		OP Sensor 1	Switching On or Off the respective channel of the overfill protection *The number of available OP sensors depends on the installed hardware.*
		OP Sensor 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 ✱

✱ The use of the ANA function is regulated in the relevant VdTÜV certificates and the technical guidelines for flammable liquids.

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

4.2.6.13 Optical Overfill Prevention

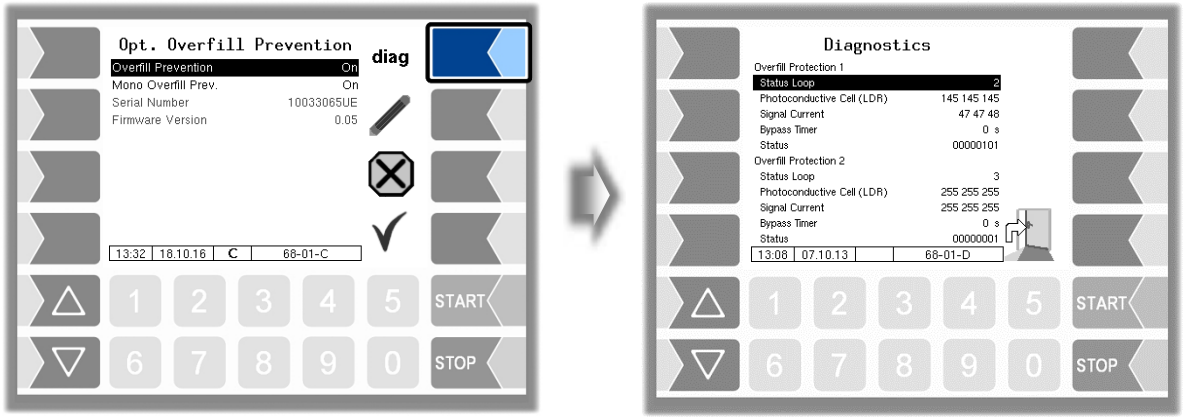
(Not available with "A3-TIGER", LPG



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

Diagnostics

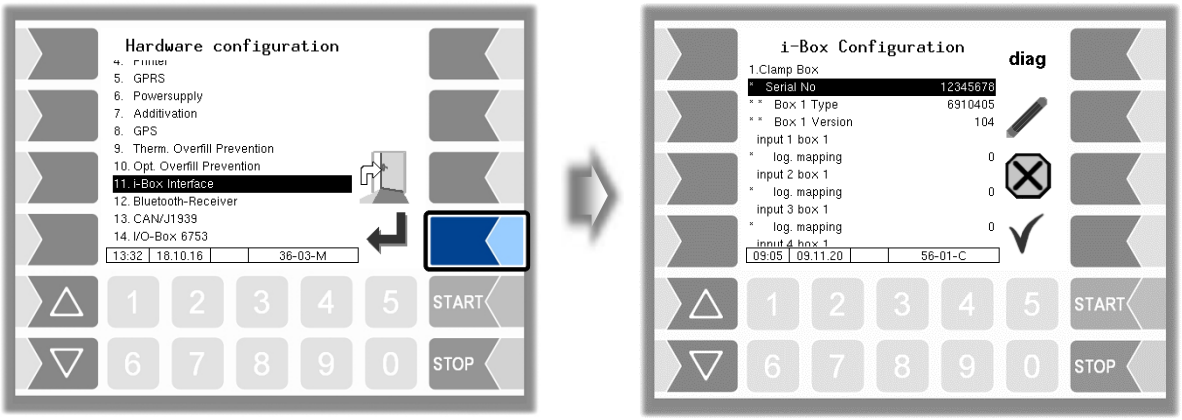
The diag softkey opens a diagnostic tool for the optical overfill prevention. If necessary, you can obtain expert support from the service staff at BARTEC BENKE.



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

4.2.6.14 i-Box Interface (Ex-TIGER and COMP)

(Available in vehicles equipped with "Ex-TIGER" or COMP)
(Not available with "A3-TIGER" or in connection with the compact controller.)



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 (...n) Box 1		
		*log. mapping	Assignment in the software (see section 7.2.1)	
		*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 (...n)		
		*compartment/ log. mapping	Assignment of the temperature sensor	
		*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)	
		2. Clamp Box (Tank identification sensors)		
	S	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".*	
		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") (see page 47)		
		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 no	Serial no. of the clamp box	
		Type	displays the Box Type	
		Version	displays the Box Version	

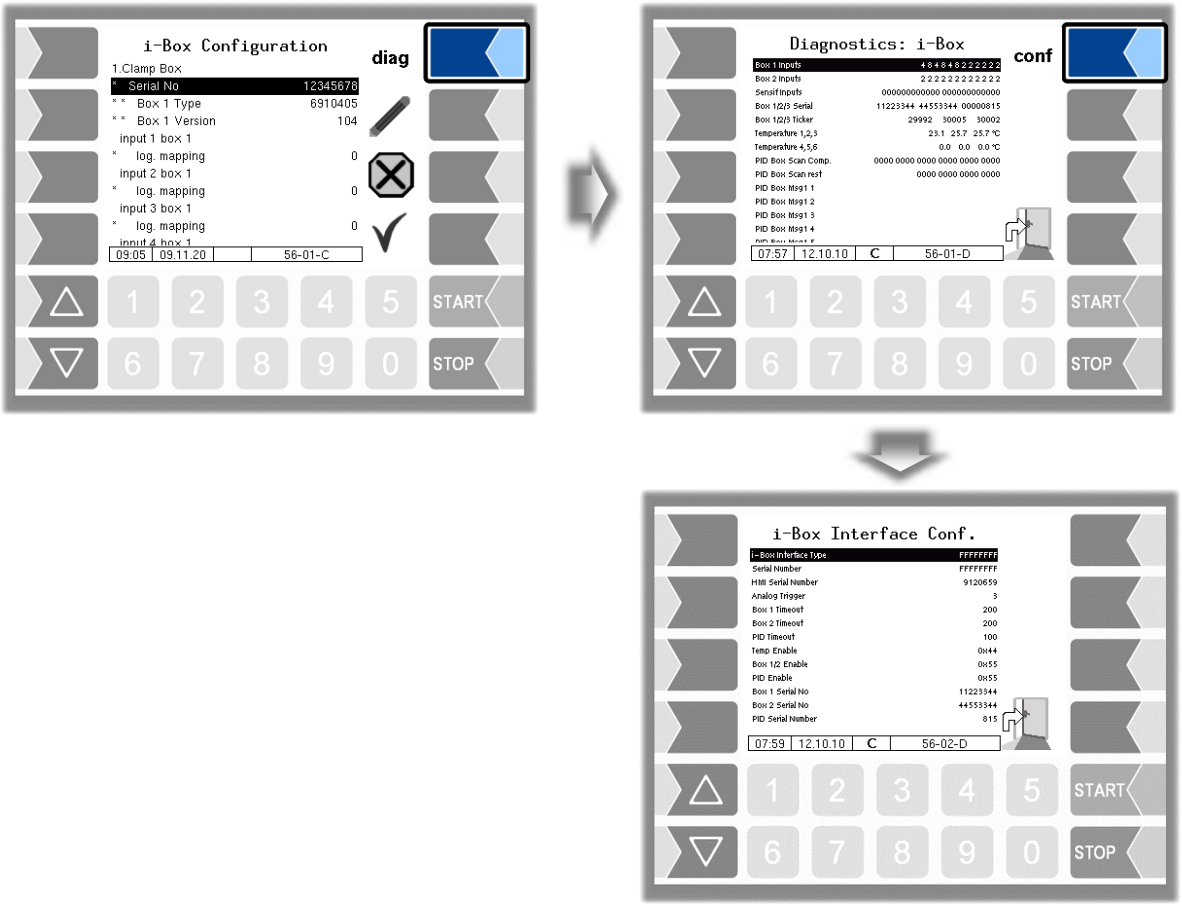
		LOG-Level	Specifies the scope of the entries in the log file (by entering the bit significance) 0: No entries 1: Entries for outputs 2: Entries for inputs 4: Other accesses (for diagnostic purposes only)
		firmware version	Displays the Firmware version of the interface board.
		driver version	Displays the Driver version of the interface board.

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

Diagnostics

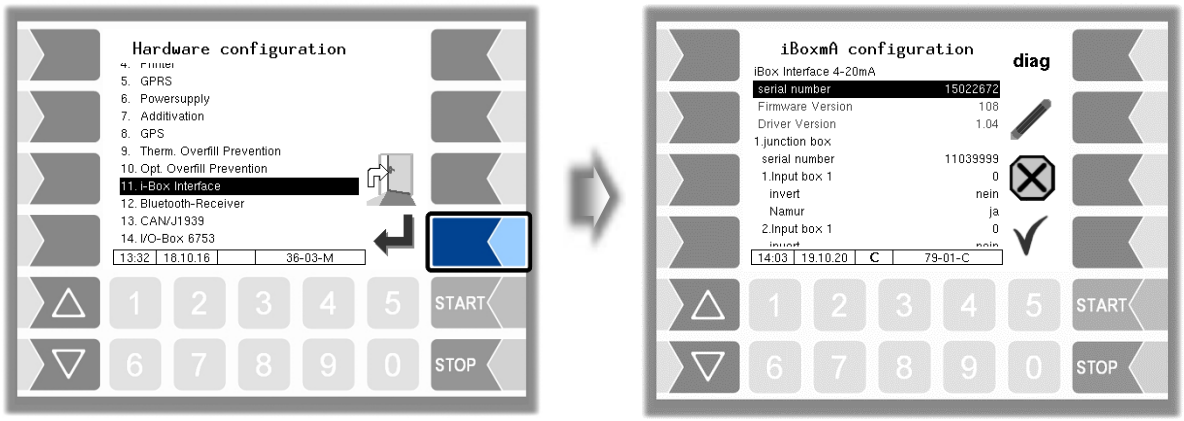
The diagnostics function is used to check the statuses of the temperature sensors, the PID scan cables and the inputs of the wet log sensors (service function). During proceeding an order you can start the i-Box diagnostics in the diagnostics menu (see appendix, section 7.3).

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



4.2.6.15 i-Box mA Interface

(Available on Operation Mode „LPG“.)

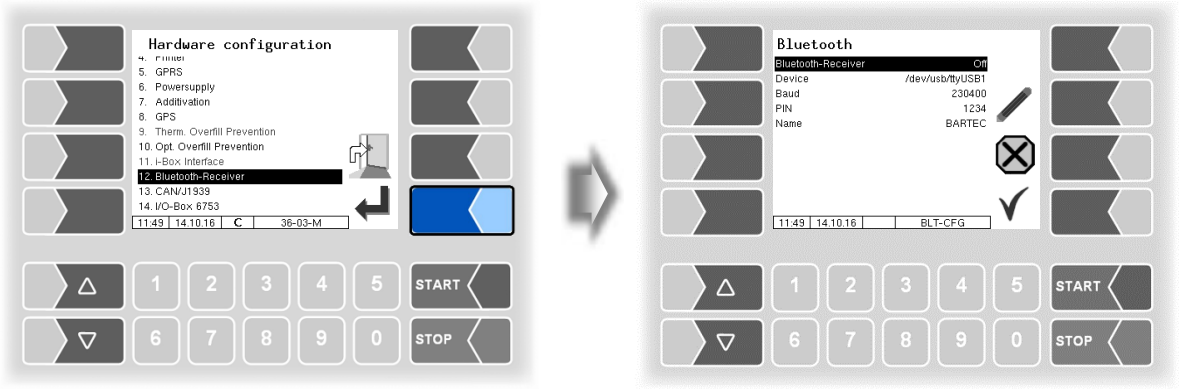


i-Box mA configuration				
		serial number	Serial number of the IBoxmA-module	
		Firmware Version	Displays the firmware version of the i-Box	
		Driver Version	Displays the driver version of the i-Box	
		1. (2.) junction box		
		Serial number	Serial number of the IBoxmA	
		1. (...18.) Input box1 (2)	logical allocation (see section 7.2.4)	
		invert	yes: The switching behaviour is inverted no: The switching behaviour is not inverted	(1)
		Namur	yes: A Namur sensor is connected to the input. no: An open / close contact is connected to the input	
		differential pressure sensor	*The pressure in the measuring section is recorded for test purposes; a corresponding pressure sensor must be configured for this purpose.*	
	S	Sensor terminal	Terminal position on the interface card (1..4)	
		max. flow	no meaning	
		min. flow	no meaning	
		current beginning CB	Current initial value [mA] of the pressure sensor according to the calibration data sheet	
		current final CF	Current end value [mA] of the pressure sensor according to the calibration data sheet	
		pressure at CB	Pressure [bar] at current initial value according to calibration data sheet	
		Pressure at CF	Pressure [bar] at current end value according to calibration data sheet	
		Allgemein		
		Logging	yes: Measurement data from the pressure sensor are logged in emf.log	

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

4.2.6.16 Bluetooth Receiver

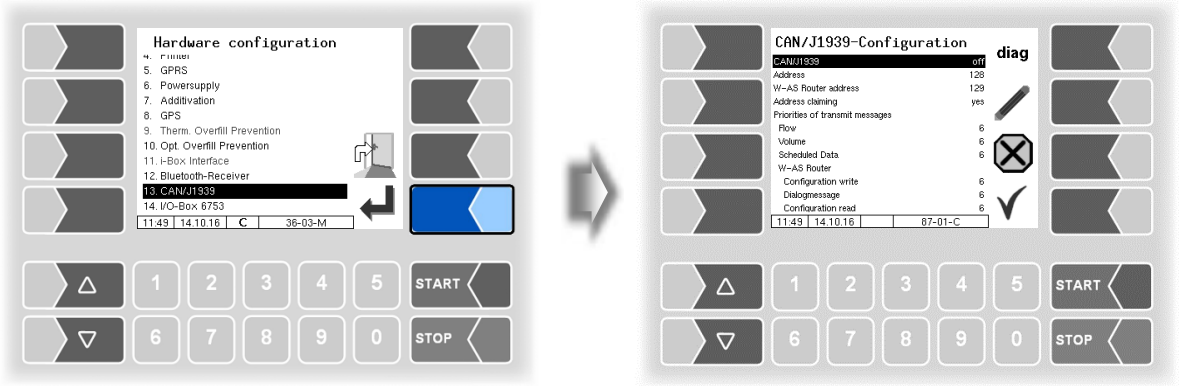
The Bluetooth interface is intended for connection to the “3003 Service Tool” PC software.



Bluetooth			
	S	Bluetooth Receiver	activate/deactivate the bluetooth receiver
		Device	interface designation (/dev/ ttyUSB1 *for Compact Controller* /dev/ ttyUSB0 for Ex-hardware)
		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).

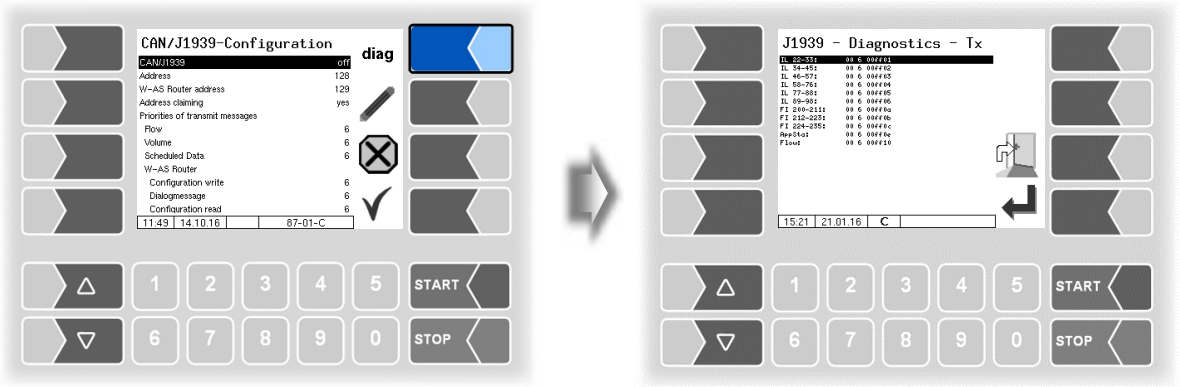
4.2.6.17 CAN / J1939 (Wireless overfill prevention)



CAN / J1939			
		CAN/J1939	Switching the interface on or off
		Address	Address used for J1939 communication Address area: 0-253 (*Standard: 128)*
		W-AS Router address	Address of the W-AS router (*Standard: 129)* 254: W-AS Router data is not evaluated by the controller.
		Address claiming	**yes**: The compact controller logs on to the bus with a fixed name and address and responds to Address Claiming Requests. no: The compact controller does not log on to the bus and does not respond to Address Claiming Requests. The user must ensure that no two bus participants use the same address.
		Priorities of transmit messages	
		Flow	
		Volume	
		Scheduled Data	
		W-AS Router	
		Configuration write	
		Dialogmessage	For service purposes. *(Standard: 6)*
		Configuration read	
		Diagnostic read	
		Configuration save	
	U	Delivery information	
		Firmware Version	Displays the firmware version of the CAN module used.
		Driver Version	Displays the driver version of the CAN module used
		W-AS Thermal	
		ANR	Displays the serial number of the thermic wireless overfill prevention.
		Version	Displays the version number of the thermic wireless overfill prevention.
		W-AS Terminal	
		ANR	Displays the serial number of the wireless overfill prevention terminal.
		Version	Displays the version number of the wireless overfill prevention terminal.
		W-AS Router	
		ANR	Displays the serial number of the wireless overfill prevention router
		Version	Displays the firmware version of the wireless overfill prevention router
		Address	Displays the address of the wireless overfill prevention
		Address System 3003	Displays the address of the wireless overfill prevention in the 3003 system.
		Relais time	
		Relais 1 (…6)	Display of the set relay times

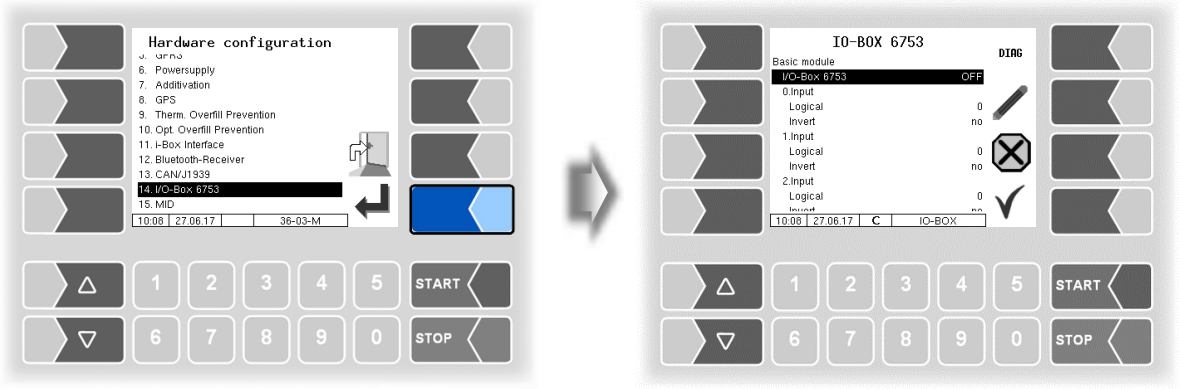
Diagnostics

The diag softkey opens a diagnostic tool for the CAN / J1939 interface.



You can also run the interface diagnostics in the diagnostics menu (see section 7.3.12).

4.2.6.18 I/O-Box 6753



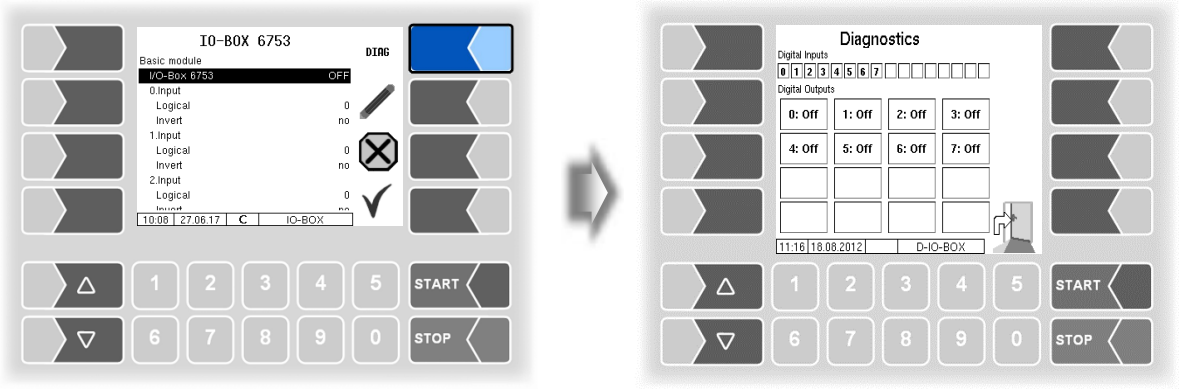
The basic module of the I/O-Box 6753 has 8 inputs and 8 outputs. The I/O box can be extended by additional modules each with 8 inputs or outputs.

I/O –Box 6753				
	S	Basic module		
		I/O-Box 6753	ON/OFF	
		0. (…7.) Input		
		Logical	Assignment of inputs in the software (see section 7.2)	
		Invert	yes: (The switching behaviour is inverted) no: (The switching behaviour is not inverted)	(∗)
		0. (…7.) Output		
		Logical	Assignment of outputs in the software (see section 7.2)	
		Invert	yes: (The switching behaviour is inverted) no: (The switching behaviour is not inverted) *Inverting the switching behaviour of the outputs is not possible under „pair 1.16“!*	(∗)

(∗) For checking the switching behaviour see section 7.3.2 „Diagnostics of the logic inputs and outputs“.

Pulse outputs (e.g. with a special additive unit) can only be controlled by the 8 outputs of the **basic module**!

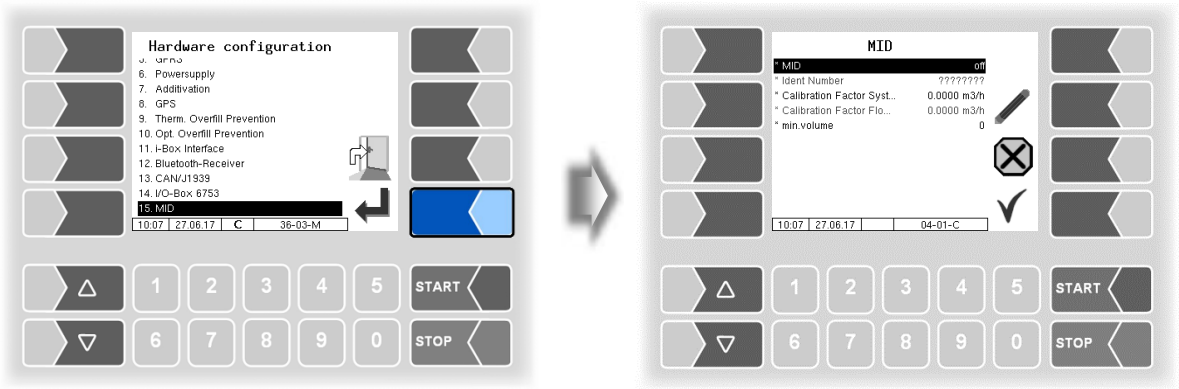
Diagnostics



4.2.6.19 CHEM (MID)

The MID is used to measure quantities when delivering products which cannot be delivered via the meters of petrol, diesel and other mineral oil products.
The MID must be installed if the delivery of AdBlue® is intended.

(Available on Operation Mode „TIGER-CHEM“ or “COMP-CHEM”.)



MID		
	*MID	on/off
	*Ident Number	MID serial number
	*Calibration Factor System	Calibration factor of the MID saved in the calibration memory of the system 3003. It can only be changed if the calibration switch is on.
C	*Calibration Factor Flo.	Calibration factor saved in the MID. If the calibration switch in the MID is open, this is transferred from the system 3003 to the MID. (upon delivery, the calibration switch in the MID is open).
	*min. volume	depending on the used flow meter (MID), (see. specifications of the MID)

Additional inputs and outputs are required for the MID (see section 7.2.2).

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

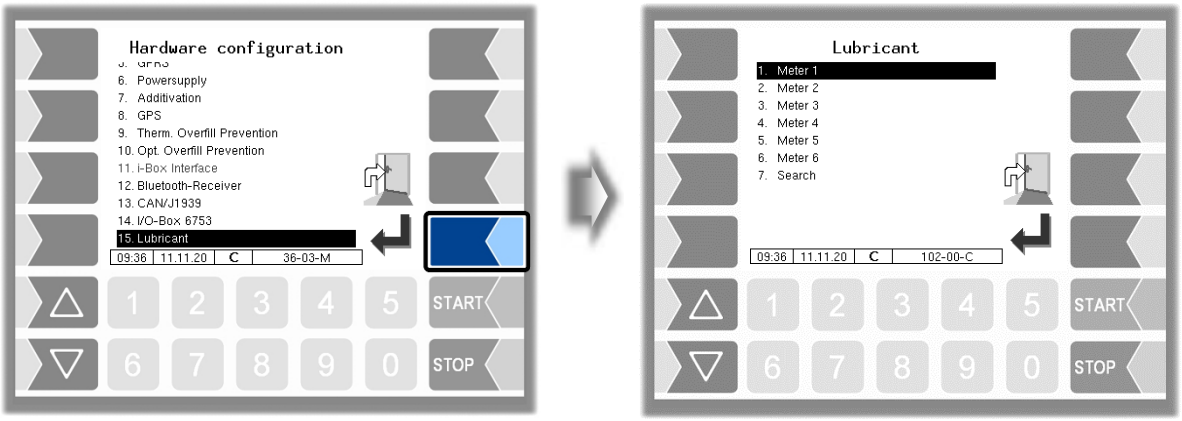
4.2.6.20 Luboil (Lubricant)

Up to 6 measuring points can be configured for the quantity measurement of lubricating oils.
The measurement is carried out with oval-wheel flowmeters and an associated sensor head.
These components are delivered with the following basic addressing:

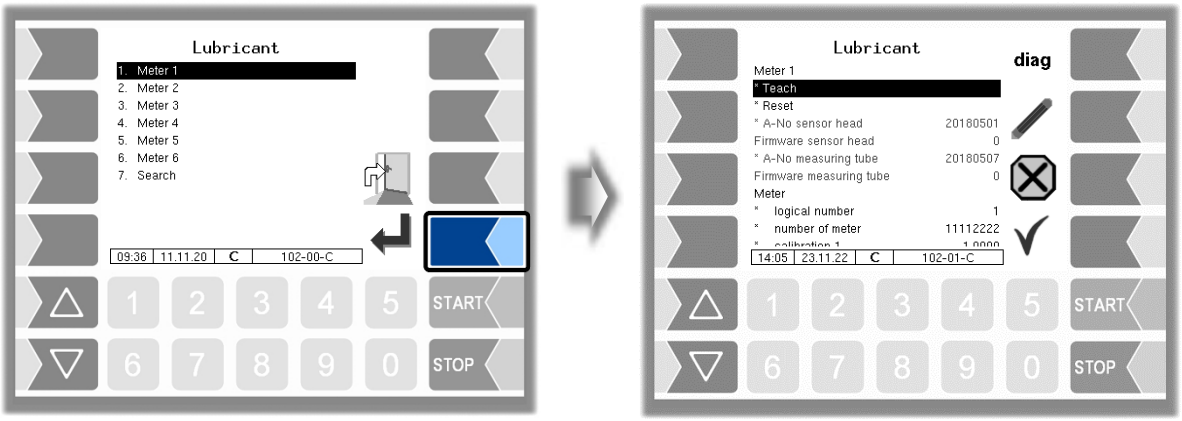
Oval-wheel flowmeter: 3, associated sensor head: 4.

To configure the measuring points, only one oval-wheel flowmeter and sensor head with the basic addressing 3 and 4 may be connected.
When the assignment to the measuring point (addressing) has been made, you can connect the next oval-wheel flowmeter and sensor head and assign to a measuring point.

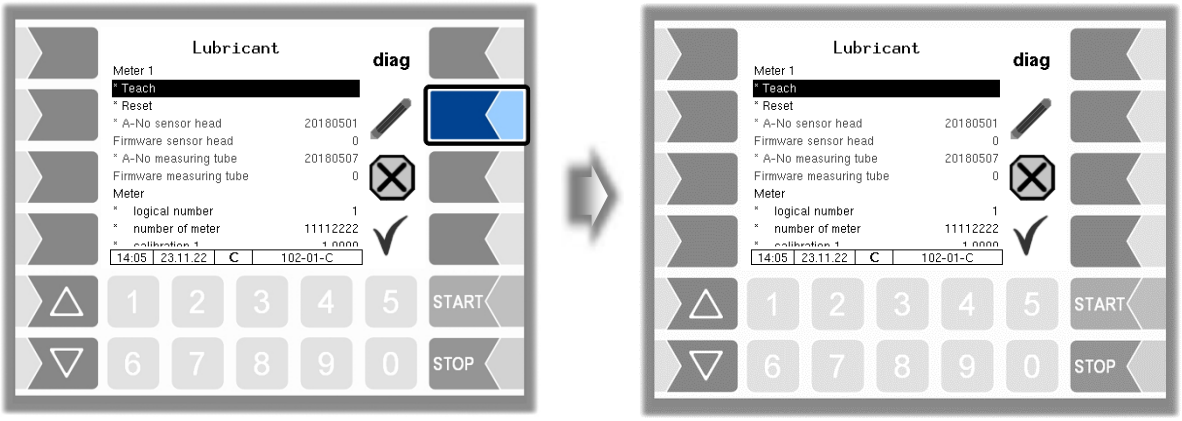
- Connect the oval-wheel flowmeter and sensor head.
- In the "Hardware configuration" menu, confirm the item "Lubricant".



- Confirm the meter that you want to configure.



- The menu item "Teach" is marked; touch the "Edit" softkey.



The oval-wheel flowmeter and sensor head are assigned to the selected meter.
The following addressing takes place according to the meter:

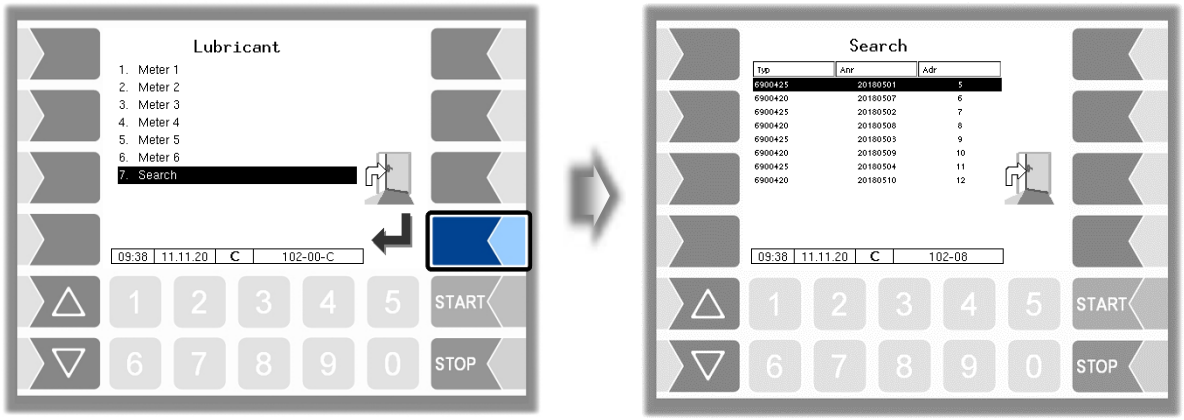
	Meter					
	1	**2**	**3**	**4**	**5**	**6**
	Adresses					
Oval-wheel flowmeter	5	7	9	11	13	15
Sensorhead	6	8	10	12	14	16

When the addressing has been carried out, serial no. and firmware no. of the oval-wheel flowmeter and sensor head are displayed

Complete the configuration of the other parameters.

Lubricant				
	C	*Meter 1 (…6)*		
		* Teach	The oval-wheel flowmeter and sensor head are assigned to the selected meter.	
		* Reset	The assignment to the meter deleted; the oval-wheel flowmeter and sensor head are reset to the basic addressing 3 and 4.	
		* A-No sensor head	The serial number of the sensor head is displayed.	
		Firmware sensor head	The firmware version of the sensor head is displayed.	
		* A-No measuring tube	The serial number of the oval-wheel flowmeter is displayed.	
		Firmware measuring tube	The firmware version of the oval-wheel flowmeter is displayed.	
		Meter		
		* logical number	Logical assignment of the meter (usually corresponding to the selected meter)	
		* number of meter	Manufacturer number of the meter	
		* calibration 1 (…3)	The calibration factor determines how many pulses produce a litre (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; below this volume the delivery is not calibrated. *If the volume is <200 L, a decimal place is displayed and printed* *If the volume is <20 L, two decimal places are displayed and printed*	
		Temperature sensor		
		* Logical assignment	Assignment of the temperature sensor to the meter	
		* Calib. 0/-195 °C	Resistance at 0°C or -195°C	Depending on the sensor used (0...50 °C or -195...-80 °C)
		* Calib. 50/-80 °C	Resistance at 50°C or -80°C	
		WLS Intern		
		* Logical assignment	Logical input of the internal WLS (see section 7.2.5) *- is automatically assigned to the meter-*	
		WLS Extern		
		* Logical assignment	Logical input of the external WLS (see section 7.2.5)	

All installed oval-wheel flowmeters and and the associated sensor heads are displayed under the “Search” menu item. You can identify the assignment to the measuring point from the displayed address (see page 79).



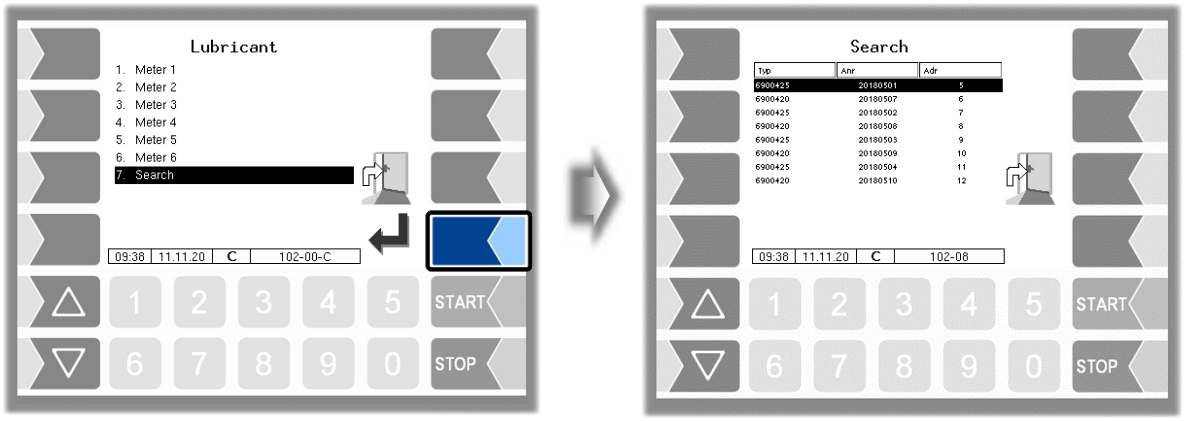
Resetting the addressing

Under certain circumstances, it may be necessary to reset an existing addressing to the basic addressing, e.g. when exchanging meters or for assignment to a different meter.

In the following example, the oval-wheel flowmeter and sensor head with addresses 9 and 10, i.e. the addresses for meter 3, are to be reset.

Example

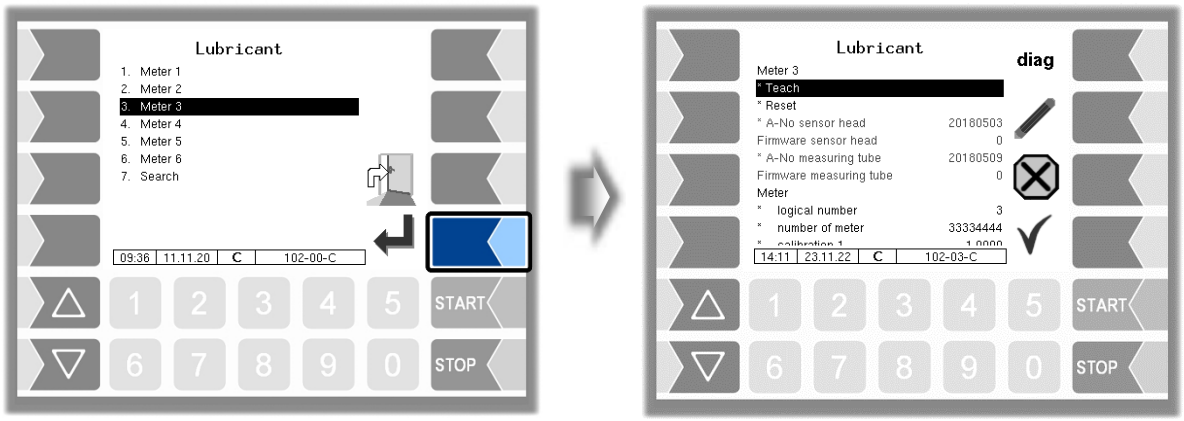
- First start the search.
  All installed oval-wheel flowmeters and associated sensor heads as well as their serial numbers and addresses are displayed.



- Use the addresses to determine the meter whose oval-wheel flowmeter and sensor head are to be reset.

  The addresses 9 and 10 belong to meter 3.

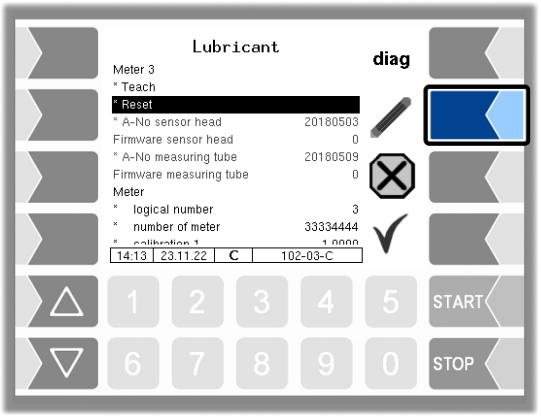
- Call up meter 3.



Select "Reset" and touch the "Edit" softkey.

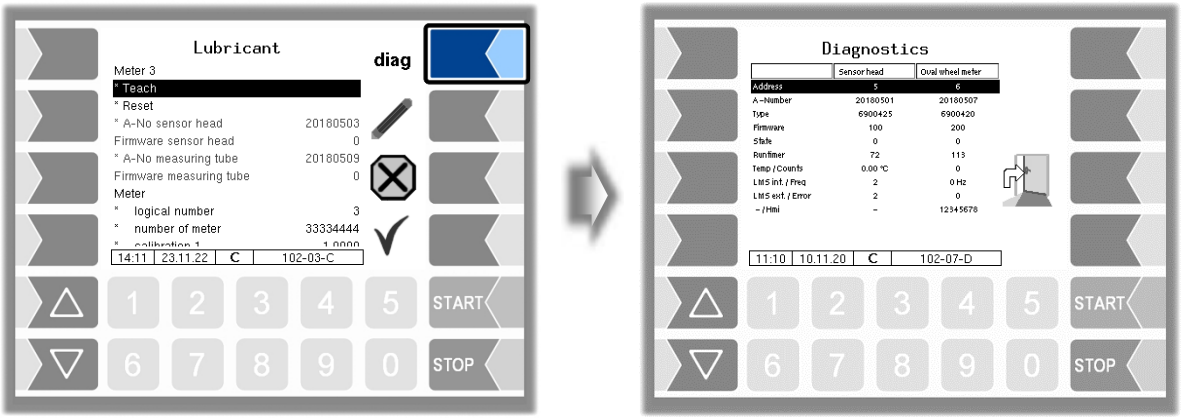
Then the addresses of the oval-wheel flowmeter and the sensor head are reset to base addressing 3 and 4.

You can now assign the oval-wheel flowmeter and sensor head to another meter using the "Teach" item (see page 79).

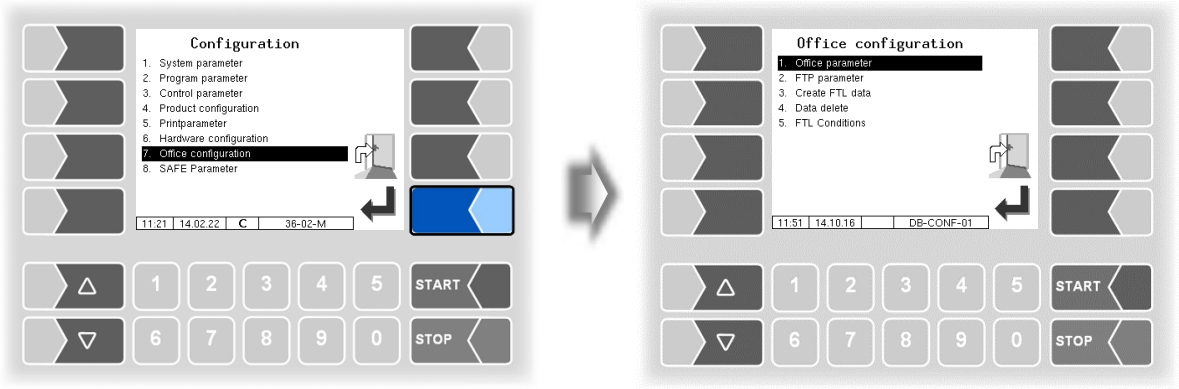


Diagnostics

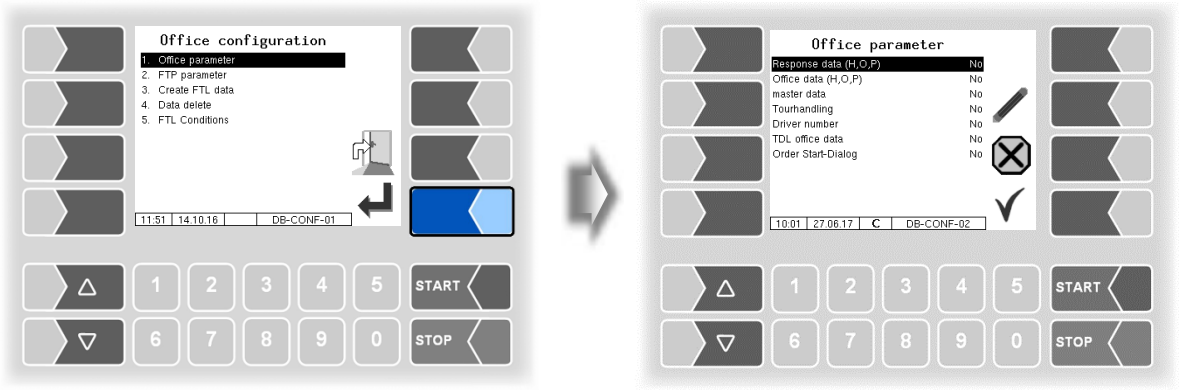
You can call up a diagnostic window for the selected meter.
You can also call up the diagnostics window in the diagnostics menu (see section 7.3.14). You will find a brief explanation of the displays there.



4.2.7 Office configuration



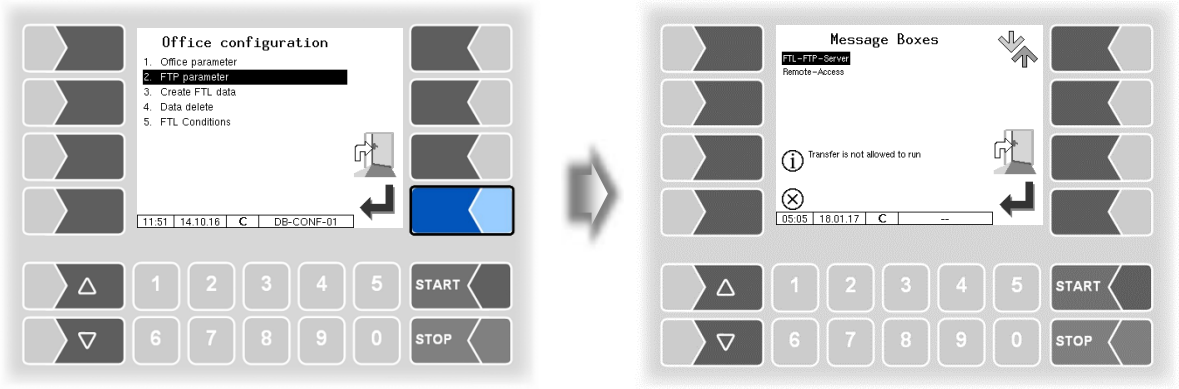
4.2.7.1 Office parameter



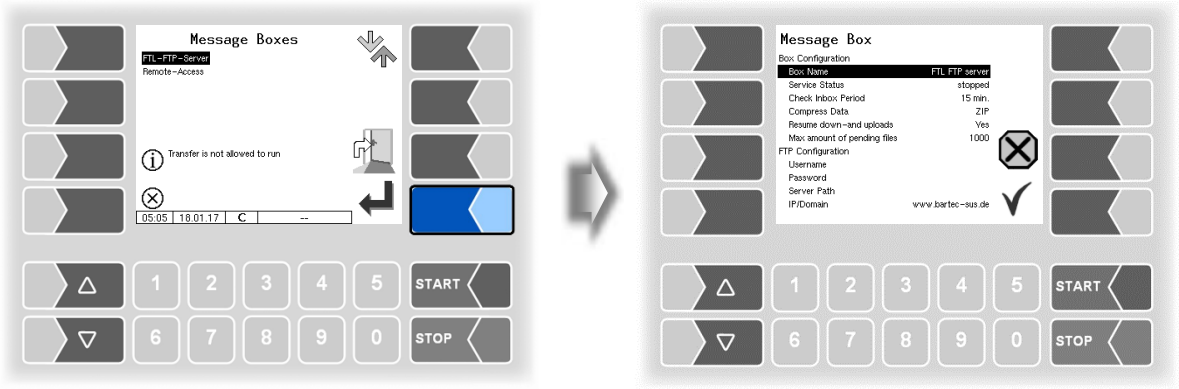
Office parameter			
	U	Response data (H, O, P)	Yes: data response is used (manual triggering possible)
		Office data (H, O, P)	Yes: scheduled data is used
		master data	Yes: master database is used (article database, customer database)
		Tourhandling	Yes: Before starting an order must a tour be started (when using office connection No: The tour always runs 24 hours (0 o'clock to 24 o'clock), e.g. order scheduling
		Driver number	Yes: The driver number must be entered when starting a tour.
		TDL office data	Yes: user specific data converting into TDL data format, if the user uses the PTrans-W program on the office side.
		Order Start-Dialog	Yes: After selecting a scheduled order, you will be asked if you really want to start it.

4.2.7.2 FTP parameter

One or more message boxes can be configured here.
The transmission of FTL scheduled and return data is configured via the message box FTL-FTP server



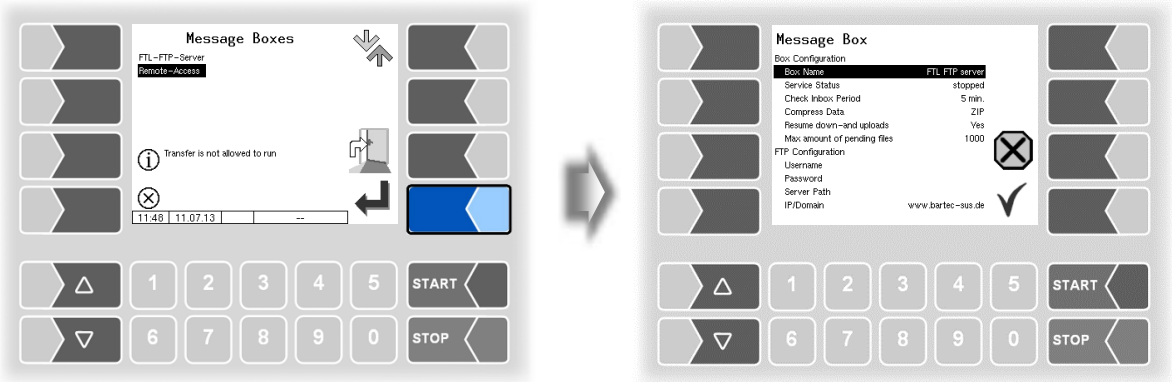
If there are several message boxes to choose from, you can select the required message box using the ▽ and △ keys.



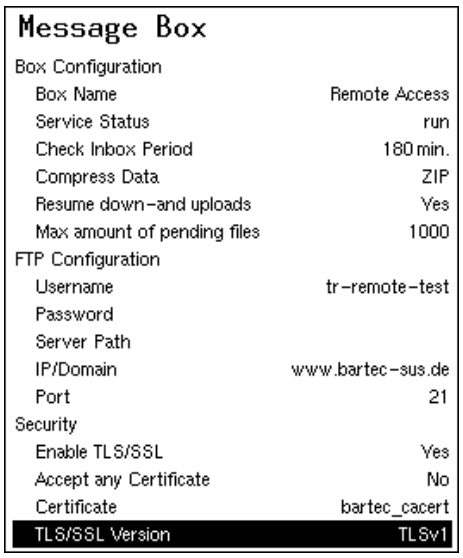
Message Box				
	U	Box Configuration		
			Box Name	Name of the message box
			Service Status	run: Data transmission option on stopped: Data transmission option off *(Note: Changes to the service status only take effect after restarting the system)*
			Check Inbox Period	Time [min] after which the system checks whether any data is waiting to be transmitted to the vehicle. This check is also performed every time data is sent. *(Standard: 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 up-loads	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 in the transmission buffer. The files have not yet been transferred. *(Standard: 1000)*
		FTP Configuration		
			Username	Username on the FTP server
			Password	Password on the FTP server
			Server Path	Path to the directory on the used server. *When using the standard setting no entry is required.*
			IP/Domain	Address of the data server
			Port	No. of the port that that is served by the server
		Security		
			Enable SSL	Yes Data encryption No: No data encryption
			Accept any Certificate	Yes Any certificate is accepted No Only the registered certificate is accepted
			Certificate	Here you select the certificate
			TSL / SSL Version	Here you select the TLS / SSL version (**TLSv1** or SSLv3) *(Standard: TLSv1)*

Online Service Function

For using the online service function (see section 4.5.15 and 7.3.107.3.10) configure the access here.



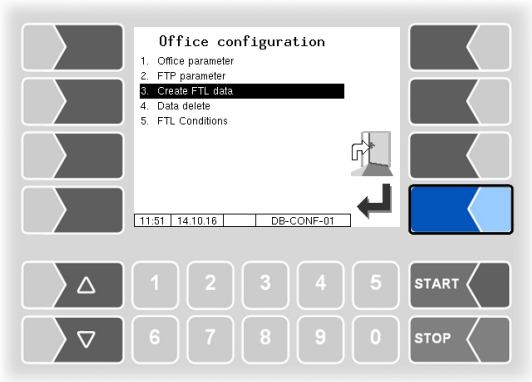
Set the parameters to the values shown in the figure.
The encryption for the network protocol is set to TLSv1 by default. Keep this setting!
If "TLSv1" is not selected for this setting in connection with the IP / domain "www.bartec-sus.de", change this setting accordingly.



Username and password must be unique for each system!

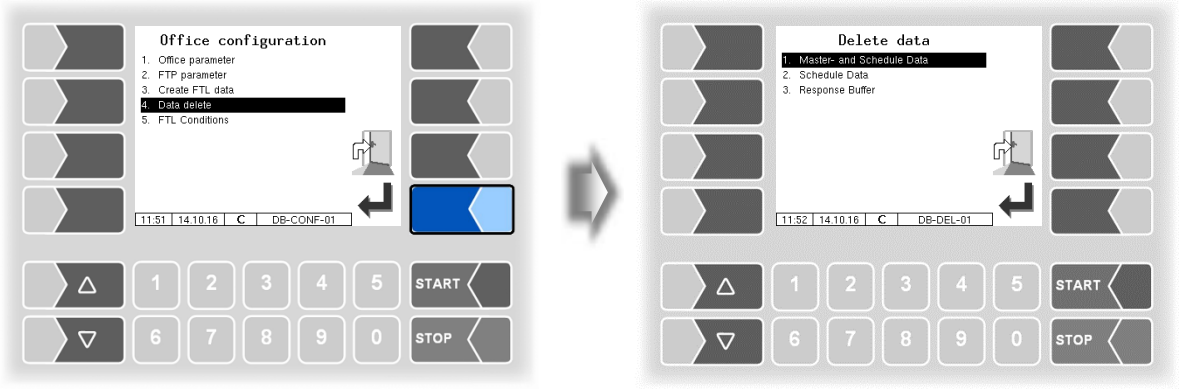
4.2.7.3 Create FTL data

When confirming this menu item, response data will be generated and made available for transmission to the Office, the schedule data will be deleted. The response data can be generated only once. After that, the menu item greyed out and is no longer available. Creating of response data can also be done in additional functions menu (see section **Fehler! Verweisquelle konnte nicht gefunden werden.**).



(available when *Office configuration/FTL Conditions /Create FTP-RC-File ≠ 0; p*age 88)

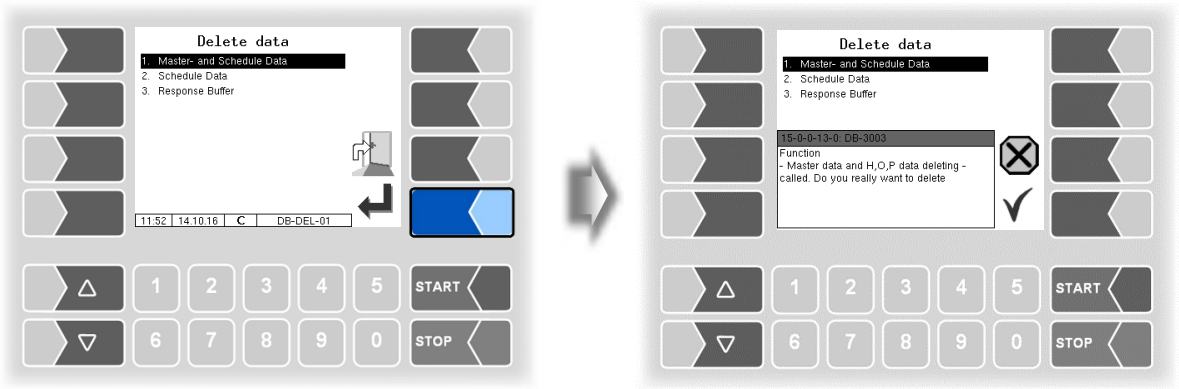
4.2.7.4 Delete data



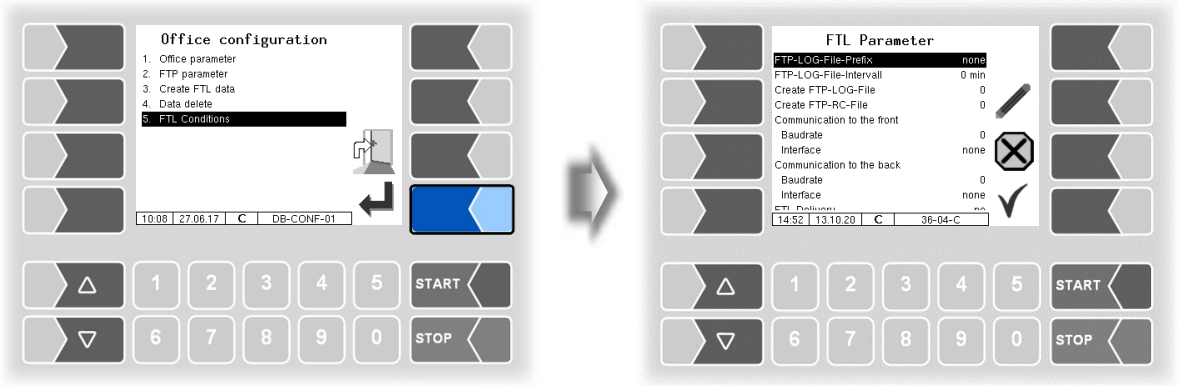
Delete data			
	U	Master and Schedule Data	Master and schedule data is deleted.
		Schedule Data	Only schedule data is deleted.
		Response data	Response data is deleted.

To delete data, select the category and touch the “Confirm” softkey.

After confirming the security query, the selected data is deleted.



4.2.7.5 FTL Conditions

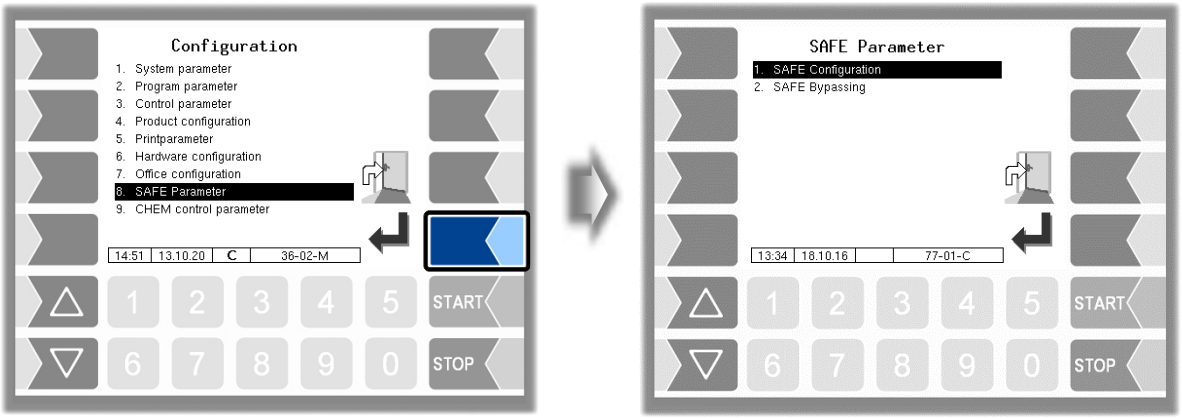


FTL Parameter				
S	FTP-LOG-File Prefix	String that appears before each line in the log file.		*Set only when FTP transfer is enabled (see page 85, FTP parameter/ Service Status set to "run") and the modem is switched on (see page 64 GPRS, Activate Modem:yes).*
	FTP-LOG-File-Interval	Time in minutes, after which a log file is transferred to the FTP server.		
	Create FTP-LOG-File	0: There is no logfile transfer. 1: The log file is transferred after finishing a tour. 2: The log file is transferred after finishing an order. 3: The log file is transferred after finishing an order and after finishing a tour.		
	Create FTP-RC-File	0: No RC file transfer (tour-, order-, position data). 1: The RC-file is transferred after ending the tour. 2: The RC-file is transferred after ending an order. 3: The RC-file is transferred after ending an order and after ending the tour.		
	Communication to the Front	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 towing vehicle.		
		Baudrate	**9600**	*Set only when the interface is used!*
		Interface	**Compakt-Controller**: to OBC: /dev/ttyS3 to tractor: /dev/ttyS2 **Ex-Hardware:** to OBC: /dev/ttySM1 to tractor: /dev/ttyS3	
	Communication to the back	Communication from the towing vehicle to the trailer.		
		Baudrate	**9600**	*Set only when the interface is used!*
		Interface	**Compakt-Controller:** /dev/ttyS2 **Ex-Hardware:** /dev/ttyS3	

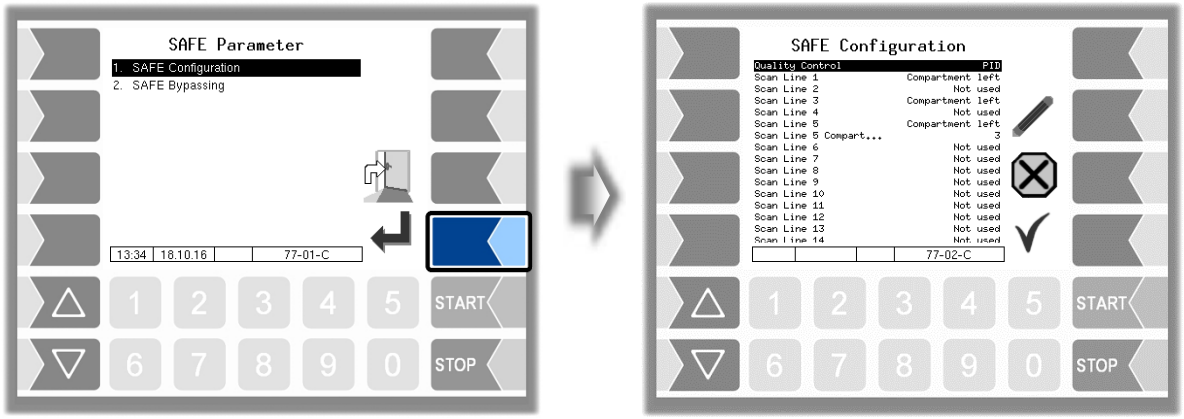
	U	FTL Delivery	no: Communication between the system and the On Board Computer is unchanged. (No change is required for an existing On Board Computer connection). *(Default)* yes Communication occurs with extended FTL record.
		OBC Printout	2: Adjusting the layout for printing via the on-board computer. *Please contact BARTEC BENKE service for further information.*
		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 (Journal with errors) *(Standard: 20 days)*
		LOG GPS Interval	The GPS coordinates are saved after the time entered here in minutes has elapsed. (only for service purposes)
		FTL-LOG in BARTEC-LOG	yes: Entries from FTL-log file will also be written to the BARTEC-log file. (only for service purposes)
		OBC-Diagnostics	yes: The communication between On Board Computer and counter will be logged. (only for service purposes)
		TDL-Payment Mode	yes: The payment mode is specified in the default data according to TDL structure (If the program PTransW is used on the office side). no: The payment mode is specified in the default data according to FTL structure
		Order Printed Dialog	yes: If an order is started before the data of the previous order has been printed, a request appears which the driver must confirm in order to start the new order.
	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 4.5.19).

4.2.8 SAFE Parameter

(Only available for vehicles with Ex-Tiger or COMP)
(Not available with "A3-TIGER" in connection with the compact controller)



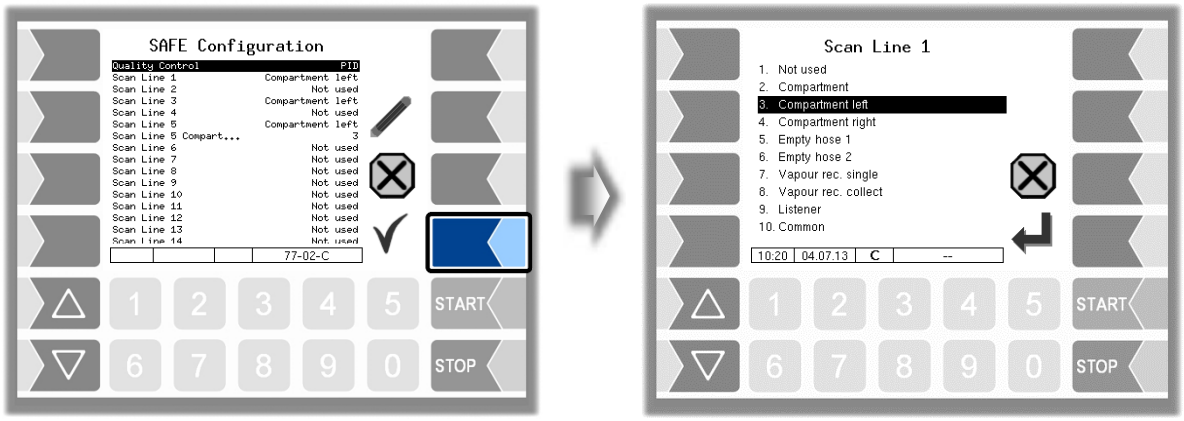
4.2.8.1 SAFE Configuration



SAFE Configuration			
	U	Quality Control	Off: There is no quality assurance. PID: Quality assurance activated Manual: *Not supported in software "pair".* PID+Manual: *Not supported in software "pair".*
		Scan Line ...	Logical assignment of the scan lines
		Scan Line ... Compart…	Sequential compartment number
		PID Connect Delay	*Not supported in software "pair".*
		PID Signal Damping	Damping level of the PID shutdown for interruption of product and vapor return hose connections low ✱ middle high

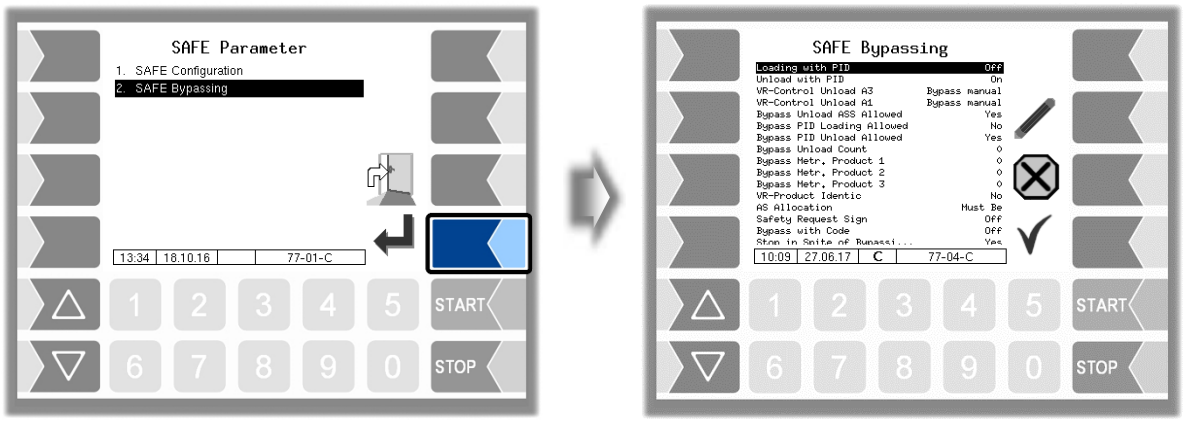
✱ permitted setting in accordance with VdTÜV certificate TÜ.AGG.465-14

Assignment of the scan lines



Select the assignment from the list.

4.2.8.2 SAFE Bypassing



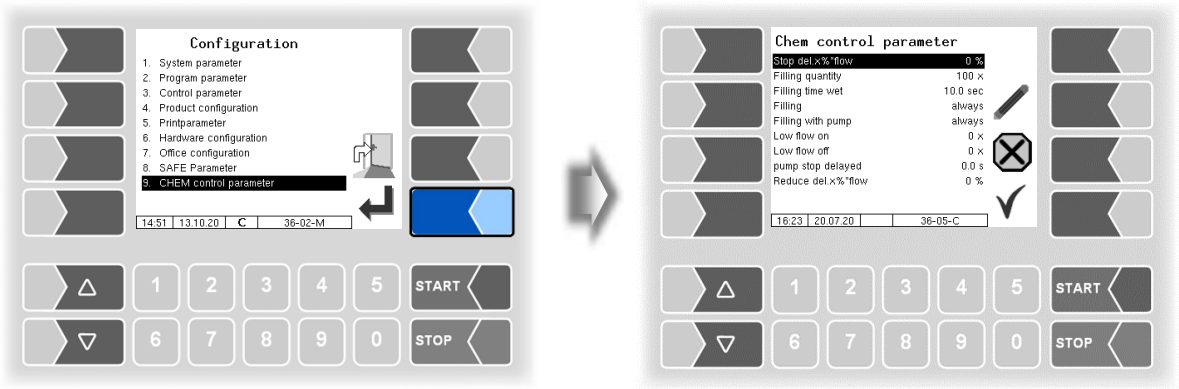
SAFE Bypassing			
		Loading with PID	*Not supported in software "pair".*
		Unload with PID	On: Deliveries using the Quality Assurance System Off: The Quality Assurance System is bypassed during delivery
	U	VR-Control Unload A3	Must Be: The vapour recovery monitor cannot be bypassed. ✱ Bypass manual: 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. ✱

	U	VR-Control Unload A1	Must Be: The vapour recovery monitor cannot 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 A1 products are delivered ✱
		Bypass Unload ASS Allowed	Yes: The filler hose protection is allowed to be bypassed during delivery. ✱ No: The filler hose protection is not allowed to be bypassed during delivery. ✱
		Bypass PID Loading Allowed	*Not supported in software "pair".*
		Bypass PID Unload Allowed	The quality assurance system is allowed/not allowed to be bypassed during loading.
		Bypass Unload Count	*Not supported in software "pair".*
		Bypass Metr. Product 1	Product number of the metrological product for which the quality assurance system is automatically bypassed during delivery.
		Bypass Metr. Product 2	Product number of the metrological product for which the quality assurance system is automatically bypassed during delivery.
		Bypass Metr. Product 3	Product number of the metrological product for which the quality assurance system is automatically bypassed during delivery. (With parameter "Bypassed measured product 3", a list of several product numbers can be specified separated by commas.)
		VR-Product Identic	Yes: The vapour recovery hose and the product in the compartment must have the same product identification (with QSS according to CEN). No: The vapour recovery hose and the product in the compartment need not have the same product identification.
		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.
		Safety Request Sign	On: The position of the soft key for confirming the safety query changes randomly to avoid an unconscious acknowledgment.✱
		Bypass with Code	*Not supported in software "pair".*
		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.
		VR-AS Allocation	Off: The allocation of the vapour return to the overfill prevention will not be checked. Bypass manual: If no vapour return can be assigned to the overfill prevention, bypassing can be done manually. ✱
		Lead is L.Substitute	Yes: The PID of leaded gasoline is valid for lead substitute (see also section *4.2.4.2 PID-Delivery leaded*).

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

4.2.9 CHEM control parameter

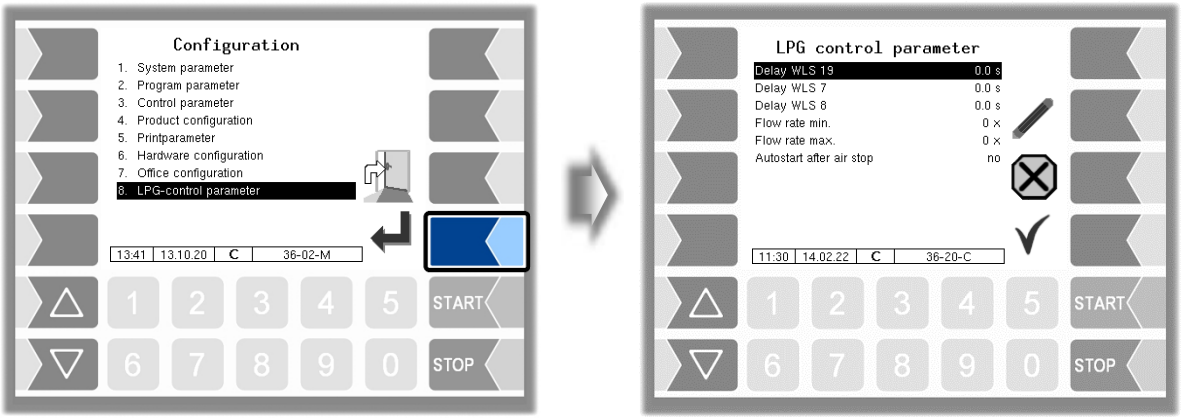
The menu is only available if the parameter *Tiger-CHEM* or *COMP-CHEM* has been activated (see section 4.2.2 Program parameter/Operation Mode).



CHEM control parameter			
	U	Stop del. X% * flow	With quantity acquisition with MID the delivery stops at x% of the output flow before reaching the preset amount
	S	Filling quantity	Filling quantity that is required for filling the measuring system including the hose quantity. (100 liters)
		Filling time wet	The wet leg sensor must be wetted for at least the configured time so that the filling is detected.
		Filling	always: The pipes are filled before each delivery. when LMH empty: The pipes are only filled when the wet leg sensor is not wetted. Never: No filling is started.
		Filling with pump	always: The pump is activated when filling. when LMH full: The pump is only activated during filling when the wet leg sensor is wetted.
	U	Low flow on	If the flow falls below this value, the pump capacity is throttled. (log. Output 37 off)
		Low flow off	If the flow rate exceeds this value, the pump capacity is increased. (log. Output 37 on)
		pump stop delayed	The pump release MID (PH) is switched to the delivery valve (VH / LH / BH) with a delay.
		Reduce del. x % *flow	When measuring the quantity with MID, the delivery is throttled at x% of the initial flow rate before the preset quantity is reached.

4.2.10 LPG control parameter

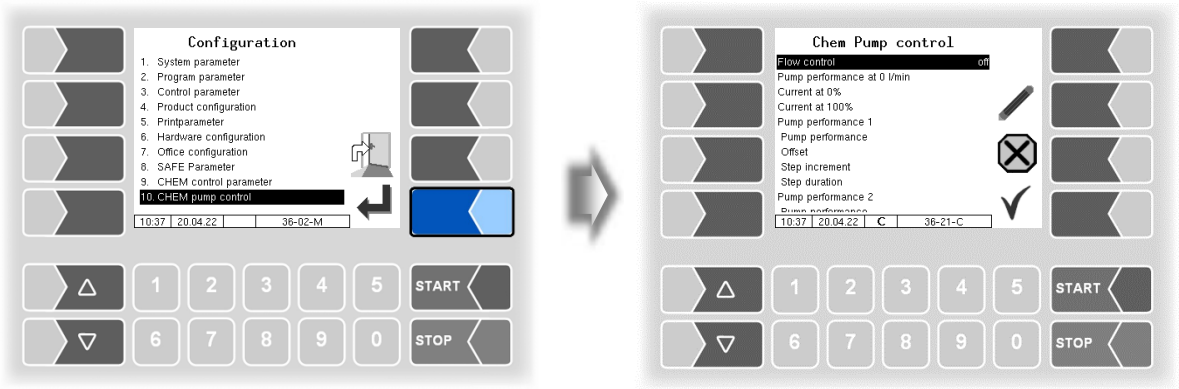
The menu is only available if the parameter *LPG* has been activated (see section 4.2.2 Program parameter/Operation Mode).



LPG control parameter			
	U	Delay WLS 19	Delay time (in seconds with one decimal place) for dry run protection sensor in front of the pump.
		Delay WLS 7	Delay time (in seconds with one decimal place) for the WLS7 wetleg sensor in the measuring section.
		Delay WLS 8	Delay time (in seconds with one decimal place) for the WLS8 wetleg sensor in the measuring section
		Flow rate min.	If the flow falls below the limit, a message window is displayed and the delivery is interrupted.
		Flow rate max.	If the flow rate is exceeded, a message window is displayed and the delivery is interrupted.
		Autostart after air intake	If the detectors of the WLS7 and WLS8 (depending on the installation) are wetted again after an ingress of air, the delivery is automatically resumed.

4.2.11 CHEM pump control

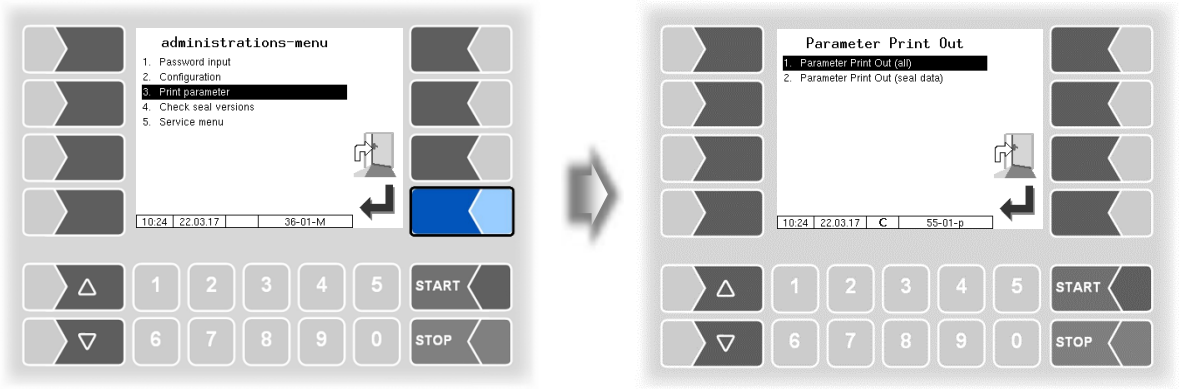
The menu is only available if the parameter *Tiger-CHEM* or *COMP-CHEM* has been activated (see section 4.2.2 Program parameter/Operation Mode).



CHEM pump control			
		Flow control	Switching the Flow control on or off *(Default: off)*
		Pump performance at 0l/min	If a flow rate of 0l/min is detected, the pump performance is reduced to this value. The pump performance must be at least high enough so that flow can be detected when the valves are open. If the value is „0“, there is no reduction. *(Default: 5%)*
		Current at 0%	Current value at which the pump is running at 0% power. *(Default: 4000uA)*
		Current at 100%	Current value at which the pump is running at 100% power. *(Default 20000uA)*
	U	Pump performance 1, 2, 3	
		Pump performance	Pump performance of the delivery step. At „0“, the step is disabled. *(Default: 0%)*
		Offset	The Pump performance from which the gradual increase begins. This value must be greater than or equal to the pump performance at 0l/min. *(Default: 5%)*
		Step increment	The step increment with which the pump performance is increased. *Default; 10%)*
		Step duration	The step duration until the next increase of the pump performance. *(Default: 2000ms)*

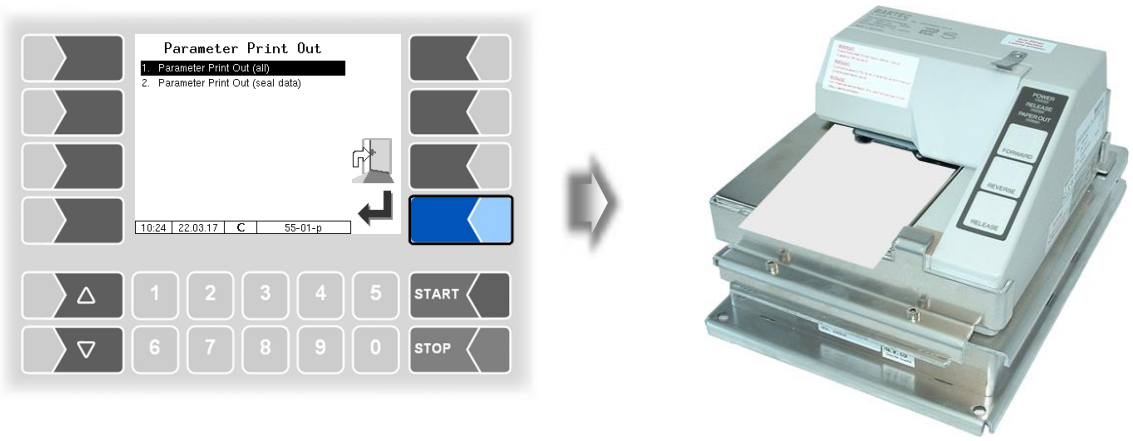
4.3 Print parameter

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



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

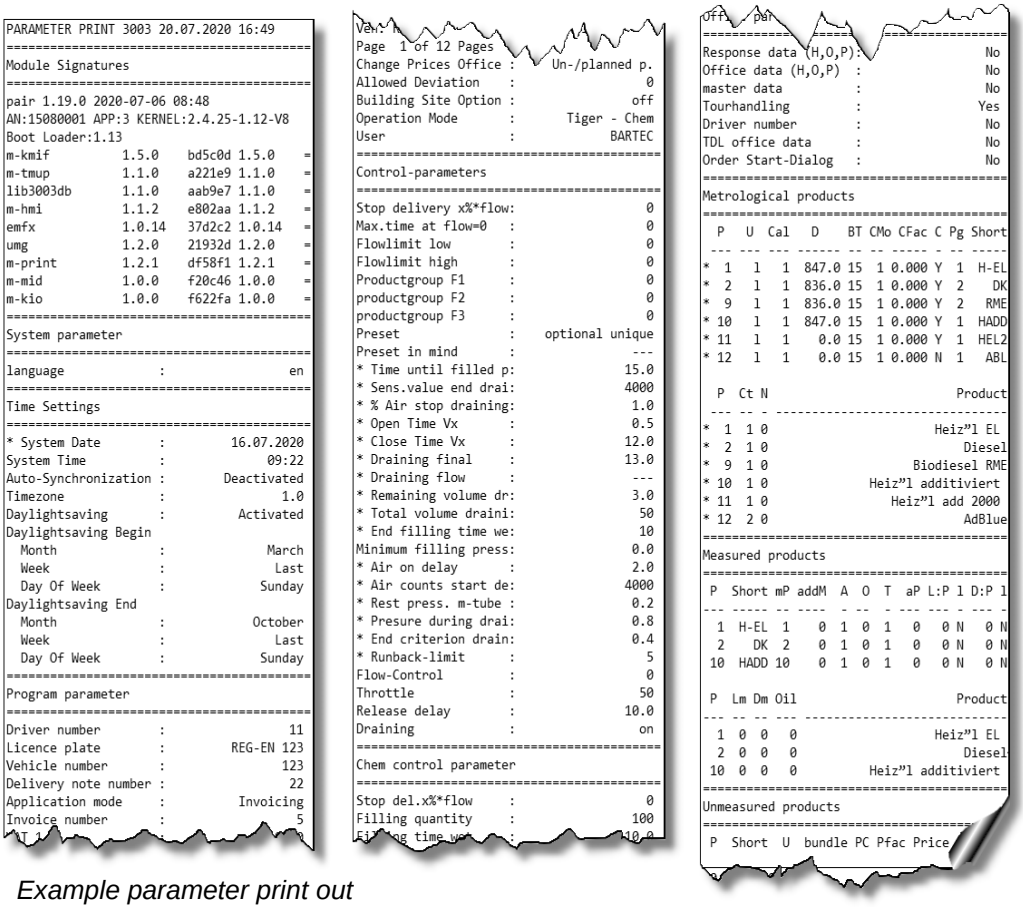
The current settings for the configuration parameters are output to the configured printer.



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

P	Product number
U	Unit
Cal	Calibration factor
D	Density
BT	Basic temperature
CMo	Compensation mode
CFac	Compensation factor
C	Product compensated
Ct	Counter type
N	Counter No.
Pg	Product group
Short	Shortcut
SW-L	Floater depth
Product	Product name
mP	Allocation for metrological product
addM	Additive mixing ratio
A	Additive pump used
O	log. output for compartment switching for additivation
T	Tax
aP	Additional product
L:P	Load PID
I	Load PID leaded
D:P	Discharge PID
I	PID- Discharge leaded
Lm	Load magnet
Dm	Discharge magnet
Oil	Oil company
bundle	Packaging content
Pc	Price code
Pfac	Price factor
Price	Price
T	VAT rate
Y	Yes
N	No

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



```
PARAMETER PRINT 3003 20.07.2020 16:49
==========================================
Module Signatures
==========================================
pair 1.19.0 2020-07-06 08:48
AN:15080001 APP:3 KERNEL:2.4.25-1.12-V8
Boot Loader:1.13
m-kmif          1.5.0    bd5c0d 1.5.0    =
m-tmup          1.1.0    a221e9 1.1.0    =
lib3003db       1.1.0    aab9e7 1.1.0    =
m-hmi           1.1.2    e802aa 1.1.2    =
emfx            1.0.14   37d2c2 1.0.14   =
umg             1.2.0    21932d 1.2.0    =
m-print         1.2.1    df58f1 1.2.1    =
m-mid           1.0.0    f20c46 1.0.0    =
m-kio           1.0.0    f622fa 1.0.0    =
==========================================
System parameter
==========================================
language              :                  en
==========================================
Time Settings
==========================================
* System Date         :          16.07.2020
System Time           :               09:22
Auto-Synchronization  :         Deactivated
Timezone              :                 1.0
Daylightsaving        :           Activated
Daylightsaving Begin
  Month               :               March
  Week                :                Last
  Day Of Week         :              Sunday
Daylightsaving End
  Month               :             October
  Week                :                Last
  Day Of Week         :              Sunday
==========================================
Program parameter
==========================================
Driver number         :                  11
Licence plate         :          REG-EN 123
Vehicle number        :                 123
Delivery note number  :                  22
Application mode      :           Invoicing
Invoice number        :                   5
VAT 1                 :                   0
```

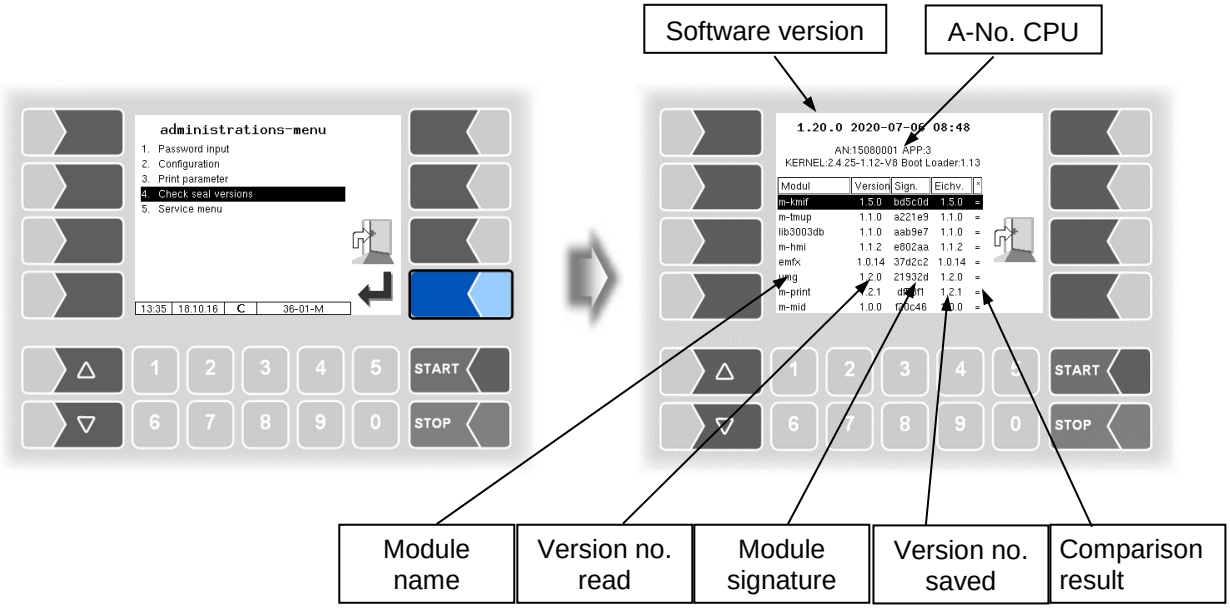
```
Ver.: 1.19.0 2020-07-06 08:48
Page  1 of 12 Pages
Change Prices Office  :     Un-/planned p.
Allowed Deviation     :                  0
Building Site Option  :                off
Operation Mode        :        Tiger - Chem
User                  :              BARTEC
==========================================
Control-parameters
==========================================
Stop delivery x%*flow:                   0
Max.time at flow=0    :                  0
Flowlimit low         :                  0
Flowlimit high        :                  0
Productgroup F1       :                  0
productgroup F2       :                  0
productgroup F3       :                  0
Preset                :    optional unique
Preset in mind        :                ---
* Time until filled p:                15.0
* Sens.value end drai:                4000
* % Air stop draining:                 1.0
* Open Time Vx        :                 0.5
* Close Time Vx       :                12.0
* Draining final      :                13.0
* Draining flow       :                ---
* Remaining volume dr:                 3.0
* Total volume draini:                  50
* End filling time we:                  10
Minimum filling press:                 0.0
* Air on delay        :                 2.0
* Air counts start de:                4000
* Rest press. m-tube  :                 0.2
* Presure during drai:                 0.8
* End criterion drain:                 0.4
* Runback-limit       :                   5
Flow-Control          :                   0
Throttle              :                  50
Release delay         :                10.0
Draining              :                  on
==========================================
Chem control parameter
==========================================
Stop del.x%*flow      :                   0
Filling quantity      :                 100
Filling time wet      :                10.0
```

```
Offline par
==========================================
Response data (H,O,P):                  No
Office data (H,O,P)  :                  No
master data          :                  No
Tourhandling         :                 Yes
Driver number        :                  No
TDL office data      :                  No
Order Start-Dialog   :                  No
==========================================
Metrological products
==========================================
  P   U  Cal   D    BT CMo CFac C Pg Short
 --- --- --- ------ -- -- ----- - -- -----
*  1   1   1 847.0 15  1 0.000 Y  1  H-EL
*  2   1   1 836.0 15  1 0.000 Y  2    DK
*  9   1   1 836.0 15  1 0.000 Y  2   RME
* 10   1   1 847.0 15  1 0.000 Y  1  HADD
* 11   1   1   0.0 15  1 0.000 Y  1  HEL2
* 12   1   1   0.0 15  1 0.000 N  1   ABL

  P  Ct N                          Product
 --- -- - --------------------------------
*  1  1 0                    Heiz"l EL
*  2  1 0                        Diesel
*  9  1 0                  Biodiesel RME
* 10  1 0              Heiz"l additiviert
* 11  1 0                 Heiz"l add 2000
* 12  2 0                       AdBlue
==========================================
Measured products
==========================================
 P  Short mP addM  A  O  T  aP L:P 1 D:P 1
--- ----- -- ----  - --  - -- --- - --- -
  1  H-EL  1    0  1  0  1   0   0 N   0 N
  2    DK  2    0  1  0  1   0   0 N   0 N
 10  HADD 10   0  1  0  1   0   0 N   0 N

 P  Lm Dm Oil                     Product
--- -- -- --- ----------------------------
  1  0  0  0                  Heiz"l EL
  2  0  0  0                      Diesel
 10  0  0  0            Heiz"l additiviert
==========================================
Unmeasured products
==========================================
 P  Short  U  bundle PC Pfac Price
```

Example parameter print out

4.4 Check seal versions

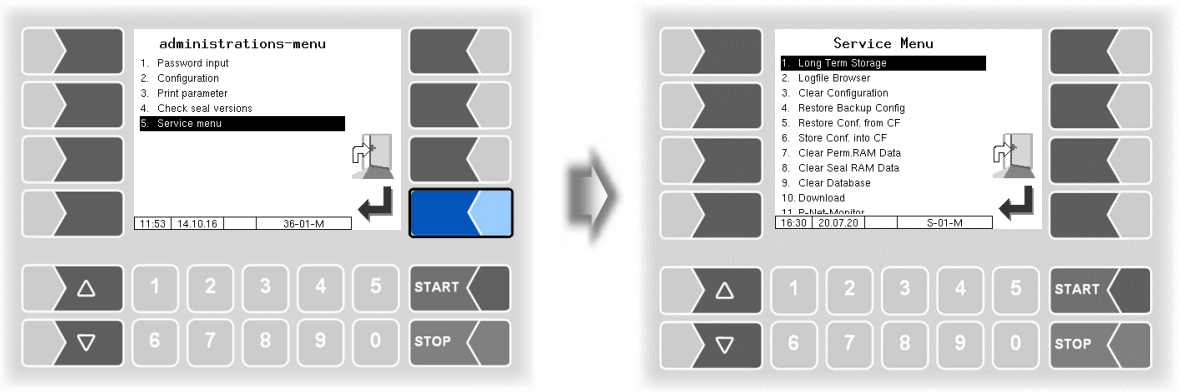
This menu shows the data that is relevant for calibration:
- Software version
- Serial no. of the CPU, application type, kernel no.
- Version comparison of the software modules subject to calibration.



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 will be informed that modules subject to calibration have been changed.
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.

4.5 Service-Menu



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

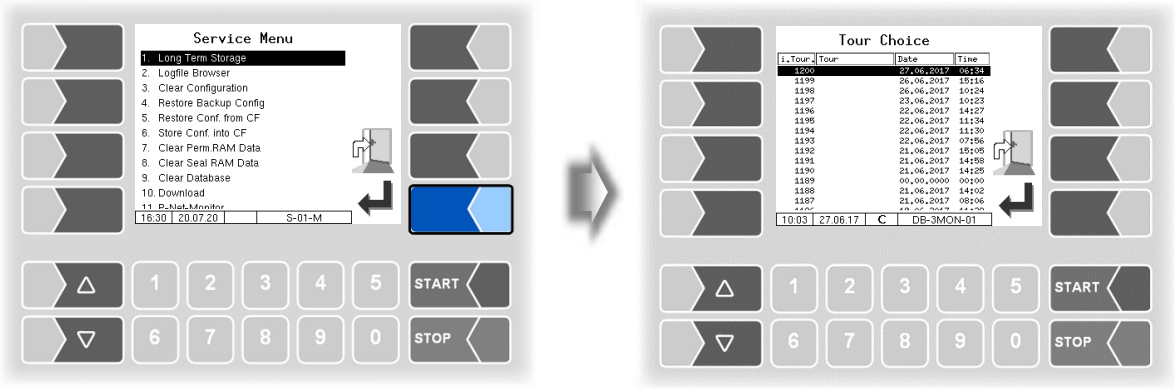
Without entering a password
- Long Term Storage,
- Logfile-Browser,
- Temperature Compensation,
- Parameter Print Out Service,
- Activate Online-Service,
- Bluetooth ON,
- Totalizer

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,

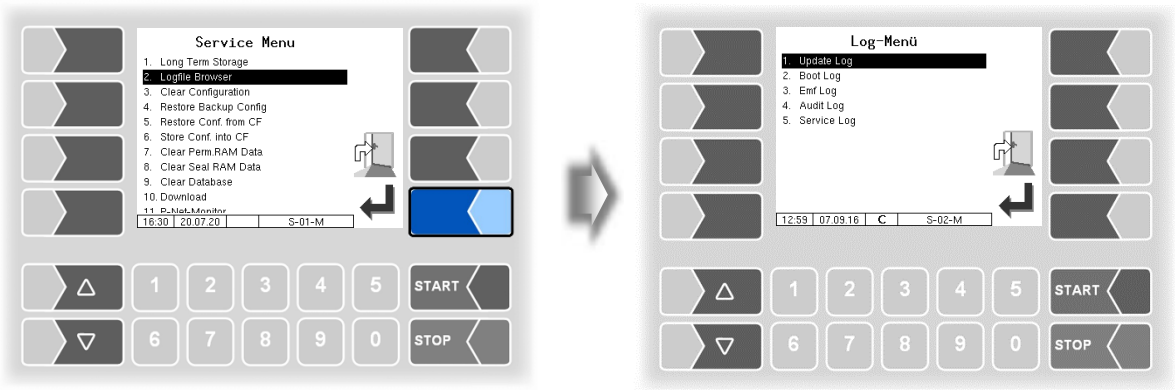
4.5.1 Long Term Storage

The tour data is stored in the long-term memory for a certain period of time (usually 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 **Fehler! Verweisquelle konnte nicht gefunden werden.**).

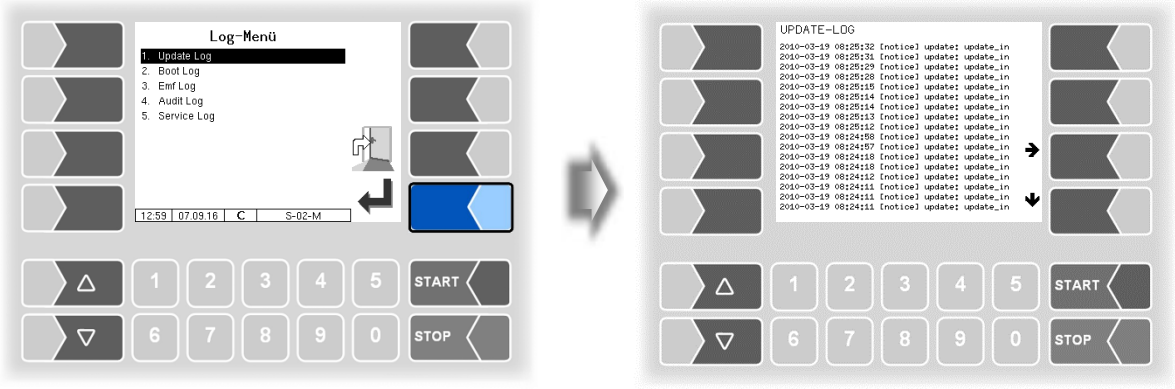


4.5.2 Logfile Browser

The logfile browser allows you to view all saved log entries. The information about the various operations is displayed in text format and can be read directly on the screen.

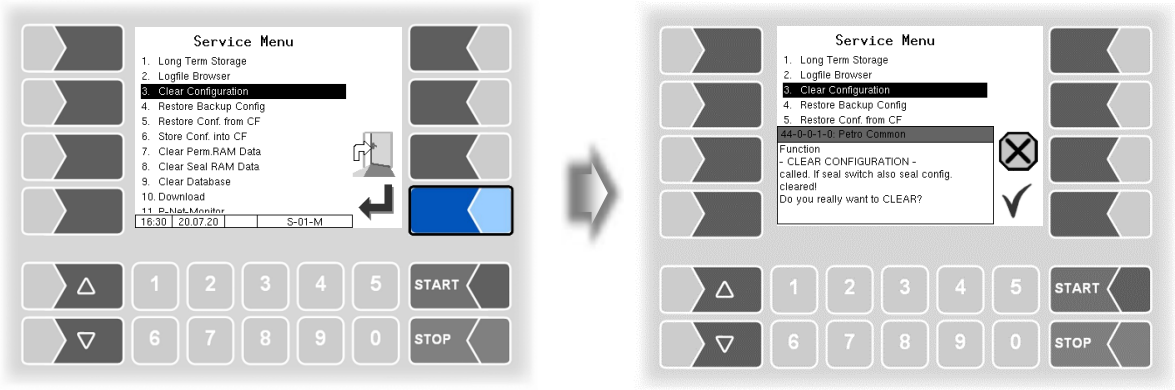


Update Log:	Log entries about updates and update attempts
Boot Log:	Boot messages, boot scripts
Emf Log:	Log output from the various applications
Audit Log:	Log entries about all parameter changes
Service Log:	Log entries for service and diagnostics



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.

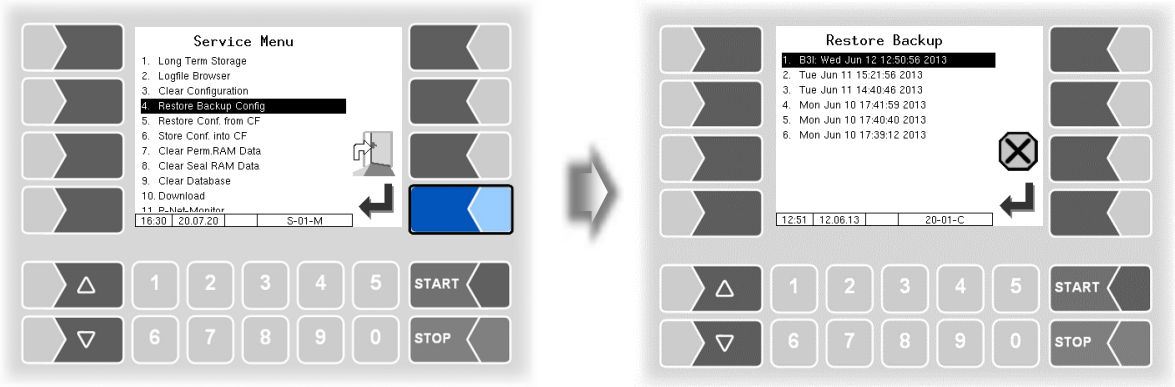
4.5.3 Clear Configuration



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!

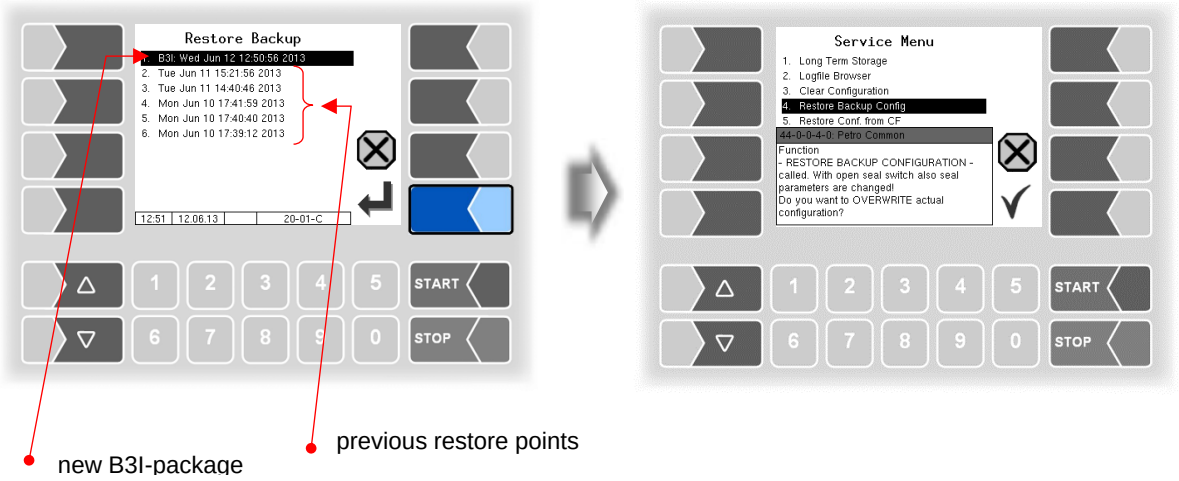
4.5.4 Restore Backup Config



The system can store up to 5 restore points, which can be accessed again in this menu.

The external PC software “3003 Service Tool” 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.
Bon files can be activated directly in the ticket configuration (see section 4.2.5).

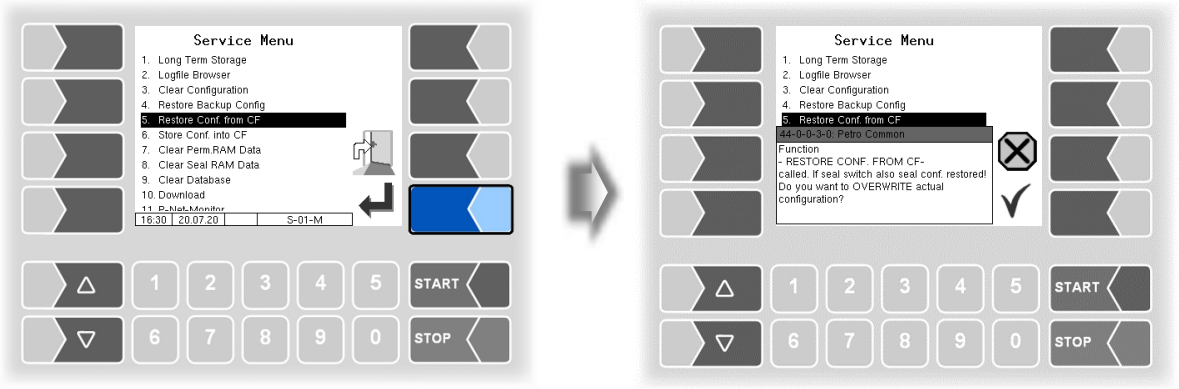


After confirming the B3I package, the configuration is adopted and a restore point is created with the current configuration.
The saved restore points can be used to switch back to a previous configuration.

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

There is a separate manual for the software “3003 Service Tool”.

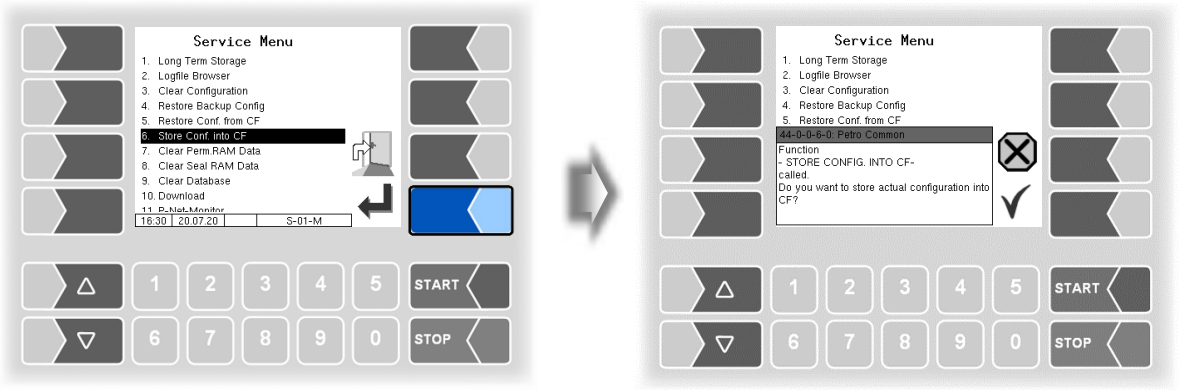
4.5.5 Restore Config from CF



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!

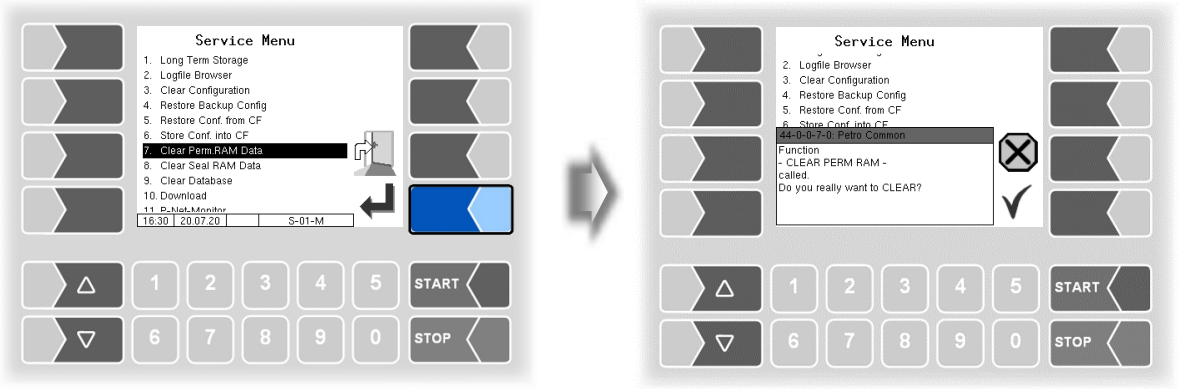
4.5.6 Store Configuration into CF



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).

The calibration-relevant parameters are saved on the CF card even when the calibration switch is closed.

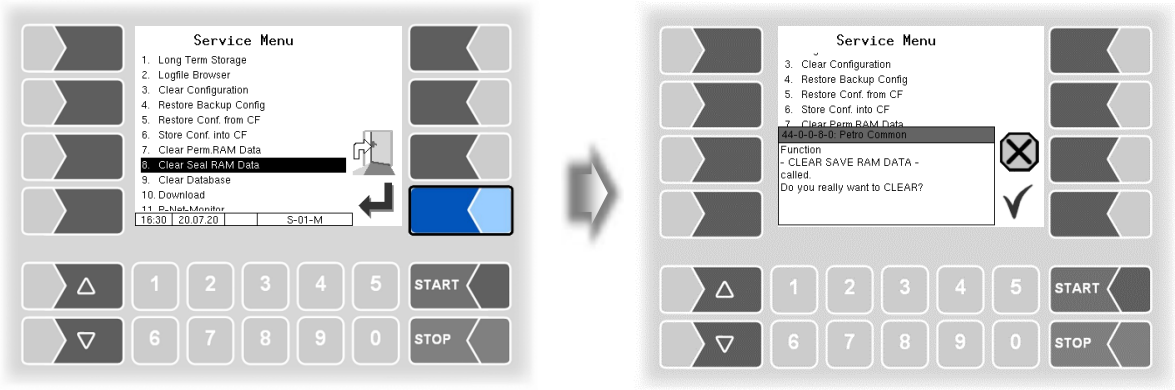
4.5.7 Clear Permanent RAM data



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

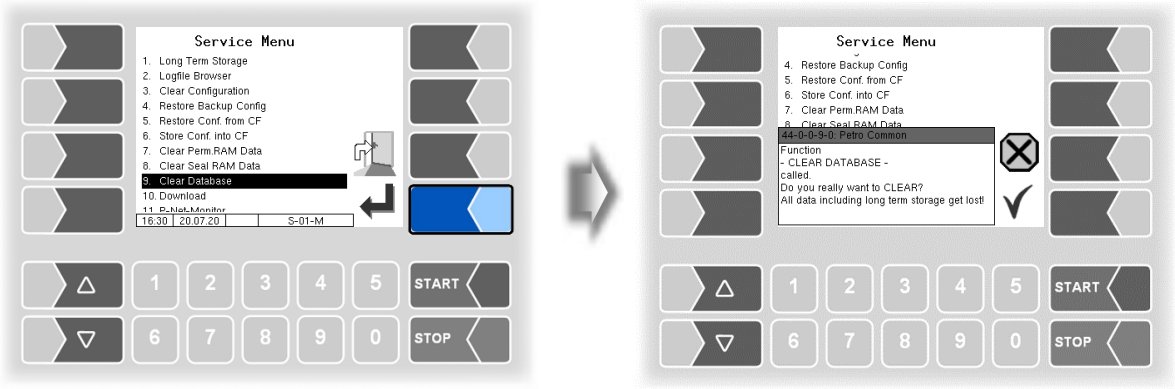
See also section 7.3.8

4.5.8 Clear Seal RAM Data



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

4.5.9 Clear Database

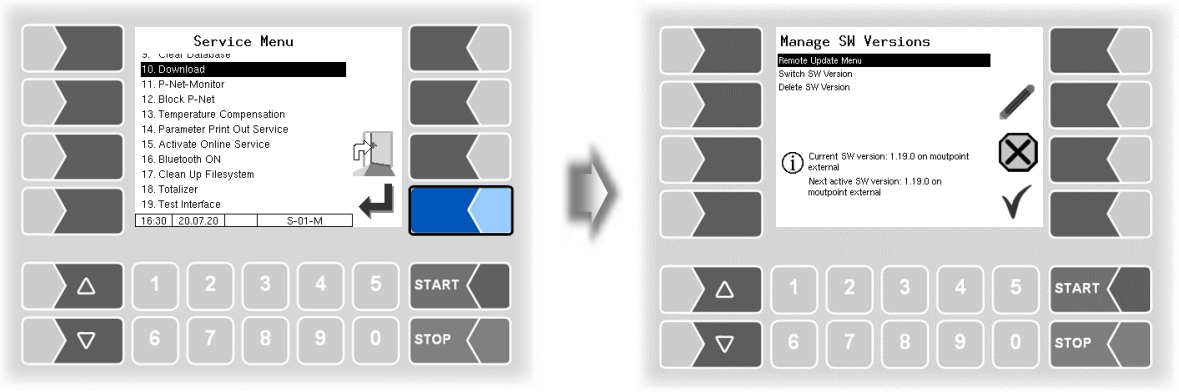


When you confirm the prompt, all data (order data, scheduled data) is cleared from the database. **Only possible with open seal switch!**

4.5.10 Download

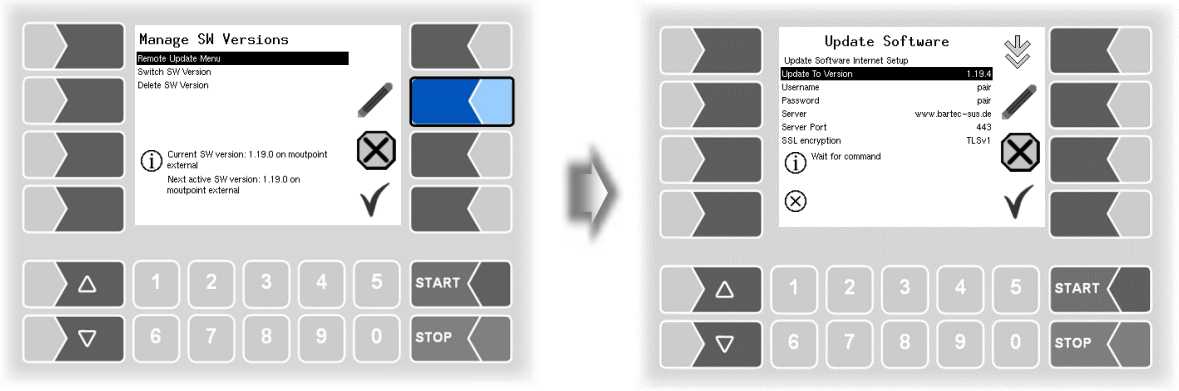
The software is constantly being further developed and expanded. You can obtain the updated software from BARTEC BENKE.

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 *Check Seal versions* menu (see section 4.4) with the seal switch open.



4.5.10.1 Remote Update Menu

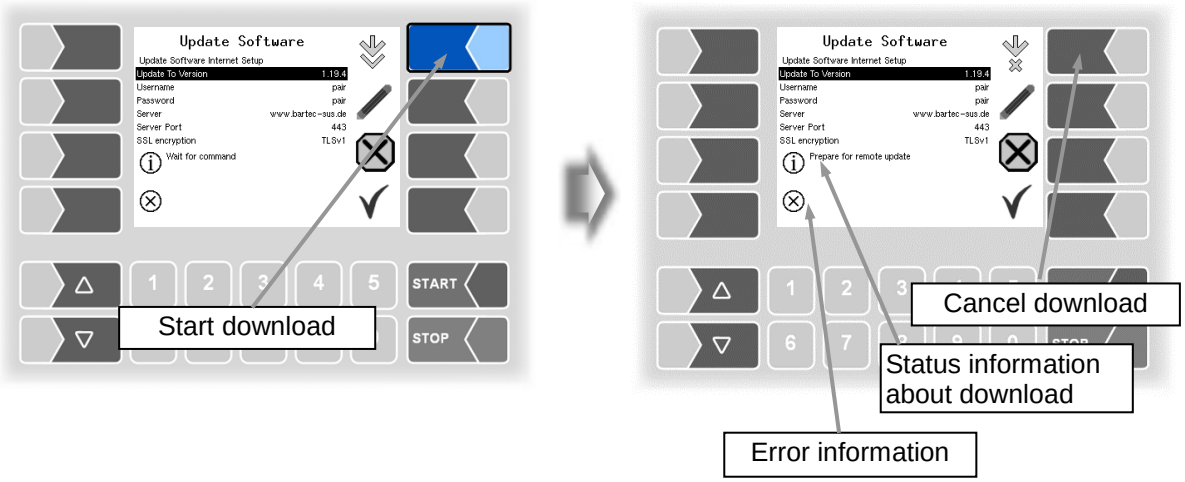
This menu option allows you to download a new program version of the controller software from the BARTEC BENKE server via a GPRS connection.



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

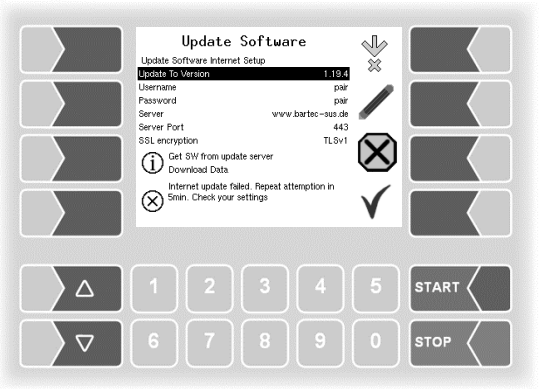
The user name and password for the download are assigned by BARTEC BENKE and must be entered manually.

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



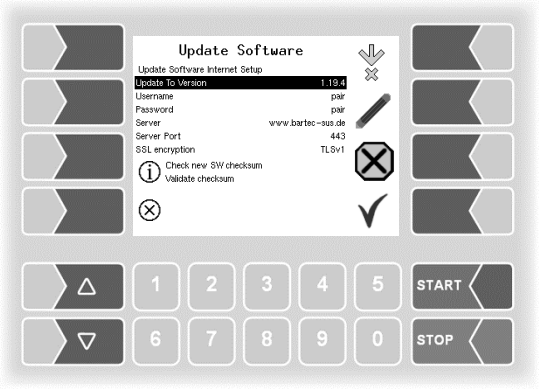
If the download is interrupted, for instance because the connection to the server is interrupted, it is automatically restarted after 5 minutes and resumed at the point at which it was interrupted.

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

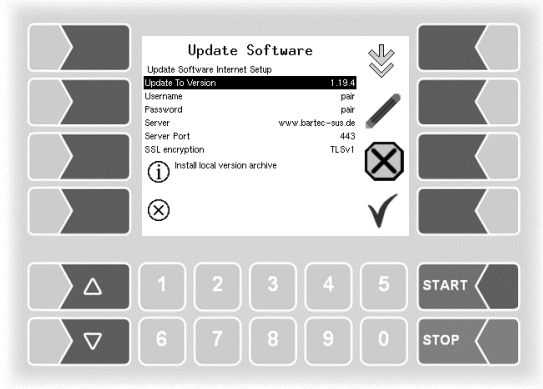


Establishing the server connection

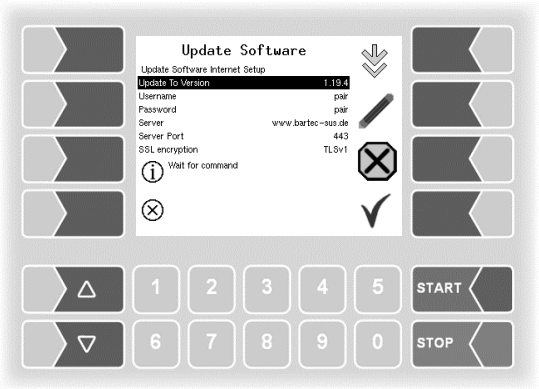
Downloading data



Compressed data downloaded successfully. Checksums Server-Client compared..



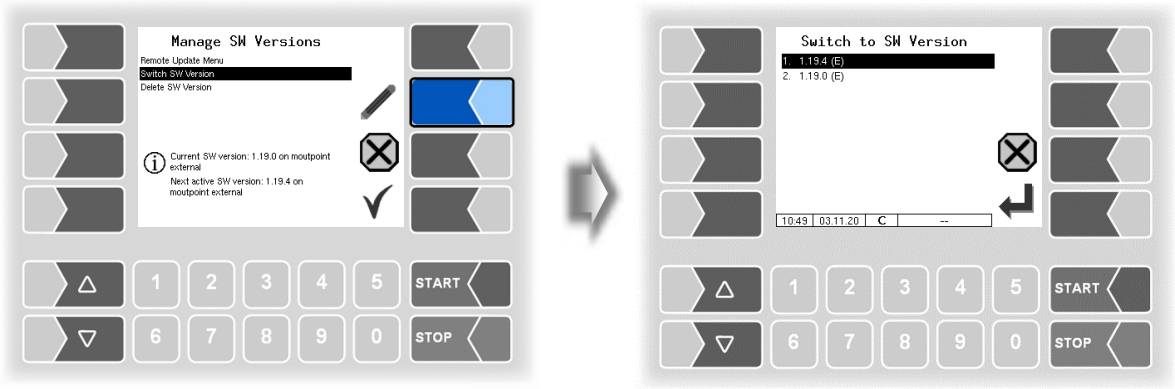
Unzipping files.



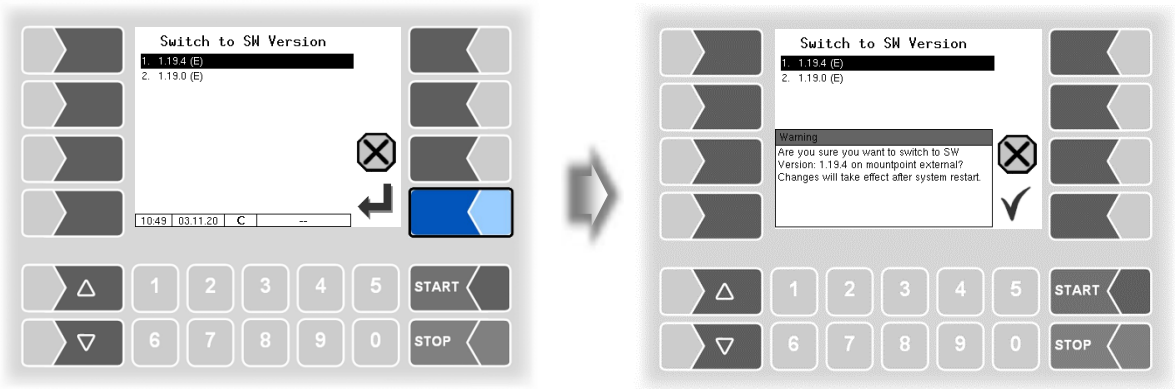
If the "Wait for command" message appears again, the software download is complete. You can close the menu and the software can be switched in the next step..

4.5.10.2 Switch Software Version

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



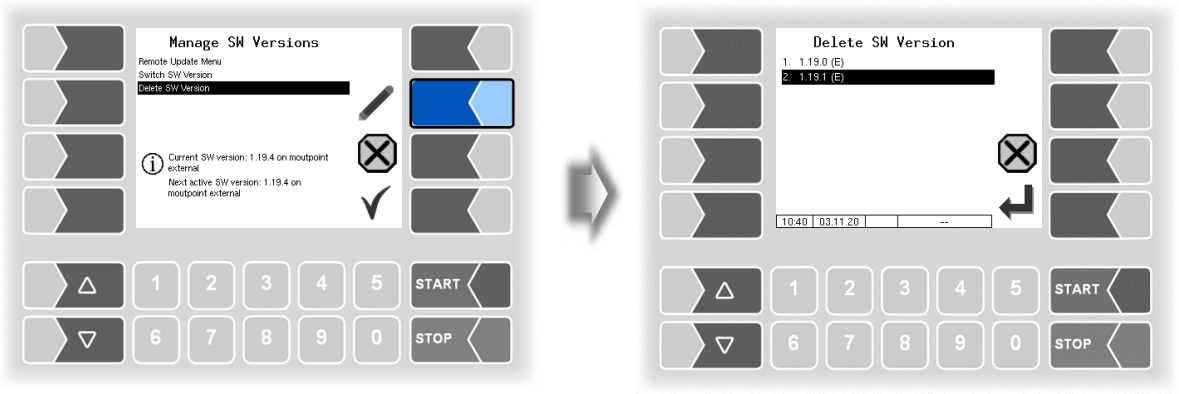
- Select the software version and touch the “confirm” softkey.



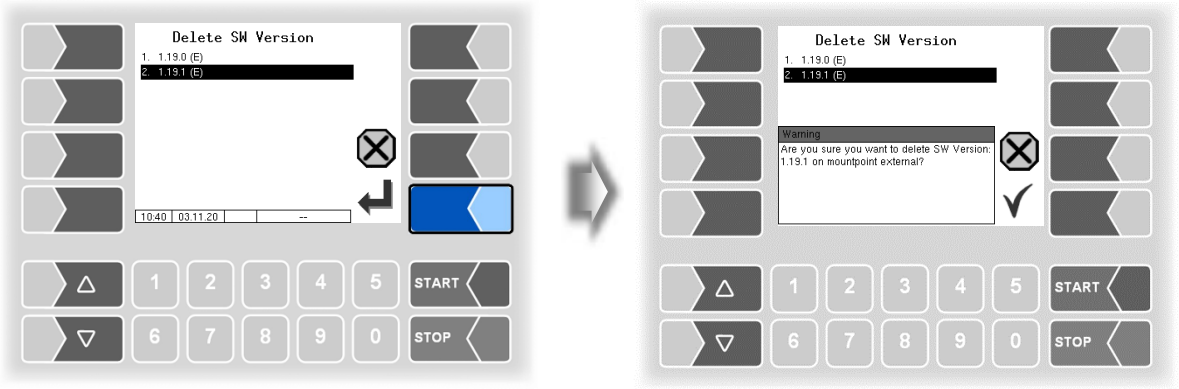
- Confirm the security query.
- When leaving the service menu, the system is automatically rebooted.

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

4.5.10.3 Delete Software Version



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

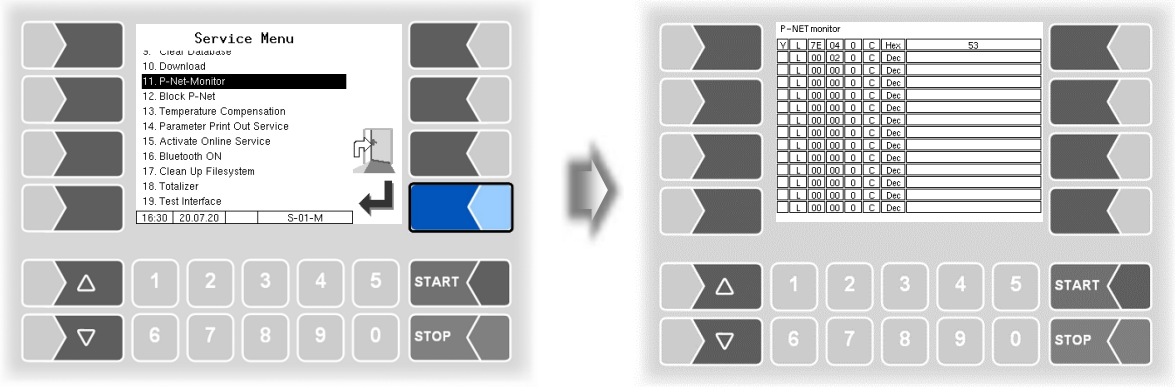


After confirming the safety query, the selected version is deleted.

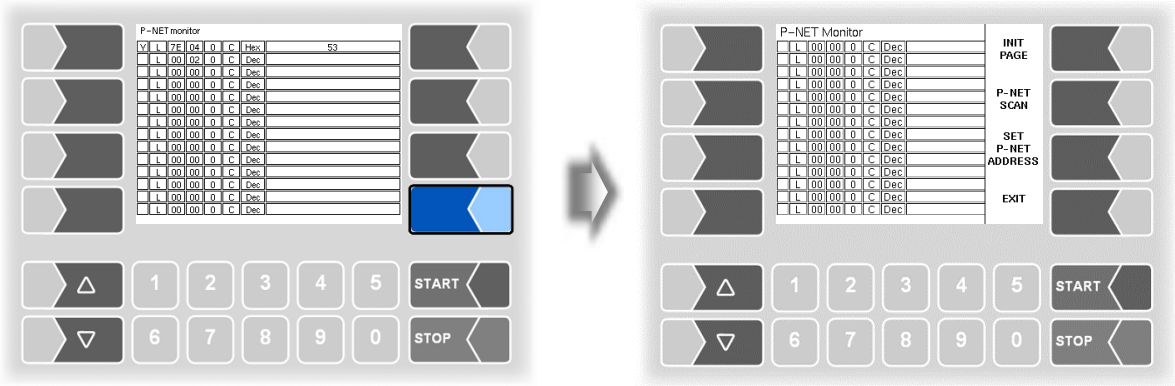
The active software version cannot be deleted!

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.

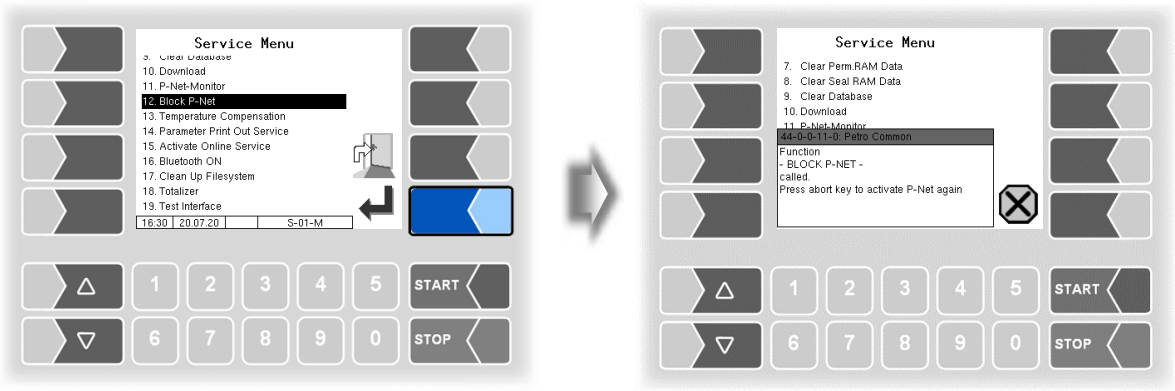
P-NET SCAN:
You can perform a P-Net scan for diagnostic purposes. The address (hexadecimal), P-Net ID number, version, serial number and manufacturer's code are displayed in separate lines for all connected P-Net devices.

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.

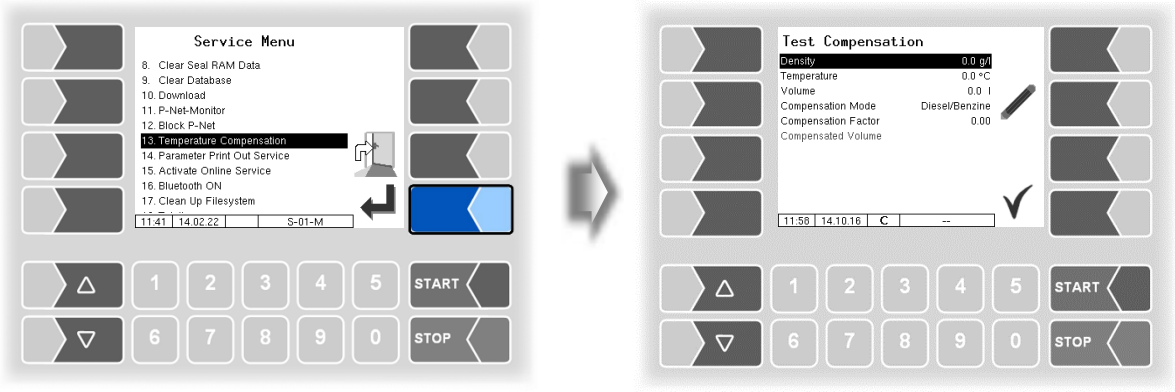
4.5.12 Block P-Net

(Not used in the measuring system with software "pair".)



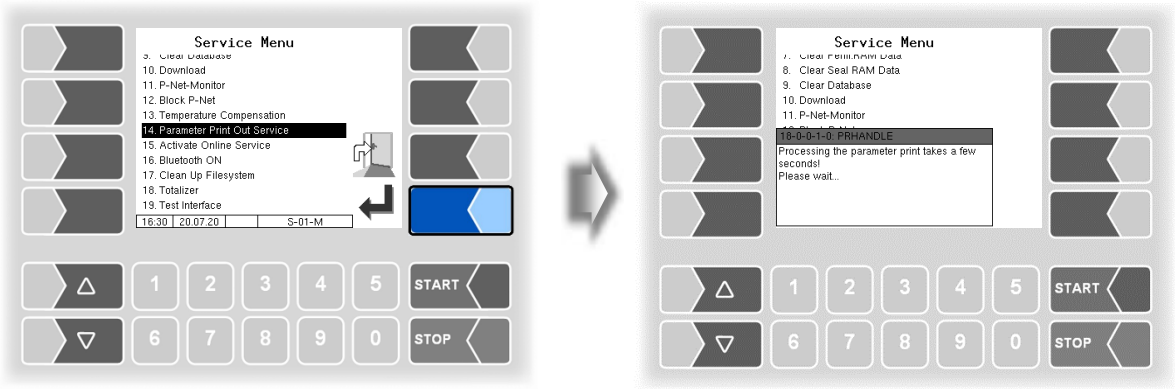
4.5.13 Temperature Compensation

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

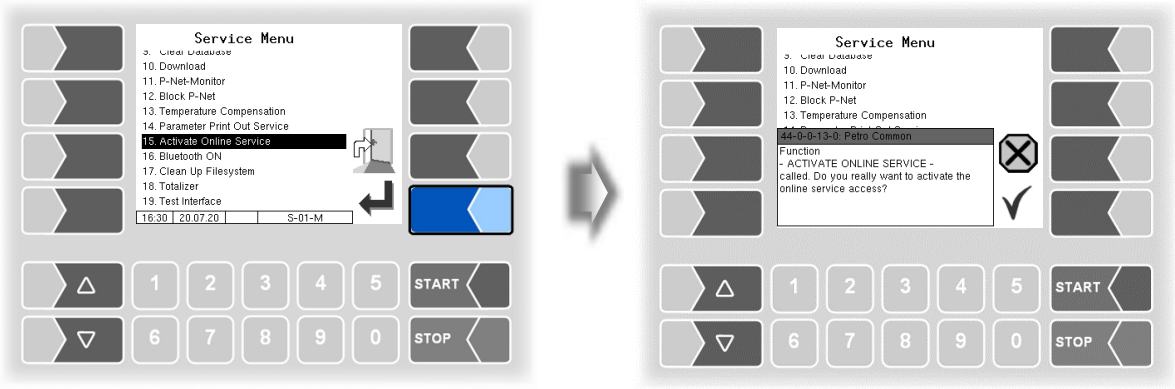
If a parameter print out for service purpose is required, you can use this function to print a parameter print out in German language regardless of the current system language.



4.5.15 Activate Online-Service

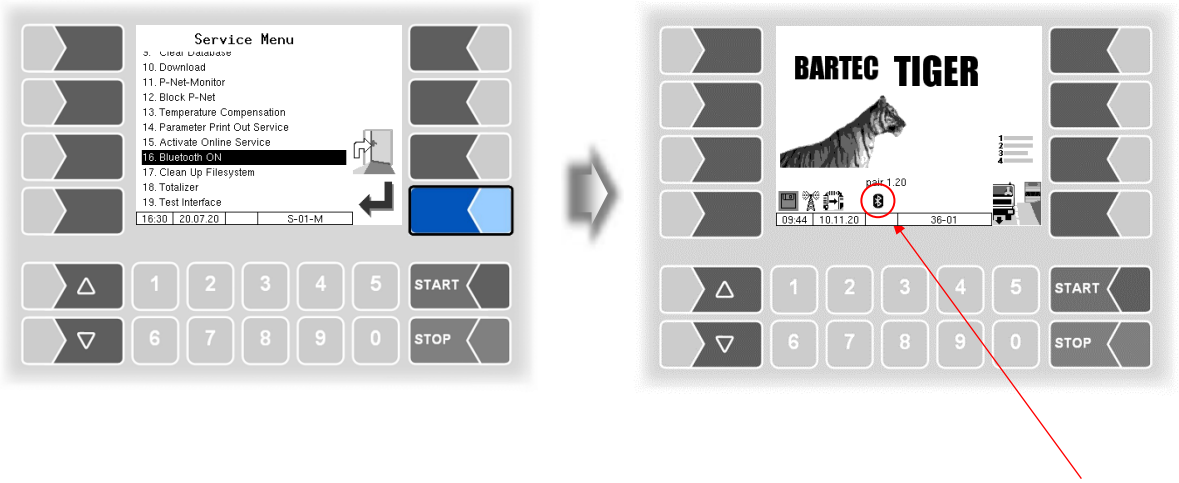
After activating the online service, you allow the BARTEC BENKE-Service access to service information of the vehicle. This allows downloading journals, log files etc. Access is via an FTP server. The connection is activated for 3 minutes, in which the access to the data needs to be started. The connection 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 only be activated if access has been configured (see section 4.2.7.2 /Online Service Function)



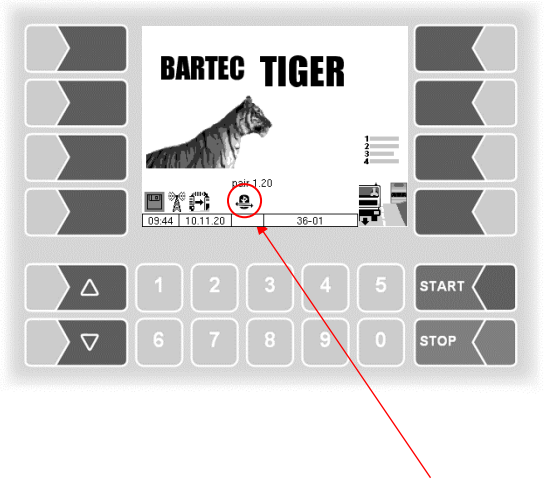
4.5.16 Bluetooth ON

When a Bluetooth receiver is configured (see section 4.2.6.16), you can activate the Bluetooth communication here.



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

With the software “3003 Service Tool” can be established, e.g. to download data and install b3i-packages.

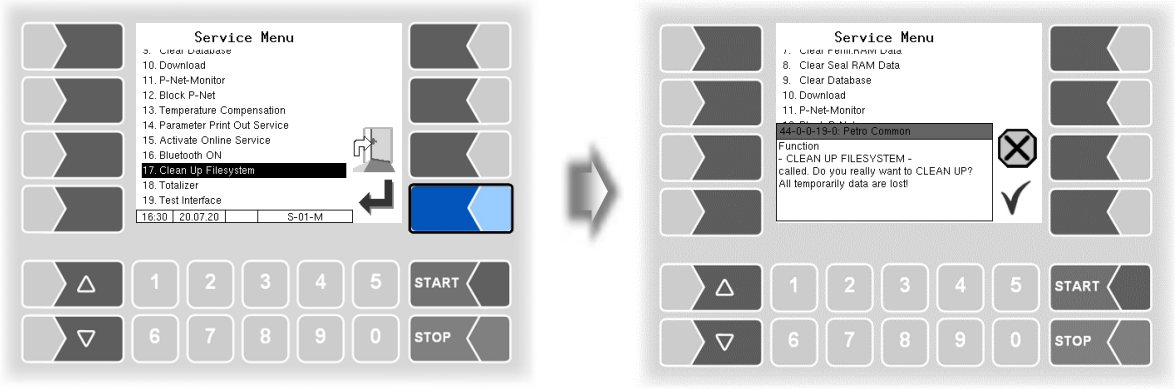


When a connection is established, this symbol is displayed.

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.

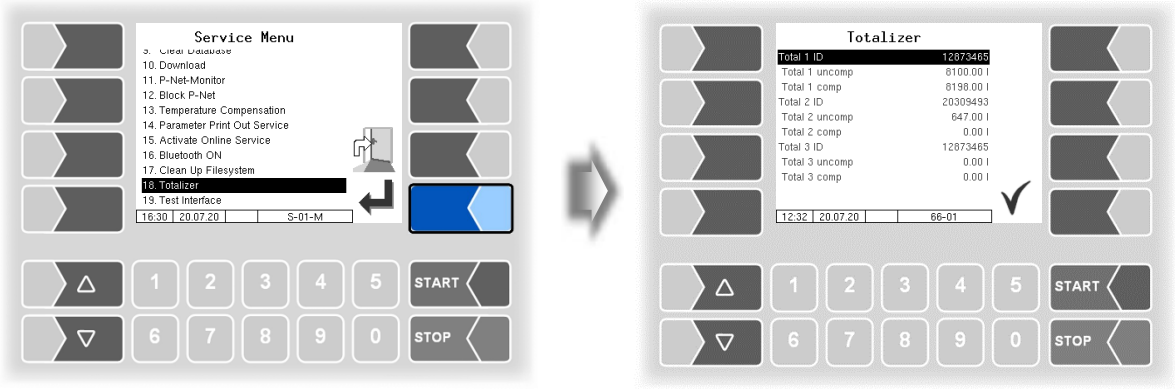


Already generated response data that are not yet transmitted, may be deleted**!**

4.5.18 Totalizer

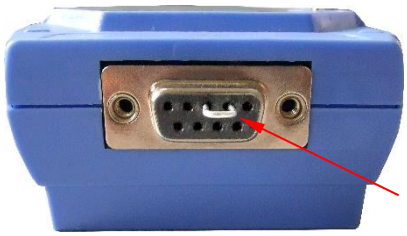
The totalizer readings are displayed here according to the operation mode selected.

Total 1 ID: TIGER and Ex-TIGER
Total 2 ID: MID
Total 3 ID: COMP counter 1
Total 4 ID: COMP counter 2
Total 5-10 ID: Luboil counter 1 to 6



4.5.19 Test Interface

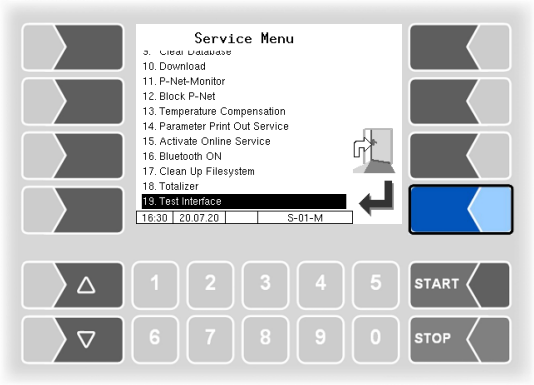
The communication between BARTEC and the OBC interface (Communication to the Front, see section 4.2.7.5) can be checked with this function. To do this, the two data lines TxD and RxD of the connection cable must be bridged so that the data sent by the system can be sent back.

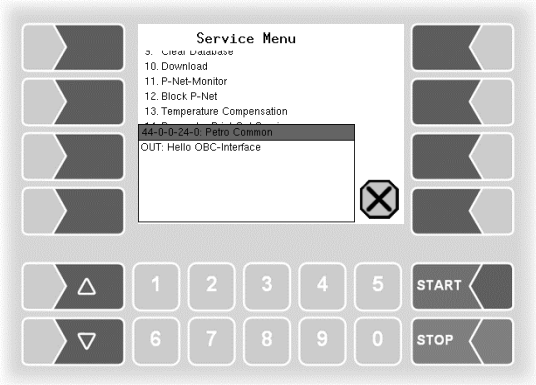


Bridging between TxD and RxD

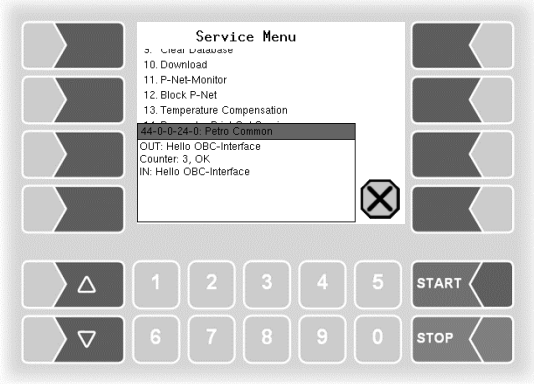
The data lines can also be bridged directly at the serial isolator.

The result of the test is displayed on the screen.
The test can also be performed in the menu *Office configuration/FTL Conditions* after entering the service password (see section 4.2.7.5).

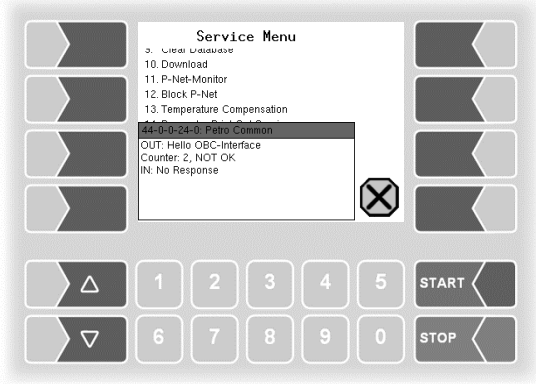




Data is being sent



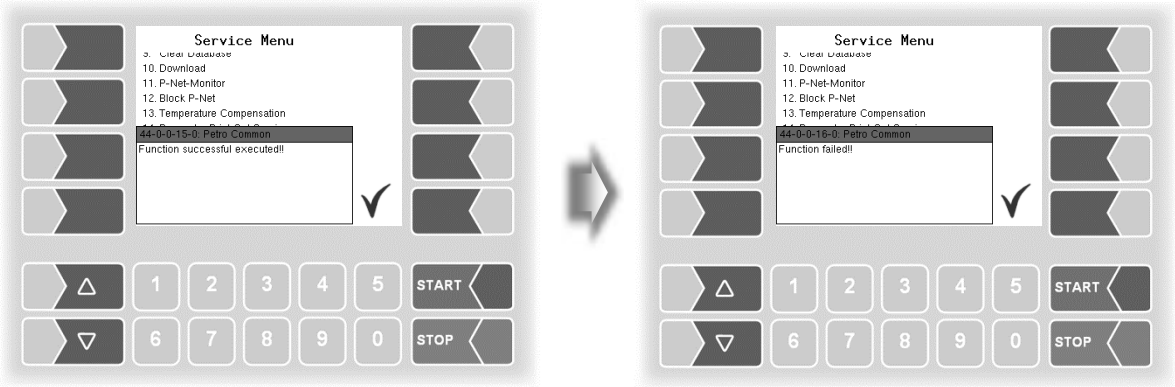
Response via OBC interface



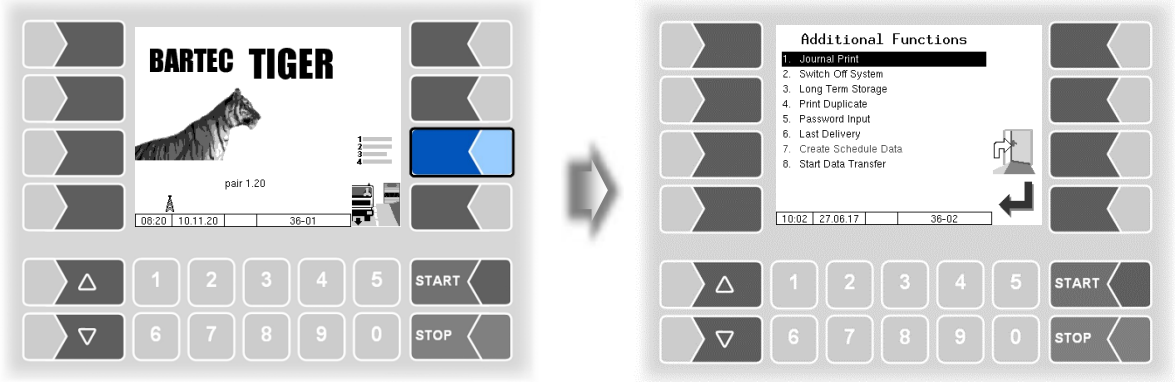
No response via OBC interface

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



A description of the functions in the Additional Functions can be found in the Operating Instructions.

6 System monitoring

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

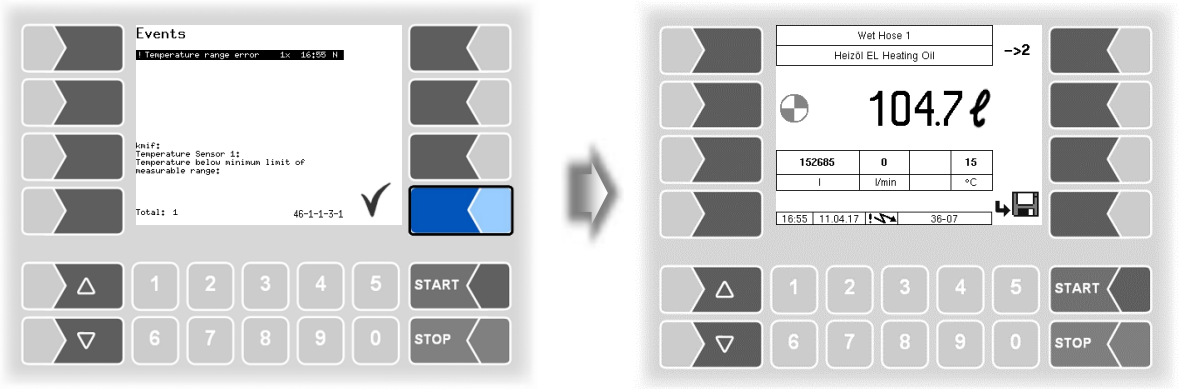
Display of malfunctions

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.

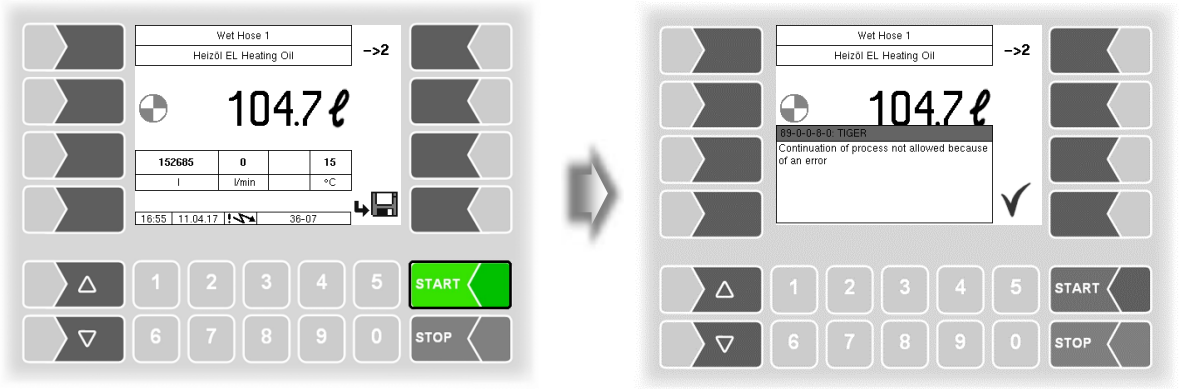
If an error occurs during an active delivery, causing this delivery to be interrupted, the event display window containing the relevant error message appears for 20 seconds.

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

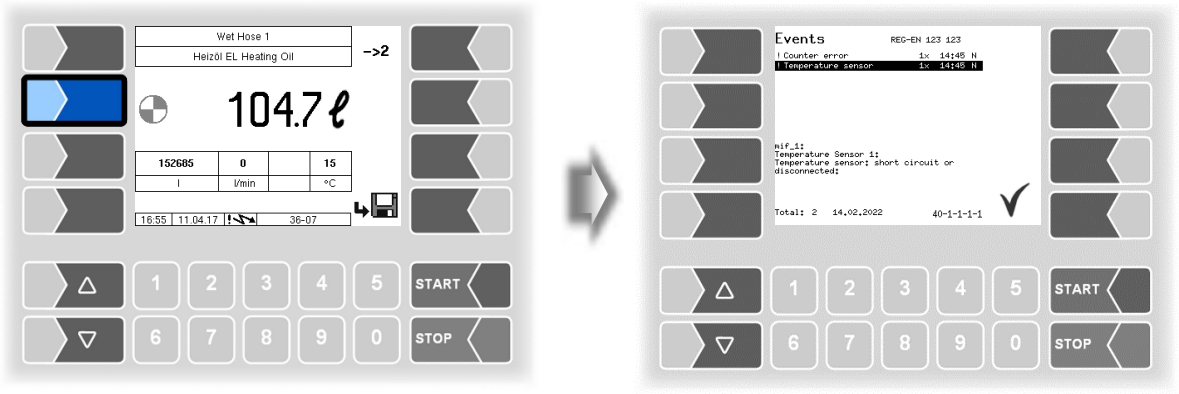
The error symbol is then displayed in the information line as long as the error is still present.



Stop the delivery.
If you try to continue the delivery a message is displayed. When you confirm this message, the delivery will be finished.



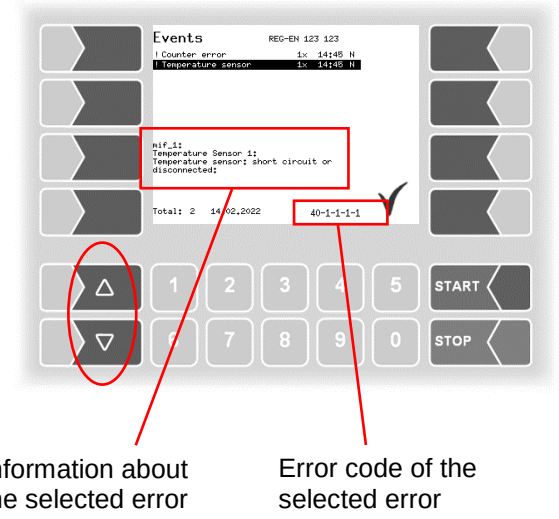
When occurring faults which do not affect the calibrated measurement, the error symbol is displayed in the info line.
You can open the event display for further information about the fault (2nd Softkey left side).



Acknowledge the error with the softkey „ ✓ “.

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.
.

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 calibration 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
2 :User password	U	Operating parameters, date
3 :Service password	S	Software parameters not subject to statutory calibration
4 :Open calibration 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		nl (Dutch)
	Daylightsaving		cs (Czech)
	Daylightsaving Begin		sl (Slovenian)
	Month		hr (Croatian)
	Week		hu (Hungarian)
	Day Of Week		it (Italian)
	Daylightsaving End		sr (Serbian)
	Month		pl (Polish)
	Week		bg (Bulgarian)
	Day Of Week		ro (Romanian)
			et (Estonian)

2: Program parameter U		
	Driver number	
	Licence plate	
	Vehicle number	
	Delivery note number	
	Application mode	
	Invoice number	
	VAT 1	
	VAT 2	
	Currency symbol	
	Change prices	
	Change Prices Office	
	Allowed Deviation	
	Building Site Option	
	Operation Mode	
	User	
	* Netherlands	C

3: Control parameter U		
	Stop Delivery x%ˣFlow	
	Max. time at flow =0	
	Flowlimit low	
	Flowlimit high	
	Productgroup F 1	
	Productgroup F 2	
	Productgroup F 3	
	Preset	
	Preset in mind	
	*Time until filled pipe	C
	*Sens. value end draining	C
	*% Air stop draining	C
	*Open Time Vx	C
	*Close Time Vx	C
	*Draining final	C
	*Draining flow	C
	*Remaining volume draining	C
	*Total volume draining	C
	*End filling time wet	C

Minimum filling pressure
*Air on Delay C
*Air counts start deairing C
*Rest press. m-tube draining C
*Pressure during draining C
*End criterion draining C
*Runback-limit C
Flow-Control S
Throttle
Release delay
Draining S

4: Product Configuration C

Metrological Products C	Measured Products U
*Designation	Designation
*Number	Number
*Shortcut	Shortcut
*Scale Unit	Metrol. product
*Calibration factor	Add. Mischungsv. 1/x
*Density	Additivpumpe
*Reference Temperature	Log. Ausgang Additiv
*Compensation	Price
*Compensation mode	Tax identif.
*Compensation Factor	Additional product
ADR Text U	PID-Delivery
*Product Group	PID-Delivery leaded
Meter S	Solenoids-Delivery
Meter no S	

Unmeasured Products U
Designation
Number
Shortcut
Scale Unit
Packaging content
Price code
Price factor
Price
Tax identif.
Additional prod.

5: Print Parameter U

*Seq. Number C

Ticket System language
Ticket List

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
Time meter readings
Driver number
Preset quantity
Vehicle registration
Ticket allocation
Delivery hose S
Seal information
Product group

6: Hardware-Configuration S

Measurement Interface (kMIF) C

Counter 1
*logical number
*number of Meter 1 (2)
Operation mode
*calibration 1
*calibration 2
*calibration 3
*min. volume
*rolling direction
*channel
*type
*tiger
*dynamic calibration
*1. (… 5.) flow
*1. (… 5.) correction
*ref.-temperature
*K1, *K2

1. (…9.) Input S

KMif
logical allocation
invert
resting state

*PIC trigger C
*analogin trigger C
firmware version
driver version

MIF- TIGER C
*measuring tube type
*air limit
*Capacity change per °C
*Air correction 1 (2) pressure
*Air correction 1 (2) factor
*LMS limit empty

Measurement Interface (COMP) C

Temperature sensor 1 (2)
*log. mapping
*calib. 0/-195°C
*calib. 50/-80°C
*circulation delay
Logging S
firmware version
driver version

KMif Ex
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]

Analog inputs

*Damping FGS
*Damping I2, I3

*Damping LMS
*Damping U1, U2

With MIF TIGER Ex, the inputs have to be configured on the interface board.

Outputs [C]

1. (...n.) Output
logical allocation
invert
firmware version
driver Version

Inputs / Outputs IO24 *(with „Ex-TIGER“))* [C]

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

Display [S]

Contrast
x/y calibration
Candle power
Set blink on/off
Calibrate HMI 1/2

Printer [U]

Epson TM
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
Record Interval

Epson LQ 590
Active
Serial Number
Lines per page
Form Feed
horiz. offset
Extended log

GPRS [U]

Device [S]
Baudrate
Modem available [D]
Provider data
APN-Server
APN user
APN password

6: Hardware-Configuration S

SIM data
Dial String
PIN-Code
Security
Report IP to BARTEC

Power supply S
System fan
Switching Off Below
Switching On Above
Firmware Version

Additivation U
BARTEC Additivation 1(2)
Additivation On/Off
Serial number S
Calibrate S
Bleed
Additiv totalizer
Clear totalizer? D
Guarantee quantity S
Firmware version

No password

GPS U
GPS Receiver On/Off
Search Radius
Load. Search Radius
KM-Recording
GPS-Logging
Model
firmware version

Overfill Prevention S
Overfill Prevention On/Off
Serial Number
OP Sensor 1 (2, 3)
ANA
bypass ANA

Opt. Overfill Prevention S
Overfill Prevention On/Off
Mono-AS
Serial Number
Firmware Version

i-Box-Interface S
(with „Ex-TIGER“))

1. Clamp Box C
*Serial No
Box 1 Typ
Box 1 Version
input 1. (...12.) Box 1
*log. mapping
*invert
*Namur
temperature sensor 1 (...6)

2. Clamp Box
Serial No
OFP-Plug Magnets
Box 2 Type
Box 2 Version
input 13 (...18.) Box 2
log. mapping
invert
Namur

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

PID Clamp Box (PID)
Serial No
Type
Version
Log-Level
firmware-Version
driver version

6: Hardware-Configuration S

i-Box mA Interface S
(available in vehicle for pressure-liquefied gases)
*serial number
Firmware Version
Driver Version
1. (2.) junction box
serial number
1. (...18.) Input box1 (2)
Invert
Namur
differential pressure sensor
Sensor terminal
max. flow
min. flow
current beginning CB
current final CF
pressure at CB
Pressure at CF
Allgemein
Logging

Bluetooth Receiver S
Bluetooth Receiver On/Off
Schnittstelle
Baud
Pin
Name

CAN / J1939 U
CAN/J1939 Ein/Aus
Address
W-AS Router address
Address claiming
Priorities of transmit messages
Flow
Volume
Scheduled Data
W-AS Router
Configuration write
Dialogmessage
Configuration read
Diagnostic read
Configuration save
Delivery information
Firmware Version
Driver Version
W-AS Thermal
ANR

Version
W-AS Terminal
ANR
Version
W-AS Router
ANR
Version
Address
Address System 3003

6: Hardware-Configuration S

Relais time
Relais 1 (…6)

I/O-Box 6753 S
Basic module
I/O-Box 6753 On/Off
0. (…7.) Input
Logical
Invert
0. (…7.) Output
Logical
Invert

MID C
*MID On/OFF
*Ident Number
*Calibration Factor System
*Calibration Factor Flo..
*min. volume

Lubricant C
Meter 1 (…6)
* Teach
* Reset
* A-No. sensor headf
Firmware sensor head
* A-No measuring tube
Firmware measuring tube
Meter
* logical number
* number of meter
* calibration 1 (…3)
* min. volume
Temperature sensor
* Logical assignment
* Calib. 0/-195 °C
* Calib. 50/-80 °C
WLS Intern
* Logical assignment
WLS Extern
* Logical assignment

7: Office configuration U

Office parameter U

Response data (H, O, P)
Office data (H, O, P)

master data
Tourhandling
Driver number
TDL office data
Order Start-Dialog

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	

Create FTL data	

Delete data	U
Master and Schedule Data	
Schedule Data	
Response data	

FTL Conditions	S
FTP-LOG-File Prefix	
FTP-LOG-File Interval	
Create FTP-LOG-File	
Create FTP-RC-File	
Communication to the Front	
Baudrate	
Interface	
Communication to the back	
Baudrate	
Interface	
FTL Delivery	C
OBC- Printout	C
LOG Output Filter	C
LOG Period	C
LOG GPS Interval	C
FTL-LOG in BARTEC-LOG	C
OBC-Diagnostics	C
TDL- Payment Mode	C
Order Printed Dialog	C
Test OBC-Interface	

8: SAFE Parameter U
(„with Ex-TIGER“)

SAFE Configuration U

Quality Control
Scan Line ...
Scan Line ... Compartment
PID Connect Delay
PID-Signal Damping

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

9: CHEM Control paramter U

Stop del.X% flow
Filling quantity S
Filling time wet S
Filling S
Filling with pump S
Low flow on
Low flow off
pump stop delayed
Reduce del. x % *flow

10: LPG Control parameter U

Delay WLS 19
Delay WLS 7
Delay WLS 8
Flow rate min.
Flow rate max.
Autostart after air intake

11: CHEM Control parameter U

Flow control
Pump performance at 0l/min
Current at 0%
Current at 100%
Pump performance 1, 2, 3
Pump performance
Offset
Step increment
Step duration

7.2 Logical Outputs and Inputs

7.2.1 PETRO TIGER

Logical Outputs			
log. No.	***in-vert***	***desig-nation***	***Function***
1	n	V	D-valve Regulates the D-valve fully open via 3/2-way solenoid valve.
2	n	B	D-valve (Bypass) Controls the bypass function of the multifunction D-valve via 3/2-way valve.
3	n	L	Dry hose Controls the dry hose valve via 3/2-way solenoid valve
4	n	V1	Full hose 1 (front) Controls the full hose valve 1 via 3/2-way solenoid valve.
5	n	V2	V Full hose 2 (behind) Controls the full hose valve 2 via 3/2-way solenoid valve.
6	n	U	unmeasured Controls the valve for unmeasured deliveries via 3/2-way solenoid valve.
7	n	E2	Bleeding – fill up Controls the passage valve to the bleeding collection vessel via 3/2-way solenoid valve.
8	n		Pumping performance high (system cable wire 5) Plus-switching output for increasing the motor speed (is switched ON if a configurable flow is exceeded, is switched OFF if a second a configurable flow is undershot) This output is not active when using bypass.
9	n	SB	Bleeding the control block Bleeds the control block via 3/2-way solenoid valve and closes bottom valves.
10	n	EV	Residue removal by compressed air Directs the compressed air for residue removal to the coordinate unit via a solenoid passage valve.
11	j	A	Inlet measuring section Controls valve A (inlet measuring section) via 3/2-way solenoid valve.
12 12a	n n	E1	Shut-off valve Residue removal ***For residue removal back to the compartment use output 21!*** Relay residue removal pump Controls the passage valve in the residue removal pipe between pump sump and upper pipe elbow; switches simultaneously the residue removal pump via a relay.
13			Output to block semi trailer suck pipe while draining (only during draining)
14	n	E4	Compressed air collector pipe Controls the passage valve in the residue removal pipe between coordinate unit and collector pipe via 3/2-way solenoid valve.
15	n		Motor OFF, before starting residue removal 5 sec. high Positive switching pulse output for stopping the motor during residue removal.
16	n	V3	Full hose 3 Controls the full hose valve 3 via 3/2-way solenoid valve.
17	n		enabling rotational speed control Positive switching output for shutting off the motor rotational speed control. (is activated at a flow higher than 5 litres/min, also when using bypass)

log. No.	*in-vert*	*designa-tion*	*Function*
18	n	B	Before reaching the preset quantity is switched over to bypass (throt-tling).
19	n		During residue removal set to high (e. g. hydraulic pump OFF).
20	n	E5	Bleeding measuring pipe (corresponds to alternative log. Nr. 12) Bleeds the measuring pipe if necessary during residue removal
21	n	E6	Full hose valve Residue removal back to the compartment
22	n		Pump: on
23…26	n		Outputs for controlling of multiple additivation tanks (see section 4.2.4.2 „Log. Output Additive“)
29	n		Operation type Rinsing, release valve backwash line
43			Self filling

Logical Inputs

	log. No.	*in-vert*	*resting state*	*namur*	*desig-nation*	*Function*
	1	no				Delivery-Stop
A3-TI-GER	3	yes	H	no	LM1	Empty indicator hose valves
Ex-TI-GER		no	-	yes		
	5	yes	L	no		Overfill prevention

Explanation:

3: Empty sensor in the lower knee (only if equipped with residue removal function)

5: Wireless overfill prevention: pick up a positive control signal at the AS solenoid valve
(optional with W-AS and AS radio, display shows whether the GWG has released; additional shutdown to the release valve of the AS by the system when the message "tank full").

7.2.2 PETRO CHEM

Logical Outputs

log. No.	invert	designation	Function
31	n	VH	Wet hose valve of the MID system
32	n	LH	Dry hose valve of the MID system
33	n	PH	Pump enabling MID when filling and delivering
34	n	EH	MID venting for filling the system
35	n	BH	Bypass delivery MID with full hose
36	n		Output for MID delivery, remains set until next TIGER delivery
37	n	ÜH	High pumping power MID
39		AH1	Delivery level 1 This output is switched when the delivery starts, provided it has been selected by the operator. Using this output, it is possible for a unit, connected downstream by the customer, e.g. set the desired flow rate for the delivery.
40		AH2	Delivery level 2 See Delivery level 1
41		AH3	Delivery level 3 See Delivery level 1
42		DH	Output flow reduction / flow throttling This output is controlled dependent on the parameter "*Reduce del. x % *flow*". The output is deactivated when the pump is enabled (log. 33).

Logical Inputs

log. No.	invert.		resting state	desig-nation	Function
	KK	I/O-Box			
1					Delivery stop
5	y		L	AS	Overfill prevention
7	n		H	LMH1	Wetleg sensor 1 for MID system
8	n	y	L	LMH2	Wetleg sensor 2 for MID system
9		y			MID system uses tank/compartment no. 2 (if 2 MID tanks are available)
17				ESH	External delivery start If a low-high edge change is detected at the input at the start of delivery or after reaching the specified quantity, the current delivery / position is saved and a new delivery is started with the parameters set in advance (specified quantity, delivery level, hose selection ...).

7.2.3 PETRO COMP

Logical Outputs

log. No.		*in-vert*	*designa-tion*	*Function*
Meter 1	*Meter 2*			
1	51	n	V	Wet hose
2	56	n	B	Bypass
3	61	n	L	Dry hose
4	64	n	V1	Hose reel 1
5	65	n	V2	Hose reel 2
6	91	n	U	unmeasured
16		n	V3	Hose reel 3
18	85	n		flow reduction
52	53	n		Pumped (with dry hose and unmeasured)
23…26				Outputs for controlling several additive tanks (s. 4.2.4.2, „Log. Output Additive“)
30	48	n		Output for venting when input 6 (23) reports active
38	88	n		Residue removal
43		n		Self filling

Logical Inputs

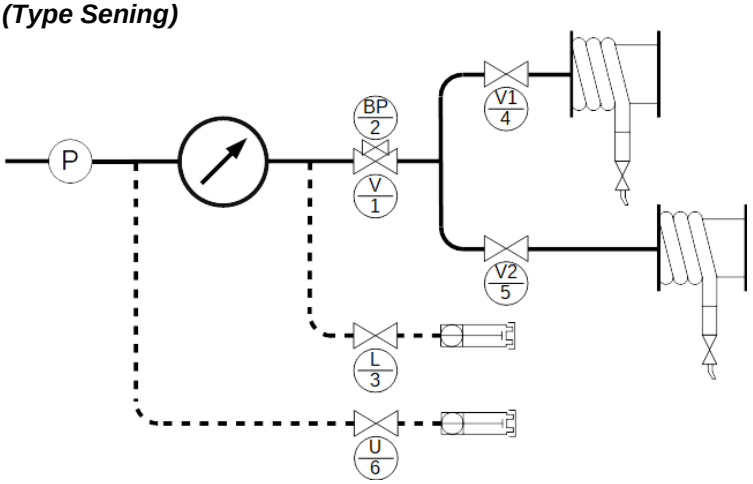
log. No.		*in-vert*	*desig-nation*	*Function*
Meter 1	*Meter 1*			
1	1	n		Delivery stop
5	5	y		Overfill prevention
6	23	y		Input for external measuring system- air in the measuring system
18	26			Residue removal from external measuring system

Pipe variants

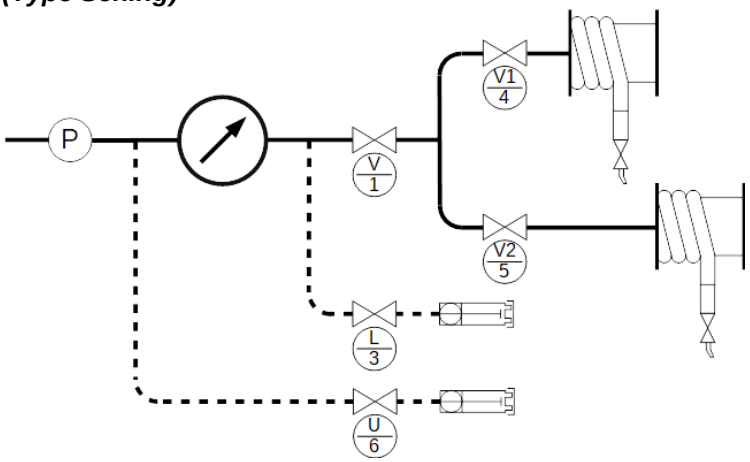
Only the logical numbers for counter 1 are given. For counter 2, the logical numbers must be replaced accordingly.

The variants with 3 full hoses are available from software version pair 1.19.4.

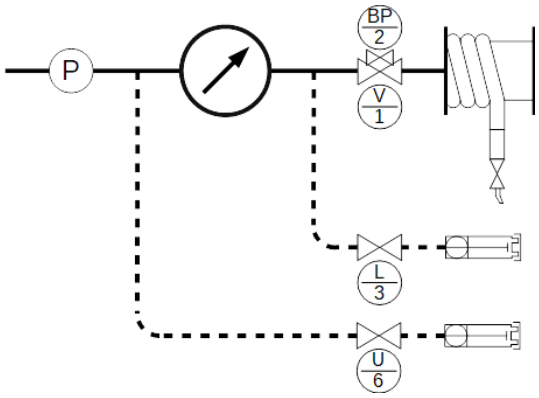
2 wet hoses, 1 bypass,
1 dry hose (optional), 1 unmeasured (optional)
(Type Sening)



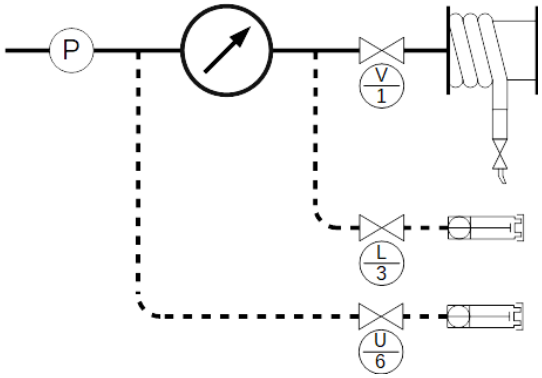
2 wet hoses,
1 dry hose (optional), 1 unmeasured (optional)
(Type Sening)



1 wet hose, 1 bypass,
1 dry hose (optional), 1 unmeasured (optional)

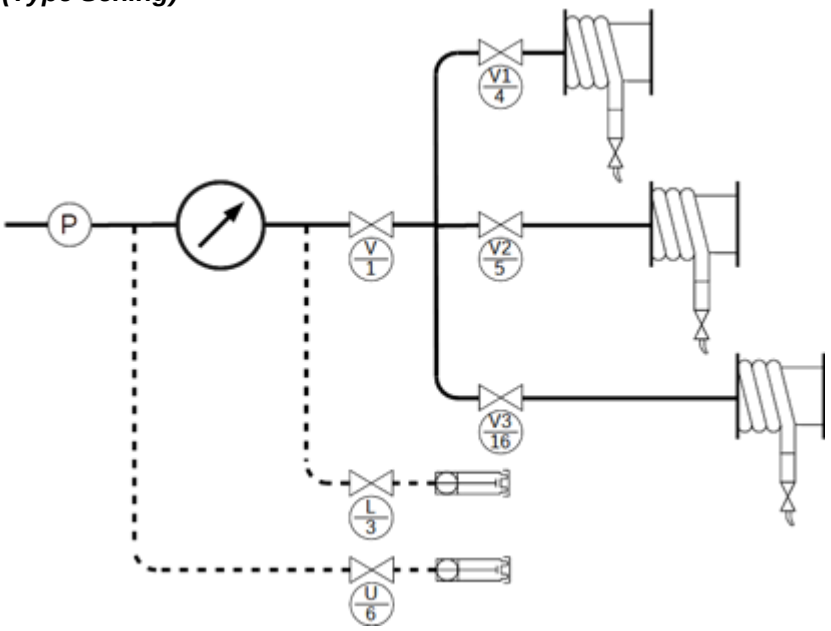


1 wet hose,
1 dry hose (optional), 1 unmeasured (optional)

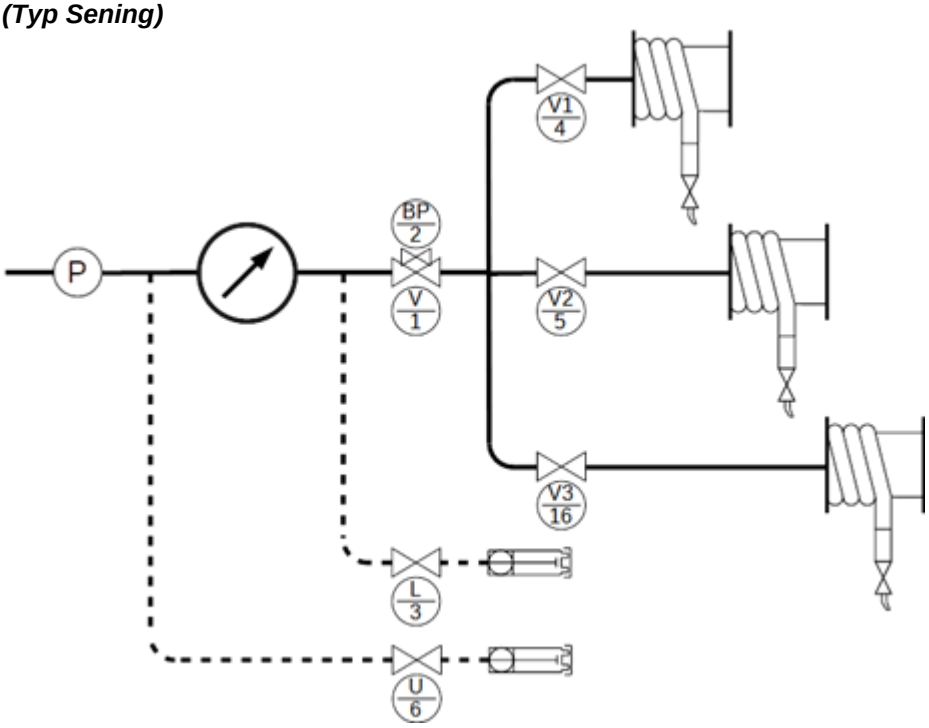


134

3 wet hoses,
1 dry hose (optional), 1 unmeasured (optional)
(Type Sening)



3 wet hoses, 1 bypass
1 dry hose (optional), 1 unmeasured (optional)
(Typ Sening)



Full hose 3 is not available for counter 2!

7.2.4 LPG

Logical Outputs			
log. No.	***in-vert***	***desig-nation***	***Function***
1	n	V	Release valve
2	n	B	Flow reduction
44			Spray line for LPG -GOFA
45			Delivery without pump or filling with pump via spray line
46			Active sucking
47			Active pressing
79			Pump stop when WLS 19 reports "dry"

Logical Inputs			
log. No.	***in-vert***	***desig-nation***	***Function***
1	n		Delivery stop
7			Wetleg sensor 1
8			Wetleg sensor 2
19			Wetleg sensor Dry run protection

7.2.5 PETRO LUBOIL 3003

Logical outputs

Meter N°						*in-vert*	*desig-nation*	*Function*
1	2	3	4	5	6			
log. N°								
66	67	68	69	70	71			Pump
72	73	74	75	76	77			throttling
81	82	83	84	86	87			Venting
92	93	94	95	96	97			release
49	50							Switching right side counter 1 and 2
62	63							Switching left side counter 1 and 2

Logical inputs

Meter N°						*in-vert*	*desig-nation*	*Function*
1	2	3	4	5	6			
log. N°								
31	33	35	37	39	41			WLS external

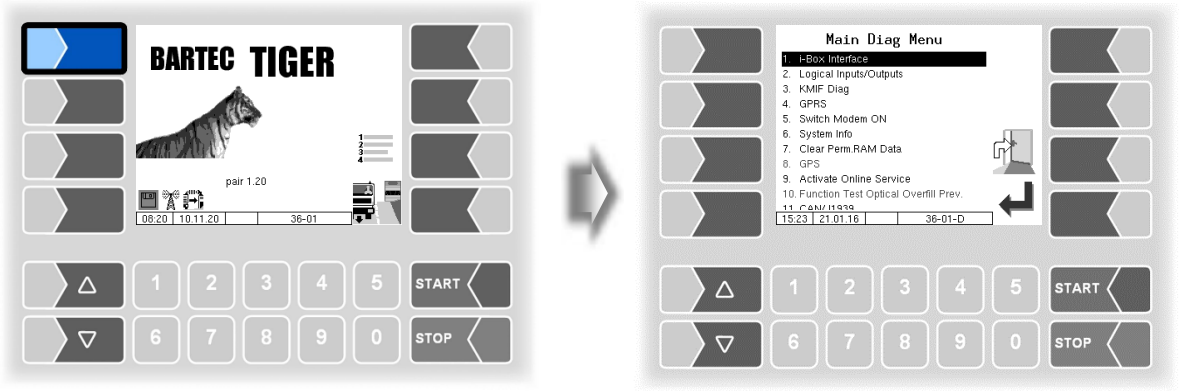
Logical inputs not configurable

Meter N°						*in-vert*	*desig-nation*	*Function*
1	2	3	4	5	6			
log. N°								
30	32	34	36	38	40			WLS internal

7.3 Diagnostics menu

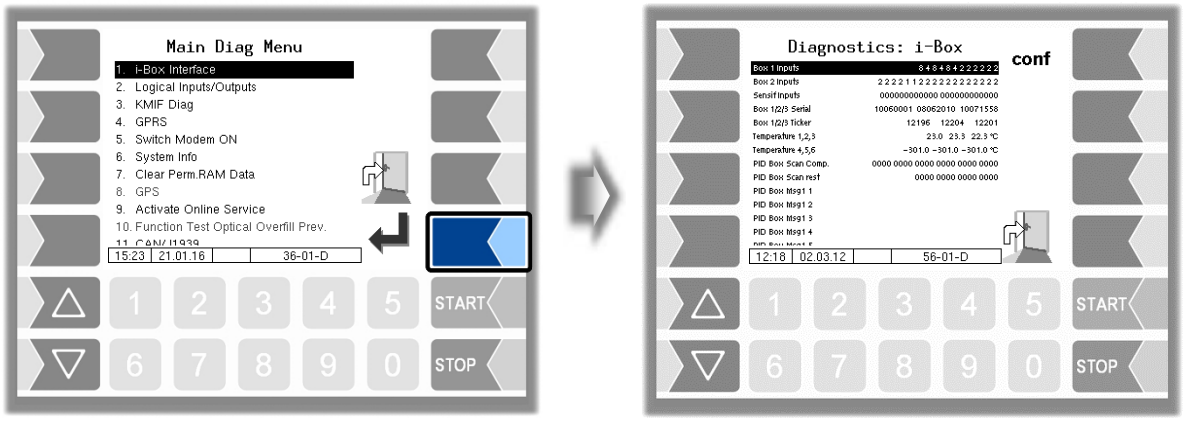
You can use the upper left softkey to open a diagnostics menu. This service function allows the service professionals to perform a specific diagnosis on individual system components.
You can open the diagnostic menu either outside of a tour, within a tour or within an order.

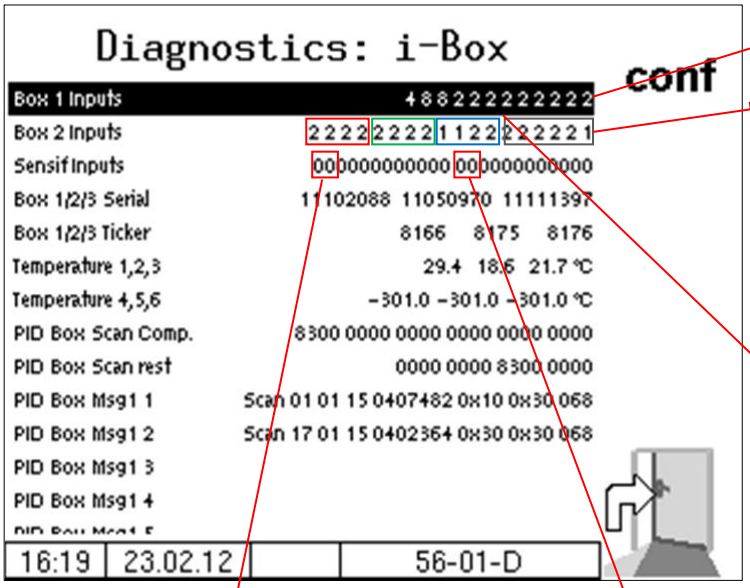
Menu items that are not available according to the respective system configuration are displayed in gray and cannot be selected.



7.3.1 i-Box Diagnostics

(Not available with "A3-TIGER" or in connection with compact controller)





Wetleg sensor 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	not wetted / closed		
8	wetted / open		

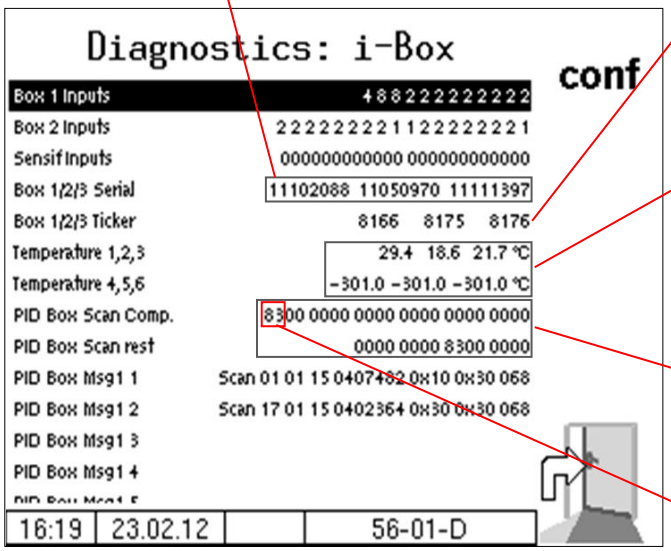
NOTE! Not identical with software „pyramid“.

Magnetic identifiers limit sensor (each 4 digits) lim. sensor 1 lim. sensor 2 lim. sensor 3		**Magnetic 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)



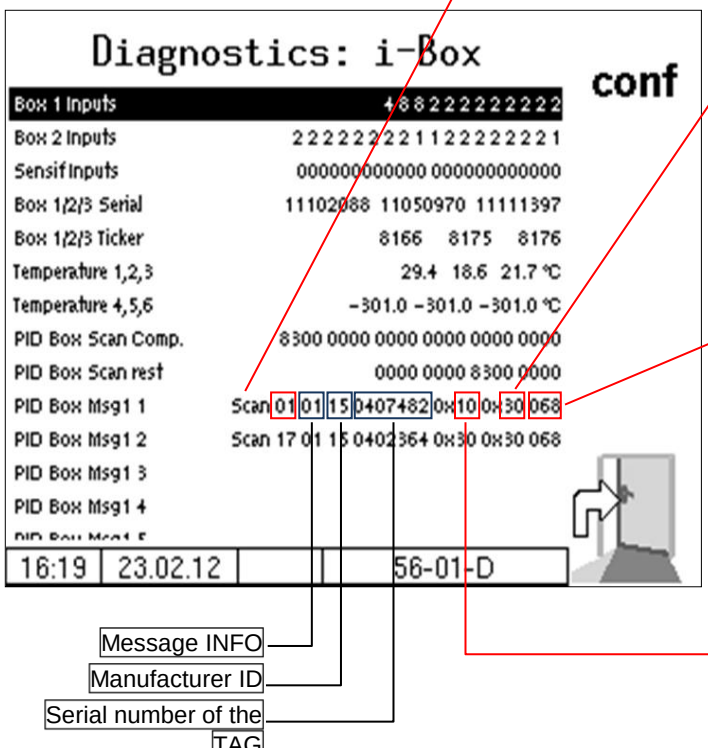
Ticker (Packet data counter)
If a counter is standing still, there is no communication with the respective board.

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 limit sensor 1	
4X	Listener limit sensor 2	
8X	Listener limit sensor 3 *In the example the PID-information is red via limit sensor 3 and scan line1.*	∗1
6X *	Listener limit sensor 1+2	
aX *	Listener limit sensor 1+3	
cX *	Listener limit sensor 2+3	∗2
eX	Listener limit sensor 1+2+3	
X1	Contact without PID-Info /Com	

∗1 *May only be read in with 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 *
02	Compartment 2, left *
03	Compartment 3, left *
04	Compartment 4, left *
05	Compartment 5, left *
06	Compartment 6, left *
07	Compartment 1, right *
08	Compartment 2, right *
09	Compartment 3, right *
10	Compartment 4, right *
11	Compartment 5, right *
12	Compartment 6, right *
17	Single vapour recovery
18	Single vapour recovery
19	Single vapour recovery
20	Common vapour recovery
*	Compartment assignment may be different depending on configuration!

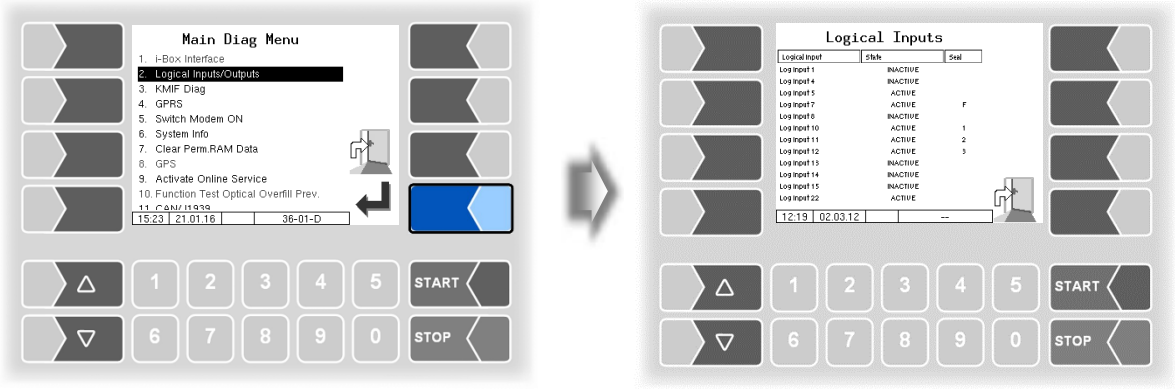
Product quality	
0x	all qualities
1x	A I – Product
2x	A II – Product
3x	A III – Product
x0	all qualities
x1	leded
x2	unleded
x3	Fuel with lead substitute

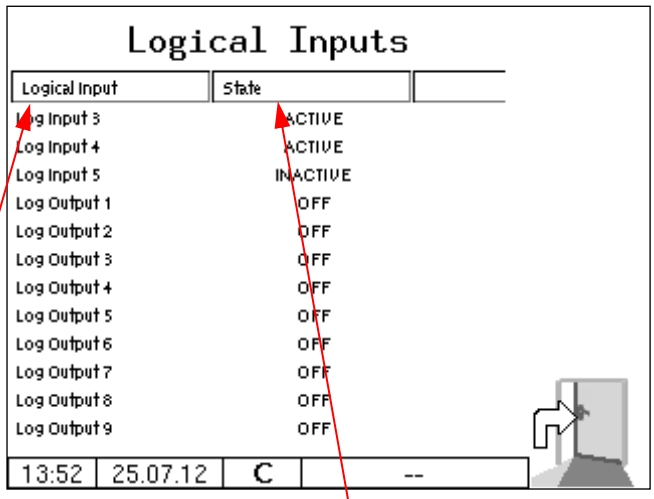
PID-Information	
00	no information (possibly Common vapour recovery)
68	Diesel
69	Heating oil
70	V-Power Diesel
72	Bio-Diesel
92	Super E 5 (formerly Petrol)
95	Super E 10 (formerly Super E 5)
98	Super plus

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 71).

7.3.2 Diagnostics of the logic inputs and outputs (Software “pair”)





Logical Input

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

State

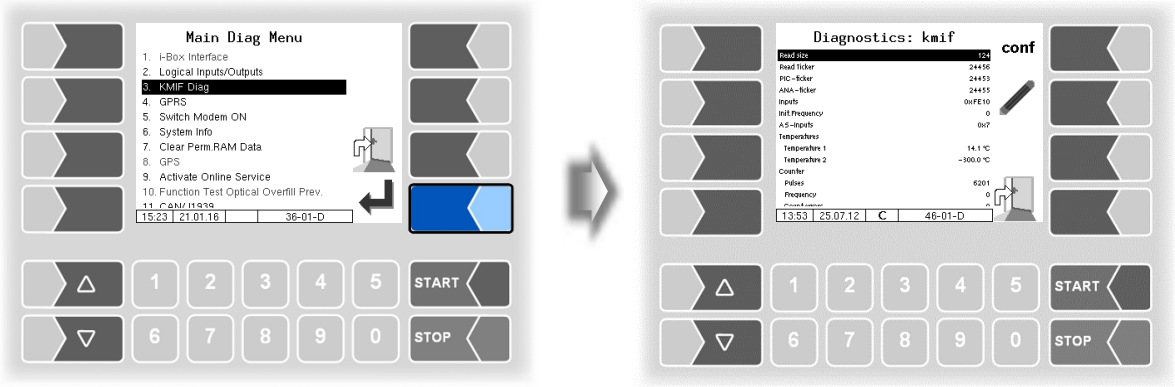
The status of the inputs and outputs is displayed.

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

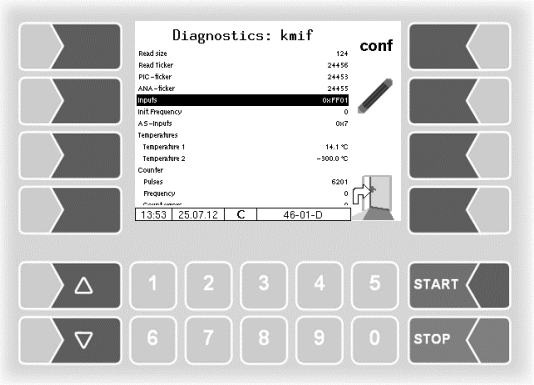
The "Logical Input / Output" diagnosis is only updated within a delivery order. Outside an order, the correct states may not be displayed.

7.3.3 Diagnostics of the measurement interface

You can perform this diagnostic function also in the configuration menu of the measurement interface (see page 47).

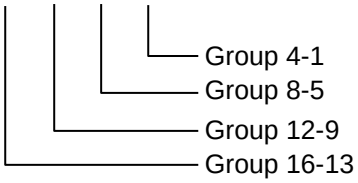


The “Inputs” line shows the current status of the inputs as a hexadecimal value. After converting this value to a binary number, you can read out the statuses of all inputs.



The 16 inputs are displayed in four groups.

Example 0 x F F 0 1



Presentation of group 4-1 (example):

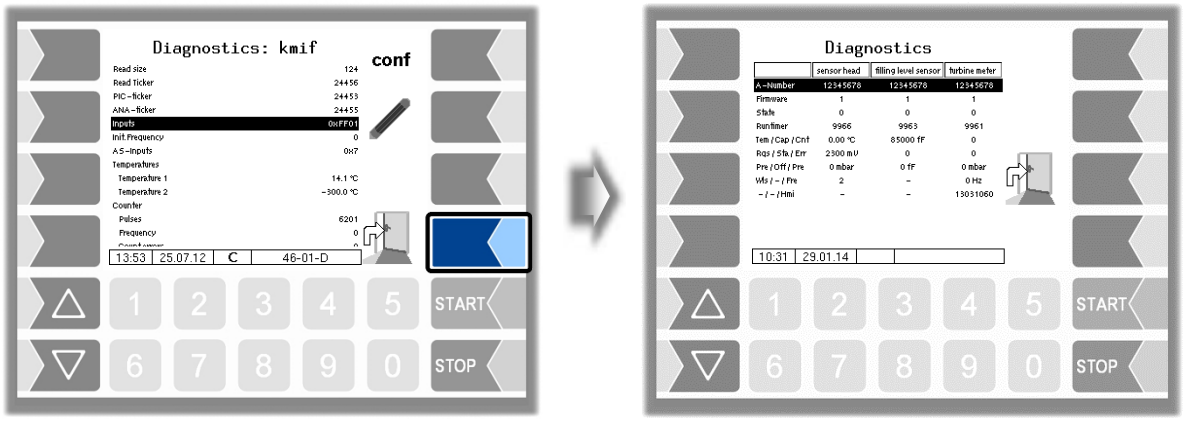
	16	15	14	13	
	12	11	10	9	
	8	7	6	5	
Inputs (Status “0” or “1”)	**4**	**3**	**2**	**1**	**Presentation (Group)**
	0	0	0	0	0
	0	0	0	1	1
	0	0	1	0	2
	0	0	1	1	3
	0	1	0	0	4
	0	1	0	1	5
	0	1	1	0	6
	0	1	1	1	7
	1	0	0	0	8
	1	0	0	1	9
	1	0	1	0	A
	1	0	1	1	B
	1	0	1	1	C
	1	1	0	0	D
	1	1	1	0	E
	1	1	1	1	F

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

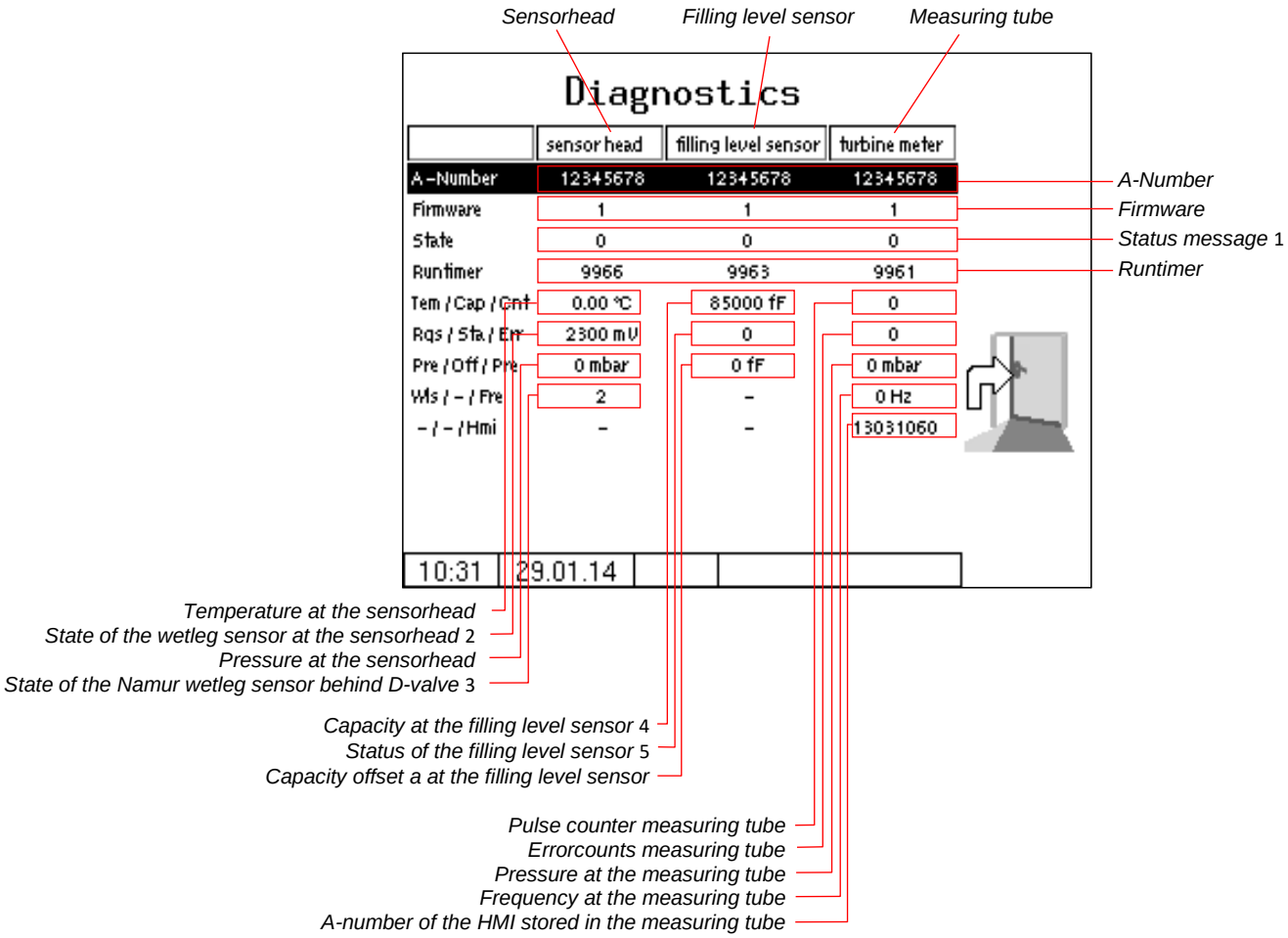
The example above shows the hexadecimal value FF01.
The corresponding binary number is 1111 1111 0000 0001.
This means that inputs 1 and 9 - 16 currently have the status “1” while inputs 2-8 have the status “0”.

You can perform this diagnostic function also in the configuration menu of the measurement interface (see page 47).

7.3.4 Diagnostics of the Measurement Interface with Ex-TIGER



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



You can perform this diagnostic function also in the configuration menu of the measurement interface (see page 50).

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*

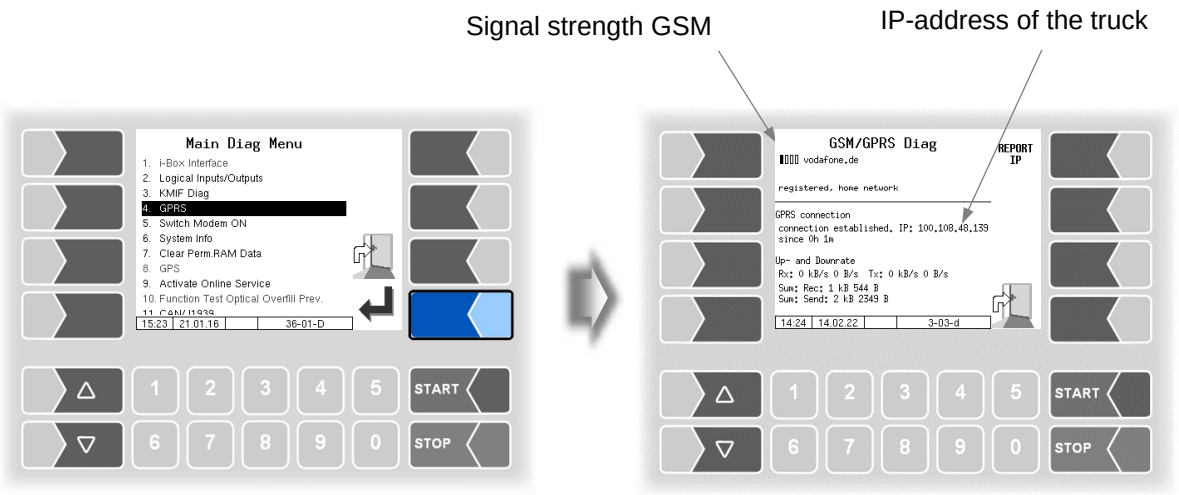
~081000 ≙ empty	140000 ≙ full (*Heating oil*)

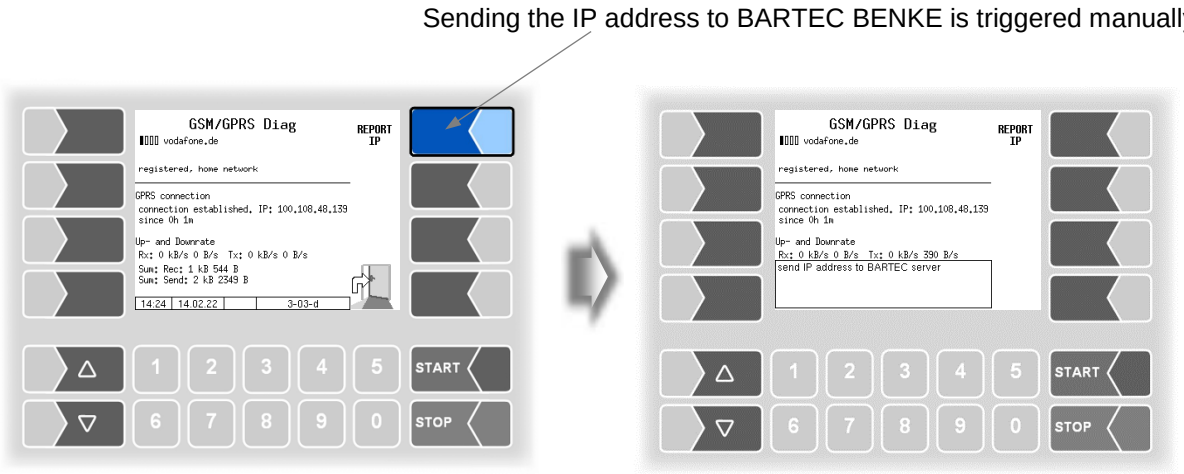
5 *Status of the des filling level sensor (Status bits of the capacitance sensor module)*

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

7.3.5 Diagnostics GPRS (Modem)

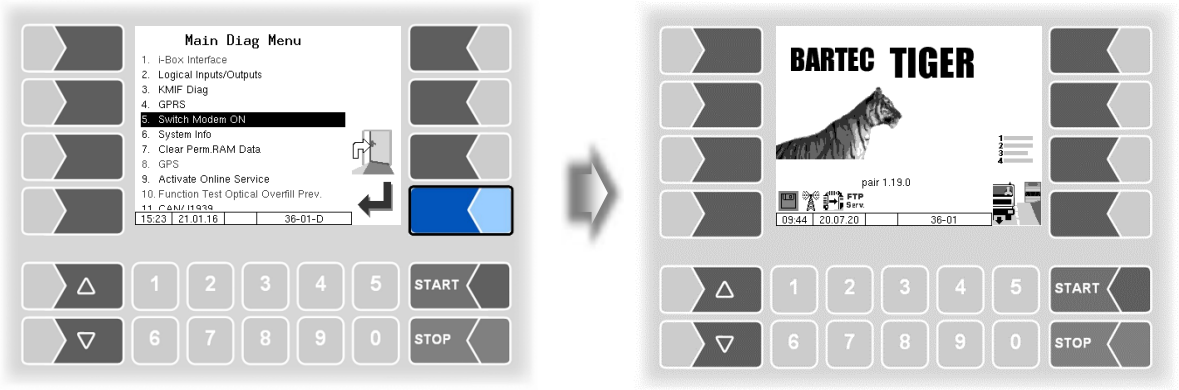
Service function for diagnostics of the GPRS unit.





The GPRS diagnostics can also be opened in the configuration menu of the GPRS unit (see section 4.2.6.8).

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 4.2.6.8).
Only if the modem is configured but not activated in the GPRS configuration, the modem can be switched permanent on or off, when confirming this menu option.

The operating status of the modem is displayed by icons.

Modem switched on 

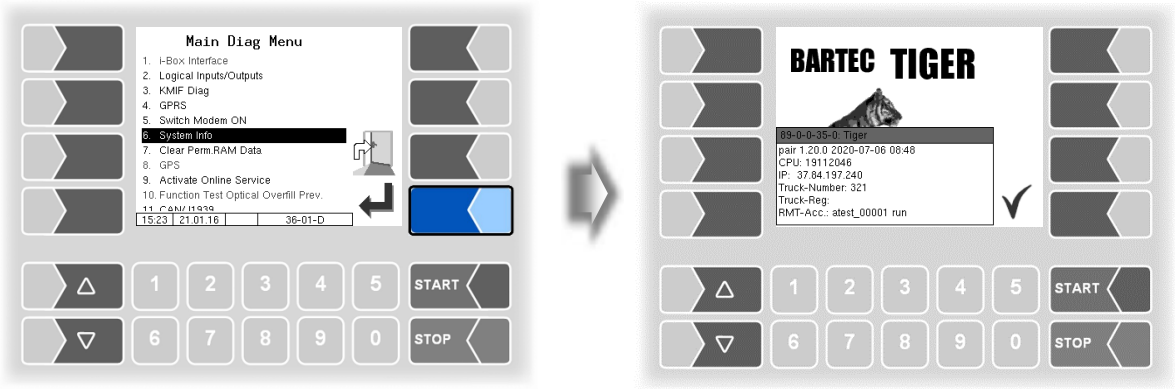
Modem switched on;  connection established

Receiving data 

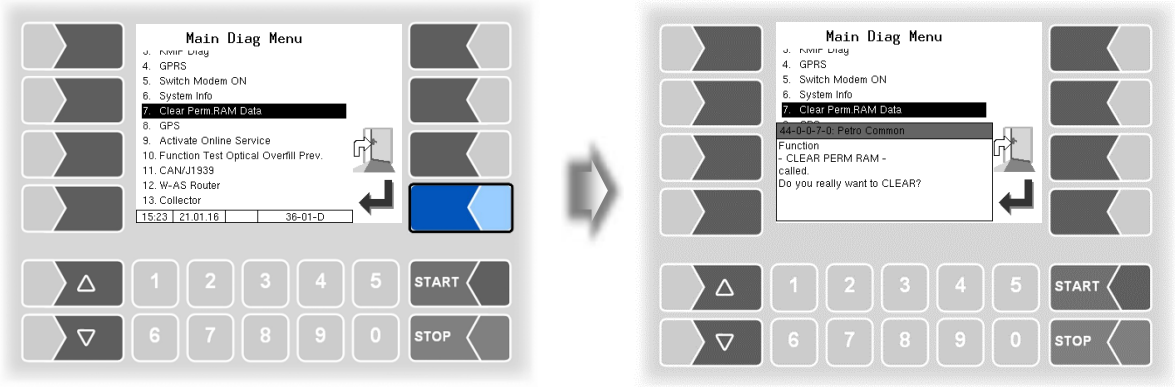
Sending data 

7.3.7 System-Info

The menu item is used for displaying system data.
.



7.3.8 Clear Permanent RAM Data

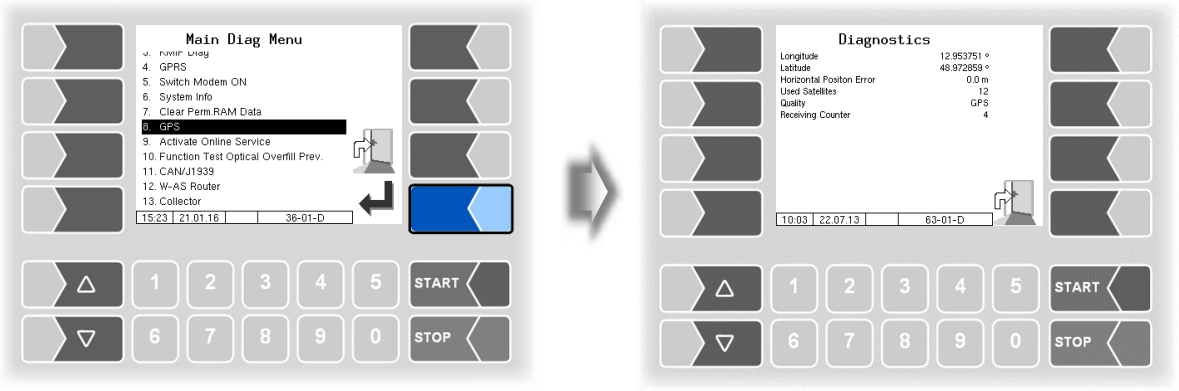


When confirming the security request the contents of the permanent RAM is deleted (data of the last delivery).

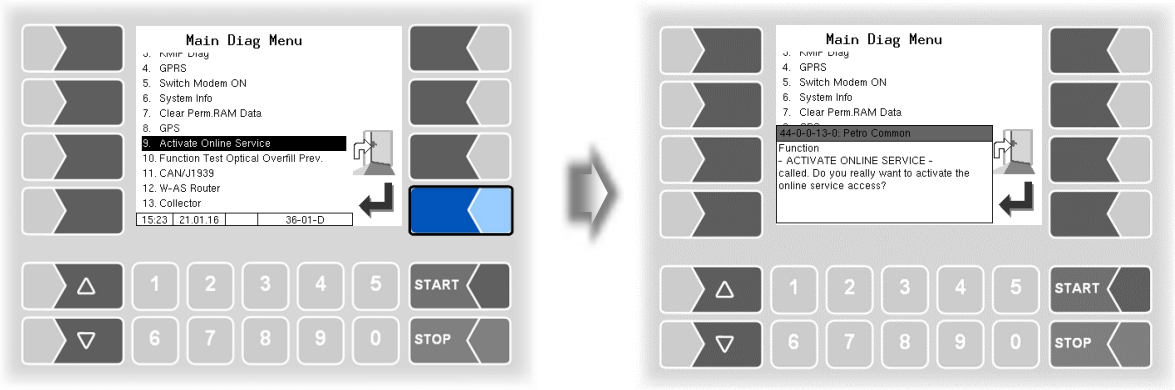
See also section 4.5.7

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).



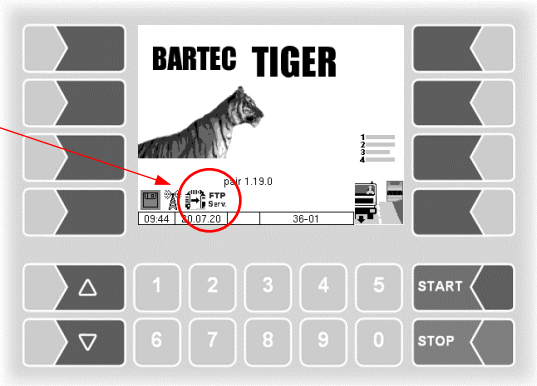
7.3.10 Activate Online Service



The online service can only be activated if the access has been configured (see section 4.2.7.2 / Online Service Function)

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).

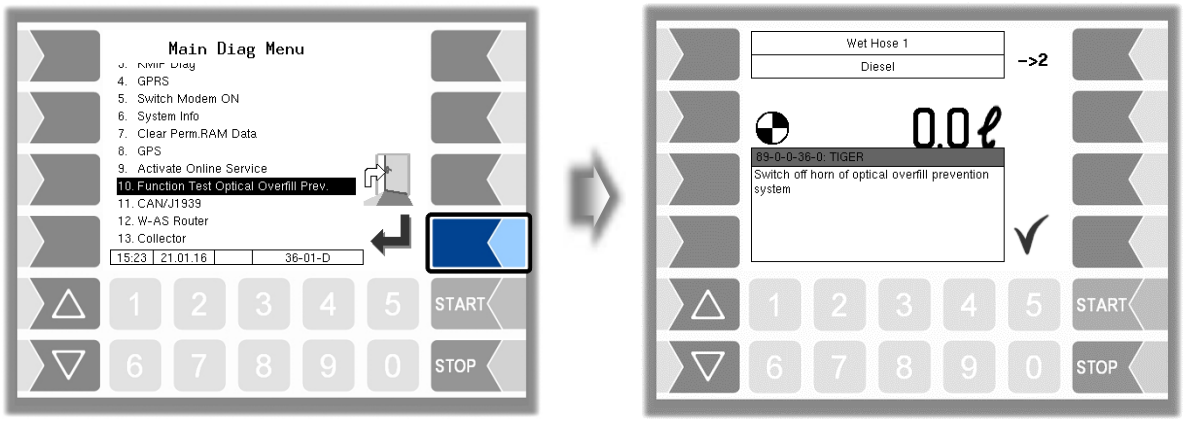
The active connection to the FTP server is displayed in the main screen.



7.3.11 Function Test Optical Overfill Prevention

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

- Open the diagnostics menu.
- Confirm the menu item „Function Test Optical Overfill Prev“.
  The delivery will be stopped and the horn is switched on.

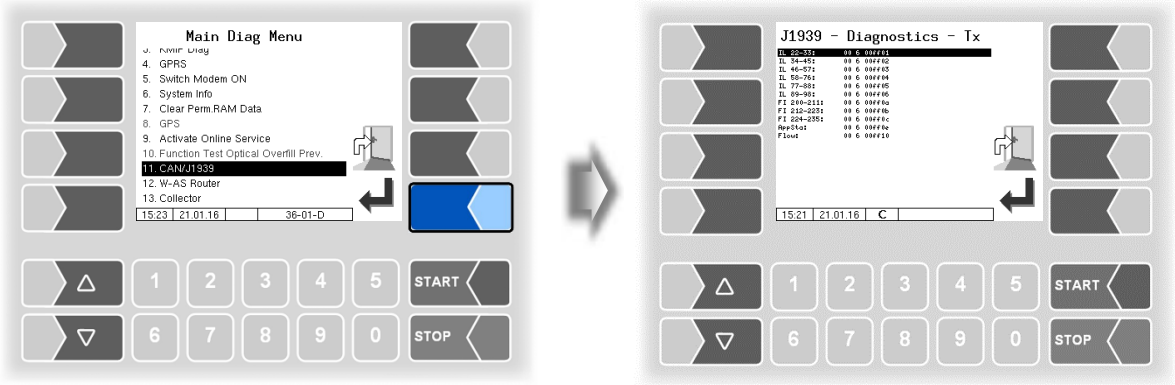


- Confirm the displayed message. The horn will be switched off and the delivery continues.

7.3.12 Diagnostics CAN/J1939

(Wireless overfill prevention / Radio overfill prevention)

Service function for diagnostics of the CAN / J1939 interface.

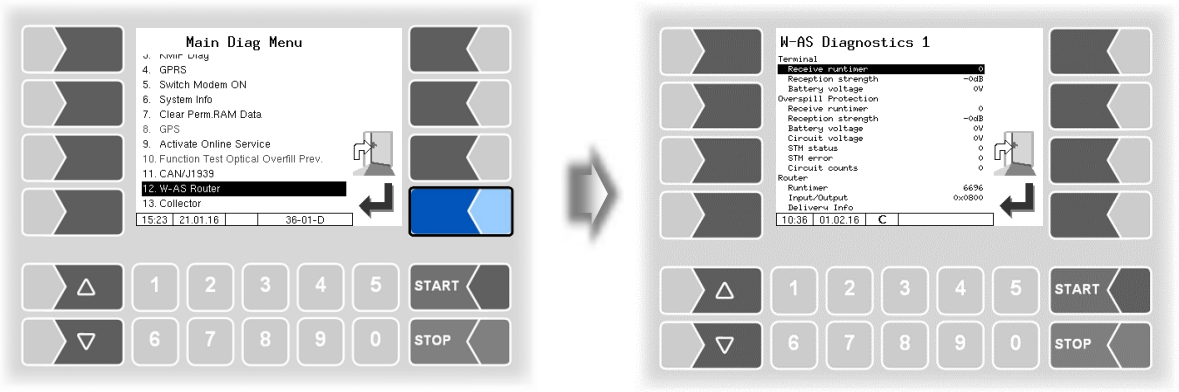


You can also run the interface diagnostics in the configuration menu of the CAN/J1939 interface (see section 4.2.6.17)

7.3.13 Diagnostics of the W-AS Router

(Wireless overfill prevention / Radio overfill prevention)

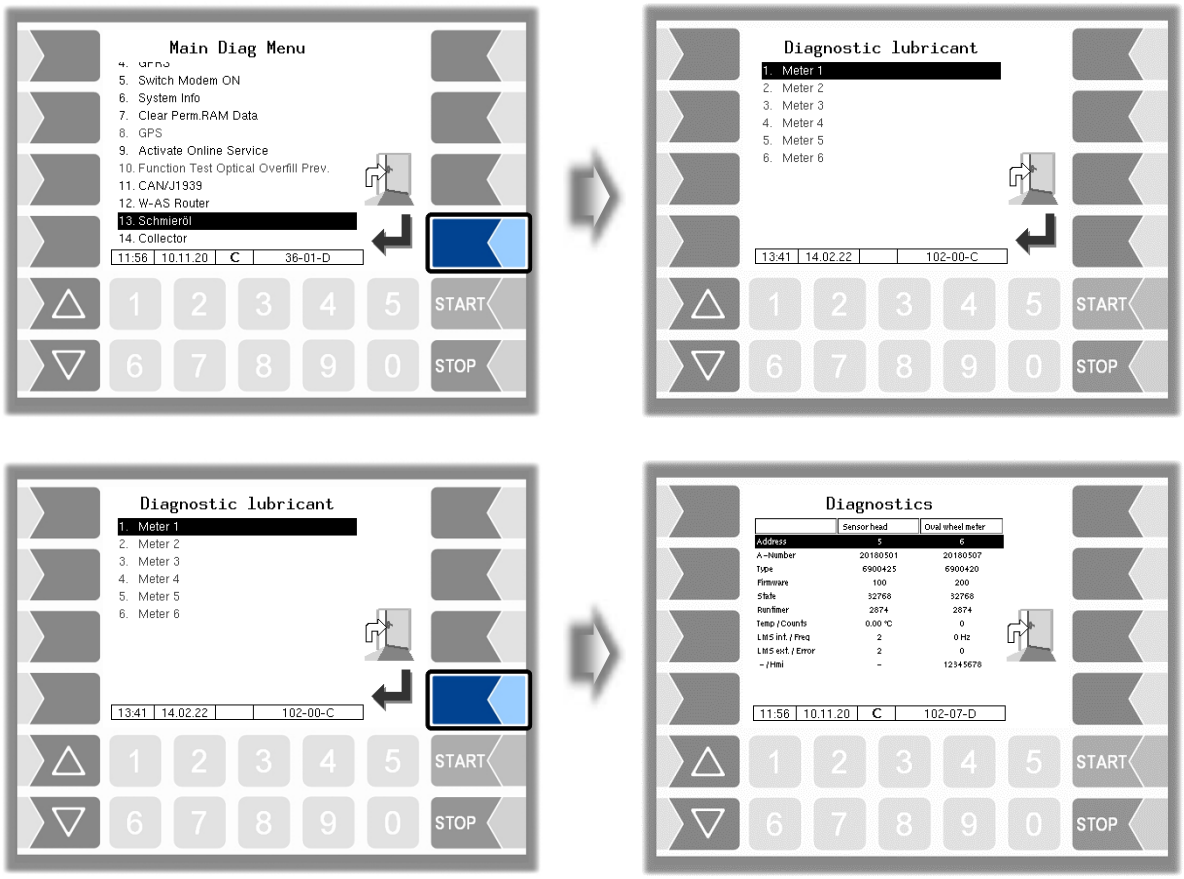
Service function for diagnostics of the W-AS router.



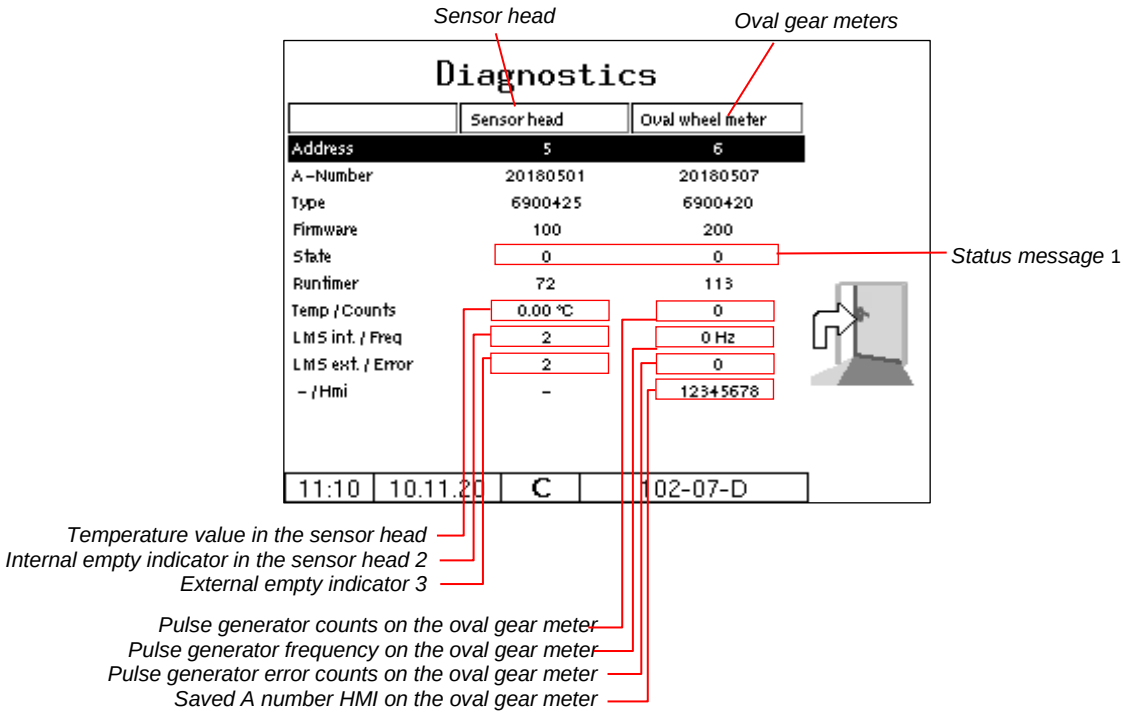
A description of the diagnostic functions can be found in the operating manual of the wireless overfill prevention.

7.3.14 Diagnostics of the lubricating oil meters (Lubricating oil)

You can open a diagnostic window for each configured meter.



The data of the oval-wheel flowmeter and the sensor head as well as the current data of the encoders are displayed in the diagnosis window.



You can also call up the diagnostics window in the configuration menu for the measuring points (see page 82).

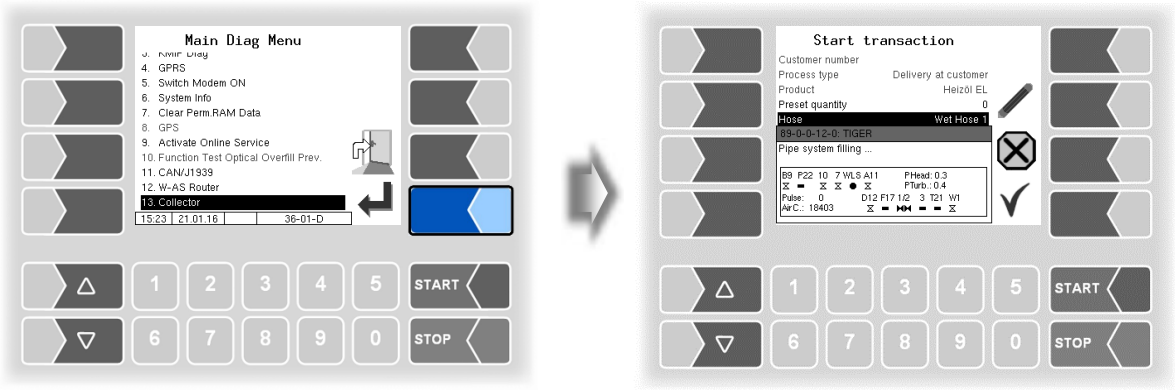
1 Status message/State

Sensor head	
0	everything's o.k.
1	Error when comparing the sent to the calculated checksum.
2	Temperature sensor error (no sensor connected or cable break) at the same time a temperature value of 300 ° C is transmitted.
4	Error LMS1 or LMS2 (which sensor delivers an error, see LMS int or LMS ext.).
Oval gear meter	
0	everything's o.k.
1	Error when comparing the sent to the calculated checksum.
2	Pulse counter error (error when evaluating the Hall elements).

2/3 Internal / external empty indicator

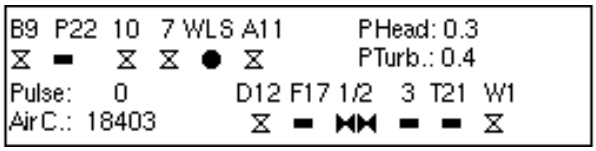
1	Empty indicator wetted
2	Empty indicator dry
3	Sensor defective or not connected (check sensor / cabling)

7.3.15 Diagnostics of the collector



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

Inverting of the outputs (e.g. A-valve A 11) is not considered!



Meaning of the symbols

⋈ = open

⧖ = closed

▬ = not configured

● = wetted

○ = not wetted

B9:	Control block bottom valves - venting	Pulse:	Previously counted pulses of the measuring section
P22:	Output Pump on	D12:	Shut-off valve residue removal + residue removal pump
10:	Compressed air - residue removal	F17:	Throttling below 50 l/min
7:	Venting, Start filling	1/2:	1 = D-Valve; 2 = Bypass
WLS:	Wetleg sensor in the sensor head	3:	Wetleg sensor delimit point
A 11:	A-Valve (Inlet measuring section)	T21:	Output for residue removal back to the compartment
PHead:	Pressure sensor in the sensor head of the measuring section	V1:	Full hose 1 (L = Dry hose)
PTurb:	Pressure sensor in the turbine *For Ex-measuring tube from series "A" no longer used.*	AirC:	Air-Counts of the Filling Level Sensor

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