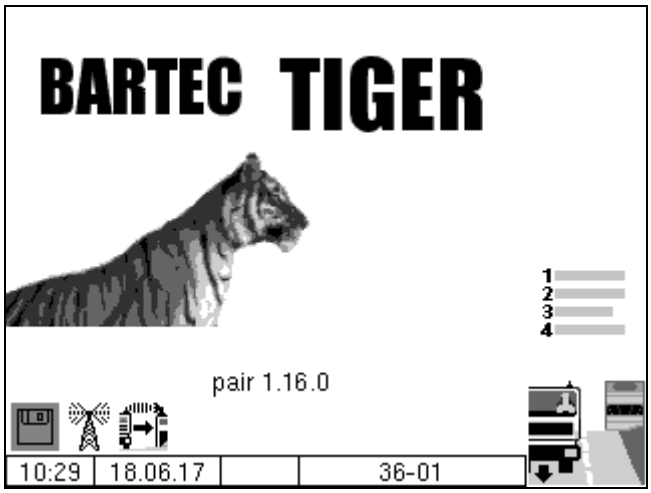
BARTEC BENKE

PETRO 3003

Measurement System TIGER (A1/A3)

Configuration



Software version pair 1.16.X

SAK 120815

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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.

Document: SAK 120815
Revision: Software version pair 1.16.X 17.01.2018

1 Safety precautions

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

Regulations and provisions lose none of their validity when the facility 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 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 cut-out).

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

EU Declaration of Conformity	We, BARTEC BENKE GmbH, Schulstrasse 30, D-94239 Gotteszell, hereby declare that this product is in accordance with the basic Requirements of the relevant EU directives. The EU Declaration of Conformity for this product is available at BARTEC BENKE GmbH, Schulstraße 30, D-94239 Gotteszell, info@bartec-benke.de.

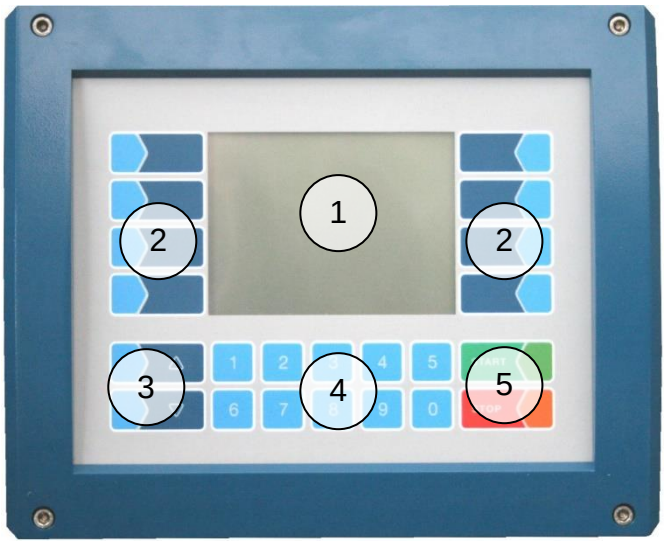
2 Basics

The PETRO 3003 system can be used to monitor, record and control all operations and operating processes for loading and unloading petroleum vehicles.
The version TIGER 3003 is used to control deliveries of hazard classes A1 and A3 products with and without additivation as well as the collection of the associated data.

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

2.1 Operating unit

The operating unit acts as the central control and information unit for the entire system.
The HMI is used as the control unit for vehicles with “A3-TIGER” and the HMI for vehicles with “Ex-TIGER”.
The operation is the same for both devices.



Compact Controller (A3)

HMI (A1)

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

2.1.1 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.

2.1.2 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.

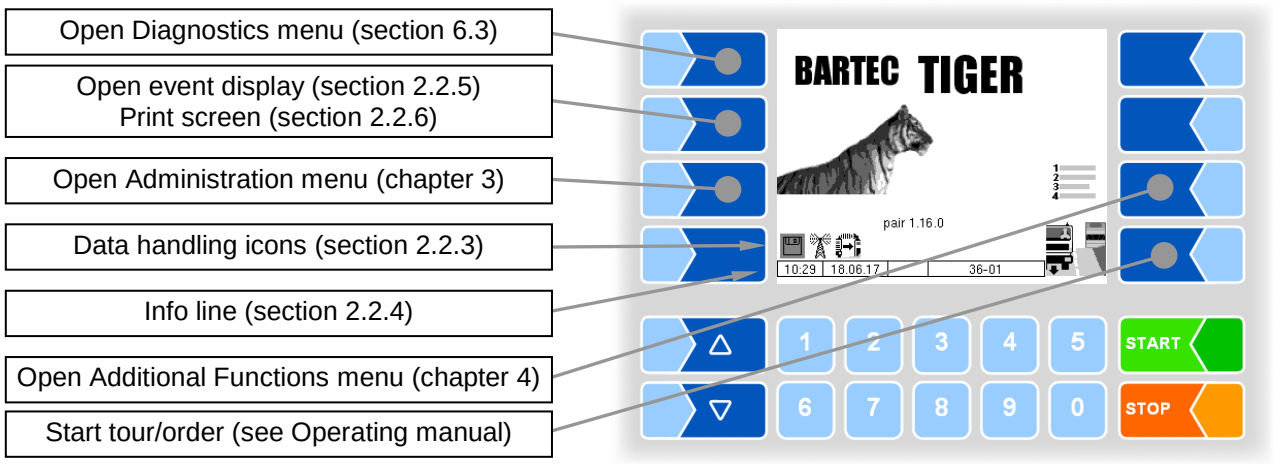
2.2 Operating concept

2.2.1 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.

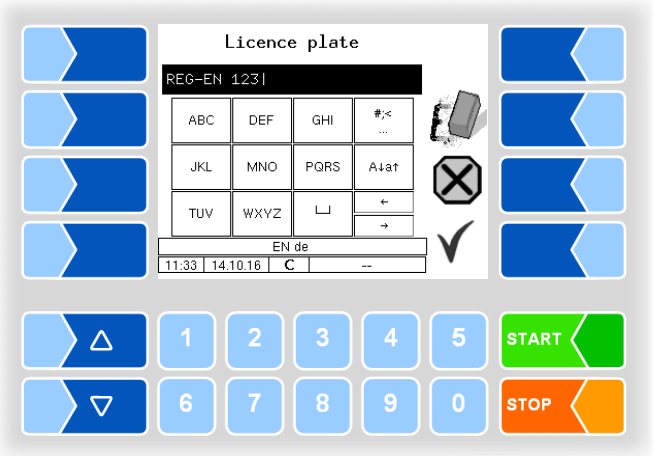
An overview of the structure of the configuration menu together with instructions on how to access the appropriate password level in each particular case can be found at page 117 and following.

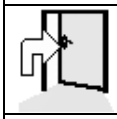
When the system is started up, the main menu appears on the display.
You can access the various displays or operating modes using the softkeys to the left and right of the display.



2.2.2 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	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.

Symbol	Meaning	Effect
	Start residue removing	If residue removing is not started automatically you can start it manually.
	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)*
	Bypass	SAFE components are bypassed. *(when using dry hose delivery with Ex-TIGER)*

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

2.2.3 Data handling icons

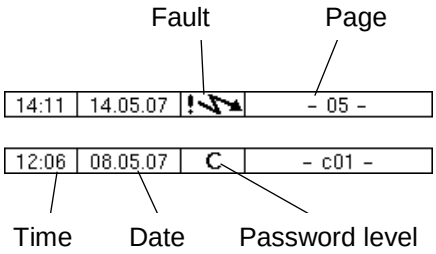
The following icons are used to monitor the data handling and are displayed on the display above the info line.

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

2.2.4 Info line

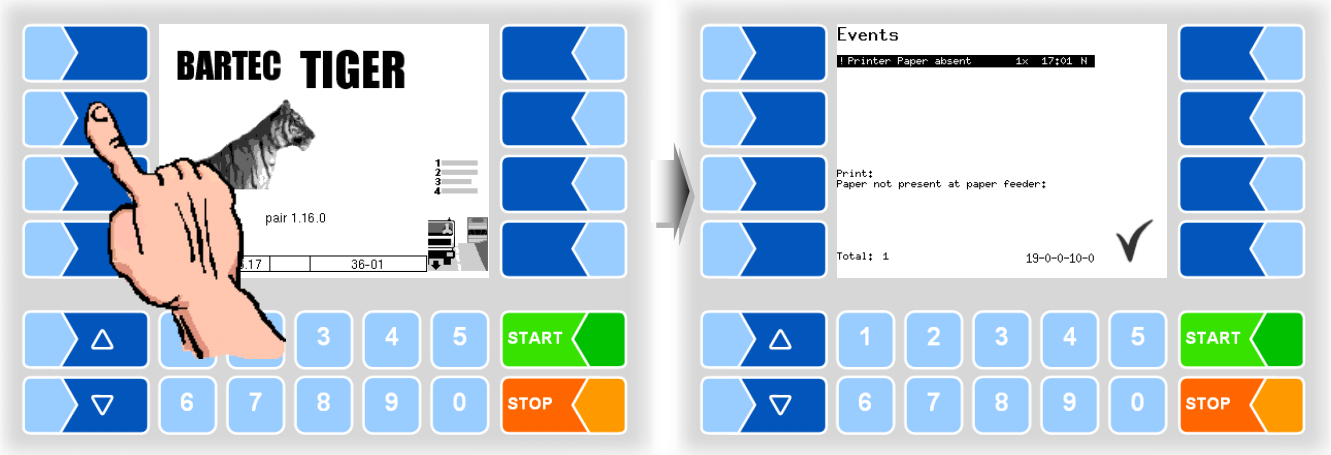
The info line shows the date and time, information about the operating status and the software page number.

Examples



2.2.5 Event display

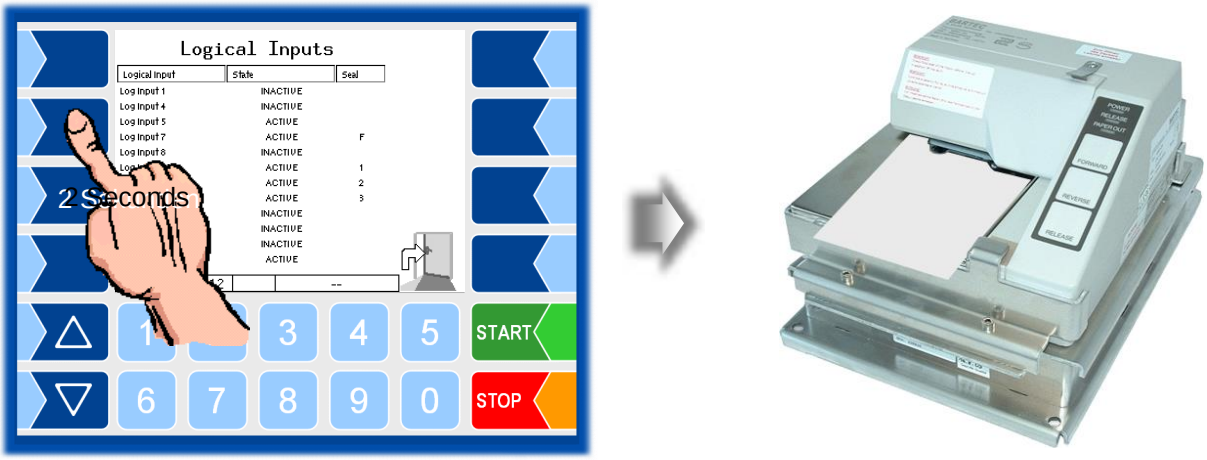
Important error messages are displayed directly in the display if the calibration switch is closed.
You can open the event display with the 2nd softkey left of the display. Here are all operating states and faults displayed.
You use the softkey ✓ to acknowledge messages that are displayed.
The “Event 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.



2.2.6 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 another or no printer is installed, a screenshot will be created. You can access the screenshot via the "3003 Service Tool".

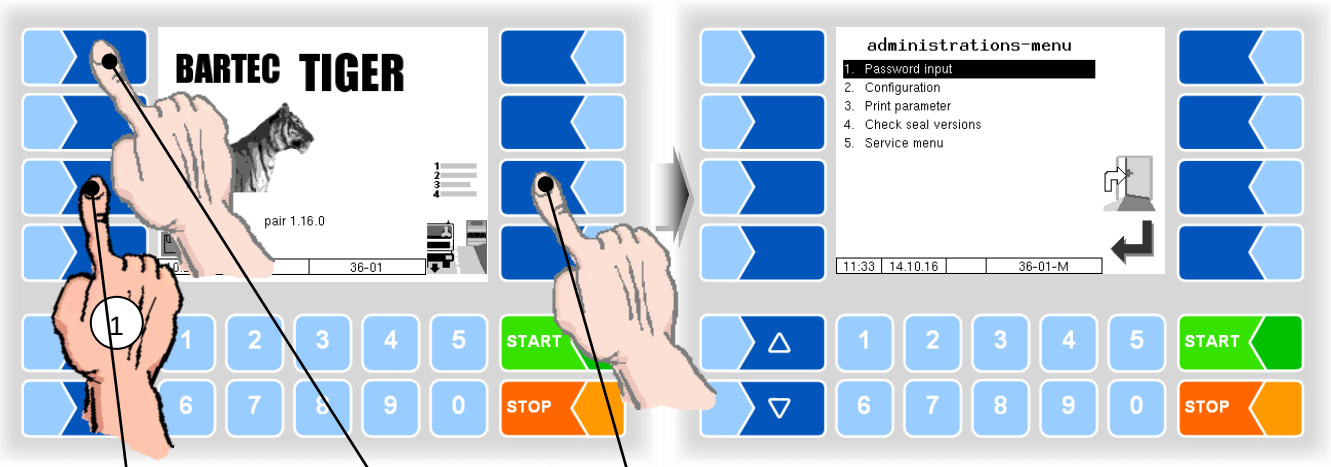
There is a separate manual for the 3003-Service Tool.



2.3 Operating the menus

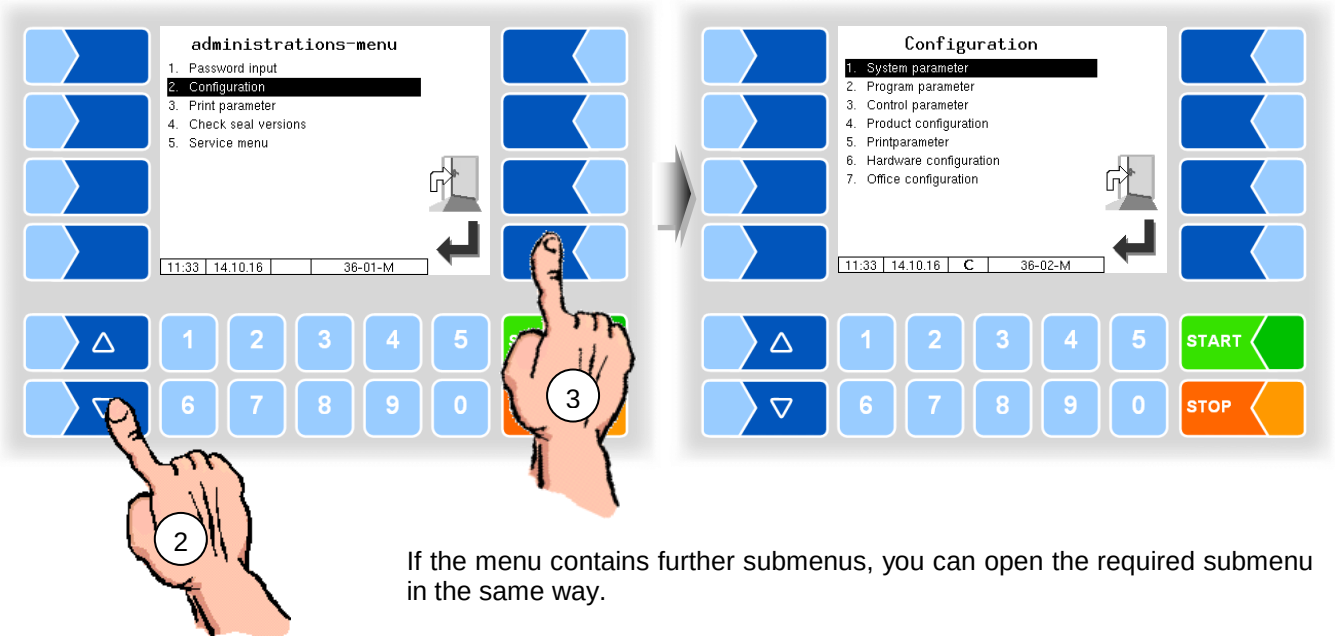
2.3.1 Opening a menu

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” softkey to open the menu.

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

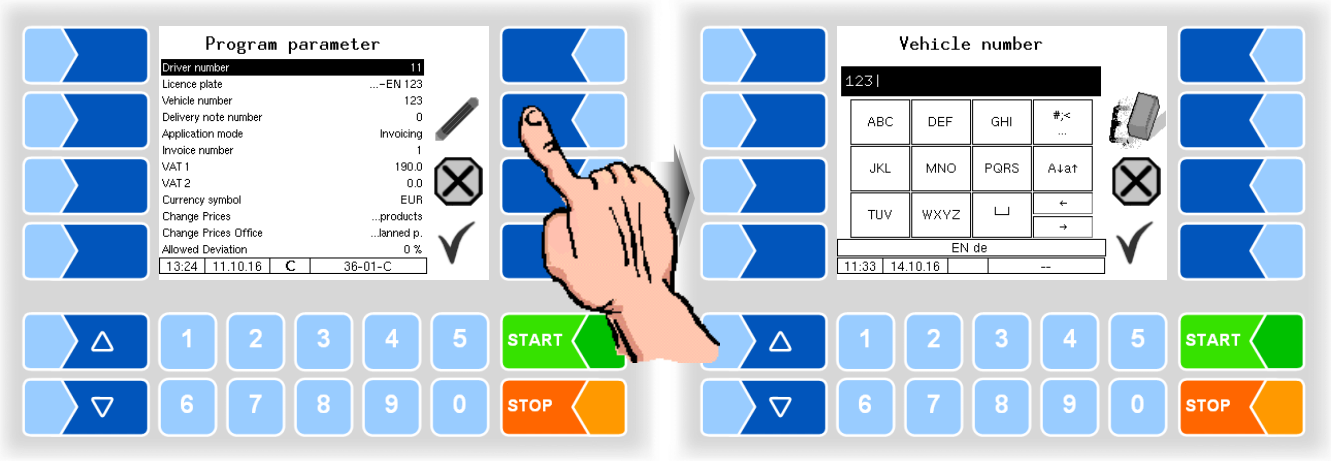


If the menu contains further submenus, you can open the required submenu in the same way.

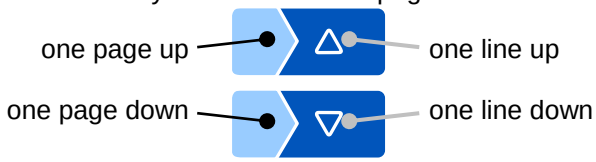
2.3.2 Editing parameters

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 3.1).

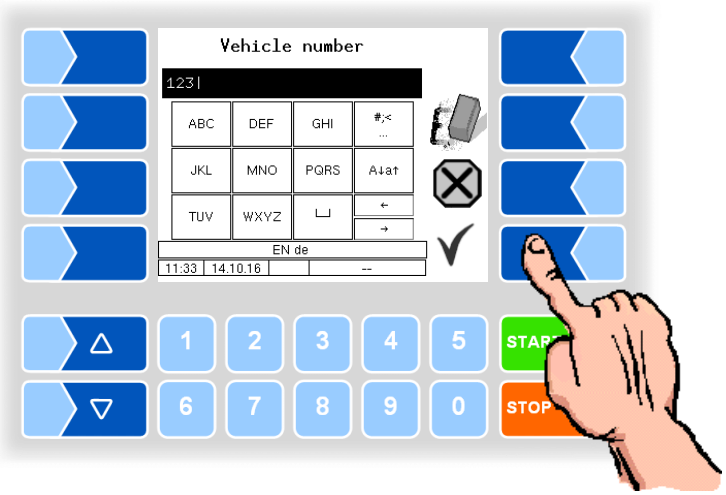


If not all entries in menus or lists can be displayed in the screen, you can use the selection keys to scroll lines or pages.



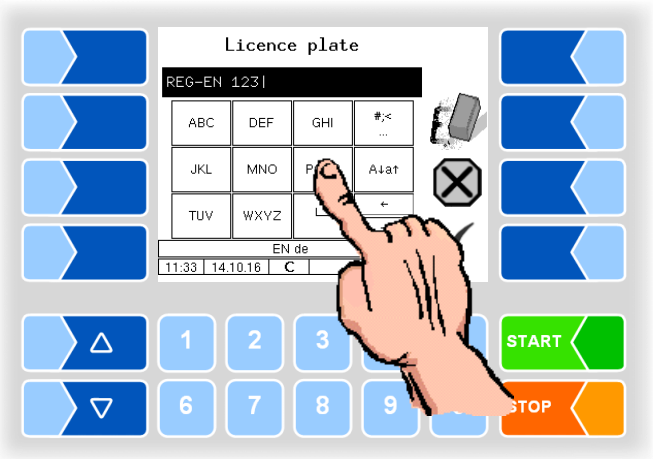
Numerical entries

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, you can use the [+/-] 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 by pressing the key the appropriate number of times in quick succession.
You can enter a blank with the [␣] key.

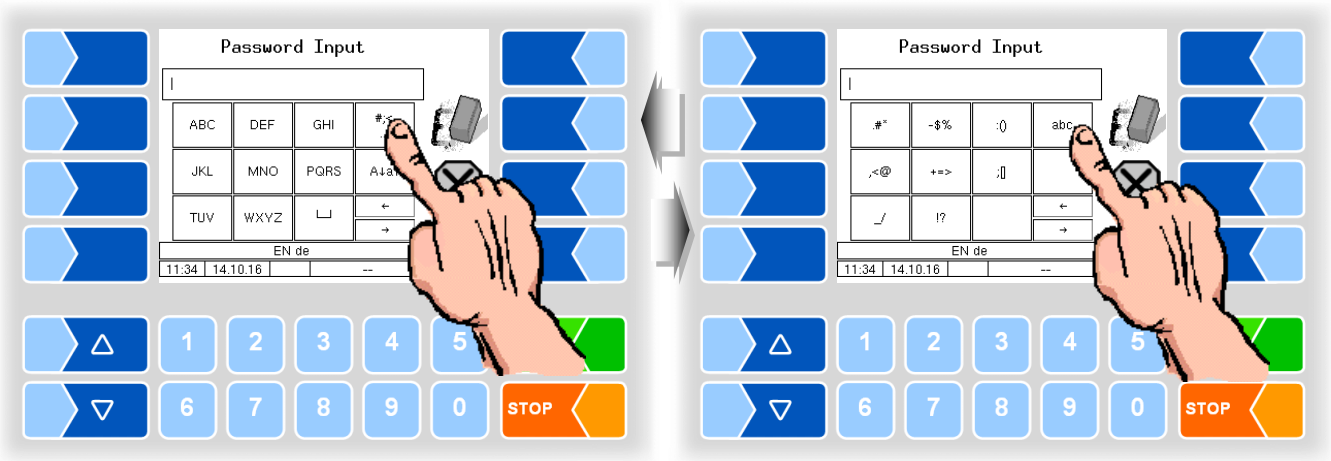


Shift key

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

Special characters

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

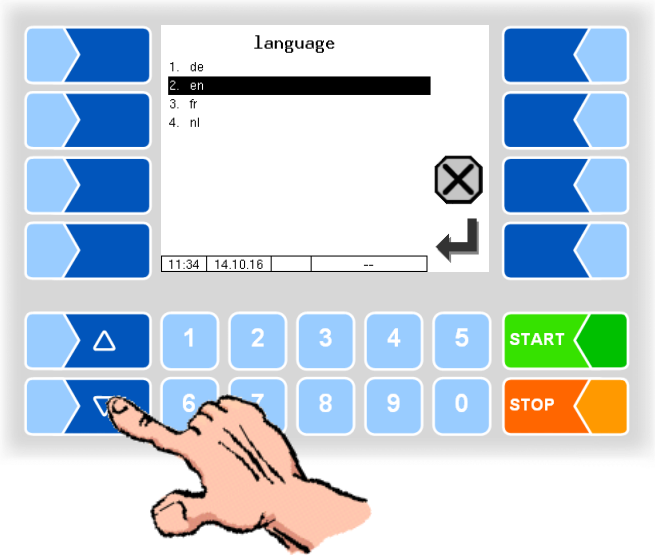


Once you have finished making your entry, touch the “Confirm” softkey.

Selection lists

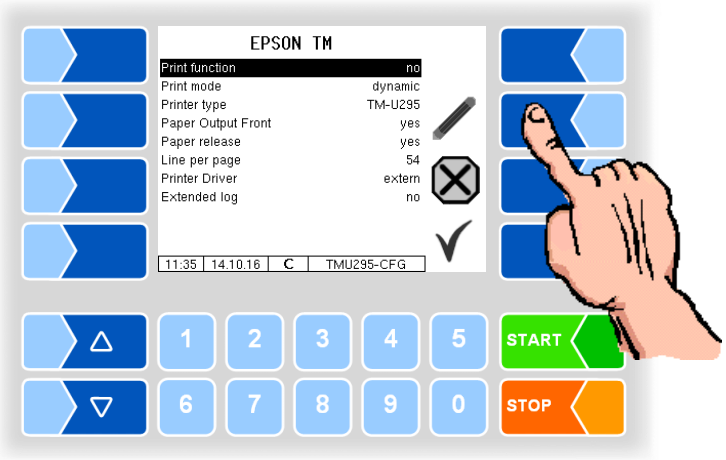
Selection lists are available for certain parameter settings.
Select the required setting using the selection keys [▽] and [△] .
The selected setting is highlighted with a black bar.
Confirm your selection using the “Confirm” softkey.

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



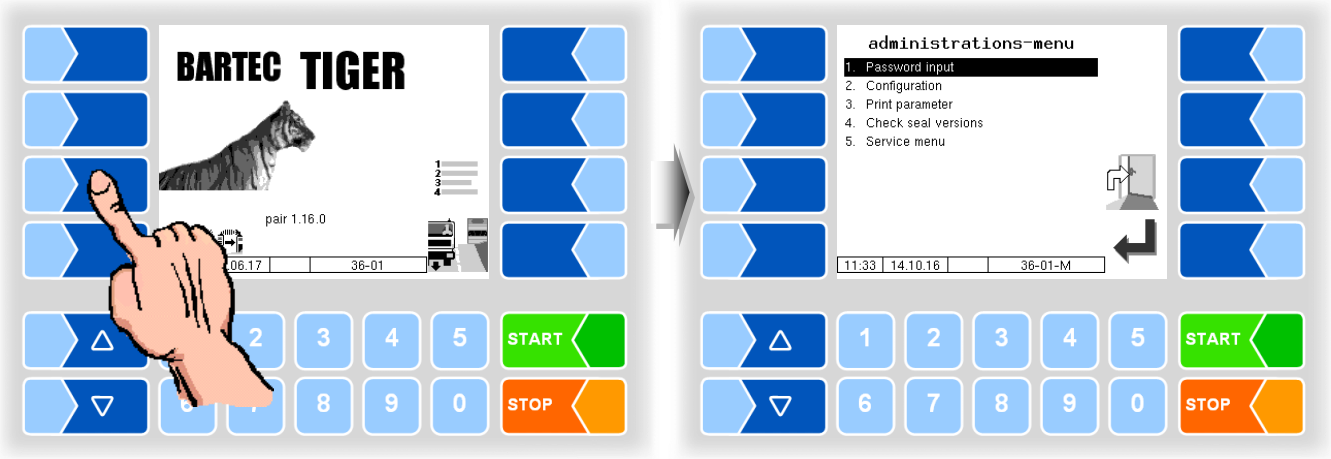
Alternatives

In the case of parameters for which only two alternative settings are possible, e.g. yes/no or on/off, the settings are switched when you touch the “Edit” softkey or a numerical key.



3 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.



3.1 Password

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 flashing 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

3.1.1 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**. 2017, **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 21). 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”.

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.

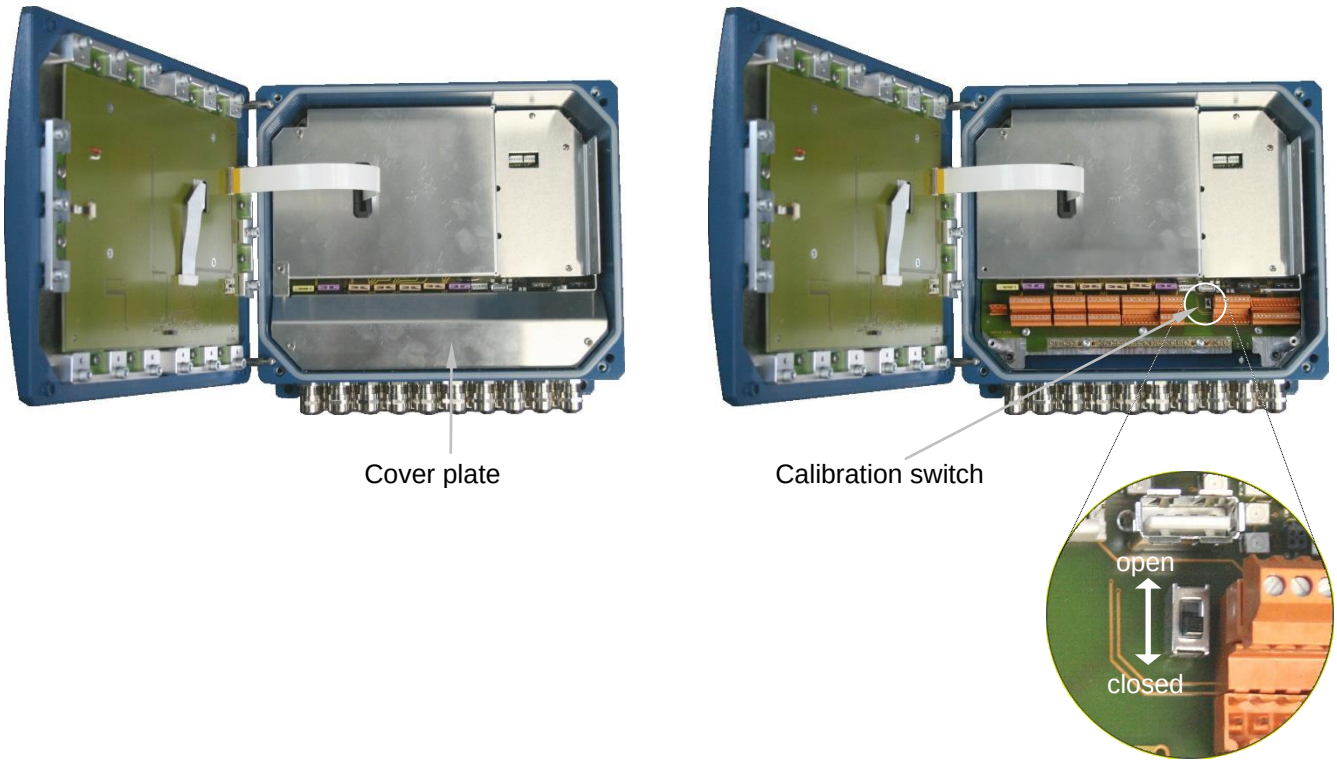
Calibration switch

Opening the calibration switch allows you to access all parameters, including those subject to statutory calibration.
The calibration switch is on the board in the control unit.

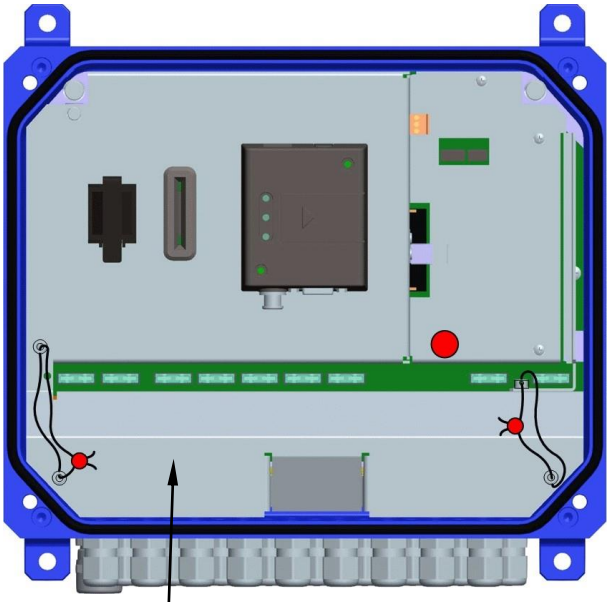
If calibration data is to be changed, the calibration switch must be opened before starting the system!
Whenever the calibration switch is opened, re-calibration by an official office, for which a charge will be made, is compulsory!

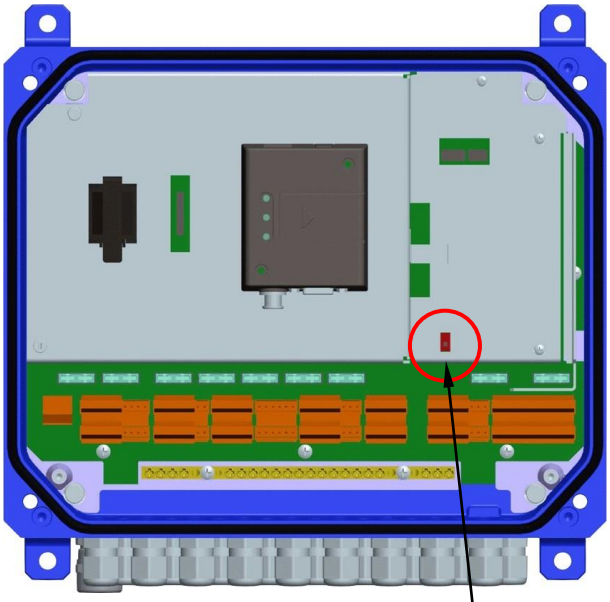
Compact Controller
The calibration switch is located on the board in the compact controller.

- 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.



New design



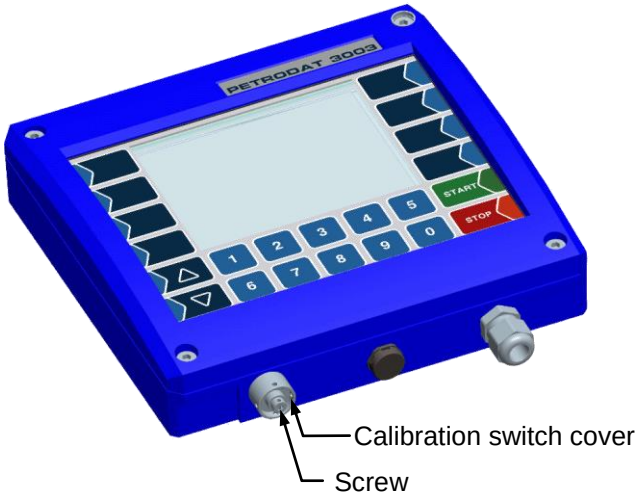


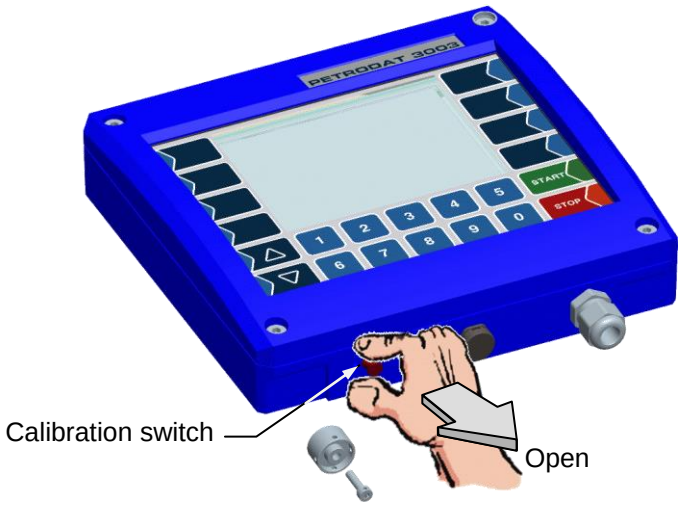
Calibration switch open:
Access to metrologically relevant parameters possible.

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

HMI

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

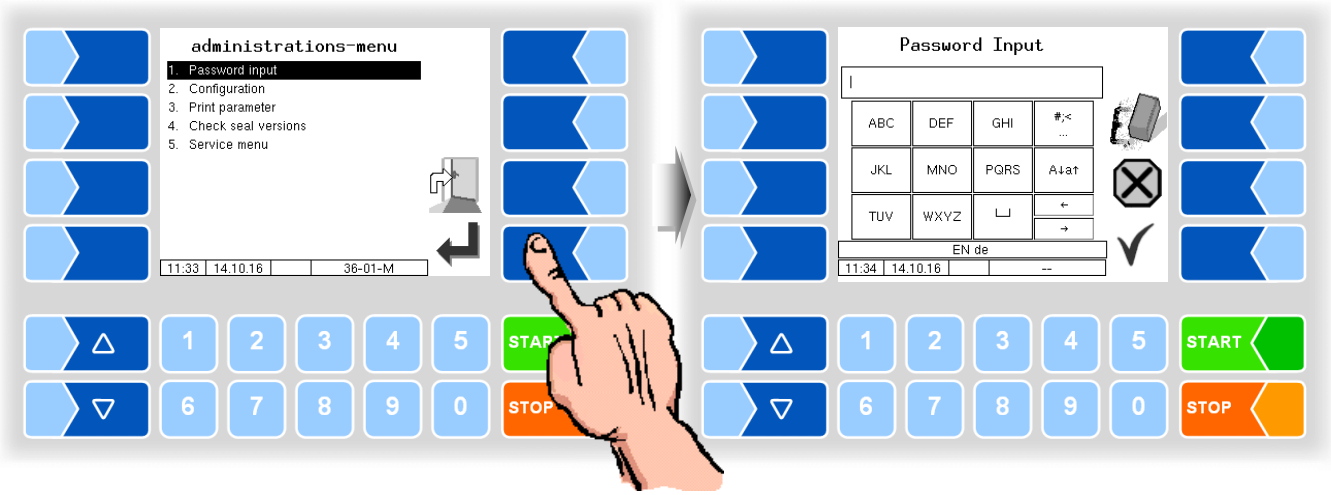




3.1.2 Entering the password

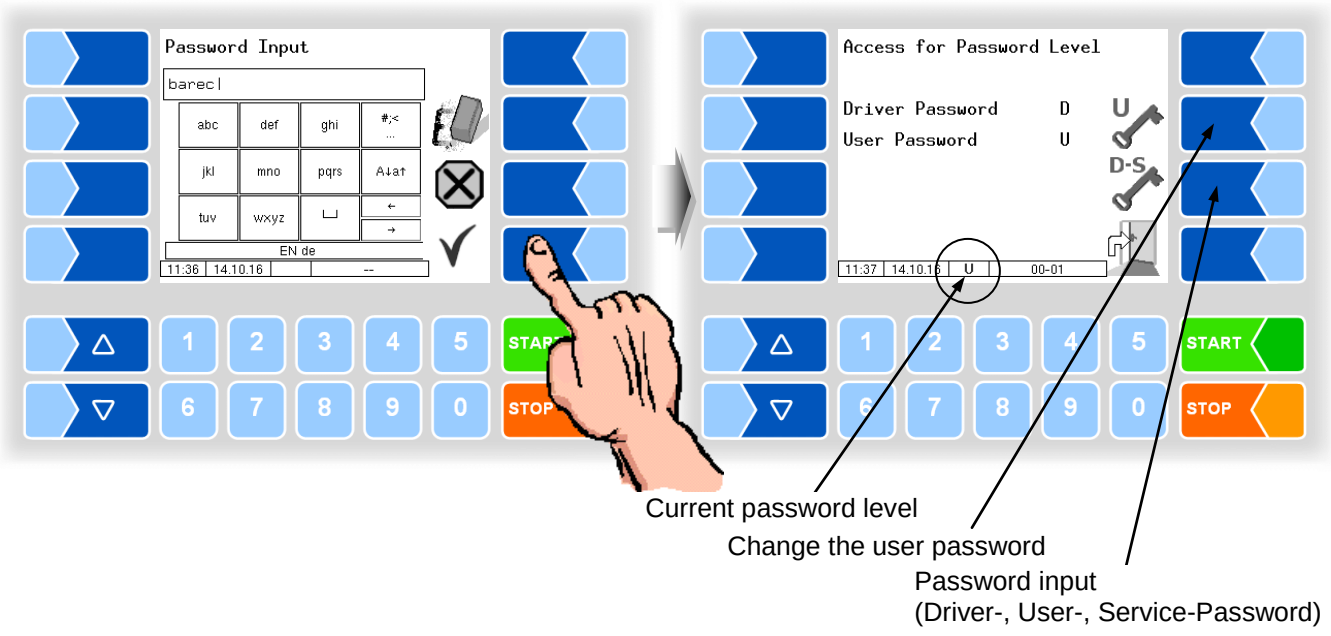
- Confirm the „Password Input“ item from the Administration menu.

You can enter the password in the following window (Alphanumerical entries see page 14).



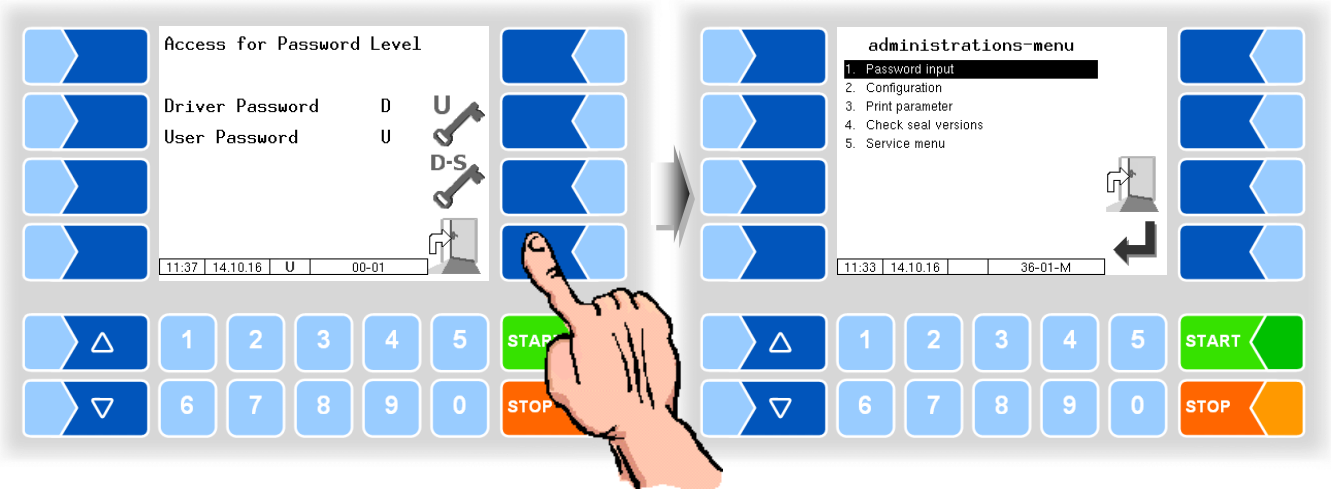
- Once you have entered the full password, touch the “Confirm” softkey.

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 calibration switch (S, U, D)

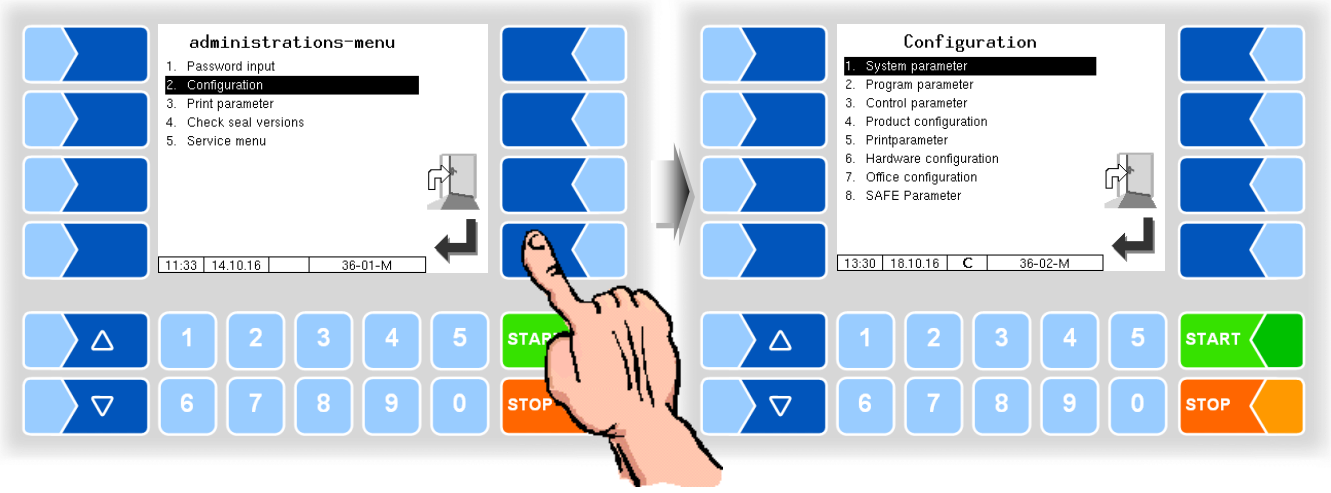


After you have entered the password for level 2 or a higher level, the softkey for changing the user password is activated. You can enter a new user password after touching this softkey.
The user password can be composed of letters or numbers.

- Touch the softkey to return to the menu selection.



3.2 Configuration

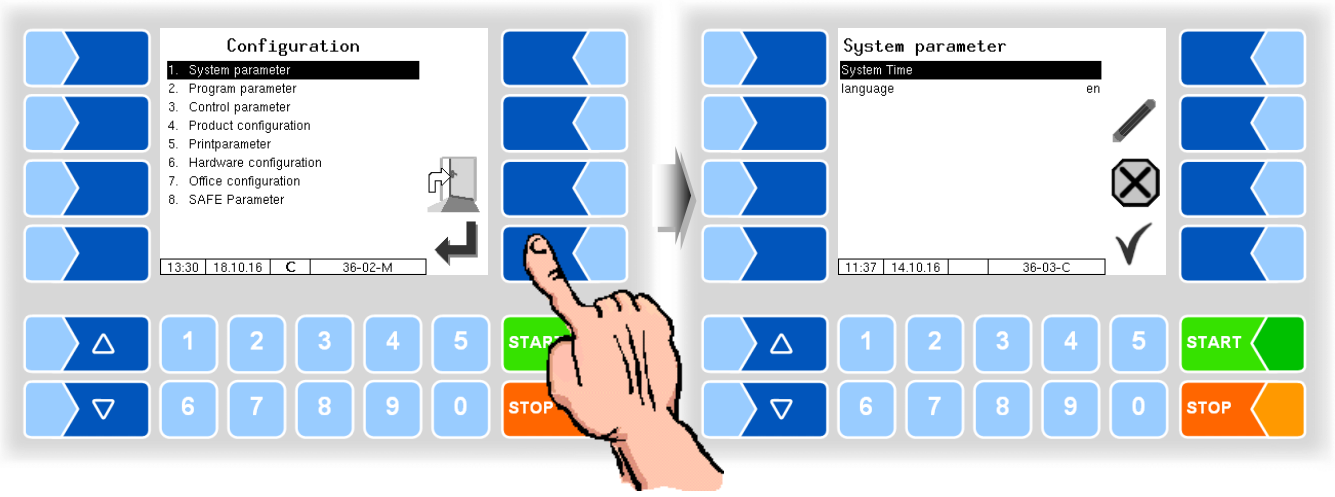


In the Configuration menus, the software for the system is customised to the respective operating conditions and the installed hardware by entering various parameters.

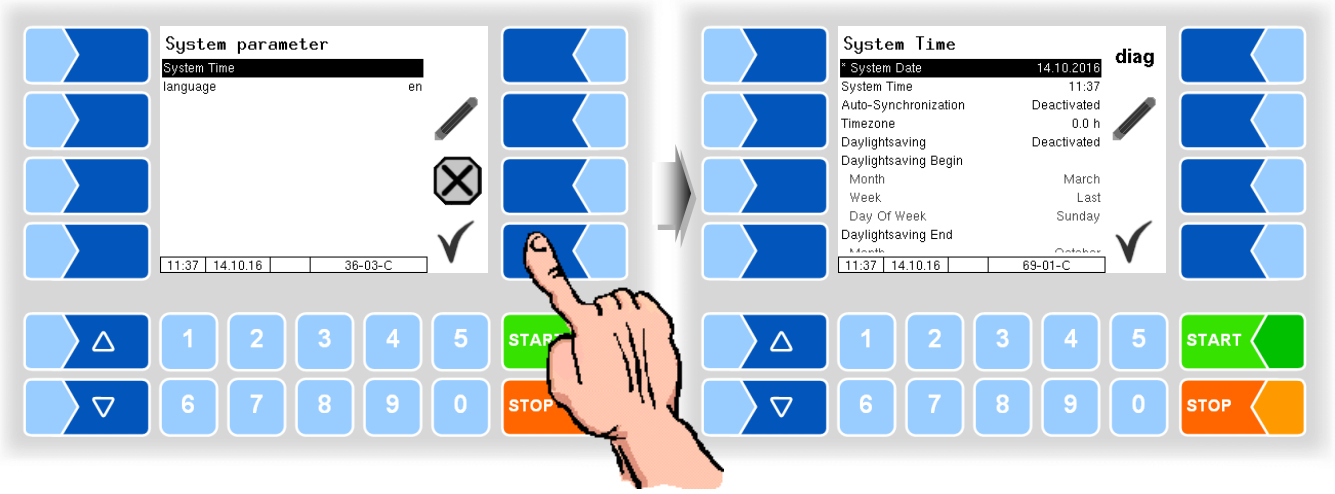
Parameters that are subject to statutory calibration are marked in the display with an asterisk prefixed.

An overview of the structure of the configuration menu can be found in section 6.1 of the Appendix.
The password level, which allows access, is also noted there.

3.2.1 System parameter



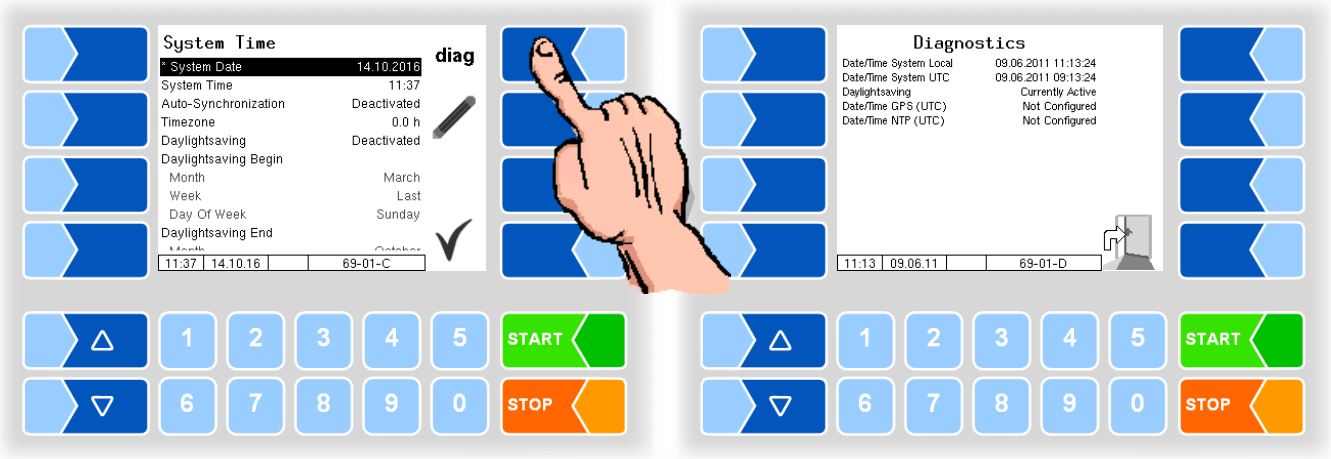
3.2.1.1 System Time



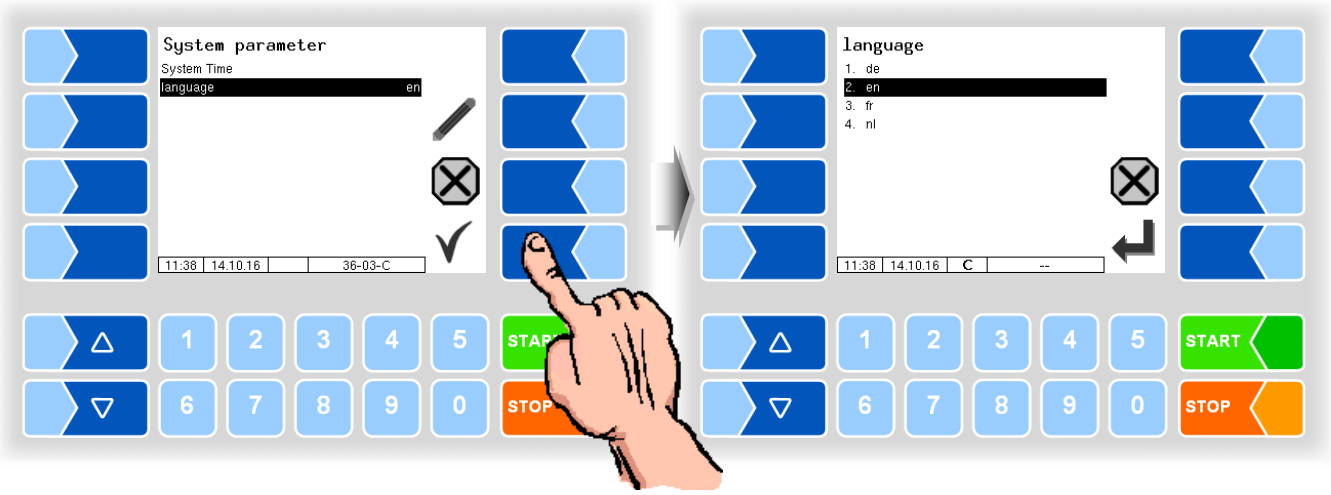
System Time			
	C	*System Date	Change the date setting
	U	System Time	Change the time setting
		Auto-Synchronisation	Activate/deactivate the automatic clock synchronisation via GPS or GPRS.
		Timezone	Set the time zone by entering the deviation from UTC
		Daylightsaving	Activate/deactivate the summertime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

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

Diagnostics



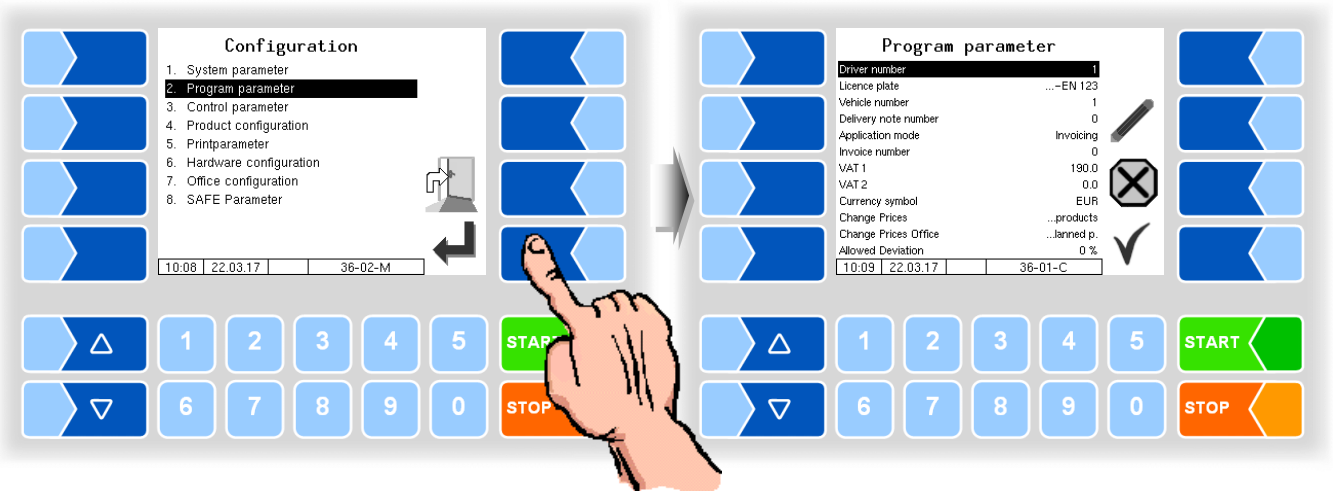
3.2.1.2 Language



Language			
	D	Language	Select the display language de (German) en (English) fr (French) nl (dutch)

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

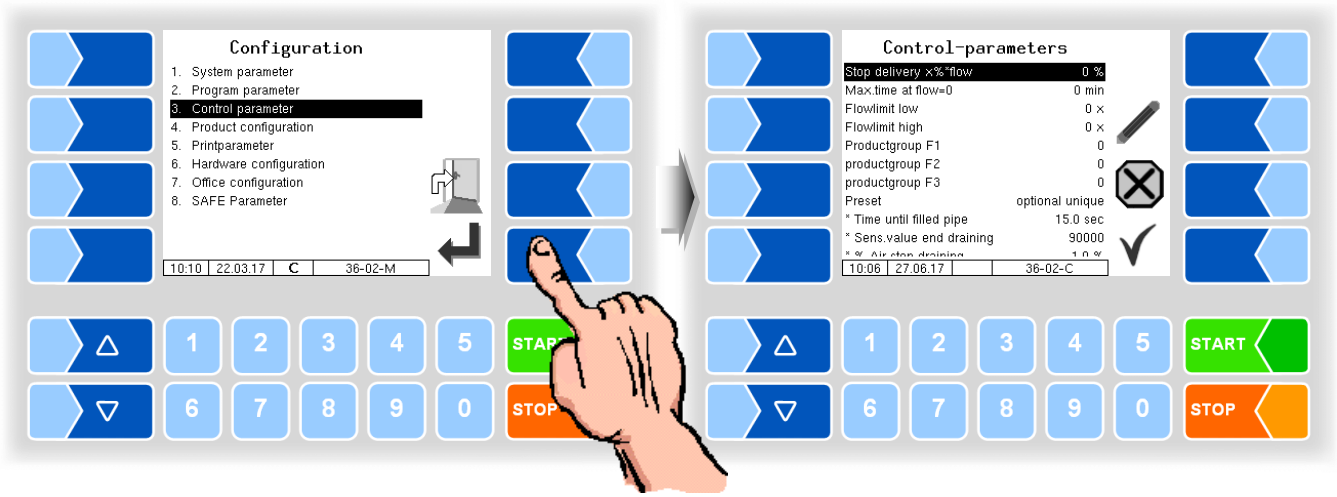
3.2.2 Program parameter



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	
	Application mode	Basic version (without invoicing) Invoicing (with invoicing)	
	Invoice number	initial number of invoices.	
	VAT 1	Amount of VAT 1	Which of the two VAT rates applies to a product is defined in the product configuration (see section 3.2.4.2).
	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).	

		Operation Mode	TIGER: Installation of the pump at the lowest point without pump control Semitrailer Tiger: Installation of the pump with pump control for a controlled filling start process COMP: Measuring Interface Mif for quantity registration, the start screen shows „COMP“.	
	U	User	BARTEC HK LF	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.
		Add-On	on: This parameter activates special functions and is only to be activated in consultation with the service personnel off	

3.2.3 Control Parameter

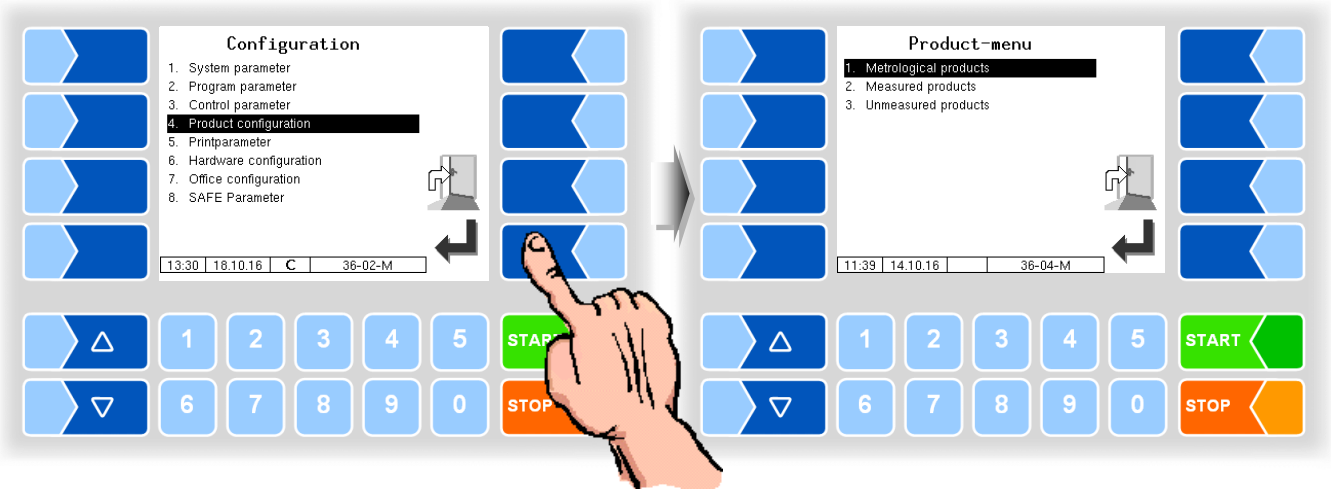


Control Parameter		*Default values or recommended values are in brackets.*	
	U	Stop Delivery x%^{x}Flow	The delivery stops at x% of the output flow before reaching the preset quantity (compensation of stop delay).
		Max. time at flow=0	The delivery is automatically finished when expiring that time without 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.

	C	Time until filled pipe		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		final criterion for residue removal FLS*-value “empty pipe” (*4000, Ex:90000*)
		% Air stop draining		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		Opening time of the valve hose during pumping from FLS to ESS. *(0.5 seconds)*
		Close Time Vx		Delay time for the repeated opening of the hose valve when pumping from FLS to the ESS. *(12 seconds)*
		Draining final		Max. time that can elapse after reaching the value “Sens. value end draining“ *(99 seconds)*. Residue removal will stop if ESS doesn´t detect „empty“.
		Draining flow		Minimum flow when removing residuals. When reaching that value will be switched to the small removal pump.
		Remaining volume draining		Uncountable amount remaining in the measuring pipe between the meter turbine and empty signal sensor. *(Default: 3 liters)*
		Total volume draining		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		The empty signal sensor must be at least the configured time be wetted, that the filling end is detected. *(Default: 10 seconds)*
				In variant “*Semitrailer Tiger“ → on*: also for controlling the cycle time for filling start gravity / pumped
		Minimum filling pressure		Set this parameter only in consultation with the service personnel. *(Defaultt: 0,0)*
		Air on Delay		Delay time for bleeding (sec). This prevents that bleeding is triggered by any air bubbles in the product. *(2 seconds)*
		Air counts start deairing		The parameter sets the threshold for detecting the empty state by the FLS. *(4000, Ex: 90000)*
		Rest press. m-tube draining		After residue removal with compressed air is bleeded until this pressure is undershot. *(0,3 bar)*
		Pressure during draining		Pressure during residue removal. *(0.8 bar)*
		End criterion draining		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)*
		Flow-Control		If the flow decreases by the configured value [%], the filling start process is restarted. *(Default value: 0 for centrifugal pump and rear cabinet: 50%)*
		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 mode COMP only*). (*Default: 10 seconds*)
		only if „Add-On“ is set to :on	MID: Stop del. x%^x^flow	For volume measurement with MID: The delivery stops at x% of the output flow before reaching the preset quantity (compensation of stop delay).
			MID: Flushing volume	Flushing volume required for a product change (*Default: 100 liters*).
			MID: Filling time wet	The empty signal sensor must be at least the configured time be wetted, that the filling end is detected. *(Default: 10 seconds)*

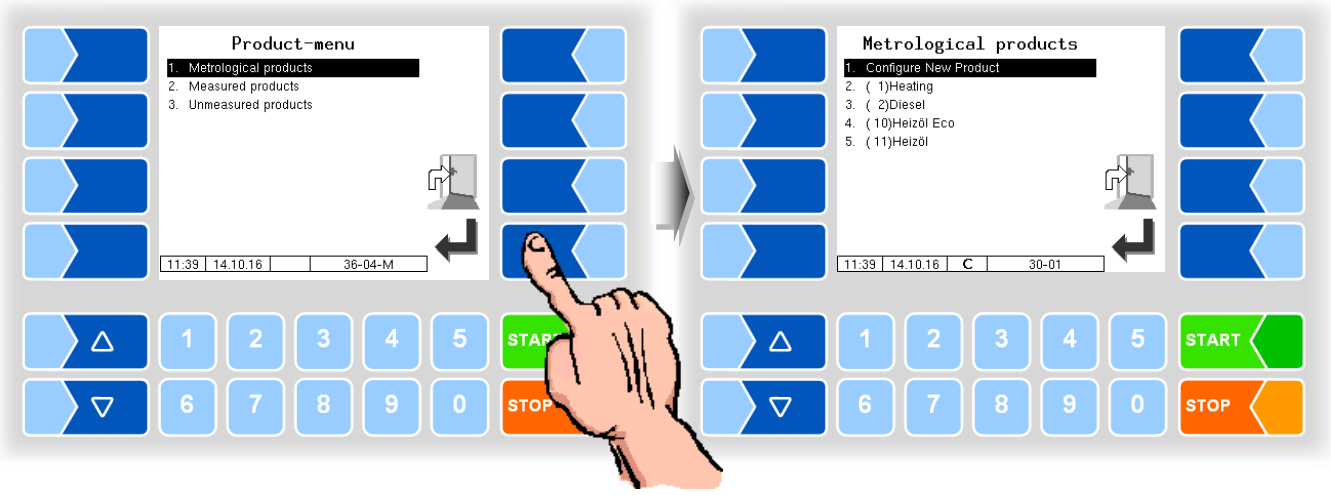
* *FLS: Filling Level Sensor, ESS: Empty Signal Sensor*

3.2.4 Product Configuration

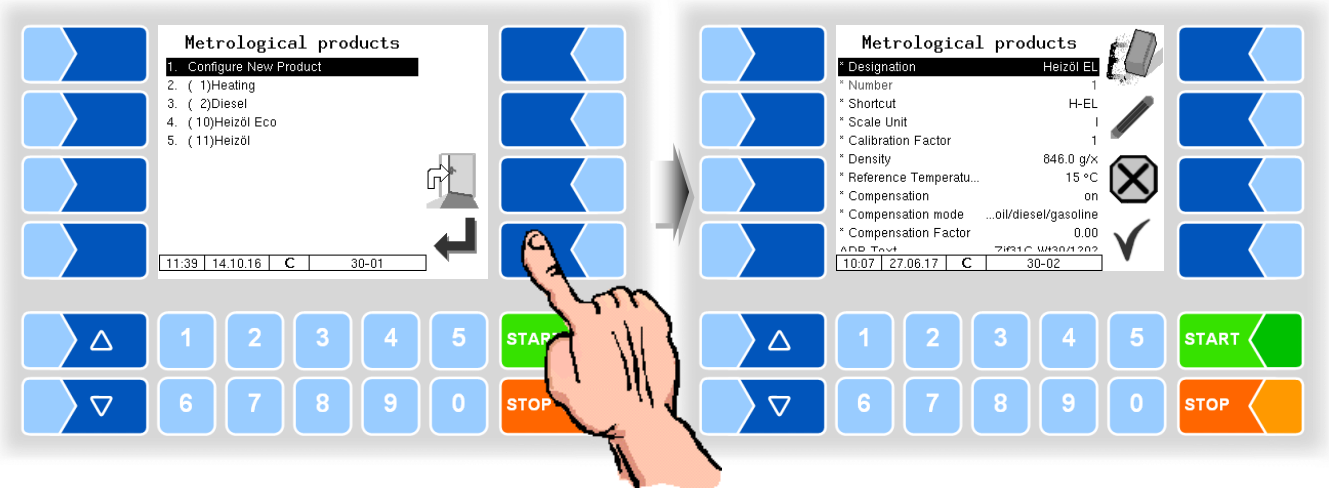


3.2.4.1 Metrological Products

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 3.2.4.2).



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)	
	Number	Product number	Number Shortcut
	Shortcut	Short product name	
	Scale Unit	Unit for the measured quantity	
	Calibration factor	Calibration factor that is valid for the product. The calibration factors are defined in the configuration of the measurement interface (see section 3.2.6.1).	
	Density	Average product density at 15°C	
	Reference Temperature	Temperature to which the quantity refers	
	Compensation	Activate/deactivate temperature compensation	
	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)	
	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.	
	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	
	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: MIF or TIGER 2: MID

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

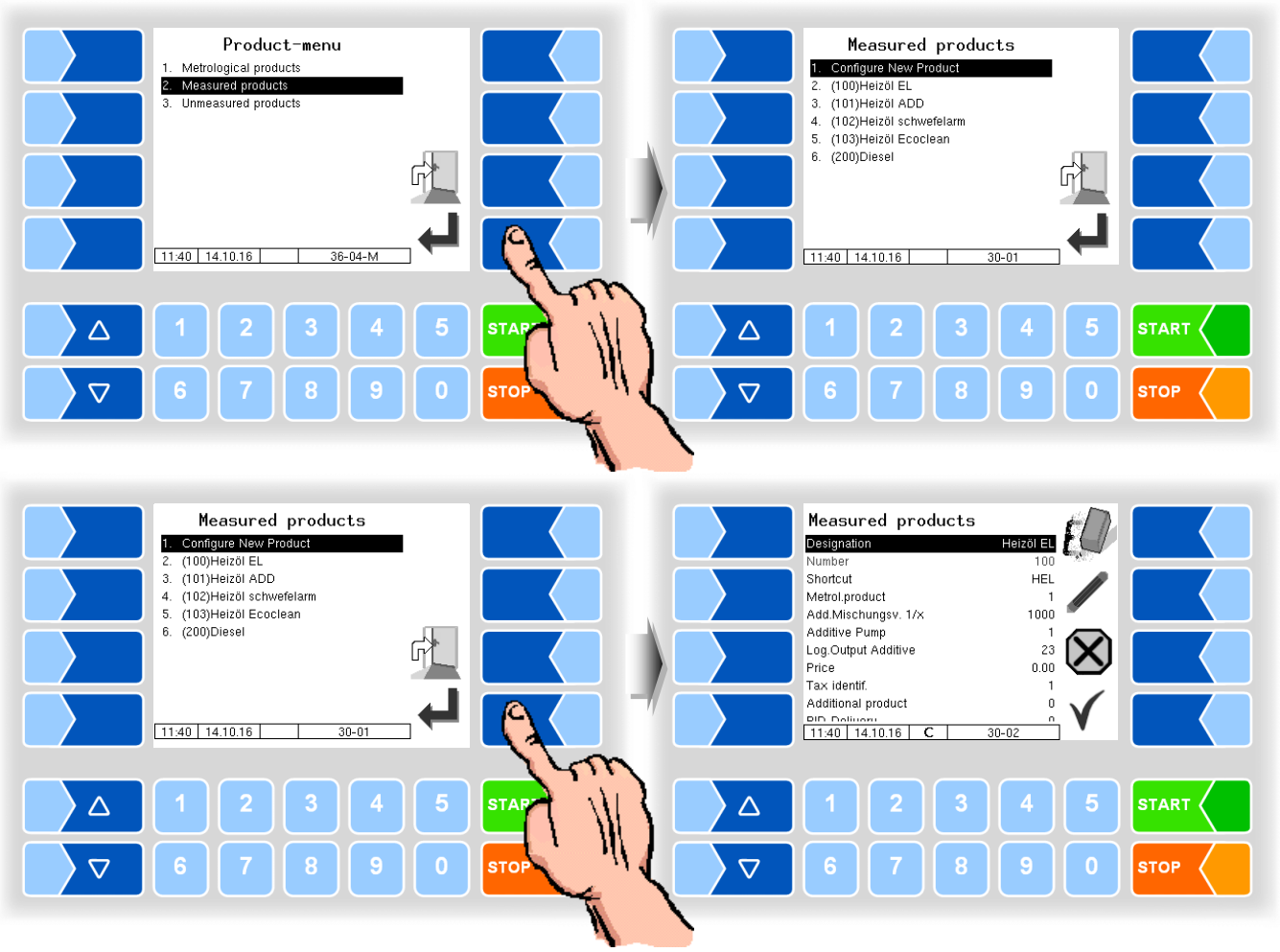
(Status: July 2016)

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 designation and the assignment of the counter type 2 (MID) are important.

3.2.4.2 Measured Products

On the basis of already configured metrological products (see section 3.2.4.1), 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			
		Designation	Product designation (max. 30 characters)
		Number	Product number
		Shortcut	Short product name
		Metrol. product	Base product (metrological product no.)
		Add. Mischungsv. 1/x	Mixing ratio, X=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 3.2.6.10*
	U	Log. Output Additive	logical output for tank changeover to additive (23…26) (see page 47)
		Price	Product price per 100 Liters
		Tax identif.	Configured VAT rate applying to this product (1 or 2, see section 3.2.2)
		Additional product	configured surcharge (unmeasured product), applying to this product (see section 3.2.4.3)
		PID-Delivery	Product-ID for delivery-TAG
		PID-Delivery leaded	The leaded product is delivered using the same PID (depending on configuration also valid for lead substitute, see also section *3.2.8.2 "Lead is L.Substitute")*
		Solenoids-Delivery	Magnetic code for delivery

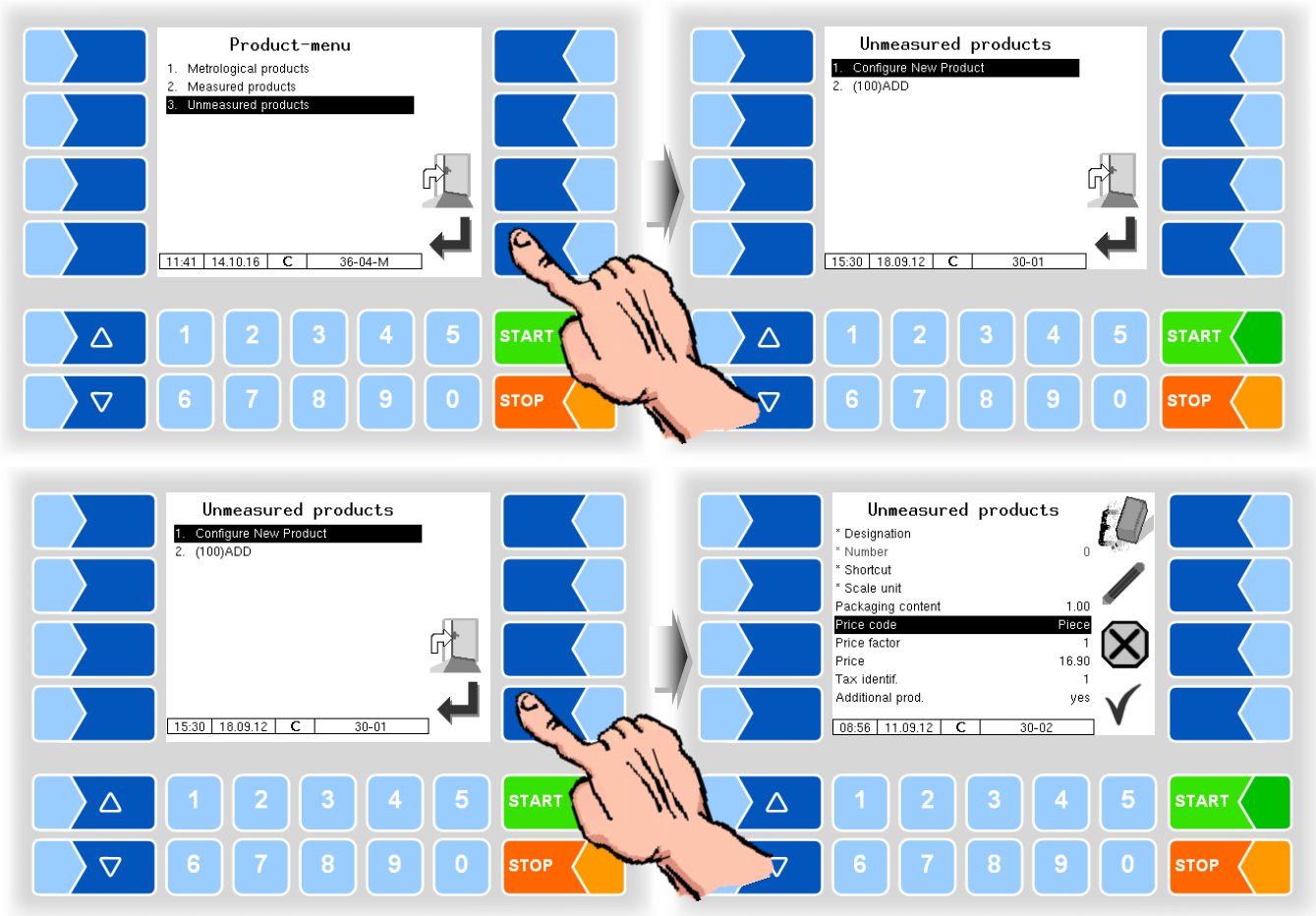
Product IDs for product recognition using tags (PIDs) and product IDs for product recognition using magnetic codes for loading and delivery			
Product	**PID**	**Magnetic code delivery**	**Magnetic code loading**
Vegetable oil	67		
Heating oil	69	2	2
Heating oil SA	71		
Diesel	68		
Truck Diesel	76	4	
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.

The detailed configuration of the products is printed on the Parameters Print out (see section 3.3).

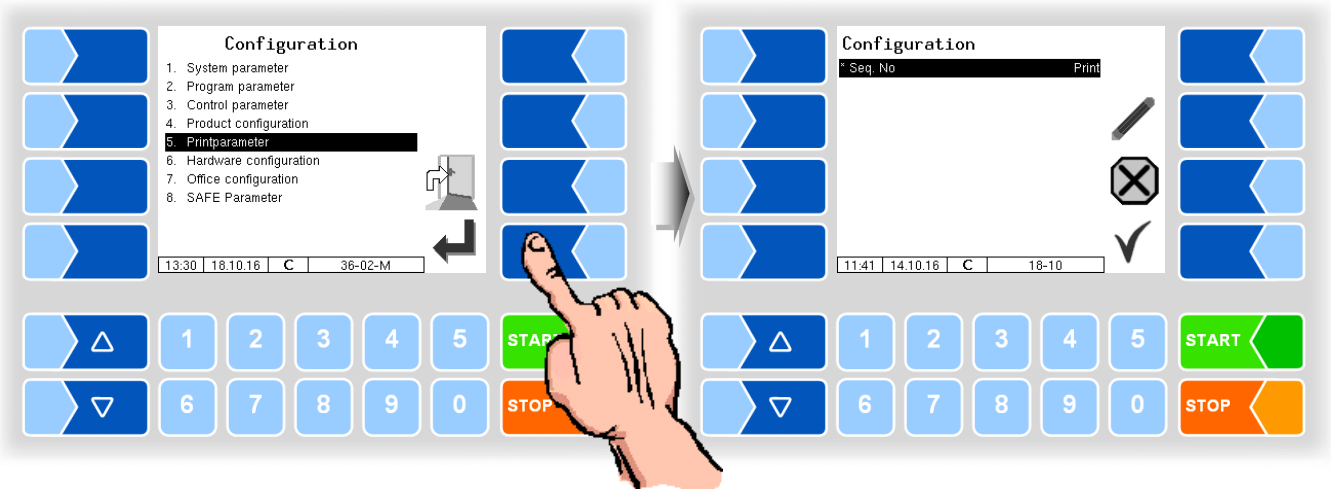
3.2.4.3 Unmeasured products

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.

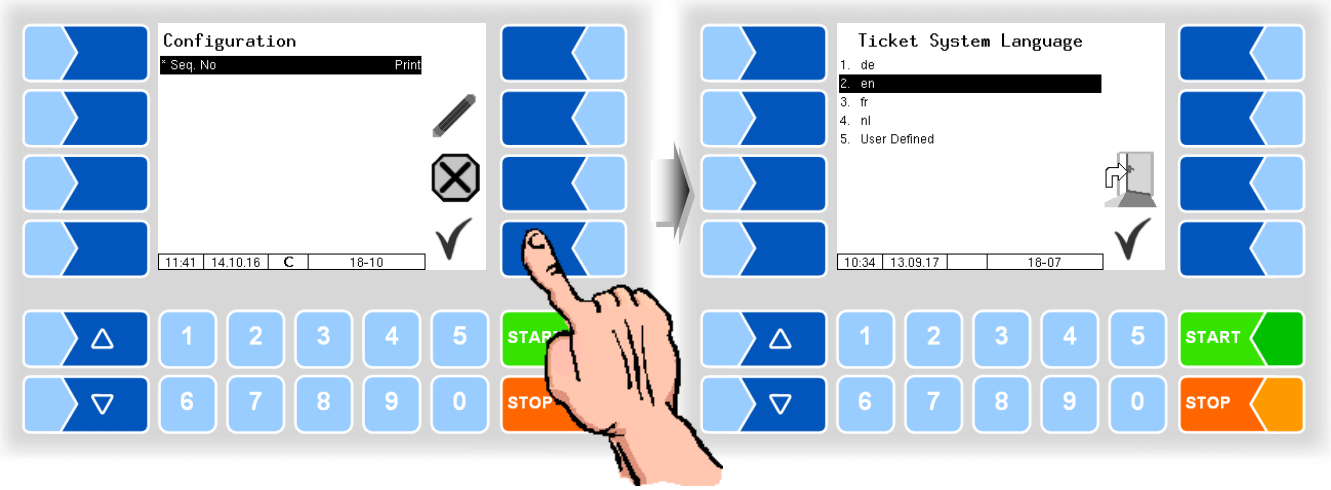


Unmeasured products			
	U	Designation	Product designation (max. 30 characters)
		Number	Product number
		Shortcut	Short product name
		Scale unit	Unit of measurement for the product
		Packaging content	Number of pieces per package.
		Price code	Piece: Net price per piece. (price per package, when a package 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 3.2.2)
		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.

3.2.5 Print parameter



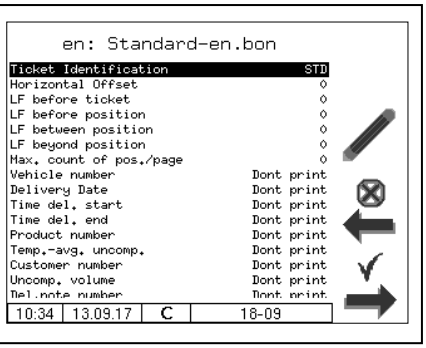
First you can specify whether a sequential number is to be printed on the tickets.

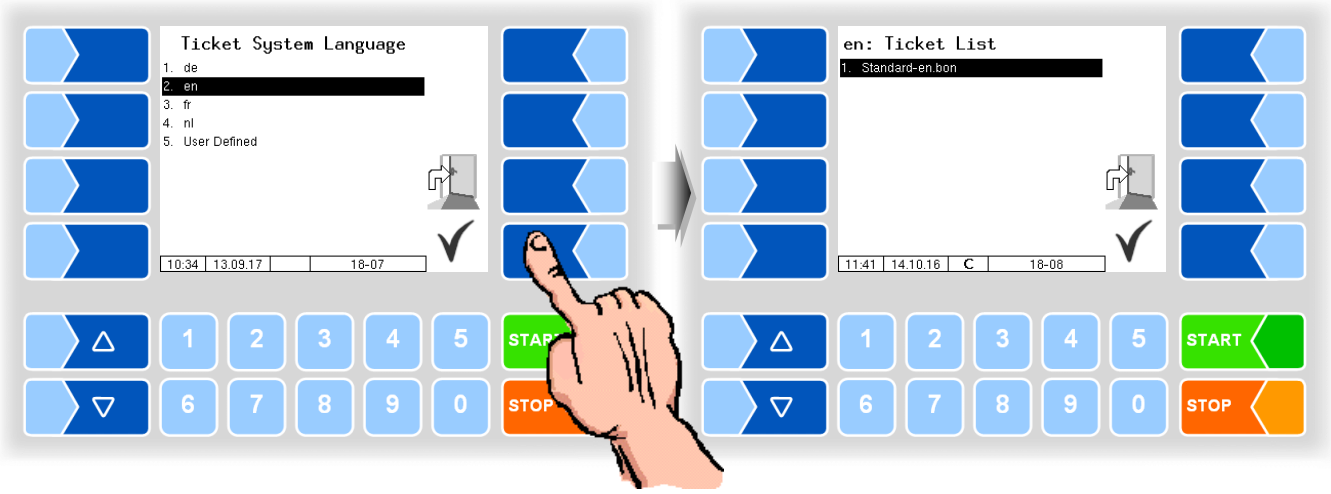


Select the ticket language from the available languages.

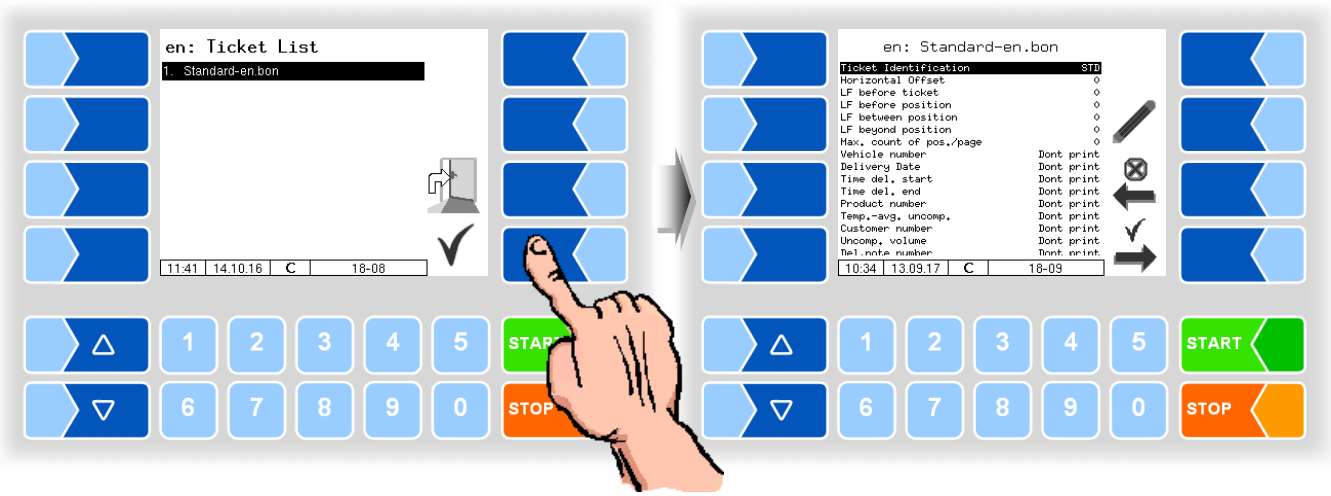
Under "User Defined" you set a company specific ticket .
This ticket is created and provided by BARTEC BENKE with a company-specific layout ("B3i format"). It includes the company specific layout and language. The ticket can be installed on the vehicle via software "3003 Service Tool".

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 35).





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.



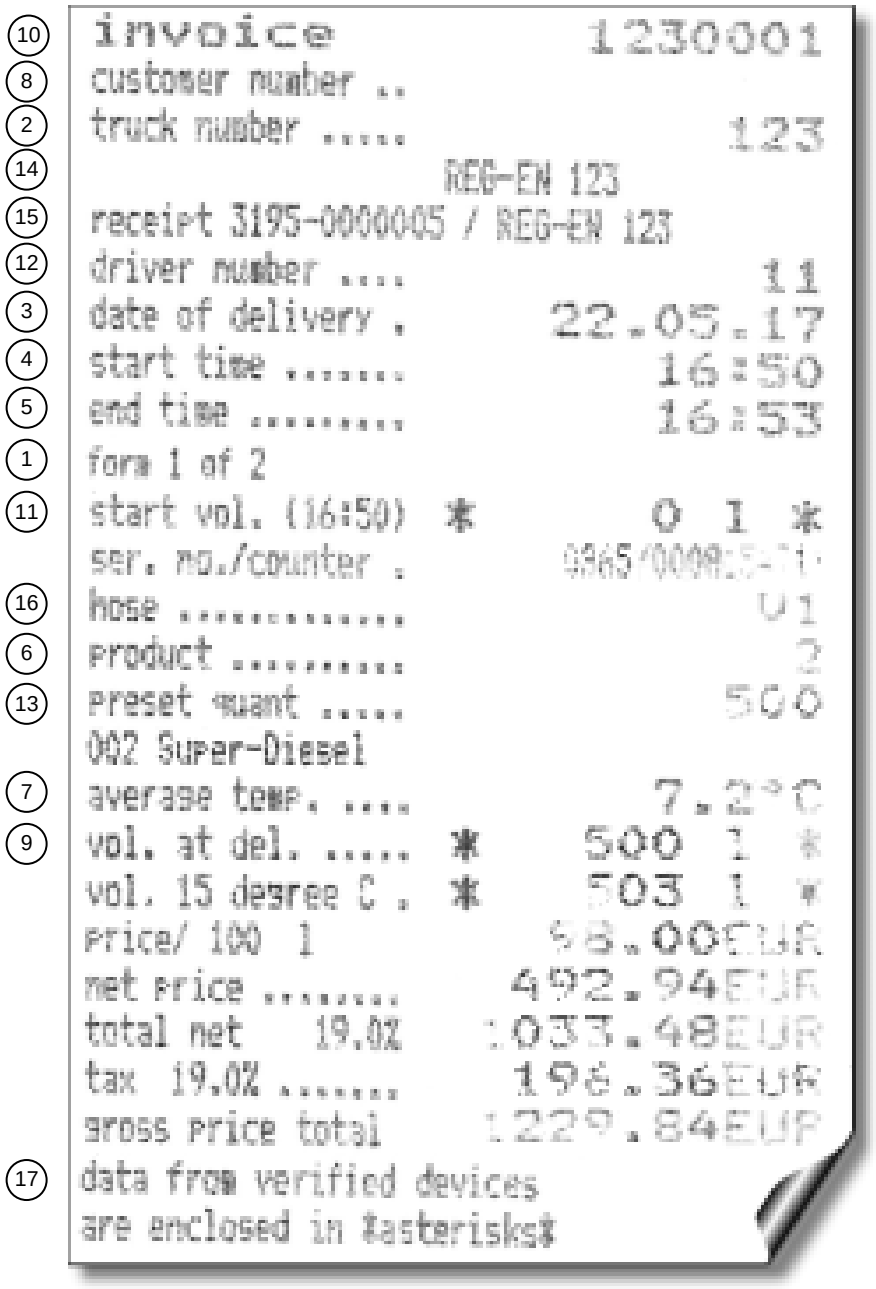
Using the ✓➡ softkey, you can configure another ticket based on the default form and save it under another name (ticket identification).
Select a parameter and touch the ✎ softkey to make changes.

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 ✓➡ softkeys.

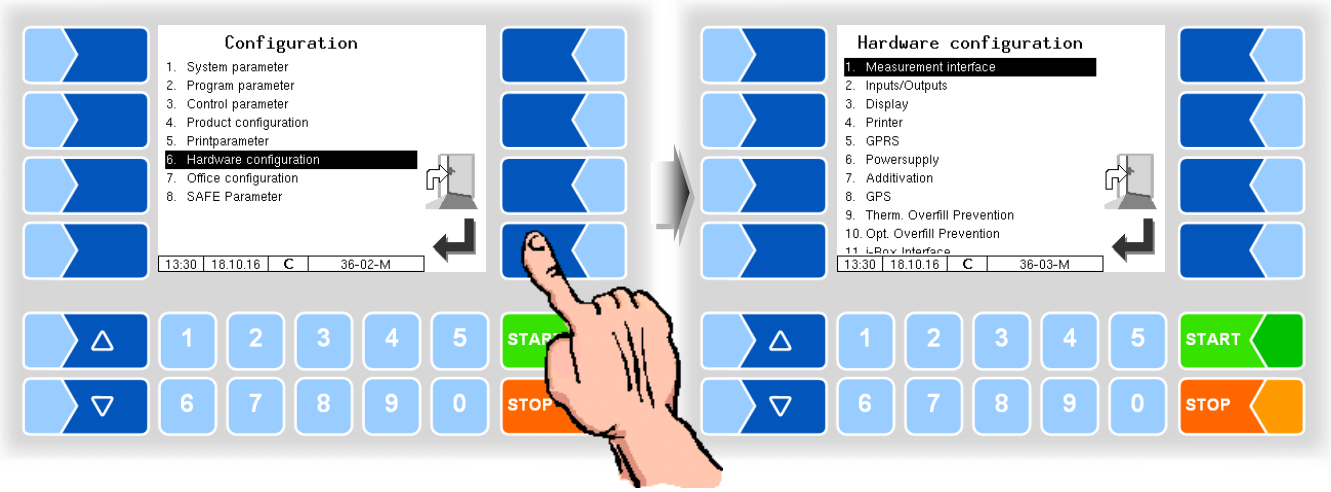
Ticket Configuration				
	U	Ticket Identification		Name of the ticket selection
		Horizontal Offset		Number of blanks, calculated from the left-hand margin
		LF before ticket		Number of blank lines at the beginning of the ticket
		LF before position		Number of lines above the items, calculated from the top of the page
		LF between position		Number of blank lines between the items
		LF beyond position		Number of lines below the items
		Max. count of pos./page	①	Number of items until a page break is inserted
		Vehicle number	②	Internal fuel tank truck number
		Delivery Date	③	Date of delivery
		Time del. start	④	Time at the start of delivery
		Time del. end	⑤	Time at the end of delivery
		Product number	⑥	Number of the delivered product
		Temp.-avg. uncomp.	⑦	Temperature average for uncompensated delivery
		Customer number	⑧	Number of the customer
		Uncomp. volume	⑨	Delivered volume based on the current temperature
		Del. note number	⑩	Number of the delivery note
		Time meter reading s.	⑪	Time and meter reading at the start of delivery
		Driver number	⑫	Internal 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
		Ticket allocation	⑮	The internal tour number and the internal order number are printed as the ticket 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.



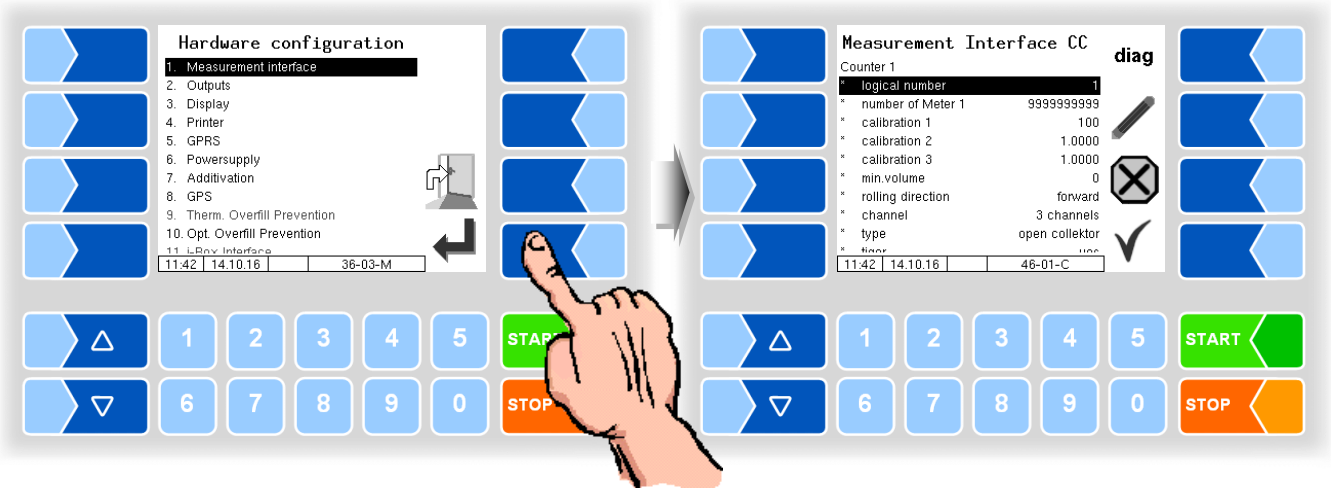
Example Invoice

3.2.6 Hardware Configuration

The illustrations apply to the compact controller and the HMI.
Some points of the configuration with "Ex-TIGER" differ in the HMI from the configuration without "Ex-TIGER" (compact controller). The user interface of the HMI is shown at the corresponding text areas.



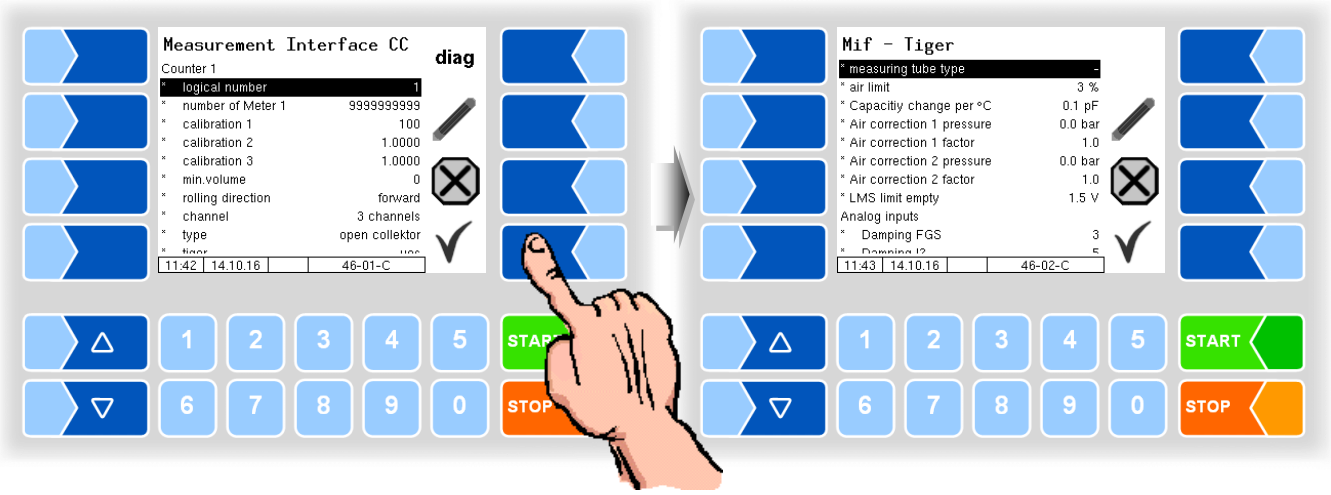
3.2.6.1 Measurement Interface (TIGER)



Measurement Interface CC				
	Counter 1			
C	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, under which the delivery is not certified.		
	rolling direction	**foreward** If no changes were made at the pulse counter, "forward" corresponds to the factory setting, that means clockwise rotation is positive counting. 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 used)			
	log. mapping	Assignment of the temperature sensor to the compartment *(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				
S	**1. (…9.) Input**	Configuration of the inputs see page 40		
	logical allocation	logical allocation of the input e.g.: in the software means input 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		
C	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.*		
	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)*		
	Air correction 2 pressure	2. Correction value for compensating measurement faults, caused by air in the product. *(Default: 7.6 bar)*		
C	Air correction 2 factor	Factor for the weighting of the 2nd correction value. *(Default: 0.2)*		
	LMS limit empty	Voltage threshold at which the Empty Signal 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	*Empty Signal sensor*	*(5)*
	Damping U1			*(5)*
	Damping U2			*(5)*

Configuration of the inputs

The allocation of the inputs can individually be configured, following allocation is recommended:

	No.	*log. input No.*	*invert*	*Resting state*	*Namur*	*Designation*	*Function*
	1	1	no				Emergency Stop
A3-TIGER	3	3	yes	High	no	LM1	Empty Signal sensor hose valve
Ex-TIGER			no	-	yes		
	5	5	yes	Low	no		Emergency Stop

Explanation:

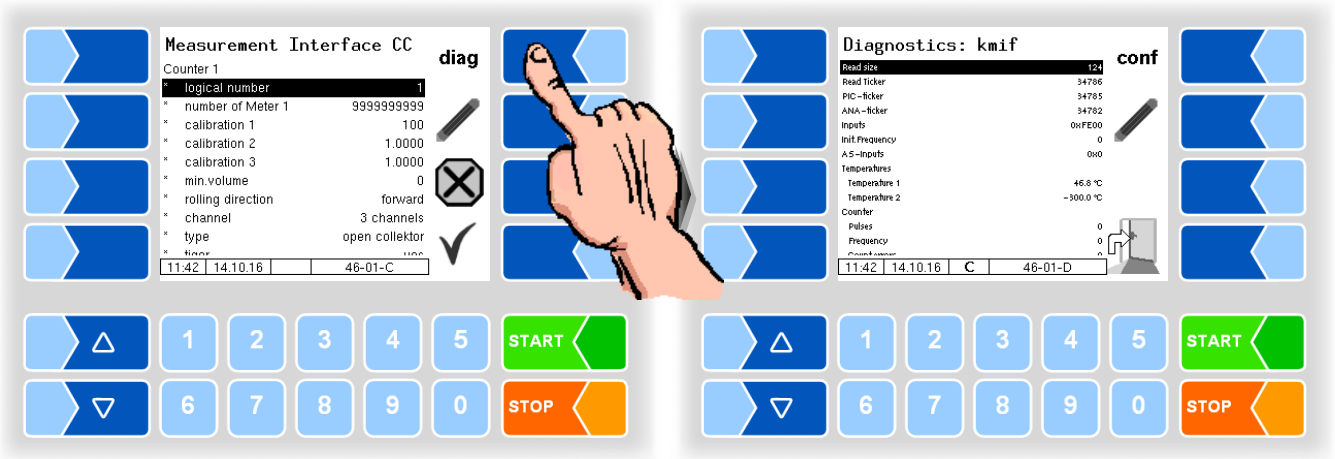
3: Empty signal sensor in the lower pipe elbow (only when equipped with residue removal function)

5: Wireless overfill prevention: positive control signal to tap on the solenoid valve of the overfill prevention (not required for W-AS wireless overfill prevention).

A list of all outputs and inputs can be found in the Appendix, section 6.2.

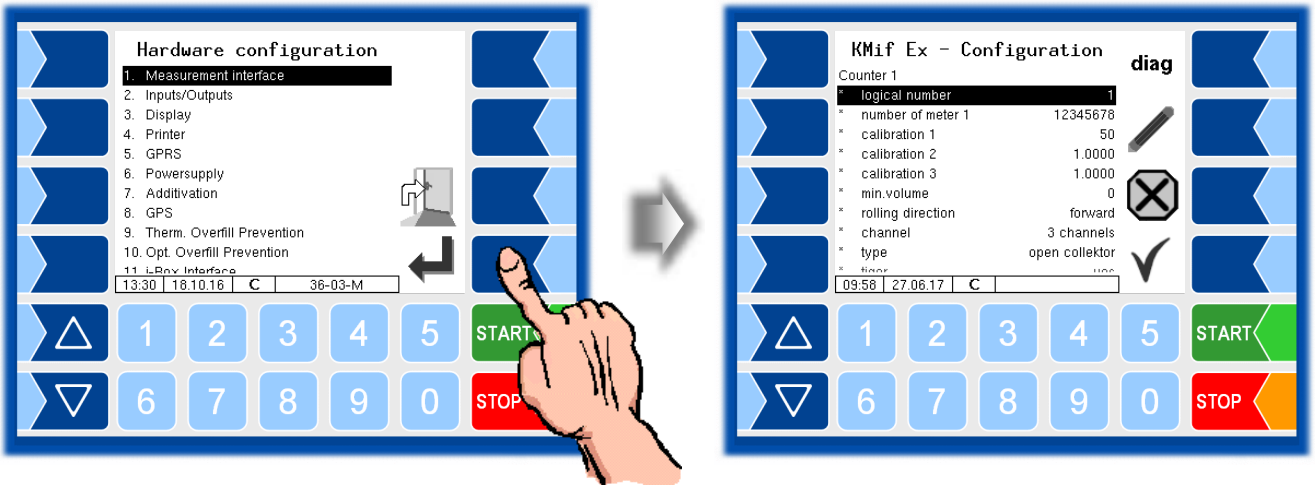
Diagnostics

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 6.3.3).



3.2.6.2 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 3.2.6.5).

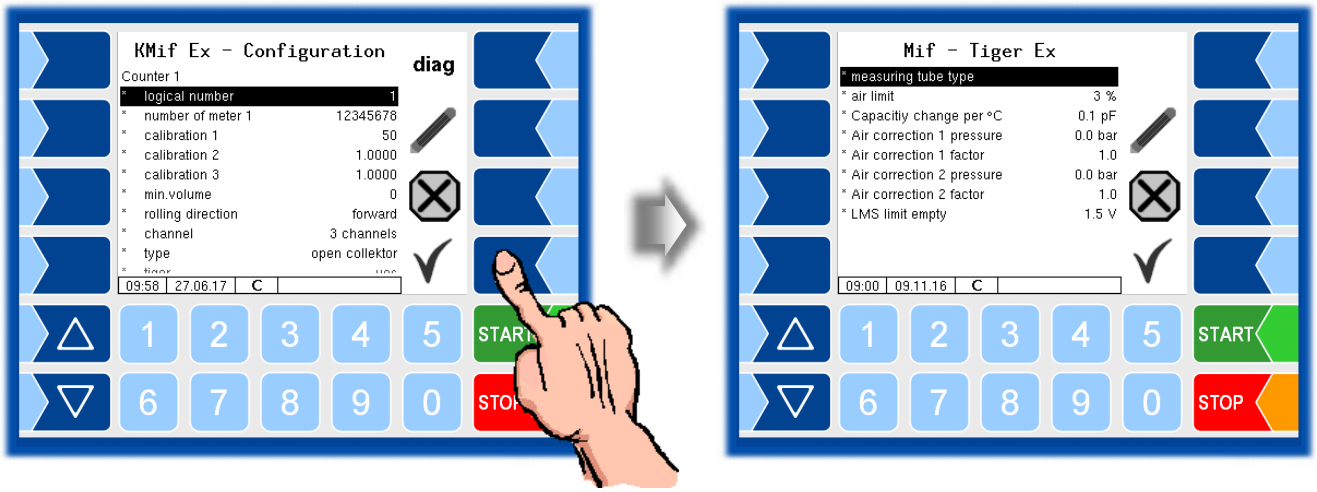


KMif Ex - Configuration				
	Counter 1	1 pulse counter is supported in software version pair 1.16.X.		
	logical number	logical allocation of the counter within the system		
	number of Meter 1 (2)	manufacturers no. of the TIGER measuring tube		
	calibration 1	The calibration factor determines how many pulses produce a liter (or configured unit) of the product. The calibration factor is defined during the calibration of the system. Not required when „tiger“ is set to „yes“.		
	calibration 2 calibration 3	You can configure three calibration factors for different product groups.		
	min. volume	Minimum delivery volume, under which the delivery is not certified.		
	rolling direction	**foreward** If no changes were made at the pulse counter, “forward” corresponds to the factory setting, that means clockwise rotation is positive counting. backward: Counting of the rotating direction is reversed.		
C	channel	2 channels **3 channels** (TIGER)		Channel type
	type	**open collector** (TIGER) Faure Herman current namur Promass/Hoffer		open collector Faure Herman current namur Promass/Hoffer
	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		

	C	**Temperature sensor 1 (2) (temperature sensor 2 is not used)**		
		log. mapping	Assignment of the temperature sensor to the compartment	
		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)		
	S	**1. Input**	Configuration of the inputs see page 40	
		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	

bold: default values

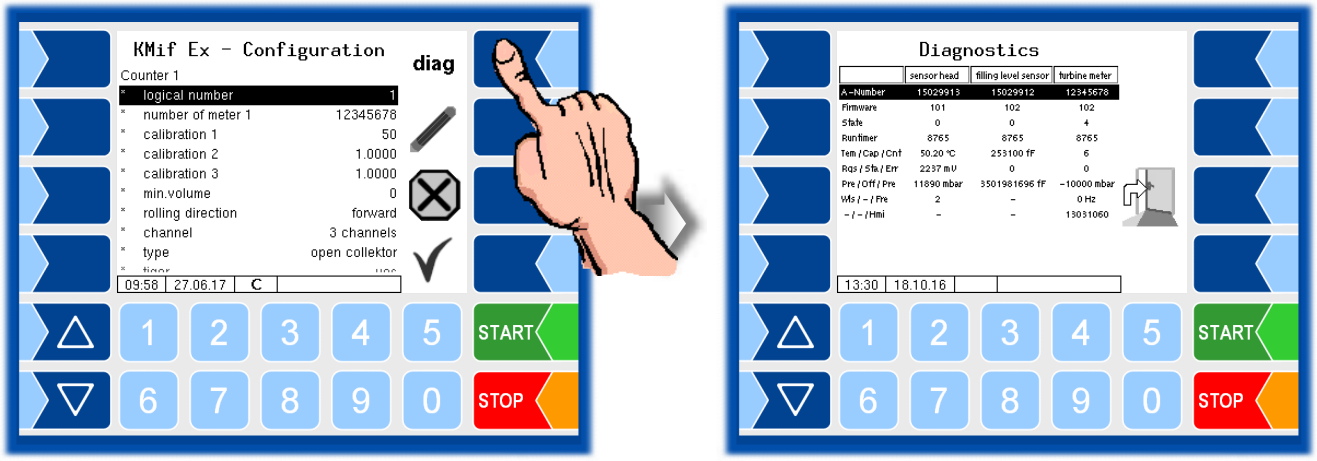
After configuring the measurement interface, special parameters must be set for the Ex-TIGER measurement interface.



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)*
		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 Empty Signal sensor "empty" reports *(1.5 V)*

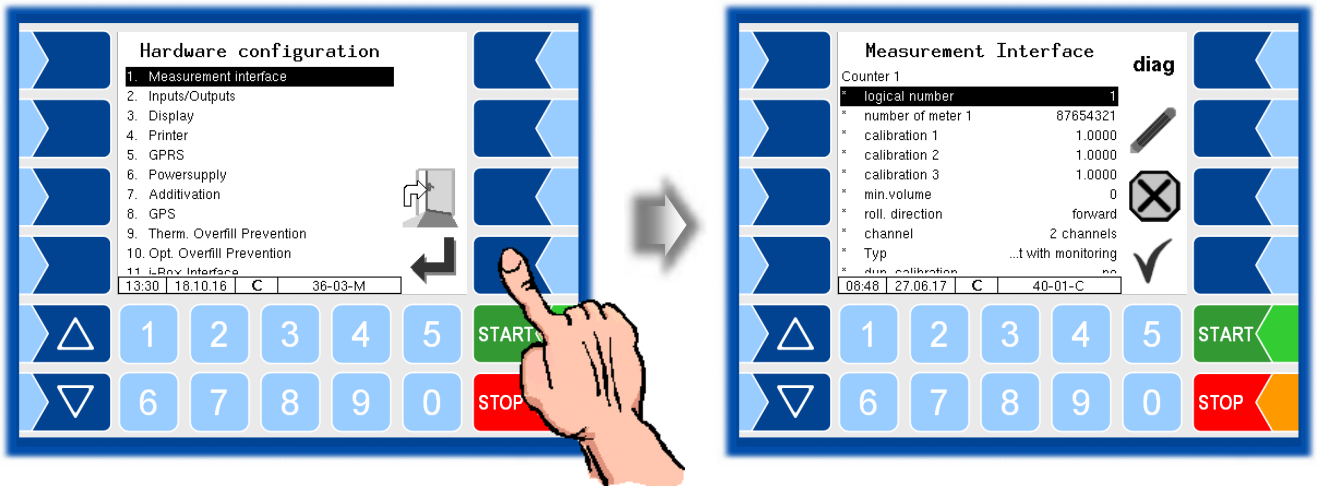
Diagnostics

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 6.3.4).



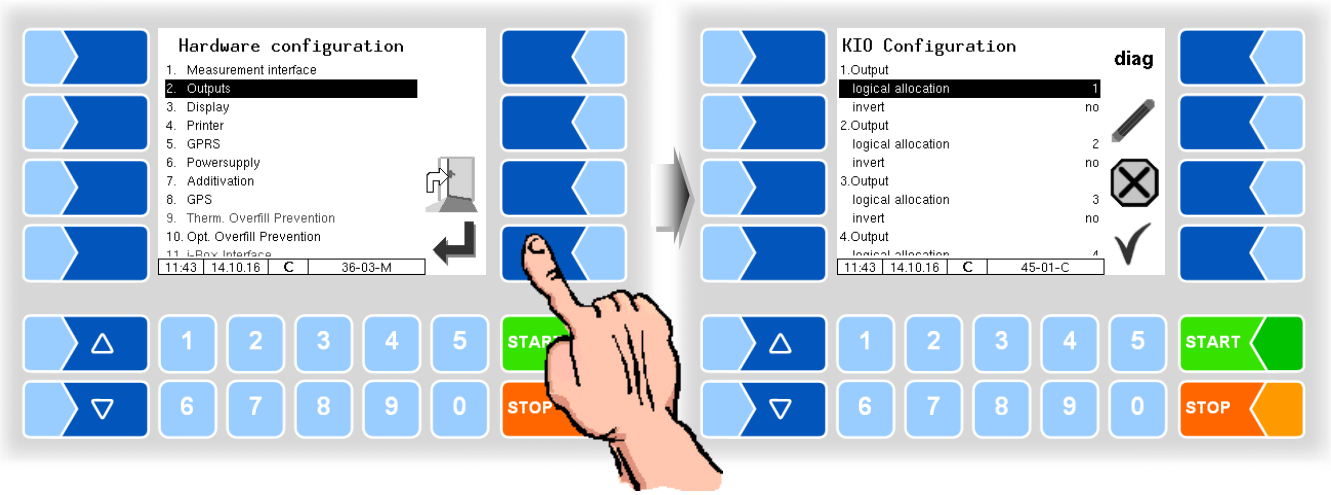
3.2.6.3 Measurement Interface (COMP)

(Program parameter/Operation Mode/COMP/see page 25)



Measurement Interface (Mif)				
	Counter 1 (2)			
		logical number	logical allocation of the counter within the system	
		number of meter 1 (2)	the manufacturers N° of the measuring chamber	
		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.	
		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
C		type	open collector / Current with monitoring / current wihout monitoring namur / Promass 64	Type of counter
		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	*according to the test protocol*
		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) (Temperatur sensor 2 is not used)			
		logical number	Assignement for the temperature sensor *(Standard: 1)*	
		calibration 0/-195°C calibration 50/-80°C	Resistance value at 0 °C or -195 °C Resistance value at 50 °C or -80 °C	depending on the type of sensor (0...50 °C or -195...-80 °C)
	circulation delay		Interval for sensor interrogation *(default: 5)*	
	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.				

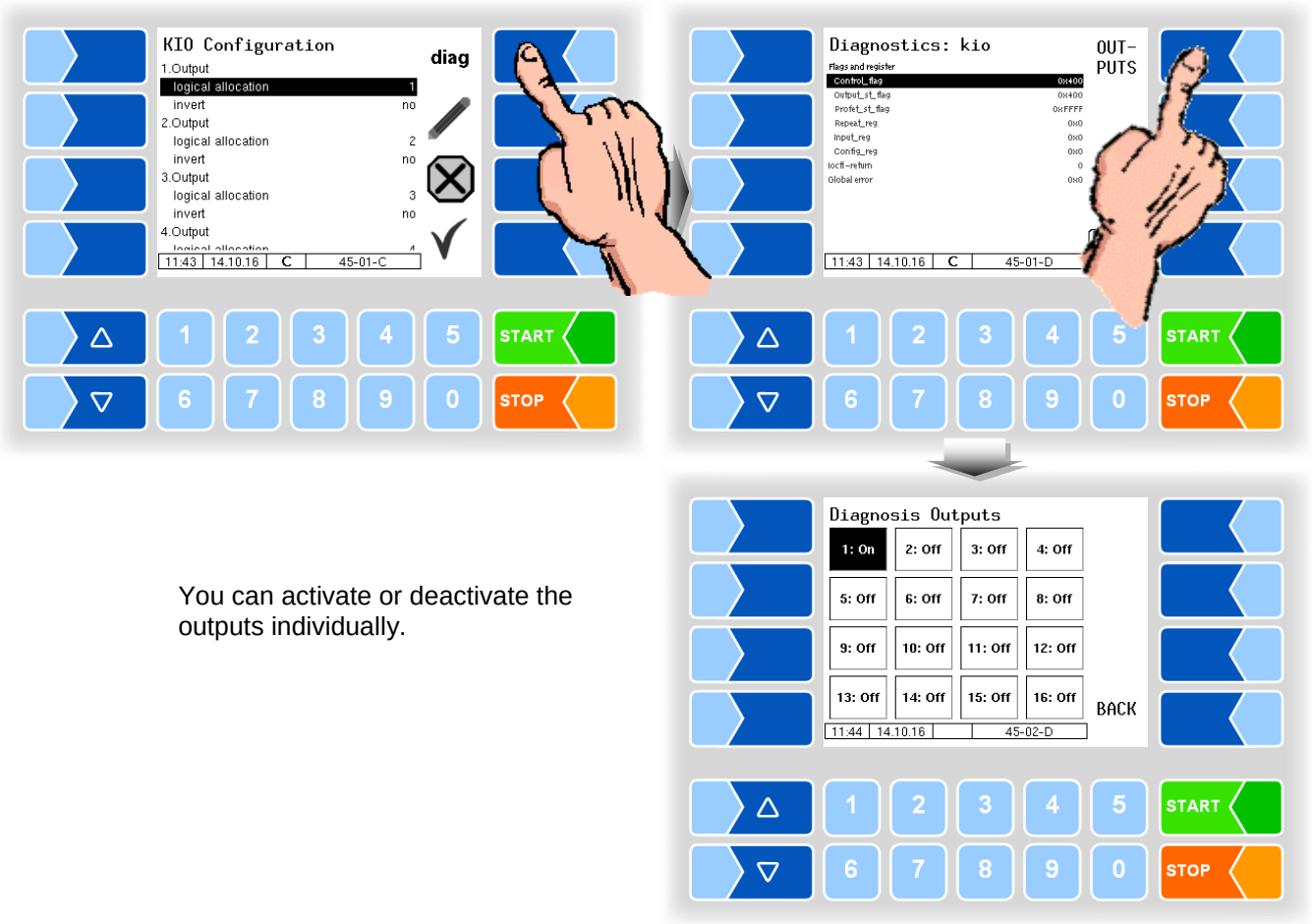
3.2.6.4 Outputs



KIO Configuration			
		1. (...16.) Output	Output configuration see page 47
	S	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 of the I/O box.



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 can individually be configured.

A list with the recommended assignment of all outputs and inputs can be found in the Appendix, section 6.2.

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!)

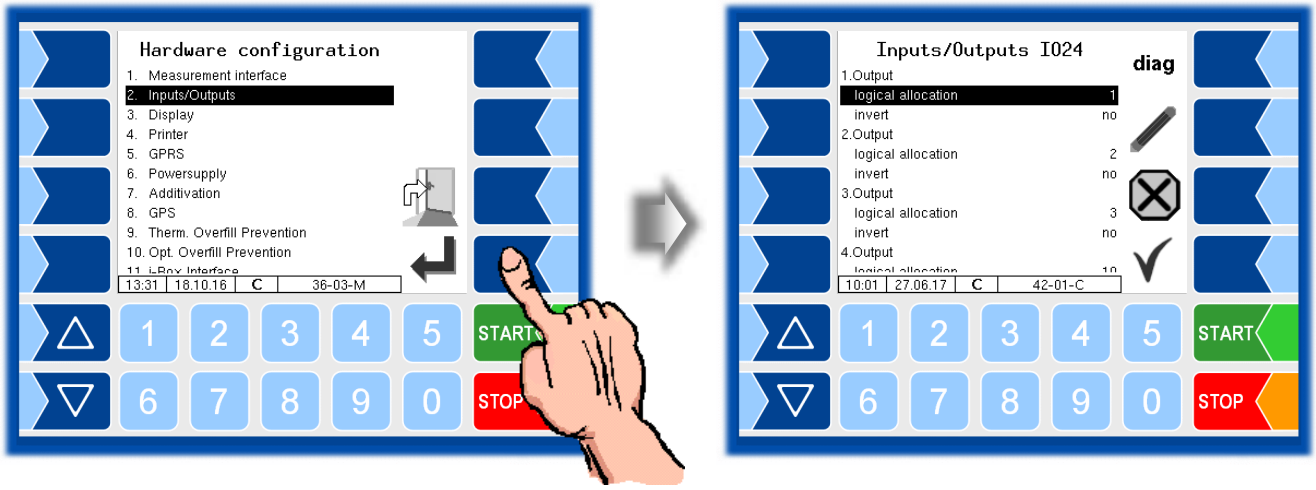
If an MID is installed, additional inputs and outputs are required
(see page 73).

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.

3.2.6.5 Outputs and Inputs IO 24 (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.

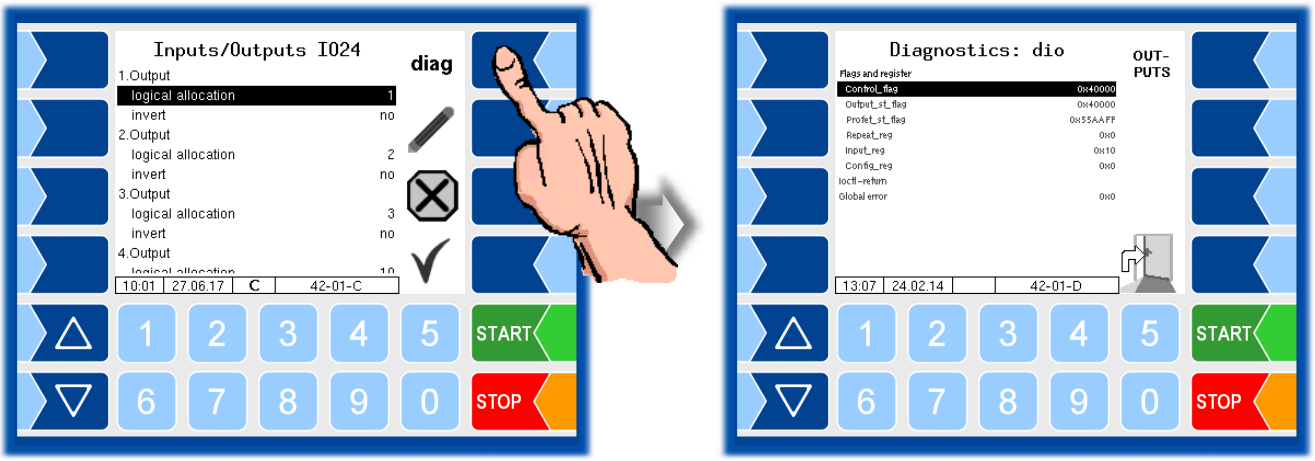


DIO Configuration				
	S	1. (...n.) Output		
		logical allocation	logical allocation of the outputs (see page 47)	
		invert	Yes: The switching behaviour is inverted No: The switching behaviour is not inverted	
		1. (...n.) Input		
		logical allocation	logical allocation of the outputs (see page 40)	
		invert	Yes: The switching behaviour is inverted No: The switching behaviour is not inverted	For checking the switching behavior see section 6.3.2 “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	

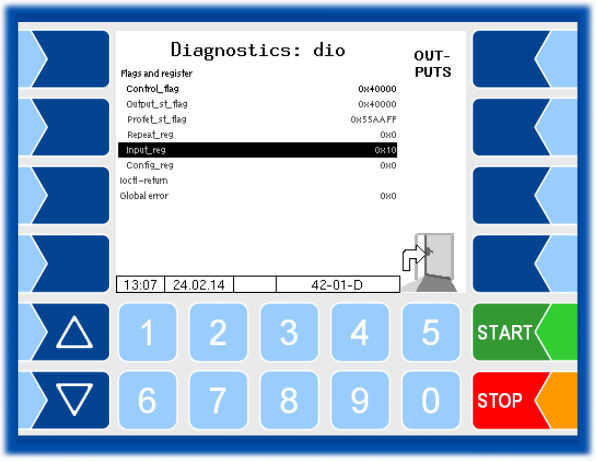
Input diagnostics

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

- Touch the diag softkey.



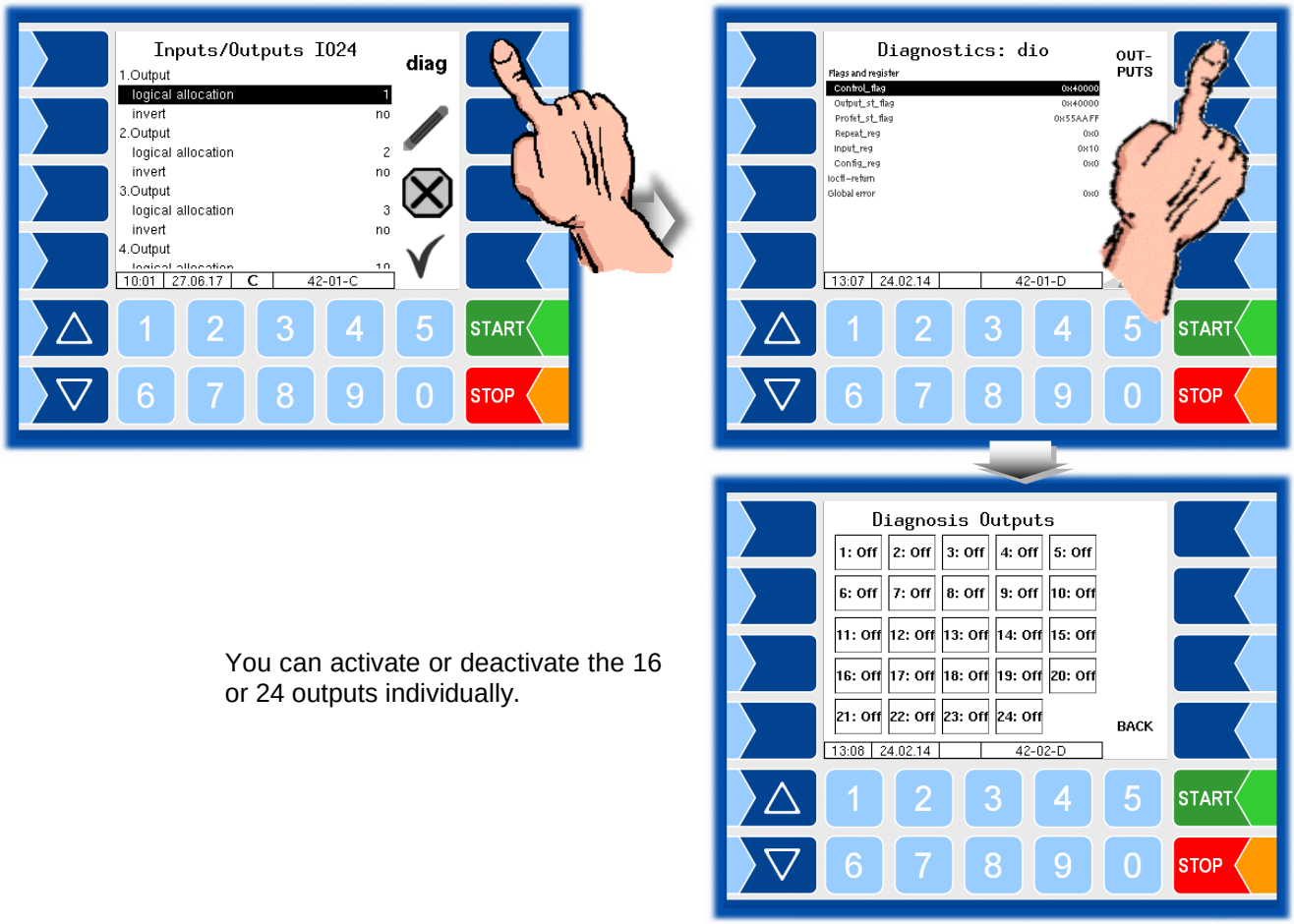
The “Input_reg” line shows the current status of the inputs as a hexadecimal value. After converting this value to a binary number, you can read out the statuses of all inputs.



Explanation of this diagnostic function, see page 133.

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 of the I/O box.

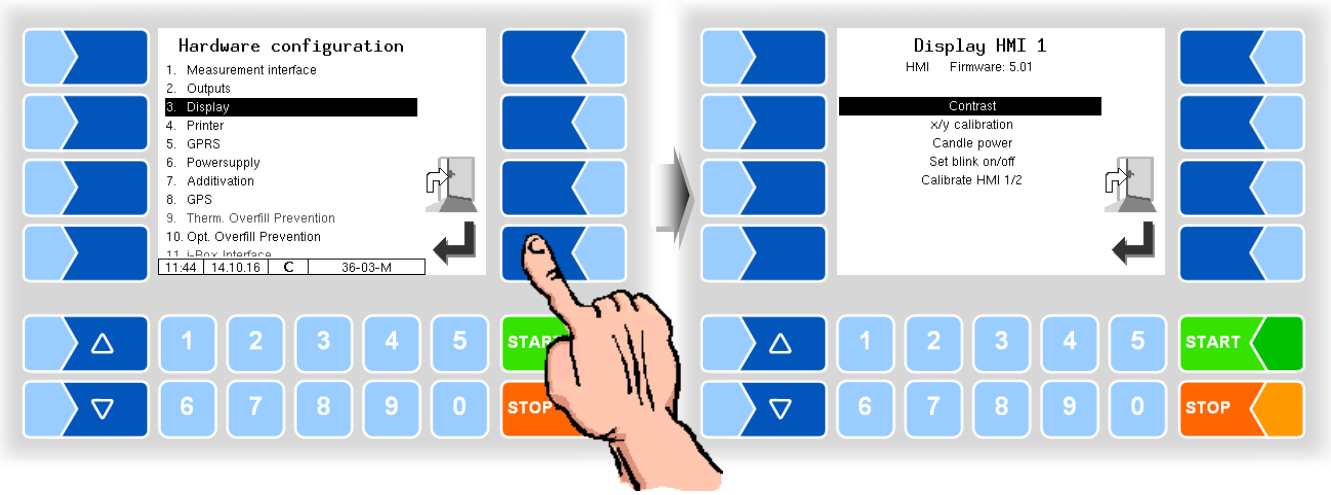


You can activate or deactivate the 16 or 24 outputs individually.

The outputs set in the Diagnosics menu are not reset until you exit the *"Inputs/Outputs IO24"* window.

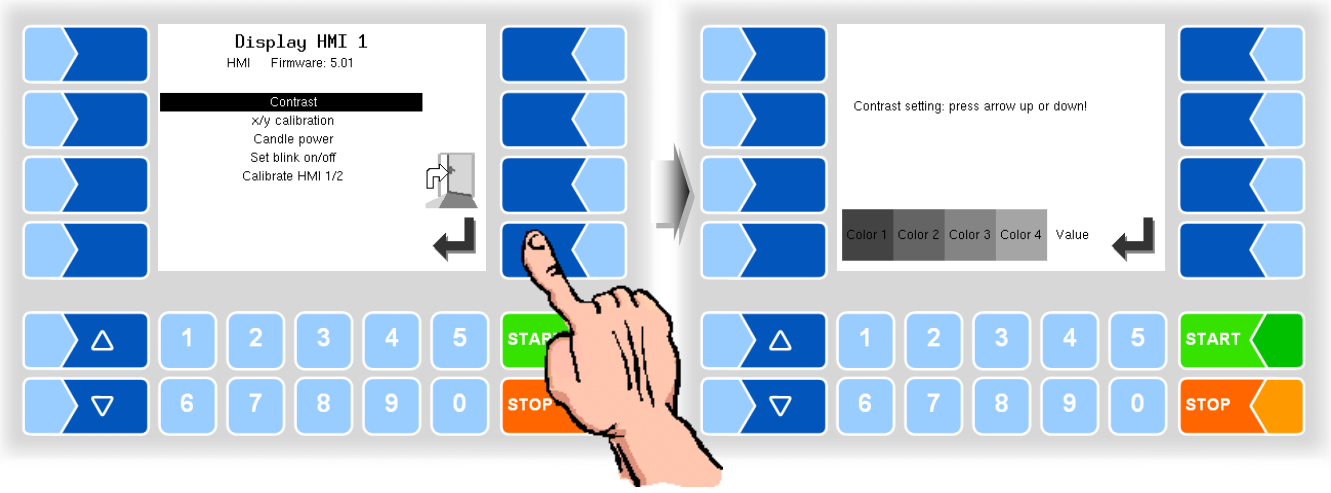
In the diagnostics menu, you can open a diagnostic window in which the current switching states of the inputs and outputs are displayed (see section 6.3.2).

3.2.6.6 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.

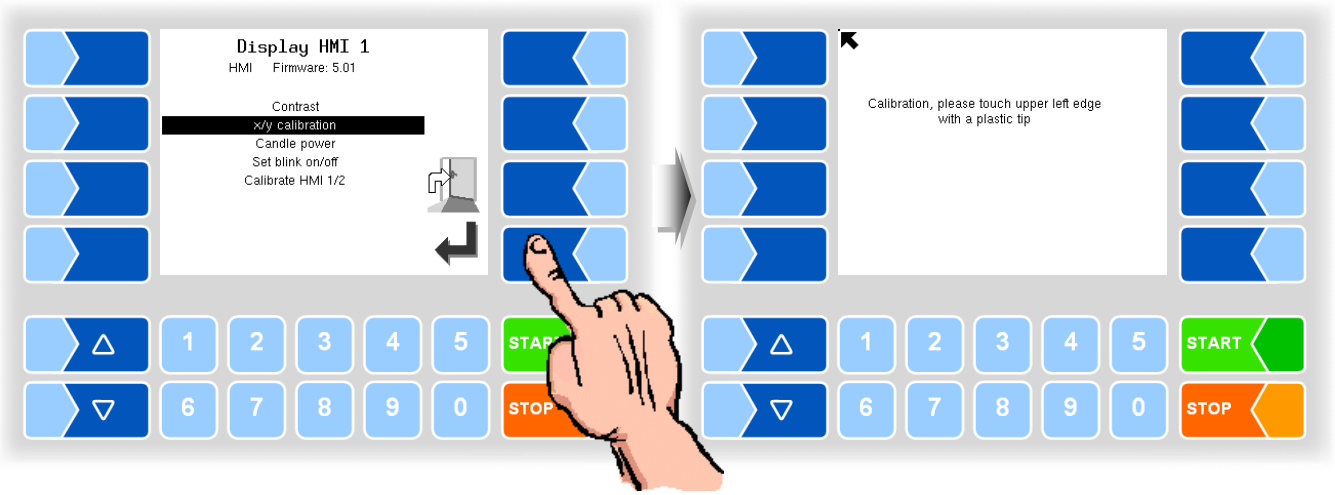
Contrast



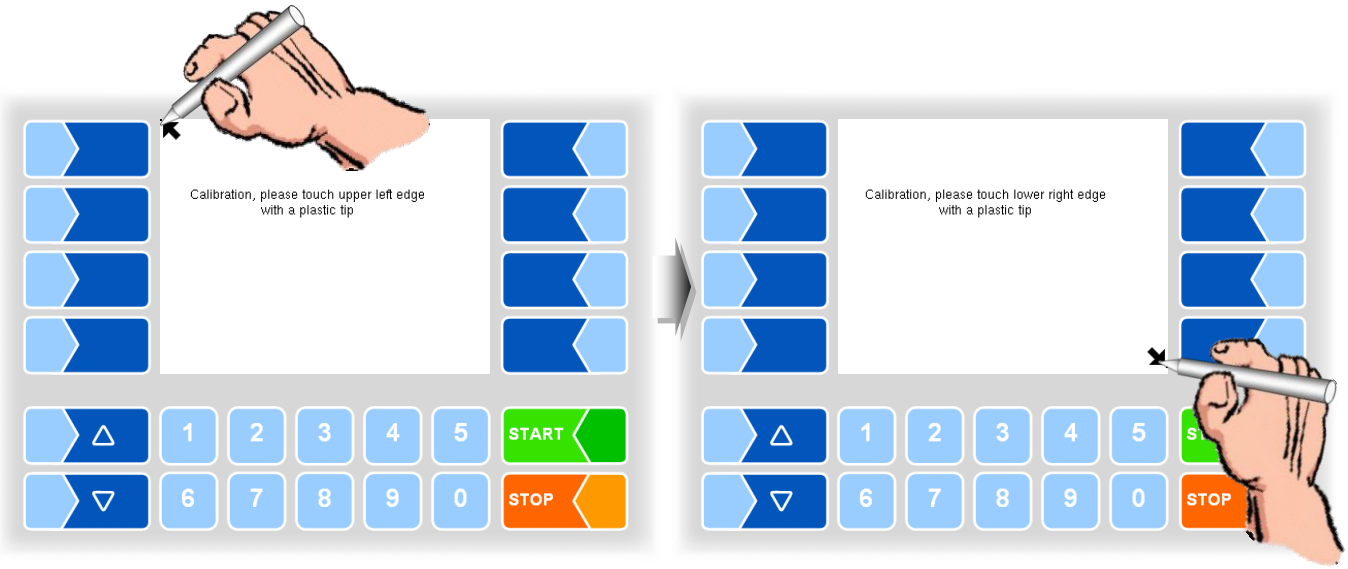
- Use the selection keys ▽ and △ to set the contrast to the required value and touch the “Confirm” softkey *(Standard value: 55)*.

x/y calibration

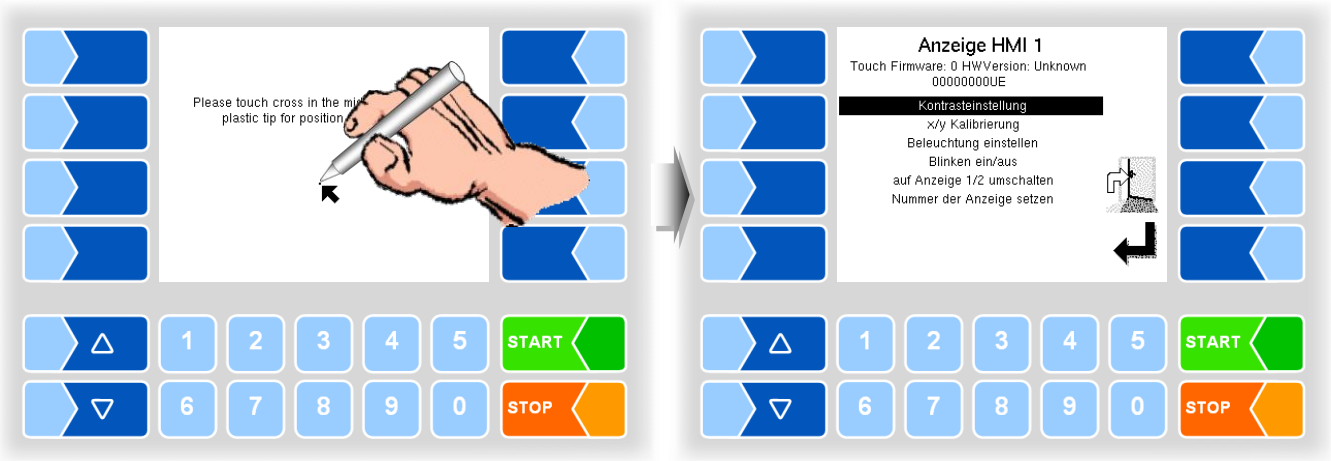
The x/y calibration function is used to redefine the display coordinates. These determine the position of the keys on the touch screen.
Follow the instructions on the display.



- 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.

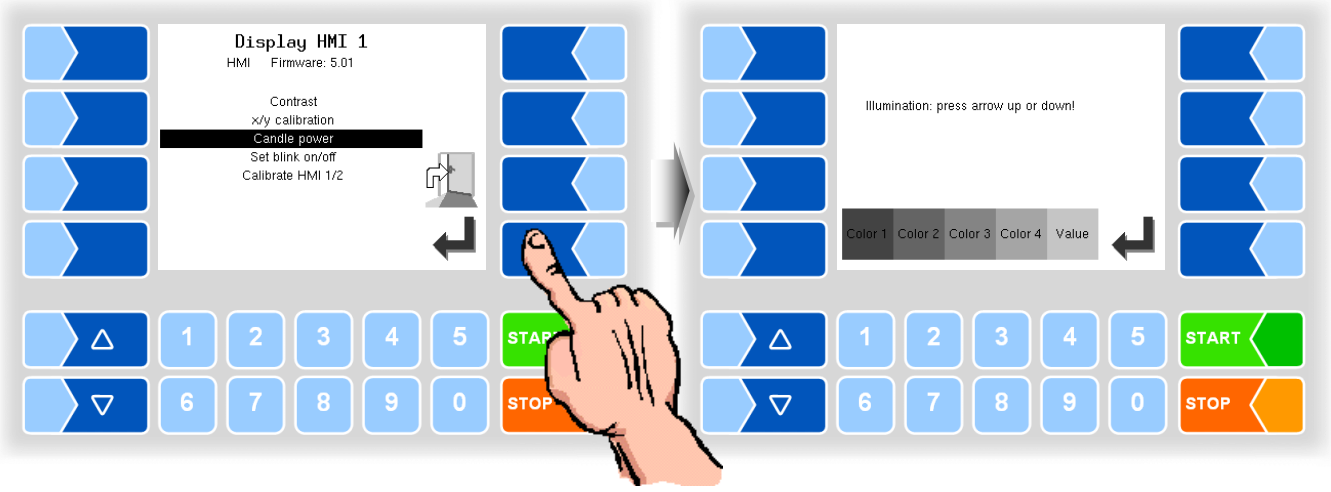


The coordinates of the touch screen have now been defined.

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

The system must not be switched off during the calibration!

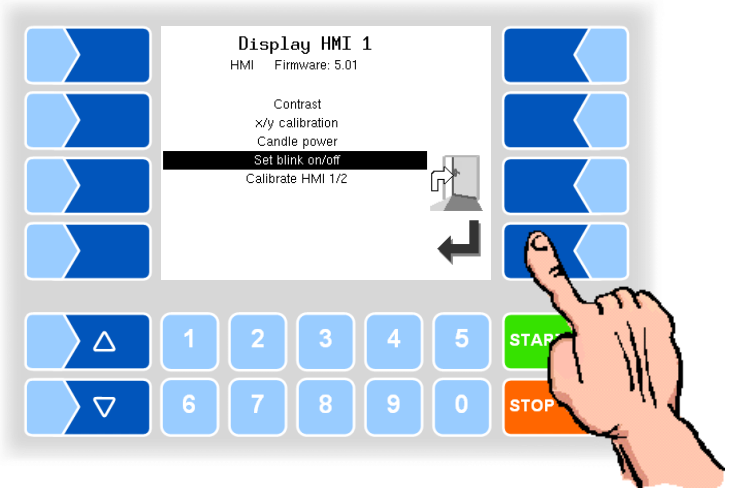
Candle power



- Use the selection keys ▽ and △ to set the brightness of the display to the required value and touch the “Confirm” softkey *(Standard value: 55)*.

Set blink on/off

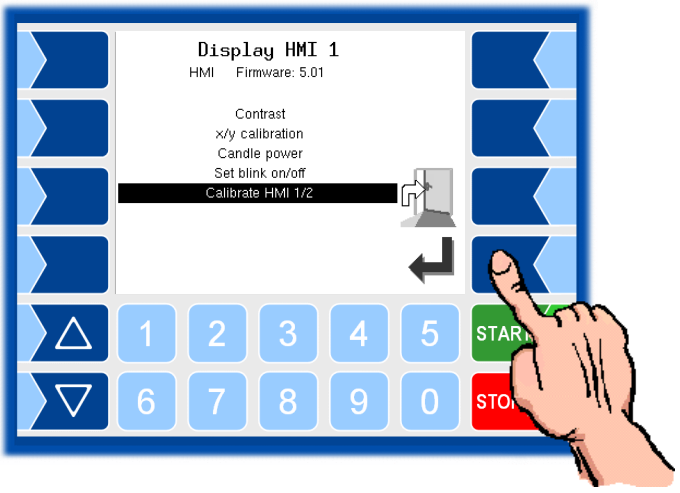
This is where you define whether the display should blink once each time you touch it or change without blinking.
The setting takes effect as soon as you confirm the menu option!



Calibrate HMI 1/2

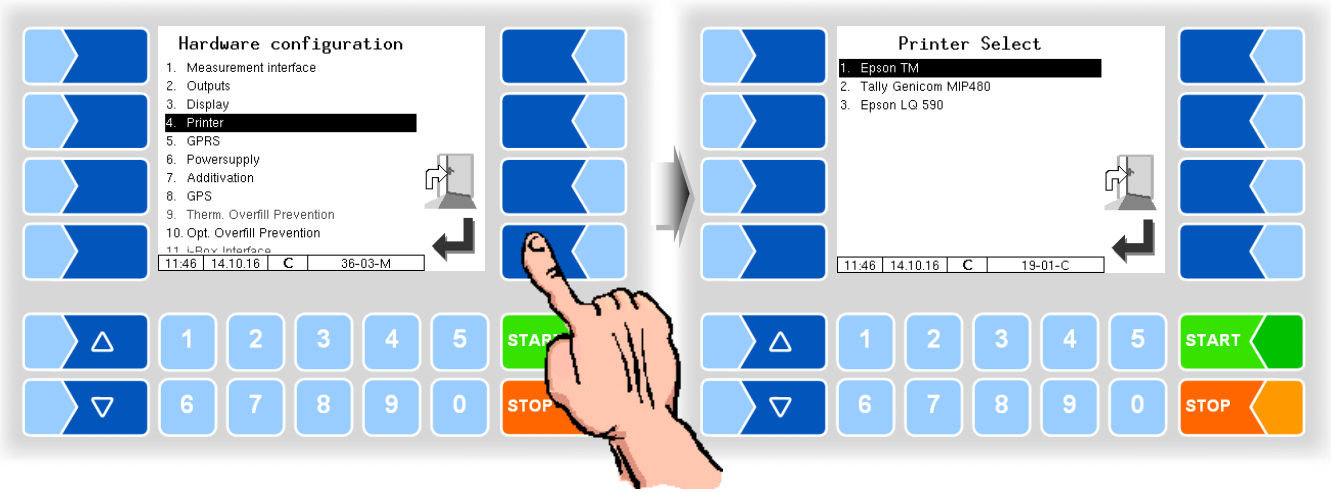
Two HMI display units can be installed for displaying information.
When you confirm this menu option, you switch from calibrating “Display HMI 1” to calibrating “Display HMI 2” or vice versa.
The following then appears in the title:
Display HMI 1 or
Display HMI 2.

(In measuring systems with compact controller without function!)



3.2.6.7 Printer

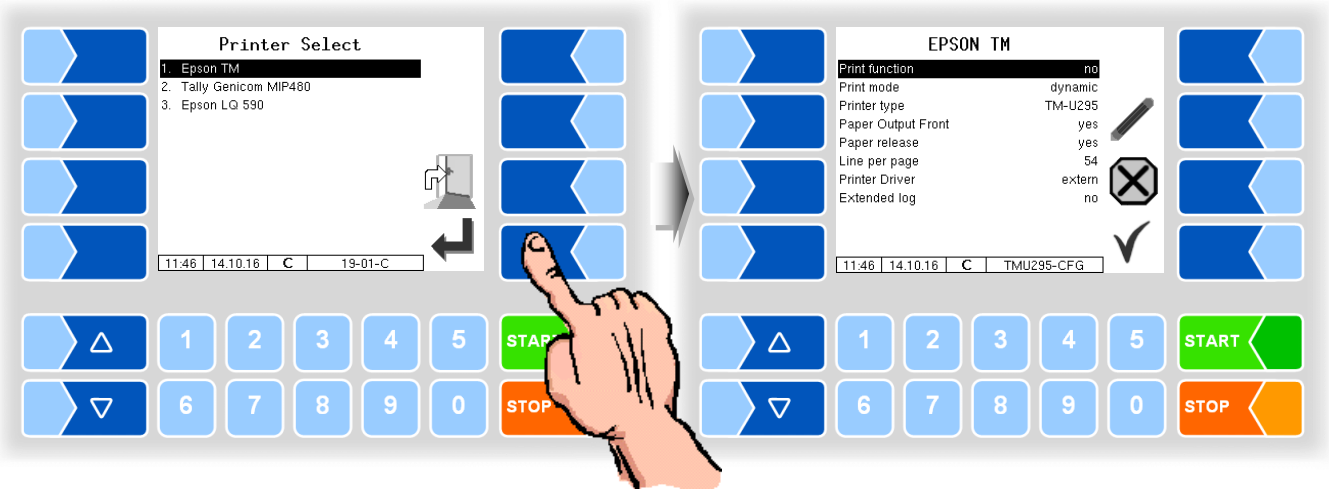
First select which printer type is to be used as the default printer.



Then you can configure the parameters for the selected printer.

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

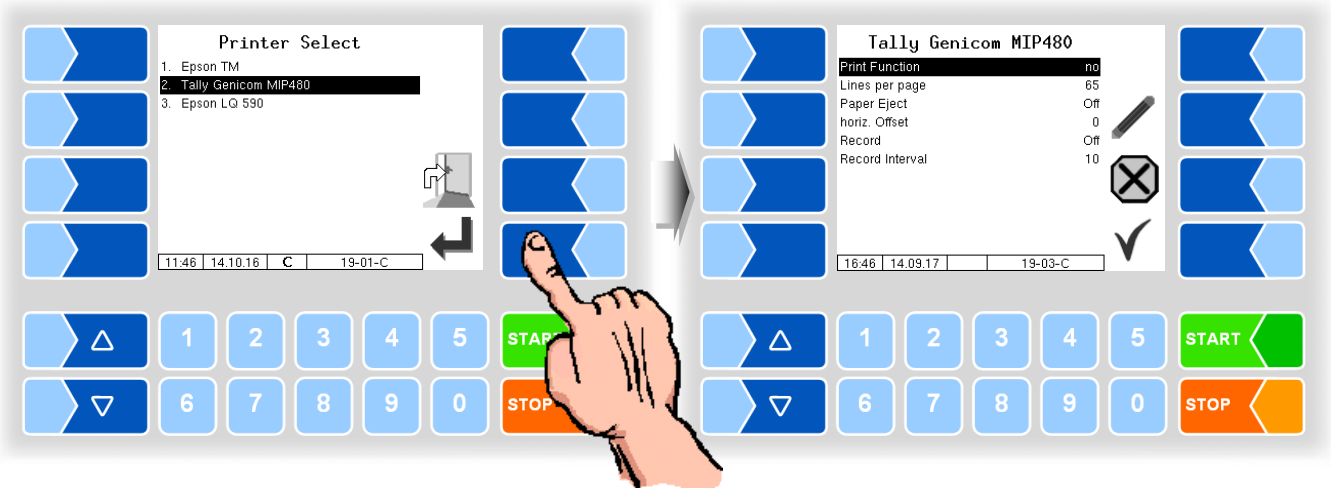
Epson TM



EPSON TM				
	U	Print Function	yes Printer activated no Printer deactivated	
		Print mode	dynamic **lines** ∗	Print mode according to printer type (transfer dynamic or line-wise)
		Printer type	**TM-U295** ∗ TM-U220 TM-T88	Select the printer type used
		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.	
		Line per Page	Number of lines (including the footer) to the end of a page when parameters or journal are printed. If 0 is entered here, there are no page breaks (default: 54).	
		Printer Driver	**extern** ∗ (TM-U295, TM-U220, TM-T88) intern	
		Extended log	yes: Communication between the printer and the system 3003 is stored (for diagnostic purposes only).	

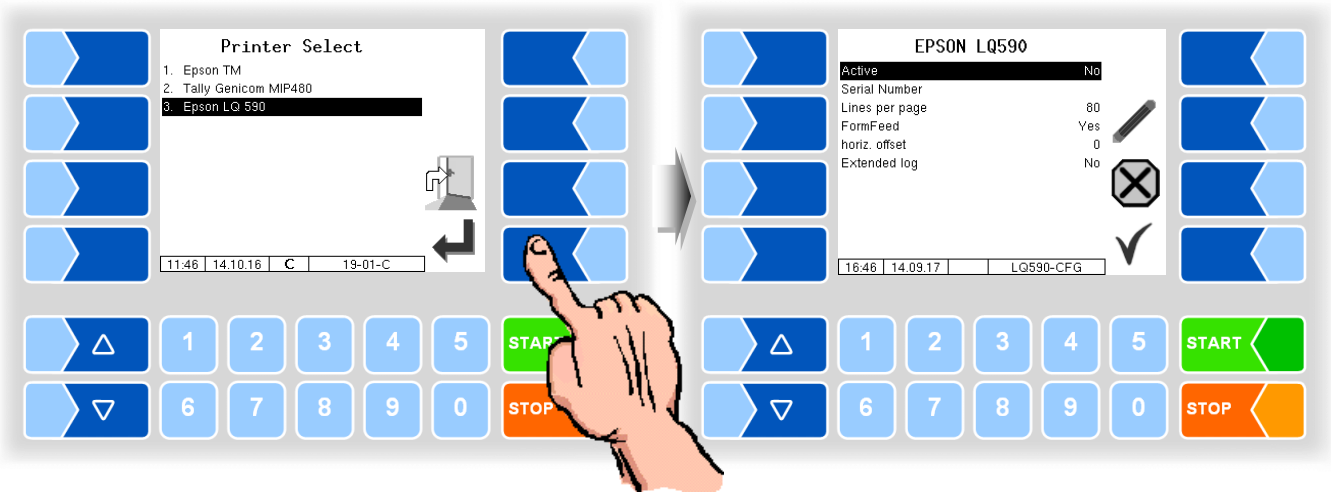
∗ Default values

Tally Genicom MIP 480



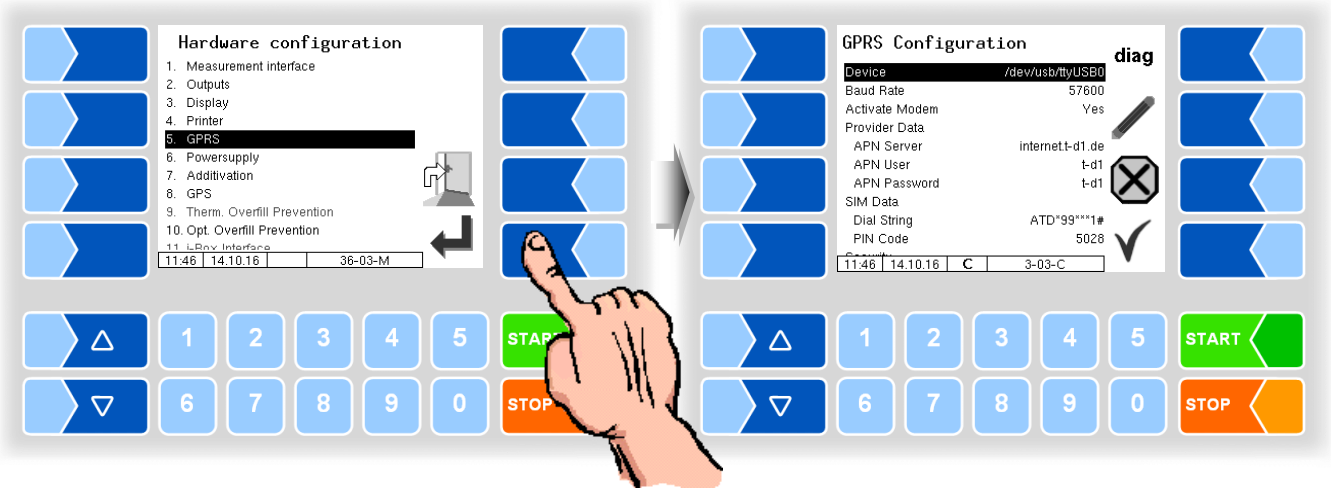
Tally Genicom MIP 480			
	U	Print Function	yes Printer activated no Printer deactivated
		Single Sheet Line/Page	Number of lines (including the footer) to the end of a page when single pages are printed (journal and parameter printing). If 0 is entered here, there are no page breaks *(Standard value: 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



Epson LQ 590			
	U	Active	ja Drucker aktiviert nein Drucker deaktiviert
		Serial Number	Artikelnummer des Druckers
		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).

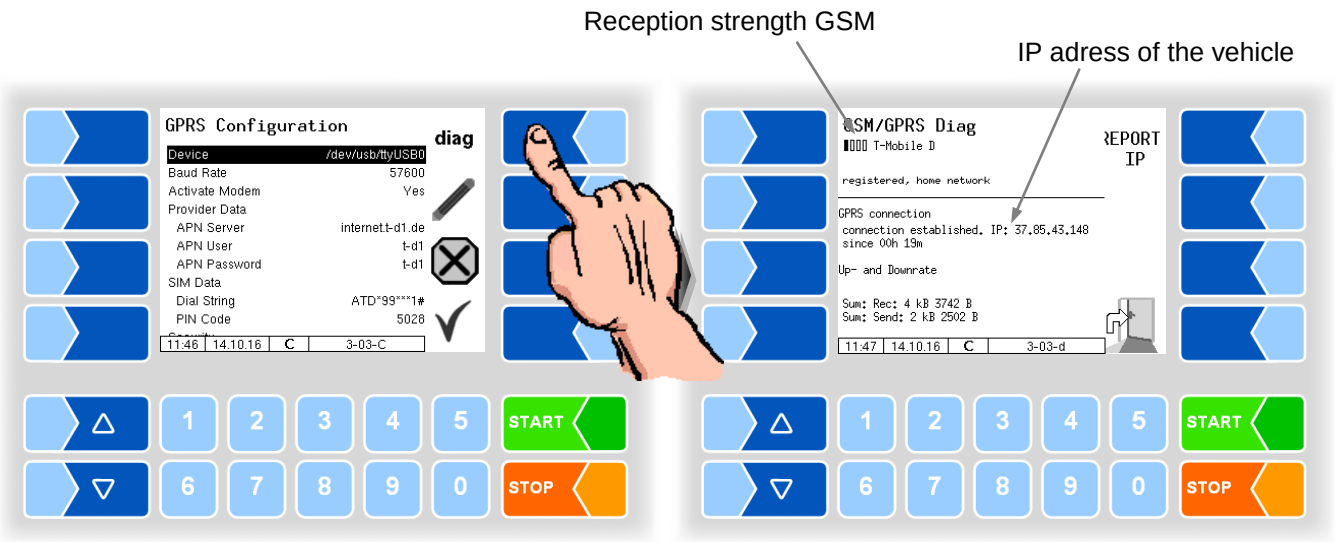
3.2.6.8 GPRS

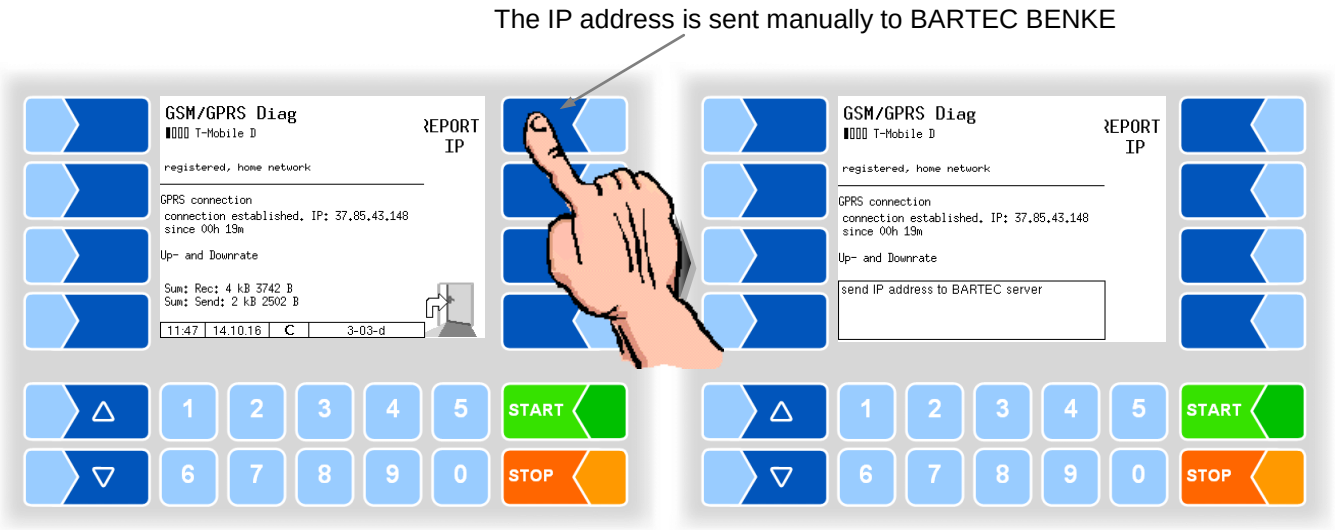


GPRS Configuration			
	U	Device	Interface (default: /dev/usb/ttyUSB0 dev/ttySM0 für Ex-TIGER)
		Baud Rate	57600 (default)
		Activate Modem	Yes: Modem activated No: Modem not activated; the modem can be switched on and off in the diagnostics menu (see section 6.3.6).
		Provider data	
		APN-Server	Provider's dial-in server
		APN User	Provider
		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 on-line by using the diag softkey (see page 60).

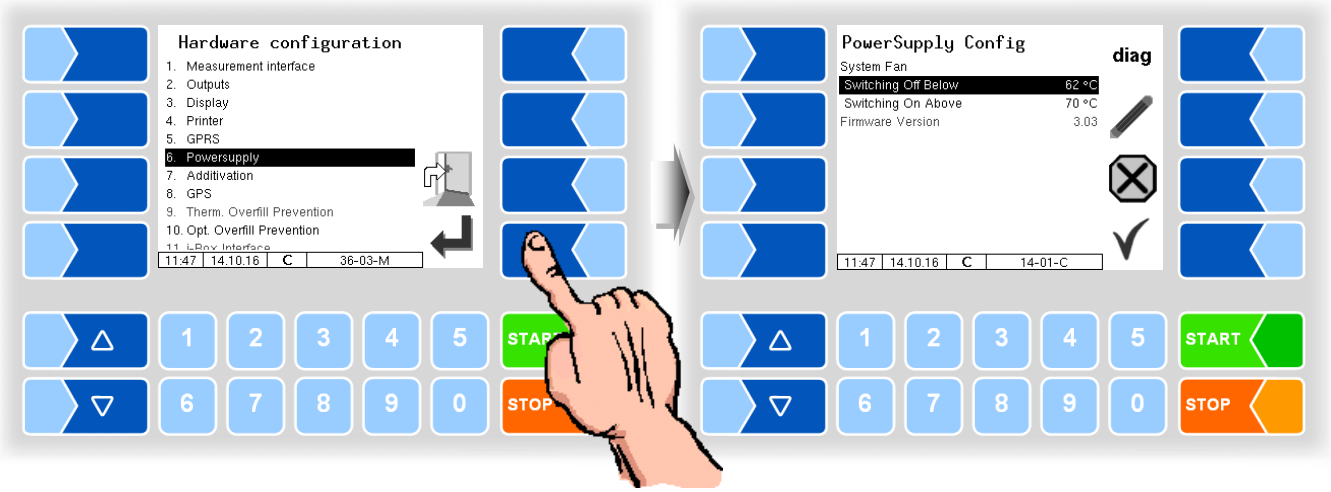
The diag softkey can be used to access a service function for diagnosing the GRPS unit.





You can open the GPRS diagnostics also in the diagnostics menu (see section 6.3.5).

3.2.6.9 Power supply

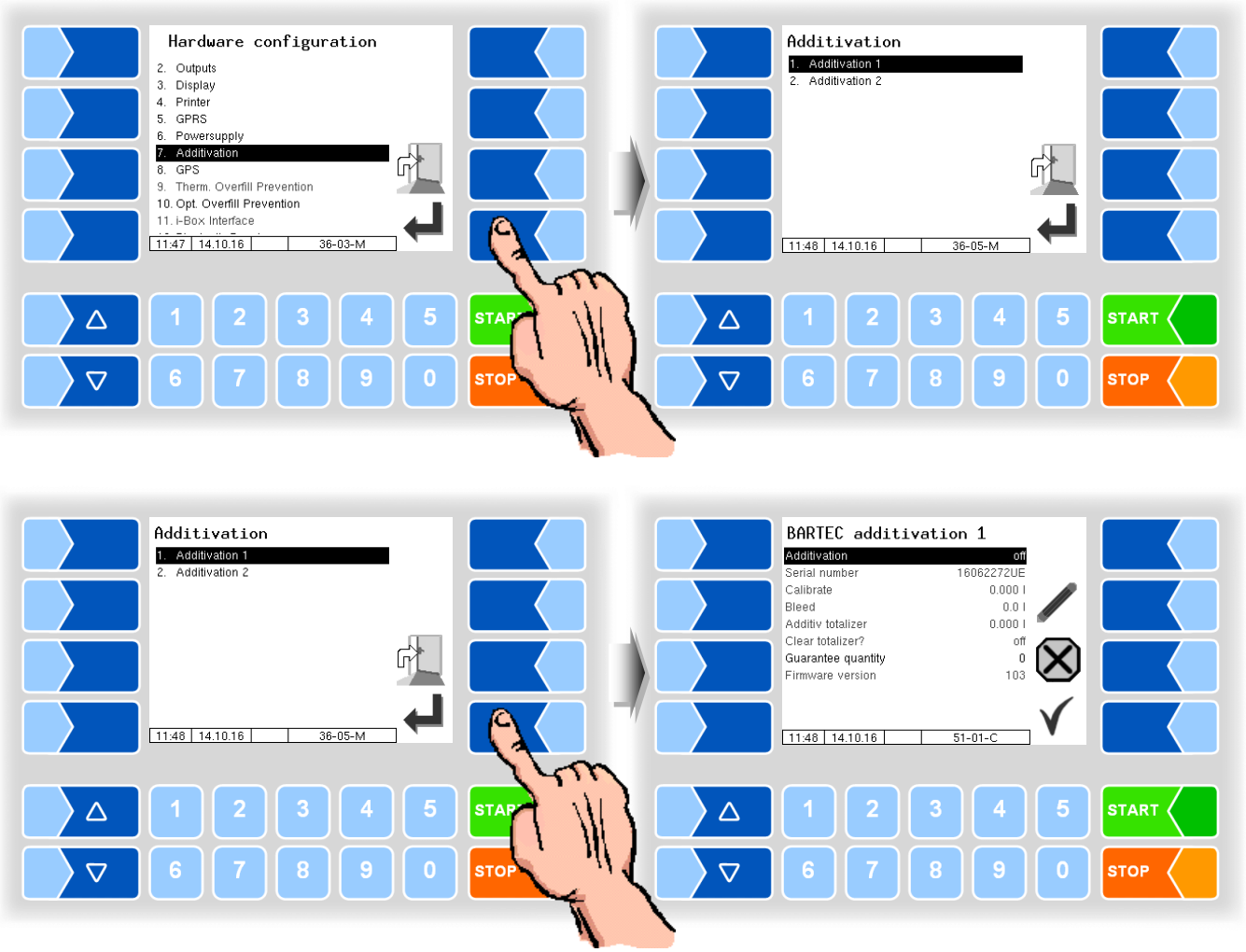


Power Supply Config			
	S	System Fan (no function when using a power supply without fan)	
		Switching Off Below	Temperature at which the fan is switched off
		Switching On Above	Temperature at which the fan is switched on
		Firmware Version	Displays the firmware version

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

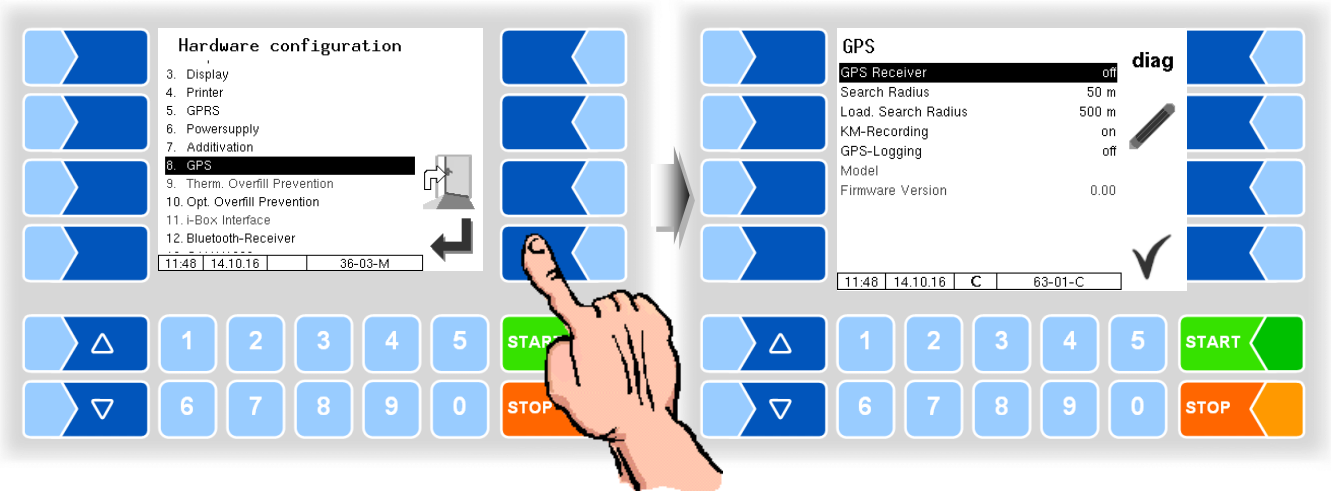
3.2.6.10 Additivation

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 3.2.4.2).



BARTEC Additivation 1/2			
	S	Additivation	Switching the additivation unit ON or OFF
		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
	D	Bleed	Bleeding the additivation unit - after starting put in the desired bleeding quantity, - start bleeding
	S	Additiv totalizer	displays the Additiv totalizer
		Clear totalizer?	ON → clears the Additiv totalizer
		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

3.2.6.11 GPS



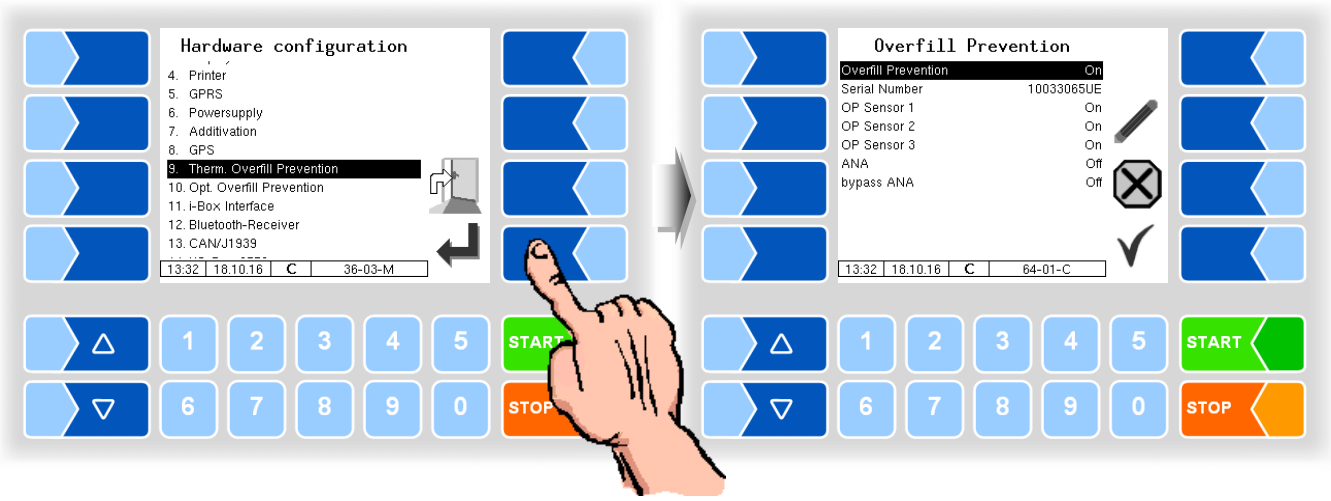
GPS			
	U	GPS Receiver	Activate/deactivate the GPS receiver
		Search Radius	*-without function-*
		Load. Search Radius	*-without function-*
		KM-Recording	*-without function-*
		GPS-Logging	When querying the GPS data, these are recorded in the Emf log file for diagnostic purposes.
		Model	Model version
		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 6.3.9).

3.2.6.12 Thermical Overfill Prevention

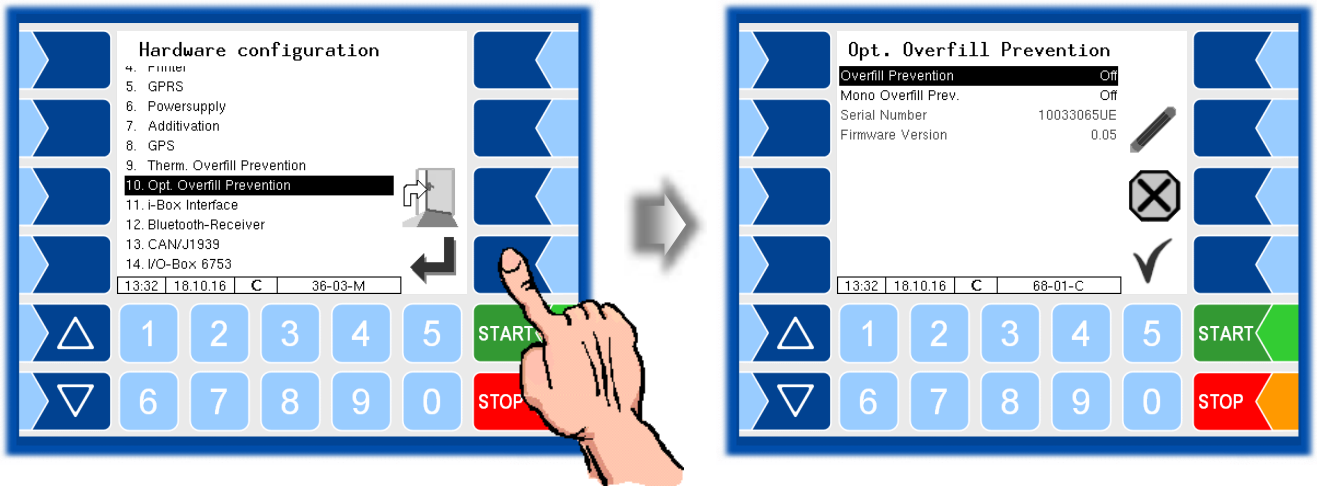
(Available on vehicles with "Ex-TIGER")



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 channel 1, 2 and 3 of the Overfill Prevention.
		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.

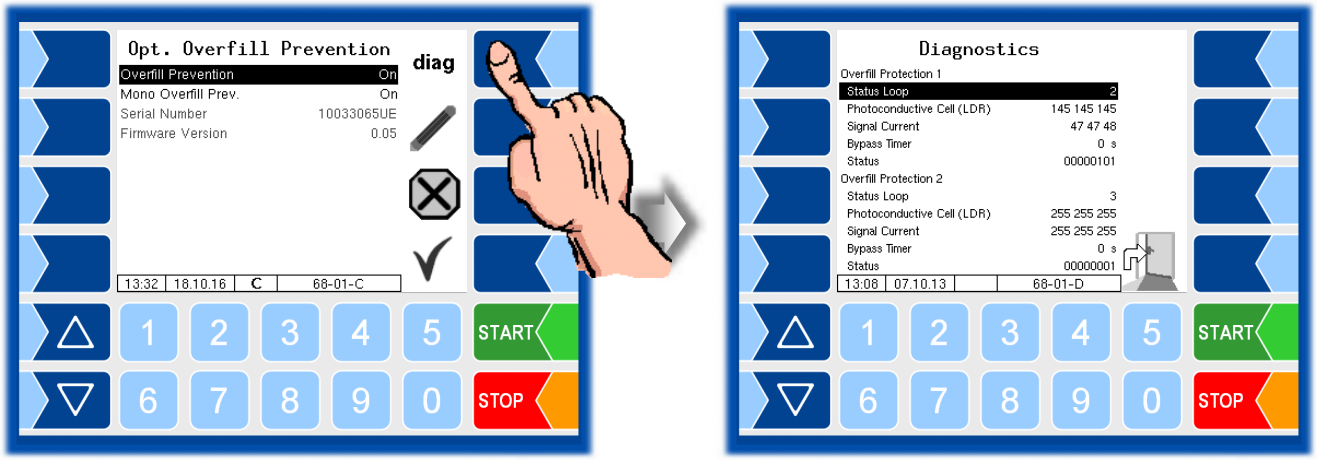
3.2.6.13 Optical Overfill Prevention



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

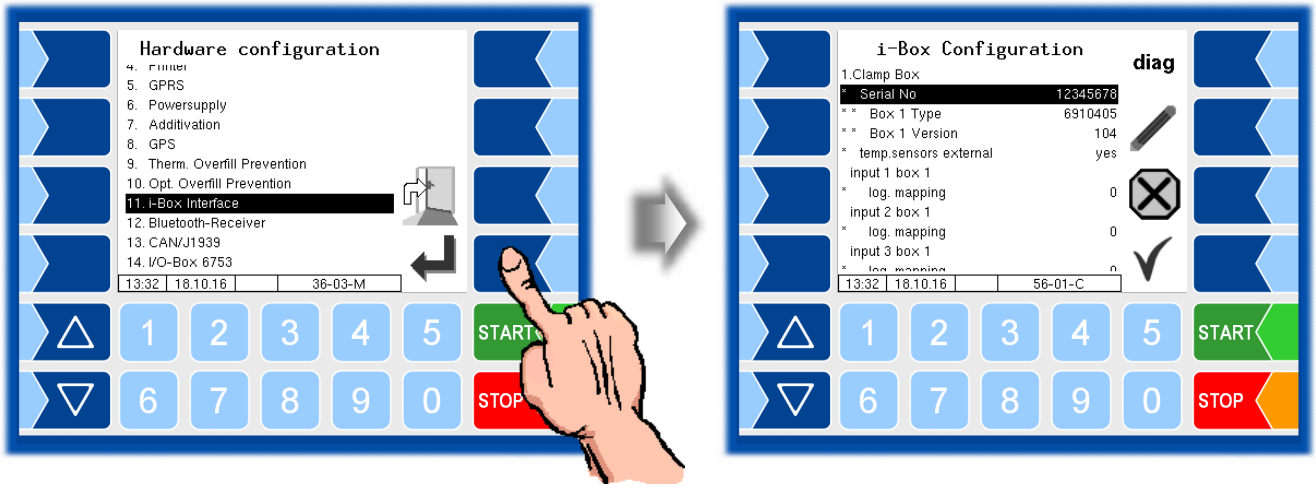
Diagnostics

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.



3.2.6.14 i-Box Interface

(Available in vehicles equipped with “Ex-TIGER”)



i-Box Configuration				
	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		
	*temp. sensors exter…	Yes: Temperature sensors are attached to the clamp box No: Temperature sensors are attached directly to the i-box interface plus card		
	input 1 (...12) Box 1			
C	*log. mapping	Assignment in the software (see page 40)		
	*invert	Yes: The switching behaviour is inverted No: The switching behaviour is not inverted		(1)
	*Namur	Yes: A Namur sensor is attached at the input. No: An NC/NO contact is attached at the input.		
	temperature sensor 1 (...6)			
	*log. mapping	Assignment of the temperature sensor to the compartment		
	*calib. 0/-195°C	Resistance at 0°C or -195°C	*(Default: 100)*	(2)
	*calib. 50/-80°C	Resistance at 50°C or -80°C	*(Default: 119,4)*	
		(2) Depending on the sensor used (0 to 50°C or -195 to -80 °C)		

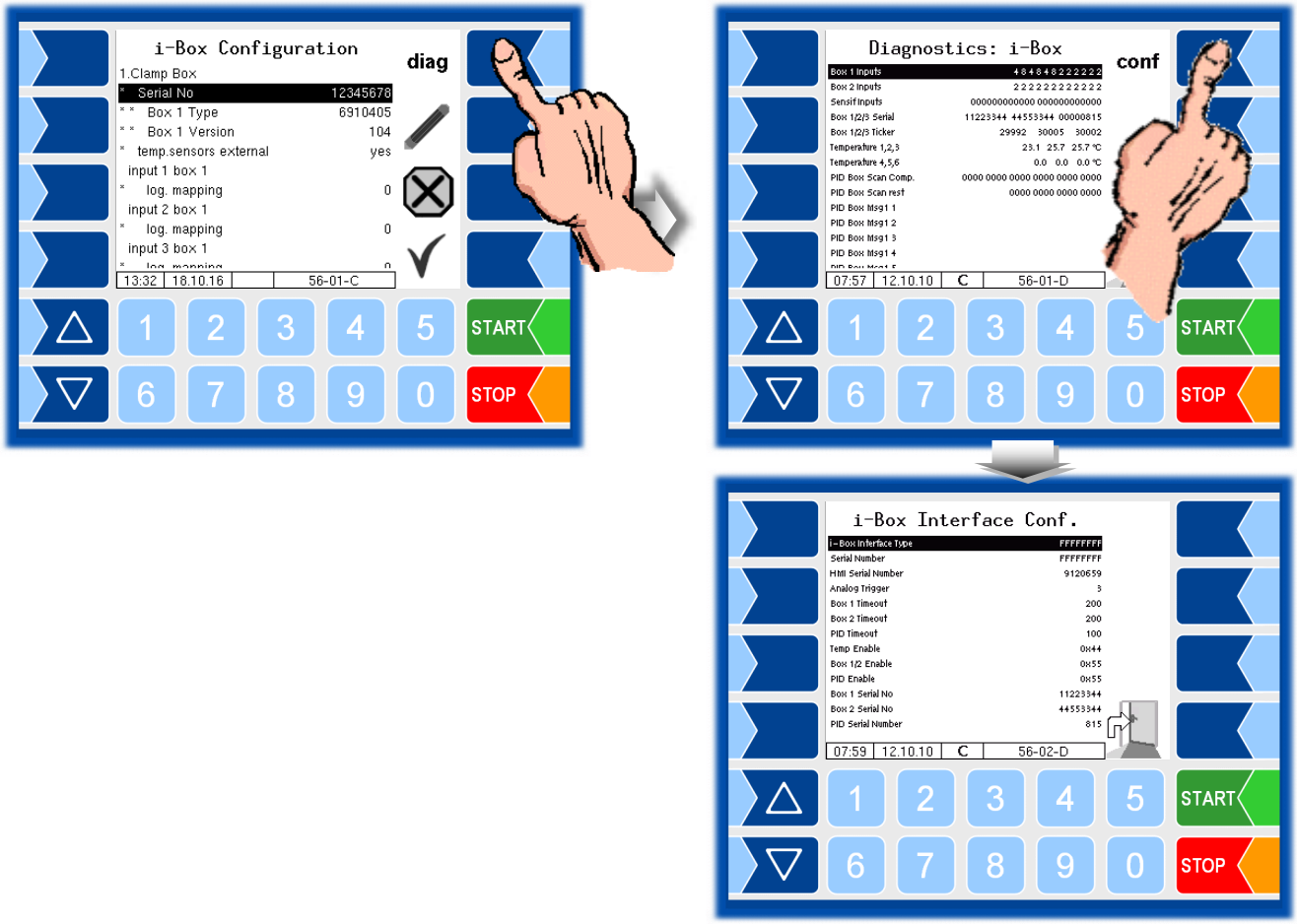
	C	**2. Clamp Box** (Tank identification sensors)		
		Serial No	Serial no. of the clamp box	
		OFP-Plug Magnets	Yes: the magnetic code product ID in the limit-sensor-plug is active *The inputs 1…12 are not displayed when "OFP-Plug Magnets" is set to "Yes".*	
		Box 2 Type	displays the Box Type	
		Box 2 Version	displays the Box Version	
		input 1 (...18) Box 2 (13. ...18. if the parameter "*OFP-plug magnets*" is set to "Yes") (see page 40)		
		log. mapping	Assignment in the software	
		invert	Yes: The switching behaviour is inverted No: The switching behaviour is not inverted	(1)
		Namur	Yes: A Namur sensor is attached at the input. No: An NC/NO contact is attached at the input.	
		PID clamp box		
		Serial Number	Serial no. of the clamp box	
		Type	displays the Box Type	
		Version	displays the Box Version	
		LOG-Level	Specifies the scope of the entries in the log file (by entering the bit significance) 0: No entries 1: 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 behavior see section 6.3.2 "Diagnostics of the logic inputs and outputs".

Diagnostics

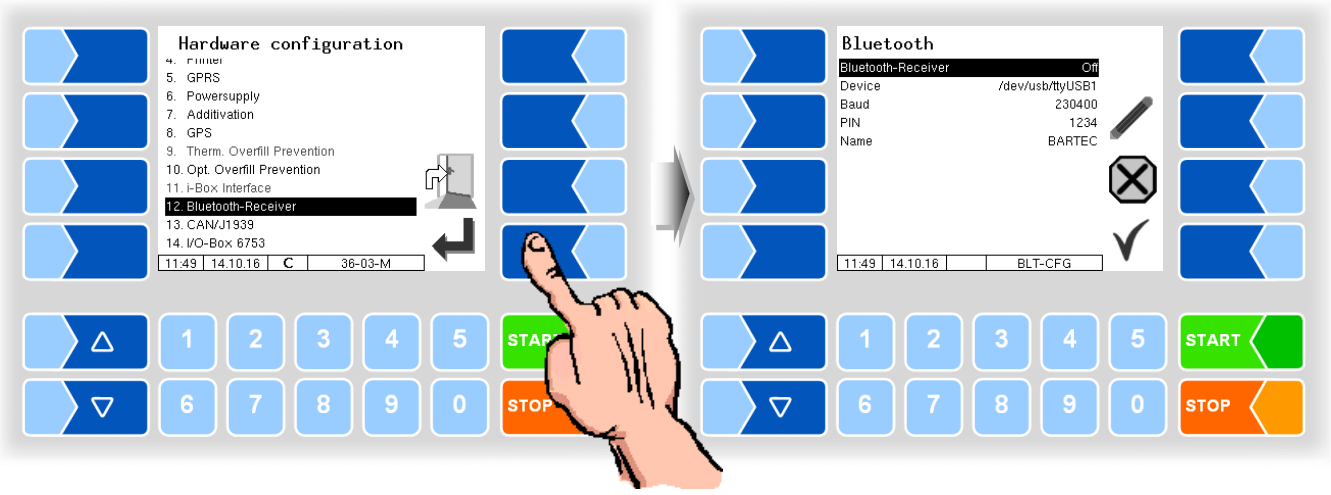
The diagnostics function is used to check the statuses of the temperature sensors, the PID scan cables and the inputs of the wet log sensors (service function). During proceeding an order you can start the i-Box diagnostics in the diagnostics menu (see appendix, section 6.3).

A description of the i-box diagnostics can be found in the appendix, section 6.3.1.



3.2.6.15 Bluetooth Receiver

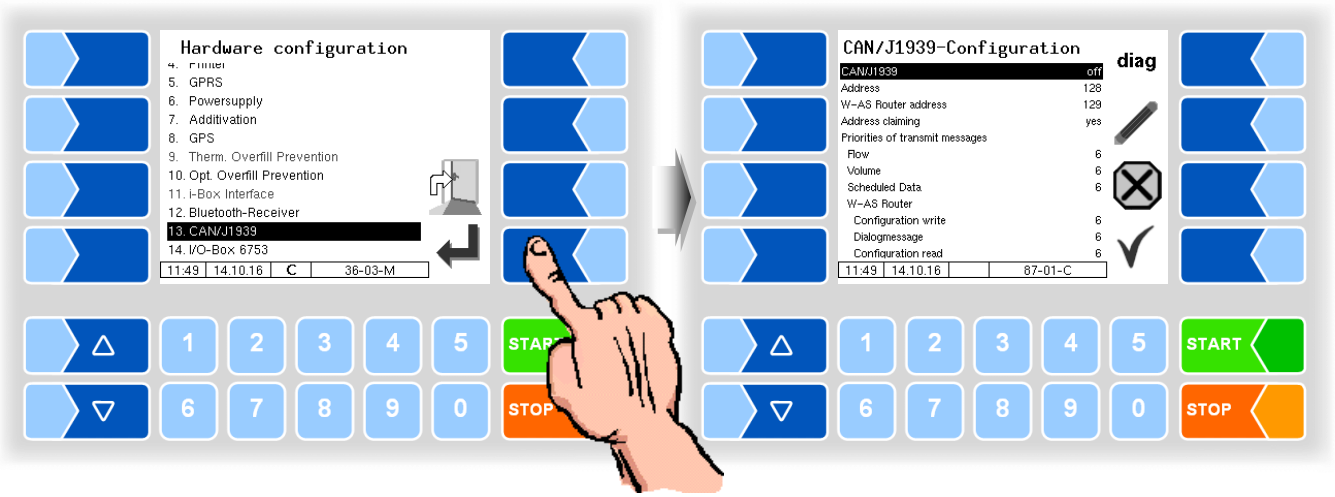
The Bluetooth interface is used to connect the 3003 service tool.



Bluetooth			
	S	Bluetooth Receiver	activate/deactivate the bluetooth receiver
		Device	interface designation (/dev/ttyUSB0)
		Baud	baud rate selectione
		Pin	access code
		Name	name of the application (e.g. N^{o} of the tank)

The Bluetooth Interface has to be activated in the service menu (see section 3.5.16).

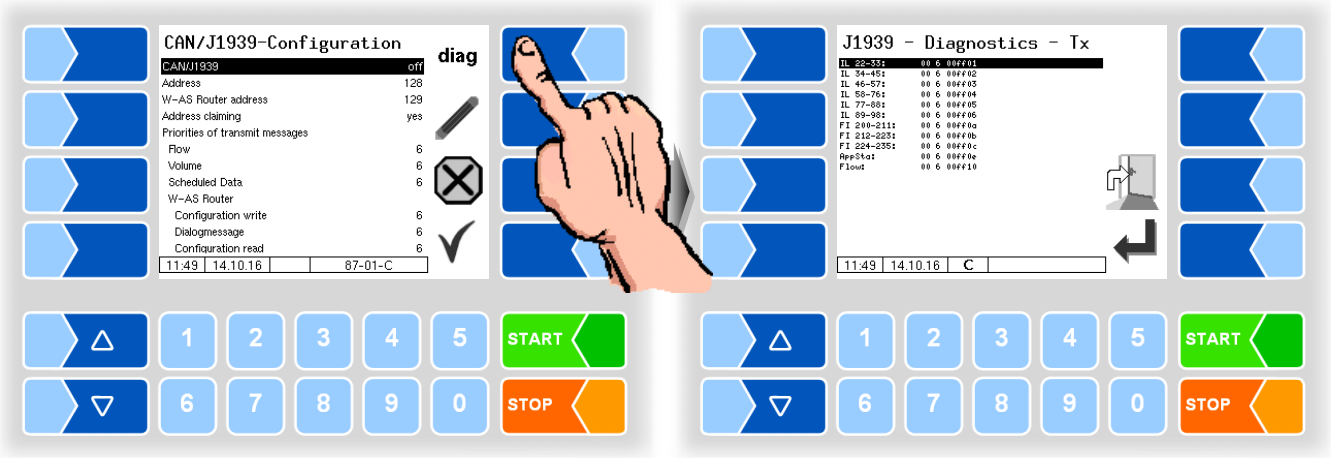
3.2.6.16 CAN / J1939 (Wireless overfill prevention)



CAN / J1939		
U	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	For service purposes. *(Standard: 6)*
	Volume	
	Scheduled Data	
	W-AS Router	
	Configuration write	
	Dialogmessage	
	Configuration read	
	Diagnostic read	
	Configuration save	
	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 thermical wireless overfill prevention.
	Version	
	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

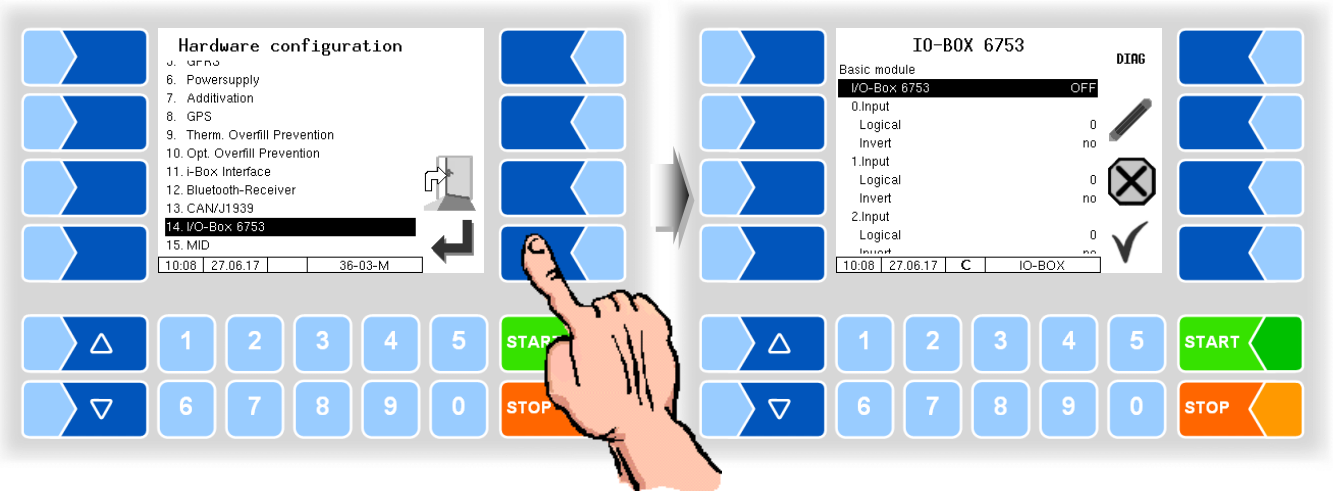
Diagnostics

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 6.3.12).

3.2.6.17 I/O-Box 6753



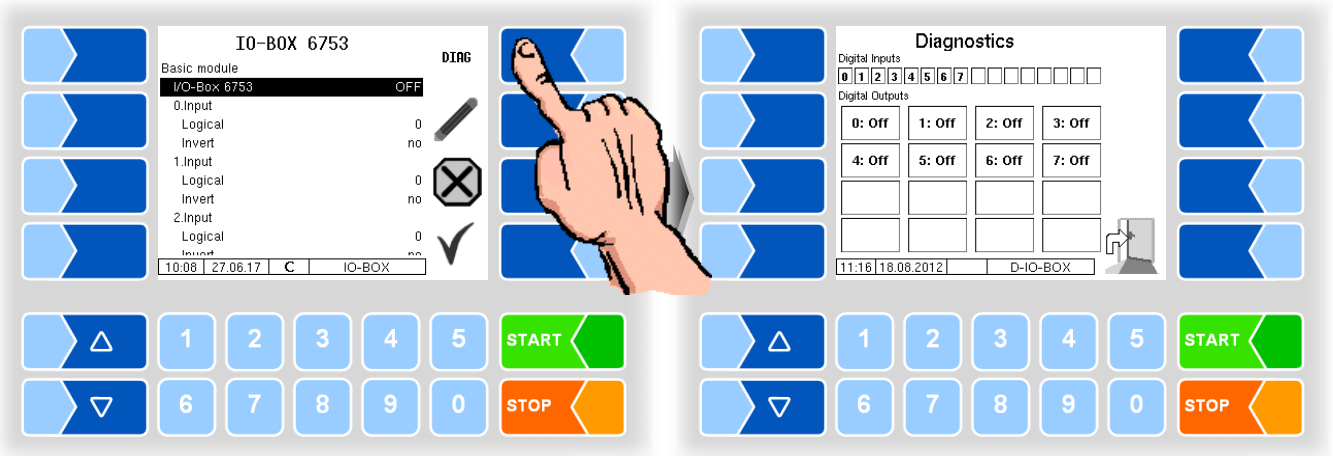
The basic module of the I/O-Box 6753 has 8 inputs and 8 outputs. The I/O box can be extended by additional modules each with 8 inputs or outputs.

I/O –Box 6753			
S	Basic module		
	I/O-Box 6753	ON/OFF	
	0. (…7.) Input		
	Logical	Assignment of inputs in the software (see page 47)	
	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 page 40)	
	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 behavior see section 6.3.2 „Diagnostics of the logic inputs and outputs“.

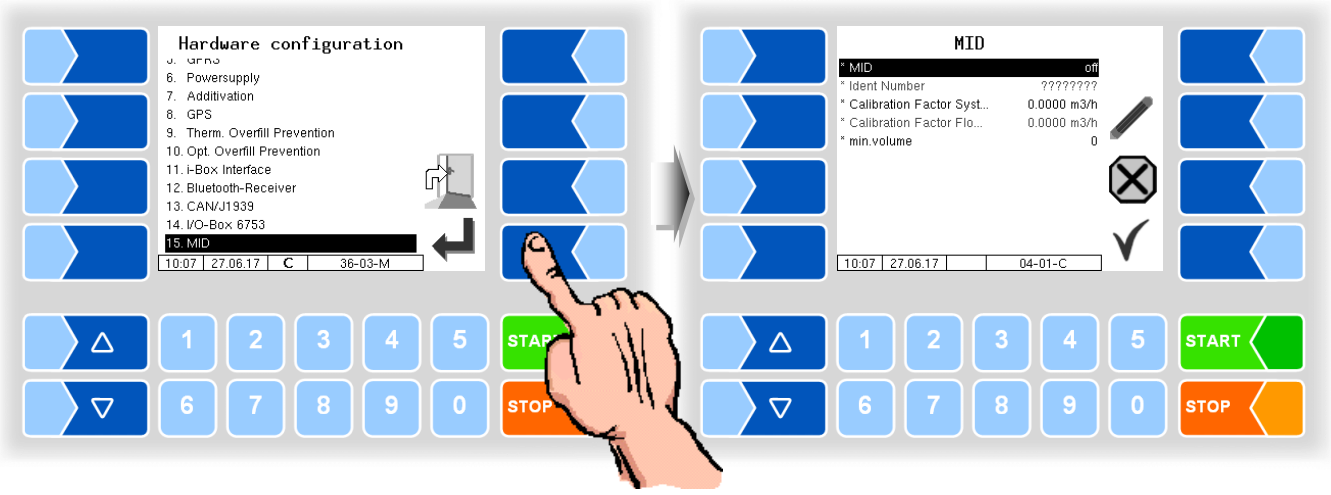
Pulse outputs can only be controlled by the 8 outputs of the **basic module**!

Diagnostics



3.2.6.18 MID

The MID is used to measure quantities when delivering products which can not 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.



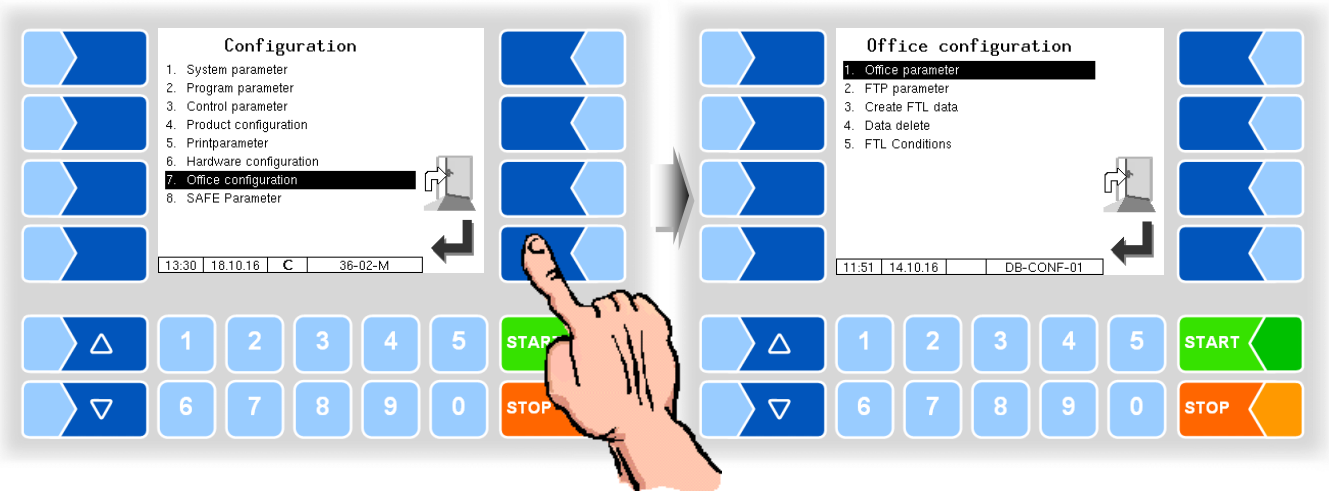
MID			
	C	MID	on/off
		Ident Number	MID serial number
		Calibration Factor System	Calibration factor of the MID saved in the calibration memory of the compact controller. It can only be changed if the calibration switch is on.
		Calibration Factor Flo..	Calibration factor saved in the MID. If the calibration switch in the MID is open, this is transferred 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)

The following additional inputs and outputs are required for the MID:

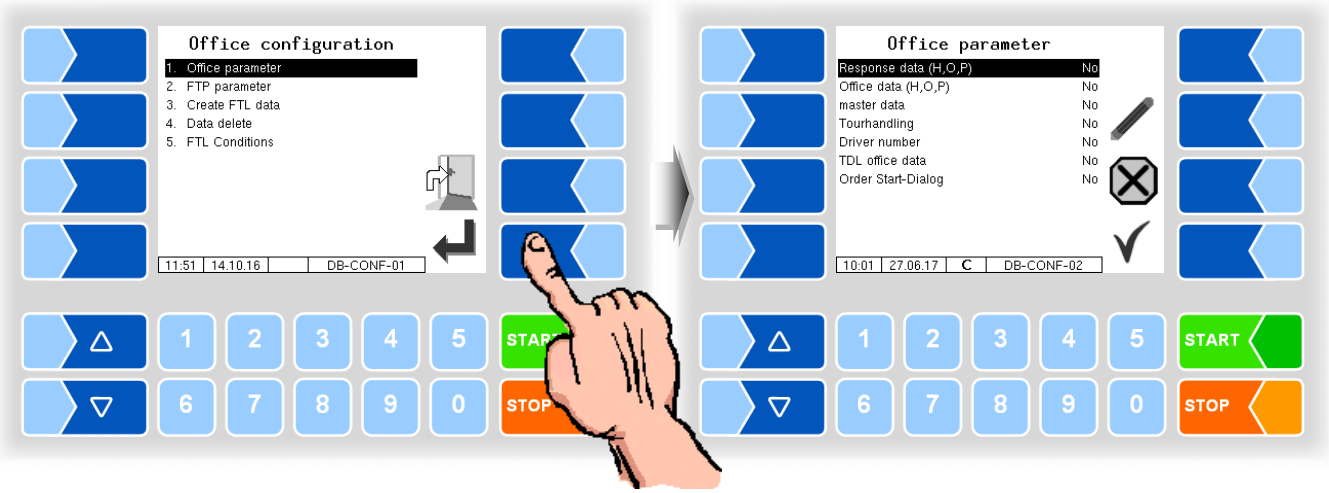
	log. N.*	*Function*
Inputs	7	Empty signal sensor for MID system, compartment 1
	8	Empty signal sensor for system, compartment 2
	9	MID system uses compartment 2 (if there are 2 compartments)
Outputs	31	Full hose valve of the MID system
	32	Dry hose valve of the MID system
	33	Pump enabling MID when filling and delivering
	34	MID venting for filling the system
	35	Bypass delivery MID with full hose
	36	Output for MID delivery, remains set until next TIGER delivery

A list of all outputs and inputs can be found in the Appendix, section 6.2.

3.2.7 Office configuration



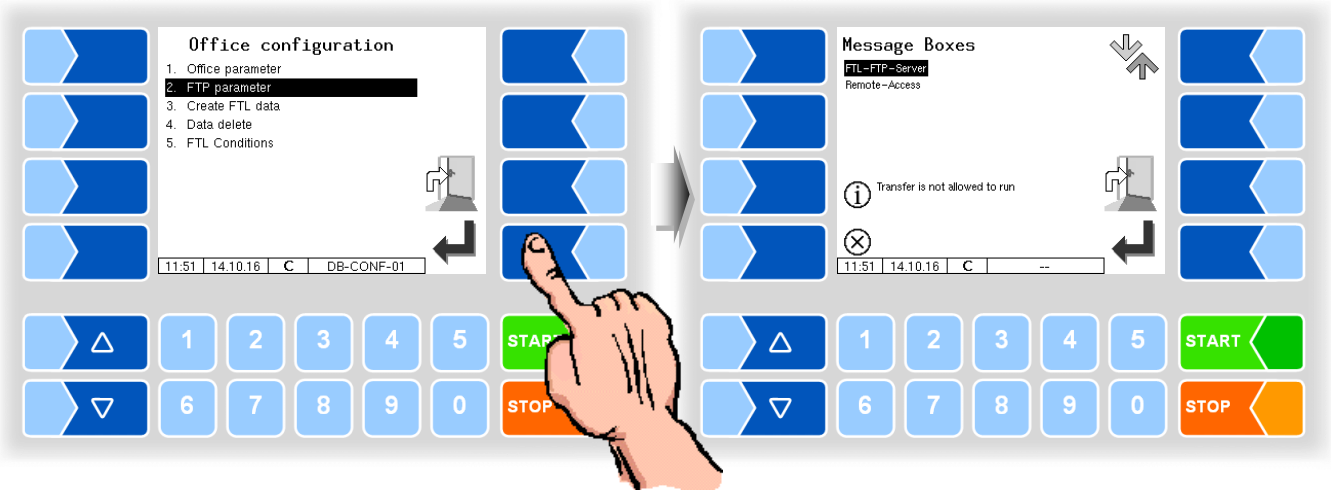
3.2.7.1 Office parameter



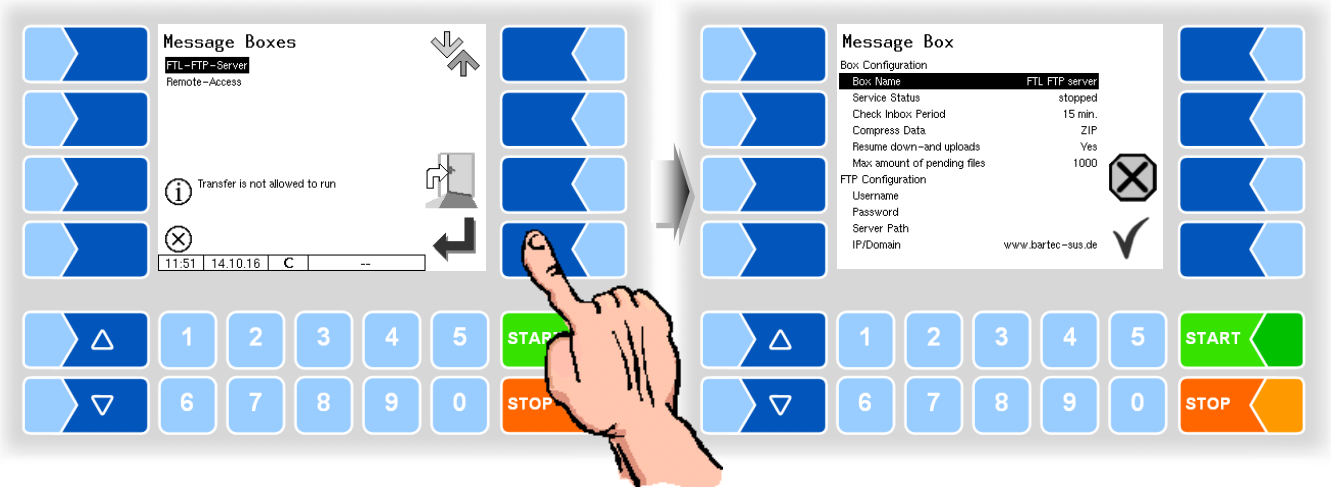
Office parameter			
	U	Response data (H, O, P)	Yes: data response is used (manual triggering possible)
		Office data (H, O, P)	Yes: scheduled data is used
		master data	Yes: master database is used (article database, product database)
		Tourhandling	Yes: Before starting an order must a tour be started (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.

3.2.7.2 FTP parameter

FTL scheduled and return data is transmitted via an FTP server. One or more message boxes can be configured for this purpose.



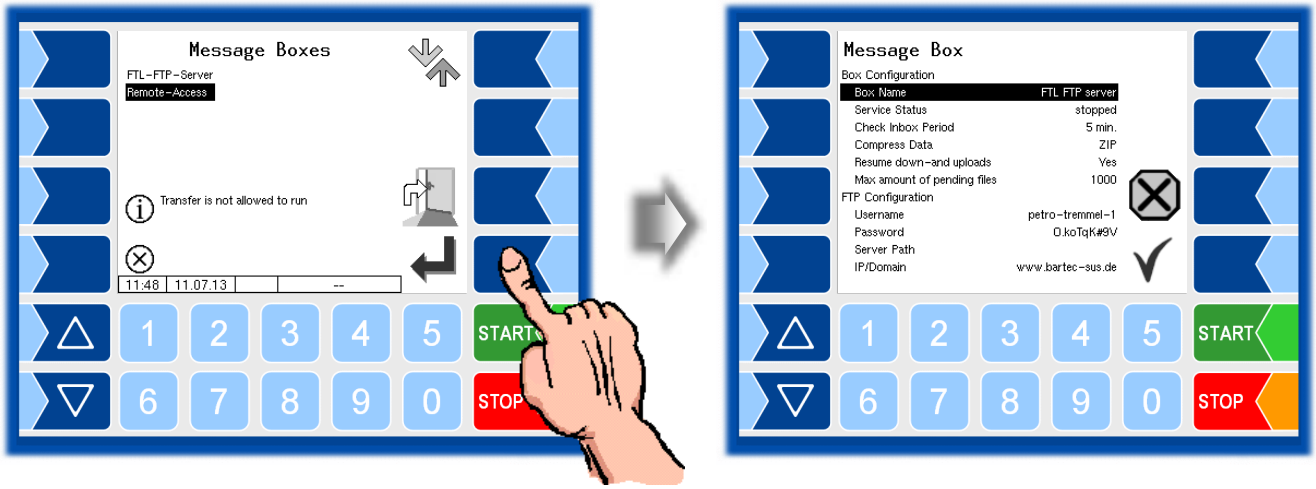
If there are several message boxes to choose from, you can select the required message box using the ▽ and △ keys.



Message Box			
	S	Box Configuration	
		Box Name	Name of the message box
		Service Status	run: Data transmission option on stopped: Data transmission option off
		Check Inbox Period	Time after which the system checks whether any data is waiting to be transmitted to the vehicle. This check is also performed every time data is sent. *(Standard: 15)*
		Compress Data	Yes: The data to be sent is compressed No: The data to be sent is not compressed
		Resume down and uploads	Yes: The server supports the Resume function (resumption if transmission is incomplete) No: The server does not support the Resume function
		Max. amount of pending files	Maximum number of files that have not yet been transferred. *(Standard: 1000)*
		FTP Configuration	
		Username	Name given to the vehicle
		Password	Password given to the vehicle
		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 No (allow fallback): If the registered certificate is not found, another one is accepted instead.
		Certificate	Here you select the certificate
		TSL / SSL Version	Here you select the TLS / SSL version (TLSv1 or SSLv3)

Online Service Function

For using the online service function (see section 3.5.15 and 6.3.10) configure the access here.

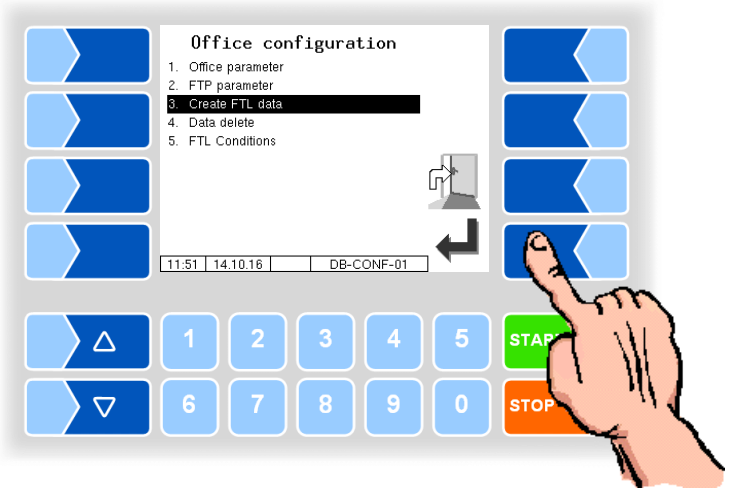


Set the parameters to the values shown here.

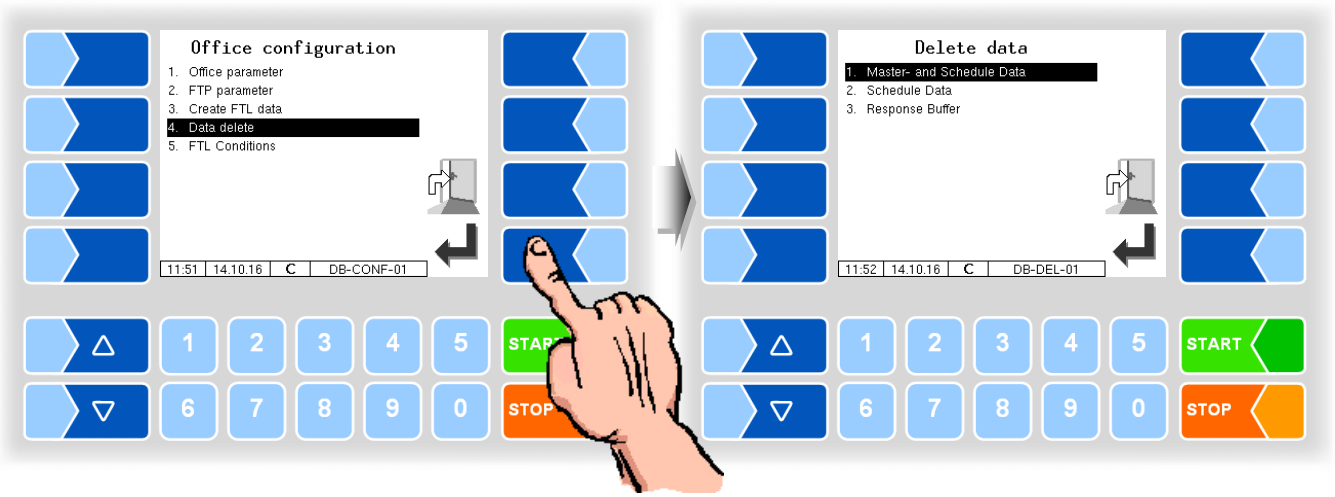
3.2.7.3 Create FTL data

(Office configuration/FTL Conditions/Create FTP-RC-File ≠ 0; page. 79)

When confirming this menu item, response data will be generated and made available for transmission to the Office. 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 4.7).



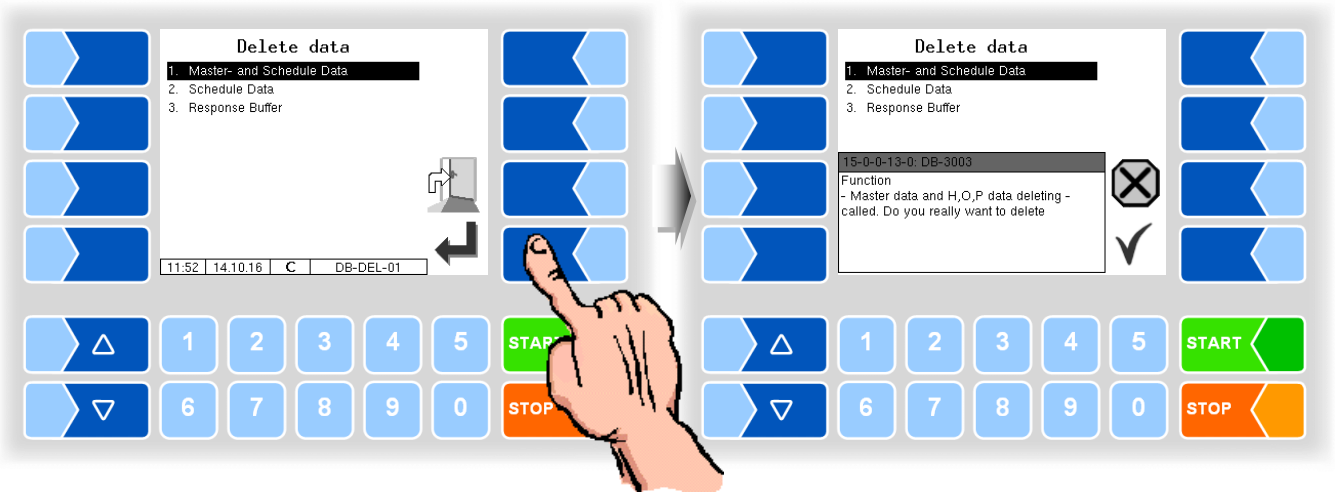
3.2.7.4 Delete data



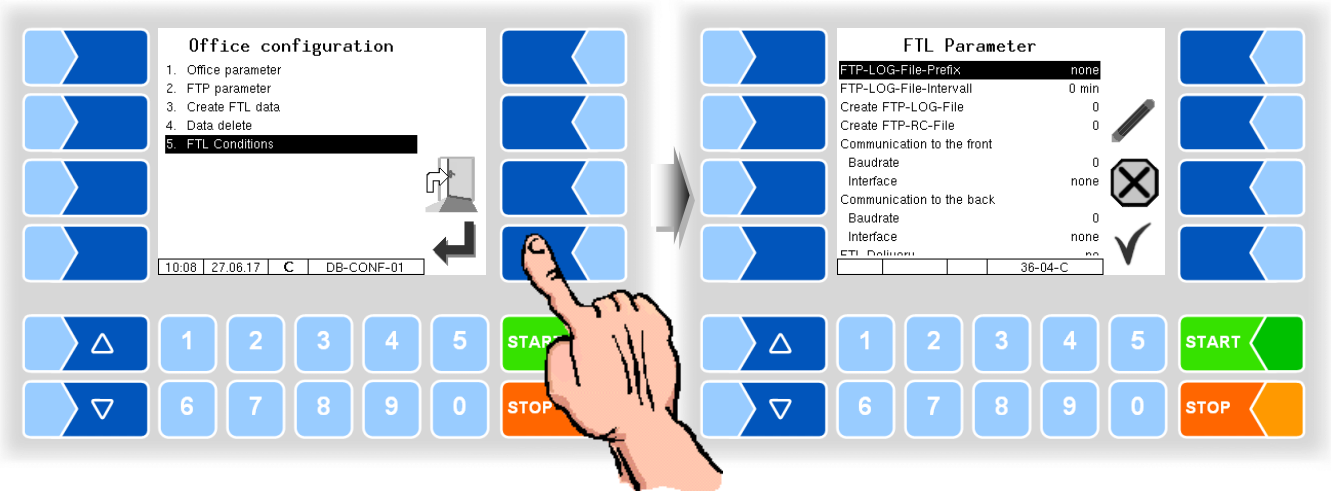
Delete data			
	U	Master and Schedule Data	Master and schedule data is deleted.
		Schedule Data	Only schedule data is deleted.
		Response data	Response data is deleted.

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

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



3.2.7.5 FTL Conditions

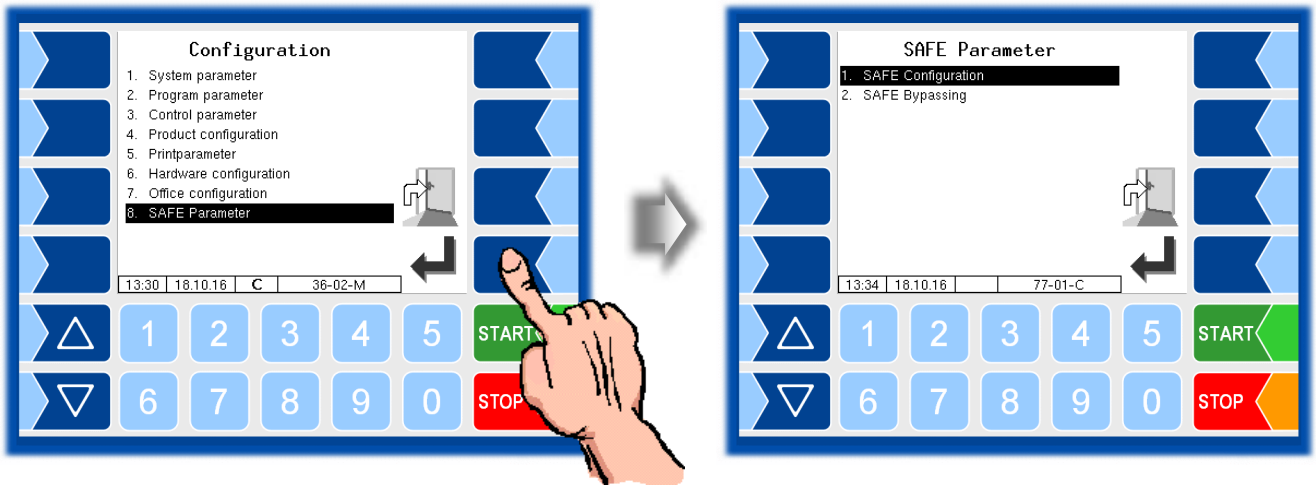


FTL Parameter			
S	FTP-LOG-File Prefix	String that appears before each line in the LOG file.	*Set only when FTP transfer is enabled (see page 76, FTP parameter/ Service Status set to "run") and the modem is switched on (see page 59 GPRS, Activate Modem:yes).*
	FTP-LOG-File-Interval	Time in minutes, after which a LOG file is transferred to the FTP server.	
	Create FTP-LOG-File	0: There is no logfile transfer. 1: The logfile is transferred after finishing a tour. 2: The logfile is transferred after finishing an order. 3: The logfile is transferred after finishing an order and after finishing a tour.	
	Create FTP-RC-File	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	**TIGER:** /dev/**ttyS3** **Ex-TIGER** /dev/**ttySM1**	
	Communication to the back	Communication from the towing vehicle to the trailer.	
	Baudrate	**9600**	*Set only when the interface is used!*
	Interface	**Ex-TIGER:** /dev/**ttyS3**	

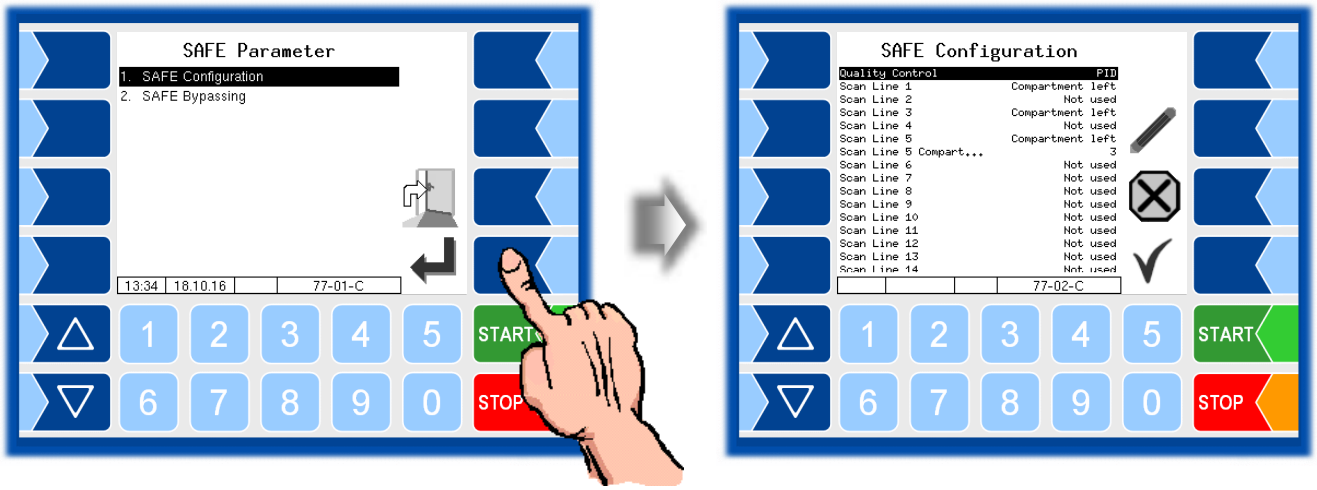
	S	FTL Delivery	no: Communication between the system and the On Board Computer is unchanged. (No change is required for an existing On Board Computer connection). *(Default)* yes Communication occurs with extended FTL record.
		OBC Printout	2: Adjusting the layout for printing via the on-board computer. *Please contact BARTEC BENKE service for further information.*
	U	LOG Output Filter	Filter for entering entries of standard outputs in the FTL logfile (hexadecimal format) 0: No entries 1: Entries
		LOG Period	Period for which the logfile is saved (Journal with errors) *(Standard: 20 days)*
		LOG GPS Intervall	The GPS coordinates are saved after the time entered here in minutes has elapsed.
		FTL-LOG in BARTEC-LOG	yes: Entries from FTL-logfile will also be written to the BARTEC-logfile
		OBC-Diagnostics	yes: The communication between On Board Computer and counter will be logged.
		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.

3.2.8 SAFE Parameter

(Available in vehicles equipped with “Ex-TIGER”)



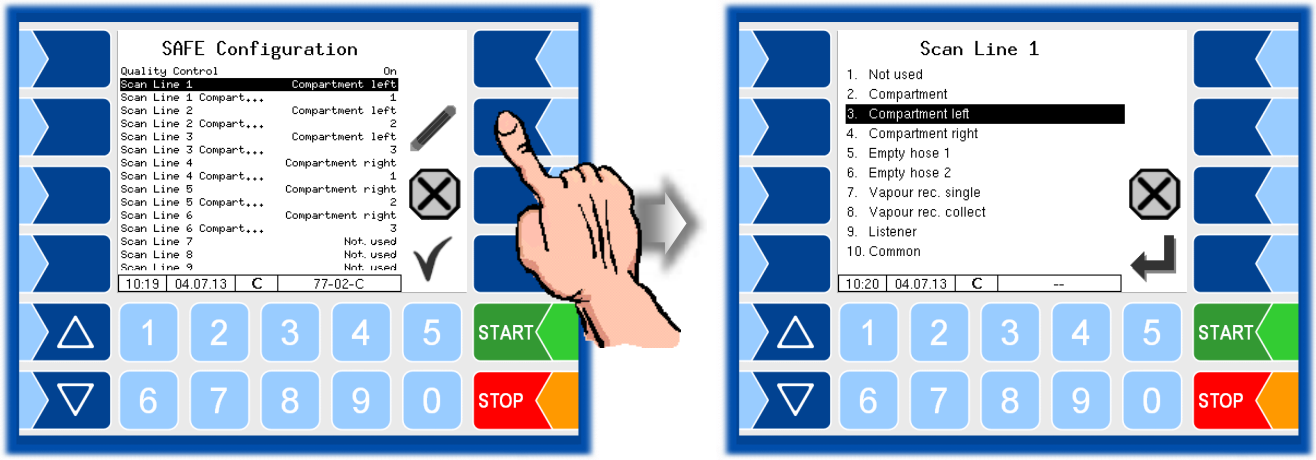
3.2.8.1 SAFE Configuration



SAFE Configuration			
	U	Quality Control	Off: There is no quality assurance. PID: Quality assurance activated Manual: *Not supported in version pair pair 1.16.X.* PID+Manual: *Not supported in version pair pair 1.16.X..*
	U	Scan Line ...	Logical assignment of the scan lines
	S	Scan Line 21…24	
	U	Scan Line ... Compart…	Sequential compartment number
		PID Connect Delay	Period of time that the PID must be permanently present, for reading the PID-Information. *Standard: 0.5 s* ✱
	U	PID Signal Damping	Damping level of the PID shutdown for interruption of product and vapor return hose connections low ✱ middle high

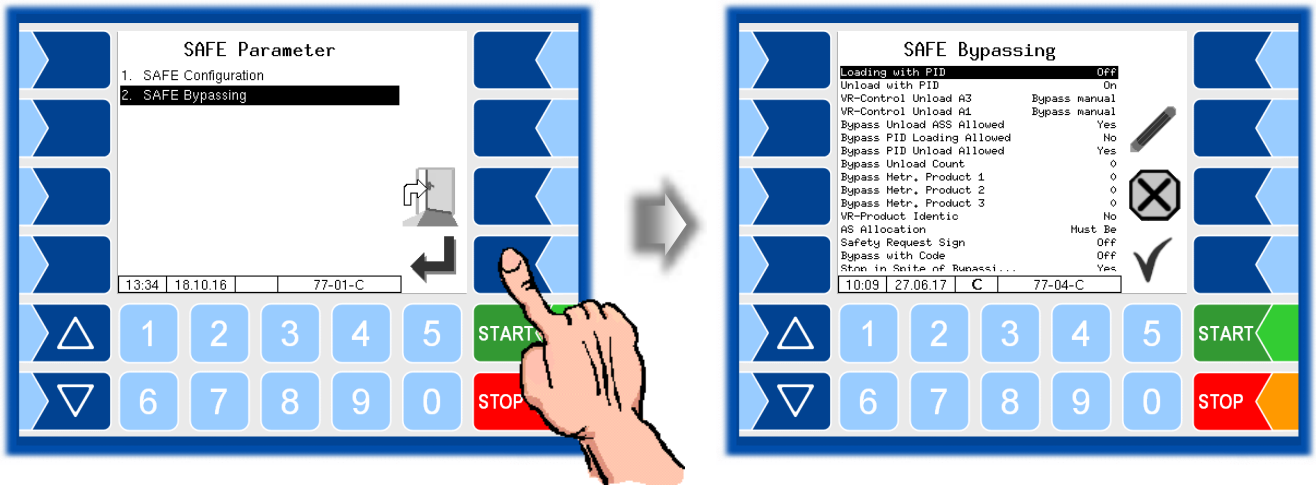
✱ permitted setting in accordance with VdTÜV certificate

Assignment of the scan lines



Select the assignment from the list.

3.2.8.2 SAFE Bypassing



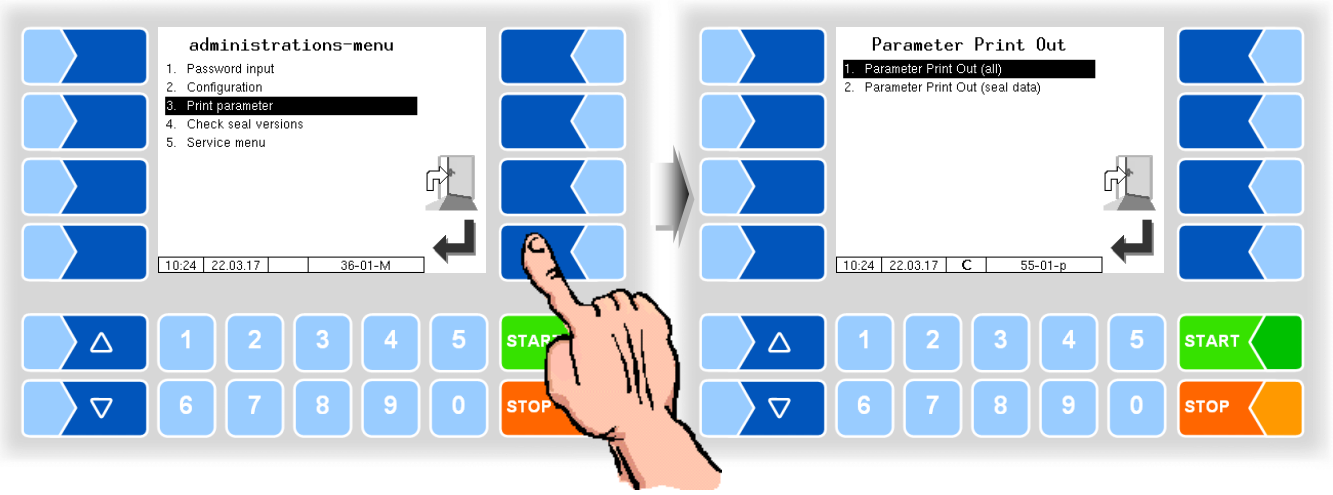
SAFE Bypassing		
	Loading with PID	On: Loading using the Quality Assurance System Off: The Quality Assurance System is bypassed during loading
	Unload with PID	On: Deliveries using the Quality Assurance System Off: The Quality Assurance System is bypassed during delivery
U	VR-Control Unload A3	Must Be: 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 Unload ASS Allowed	Yes: The filler hose protection is allowed to be bypassed during delivery. ❋ No: The filler hose protection is <u>not</u> allowed to be bypassed during delivery. ❋
		Bypass PID Loading Allowed	The quality assurance system is allowed/not allowed to be bypassed during loading.
		Bypass PID Unload Allowed	The quality assurance system is allowed/not allowed to be bypassed during loading.
		Bypass Unload Count	Number of simultaneous deliveries that may be done with bypass. 0: no bypass ❋ 1: one delivery with bypass ❋ 2: two simultaneous deliveries with bypass ❋ 3: three simultaneous deliveries with bypass
		Bypass Metr. Product 1 (2, 3)	Product number of the metrological product for which the quality assurance system is automatically bypassed during delivery.
		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	*When a Quality Assurance System component shall be bypassed, a 5 digits code is generated and displayed. The driver must this code send to the office via On Board Computer. If the office permits bypassing, a response code is sent back. To enable the bypassing this response code must be entered at the operating unit.* Off: Bypassing with code is disabled. Load: Bypassing with code is allowed during loading. Unload: Bypassing with code is allowed during unloading. Load + Unload: Bypassing with code is allowed during loading and unloading.
		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 assignement of the vapor return to the overfill prevention will not be checked. Bypass manual: If no vapor return can be assigned to the overfill prevention, bypassing can be done manually. ❋
		Lead is L.Substitute	Yes: The PID of leaded gasoline is valid for lead substitute (see also section *3.2.4.2 PID-Delivery leaded*).

❋ permitted setting in accordance with VdTÜV certificate

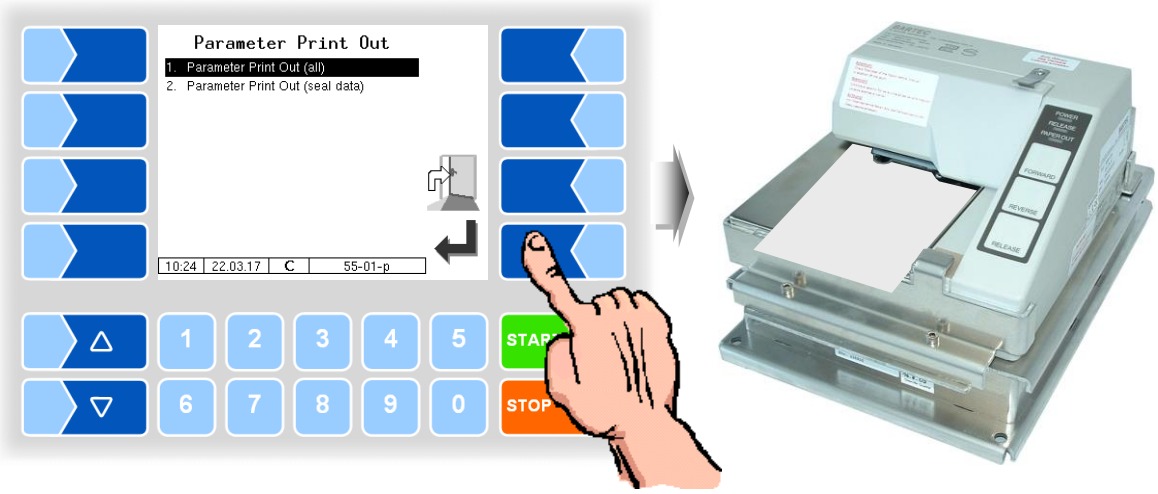
3.3 Print parameter

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



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

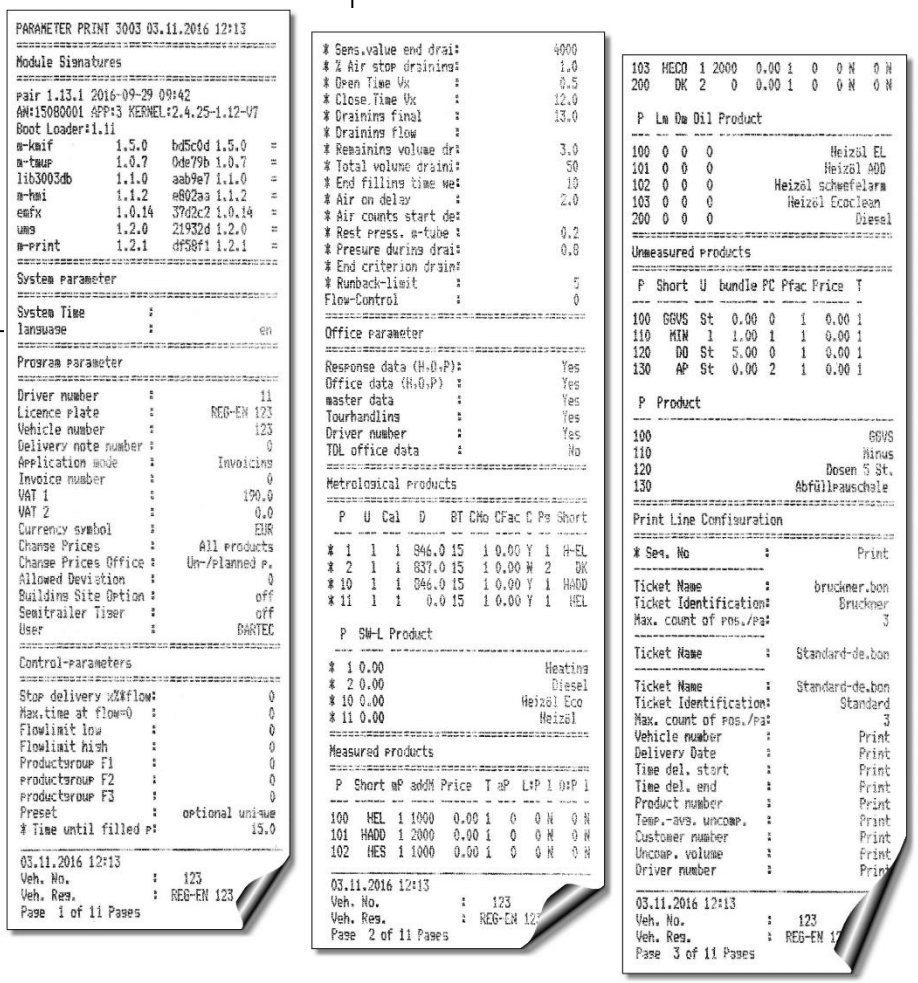
The current settings for the configuration parameters are output to the configured printer.



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
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
Y	Yes
N	No

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



PARAMETER PRINT 3003 03.11.2016 12:13

Module Signatures

pair 1.13.1 2016-09-29 09:42
AM:15080001 APP:3 KERNEL:2.4.25-1.12-V7
Boot Loader:1.11

m-kmif	1.5.0	bd5c0d	1.5.0 =
m-tmup	1.0.7	0de79b	1.0.7 =
lib3003db	1.1.0	aab9e7	1.1.0 =
m-kmi	1.1.2	e802aa	1.1.2 =
emfx	1.0.14	37d2c2	1.0.14 =
ums	1.2.0	21932d	1.2.0 =
m-print	1.2.1	df58f1	1.2.1 =

System parameter

System Time	:
language	: en

Program parameter

Driver number	: 11
Licence plate	: REG-EN 123
Vehicle number	: 123
Delivery note number	: 0
Application mode	: Invoicing
Invoice number	: 0
VAT 1	: 190.0
VAT 2	: 0.0
Currency symbol	: EUR
Change Prices	: All products
Change Prices Office	: Un-/Planned p.
Allowed Deviation	: 0
Buildins Site Option	: off
Semitrailer Tiger	: off
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
* Time until filled p	: 15.0

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Veh. No. : 123
Veh. Reg. : REG-EN 123
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* Sens.value end drai	: 4000
* % Air stop draining	: 1.0
* Open Time Vx	: 0.5
* Close Time Vx	: 12.0
* Drainins final	: 13.0
* Draining flow	:
* Remaining volume dr	: 3.0
* Total volume drain	: 50
* End fillins time we	: 10
* Air on delay	: 2.0
* Air counts start de	:
* Rest press. m-tube	: 0.2
* Presure during drai	: 0.8
* End criterion drain	:
* Runback-limit	: 5
Flow-Control	: 0

Office parameter

Response data (H,O,P)	: Yes
Office data (H,O,P)	: Yes
master data	: Yes
Tourhandlins	: Yes
Driver number	: Yes
TDL office data	: No

Metrological products

P	U	Cal	D	BT	CMo	CFac	C	Pg	Short
* 1	1	1	846.0	15	1	0.00	Y	1	H-EL
* 2	1	1	837.0	15	1	0.00	N	2	DK
* 10	1	1	846.0	15	1	0.00	Y	1	HADD
* 11	1	1	0.0	15	1	0.00	Y	1	HEL

P	SW-L	Product
* 1	0.00	Heating
* 2	0.00	Diesel
* 10	0.00	Heizöl Eco
* 11	0.00	Heizöl

Measured products

P	Short	mP	addM	Price	T	aP	L:P	I	O	D:P	I
100	HEL	1	1000	0.00	1	0	0	N	0	N	
101	HADD	1	2000	0.00	1	0	0	N	0	N	
102	HES	1	1000	0.00	1	0	0	N	0	N	

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103	HECO	1	2000	0.00	1	0	0	N	0	N	
200	DK	2	0	0.00	1	0	0	N	0	N	

P	Lm	Dm	Oil	Product
100	0	0	0	Heizöl EL
101	0	0	0	Heizöl ADD
102	0	0	0	Heizöl schwefelarm
103	0	0	0	Heizöl Ecoclean
200	0	0	0	Diesel

Unmeasured products

P	Short	U	bundle	PC	Pfac	Price	T
100	GGVS	St	0.00	0	1	0.00	1
110	MIN	1	1.00	1	1	0.00	1
120	DO	St	5.00	0	1	0.00	1
130	AP	St	0.00	2	1	0.00	1

P	Product
100	GGVS
110	Minus
120	Dosen 5 St.
130	Abfüllpauschale

Print Line Configuration

* Seq. No	: Print
Ticket Name	: bruckner.bon
Ticket Identification	: Bruckner
Max. count of pos./pa	: 3
Ticket Name	: Standard-de.bon
Ticket Name	: Standard-de.bon
Ticket Identification	: Standard
Max. count of pos./pa	: 3
Vehicle number	: Print
Delivery Date	: Print
Time del. start	: Print
Time del. end	: Print
Product number	: Print
Temp.-avg. uncomp.	: Print
Customer number	: Print
Uncomp. volume	: Print
Driver number	: Print

03.11.2016 12:13
Veh. No. : 123
Veh. Reg. : REG-EN 123
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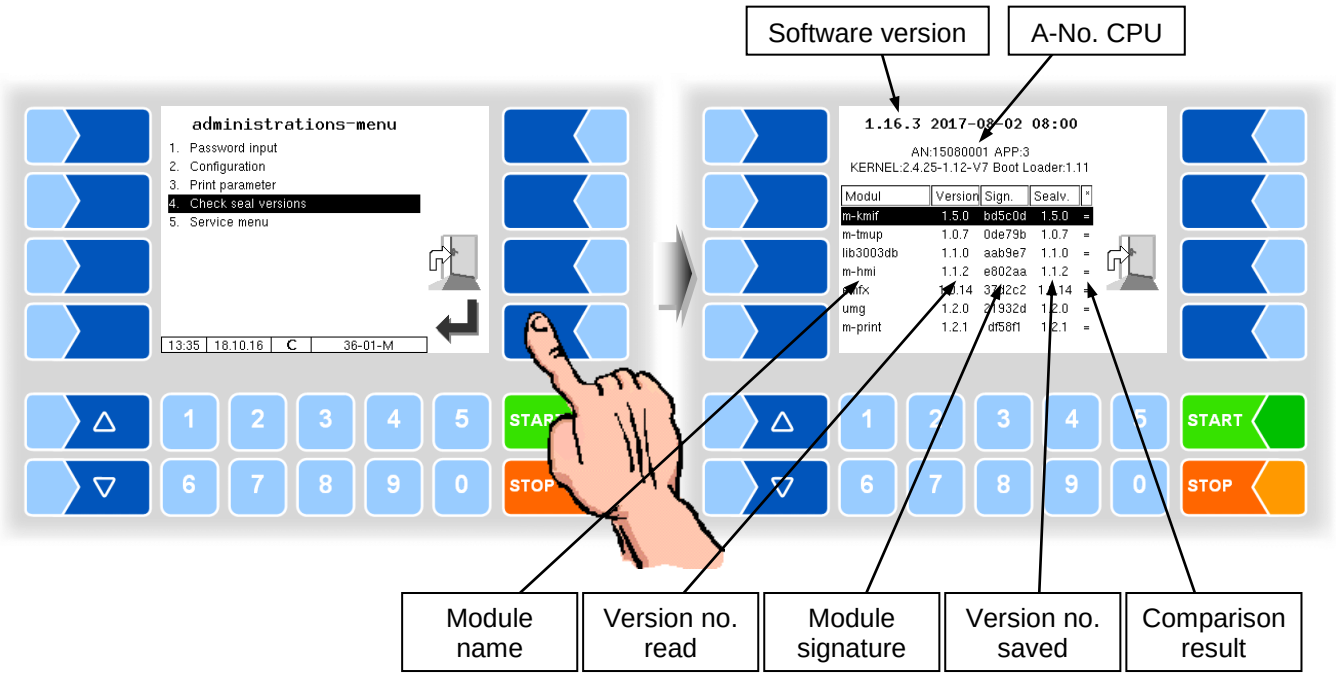
Example parameter print out

3.4 Check Seal Versions

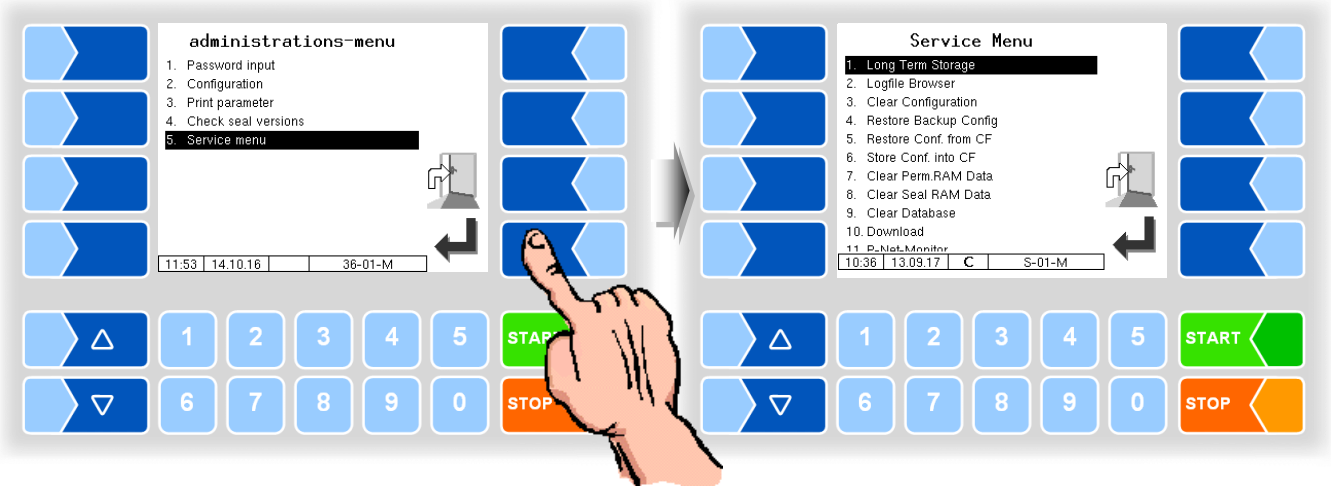
This menu shows the data that is relevant for calibration:
- Software version
- Serial no. of the CPU, application type, kernel no.
- Version comparison of the software modules subject to calibration.



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

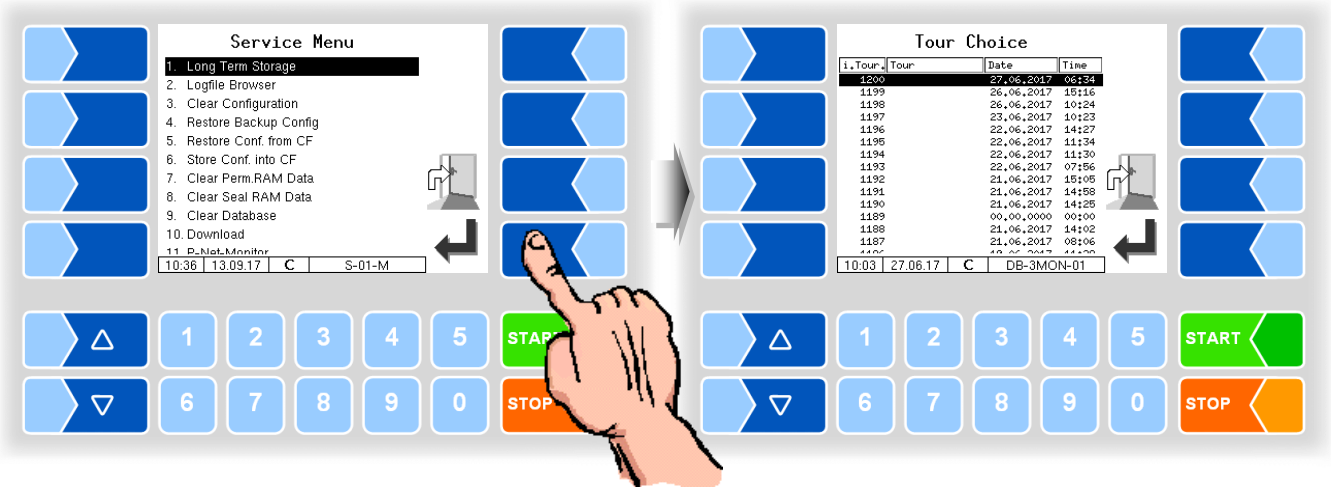
3.5 Service-Menu



The functions in the service menu can be accessed using the service password. Parameters that are subject to calibration are protected by the seal switch.
The database browser and logfile browser can be opened without entering the password.

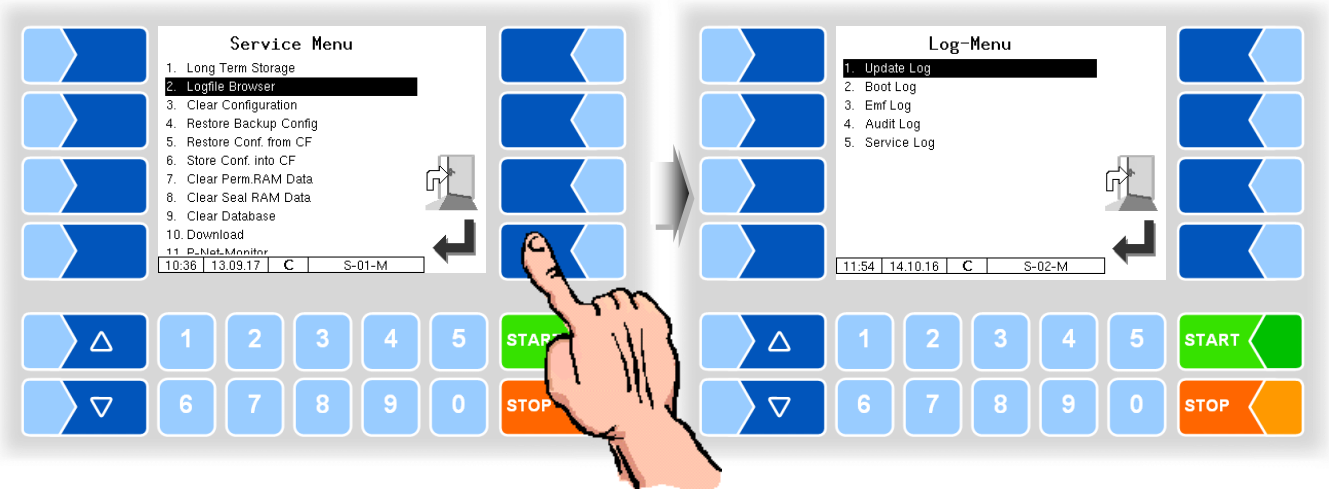
3.5.1 **Long Term Storage** (3 months storage)

Long Term Storage stores the tour data for three months. Within this time, you can view or print duplicates of the documents.
You can open the *Long term storage* also in the *Additional functions menu*. How to use this feature is discribed there (see section 4.3).

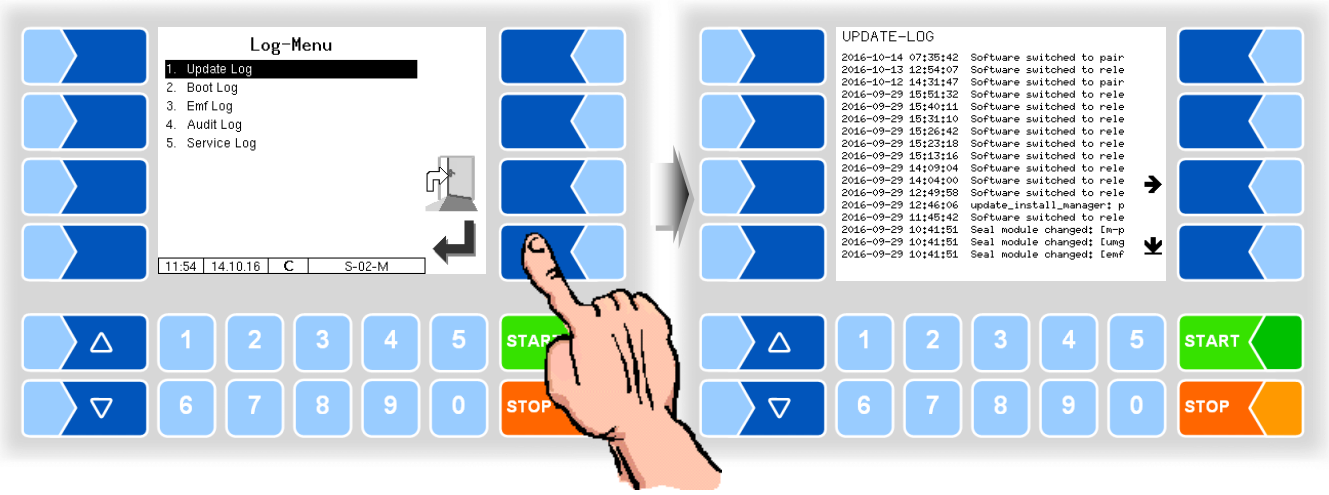


3.5.2 Logfile Browser

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.

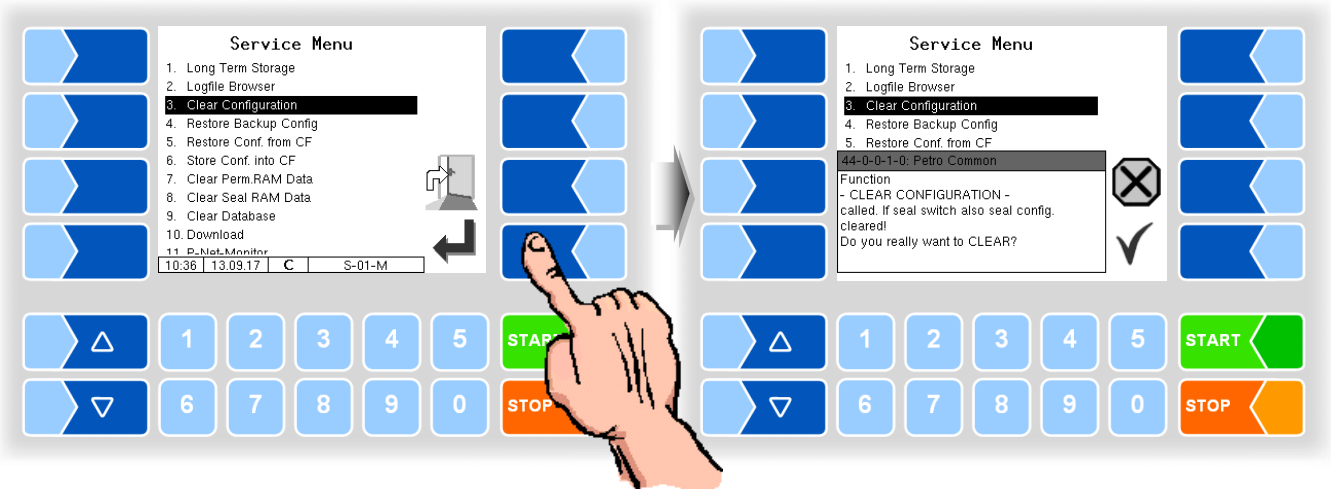


Update Log:	Log entries about updates and update attempts
Boot Log:	Boot messages, boot scripts
Emf Log:	Log output from the various applications
Audit Log:	Log entries about all parameter changes
Service Log:	Log entries for service and diagnostics



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.

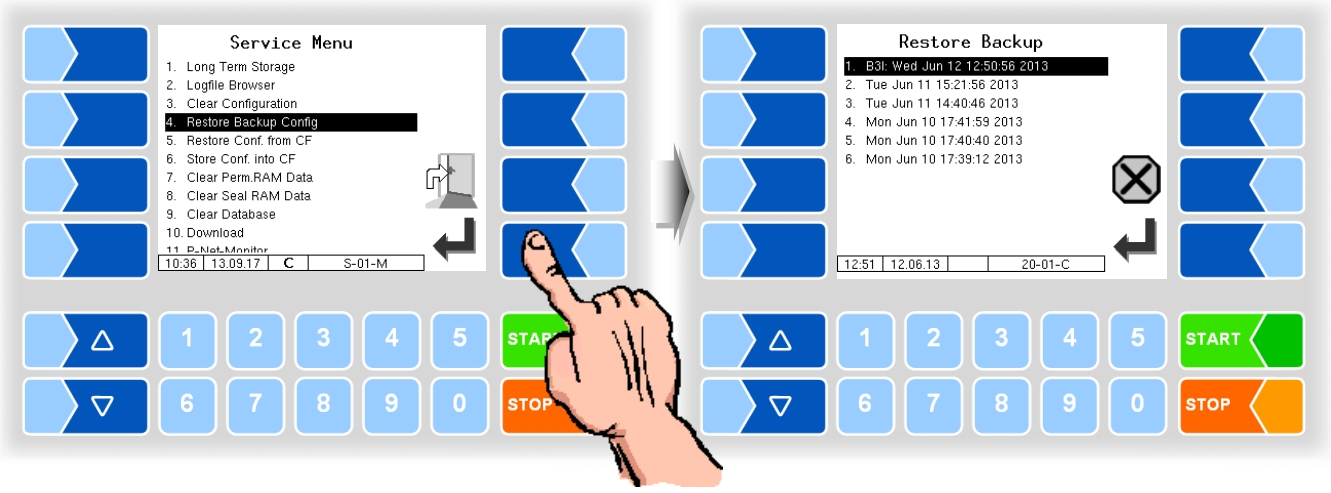
3.5.3 Clear Configuration



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!

3.5.4 Restore Backup Config

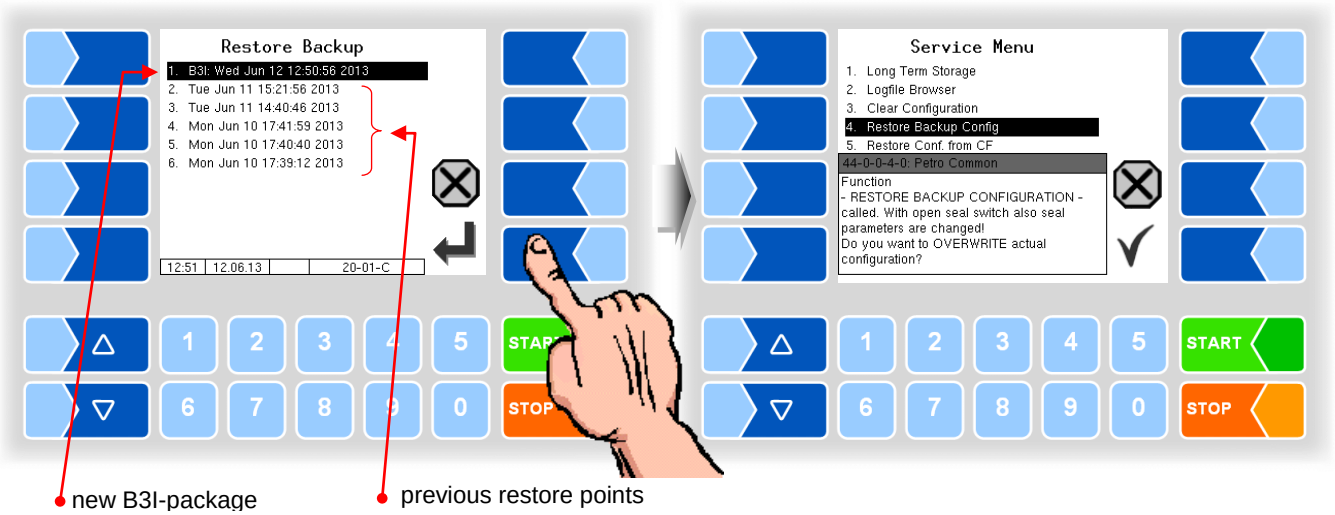


The system can store up to 5 restore points, which can be accessed again in this menu.

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.
Bonfiles can be activated directly in the ticket configuration (see section 3.2.5).

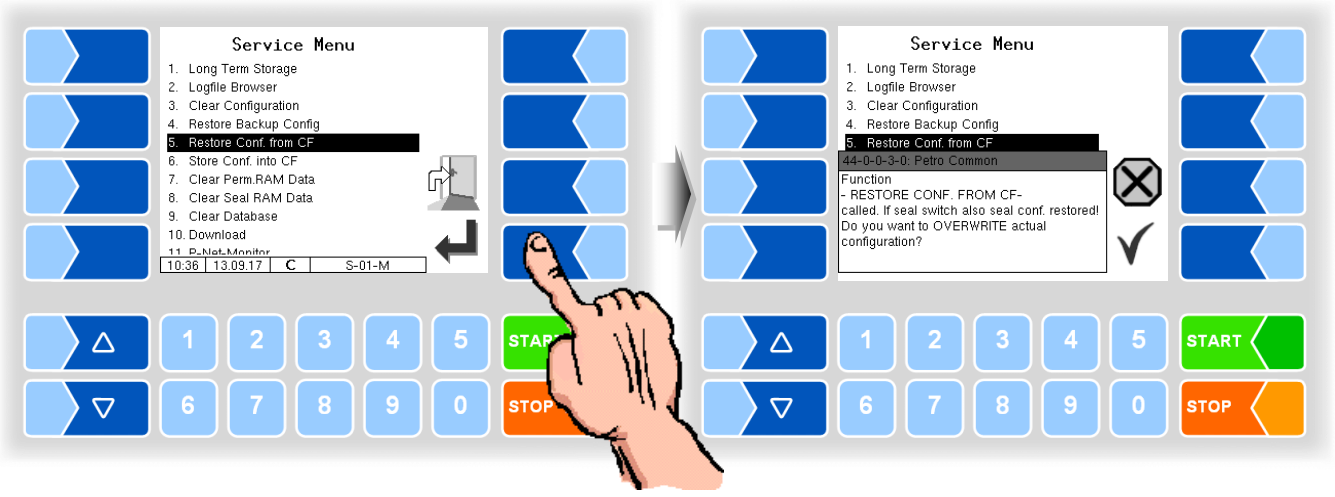
Access to the configuration file can be done via GPRS online or via a network cable.



After confirming the B3I package it is downloaded and activated. You can then select a restore point and restore the configuration state for that time.

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

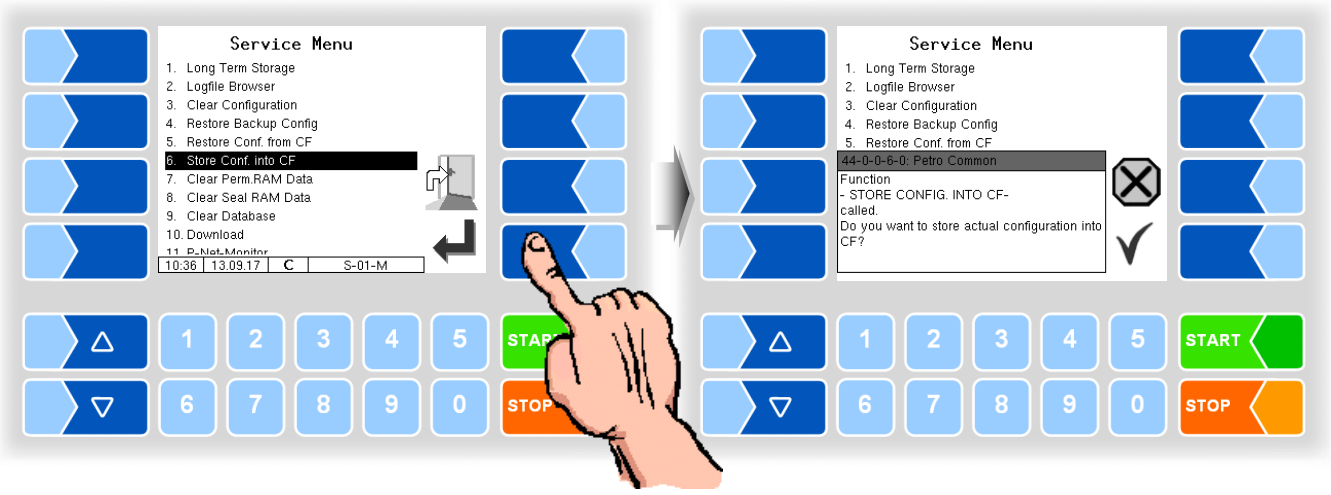
3.5.5 Restore Configuration from CF



When you confirm the prompt, the configuration of parameters saved at the CF-card (see section 3.5.6) is loaded. The existing parameter settings are overwritten.

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

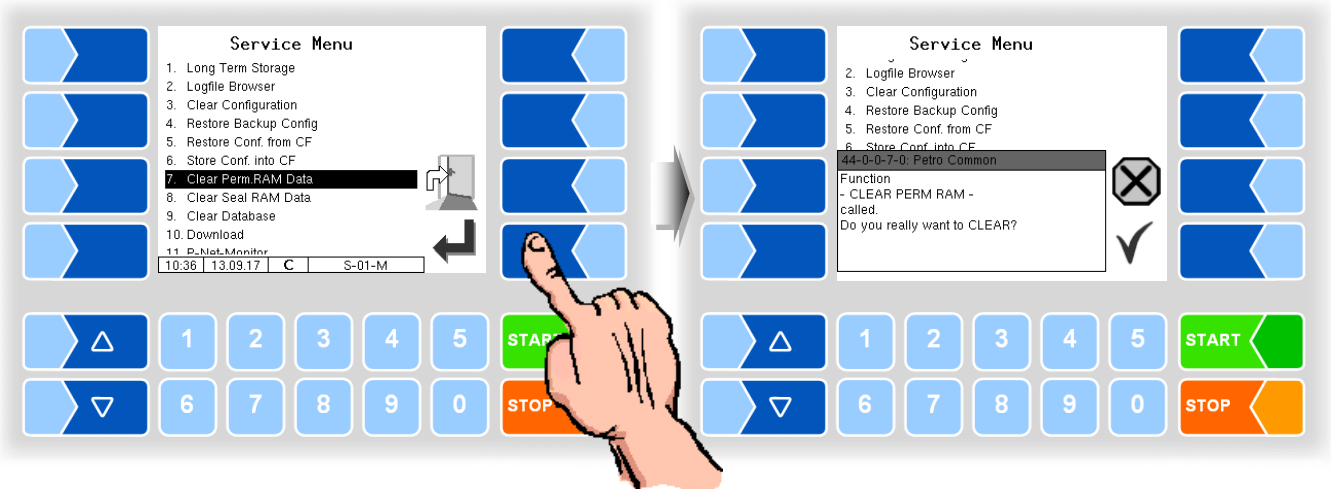
3.5.6 Store Configuration into CF



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 3.5.5). This way you can e.g. easily set an identically configuration to several vehicles.

With open seal switch will also calibration relevant data be saved to the CF-card.

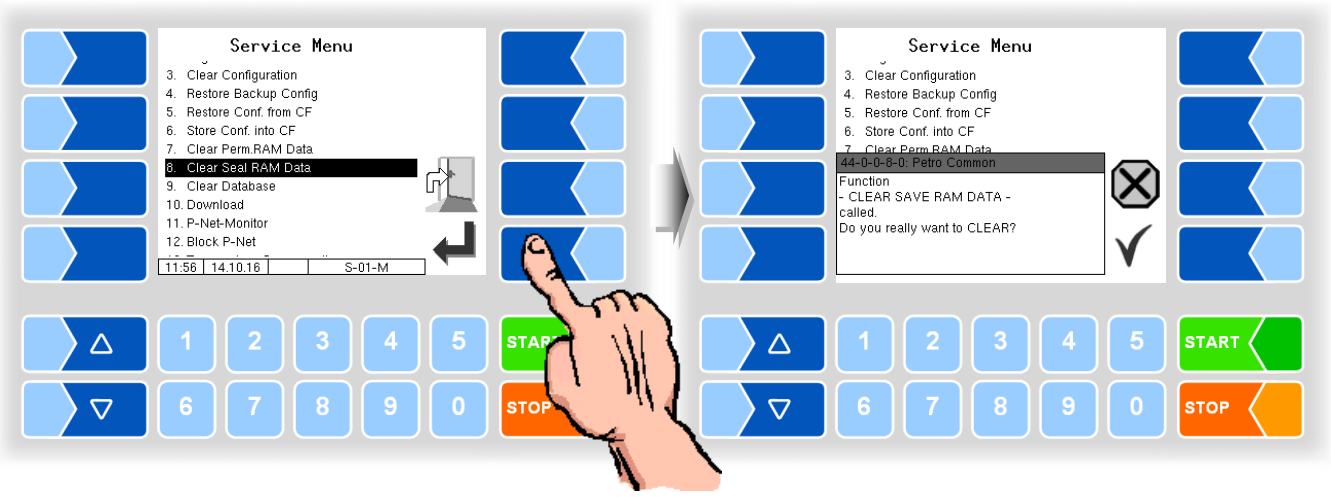
3.5.7 Clear Permanent RAM data



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

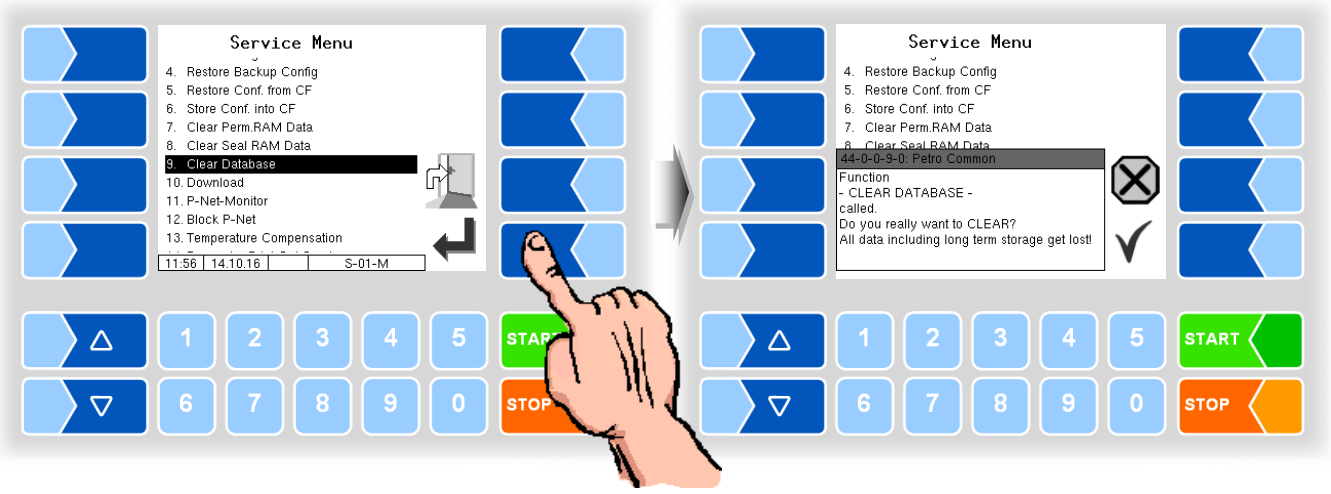
See also section 6.3.8.

3.5.8 Clear Seal RAM Data



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

3.5.9 Clear Database

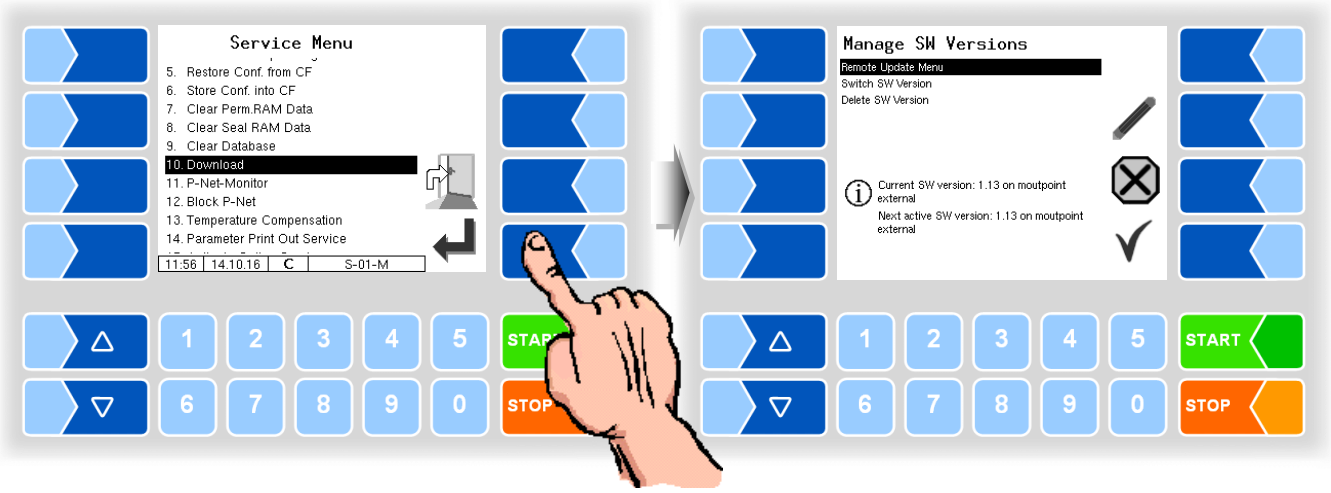


When you confirm the prompt, all data (order data, scheduled data) is cleared from the database.
Only possible with open seal switch!

3.5.10 Download

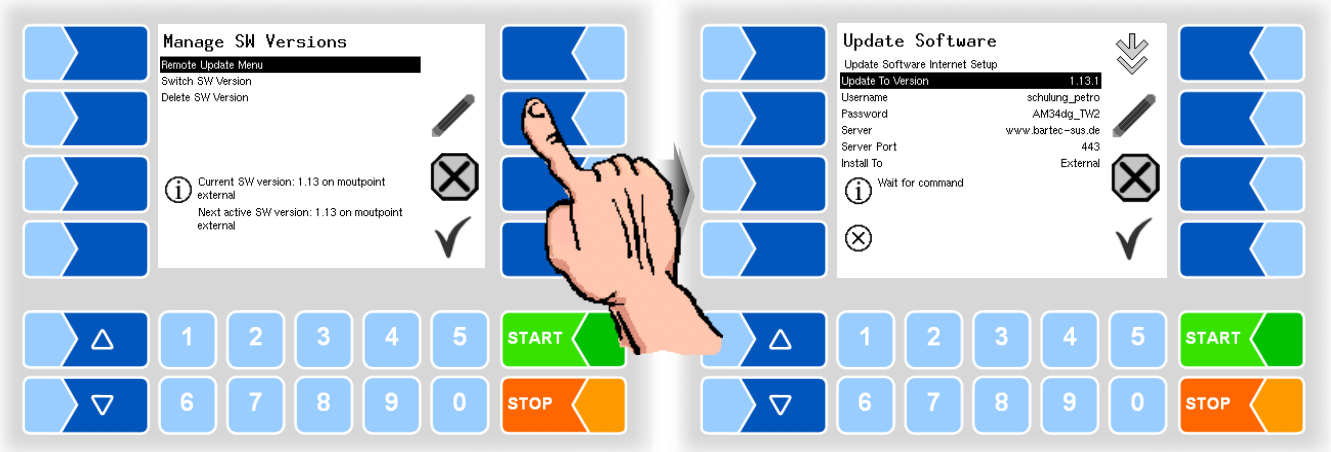
The software is constantly being further developed and expanded. You can obtain the updated software from BARTEC BENKE.

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 3.4) with the calibration switch open.



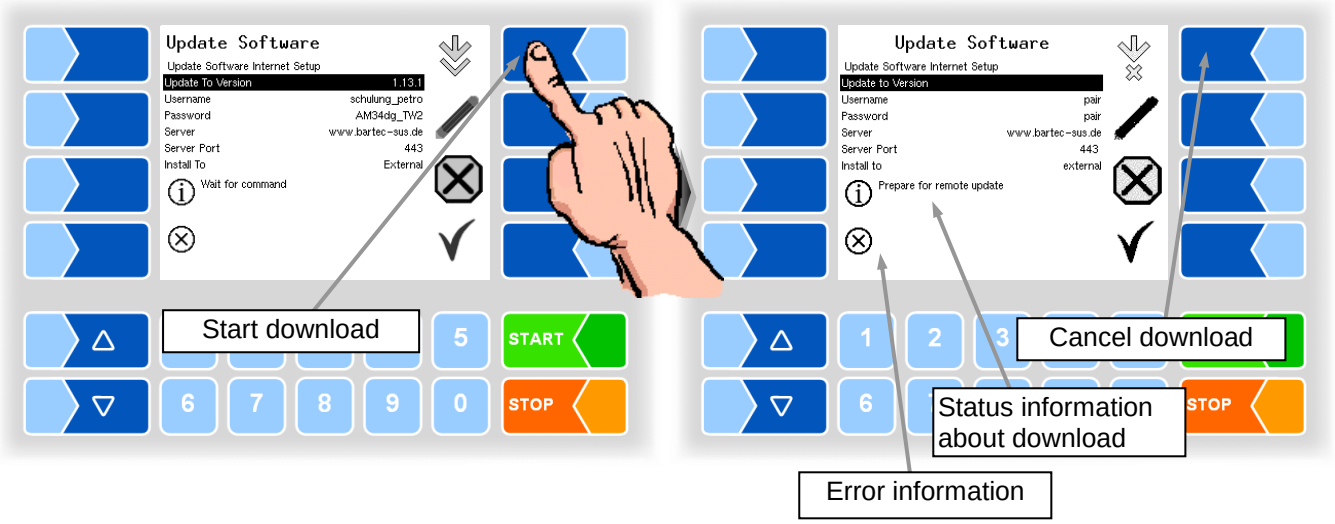
3.5.10.1 Remote Update Menu

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

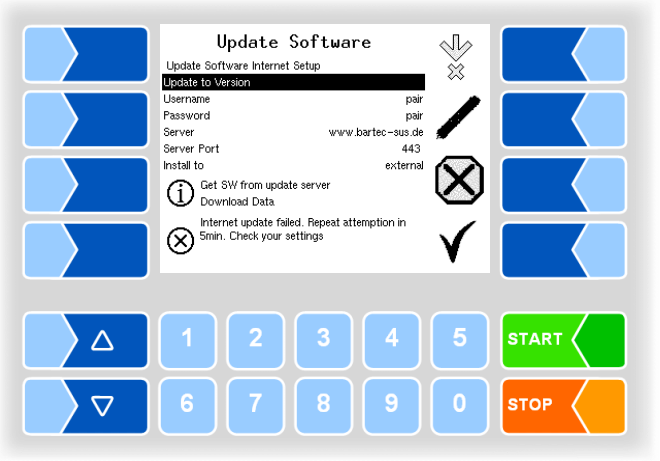


Update to Version Here you can enter the number of the software version to be downloaded. Without an entry the latest version that is found at the server will be downloaded.

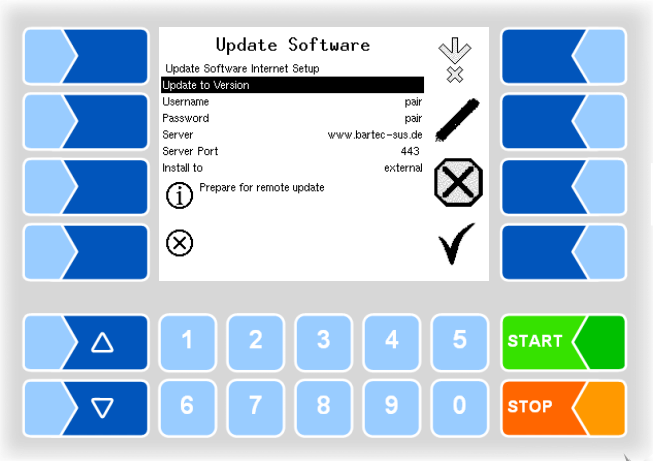
The user name and password for the download are assigned by BARTEC BENKE and must be entered manually.



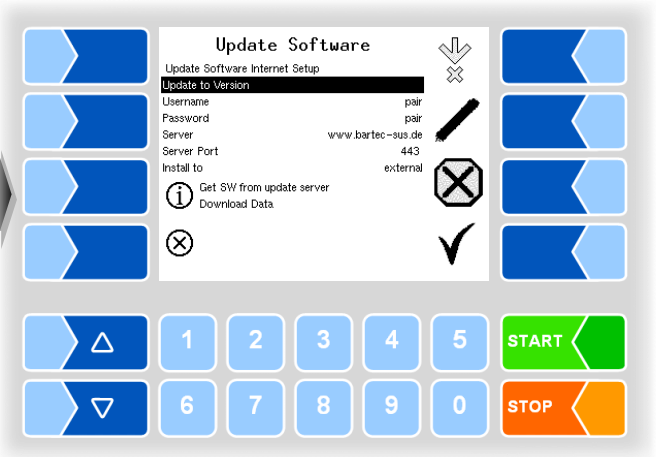
If the download is interrupted, for instance because the connection to the server is interrupted, it is automatically restarted after 5 minutes and resumed at the point at which it was interrupted.



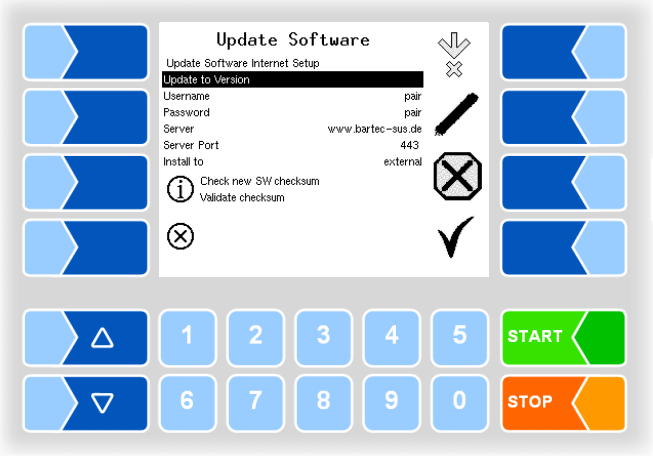
If the download is interrupted manually, the data that was already downloaded is deleted. The download must be restarted if necessary.



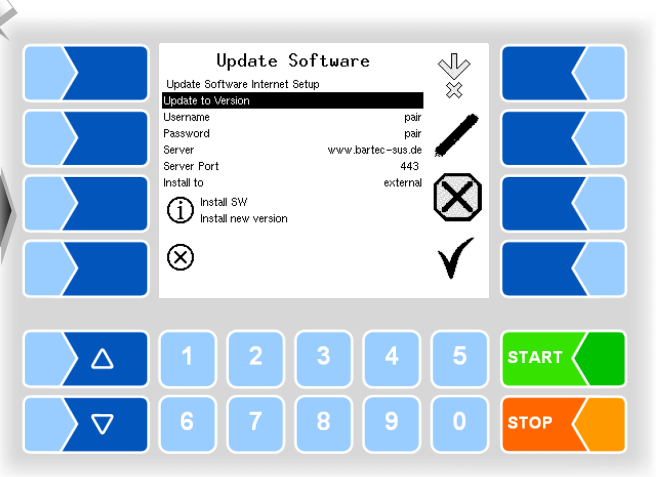
Establishing the server connection



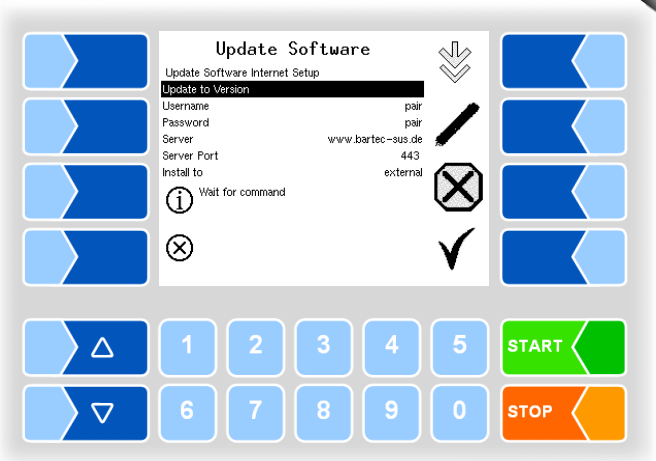
Downloading data



Compressed data downloaded successfully.
Checksums Server-Client compared.



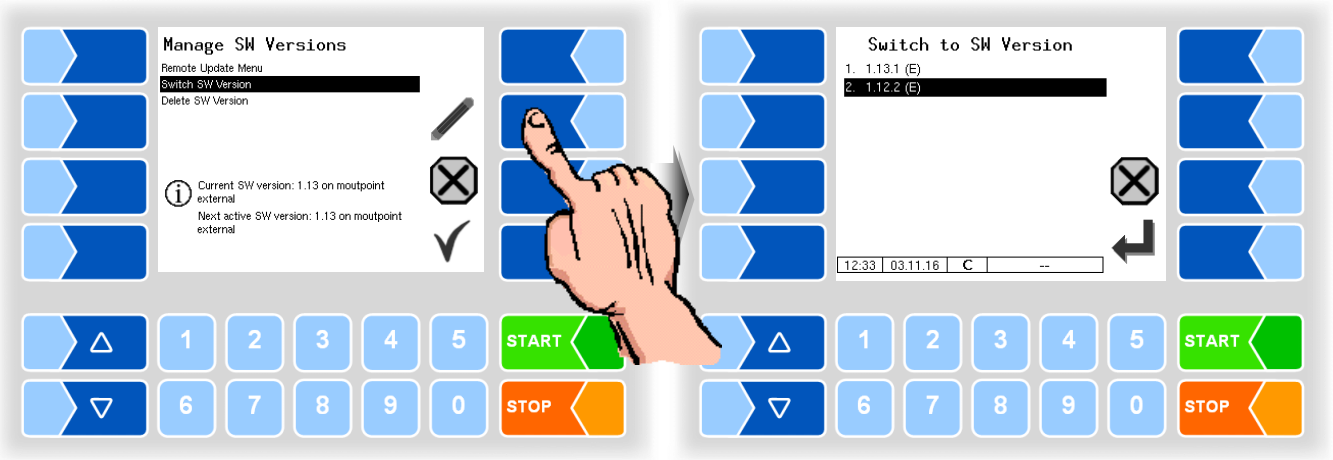
Unzipping files.



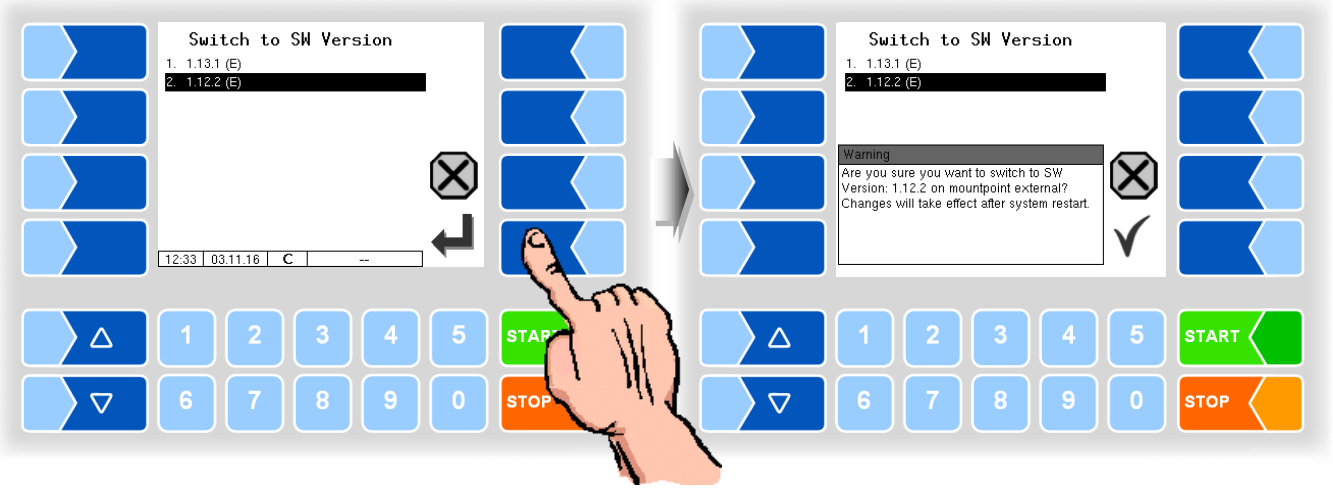
If the "Wait for command" message appears again, the software download is complete.
You can close the menu and the software can be switched in the next step.

3.5.10.2 Switch Software Version

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



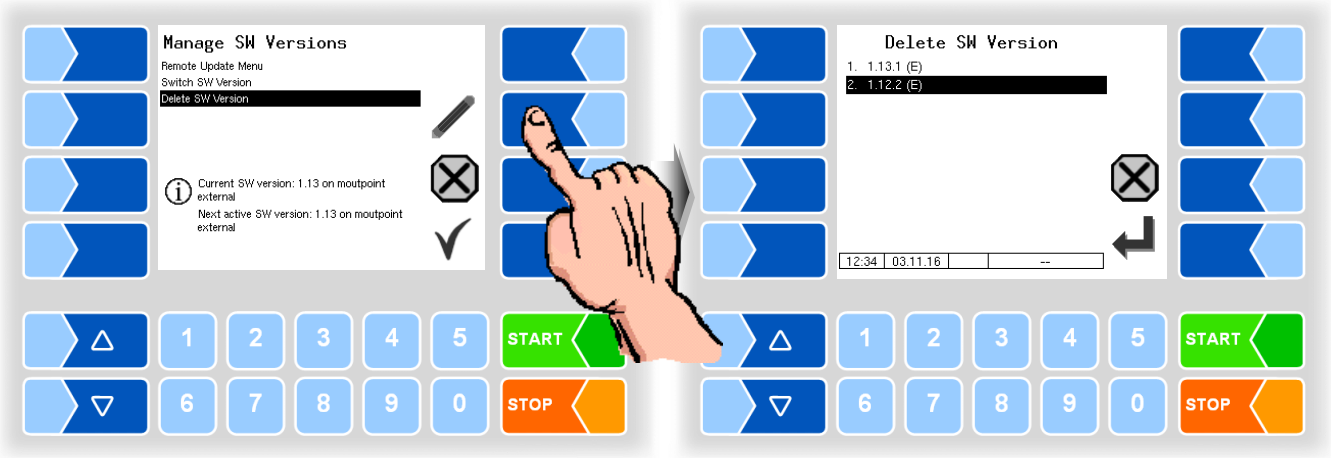
- Select the software version and touch the “confirm” softkey”.



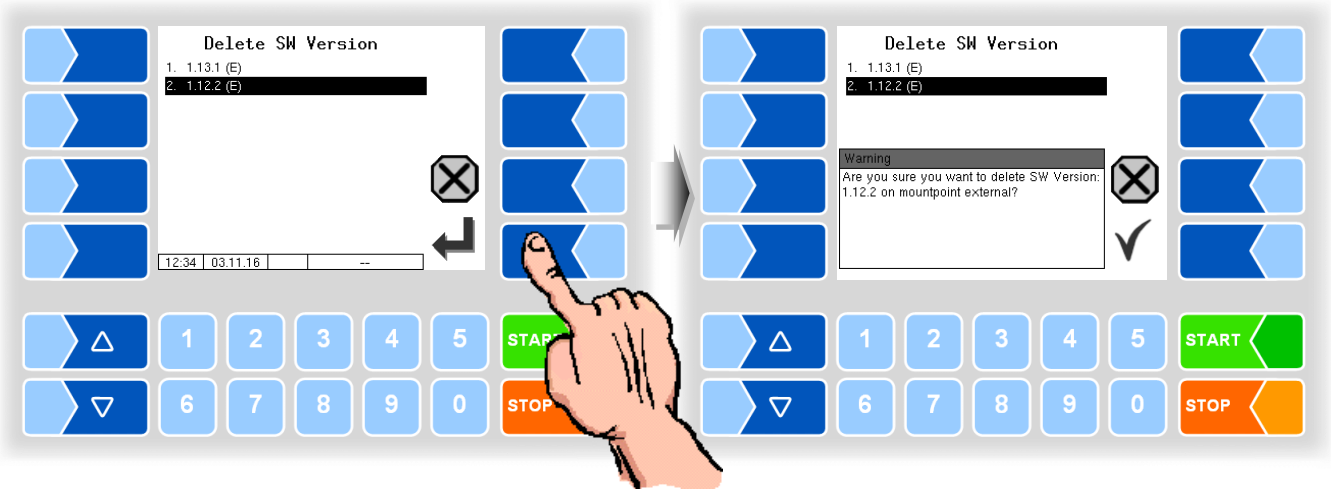
- Confirm the security query.
- Then shut down the system and reboot it.

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

3.5.10.3 Delete Software Version



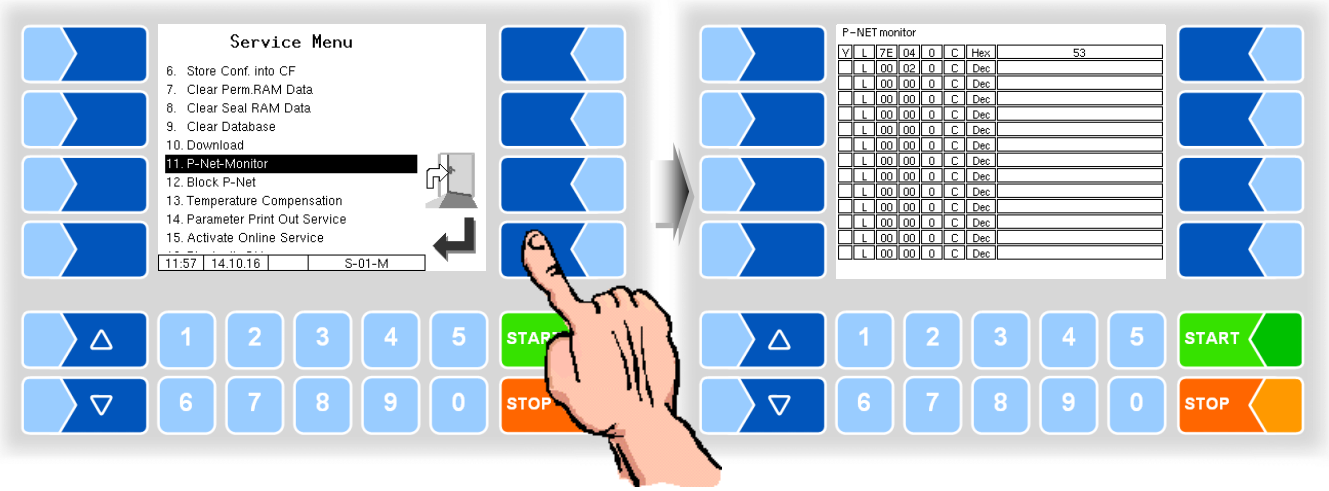
If multiple software versions are stored, you can delete the versions which are no longer needed.



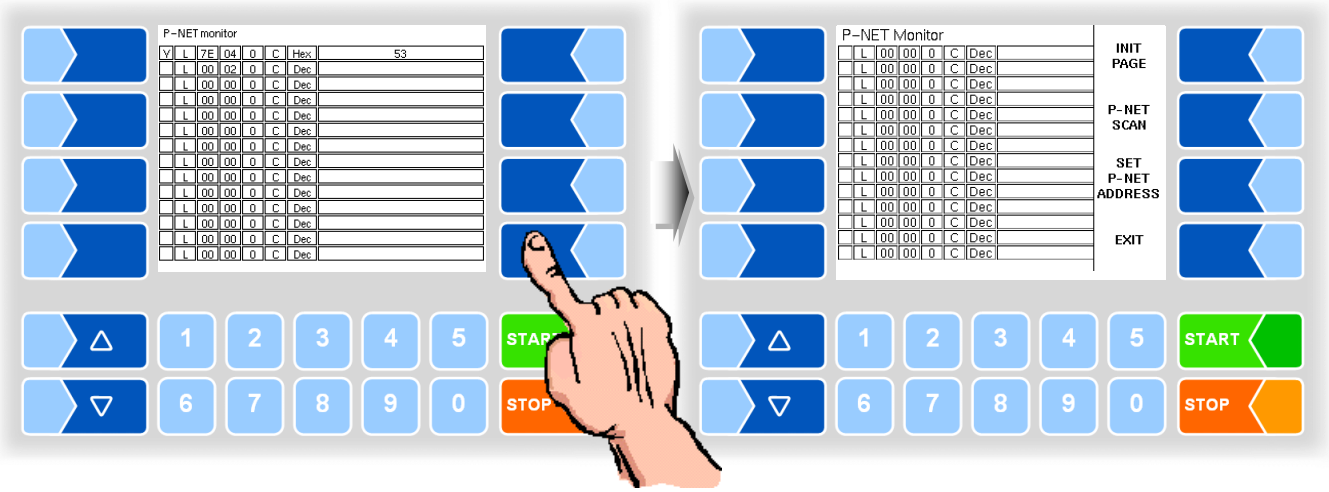
After confirming the safety query the selected version is deleted.

3.5.11 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.

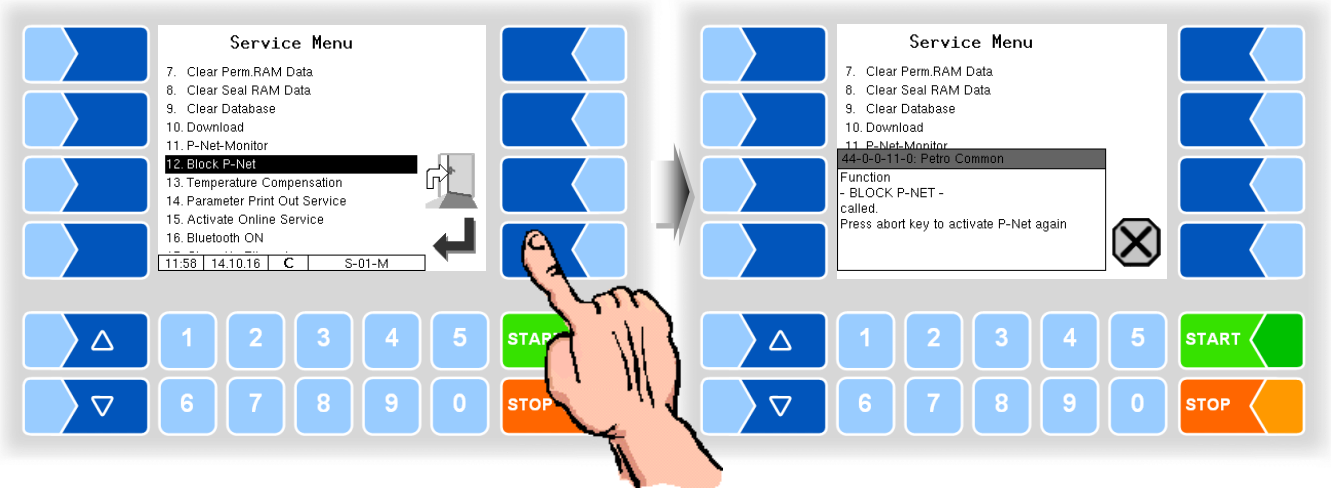
P-NET SCAN:
You can perform a P-Net scan for diagnostic purposes. The address (hexadecimal), P-Net ID number, version, serial number and manufacturer's code are displayed in separate lines for all connected P-Net devices.

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.

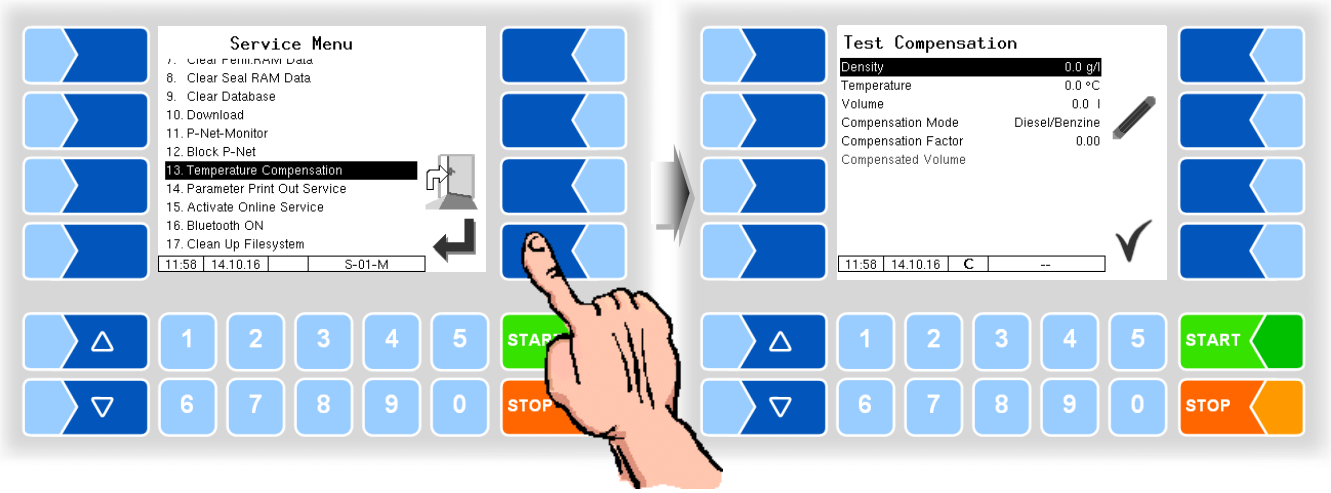
3.5.12 Block P-Net

(Not used in the measuring system TIGER.)



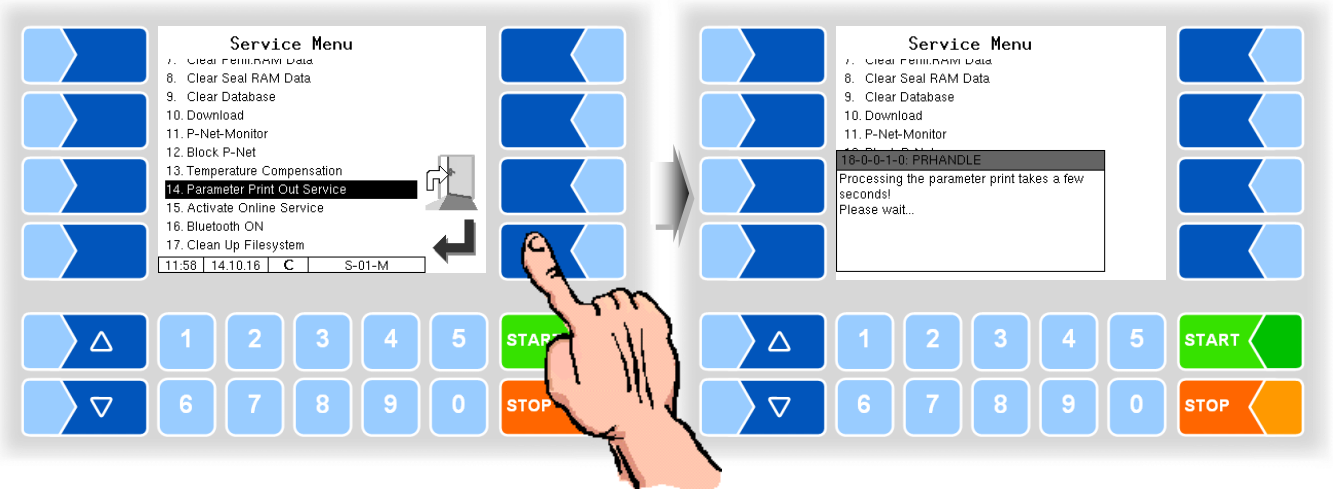
3.5.13 Temperature Compensation

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



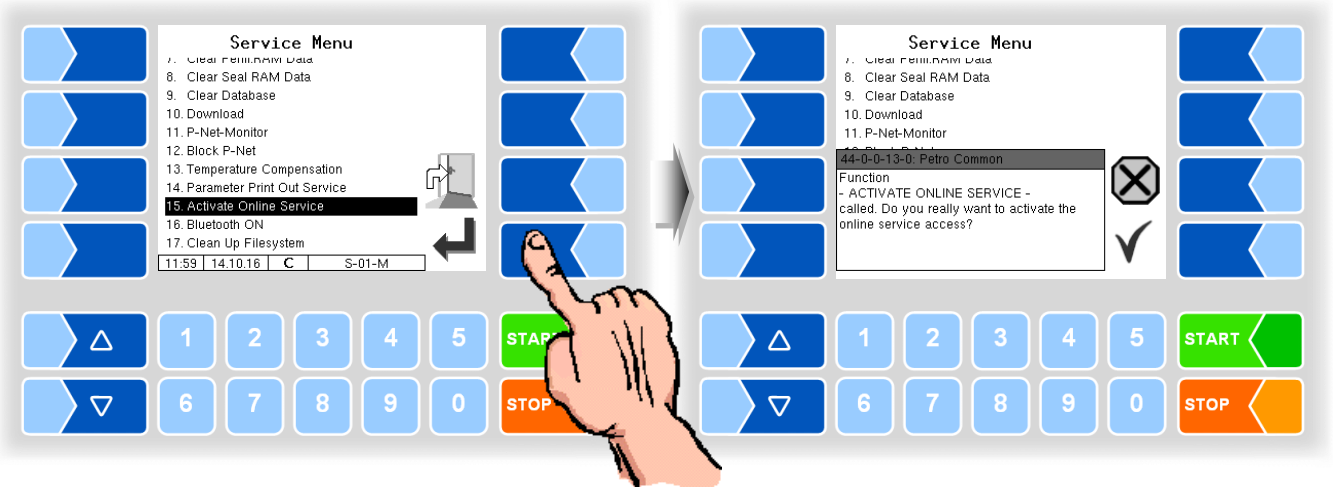
3.5.14 Parameter Print Out Service

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.



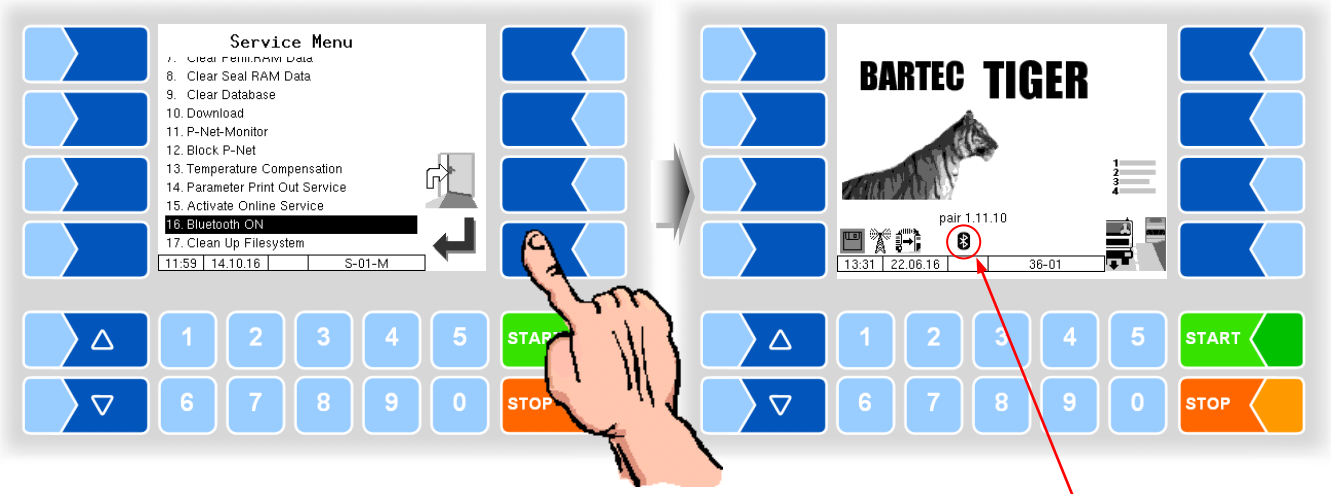
3.5.15 Activate Online-Service

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 6.3.10).
The active connection to the FTP server is displayed in the main screen. This requires a configured remote access (see page 76.)



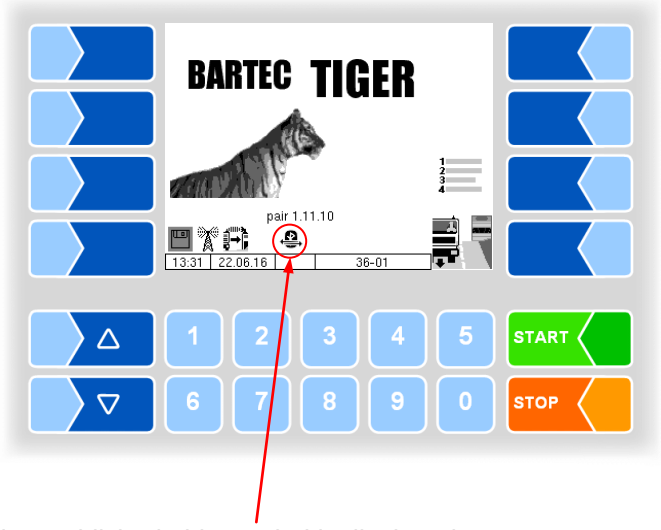
3.5.16 Activate Bluetooth

When a Bluetooth receiver is configured (see section 3.2.6.15), you can activate the Bluetooth communication here.



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

With the BARTEC 3003 Service Tool can be established a connection and accessed to the software.

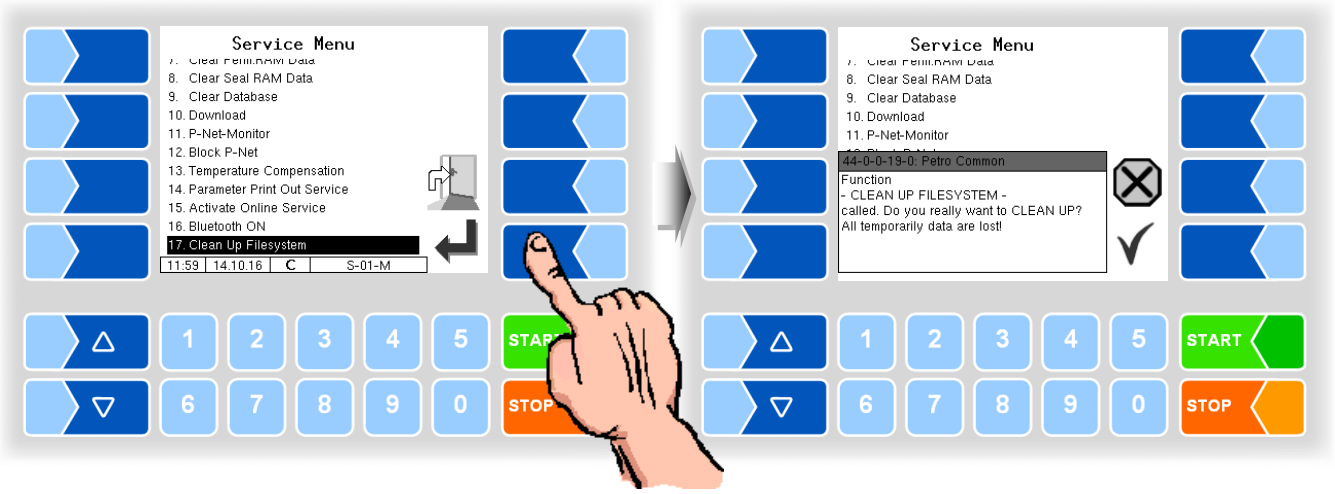


When a connection is established, this symbol is displayed.

3.5.17 Clean Up Filesystem

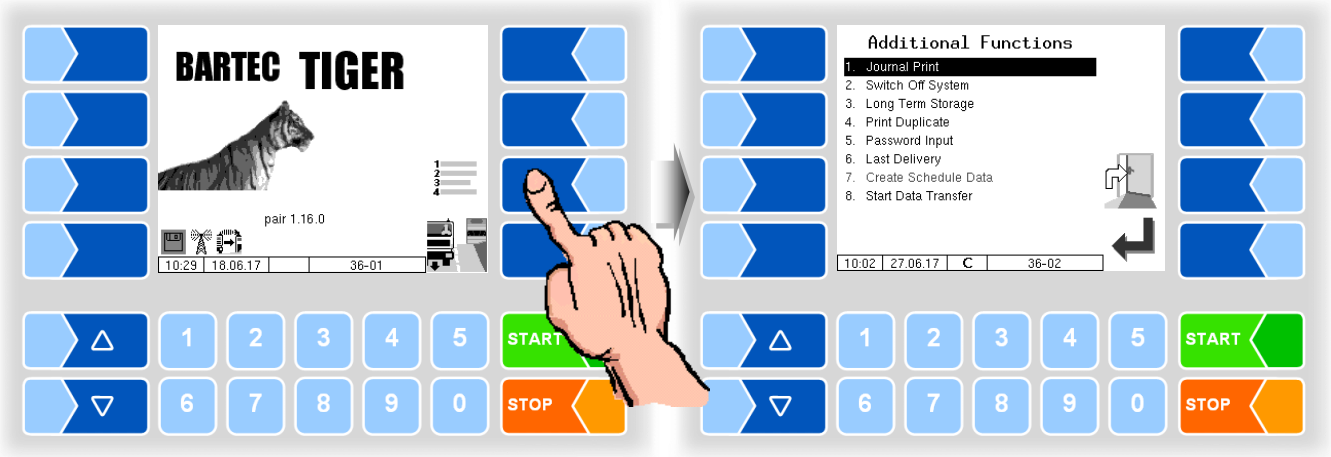
When 80% of the internal memory capacity is exhausted, a message is displayed.

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.



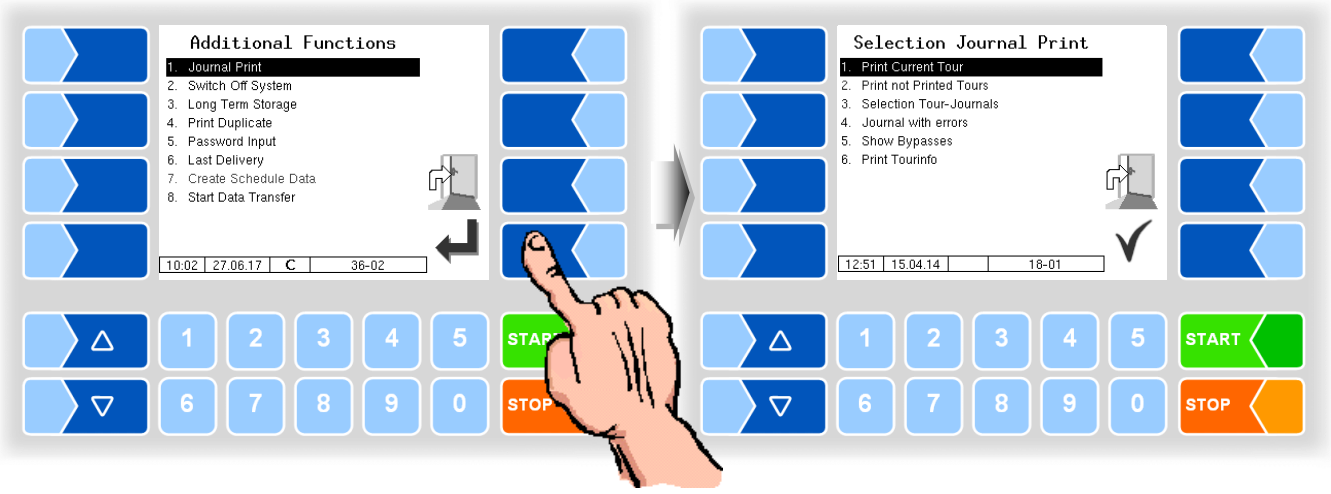
ATTENTION:
Already generated response data that are not yet transmitted, may be deleted.

4 Additional Functions



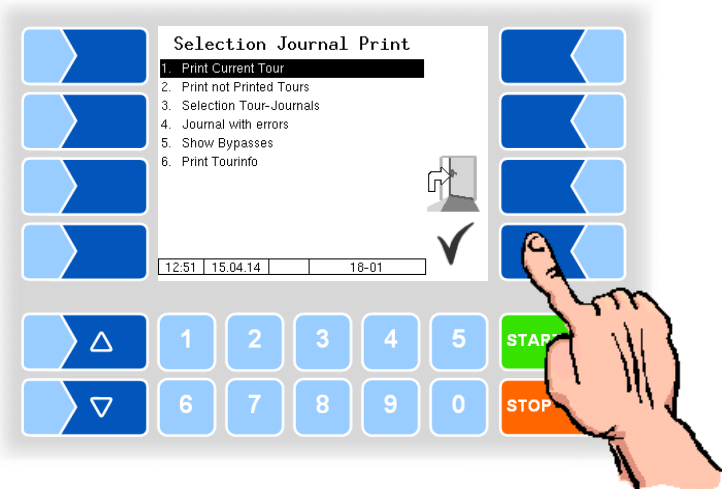
4.1 Journal Print

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



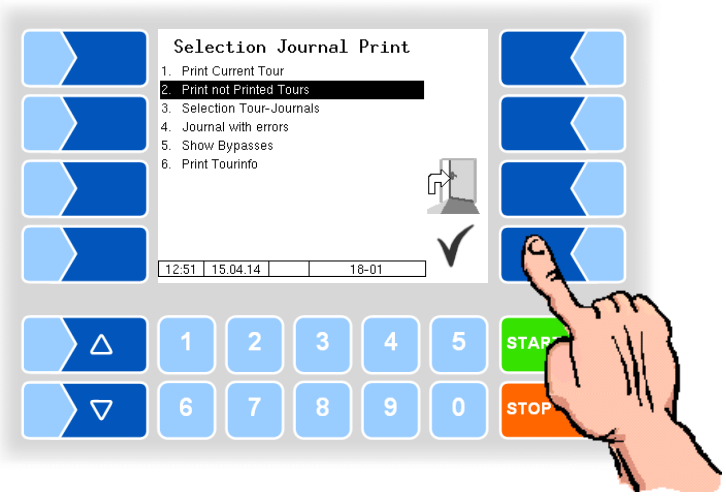
Further selections are possible in the journal print submenu.

4.1.1 Print Current Tour



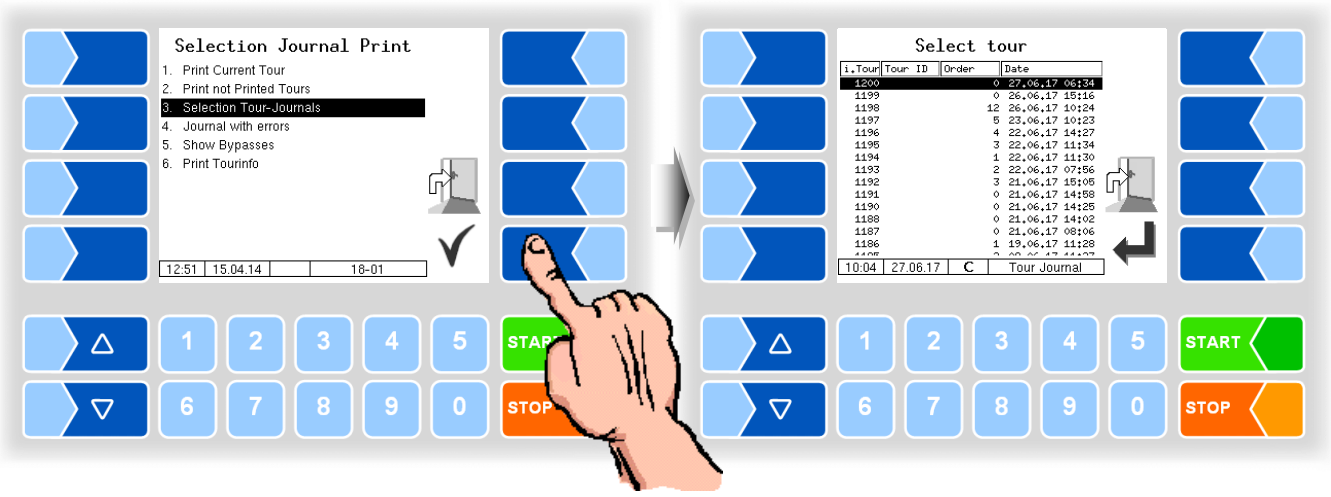
The data for the current (last) tour is printed.

4.1.2 Print not Printed Tours

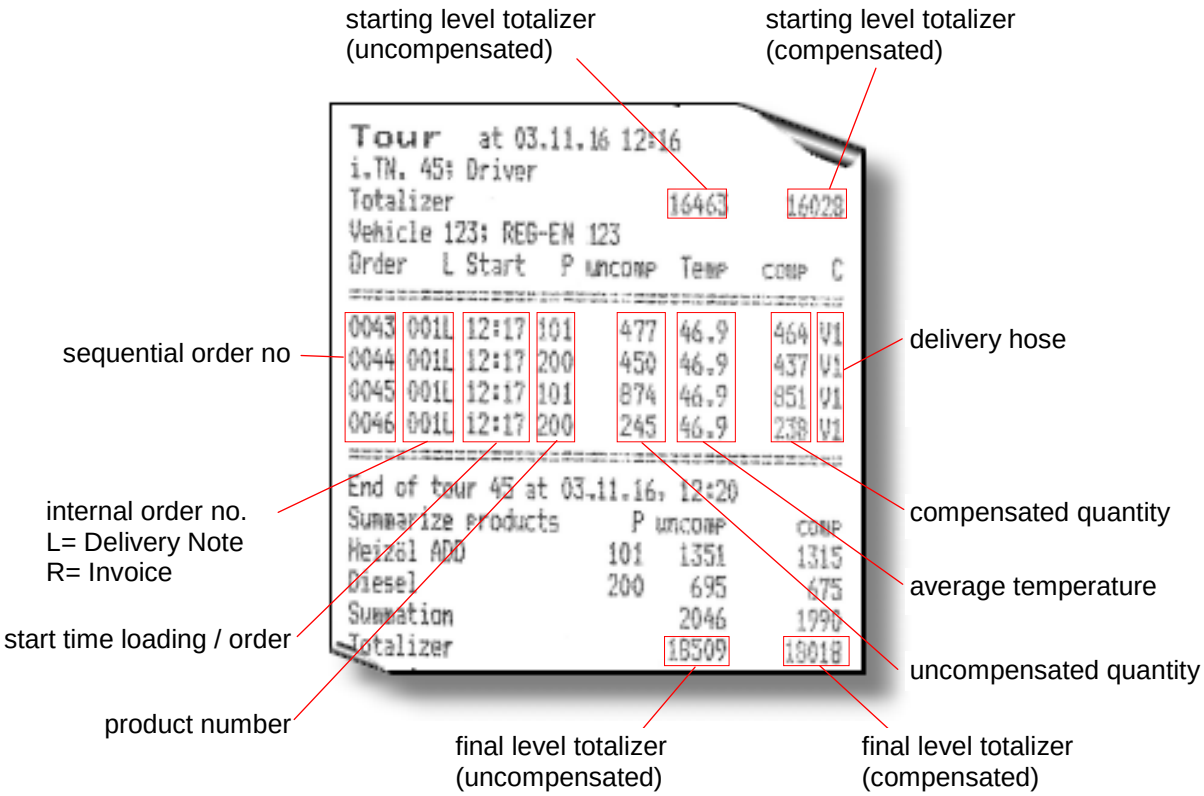


The data for all stored tours that have not yet been printed is printed.

4.1.3 Selection Tour-Journals



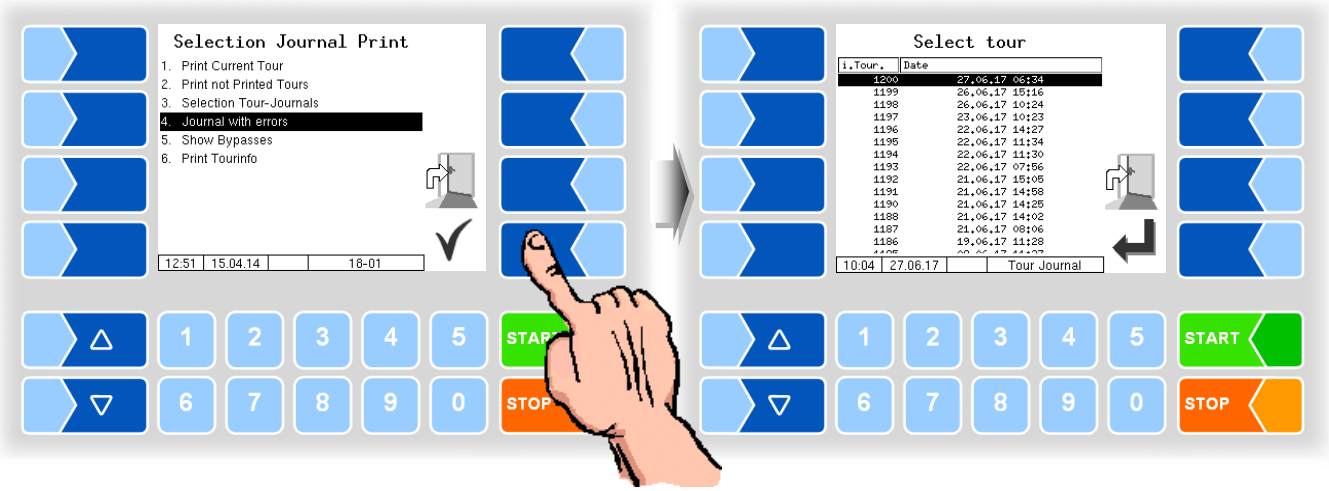
You can use the date and the tour start time to select the tour for which you want to print data.



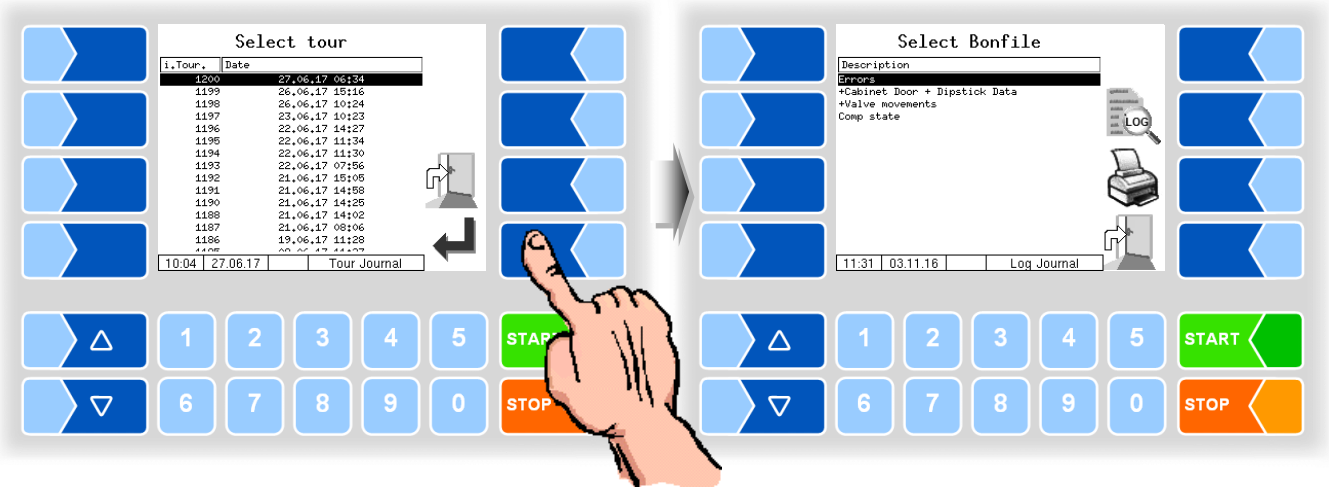
Example Journal Print

4.1.4 Journal with errors

In this menu you can select from the stored log journals. The log-journals also contain all recorded errors.



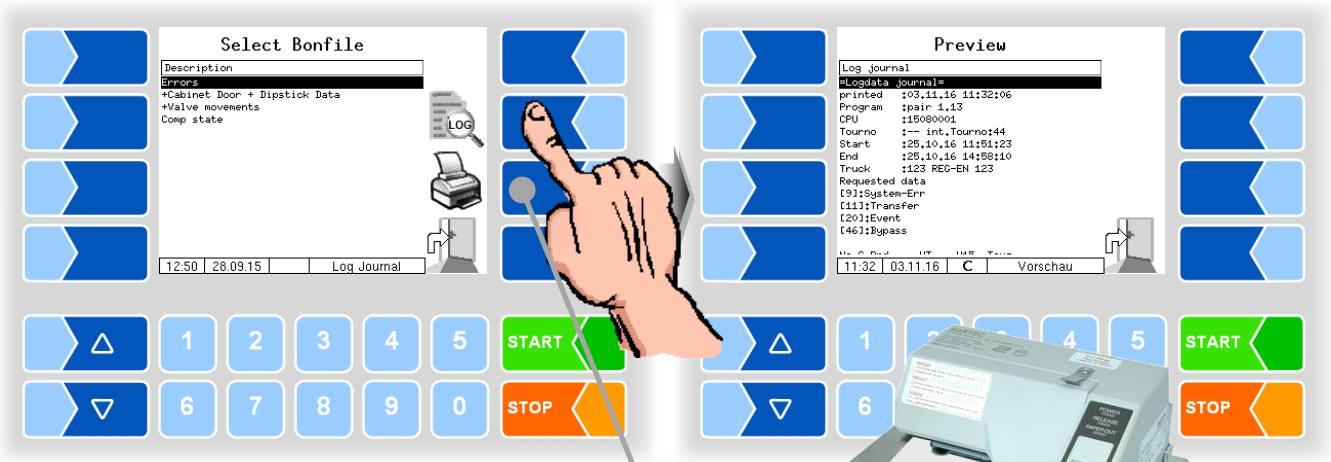
- First select the tour from which a log journal shall be displayed or printed.

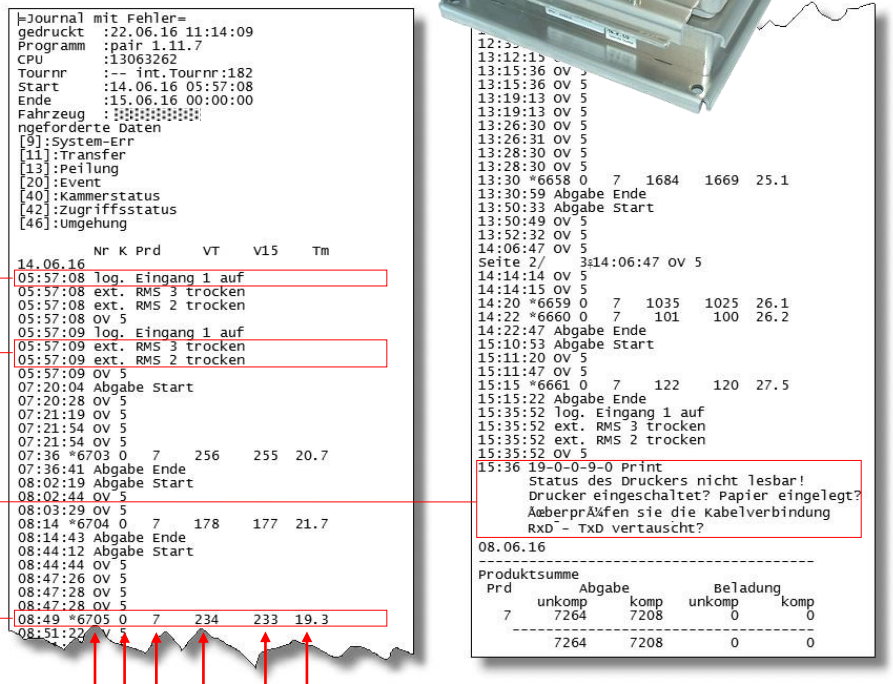


- Then select the contents of the log journal based on the bonfile.

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

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





State of inputs

State of the wetleg sensors

Reportings from hardware-components

Delivery

Tm: average temperature

V15: quantity compensated

VT: quantity uncompensated

Prd: Product number

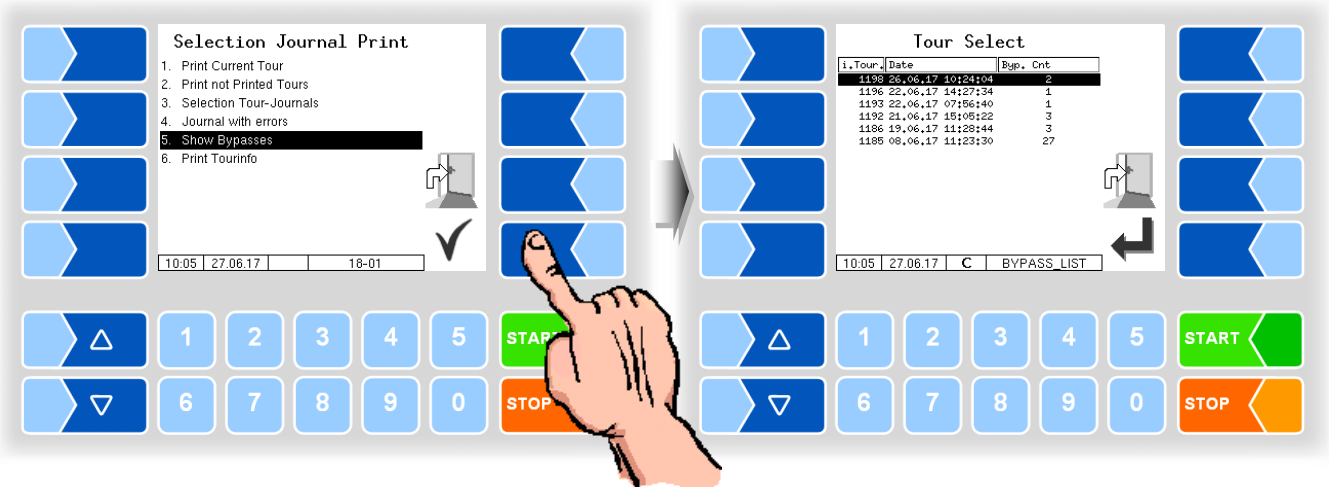
C: compartment number *(in version „pair 1.16.X“ not relevant)*

Nr: seq. no. of delivery

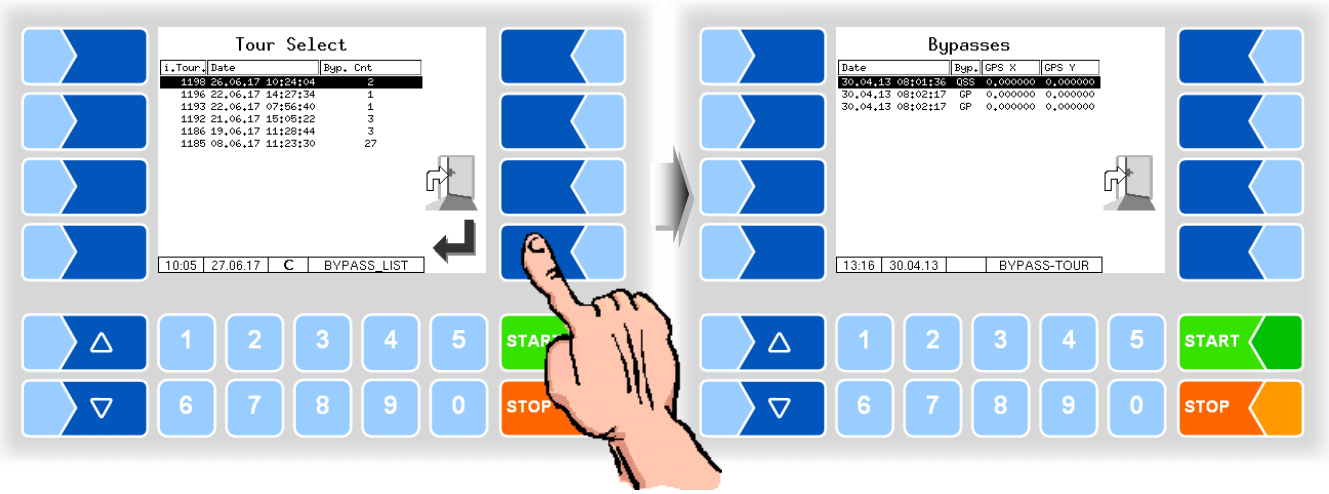
Example
Journal with errors
(German)

4.1.5 Show Bypasses

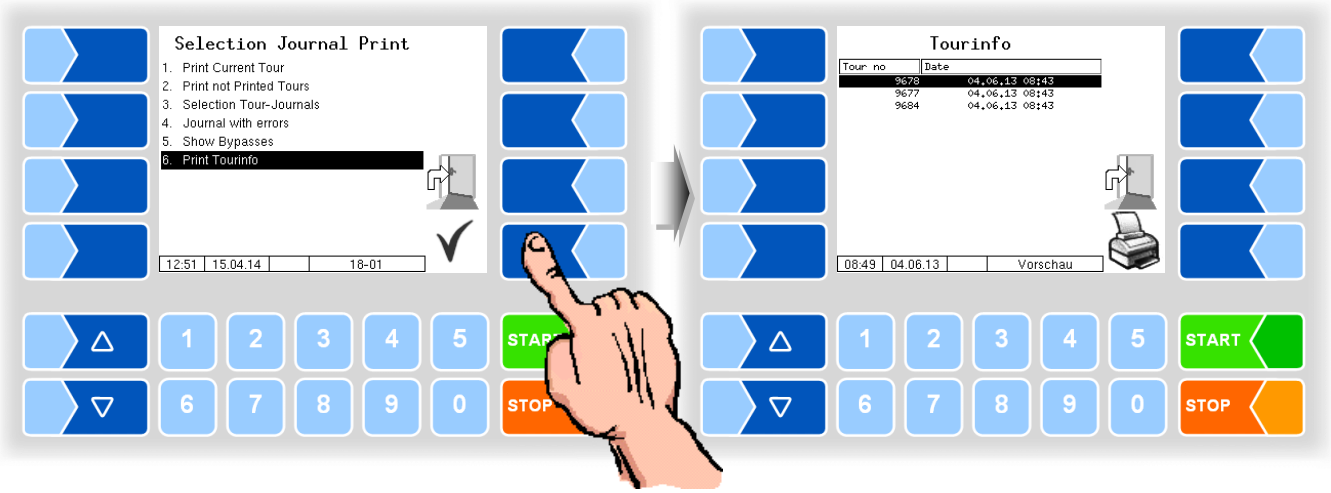
When using the "SAFE" system, you can use this menu item to display the QSS (quality safe system) bypassing.

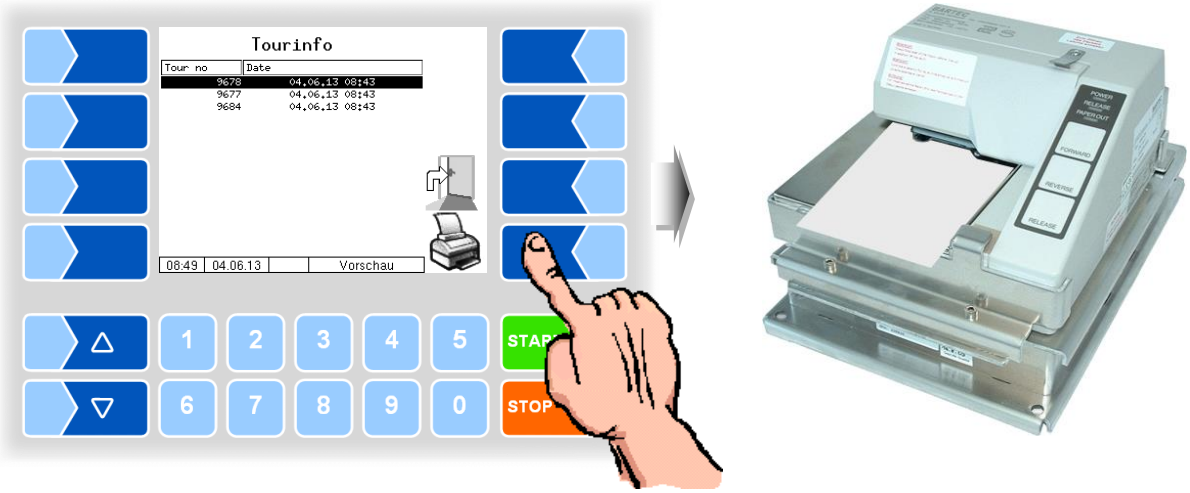


Select and confirm a tour. Details of the bypassing during this tour are displayed: date, time, module which was bypassed. If a GPS module is installed, additionally the corresponding position data is displayed.



4.1.6 Print Tourinfo

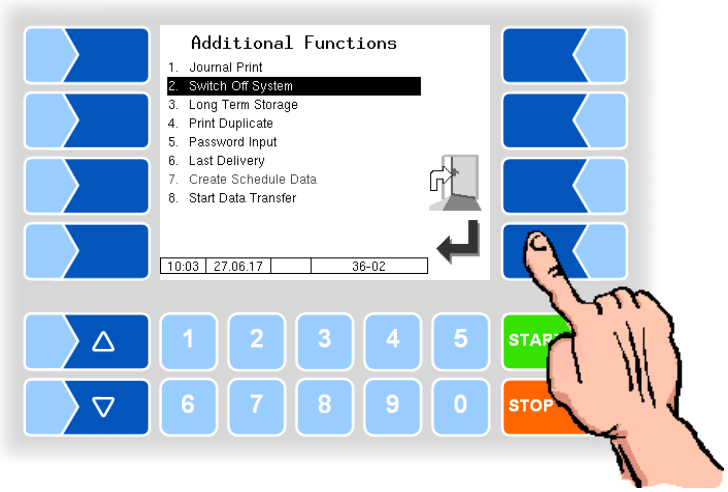




When working with an office connection, the tour data of the last 7 days is stored. You can select a tour here and output the information about the selected tour produced by the office on the printer if this feature is supported by the office.

4.2 Switch off System

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

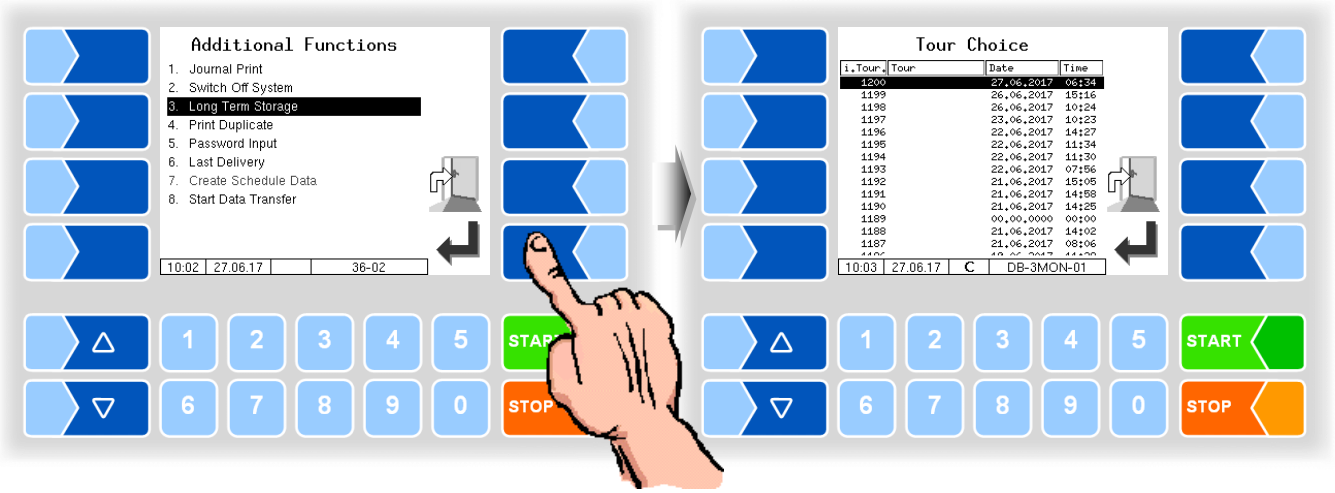


The main switch may not be switched off until the system has been fully shut down properly!

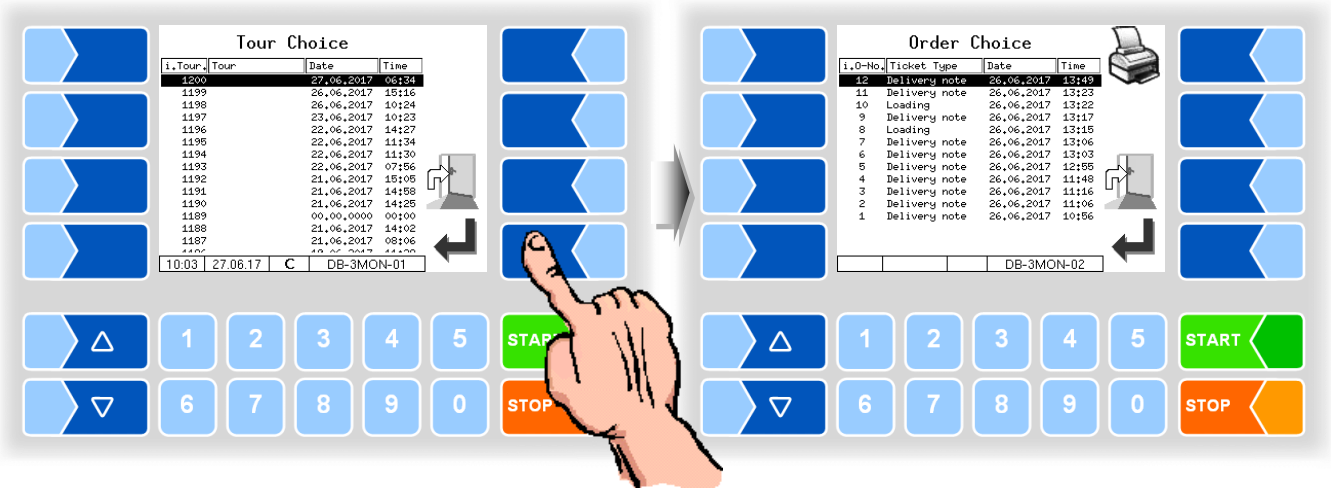
4.3 Long Term Storage (3 months storage)

You can open the *Long term storage* also in the Service menu (see section 3.5.1).

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

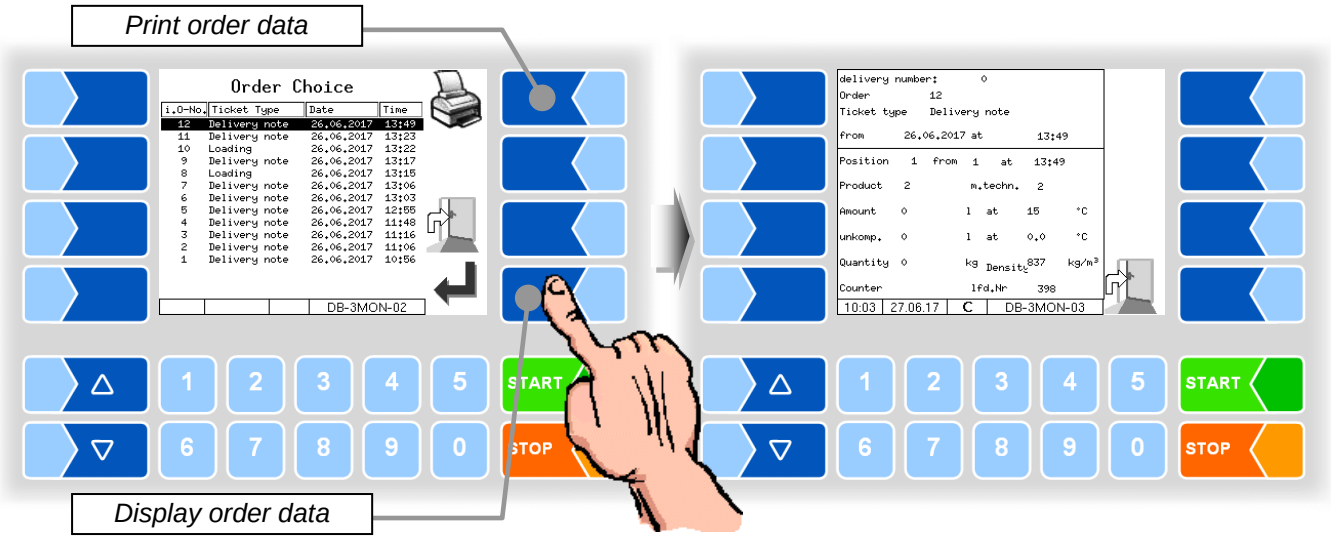


- Select a tour.



- Select an order within the tour.

You can print the order or display it on the screen.

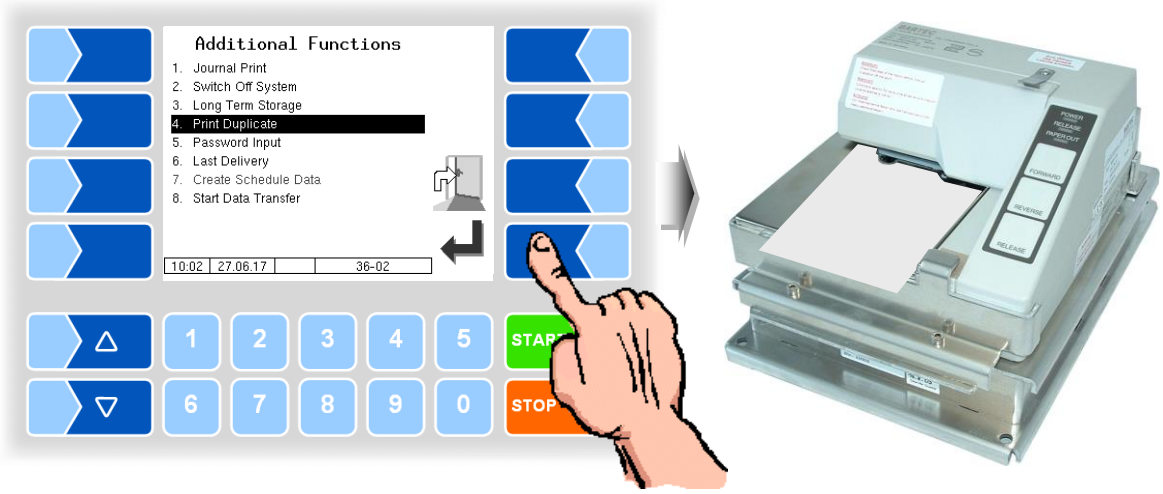


If the order contains more than two items, you can select the required item using the ▽ and △ keys.

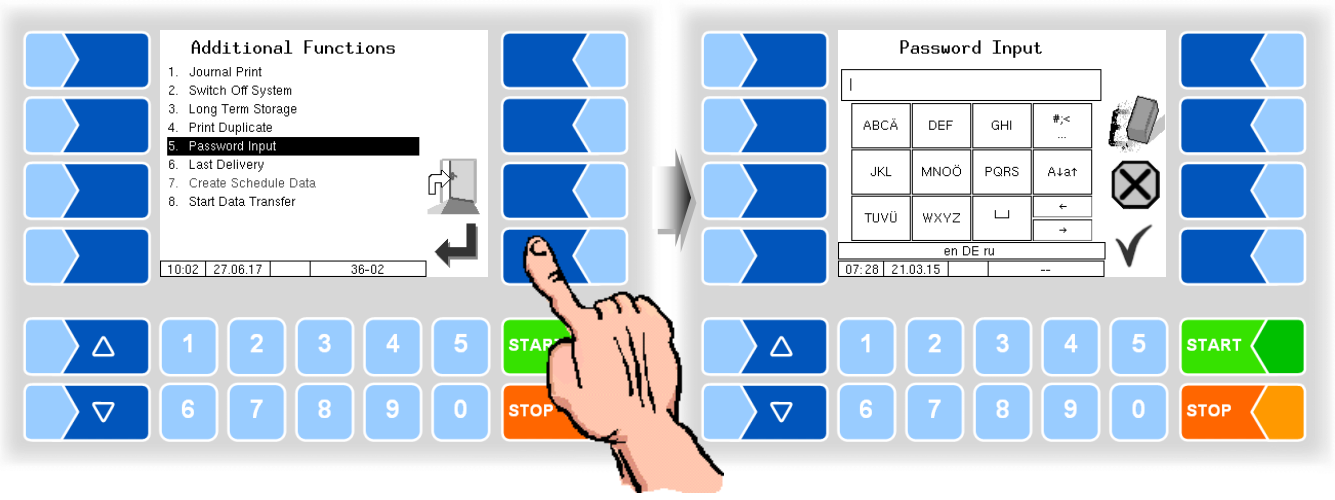
The printout is a duplicate of the original ticket.

4.4 Print Duplicate

You can print as many duplicates of the delivery note as you like for the last order. The duplicate differs from the original only in that the word “Duplicate” and the duplicate's sequential number are output at the start of the printout. You can print duplicates of older orders using the long-term memory (see section 4.3).



4.5 Password Input

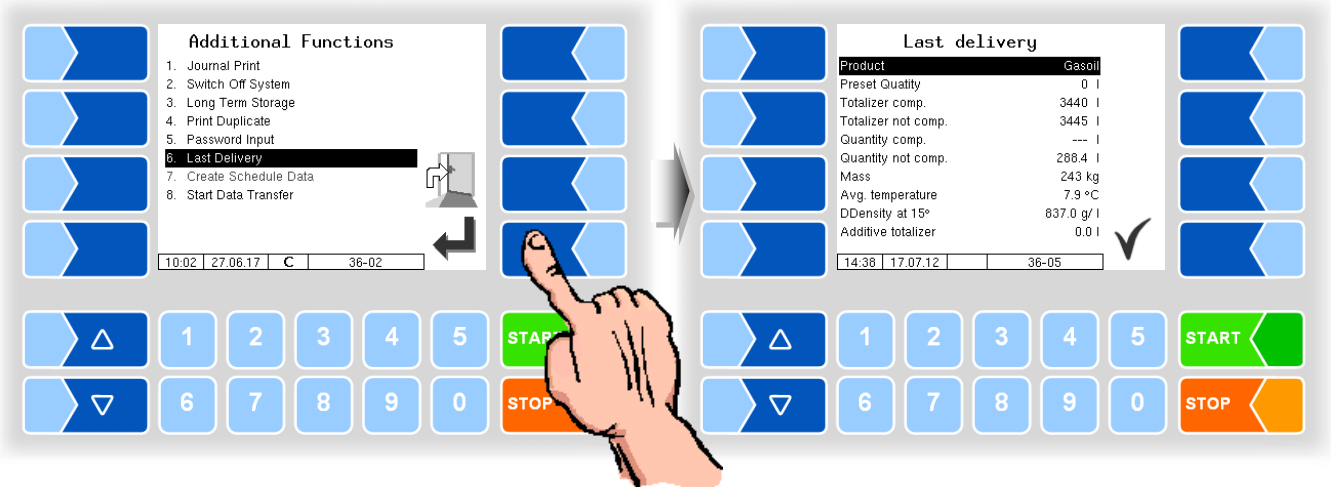


Entering a service password allows you to open the delivery menu once if an error occurs. In this case, the driver must request the current service password from the local service centre. The password is entered as described in section 3.1.2

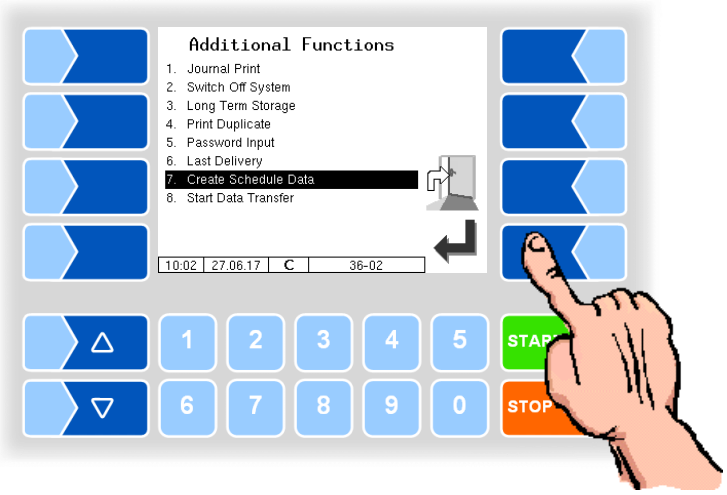
In software version pair 1.16.X wihout function.

4.6 Last delivery

The data of the last delivery is displayed.

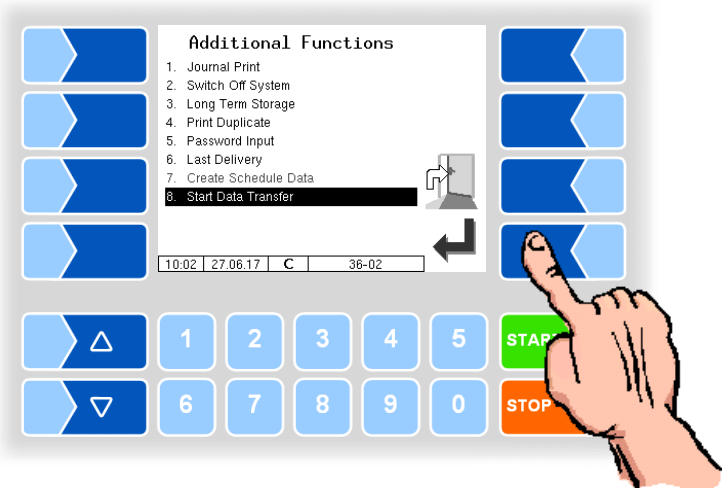


4.7 Create Schedule Data



When confirming this menu item, response data will be generated and made available for transmission to the Office. The response data can be generated only once. After that, the menu item grayed out and is no longer available (see also section 3.2.7.3).

4.8 Start Data Transfer



You can use this menu item to start the data transfer in order to receive schedule data, even if response data has already been transferred.

5 Error Handling

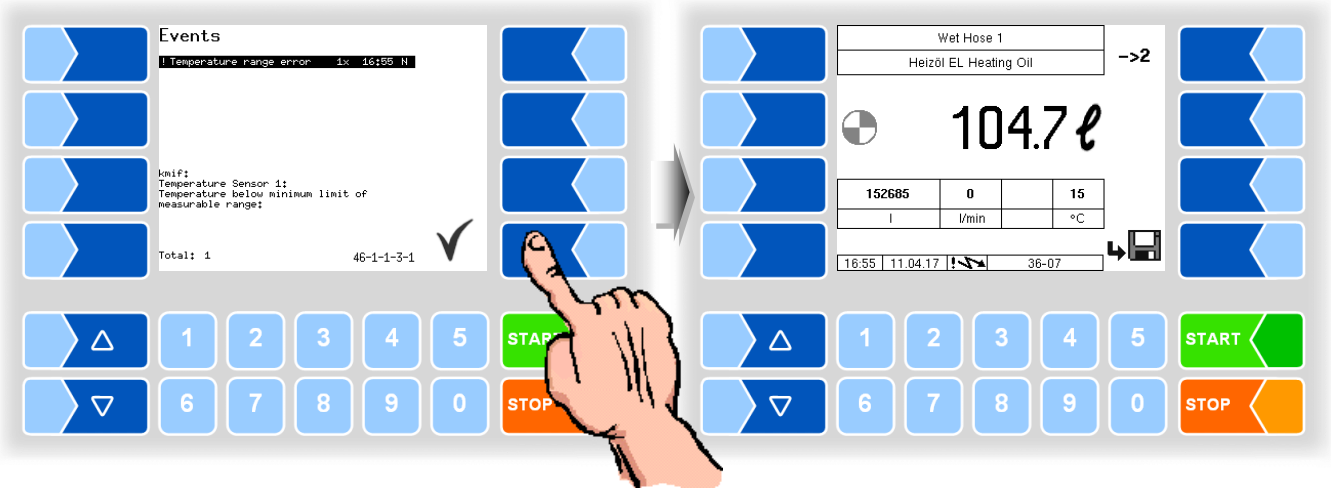
If an error occurs during an active delivery, causing this delivery to be interrupted, the event display window containing the relevant error message appears for ten seconds.

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

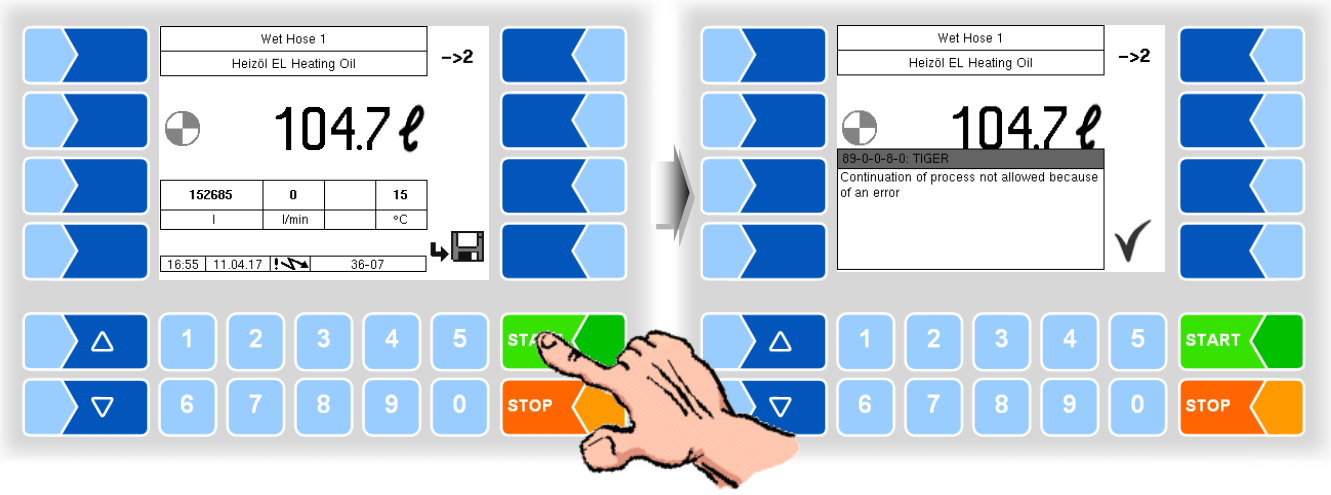
The error symbol is then displayed in the information line as long as the error is still present.

For more information on an error displayed in the information line, you can open the event display manually (2nd softkey from the top left of the display).

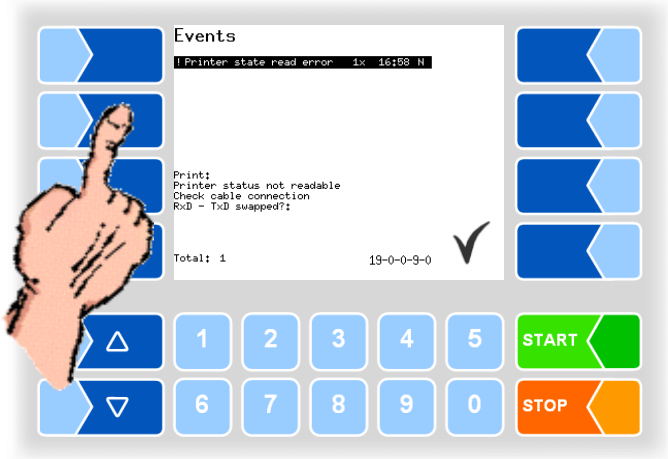
Error messages are not cleared until the cause of the error has been removed.
As long as the error is still active, an exclamation mark is displayed next to the error message.



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



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).



Confirm the fault " ✓ ".
The error message is not deleted until the cause of the error is eliminated.

If you request for help from your service company, report to the five numbers that are right down in the event window. They are used to uniquely identify the error by the service company.

If the calibration 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.

6 Appendix

6.1 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
- System Date (C)
- System Time
- Auto-Synchronisation
- Timezone
- Daylightsaving
- *Daylightsaving Begin*
- Month
- Week
- Day Of Week
- *Daylightsaving End*
- Month
- Week
- Day Of Week

Language (D)
- de (German)
- en (English)
- fr (French)
- nl (Dutch)

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
- Add-On

3: Control parameter (U)

- Stop Delivery x%^{x}Flow
- Max. time at flow =0
- Flowlimit low
- Flowlimit high
- Productgroup F 1
- Productgroup F 2
- Productgroup F 3
- Preset
- Time until filled pipe
- Sens. value end draining
- % Air stop draining
- Open Time Vx
- Close Time Vx
- Draining final
- Draining flow
- Remaining volume draining
- Total volume draining
- End filling time wet
- Minimum filling pressure
- Air on Delay
- Air counts start deairing
- Rest press. m-tube draining
- Pressure during draining
- End criterion draining

(C)

- Runback-limit
- Flow-Control
- Throttle
- Release delay
- MID: Stop del. x%^{x}flow
- MID: Flushing volume
- MID: Filling time wet (C)

if Program parameter/Erweiterung is ON

4: Product Configuration

Metrological Products (C)

Designation
Number
Shortcut
Scale Unit
Calibration factor
Density
Reference Temperature
Compensation
Compensation mode
Compensation Factor
ADR Text (U)
Product Group (U)
Meter (S)

Measured Products (U)

Designation
Number
Shortcut
Metrol. product
Add. Mischungsv. 1/x
Additivpumpe
Log. Ausgang Additiv
Price
Tax identif.
Additional product
PID-Delivery
PID-Delivery leaded
Solenoids-Delivery

Unmeasured Products (U)

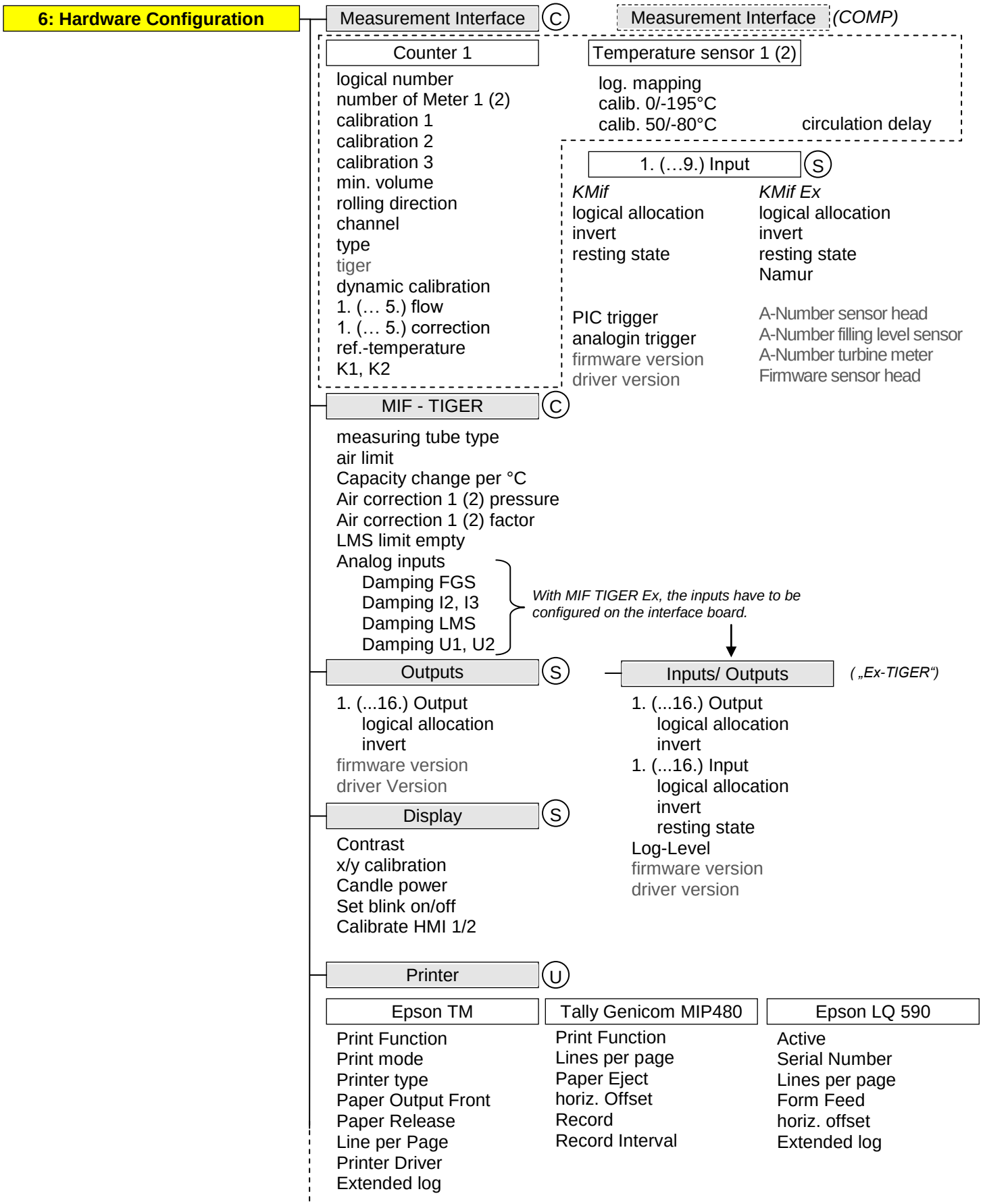
Designation
Number
Shortcut
Scale Unit
Packaging content
Price code
Price factor
Price
Tax identif.
Additional prod.

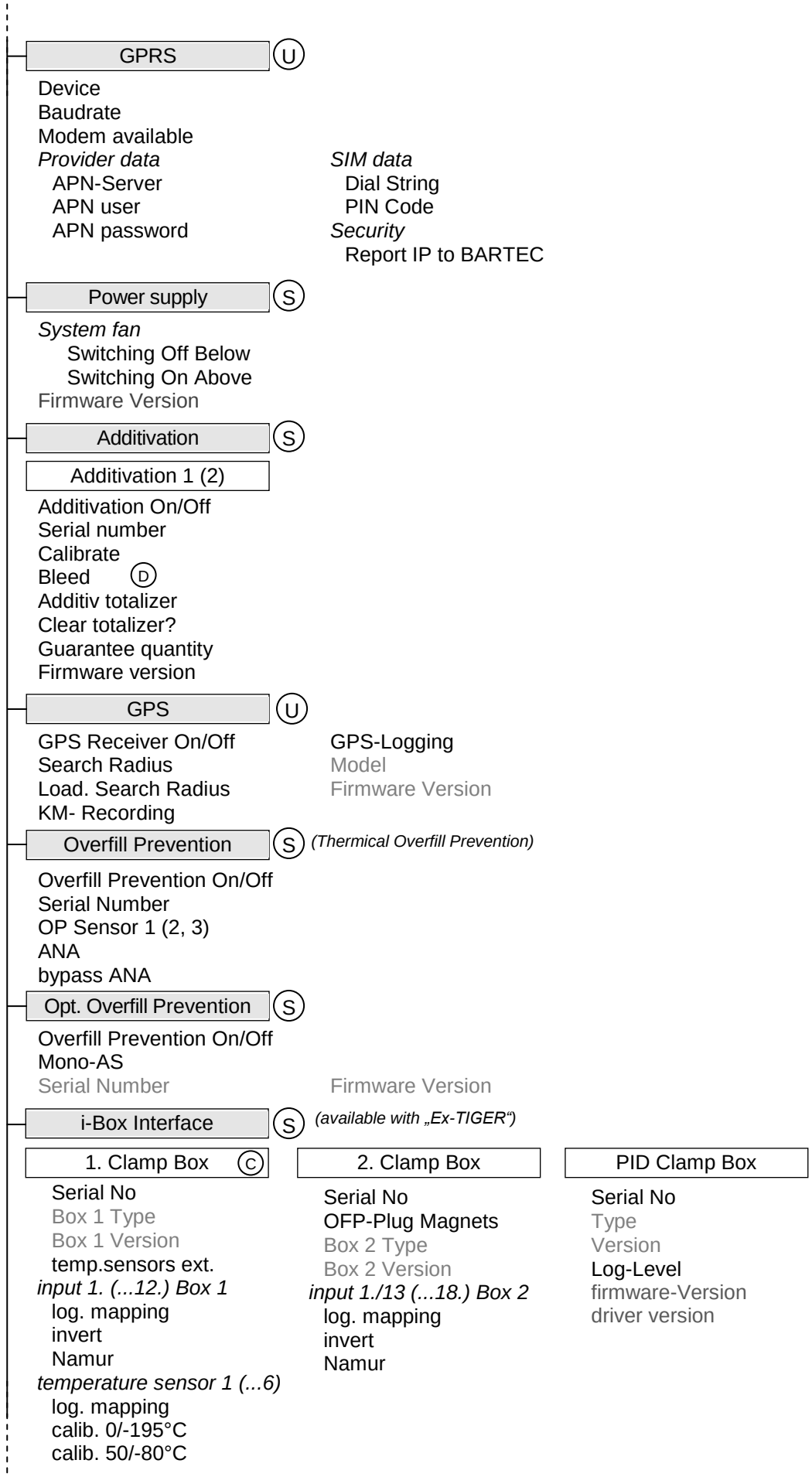
5: Print Parameter (U)

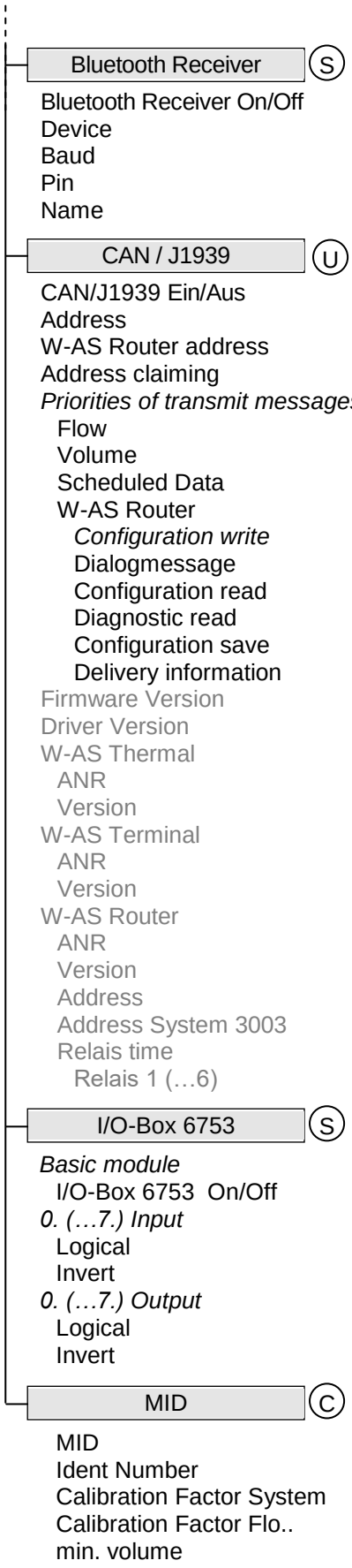
Seq. Number

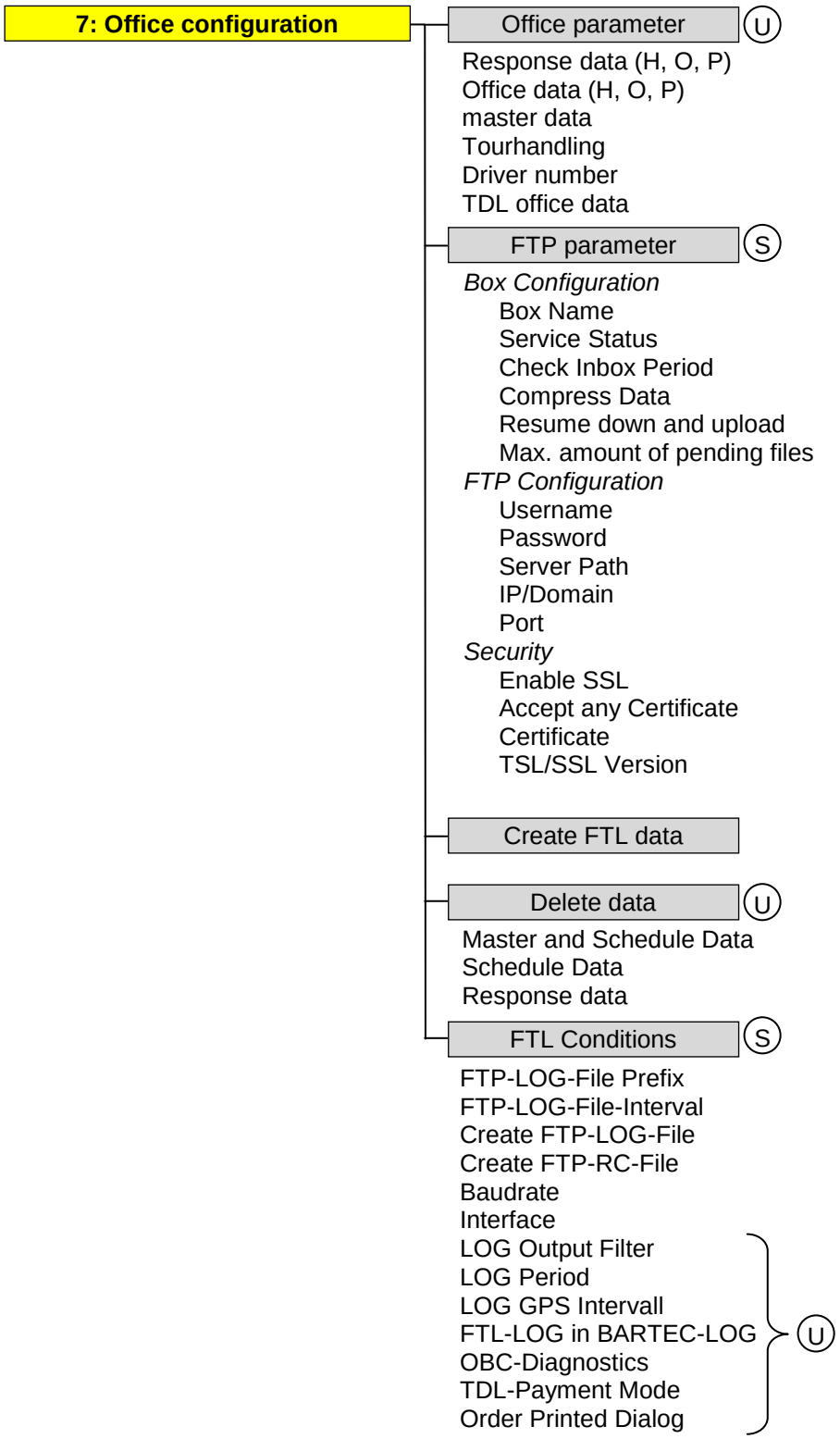
Ticket System language
Ticket List

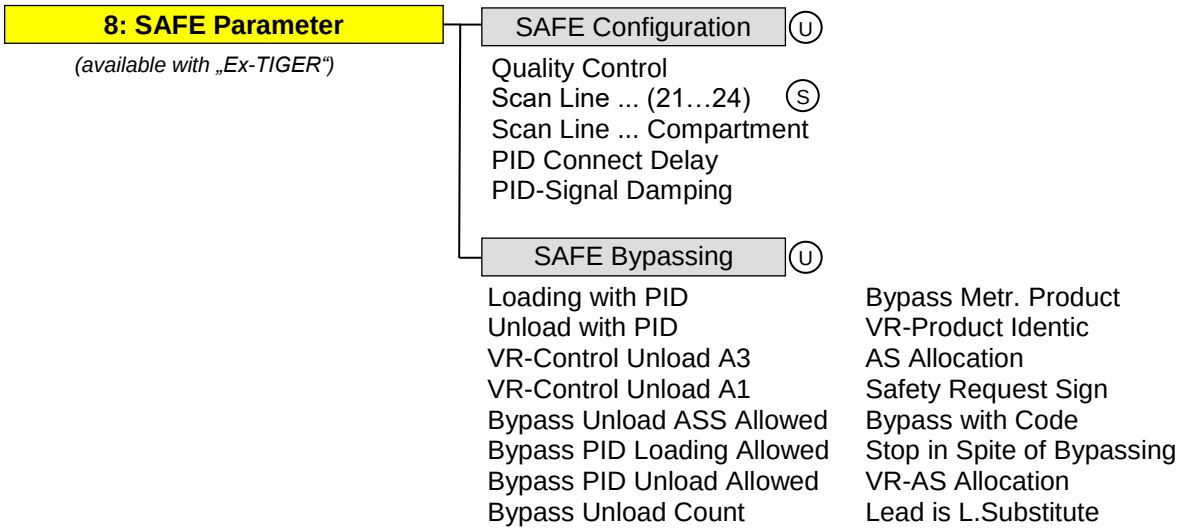
Ticket Identification
Horizontal Offset
LF before ticket
LF before position
LF between position
LF beyond position
Max. count of pos./page
Vehicle number
Delivery Date
Time del. start
Time del. end
Product number
Temp.-avg. uncomp.
Customer number
Uncomp. volume
Del. note number
Time meter readings
Driver number
Preset quantity
Vehicle registration
Ticket allocation
Delivery hose
Seal information
Product group


6: Hardware Configuration
Measurement Interface
C
Measurement Interface
(COMP)
Counter 1
logical number
number of Meter 1 (2)
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
Temperature sensor 1 (2)
log. mapping
calib. 0/-195°C
calib. 50/-80°C
circulation delay
1. (…9.) Input
S
KMif
logical allocation
invert
resting state
PIC trigger
analogin trigger
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
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
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
S
1. (...16.) Output
logical allocation
invert
firmware version
driver Version
Inputs/ Outputs
(„Ex-TIGER“)
1. (...16.) Output
logical allocation
invert
1. (...16.) 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
Line per Page
Printer Driver
Extended log
Tally Genicom MIP480
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
Baudrate
Modem available
Provider data
APN-Server
APN user
APN password
SIM data
Dial String
PIN Code
Security
Report IP to BARTEC
Power supply
S
System fan
Switching Off Below
Switching On Above
Firmware Version
Additivation
S
Additivation 1 (2)
Additivation On/Off
Serial number
Calibrate
Bleed
D
Additiv totalizer
Clear totalizer?
Guarantee quantity
Firmware version
GPS
U
GPS Receiver On/Off
Search Radius
Load. Search Radius
KM- Recording
GPS-Logging
Model
Firmware Version
Overfill Prevention
S
(Thermical Overfill Prevention)
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
(available with „Ex-TIGER“)
1. Clamp Box
C
Serial No
Box 1 Type
Box 1 Version
temp.sensors ext.
input 1. (...12.) Box 1
log. mapping
invert
Namur
temperature sensor 1 (...6)
log. mapping
calib. 0/-195°C
calib. 50/-80°C
2. Clamp Box
Serial No
OFP-Plug Magnets
Box 2 Type
Box 2 Version
input 1./13 (...18.) Box 2
log. mapping
invert
Namur
PID Clamp Box
Serial No
Type
Version
Log-Level
firmware-Version
driver version


Bluetooth Receiver
S
Bluetooth Receiver On/Off
Device
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
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
Ident Number
Calibration Factor System
Calibration Factor Flo..
min. volume


7: Office configuration
Office parameter
U
Response data (H, O, P)
Office data (H, O, P)
master data
Tourhandling
Driver number
TDL office data
FTP parameter
S
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
Baudrate
Interface
LOG Output Filter
LOG Period
LOG GPS Intervall
FTL-LOG in BARTEC-LOG
OBC-Diagnostics
TDL-Payment Mode
Order Printed Dialog
U


8: SAFE Parameter
(available with „Ex-TIGER“)
SAFE Configuration
U
Quality Control
Scan Line ... (21…24)
S
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
VR-Product Identic
AS Allocation
Safety Request Sign
Bypass with Code
Stop in Spite of Bypassing
VR-AS Allocation
Lead is L.Substitute

6.2 Logical Outputs and Inputs

Logical Outputs			
log. No.	***invert***	***Valve designation***	***Function / Explanation of the logical outputs***
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 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 performence 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 actice 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 liters/min, also when using bypass)
18	n	B	before reaching the preset quantity is switched over to bypass
19	n		during residue removal set to high (e. g. hydraulic pump OFF)
20	n	E5	Bleeding measuring pipe (entspricht alternaiv auch 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

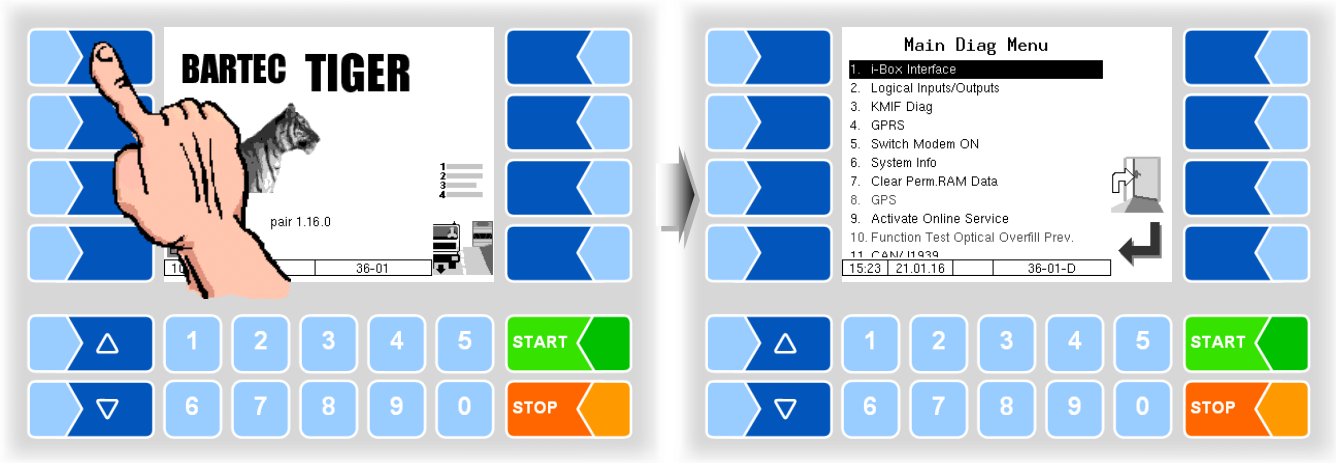
log. No.	invert	Valve designation	Function / Explanation of the logical outputs
23…26	n		Outputs for controlling of multiple additivation tanks (see section 3.2.4.2 „Log. Output Additive“)
29	n		Operation type Rinsing, release valve backwash line
30	n		Output for bleeding when input 6 is active (non-TIGER systems)
31	n		Full hose valve of the MID system
32	n		Dry hose valve of the MID system
33	n		Pump enabling MID when filling and delivering
34	n		MID venting for filling the system
35	n		Bypass delivery MID with full hose
36	n		Output for MID delivery, remains set until next TIGER delivery

Logical Inputs

log. No.	invert	Valve designation	Function
1	n		Emergency Stop
3	y/n		Empty signal sensor hose valves
5	y		overfill prevention
6	n		Input for external measuring systems to signal air in the system
7	n		Empty signal sensor for MID system, compartment 1
8	n		Empty signal sensor for system, compartment 2
9	n		MID system uses compartment 2 (if there are 2 compartments)

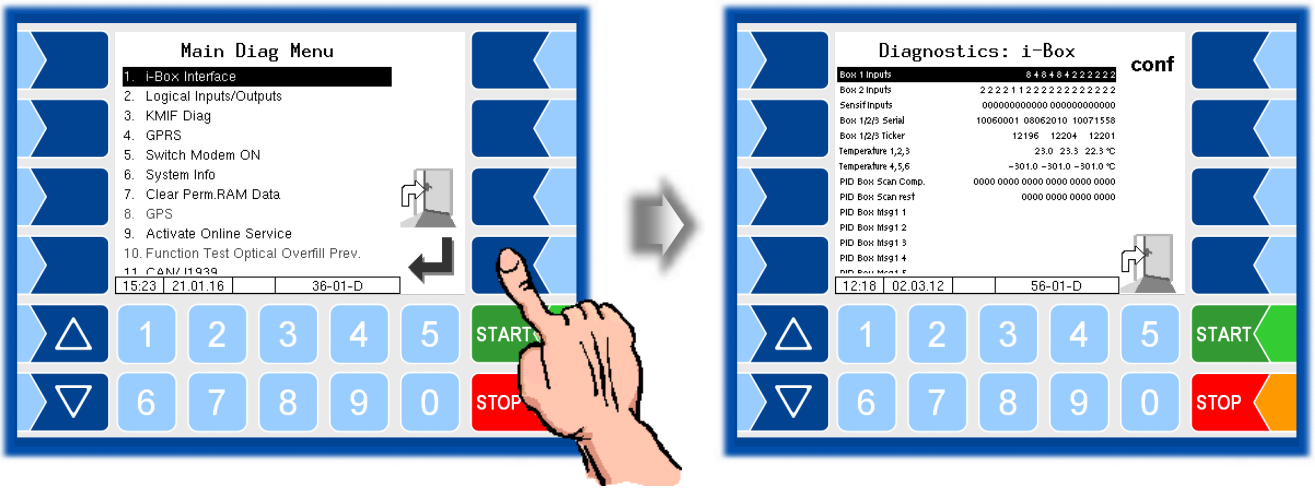
6.3 Diagnostics menu

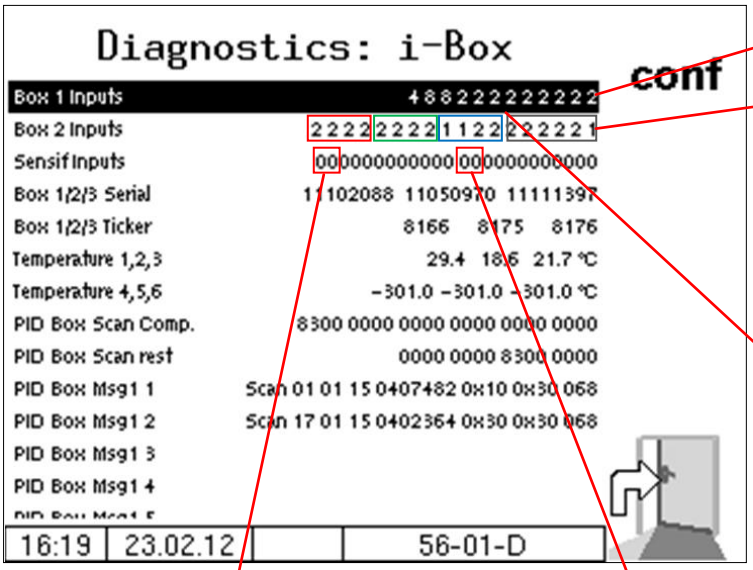
You can use the upper left softkey to open a diagnostics menu. This service function allows the service professionals to perform a specific diagnosis on individual system components.
You can open the diagnostic menu either outside of a tour, within a tour or within an order.



6.3.1 i-Box Diagnostics

(Available in vehicles equipped with “Ex-TIGER”)





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

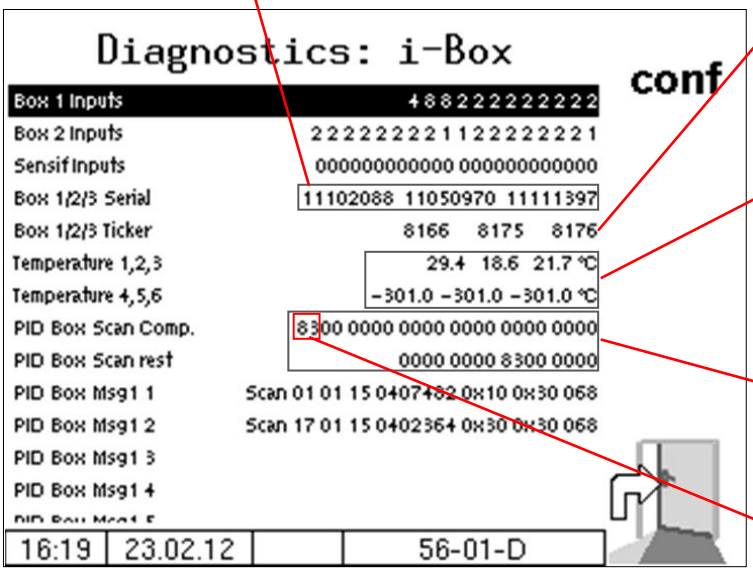
NOTE! Not identical with software „pyramid“.

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)		**Magnetic 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)



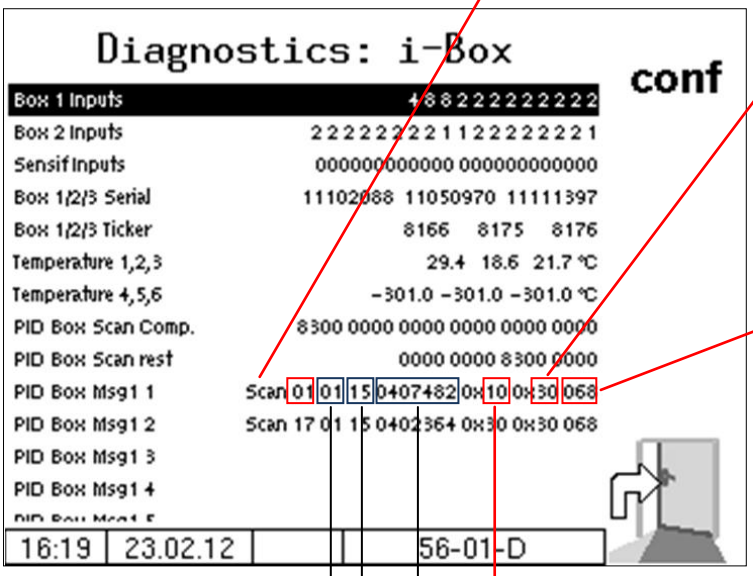
Ticker (Packet data counter)
If a counter is standing still, there is no communication with the respective board.

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	∗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.*	
6X *	Listener limit sensor 1+2	∗2
aX *	Listener limit sensor 1+3	
cX *	Listener limit sensor 2+3	
eX	Listener limit sensor 1+2+3	
X1	Contact without PID-Info /Com	
X3	Contact with PID-Info	

∗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!

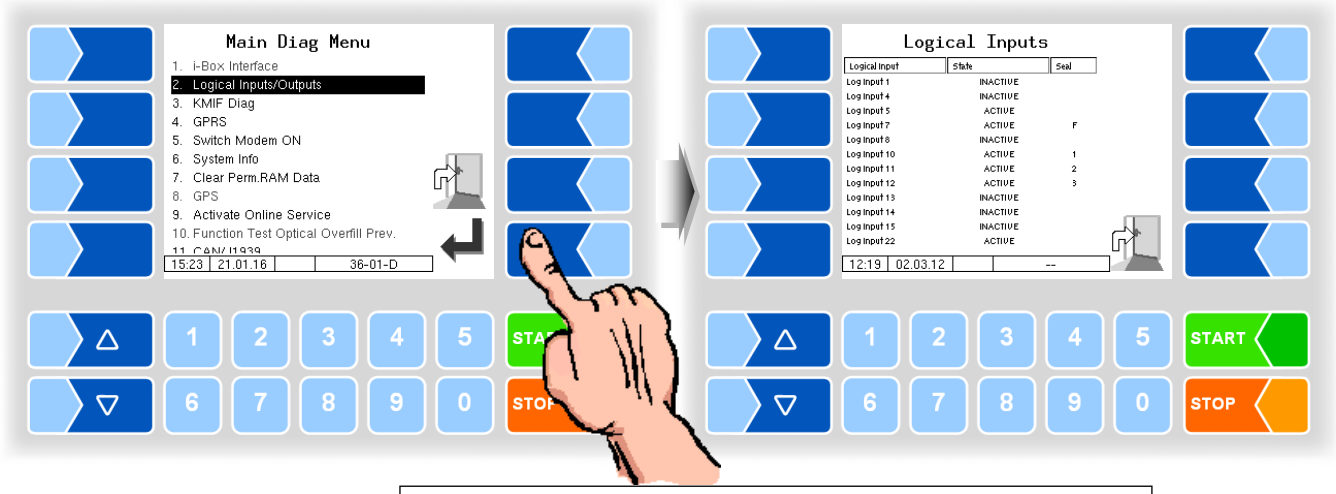
Product quality	
0x	all qualities
1x	A I – Product
2x	A II – Product
3x	A III – Product
x0	all qualities
x1	leded
x2	unleded
x3	Fuel with lead substitute

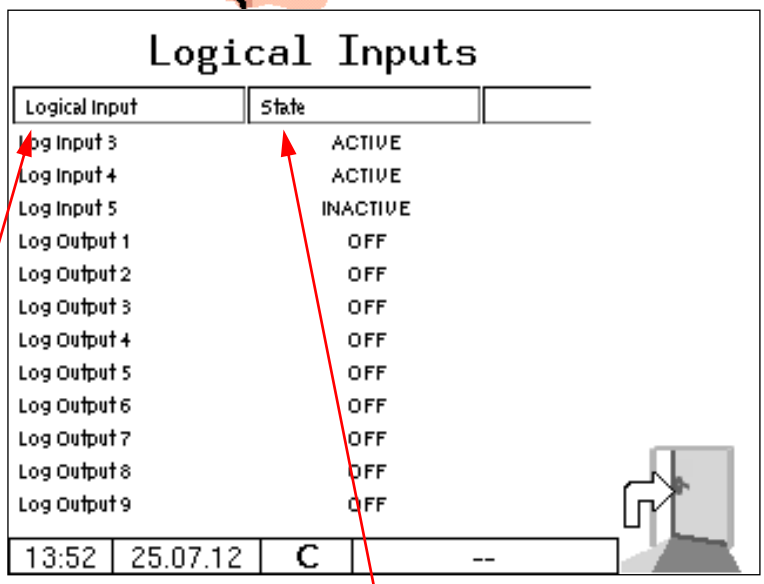
PID-Information	
00	no information (possibly Common vapour recovery)
68	Diesel
69	Heating oil
70	V-Power Diesel
72	Bio-Diesel
92	Super E 5 (formerly Petrol)
95	Super E 10 (formerly Super E 5)
98	Super plus

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 68).

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





Logical Input

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

State

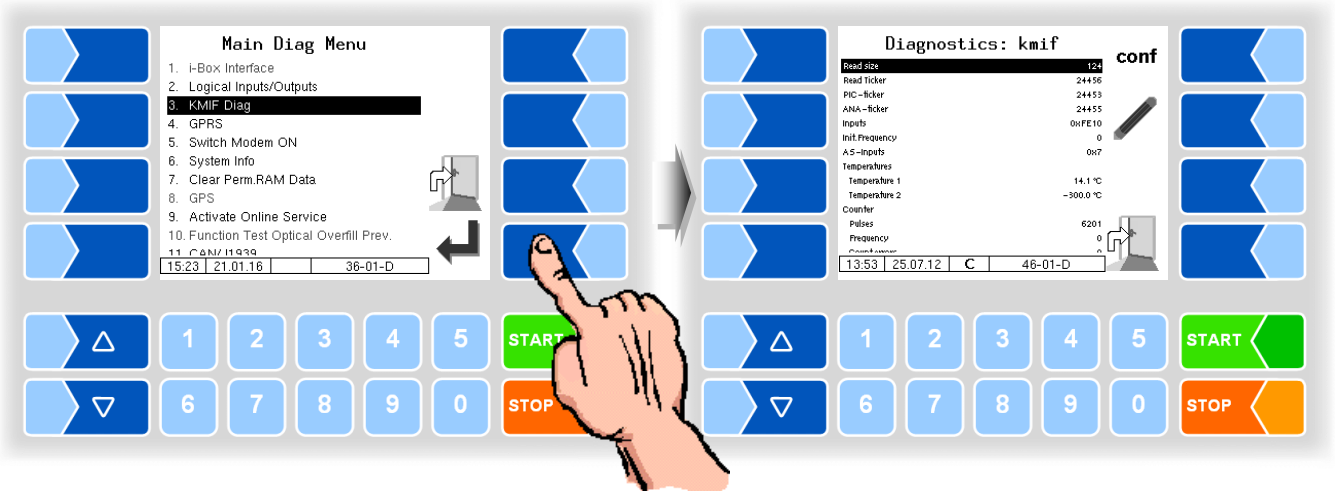
The status of the inputs and outputs is displayed.

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

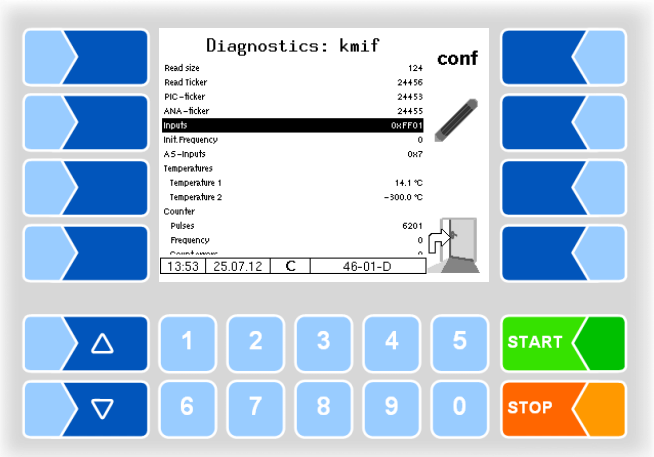
The "Logical Input / Output" diagnosis is only updated within a delivery order. Outside an order, the correct states may not be displayed.

6.3.3 Diagnostics of the measurement interface

You can perform this diagnostic function also in the configuration menu of the measurement interface (see page 40).

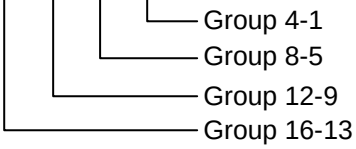


The “Inputs” line shows the current status of the inputs as a hexadecimal value. After converting this value to a binary number, you can read out the statuses of all inputs.



The 16 inputs are displayed in four groups.

Example 0 x F F 0 1



Presentation of group 4-1 (example):

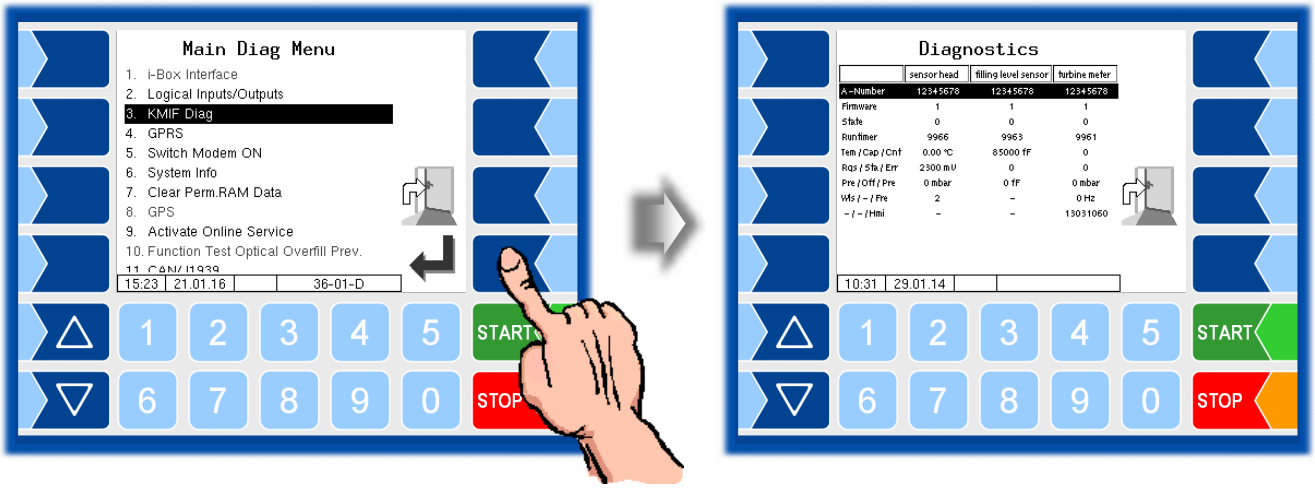
	16	15	14	13	
	12	11	10	9	
	8	7	6	5	
Inputs (Status “0” or “1”)	**4**	**3**	**2**	**1**	**Presentation (Group)**
	0	0	0	0	0
	0	0	0	1	1
	0	0	1	0	2
	0	0	1	1	3
	0	1	0	0	4
	0	1	0	1	5
	0	1	1	0	6
	0	1	1	1	7
	1	0	0	0	8
	1	0	0	1	9
	1	0	1	0	A
	1	0	1	1	B
	1	0	1	1	C
	1	1	0	0	D
	1	1	1	0	E
	1	1	1	1	F

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

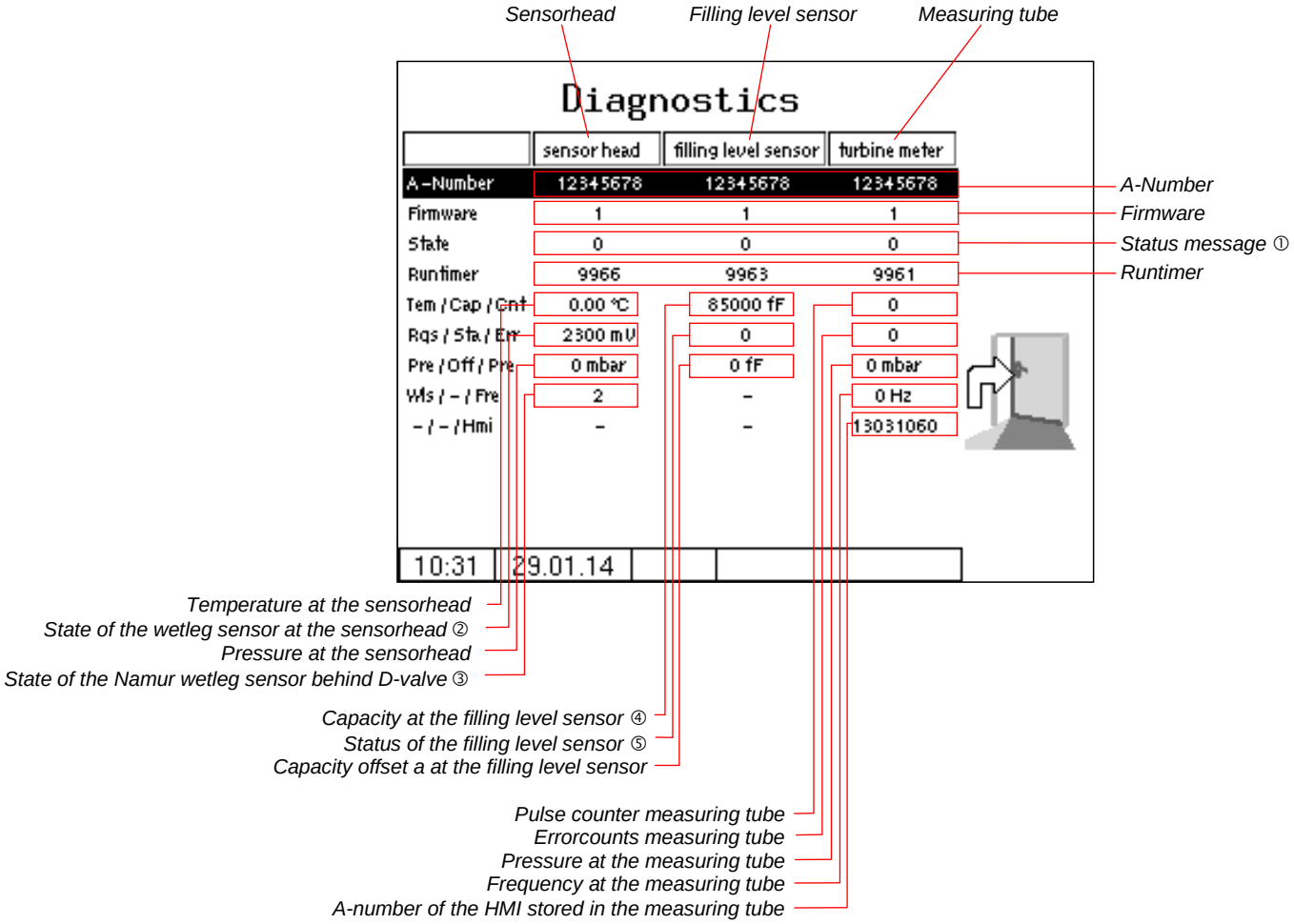
The example above shows the hexadecimal value FF01.
The corresponding binary number is 1111 1111 0000 0001.
This means that inputs 1 and 9 - 16 currently have the status “1” while inputs 2-8 have the status “0”.

You can perform this diagnostic function also in the configuration menu of the measurement interface (see page 40).

6.3.4 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 43).

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*

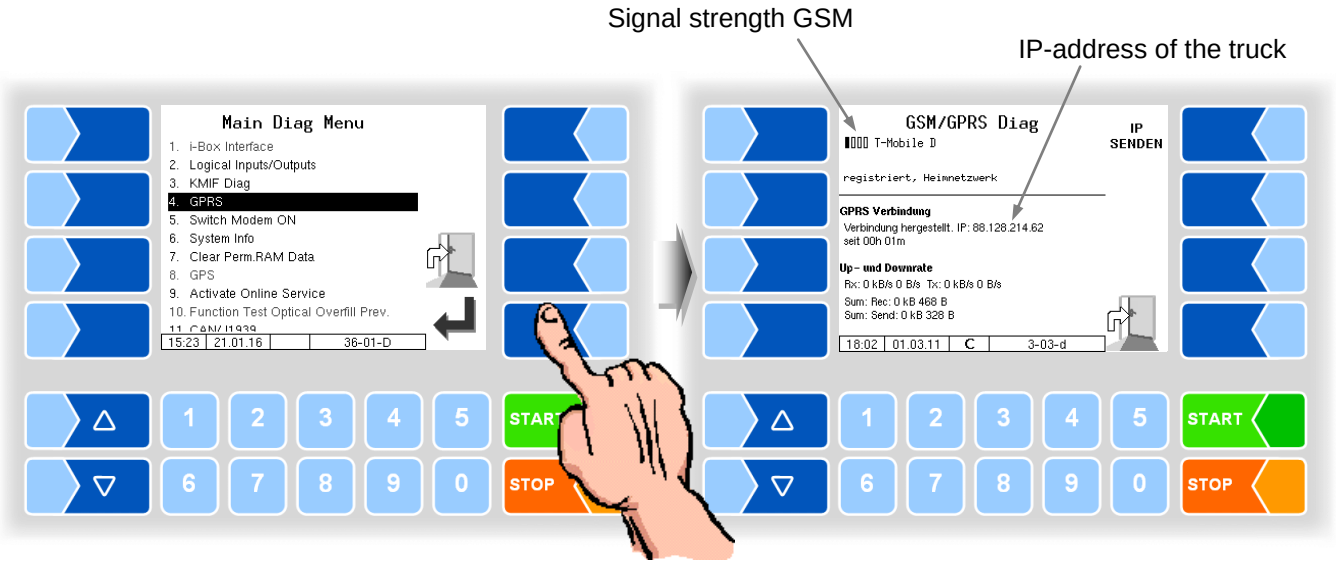
~081000 ≙ empty	140000 ≙ full (*Heating oil*)

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

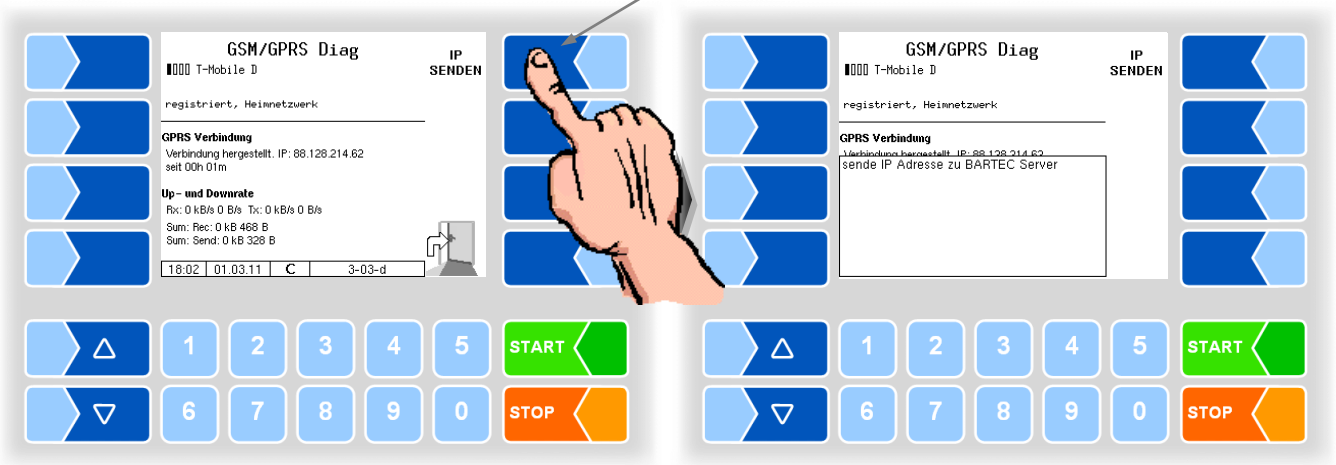
0	no error
2	Timeout error in the capacitance measurement Sensor 1
20	internal error, Sensor 1

6.3.5 Diagnostics GPRS (Modem)

Service function for diagnostics of the GPRS unit.

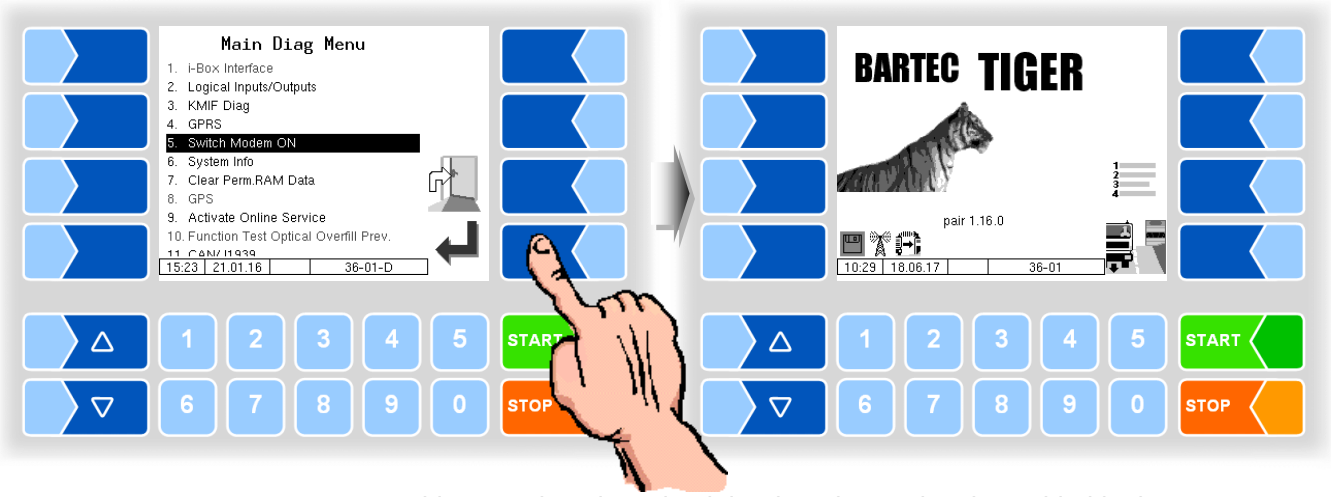


Sending the IP address to BARTEC BENKE is triggered manually.



The GPRS diagnostics can also be opened in the configuration menu of the GPRS unit (see section 3.2.6.8).

6.3.6 Switch Modem ON and OFF



This menu item is omitted, is when the modem is enabled in the GPRS configuration (see section 3.2.6.8).
Only if the modem is configured but not activated in the GPRS configuration, the modem can be switched on or off, when confirming this menu option.

The operating status of the modem is displayed by icons.


Modem switched on

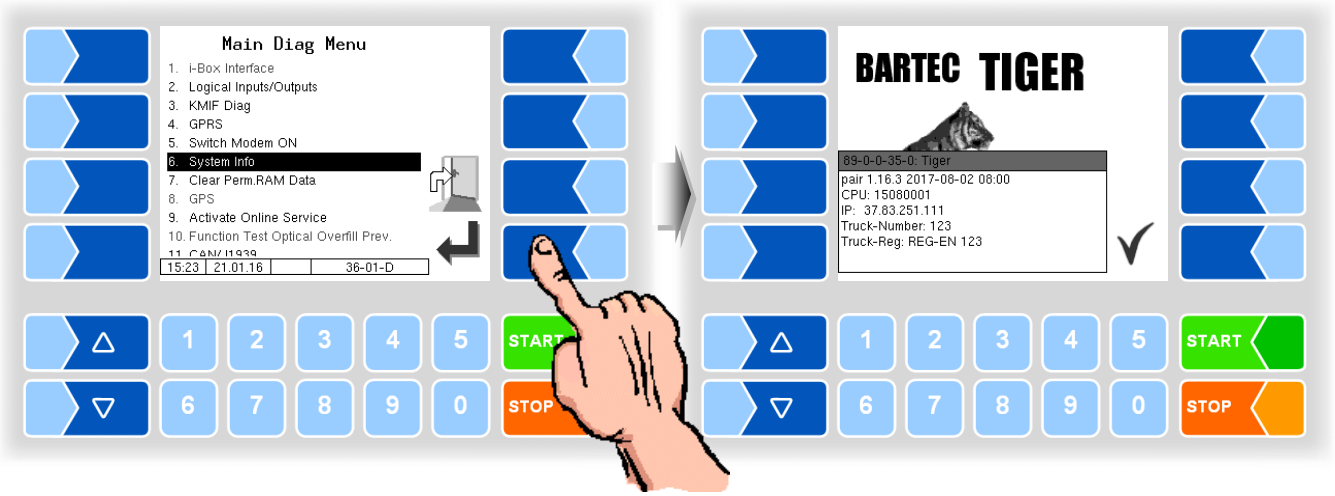

Modem switched on, connection established


Receiving data

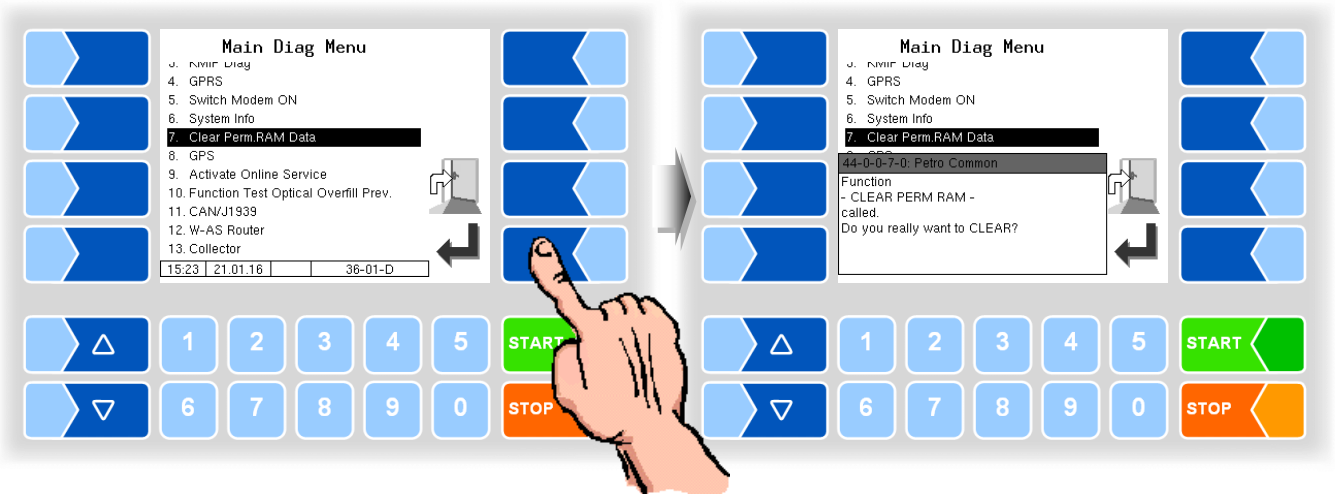

Sending data

6.3.7 System-Info

The menu item is used for displaying system data.



6.3.8 Clear Permanent RAM Data

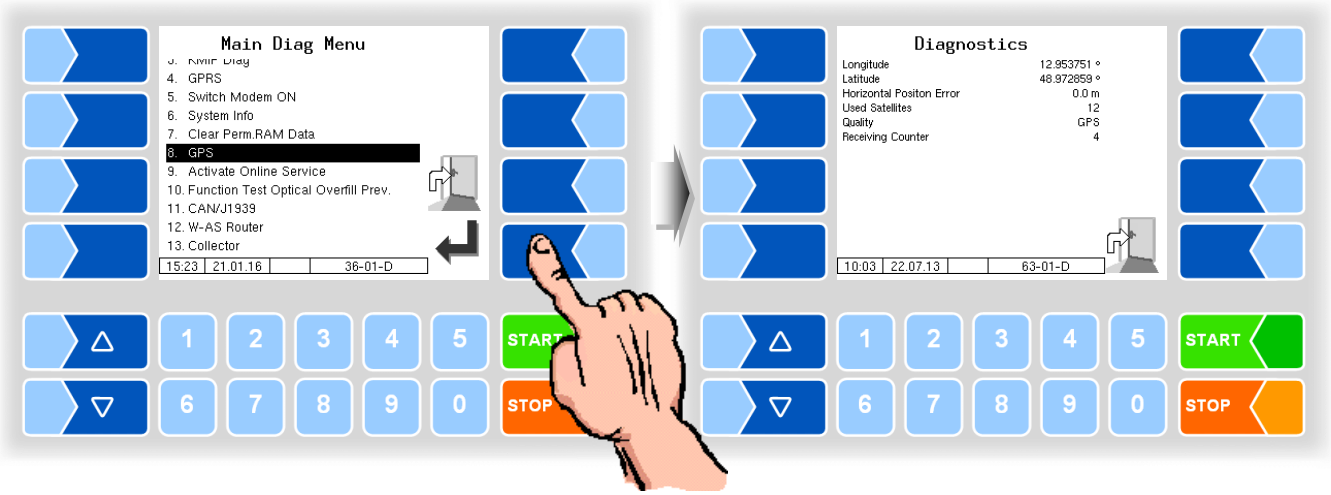


When confirming the security request the contents of the permanent RAM is deleted (data of the last delivery).

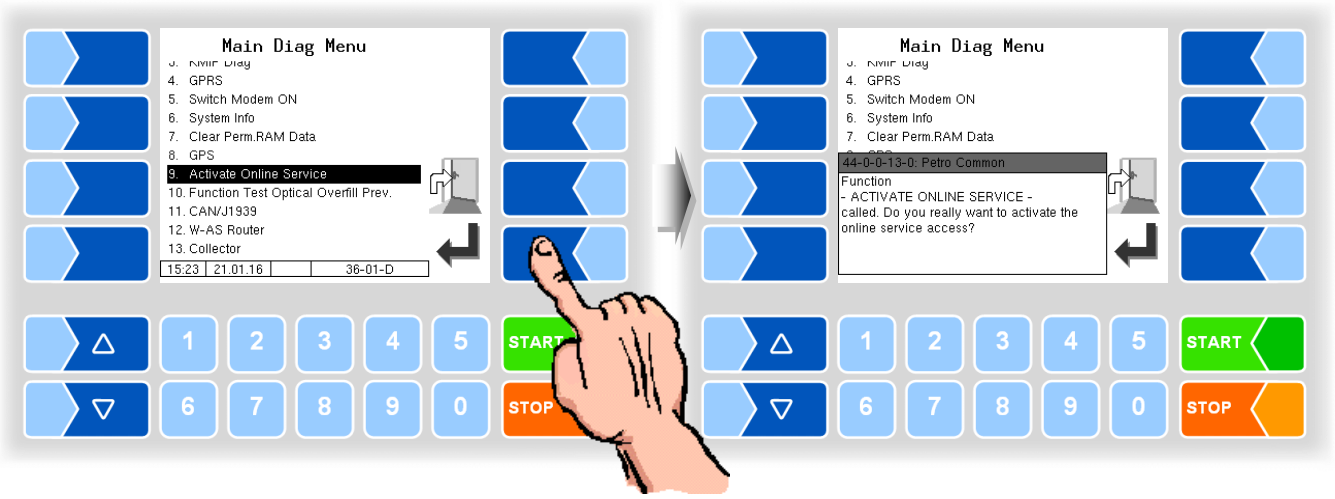
See also section 3.5.7.

6.3.9 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 3.2.6.11).



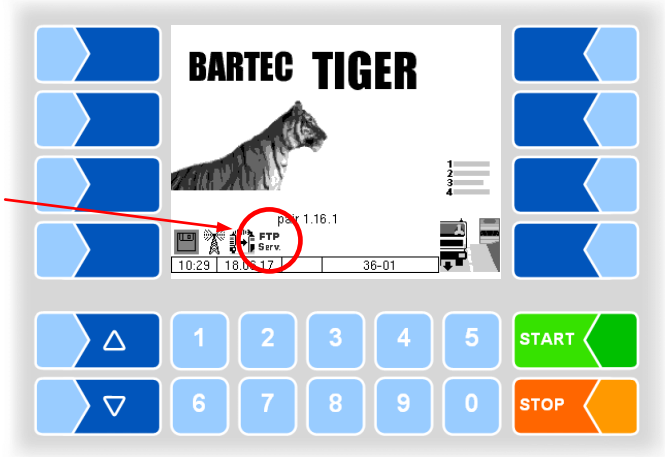
6.3.10 Activate Online Service



The online service can only be activated if the access has been configured (see page 76).

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 3.5.15).

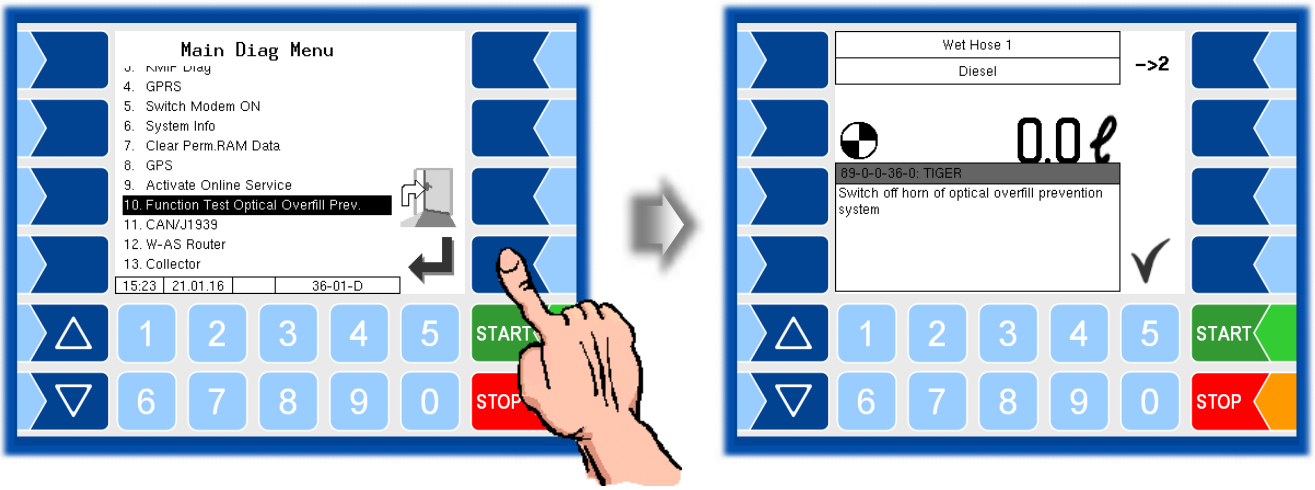
The active connection to the FTP server is displayed in the main screen.



6.3.11 Function Test Optical Overfill Prevention

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

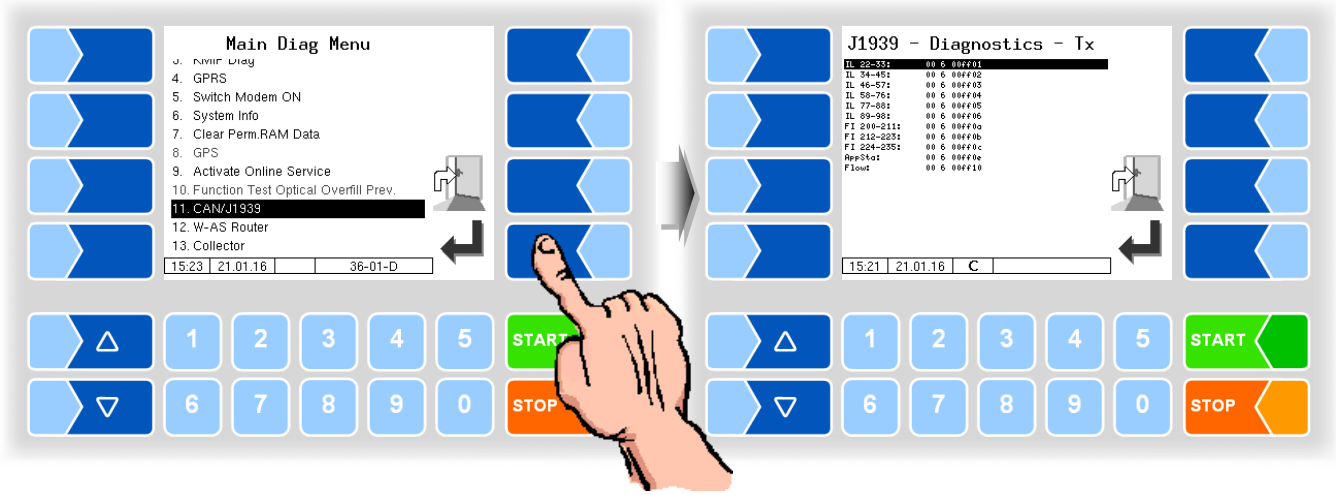
- Confirm the menu item 10.
  The delivery will be stopped and the Horn is switched on.



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

6.3.12 Diagnostics CAN/J1939 (Wireless overfill prevention)

Service function for diagnostics of the CAN / J1939 interface.

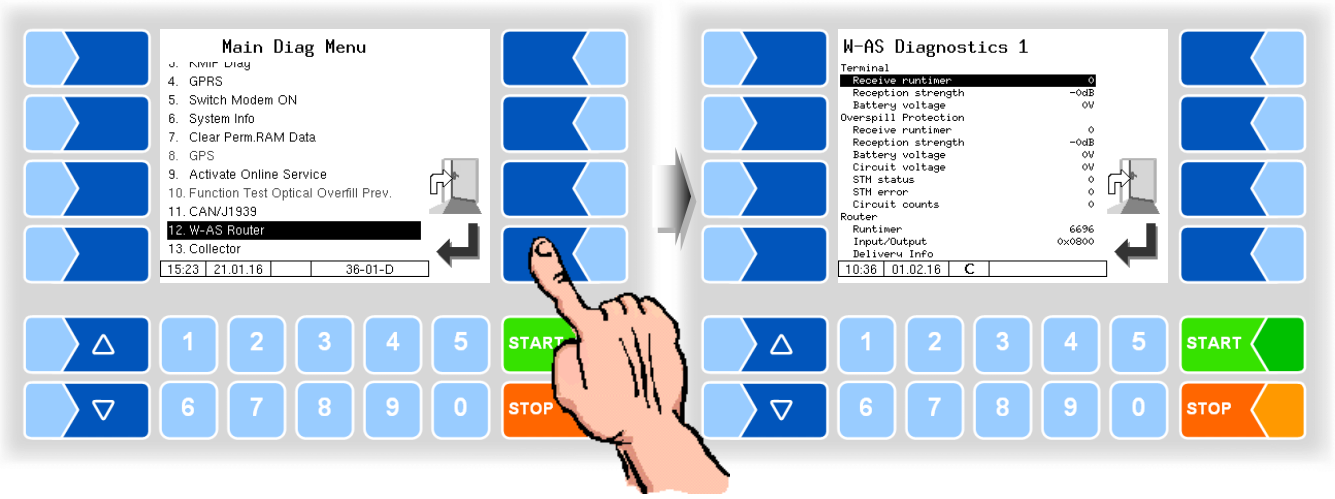


You can also run the interface diagnostics in the configuration menu of the CAN/J1939 interface (see section 3.2.6.16)

6.3.13 Diagnostics of the W-AS Router

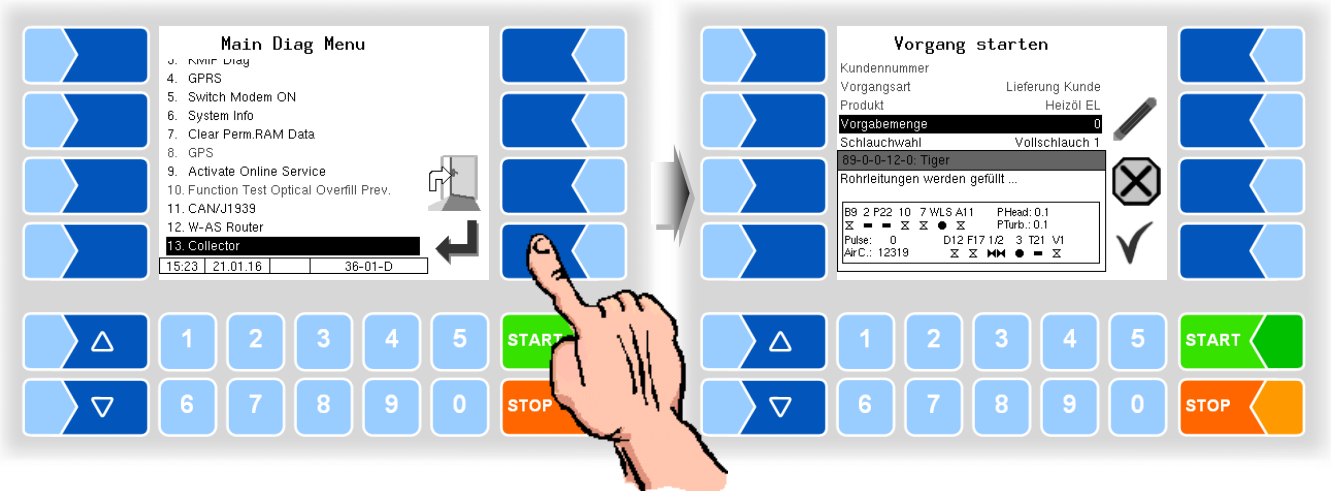
(Wireless overfill prevention)

Service function for diagnostics of the W-AS router.



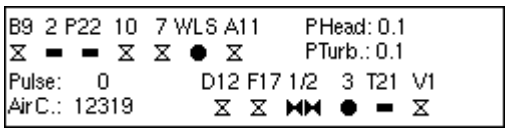
A description of the diagnostic functions can be found in the operating manual of the wireless overfill prevention.

6.3.14 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

⋈ = closed
⧖ = open
▬ = not configured
● = wetted
○ = not wetted

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

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