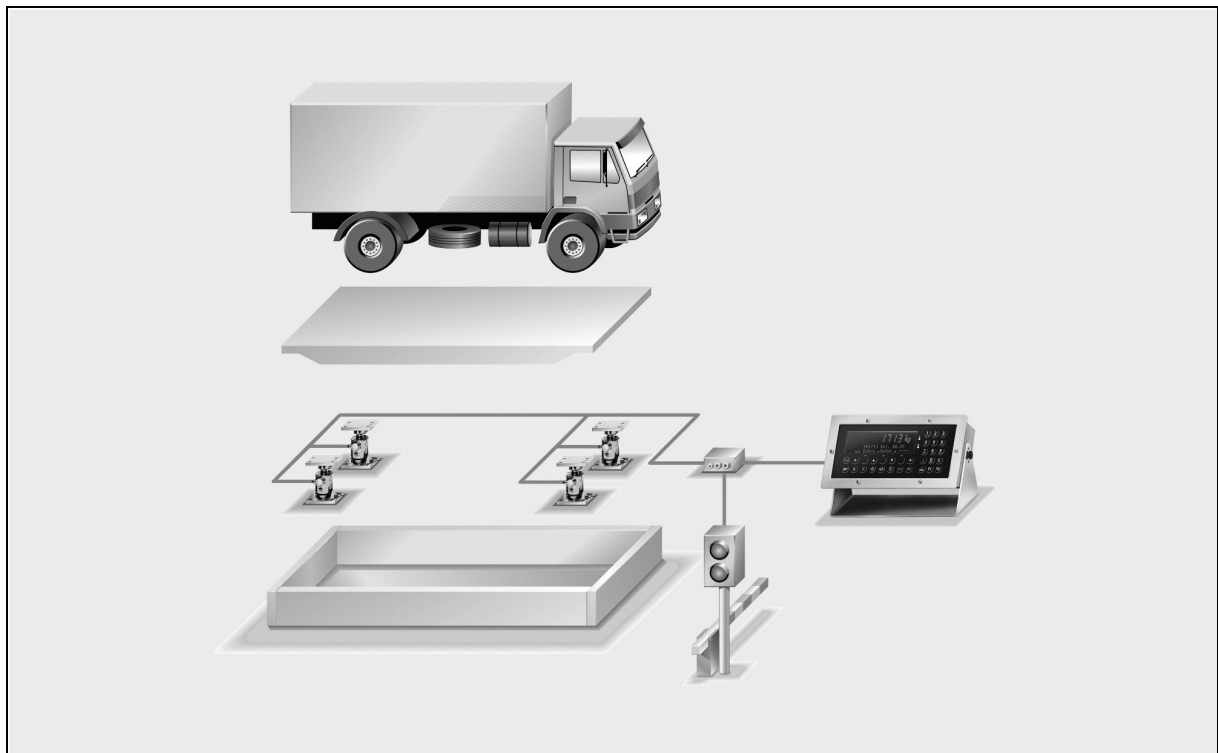


X5, X6 - Application TruckLine

Operating Manual



Operating manual

9499 050 61102

Edition 2

24.01.2008

for PR 5610/10

Release 3.14



for PR 5710/10

Release 3.14



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1 GENERAL

1.1 Application description

A truckscale is used to determine the parameters of 'how much' (weight) 'of what' (product/material) is transported 'when' (date and time), 'on which truck' (ident) by whom to whom in a goods transaction: these parameters are the basis for administration processes such as invoicing, payment, statistics, etc. These weighing transactions must meet the regulations (weights & measures, trade legislation) of the user country.

Dependent of application, various methods of determination of the material or product weight are used:

- weight determination by means of first and second weighing operation as well as calculation of the difference as a transaction weight (net).
- weight determination by weighing the loaded truck using the truck fixtare weight. The difference, i.e. the transaction weight (net), is calculated automatically.
- determination of the truck tare weight.
- weight determination of a loaded truck as individual weighing operation.

If the charging function has been activated at [Setup]-[Config]-[Parameter] and the license PR 1713/32 has been entered, the following charging modes are activated:

- Charging of a truck with coarse / fine control and overshoot correction
- Manual charging or discharging with setpoint definition
- Registration (Charging or discharging without setpoint definition)

The procedures include a number of data input, output and control functions:

- control of truck scale entry and exit with traffic lights and barriers (PLC program)
- indication of weight data for the driver on a large figure display (serial interfaces)
- print-out of a weight ticket with the weighing process data for the driver. The weight ticket must be kept by the driver during the tour and presented to the official authorities on request (serial interfaces)
- acquisition and power failure safe storage of data weight, order number, products, trucks, customers, hauler and delivery addresses with date and time in a database

The typical scale at the gate of a plant determines the supply or removal of products by means of entrance or exit weighing as well as calculation of the difference and print-out of a ticket in compliance with the weights & measures legislation. Further functions such as specification of order number, product, customer and hauler data as well as delivery address can be realized optionally. All weight data are stored in the alibi memory and in a database.

A special gate scale version typically determines product supplies by means of single truck weighing operation with a fixtare weight per truck. This form of application is used e.g. as an alternative with waste incineration plants. Hereby, print-out of a ticket in compliance with the weights & measures legislation is also required. The fixtare values are measured by special weighing operation per truck, and stored. All weight data are stored in the alibi memory and in a database.

Moreover, single weighing operations are possible, as encountered e.g. with truck checking by the police authorities. In these applications, no other functions in addition to the output of a weights & measures ticket are normally required, and no data are saved.

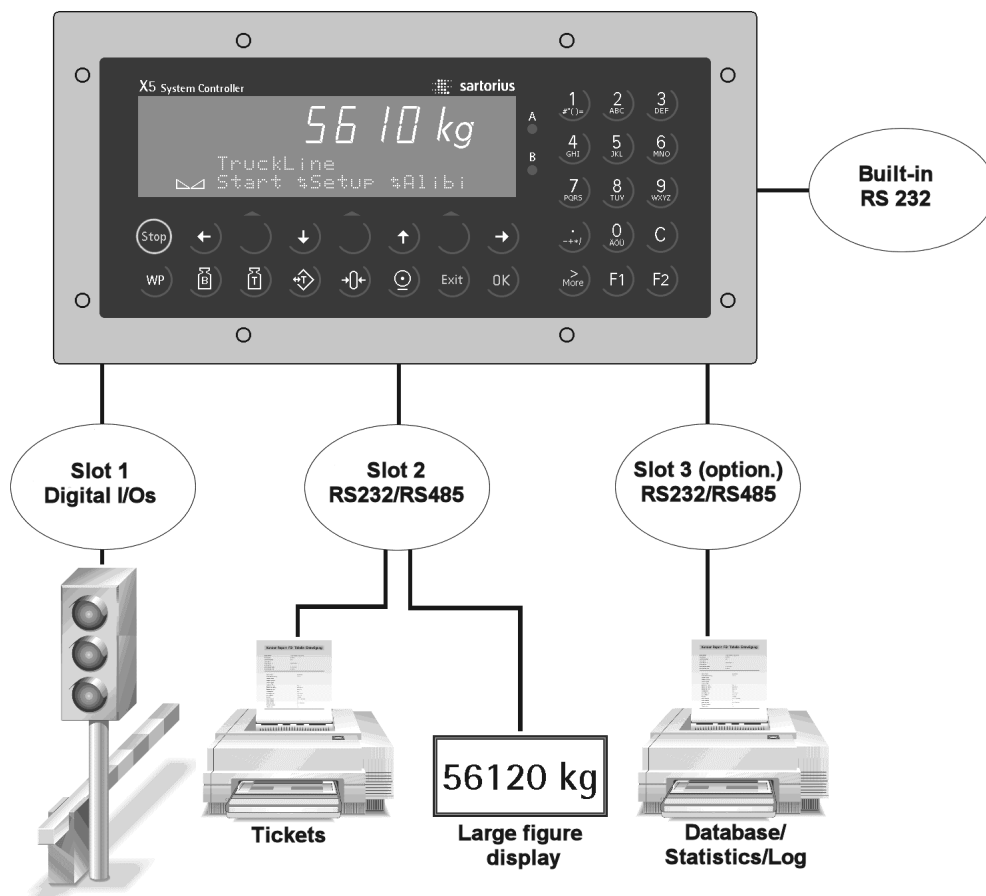
1.2 System structure

The technical solution of a Sartorius truck weighing system comprises the following components:

- PR 5610/10 TRUCK Controller or PR 5710/10 TRUCK Controller,
- built-in serial interface RS 232 for data communication,
- built-in standard memory extension PR 1713/05,
- digital inputs/outputs for process control by built-in interface card PR 1713/15 on slot 1,
- connection of a printer for weight tickets via built-in serial interface RS 232 of card PR 1713/04 on slot 2,
- optional connection of a large figure display for weight data via serial interface RS 485 of card PR 1713/04,
- optional connection of further printers or of a superordinate data processing system via optional serial interface RS 232 or RS 485,
- connection of an optional PC keyboard using a 5-pole DIN connector, e.g. Cherry make, type Business Line G83-6300,
- max. 8 load cells (also a higher number of PR 6221 series load cells in exceptional cases),
- load cell mounting plates,
- cable junction box for mounting at or in the truck weighbridge,
- truck scale in steel-concrete or steel construction for installation above ground, or pit installation. This part of the overall system is not comprised in the Sartorius scope of delivery.

1.3 Hardware

For these applications, the following standard and optional hardware is used:



1.4 Firmware

Firmware release 3.14 is min. requirement.

1.4.1 SW licences

For using application program TRUCK Controller, application licence 105 is required and is checked when starting the application.

A licence is also required for the alibi memory. If the charging function has to be activated, the license PR 1713/32 Phase batching is required. The mentioned licences are included in the standard scope of delivery of the TRUCK Controller.

1.5 Weighing points

The weighing point shown on the TRUCK Controller display A, B and A+B displayed as C is always used for the weighing process. Weighing point matching is necessary. Using different weight units for weighing points A and B is not possible. The scale of an external weighing point must not be switched over during operation.



When re-calibrating a scale from metric units into lb or vice versa, a cold start must follow, whereby all data, including those in the alibi memory, are lost.

All measured weights are gross weights.

Net values are generated by calculating the difference between first and second weighing operation, or between first weighing operation and fixtare value. Weighing operations are marked by a sequence number. First and second weighing operation have the same number. The number can be reset with a suitable password.

Weights can be replaced by manual entries. Neither weighing point nor pointed brackets as with weight values of a W&M scale are provided on the print-outs of weighing operations with manual entries, furthermore no saving in the alibi memory is done.

1.6 Memory requirement

In the instrument RAM memory, approx. 200 kBytes are needed for system and application. The remainder of approx. 1,1MBytes is available as a working memory for databases.

1.6.1 Database

The instrument provides databases for trucks, products, addresses, users, onsite list, statistics, reports and alibi memory. A database entry is marked by a number (ident) and a name. Idents and names must be unambiguous. Selection of an entry is either by the name or the ident.


The address list contains all addresses of customers and hauler, as well as all delivery addresses.

The user list contains all users, associated with one of the levels operator, supervisor or administrator.

The onsite list contains all trucks, which have already undergone first weighing. After second weighing, the weight data are entered into the statistics, and the truck is deleted from the onsite list.

1.6.1.1 Memory calculation

Example:	Number	Database	Bytes per entry	Memory
	50	Truck	160	8000
	30	Product	128	3840
	100	Address	160	16000
	10	User	64	640
	20	Onsite list	352	7040
	800	Statistics	96	76800
	100	* Report	640	64000
		Total		176320
	13000	Alibi memory	64	832000
		Memory requirement		1008320

	<p>* Care has to be taken, that the reports are collected by AccessIt (with REP as [Polling table] activated) !!</p> <p>If communication problems occur (e.g. PC not online, wrong settings in AccessIt or OPC), the administrator can manually with [Start]-[DBase]-[Reports] erase the reports with [Yes].</p> <p>Reports are stored in the database only if at [Setup]-[Config]-[Change]-[Parameter]-[Log to database] is set to [Yes].</p>
---	--

Memory space requirements per weighing operation (without alibi memory)

Weighing operation	Memory / operation	Comment
After first weighing	352	Data in on-site list
After second weighing	96	Data in statistics, data in on-site list deleted
Tare weighing	96	Data in statistics
Fixtare weighing	0	Data in truck list
Single weighing	0	No data storage, only ticket print-out

Some data entries are configurable. In this case, only selected data are available in operating mode (see chapter 4.1).

Name entries in the databases are 18 characters long, i.e. the full name can always be displayed when paging. The address fields are 30 characters long. The data field names can be adapted to the customer requirements using program in the dialogues and print-outs (if necessary, the local language can also be mixed with English expressions).

After each weighing operation, the available memory space is checked. Unless at least 20 kBytes are free, a warning is displayed. Before each weighing operation, a minimum of 3000 bytes must be free, in order to start weighing. Below 3000 bytes, some functions are not available any more. In this case, free memory space must be provided by deleting database entries. After exit from the database editor, the available memory capacity is displayed.

Database entries are not possible directly in the database function (More data - ...) or during a weighing operation (selection ... - exit).

1.6.2 Statistics

In the statistics, product reception and removal are distinguished by a preceding sign. The following statistics are possible:

- all products which were transported by means of a truck,
- all products related to a delivery address,
- all delivery addresses for a product.

Each address includes customer, hauler and delivery address.

1.7 Alibi memory

The alibi memory is standard, but must be configured. Only measured weights, but no manual entries are recorded in the alibi memory. Normally, the alibi memory is designed for storage of all weight data for a 3-month period.

Instead of the internal alibi memory, OmniScale can be used via a serial interface. For this purpose, the log function is used. The function can be allocated to an own interface.

1.7.1 Configuration of the alibi memory

The memory is configured during commissioning and cannot be erased or changed in size, if the CAL switch is closed. A cold start or re-configuration erases the memory and its configuration. A data set has 64 bytes (see chapter 1.6.1).

The application memory requirement (all databases !) must be taken into account by the user himself.

1.7.2 Data in the alibi memory

- Weight value, contains the weight, the weight type and the weighing point identification (WEIGHT).
- Date & time (DT)
- Operation number within 1 and 999999 (DINT).
- Modified CRC-16 (WORD). The type of modification is not disclosed. I.e. stored data cannot be changed also by application programming. Records with faulty CRC check contain a sequence of minus signs instead of a weight.

The data are stored in a ring memory. After the memory is full, further new data shift the earliest data out of the memory. The function is transparent for the user.

1.7.3 Size of the alibi memory

100 kbytes for the dynamic memory, e.g. databases, are reserved for the application program. Depend-ent of firmware release, approx. 200 kBytes are occupied by system and application.

During database creation, the entry is limited to the actual conditions due to already occupied memory space, i.e. the actual memory extension and the firmware memory requirement are taken into account. An own main program, which can be called up at the uppermost operating level, is used for operation. It includes the following functions:



- Configuration, if the CAL switch is open.
- Search and print-out of data sets, if the CAL switch is closed.

1.7.4 Use of the alibi memory

An own main program which can be called up at the uppermost operating level is used for operation. This function is available also during operation of the application.

1.7.5 Printing the alibi memory contents

The print function of the alibi memory uses two different printers:

- Print-out from the started program [Alibi] is on the ticket printer (PRN:).
- When printing from the application [Start] - [User] -  -  - [Alibi], the configured log printer is used.



1.7.6 Time behaviour of the alibi memory

As the database can contain several thousand entries, handling times in the range of seconds must be expected. The time requirement for handling a database operation increases with the number of possible entries. For this reason, no more than the indispensable number of entries should be made available by configuration. During searching in the database, 3 dots are shown in the upper left corner of the two-line display.

1.8 Operation

The operation of the TRUCK Controller is divided into functions Setup and Application. Setting up requires detailed knowledge, which is provided in the PR 5610 operating manual. Configuration of the application is part of the setup. Configuration and operation of the TRUCKapplication are explained in detail in this operating manual.

Faulty operations are displayed with a message. Some messages have to be acknowledged. Messages which do not need acknowledgement are displayed during 3 s.

The  key cancels an entry. Unlike other X5 applications, the exit function does not always lead to the next higher operating level, unless an entry for a weighing process is made. In this case it leads to special selection menus. Therefore early weighing process cancellation always requires pressing of the red  key.

A table with users, where [Admin] is always present and cannot be deleted, is created. The table contains the PIN (1111 ... 9999) and the user privileges. The default PIN for [Admin] after a cold start is 9999. User [Admin] allocates the privileges and the first PIN for all new operators. The user can change this PIN, provided that he has logged in. In emergency cases, a PIN which provides unique access can be calculated by means of a pocket calculator. The instructions for calculation are given on a supplement included in the manual.

Three classes of operators are provided:

1. The [Operator] may operate the weighing process
2. The [Supervisor] can also handle the database level and statistics (this should be the 'normal' privilege of the supervisor)
3. The [Admin] has all privileges. In particular, he is allowed to leave the application programm, in order to change the configuration

The user must identify himself at 2 stages:

1. When starting the application. In the application, he can handle all work corresponding to his privileges
2. When leaving the application. For this, the administrator privilege is necessary. Thus, all configuration data are protected against unauthorized access

After a cold start, the operator has the privileges of an administrator. After completing the configuration, the application shall be started. Without corresponding privileges, leaving the application is not possible any more.

1.9 Printer interfaces

The print functions Ticket, Log and Statistics can be combined or allocated to separate interfaces. The possible interfaces are:

- no printer
- = ticket
- serial interface 2 RS485
- serial interface 2 RS232
- serial interface 3 RS485
- serial interface 3 RS232

Adjusting the interface of the ticket printer is done in [Setup]-[Serial Ports]-[Printer device at]. The settings for the log printer and statistic printer are done at [Setup]-[Config]-[Change]-[Parameter]-[Log printer] / [Statistic printer].

All weight tickets can be printed via NiceLabelExpress. For this, a ticket layout must exist. Unless a layout generated by NLE exists, print-out is direct as determined by the program. Individual tickets can be switched off or printed out repeatedly. Statistics, configuration, database extracts and alibi memory are always printed directly.

A log printer can provide a record for each weighing operation. This printer should provide W & M print-outs. This interface can be used for OmniScale instead of the internal alibi memory. The log print-out is possible only, unless the print-out shall be provided via the ticket printer.

For statistics, database extracts and configuration, it is possible to use an own printer, the ticket printer or the log printer.

Print-out is with a timeout of 3 s for the first line. After successful printing of this first line, a multiple of 3 s (e.g. 5 * 3 s) is possible.

1.10 Remote display

The firmware functions for remote displays are available.

1.11 Special functions

A database back-up is possible via RecoverIt or AccessIt. RecoverIt also permits EAROM saving. Language adaptation is by means of TranslatIt.

1.12 Network options

For use of a fieldbus card please refer to chapter 14. The database contents can be transmitted to a PC using the program AccessIt. The connection is done via Ethernet card or a serial interface, see. chapter 13If AccessIt is used, all data belonging to a weighing operation, can be taken from the table REP. .

1.13 Scope of delivery

The TRUCK Controller contains the following hardware and software:

- 1) In Slot 1 the digital input/output card PR 1713/15 with 4 optocoupler inputs and 4 relay outputs is fitted
- 2) In Slot 2 the serial interface card PR 1713/04 with 1 interface RS232 and RS 485 is fitted
- 3) Slot 3 is free for e.g. another optional interface card PR 1713/04
- 4) Slot 4 is free for a fieldbus or the ethernet card
- 5) Firmware PR 5610 release 3.14 or higher with the relevant BIOS for the release
- 6) Software licence TRUCK (105)
- 7) Software licence ALIBI (PR 1713AL)
- 8) Software licence Charging (PR 1713/23)
- 9) Docu-CD with the **Installation and Operating Manual** in English and German

1.14 Additional option cards

Detailed information can be obtained from the **Installation Manual**.

For X5 and X6 Controller		Slot 1	Slot 2	Slot 3	Slot 4
PR 1713/04	Serial interface card (RS 232/485)	○		○	
PR 1713/06*	Analogue out 0/4-20 mA *	○ X1	○ X1	○ X1	
PR 1713/07*	1 Analogue out/4 Analogue input *	○ X1	○ X1	○ X1	
PR 1713/08	BCD Out			○	
PR 1713/12	Control I/O Card 4/4 opto	○	○	○	
PR 1713/13	DIOS-Master (additionaly. SW required)			○	
PR 1713/14	Ethernet Interface				○ X1
PR 1713/15	Control I/O Card 4/4 relay		○	○	
PR 1713/17	Control I/O Card 6/8 opto	○	○	○	
PR 1721/11	Profibus-DP interface				○ X1
PR 1721/12	Interbus-S interface				○ X1
PR 1721/14	DeviceNet interface				○ X1

	= Fitted as standard in the delivery condition.
○	= Can be fitted additionally.
X1	= Note restrictions due to high current consumption !
*	= Max. 1 analogue output card each controller-



If a card is inserted in Slot 4,
only one analogue output card is allowed in Slot 1 or Slot 2.

2 OPERATING INTERFACE

2.1 Display







The weight display allows the display of 7 digits of weight plus a decimal point. The unit can be selected as tons, kilograms, grams or lbs. The display is capable of handling two lines of text of 20 characters each in addition to the numeric output. The other symbols in the display are listed below:






Status indicator	Description
B G	Gross weight is displayed Gross weight = Net weight + Tare weight. (G only active in NTEP mode).
NET	Net weight is displayed..
T	Stored tare or initial weight is displayed. Tare in offsets the displayed weight.








Status indicator	Description
	The weight value is within center of zero (+-1/4 d).
	The weight fulfills the standstill conditions.
	Charging process is active.
	Flashing indicates an alarm.









2.2 Keypad

The symbols on the front panel keys and their signification are:

Funct. keys	Description
	Whilst pressing this key, the gross weight is displayed (<i>B = gross weight</i>).
	Whilst pressing this key, the tare weight is displayed, provided that the tare weight was set.
	Set/reset tare. This key has no purposeful function for the IBC controller.
	Set gross weight to zero, provided that: standstill weight within zero set range not tared Charging is not active.

Funct. keys	Description
	Stops the charging process.
	Programmable function key
	Programmable function key
	Key for switch-over between weighing point A and B.
	Print-out of menu-dependent data, e.g. configuration data, material data or total.

Menu keys	Description
	Exit from the actual menu and continue operation at the next higher level.
	Softkey: selects displayed function.
	Scroll down through menu function.
	Scroll back through menu functions.
	Click on the double arrow  for access to further menu options. For X6 Controller the More-key has this design: 




Edit keys	Description
	Move cursor left during editing. Further you can select values, while  is shown.
	Move cursor right during editing. Furthermore you can select values, while  is shown
	Enter / confirm / execute For X6 Controller use the 'Enter'-key  .
	Backspace / delete
	Can be used also as space key.




2.3 Operating concept

The operation of both controllers are very similar. Therefore this manual will only describe the operation of the X5 controller. Differences in the operation between the different controllers will be explained.



2.3.1 Entering alphanumeric data

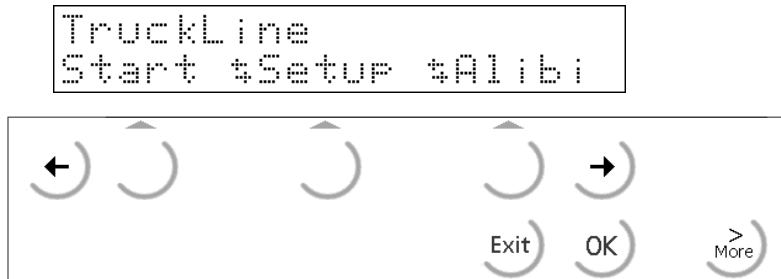
In the alphanumeric entry mode, a cursor is flashing in the entry field. This mode is accessible by pressing a key from the alphanumeric keypad



	<p>The alphanumeric keys have got more than one assignment. After pressing a key for the first time, the relevant first character, e.g. 'A' is displayed in the cursor position. After pressing for the second time, e.g. 'B' instead of 'A' is displayed; 'C' is displayed after pressing for the third time, etc. After the last signification, the first one is displayed again.</p> <p>Pressing another character key (or ) completes the entry of a character. To complete an entry, the key  has to be used.</p> <p>If only numeric values are required for an entry, letters are not selectable. Therefore, values such as 555 can be entered by pressing the key successively three times without using the arrow key.</p>
--	--




Key	Character	Remark
<td></td>		
	ABC abc 2	
	DEF def 3	
	GHI ghi 4	
	JKL jkl 5	
	MNO mno 6	
	PQRS p q r s 7	
	TUV tuv 8	
	WXYZ w x y z 9	
	- + * / ; ; _ ' & ; < >	If a value has a polarity sign, it can be entered by pressing the dot key  once for minus or twice for plus.
	A Ö Ü ä ö ü ß 0	A space can be entered using the key  .
		A character will be removed by pressing the clear key  .

2.3.2 Operation via softkeys

The controllers operation is menu-guided. For this purpose, the controller is provided with a 'Softkey' functionality: The three softkeys with the upward arrow below the display  have the function described in the lower text line. For the X6 Controller these softkeys have this design .

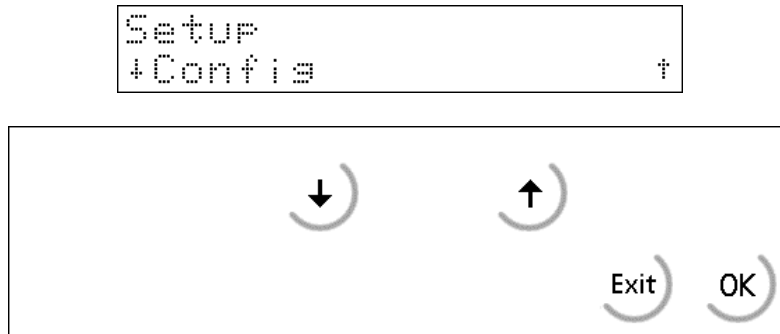




If more than three functions can be selected, the double arrows  indicate that further functions can be displayed and called up by pressing key .

 permits scrolling downwards through the menus,  permits scrolling backwards through the menu.  can be used to leave the menu and to continue the operation at the next higher level.



 permits selection of the value displayed between   as menu item.

2.3.3 Selection via scroll buttons


























The functions in the menu can be scrolled in forward direction using  or in reverse direction .

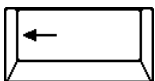
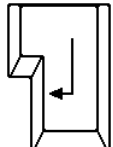







 is used to leave the menu item and to continue at the next higher level.

 selects the item indicated in .

2.4 Input via external PC-keyboard

The Controller has an alphanumeric key pad and a connection for a PC keyboard with DIN- Plug (on the rear side of the housing). Thus the operation of the Controller can be made also by an external PC keyboard. Both functions are equivalent and are alternatively applicable.

Keyboard												
Keypad												

Keyboard			
Keypad			
			
			
			

In the delivering condition the external keyboard is adjusted as an US keyboard. If a German keyboard will be used, you have to change the character set with [Strg][F2] into German. With [Strg][F1] you can return again to the delivering condition (US).
The LEDs from the PC keyboard will be not controlled.

For detailed information please refer to the Installation Manual.

3 TRUCK CONTROLLER SWITCHING-ON

This chapter describes the TRUCK Controller switching-on procedure. After power interruption the instrument goes exactly to the status before power supply interruption.

The order of steps during commissioning is:

- scale calibration and configuration (see chapter 3.3)
- configuration parameter setting

3.1 Switching-on a new instrument



Caution! With a new unit the clock is probably not running, ensure that the battery jumper is closed! Afterwards the Time and Date has to be set! (see Installation Manual).

The unit makes a cold start with the preset data in the main menu. The upper display line shows the application, and the functions of softkeys **[Start]**, **[Setup]**, **[Alibi]** and **[Test]** are displayed on the lower line

```
TruckLine
Start $Setup $Alibi
```

[Start] Start of the process and entry of the user


```
User
+Admin †
```

[Setup] Setup with configuration, weighing point definition with calibration and function

```
Setup
+Confis †
```

[Alibi] Definition of the alibi memory

```
Number of entries
0
```

[Test] Access via key . Activation of the analog test, which can be done in absolute or relative mode dependent of configuration

```
TruckLine
$Test †
```

3.2 Switching-on after power failure

After power failure during a weighing process, a warm start and return to the process step in which the power supply interruption occurred are made. The interrupted process can be continued or aborted

```
User
+Admin †
```

3.3 Switching-on with stop key pressed

The unit starts with the boot menu. The following functions can be selected:


[Cold] = Cold start with deletion of user programs and production data. All other parameters remain unchanged. A coldstart is always required after changing software, hardware options or scale, e.g. from kg into lb.

[Warm] = All data remain unchanged.

[Flash] = Loading a new firmware, Bios or user

```
Stop-Key pressed
Cold † Warm † Flash
```

For further information, please refer to the Installation Manual

Key  can also be pressed to display and select function **[Test]**. This is the start of a hardware function test cycle of the unit

```
Stop-Key pressed
Test † †
```






For further information, please refer to the Installation Manual

Basic setup and operation of the unit are possible only via keypad and display. Operation is menu-guided at all operator levels using alphanumeric keys, firmly allocated function keys, programmable keys and softkeys.

4 SETUP

The setup is accessible only after a cold start, or when an administrator has finished the application. All parameters can be adjusted in the setup menu. Parameters are dependent of firmware, application packages, licences and built-in options. The menu comprises the following functions:

Setup	
- Config	Entry of all application specific parameters, see chapter 4.1
- Weighingpoints	Entry of all scale relevant parameters
- Set Clock	Entry of time and date
- Serial Ports	Function selection for serial ports
- Software Parameter	Operating language and others
- Licence Setup	Show, add or delete licences
- Show Boardnumber	Display board number
- Print Setupdata	All setup data printed, if printer available
- Print last fault	Print out of register contents etc. at 'Fatal error'
- Refresh Display	Procedure to harmonize the display brightness
- I/O Slots	Display of I/O status
- Show Version	Display of software versions (firmware, application and Bios)
- Enable Download	Download from PR 1750 enabled/cancelled, if selected by setup
- Reboot	Reboot
- Show memory	Display of memory allocation
- Show memory	Display of register contents etc. at 'Fatal error'

Parameter entry always starts by pressing key . After entry or selection, the relevant parameter can be completed by pressing key  or key . Pressing key  stores the new data or the new selection. By pressing key , the old parameters remain unchanged. For details on all menu items except configuration, see **Installation Manual**.

4.1 Configuration


The TRUCK Controller configuration is only possible via the unit display and keyboard. It comprises all application specific parameters. The table below provides a survey of the parameter entries required for the TRUCK application.

All other parameters are explained in detail in the **Installation Manual**.


Setup		
- Config		Configuration for TruckLine Controller
- Change		
- Input config.		Function assignment for installed input cards
- Slot 1		Input configuration for Slot 1
- Slot 2		Input configuration for Slot 2
- Slot 3		Input configuration for Slot 3
- Output config.		Function assignment for installed output cards
- Slot 1		Output configuration for Slot 1
- Slot 2		Output configuration for Slot 2
- Slot 3		Output configuration for Slot 3
- Limit config.		
- WP-A: Limit 1 on		-0.1 * FSD ... <0> ... FSD (Full scale deflection)
- WP-A: Limit 1 off		-0.1 * FSD ... <0> ... FSD
- WP-A: Limit 2 on		-0.1 * FSD ... <0> ... FSD
- WP-A: Limit 2 off		-0.1 * FSD ... <0> ... FSD
		If WP-B is also installed, further trigger points are displayed
- Parameter		
- Scale identifier		<X5>, max. 16 alfanumerical characters
- Date format		<YYYY.MM.DD>, DD.MM.YYYY, MM/DD/YYYY,
- Statistics for		0, ... <7> ... 1000 Lifecycle of weighing data in days
- Volume dimension		<Off>, liter [], m ³
- Charging		<No>, Yes
- Use order number		<Yes>, No
- * Use product		<Yes>, No, * only if Charging = No
- Use customer		<Yes>, No
- Use hauler		<Yes>, No
- Use site		<Yes>, No
- Data entry at 1st		<Yes>, No
- Comment line		<No>, Yes
- * Prompt extra line		prompt text for extra line per weighing * only if comment line = Yes
- Message line 1		max. 30 alfanumeric characters
- Message line 2		max. 30 alfanumeric characters
- Log printer		<No printer>, = Ticket, Opt 2-RS485/232, Opt3 RS485/232
- Statistic printer		<No printer>, = Ticket, Opt 2-RS485/232, Opt3 RS485/232
- 1st weighing		Number of copies <1>...9, with 0 no print
- 1st weighing		<.#ULCOAHTPL1.>
- 2nd weighing		Number of copies <1>...9, with 0 no print
- 2nd weighing		<.#ULCOAHTPL1.2.N.>
- Fixtare weighing		Number of copies <1>...9, with 0 no print
- Fixtare weighing		<.#ULCOAHTPLF.G.N.>
- * Charging		Number of copies <1>...9, with 0 no print, * only if Charging = Yes
- * Charging		<.#ULCOAHTPLSL1.2.N.>, * only if Charging = Yes
- Tare weighing		Number of copies <1>...9, with 0 no print
- Tare weighing		<.#ULTF.>
- Single weighing		Number of copies <1>...9, with 0 no print
- Single weighing		<.#ULTG.>
- LOG to database		<No>, Yes
- PLC program		<1> ... 4
- Use PIN		<No>, Yes

Continuation of Configuration menu:


- * Simulation	Only for Charging !
- Simulation A	<No>, Yes (with Yes entry of coarse flow rate)
- Simulation	As A, if WP-B is installed
- User	
- New	
- Name	Maximum 18 characters
- New PIN	1111 ... 9999
- Repeat PIN	1111 ... 9999
- User is	Operator, supervisor, administrator
- Modify	
- User	Name and privileges
- New Pin	1111 ... 9999
- Repeat PIN	1111 ... 9999
- User is	Operator, supervisor, administrator
- Delete	
- User	Name
- Print	Printout of the configured parameters

Access to the Setup is from the main menu via [Setup] and .

```
TruckLine
Start *Setup *Alibi
```

Select with  /  [Config] and confirm with .

```
Setup
+Confis
```

The input menu for configuration with selections [Change] for parameter entry, [User] for operator entry or [Print] /  for print-out of the configuration parameters

```
Configuration
Change* User *Print
```



4.1.1 Digital input configuration

The digital inputs for Slot 1 to 3 can be configured, the following functions for slot 1 are pre-defined:

Bit	Default	Function
Slot 1 Bit 0	3	Barrier can be closed
Slot 1 Bit 1	16	Zero setting WP-A
Slot 1 Bit 2	17	Set tare WP-Ao
Slot 1 Bit 3	18	Reset tare WP-A

An input can be assigned to the individual functions. Generally, more than one input can be allocated to an input function. In this case, the input with a higher card number and / or input number will overrule. FALSE will be assigned to non-defined input functions.

The card type and the available inputs are detected automatically. Functions for a 2nd WP can be selected, however, they are without function unless a 2nd WP is connected.

The menu is reached after pressing [Setup]-[Config]-[Change], press  to select [Input config.].



```
+InPut confis.      ↑
```

Press / to select the card position.


```
Input confis.
+Slot 1  ↑      I/O
```

If a slot is not fitted with a card with digital inputs, a corresponding message is displayed. The card is not selectable for an input configuration.


```
Input confis.
+Slot 2  ↑ no input
```

Select input with / and determine the required function with the relevant SPM bit number.

```
Slot 1 Input      + 1↑
SPM-Bit:          17
```

Configure further cards as described above.  finishes the entries for this slot position.

```
Input confis.
+Slot 1  ↑      I/O
```

 finishes the input configuration.

```
+InPut confis.      ↑
```

Possible plug-in cards

Standard:

PR1713/15	digital I/Relay O Type:	4 Inputs
-----------	-------------------------	----------

Optional (see chapter 1.14):

PR1713/08	digital I/O Type:	1 Input
PR1713/12	digital I/O Type:	4 Inputs
PR1713/17	digital I/O Type:	6 Inputs

4.1.2 Digital output configuration

A function can be allocated to the individual inputs and outputs. Card type and available I/Os are detected automatically.

Bit	Default	Function
Slot 1 Bit 0	4	Traffic light red
Slot 1 Bit 1	5	Traffic light yellow
Slot 1 Bit 2	6	Traffic light green
Slot 1 Bit 3	7	Close barrier

Bits 256 ... 511 are available for the material definition.



Bits 128 ... 159 are mirrored into range 192 ... 255 with an AND function with coarse/fine.

Hence bits 192 ... 255 can be used only for charging.



Bit	Bit AND coarse flow A	Bit AND fine flow A	Bit AND coarse flow B	Bit AND fine flow B
128 ... 143	192 ... 207	208 ... 223		
144 ... 159			224 ... 239	240 ... 255


The menu is reached by pressing [Setup]-[Config]-[Change].


Press  to select [Output config.].

Select the card position with /.

Unless a card with digital outputs is fitted in a slot, a corresponding message is displayed. The card is not selectable for an output configuration.

Press / to select the output channel and determine the required function with the relevant SPM bit number.

 finishes the entries for this slot position. Configure further plug-in cards as described above.

 finishes the output configuration.

```
+Output confis.  †
```

```
Output confis.
+Slot 1 † I/O
```

```
Output confis.
+Slot 2 † no output
```

```
Slot 1 Output † 1†
SPM-Bit: 36
```

```
Output confis.
+Slot 1 † I/O
```

```
+Output confis.  †
```

Possible plug-in cards

Standard:

PR1713/15	digital I/ relay O type:	4 outputs
-----------	--------------------------	-----------

Optional (see chapter 1.14)

PR1713/08	digital I/O type:	24 outputs
PR1713/12	digital I/O type:	4 outputs
PR1713/17	digital I/O type:	8 outputs

4.1.3 PR1713/08 BCD card configuration




For mechanical reasons, the BCD card should be fitted in slot 3, see installation manual. Switch-over from BCD to digital outputs deletes all output functions for this slot.

Card PR1713/08 is configurable as:

1. Digital output card with 24 outputs and an input.
2. BCD output of configured weight values of scale A or B.

4.1.3.1 PR1713/08 as a digital I/O card

For mechanical reasons, PR1713/08 should be fitted in Slot 3.

Select Slot 3 with / and press  to confirm.

```
Output confis.
+Slot 3 + I/O
```

Press / to select [digital] and confirm it with .

```
+Mode of output +
$ digital $
```

Continue operation as with other digital I/Os, see chapter 4.1.2.

```
Slot 3 Output + 1+
SPM-Bit# 36
```

4.1.3.2 PR1713/08 as a BCB output for weight value

For mechanical reasons, PR1713/08 should be fitted in Slot 3.

One of the following weight values can be displayed:

- gross weight
- net weight
- tare
- following the display on the instrument.

5 decades are displayed. With more than 5-digit scale, the most significant decade is not displayed. The data relate to the scale selected with parameter [Source of Data].

Bit	PIN	Con- nector	Signification
0	1	X 104	1
1	2		2
2	3		4
3	4		8
4	5		1
5	6		2
6	7		4
7	8		8
8	9		1
9	10		2
10	11		4
11	12		8
12	13		1
13	14		2
14	15		4
15	16		8
16	17		1
17	18		2
18	19		4
19	20	8	
20	1	X 105	Negative
21	2		Standstill
22	3		Value valid
23	4		Tare set

Select Slot 3 with / and confirm it with .

```
Output confis.
+Slot 3  +   I/O
```

Press / to select [BCD] and confirm it with .

```
+Mode of output  +
+      BCD      +
```

Select scale A [WP-A] or scale B [WP-B] by pressing / and confirm it with .

```
+Source of data:  +
+      WP-A      +
```

Press / to select [Gross] or [Net] or [Tare] or [as display] and confirm it with .

```
+BCD value       +
+      Gross     +
```

Press to finish the slot configuration.

```
Output confis.
+Slot 3  +   I/O
```

4.1.4 Output configuration of analog card

An analog output can be preferably fitted in Slot 3, see also chapter 1.14. The scale A or B can be selected as data source. The menu is reached by [Setup]-[Config]-[Change]-[Output config.].

Press / to select the slot in which the PR1713/07 card is fitted and confirm it with .

```
Output config.
+Slot 3 + Analog
```

Select scale A [WP-A] or scale B [WP-B] with / and confirm it by pressing .

```
+Source of data: +
+ WP-A +
```

Select the weight value for the analog output by pressing /.

```
+Analog value +
+ Gross +
```

Press / to select the range for the analog output.

```
+Analog range +
+ 0...20 mA +
```

Select output behaviour in case of error with /.

```
+If ADC error +
+ 0mA +
```

Select output behaviour in case of weight below zero with /.

```
+If below zero +
+ 0mA +
```

Select output behaviour in case of weight above FSD with /.

```
+If above FSD +
+ 0mA +
```

[Analog value]	
[Gross]	Gross value output
[Net/gross]	Net value output. If tare was not set: gross output
[Net/0 mA]	Net value output. If tare was not set: output of 0 mA
[Net/4 mA]	Net value output. If tare was not set: output of 4 mA
[Net/20mA]	Net value output. If tare was not set: output of 20 mA

[Analog range]	
[4...20mA]	Output of 0... FSD as a 4... 20 mA signal
[0...20mA]	Output of 0... FSD as s 0... 20 mA signal

[If ADC error]	
[0mA]	If ADC error status: set output to 0 mA
[4mA]	If ADC error status: set output to 4 mA
[20mA]	If ADC error status: set output to 20 mA
[Hold]	If ADC error status: last output value remains unchanged

[If below zero]	
[0mA]	If weight below zero: set output to 0 mA
[4mA]	If weight below zero: set output to 4 mA
[20mA]	If weight below zero: set output to 20 mA
[Hold]	If weight below zero: last output value remains unchanged

[If above FSD]	
[0mA]	If weight above FSD: set output to 0 mA
[4mA]	If weight above FSD: set output to 4 mA
[20mA]	If weight above FSD: set output to 20 mA
[Hold]	If weight above FSD: last output value remains unchanged

Press to leave the menu.

4.1.5 Limit values

The menu can be reached via [Setup]-[Config]-[Change]-[Limit config].
Limits can be set in the range of $-0.1 \cdot \text{FSD}$ (Full scale deflection) to FSD.

Select the menu for limit values.

```

+Limit configs.  +
    
```

Press \downarrow/\uparrow to select [WP: A limit 1 on].

```

+WP-A: Limit 1 on +
                0  ks
    
```

After pressing OK , enter a numeric value for Limit 1.

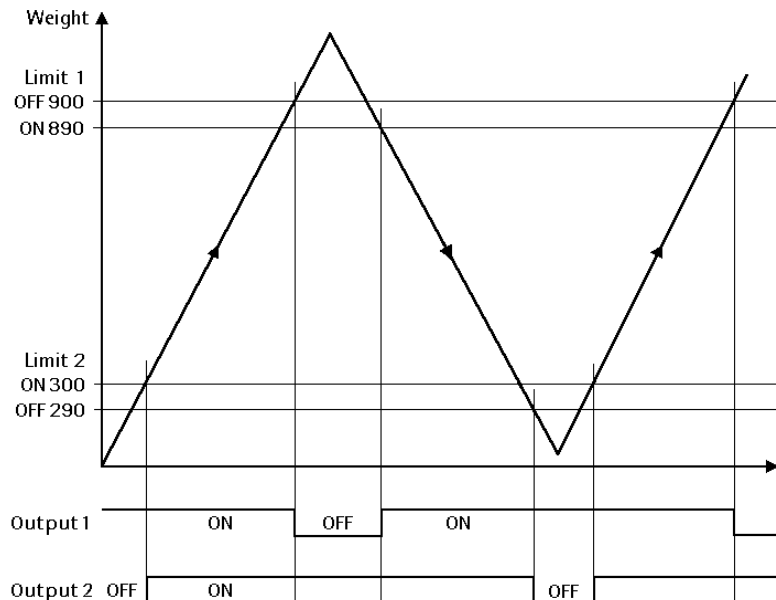
```

+WP-A: Limit 1 on +
                100 ks
    
```

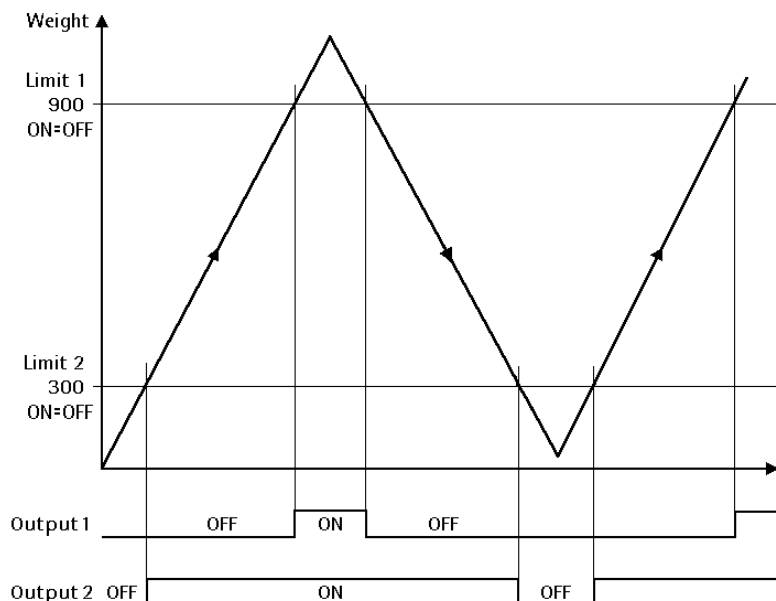
Definition of the limit values for Limit 1 off, Limit 2 on and Limit 2 off can be done accordingly.
For output addresses of Limit 1 and Limit 2, see chapter 4.1.2.
If a second scale (WP: B) is installed, 4 other values can be configured.

Example:

The output signal of limit contact 1 switches OFF above 900kg, limit contact 2 switches OFF below 290 kg. The limit contacts both have a hysteresis of 10 kg. With power failure (both limit contacts OFF), the contacts indicate underfill and overfill simultaneously.



If the limit values for ON and OFF are equal, the limit contact switches ON, when the weight is above the value and OFF, when the weight drops below the value.



4.1.6 Parameter

4.1.6.1 Ticket-Layout

Besides the definition on the number of ticket copies the ticket content can be specified via a textline. In [Config]-[Change]-[Parameter] the texts are proposed in relation to the actual configuration. This automatic assignment is only done if the texts are empty, e.g. after a COLD-start. Subsequent changes in the configuration have to be followed by manual correction of the text string. The format instructions to build a non-NLE-Ticket can be changed in the configuration.

Examples for ticket layouts:

1 – 1st weighing	T1:	.#ULCOSHTPL1 .
2 – 2nd weighing	T2:	.#ULCOSHTPL1 .2 .NV .XYZ .
3 – Charging	TD:	.#ULCOAHTPL1 .2 .SMNV .XYZ .
4 – Weighing with fixtare	TT:	.#ULCOSHTPLF .G .NV .XYZ .
5 – Fixtare	TF:	.#ULTF .
6 – Single weighing	TS:	.#ULTG .

Character	Function	1-T1	2-T2	3-TD	4-TT	5-TF	6-TS
.	Line feed	√	√	√	√	√	√
#	Sequence number	√	√	√	√	√	√
-	Form feed	√	√	√	√	√	√
1	1st weighing	√	√	√			
2	2nd weighing		√	√			
A	Delivery address	√	√	√	√		
C	Customer	√	√	√	√		
D	Date / time	√	√	√	√	√	√
F	Fixtare				√	√	
G	Gross				√		√
H	Hauler	√	√	√	√		
L	Dotted line	√	√	√	√	√	√
* M	Setpoint charging in l or m ³			√			
N	Net		√	√	√		
O	Order number	√	√	√	√	√	
P	Product	√	√	√	√	√	
S	Setpoint for charging			√			
T	Truck-ID	√	√	√	√	√	√
U	User-ID	√	√	√	√	√	√
* V	Net in l or m ³		√	√	√		
X	Variable comment line	√	√	√	√		
Y	Message line 1	√	√	√	√		
Z	Message line 2	√	√	√	√		




Each code is using one line. Impossible codes, e.g. 'V' if density is not activated, are ignored. Codes which are not listed here are ignored.

* If [Volume dimension] is set to [l] oder [m³], then the calculated volume can be printed in the reports with V. The density has to be specified in kg/l in the product parameters. At charging mode the setpoint can be entered in volume and printed with M, the charging is done on the calculated weight..

4.1.6.2 Parameter Data

Access to parameter entry is with [Change]






```
Configuration
Change* User *Print
```

Select [Parameter] with / and confirm with 



```
+Parameter          †
‡                   ‡
```

Enter scale identifier with default is X5
max. 18 alfanumerical characters, default is X5


```
+Scale identifier   †
Gate scale 2       ‡
```

Enter the date format for print-outs. Select 2005.03.12,
12.03.2005 or 03/12/2005 with /, store with 
or /

```
+Date format        †
‡ 2005.03.12      ‡
```

Enter the **lifetime of weighing data** using keys  to 
in a range of 0 1000 days, default is 7 days

```
+Statistics for     †
7 days             ‡
```

Selections are [Off] or [liter(l)] or [m³]. With volumetric
function the density has to be specified in the product
definition. During entering the setpoint it can be toggled
between weight and volume with 

```
+Volume dimension   †
‡ Off              ‡
```

If switched to [Yes] it is possible to use the scale for char-
ging in automatic / manual or for weight registration

```
+Charging           †
‡ No               ‡
```

When [Yes] is selected an order number has to be entered
before weighing

```
+Use ordernumber    †
‡ Yes              ‡
```

If Charging has been set to [Yes], the question does not
appear, as then products have to be always defined

```
+Use product name   †
‡ Yes              ‡
```

When [Yes] is selected customer name, ident and address
can be entered

```
+Use customer       †
‡ Yes              ‡
```

When [Yes] is selected hauler name, ident and address can
be entered

```
+Use hauler         †
‡ Yes              ‡
```

When [Yes] is selected site name, ident and address can be
entered

```
+Use site           †
‡ Yes              ‡
```

When setting one or several parameters from [Yes] to [No] at a later time, no new data are stored any
more for these parameters. The old data are removed from the statistics slowly due to aging.

For parameter entry with first weighing (see chapter 5.4),
the selection sequence shown before appears with [Yes] .
When replying [No] this entry is skipped with first weigh-
ing.

```
+Data entry at 1st †
‡ Yes             ‡
```

When [Yes] a prompt text for an extra line can be set

```
+Comment line      †
‡ Yes             ‡
```

If [Comment] is set to [Yes], 1 line as prompt text (here
enter comment) can be entered

```
+Promet extra line †
Enter comment     ‡
```


1 line of message with max 30 characters can be entered (here example 1)

```
+Message line 1 +
Example 1
```

A second line of message with max 30 characters can be entered (here example 2)

```
+Message line 2 +
Example 2
```

Printer allocation for Log with /; store with or /, selections:

```
+Log printer +
$ No printer $
```

[No printer] or [= Ticket] or [Opt 2 - RS485] or [Opt 2 - RS232] or [Opt 3 - RS485] or [Opt 3 - RS232]
Allocate the printer for statistics, selections:
[No printer] or [= Ticket] or [Opt 2 - RS485] or [Opt 2 - RS232] or [Opt 3 - RS485] or [Opt 3 - RS232]

```
+Statistic printer +
$ No printer $
```

Enter the number of copies by pressing keys to in a range of 0, (no print) 1 ... 9

```
+1st weighing +
Number of copies 1
```

The layout can be adapted by altering the proposed set, for further info refer to chapter 4.1.6.1

```
+1st weighing +
.#ULCOANTPL1.
```

Enter the number of copies by pressing keys to in a range of 0, (no print) 1 ... 9

```
+2nd weighing +
Number of copies 1
```

The layout can be adapted by altering the proposed set, for further info refer to chapter 4.1.6.1

```
+2nd weighing +
.#ULCOANTPL1.2.N.
```

Enter the number of copies by pressing keys to in a range of 0, (no print) 1 ... 9

```
+Fixtare weighing +
Number of copies 1
```

The layout can be adapted by altering the proposed set, for further info refer to chapter 4.1.6.1

```
+Fixtare weighing +
.#ULCOANTPLF.G.N.
```

Enter the number of copies by pressing keys to in a range of 0, (no print) 1 ... 9

```
+Charging +
Number of copies 1
```

The layout can be adapted by altering the proposed set, for further info refer to chapter 4.1.6.1

```
+Charging +
.#ULCOANTPLSL1.2.N.
```

Enter the number of copies by pressing keys to in a range of 0, (no print) 1 ... 9

```
+Tare weighing +
Number of copies 1
```

The layout can be adapted by altering the proposed set, for further info refer to chapter 4.1.6.1

```
+Tare weighing +
.#ULTF.
```

Enter the number of copies by pressing keys to in a range of 0, (no print) 1 ... 9

```
+Single weighing +
Number of copies 1
```

The layout can be adapted by altering the proposed set, for further info refer to chapter 4.1.6.1

```
+Single weighing +
.#ULTG.
```

With [Yes] the Log data is entered in the database, to prevent the database from overrun, the [Admin] can erase the report DB.

```
+Log to database +
$ No $
```

Select the PLC program for traffic light control etc. selection 1...4 (see chapter 11).



```

+PLC Program      †
                                     †
                                     1
  
```

Select the use of PIN with [Yes] to limit the access of users (see chapter 7.4).

```

+Use PIN          †
‡                ‡
‡                No ‡
  
```

Leave the selection menu with  and . A prompt for saving is displayed (only with changes)


```

Store data ?
Yes #          # No
  
```

After confirmation the unit returns to the configuration menu automatically

```

Configuration
Change# User #Print
  
```

Nevertheless with  the last print out can be printed or repeated.




4.1.7 Simulation

For testing the charging function (incl. the coarse / fine signals) a simulation can be done.

The menu is reached by [Setup]-[Config]-[Change]-[Simulation]

```

+Simulation      †
  
```

With  the menu for A is reached and can be switched from [No] to [Yes] by /

```


+Simulation A    †
‡ Yes          ‡
  
```


With the numerical keys the coarse rate can be set, the coarse / fine relation is fixed at 5 to 1

```

+Coarse speed A  †
                †
                200 kg/min
  
```

If scale A and B are activated, the operation for B has to be done accordingly.

	<p>The simulation can only be used if [W&M] is set to [none] and the CAL-switch is open. The simulation differs from the real charging process as there is no standstill check before and after the charging simulation.</p>
---	--


At switching-on the simulation for a scale with [Yes], the weight display can be set to 0 by pressing . The simulation is done on the defined scale as a weight increase with coarse / fine signals and preset / overshoot / calming like a real charging process.

4.1.8 User data

4.1.8.1 Privileges

The 3 user hierarchies with different privileges are:

- Administrator
- Supervisor
- Operator

	A PIN is prompted only, if the parameter in [Setup]-[Config]-[Change]-[Parameter]-[Use PIN] was set to [Yes].
---	---

Privilege	Operator	Supervisor	Administrator
Weighing	√	√	√
Creating trucks	*1√	√	√
Modify trucks		√	√
Deleting trucks		√	√
Creating products	*1√	√	√
Editing products		√	√
Deleting products		√	√
Creating addresses	*1√	√	√
Editing addresses		√	√
Deleting addresses		√	√
Print statistics		√	√
Erase statistics			√
Erasing report data			√
Changing one's own PIN	√	√	√
Creating a user			√
Editing a user			√
Deleting a user			√
Leaving application			√
Set-up/configuration			√

*1 only during weighing dialogue, not in menu database.

Access to the user entry is with [User]. User [Admin] with administrator status and PIN 999 is created by the system. The PIN can be changed


```
Configuration
Change# User #Print
```

The selection menu appears, access to the entry menu for new users is by pressing [New]


```
User management
New #Modify#Delete
```

Enter the name (16 characters) via the alphanumeric keys and store it by pressing 






```
Name
Flott
```

Enter the PIN code (1111 ... 9999) and store it by pressing 

```
New PIN
*****
```

Repeat the PIN code and store it by pressing 




```
Repeat PIN
*****
```

Select user status [Operator], [Supervisor] or [Admin] by pressing /, store it by pressing  or /


```
User is
$ Operator $
```

An automatic return to the selection menu is made, access to the modifying menu for registered users is with [Modify]

```
User management
New #Modify#Delete
```

The user called up last is displayed. Further users can be scrolled by pressing / and called up by pressing 




```
User
↑Flott ↑
```

Enter the new PIN and store it by pressing key 

```
New PIN
*****
```

Repeat the PIN and store it by pressing key 




```
Repeat PIN
*****
```

The present user privileges are displayed. Other selections can be called up by pressing / and stored by pressing 

```
User is
$ Administrator $
```

Automatic return to the selection menu, access to the deletion menu for registered users is by means of [Delete]

```
User management
New #Modify#Delete
```

The user called up last is displayed. Further users can be scrolled by pressing keys / and called up by pressing key 

```
User
↑Flott ↑
```

The prompt for deleting the user displayed last is displayed

```
Delete User ?
Yes # # No
```


Automatic return to the selection menu for [New], [Modify] and [Delete]

```
User management
New #Modify#Delete
```

Leave the selection menu with 

```
Configuration
Change# User #Print
```



4.1.9 Print-out of the configuration parameters

Print-out of the configuration parameters is either with **[Print]** or by pressing key  (see chapter below), the menu remains unchanged

```
Configuration
Change# User #Print
```

```
No printer
```

Error message for approx. 2 sec. if printer is not allocated

Return to the start menu is by pressing  

```
TruckLine
Start $Setup $Alibi
```


A print-out example can be found in chapter 9.4

4.2 Alibi memory

The alibi memory is used for weights & measures storage of weight data. It is indispensable, if no weights & measures tickets with copies are printed out. In this case, the memory must be used for saving the weighing data for the required period. This is the responsibility of the plant owner. The alibi memory must be configured according to the requirements (CAL switch open).

Access to alibi memory configuration is with **[Alibi]**

```
TruckLine
Start $Setup $Alibi
```

Provided that the number of entries is already configured, the number is displayed and can be changed and stored by pressing key .

```
Number of entries:
1000
```

If the number of entries is changed, the existing entries are erased

```
Delete database ...
```

The database is created

```
Generate database
#####
```

An automatic return to the start menu is made

```
TruckLine
Start $Setup $Alibi
```

5 WEIGHING APPLICATIONS



5.1 Function description


During TRUCK Controller configuration, important parameters for the applications which are entered for the weighing process and stored in the database, can also be printed out. These parameters are truck data, order number, product data, customer data, hauler data, delivery address, etc. However, these data are entered only, provided that they were selected in the configuration.

As entry of these data is not always desired or possible, they can be skipped partly or completely during first weighing. Data which were not entered are requested again at the second weighing operation. On this occasion, they can be skipped partly or in total again. I.e. the ticket print-out is uncomplete, because data which were not entered are missing.

Furthermore, up to three printers for various tasks can be configured, e.g. a weight ticket printer with limited print width ≥ 35 characters, a statistics printer and a log printer.

Moreover, the users are entered during configuration and provided with their privileges ([admin], [supervisor] or [operator]). Default is [Admin] with the administrator level, which includes all functions. If the PIN code of a user was lost, a unique access via a service number is possible, whereby a new PIN code can be entered.

As the operating sequence includes branches which cannot be described in parallel, but only sequentially, the branching point is marked with an arrow and a number, e.g. continue with 1. The continuation point of the description is marked with a big arrow on the left and the same number, e.g. .

If more than one weighing point is installed, e.g. A, B, C (=A+B), switching over between weighing points is done by pressing key .

5.2 Starting and finishing the application

After switching-on for the first time, or cold start, the TRUCK Controller goes to the Start menu. Access to the application is by [Start]

```
TruckLine
Start $Setup $Alibi
```

```
License required !
```

In case no licence for TRUCK (105) was entered so far, this message is displayed. For the charging function the licence PR 1713/32 is required too

User log-in. The controller displays the user called up last. Default is Admin, which cannot be deleted

```
User
+Admin †
```

Press / to display another available user and select him by pressing key

```
User
+Flott †
```

Enter the relevant PIN code and store it by pressing . The user is logged in

```
PIN
*****
```

The TRUCK Controller goes to selection menu 'Weighing'

```
TruckLine
1st $ 2nd $ Tare
```

User log-out is by pressing . The log-out menu is displayed. Unless the truck scale is used, the user should be logged out to prevent unauthorized or accidental use and adjustment

```
Logout
Yes # # No
```

With [No], a return to selection menu Weighing is made

```
TruckLine
1st $ 2nd $ Tare
```

With [Yes], the log-in menu is displayed with the logged out user as a proposal. Select another user by pressing /

```
User
+Admin †
```

* * *

If the user displayed in the log-in menu has the status of an administrator, he can finish the application by pressing , e.g. for changing the configuration or entry of a new user.

Enter the PIN and store it by pressing key

```
PIN
*****
```

The application is finished and the start menu is displayed

```
TruckLine
Start $Setup $Alibi
```

* * *





If key is pressed again instead of entering the PIN, a service number for calculation of a PIN permitting unique access to the administrator status is displayed (see chapter supplement page)

```
Service #4237
0
```

5.3 General procedure of weighing sequences

The weighing sequences always start with the truck selection, which is described in detail in section 5.3.3. Either an existing truck is selected, or a new one is entered. When entering a new truck, distinction of the usual entry of a truck into the truck list and of a temporary truck without entry into the truck list is made.

This procedure is followed by the data input sequence, which permits data entry for the configured parameters. It comprises entry of order number, product, customer, hauler and delivery address, provided that these parameters were selected during configuration. Either existing data are selected, or new ones are entered. Moreover, entries for particular or all selected parameters can be skipped. The data for product and weight go into the statistics also for temporary trucks, provided that they are configured.

The selection of the stored data for a parameter can be displayed by pressing keys / and selected by pressing key . Moreover, stored data can be entered by entry of the identity number or of the name and selected by pressing key . If a keyboard is connected, switch-over is with the key pressed first.




Entry of new data for a parameter is via a selection menu, which, apart from entry of new data, also permits skipping of the data entry for the actual parameter or for all following parameters. Caution! Data which were entered during the first weighing operation are not requested any more during the second weighing operation. For completeness, the data input sequence is described in section 5.3.4.

This is followed by weighing. However, the various weighing sequences are different and therefore shown in detail in the relevant weighing sequence descriptions.




Completion is by print-out of the weighing data, which is also weighing sequence specific and therefore shown in detail in the weighing sequence description.

5.3.1 Selection menu Weighing / Charging




The menus are shown under the condition that [Parameter]-[Charging] = [Yes] and differ slightly if set to [No].

By pressing  or /, 2 further functions can be called up




```
TruckLine
FTare $          $ DBase
```

By pressing  or /, 3 further functions can be called up

```
TRUCK Controller Rel
Stat $Alibi $ Pin
```


By pressing  or /, further functions can be called up, [Charge] appears only if [Parameter]-[Charging] is set to [Yes]

```
TruckLine
Charge$Single$
```

Press  or / again to return to the weighing menu.

```
TruckLine
1st $ 2nd $ Tare
```

5.3.2 Finishing a weighing sequence

Finish a weighing sequence by pressing . With [No], the sequence is continued

```
TruckLine
1st $ 2nd $ Tare
```

with [Yes], a return to selection menu Weighing is made

```
Losout
Yes #          # No
```

```
TruckLine
1st $ 2nd $ Tare
```


5.3.3 Truck selection

➔1 The truck called up last is displayed

```

+HH-TK 135      †
Truck           135 ‡
    
```

Press keys / to display another truck and select it by pressing . Moreover, a truck can be entered by entry of the truck ident or of the truck name and selected by pressing key ..

```

+HH-TK 123      †
Truck           123 ‡
    
```

With a temporary truck can be defined with [Temp]. In this case, no truck data are stored.

```

New truck
Temp # No      # Yes
    
```

End of truck selection, return to the weighing sequence.

When pressing [No], a return to the truck selection in ➔1 is made

```

Truck name
HH-TR 150
    
```

When pressing [Yes] a truck ident < 999999 is entered and stored with

```

Truck ident
                               155
    
```

```

Duplicate number
    
```

If the truck number exists already, an error message is displayed during 3 s, and the entry must be repeated

```

Truck is onsite
    
```

If the truck is again selected for a first weighing operation after a completed first weighing operation, i.e. it is on the onsite list, an error message is displayed during 3 s

This is followed by an 'Overwrite'. Select [No] to return to the truck selection in ➔1, select [Yes] to overwrite the stored data

```

Overwrite 1st
Yes #      # No
    
```

End of truck selection, return to the weighing sequence.

If the truck is new in the truck list, enter the name and store it by pressing key

```

Truck name
HH-TR 155
    
```


```

Duplicate name
    
```

If the name exists already, an error message is displayed during 3 s and the entry must be repeated

End of truck selection, return to the weighing sequence.

5.3.4 Data entry sequence





➔2 Enter the order number (< 999999), if it is configured. Store it with 

```
Order number
                                     100
```

* * *


Enter the product, provided that it is configured (if charging is activated, products are automatically activated). The product called up last for the selected truck is displayed

```
Soja
Product                               11 ‡
```


Press / to display another product. Select the product by pressing key . Moreover, a product can be selected by entry of the product number or of the name and completing with key 

```
Corn
Product                               12 ‡
```


Continue by entry of the customer in ➔3

Press key  to call up the following functions:
Skip the product entry with [Prod], continue with the customer entry in ➔3, or skip all further entries with [All]. End of the data entry sequence, return to the weighing sequence or enter a new product with [New]

```
Enter data later
All ‡ Prod ‡ New
```

Enter a new product number < 999999 with [New], store it by pressing 

```
Product ident
                                     10
```





Enter a new product name, store it by pressing key 

```
Product name
Cocos
```

* * *


➔3 Enter the customer, provided the customer is configured. The customer called up last for the selected truck is displayed

```
+Taylor Ltd †
Customer                               301 ‡
```

Press keys / to display another customer. Select the customer by pressing . Moreover, a customer can be selected by entry of the customer number, or of the name, if a keyboard is connected, and completing with key . Continue by entry of the hauler in ➔4

```
+Crawford & Sons †
Customer                               305 ‡
```

Enter a temporary customer

If  is pressed at the customer selection, the following menu appears, select [Temp.]



```
Enter data later
All ‡ Cust ‡ Temp.
```

Enter temporary customer name


```
Name
```

Enter the address line 1, similar menu appears for line 2 and 3. Continue by entry of the hauler in ➔4


```
+Address line 1 †
```

Press key  to call up the selection menu, it offers the following functions:
 Skip the customer entry with [Cust] , continue by entry of the hauler in 4.
 or skip all further entries with [All]. End of the data entry sequence, return to the weighing sequence
 or enter a new customer with [New]


```
Enter data later
All  # Cust # New
```

Enter a new customer number < 999999 with [New], store it by pressing key 


```
Address ident      307
```

Enter a new customer name, store it by pressing key 


```
Name
Perkins & Smith
```

Enter address line 1, store it with . No data need to be entered

```
+Address line 1  +
27, Norwich Road
```


Enter address line 2, store it by pressing key . No data need to be entered

```
+Address line 2  +
JK7PX Starleton
```

Enter address line 3, store it with . No data need to be entered


```
+Address line 3  +
_
```

* * *

4 Entry of the hauler, provided the hauler is configured. Selection or entry of the hauler are analogous to the selection or entry of the customer


```
+Transfix      +
Hauler        511
```

* * *

5 Entry of the delivery address, provided that the delivery address is configured. Selection or entry of the delivery address are analogous to the selection or entry of the customer

```
+Superfis      +
Site          805 $
```

* * *

6 Entry of variable comment line, provided that it is configured. The question (here Prompt text) in the first line is defined in the configuration. Text entry is possible

```
Prompt text
```

* * *

End of the data entry sequence, return to the weighing sequence

5.4 First weighing

A first weighing operation is used for measurement of the truck weight of a loaded or empty truck.

Access to first weighing is by [1st]

```
TruckLine
1st  * 2nd  * Tare
```

This is followed by truck selection, continue with chapter 5.3.3

```
↑HH-TK 135 ↑
Truck          135 *
```

Now, the data entry sequence follows, continue with chapter 5.3.4

```
Order number          101
```


Start weighing

First weighing with [Yes]. The actual data including weight are stored in the onsite list. Weight, sequence number and date/time are stored in the alibi memory. Continue by print-out in ⇒7

```
Start weighing
Yes  * Fix  * Man
```

or with [Fix], the measured weight is stored as truck fix-tare value simultaneously with weighing, continue by print-out with ⇒7

or weighing with manual entry of a tare value with [Man], please refer to chapter 5.8.

Store it with , continue by print-out in ⇒7. The weight ticket provides a net weight without pointed brackets with specification of the weighing point

```
Enter weight
          12.60 t
```

⇒7 The message of the alibi memory is displayed during 3 s.

```
Memory contains
  3 day(s)
```

During printing, the print-out message for ticket T1 is displayed during 3 s.

```
Printing ...
```

First weighing is finished. An automatic return to selection menu Weighing is made

```
TruckLine
1st  * 2nd  * Tare
```

5.5 Second weighing

Second weighing is possible only after first weighing. The difference of the two weighing operations is output as net weight.

Access to second weighing is with [2nd]

Now, select the truck from the onsite list. Continue with chapter 5.3.3, whereby new or temporary trucks cannot be included. Unless the selected truck is found on the onsite list, the operation must be repeated or canceled with



With temporary trucks, the correct name must be selected with /. Pressing limits the list to temporary trucks

Data which were not entered during first weighing are requested now. They can be entered or skipped again. Data which were not entered so far are missing in print-out and statistics.

This is followed by the data input sequence, continue with 5.3.4 Data input sequence

Start weighing

Second weighing with [Yes], net weight calculation from the first weighing operation – second weighing. The net weight is stored in the statistics database with the measured data. A negative net weight is taken into account in the statistics. Delete the truck from the onsite list, continue by printing out with

or weighing with the stored truck fixtare value with [Fix]. In this case, second weighing is a fixtare weighing operation. Continue by print-out in

or weigh with manual entry of a tare value with [Man], please refer to chapter 5.8.

Store it with . In this case, second weighing is a manual tare weighing operation. Continue by print-out in

The alibi memory message is displayed during 3 s.

The print message for ticket T2 is displayed during 3 s during printing.

```
TruckLine
1st  * 2nd  * Tare
```

```
+HH-TK 135      †
Truck                135 *
```

```
???
                                135
```

```
Start weighing
Yes  * Fix  * Man
```

```
Enter weight
                12.60  t
```

```
Memory contains
  3 day(s)
```

```
Printing ...
```

5.6 Tare weighing

Tare weighing uses the stored truck fixtare value for taring.

Access to tare weighing is with [Tare]

```
TruckLine
1st  * 2nd  * Tare
```

This is followed by truck selection, continue with 5.3.3 Truck selection.

```
↑HH-TL 155 ↑
Truck          155 *
```

Unless a tare value is already stored, 0.00 is displayed and can be confirmed with [Yes] or changed with [No]

```
Use tare      0.00 t
Yes  #          # No
```

Go on with the data input sequence in section 5.3.4. Start weighing

```
Order number
                               101
```


Fixtare weighing with [Yes], the (net) weight is stored in the statistics database and in the alibi memory

```
Start weighing
Yes  #          # Man
```

➔10 With fixtare, the material movement direction cannot be detected automatically. Therefore, the selected product is displayed and the system asks for input or output weighing. Go on with [Out] or [In] for print out in

```
"Soja"
In  # Out  #
```

⇒11

or weighing via manual entry of the tare value with [Man], please refer to chapter 5.8. Store it by pressing . Temporary truck weighing is possible only using this method. Continue with ➔10

```
Enter weight
                               12.60 t
```

➔11 This is followed by display of the alibi memory message during 3 s.

```
Memory contains
3 day(s)
```

During printing, the print-out message for ticket TT is displayed during 3 s.




```
Printing ...
```

Tare weighing is finished and an automatic return to the selection menu for weighing is made.

```
TruckLine
1st  * 2nd  * Tare
```

5.7 Fixtare weighing



Fixtare weighing is used for measuring the truck tare weight, which is used subsequently during tare weighing. The tare weight is stored in the truck database.

Access to fixtare weighing is from the weighing selection menu by pressing  or / and [Fixtar]


```
TruckLine
FTare $          $ DBase
```

This is followed by truck selection, continue with section 5.3.3.

```
+MH-TL 155          †
Truck              155 $
```

Display of the last stored tare value for the truck with options [Yes], [No] or [New] with /


```
Use tare          0.00 †
                  $    New $
```

Use the displayed tare value with [Yes] and . No ticket is printed out.


```
Use tare          0.00 †
                  $    Yes $
```

Continue in **⇒13**

For not using the displayed weight, reply [No] and press

. No ticket is printed and the stored value is not used with tare weighing. The value is not stored in the alibi memory. Continue with **⇒13**.

```
Use tare          0.00 †
                  $    No  $
```

Weigh the truck as tare value with [New] and press 

```
Use tare          0.00 †
                  $    New $
```


The system asks for the fixtare value via weighing [Yes] or manual input [Man], please refer to chapter 5.8.

Reply [Yes] for weighing and store the fixtare value in alibi memory and database.

```
Start weighing
Yes #          # Man
```

The alibi memory message is displayed during 3 s. Continue with **⇒12**

```
Memory contains
 3 day(s)
```

Enter the fixtare value manually with [Man] and store it by pressing key . Continue with **⇒12**

```
Enter weight
          12.60 †
```

⇒12 Print out ticket TF with print-out message during 3 s. Continue with **⇒13** or

```
Printing ...
```

⇒13 Fixtare weighing is finished. An automatic return to selection menu Weighing is made

```
TruckLine
1st $ 2nd $ Tare
```



5.8 Manual entry of fixtare values

To fulfill the standard EN 45501 chapter 4.7.1 "Step width", all manual entered fixtare values have to be rounded. Two different cases have to be explained separately:


- Is the step width of a fixtare value, to be entered manually, not known all entered fixtare values within the scale range will be accepted and later on rounded, when the net weight is calculated from weight and fixtare value.
- Is the step width of a fixtare value, to be entered manually, known, e.g. at second weighing, only a fixtare value corresponding to the step width of the weight will be accepted. For all other manually entered fixtare values the rounded value will be proposed, which can be entered or changed.

5.9 Single weighing

Single weighing is only used for truck weight determination. Neither taring nor weight difference calculation occur.

Access to single weighing is from selection menu weighing by pressing  or  and [Single]

```
TruckLine
Charset*Single*
```

The system requests the truck name. Enter the name and store it by pressing 

```
Truck name
HM-TL 166
```

Carry out weighing with [Yes]

```
Start weighing
Yes # #
```

The alibi memory message is displayed during 3 s

```
Memory contains
3 day(s)
```

➔15 Print-out of a ticket TS

```
Printing ...
```

Single weighing is finished. An automatic return to selection menu weighing is made

```
TruckLine
1st * 2nd * Tare
```

5.10 Error messages in a weighing sequence

```
Weight invalid !
```

No standstill

The weight is displayed without pointed brackets

< Minimum weight

6 CHARGING

6.1 General

From the weighing menu the charging menu can be reached by  and [Charge].

To activate the charging mode, it is required to enter the licence PR 1713/32 and to set in [Setup] - [Config] - [Change] - [Parameter] - [Charging] to [Yes].

It is possible to charge with scale A or B (if installed), but not with C as sum of A and B.

Switching the scale from A to B or vice versa is not possible during charging.

The dialog before charging and taking of weight is compatible to the 'first weighing' [1.st].

Taking of weight after charging is compatible to 'second weighing' [2.nd].

Precondition for the standstill check before and after the charging is that a W&M mode has been selected:

In [Setup]-[Weighing points]-[Calib]-[Param]-[W&M] set to [OIML] or [NSC] (Australien) or [NTEP] (USA).


6.2 Charging modes

For charging 3 modes can be used, the mode can be selected during product definition, see chapter 7.1.2

Survey of charging modes allocated to a product:

Function / Parameter	automatic	manual	register
Intake (amount received from customer)	no	yes	yes
Outtake (amount delivered to customer)	yes	yes	yes
Density (if Volume dimension = l/m ³)	yes	yes	yes
Preset (Switch over from Coarse to fine)	yes	no	no
Overshoot (after closing fine)	yes	no	no
+ Tolerance (in percent of fine)	yes	yes	no
- Tolerance (in percent of fine)	yes	yes	no
Time to wait (calming time)	yes	no	no
Enabled by bit (input)	yes	no	no
Set ready by bit (input)	no	yes	no
Activates bit (output)	yes	yes	no
Setpoint before start	yes	yes	no
Setpoint limitation (correction)	yes	yes	no
Dialog: Start charging ?	yes	yes	yes
Dialog: Ready ?	no	no	yes
Visualization by bargraf	yes	yes	no

6.2.1 Charging mode automatic

The scale selected by  is used; the output signals (coarse, fine etc.) are related to the scale.
Procedure:

Data entry is done like described in chapter 5.3.4, the following sequences are deviating from it:

1. Enter setpoint
2. Acknowledge start
3. Wait for enable input (if enable bit is not 0)
4. Automatic charging in coarse and fine mode
5. Calming time / Wait for overshoot
6. Tolerance checking
7. Print ticket / report, store log

Charging is done in restart mode 4.

Preset point

The preset point determines the time of switch-over (setpoint – overshoot – presetpoint) from coarse to fine (coarse flow valve is closed).



The fine signal is active also during the 'coarse phase'.
With charging at only one speed, **only** the **fine signal** must be used!

Overshoot

All material which reaches the truck after closure of the fine valve is called overshoot. The initial value for the overshoot must be adjusted so, that the material which is still on the way into the truck will be taken into account. At the beginning, the overshoot should be set to a higher value than expected, in order to prevent the setpoint from being exceeded by the overshoot when starting for the first time. Only the overshoot portion which has flown into the truck until elapse of the calming time is taken into account. Overshoot calculation/correction will occur only, if tolerance checking is activated.

Calming time

As the calming time starts already after closure of the fine valve, the time for the overshoot must be taken into account. The system can be set into vibration due to dynamic effects. In order to determine the weight correctly nevertheless, a corresponding time in seconds for settling must be selected. Before the first start of a system, the calming time should be always a bit higher, in order to use a stabilized weight value for tolerance checking.

The calming time to be adjusted is dependent e.g. on the following factors

- Time for the overshoot after closure of the fine flow valve
- Material consistency (solid, lumpy, liquid)
- Delays and properties of the supply system (screw, vibrator, valve)

Tolerance checking

The tolerance is specified in percent of the setpoint per material and can be determined with + tolerance for weight above setpoint and with – tolerance for weight below setpoint.



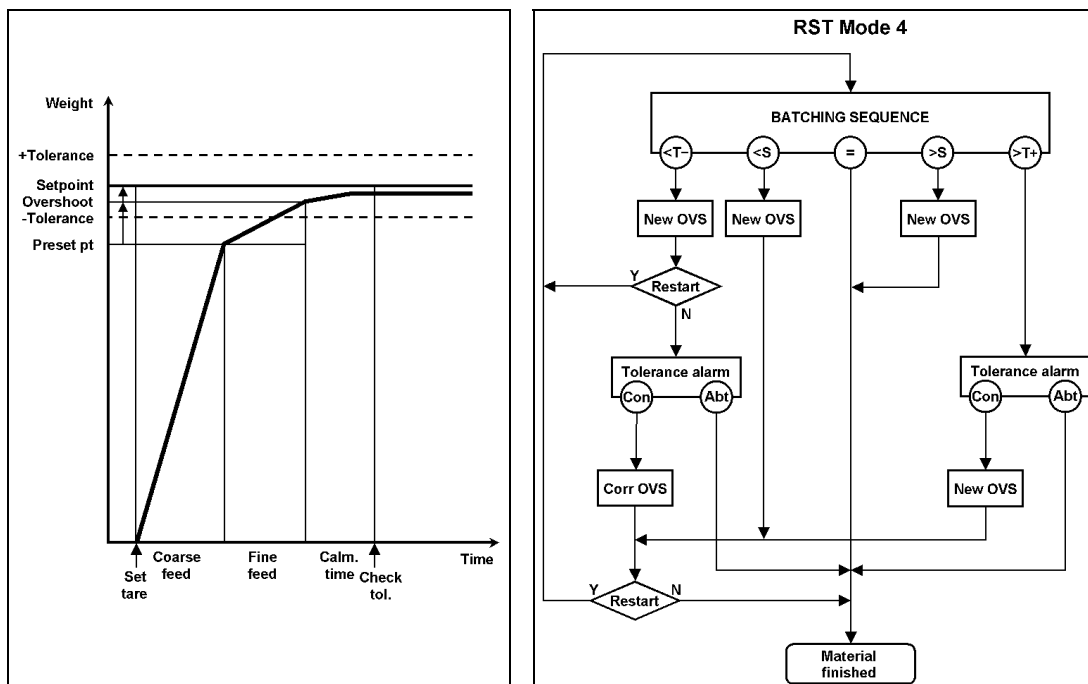
The tolerances should not be too narrow,
otherwise, overshoot optimization might not be done.
A smaller tolerance does not lead to a better loading result!

Tolerance errors generate a tolerance alarm, which must be acknowledged.



With + tolerance and – tolerance set to 0, no tolerance checking is done.
Overshoot correction and/or post-charging are not done.
The overshoot value remains unchanged.

Diagrams for charging sequence and overshoot correction (RST mode 4)



The [automatic] mode is used for charging based on the net weight with the following steps:

- Set tare: The gross weight is stored as tare weight and the net weight starts at zero.
- Preset pt.: The coarse flow is switched off, the fine flow remains activated.
- Coarse: The material is charged in coarse flow until reaching the preset point.
- Fine: The material is charged in fine flow until reaching the switch-off point (overshoot).
- Time to wait: Calming time during which the overshoot is effective and the scale vibrations can settle down.
- Check tol.: The charged weight is determined and checked against the tolerance values.

Abbreviations for overshoot correction used in the diagram

- $\textcircled{<T-}$ below -tol.
- $\textcircled{<S}$ below setpoint
- $\textcircled{=}$ Setpoint reached exactly
- $\textcircled{>S}$ above setpoint
- $\textcircled{>T+}$ above +tol

$$\text{New OVS} = \text{old_overshoot} \quad (\text{Setpoint} - \text{weight at tolerance check})/2$$


$$\text{Corr OVS} = \text{old_overshoot} \quad (\text{Setpoint} - \text{actual_weight})$$

- Con [Contin] Change overshoot, post-charge, if necessary
- Abt [Abort] Finish material


When exceeding the tolerance, the actual weight before tolerance alarm output is measured. When restarting, this weight is used for recalculating the overshoot. If the measured weight is below -tol after the calming time, a new overshoot is calculated. A setpoint difference higher than the overshoot causes post-charging. If the weight after another waiting time until elapse of the calming time is within the tolerances and still below the setpoint, the overshoot is corrected again. Further correction is not possible. With tolerance alarm, charging stops and the operator can make an intervention. Continue with [Con- tin] or finish with [Abort].

6.2.1.1 Sequence and visualization charging automatic

The following displays for process visualization are available:

The setpoint which was used for the truck previously is proposed, it can be overwritten and confirmed with 

```
Goldauto
Setpoint          1000  kg
```

Acknowledge with softkey or , if the truck is ready for charging

```
Goldauto
Start charging ?
#   OK   #
```


Wait for enable (SPMIn), if the input in the component is not set to 0

```
Goldauto
Status:          SPM input
```



```
Goldauto
Weight invalid !
ContIn#         # Abort
```


Message if before charging the standstill condition is not reached, try again with [ContIn]

With standstill the charging starts and the difference (starting with setpoint and running in 0 direction) is shown.

Difference to the setpoint is shown and charging symbol 

```
Goldauto
Diff:           47  kg
```

Press keys / to switch over cyclically to: bargraph ... setpoint ... tolerance ... difference ... bargraph

Press  for bargraph without tolerance band (+ tol. and - tol. are 0). Each character stands for 1/15 of setpoint.

```
Goldauto
#####-----■-----
```

Bargraph with tolerance band.

The values before and behind the tolerance band represent a weight of (setpoint - neg. tolerance) / 12 each. The tolerance band is stretched to 6 characters, i.e. each character stands for a weight of (pos. tolerance + neg. tolerance) / 6.



```
Goldauto
#####■■■■■===---
```

Signification of characters for bargraphs:


```
- > actual
# < actual
■ > -Tolerance
= < +Tolerance
x > +Tolerance
```

Press  for setpoint.



```
Goldauto
Setpoint:       100  kg
```

Press   for tolerance band

```
Goldauto
+Tol:           10  kg
-Tol            10  kg
```

With  the actual status of the charging cycle is shown

```
Goldauto
Charging:      Coarse
```

If  is pressed during charging, the message appears and the charging symbol is flashing 

```
Goldauto
Stopped
ContIn#         # Abort
```

Display during overshoot / calming time (time to wait)

```
Goldauto
Charging:      Calming
```

If weight is not within the tolerance

```
Goldauto
Tolerance alarm
ContIn#         # Abort
```


6.2.2 Charging mode manual

The scale selected with  is used.


Data entry is done like described in chapter 5.3.4, the following sequences are deviating from it:

1. Enter setpoint
2. Acknowledge start
3. Manual charging up to setpoint
4. After OK or 'ready'-signal weight determination and tolerance check are done
5. Ticket / Report is printed, Log is stored

6.2.2.1 Sequence and visualization charging manual

The setpoint which was used for the truck previously is proposed, it can be overwritten and confirmed with 

```
Setpoint
                1000  kg
```



Acknowledge with softkey or , if the truck is ready for charging


```
Start charging ?
#   OK   #
```

Charging symbol and difference from the setpoint are shown



```
Silverhand
Diff:                67  kg
```

Now, you can switch over cyclically by pressing keys / as follows:
Bargraph ... setpoint ... tolerance ... difference ... bargraph

Press  for bargraph with tolerance band



```
Silverhand
#####■■■■■=---
```

or for bargraph without tolerance band
(+ tol. and - tol. are 0)


```
Silverhand
#####■X---
```

Press  for setpoint.

```
Silverhand
Setpoint:          1000  kg
```


Press   for tolerance band.

```
+Tol:                2  kg
-Tol                  2  kg
```

If  is pressed during charging, the message appears and the charging symbol is flashing



```
Stopped
ContIn#           # Abort
```

If the charging is finished, the weight determination and the tolerance check are released by  or the 'ready'- bit input.


```
Silverhand
Status:   Waiting
```

Message if the scale is not at standstill,
(Standstill condition not kept)

Tolerance alarm (10kg below setpoint), with [Retry]: add material, with [Accept]: accept tolerance.


```
Tolerance           -10  kg
Retry #             # Accept
```

6.2.3 Charging mode register


The scale selected with  is used. As only registration is done neither setpoint definition nor tolerance band / tolerance check are present.

Data entry is done like described in chapter 5.3.4, the following sequences are deviating from it:

1. Confirm 'start'
2. Manual charging
3. After 'ready' confirmation weight determination follows
4. Ticket / Report is printed, Log is stored

If the truck is ready for charging, acknowledge with softkey or 

```
Start charging ?
#   OK   #
```

If the truck has been charged, confirm with softkey or 



```
Ready ?
#   OK   #
```

6.2.4 Volumetric charging

If in [Setup]-[Config]-[Change]-[Parameter]-[Volume dimension] is set to [l] or [m³] and a component of type [manual] or [automatic] has been selected, the setpoint for charging can be entered in volume. The density definition in the component is always done in kg/l.

Gravimetric entering of setpoint in e.g. kg

```
Setpoint
1000 kg
```

With  can be switched to m³ and with again  can be switched back to kg

```
Setpoint
1 m³
```

Or it can be switched to l (if [Volume dimension] is set to [l])

```
Setpoint
1000 l
```

The weight display remains always in the kg/t mode.

The volume definition at setpoint entering is recalculated to weight and stored as setpoint according to the density defined in the component specification. Then for print outs the volume is given as well, the number of digits behind the decimal point is adjusted to the digits defined for the smaller scale. The scale interval for volume is 1.

If in a special case the codepage 2 is used for characters on the two line display (only relevant if special characters are used with Translatelt), logically the characters of the upper half of codepage 1 cannot be shown anymore, as consequence the ³ is not available anymore.

6.2.5 Setpoint limitation

For charging modes [automatic] und [manual] a setpoint limitation is built-in. During entry only setpoints within the range of 99% of the value (Full scale deflection – actual gross value) are accepted to prevent the scale from overloading. Larger setpoints are recalculated to 99% and displayed as proposal.

7 DATABASE

7.1 Database maintainance

A number of data lists the contents of which can be modified are available to the database. Therefore, a detailed description is provided in the following sections.

Access to database maintenance is from selection menu weighing by pressing or / and [DBase]

```
TruckLine
FTare $          $ DBase
```

Selections [Truck] (truck list), [Prod] (product list), and [Addr] (address list) are displayed

```
DB maintenance
Truck $ Prod $ Addr
```

Via further options [Onsite] (onsite list), [Seq] (sequence number) and [Report] (Clear) are available

```
DB maintenance
Onsite$ Seq $Report
```

Safety prompt for clearing all reports (Administrator rights required)

```
Clear all reports
Yes #          # No
```

7.1.1 Truck list

→20 Access to the **truck list** from the database maintenance menu is with **[Truck]**. No storage in the alibi memory occurs.

```
Truck
New #Modify#Delete
```

```
No truck
```

Unless a truck is on the truck list, an error message is displayed during 3 s. Leave the truck list and continue with **→23**

From this menu, the truck list with the fixtare values can be printed by pressing , see chapter 9.5.3.

```
Printing ...
```

Selections [New], continue in text, [Modify], continue with **→21**, and [Delete], continue with **→22**, are displayed

```
Truck
New #Modify#Delete
```

With [New], a new truck number < 999999 is displayed and can be stored with

```
Truck ident
133
```

```
Duplicate number
```

If the truck number exists already, an error message is displayed during 3 s and the entry must be repeated

Enter the truck name and store it by pressing

```
Truck name
MM-TK 133
```

```
Duplicate name
```

If the name exists already, an error message is displayed during 3 s and the entry must be repeated

* * *

➔21 Access to the modification mode with [Modify]

The truck called up last is displayed. Another truck can be displayed by pressing / and selected with .

Press to return to the truck list in

➔20

Display the tare value stored last for the truck with selections [Yes], [No fixtare] or [Get new] with /

Use the displayed tare value with [Yes] and press . No ticket is printed.

Continue with ➔21

For not using the displayed weight, reply [No] and press . No ticket is printed and the stored value is not used with tare weighing. No storage in the alibi memory occurs. Continue with ➔21

Weigh the truck as tare value with [New] and

The fixtare value is requested via weighing [Yes] or manual entry [Man]

Reply [Yes] for weighing and storage of the fixtare value in alibi memory and truck database

The alibi memory message is displayed during 3 s. Continue with ➔24

Enter the fixtare value manually with [Man] and store it by pressing key . Continue with ➔24

➔24 Print out ticket TF with print-out message during 3 s

Selected truck handling is completed. Continue with ➔21

```
+HH-TK 133      †
                133 †
```

```
Use tare      10.60 †
‡           Get new †
```

```
Use tare      10.60 †
‡           Yes †
```

```
Use tare      10.60 †
‡           No fixtare †
```

```
Use tare      10.60 †
‡           Yes †
```

```
Start weighing
Yes # # Man
```

```
Memory contains
3 day(s)
```

```
Enter weight
                8.30 †
```

```
Printing ...
```

```
+HH-TK 133      †
                133 †
```

* * *

➔22 Access to the delete mode is with [Delete]

The truck called up last is displayed. Press / to display another truck and select it by pressing

The systems asks for deleting the truck with [Yes] or [No]

Press [Yes] to delete the selected truck. The next truck on the list is displayed. All database entries pertaining to this truck are also deleted. Therefore, we recommend printing out the database previously.

With [No] the previous truck is displayed again

```
Truck is onsite
```

If the selected truck is on the onsite list, it cannot be deleted. An error message is displayed during 3 s and the truck is displayed again

Continue with ➔22 or

press to return to the truck list, continue with ➔20

```
Truck
New #Modify#Delete
```

```
+HH-TK 133          †
                        133 ‡
```

```
Delete truck
Yes #                # No
```

```
+HH-TK 123          †
                        123 ‡
```

```
Truck
New #Modify#Delete
```

* * *

➔23 Leave the truck list to go to the database maintenance menu by pressing , in which another list can be selected.

From this menu, key can be pressed to return to the weighing menu, whereby the free memory space is displayed during 3 s.

```
DB maintenance
Truck ‡ Prod ‡ Addr
```

```
Free memory
1112448 Bytes
```

```
TruckLine
FTare ‡          ‡ DBase
```


7.1.2 Product list

➔25 Access to the product list from menu database maintenance is with [Prod].

```
DB maintenance
Truck $ Prod $ Addr
```

```
No product
```


Unless a product is on the product list, an error message is displayed during 3 s. Leave the product list and continue with ➔28

From this menu, key  can be pressed to print the product list with the received and delivered weights, see chapter 9.5.4.

```
Printing ...
```

Selections [New], continue in text, [Modify], continue with ➔26 and [Delete], continue with ➔27 are displayed


```
Product
New *Modify*Delete
```

Access to the input mode is with [New]. A new product ident < 999999 is entered and stored with 

```
Product ident
17
```

```
Duplicate number
```

If the product ident exists already, an error message is displayed during 3 s and the entry must be repeated.

Enter the product name and store it with 





```
Product name
Molasses
```

```
Duplicate name
```


If the product name exists already, an error message is displayed during 3 s and the entry must be repeated

* * *

➔26 Access to the modifying mode is with [Modify].

The product called up last is displayed. Keys / can be pressed to display another product and to select it with . The stored total weight for the product intake is displayed. This value can be changed. Store the change with . Default is 0.

```
+Molasses
17 t
```



The stored total weight for the product outtake is displayed. This value can be changed. Store the change with . Default is 0.

```
+Intake
45.70 t
```

```
+Outtake
0.00 t
```

If [Charging] has been set to [Yes], the following menu items appear: [automatic] for loading with coarse / fine control

```
+Charging
$ automatic $
```

With / can be switched to [manual]


```
+Charging
$ manual $
```


With / again [register] can be selected


```
+Charging
$ register $
```


The product density in kg/l can be entered (only if [Volume dimension] is set to [m³] or [l]), see chapter 4.1.6.2


```
+Density
1 kg/l
```


With [automatic] the switch-over point from coarse to fine flow has to be determined, press  to confirm.

With [automatic] the expected overshoot has to be entered and confirmed with  (the overshoot is updated after charging).


For [automatic] or [manual] enter the permissible upper tolerance in % and press  to confirm.




For [automatic] or [manual] enter the permissible lower tolerance in % and confirm it with .

For [automatic] enter the calming time (1 ... 30000 s) for weight determination in sec. and press .

Range: 0 ... 511. To avoid conflicts, addresses 160 ... 175 and 256 ... 511 must be used purposefully. Enter the address of the enable bit and confirm it with .

For [manual] the input for the 'ready' signal must be determined.

Range: 0 ... 511. purposeful words are addresses within 128 ... 143 for WP-A addresses within 144 ... 159 for WP-B. For information how to combine the bit with coarse and fine, see chapter 4.1.2, otherwise, use addresses 160 ... 175 and 256 ... 511. Enter the address of the material bit and confirm it with .

Continue with  **26** or press  to return to the product list with  **25**.

* * *

```
↑Preset                ↑
                        0   ks
```

```
↑Overshoot            ↑
                        0   ks
```

```
↑+ Tolerance          ↑
                        0.2 %
```

```
↑- Tolerance          ↑
                        0.2 %
```

```
↑Time to wait         ↑
                        2   s
```

```
↑Enabled by bit       ↑
                        0
```

```
↑Set ready by bit    ↑
                        160
```

```
↑Activates bit       ↑
                        129
```

```
Product
New   *Modify*Delete
```

➔27 Access to the **delete mode** is with **[Delete]**.

```
Product
New   #Modi fy#Delete
```

The product called up last is displayed.

```
+Molasses           †
                    17 ‡
```

Keys **[↓]**/**[↑]** can be pressed to display another product and to select it with **[OK]**.

```
+Corn                †
                    12 ‡
```

Reply **[Yes]** to delete the selected product. The next product on the list is displayed. All database entries pertaining to this product are also deleted. Therefore, we recommend printing out the database previously.

```
Delete product
Yes   #           # No
```

Reply **[No]** to display the last product again.

```
+Corn                †
                    12 ‡
```

Continue with ➔27 or

press **[Exit]** to return to the product list in ➔25.

```
Product
New   #Modi fy#Delete
```

* * *

➔28 Leave the product list and go to the database maintenance menu by pressing **[Exit]**, in which another list can be selected.

```
DB maintenance
Truck ‡ Prod ‡ Addr
```

From this point, key **[Exit]** permits returning to the weighing menu, whereby the free memory space is displayed during 3 s.

```
Free memory
      1112448 Bytes
```

```
TruckLine
1st ‡ 2nd ‡ Tare
```


7.1.3 Address list

Access to the address list is from the database maintenance menu with [Addr].

```
DB maintenance
Truck $ Prod $ Addr
```

```
No address
```


➔30 Unless the address list contains an address, an error message is displayed during 3 s. Leave the address list and continue with ➔33

From this menu, key  can be pressed to print the address list, see chapter 9.5.5.

```
Printing . . .
```

Selections [New], continue in text, [Modify], continue with ➔31 and [Delete], continue with ➔32 are displayed

```
Address
New #Modify#Delete
```

Access to the input mode is with [New]. Enter a new address ident < 999999 and store it with 

```
Address ident
187
```

```
Duplicate number
```


If the address ident exists already, an error message is displayed during 3 s and the entry must be repeated

Enter the name and store it with 


```
Name
Three Star Co.
```

```
Duplicate name
```


If the product name exists already, an error message is displayed during 3 s and the entry must be repeated

Enter address line 1 and store it by pressing key . No data need to be entered

```
+Address line 1 +
253, Darkwing Road
```

Enter address line 2 and store it by pressing key . No data need to be entered

```
+Address line 2 +
DB7JF Norfolk
```

Enter address line 3 and store it by pressing key . No data need to be entered

```
+Address line 3 +
-
```




* * *

➔31 Access to the modifying mode is with [Modify]

```
Address
New #Modify#Delete
```

The address called up last is displayed, provided that min. one address is stored

```
+Three Star Co. +
187 $
```

Keys / can be pressed to display another address which can be selected by pressing key 

```
+Mova Ltd +
520 $
```

Modify address line 1

```
+Address line 1 +
67, Wilson Street
```


Modify address line 2

```
+Address line 2 +
DH7NT Dornfield
```

Modify address line 3

```
+Address line 3  +
_
```

Continue with **⇒31** or

press  to return to the address list with **⇒30**.




* * *

⇒32 Access to the delete mode is with [Delete]

```
Address
New #Modify#Delete
```

The address called up last is displayed, provided that min. one address is stored

```
+Mova Ltd  +
                    520 +
```

Keys / can be pressed to display another address which can be selected by pressing key 

```
+Three Star Co.  +
                    187 +
```


The system asks if the address must be deleted [Yes] or [No]

```
Delete address
Yes # # No
```

With [No], the previous address is displayed again


```
+Three Star Co.  +
                    187 +
```

Continue with **⇒32** or


press  to return to the address list with **⇒30**

```
Address
New #Modify#Delete
```

* * *

⇒33 Leave the address list to go to the database maintenance menu by pressing key , in which another list can be selected

```
DB maintenance
Truck # Prod # Addr
```

In this menu, key  can be pressed to return to the weighing selection menu, whereby the free memory space is displayed during 3 s.

```
Free memory
1112448 Bytes
```

```
TruckLine
1st # 2nd # Tare
```


7.1.4 Onsite list

Access to the onsite list from the database maintenance menu is with [Onsite].

```
DB maintenance
Onsite$ Seq $Report
```

```
No truck is onsite
```

➔35 Unless a truck is on the onsite list, an error message is displayed during 3 s. Leave the onsite list and continue with ➔38

From this menu, key  can be pressed to print the onsite list with all trucks on one line, see chapter 9.5.2.

```
Printing . . .
```




The onsite list is displayed with selections [View], continue in text, and [Delete], continue with ➔37

```
Onsite table
# View #Delete
```




* * *

➔36 Access to the display mode is with [View]. The truck called up last is displayed, provided that min. one truck is stored

```
+HH-TK 123          †
                        123 ‡
```

Keys / can be pressed to display another truck, which can be stored by pressing key 

```
+HH-TK 135          †
                        135 ‡
```

Now, keys / or  can be pressed to call up the other parameters for this truck, if they are existing:

Order number

```
Order number
                        101
```

Customer name and number

```
+Three Star Co.    †
Customer           187
```

Hauler name and number

```
+Transfix          †
Hauler             511
```


Delivery address and number

```
+Porkomat          †
Site               832
```

Date/time/sequence number/weighing point and weight mode

```
2002-03-21 10:28:42
+#19         A-Gross †
```

Continue with ➔36 or

press  to return to the onsite list with ➔35

```
Onsite table
# View #Delete
```

* * *

➔37 Access to the delete mode is with [Delete]

```
Onsite table
# View #Delete
```

The truck called up last is displayed, provided that min. one truck is stored

```
+HH-TK 135          †
                        135 ‡
```

Keys / can be pressed to display another truck, which can be selected by pressing

```
+HH-TK 123          †
                        123 ‡
```

Reply [Yes] to delete or [No] in order not to delete the weight data of the selected truck

```
Delete weighing data
Yes #                # No
```

In both cases, an automatic return to the onsite list with ➔35 is made

```
Onsite table
# View #Delete
```

* * *

➔38 Leave the onsite list by pressing to go to the database maintenance menu in which another list can be selected

```
DB maintenance
Onsite‡ Seq †Report
```

From this menu, press to return to the weighing menu, whereby the free memory space is displayed during 3 s

```
Free memory
1112448 Bytes
```

```
TruckLine
1st ‡ 2nd ‡ Tare
```


7.1.5 Sequence number memory

Access to the sequence number from the database maintenance menu is with [Seq]


```
DB maintenance
Onsite# Seq #Report
```

The system asks if the sequence number (shown is the next free number) must be reset [Yes] or [No]

```
Reset                               57
Yes #                               # No
```

Reply [Yes] to reset the sequence number to 1, or [No] in order not to reset it. In both cases, an automatic return to the database maintenance menu is made, in which another list can be selected

```
DB maintenance
Onsite# Seq #Report
```

From this menu, key  can be pressed to return to the weighing menu, whereby the free memory space is displayed during 3 s

```
Free memory
1112448 Bytes
```

```
TruckLine
1st # 2nd # Tare
```

7.1.6 Report database

Entry of report database in menu DB maintenance by [Report]

```
DB maintenance
Onsite# Seq #Report
```

With [Yes] all reports are deleted definitely, return to the previous menu by [No]

```
Clear all reports
Yes #                               # No
```

7.2 Statistics

Caution! When deleting a truck, product, customer, hauler or delivery address, all data related to this item are also deleted.

Access to the statistics is from selection menu weighing by pressing or / and [Stat]

```
TruckLine
Stat $Alibi $ PIN
```

➔40 Leave the statistics menu by pressing

The statistics menu with selections [Print], continue in text, and [Clear], continue with ➔42, is displayed

```
Statistics
Print #           # Clear
```

Select [Print] to display the first print menu

```
Statistics
$ Truck / Product $
```

➔41 With /, all available print menus can be displayed to select a menu by pressing

```
Statistics
$Customer / Product$
```

```
Statistics
$ Hauler / Product $
```

```
Statistics
$ Site / Product $
```

```
Statistics
$Product / Customer$
```

```
Statistics
$ Product / Hauler $
```

```
Statistics
$ Product / Site $
```

```
No statistic data
```

Unless statistics data are existing for the selected menu, an error message is displayed during 3 s.

For each selected menu, the statistics period is defined with 'First date'

```
First date:
2005-03-30
```

and 'Last date'. The proposed data correspond to the period stored in the statistics

```
Last date:
2005-06-29
```

Start calculation and print out with

```
Calculating ...
```

Continue with ➔41 or return to the statistics menu by pressing , continue with ➔40

```
Statistik
Print #           # Clear
```

* * *

➔42 Access to the delete mode is with [Clear]

```
Statistik
Print # # Clear
```

Define the delete period with 'First date'

```
First date:
2005-03-30
```

and 'Last date'. The proposed data correspond to the period stored in the statistics

```
Last date:
2005-06-29
```

The system asks if the data for the selected period must be deleted [Yes] or [No]

```
Delete range
Yes # # No
```

With [No], nothing is deleted. An automatic return to the statistics menu in ➔40 is made

```
Statistik
Print # # Clear
```




```
No statistic data
```

If you reply [Yes], all statistics data of the selected period are deleted. After deleting all data, a status message is displayed shortly

```
TruckLine
Stat %Alibi % PIN
```

Subsequently, an automatic return to selection menu weighing is made.


7.3 Alibi memory

Access to the alibi memory from selection menu weighing is by pressing  or / and [Alibi]

```
TruckLine
Stat %Alibi % PIN
```

➔45 The alibi memory menu with selections [Date], continue in text, [Range] and [Seq] is displayed, continue with ➔47.

```
Search for
Date #Range # Seq
```

Optionally, you can leave the alibi memory menu and return to the weighing menu by pressing 



```
TruckLine
1st % 2nd % Tare
```

With [Date], the date of the last entry is displayed


```
Date:
2005-05-01
```

Another date can be entered and stored with 



```
Date:
2005-04-01
```

The time of the last entry for the selected date is displayed. Press / to display further times of weighing operations for this date


```
2005-04-01 Time:
+12:45:42.30 +
```

Press  to display the data of the selected entry with sequence number, weighing point and weight mode. The weight value appears on the weight display

```
2005-04-01 11:41.02
+#41 A-Gross†
```

Press / to display further entries for this date

```
2005-04-01 11:52.04
+#43 A-Gross†
```

Press  to return to the alibi memory menu, continue with ➔45


```
Search for
Date #Range # Seq
```

Select [Range] to choose the range entry for the weighing data print-out

```
Search for
Date #Range # Seq
```

➔46 The date of the first entry in the alibi memory is displayed



```
First date:
2005-03-30
```

Optionally,  permits returning to the alibi memory menu, in which other options can be selected

```
Search for
Date #Range #Seq
```

Another date can be entered and stored by 


```
First date:
2005-04-15
```

The time of the first entry for the selected date is displayed. Press / to display further entries for this date


```
2005-04-15 Time:
+08:45:42.00 †
```

```
No matching entry !
```

Unless an entry for the selected date exists, an error message is displayed during 3 s. Subsequently, the date entry must be repeated

Press key  to select the start of the list. The date of the last entry is displayed



```
Last date:
2005-06-29
```

Another date can be entered and stored by pressing 


```
Last date:
2005-06-15
```

```
No matching entry !
```

Unless an entry for the selected date exists, an error message is displayed during 3 s. Subsequently, this date entry must be repeated

Keys / can be pressed to display all entries for the defined period

```
2005-06-15 Time:
+12:45:42.30 †
```

Press  to select the end of the list and to activate the print-out. All weighing data for the defined period with date, time, sequence number, weight mode, weighing point and weight are printed out


```
Printing ...
```

Continue with ➔46

```
First date:
2005-03-30
```

➔47 Select [Seq] to choose the display of a selected weighing sequence

```
Search for
Date #Range #Seq
```

Optionally, key  can be pressed to return to the alibi memory menu, continue with ➔45.


```
Search for
Date #Range #Seq
```

The number of the last weighing sequence is displayed

```
Sequence number
42
```

A different sequence number can be entered


```
Sequence number
41
```

Press  to display the data of the selected entry with sequence number, weighing point and weight mode. The weight value appears on the weight display

```
2005-04-15 11:41.02
+#41 A-Gross†
```




Press / to display further entries

```
2005-04-17 10:29.04
+#41 A-Gross†
```


Return to the sequence number entry by pressing key , continue with ➔47

```
Sequence number
41
```

7.4 Change PIN code

Access to PIN changing for the logged in operator is from the weighing selection menu by pressing keys  or /, and [PIN]

```
TruckLine
Stat $Alibi $ PIN
```

The system asks for the old PIN. Enter the old PIN and store it by pressing 

```
Old PIN
*****
```


Unless the old PIN is correct, leave the input menu, and the weighing selection menu is displayed again

```
TruckLine
Stat $Alibi $ PIN
```

→50 Enter the new PIN code and store it by pressing key



```
New PIN
*****
```

Repeat the new PIN code and store it by pressing 

```
Repeat PIN
*****
```

```
Wrong PIN
```

If the two entries are not identical, an error message is displayed during 3 s and entry of the new PIN code must be repeated, continue with **→50**

Otherwise, the weighing menu is displayed again

```
TruckLine
Stat $Alibi $ PIN
```

If the PIN was lost, access to the operating mode is possible using a substitute PIN. Calculation of the substitute PIN is as described on the attached supplement sheet (see last page).

7.4.1 CALCULATION OF A SUBSTITUTE PIN

Calculation is by means of the formula specified below:

$$A = (8191 - X) * 7$$

$$B = \text{INT}(A / 8192)$$

$$\text{PIN} = A - B * 8192$$

X : displayed service number

A : intermediate result

B : only the integer part of the division

PIN : substitute PIN, valid only for the displayed X

Example:

$$X = 3639$$

$$A = (8191 - 3639) * 7 = 31864$$

$$B = \text{INT}(31864 / 8192) = \text{INT}(3.889648438) = 3$$

$$\text{PIN} = 31864 - 3 * 8192 = 7288$$

8 TABLES

8.1 User data

The user database is not visible from the terminal.

Name	: STR18;	(* name of user *)
PIN	: DINT;	(* password *)
Class	: INT;	(* class of rights *)
Protected	: BOOL;	(* TRUE if protected *)

8.2 Onsite data (WGT)

Name	: STR18;	(* name of truck *)
ID	: DINT;	(* ident of truck *)
User1	: STR18;	(* user 1st weight *)
User2	: STR18;	(* user 2nd weight *)
Order	: STR18;	(* order number *)
Product	: DINT;	(* ident of product *)
Seq	: DINT;	(* sequence number *)
Setp	: REAL;	(* set point in kg / lb *)
wgt1	: WEIGHT;	(* first weight *)
dt1	: DT;	(* date of first weighing *)
wgt2	: WEIGHT;	(* second weight *)
dt2	: DT;	(* date of second weighing *)
Customer	: DINT;	(* ident of customer *)
Hauler	: DINT;	(* ident of supplier *)
Site	: DINT;	(* ident of site *)
TxtV	: STR30;	(* free text *)
Addr	: STR18;	(* name of customer *)
Addr1	: STR30;	(* address field *)
Addr2	: STR30;	(* address field *)
Addr3	: STR30;	(* address field *)
WP	: STR1;	(* weighing point for dosing only *)
OrderOK	: BOOL;	(* order entered *)
ProductOK	: BOOL;	(* product entered *)
CustomerOK	: BOOL;	(* customer entered *)
HaulerOK	: BOOL;	(* hauler entered *)
SiteOK	: BOOL;	(* site entered *)

8.3 Truck data (TRK)

The setpoint for a loading is stored at the truck and is used as proposal for a next loading.

Name	: STR18;	(* name of truck *)
ID	: DINT;	(* ident of truck *)
Tare	: WEIGHT;	(* tare weight of truck *)
TareDT	: DT;	(* date of last tare weighing *)
TUser	: STR18;	(* name of user *)
MaxWGT	: WEIGHT;	(* not used *)
UseTare	: BOOL;	(* use the fixtare *)
Product	: DINT;	(* ident of material *)
Customer	: DINT;	(* ident of customer *)
Hauler	: DINT;	(* ident of supplier *)
Site	: DINT;	(* ident of site *)
Setp	: REAL;	(* last setpoint *)

8.4 Address data (ADR)

The parameter discount (Dis) is not used.

Name	: STR18;	(* name of customer *)
ID	: DINT;	(* ident *)
Dis	: REAL;	(* reserved *)
Addr1	: STR30;	(* address field *)
Addr2	: STR30;	(* address field *)
Addr3	: STR30;	(* address field *)

8.5 Report (REP)

The report data base can be read via the AccessIt tool. Data entry is done if a ticket of type T2, TD or TT is printed.

ActDT	: DT;	(* creation date *)
Order	: STR18;	(* order identification *)
Sequence	: DINT;	(* sequence number *)
Truck	: STR18;	(* name of the truck *)
TruckID	: DINT;	(* ident of truck *)
Product	: STR18;	(* name of material *)
ProductID	: DINT;	(* ident of material *)
Dens	: REAL;	(* Density *)
User1	: STR18;	(* user 1 st weight *)
User2	: STR18;	(* user 2 nd weight *)
Setp	: REAL;	(* set point in kg *)
wgt1	: REAL;	(* first weight in kg *)
dt1	: DT;	(* date of first weighing *)
wgt2	: REAL;	(* second weight in kg *)
dt2	: DT;	(* date of second weighing *)
Net	: REAL;	(* net weight in kg *)
CustomID	: DINT;	(* ident of customer *)
Customer	: STR18;	(* name of customer *)
CustAdr1	: STR30;	(* address line of customer *)
CustAdr2	: STR30;	(* address line of customer *)
CustAdr3	: STR30;	(* address line of customer *)
HaulerID	: DINT;	(* ident of supplier *)
Hauler	: STR18;	(* name of supplier *)
HaulAdr1	: STR30;	(* address line of supplier *)
HaulAdr2	: STR30;	(* address line of supplier *)
HaulAdr3	: STR30;	(* address line of supplier *)
SiteID	: DINT;	(* ident of site *)
Site	: STR18;	(* name of site *)
SiteAdr1	: STR30;	(* address line of site *)
SiteAdr2	: STR30;	(* address line of site *)
SiteAdr3	: STR30;	(* address line of site *)
TxtV	: STR30;	(* free text *)
Txt1	: STR30;	(* fix text *)
Txt2	: STR30;	(* fix text *)
WP	: STR1;	(* weighing point f. charg. only *)
Scale	: STR20;	(* used scale *)
CRC ²	: UINT;	(* CRC from this record *)

2 The data record can be checked by the CRC for subsequent modification.

8.6 Statistics data (STA)

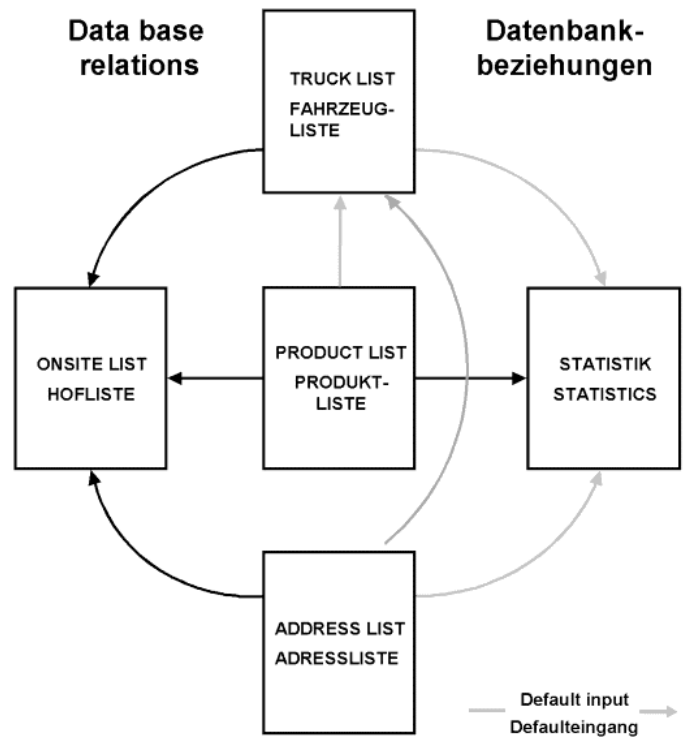
Entries are deleted automatically, when the configured lifetime is exceeded.

Dat	: DT;	(* date of second weighing *)
Net	: WEIGHT;	(* net weight *)
Truck	: DINT;	(* ident of truck *)
Product	: DINT;	(* ident of material *)
Customer	: DINT;	(* ident of customer *)
Hauler	: DINT;	(* ident of supplier *)

8.7 Product data (PRD)

The parameter 'Price' is not used.

Name	: STR18;	(* name of material *)
ID	: DINT;	(* ident of material *)
Setp	: REAL;	(* last setpoint *)
Dens	: REAL;	(* density *)
BMode	: INT;	(* code of chrg mode *)
Preset	: REAL;	(* preset *)
OVS	: REAL;	(* overshoot *)
PTol	: REAL;	(* upper tolerance in % *)
NTol	: REAL;	(* lower tolerance in % *)
Calm	: REAL;	(* calming time *)
Price	: REAL;	(* reserved *)
SPMin	: INT;	(* enable bit *)
SPMout	: INT;	(* material select *)
RstMode	: UINT;	(* restart mode for automatic *)
Intake	: WEIGHT;	(* received material *)
Outtake	: WEIGHT;	(* delivered material *)



9 PRINT-OUTS

The print-outs are bilingual and can be translated using Translatelt. In the delivery condition, all print-outs are not made via NiceLabelExpress (= no NLE files are included). If customer-made NLE files are included, print out with this layout is via NLE. In this case, all data required for an NLE print-out are made available (as they are used for the internal formats).

The interface for weight tickets is defined in [Setup] – [Serial Ports] – [Printer device at]'. the interface for Log and Alibi memory is determined in [Setup] – [Config] – [Change] – [Parameter] – [Log printer]. The interface for configuration, statistics and database extracts is defined in [Setup] – [Config] – [Change] – [Parameter] – [Statistic printer].

	Configurable with "Nice Label Express"
Alibi memory print-out	No
First weighing ticket	Yes
Second weighing ticket	Yes
Charging ticket	Yes
Tare weighing ticket	Yes
Fixtare weighing	Yes
Single weighing ticket	Yes
Print-out Log	No
Truck / product report	No
<Address> / product report	No
Product / <Address> report	No
User list	No
Onsite list	No
Truck list	No
Product list	No
Address list	No
Configuration data (parameter list)	No
Setup data	No

9.1 Alibi memory print-out

Print-out is via the log printer with one line per measured value, independent of whether a single measured value or a range is printed. No connection to NiceLabelExpress is provided.

```
2005-01-31 17:51:21 #12345678 Gross A <123.45 kg>
```

With charging mode instead of 'Gross' the term 'Net' (Difference of gross weight before and after the charging) is stored.

For single weighings below min. weight the term 'Calcul' is used and the weight is stored without '<>'. The date format is YYYY.MM.DD.

If the weight is out of the permitted print range, '???' instead of the type is printed.

With faulty CRC, '-----' instead of the weight is printed.

9.2 Predefined tickets

The predefined format is limited to a width of 35 characters. When using the full length of 30 characters with addresses, however, a width of 35 characters will be exceeded by 9 characters. This effect is due to the printer configuration (printing into a new line, or cutting). All texts, including the firmly defined ones, are defined in the program and can be translated into other languages by means of Translatelt. Empty address lines 1 ... 3 are suppressed.

9.2.1 Ticket First weighing 'T1'

Unless a Nice Label Express layout was defined, the report will be printed out in the following format. When using "Nice Label Express", layouts "t1.lbl" must be used for editing.

```
Ticket      7                Truck scale 2
Supervisor  G.Kowalski
-----
Customer   Crawford & Sons
           74, Lester Road
           NF4KJ Cummings

Order      101
from/to    Superpig
           89, Forest Hill
           CF3LS Warwick

-----
Hauler     Mova Ltd
Truck      HH-TK 137
Product    Tapioka
-----
2005.05.06 10:00:06
1st weight      A      <19.74 t>
```

9.2.2 Ticket Second weighing 'T2'

Unless a Nice Label Express layout was defined, the report will be printed out in the following format. When using "Nice Label Express", layouts "t2.lbl" must be used for editing.

```

Ticket      7                Truck scale 2
Supervisor  G.Kowalski
-----
Customer    Crawford & Sons
            74, Lester Road
            NF4KJ Cummings
Order      101
from/to    Superpig
            89, Forest Hill
            CF3LS Warwick
-----
Hauler     Mova Ltd
Truck      HH-TK 137
Product    Tapioka
-----
2005.05.06 10:00:06
1st weight          A      <19.74 t>

2005.05.06 10:03:45
2nd weight          A      <08.80 t>

Net              A      <10.94 t>

```

9.2.3 Ticket Charging 'TD'

Unless a Nice Label Express layout was defined, the report will be printed out in the following format. When using "Nice Label Express", layouts "td.lbl" must be used for editing.

```

Ticket      2                X5
User        Admin
-----
Customer    Müller
            Hamburg
            im Hause
            SSD
from/to     Schulze
            Hamburg
-----
Truck      WL-JD 411
Product    Wasser
-----
Setpoint          1.210 kg
Setpoint          1.235 l

2005.02.02 11:46:13
1. Weight          A      <00.280 kg>

2005.02.02 11:46:27
2. Weight          A      <01.492 kg>

Net              A      <01.212 kg>
Net              1.237 l

```

9.2.4 Ticket Tare weighing 'TT'

Unless a Nice Label Express layout was defined, the report will be printed out in the following format. When using "Nice Label Express", layouts "tt.lbl" must be used for editing.

```

Ticket      13                Truck scale 2
Supervisor  G.Kowalski
-----
Customer    Three Star Co.
            253, Darkwing Road
            DB7JF Norfolk

Order       103
from/to     Porkomat
            230, Meadow Lane
            PD2LX Epping
-----
Hauler      Transfix
Truck       HH-TK 123
Product     Corn
-----
2005.05.06 10:24:46
Fixtare          A      <08.69 t>

2005.05.06 10:26:09
Weight          A      <17.78 t>

Net           A      <09.09 t>

```

9.2.5 Ticket Fixtare weighing 'TF'

Unless a Nice Label Express layout was defined, the report will be printed out in the following format. When using "Nice Label Express", layouts "tf.lbl" must be used for editing.

```

Ticket      12                Truck scale 2
Supervisor  G.Kowalski
-----
Truck       HH-TK 123
2005.05.06 10:24:46
Fixtare          A      <08.69 t>

```

9.2.6 Ticket Single weighing 'TS'

Unless a Nice Label Express layout was defined, the report will be printed out in the following format. When using "Nice Label Express", layouts "ts.lbl" must be used for editing.

```

Ticket      15                Truck scale 2
Supervisor  G.Kowalski
-----
Truck       HH-TL 185
2005.05.06 10:28:45
Weight          A      <20.96 t>

```

9.2.7 Print-out Log

This print-out requires a second printer with a width of 80 characters. These lines are printed out successively without separation. Print-out is together with the entry in the alibi memory. The print-out can be used together with OmniScale as an external alibi memory. Print-out is suppressed, if log and tickets use the same printer.

```
HH-TR 180
```

```
2005-04-16 17:51:21 #86895430 Gross A <12,50 t>
```

Unless a printer is connected and configured, the following error message is displayed and must be acknowledged with [OK]

```
Log not Printed
# OK #
```

9.3 Reports

The reports are not formatted by NiceLabelExpress. The maximum width is 79 characters. The log printer is used. The reports distinguish product intake and outtake.

9.3.1 Truck / product report

Truck	HH-TK 123	2005.04.30 ... 2005.05.06	
Product	Intake	Outtake	Balance
Corn	27.41 t	0.00 t	27.41 t
Soja	11.97 t	0.00 t	11.97 t

9.3.2 <Address> / product report

With this report, a customer, a hauler or a delivery address can be selected for <Address>.

Customer	Three Star Co.	2005.04.30 ... 2005.05.06	
Product	Intake	Outtake	Balance
Corn	27.41 t	0.00 t	27.41 t
Soja	11.97 t	0.00 t	11.97 t

9.3.3 Product / <Address> report

With this report, a customer, a hauler or a delivery address can be selected for <Address>.

Product	Corn	2005.04.30 ... 2005.05.06	
Customer	Intake	Outtake	Balance
Crawford & Sons	09.84 t	0.00 t	09.84 t
Perkins & Smith	04.04 t	0.00 t	04.04 t
Three Star Co.	27.41 t	0.00 t	27.41 t

9.4 Parameter list print-out

The parameter print-out is not formatted by NiceLabelExpress. The max. width is < 40 characters. The log printer is used.

```
Configuration data TruckLine - 03.00.00  
Date: 2005.03.14 17:12  
-----
```

Input configuration

```
Slot 1:          Digital input  
Input 1:         3  
Slot 2:          No function  
Slot 3:          No function
```

Output configuration

```
Slot 1:          Digital output  
Output 1:        4  
Output 2:        0  
Output 3:        6  
Output 4:        7  
Output 5:        0  
Output 6:        0  
Output 7:        0  
Output 8:        0  
Output 9:        0  
Output 10:       0  
Output 11:       0  
Output 12:       0  
Output 13:       0  
Output 14:       0  
Output 15:       0  
Output 16:       0  
Output 17:       0  
Output 18:       0  
Output 19:       0  
Output 20:       0  
Output 21:       0  
Output 22:       0  
Output 23:       0  
Output 24:       0  
Slot 2:          No function  
Slot 3:          No function
```

Limits

```
WP-A: Limit 1 on   -300.0 kg  
WP-A: Limit 1 off  3000.0 kg  
WP-A: Limit 2 on   3000.0 kg  
WP-A: Limit 2 off  -300.0 kg
```

Parameter

```
Scale identifier   X5  
Date format       2005.03.14 17:12  
Statistics for    7 days  
Volume dimension  Off  
Charging          automatic
```



```

Use ordernumber      Yes
Use product          Yes
Use Customer         Yes
Use hauler           Yes
Use site             Yes
Data entry at 1st   Yes
Comment line         Yes
  Prompt extra line Text 1
Message line 1
Message line 2
Log printer          = Ticket
Statistic printer   = Ticket
Number of copies:
  1st weighing      1
  2nd weighing      1
  Charging          1
  Tare weighing     1
  Fixtare weighing  1
  Single weighing   1
Layout:
  1st weighing      .#ULCOAHTPL1.
  2nd weighing      .#ULCOAHTPL1.2.N.
  Charging          .#ULCOAHTPLSL1.2.N.
  Tare weighing     .#ULTF.
  Fixtare weighing  .#ULCOAHTPLF.G.N.
  Single weighing   .#ULTG.
Log to database      No
PLC program         1
Use PIN             No

User                Class
-----
Admin              Admin
Cook.....Supervisor
Operator           Kowalski
    
```

9.5 Database print-outs

The database print-outs are not formatted by NiceLabelExpress. The maximum width is < 80 characters. The log printer is used.

9.5.1 User list print-out

```

Admin              Administrator
G.Kowalski         Supervisor
A.Flott            Operator
    
```

9.5.2 Onsite list print-out

```

Onsite table                2005.05.06 12:09
-----
123 HH-TK 123              2005.05.06 12:08  A    <17.36  t>
    
```

9.5.3 Truck list print-out

Truck	2005.05.06 12:11			
123 HH-TK 123	2005.05.06 10:24	A	<08.69	t>
135 HH-TK 135				
137 HH-TK 137				
150 HH-TK 150				
155 HH-TK 155				
180 HH-TL 180				
185 HH-TL 185				

9.5.4 Product list print-out

Product	2005.05.06 12:12			
	Intake	Outtake	Balance	
10 Cocos	12.88 t	0.00 t	12.88	t
12 Corn	27.41 t	0.00 t	27.41	t
11 Soja	11.97 t	0.00 t	11.97	t
14 Tapioka	19.30 t	0.00 t	19.30	t

9.5.5 Address list print-out

Address	2005.05.06 12:18	
520 Mova Ltd 67, Wilson Street DH7NT Dornfield		
—		
307 Perkins & Smith 27, Norwich Road JK7PX Stapleton		
—		
876 Porkomat 230, Meadow Lane PD2LX Epping		
—		
805 Superpig 89, Forest Hill CF3LS Warwick		
—		
187 Three Star Co. 253, Darkwing Road DB7JF Norfolk		
—		
511 Transfix 267, Enfield Road ND3GS Macclesfield		
—		

9.6 NiceLabelExpress

All texts including the firmly determined ones are defined in the program and can be translated into further languages using Translatelt. I.e. language selection is possible without handling the ticket by means of NiceLabelExpress.

In the delivery condition, all print-outs are **not** made via NiceLabelExpress (= no NLE files included). If customer-designed NLE files are included, this layout is used for printing via NLE. All data required for a print-out are made available for NLE. The file names for NLE are 'T1', 'T2', 'TD', 'TT', 'TF' and 'TS'.

The data in the following table are available for all tickets with NiceLabelExpress. Only the data generated during the relevant weighing sequence must be used. After first weighing, e.g. net weight and date of second weighing are not yet available, i.e. they can contain data, which do not make sense. Information on which data are purposeful and can be printed out is given in the tables and print-out examples of the fixed ticket formats.

Table of available data for the tickets:

Value	Description	Format	1-1st weigh T1	2-2nd weigh T2	3-Charging TD	4-Tare weigh TT	5-Fixture TF	6-Single weigh. TS
ActDt	Actual date / time	STR20	√	√	√	√	√	√
Order	Order number	STR18	1	2	√	2	-	-
Seq	Ticket number	DINT	√	√	√	√	√	√
ScaleID	Waagenidentifikation	STR18	√	√	√	√	√	√
Wgt1 / Date1	Weight / date / time of 1st weighing	WEIGHT/STR20	√	√	√	3	√	√
Wgt2 / Date2	Weight / date / time of 2 nd weighing	WEIGHT/STR20	-	√	√	√	-	-
DDens	Dimension for density	STR8			√			
Setp	Setpoint for charging	WEIGHT			√			
SVol	Setpoint as volume	REAL			√			
Net	1st weighing – 2nd weighing	WEIGHT	-	√	√	√		-
Vol	Net in volume	REAL		√	√	√		
User	Weighing operator(s)	STR18	√	√	√	√	√	√
Truck / TruckID	Truck name, ident	STR18/DINT	√	√	√	√	√	4
Product / ProdID	Product name	STR18/DINT	1	2	1	2	-	-
PrdIn / PrdOut	Totalizer for product intake/outtake	WEIGHT					-	-
Customer / CustID	Customer name, ident	STR18/DINT	1	2	1	2	-	-
CustAdr1 ... 3	Customer address	STR30					-	-
Hauler / HaulerID	Forwarder name and number	STR18/DINT	1	2	1	2	-	-
HaulerAdr1 ... 3	Forwarder address	STR30					-	-
Site / SiteID	Delivery address	STR30/DINT	1	2	1	2	-	-
SiteAdr1 ... 3	Delivery address description	STR30					-	-
TxtV	Variable comment line	STR30	1	2	√	2	-	-
Txt1 ... 2	2 lines for comment characters	STR30	1	2	√	2	-	-
T*	Fixed inscription texts	STR18	√	√	√	√	√	√

Remark 1: if already measured and configured 3: = tare
 2: available, provided that configured 4: only name, no ID

Data formats: STR18 = max. 18 alphanumeric characters. Possible are 8/16/20/30 too.
 DINT = double integer, pure numeric value
 WEIGHT = weight value with polarity sign and unit
 Date = actual date and time

Tickets are printed on the ticket printer (PRN:). First, an attempt to print the ticket via NiceLabelExpress is made. Unless this is possible (e.g. no layout loaded), the ticket defined in IEC61131 is printed. No NLE layout is included in the scope of delivery. The name for NLE layouts is 'T1' to 'TS' according to the headlines.

10 TRANSLATEIT

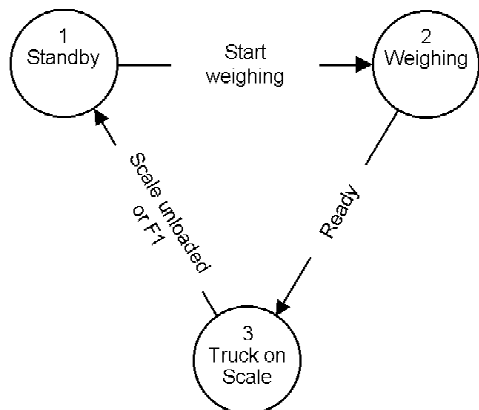
The texts in the various software modules (exclusive firmware functions) can be translated to a local language with the help of the program Translatelt. There are 128 modules with a total of approx. 350 text lines to be translated.

The two lines display can language depending be switched to the second code page. Therefore with Translatelt the 'Variable Page' in the POU Init has to be set to \$19 for local language. All texts of the 'local language' can use the special characters of the code page 2. The Analogtest and the Alibi memory are not using the code page 2.

11 PLC PROGRAMS

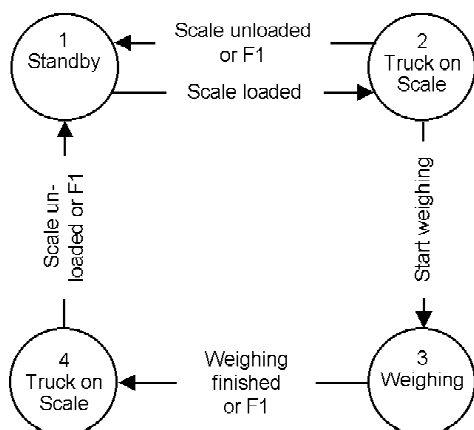
There are 4 PLC programs provided for control of traffic light / barrier. Selection is via a numeric configuration parameter. The output for closing a barrier corresponds to a red traffic light AND disable input. A value > 1% FSD is displayed by the loaded scale, the value displayed by the non-loaded scale is < 0.5 % FSD. The PLC program does not interfere with the weighing process.

Program 1 (Traffic light behind the scale)



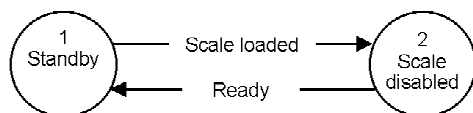
Status	red	yellow	green
1	on	off	off
2	on	on	off
3	off	off	on

Program 2 (Traffic light before the scale)



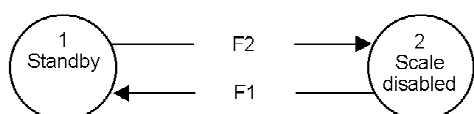
Status	red	yellow	green
1	off	off	on
2	off	on	off
3	on	off	off
4	off	off	on

Program 3 (Traffic light shows red during weighing)



Status	red	green
1	off	on
2	on	off

Program 4 (Traffic light is controlled via F1 and F2)



Status	red	green
1	off	on
2	on	off

A weighing operation starts by selection of the weighing mode (e.g. 1st weighing) and ends after reading the weight. The closed barrier corresponds to the red traffic light and an AND-linked external signal (e.g. a light barrier).

12 PROCESS INTERFACES

12.1 Digital inputs and outputs

The function assignment to the digital inputs and outputs can be done in the configuration, see chapter 4.1

Access to the virtual SPM for OPC and e.g. Modbus:

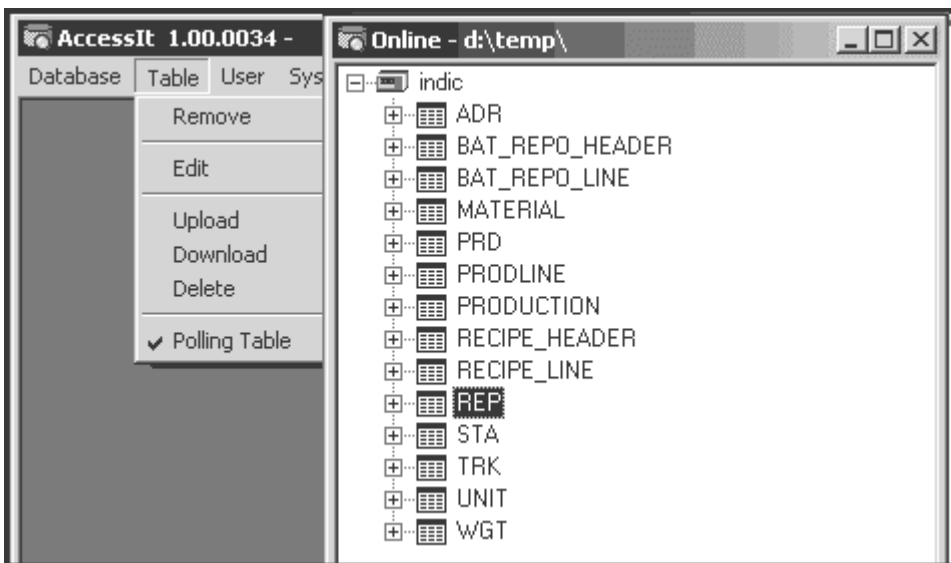
Address	Type	I / O	Function
MX 0	BOOL		Reserved for system
MX 1	BOOL	Out	TRUE if a phase is actually running
MX 2	BOOL	In	Stop charging / phase
MX 3	BOOL	In	Barrier can be closed
MX 4	BOOL	Out	Traffic light red
MX 5	BOOL	Out	Traffic light yellow
MX 6	BOOL	Out	Traffic light green
MX 7	BOOL	Out	Close barrier
MX 8	BOOL	Out	Limit 1 WP-A
MX 9	BOOL	Out	Limit 2 WP-A
MX 10	BOOL	Out	Limit 1 WP-B
MX 11	BOOL	Out	Limit 2 WP-B
MX 16	BOOL	In	Set zero WP-A
MX 17	BOOL	In	Set tare WP-A
MX 18	BOOL	In	Reset tare WP-A
MX 19	BOOL	Out	Charging display: below tolerance
MX 20	BOOL	Out	Charging display: above tolerance
MX 21	BOOL	Out	Charging display: within tolerance
MX 22	BOOL	Out	Charging display: within tolerance, above setpoint
MX 23	BOOL	Out	Charging display: within tolerance, below setpoint
MX 24	BOOL	In	Set zero WP-B
MX 25	BOOL	In	Set tare WP-B
MX 26	BOOL	In	Reset tare WP-B
MX 28	BOOL	Out	Coarse feed WP-A or WP-B
MX 29	BOOL	Out	Fine feed WP-A or WP-B (during coarse active too)
MX 30	BOOL	Out	Discharge WP-A or WP-B (act. not used)
MX 32	BOOL	Out	Data valid for WP-A
MX 33	BOOL	Out	¼ d WP-A
MX 34	BOOL	Out	Standstill WP-A
MX 35	BOOL	Out	WP-A tare active
MX 36	BOOL	Out	Coarse feed WP-A
MX 37	BOOL	Out	Fine feed WP-A (during coarse active too)
MX 38	BOOL	Out	Discharge WP-A (act. not used)
MX 40	BOOL	Out	Data valid for WP-B
MX 41	BOOL	Out	¼ d WP-B
MX 42	BOOL	Out	Standstill WP-AStand still WP-A
MX 43	BOOL	Out	WP-B tare active
MX 44	BOOL	Out	Coarse WP-B
MX 45	BOOL	Out	Fine feed WP-B (during coarse active too)
MX 46	BOOL	Out	Discharge WP-B (act. not used)
MW 3	WORD	Out	Analog output value (act. not used)
MW 4	WORD	In	Value analog input 1 (act. not used)
MW 5	WORD	In	Value analog input 2 (act. not used)

Address	Type	I / O	Function
MW 6	WORD	In	Value analog input 3 (act. not used)
MW 7	WORD	In	Value analog input 4 (act. not used)
MX 128...143	BOOL	Out	Preferably for components of WP-A, are mirrored with coarse in MX 192...207 and with fine in MX 208...223
MX 144...159	BOOL	Out	Preferably for components of WP-B, are mirrored with coarse in MX 224...239 and with fine in MX 240...255
MX 160...191	BOOL	Out	User defined inputs (SPMIn)
MX 192...207	BOOL	Out	MX 128...143 AND coarse WP-A
MX 208...223	BOOL	Out	MX 128...143 AND fine WP-A
MX 224...239	BOOL	Out	MX 144...159 AND coarse WP-B
MX 240...255	BOOL	Out	MX 144...159 AND fine WP-B

Base address in the SPM is MB 400 = MX 3200.

13 ACCESSIT

The internal databases can be transferred to a PC with the tool AccessIt.
 The program AccessIt is contained on the Power Tools CD to be ordered at Sartorius.
 The following licences are required in the PR 5610 instrument:
 PR 1792/13 OPC Server communication
 PR 1792/20 OPC Database access
 (The 7 digit licence numbers have to be ordered and are linked to the serial number of the instrument)
 The licences have to be entered in the instrument at [Setup]-[Licence setup]-[Add].
 Communication between the Truckline Controller and the PC is done via a serial port (Builtin or PR 1713/04) or Ethernet communication (PR 1713/14 Ethernet card in Slot 4).
 For installation and settings of the PR 5610, the OPC Server and AccessIt program please refer to the PR 5610 Installation Manual and the AccessIt Operating Manual.
 Info on memory requirement and base settings can be found in chapter 1.6.1.1.
 To transfer the report data described in chapter 8.5 the database has to be set to 'online' and table REP has to be selected and with set to 'Polling Table'.



Example for a dataset (REP), shown with 'Refresh':

indic - REP									
Refresh		Sort		Filter		Delete		Delete All	
Order	Sequence	Truck	TruckID	Product	ProductID	Dens	User1	User2	
▶	1034	51	HH-ST 1024	999	sugar	1234	1	Admin	Admin
*									
User2	Setp	wgt1	dt1	wgt2	dt2	Net	CustomID	Customer	
Admin	2500	52,2	22.04.2005 09:56:28	2544,4	22.04.2005 09:56:46	2492,2	10	SWEETEE	
Customer	CustAdr1	CustAdr2	CustAdr3	HaulerID	Hauler	HaulAdr1			
SWEETEE	24 CANDY ROAD	KDAD CHOKOVILL	GATE 1099	20	FASTTRANS	99, SPEED ROAD			
HaulAdr1	HaulAdr2	HaulAdr3	SiteID	Site	SiteAdr1	SiteAdr2			
99, SPEED ROAD	FAST TURBOVILL	5-CURVE	30	SUPERSTORE	55, MAGAZIN RD	TONN CARTONAGE			
SiteAdr2	SiteAdr3	Txt1	Txt2	Txt3	WP	Scale	CRC		
TONN CARTONAGE	WAREHOUSE 10667	super-clear	comment 1	comment 2	A	X5	50423		

14 FIELDBUS

A TRUCK-Controller can be used as fieldbus slave for Profibus, Interbus-S or DeviceNet by inserting a fieldbus interface card into slot 4. I.e. one or several TRUCK-Controllers can be connected to a communication master (e.g. Siemens S7 Profibus). Data on the fieldbus are handled at intervals of 20 ms. Weights are always REAL in 'kg' or 'lb', dependent of scale configuration.

14.1 Configuration

Configuration parameters in menu section [Setup]-[Fieldbus]:

With [Protocol] the protocol, e.g. Profibus-DP, can be selected.

For using the fieldbus interface as described here, parameter [Scale Interface] must be set to [enabled].

14.2 Application protocol

The interface operates with a 2 * 8 byte write window and a 2 * 8 byte read window. The windows are allocated to the weighing points. The field exchanges its data cyclically from each slave. This means: in each cycle, 8 bytes are written and 8 bytes are read, also with unchanged data contents. The application protocol described in this chapter is independent of the selected fieldbus and shown from the fieldbus master's view.

14.2.1 Write window

In this window, data are transmitted from the master (PLC) to the slave (TRUCK-Controller).

The first four bytes are used for writing a data value. The type of these data is written in byte 5.

The bits in bytes 6 and 7 are independent of the write value data type in direct access.

Byte 0	Write data: MSB
Byte 1	"
Byte 2	"
Byte 3	Write data: LSB
Byte 4	Read data type request
Byte 5	Write data type
Byte 6	Direct control bits
Byte 7	Direct control bits

Procedure for writing a parameter:

1. Wait, until *write_handshake* = 0 in the read window (PR 5610 is ready to receive new data)
2. Write value into bytes 0 to 3
3. Write data type into byte 5 (*write data type request*)
4. Wait, until *write_handshake* = 1 (TRUCK-Controller confirms data reception) write 0 into byte 5 (*write data type request*) -> *write_handshake* is set to 0.

14.2.2 Read window

In this window, data are transmitted from the slave (TRUCK-Controller) to the master (PLC). The first four bytes are used for reading a data value. The type of these data is given in byte 4. The data type corresponds to the request in the write data window. Bytes 6 and 7 contain status bits independent of the read value data types. For reading status bits and writing direct control bits, a procedure is not required. General system bits and status bits are always present and need not be requested. The direct control bits are also available continuously.

Procedure for reading a parameter:

1. Write the type of data / parameters into byte 4 of the write window (e.g. net weight) as *read data type request*.
2. Wait until, in the 4th byte of the read window, the echo of *read data type request* is equal to the *read data type* of the 4th byte in the write window.
3. Now, the value is available in bytes 0 to 3.

14.3 Data formats

Write the **DINT** value *editint* 4660 (1234 hex)

Write window: byte number value 132 (84 hex)

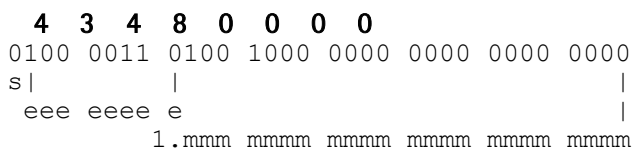
0	1	2	3	4	5	6	7
00	00	12	34		84		

The **REAL** format according to IEEE 754 ; IEC 60559

REAL : 32 bit = 1 bit sign, 8 bit exponent bias 127, 23 bit mantissa

Example:

200 = 43 48 00 00



Sign = 0
 Exponent = 10000110 = 134 - bias 127 = 7

MANTISSA = 1.100 1000 0000 0000 0000 0000 = 1,5625 * 2⁷ = 200

STRING is always 20 characters long and is transmitted in portions of 5 * 4 characters.

14.4 Write data

All write values are addressed by *write_data_type_request*. The WP-typical data are accessible via various write windows. The data which are independent of the WP can be reached via the write window of WP-A or WP-B.

Value in byte 5 <i>Write data type request</i>	Write data in byte 0...3 (parameters)
Dec	
4 - 14	Reserved for firmware WP-A
20	SPM Bit pattern of bits 160 ... 191 [DINT]
112	Set zero no write data required
113	Set tare no write data required
114	Reset tare no write data required
115	Activate test no write data required
116	Reset test no write data required

Direct control bits (write bits for the fieldbus master, separate windows for WP-A and WP-B):

	bit 7	bit 6	bit 5	bit 4	bit 3	bit 2	bit 1	bit 0
Byte 6	stop charging	enable barrier				.		
Byte 7			reset powerfail	test off	test on	reset tare	set tare	set zero

Note: The addresses shown with gray background and the control bits are handled by the firmware section of the interface. All control bits react only on a 0 -> 1 transition. To detect a transition, the status must be present during at least 40 ms. Weights from this area are in READOUT format, **not** REAL !

Reset power fail reset power fail flag
 Test off de-activate analog test
 Test on activate the analog test
 Reset tare the scale tare is reset
 Set tare the scale tare is set
 Set zero set the scale to zero, the weight has to be within the zero set range

14.5 Read data

All read values are addressed by *read data type request*. The data typical for the WP are accessible via various read windows. The data independent of the Wp can be reached via the read window of WP-A or WP-B.

Value in byte 4 <i>Read data type request</i>	Read data in bytes 0...3 (parameters)
Dec	
4	Exponent / unit / step width
8	Gross [DINT]
9	Net [DINT]
10	Tare [DINT]
12	Gross x 100 [DINT]
14	FSD [DINT]
20	SPM-Bit pattern of bits 0 ... 31
21	SPM-Bit pattern of bits 32 ... 63
22	SPM-Bit pattern of bits 128 ... 159
23	SPM-Bit pattern of bits 192 ... 223
24	SPM-Bit pattern of bits 224 ... 255
30	Gross of displayed WP as REAL in kg / lb
31	Net of displayed WP as REAL in kg / lb
32	Tare of displayed WP as REAL in kg / lb
33	Full scale defl. of displayed WP as REAL in kg / lb
34	Last setpoint as REAL in kg / lb

Direct control bits (for reading by the fieldbus master, separate windows for WP-A and WP-B)

	bit 7	bit 6	bit 5	bit 4	bit 3	bit 2	bit 1	bit 0
Byte 5	write handshake	power fail	coarse	fine	* red	* yellow	* green	* barrier
Byte 6						tare active	calibration active	test active
Byte 7	out-of-calibration	standstill	within zero set range	zero within 1/4d	below zero	above overload	above FSD	error number in gross

Note: The addresses and control bits with grey background are handled by the firmware part of the interface. All control bits react only on a 0 -> 1 transition. To detect a transition, the respective status has to be present for at least 40ms. Weight values from this range are in the READOUT-Format, **not** REAL.

- write handshake 0 = TRUCK Controller is ready to receive new data
- power fail scale has a voltage sag (signal must be reset for deleting it)
- calibration active scale is in calibration mode
- out-of-calibration scale is between FSD and overload; also when weight < 0 (dim bit) when W&M mode is active
- within zero set range scale is within zero set range
- zero within 1/4d scale is zero (+/-weight < 1/4d)
- above overload scale load exceeds the overload range
- above FSD scale is above fullscale value (maximum scale range e.g. 5000 kg), but still no overload.
- error number in gross scale is in error condition e.g. 'Err 3'. An error number instead of a weight is on the display and in the gross weight.

15 ANALOG TEST

During the calibration of the Controller a test figure is automatically calculated and stored in the EAROM. The value corresponds to the full scale deflection value e.g. 5000.


During the test procedure the connection to the load cells is interrupted. The test value is displayed without kg or t unit. According to the selection in the calibration procedure either the full value is displayed or the difference between the test figure and the full scale range is displayed.

In the main menu is via  the test menu accessible

```
TRUCK Controller
  *Test *
```

Via [Atest] the analog test is carried out and the test figure is displayed on the weight display


```
Analog test activ
#                # Stop
```

Via [Stop] or  the controller returns to the start process menu

```
TRUCK Controller
  *Test *
```

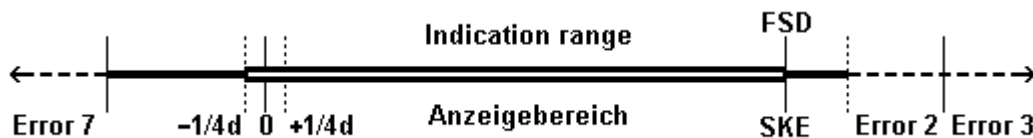
16 ERROR MESSAGES

16.1 Error messages on the weight display

The internal ADC and the external weighing points can generate error messages which are output on the weight display. If more than one weighing point was assigned, switching over between weighing points is done by pressing key . The messages are displayed in 'Error X' coded form.



Display	Signification / cause
Error 1	Internal calculation overflow (faulty calibration).
Error 2	Measured voltage higher than FSD plus overload range.
Error 3	Measured voltage higher than maximum value 38 mV. Other possibilities: error in analog section, load cell error or load cell cable break.
Error 4	Weight value exceeds the number of displayed digits.
Error 5	No weight value, e.g. weighing point is busy.
Error 7	Measuring voltage negative or faulty load cell connection.
Error 8	ADC error, hardware defective or overload.
Error 9	No communication with external weighing point
Error 11	No weight value



Error messages on the alphanumeric display

These error messages are part of the firmware and described in the PR 5610 **Installation Manual**.

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