

D-72336 Balingen E-Mail: info@kern-sohn.com Phone: +49-[0]7433-9933-0 Fax: +49-[0]7433-9933-149 Internet: www.kern-sohn.com

Operating and Installation Instructions Display Unit

KERN KEN-TM / KET-TAM

Version 3.0 11/2015 GB



KEN-TM / KET-TAM-BA-e-1530



KERN KEN-TM / KET-TAM

Version 3.0 11/2015 Operating and installation instructions Display unit

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1 Technical data

KERN	KET-TAM KEN-TM		
Display (segments)	7-digit	7-digit	
Resolution (verified)	6000 e	6000 e	
Resolution (non-verified)	100.000 d	100.000 d	
Verification class	III		
Weighing ranges	3	3	
Divisions	1,2,5,10n	1,2,5,10n	
Weighing Units	Models with	i type approval: g, kg	
	Models without type	e approval: g, kg, ct, lb, N, oz	
Display	Graphic LCD – Touch Height of digit small 19 mm Height of digit large 21 mm		
Housing material	Synthetic material	Stainlees steel	
Dimensions case [mm]	215 x 156 x 71	282 x 200 x 76	
	min. 80 Ω		
	max. 1200 Ω		
Recommended adjustment weight	We recommend ≥ 50 % max.		
Admissible ambient temperature	-10° C to +40° C		
Humidity of air	30 ~ 80 % relative (not condensing)		
Input voltage – power unit	110 - 230 V AC		
Input voltage - device	15V 2.0A	110- 240 V AC 65 – 150 mA	
Net weight	650 g	4.5 kg	
Languages user interface	German, English, French, Italian, Polish, Rumanian, Spanish, Turkish, Czech, Hungarian see chap. 7.8.1		

1.1 Dimensions KET-TAM:



KEN-TM:



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1.2 Anschlüsse / Schnittstellen

1.2.1 KET-TAM



- 1. Ethernet
- 2. RS232 (COM1)
- 3. USB port



4. Digital I/O, RS232 (COM2)

Pin allocation (front view):

> RS232 DB9/M (9-pin plug)



Digital I/O, RS232 DSUB15/F (15-pin socket)

> Configuration IN1 – IN4 / OUT1 – OUT 4, see chap.7.5

Pin1 - GNDWE

- Pin2 OUT1 Pin3 - OUT2
- Pin4 COMM
- Pin5 6÷9VDC
- 1 5 Pin6 IN4
 - Pin7 IN3
 - Pin8 TxD2
 - Pin9 5VDC
 - Pin10 GNDRS
 - Pin11 IN2
 - Pin12 IN1
 - Pin13 RxD2
 - Pin14 OUT4
 - Pin15 OUT3



- 1. Protective conductor
- 2. Electric Supply
- 3. Ethernet
- 4. 3IN/OUT
- 5. RS232
- 6. USB port
- 7. Peripherals (8IN/8OUT)
- 8. Platform 1
- 9. Add-on devices
- 10. Add-on devices
- 11. Platform 2
- 12. Platform 3
- 13. Platform 4

Pin allocation:

RS 232 / BUS Module (option)	Pin1 – B Pin2 – RxD Pin3 – TxD Pin4 – A Pin5 – GND Pin6 – +5VDC
Addition RS 232	Pin1 – NC Pin2 – RxD Pin3 – TxD Pin4 – NC Pin5 – GND Pin6 – +5VDC
3IN/OUT	Pin1 – OUT3 Pin2 – OUT2 Pin3 – OUT1 Pin4 – COMM Pin5 – IN3 Pin6 – IN2 Pin7 – IN1 Pin8 – GNDWE
4INPUTS	Pin1 – NC Pin2 – NC Pin3 – NC Pin4 – +24VDC Pin5 – IN3 Pin6 – IN2 Pin7 – IN1 Pin8 – IN4
Ethernet	Pin1 – Rx+ Pin2 – Tx+ Pin3 – Rx- Pin4 – Tx-
USB	Pin1 – Vcc Pin2 – D- Pin3 – D+ Pin4 – GND

English

Error-free operation is only guaranteed when using the optionally available KERN interface cables.

2 Control elements and program structure

2.1 Keyboard overview



Fig.: KET-TAM



Fig.: KEN-TM

	KET-TAM	KEN-TM			
1		-	Touch-free sensors. Adjustable function, see chap. 7.4.2. Operate this function by moving your hand across the respective sensor. The sensor will confirm (if enabled in the menu see chap. 7.8.3) by sounding an audio signal that it has detected and executed a command. The sensors are supplied disabled by default.		
2	F1 ↓ F3	F1 ↓ F7	Shortci and se Setting	Shortcut key for frequently used applications, functions and settings Settings, see chap 7.4.2	
3	Me	INU	Call up	menu	
4			OFF:	when instrument ready for operation	
	STAT	rus 🌔 ED	ON:	When weighing scale is connected to power supply	
	Status display		Flashi ng:	When operating system is loading	
5		N FF	Turn on/off		
6	→ 0←		Zeroing)	
7	TA	RE	Taring		
8	PRINT	PRINT	Issue weighing dataConfirm		
9	-	PRE TARE	Enter tare value numerically		
10	-	2	Change platform		
11	-	UNIT	Switch-over weighing unit		
12	-	Ŧ	Alphanumerical keyboard		

2.2 Overview of display

The coloured touch screen is a touch-sensitive display. The touch screen does not only display information, you can also enter orders, by tapping certain areas of the surface.





The display has four areas:

	0	0	8 4	
1. Range	Meighing	Admin	29.10.2014 10:10:39	
	• Active applica Tapping the co select the desi	ation. ontrol button will c red application.	all up a menu where	you can
	2 Logged-in us Tapping this ca	er ontrol key will allo	w you to select additi	onal users.
	Active connect Active connect	ction to PC tion to a PC is ind	icated by an icon.	
	Current date/t Tapping this b setting of displ	time utton can be used ay format see cha	l to change date / tim ap. 7.8.2	e. For

English



3. Range	Product:			
	Tare:	0.0g		
	Gross:	0.0g		
	Number:	0	0	
	Total:	Og		

Info field

This area shows additional information to the enabled application.

Tap this button to select which info fields and function keys [0] are to be shown, see chap.7.4.1.

The bar filled black at the upper margin shows the enabled info field.



For instance when the field in the centre is enabled Settings, see chap 7.4.1



Function keys

The function keys allow direct access to frequently required functions and settings in the enabled application. For defining function keys see chap. 7.4.2

2.3 Program structure

2.3.1 Menu overview

The menu is split into the following blocks:

WEIGHING see chap. 7.1.	DATABASES see chap. 14.	REPORTS see chap. 15.
WORKING MODES	COMMUNICATION	DEVICES
DISPLAY	INPUTS / OUTPUTS	ACCESS LEVELS
UNITS see chap. 7.4	OTHERS see chap. 7.5	CALIBRATION see chap. 7.6 CALIBRATION see chap. 7.9 only available for models without type approval
INFO see chap. 7.11	UPDATE Not documented	REMOTE DESKTOP

To call up individual menu blocks and change their settings, tap the icons.

2.3.2 Navigation in the menu



Exit menu / back to weighing mode.

The display returns one step to previous view by tapping Press Back to Main Window **repeatedly**.

or

⇒ In the upper bar and press once and the device will return immediately to the start screen.

After returning to the previous view or the start screen all the changes you entered will be saved automatically.

2.4 Authorisation levels

The software is designed for users with different access rights: Administrator and various users There is only one administrator.

- > The administrator is allowed to use all the functions and has all access rights.
- A user, on the other hand, is not allowed to use all the functions and has limited rights, see table 1 below.

Authorisation level	Available rights and functions		
Administrator	The administrator is allowed to use all the functions and		
	has all access rights.		
	There is only one administrator.		
Advanced user	⇒ Start and carry out weighing.		
	⇒ Delete old data from database		
	Access the following functions:		
	<operating modes=""></operating>		
	<profiles read-out="" ➡=""></profiles>		
	<communication></communication>		
	<devices></devices>		
	<other> except <date time=""></date></other>		
User	⇒ Start and carry out weighing.		
	⇒ Define universal variables		
	⇒ Export weighing data		
	⇒ View data from database		
	Access the following functions:		
	<profiles read-out="" ➡=""></profiles>		
	<general parameters=""> except <date time=""></date></general>		
none	⇒ Carry out weighing.		
	⇒ No access to menu and database.		

Tab. 1:

3 Basic instructions

3.1 Proper use

The display unit acquired by you is used in combination with a load cell and serves to determine the weighing value of material to be weighed. It is not intended for use as non-automatic weighing system.

 Place load manually but carefully on weighing platform. Prevent loads from dropping.



> Place load in centre.



> Prevent lateral stress as well as pushing from the side.



As soon as a stable weighing value is reached the weighing value can be read.

3.2 Improper Use

Do not use weighing system for dynamic weighing. In the event that small quantities are removed or added to the material to be weighed, incorrect weighing results can be displayed due to the "stability compensation" in the unit. (Example: Slowly draining fluids from a container on the balance.)

Do not leave permanent load on the weighing pan. This may damage the measuring system.

Impacts and overloading exceeding the stated maximum load (max) of the weighing plate, minus a possibly existing tare load, must be strictly avoided. Both, the weighing plate and the display unit may be damaged during this process.

Never operate display unit in explosive environment. The serial version is not explosion protected.

Changes to the display unit's design are not permitted. This may lead to incorrect weighing results, safety-related faults and destruction of the display unit.

The display unit may only be operated in accordance with the described default settings. Other areas of use must be released by KERN in writing.

3.3 Warranty

Warranty claims shall be voided in case

- Our conditions in the operation manual are ignored
- The appliance is used outside the described uses
- The appliance is modified or opened
- Mechanical damage or damage by media, liquids, natural wear and tear
- The appliance is improperly set up or incorrectly electrically connected
- The measuring system is overloaded

3.4 Monitoring of Test Resources

In the framework of quality assurance the measuring-related properties of the display unit and, if applicable, the testing weight, must be checked regularly. The responsible user must define a suitable interval as well as type and scope of this test. Information is available on KERN's home page (<u>www.kern-sohn.com</u> with regard to the monitoring of display units' test substances and the test weights required for this. In KERN's accredited DKD calibration laboratory test weights and display units may be calibrated (return to the national standard) fast and at moderate cost.

4 Basic Safety Precautions

4.1 Pay attention to the instructions in the Operation Manual



Carefully read this operation manual before setup and commissioning, even if you are already familiar with KERN balances.

All language versions contain a non-binding translation. The original German is binding.

4.2 Personnel training

The appliance may only be operated and maintained by trained personnel.

5 Transport and storage

5.1 Testing upon acceptance

When receiving the appliance, please check packaging immediately, and the appliance itself when unpacking for possible visible damage.

5.2 Packaging / return transport



- ⇒ Keep all parts of the original packaging for a possibly required return.
- ⇒ Only use original packaging for returning.
- ⇒ Prior to dispatch disconnect all cables and remove loose/mobile parts.
- ⇒ Reattach possibly supplied transport securing devices.
- \Rightarrow Secure all parts against shifting and damage.

6 Unpacking, Setup and Commissioning

6.1 Installation Site, Location of Use

The display units are designed in a way that reliable weighing results are achieved in common conditions of use.

Precise and fast work is achieved by selecting the right place for your display unit and your weighing plate.

On the installation site observe the following:

- Place the weighing system on a firm, level surface;
- Avoid extreme heat as well as temperature fluctuation caused by installing next to a radiator or in the direct sunlight;
- Protect the display unit and the weighing plate against direct draft from open windows or doors.
- Avoid jarring during weighing;
- Protect the display unit and the weighing plate against high humidity, vapours and dust.
- Do not expose the display unit to extreme dampness for longer periods of time. Non-permitted condensation (condensation of air humidity on the appliance) may occur if a cold appliance is taken to a considerably warmer environment. In this case, acclimatize the disconnected appliance for ca. 2 hours at room temperature.
- Avoid static charge of goods to be weighed or weighing container.

Major display deviations (incorrect weighing results) may be experienced should electromagnetic fields (e.g. due to mobile phones or radio equipment), static electricity accumulations or instable power supply occur. Change location or remove source of interference.

6.2 Unpacking and placing

Take the display unit carefully out of its packaging, remove the plastic jacket and install it at the designated work space. Mount the display unit in a way that facilitates operation and where it is easy to see.



The display unit is not mounted rigidly on the weighing platform. If required, it may be placed independently within the vicinity of the weighing scale as long as the length of the cable allows such a setup.

6.3 Scope of delivery / serial accessories

KET-TAM	KEN-TM
Display Unit	Display unit with integrated power unit
Protective cover	Operating and Installation Instructions
Mains adapter	
IEC cable	
Ferrite core for cable shielding	
Operating and Installation Instructions	

6.4 How to connect the platform

See chap. 21 "Installing display unit / platform".

Please also follow the instructions for installing a platform, as these contain all the details for the set-up and first start-up.

6.5 Mains connection

Power supply is achieved via external power units (KET-TAM only). The stated voltage value must be the same as the local voltage.

Only use original KERN mains adapters. Using other makes requires consent by KERN.

6.6 Commissioning

Connect scale to power supply.

- \Rightarrow Connect display unit to power supply; the red status light will light up.
- ⇒ Press and the operating system will be loaded when the red status light is flashing.

Wait until the start screen followed by the user interface is displayed.



As soon as the weight display appears, the balance is ready for weighing. On delivery, the weighing scale will be in a logged-out status, that is, merely the simplest functions such as Weigh or Tare are enabled, see chap. 6.9.

To obtain full access to the user parameters and to the editing functions of databases, the user has to log on as administrator by following the steps below:





Tap <Log in> button.

Operators		5
🔏Admin		-

┛

<Operators> window appears.

The weighing scale is supplied without user profiles. To adjust all settings, the user has to register as administrator.

Tap <Admin> button.

	1	0
+0+		g
Product:		-
Tare:	0.0g	
Gross:	0.0g	
Number:	0g	
Total:	0g	

Setting user language

On delivery the display is set to German. For setting additional languages see chap.7.8.1.

Initial Commissioning

In order to obtain exact results with the electronic balances, your balance must have reached the operating temperature (see warming up time chap. 1).

During this warming up time the weighing system must be connected to the power supply (mains, accumulator or battery).

To adapt the balance to ambient conditions, open wind screen doors.

The accuracy of the weighing system depends on the local acceleration of gravity.

Strictly observe hints in chapter Adjustment.

6.7 Log out

1

- ⇒ Tap logged-on user in the upper bar of the display. This will bring up the <User> window.
- ⇒ Tap <log out> button

6.8 Putting out of service / Standby mode

- ⇒ Press and tap desired option.



When selecting **<Stand by>** the weighing scale will be ready for operation. It is ready for operation immediately after start-up without requiring warm-up time.

When selecting **<Off>** you will have to restart the weighing scale as described in chap. 6.6 and observe the required warm-up time.

KEN-TM / KET TAM-BA-e-1530

6.9 Basic Operation

1

- Stabilisation requires a certain warm-up time.
 - For further information on specific setting options for the weighing application please refer to chap.8.2

6.9.1 Simple weighing

- ⇒ Check zero display [→0←] and set to zero with the help of $\stackrel{\bullet \bullet \bullet}{\frown}$.
- \Rightarrow Place goods to be weighed on balance.
- \Rightarrow Wait until the stability display appears ().
- \Rightarrow Read weighing result.

To save and print the weighing value if an optional printer is connected, press For data format see chap. 16.4

6.9.2 Zeroing

In order to obtain optimal weighing results, reset to zero the balance before weighing. Setting to zero requires a range $\pm 2\%$ max. Values greater than $\pm 2\%$ max will trigger the error message "Err2".

- ⇒ Unload the balance
- \Rightarrow Press $\xrightarrow{\bullet 0+}$ and zero display as well as indicator $\rightarrow 0+$ will appear.

6.9.3 Selecting weighing unit



Not all weighing units are available for weighing scales with type approval.

Unit	Designation	With type approval	Without type approval
Gram	[g]	yes	yes
Kilogram	[kg]	yes	yes
Carat	[ct]	yes	yes
Pound	[lb]	no	yes
Ounce	[oz]	no	yes
Newton	[N]	no	yes



For definition of start unit and user defined units see chap. 7.7.

6.9.4 Weighing with tare

> Taring

The dead weight of any weighing container may be tared away by pressing a button, so that the following weighing procedures show the net weight of the goods to be weighed.

- \Rightarrow Put weighing container on the weighing pan.
- ⇒ Wait until the stability display appears (►►), then press ^{TARE}. Zero display and indicator (**Net**) appear. The weight of the container is now internally saved.
- \Rightarrow Weigh the material.
- \Rightarrow Wait until the stability display appears ().
- \Rightarrow Read net weight.
 - Tare weight can be allocated to a product in the database. Tare weight will be loaded automatically as soon as a product is selected.
 - When the balance is unloaded the saved taring value is displayed with negative sign.
 - Taring negative values is prohibited. The attempt of taring negative values will result in error message "Err 3"
 - The taring process can be repeated any number of times. The limit is reached when the whole weighing range is exhausted.

Numeric entering of tara weight

- \Rightarrow Press f^{3} or the function key (allocating function key, see chap. 7.4.2) and the numeric input window will appear.
- Enter known tare weight and confirm by tapping _____. The balance returns to weighing mode.
 The entered weight will be saved as tare weight whereupon the indicator [Net]

and the tare weight including minus sign will appear.

- ⇒ Place the filled weighing container.
- \Rightarrow Wait until the stability display appears **[**].
- \Rightarrow Read net weight.

> Delete tare

- Unload weighing plate and press [→]. The (**Net**) indicator turns off, the zero display shows.
- When the weighing platform is loaded, you can only press [→] if the zero setting range is kept within 2% max (>2% max will generate error message "Err 2"). The (Net) indicator turns off, the zero display shows.
- 3. Press function key **~~ <Turn off tare>** when weighing platform is loaded (<2% max) or unloaded (For allocation of function key see chap.7.4.2. The (**Net**) indicator turns off, the zero display shows.

If there is a function key allocated to **<Reset tare>**, the most recently used tare value will be called up. (Allocation of function key, see chap. 7.4.2).

6.10 Connection of peripheral devices

Before connecting or disconnecting of additional devices (printer, PC) to the data interface, always disconnect the balance from the power supply.

With your balance, only use accessories and peripheral devices by KERN, as they are ideally tuned to your balance.

7 System settings (menu)

The system settings are used to customise the behaviour of the weighing scales to your requirements (such as ambient conditions, special weighing processes).

- > System settings apply to all user profiles and applications.
- > To change settings, you have to select <Administrator> as user.
- > Weighing scales with type approval offer access to all settings.

Call up system settings (menu):

- To open system settings, press and the options for system settings will appear, see chap. 2.3.1.
- Navigation in menu see chap. 2.3.2



7.1 Weighing

This function is used to customise the behaviour of the weighing scale to the ambient conditions of special requirements.

- > Filter
- Confirm results
- > Autozero
- Autozero: Dosing
- Last digit



Tap **<Weighing>**.

To call up and change settings tap the icons.

32



7.1.1 Median filter

The median filter removes shocks such as mechanical vibrations.

None	*
0.5	
1	
1.5	

Tap <Medianfilter>

The menu will appear. Select desired setting.



7.1.2 Filter

This setting is used to customise the behaviour of the weighing scale to the ambient conditions.

None	X
Very fast	
Fast	
Average	
Slow	

Tap <Filter>

The menu will appear.





The balance reacts quickly and in a sensitive manner, quiet set-up location.



The balance reacts slowly and in a robust manner, busy set-up location

Please note that in general slowing down reaction times result in higher stability of the set data handling, while speeding up reaction times have an influence on the stability deterioration.



7.1.3 Auto Zero

The automatic zero point adapter (auto zero) provides continuous correction for minor weight variations such as contamination on the weighing platform.

In the event that small quantities are removed or added to the material to be weighed, incorrect weighing results can be displayed due to the "stability compensation". (e.g. slow flow of liquids from a container placed on the balance, evaporating processes).

When apportioning involves small variations of weight, it is advisable to switch off this function.

Available settings:



Auto zero disabled



Auto zero enabled



7.1.4 LO threshold

Entering threshold for automatic operation

The next measurement will not be saved until the weighing display falls below the net value set for the LO threshold.

		*		
1	2	3	4	5
6	7	8	9	0

Tap <LO threshold> and the numeric input window will appear.

Enter value and take over by





7.1.5 Last digit display accuracy

Lower display accuracy results in faster display.

Always	*
Never	
When stable	

Tap < Last digit >		
The menu will appear.		
Always	All digits on	
Never	Last digit off	
When stable	Last digit on for stable weighing value	



7.2 Communication parameters

Via the interfaces weighing data may be exchanged with connected peripheral devices. Connect balance using a suitable cable with the interface of the peripheral device. Error-free operation is only guaranteed when using the optionally available KERN interface cables.

Available interfaces (See image chap. 1.2)

- Ethernet
- ➢ RS232 (COM1)
- USB port
- Digital I/O, RS232 (COM2)
- ➢ WiFi (only KET-TAM)

All interfaces must be configured according to peripheral device and desired function.



Tap **<Communication>**.

Select interface to be configured.

		1	20
4	16		5
	1	3	۶
	- 19		÷

7.2.1 RS232 (1) / RS232 (2)

O	RS 232 (2)		5
R	Baud Rate	9600	100
010	Data Bits	8	_
010	Stop Bits	1	
(PARTY)	Parity	None	
PARTY	Failty	None	_

7

7.2.2 Ethernet / IP

Tap < RS232 (1) or RS232 (2)>

Configuration options will be displayed.

Select setting.

The communication parameters of weighing scale and peripheral device must match.



Tap < Ethernet >

The configuration options below will be displayed:

DHCP	V yes	√no
IP-address		
Mask	Automotio	monuol
Gate	Automatic	manuai
DNS		
MAC address	Device specific (not editable)



Transfer parameters have to be set according to local network.

The import of changes requires that you restart the device by 🔄.


3

8

+

4

9

+

5

0

Back

Тар **<TCP>**

Set TCP-Port in input window.



1

6

.

2

7

.

Default value for KERN devices is "4001".



7.2.4 WiFi (Only KET-TAM)

1. DHCP Vyes



Select the item **<WiFi>**.

The selection list will be displayed:

0	Wifi	5
	Network status	-
a	Avaible networks	
	DHCP	
	IP Address	
-	Subnet mask	
a	Default gateway	
	DNS	
	Mac address 00-11-F6-F1-D7- DF	- 1

DHCP	💙 yes	No
IP address		
Mask	outomotically	monuolly
Gate	automatically	manually
DNS		
MAC address	specific for the de (fixed)	evice

Transmission parameters shall be set according to the local network. Having accepted changes, restart the device pressing the button .

1. Network status

1



Select the item <Network status>.

The selection list will be displayed:

Name	Value	Description
Network	_	Network name (provided there is connection)
Network status	connected	No connection / connected
RSSI	- dbm - %	Signal strength
Delete network	-	Deleting



*

6

h

g

v b

~

k | :

1 + + +

7 8 9 0

I

n m , .

Connected

~

₽

SAMPLE NET

4

10.0.1.186

255,255,0.0

10.0.0.1

2 3 4 5

z x c

d f

ab / ąë

Wifi

DHCP

IP Address

Subnet mask

Default gateway

Network status

Avaible networks

(TR)

-

B

1

qwertyuiop{}

a s

Shift

!\$ / që

Select the item < Available networks >.

Select the network displayed or update the list selecting the item **<Refresh>**.

If necessary, enter the password and <u>confirm it</u> by pressing the button



1

- Back

· Enter

1

Wait for the connection.

Confirm the network connection by pressing the button

Adr ILT Max 6000g Mint	nin 19 e=10 e=0.19	
	0 (
	. U.	g
0.0g		
0.0g		
	0.0g 0.0g	44min LT Max 6000g Min 5g == 1g == 0.1g 0.0g 0.0g

The symbol will be displayed in the work window.



7.3 Devices



Tap <Devices>.



Select peripheral device to be configured.

English





Tap < Computer >

Configuration options will be displayed.

3. Port

None	*
RS 232 (1)	
RS 232 (2)	
Тср	

Tap <Port>.

The display will show the interfaces available for connecting the device to the computer.

4. Address



Tap <Address>.

Enter the desired address in the input

window and confirm by tapping



5. Continuous transmission

Setting options:



🗸 yes

Continuous data transmission enabled

6. Default log

This is used to determine which information is to be issued to the PC.

1	2	3	4	5	6	7	8	9	0	-	Back
q	w	e	r	t	У	u	1	0	p	(>
a	s	d	+	g	h	J	k	1	:	•	Enter
Shift	z	x	c	v	b	n	m		+	t	
1\$/a	ë a	b/ąĕ						N.	+	+	+
0	a	12	5	-				-	1	3	-

Tap < Weighing Printout Template > and the input window will appear. Enter texts and variables (For table see chap.

- 19) and import by tapping
- ⇒ Variables are to be presented in curly brackets {x}.
- ➡ Tap and the menu showing all variables will appear.
- \Rightarrow To enter line break tap <Enter>.
- ⇒ To hide the keyboard / zoom out the

{4} {5} {8} {28} Back 1 2 3 4 5 6 7 8 9 0 q w ė y u i 0 p { } . d k I. : Enter a s f g h J Shift z c v b n m x t . ab / ąĕ 1 +-IS / që + -B R \checkmark

input window, tap 🞽

⇒ To import a complete draft from an



⇒ To import a complete draft from an

USB storage medium, tap

To delete the content in the editing

field, tap

7. E2R system



Tap < E2R System >.

The settings **System enabled>** / **Product selection blocked>** are blocked by default.

These settings may only be modified by the manufacturer!

Setting options:

no

yes



System disabled

System active.

The following icons are displayed on the upper screen bar when the functions are enabled:

E2R System	System active
PC	Active connection to PC software



7.3.2 Printer

Selecting / configuring printer interface

0	Printer		5
Ø	Port	RS 232 (1)	1
(and	Code Page	1250	
d'	Printouts		
-6	Printouts acivation		
			_

Tap < Printer >

Configuration options will be displayed.

1. Port

None	*
RS 232 (1)	
RS 232 (2)	
USB	

Tap <Port>.

The display will show the interfaces available for connecting the device to the computer.

2. Code



Tap <Code>.

Enter desired value in input window and

confirm by tapping



3. Defining logs





Display example: Default log "Weighing"

4. Enabling printouts



Tap <**Printouts>**.

Select log type (such as weighing printout sample), and the input window will appear. Enter texts and variables (For variables menu see chap. 19) and import by tapping

- \Rightarrow Variables are to be presented in curly brackets {x}.
- ⇒ Finish each line by tapping "Enter"
- and the menu showing all ⇒ Tap variables will appear.
- \Rightarrow To enter line break tap <Enter>.
- ⇒ To hide the keyboard / zoom out the

input window, tap

⇒ To import a complete draft from an

USB storage medium, tap

 \Rightarrow To delete the content in the editing

field, tap

Tap < Printouts activation >.



enabled





7.3.3 Barcode scanner

Select / configure interface

The barcode scanner allows fast access to:

- Product
- Customer
- Packaging
- > Bearing
- Dispensing processes
- > Recipe
- > Components of recipe
- Universal variables
- Serial number
- Batch number

Ensure that communication parameters of weighing scale (standard 9600 baud) and barcode scanner match.

0	Bar Code Rea	der	5
Ø	Port	None	1
	Prefix	01	
	Sufix	Od	
1	Field selection		
TEST	Test		

Tap < Bar Code Reader >

Configuration options will be displayed.

1. Port

None	*
RS 232 (1)	
RS 232 (2)	
USB	

Tap **<Port>**.

The available interfaces will be displayed.

2. Prefix / suffix



Tap < Prefix / Suffix >.

Enter values (hexadecimal) for prefix / suffix in input window and import by tapping

3. Field selection



Tap < Field selection >.

To call up and change settings tap the icons.

RFID

4. Test

ASCII:		
HEX:		
	Test result:	
	×	

Tap < Test >.

Check error-free functioning of barcode scanner.



N.

Select / configure interface

None

Transponder card reader

(RFID)

Port

O

	- 10
ort	
None	*
RS 232 (1)	



Tap **<Port>**. The available interfaces will be displayed.

Ensure that communication parameters of weighing scale (standard 9600 baud) and transponder card reader match.



7.3.5 Additional display

© _o	Additional d	isplay	5
Ø	Port	None	-
ø	Sample		

Tap < Additional display >

1. Port

None	*
RS 232 (1)	
RS 232 (2)	
Тср	

Tap **<Port>**.

The available interfaces will be displayed.

2. Sample

San (141)	pto -										1
1	2	3	4	5	6	7	8	9	0	-	Back
q	w	e	r	t	y	u	1	0	р	()
a	s	d	1	g	h	J	k	1	:		Enter
Shift	z	x	c	v	b	n	m	*		+	
1\$/ a	6 a	b/ąĕ						N.,	+-	-+-	+
æ	3	-		*			/		10	30	4

Tap <Sample>.

The input window used to define the communication log will appear.

Factory settings:

{141} KERN KET-A03

 $\{142\}$ KERN KET-A06



7.4 Configure display

This function allows the user to customise the terminal to his/her requirements.





The available parameters will be displayed.

7.4.1 Select information texts



Tap < Text information >.

To call up and change settings tap the icons.

0,1,0		Main display sample (middle)	Select information texts in info	o field he application below	
a+1-0	Left display sample		the weighing value in the form of a grey field. This section also shows additional information to the		
0,1,0		Right display sample	separate info fields. To change between fields, use a swiping movement with your hand.		
		To enter the information text, tap the desired field and the input wind will appear. Enter texts and variables (For table see chap. 19.1) and import by tapping Import by tapping Import by tapping Import and the menu showing all variables will appear. Import by tapping Import a complete draft from an USB storage medium, tap Import a complete draft from an USB storage medium, tap Import a complete draft from an USB storage medium, tap Import and the editing field, tap Import a complete draft from an USB storage medium, tap Import and the editing field, tap			
а		Font	Font		
	aa	Font style	Character font available: Aria	I, Courier	
	13	Font size	Font size options small, normal, large.		
	ล์ฮ	Grease, lubricant	Font style "Bold"	yes	
				no	
	ca	Font tilt	Foot ob do "Italia"	💙 yes	
	a			No no	
	đ	Font colour	Font colour for text information at the working area, 18 colour options		
Ø		Background colour	Colour display for display scre	een, 18 colour options	
Set default		Set default	Reset to default setting		

Table 2: Default settings "information texts"

Weighing:	{40:Product:,-15}{50} {40:Tare:,-15}{9}{11} {40:Gross:,-15}{8}{11} {40:Quantity:,-15}{15} {40:Total:,-15}{16}{11}
Parts counting:	{40:Product:,-15}{50} {40:Mass of reference weight:,-15}{35}{11} {40:Net:,-15}{7}{11} {40:Tare:,-15}{9}{11}
Percent determination:	{40:Product:,-15}{50} {40:Mass of reference weight:,-15}{36}{11} {40:Net:,-15}{7}{11} {40:Tare:,-15}{9}{11}
Dosing:	Dosiervorgang: {175}
Formulation:	{220} {40:Ingredient:,-12}{230}/{231}[{226}] {40:Dose:,-12}{228}{11}/{227}{11} {40:Batch:,-12}{232}/{233} {40:Designed:,-12}{225:F0}
Density:	Product: {50}
Animal weighing:	{40:Tare:,-15}{9}{11} {40:Gross:,-15}{8}{11}
FPVO	Product: {50} Code: {51}

7.4.2 Selecting function keys

Function keys allow direct access to frequently used functions and settings of the enabled application. They are displayed on the application at the lower margin of the display.

	Button functio	ns	5
	Button F1	Print Screen	100
8	Button F2	Choose client	
E	Button F3	Set Tare	
\$	Screen button 1	Local parameters	
	Screen button 2	Set MIN and MAX	
2	Screen button 3	Choose package	

Tap < Button functions >.

Menu will appear:

- ➢ Keys F1 F3
- Display keys 1-9
- Touch free sensors, left / right (KET-TAM only)

Use the cursor ¹² to scroll forward or backward.

The numbers of the display keys determine the order on the display.

Tap desired key.

The menu will appear. For default settings see table 3 below:

Use the cursor to scroll forward or backward.

Selection is imported by tapping. The display returns to the previous screen.

None	*
Local parameters	
Choose product	
Set Tare	

Weighing:		F1-key	Search product
		F2-key	Select customer
		F3-key	Set tare
	0	Screen key 1	Application specific settings
	min max	Screen key 2	Set limit values MIN and MAX for control weighing
		Screen key 3	Select packaging
	-0123	Screen key 4	Edit serial number
	12RBC	Screen key 5	Edit batch number
	-0-	Screen key 6	Statistics Z: Zeroing
Parts counting:		F1-key	Search product
		F2-key	Select customer
		F3-key	Set tare
	50	Screen key 1	Application specific settings
	P	Screen key 2	Select packaging
	.	Screen key 3	Enter reference single weight numerically
	-012.34-)	Screen key 4	Determine reference single weight by weighing
		Screen key 5	Allocate reference single weight
Percent determination:		F1-key	Search product
		F2-key	Select customer
	(III)	F3-key	Set tare
	50	Screen key 1	Application specific settings
		Screen key 2	Select packaging
	<u>9%</u>	Screen key 3	Enter reference weight (100%) as numeric value
	<u>9%</u>	Screen key 4	Determine reference weight (100%) by weighing
Dosing:		F1-key	Select dispensing
		F2-key	Select customer
		F3-key	Set tare
		Screen key 1	Application specific settings

Table 3: Default settings "function keys"

		Screen key 2	Select dispensing
	~	Screen key 3	Start
	*	Screen key 4	Stop
	STOP	Screen key 5	Failure
Formulation:		F1-key	Select recipe
		F2-key	Select customer
		F3-key	Set tare
		Screen key 1	Application specific settings
		Screen key 2	Select recipe
	~	Screen key 3	Start recipe
	*	Screen key 4	Stop recipe
	IS	Screen key 5	Select component from recipe menu
	4	Screen key 6	Select previous component of recipe
		Screen key 7	Select next recipe
		Screen key 8	Enter weight manually
	-0123	Screen key 9	Edit serial number of component
Determination of density:		F1-key	Search product
		F2-key	Select customer
		F3-key	Set tare
		Screen key 1	Application specific settings
		Screen key 2	Determine density of liquid
	U	Screen key 3	Determine density of solids
	*	Screen key 4	Stop
Animal weighing:		F1-key	Search product
		F2-key	Select customer
		F3-key	Set tare
	ŝ	Screen key 1	Local parameters
	<	Screen key 2	Start

7.4.3 Display all platforms

When used as weighing system with several platforms, the display for each platform can be switched as follows:

For assigning switching option to function key or sensor, see chap. 7.4.2. or

Enable function <Show all platforms> as described below:



All platforms will be displayed when this function is enabled. To edit the desired platform, tap it.





Tap < Bargraph >.

The available bargraph types will be displayed:

- None bargraph is not displayed
- ➢ Fast weighing
- Pilot light settings
- ➤ Linearity

1. Bargraph type

None	*
Fast weighing	
Signalling checkweighing ranges	
Linear	

Tap < Bargraph Type >.

Select type of your choice to be displayed.

2. Fast weighing

Function:

Eight red and three green pilot lights indicate whether the load is within the tolerance limits (MIN / MAX threshold).

The signal lights provide the following information:

The red pilot lights on the left indicate that the target weight is below the lower tolerance limit (MIN threshold).	The g indica weigh tolera thres	green pilot lights ate that the target at is within the ance range (OK hold).	The red pilot lights on the right indicate that the target weight is above the upper tolerance limit (MAX threshold).
below the MIN threshold the more red arrows will light up on the left.		< 1/3 MIN-MAX range	above the MAX threshold, the more red arrows will light up on the right.
		> 1/3 and 2/3 MIN-MAX range	
		> 2/3 MIN-MAX range	

Settings:



Tap < Fast weighing >.

The menu will be displayed; see table 4 below.

MAR	Operating mode for thresholds MIN, MAX	Stable – pilot light for thresholds MIN, MAX will be visible after exceeding the LO threshold and after reaching a stable weighing result; Unstable – pilot light for thresholds MIN / MAX will be visible after exceeding the LO threshold.
Cok	Operating mode of OK threshold	 Stable – pilot light for threshold OK will be visible after exceeding the LO threshold and after reaching a stable weighing result; Unstable – pilot light for threshold OK will be visible after exceeding the LO threshold
	Pilot light colour for MIN threshold	Select pilot light colour for threshold MIN, 18 colour options available
Q	Pilot light threshold for OK threshold	Select pilot light threshold for threshold OK, 18 colour options available
	Pilot light colour for MAX threshold	Select pilot light threshold for threshold MAX, 18 colour options available.
	Gradient	Turn on / turn off filling flow for type "Gradient".
Ő	Background colour	Select background colour for bargraph, 18 colour options available.
1	Frame colour	Select frame colour for bargraph, 18 colour options available.

3. Pilot light setting (checkweighing)

Three colour pilot lights indicate whether the load is within the tolerance limits (MIN / MAX threshold).

The signal lights provide the following information:

Target weight below lower	Target weight within	Target weight above
tolerance limit	tolerance range (OK	upper tolerance limit
(MIN threshold)	threshold)	(MAX threshold)

Settings:



Tap < Signalling checkweighing ranges >.

Menu will appear, see table. 4.

4. Linearity

Function:

The bargraph display moves from the left to the right and proceeds equally to the weight loaded onto the weighing balance. Its full width is reached at maximum load.

For tolerance controls such as dosaging, apportioning or sorting the balance will display violated upper or lower limits vie the bargraph display. The analogue bargraph display (length of displayed bars) indicates where the weight of the weighed goods comes in the tolerance range. The tolerance range is always standardised between target value and limit values (Min / MAX threshold) so that it corresponds to the bar length of the bargraph.

> Target weight below lower tolerance limit (MIN threshold):



> Target weight within tolerance range (OK threshold):



> Target weight above upper tolerance limit (MAX threshold):

Settings:



Tap **< Linear >**.

Menu will appear, see table. 5.

Tab. 5:

R	Pilot light colour for MIN threshold	Select pilot light colour for threshold MIN, 18 colour options available
S	Pilot light threshold for OK threshold	Select pilot light threshold for threshold OK, 18 colour options available
NAX	Pilot light colour for MAX threshold	Select pilot light threshold for threshold MAX, 18 colour options available.
	Gradient	Turn on / turn off filling flow for type "Gradient".
ø	Background colour of OK range	Select background colour for OK range on bargraph, 18 colour options available.
F	Frame colour	Select frame colour for bargraph, 18 colour options available.





Tap < Inputs / Outputs >.

Ö.	Inputs/Outputs	5
-0	Inputs	-
•	Outputs	

7.5.1 Inputs



For pin allocation IN1 – IN4, see chap. 1.2

puts/Outputs	-2
outs	-
tputs	_
	uts

© ō	Inputs		5
-0	Input 1	None	-
-0	Input 2	None	
-0	Input 3	None	
-0	Input 4	None	
-			

Select input to configure (IN1 - IN4).

Tap < Inputs >.

Default settings of all inputs: <none>.

None	*
Local parameters	
Choose product	
Set Tare	

Select action to be carried out on enabling selected input.

7.5.2 Outputs



For pin allocation OUT1 – OUT4, see chap. 1.2

© _©	Inputs/Outputs	5
-0	Inputs	
•	Outputs	_

Tap < Outputs >.



Select output to configure (OUT1 – OUT4).

The default setting for all parameters is <none>.

rated 4			
None	*		
Stability			
MIN stable			
MIN non-stable			
OK stable			

Select event that is to trigger enabling of output, see table below. 6.

Tab. 6:

No	Output disabled
Stable	Stable weighing value above LO weight
MIN stable	Stable weighing value below threshold MIN
MIN unstable	Unstable weighing value below threshold MIN
OK stable	Stable weighing value between thresholds MIN and MAX
OK unstable	Unstable weighing value between thresholds MIN and MAX
MAX stable	Stable weighing value above threshold MAX
MAX unstable	Unstable weighing value above threshold MAX
Zero	Stable weighing value zero net
Cycle end confirmation	Confirmation signal for cycle completion of dispensing
Zero	Zero weighing result (character "zero")
! OK unstable	Unstable weighing value outside OK threshold
! OK stable	Stable weighing value outside OK threshold

English



7.6 Authorisations

Function <Access Level> is only available when you are logged on as <Administrator>.

This function is used by the administrator (See chap.2.4 / Table. 1) to set protection for certain functions individually and to grant rights to a user of the weighing scale who is not logged on ("anonymous user").



Tap < Access level >.



1. Anonymous user This function is used to grar

This function is used to grant rights to a user of the weighing scale who is not logged on.

Anonymous	operator	Operator	
Date and Tir	ne	Administrator	
Printouts		None	
) Databases e	dition		
Set element	from the data	ase	
nonymous op	erator		

Tap <Anonymous operator>

The menu will appear.

For available rights and functions of the respective option, see chap.2.4 / table. 1

Advanced Operator

2. Date and time

This function is used to grant the user access to <Date and Time>.



Tap < Date and time >

The menu will appear.

Select users who are to be granted rights of access.

For available rights and functions of the respective option, see chap.2.4 / table 1

3.

None

Operator

Advanced Operator

Administrator

Operator

Advanced Operator

Administrator

3. Print document

x

1

This function is used to grant the user right of access to define logs.

Ö,	Access level		5
8	Anonymous operator	Operator	
0	Date and Time	Administrator	
Ø	Printouts	None	
8	Databases edition		-
2	Set element from the data	base	
			_

Tap <Printouts>

Select users who are to be granted rights of access.

For available rights and functions of the respective option, see chap.2.4 / table 1



Selecting <**none>** results in free access to the function.

x



4. Editing database

This function is used to grant rights that are supposed to be available to the user for editing the respective database.

D _e	Access level		5
8	Anonymous operator	Operator	in.
	Date and Time	Administrator	
d'	Printouts	None	
>	Databases edition		
?	Set element from the database	ĥ	
e	CPG		
ē,	Databases edition		5
9	Products	Administrator	1
	Clients	Administrator	
1	Recipes	Administrator	
Д	Dosing processes	Administrator	
•	Warehouses	Administrator	
	Vehicles	Administrator	
Nor	ne		*

Tap < Database edition >

Select database for which right of access is to be granted.

None	*
Operator	
Advanced Operator	
Administrator	

Select access level.

For available rights and functions of the respective option, see chap.2.4 / table 1

1

Selecting **<none>** results in free access to the function.



5. Select database

This function is used to grant rights that are to be available to the user for viewing the respective database.

0	Access level		5
8	Anonymous operator	Operator	
	Date and Time	Administrator	
A	Printouts	None	
8	Databases edition		-
8	Set element from the data	base	_
e	CPG		2

Tap < Set element from the database >



Select database for which right of access is to be granted.

None	*
Operator	
Advanced Operator	
Administrator	
	-

Select access level.

For available rights and functions of the respective option, see chap.2.4 / table. 1



Selecting <none> results in free access to the function.



6. FPVO

Not documented

English



7.7 Weighing Units

This function is used to determine which weighing units are to be used for the operation of the weighing scale.



To call up and change settings tap the icons.

1. Unit switch over

This function is used to set the units into which the weighing result can be switched to, see chap.2.2. [6].



Tap < Accessibility >.

- Weighing unit activated
 - Weighing unit deactivated

2. Starting unit

This function is used to set the unit to be displayed when the weighing scale is started.



Tap < Start unit >.

Select desired starting unit.

The selected unit will be displayed after a restart.

Not all units are available for weighing scales with type approval.

80665				
3		× <		1
1	2	3	4	5
6	7	8	9	0
	-	+	+	Back

3. Gravitational acceleration

Tap < Acceleration of gravity >.

Enter local gravitations constant in input window.

English



7.8 General parameters

This is used to set parameters influencing the operation of the weighing scale, such as user language, date / time display, key level, brightness of display etc.



English

Buttons



To call up and change settings tap the icons.

7.8.1 User language

Language

Beep

Cursor

K

Date and Time

Touch screen calibration

Screen brightness



Tap < Language >.

Select language.

The display will change directly to the selected language.

7.8.2 Enter date / time, select display format



Tap < Date and time >.

The individual settings can be called up and edited by tapping the icon.



1. Setting date and time

$2\tilde{q} - d(y)/(q)^2$				
2014				
		× <		2
1	2	3	4	5
6	7	8	9	0
	÷	÷	+	Back

Tap < Set date and time >

Go to the numeric input window and enter date / time.

Follow the on-screen instruction. Enter year, month, day, hour, minutes one by one and import accordingly by V.



Confirm query for import by tapping 💙

You may also set date / time directly by tapping the date / time display in the main window, see chap. 2.2 [4]


2. Selecting date format

d.M.yy	*
d.M.yyyy	
d/M/yy	
dd.MM.yy	
dd.MM.yvyy	

Tap < Date format > Import desired format by tapping.



3. Selecting time format

H.mm.ss	*
H:mm:ss	
H-mm-ss	
HH.mm.ss	

Tap < Time format >

Select desired display format by tapping.





4. Display of currently set time / date

7.8.3 Signal tone when pressing button

Every time a key is pressed, a brief audio signal will be sounded for confirmation. This function can be enabled / disabled as follows.



Tap **< Beep >**.

None	*
Buttons	
Sensors	
All	

The menu will appear.

None	Audio signal disabled
Button	Audio signal will be sounded every time you press a key.
Sensors	The sensor confirms that it has detected and executed a command by sounding an audio signal.
All	Audio signal will be sounded when keys and optic sensors are operated.

7.8.4 Set the touch screen alignment

When the alignment of the touch-sensitive ranges of the display does not match exactly with the position of the buttons, it can be corrected with the help of this function.

0	Others		5
•	Language	English	
6	Date and Time		
53	Веер	Buttons	
	Touch screen calibration		
RANKER STREET	Screen brightness		

Tap < Touch screen calibration >.

To adjust the touch screen, follow the

Repeat this process for all items.

With a pen tick the centre of the cross as exactly as possible. Press and hold until

instructions on the screen.

the next cross appears.



Press PRINT key to confirm the new settings. To cancel, tap the screen on the top right corner (See image).

New calibration settings have been measureds. Press the Enter key to accept the new settings. Press the ESC key to keep the old settings.

- Ensure that during adjustment no other ranges of the display are touched.
- Do not touch the display by hand.
- The adjustment cannot be interrupted.

1

7.8.5 Setting brightness of display



Tap < Screen brightness >.



17 %

 \checkmark

The currently set brightness will be displayed.

To change, drag bar to the right or left. Every movement will change the brightness immediately, making the change immediately noticeable.

Take over setting with V.

Adjustable: 0 % - 100 % Default setting: 90 %



*



Tap < Cursor >.

 \checkmark

Mouse support enabled



English

7.8.7 Setting "Log on required"



Tap <Login in required >.

To force the user to log on after starting up the device, enable function <log on required>.



Log on required

Log on not required

7.8.8 Setting start logo

1060



1. Startlogo

Tap < Startlogo >.



This function is used to customise the start logo.

Connect the USB storage medium containing the start logo file.

Optimal resolution for start logo file (JPEG, PNG) is 640 x 480 pixel

Tap < **Start logo** > and import file.

The start logo will be updated on restarting.



2. Standard Settings



Tap < Set Default >. To reset the default setting for the start logo, tap

7.8.9 Setting viewing times for error messages

0	Others	5
11 ¹	Screen brightness	-
k	Cursor	
50	Loggin in required	
1060	Start logo	
•	Error information preview time 10 [s]	

Tap <Error information preview time>.

1 [s]	0	*
3 [s]	\bigcirc	
5 [s]	\bigcirc	
10 [s]	\bigcirc	
Max	×	1

Tap desired duration.

78



7.9 Adjustment

As the acceleration value due to gravity is not the same at every location on earth, each display unit with connected weighing plate must be coordinated - in compliance with the underlying physical weighing principle - to the existing acceleration due to gravity at its place of location (only if the weighing system has not already been adjusted to the location in the factory). This adjustment process must be carried out for the first commissioning, after each change of location as well as in case of fluctuating environment temperature. To receive accurate measuring values it is also recommended to adjust the display unit periodically in weighing operation.

 The adjustment of this menu item is locked in calibrated weighing systems. It is not shown on the menu. To disable the access lock, destroy the seal and actuate the service switch. For position of service switch see chap. 7.10. Attention: After destruction of the seal the weighing system must be re-verified by an authorised agency and a new verification wire/seal mark fitted before it can be reused for applications subject to verification.

For execution of "adjust weighing system" see chap. 21.4

7.10 Verification

General introduction:

According to EU directive 2009/23/EC balances must be officially verified if they are used as follows (legally controlled area):

- a) For commercial transactions if the price of goods is determined by weighing.
- b) For the production of medicines in pharmacies as well as for analyses in the medical and pharmaceutical laboratory.
- c) For official purpose.
- d) For manufacturing final packages.

In cases of doubt, please contact your local trade in standard.

Verification notes:

An EU Qualification Approval is in existence for verified weighing systems. If a balance is used where obligation to verify exists as described above, it must be verified and reverified at regular intervals.

Reverification is carried out according to the relevant national statutory regulations. The validity for verification of balances in Germany is e.g. 2 years.

The legal regulation of the country where the balance is used must be observed!

Notes on verified weighing systems

In calibrated weighing systems the adjustment switch used for adjustments is locked. To disable the access lock, destroy the seal and actuate the service switch.



Position of seals and adjusting switch:

• Verification of the weighing system is invalid without the "seal".



7.11 Weighing scale info

This function is used to call up weighing scale information.



 Info
 140324

 Image: Software version
 2.6.2 O

 Image: Software version
 2.6.2 O

 Image: Version of weighing software
 3.0P

 Image: Memory usage
 FLASH: 0 %

Tap **< Info >**.

The following information about the weighing scale will be displayed:

- Serial number
- Program version "metrology"
- Program version "applications"
- Current storage capacity

8 Application settings

Overview of available applications:

ð	Weighing	see chap. 9.
***	Parts counting	see chap. 10.
3	Percent determination	see chap. 11.
Å	Dosing	Not documented; for further information please contact KERN
	Recipes	see chap. 12.
	Density determination	Not documented; for further information please contact KERN
E	Animal weighing	see chap. 13.
е	FPVO	Not documented; for further information please contact KERN
	Vehicle weighing	Not documented; for further information please contact KERN

8.1 Select application

There are two options available:

1. By tapping the icon on the top left corner of the window

or

- 2. By calling up in the menu
- 1. Tap the icon on the top left corner of the window [1].



Tap desire application.

Which applications are to be available on the menu is defined under menu item < functions → 💏 availability>.



Enable functions to be available on the

- 2. Call up application on menu
 - ⇒ For menu access press



Tap < Working modes >.

0	Working modes		5
80	Accessibility	Ì	-
8	Weighing		_
-	Parts counting		
2%	Deviations		
A	Dosing		
T.	Recipes		-

Tap desire application.

8.2 Application specific settings

Application specific settings are available to customise the application according to your requirements. The available settings depend on the currently enabled application. Some of these settings are global, that is, they are available with most applications (except Recipeting, dispensing). Please refer to the overview below:

	Weighing	Piece counter	Percentage determination	Animal weighing	Density determination
Storage mode	~	~	~	-	~
Differential weighing	~	~	~	-	~
Checkweighing	~	~	~	~	~
Tare mode	~	~	~	~	~
Labelling	~	~	~	~	~
Statistics	~	~	~	~	~
Peak value function	~	-	-	-	-

Two options are available for defining application specific settings:

- By tapping the icon
 or
- 2. By calling up in the menu

1. Tap the icon on the bottom left corner of the window.



This action will bring up the application specific settings of the currently enabled applications.

Ö	Weighing		5
8 _a	Save mode	Manual first stable	-
8	Dispensing		
8	Checkweighing	2	
	Tare mode	Single	
4	Labelling mode		
althur	Statistics	Global	5

Tap the desired setting.

B

1. Mar

Checkweighing

Labelling mode

Tare mode

Statistics

2. For menu access please press





Single

Global

Tap < Working modes >.

Tap desired application (such as weighing).

The application related settings will be displayed.





9 Weighing

The default setting for the weighing scale in the application is weighing.

How to carry out a simple weighing process is described in chap. 6.9 "Basic operation" Apart from the operating steps described therein (simple weighing, zero setting, taring, selecting weighing unit) the weighing system also offers additional options for customising application "Weighing" to your specific requirements.



For selecting application, see chap. 8.1 For selecting application specific settings, see chap. 8.2

The following settings are available for application "Weighing":

Ö	Weighing		5
Ø.	Save mode	Manual first stable	-
8	Dispensing		_
8	Checkweighing		
	Tare mode	Single	
¢.,	Labelling mode		
hillion	Statistics	Global	5
A-B	Differential weighing		
MAX	Peak hold	-1	
	Information about saved measurement		

₩.	Storage mode	see chap. 9.1.
R	Dispensing	see chap. 9.2.
8	Checkweighing	see chap. 9.3.
-	Tare mode	see chap. 9.4.
	Labelling mode	see chap. 9.5
Latiture.	Statistics	see chap. 9.6.
<u>А</u> _В	Differential weighing	see chap. 9.7.
MAX	Peak hold	see chap. 9.8.
	Info about saved weighing activities	see chap. 9.9.



9.1 Setting storage conditions for alibi memory

This function is used to determine under which conditions weighing values are to be saved to the alibi memory; options include:

- Manual all stable
- Manual first stable
- Automatic last stable
- Automatic first stable

© ₀	Weighing		5
8.	Save mode	Manual first stable	-
8	Dispensing		
8	Checkweighing	1.1	
	Tare mode	Single	
Q	Labelling mode		
allin	Statistics	Global	5
M	anual every stable		
м	anual first stable		
A	utomatic last stable	2	

Tap < Save mode >.

Select condition that is to trigger storage, see table below: 7.

Tab. 7:

Automatic first stable Semi-automatic first stable

Manual all stable	Each stable weighing value will be saved after pressing the PRINT key.
Manual first stable	The first stable weighing value will be saved after pressing the PRINT key.
Automatic last stable	The last stable weighing value will be saved automatically.
Automatic first stable	The first stable weighing value will be saved automatically.



Under the menu item

<Reports>



<Reports from weighing records>



<Weighings / Alibi>

the saved weighing value can be seen



9.2 Dispensing

- \Rightarrow Place and tare full container.
- Remove portions of components and save them at the same time to the alibi memory (Depends on menu setting in storage module), see chap.
 9.1). The displayed minus figures are saved to the alibi memory as plus figures.

the saved weighing values can be seen, see chap. 9.1.

0	Weighing		Та	ap < Dispensing >.
2	Save mode	Manual first stable	-	
8	Dispensing	- V	\leq	Weighing scale is working i
8	Checkweighing			
	Tare mode	Single		Weighing scale is working
9.	Labelling mode			mode "Differential Weighing"
allia	Statistics	Global		



9.3 Checkweighing

Checkweighing allows you to set an upper as well as a lower limit value (min / max threshold) and ensures that weighed loads are kept precisely within the set tolerance limits.

The bargraph display facilitates checkweighing by differently coloured displays according to the settings in the menu. < display ➡ bargraph >, see chap. 7.4.4.

Log / save result of tolerance check



Entering limits:





Press assignable function key (For assigning function to a key, see chap. 7.4.2).

The numeric input window for min threshold will be displayed.

Enter value for min threshold (such as 1500 g) and press to import.

The numeric input window for max threshold will be displayed.

Enter value for max threshold (such as 2000 g) and press to import.

Start checkweighing:

- \Rightarrow Tare when using a weighing container.
- Put on goods to be weighed, tolerance control is started. The pilot lights indicate whether the load is within the min / max threshold.

Display example for bargraph setting "pilot light":



KEN-TM / KET_TAM-BA-e-1530

KEN-TM / KET_TAM-BA-e-1530

tare weight	weighing range is exhausted.
	 Place first container or packaging on weighing scale and press the TARE key. The tare weight will be saved and zero display and [Net] indicator will appear.
	 ⇒ Weigh the material, the net weight will be indicated. ⇒ Place second container or packaging on weighing scale and again press the TARE key.
	The loaded total weight will be saved as the new tare weight and zero will be displayed. Weigh load into the second container, net weight will be displayed.
	⇒ For additional containers / packaging repeat these steps.
Total of	When selecting a product with tare value from the database
current	you can increase this tare value numerically by pressing the function key
	(For assigning function key, see chap. 7.4.2). Each new tare value entry overwrites the previous tare value. Everything is based on the original value in the database.
Total of	When selecting a product with tare value from the database
all	This value can be increased numerically by pressing the function key (For assigning function key, see chap. 7.4.2). Each numeric tare value will be added to the previous tare value.
Auto tare	Each first stable weighing value will be automatically imported as tare value. Zero display and indicator [Net] appear. Place filled weighing container on weighing scale and the net weight will be shown.
Each measurement	Each confirmed weighing value will be imported as tare value.

This function allows multiple taring. The limit is reached when the whole

 Weighing

 Image: Save mode

 Manual first stable

 Image: Save mode

 Image: Sa

Single

9.4 Tare mode

Tap < Tare mode >.

Select tare mode; see table below. 8.

P

Single

Current sum Total sum

Autotare

Tab. 8:

Subsequent

Each measurement

Tare mode



*

0



9.5 Labelling

The creation of labels is only possible in combination with label printers KERN PET A07 or PET A08.

Available labels:

- Standard labels for attaching to individual products
- Miscellaneous labels for attaching to container
- Miscellaneous labels, of miscellaneous labels for attaching to container

Ö	Weighing		5	Tan < I abelling mode >
B _a	Save mode	Manual first stable		
8	Dispensing			
8	Checkweighing	1.0		
	Tare mode	Single		
4	Labelling mode			
aillia.	Statistics	Global	-	
Ö	Labelling mode		5	Select function
	Number of labels	1		
¢.	No. of cumulative labels	1		
4	No. of CC labels	1		
AUTO	C label automatic triggering			
AUTO	CC label automatic triggering			
			-	

•	For further information please refer to the operating instructions enclosed
1	with the optional label printers KERN PET A07 / PET A08.

English

9.6 Statistics

Statistics will be updated each time a new value is imported. This function is used to determine whether statistical data updating shall take place independent on a certain product or dependently on a product in the database.

Weighing		5
Save mode	Manual first stable	
Dispensing		
Checkweighing		
Tare mode	Single	
Labelling mode		
Statistics	Global	1
	Weighing Save mode Dispensing Checkweighing Tare mode Labelling mode Statistics	WeighingSave modeManual first stableDispensingImage: CheckweighingCheckweighingImage: CheckweighingTare modeSingleLabelling modeImage: CheckweighingStatisticsGlobal

Statistics
Global
Product

Select function:

Tap < Statistics >.

Global	Statistics data will be updated globally
Product	Statistics data will be updated separately for each weighed product from the database.

1

When <Statistics> \Rightarrow <Goods> is selected, only data relating to the most recently weighed product will be imported to the device's statistics after a restart.



9.7 Differential weighing

In differential weighing, samples are investigated with regard to changes in weight. The first working step is to determine the initial weight of the sample. Afterwards some components of the sample will be removed or added (such as drying, separating, filtering, reducing to ash, vaporizing and letting condense, coating). The sample will be reweighed after processing. Then the weighing scale will measure the difference between the two weighing activities.

Activate function:



Tap < Differential weighing >.



The menu will appear.

Not documented; for further information please contact KERN



9.8 Peak value function

This function shows the highest load value (peak value) in a series of weighing activities.

The peak value remains in the display until it will be deleted.

Activate function:

Ö _o	Weighing		5
allow.	Statistics	Global	1
<u>А-В</u>	Differential weighing		
-	Peak hold		
	Information about saved measurement	-	
×?	Ingredient weight entered manually		
	manuary		

Tap **< Peak hold>**.



Function activated

Display peak value:



Load weighing pan.
 The highest load value is displayed in red digits.

⇒ The peak value remains in the display until it will be deleted using . Then the balance is ready for further measurements.



Activate function:





10 Parts counting

Before the balance can count parts, it must know the average part weight (i.e. reference). Various methods are at hand for determining a reference single weight . (See chap. 10.3.1, chap.10.3.2).

10.1 Select application

Tap for instance symbol in the top left corner of the display window and select the application **Application Parts counting>** or you can call it up from the menu (For details see chap. 8.1).

The piece counting window is displayed showing the unit "pcs".



Two special function keys $< \square$, \square , \square > as well as a special info field are enabled by default for parts counting.

<u>*</u>	The reference single weight is entered as numerical value, see chap.10.3.2
	The reference single weight is determined by weighing a known reference number of parts, see chap. 10.3.1

|--|

10.2 Application specific settings

⇒ Tap icon in the bottom left corner of the window or call it up from the menu (For details see chap.8.2).

The application specific settings will be displayed.

-0	Parts counting		5
SMP	Automatic correction of reference mass	*	
MIN	Minimum reference mass	10 d	_
200	Save mode	Manual every stable	
8	Dispensing	100	
8	Checkweighing	4	
	Tare mode	Single	5
4	Labelling mode		
alltin	Statistics	Global	
×?	Ingredient weight entered manually		5

SMP	Automatic correction of reference mass	see chap. 10.2.1.
MIN	Minimum reference mass	see chap. 10.2.2.
₩ ₽	Save mode	see chap. 9.1.
	Dispensing	see chap. 9.2.
	Checkweighing	see chap. 9.3.
483	Tare mode	see chap. 9.4.
	Labelling mode	see chap. 9.5
<u>hallinn.</u>	Statistics	see chap. 9.6.
A-B	Differential weighing	see chap. 9.7.
- Contraction of the second se	Info about saved weighing activities	see chap. 9.9.

The setting options for the application "Parts counting", are with a few exceptions identical to those of the application "Weighing". For that reason the description below is restricted to the divergent settings.

10.2.1 Automatic reference optimization

This function is used to determine whether the reference single weight is to be optimised automatically during counting.

At every reference optimisation, the reference piece weight is calculated anew. As the additional pieces increase the base for the calculation, the reference also becomes more exact.

Activate function:



Counting with reference optimisation



For setting reference single weight (see chap. 10.3.1or chap. 10.3.2), continue parts counting.



The quantity placed on the weighing scale will be used as new reference number of parts and will be used as a basis for reference single weight recalculation.

The info field shows the new reference number of parts and the optimised reference single weight.

1	Notes:
	Reference optimisation will only be carried out when:
	 The number of placed parts is greater than the previous reference number of parts.
	 The number of placed parts is not greater than double the previous reference number of parts.
	 When reference optimisation is enabled, the PRINT key cannot be used for data transmissions to a connected printer.
	• You can use the PRINT key to disable reference optimisation as soon as it is sufficient.

10.2.2 Minimum reference single weight



Tap <Minimum reference mass>.

1 d	*
2 d	
5 d	
10 d	

Select desired setting.

Entering a reference single weight smaller than the set readability will result in an error message preventing import by pressing \checkmark .

10.3 Carry out parts counting

10.3.1 Determination of the reference piece weight by weighing

Determining reference

		0	ocs
Product:			
Sample wei	ght: 9.997g		
Net:	0.0g		
Tare:	0.0g		

⇒ Reset balance to zero or tare the empty weighing container if necessary.



00					
1 8		× <		2	
1	2	3	4	5	
6	7	8	9	0	
	-	-	+	Back	

Put down	n pieces: 100

⇒ Enter the known quantity of reference parts (such as 100 items) via the numeric keys and import by pressing ♥.

 Place the required number of reference parts on the weighing scale (such as 100 items).
 Wait until stable and import by pressing .



Count the items



- ⇒ The weighing scale determines the reference single weight and displays the result on the info field.
- \Rightarrow Remove reference weight.

⇒ Tare if necessary, place weighing good and read off the number of items.

10.3.2 Enter reference single weight as numeric value

Set reference:



⇒ Enter known reference single weight (such as 10 g) via the numeric keys and import by

The entered reference single weight will be shown in the info field.

ی 🏤 🗞

🚣 🎒
10.4.1 Load reference single weight from database.

Load reference





⇒ Select product and the allocated

reference single weight will be loaded



Count the items



⇒ Tare if necessary, place weighing good and read off the number of items.

10.4.2 Allocating reference single weight in database to a product Procedure 1 via function keys:

⇒ Press F1 o	· function key and se	elect product from menu.
	Products	No N
	1. test 2	100
	🧐 z. test	

 \Rightarrow The data record for the selected product will be loaded.

test 3 test1

- and contained	Admin	0 10 2014
-0-		0 pcs
Product:	test	_
Sample weight:	21g	
Net:	0.0g	
Tare:	0.0g	
	· ·	
🉈 🏤 🚣	<u></u>	

 \Rightarrow For determining / changing reference single weight see chap. 10.3.1 or 10.3.2.



English

1

Procedure 2 via menu:

- ⇒ For determining a reference single weight see chap. 10.3.1 or chap.10.3.2
- Press to invoke menu and select the product to be assigned a reference single weight under <Database> → <Product>.

or

Press $\begin{bmatrix} F1 \\ and select the product to be assigned a reference single weight from the menu.$

 \Rightarrow Keep your finger on the menu until the context menu appears.

Edit	
Delete	<u></u>
Print	100
Ascribe standard	-
Сору	
Cancel	

⇒ Tap <Ascribe standard>.

ю _о	Record edition:	Product	50
	Name	test	-
	Description	abc	-
G	Code	007	
	EAN Code	0	
\$	Single piece mass	21.5	
F-S	Mass for fast dosing	0	

The reference single weight will be saved under the item **<Single piece mass>**.



11 Percent determination

Percent weighing allows to display weight in percent, in relation to a reference weight (100%). There are several options available for determining the reference (see chap. 10.3.1, chap. 0).

11.1 Select application

Tap for instance the icon in the top left corner of the window and select the application < Abweichungen > or call it up in the menu (Details, see chap. 8.1).

The screen for percentage calculation using the "%" unit will be displayed.



Two special function keys $< \square$, $\blacksquare >$ as well as a special info field are enabled by default for percentage determination.

%	Enter the reference weight as numeric value, see chap. 11.3.2
012.34	The reference weight is determined by means of weighing, see chap. 11.3.1

Selecting further function keys, see chap. 7.4.2
--

11.2 Application specific settings

⇒ Tap icon in the bottom left corner of the window or call it up from the menu (For details see chap.8.2).

The application specific settings will be displayed.



Ø.	Save mode	see chap. 9.1
	Dispensing	see chap. 9.2
	Checkweighing	see chap. 9.3
() ()	Tare mode	see chap. 9.4
	Labelling mode	see chap. 9.5.
latitus.	Statistics	see chap. 9.6.

The setting options for the application "Percentage Calculation" are identical to those of the application "Weighing".

11.3 How to carry out percentage calculation

Determining reference

11.3.1 Determination of the reference weight by weighing

% ⇒ Reset balance to zero or tare the 1 0.00 empty weighing container if necessary. +0+ Product: test Sample weight: 699.9g Net: 0.0g 0.0g Tare: 9% Press button. 9% ⇔ 20 ⇒ Place reference weight equalling 100 % on weighing scale; wait until Put sample stable and import by pressing \checkmark . * \checkmark The weight will be imported as ⇔ reference (100%) and displayed in 100.00 h 4 the info field. ⇒ Remove reference weight. Product: Sample weight: 999.8g 999.8g Net: 0.0g Tare: 0% 9% 80 🔗

114

Percent weighing



 Place goods to be weighed on balance.
 The weight of the item to be weighed is displayed in percent, referring to the reference weight.

11.3.2 Enter reference weight as numeric value

9

+

Determining reference

M Stevimens	0.00	10 JULA 52 T/	⇔	Press 🛄 button.
Product: Sample weight: Net: Tare:	test 699.9g 0.0g 0.0g			
	●% =====		4	Enter known reference weight (ouch
1000	× •		5	as 1000 g) via the numeric keys and import by pressing V.

0

Back

- English

7

-

8

+

6

÷



The weight will be imported as reference (100%) and displayed in the info field.

Percent weighing

Deviations Admin 20 10 2014 10 17 35 799.999 % Product: Sample weight: 1000g Net: 799.9g Tare: 0.0g

Place goods to be weighed on balance.

The weight of the item to be weighed is displayed in percent, referring to the reference weight.



12 Formulation

This function is used to weigh several related components one after another.

The weighing results of all single components as well as the overall result will be recorded and can be logged.

Complete recipes including all components and their related parameters (such as name, tolerances, tare weights) can be stored in the database. When processing these recipes from the database the weighing scale will guide you step by step through the process of adding components.

In the case of excess weight for a component the useful back calculation function will automatically calculate the new target weight for the other components.

12.1 Select application

Tap for instance the icon 22 in the top left corner of the window and select the

application < **Recipes>** or call it up in the menu (Details, see chap. 8.1). The display for formulation will be shown.

To serve		
-0-	0	0 g
Start proces	s: Select recipe	-
Ingredient:	/ [1
Portion:	g / g	
Charge:	/	
Completed:		

The function keys below as well as a special info field for Recipetion are enabled by default.

	For application specific settings see chap. 12.2
Contraction of the second seco	For selecting a recipe see chap. 12.4
~	Start recipe
*	Stop recipe
	Select component from recipe menu
4	Select previous component of recipe
\diamond	Select next component of recipe
	Enter weight manually – weight of component in recipe in finished packaging with known weight
-0123) -0123	Edit serial number of component and/or initial weight for ingredient of recipe

•1	Selecting further function keys, see chap. 7.4.2

12.2 Application specific settings



⇒ Tap icon [™] in the bottom left corner of the window or call it up from the menu (For details see chap.8.2).

The application specific settings will be displayed.



Explication:

<mark>₹</mark> ×?	Ask for multiplier	Enable query, by how many multiples the amount of the recipe has to be created (such as double the amount = factor 2). The target weights of the components to be weighed will then be adjusted accordingly.
8 ?	Ask for numer of cycles	Query about how often the recipe has to be processed.
	Confirm batching ingredients manually	Each individual component must be imported manually by pressing the PRINT key. Tare every time you add a component by pressing the TARE key.
883	Automatic tare	Automatic import of individual components after stability has been established. Automatic taring on start of recipe and every time a component is added.
	Ingredient control	When " Check Component " is enabled the editing window <check component=""> will appear prior to adding the component. The editing window is used to enter the component's code with the help of a bar scanner.</check>
	Portion weighing	To reach the target weight, enable "Dosing of Components in Random Dosages" mode.
S	Record printout	Automatic log printout after recipe completion

12.3 Defining recipe in database



Call up recipe database:

Define new recipe:





- ⇒ Call up menu by
- ⇒ Tap <Databases>

⇒ Tap <Recipes>

- ⇒ Tap < ⊕ > to enter new data record.
- Acknowledge query "Create new data record?" by tapping ♥.



The menu will appear. Tap the individual icons to call up and edit the individual settings as described below.



1. Name

Mi⊢	10	_									
-				2	\$		V				2
1	2	3	4	5	6	7	8	9	0		Back
q	w	e	r	t	у	u	i	0	р	{	}
a	5	d	Ť	g	h	I	k	1	:	1	Enter
Shift	z	x	c	v	b	n	m	,		t	
1\$/ a	ë al	o/ąĕ						1	+	+	-

- \Rightarrow Go to the menu and tap <Name>.
- ⇒ The alphanumeric input window will appear.
- ⇒ Enter name of recipe and import by tapping ♥.



2. Code

124	m ei	lition	Rec	ipe (Gove						-
æ				3	\$		>]			2
1	2	3	4	5	6	7	8	9	0	+	Back
q	w	e	r	t	у	u	1	0	р	{	}
a	5	d	t	g	h	I	k	I.	:	•	Enter
Shift	z	x	c	v	b	n	m	,	•	t	
1\$/ a	ë al	b/ąë						1	+	+	-

- \Rightarrow In the menu tap <Code>.
- ⇒ The alphanumeric input window will appear.
- ⇒ Enter code for recipe and import by tapping ♥.

English



3. Component

This is used to define the individual components of the recipe.



⇒ Go to menu and tap < Component >.
 ⇒ To add a component, tap < < > >.
 ⇒ The list of parameters for the component will be displayed.

Define parameters for first component (such as milk):

milk	(-						
				3	\$		V				2
1	2	3	4	5	6	7	8	9	0		Back
q	w	e	r	t	у	u	i	0	р	{	}
a	5	d	f	g	h	I	k	1	:	1	Enter
Shift	z	x	c	v	b	n	m		•	t	
1\$/a	ë a	b/ąĕ						N.	+	+	-

asd											
æ				3	\$	-	×				2
1	2	3	4	5	6	7	8	9	0	-	Back
q	w	e	r	t	у	u	i	0	р	{	}
a	5	d	t	g	h	J	k	1	:		Enter
Shift	z	x	c	v	b	n	m	•	•	†	
1\$/a	ë at	o/ąĕ						1	+	+	-

- \Rightarrow In the menu tap **<Name>**.
- ⇒ The alphanumeric input window will appear.
- \Rightarrow Enter name of component and import by tapping \checkmark .
- \Rightarrow In the menu tap **<Code**>.
- ⇒ The alphanumeric input window will appear.
- ⇒ Enter code of component and import by tapping ✓.

Products	
🧐 test 2	100
test	
🧐 . test 3	
test1	

70				
88		× 🔺	/	ł
1	2	3	4	5
6	7	8	9	0

Percents	Mass	*
	Percents	

]		× <		
1	2	3	4	5
6	7	8	9	0

Plattform 1	X

- \Rightarrow Go to menu and tap **<Products>** .
- ⇒ Select component from database "Product"
- \Rightarrow Go to menu and tap **<Mass>**.
- ⇒ The alphanumeric input window will appear.
- ⇒ Enter nominal weight (such as 470 g) for component and import by tapping ♥.
- In the menu tap<Type of deviation>.
- \Rightarrow Select desired setting.

Mass	Admissible tolerance of
	component in gram

- Percent Admissible tolerance of components in percent
- In menu tap <Lower deviation> / <Upper deviation>.
- ⇒ The alphanumeric input window will appear.
- ⇒ Enter admissible lower / upper tolerance for component (such as 5 g) and import by tapping ✓.
- ⇒ In menu tap <Platform>
- ⇒ Assign platform to component.

⇒ For enable <**Dispensing**>, see chap. 9.2



Define parameters for additional components:

- ⇒ After defining all parameters for the first
 - component return to menu by

 \Rightarrow Add more components by < \bigcirc >.

⇒ Tap <**Add**> and define additional components as described for first component.



⇒ When you have completed defining all components for the recipe, return to







and the total weight displayed.

will be



4. Type of charge



- Go to the menu and tap <Type of charge >.
- \Rightarrow Select desired setting.

⇔

No

Global

Function deactivated

Based on the recipe, several batches will be produced that contain all components of the recipe.

Example:

The recipe containing the three components A, B, and C is to be subdivided into 5 portions (batches).

Weighing procedure:

- 1. [20% A, 20% B, 20% C]
- 2. [20% A, 20% B, 20% C]
- 3. [20% A, 20% B, 20% C]
- 4. [20% A, 20% B, 20% C]
- 5. [20% A, 20% B, 20% C]

By ingredient Based on the recipe, several batches will be produced that contain only one of the components of the recipe.

Example:

Each component A, B and C is to be divided into 5 portions (batches).

Weighing procedure, sequential and separate for each component

- 1. [20% A, 20% A, 20% A, 20% A, 20% A]
- 2. [20% B, 20% B, 20% B, 20% B, 20% B]
- 3. [20% C, 20% C, 20% C, 20% C, 20% C]



5. Charge

8			/	e
1	2	3	4	5
6	7	8	9	0
	-	+	+	Bacl

- \Rightarrow In menu tap < Charge >.
- ⇒ Select number of batches

12.4 Process recipe from database

Condition:

- > The user must be logged on at least at <user> level.
- ➢ Recipe already defined, see chap. 12.3
- > For selecting application specific settings, see chap. 12.2

	For selecting a recipe see chap. 12.4
~	Start recipe
*	Stop recipe
18	Select sequence of components from list of recipes: Start recipe by tapping < >; tap < >> to display list of components and tap desired component.
	When recipe has started, select previous component of recipe
>	When recipe has started select next component of recipe
	Enter weight for component of recipe in finished packaging with known weight manually.
-0123) S	Enter batch number for component of recipe

Press function key [■] and select desired recipe such as MiHo-Creme (see chap. 12.3) from database.



- ⇒ Place weighing container on weighing scale and tare by pressing **TARE** key.
- \Rightarrow Press function key \checkmark and processing for recipe will start.



⇒ Weigh first component (such as milk). The graphic weighing aid showing tolerance tags facilitates weighing according to target value (such as 470 g).

The bargraph of the weighing aid runs from the left to the right and progresses according to the weight placed on the weighing scale.



 \Rightarrow The target weight reached will be saved according to the application specific

setting or (see chap. 12.2) **automatically** after stability has been established or **manually** after pressing the **PRINT** key.



 \Rightarrow The weighing scale is ready for weighing a second component.



- ⇒ Weigh second component such as [almond oil] according to target value (such as 950 g).
- Then weigh additional components as described above. Every time you press the **PRINT** key, the weighing result will be saved and logged provided an optional printer is connected.

⇒ After weighing all components you will see the message <End of process >.



- \Rightarrow Confirm message by \checkmark .
- ⇒ This also completes the log for the recipe. For printout example see chapter below 12.5

1 Back calculation function:

When you confirm an exceeded target weight by pressing the **PRINT** key, a query will appear: < Calculate Ingredient>:

Informatio	n				
i	Maximum Ingredient e Ir	mass value xceeded. Re gredients?	ass value of the eded. Recalculate edients?		
	*	*			

After confirmation by pressing \checkmark , new target weights for the other components proportional to the exceeded weight value will be calculated.

English

12.5 Log recipe

When < Berichtsausdruck > is enabled (see chap.12.2) a log will be issued automatically after every formulation.

At the same time the logs are saved under " Reports / Reports / Reports from recipes ".



 Reports

 Weighing records
 Image: Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2"

 Average Tare Reports
 Density Reports
 Delete older data



To <Open / Print> keep your finger pressed on the desired report until the context menu is displayed.



```
_____
                                    _____
Recipe
      _____
{40:Starting date:,-25}{240}
{40:Completion date:,-25}{241}
{40:Name:,-25}{220}
{40:Code:,-25}{221}
{40:Status:,-25}{242}
{40:Measurements:,-25}
                            _____
\{245:(50,-20) (7)(11)\}
(40:Nominal weight:,-25)(246)(11)
(40:Difference:,-25)(247)(11)
}
   _____
{40:Weight:,-25}{244}
```

English

470.0g 950.0g 80.0g 6.09 6.0g _____ ____ ____ Recipe -----Start date: 31.10.2014 07:4 3:06 End date: 31.10.2014 07:4 4:33 MiHo-Creme Name: Code: 123 OK Status: Measurements: _____ -----Ingredients 1.-----_____ 470.0g 1. Nominal Mass: 470.0g 0.0g Difference: _____ ____ _____ ----- Ingredients 2.-----_____ 1. 950.0g Nominal Mass: 950.0g 0.0g Difference: _____ _____ _____ -----Ingredients 3.-----1. 80.0g Nominal Mass: 80.0g 0.0g Difference: 0. _____ _____ ----- Ingredients 4.-----_____ 4... 6.0g Nominal Mass: 6.0g 0.0g Difference: _____ ----- Ingredients 5.-----_____ 6.0g 1. Nominal Mass: 6.0g Difference: 0.09 -----_____ _____ 1512 g Mass: _____ ____

Printout example default log (KERN YKB-01N):



13 Animal weighing

This function is used to weigh unstable articles such as live animals. There are two different start modes available for selection:

Manual (via keystroke)

or

Automatic (automatic start after exceeding LO threshold).

13.1 Select application

Tap for instance the icon in the top left corner of the window and select the

application < K Weighing animals> or call it up in the menu (Details see in chap. 8.1).

The display for weighing animals will appear:



The function keys below as well as a special info field for fomulation are enabled by default.

Section and the section of the secti	For application specific settings see chap. 8.2
~	Start weighing cycle

1	Selecting further function keys, see chap. 7.4.2
---	--

English

13.2 Application specific settings

⇒ Tap icon [™] in the bottom left corner of the window or call it up from the menu (details see chap.8.2).

The application specific settings will be displayed.



Explication:

	Average time	see chap. 13.2.1
auto	Automatic mode	see chap. 13.2.2
	Checkweighing	see chap. 9.3
483	Tare mode	see chap. 9.4
	Labelling mode	see chap. 9.5.
	Statistics	see chap. 9.6.

The setting options for the application "Weighing Animals" are with a few exceptions identical to those of the application "Weighing". Subsequently only the divergent settings are described.

13.2.1 Average time

This function is used to set the duration for the weighing cycle based on which average is calculated.

Ö.	Weighing anim	5	
0	Averaging time	5	100
(G) auto	Automatic mode	4	_
8	Checkweighing	1	
	Tare mode	Single	
4	Labelling mode		
alline	Statistics	Global	

Tap <Averaging time>.

5				
×		×	/	
1	2	3	4	5
6	7	8	9	0
	-	+	+	Back

Enter time in input window and import by tapping \checkmark .

Selectable 1 to 99 seconds (default setting 5 s)

13.2.2 Auto start



Tap <Automatic mode>.

Function deactivated

Function activated

13.3 Dynamic weighing using manual start

Condition: For auto start disabled see chap. 13.2.2.



- When using a weighing container, tare with the help of the TARE key.
- ⇒ Place load on weighing scale and press ✓ to start dynamic weighing.
- The progress bar and the set average time will be displayed during dynamic weighing.
- ➡ To cancel measurement, press
- ⇒ The result and the set average time will be displayed.
- Remove load and confirm by pressing V.
 Then the balance is ready for further measurements.

13.4 Dynamic weighing with automatic start

g

System requirements:

Auto start enabled, see chap. 13.2.2.

0.0g

0.0g

For LO threshold < velocities of the see chap. 7.1.4.



Place load on weighing scale and dynamic weighing will start automatically after reaching the LO threshold.

86 🗸

Start weighing

Tarawert:

Brutto:

+0+



- ⇒ The progress bar and the set average time will be displayed during dynamic weighing.
- ➡ To cancel measurement, press



- ⇒ The result and the set average time will be displayed.
- Remove load. Then the balance is ready for further measurements.



14 Database

Call up database menu:

Databases

Products

Dosing processes

Identification processes

Labels

Images



	\frown
	MENU
Press	

⇔

Tap **<Datenbases >** button. ⇔

The menu for databases will be displayed:

ises		5	S	Products, see chap. 14.1.3, 14.7.2
	2	-	SB	Operators, see chap. 14.1.3, 14.7.1
Operators	Clients			Clients, see chap. 14.1.3, 14.7.3
Formula			N.	Dosing processes, not documented
Recipes	Vehicles			Recipes, see chap. 14.7.5
4	-			Vehicles, not documented
Packages	Warehouses		2	Identification processes Not documented; for further information please contact KERN
A				Packages, see chap. 14.7.7
Universal variables	Extra variables			Warehouses, see chap. 14.7.8
mark the second		_	and the second s	Labels
Databases			Var	Universal variables, see chap. 14.7.9
,			Var	Extra variables, see chap. 14.1.4
			15 <mark>-2</mark> 2-	Images, see chap.14.7.10
				Database Configuration, see chap. 14.1





⇒ Go to menu (See chap. 14) and tap
 < Database configuration >.

0	Databases configuration	5
R	Databases accessibility	1
-	Categories	-
٠	Products	
8	Operators	
2	Clients	
	Extra variables	
د	Records preview	
4	Import	
-	Export	

Menu will appear:





14.1.1 Accessibility of databases

This is used to determine which menu items are to be available in the <Database> menu, (see chap. 14)



Tap < Databases accessibility >.

Function deactivated

Function activated

14.1.2 Categories

Products may generally be subdivided into product categories. This function is used to set the categories available in the product database and allows you to display products according to these categories in the product database.

1. Determining categories



Tap <Database of categories >.



Ø	o R	lecc	ord e	editi	on:	Cat	ego	ry	24	3	3	⇔ Tan <name></name>
N	N	ame										, rup shumor .
Reco kat	ord ei 1	Jilion	Cel	=gol	/ / Na	me	×	1				⇔ Enter name (such as cat. 1) in editing window and import by tapping ✓.
1	2	3	4	5	6	7	8	9	0		Back	
q	w	e	r	t	У	u	1	o	p	1	>	
		4			1					1,	Enter	

1. Enable display of categories

Categories

Database of categories

Products categories

 \checkmark

Tap < Products categories>. **Display enabled**

Display disabled

Display example on calling up **<Database> / <Product>:**

V	
Database of categories	Products
kat.1	1. test 2
Not assigned	2. apple
	🧐 3. test
	🧐 . test 3
	🤣 s. test1
The products are subdivided in:	No organised display by assigned
Products with assigned category	categories.
Products without assigned category	



14.1.3 Products / Operators / Clients

This is used to determine which data is to be made available in the databases "products, operators or clients.





14.1.4 Extra variables

This is used to define extra variables that are not available on the list of variables, see chap. 19.1

Ö.	Extra variables	5
Var	Extra variable 1: Name	100
Var	Extra variable 2: Name	
Var	Extra variable 3: Name	
Var	Extra variable 4: Name	
Var	Extra variable 5: Name	

⇒ < Extra variable x: Tap Name >.

- -* 2 ~ - Back 1 2 3 4 5 6 8 9 7 0 q w e r t у u i 0 { } р • Enter k 1 1 a 5 d 1 g h J. Shift z x с v b n m , . 1 !\$/ ąё ab / ąё ١ + + -
- ⇒ Enter variable in editing window and import by tapping ♥.



14.1.5 Data record format

Ø _e	Records preview		5
4	Products	111	-
2	Operators		
2	Clients		
X	Dosing processes		
	Recipes		
1	Packages		

⇒ Tap < **Records preview** >.



Display as raster



Display as list

English

Products	Products Produc
----------	--

Display example on calling up **<Database>** / **<Product>**:

43

14.1.6 Importing / exporting database file from USB storage medium

0	Databases configuration	5
4	Products	-
8	Operators	
2	Clients	
	Extra variables	
3	Records preview	
48	Import	
1	Export	
	Operation completed succesfully	

- ➡ Connect USB storage medium to USB port.
- ⇒ Tap < Import > or < Export >. Import / Export will start automatically.

⇒ When the process is complete, confirm message "Process completed successfully" by tapping ♥.

14.2 Search for Data Record / Add Data Record

Parameters



- \Rightarrow Call up < Databases >, see chap. 14.
- \Rightarrow Select **<Product>**.

The following operations will be available on tapping the icon in the top right corner of the window:



(+)Add data record (administrator only)

!\$/ ąё ab / ąё ١. + ŧ -

🖻 🕈 Tap 🎤

 \Rightarrow Go to the displayed editing window, enter <Name> and confirm by tapping 💜. The data record containing the entered name will be loaded automatically.

146

English

2. Search data record by code



🗢 🛛 Tap 윰

⇒ In the displayed editing window, enter **<Code>** and confirm by tapping

The data record containing the entered code will be loaded automatically.

3. Add data record



- ⇒ Tap ⊕⇒ Confirm query with ♥.
- ⇒ The new data record will be loading automatically for editing.



14.4 Deleting data record (administrator only)



⇒ Call up < Databases >, see chap. 14.

 \Rightarrow Select **< Product**>.

⇒ Select data record to be printed



Тар 😂 .

When an optional printer is connected, data will be edited.

Contents of data output is defined under < The printer / Printer / Print documents / Product Printout Sample>, See chap. 7.3.2

14.6 Basic data record operations via context menu

1. Context menu "databases"

Parameters Image: Constraint of the second sec

- ⇒ Call up < see chap. 14.</p>
- Databases >,



Keep your finger pressed on the selected item (such as <Product>) until the context menu appears.

Open	Open content of folder
Import	Import file from USB storage medium
Export	Export file from USB storage medium
Delete all	Delete all data records in database
Cancel	Cancel context menu



2. Context menu "data record"

⇒ Call up < Databases >, see chap. 14.

Select desired submenu such as <**Product>**.

⇒ Keep your finger pressed on the data record until the context menu appears.

Editing	Edit data record
Clear	Data record deletion
Print	Print data record
Сору	Copy data record
Cancel	Cancel context menu

Cancel

14.7 Edit databases (administrator only)

Sequence of operations:

- ⇒ Open database menu < Database>, see chap. 14.
- Select Database in menu and tap desired item (See chap. 14) The list of parameters will appear.



14.7.1 User database

Parameter overview:

N		Name	User name.
C		Code	User code
		Password	Password for logon (max. 16 characters)
N		Authorisations	Access level of user
<mark>1,2n</mark> RFID		Card number	Number of transponder card for logon
3		Function	Assign applications to user
	auto	Automatic	Automatic mode: After the user has logged on the weighing scale will start working in the most recently used operating mode.
	2 5	Change function	Create fixed assignment to logged-on user. The weighing scale will start in the set operating mode. The option "None", disables this function.
		Identification procedure	Assign identification procedure to logged-on user



14.7.2 Product database

Parameter overview:

	Name	Name of product
	Description	Additional description of product
	Code	Product code
	EAN code	EAN code of product (max 20 digits)
*	Weight 1	Single weight of product
	Dosing orifice 2)	Define number of orifices for correct dosing
	Orifices for fast dosing ²⁾	Define number of orifices for fast dosing
+=	Correction 1 ²⁾	Correction value dosing for platform 1
+ ∎+	Correction 2 ²⁾	Correction value dosing for platform 2
+=+	Correction 3 ²⁾	Correction value dosing for platform 3
+=++	Correction 4 ²⁾	Correction value dosing for platform 4
MAX	Max correction ²⁾	Max correction value for dosing
min	Min ³⁾	Lower limit value for checkweighing
≜ max	Max ³⁾	Upper limit value for checkweighing
₩ + %	Type of deviation ⁴⁾	Admissible tolerance for recipe component in [g] or [%]
- 20	Lower deviation ⁴⁾	Admissible lower tolerance for recipe component
+ 20	Upper deviation ⁴⁾	Admissible upper tolerance for recipe component
483	Tare	Tara value of product (automatically loaded if product is selected from database ts)
Se la companya de la comp	Cost	Unit price of product
£\$€	Currency	Currency
е	FPVO ⁵⁾	Not documented
E.	Number of expiration days	Number of expiration days
15	Date	Product date
VAT	VAT	VAT for product in [%]

۵	Ingredients	Editing field for entering recipe component
	Label	Assign single label sample to product
	Label K	Assign label K sample to product
ΣΣ	Label KK	Assign single label KK sample to product
	Categorie	Assign category to product
2	Graphic	Assign graphic to product
3	Identification procedure	Assign identification procedure to product

1) Designation depends on selected application:

Application	Designation
Weighing	Weight
Dosing	
Formulation	
Animal weighing	
Density determination	
Parts counting	Parts counting
Percent determination	Mass of reference weight

- 2) Available in dosing mode only
- 3) Not available in recipe mode.
- 4) Available in recipe mode only
- 5) Available in FPVO mode only



14.7.3 Client database

Parameter overview:

N	Name	Name of client
C	Code	Client code
VAT No.	Tax ref. number	Tax ID number
	Address	Address of client
4	Post code	Post code of client
1	Place	Place of residence of client
%€	Discount	Discount of client
	Label	Sample of label assigned to client



14.7.4 Database "Dosing Processes"

Parameter overview:

	Name	Name of dosing process
	Code	Code of dosing process
M	Platform 1	Platform 1
×	Platform 2 *	Platform 2
M	Platform 3 *	Platform 3
Z	Platform 4 *	Platform 4

*) - The number of platforms depends on the platforms defined in the terminal.



14.7.5 Database "Recipes"

Parameter overview:

N	Name	Name of recipe
C	Code	Code of recipe
6	Ingredients	Define components of recipe
	Number of ingredients	Display "Number of components in recipe"
2	Weight of recipe	Total weight of recipe
ABC	Type of batch	Type of batch
1 2 3	Batch	Number of batches



14.7.6 Database "Identification Processes"

Parameter overview:

N	Name	Name of identification process
Ó	Code	Code of identification process
S	Process assistant	Submenu for definition of identification process



Parameter overview:

N	Name	Name of packaging		
C	Code	Code of packaging		
*	Weight	Weight of packaging		

English



14.7.8 Database "Storage"

Parameter overview:

Z	Name	Name of storage space			
G	Code	Code of storage space			
	Description	Detailed description of storage space			



14.7.9 Database "Universal Variables"

This database contains the universal variables assigned to the function keys,

Parameter overview:

0	Code	Code of label		
	Value	Value of universal variables for printouts		



How to create a new data record:

- ⇒ Connect USB storage medium to USB port.
- ⇒ Call up submenu < Database / Salabase / Salabas
- ⇒ Use key ⊕ to add a new data base. Message: Confirm <Create new database?> by tapping .
- ➡ Tap < Name>; enter name of graphic in editing window and import by tapping
- ⇒ Tap < Set Graphics>. This action opens the content of the main folder in the USB storage medium.
- \Rightarrow Select file. The display returns to the previous submenu.
- File format *.jpg, *.png, at maximum resolution **150x150** pixel, where:
 - Optimal resolution for viewing data records of products in format "List" 57x57 pixel, see chap. 14.1.5
 - Optimal resolution for viewing data records of products in format "**Raster**" **133x133** pixel., see chap. 14.1.5.



How to call up log menu:



- Press ⇔
- Tap <Reports> button. ⇒



- The menu for logs will be displayed:
- Reports from weighing reports, see chap. 15.3
- - Reports from dosing



- Reports from recipes
- **Conbtrol Reports**
- Average tare Reports
 - Reports of vehicle scale
- **Density Reports**







Delete older data, see chap. 15.2

Reports configuring see chap. 15.1



15.1 Enabling accessibility to logs

This is used to determine which menu items are to be accessible in menu < **Reports** > (see chap. 15).





15.2 Deleting older data (advanced users only)



⇒ Tap < Delete older data >.

2012 æ 1 X 2 3 5 1 4 7 6 8 9 0 Back -4 -.

Are	ou sure you	u want to de	elete?

Enter date up to which data is to be deleted:
 Enter year, month and day one after the other and import by tapping V.

⇒ Confirm deleting process with ♥.
 Information about deleted data records will be shown on-screen.



15.3 Weighing logs





Menu will appear:



- Weighing / Alibi, see chap. 15.3.1
- Filter, see chap. 15.3.2
 - Report printout, see chap. 15.3.3

Graph of weighing procedures, see chap. 15.3.4



Exporting data of weighing activities, see chap. 15.3.5

Counter of weighing activities, see chap. 15.3.6



15.3.1 Alibi memory

If required by statutory provisions, all weighing activities may be traced in the alibi memory.

All weighing activities including stipulated data are saved to the alibi log file.

Call up to alibi log file:



⇒ Tap < Weighings/Alibi >, see chap. 15.3

⇒ The alibi data records for the last five weighing activities will be displayed.

Quick search for date:



Тар 뎶 .

- ⇒ Enter year, month, day, hour, minute one after the other and import by tapping ♥.
- ⇒ The list of log files will be displayed. The file you searched can be found on top.

English

-23

15.3.2 Filter

This function is used to filter the printouts of alibi log files by specific criteria.



Ö	Filtering	5
	Start date	-
¢	End date	_
۹	Product	
8	Operator	
20	Client	
Ø	Package	-
min	Min	1
max	Max	
00285	Lot number	_
12880	Batch number	
٢	Target warehouse	
۲	Source warehouse	-
8	Checkweighing	
B	Platform number	-

⇒ Select < Filtering >, see chap. 15.3

A list will be displayed that shows the criteria by which you can filter data.



 \Rightarrow Tap Criteria such as starting date.

Filter enabled

- Filter disabled
- \Rightarrow Tap starting date.
- ⇒ Enter year, month and day one after the other and import by tapping ♥.



15.3.3 Record print out



- Call up to alibi log file:
- ⇒ Select < Report printout >, see chap. 15.3.

The log printout takes place according to the criteria defined in chap. 15.3.2

For large amounts of data you will see the message "process status".

Settings default log:

```
Log of weighing activities

{40:Starting date:,-20}{101}

{40:Completion date:,-20}{102}

Weighing activities

{100:

(40:Date:,-10)(4)

(40:Weight:,-10)(6) (10)

}------

(40:Number of weighing activities:,-20)(116)

{40:Number of weighing activities:,-20}{116}{11}
```

Printout example KERN YKB-01N:

```
Report from weighments
Start date:
                     03.08.2014 03:07:00
End date:
                    07.10.2014 12:00:00
Weighing records
1.
   Date:
             12.09.2014 11:29:17
             450.3 g
  Mass:
2.
   Date:
             12.09.2014 11:29:49
   Mass:
             450.3 g
з.
   Date:
             20.09.2014 08:02:06
   Mass:
             99.97 %
4.
           30.09.2014 10:02:36
383 7 -
   Date:
   Mass:
             383.7 g
5.
             01.10.2014 09:41:03
   Date:
             50.0 g
   Mass:
6.
           01.10.2014 09:41:27
100.0 g
   Date:
   Mass:
7.
   Date:
             01.10.2014 09:41:41
             50.0 g
   Mass:
```





15.3.4 Display weighing procedures as a diagram



⇒ Select <Weigments chart >, see chap. 15.3.



- ⇒ The weighing values will be displayed in a diagram.
- ⇒ The following options are available on the bottom bar.
 - View "Complete View"

Zoom in

PCL

Exit diagram view

Print diagram (printer type PCL)

Save diagram as (**bmp**) file to USB storage medium



15.3.5 Export weighing data to USB storage medium



➡ For selecting <Export the weighing database to a file> see chap. 15.3.



The menu telling you which criteria can be used for filtering will be displayed.

⇒ Tap Criteria



Filter enabled

Filter disabled

- ⇒ Connect USB storage medium to USB port.
- ⇒ Tap <Export> Export will be started automatically.

For large amounts of data you will see the message "process status".

⇒ When the process is complete, confirm message "Process completed successfully" by tapping ✓



15.3.6 Counter for weighing activities

This function is used to edit the counter for weighing activities.



⇒ For selecting < Weighing counter > see chap. 15.3.

Weighing e	ounter			
66				
æ			/	2
1	2	3	4	5
6	7	8	9	0
•	÷	-	+	Back

Enter the desired values in the editing window and import by tapping \checkmark .

16 Communication

16.1 Overview interface commands

The weighing scale recognises the following commands.

Comma nds	Function
Z	Zeroing
Т	Taring
UT	Retrieve tare value
LT	Set tare value
S	Send stable weighing value in standard weighing unit
SI	Send weighing value immediately in standard weighing unit
SIA	Send weighing values of all platforms in default unit immediately
SU	Send stable weighing value in current weighing value
SUI	Send weighing value immediately in current weighing unit
C1	Start continuous output in standard weighing unit
C0	Stop continuous output in standard weighing unit
CU1	Start continuous output in current weighing unit
CU0	Stop continuous output in current weighing unit
DH	Set value for lower threshold
UH	Set value for upper threshold
ODH	Retrieve value for lower threshold
OUH	Retrieve value for upper threshold
SS	Press simulation "PRINT key"
PP	Change platform
PC	Send all implemented commands



Finish commands by setting CR/LF character.

16.2 General response format

Commands	Function
XX_A CR LF	Command accepted; executing command
XX_D CR LF	Execution of previously started command completed (Occurs only after XX_A auf)
XX_I CR LF	Command valid but can currently not be executed
XX_^ CR LF	Command valid but range limits were exceeded
XX_v CR LF	Command valid but short of range limits
ХХ_ОК CR LF	Command accepted and executed
ES_ CR LF	Invalid entry
XX_E CR LF	Time limit for stabilisation weighing scale display was exceeded

1	XX	Command such as Z = reset to zero
-	L	Space character (20h, 0x20)

16.3 Detailed information about interface logs

16.3.1 Zeroing

Befehl: Z CR LF

Possible responses:

Z_A CR LF	Command accepted; executing command
Z_D CR LF	Execution of previously started command completed
Z_A CR LF	Command accepted; executing command
Z_^ CR LF	Command valid but zero setting range was exceeded
Z_A CR LF	Command accepted; executing command
_ Z_E CR LF	Time limit for stabilisation of weighing scale display was exceeded
Z _ CR LF	Command valid but can currently not be executed

16.3.2 Taring

Command: T CR LF

Possible responses:

T_A CR LF	Command accepted; executing command
T_D CR LF	Execution of previously started command completed
T_A CR LF	Command accepted; executing command
T_^ CR LF	Command valid but tare range was exceeded
T_A CR LF	Command accepted; executing command
T_E CR LF	Time limit for stabilisation of weighing scale display was exceeded
T_I CR LF	Command valid but can currently not be executed

16.3.3 Retrieve tare value

Command: **OT** CR LF

Answer:

1	2	3	4 - 12	13	14 - 16	17	18	19
Ο	Т	L	Tare	I	Unit	L	CR	LF

Tare value:- 9 characters with right-justified alignmentUnit:- 3 characters with left-justified alignment

1	Tare values are always issued in adjusting unit
---	---

16.3.4 Set tare value

Command: **UT_TARA** *CR LF*, (**TARA** = tare value)

Possible responses:

UT_OK CR LF	Command executed
UT_I CR LF	Command valid but can currently not be executed
ES CR LF	Invalid entry

Set tare value:
Mark decimal places with a dot
Without weighing unit

16.3.5 Send stable weighing value in standard weighing unit

Command: S CR LF

Possible responses:

S_A CR LF	Command accepted; executing command
S_E CR LF	Time limit for stabilisation of weighing scale display was exceeded
S_I CR LF	Command valid but can currently not be executed

1	2-3	4	5	6	7-15	16	17-19	20	21
S	ſ	Stability icon*	L	Signs	Weight	L	Unit	CR	LF

Example:

S CR LF	Sent command: Send stable weighing value in standard weighing unit
S _ A CR LF	Command accepted; executing command
Տ 8 . 5 _g <i>CR LF</i>	Command executed, Weighing value is issued in default weighing unit

•	Stab	Stability sign*				
1	?	unstable (3Fh, 0x3F)				
	IJ	stable (20h, 0x20)				

16.3.6 Send weighing value immediately in standard weighing unit

Command: SI CR LF

Possible responses:

SI_I CR LF Command valid but can currently not be executed	
--	--

1	2	3	4	5	6	7-15	16	17-19	20	21
s	I	L	Stability icon	L	Signs	Weight	L	Unit	CR	LF

Example:

SI CR LF	For sent command see chap. 16.1
S I_?1 8 . 5_k g_ <i>CR LF</i>	Command executed Weighing value is issued in default weighing unit

16.3.7 Send weighing values for all platforms in default weighing unit immediately

Command: SIA CR LF

Possible responses

SIA_I CR LF

Command valid but can currently not be executed

1	2	3	4	5	6	7-15	16	17-19	20	21
S	Ι	L	Stability icon	L	Signs	Weight	L	Unit	CR	LF

n- Number of platformWeight- 9 characters with right-justified alignment

Unit - 3 characters with left-justified alignment

Example (two connected platforms):

SIA CR LF	For sent command see chap. 16.1
P 1_?1 1 8 . 5_gCR LF	Command executed, Weighing values of platforms will be issued in default
P 23 6 . 2_k g_CR LF	weighing unit

16.3.8 Send stable weighing value in current weighing value

Command: SU CR LF

Possible responses:

SU_A CR LF	Command accepted; executing command
	Time limit for stabilisation of weighing scale display was exceeded
SU_I CR LF	Command valid but can currently not be executed
SU_A CR LF	Command accepted; executing command

1	2	3	4	5	6	7-15	16	17-19	20	21
S	U	L	Stability icon	L	Signs	Weight	L	Unit	CR	LF

Example:

SUCRLF	For sent command see chap. 16.1
SU_ACRLF	Command accepted; executing command
S U1 7 2 . 1 3 5_N <i>CR LF</i>	Command executed. Weighing value will issued in current weighing unit

16.3.9 Send weighing value immediately in current weighing unit

Command: **SUI** CR LF

Possible responses:

SUI_I CR LF	Command valid but can currently not be executed
-------------	---

1	2	3	4	5	6	7-15	16	17-19	20	21
S	U	Ι	Stability icon	L	Signs	Weight	L	Unit	CR	LF

Example:

SUI CR LF	For sent command see chap. 16.1
S U I ? <mark></mark> 5 8 . 2 3 7.k g.CR LF	Command executed. Weighing value will issued in current weighing unit

16.3.10 Start continuous output in standard weighing unit

Command: C1 CR LF

Possible responses:

C1_I CR LF	Command valid but can currently not be executed			
C1_A CR LF	Command accepted; executing command			
-	Weighing value will be issued in default weighing unit			

1	2	3	4	5	6	7-15	16	17-19	20	21
S	I	L	Stability icon	L	Signs	Weight	L	Unit	CR	LF

16.3.11 Stop continuous output in standard weighing unit

Command: C1 CR LF

Possible responses:

C0_I CR LF	Command valid but can currently not be executed
C0_A CR LF	Command accepted; executing command

16.3.12 Start continuous output in current weighing unit

Command: CU1 CR LF

Possible responses:

CU1_I CR LF	Command valid but can currently not be executed
CU1. A CR LF	Command accepted; executing command
-	Weighing values will be issued in current weighing unit

1	2	3	4	5	6	7-15	16	17-19	20	21
S	U	Ι	Stability icon	L	Signs	Weight	L	Unit	CR	LF

16.3.13 Stop continuous output in current weighing unit

Command: CU0 CR LF

Possible responses:

CU0_I CR LF	Command valid but can currently not be executed
CU0_A CR LF	Command accepted; executing command

16.3.14 Set value for "Lower Threshold"

Message: **DH_XXXXX** *CR LF* (**XXXXX** = threshold value)

Possible responses:

DH_OK CR LF	Command executed
ES CR LF	Command not accepted

16.3.15 Set value for "Upper Threshold"

Command: **UH_XXXXX** *CR LF* (**XXXXX** = threshold value)

Possible responses:

UH_OK CR LF	Command executed
ES CR LF	Command not accepted

16.3.16 **Retrieve value for "Lower Threshold"**

Command: **ODH** CR LF

Possible responses:

DH MASA CR LF	Command executed

1	2	3	4-12	13	14-16	17	18	19
D	Н	Ľ	Weight	L	Unit	L	CR	LF

Weight - 9 characters with right-justified alignment Unit

- 3 characters with left-justified alignment

16.3.17 **Retrieve value for "Upper Threshold"**

Command: OUH CR LF

Possible responses:

1	2	3	4-12	13	14-16	17	18	19
D	Н	Ľ	Weight	L	Unit	L	CR	LF

Weight - 9 characters with right-justified alignment

Unit - 3 characters with left-justified alignment

16.3.18 Press simulation "PRINT key"

Command: SS CR LF

Using the command **S S CR LF** will save the weighing activity automatically to the database and a printout will follow provided an optional printer is connected.

16.3.19 Send all implemented messages

Command: PC CR LF

Answer:

```
PC A
"Z,T,S,SI,SU,SUI,C1,C0,CU1,CU0,DH,ODH,UH,OUH,OT,UT,SIA,SS, PC"
```

16.4 Data format

1	2	3	4-12	13	14-16	17	18
stability	L	Signs	Measuring Value	L	Unit	CR	LF

Stability symbol	[] stable
	[?] instable
	[^] overload
	[v] underload
Signs [] positive values	
	[-] negative values
Measuring Value	9 characters with right-justified alignment
Unit	3 characters with left-justified alignment

Example (stable / positive weighing value):

_____1832.0_g__CRLF

17 Servicing, maintenance, disposal



Before any maintenance, cleaning and repair work disconnect the appliance from the operating voltage.

17.1 Cleaning

Do not use aggressive detergents (solvents or similar). Ensure that no liquid penetrates into the device. Polish with a dry soft cloth.

Loose residue sample/powder can be removed carefully with a brush or manual vacuum cleaner.

Spilled weighing goods must be removed immediately.

17.2 Servicing, maintenance

- ⇒ The appliance may only be opened by trained service technicians who are authorized by KERN.
- ⇒ Ensure that the balance is regularly calibrated, see chap. Monitoring of test resources.

17.3 Disposal

⇒ Disposal of packaging and appliance must be carried out by operator according to valid national or regional law of the location where the appliance is used.

18 Troubleshooting guide / error messages

Possible causes of errors:

In case of an error in the program process, briefly turn off the balance and disconnect from power supply. The weighing process must then be restarted from the beginning.

Fault

Possible cause

The displayed weight does not glow.

- The display unit is not switched on.
- Mains power supply interrupted (mains cable • defective).
- Power supply interrupted.

The displayed weight is permanently changing

The weighing result is

obviously incorrect

- Draught/air movement •
- Table/floor vibrations
- Weighing pan has contact with other objects.
- Electromagnetic fields / static charging (choose different location/switch off interfering device if possible)
- The display of the balance is not at zero
- Adjustment is no longer correct.
- Great fluctuations in temperature.

Communication settings are wrong.

- Warm-up time was ignored.
- Electromagnetic fields / static charging (choose different location/switch off interfering device if possible)

No data transfer between printer and balance.

- changed.
- The menu setting cannot be Menu item is locked for models with type approval certificate.

Error messages:

Err2	Value outside zero setting range
Err3	Value outside tare range
Err8	Taring or resetting to zero when time is exceeded during procedure
Er4 FuL2	Weighing range exceeded
NULL	Error AD transformer
FULL	Weighing range exceeded
НІ	Display range exceeded
LH	Initial weight error

KEN-TM / KET_TAM-BA-e-1530
19 Appendix A – Variables for printouts

19.1 List of variables

Symbol	Description
{0} ¹⁾	Default printout in adjusting unit
{1} ¹⁾	Default printout in current unit
{2}	Date
{3}	Time
{5}	Mathematical recipes
{4}	Date and time
{6}	Net weight in current unit
{7}	Net weight in adjusting unit
{8}	Gross weight
{9}	Tare
{10}	Current unit
{11}	Adjusting unit
{12}	Min threshold
{13}	Max threshold
{14}	Serial number
{15}	Statistics: Number
{16}	Statistics: Sum
{17}	Statistics: Mean Value
{18}	Statistics: Min
{19}	Statistics: Max
{20}	Statistics ZZ: Number
{21}	Statistics ZZ: Sum
{22}	Statistics ZZ: Mean Value
{23}	Statistics ZZ: Min
{24}	Statistics ZZ: Max
{25}	Weight: [lb]
{26}	Result check
{27}	Value
{28}	Value Z
{29}	Value ZZ
{30}	Gross value

{31}	Number of platform
{32}	Manufacturer's number
{33}	Weighing scale division
{34}	Range
{35}	Parts counting: Mass of reference weight
{36}	Deviations: Mass of reference weight
{37}	Statistics: Standard Deviation
{38}	Statistics ZZ: Standard Deviation
{39}	Universal variable
{40}	Text information
{41}	Batch number
{42}	Statistics: Counter for weighing activities
{43}	Weight of platform
{44}	Weighing scale type
{45}	Parts counting: Reference quantity
{46}	Statistics ZZ: Number of measurements
{47}	Statistics: Gross total
{48}	Statistics ZZ: Gross total
{50}	Product: Name
{51}	Product: Code
{52}	Product: EAN code
{53}	Product: Weight
{54}	Product: Tare
{55}	Product: Cost
{56}	Product: Min
{57}	Product: Max
{58}	Product: FPVO mode
{59}	Product: Number of expiration days
{60}	Product: VAT
{61}	Product: Date
{62}	Product: Expiration date
{63}	Product: Density
{64}	Product: ingredients
{65}	Product: Description
{66}	Product: Lower deviation
{67}	Product: Upper deviation
{68}	Product: Categorie
{75}	User: Name
{76}	User: Code

{77}	User: Authorisations
{80}	Packaging: Name
{81}	Packaging: Code
{82}	Packaging: Weight
{85}	Customer: Name
{86}	Customer: Code
{87}	Customer: Tax ID number
{88}	Customer: Address
{89}	Customer: Post code
{90}	Customer: Place
{91}	Customer: Discount
{100}	Weighing report: Measurements
{101}	Filter weighing log: Starting date
{102}	Filter weighing log: Completion date
{103}	Filter weighing log: Product
{104}	Filter weighing log: User
{105}	Filter weighing log: Customer
{106}	Filter weighing log: Packaging
{106}	Filter weighing log: Product
{107}	Filter weighing log: Min
{108}	Filter weighing log: Max
{110}	Filter weighing log: Party no.
{111}	Filter weighing log: Target storage place
{112}	Filter weighing log: Source storage place
{113}	Filter weighing log: Result check
{114}	Filter weighing log: Platform no.
{115}	Filter weighing log: Number of weighing procedures
{116}	Filter weighing log: Total of weighing activities
{117}	Filter weighing log: Value
{118}	Filter weighing log: Gross value
{119}	Filter weighing log: Mean Value
{120}	Filter weighing log: Min
{121}	Filter weighing log: Max
{122}	Filter weighing log: Vehicle
{130}	Source storage place: Name
{131}	Source storage place: Code
{132}	Source storage place: Description
{135}	Target storage place: Name
{136}	Target storage place: Code

{137}	Target storage place: Description
{140}	Net weight in adjusting unit: Sum
{141}	Ancillary display: WD
{142}	Ancillary display: WWG
{143}	Hex
{144}	Hex UTF-8
{145}	Part weight
{146}	Gross weight in current unit
{147}	Tare in current unit
{148}	Ancillary display: PUE7
{149}	IP-address
{155}	Density: Starting date
{156}	Density: Completion date
{157}	Density: Method
{158}	Density: Reference liquid
{159}	Density: Density of reference liquid
{160}	Density: Temperature
{161}	Density: = volume of sinker
{162}	Density
{163}	Density: Unit
{164}	Density: Sample number
{165}	Density: Weighing measurement 1
{166}	Density: Weighing measurement 2
{167}	Density: Weighing measurement 3
{168}	Density: Volume
{169}	Density: Mass of pycnometers
{170}	Density: Volume of pycnometers
{175}	Dosing process: Name
{176}	Dosing process: Code
{177}	Dosing process: Cycle number
{178}	Dosing process: Number of cycles
{180}	Dosing log: Starting date
{181}	Dosing log: Completion date
{182}	Dosing log: Result
{183}	Dosing log: Number of measurements
{184}	Dosing log: Sum
{185}	Dosing log: Measuring
{186}	Measurements: Nominal weight

{187}	Measurements: Difference
{190} ³⁾	Comparator: Log number
{191} ³⁾	Comparator: Starting date
{192} ³⁾	Comparator: Completion date
{193} ³⁾	Comparator: Order number
{194} ³⁾	Comparator: Number of test weight
{195} ³⁾	Comparator: Number of reference weight
{196} ³⁾	Comparator: Measuring
{197} ³⁾	Comparator: Average difference
{198} ³⁾	Comparator: Standard Deviation
{199} ³⁾	Comparator: Number of cycles
{200} ³⁾	Comparator: Method
{205}	Adjustment history: Nominal weight
{206}	Adjustment history: Number of platform
{209}	Vehicle: User
{210}	Vehicle: Name
{211}	Vehicle: Code
{212}	Vehicle: Description
{213}	Vehicle: Starting date
{214}	Vehicle: Completion date
{215}	Vehicle: Weight of entrance ramp
{216}	Vehicle: Weight of exit ramp
{217}	Vehicle: Weight of load
{218}	Vehicle: Type of transaction
{219}	Vehicle: Status
{220}	Recipe: Name
{221}	Recipe: Code
{222}	Recipe: Cycle number
{223}	Recipe: Number of cycles
{224}	Recipe: Process status
{225}	Recipe: Process status in %
{226}	Recipe: Name of component
{227}	Recipe: Difference
{228}	Recipe: Dose
{229}	Recipe: Nominal weight
{230}	Recipe: Number of current ingredient
{231}	Recipe: Number of ingredients
{232}	Recipe: Number of current batch
{233}	Recipe: Number of batches

{234}	Recipe: Status
{235}	Recipe: Min
{236}	Recipe: Max
{237}	Recipe: Code of ingredient
{240}	Recipe log: Starting date
{241}	Recipe log: Completion date
{242}	Recipe log: Result
{243}	Recipe log: Number of measurements
{244}	Recipe: Total weight
{245}	Recipe log: Measuring
{246}	Measurements: Nominal weight
{247}	Measurements: Difference
{248}	Recipe log: Code of ingredient
{295}	Log average tare: Date
{296}	Log average tare: Result
{297}	Log average tare: Standard Deviation
{298}	Log average tare: 0.25T1
{299}	Log average tare: Number of measurements
{300}	Log average tare: Measuring
{301}	Log average tare: Log no.
{302}	Log average tare: Average tare
{303}	Log average tare: Note

19.2 Format variables

The user has the option to format randomly any number variables and text variables that can be displayed as an expression or information in the working area of the display.

Types of formatting:

- > Left-justified alignment
- Right-justified alignment
- > Number of characters in printout / display
- > Number of decimal places for number variables
- Date / time format
- > Display of number variables in the form of code EAN13
- > Display of number variables and date in the form of code EAN128

Definition of format:

All format elements have the following pattern and comprise the following components: { variable number }

{ variable number, field width }

{ variable number:format character string}

{ variable number, field width : format character string}

Curly brackets ("{" and "}") are required.

Alignment component

The component *alignment* represents an integral number with sign, specifying the desired formatted field width. If the value for *alignment* is less than the length of the formatted character string, *alignment* will be ignored and the length of the formatted character string will be used as field width. Formatted data in the field is presented right-justified when the value for *alignment* is positive and left-justified when the value for *adjustment* is negative. If fill characters are required, use spaces. A comma is required when stating *alignment*.

Format character string component

The optional component *format character string* describes how the specified variable is issued in a formatted form. It may contain the following details:

Specify a default or user defined numeric format character string if the corresponding object is a numeric value. Specify a default or user defined format style sheet for date and time. Specify the corresponding string. The general format identifier ("G") will be used if no *format character string* has been specified. A colon is required when specifying the *format character string*.

Special characters for formatting:

Character	Description	Example
,	Delimiter for variables with left-justified alignment	{7,10} – Net weight with unit, field width 10 characters left-justified alignment
-	Delimiter for variables with right-justified alignment	{7,-10} – Net weight with unit, max 10 characters with right- justified alignment
:	Delimiter for time (hours, minutes, seconds) with corresponding formatting	 {7:0.000} – Net weight with unit and three decimal places; {3:hh:mm:ss} – Current time in format: Hour : Minute : Second
-	First dot after a number is deemed to be the delimiter for the decimal place. All subsequent dots will be ignored.	<pre>{55:0.00} - Unit price for product always with two decimal places; {17:0.0000} - Mean value for measurements always with four decimal places</pre>
F	Fixed comma Integral numbers and decimal numbers with optional minus sign	 {7:F2} – Net weight with unit always with two decimal places {7,9:F2} – Net weight with unit always with two decimal places providing a field width of 9 characters with right- justified alignment
V	Formatting weight value into barcode EAN13	{7:V6.3} – Net weight Fehler! Verweisquelle konnte nicht gefunden werden. as barcode EAN13 (code of 6 characters) with three decimal places
Т	Formatting weight value as barcode EAN128	{7:T6.3} – Net weight as barcode EAN128 with three decimal places
1	Delimiter for date between days, months and years	{2:yy/MM/dd} – Current date in format: Year – Month – Day, whereby yy stands for the last two digits of the year
	The character for "escape" removes the formatting function of the next character. The character is deemed to be text.	{2:yy\/MM\/dd} – Current date in format: Year / Month / Day; {2:yy\:MM\:dd} – Current date in format: Year: Month: Day.

Examples:

CODE	Description
{7:V6.3}	Net weight as EAN 13 (code of 6 characters)
{7:V7.3}	Net weight as EAN 13 (code of 7 characters)
{27:V6.3}	Net value as EAN 13 (code of 6 characters)
{27:V7.3}	Net value as EAN 13 (code of 7 characters)
{7:T6.3}	Net weight in EAN code 13
{16:T6.3}	Net weight K in EAN code 128
{21:T6.3}	Net weight KK in EAN code 128
{25:T6.3}	Net weight (lb) in EAN code 128
{8:T6.3}	Gross weight Kin EAN code 128
{55:T6.2}	Product price in EAN Code 128
{2:yyMMdd}	Date in EAN code 128
{61:yyMMdd}	Product date in EAN code 128
{62:yyMMdd}	Expiration date of product in EAN code 128
{16:V6.3}	Net weight K in EAN code 13 (code of 6 characters)
{16:V7.3}	Net weight K in EAN code 13 (code of 7 characters)
{28:V6.3}	Net value K in EAN code 13 (code of 6 characters)
{16:V7.3}	Net value K in EAN code 13 (code of 7 characters)
{21:V6.3}	Net weight KK in EAN code 13 (code of 6 characters)
{21:V7.3}	Net weight KK in EAN code 13 (code of 7 characters)
{29:V6.3}	Net value KK in EAN code 13 (code of 6 characters)
{29:V7.3}	Net value KK in EAN code 13 (code of 7 characters)

19.2 Mathematic formula

The function for mathematic formulas with variable **<{5} Mathematic Formula>** makes it possible to carry out arbitrary calculations. The following mathematical basic operations are available:

- Addition (+)
- Subtraction (-)
- Multiplication (*)
- Division (/)

It is also possible to use existing variables for your calculation. This allows you to load the weight from the platform and to process it correctly.

Example:

{5: ([43:1] + [43:2]) / 2}

When using variable **<{43} Weight of Platform>** as described above, the weight will be loaded from the platform (:1 und :2). It is then divided by 2.

The brackets allow you to carry out the calculation in the correct order according to mathematical basic principles.

Note:

The variables of mathematical computer operations are stored between square brackets [], that is, not as before between curly brackets { }.

The user may apply advanced functions that enable him/her to modify data in an extended way. Advanced functions are presented as text characters and descriptions in brackets:

- > round (numeric value, precision of rounding (number)) rounding
- > abs (numeric value) absolute value
- sin (numeric value) sinus
- > cos (numeric value) cosine
- > tan (numeric value) tangent
- sqrt (numeric value) root
- > pow (numeric value, basis of power (number)) power
- > log (numeric value) logarithm
- > log10 (Numeric value) logarithm with base 10

There are additional functions that modify text values. These functions allow you to amend text during its issue:

• remove ("text", starting point (number), number of characters for deleting (number)) – The rest of the text will be issued after this entry. The sentence or text from the defined starting point to the specified number of characters will be deleted.

Example: {5:remove("sample text",8,4)} = example

 substring ("text value", starting point (number), number of characters for copying (number)) – This function is used to extract only certain words from the overall text.

Example: {5:substring("sample text",1,8)} = example

tolower ("text value") – Converts text in question to lower-case characters.
 Example: {5:tolower("EXAMPLE")} = example

toupper ("text value") – Converts text in question to upper-case characters.

Example: {5:toupper("example")} = EXAMPLE

• replace ("text value", old text, new text) – Resets text with changed letters or parts of the text from second or third parameter.

Example: {5:replace("2.000", "0", "1")} = 2.111

Note:

Text values need to be presented in inverted commas " ".

<u>IMPORTANT: Always write text details in inverted commas.</u> When using existing variables from the database please use square brackets [].

Please see also example using variable 50 (product name) below:

Toupper([50]) = APPLE

20 Appendix B – list "Function Keys"

Symbol	Description
0	ENTER
<u>-0-</u>	Zeroing
-T-	Taring
	Set tare
Surger Surger	Parameters
	Application specific settings
min max	Set limit values MIN and MAX for control weighing
Store State	Statistics Z: Print and reset to zero
S S	Statistics Z: Printing
- O -	Statistics Z: Zeroing
50	Statistics ZZ: Print and reset to zero
ST.	Statistics ZZ: Printing
-0-	Statistics ZZ: Zeroing
-0123	Edit serial number
IZRBC	Edit charge number
~	Start recipe
*	Stop recipe
2	Select user
name	Select user by code
eboo	Select user by code
	Select product
(Mame)	Select product by name

code	Select product by code
	Select packaging
name	Select packaging by name
Code	Select packaging by code
	Select customer
name	Select client by name
code	Select client by code
	Select source storage space
	Select source storage space by name
code	Select source storage space by code
	Select target storage space
	Select target storage space by name
code	Select target storage space by code
	Select application
.	Enter reference single weight as numeric value
-012.34-	Determine reference single weight by weighing
	Parts counting: Assign reference weight
5	Reference piece number 5
10	Reference piece number 10
20	Reference piece number 20
50	Reference piece number 50
<u>9</u> %	Enter reference weight (100%) as numeric value
012.34	Determine reference weight (100%) by weighing
STOP	Failure

	Permit pouring
OFF	Disable tare
II ON	Retrieve tare
kg Ib	Change unit
$\overline{\Delta^{\circ}}\overline{\Delta}$	Change platform
Var 1	Edit universal variable 1
Var 2	Edit universal variable 2
Var 3	Edit universal variable 3
Var 4	Edit universal variable 4
Var 5	Edit universal variable 5
Var 1	Edit universal variable 1
Var 2	Edit universal variable 2
Var 3	Edit universal variable 3
Var 4	Edit universal variable 4
Var 5	Edit universal variable 5
	Select dosing process
	Select dosing process by name
code	Select dosing process by code
Fernit C	Select recipe
Ferris C	Select recipe by name
Formal Pr Code	Select recipe by code
	Component
Ľ ² €₂	Determining density of liquids
₫ ¶	Density determination of solids

U RA	Density determination with pycnometer
	Density determination for porous solids
P	Edit quantity of labels
Σ	Edit quantity of K labels
	Edit quantity of KK labels
	Change FPVO: Working area / diagram
е	FPVO: Set check
ß	FPVO: Return to start screen
Í	FPVO: Information on check in progress
	Select identification process
name	Select identification process by name
code	Select identification process by code
1	Select platform 1
2	Select platform 2
3	Select platform 3
4	Select platform 4
	Print screen

21 Installation display unit / platform



Installation / configuration of a weighing system must be carried out by a well acquainted specialist with the workings of weighing balances.

To configure a weighing system you have to call up the service level in the menu. Here you can change all parameters. For this reason direct access to the service switch is locked.

For disabling access lock see chap. 21.4.

21.1 Technical data

	KET-TAM	KEN-TM	
Supply voltage platform	5 V		
Max. signal voltage	19.5 mV		
	min. 80 Ω		
Load cell resistance	max. 1200 Ω		
Max number of platforms	2	4	

21.2 Weighing system design

The display unit is suitable for connection to any analogue load cell in compliance with the required specifications.

The following data must be established before selecting a load cell:

Weighing balance capacity

This usually corresponds to the heaviest load to be weighed.

Preload

This corresponds to the total weight of all parts that are to be placed on the weighing cell such as upper part of platform, weighing pan etc.

- Zeroing range
- Smallest desired display division
- Verifiable, if required

The addition of weighing scales capacity, preload and the total zero setting range give the required capacity for the weighing cell.

To avoid overloading of the weighing cell, include an additional safety margin.

21.3 How to connect the platform

- \Rightarrow Disconnect the display unit from the power supply.
- ⇒ Open housing
- \Rightarrow To shield platform cable wind it around ferrite core [F].
- Solder the individual leads of the load cell cable onto the circuit board, see diagrams below.

With 6 conductors:



Printed Circuit Board	Load cell	Remarks
Е	SHIELD	
REF+	SENSE +	JP1 unjumpered
REF-	SENSE -	JP2 unjumpered
IN+	OUTPUT +	
IN-	OUTPUT -	
+5V	INPUT +	
GND	INPUT -	

With 4 conductors:



To connect a load cell with 4 conductors
JP1 / JP2 must be jumpered.

Printed Circuit Board	Load cell	Remarks
E	SHIELD	
REF+	-	JP1 jumpered
REF-	-	JP2 jumpered
IN+	OUTPUT +	
IN-	OUTPUT -	
+5V	INPUT +	
GND	INPUT -	

1

For connection of individual wires please refer to the load cell's ID.

The connection of several platforms requires the use of A/D transformer module KERN KET-A01 (optional).

21.4Configure display unit

Before configuring a display unit make sure you know the required configuration data, see chap. 21.2. The weighing system is equipped with a service switch protected service level for entering configuration data.

Call up service level:



⇒ To call up the service level you have to operate the service switch. Use a suitable instrument for pushing the service switch (such as thin screwdriver, Ø approx. 3 mm).



Fig.: Position service switch

Attention:

To operate the service switch of calibrated weighing systems you will first have to destroy the seal.

After destruction of the seal the weighing system must be re-verified by an authorised agency and a new verification wire/seal mark fitted before it can be reused for applications subject to verification.

⇒ Call up menu with and the complete menu (See chap. 2.3.1) incl. service level will be displayed. The two service blocks of the service level are described below:





General parameters

Tap < Global >.

The menu will be displayed; see table below. 10.

To call up or change settings, tap the icons.



Tab. 10:

Number of platforms	Enter number of platforms
Weighing module type	Standard
	Weighing scale with NT command
	MW-01
	MW-04
Appropriate for verification	Vyes
	No no
Speed of transformer	Retrieve value of A/D transformer. This value can be used to check whether the weighing cell is working correctly.
G-Cor	For G-Cor method see chap. Fehler! Verweisquelle konnte nicht gefunden werden.
	For latitude method see chap. Fehler! Verweisquelle konnte nicht gefunden werden.
factory number	View or change serial number
Synchronisation	
Storage deadline for weighing activities	Secure product database against deleting of data records (retention period in days)
Service	Service mode
Additional units	Vyes
	No no
Mode of rounded tare	Vyes
	No no
Tare locked	Lock tare
Configuration of database	Configure database data
Accessibility of working modes	Allocate applications
Import	Import data from external storage medium
Export	Export data to external storage medium
Folder for updates	Localization of updated files
Copy events file	-
Set default configuration	Reset to default settings
Standard Settings	Default settings
Use memory	Apply storage medium / USB storage medium



Manufacturer parameters

1. Tap < Factory parameters>.

For configuring **one** platform, the submenu will be displayed directly, continue with step 3.

or

For configuring **several** platforms, first select the respective platform.

- 2. Tap the platform to be configured.
- 3. The submenu will be displayed.

ĩ

Information

Set Default

21.4.1 Entering metrology / configuration data



- ⇒ Tap < Metrology > and the list of parameters for configuration will appear.
- ⇒ Tap the parameters one after the other on the list and select the desired setting, see list of parameters below.

List of parameters "Configuration" (Display example single range scale 6 kg):					
Parameters	Default setting	Adjustable settings	Description		
Readability 1	0.001	0.001, 0.002, 0.005, 0.02, 0.05, 0.1, 0.2, 0.3 1, 2, 5, 10, 20, 50	Readability 5, First weighing range		
Readability 2	0.001	0.001, 0.002, 0.005, 0.02, 0.05, 0.1, 0.2, 0.3 1, 2, 5, 10, 20, 50	Readability 5, First weighing range		
Readability 3	0.001	0.001, 0.002, 0.005, 0.02, 0.05, 0.1, 0.2, 0.3 1, 2, 5, 10, 20, 50	Readability 5, First weighing range		
Weighing range max	6.009		Weighing range [Max + 9e]		
Weighing range 2	0.000		Transition temperature First weighing range ↓ 2. Weighing range For eigele range coole coloct cotting "0"		
Weighing range 3	0.000		Transition temperature First weighing range 3. Weighing range For single and dual range scale select setting "0"		
Adjustment weight	1.000		Weighing value "Adjustment weight"		
Adiusting unit	ka	a, ka, lb	Weighing unit " Admustment weight"		
G-cor	5	<u> </u>	Set correction value for geometric value		
Auto zero range	0,25	0,1 -5	Autom. Zero tracking: Zero setting range in unit of readability		
Stability range	5 d	0,1 -5	Rest position range in unit of readability		
Stabilisation time		0 – 20	Time interval for stability control		
Correction time			Not documented		
Correction range			Not documented		
Start of		0 switched off	Start up zero setting range		
control mass		1 -5% to + 15 %	,		
		2 ±20 %			
Digit marker	~	✓ no ✓ ves	Represent last decimal place in bracket, YES/NO		

u . . .

English

After entering configuration data you have to carry out an adjustment or linearization.

For implementation see subsequent chapters 21.4.2 / 21.4.3.

21.4.2 Adjusting a weighing system



⇒ Tap < Adjustment >

The menu will be displayed

Ö _ö	Adjustment	0 .	5
b	Evaluation of start mass		
1	Adjustment		
	Start mass	395259	
	Adjustment factor	452.6264	
	Mass of adjustment weight	5000	

Determine initial mass	Adjust zero point
Calibration	How to carry out adjustments
Initial mass	A/D transformer at zero
Calibration factor	Adjusting co-efficient
Adjustment weight	For mass of required adjustment weight see list of parameters "Configuration".

How to carry out adjustment:

- Prepare the required adjustment weight. The weight to be used depends on the capacity of the scale. Carry out adjustment as near as possible to the scale's maximum weight. Info about test weights can be found on the Internet at: http://www.kern-sohn.com.
- Observe stable environmental conditions. Stabilisation requires a certain warmup time.
- When using several platforms follow the sequence of steps below for each platform.



⇒ Tap < Adjustment >

⇒ Ensure that there are no objects on the weighing plate.
 Acknowledge with ♥.

- ⇒ Wait until required adjustment weight is displayed.
- ⇒ Carefully place adjusting weight in the centre of the weighing plate.
- ⇒ Adjustment will start automatically.

 After successful adjustment, confirm the message "process completed successfully" by pressing The display will return to the menu.

21.4.3 How to linearize a weighing system

Linearity shows the greatest deviation of a weight display on the scale to the value of the respective test weight according to plus and minus over the entire weighing range. If linearity deviation is discovered during a monitoring of test resources, you can improve this by means of linearization.

- 1
- In balances with a resolution of > 15 000 dividing steps carrying out a linearisation is recommended.
- Carrying out linearization is restricted to specialist staff possessing well acquainted with the workings of weighing scales.
- The test weights to be used must be compatible with the specifications of the weighing scale.
- Before starting linearization make sure that no objects have been left on the weighing platform and the indicators and are displayed.
- We recommend you calibrate the weighing scale after linearization.



⇒ Tap < Linearity>

The menu will be displayed

Determination	Carry out a 6 point linearization
Delete	Delete all saved linearization points
correction	Correct linearization points numerically

Carry out 6 point linearization:

- Observe stable environmental conditions. Stabilisation requires a certain warmup time.
- When using several platforms follow the sequence of steps below for each platform.



Display example max 6 kg:

Mage:				
1000				
× × ±				
1	2	3	4	5
6	7	8	9	0

2000				
el company a company		× <	/	2
1	2	3	4	5
6	7	8	9	0

	Put 2	2000 g	

⇒ Tap **<Estimate>**.

 Enter weight value for first adjustment point (1/6 max) and confirm by

- Place the required adjusting weight carefully in the centre of the weighing plate and press ✓ to confirm.
- Enter weight value for first adjustment point (2/6 max) and confirm by
- Place the required adjusting weight carefully in the centre of the weighing plate and press ✓ to confirm.
- Repeat steps 1 and 2 for all six adjustment points.
 After successful linearization of the sixth adjustment point the display will return automatically to the menu.

Correct linearization points:

0	Linearity	[<u>0.0</u>]	5
	Estimate		-
31 M.H.	Delete		
EL III II	Corrections		
Ô	Corrections	6000.	5
	1000 g	0 g	-
1111	2000 g	0 g	
	3000 g	0 g	
ALL B	4000 g	0 g	
an ma	5000 g	0 g	
1	6000 -	0.1000000140 -	1

0.0 🐩

Delete linearization points:

Linearity

Estimate

Delete

Corrections

NILL IN

IIIII

⇒ Tap < Corrections >

The linearization points including related deviations will be displayed and can be corrected numerically, as required.

⇒ Tap < Delete >

Confirm query with 💜.

All saved linearization points will be deleted.

*	~	
Corrections	[<u> 0.</u> 0	
0 g	0 g	1
0 g	0 g	_
0 g	0 g	
0 g	0 g	
	Corrections 0 g 0 g 0 g 0 g	Image: Corrections 0.0 0g 0g 0g 0g 0g 0g 0g 0g 0g 0g 0g 0g

21.4.4 Display configuration data



 \Rightarrow Tap < Information >.

⇒ The configuration data will be displayed

21.4.5 Reset to default settings



⇒ Tap < Set Default >

 \Rightarrow For resetting confirm query with \checkmark .

English

21.4.6 Geo value

The geographical value is used to adapt the weighing scale to local gravity conditions.

Set correction value for geometric value

		2/	3
[Kg] Metrology	Adjustment	Linearit	у
Metrology	Ľ	28.3	- - -
Mass of adjustmen	t weight 5000	6	1
Mass of adjustmen	t weight 5000 g	6. 	
Mass of adjustmen Adjustment unit Gcor	t weight 5000 g 1		
Mass of adjustmen Adjustment unit Gcor Autozero Range	t weight 5000 9 1 5		
Mass of adjustmen Adjustment unit Gcor Autozero Range Stability Range	t weight 5000 9 1 5 5		

⇒ Tap < Metrology >

⇒ Tap < G-Cor >

8				
1	2	3	4	5
6	7	8	9	0
	-	-	+	Back

 \Rightarrow Input correction factor and import with

Set geo value for adjustment location and installation location.



⇒ Tap < Global >.

The menu will be displayed ⇒ Tap G-Cor

Select desired method

- 1. Gravitational acceleration method
- 2. Latitude method



1. Gravitational acceleration method

8 2 * ~ 1 2 3 4 5 7 6 8 9 0 + + Back -.

⇒ Enter geo value for adjustment location

⇒ Enter geo value for installation location

2. Latitude method







Gcor Gravitational acceleration method G = 9.8028814540823 Gcor = 0.999518888829306 ⇒ Enter gravitational acceleration for adjustment location.

⇒ Enter latitude for installation in degrees and minutes

⇒ Enter longitude for installation location

The weighing scale determines the geo value for the installation location and will display the result as well as a correction factor.

KEN-TM / KET_TAM-BA-e-1530

22 Conformity explanation/ test certificate



KERN & Sohn GmbH

D-72322 Balingen-Frommern Postbox 4052 E-Mail: info@kern-sohn.de Phone: 0049-[0]7433- 9933-0 Fax: 0049-[0]7433-9933-149 Internet: www.kern-sohn.de

Declaration of conformity

EC Declaration of Conformity EC- Déclaration de conformité EC-Dichiarazione di conformità EC- Declaração de conformidade EC-Deklaracja zgodności EC-Declaration of -Conformity EC-Declaración de Conformidad EC-Conformiteitverklaring EC- Prohlášení o shode EC-Заявление о соответствии

D	Konformitäts-	Wir erklären hiermit, dass das Produkt, auf das sich diese Erklärung bezieht,
	erklärung	mit den nachstehenden Normen übereinstimmt.
EN	Declaration of	We hereby declare that the product to which this declaration refers conforms
	conformity	to the following standards.
CZ	Prohlášení o	Tímto prohlašujeme, že výrobek, kterého se toto prohlášení týká, je v souladu
	shode	s níže uvedenými normami.
Е	Declaración de	Manifestamos en la presente que el producto al que se refiere esta
	conformidad	declaración está de acuerdo con las normas siguientes
F	Déclaration de	Nous déclarons avec cela responsabilité que le produit, auquel se rapporte la
	conformité	présente déclaration, est conforme aux normes citées ci-après.
	Dichiarazione di	Dichiariamo con ciò che il prodotto al quale la presente dichiarazione si
	conformitá	riferisce è conforme alle norme di seguito citate.
NL	Conformiteit-	Wij verklaren hiermede dat het product, waarop deze verklaring betrekking
	verklaring	heeft, met de hierna vermelde normen overeenstemt.
Ρ	Declaração de	Declaramos por meio da presente que o produto no qual se refere esta
	conformidade	declaração, corresponde às normas seguintes.
PL	Deklaracja	Niniejszym oświadczamy, że produkt, którego niniejsze oświadczenie dotyczy,
	zgodności	jest zgodny z poniższymi normami.
RUS	Заявление о	Мы заявляем, что продукт, к которому относится данная декларация,
	соответствии	соответствует перечисленным ниже нормам.

Electronic Balance: KERN KEN-TM, KET-TAM, ILT-BM, ILT-GM

EU Directive	Standards
2004/108/EC	EN 61326-1:2006
2006/95/EC	EN 61010-1:2010
2011/65/EU	EN 50581 :2012

Date Date

Place of issue

17.10.2015

Signatur Signature

Albert Sauter KERN & Sohn GmbH **Manager** *Managing director*

KERN & Sohn GmbH, Ziegelei 1, D-72336 Balingen, Tel. +49-[0]7433/9933-0 Fax +49-[0]7433/9933-149, E-Mail: info@kern-sohn.com, Internet: www.kern-sohn.com

Ort der Ausstellung 72336 Balingen