

# Operating manual

## Price calculating balance

### KERN RFE

Typ TRFE-A

Version 1.3

2021-09

GB



**RFE-BA-e-2113**



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Version 1.3 2021-09

## Operating manual

## Price calculating balance

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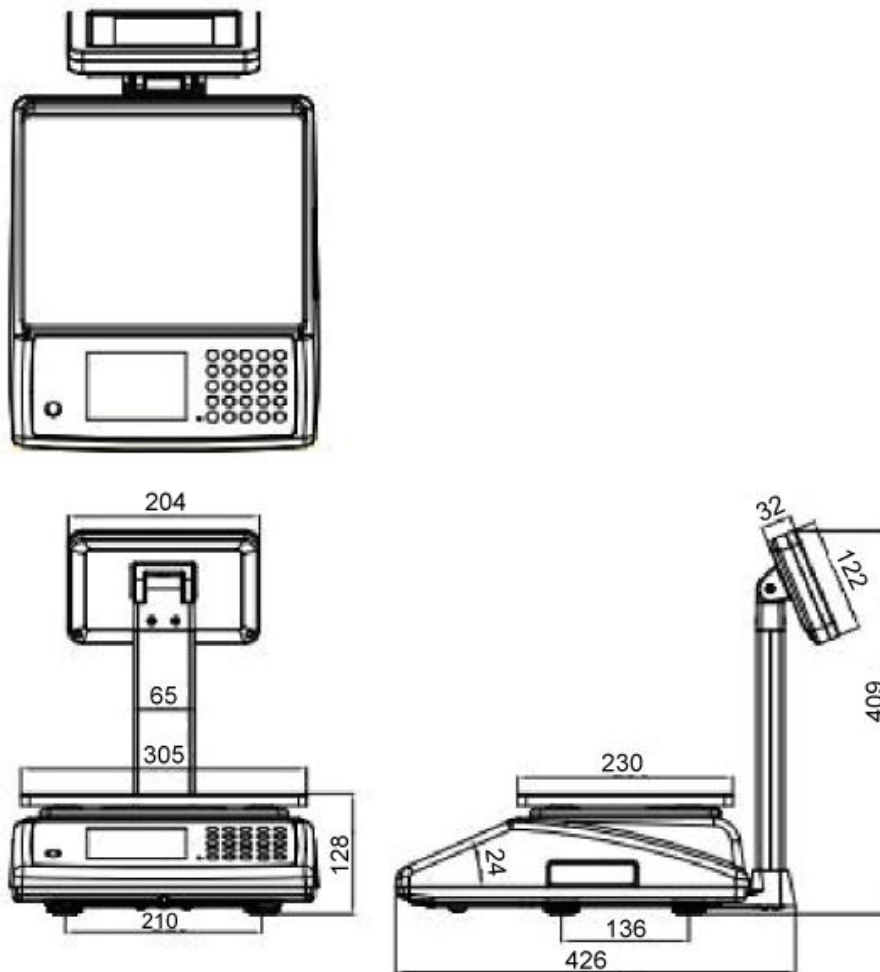
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## 1 Technical data

KERN	RFE 6K3M	RFE 15K3M	RFE 30K3M
Item no./ Type	TRFE 6K3M-A	TRFE 15K3M-A	TRFE 30K3M-A
Weighing range (max)	3 kg / 6 kg	6 kg / 15 kg	15 kg / 30 kg
Readability (d)	1 g / 2 g	2 g / 5 g	5 g / 10 g
Minimum load (Min)	20 g	40 g	100 g
Verification value (e)	1 g / 2g	2 g / 5g	5 g / 10 g
Verification class	III	III	III
Reproducibility	1 g / 2 g	2 g / 5 g	5 g / 10 g
Linearity	± 3 g / ± 6 g	± 6 g / ± 15 g	± 15 g / ± 30 g
Recommended adjusting weight (not supplied)	6 kg (M1)	15 kg (M1)	30 kg (M1)
Stabilization time	2 s		
Heating time (operating temperature)	10 min		
Net weight (kg)	4.1		
Basic price, can be switched over	€/kg; €/100 g		
Admissible ambient temperature	-10° C to 40° C		
Weighing surface (mm)	230 x 300		
Tripod height (mm)	395		
Auto-Off (battery; min.)	3, 5, 15, 30		
Allowable air humidity	0 % - 80 % (non-condensing)		
Electric Supply	Mains adapter 220 V – 240 V AC 50 Hz balance 12 V, 500 mA		
Rechargeable battery (optional)	6 V, 4 Ah		
	Operating period - background illumination OFF: 60 h		

## 1.1 Dimensions



## 2 Declaration of conformity

The current EC/EU Conformity declaration can be found online in:

[www.kern-sohn.com/ce](http://www.kern-sohn.com/ce)

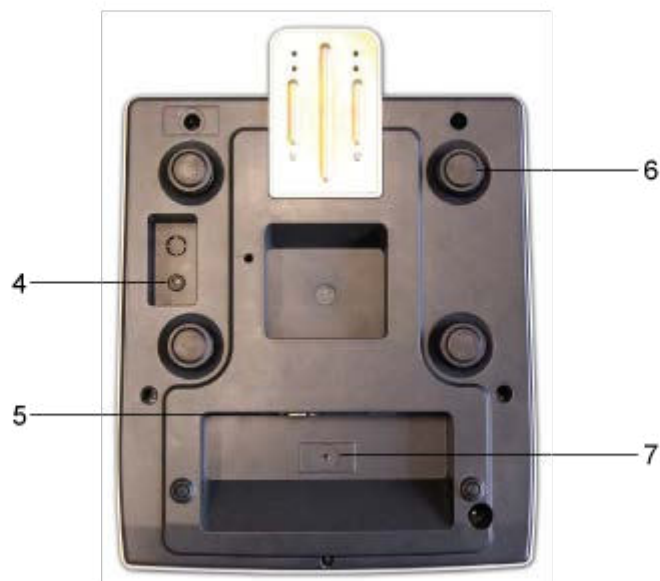
- i** For verified weighing scales (= weighing scales assessed for conformity) a declaration of conformity is included in the scope of delivery.

### 3 Appliance overview

Models without post-mounted display:

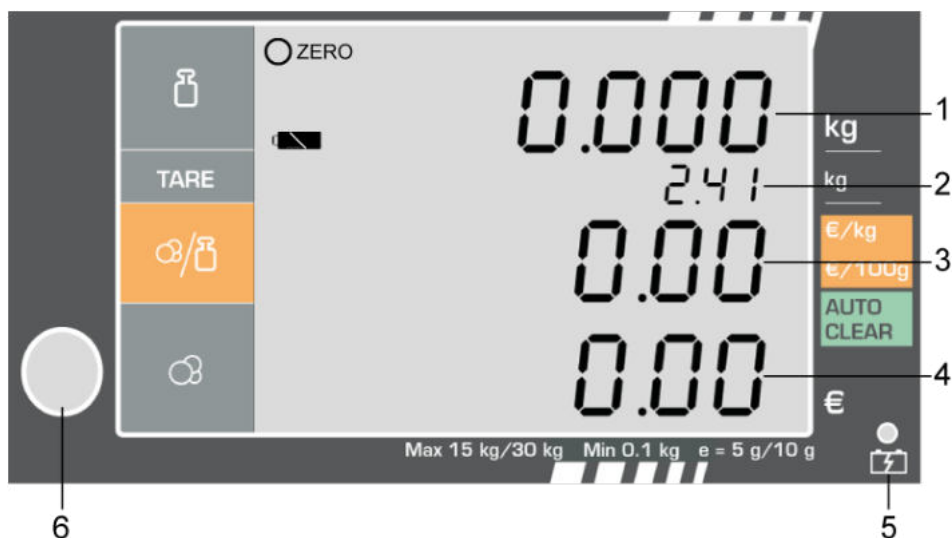


Models with post-mounted display:



1. Bubble level
2. Weighing pan
3. Post-mounted display
4. Mains adapter connection
5. RS 232 interface
6. Footscrews
7. Adjustment switch

### 3.1 Overview of display



1	Weight
2	Taring value
3	Basic price
4	Sales price
5	Storage battery status display
6	Bubble level





	Stability display
<b>ZERO</b>	Zeroing display
	Battery symbol
<b>€/kg</b>	Basic price in €/kg
<b>€/100 g</b>	Basic price in €/100 g
<b>AUTO CLEAR</b>	Set basic price is deleted automatically when balance is unloaded

### 3.2 Keyboard overview



Selection	Function
	<ul style="list-style-type: none"> <li>Numerical keys, PLU-keys</li> </ul>
	<ul style="list-style-type: none"> <li>Delete</li> </ul>
	<ul style="list-style-type: none"> <li>Direct PLU keys</li> </ul>
	<ul style="list-style-type: none"> <li>PLU key</li> <li>(when saving articles, the current tare value is also saved, see chapter 9.3.1)</li> </ul>
	<ul style="list-style-type: none"> <li>Numeric keys 4 and 6</li> <li>Scroll up (4) or down (6) in the menu</li> </ul>
	<ul style="list-style-type: none"> <li>For activated function, the set basic price is automatically deleted when the balance is unloaded.</li> </ul>
	<ul style="list-style-type: none"> <li>Display background illumination</li> </ul>
	<ul style="list-style-type: none"> <li>Switch-over unit € / kg ↔ € / 100g</li> </ul>
	<ul style="list-style-type: none"> <li>Turn on/off balance</li> </ul>



	<ul style="list-style-type: none"> <li>• Issue to external device</li> </ul>
	<ul style="list-style-type: none"> <li>• Taring</li> <li>• In menu: Confirm</li> <li>• Pre-Tare: Long key press: Enter tare value via numeric keys (s. ch. 9.3.1)</li> </ul>
	<ul style="list-style-type: none"> <li>• Zeroing</li> <li>• In menu: Exit menu</li> </ul>
	<ul style="list-style-type: none"> <li>• Numeric key 0</li> </ul>

## 4 Basic Information (General)

### 4.1 Proper use

The balance you purchased is intended to determine the weighing value of material to be weighed. It is intended to be used as a “non-automatic balance”, i.e. the material to be weighed is manually and carefully placed in the centre of the weighing pan. As soon as a stable weighing value is reached the weighing value can be read.

### 4.2 Improper Use

Do not use balance 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“. (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 balance, minus a possibly existing tare load, must be strictly avoided. Balance may be damaged by this.

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

The structure of the balance may not be modified. This may lead to incorrect weighing results, safety-related faults and destruction of the balance.

The balance may only be used according to the described conditions. Other areas of use must be released by KERN in writing.

### 4.3 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

### 4.4 Monitoring of Test Resources

In the framework of quality assurance the measuring-related properties of the balance 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 ([www.kern-sohn.com](http://www.kern-sohn.com)) with regard to the monitoring of balance test substances and the test weights required for this. In KERN's accredited DKD calibration laboratory test weights and balances may be calibrated (return to the national standard) fast and at moderate cost.

## 5 Basic Safety Precautions

### 5.1 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.

### 5.2 Personnel training

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

## 6 Transport and storage

### 6.1 Testing upon acceptance

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

### 6.2 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.
- ⇒ Secure all parts such as the glass wind screen, the weighing platform, power unit etc. against shifting and damage.

## 7 Unpacking, Setup and Commissioning

### 7.1 Installation Site, Location of Use

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

You will work accurately and fast, if you select the right location for your balance.

**On the installation site observe the following:**

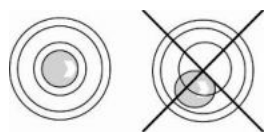
- Place the balance on a firm, level surface;
- Avoid extreme heat as well as temperature fluctuation caused by installing next to a radiator or in the direct sunlight;
- Protect the balance against direct draughts due to open windows and doors;
- Avoid jarring during weighing;
- Protect the balance against high humidity, vapours and dust;
- Do not expose the device 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.

If electro-magnetic fields or static charge occur, or if the power supply is unstable major deviations on the display (incorrect weighing results) are possible. In that case, the location must be changed.

### 7.2 Unpacking

Carefully remove the balance from the packaging, remove plastic cover and setup balance at the intended workstation.

#### 7.2.1 Placing



Level balance with foot screws until the air bubble of the water balance is in the prescribed circle.

## 7.2.2 Scope of delivery / serial accessories:

- Balance
- Mains adapter
- Operating manual
- Tripod with screws

## 7.3 Mains connection

Power is supplied via the external mains adapter. The stated voltage value must be the same as the local voltage.






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

## 7.4 Rechargeable battery operation

**The rechargeable battery is charged via the delivered power supply.**

Before the first use, the battery should be charged by connecting it to the mains power supply for at least 12 hours. Two symbols show the capacity of the rechargeable battery:

- In the display the symbol 
- The LED display above the loading battery status display 

	 *	Description
<b>red:</b>		Battery is almost discharged
<b>green:</b>		Rechargeable battery completely reloaded
<b>yellow:</b>		Charging storage battery

\* Loading battery status of the rechargeable battery with this symbol is only correctly displayed, when the balance is supplied with energy not via the mains adapter.

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

The accuracy of the balance depends on the local acceleration of gravity. Strictly observe hints in chapter Adjustment.

## 7.6 Tripod

Delivery volume includes a tripod for setting the display unit higher.

### Assembly:

	Lead the cable of the display unit through the tripod.
	Screw down the tripod at the display unit
	Plug the tripod in the tripod foot at the platform
	Screw the tripod at the lower side of the platform

## 7.7 Adjustment

As the acceleration value due to gravity is not the same at every location on earth, each balance 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 balance 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 balance periodically in weighing operation.



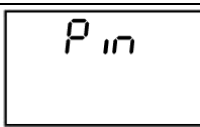
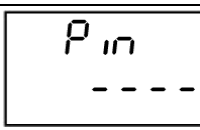

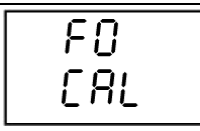

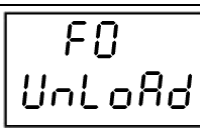



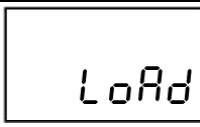

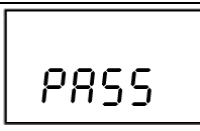
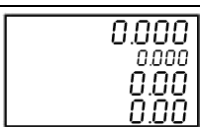
- i** The adjustment is locked for verified balances. Carrying out adjustment requires that the seal is destroyed and the adjusting switch is confirmed in step 3 when turning on the scale. Position of adjustment switch, see chap. 7.8.1

**Attention:**

After destruction of the seal the balance 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.

### Procedure when adjusting:

Observe stable environmental conditions. A warming up time (see chapter 1) is required for stabilization. Ensure that there are no objects on the weighing pan. Arrange adjustment weight, details see chap.1 „Techn. data“

<ul style="list-style-type: none"> <li>Start balance by pressing . During the selftest press . The password query "P in" is displayed.</li> </ul>	
<ul style="list-style-type: none"> <li>Using numeric keyboard, enter the standard password "9999". "P in ----" is displayed.</li> </ul>	
<ul style="list-style-type: none"> <li>Confirm by , the menu is called up, the first menu point "F0 CAL" is displayed.</li> </ul>	
<ul style="list-style-type: none"> <li><b>Press adjustment switch on the lower side of the balance</b></li> </ul>	
<ul style="list-style-type: none"> <li>Press , "F0 UnLoad" will be displayed. Ensure that there are no weighing goods on the weighing pan. Wait for stability display.</li> </ul>	
<ul style="list-style-type: none"> <li>Press  anew. The value of the adjustment weight appears.</li> </ul>	 (example)
<ul style="list-style-type: none"> <li>Either place the displayed adjustment weight, or use the numeric keys to enter a new adjustment weight.</li> </ul>	
<ul style="list-style-type: none"> <li>Acknowledge with , „Load“ is displayed.</li> </ul>	
<ul style="list-style-type: none"> <li>Place adjustment weight, wait for stability display and press . "PASS" will be displayed.</li> </ul>	
<ul style="list-style-type: none"> <li>Adjustment now has finished. Remove adjustment weight from weighing plate. The balance changes automatically into weighing mode. The zero display appears.</li> </ul>	



## 7.8 Verification

### General hints:

According to EU directive 2014/31/EU 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.

After verification the balance is sealed at the indicated positions.

**Verification of the balance is invalid without the "seal".**

### Verification notes

An EU type approval exists for balances described in their technical data as verifiable. If a balance is used where obligation to verify exists as described above, it must be verified and re-verified at regular intervals.

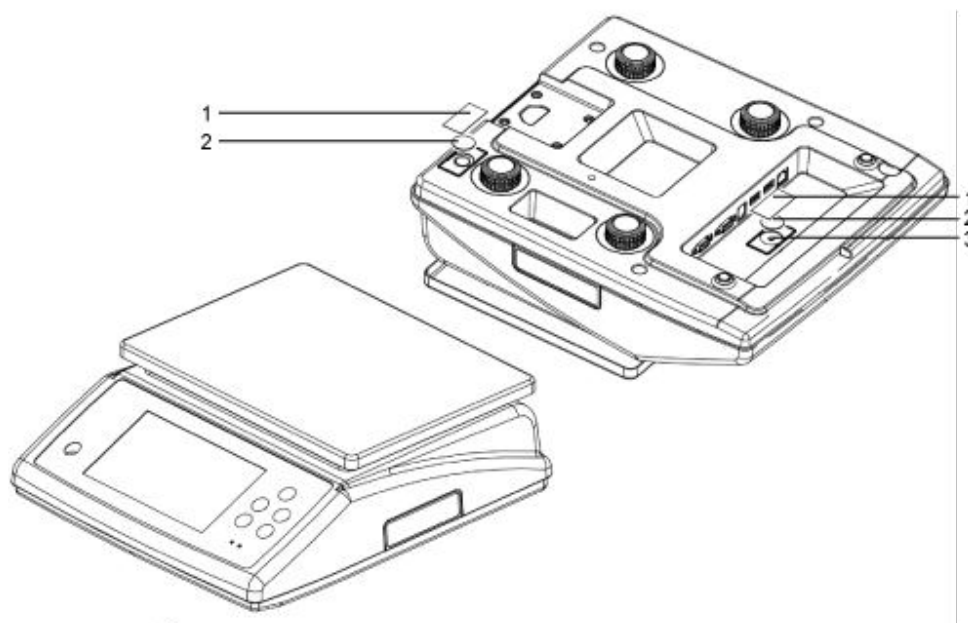
Re-verification of a balance is carried out according to the respective national regulations. The validity for verification of balances in Germany is e.g. 2 years.

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

### **Balances with obligation to verify must be taken out of operation if:**

- The **weighing result** of the balance is outside the **error limit**. Therefore, in regular intervals load balance with known test weight (ca. 1/3 of the max. load) and compare with displayed value.
- The **reverification deadline** has been exceeded.

### 7.8.1 Adjustment switch and seals



1. Seal mark
2. Cover
3. Verification switch

### 7.9 Checking the balance verification settings

For the adjustment, the balance must be switched over to service mode.



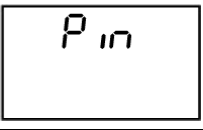
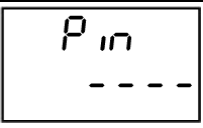

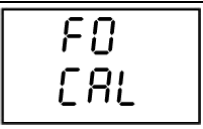
In calibrated scales the service mode is locked individually for each switch. To disable the access lock, destroy the seal and actuate the switch.

#### **Attention:**



After destruction of the seal the balance 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.





## 8 The menu

### 8.1 Access to menu:


<ul style="list-style-type: none"> <li>Start balance by pressing . During the selftest press . The password query "P in" is displayed.</li> </ul>	
<ul style="list-style-type: none"> <li>Using numeric keyboard, enter the standard password "9999". "P in ----" is displayed.</li> </ul>	
<ul style="list-style-type: none"> <li>Confirm by , the menu is called up, the first menu point "F0 CAL" is displayed.</li> </ul>	
<ul style="list-style-type: none"> <li><b>For calibration-relevant settings press adjustment switch on the lower side of the balance</b></li> </ul>	

#### Select function:







Use the numeric keys  , scroll up or down in the menu.

Confirm selected function by pressing . Select desired setting with   and acknowledge by .

#### Exit menu:

Press the  button as often as necessary until the zero display appears. The balance is now again in weighing mode.

## 8.2 Menu overview

Function		Settings	Description
 or  and 		 or  and 	
<b>F0</b>	<b>CAL</b>		Adjustment function
<b>F1</b>	<b>rES</b>	Press adjustment switch	Resolution
		dUAL rAnGE	
		3000	
		6000	
		dUAL intErv	
<b>F2</b>	<b>CAP</b>		Weighing range (max)
		30KG	
		3KG	
		6KG	
		15KG	
<b>F3</b>	<b>oFFtmE</b>		Auto Off function
		15	
		30	
		oFF	
		3	
		5	
<b>F4</b>	<b>CLoCK</b>		Time/Date
		dAtE	
		timE	
		StYLE	


F5	P Com				RS 232 interface	
	Com 1	CHAnEL	rJ45	rS232	oFF	Interface out of function
					PSEnd	Kont. Data Transfer
				Print	rG88u	Print output on
				oFF	Print output off	
			bAUd	1200		
				2400		
				4800		
				9600		
				19200		
				38400		
		115200				
		vEriFY	7E1			
			701			
			8n1			
		Com 2	CHAnEL	Print		
				USb		
			Com 3	bLUE	Com 1	
Com 2						
Com 3						
Com 4						
PtYPE	oFF					
	PSEnd					
bAUd	9600					
	19200					
	38400					
	115200					
	1200					
	2400					
	4800					
Com 4	WiFi		oFF			
			on			
	PtYPE		PSEnd			
			oFF			
	bAUd		9600			
			19200			
			38400			
115200						
1200						
2400						
4800						

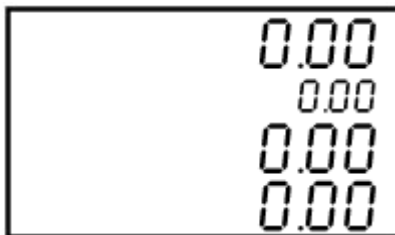
<b>F6</b>	<b>Print</b>		Printer setting
		FormAt	oFF
			Prt 1
			Prt 2
		HEAdE 1	Head line 1
		HEAdE 2	Head line 2
		HEAdE 3	Head line 3
		FootE 1	Foot line 1
		FootE 2	Foot line 2
		FootE 3	Foot line 3
<b>F7</b>	<b>AZn</b>		Auto-Zero
		on	
		off	
<b>F8</b>	<b>PdECi</b>		Decimal dot in price
		0.00	
		0.000	
		0	
		0.0	
<b>F9</b>	<b>PrCmod</b>		
		Fix	
		FLoAt	
<b>F10</b>	<b>CHAnGE</b>	Press adjustment switch	Calculation of credit
		on	
		off	
<b>F11</b>	<b>rEtArE</b>		Pre-Tare
		on	
		off	
<b>F12</b>	<b>SPEEd</b>		A/D-converter
		FAsT	
		SLoW	
		Mid	
<b>F13</b>	<b>GrA</b>		Gravity


<b>F14</b>	<b>t-Curr</b>		Symbol for currency
		EUr	Euro
		CnY	Chinesische Yen
		CuStom	Custom currency
		USd	USd
<b>F15</b>	<b>Min Coin</b>	1	Smallest currency unit
		2	
		5	
		10	

## 9 Operation

### 9.1 Turn on/off

- ⇒ To switch on, press . The balance will carry out a self-test. As soon as the weight display shows "0" in all the three numeric values, your balance is ready to weigh.




- ⇒ To switch off press  anew.


### 9.2 Zeroing

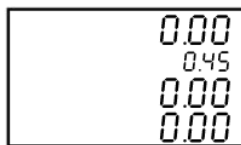
Resetting to zero corrects the influence of light soiling on the weighing plate.

- ⇒ Unload the balance

- ⇒ Press , the balance starts resetting to zero. The indicator ZERO appears.

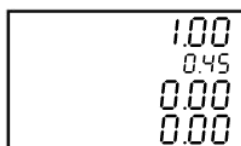
### 9.3 Weighing with tare

- ⇒ Deposit weighing vessel. After successful standstill control press the  button. The weight value goes to 0, in the field for the taring weight appears the weight value of the weighing container.



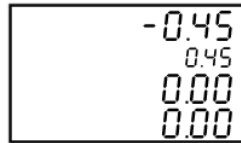
(example)


- ⇒ Weigh the material, the net weight will be indicated.






- ⇒ After removing the weighing container, the weight of the weighing container appears in the field of the weight display as negative value.



- ⇒ To delete the tare value, remove load from weighing plate and press . In all fields now will again be displayed 0.

### 9.3.1 Pre-Tare

It is possible to place a known tare weight in the balance in advance. There are two possibilities for this:

- Long key press on . The pretare value can be entered using the numeric keys
- If articles are stored via PLU, the current tare value is also stored.  
Note: A price must be entered, or the price can also have the value "0".

### 9.4 Overload warning

Overloading exceeding the stated maximum load (max) of the balance, minus a possibly existing tare load, must be strictly avoided. This could cause damage to the balance.



Exceeding maximum load is indicated by the display of "-oL-", and an audio sound. Unload balance or reduce preload.

## 10 Weighing with price determination



As soon as the goods to be weighed are placed on the balance and the basic price has been set the price is calculated automatically and displayed in the provided field.

First set the desired currency in menu menu item F14.

### 10.1 Basic price entry via keyboard

	<table border="1"> <tr><td>0</td><td>0.000</td></tr> <tr><td>TARE</td><td>0.00</td></tr> <tr><td>0/100</td><td>0.00</td></tr> <tr><td>0</td><td>0.00</td></tr> </table>	0	0.000	TARE	0.00	0/100	0.00	0	0.00
0	0.000								
TARE	0.00								
0/100	0.00								
0	0.00								
Place goods to be weighed on balance.	<table border="1"> <tr><td>0</td><td>0.175</td></tr> <tr><td>TARE</td><td>0.00</td></tr> <tr><td>0/100</td><td>0.00</td></tr> <tr><td>0</td><td>0.00</td></tr> </table> <p>(example)</p>	0	0.175	TARE	0.00	0/100	0.00	0	0.00
0	0.175								
TARE	0.00								
0/100	0.00								
0	0.00								
Enter basic price via the numeric keys  to  The sales price will be calculated and displayed automatically.	<table border="1"> <tr><td>0</td><td>0.175</td></tr> <tr><td>TARE</td><td>0.00</td></tr> <tr><td>0/100</td><td>5.00</td></tr> <tr><td>0</td><td>0.88</td></tr> </table> <p>(example)</p>	0	0.175	TARE	0.00	0/100	5.00	0	0.88
0	0.175								
TARE	0.00								
0/100	5.00								
0	0.88								

**i**

- The set basic price is deleted by .
- Using  switch over basic price from € / kg ↔ to € / 100g.
- Calculating the change, see chap. 10.2.3


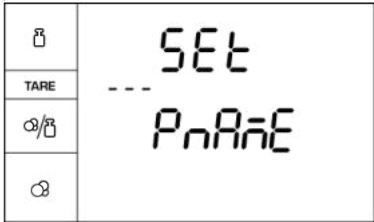







## 10.2 Memory for basic price (PLU = Price look up)

The balance has more than 100 indirect PLU memory locations and 4 direct ones. The following data are stored per memory location:

- Product code
- Product name
- Weighing type
- Sales price
- Purchase price
- Pretare value

### 10.2.1 Direct PLU memory locations

Save:

<p>Press direct PLU key  and keep it pressed. In the display appears Set PNAmE. The display flashes.</p>	
<p>Use the numeric keys to enter the product <b>name</b>, e.g. APPLE. Values with up to 9 letters can be entered.</p>	 <p>(example)</p>
<p>Acknowledge with . The <b>weighing type</b> is displayed. Either Amount or Weight. It can be calculated according to</p> <ul style="list-style-type: none"> <li>• amount or</li> <li>• according to weight kg (Weight KG) or</li> <li>• according to weight in 100g (Weight 100g)</li> </ul> <p>Select the desired weighing type by  or  acknowledge on .</p>	
<p>In the weighing type Amount in the display appears now the entry of the unit price.</p>	

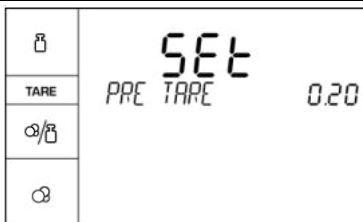
Use the numeric keys to enter **Unit price** and confirm by pressing **TARE**.



(example)

The display to enter the **Pretare value** appears. Enter pretare value using numeric keys.




Acknowledge with **TARE**.



(example)



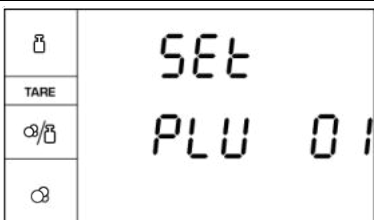
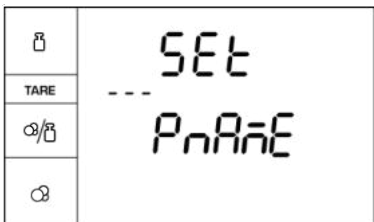


Entering the data for the direct PLU memory location "1" is herewith completed. The balance changes automatically into weighing mode.











### Retrieve / show sales price:

<p>To call up the data stored before, press  in weighing mode. Data are displayed.</p>	 <p>(example)</p>
<p>Place the weighing good, the weight and the sales price are now displayed.</p>	 <p>(example)</p>

### 10.2.2 Indirect PLU memory locations




#### Save:

<p>Press  and keep pressed. In the display Set PLU.</p>	
<p>Use the numeric keys to enter the memory location where data shall be stored.</p>	
<p>The display to enter the <b>Product name</b> appears.</p>	
<p>Use the numeric keys to enter the name. Acknowledge with .</p>	


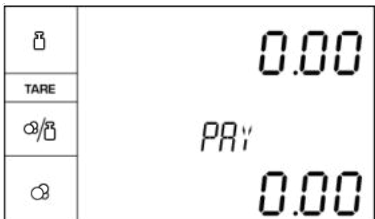
<p>Acknowledge with . The <b>weighing type</b> is displayed. Either Amount or Weight. It can be calculated according to amount or according to weight.</p> <p>Select the desired weighing type by  or  acknowledge on .</p>	
<p>In the weighing type Amount in the display appears now the entry of the unit price.</p>	
<p>Use the numeric keys to enter <b>Unit price</b> and confirm by pressing .</p>	 <p>(example)</p>
<p>The display to enter the <b>Pretare value</b> appears. Enter pretare value using numeric keys. Acknowledge with .</p>	 <p>(example)</p>

Entering the data for the indirect PLU memory location "01" is herewith completed.  
The balance changes automatically into weighing mode.

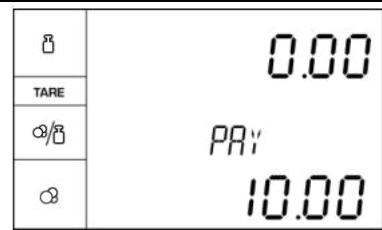
**Retrieve / show sales price:**

<p>To call up the data stored before, press <b>PLU</b> in weighing mode. SELECT PLU is displayed. Use the numeric keys to enter the memory location.</p>	 <p>(example)</p>
<p>In the display appear the data stored before.</p>	 <p>(example)</p>
<p>Place the weighing good, the weight and the sales price are now displayed.</p>	 <p>(example)</p>

**10.2.3 Calculating the change**

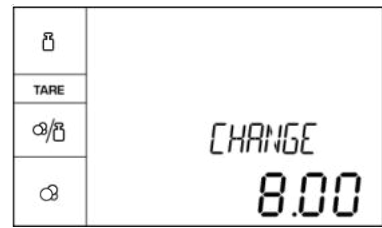
<p>When the sales price appears, press <b>BAR</b>.</p>	 <p>(example)</p>
<p>PAY will be displayed.</p>	

Use the numeric keys to enter the given amount and confirm by pressing **TARE**.



(example)

The change will be shown briefly.











(example)



## 11 Additional useful functions


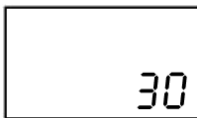



### 11.1 Display background illumination

<p>In weighing mode press  and keep pressed. SET BKMODE manual will be displayed.</p>	
<p>Use  or  to change between the settings:</p> <ul style="list-style-type: none"> <li>• Manual</li> <li>• Auto</li> <li>• Off</li> </ul> <p>Use  to confirm the desired setting.</p>	
<p>The brightness of the display can be set by the keys  and .</p>	

Display	Description
Auto	Background illumination on, as soon as the balance is used or the weight value is not zero
manual	Background illumination on/off by pressing  .
oFF	Background lighting off







## 11.2 AUTO-OFF




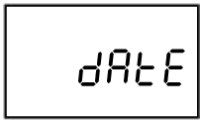

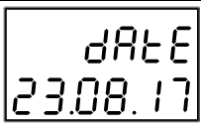
To save the rechargeable battery, the automatic switch-off function can be activated, switch-off time selectable after 3, 5, 15 or 30 minutes.

<p>In menu F3 call up offmE and confirm by . The last selected setting will be shown.</p>	<div style="border: 1px solid black; padding: 5px; text-align: center;">               (example)         </div>
<p>Select the desired time using the keys  or  and acknowledge on . The switch-off time now is set.</p>	

- oFF**      Automatic switch off deactivated
- 3**         Automatic switch off after 3 min
- 5**         Automatic switch off after 5 min
- 15**        Automatic switch off after 15 min
- 30**        Automatic switch off after 30 min

## 11.3 Date and time

<p>In menu F4 call up CloCK and confirm by . The last selected setting will be shown.</p>	<div style="border: 1px solid black; padding: 5px; text-align: center;">               (example)         </div>
<p>Use the keys  or  to change between date, time and the format. We recommend to select the format first:</p> <ul style="list-style-type: none"> <li>• YYmmdd = JJMMTT</li> <li>• mmddYY = MMTTJJ</li> <li>• ddmmYY = TTMMJJ</li> </ul>	
<p>Here is an example: YYmmdd and press  to confirm. STYLE is displayed.</p>	<div style="border: 1px solid black; padding: 5px; text-align: center;">  </div>

<p>Select date or time using  or . In this example dAtE, confirm with .</p>	
<p>dAtE and a date will be displayed. Enter the current date via the numeric keys and confirm by .</p>	 (example)
<p>Set the time in the same way.</p>	

## 12 RS 232 interface

### 12.1 Technical data

RS 232 connection to output of weighing data

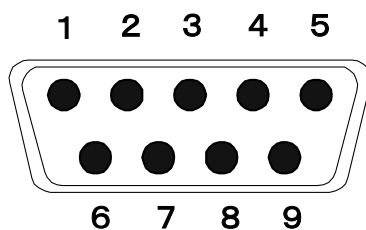
ASCII code

Baud rate 1200, 2400, 4800, 9600, 19200, 38400, 115200

8 data bits

No parity

### 12.2 Pin allocation of balance output bushing:



Pin 2	RXD	Input	Receiving data
Pin 3	TXD	Output	Transmission data
Pin 5	GND	—	Signal ground

### 9pin D Connector:

Balance		computer
Pin 2	—	Pin 3
Pin 3	—	Pin 2
Pin 5	—	Pin 5

### 12.3 Data output format

Continuous data output:

		,			:	-	+/-	0	.	0	0	0	0	k	g	\r	\n
S	T			G	S		SPACE		WEIGHT DATA					WEIGHT UNIT			
ST: STABLE				GS: GROSS WEIGHT													
UT: UNSTABLE				NT: NET WEIGHT				TERMINATOR									

Report export:

( 1 ) daily\r\n : export the daily report

D	a	i	l	y	\r	\n
input daily command						Terminator

( 2 ) start170718\r\n  
end170718\r\n export report for some day

S	t	a	r	t	1	7	0	7	1	8	\r	\n
put start command					input starting date						Terminator	
E	n	d	1	7	0	7	1	8	\r	\n		
input end command			input end date							Terminator		

(3) product--(1-12 direct PLU)\r\n

p	r	o	d	u	c	T	0	1	\r	\n
Product command							PLU number 00<N<13 Terminator			

( 4 ) product12(0-99 indirect PLU)\r\n export the input PLU transaction record

p	r	o	d	u	c	T	0	1	\r	\n
Product command							PLU number N< 99		Terminator	

(5) list\r\n export all PLU information (PLU should be seted)

L	i	s	t	\r	\n
List command				Terminator	

(6) recordall\r\n clear all the transaction record

r	e	c	o	r	d	A	l	l	\r	\n
Recordall command									Terminator	

SCALE serial port mode :

SendPlu (use for setting from back office to scale)

P 0 3 , B I G A P P L E , 1 , 5 . 0 0 , 0 . 3 0 0

P	0	3	,	B	I	G	B	A	N	A	N	A	,	1	,	5	.	0	0	,	0	.	3	0	0	,	\	\
PLU number			product name											unit price			pre tare value			Terminator								

Weighing mode

## 12.4 Print

The following default settings in the menu must be made:

<b>F8</b>	ACC	off				
<b>F6</b>	Print	Format	Prt2			
<b>F11</b>	change	on				
<b>F5</b>	Pcom	Com1	chanel	Rs232	Print	rG88

**i** A printout is only possible if a basic price was previously entered.

## 12.5 Printout examples:



- In validated scales, the sum feature is blocked with a switch. To remove the access block, destroy the seal and press the switch.
- Menu: F6 → Format → Prt2

2017/12/04 15:30:48

T (kg)	N (kg)	EUR/kg	C (EUR)
-----			
#0000	Apple		
0.5	0.538	1,99/ kg	1.071
-----			
C (EUR) :			1.071

2017/12/04 15:30:48

T (kg)	N (kg)	EUR/g	C (EUR)
-----			
#0000	Apple		
0.5	0.538	1,99 /100 g	10,706
-----			
C (EUR) :			10,706

2017/12/04 15:30:48

T (kg)	N (kg)	EUR	C (EUR)
-----			
#0000	Apple		
0.5	6 x	1,99	11,94
-----			
C (EUR) :			11,94

## **13 Servicing, maintenance, disposal**

### **13.1 Cleaning**

Before cleaning, please disconnect the appliance from the operating voltage.

Please do not use aggressive cleaning agents (solvents or similar agents), but a cloth dampened with mild soap suds. Ensure that no liquid penetrates into the device and wipe 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.**

### **13.2 Servicing, maintenance**

The appliance may only be opened by trained service technicians who are authorized by KERN.

Before opening, disconnect from power supply.

### **13.3 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.



## 14 Instant help

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.

<b>Fault</b>	<b>Possible cause</b>
The displayed weight does not glow.	<ul style="list-style-type: none"><li>• The balance is not switched on.</li><li>• The mains supply connection has been interrupted (mains cable not plugged in/faulty).</li><li>• Power supply interrupted.</li><li>• Batteries are inserted incorrectly or empty</li><li>• No batteries inserted.</li></ul>
The displayed weight is permanently changing	<ul style="list-style-type: none"><li>• Draught/air movement</li><li>• Glass doors not closed</li><li>• Table/floor vibrations</li><li>• Weighing pan has contact with other objects.</li><li>• Electromagnetic fields / static charging (choose different location/switch off interfering device if possible)</li></ul>
The weighing result is obviously incorrect	<ul style="list-style-type: none"><li>• The display of the balance is not at zero</li><li>• Adjustment is no longer correct.</li><li>• The balance is on an uneven surface.</li><li>• Great fluctuations in temperature.</li><li>• Electromagnetic fields / static charging (choose different location/switch off interfering device if possible)</li></ul>

Should other error messages occur, switch balance off and then on again. If the error message remains inform manufacturer.

## 14.1 Error messages

-----	Overload
Err 1	Wrong data format in date input
Err 2	Wrong data format in time input
Err 4	Zero range exceeded
Err 5	Invalid entry
Err 6	Damaged electronics
Err 8	Adjustment error, check adjustment weight
Err 9	Instable; check environmental conditions
Err 19	Zero point drift; remove additional preloads (vessels) from the balance. Adjustment of the balance