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# Operating manual Platform balances

## KERN EOA

Version 1.0

10/2013

GB



EOA-BA-e-1310



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Version 1.0 10/2013

## Operating manual

### Platform balances

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## 1 Technical data

KERN	EOA 10K-3	EOA 30K-2
Readability (d)	0.005 kg	0.01 kg
Weighing range (max)	15 kg	35 kg
Reproducibility	0.005 kg	0.01 kg
Linearity	± 0.025 kg	± 0.05 kg
Warm-up time	10 minutes	
Weighing Units	kg	
Recommended adjustment weight, not added (class)	10 kg (M2)	20 kg ( M2 )
Stabilization time (typical)	3 sec.	
Operating temperature	+ 10° C ... + 35° C	
Humidity of air	max. 80 % (not condensing)	
Weighing plate mm	315 x 305	
Electric Supply	Input Voltage: 15 V / 600 mA	
Battery	9 V block Operating period: 60 h	
Auto-off	3 minutes	
Weight kg (net)	3	

<b>KERN</b>	<b>EOA 50K-2</b>	<b>EOA 100K-2</b>
Readability (d)	0.02 kg	0.05 kg
Weighing range (max)	60 kg	150 kg
Reproducibility	0.02 kg	0.05 kg
Linearity	± 0.1 kg	± 0.25 kg
Warm-up time	10 minutes	
Weighing Units	kg	
Recommended adjustment weight, not added (class)	40 kg (M1)	100 kg (M1)
Stabilization time (typical)	3 sec.	
Operating temperature	+ 10° C ... + 35° C	
Humidity of air	max. 80 % (not condensing)	
Weighing plate mm	315 x 305	
Electric Supply	Input Voltage: 15 V / 600 mA	
Battery	9 V block Operating period: 60 h	
Auto-off	3 minutes	
Weight kg (net)	3	

## 2 Declaration of conformity



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### Declaration of conformity

**EC-Konformitätserklärung**  
**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**

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

### Electronic Balance: KERN KERN EOA

EU Directive	Standards
2004/108/EC	EN 61326-1: 2006 EN 61326-2-2: 2006 EN 61000-3-2: 2006 EN 61000-3-3: 2008
2006/95/EC	EN 60950-1: 2006+A11: 2009

**Datum** 23.09.2013  
*Date*

**Ort der Ausstellung** 72336 Balingen  
*Place of issue*

**Signatur**  
*Signature*

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## 3 Basic Information (General)

### 3.1 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.

### 3.2 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.

### 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 and damage caused 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 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.

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

## 6 Unpacking, Setup and Commissioning

### 6.1 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.

***Therefore, observe the following for the installation site:***

- 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 charging of the material to be weighed, weighing container and windshield.

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

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

#### 6.2.1 Placing

The balance must be installed in a way that the weighing plate is exactly in horizontal position.



## 6.2.2 Scope of delivery

### Serial accessories:

- Balance with weighing plate and display unit
- Operating manual
- Battery

## 6.2.3 Basic structure

- Place the balance on a horizontal and solid base.
- Remove lamination sheet from weighing plate or display unit if existing.

## 6.3 Battery operation (Standard)

If the battery is used up, remove battery cover from the lower side of the balance and exchange the battery. Reinsert the battery cover.

In order to save the battery, the balance switches automatically off after 3 minutes without weighing.

If the balance is not used for a longer time, take out the batteries and store them separately. Leaking battery liquid could damage the balance.

## 6.4 Mains connection (optional)

Power is supplied via the external mains adapter. 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.

## 6.5 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. 1). 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.

## 6.6 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.


## 6.7 Adjustment

The adjustment should be made with the recommended adjustment weight (see chap. 1 "Technical data"). Weights of different nominal values may be used for adjustment but are not optimal for technical measuring.

### Procedure when adjusting:


Observe stable environmental conditions. A warming up time (see chapter 1) is required for stabilization.

Operation	Display
-----------	---------

⇒ Start balance by pressing .


⇒ Await zero display



⇒ Press  and keep it pressed, [CAL] is displayed

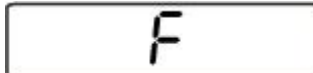


⇒ After approx. 5 seconds appears automatically the size of the recommended adjustment weight



(example)

⇒ Place adjustment weight in the middle of the weighing plate, short time later [F] will appear.



Afterwards the balance automatically jumps back to weighing mode. In the display there appears the value of the adjustment weight.



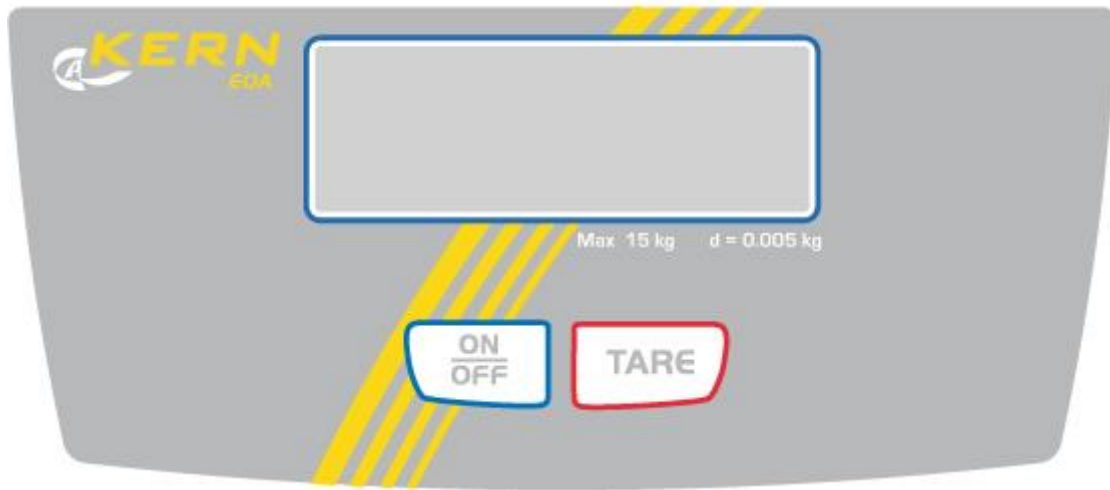
(example)



An error during adjustment or the use of an incorrect adjusting weight will result in an error message „CAL E“. Repeat adjustment.

Keep the adjustment close to the balance. Daily control of the weighing exactness is recommended for quality-relevant applications.

## 7 Operation

### 7.1 Keyboard overview



Button	Description	Function
	ON/OFF button	Switch on-off balance
	TARE button	<ul style="list-style-type: none"><li>▪ short pressing: Tare balance</li><li>▪ long pressing: Invoke adjustment</li></ul>

## 7.2 Weighing

### Operation

⇒ Start balance by pressing



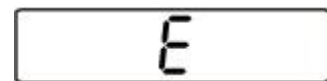
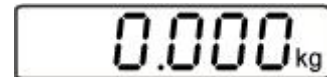
⇒ Await zero display

⇒ Place goods onto weighing plate.

Now the weight is displayed, after the standstill control appears the weighing unit **[kg]** right-hand in the display.

If the material to be weighed is heavier than the weighing range, the display will show **[E]** (=Overload).

### Display



## 7.3 Taring

### Operation

⇒ Turn on weighing scale



and wait for zero to be displayed.

⇒ Place the tare vessel (ex. 3kg) on the weighing plate

and press the



button.

The balance display goes to **[0]**.

⇒ Put the sample into the tare vessel.  
Weight of sample is indicated.

⇒ If after finishing the weighing process the



button is pressed again, **[0]** appears anew in the display.

### Display



(example)




(example)









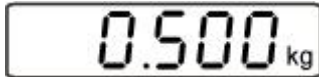


The taring process can be repeated any number of times, e.g. when adding several components for a mixture (adding).

The limit is reached when the whole weighing range is exhausted.

After removing the taring container the total weight is displayed as negative display.

By pressing the  button again, the balance returns to „0“.

## 7.4 Plus/minus weighing

Operation	Display
⇒ Turn on weighing scale  and wait for zero to be displayed.	
⇒ Put the nominal weight on the weighing plate and tare to [0] using the  button.	 (example) ↓ 
⇒ Remove the nominal weight. The nominal weight appears as negative display.	 (example)
⇒ Put the test objects subsequently on the weighing plate, the respective deviation from the nominal weight is displayed with the respective sign to „+“ and „-“.	 (example)
⇒ Back to weighing mode by pressing the  button and with unloaded weighing plate	

## 8 Servicing, maintenance, disposal

### 8.1 Cleaning



Before any maintenance, cleaning and repair work 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. Polish with a dry soft cloth.

**Spilled weighing goods must be removed immediately.**

### 8.2 Servicing, maintenance

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

Before opening, disconnect from power supply.

### 8.3 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.

## 9 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.

Help:

**Fault**

**Possible cause**

The displayed weight does not glow.

- The balance is not switched on.
- The mains supply connection has been interrupted (mains cable not plugged in/faulty).
- Power supply interrupted.
- Batteries are inserted incorrectly or empty
- No batteries inserted.

The displayed weight is permanently changing

- Draught/air movement
- Table/floor vibrations
- The weighing plate is in contact with foreign matter.
- Electromagnetic fields / static charging (choose different location/switch off interfering device if possible)

The weighing value is obviously wrong

- The display of the balance is not at zero
- Adjustment is no longer correct.
- Great fluctuations in temperature.
- Electromagnetic fields / static charging (choose different location/switch off interfering device if possible)

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