

# Operating instructions School and platform balances

## KERN EFB

Version 1.1  
11/2004  
GB





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## Operating instructions

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## 1 Technical data

<b>KERN</b>	<b>EFB10K5D</b>	<b>EFB20K10D</b>	<b>EFB50K20D</b>
<i>Readout</i>	5g / 10g	10g / 20g	20g / 50g
<i>Weighing range</i>	5kg / 10kg	10kg / 20kg	20kg / 50kg
<i>Reproducibility</i>	5 g / 10g	10g / 20g	20g / 50g
<i>Linearity</i>	± 15g // ± 30g	±30g // ± 60g	± 60g // ± 150g
<i>Stabilization time</i>	2-3 sec.		
<i>AUTO-OFF-Function</i>	Approx.. 4 min.		
<i>Operating temperature</i>	5° C .... + 35° C		
<i>Air humidity</i>	max. 80 % (non-condensing)		
<i>Case (W x D x H) mm</i>	300 x 400 x 80		
<i>Weighing plate (stainless steel) mm</i>	300 x 300		
<i>Mains adapter</i>	solary		

<b>KERN</b>	<b>EFB 200-1D</b>	<b>EFB 2000-0D</b>	<b>EFB 5K2D</b>
<i>Readout</i>	0,1g / 0,2g	1g / 2g	2g / 5g
<i>Weighing range</i>	100g / 200g	1kg / 2kg	2kg / 5kg
<i>Reproducibility</i>	0,1g / 0,2g	1g / 2g	2g / 5g
<i>Linearity</i>	± 0,3g // ± 0,6g	± 3g // ± 6g	± 6g // ± 15g
<i>Stabilization time</i>	2-3 sec.		
<i>AUTO-OFF-Function</i>	Approx. 4 min.		
<i>Operating temperature</i>	5° C .... + 35° C		
<i>Air humidity</i>	max. 80 % (non-condensing)		
<i>Case (W x D x H) mm</i>	185 x 175 x 42		
<i>Weighing plate (stainless steel) mm</i>	∅ 140		
<i>Mains adapter</i>	solary		

## 2 Declaration of conformity



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## Konformitätserklärung

Declaration of conformity for apparatus with CE mark

Konformitätserklärung für Geräte mit CE-Zeichen

Déclaration de conformité pour appareils portant la marque CE

Declaración de conformidad para aparatos con disitintivo CE

Dichiarazione di cofnromità per apparecchi contrassegnati con la marcatura CE

- English** We hereby declare that the product to which this declaration refers conforms with the following standards.
- Deutsch** Wir erklären hiermit, daß das Produkt, auf das sich diese Erklärung bezieht, mit den nachstehenden Normen übereinstimmt.
- Français** Nous déclarons avec cela responsabilité que le produit, auquel se rapporte la présente déclaration, est conforme aux normes citées ci-après.
- Español** Manifestamos en la presente que el producto al que se refiere esta declaración est´a de acuerdo con las normas siguientes
- Italiano** Dichiariamo con ciò che il prodotto al quale la presente dichiarazione si riferisce è conforme alle norme di seguito citate.

**Electronic Balances: KERN EFB**

Mark applied	EU Directive	Standards
	89/336EEC EMC	EN 61000-6-3 EN 61000-6-1

Date: 15.11.2004

Signature:

Gottl. KERN & Sohn GmbH  
Management

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### **3 Fundamental information (general)**

#### **3.1 Intended use**

The balance you have acquired serves to determine the weighing value of the 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 plate. The weighing value can be read off after a stable weighing value has been obtained.

#### **3.2 Inappropriate use**

Do not use the 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” in the balance. (Example: Slowly draining fluids from a container on the balance.)

Do not leave a permanent load on the weighing plate. This can damage the measuring equipment.

Be sure to avoid impact shock and overloading the balance in excess of the prescribed maximum load rating (max.), minus any possible tare weight that is already present. This could cause damage to the balance.

Never operate the balance in hazardous locations. The series design is not explosion-proof.

Structural alterations may not be made to the balance. This can lead to incorrect weighing results, faults concerning safety regulations as well as to destruction of the balance.

The balance may only be used in compliance with the described guidelines. Varying areas of application/planned use must be approved by KERN in writing.

#### **3.3 Guarantee**

The guarantee is not valid following

- non-observation of our guidelines in the operating instructions
- use outside the described applications
- alteration to or opening of the device
- mechanical damage and damage caused by media, liquids
- natural wear and tear
- inappropriate erection or electric installation
- overloading of the measuring equipment

#### **3.4 Monitoring the test substances**

The metrology features of the balance and any possible available adjusting weight must be checked at regular intervals within the scope of quality assurance. For this purpose, the answerable user must define a suitable interval as well as the nature and scope of this check. 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. Test weights and balances can be adjusted quickly and at a reasonable price in KERN's accredited DKD calibration laboratory (return to national normal).

## **4 Fundamental safety information**

### **4.1 Observe the information in the operating instructions**

Please read the operating instructions carefully before erecting and commissioning, even if you already have experience with KERN balances.

### **4.2 Staff training**

The device may only be operated and looked after by trained members of staff.

## **5 Transport and storage**

### **5.1 Acceptance check**

Please check the packaging immediately upon delivery and the device during unpacking for any visible signs of external damage.

### **5.2 Packaging**

Please retain all parts of the original packaging in case it should be necessary to return items at any time.

Only the original packaging should be used for return consignments.

Before despatch, disconnect all attached cables and loose/movable parts.

Secure all parts, e.g. power unit etc., to prevent slipping and damage.

## 6 Unpacking, installation and commissioning

### 6.1 Place of installation, place of use

The balance is constructed in such a way that reliable weighing results can be achieved under normal application conditions.

By selecting the correct location for your balance, you will be able to work quickly and precisely.

**Therefore please observe the following at the place of installation:**

- 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. Inadmissible bedewing (condensation of air moisture on the device) can occur if a cold device is taken into a significantly warmer environment. In this case, please acclimatise the device for approx. 2 hours at room temperature after it has been disconnected from the mains.
- Avoid static charging of the material to be weighed and weighing container .

Major display deviations (incorrect weighing results) are possible if electromagnetic fields occur as well as due to static charging, currents and instable power supply. It is then necessary to change the location.

### 6.2 Unpacking

Carefully remove the balance from its packaging, remove the plastic wrapping and position the balance in its intended working location.

#### 6.2.1 Installation

Install the balance in such a fashion that the weighing plate is absolutely horizontal

#### 6.2.2 List of items supplied

**Standard accessories:**

<b>KERN EFB</b>
<ul style="list-style-type: none"><li>• <i>Balance</i></li><li>• <i>Stainless steel weighing plate</i></li><li>• <i>Operating manual</i></li></ul>

### 6.3 Energy supply

Flashing „Low“ in the display indicates that the stored energy is running low and that the scale should be placed in a stronger light. If „Low“ appears without flashing The energy is completely used up and the scale will switched off at any moment..

### 6.4 Switching on

After pressing the operation key all symbols will appear. You can check whether all segments are clearly shown on the display. Zero indicates that the scales are ready for operation.

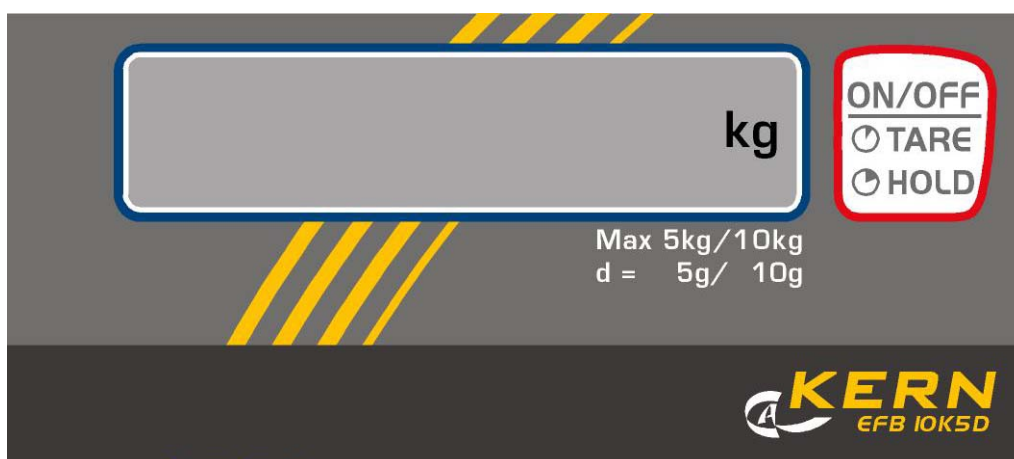
### 6.5 Switch –Off / Auto-Off

Press the key until „0“ is indicated in the display. Press the key once more for switch-off. Automatic switch-off will occur after approx. 4 min( with or without weight on the scales). The scales will not automatically switch off while the HOLD function is activated.

## 7 Operation


### 7.1 Overview of the keypad

Model: EFB 10K5D, EFB 20K10D, EFB 50K20D





Model: EFB 200-1D, EFB 2000-0D, EFB 5K2D





Key	Pressed briefly	Pressed for 2 sec
	<ul style="list-style-type: none"> <li>• Switch-on the scale</li> <li>• Tara-function</li> <li>• Press the key until „0“ is indicated in the display.</li> </ul>	<ul style="list-style-type: none"> <li>• The HOLD function freeze the indicated weighing value</li> </ul>

## 7.2 Operating instructions

### 7.2.1 Weighing

- The balance is switched on by pressing the  key.
- The balance performs auto-diagnostics (for 2 s) and then displays "0".
- If the weighing object is heavier than the weighing range the display indicates "FULL" (=Overload).
- The balance is switched off by pressing the  key once.

### 7.2.2 Taring

- Place tare container on the weighing plate and press  key. The weighing indication changes now to "0". The weight of the cup is now memorised.
- Fill weighing object in the container, read measuring value.
- By pressing  key, after the terminated weighing operation "0" appears again in the display.

The taring procedure can be repeated several times, for instance to produce a mixture of several components.

The limit is reached when the total weighing range has been used.

After removal of the tare cup the total weight appears as a negative value with „-„ mark.

### 7.2.3 Hold

The HOLD function serves to freeze the indicated weighing value and is of advantage when weighing large formats that hide the display.

- Place the letter or parcel onto the scales. Hold the key for at least 2.sec. As soon as "HOLD" is shown in the display, release the key. The display will freeze the weighing value.  
Press the key again to release the HOLD function.

## 8 Maintenance, upkeep, disposal

### 8.1 Cleaning

Please disconnect the device from the operating voltage before cleaning. Only use a cloth dampened with mild suds and not aggressive cleaning agents (solvents or similar). Please ensure that fluids are not able to get into the device and rub off using a clean, soft cloth.

Loose sample residue/powder can be removed carefully using a brush or hand vacuum cleaner.

**Remove any spilt material to be weighed immediately.**

### 8.2 Maintenance, upkeep

The device may only be opened by trained service engineers authorised by KERN.

### 8.3 Disposal

The operating company shall dispose of the packaging and the device in compliance with the valid national or regional law of the operating location.

## 9 Troubleshooting

The balance should be switched off for a short time following an interruption in the programme sequence. It is then necessary to repeat the weighing process from the beginning.

Help:

#### ***Interruption***

#### ***Possible cause***

*Weight display is not illuminated.*

- *The balance is not switched on.*

*The weight display changes continually*

- *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 result is obviously incorrect*

- *The balance display is not set to zero*
- *Great fluctuations in temperature.*
- *Electromagnetic fields / static charging (choose different location/switch off interfering device if possible)*

Switch the balance off if other error messages should appear and then switch on again. Contact the manufacturer if the error message does not disappear.

