

KERN[®]

KERN & Sohn GmbH

Ziegelei 1
D-72336 Balingen
E-Mail: info@kern-sohn.com

Tel: +49-[0]7433- 9933-0
Fax: +49-[0]7433-9933-149
Internet: www.kern-sohn.com

Operating instruction Platform scale

KERN ECB_ECE-N

Version 2.3
04/2016
GB



(ECB-N)

ECB_ECE-N-BA-e-1623



KERN ECB_ECE-N

Version 2.3 04/2016

Operating instruction

Platform scale

Table of contents:

1	Technical data.....	3
2	Fundamental information (general).....	5
2.1	Intended use	5
2.2	Inappropriate use	5
2.3	Guarantee	5
2.4	Monitoring the test substances	6
3	Fundamental safety information.....	6
3.1	Observe the information in the operating instructions	6
3.2	Staff training	6
4	Transport and storage.....	6
4.1	Acceptance check	6
4.2	Packaging / return transport	6
5	Unpacking, installation and commissioning	7
5.1	Place of installation, place of use	7
5.2	Unpacking the Balance	7
5.2.1	Installation.....	7
5.2.2	Package volume	8
5.3	Mains supply/Battery operation	8
5.3.1	Mains supply (optional)	8
5.3.2	Battery operation	8
5.4	Initial start-up	10
5.5	Adjustment	10
5.6	Adjusting	10
6	Operation.....	11
6.1	Weighing	11
6.2	Taring.....	11
6.3	Rear illuminated display (only models ECB-N)	12
6.4	Dosage und Zero-tracking	13
6.5	AUTO-OFF function (only models ECB-N).....	14
6.6	Reset function.....	15
7	Maintenance, upkeep, disposal	16
7.1	Cleaning.....	16
7.2	Maintenance, upkeep	16
7.3	Disposal.....	16
8	Troubleshooting.....	17
9	Declaration of -Conformity.....	18

1 Technical data

Models ECB-N:

KERN	ECB 10K-3N	ECB 20K-2N	ECB 50K-2N
Readout (d)	5 g	10 g	20 g
Weighing range (max)	10 kg	20 kg	50 kg
Taring range (subtractive)	10 kg	20 kg	50 kg
Reproducibility	5 g	10 g	20 g
Linearity	± 20 g	± 40 g	± 80 g
Recommended adjustment weight, not added (class)	5 kg (M3)	10 kg (M3)	20 kg (M3)
Stabilisation time (typical)	2 sec.		
Operating temperature	+ 5°C+ 35°C		
Humidity	max. 80 % (non-condensing)		
Size (W x D x H) mm	320 x 300 x 60		
Stainless steel weighing plate mm	320 x 260		
Weight kg (net)	2,5		

Models ECE-N:

KERN	ECE 10K-3N	ECE 20K-2N	ECE 50K-2N
Readout (d)	5 g	10 g	20 g
Weighing range (max)	10 kg	20 kg	50 kg
Taring range (subtractive)	10 kg	20 kg	50 kg
Reproducibility	5 g	10 g	20 g
Linearity	± 20 g	± 40 g	± 80 g
Recommended adjustment weight, not added (class)	5 kg (M3)	10 kg (M3)	20 kg (M3)
Stabilisation time (typical)	2 sec.		
Operating temperature	+ 5°C+ 35°C		
Humidity	max. 80 % (non-condensing)		
Size (W x D x H) mm	320 x 300 x 60		
Plastic weighing plate mm	320 x 260		
Weight kg (net)	2,5		

2 Fundamental information (general)

2.1 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.

2.2 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.

2.3 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

2.4 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) 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).

3 Fundamental safety information

3.1 Observe the information in the operating instructions



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

Versions in other languages are non-binding translations.
The only binding version is the original document in German.

3.2 Staff training

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

4 Transport and storage

4.1 Acceptance check

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

4.2 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 transport securing devices. (see chapter 5.2)
- ⇒ Secure all parts such as the glass wind screen, the weighing platform etc. against shifting and damage.

5 Unpacking, installation and commissioning

5.1 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, weighing container and windshield.

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

5.2 Unpacking the Balance

Carefully remove the balance from the packaging and out of the plastic covering, then place the balance on the assigned position.

5.2.1 Installation

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

5.2.2 Package volume

Serial fittings:

KERN ECB_ECE-N
<ul style="list-style-type: none">• Balance with<ul style="list-style-type: none">• weighing plate stainless steel (ECB-N)• weighing plate plastic (ECE-N)• User manual

5.3 Mains supply/Battery operation

5.3.1 Mains supply (optional)

Electric power supply is by means of the external mains supply circuit. The printed voltage level must comply with the local voltage.

Only use original KERN mains supply circuits. The use of other makes is subject to approval by Kern.

Mains adapter output voltage: 9V DC (polarity: inner terminal is negative)

5.3.2 Battery operation (standard) / Rechargeable Battery (option)

Open the battery cover on the underside of the balance. Insert 6 x 1.5volt (AA) batteries.

Replace the battery cover. To preserve battery life, the balance switches off automatically after 3 minutes if no weighing has taken place.

For battery operation the balance has an automatic switchoff function which can be activated and deactivated in the menu (chap. 6.5).

When the battery power is used up the display will show "LO". Press the ON/OFF key and change the batteries at once.

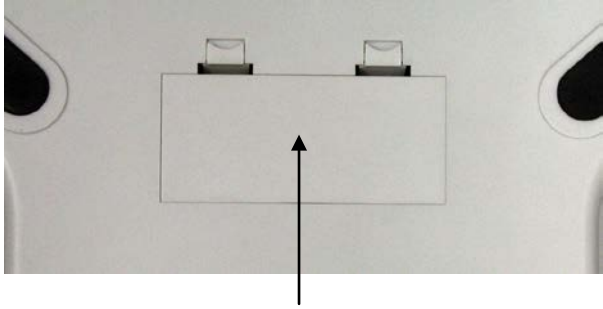
When the balance is not in use for a longer period of time remove batteries and keep them separately. Leakage of battery liquid might damage the balance.

The optionally supplied battery is charged with the optionally supplied power supply.

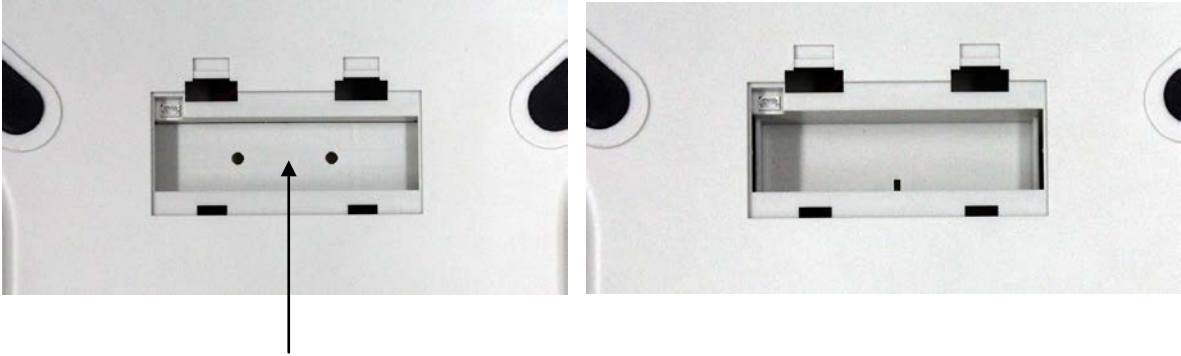
The battery has a service life of c. 100 hours.

The charging period for total charge is c. 10 hours.

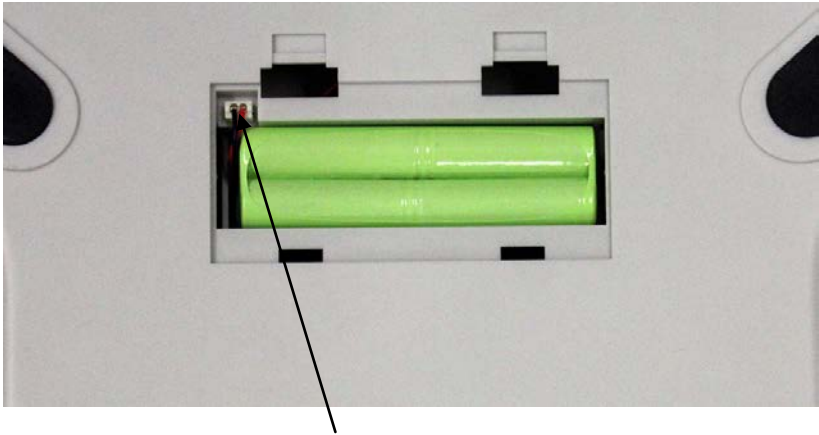
Rechargeable Battery Installation:



1. Remove battery cover



2. Slide spacer to left or right, lever down on corner, then remove the spacer



3. Insert and connect rechargeable battery

5.4 Initial start-up

A warm-up time of 5 minutes stabilises the measured values after switching on.

The accuracy of the balance depends on the local acceleration of the fall.

Please be sure to observe the information in the chapter on adjusting.

5.5 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 during the initial start-up, after change in location and variation of surrounding temperature. It is also recommendable to adjust the balance periodically during weighing operation in order to obtain exact measured values.


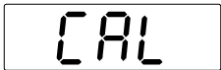
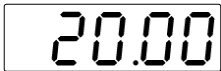
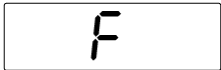
5.6 Adjusting

Using a precision weight, the accuracy of the balance can be checked at any time and adjusted.

Adjustment procedure:

Check that the surrounding conditions are stable.

A short warm-up time of about 5 minutes is recommended for stabilisation.

Operation	Display
Turn on balance by pressing the ON/OFF key	
Keep the TARE key pressed for 3 seconds „ CAL “ – followed by the adjustment weight will be adjusted.	  (example)
Place the required adjustment weight on the centre of the weighing plate (see chap. 1 „Technical Data“) Short time later appears: After that the balance will switch off automatically. Adjustment has now been completed successfully. Remove the weighed good.	
An error during adjustment or the use of an incorrect adjusting weight will result in an error message „ E “. In this case repeat the adjustment.	

6 Operation

6.1 Weighing

- The balance is switched on by pressing the "**ON/OFF**" key.
- The balance performs auto-diagnostics (for 2 s) and then displays "**0.00**".
- If the weighing object is heavier than the weighing range the display indicates "**E**" (=Overload).
- The balance is switched off by pressing the "**ON/OFF**" key once.

6.2 Taring

- Switch the balance with the "**ON/OFF**" key on and wait until display appears as "**0.00**". Position the tare load and press the "**TARE**" key.
- The balance display becomes "**0.00**".
- The item to be weighed can now be placed in the tare container and the weight can be read off.

6.3 Rear illuminated display (only models ECB-N)

To choose the backlight mode, please follow the below instruction for the setting:

- ⇒ When the balance is switched off, press the **TARE** -key and keep it pressed
- ⇒ Do not release the **TARE** -key. Press also the **ON/OFF** -key and keep it pressed
- ⇒ Keep the **ON/OFF** -key pressed, however release the **TARE** -key
- ⇒ Press **TARE** -key anew
- ⇒ Keep both keys pressed until in the display “**bl**” appears
- ⇒ Release both keys. The balance is situated in the menu.
- ⇒ Press the **ON/OFF** -key until „**bl**“ appears
- ⇒ Confirm with the **TARE** key
- ⇒ Press the **ON/OFF** key to switch among the backlight modes:

Display	Mode	Function
„bl“ ON	Backlight on	Contrasting display which can also be read in the dark.
„bl“ OFF	Backlight off	Save the battery
„bl“ CH	Backlight switches automatically off 10 sec after stable indication	Save the battery

- ⇒ Confirm with the **TARE** key. Wait until the balance automatically returns to weighing mode

6.4 Dosage und Zero-tracking

When the Auto-Zero-function is activated, any slight changes of the zero readout are automatically tared.

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.)

Having dosages with slight changes of weight it is recommended to deactivate this function.

With switched off **Zero-Tracking** the display however is more unstably.

Activate/deactivate Zero-Tracking

- ⇒ When the balance is switched off, press the **TARE** -key and keep it pressed
- ⇒ Do not release the **TARE** -key. Press also the **ON/OFF** -key and keep it pressed
- ⇒ Keep the **ON/OFF** -key pressed, however release the **TARE** -key
- ⇒ Press **TARE** -key anew
- ⇒ Keep both keys pressed until in the display “**bl**” appears
- ⇒ Release both keys. The balance is situated in the menu.
- ⇒ Press the **ON/OFF** -key until „tr“ appears
- ⇒ Confirm with the **TARE** key
- ⇒ Press the **ON/OFF** key to switch among the settings:

Display	Mode
„tr“ ON	Auto-Zero on
„tr“ OFF	Auto-Zero off

- ⇒ Confirm with the **TARE** key. Wait until the balance automatically returns to weighing mode

6.5 AUTO-OFF function (only models ECB-N)

For battery operation the balance has an automatic switch off function which can be activated and deactivated in the menu.

Please follow the below instruction for the setting:

- ⇒ When the balance is switched off, press the **TARE** -key and keep it pressed
- ⇒ Do not release the **TARE** -key. Press also the **ON/OFF** -key and keep it pressed
- ⇒ Keep the **ON/OFF** -key pressed, however release the **TARE** -key
- ⇒ Press **TARE** -key anew
- ⇒ Keep both keys pressed until in the display “**bl**” appears
- ⇒ Release both keys. The balance is situated in the menu.
- ⇒ Press the **ON/OFF** -key until „**AF**“ appears
- ⇒ Confirm with the **TARE** key
- ⇒ Press the **ON/OFF** key to switch among the settings:

Display	Mode
„ AF “ ON	Battery conservation through automatic power-off 3 minutes after ending a weighing operation.
„ AF “ OFF	AUTO-OFF function deactivated.

- ⇒ Confirm with the **TARE** key. Wait until the balance automatically returns to weighing mode

6.6 Reset function

Factory setting reset.

- ⇒ When the balance is switched off, press the **TARE** -key and keep it pressed
- ⇒ Do not release the **TARE** -key. Press also the **ON/OFF** -key and keep it pressed
- ⇒ Keep the **ON/OFF** -key pressed, however release the **TARE** -key
- ⇒ Press **TARE** -key anew
- ⇒ Keep both keys pressed until in the display "**bl**" appears
- ⇒ Release both keys. The balance is situated in the menu.
- ⇒ Press the **ON/OFF** -key until „**rSt**“ appears
- ⇒ Confirm with the **TARE** key
- ⇒ Press the **ON/OFF** key to switch among the settings:

Display	Mode
„rst“ YES	Factory setting reset
„rst“ NO	No factory setting reset

- ⇒ Confirm with the **TARE** key. Wait until the balance automatically returns to weighing mode

7 Maintenance, upkeep, disposal

7.1 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.

7.2 Maintenance, upkeep

The device may only be opened by trained service engineers authorised by KERN. Disconnect from the mains supply before opening.

7.3 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.

8 Troubleshooting

The balance should be switched off for a short time following an interruption in the programme sequence and disconnected from the mains supply. 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 mains supply connection has been interrupted (mains cable not plugged in/faulty).
- Power supply interrupted. .

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
- Adjustment is no longer correct.
- 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.

9 Declaration of –Conformity

To view the current EC/EU Declaration of Conformity go to:

www.kern-sohn.com/ce