KERN & Sohn GmbH
Ziegelei 1
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 instructions
Baby balance

KERN MBC

MBC 15K2DNM
MBC 20K10NM
MBC 15K2DEM
MBC 20K10EM

Version 4.2
2025-04
GB

MBC_NM-BA-e-2542

D	Weitere Sprachversionen finden Sie online unter www.kern-sohn.com/manuals
BG	Други езикови версии ще намерите в сайта www.kern-sohn.com/manuals
DK	Flere sprogudgaver findes på websiden www.kern-sohn.com/manuals
EST	Muud keeleversioonid leiate Te leheküljel www.kern-sohn.com/manuals
E	Más versiones de idiomas se encuentran online bajo www.kern-sohn.com/manuals
GR	Άλλες γλωσσικές αποδόσεις θα βρείτε στην ιστοσελίδα www.kern-sohn.com/manuals
F	Vous trouverez d'autres versions de langue online sous www.kern-sohn.com/manuals
LV	Citas valodu versijas atradīsiet vietnē www.kern-sohn.com/manuals
FIN	Muut kieliversiot löytyvät osoitteesta www.kern-sohn.com/manuals
LT	Kitas kalbines versijas rasite svetainėje www.kern-sohn.com/manuals
GB	Further language versions you will find online under www.kern-sohn.com/manuals
RO	Alte versiuni lingvistice veţi găţi pe site-ul www.kern-sohn.com/manuals
I	Trovate altre versioni di lingue online in www.kern-sohn.com/manuals
SK	Iné jazykové verzie nájdete na stránke www.kern-sohn.com/manuals
NL	Bijkomende taalversies vindt u online op www.kern-sohn.com/manuals
SLO	Druge jezikovne različice na voljo na spletni strani www.kern-sohn.com/manuals
P	Encontram-se online mais versões de línguas em www.kern-sohn.com/manuals
CZ	Jiné jazykové verze najdete na stránkách www.kern-sohn.com/manuals
PL	Inne wersje językowe znajdą Państwo na stronie www.kern-sohn.com/manuals
SE	Övriga språkversioner finns här: www.kern-sohn.com/manuals
H	A további nyelvi változatok a következő oldalon találhatók: www.kern-sohn.com/manuals
HR	Druge jezične verzije su dostupne na stranici: www.kern-sohn.com/manuals
NO	Andre språkversjoner finnes det på www.kern-sohn.com/manuals

GB

KERN MBC

Version 4.2 2025-04

Operating instructions

Baby balance

Contents

1 Technical data

KERN (type)	MBC 15K2DNM	MBC 20K10NM
Model	MBC 15K2DM	MBC 20K10M
Weighing range (max)	6 kg / 15 kg	20 kg
Minimum load (Min)	40 g / 100 g	200 g
Readability (d)	2 g / 5 g	10 g
Verification value (e)	2 g / 5 g	10 g
Reproducibility	2 g / 5 g	10 g
Linearity ±	2 g / 5 g	10 g
Accuracy for conformity assessment (first verification)	till to 1 kg = 0.5 e >1 kg- 10 kg = 1 e >10 kg – 15 kg = 1,5 e	till to 5 kg = 0.5 e >5 kg- 20 kg = 1 e
Display	LCD with 25mm high digits	
Recommended adjustment weight, not added (class)	15 kg (M1)	20 kg (M1)
Stabilization time (typical)	3 sec.	
Warm-up time	10 min	
Operating temperature	10° C …. + 40° C	
Humidity of air	max. 80 % (not condensing)	
Input Voltage	100 V - 240 V, 50 / 60 Hz	
Auto Off	After “x“ min adjustable without load change	
Dimensions fully mounted (W x D x H) mm	890 x 470 x 175 (incl. integrated height measuring device) 600 x 407 x 120 (without height measuring device)	
Dimensions display unit (B x D x H) mm	200 x 130 x 60	
Baby weighing pan (B x D x H) mm	600 x 280 x 55	
Weight kg (net)	4,6	
Rechargeable battery operation optional	MBC-A08, internal 6x1.2 V 2000mA	
Verification in accordance with 2014/31/EU	Category III	
Medical product as per (EU) 2017/745	Category I with measuring function	
Height measuring rod, optional	MBC-A01, Measuring range 40 – 80 cm	

KERN (type)	TMBC 15K2DEM-A	TMBC 20K10EM-A
Model	MBC 15K2DEM	MBC 20K10EM
Weighing range (max)	6 kg / 15 kg	20 kg
Minimum load (Min)	40 g / 100 g	200 g
Readability (d)	2 g / 5 g	10 g
Verification value (e)	2 g / 5 g	10 g
Reproducibility	2 g / 5 g	10 g
Linearity ±	2 g / 5 g	10 g
Accuracy for conformity assessment (first verification)	till to 1 kg = 0.5 e >1 kg- 10 kg = 1 e >10 kg – 15 kg = 1,5 e	till to 5 kg = 0.5 e >5 kg- 20 kg = 1 e
Display	LCD with 25mm high digits	
Recommended adjustment weight, not added (class)	15 kg (M1)	20 kg (M1)
Stabilization time (typical)	3 sec.	
Warm-up time	10 min	
Operating temperature	10° C …. + 40° C	
Humidity of air	max. 80 % (not condensing)	
Input Voltage	100 V - 240 V, 50 / 60 Hz	
Auto Off	After “x“ min adjustable without load change	
Dimensions fully mounted (W x D x H) mm	890 x 470 x 175 (incl. integrated height measuring device) 600 x 407 x 120 (without height measuring device)	
Dimensions display unit (B x D x H) mm	200 x 130 x 60	
Baby weighing pan (B x D x H) mm	600 x 280 x 55	
Weight kg (net)	4.6	
Rechargeable battery operation optional	MBC-A08, internal 6x1.2 V 2000mA	
Batteries	6 x 1.5 V AA	
Verification in accordance with 2014/31/EU	Category III	
Medical product as per (EU) 2017/745	Category I with measuring function	
Height measuring rod, optional	MBC-A01, Measuring range 40 – 80 cm	

1.1 Tolerances optional body height measuring rod MBC-A01

Measured value (cm)	Tolerance (cm)
10 - 80	± 0.5

2 Declaration of conformity

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

www.kern-sohn.com/ce

For verified weighing scales (= weighing scales assessed for conformity) the declaration of conformity is included in the scope of delivery.
Only these balances are medical products.

2.1 Explanation of the graphic symbols for medical products

CE M18 0122 0297

All medical balances with this mark fulfill the following guidelines:

1. 2014/31/EU: Guideline for non-automatic balances
2. (EU) 2017/745: Medical products regulation

UDI

Unique product identification

MD

Is a medical device

III

Balances which carry this mark, are conformity-evaluated as per accuracy class III of the EC-guideline 2014/31/EU.

WF 182795

Designation of the serial number of every device, applied at the device and on the packaging

(Number as an example)

Identification of the manufacturing date of the medical product.

(Year and month here as example)

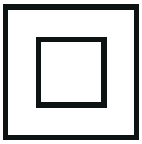
2022-06

“Attention, please note the accompanying document“,
or “Please note operating instructions”

Kern & Sohn GmbH
D–72336 Balingen,Germany
www.kern-sohn.com

Identification of manufacturer of medical product including address

“Electro-medical device“
with attachment for type B



Device protection class II

Dispose of old appliances separately from your household waste!

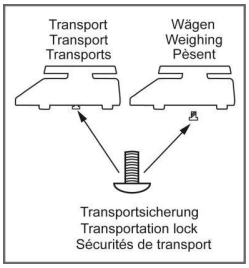
Instead, take them to communal collection points.

Display of supply voltage for scales with polarity display

Supply voltage direct current

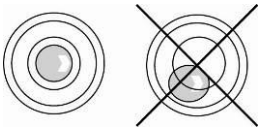
Information

To prevent babies lying on the weighing pan from falling off the scale, they must be watched all the time. Please observe note on weighing pan!



Transport Securing

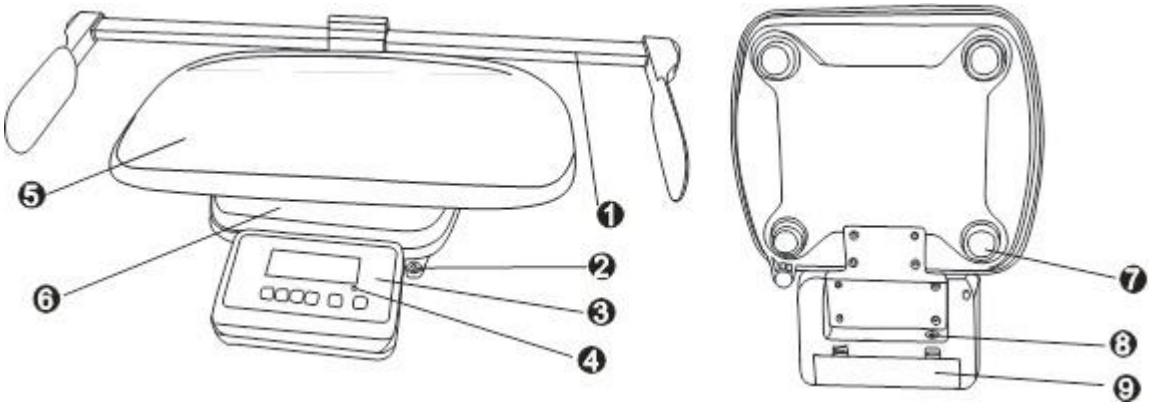
The small sticker attached to the side of the display unit indicates the power port



Level balance before use

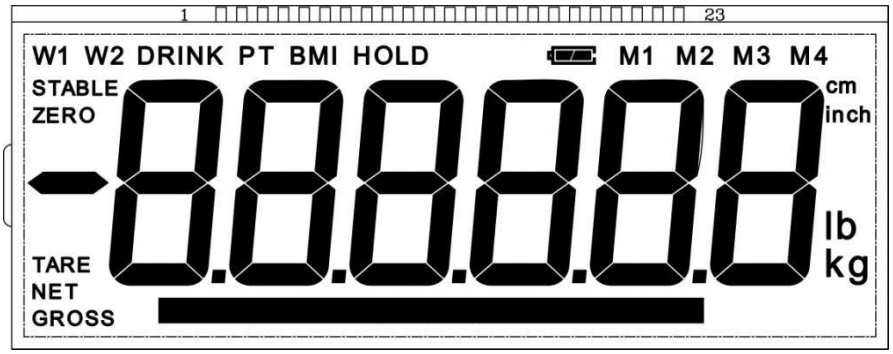
Electrostatically endangered structural components

3 Appliance overview



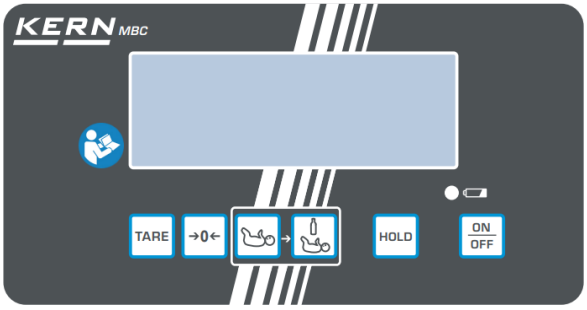
1. Height measuring rod (optional)
2. Bubble level
3. Display Unit
4. LED
5. Baby weighing pan
6. Weighing plate
7. Rubber feet (height adjustable)
8. Mains connection (only models MBC-NM)
9. Rechargeable battery compartment

3.1 Overview of displays



Display	Designation	Description
GROSS	Gross weight display	Lights up during indication of the gross weight of the baby (after drinking)
NET	Net weight display	Lights up during indication of the net weight of the baby (before drinking) Illuminated after weighing scale was tared
ZERO	Zeroing display	Should the balance not display exactly zero despite empty scale pan, press the →0← button. Your balance will be set to zero after a short standby time.
STABLE	Stability display	Scales are in a steady state
DRINK	DRINK function	Is displayed with active drink function
HOLD	HOLD function	Is displayed with active hold function
	Rechargeable battery symbol	Lights when the voltage drops below the prescribed minimum.
		Lights when the rechargeable battery capacity is almost exhausted.
		Illuminated when the rechargeable battery is fully charged.

3.2 Keyboard overview



MBC 15K2DNM
MBC 20K10NM

MBC 15K2DEM
MBC 20K10EM

Button	Designation	Function
ON/OFF	**ON/OFF**-button	Turn on/off
→0←	Zeroing key	Weighing scale will be reset to „0.0“ kg. **For numeric entry:** • Change decimal digit
HOLD	HOLD-button	Hold function
TARE	TARE-button	Tare balance
	Feeding Function key	Differential weighing before and after the baby drinks
		The net weight of the baby will be shown: Before drinking **In menu:** • Call up menu • Select menu items **For numeric entry:** Edit numeric value
		The gross weight is displayed: After drinking **In menu:** ⇨ Confirm selection **For numeric entry:** ⇨ Confirm numerical value

4 Basic instructions

Balances have to be verified for the purposes stated below in accordance with Directive 2014/31/EU. Article 1, paragraph 4. “Determination of mass in the practice of medicine that is, weighing patients for reasons of medical supervision during medical surveillance, examination and treatment.”

4.1 Specific function

4.1.1 Indication

Medical scales:

Indication:

- These scales are used to determine the weight of people in medical treatment facilities. The scales are suitable for the detection, prevention, and monitoring of diseases.

Use:

- With baby scales, the baby must be placed carefully in the middle of the weighing tray.

After reaching a stable weighing value, the weighing value can be read.

The scale is designed for continuous operation.

Medical Height Rod:

Indication:

- Determination of body height in the medical field

Use:

- For the infant size height rods, the baby is carefully placed between the head and footrest, and the markers are pushed against the body.

4.1.2 Contraindication

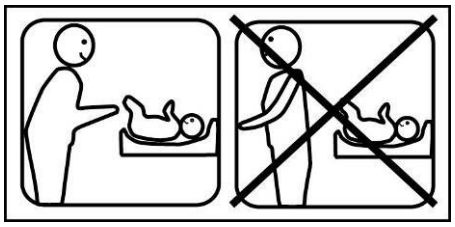
No contraindication known.

4.2 Proper use

These balances serve as a means of determining the weight of babies in medical treatment rooms. The scales are suitable for recognizing, preventing and controlling illnesses.

- The balance should be checked for correct condition prior to each utilization by a person familiar with proper operation of the balance.

To prevent babies lying on the weighing pan from falling off the scale, they must be watched all the time. Please observe note on weighing pan!



If the balance doesn't have any contact with the transfer cable, do not touch the transfer port in order to avoid an ESD-failure.

4.3 Non-intended product use / contraindications

- Do not use these scales for dynamic weighing processes.
- 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. This could cause damage to the balance.
- Never operate the balance in explosive environment. The serial version is not explosion protected. It should be noted that a flammable mixture of anaesthetics and oxygen or laughing gas may occur.
- 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.
- 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.
- The balance may only be used for weighing babies. Persons heavier than 15 kg (for MBC 15K) or 20 kg (for MBC 20K) may not step onto the balance.

	**Non-intended use of the optional body height measuring rod** • The body height measuring rod may only be assembled as specified in the operating instructions. • The structure of the body height measuring rod may not be modified. This may lead to incorrect measuring results, safety-related defects as well as destruction. • The body height measuring rod may only be used according to the described conditions. Other areas of use must be released by KERN in writing. For more details please see the user manuals of the body height measuring rod.

4.4 Warranty

Warranty claims shall be voided in case:

- Our conditions in the operation manual are ignored
- The appliance is used beyond 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
- Dropping the balance

4.5 Monitoring of Test Resources

In the framework of quality assurance the measuring-related weighing 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) 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.

For balances with height measuring rods, we recommend a metrological examination of the accuracy of the body height measuring rod, however, this is not mandatory as the determination of human body height involves rather large, intrinsic inaccuracies.

4.6 Plausibility check

Please make sure that the measurement values computed by the appliance are plausible and are allocated to the respective patient, before storing and using the values for further purposes.

4.7 Reporting serious incidents

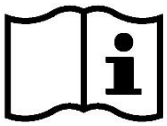
All serious incidents appeared related to this product must be reported to the manufacturer and the responsible authority of the member state where the user and/or the patient are residents.

„Serious incident“ that means an incident which directly or indirectly had, could have or could have had one of the following consequences:

- the death of a patient, a user or another person,
- the temporary or permanent fatal deterioration of the health status of a patient, a user or other persons,
- a serious danger for public health.

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 medical staff must apply and follow the operating instructions for proper use and care of the product.

5.3 Preventing contamination

To prevent cross-contamination (fungal skin infections, …), clean the baby weighing pan or weighing plate every time after weighing.
Recommendation: After any weighing procedure that could potentially result in contamination (e. g. after weighing that involves direct skin contact).

5.4 Preparation for use

- Check the baby balance for damage before any use
- Maintenance and reverification (in Germany MTK): The baby balance must be serviced and reverified at regular intervals
- Do not use the appliance on slippery surfaces or in facilities with risk of vibration
- During installation the baby balance must be levelled
- If possible, the product must remain in its original packaging for transportation purpose. Should this not be possible, make sure that the product is protected against damage

6 Electromagnetic compatibility (EMC)

6.1 General hints

The installation and use of this electrical medical device requires special precautionary measures as outlined in the EMC information below.

This device complies with the limits set for medical electrical devices of group 1, class B (as per EN 60601-1-2).

Electromagnetic compatibility (EMC) describes a device's ability to perform reliably within an electromagnetic environment without causing inadmissible electromagnetic interference at the same time. Amongst other things, such disturbances may be transmitted by connecting cables or by the air.

Inadmissible disturbances from the environment may result in incorrect displays, inaccurate measured values or incorrect behavior of the medical device. Also in certain cases the baby balance MBC-NM may cause such failures in other devices. To eliminate problems of that kind, we recommend you to take one or several of the measures listed below:

- Change the alignment or distance of the device to the source of EMI.
- Install or use the baby balance MBC-NM on another place.
- Connect the baby balance MBC-NM to another power source.
- For further questions please contact our customer services.

Disturbances may be caused by improper modification or add-ons to the device or not recommended accessories (such as power supply units or connecting cables). The manufacturer will not be responsible for these. Modifications may also result in a loss of authorisation relating to the use of the device.

Devices emitting high frequency signals (mobile telephones, radio transmitters, radio receivers) may cause interference in the medical device. For that reason do not use them near the medical device. Chapter 6.4 contains details about recommended minimum distances.

6.2 Electromagnetic interferences

Guidelines and manufacturer's declaration – electromagnetic interferences		
The baby balance MBC-NM is intended to be operated in an electromagnetic environment as defined below. The customer or user of the baby balance MBC-NM should ensure that operation takes place in such an environment.		
Emitted interference measurements	**Conformity**	**Electromagnetic environment - guideline**
HF emissions as per CISPR 11 / EN 55011	Assembly 1	The baby balance MBC-NM uses HF energy exclusively for its inner function. Its HF emission therefore is very low and it is highly unlike to interfere with adjacent electronic devices.
HF emissions as per CISPR 11 / EN 55011	Class B	The baby balance MBC-NM is designed for use in all installations including those in living areas and those connected directly to the public power grid that also supplies buildings used for living purposes.
Emission of harmonics as per IEC 61000-3-2	Category A	
Emission of voltage fluctuations / flicker as per IEC 61000-3-3	Conforms	

Do not use the baby balance MBC-NM directly next to other devices or stacked with other devices. If this type of operation is necessary, observe the baby balance MBC-NM to ensure normal operation in such an arrangement.

6.3 Electromagnetic interference immunity

Guidelines and manufacturer's declaration - electromagnetic interference immunity			
The baby balance MBC-NM is intended to be operated in an electromagnetic environment as defined below. The customer or user of the baby balance MBC-NM should ensure that operation takes place in such an environment.			
Interference immunity tests	**IEC 60601 test level**	**Conformity**	**Electromagnetic environment - guideline**
Discharge static electricity (DSE) as per IEC 61000-4-2	± 6 kV contact discharge ± 8 kV air discharge	± 6 kV ± 8 kV	Floors should be made of wood or concrete or tiled with ceramic tiles. If floors are covered with synthetic material, relative air humidity must be at least 30%.
Fast transient electrical disturbances / bursts as per IEC 61000-4-4	± 2 kV for power lines ± 1 kV for input and output lines	± 2 kV ± 1 kV	The quality of the supply voltage should match that of the typical business or hospital environment.
Impulse voltages / surges as per IEC 61000-4-5	± 1 kV voltage Live wire - live wire ± 2 kV voltage Live wire - earth	± 1 kV Inapplicable	The quality of the supply voltage should match that of the typical business or hospital environment.
Voltage dips, short-term disruptions and fluctuations in supply voltage as per IEC 61000-4-11	< 5 % U_T (> 95 % dip of U_T) for ½ period 40 % U_T (> 60 % dip of U_T) for 5 periods 70 % U_T (> 30 % dip of U_T) for 25 periods < 5 % U_T (> 95 % dip of U_T) for 5 s	Compliance with requirements under all postulated conditions Controlled switch off Return to undisturbed situation after user intervention.	The quality of the supply voltage should match that of the typical business or hospital environment. Where the user of the medical device demands continuous operation even during disruptions to the power supply, we recommend powering the baby balance MBC-NM by no-break power supply or a battery.
Magnetic field for supply frequency (50/60 Hz) as per IEC 61000-4-8	3 A/m	3 A/m 50/60 Hz	Magnetic fields for the supply frequency should match the typical values found in the particular business or hospital environment.
NOTE U_T equals AC line voltage prior to application of test level.			

Guidelines and manufacturer's declaration - electromagnetic interference immunity

The baby balance MBC-NM is intended to be operated in an electromagnetic environment as defined below. The customer or user of the baby balance MBC-NM should ensure that operation takes place in such an environment.

Interference immunity tests	IEC 60601 test level	Conformity	Electromagnetic environment - guideline
Conducted HF disturbance variables as per IEC 61000-4-6	3 V_{rms} 150 kHz to 80 MHz	3 V	Do not use portable or mobile radio sets nearer to the medical device or its wires than the distance recommended as safety distance which is calculated according to the equation relevant for its transmission frequency.
Emitted HF disturbance variables According to IEC 61000-4-3	3 V_{rms} 80 MHz to 2.5 GHz	3 V/m 	Recommended safety distance: $d = 1.2\sqrt{P}$ $d = 1.2\sqrt{P}$ for 80 MHz to 800 MHz $d = 2.3\sqrt{P}$ for 800 MHz to 2.5 GHz Use P as rated capacity of radio transmitter in Watt (W) as per details given by the radio transmitter manufacturer and d as recommended safety distance in metres (m). The field intensity of stationary radio transmitters should for all frequencies be lower according to an in situ [a] examination than the conformity level.[b] Interference may occur near devices bearing the symbol below.

NOTE 1 Higher frequency range applies to 80 MHz and 800 MHz.
NOTE 2 These guidelines may not be applicable in all cases.
The spreading of electromagnetic variables is influenced by absorption and reflections from buildings, objects and persons.

[a] The field intensity of stationary radio transmitters such as base stations of wireless telephones and mobile radio sets, amateur radio stations, AM and FM radio and television stations cannot be reliably predicted in advance. To determine the electromagnetic environment in respect of stationary transmitters, you should consider a study of electromagnetic phenomena at the location. If the measured field intensity at the location where the baby balance MBC-NM is to be used exceeds the conformity level above, you should observe the baby balance MBC-NM in order to ensure normal operation. If you observe unusual features of performance you may have to take additional measures such as a change in alignment or a different location for the medical device.

[b] For a frequency range of 150 kHz to 80 MHz field intensity should be less than 3 V/m.

6.3.1 Crucial features of performance

The baby balance MBC-NM does not have any crucial features of performance as per IEC 60601-1. The system may be subject to interference by other devices even if these devices conform to current emission requirements as per CISPR.

6.4 Minimum distances

Recommended safety distances between portable and mobile HF telecommunication devices and the medical device

The baby balance MBC-NM is designed for use in an electromagnetic environment in which HF disturbance variables are controlled. The customer or user of the baby balance MBC-NM can help avoiding electromagnetic disturbances by keeping the minimum distance between portable and mobile HF telecommunication devices (transmitters) and the medical device – depending on the output performance of the communication device, as stated below.

Rated capacity of transmitter W	**The safety distance depends on the transmission frequency** m		
	150 kHz to 80 MHz $d = 1.2\sqrt{P}$	80 MHz to 800 MHz $d = 1.2\sqrt{P}$	800 MHz to 2.5 GHz $d = 2.3\sqrt{P}$
0.01	0.12	0.12	0.23
0.1	0.38	0.38	0.73
1	1.20	1.20	2.30
10	3.80	3.80	7.30
100	12.00	12.00	23.00

For transmitters with a maximum rated capacity not stated in the table above you can calculate the recommended safety distance d in meters (m) yourself by using the equation belonging to each column, whereby P equals the maximum rated capacity of the transmitter in Watt (W) as per details provided by the transmitter manufacturer.

NOTE 1 Higher frequency range applies to 80 MHz and 800 MHz.
NOTE 2 These guidelines may not be applicable in all cases.
The spreading of electromagnetic variables is influenced by absorption and reflections from buildings, objects and persons.

7 Transport and storage

7.1 Testing upon acceptance

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

7.2 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 weighing pan, power unit etc. against shifting and damage.

8 Unpacking, Installation and Commissioning

8.1 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 stable, even 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 the balance and of the person to be weighed.
- Avoid contact with water.

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. In that case, the location must be changed.

8.2 Unpacking

Take the balance out of its packaging and place it at the intended position. When using the power supply unit, ensure that the power cable does not produce a risk of stumbling.

8.3 Scope of delivery

8.3.1 Models MBC-NM

- Balance
- Mains adapter (in conformity with EN 60601-1)
- Operating instructions

8.3.2 Models MBC-EM

- Balance
- Batteries 6 x AA 1.5 V
- Operating instructions

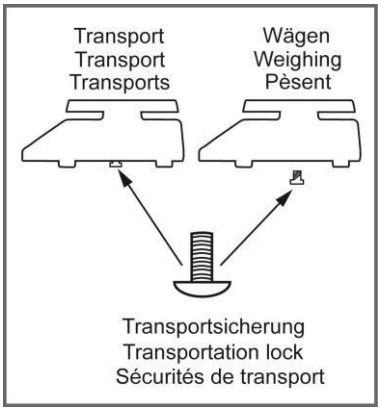
8.4 Placing

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

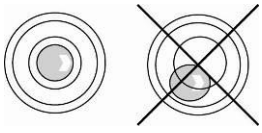
Make sure that all transport locking devices are removed

To loosen the transport securing, screw out transport screw [**1**] anticlockwise.

For transportation carefully screw-in transport screw clockwise till to the stopper and then fix it using locknut.



Levelling



- ⇨ Level balance with foot screws until the air bubble of the water balance is in the prescribed circle.
- ⇨ Check levelling regularly

8.5 Rechargeable battery operation using an optional battery power pack (MBC-A08)

Open the battery compartment lid (1) at the base of the display unit and insert the rechargeable battery pack. Charge the rechargeable battery for at least 12 hours before initial use.

The appearance of the symbol  in the weight display indicates that the battery packs is almost exhausted. The weighing scale will remain ready for operation for a few more minutes before switching off in order to save battery. Charge rechargeable battery.

 Voltage has dropped below prescribed minimum.

 Rechargeable battery very low.

 Rechargeable battery completely recharged

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

8.6 Battery operation

As an alternative for the rechargeable battery operation, the balance offers also the possibility to be operated with 6x AA-batteries.

Open the battery cover (1) at the lower side of the display unit and insert the batteries according to the example shown below. Lock again the battery compartment lid. If the batteries are empty, in the balance display appears the symbol  . Change batteries. To save battery, the balance switches off automatically.

 Capacity of batteries exhausted.

 Capacity of batteries will soon be exhausted.

 Batteries completely charged

Insert batteries:

Remove battery compartment lid	
Connect battery retainer as per illustration to the contact of the housing	
Insert battery retainer	

Insert batteries in the battery compartment and lock them with battery compartment lid.	

8.7 Mains connection (only models MBC-NM)

Power is supplied by the external mains adapter which also serves to isolate the mains supply from the scale. The stated voltage value must be the same as the local voltage.
Only approved genuine KERN mains adapters may be used in compliance with Directive EN 60601-1.

The small sticker attached to the side of the display unit indicates the power port:

The LED remains illuminated as long as the weighing scale remains connected to the mains.
The LED display provides information about the battery's charging status.

green Rechargeable battery completely recharged

blue: Charging rechargeable battery

8.8 Optional mains adapters

Available mains adapters (optional)

- YKA-43 (EU, CH, UK)
- YKA-44 (EU)

8.9 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) and be switched on.

The accuracy of the balance depends on the local acceleration of gravity.
The value of gravity acceleration is shown on the type plate.

9 Operation

9.1 Weighing

⇨ Start balance by pressing ON/OFF.
The balance will carry out a self-test
The balance is ready for operation as soon as the weight display for "**0.0kg**" has appeared.

▪ However, you can reset the weighing scale to zero by pressing the →0← key.

⇨ Put baby in the centre of the weighing pan.
⇨ Wait for stability display "**STABLE**", then read the weighing result.

▪ If the baby is heavier than the max. weighing range, the display shows "**oL**" (overload) and a beep sounds.

9.2 Taring

The tare weight of any preloads can be deducted by pressing a button so that the actual weight of the baby is displayed in subsequent weighings.

(example)

⇨ Put object (such as towel or padding) on the weighing pan.
⇨ Wait until stability display „**STABLE**" appears

⇨ Press TARE, the zero display appears.

(example)

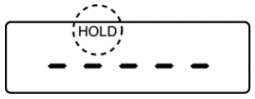
⇨ Put baby on the weighing pan.
Wait until the stability display „**STABLE**" appears, then read the weighing result. „**NET**" is shown at the bottom on the left.

▪ When the balance is unloaded the saved taring value is displayed with negative sign.
▪ To delete the stored tare value, unload the balance and press TARE.

9.3 Hold function (Standstill function)

The balance has an integrated standstill function (mean value calculation). This allows one to weigh the baby exactly, even if it is not restful in the weighing pan.

⇨ Start balance by pressing ON/OFF.
Await zero display



⇨ Place the baby, press HOLD, " ------ " will be briefly displayed.
In addition the „**HOLD**" symbol appears.

(example)

⇨ After that the weight of the baby is displayed and "frozen".

⇨ After unloading the balance, the weighing value remains displayed for approx. 10 seconds, than the balance returns automatically into the weighing mode.
The **„HOLD"** symbol disappears.

9.4 Feeding function (control of weight gain)

The baby's weight can be saved before feeding. Then the weight gain can be calculated by pressing a button.

⇨ Start balance by pressing ON/OFF.
Wait for stability display "**STABLE**".

⇨ Place the baby on the weighing pan center before feeding.

(example)

⇨ After the stability display shows „**STABLE**", press . The weight of the baby is recorded and stored. Display "**DRINK**" lights up.

⇨ Take the baby from the weighing pan.

⇨ Place the baby on the scale pan after feeding.

⇨ Press , the difference between the weight and the value before and after breastfeeding is displayed.

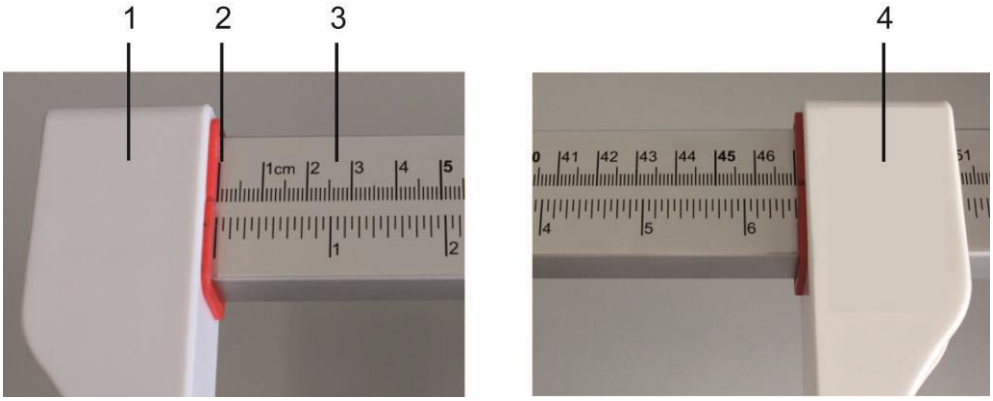
By pressing the button several times, the balance returns to the normal weighing mode.

9.5 Show another decimal place (not verified value)

Press TARE and hold for about 2 s whilst weighed result is being shown. The third decimal place will be shown for approx. 5 s.

9.6 Using the optional body height measuring rod MBC-A01

The balance has the ability to determine not only the weight but also the body height using the optional body height measuring rod.



For this purpose proceed as follows:

- ⇨ Put the head stopper (left) (1) to zero (2)
- ⇨ Put the baby in the centre of the weighing pan.
- ⇨ Move the height measuring rod (3) carefully to the right until the head stopper gently touches the baby's head
- ⇨ With the right hand push the foot stopper (right) (4) carefully to the soles of the baby
- ⇨ On the scale read the baby's size in cm.
- ⇨

A correctly exercised height measurement will achieve an accuracy of up to 5 mm.

For further information (for example, installation), refer to the instruction manual attached to body height measuring rod.

10 Menu

Access to service menu „tCH“ is locked in verified balances.

To disable the access lock, destroy the seal mark and actuate the adjustment switch. Position of the adjustment switch see chap. 15.1.

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

10.1 Navigation in the menu

Call up menu	⇨ Turn on the scale during the self-test press  , the first function **[F1 oFF]** is displayed.
Select function	⇨ With help of  , the individual functions can be selected one after the other.
Change settings	⇨ Confirm selected function by  . The current setting will be displayed. ⇨ Select the desired setting with  and press  to confirm or  to reject, the balance returns to the menu.
Exit menu/ **Return to weighing mode**	⇨ Press  , the balance will return to weighing mode.

10.2 Menu overview

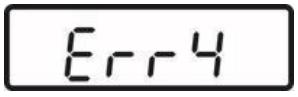
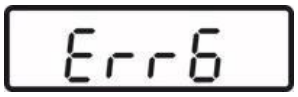
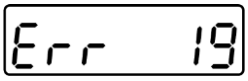
Function	Settings	Description
F1 oFF Automatic cutout Auto Off	oFF 0*	Automatic shutdown off
	oFF 3	Automatic shutdown after 3 min
	oFF 5	Automatic shutdown after 5 min
	oFF 15	Automatic shutdown after 15 min
	oFF 30	Automatic shutdown after 30 min
F2 bk Background illumination of display	bl on	Display background illumination on
	bl oFF	Display background illumination off
	bl AU*	Backlighting for display will come on automatically as soon as the weighing scale is operated.
tCH Service menu	Pin	If display shows "Pin" actuate adjustment switch. Then press  ,  .,  subsequently.
P1 Spd Display speed	15*	Not documented
	30	
	60	
	7.5	

P2 CAL	duA in	dESC	C 0.00	
			C 0.000	
			C 0.0000	
			C 0	
			C 0.0	
		inC	Sd iv 1	div 1, 2, 5, 10, 20, 50
			Sd iv 2	div 1, 2, 5, 10, 20, 50
		CAP	CAP 1	
			CAP 2	
		CAL	UnLoAd	
		StrAnG	St 100	
			St 200	
			St 500	
	duA rA	dESC	C 0.00	
			C 0.000	
			C 0.0000	
			C 0	
			C 0.0	
		inC	Sd iv 1	div 1, 2, 5, 10, 20, 50
			Sd iv 2	div 1, 2, 5, 10, 20, 50
		CAP	CAP 1	
			CAP 2	
		CAL Adjustment	UnLoAd	
		StrAnG	St 100	
			St 200	
			St 500	
	SnG rA	dESC	C 0.00	
			C 0.000	
			C 0.0000	
			C 0	
			C 0.0	
		inC	Sd iv 1	div 1, 2, 5, 10, 20, 50
			Sd iv 2	div 1, 2, 5, 10, 20, 50
		CAP	CAP 1	
			CAP 2	
		CAL	UnLoAd	
		StrAnG	St 100	
			St 200	
			St 500	

P3 Pro	tri	Not documented
	CoUnt	Not documented
	rESEt	Reset weighing scale to factory setting
	SetGrA	Not documented

* factory setting

11 Error messages

Display	Description
	**Zero setting range exceeded** (on start-up or when pressing the →0← button) • Load on weighing pan • Excess load, during zero setting of weighing scale • Incorrect adjustment process • Fault on load cell
	**Value outside the A/D changer range** • The transport locking device was not removed (see chapter 8.4) If the transport locking device has already been removed: • Damaged weighing cell • Damaged electronics
	**Unable to initialise zero point** • Measuring cell defective / overloaded • Objects on platform / contact • Transport safety device has not been removed • Main board defective

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

12 Servicing, maintenance, disposal

12.1 Cleaning

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

12.2 Cleaning / disinfecting

Clean weighing plate (such as seat pan) as well as casing with household detergents or commercially available disinfectants, e.g. 70% isopropanol. We recommend a disinfectant suitable for wiping disinfection. Please follow manufacturer's instructions.

Do not use abrasive or aggressive cleaners such as spirits or alcohol or similar as they might damage the high-quality surface.

To prevent cross-contamination (fungal skin infection) please observe the following time intervals for disinfection:

- Weighing plate before and after any measurement with direct skin contact
- When required:
  - Display
  - Touch-sensitive keyboard

⇨ Do not spray the device with disinfectant, just wipe it.

⇨ Make sure that disinfectant does not penetrate the interior of the balance.

⇨ Remove dirt immediately.

12.3 Sterilisation

Sterilisation of the appliance not allowed.

12.4 Servicing, maintenance

The appliance may only be opened by trained service technicians who are authorized by KERN.
We recommend a regular safety-related technical check (STK).
Disconnect scales from mains before opening.

12.5 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.

13 Instant help for troubleshooting

In case of a fault in the program sequence, the balance should be shortly switched off. The weighing process must then be restarted from the beginning.

Fault:	**Possible causes:**
The weight display 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. ▪ The rechargeable battery / the batteries is/ are inserted incorrectly or empty ▪ No rechargeable battery / no batteries is/ are inserted
The displayed weight is permanently changing	▪ Draught/air movement ▪ Table/floor vibrations ▪ The weighing pan is in contact with foreign bodies or is not correctly positioned. ▪ Electromagnetic fields/ static charging (choose different location/switch off interfering device if possible).
The weighing result is obviously incorrect	▪ The display of the balance is not at zero. ▪ Adjustment is no longer correct. ▪ Great fluctuations in temperature. ▪ The balance is on an uneven surface. ▪ 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. Check whether the transport locking device has been removed (see chapter 8.4). If the error message remains inform manufacturer.

14 Verification

General:
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 purposes

d) For manufacturing final packages

e) Determination of mass in the practice of medicine that is, weighing patients for reasons of medical supervision during medical surveillance, examination and treatment,

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

Verification notes:
An EU type approval exists for balances described in their technical data as verifiable. If the 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. Validity period of verification, see chap. 14.1.
The legal regulation of the country where the balance is used must be observed!

Verification of the balance is invalid without seal marks.
The seal marks attached on balances with type approval point out that the balance may only be opened and serviced by trained and authorised specialist staff. If the seal mark is destroyed, verification looses its validity. Please observe all national laws and legal regulations. In Germany a re-verification will be necessary.

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.

14.1 Verification validity period (current status in D)

Personal scales (including chair and wheelchair scales) in hospitals	4 years
Personal balances, when not located in hospitals (for example, doctor's offices and nursing homes)	unlimited
Baby balances and mechanical birth weight scales	4 years
Bed scales	2 years
Scales in dialysis stations	unlimited

Notes:

- Also rehab clinics and health authorities are treated as hospitals
- Not treated as hospitals (verification validity not limited) are dialysis stations, nursing homes and doctor’s surgeries.

  (Data source: ”Bureau of Standards News, Weighing Instruments in Medicine“}

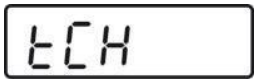
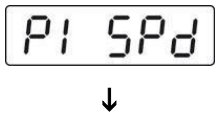
15 Adjustment

As the acceleration value due to gravity is not the same at every location on earth, each display unit with connected weighing pan 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.

	• Prepare the required adjustment weight. The adjustment weight to be applied depends on the capacity of a weighing scale, see chap. 1. Carry out adjustment as closely as possible to admissible maximum load of weighing scale. Info about test weights can be found on the Internet at: http://www.kern-sohn.com. • Observe stable environmental conditions. For warm-up time required for stabilisation see chap.1.

	Access to service menu „tCH“ is locked in verified balances. To disable the access lock, destroy the seal mark and actuate the adjustment switch. Position of the adjustment switch see chap. 15.1. **Attention**: After destruction of the seal mark the weighing system must be re-verified by an authorized agency and a new seal mark fitted before it can be reused for applications subject to verification.

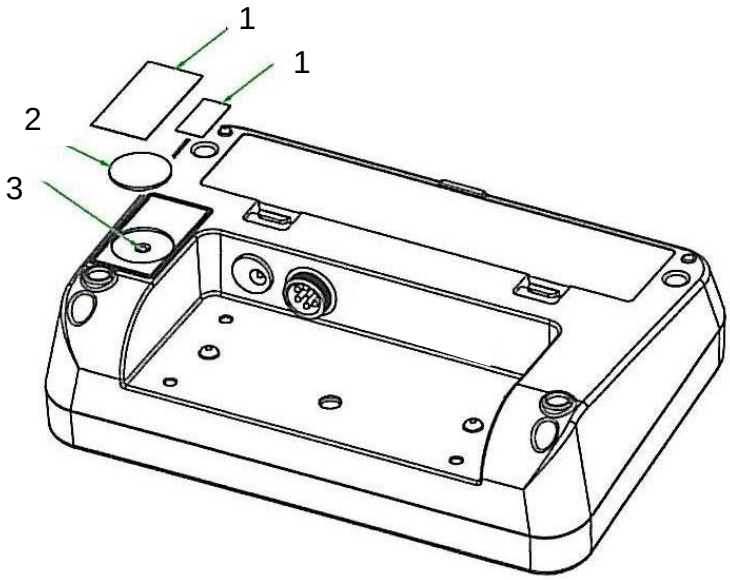
Procedure:

	⇨ Turn on the scale during the self-test press  , the first function [F1 oFF] is displayed. ⇨ Press  repeatedly until **„tCH“** will be displayed.
	⇨ Press  , **[Pin]** is displayed
	**Operate adjustment switch; position see chap.15.1** Press  ,  and  subsequently, **[P1 SPd]** will appear
	⇨ Press  , [**P2 CAL]** will be displayed

P2 CAL	
SnGrA ⇕ dUArG ↓ dESC	⇨ Press , the currently set balance type is displayed. SnGrA = single range balance dUArG = dual range balance ⇨ To change select scale type with and confirm with , **[dESC]** appears.
CAL	⇨ Press repeatedly until **[CAL]** will be displayed. ⇨ Confirm with , **[UnloAd]** appears
UnLoAd	⇨ Ensure that there are no objects on the weighing pan. Wait for stability display **"STABLE**", then confirm with
0020.00 kg (example)	⇨ The size of the currently set adjustment weight is displayed, the active site flashes. If required, select with →0← the digit to be altered and change the digit with . Confirm with , **[LoAd]** appears.
LoAd ⇓ PASS	⇨ Put the required adjustment weight carefully in the centre of the weighing pan. ⇨ Wait until stability display „**STABLE**" appears ⇨ Confirm with **[PASS]** is displayed.
STABLE ZERO GROSS 0.0 kg	After the adjustment the balance will carry out a self-test. Remove adjustment weight **during** selftest, balance will return into weighing mode automatically. An adjusting error or incorrect adjustment weight will be indicated by the error message; repeat adjustment procedure. An adjustment error or incorrect adjustment weight will generate an error message („Err 4"), repeat the adjustment process.

15.1 Adjustment switch and seals

Position adjustment switch and seal marks:



1. Self-destroying seal mark
2. Cover
3. Adjustment switch

16 Accessories (optional)

Item number	Product
MBC-A01	Height measuring rod
YKA-43	Power supply unit (EU/UK/CH)
MBC-A05	Foot/head stopper
MBC-A08	Rechargeable battery
YKA-44	Power supply unit (EU/CH)