**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*
*Website: www.kern-sohn.com*

# Operating Instructions

**Personal weighing scale, Stand on scale, Wheelchair scale, Chair scale**

## KERN MPP/MTP/MWP/MCP-M

Version 1.2
03/2011
GB

GB

# KERN MPP 200K100 M / PM / HM
# KERN MTP 220K100M
# KERN MWP 220K100PM
# KERN MCP 220K100M / WM

Version 1.2 03/2011

## Operating Instructions

**Personal weighing scale, Stand on scale, Wheelchair scale, Chair scale**

English

Contents

English

# 1 Technical data

| KERN | Personal weighing scales MPP | Scales MTP, MWP |
|---|---|---|
| Display | 6-position one | |
| Read-out | e = 100 g | |
| Display | LCD, 25 mm high digits | |
| Weighing range (max) | 200 kg | 220 kg |
| Minimal load | 2.0 kg | |
| Recommended calibration weight | 180 kg (M1) | |
| Warm-up time | 10 minutes | |
| Battery supply operation | serial equipment | |
| Automatic switching off after | only in battery supply mode: adjustable (0-20 minutes) | |
| Interface | RS 232 C | |
| Weighing units | kg, lb | |
| Supply voltage | 100-240 V , 50/60 Hz, 400 mA | |
| Mains adapter supply | 9 V DC / 500 mA (EN 60601-1) | |
| Operating temperature | 0°C .... + 40°C | |
| Storage temperature | -30°C …. + 70°C | |
| Air humidity | max. 80% (non-condensing) | |
| Housing of operating panel (W x D x H) mm | 182 x 155 x 95 | |
| Scale ready for operation (W x D x H) mm | MPP-M 380x370x80<br>MPP-PM 380x525x1283<br>MPP-HM 380x525x1383 | MTP-M 650x655x1130<br>MWP-PM 900x970x1150 |
| Total weight (net) | 8.0 / 11.5 / 12.0 kg | 22.0 / 31 kg |
| Battery operating time | 100 hours (charge time of 8 hours) | |
| Verification according to 90/384/EEC | Medical, class III | |
| Medical device according to 93/42/EEC | Class I with measuring function | |

| KERN | MCP 220K100M | MCP 220K100WM |
|---|---|---|
| Display | 6-position one | |
| Read-out (d) | 100 g | |
| Display (high digits) | LCD, 25 mm | |
| Weighing range (max) | 220 kg | |
| Minimal load | 2.0 kg | |
| Recommended calibration weight | 180 kg<br>(M1) | |
| Warm-up time | 10 minutes | |
| Battery supply operation | serial equipment | |
| Automatic switching off after | only in battery supply mode: adjustable (0-20 minutes) | |
| Interface | RS 232 C | |
| Weighing units | kg, lb | |
| Supply voltage | 100-240 V , 50/60 Hz, 400 mA | |
| Mains adapter supply | 9 V DC / 500 mA (EN 60601-1) | |
| Operating temperature | 0°C .... + 40°C | |
| Storage temperature | -30°C …. + 70°C | |
| Air humidity | max. 80% (non-condensing) | |
| Housing of operating panel (W x D x H) mm | 182 x 155 x 95 | |
| Scale ready for operation (W x D x H) mm | 600 x 790 x 950 | |
| Total weight (net) | 22 kg | |
| Battery operating time | 100 hours (charge time of 8 hours) | |
| Verification according to 90/384/EEC | Medical, class III | |
| Medical device according to 93/42/EEC | Class I with measuring function | |
| Wheels | 2 | 4 |
| Foot rest | ✓ | ✓ |

English

## 2 Declaration of conformity

Declaration of conformity: refer to the separate document with serial number of the device

CE marking:

| | |
|---|---|
| CE 0297 | 93/42/EEC |
| CE year M 0103 | 90/384/EEC<br>The directive relating to non-automatic weighing instruments |

English

### 2.1 Explanation of graphical symbols


This EEC verification mark indicates that these scales are in conformity with EEC Directive 90 / 384 / EEC for Non-Automatic Weighing Instruments. Weighing instruments bearing this mark are approved for medical purposes within the European Union.

**SN WOC 09000100**

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

Number here as example

**2009-10**

Identification of the manufacturing date of the medical product.

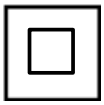
Year and month here as example

“Please note the accompanying documents“
or “Observe operating instructions”

Identification of manufacturer of medical product including address

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

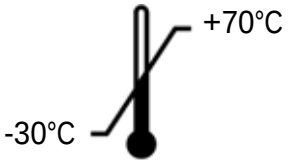
"Electro-medical appliance"
with attachment for type B



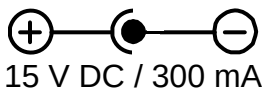
Device protection category II

Dispose of old appliances separately from your household waste!!!

Instead, take them to communal collection points.




Temperature limit indicating the upper and the lower limit
(storage temperature on packaging)
(Temperature serving as an example)




Display of supply voltage for scales with polarity display
(Polarity and values serving as an example)

English

# 3 Basic directions (general information)

According to the Directive 90/384/EEC scales must be verified to the following application purposes. Article 1, paragraph 4 „Determination of weight in the course of medical practice i.e. weighing of patients for the purpose of health monitoring, diagnosis and medical treatment."

## 3.1 Use

### 3.1.1 Indication

- Determination of body weight in the course of medical practice.
- Used as a non-automatic scale i.e. a person is to be placed carefully in the centre of the scale plate or in the suitable supporting device in the case of wheelchair or chair scales. In the case of baby scales, a baby is to be always laid down or seated on the scale pan. The weighing value can be read off after a stable weighing value has been obtained.

English

### 3.1.2 Contraindication

No contraindications.

## 3.2 Intended use

These scales are used to determine weight of people in standing and sitting position or babies in lying position depending on the model in rooms intended for carrying out medical care. The scales are intended to diagnose, prevent and monitor diseases.

The scales equipped with serial interface can only be connected to the equipment compliant with EN60601-1 standard.

In the case of personal weighing scales, a person to be weighed is to be placed carefully in the centre of the scale plate and left at rest or in the case of chair scales, a person should be seated in the centre of seat and left at rest.
In the case of wheelchair scales, place a wheelchair entirely on the platform and then lock its wheels before carrying out weighing procedure.

The weighing value can be read off after a stable weighing value has been obtained.
The scale is designed for continuous operation.

The scale platform can only be walked on by people that can stand on it securely with both feet, or sit calmly (in the case of chair scale).
Scale platforms or footrests are equipped with anti-slip material which cannot be removed or covered when people are weighed.

When scales equipped with height measure are used, pay attention that the top flap is always folded down after their use to avoid danger of injury.

- The chair scales may not be used for the transport of people!
- As long as the patient is remaining on the chair scales, the wheel brakes must be locked without fail.



Before any use, the scale must be checked for correct condition by an authorised person.

### 3.3 Inappropriate use

Do not use the scales for dynamic weighing.
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 scale in excess of the prescribed maximum load rating (max.), minus any possible tare weight that is already present. This could result in damage of the scale.
Never operate the scale in hazardous locations. The series design is not explosion-proof. Attention should be paid that flammable mixture may also be formed from anaesthesiological means that contain oxygen or laughing gas (nitrous oxide).
Construction alterations may not be made to the scale. This can lead to incorrect weighing results, faults concerning safety regulations as well as to destruction of the scale.
The scale may only be used in compliance with the described guidelines. Other areas of application/planned use must be approved by KERN in writing.

### 3.4 Guarantee

The guarantee shall become void in the event of the following:

- non-observation of our guidelines in the Operating Instructions,
- use outside the described applications,
- alteration to or opening of the device,
- mechanical damage or damage caused by media, liquids, usual wear and tear,
- inappropriate erection or electric installation,
- overloading of the measuring equipment,
- scale falling down (pay attention to information label on the platform scales).

English

### 3.5 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 responsible 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 at KERN's accredited DKD (Deutsche Kalibrierdienst) calibration laboratory (return to national standard).

In the case of the scales for weighing people provided with the scale to determine a body size, it is recommended to carry out the check of its measuring accuracy because determination of the human body size is always connected with a very large inaccuracy.

# 4 Basic safety directions

## 4.1 Observing the directions included in the Operating Instructions

Please read these Operating Instructions carefully before erecting and commissioning the balance, even if you already have experience with KERN medical scales.

## 4.2 Staff training

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

## 4.3 Avoidance of contamination

To avoid cross contamination (mycosis,...), the scale plate is to be cleaned regularly. Recommendation: after each weighing which could result in potential contamination (e.g. when there is a direct skin contact during weighing).



# 5 Transport and storage

## 5.1 Check upon delivery

Please check the packaging immediately upon delivery and the device during unpacking for any visible signs of external 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, installation and starting

## 6.1 Place of installation, place of use

The scale is designed in such a way that reliable weighing results can be achieved under normal application conditions.
By selecting the correct location for your scale, you will be able to work quickly and precisely.

***Therefore, please observe the following when choosing a place of installation:***

- Place the scale on a firm, level surface;
- Avoid extreme heat as well as temperature fluctuation caused by installing the scale next to a radiator or in the direct sunlight;
- Protect the scale against direct draughts due to open windows and doors;
- Avoid shaking during weighing;
- Protect the scale 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 keep the device for approx. 2 hours at room temperature after it has been disconnected from mains supply;
- Avoid static charge build-up on people to be weighed;
- Avoid contact with water.

Major display deviations (incorrect weighing results) are possible if electromagnetic fields occur (e.g. coming from mobile phones or radio equipment) as well as due to static charging and instable power supply. It is necessary then to change the scale location or remove disturbance source.

## 6.2 Unpacking

Carefully remove individual scale parts or the whole scale from its packaging and position the scale in its intended working location. When the mains adapter is used, be careful not to cause the danger of falling over the power cable.

### 6.2.1 Installation and Scale Setup

**Personal weighing scales – MPP models:**

The scale is delivered together with the wall bracket.

**Personal weighing scales - MPP model with stand:**

In the case of personal weighing scales with a stand, loose the suitable screw at each stand joint with the delivered hexagonal spanner (5 mm) until the tooth coupling makes it possible to set the stand. When the stand is set in vertical position, retighten this screw or screws so that the teeth come into close engagement.

**Personal weighing scales - MPP model with height measure:**

English

Scope of delivery:

Insert the height measure into the hole in the scale housing. Insert the screw in the scale bottom and tighten it.

Insert another 4 mm screw through the stand into the fixing clip of the height measure and tighten it.

The flap of the height measure can be tightened firmly or slightly loosened with 2 mm screwdriver depending on whether a user wants a flap to be stable or fall down automatically immediately after its use.

**Note:**
**In the case of the stable and projecting flap there is a risk of personal injuries.**

**Scale with stand – MTP models:**

Scope of delivery:

English

First set the articulated bars in the way described for the personal weighing scale.

Additionally, fix two side bow bars on the stand and tight them firmly with 4 delivered screws.

Installation of the side bow bars to the stand.

Fix the side bow bars from the platform bottom.

**Wheelchair scale - MWP models**
The scale is delivered completely pre-assembled.



Before setting up the scale, loose screw connections with the handles and then re-tighten them.

The scale in the set up position and ready for use.

Space-saving position used for scale storage.



**Chair scale - MCP models**

The scale is delivered completely pre-assembled.

**General direction concerning setting up the previously mentioned scales**

Place a personal weighing scale in the intended location and level it with the adjustable rubber feet until the air bubble in the spirit level (located in the centre of the scale plate) is in the centre.
When scales with large and heavy platforms are installed and transported (a scale plate folded upwards), take care not to drop a scale as this could cause its damage.

The following information label is located on the platform side.
Attention should be paid to lower the platform slowly on the floor and avoid its falling down during this operation.

When the mains adapter is not used (and wall holder not installed), put the mains adapter into the compartment located on the back wall of the operating panel to store it.

### 6.2.2 Scope of delivery

***Standard accessories:***

- Mains adapter (complaint with EN 60601-1 standard)
- Operating Instructions

## 6.3 Mains socket

Power supply is carried out by means of the external mains adapter which also provides separation between mains and a scale. The printed voltage value must be compliant with local voltage.
Use only admitted and original KERN mains adapters compliant with EN 60601-1 standard.

## 6.4 Battery supply operation / battery replacement

The delivery scope of the scale includes the mains adapter which is inserted in the back wall of the operating panel.
The mains adapter is used to supply the scale directly or charge a battery which is also included in the delivery scope.
When the **BAT** message appears on the display, connect the mains adapter immediately because the battery charge condition is very low. As a result of that, the scale is supplied from mains and battery is charged at the same time.
Total charging of the battery (6 V, 3.2 Ah) requires at least 8 hours. The battery charge condition is displayed with the red LED located next to the plug for the mains adapter. When the battery is fully charged, the LED colour changes into green. The operation time of the scale supplied from battery is about 100 hours.

The battery is located inside the operating panel. After replacement, the verification marks must be renewed or it is recommended, if required, to replace the battery before the next verification.

Replacements in those scales can only be carried out by the trained service personnel.



## 6.5 Initial start-up

To obtain accurate weighing results with electronic scales, the appropriate operating temperature is to be provided for them (refer Warm-up time, section 1).
During warm-up the scale must be connected to power supply and switched on (mains socket or battery).

The accuracy of the scale depends on the local acceleration of gravity.
The value of acceleration of gravity is given on the rating plate.

### 6.5.1 Displaying stable weighing value

When the scale plate is loaded, the display reading is seen after reaching the stable weighing value.

To achieve that the special filters are used, which make it possible to display weight correctly also when active children or people are weighed.

### 6.5.2 Displaying zero on the operating panel

If in spite of unloaded scale plate, the personal weighing scale does not display zero value accurately, press the →0← key and the **ZERO** display zeroing will be started. If the scale load is higher than 2% of the maximal load, then the scale can also be zeroed with the **TARE** key.

## 6.6 Menu settings

To select this mode when the scale plate is unloaded, press the **Wiederholen** (Repeat) key and the **Menu** will be displayed.
3 possibilities of settings are at a user's disposal:
**MEnU -> LIvE -> FrEEZE -> t-OFF -> SAvE**

| Operation | Display |
|---|---|
| The scale is in the weighing mode,<br>the scale plate is unloaded, press the **Wiederholen** (Repeat) key | **MEnU** |
| Press the **Wiederholen** (Repeat) key | **LIvE - OFF**<br>(alternately) |
| Initial settings can be changed with the **kg/lb** key<br>OFF = people weighing mode is activated (display seen at stable weighing value) (standard setting)<br>On = direct displaying mode is activated (weighing value is not stored) | **OFF** |
| Press the **Wiederholen** (Repeat) key | **FeEEZE - On**<br>(alternately) |
| Initial settings can be changed with the **kg/lb** key<br>On = the last weighing value is stored after unloading the scale plate, reset is done with the →0← key<br>OFF = after unloading the scale plate, the value of 0,0 kg is displayed again | **On** |
| Press the **Wiederholen** (Repeat) key | **t-OFF - 2**<br>(alternately) |
| Time of automatic switching off can be set here (time in minutes, after which the scale automatic switching off occurs if no weighing is performed).<br>Initial settings can be changed with the **kg/lb** key.<br>Pressing the **kg/lb** key will reset the set value again to 0.<br>(0 means no switching off)<br>The repeated long pressing the **kg/lb** key will increase the set value within the range 0…9. To enter 10 or 20, select 1 or 2, and then press shortly the particular key twice. | **0**<br>**1**<br>**10** |
| Press the **Wiederholen** (Repeat) key | **SAvE** |
| Press the **Wiederholen** (Repeat) key, the **Done** (No) symbol will be displayed for 1 second, and after displaying the **StArt** symbol, the repeated return to the normal weighing mode occurs. | **Done** |
| | **0,0 kg** |

To leave the menu without storing, press the **BMI** key when the **Menu** word is displayed at the beginning of setting.

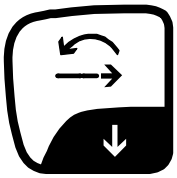
# 7 Operation

## 7.1 Operating elements

### 7.1.1 Display


Example: Personal weighing scale MPP

### 7.1.2 Overview of keyboard

| Key | Marking | Operation | Function |
|---|---|---|---|
|  | **ON/OFF** | Switching on: short pressing the key<br>Switching off: long pressing the key | SWITCHING ON or SWITCHING OFF the scale |
| | →**0**← | When the scale is switched on, press the key shortly | Zeroing the scale display to perform next weighing |
|  | **BMI** | When the scale plate is loaded, press the key shortly | Calculation of BMI (determination of weight and height of person's body) |
| | **TARE** | When the scale plate is loaded: hold the key pressed for 3 seconds<br><br>When the scale plate is unloaded: press the key for 1 second and then release it | Direct taking over the tare value, display of 0,0 kg<br><br>The displayed value of the set initial tare of 15,0 kg can be changed with the arrow keys; to take over, press the TARE key again, the set value is seen with negative sign. |
|  | **Wiederholen (Repeat)** | Short pressing the key | Will repeat the weighing process without leaving the scale plate |
| | **Down arrow** | Short pressing the menu key | Will decrease the displayed value (body height) by 0.5 cm |
|  | **kg/lb** | Short pressing the key | Will switch over the weight unit |
| | **Up arrow** | Short pressing the menu key | Will increase the displayed value (body height) by 0.5 cm |
| | **PRINT** | Long pressing the key | Data output via RS232 interface |

To switch on the scale (when the scale plate is unloaded), press the **ON/OFF** key. The **Start** symbol is displayed and diagnostic scale self-check is performed. When self-check is in progress, first all elements of display are shown. It is followed by software version and then value of **0,0 kg** is displayed.

### 7.1.3 View of display

| Display | Description |
|---|---|
| • ZERO | • Scale plate is loaded and ready to weigh |
| • TARE | • Tare function is active |
| • BAT | • Battery is discharged, it is to be charged |
| • kg/lb | • Displaying weight units |
| • < > | • Stable weighing value has been reached |

# 8 Using scale



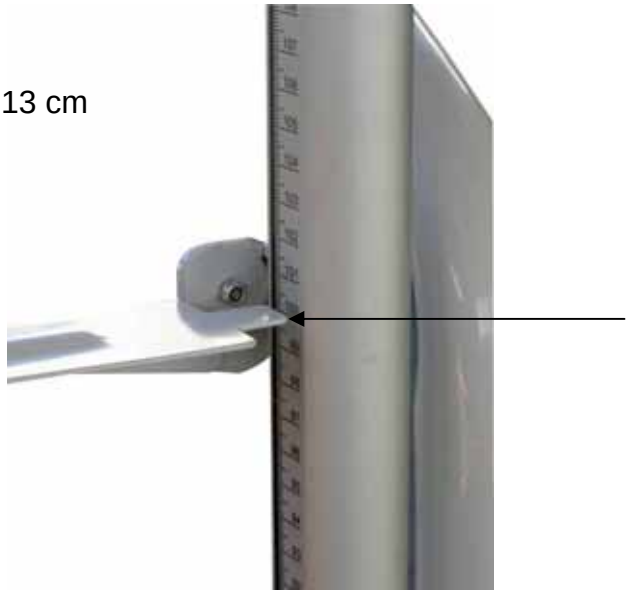
## 8.1 Weighing people

1. Switch on the scale with the **ON/OFF** key. The display will show the **Start** symbol, display test, version number, and finally **0,0 kg**.
2. Position a person on the scale plate. The display will show the **WEIGH** symbol, and then a person weight. An audible signal and small arrows at both sides of the display indicate completion of weight determination.
3. If it is necessary, weighing can be repeated by using the **Wiederholen** (Repeat) key.
4. With the **kg/lb** key it is possible to switch over a weight unit from kilograms to pounds or vice versa.
5. Long holding (3 seconds as minimum) the **ON/OFF** key pressed will switch off the scale again.

## 8.2 Using Body Mass Index (BMI) function

In order to calculate BMI the patient's height must be measured. If height is previously known it can be entered into the scale directly, if not then it can be measured using the height rod function MPP200K100HM. To measure the height, slide the height measure up and set the flap horizontally. Slide the height measure down carefully until the flap touches a person head (it is recommended to carry out measurement without shoes). Then read the body height on the height measure. Refer to the following pictures.

For body height up 113 cm



For body height over 113 cm

1. To determine BMI value, a person is to be weighed in the way described in the previous section. Then press the **BMI** key and the display will show the body height initially entered of 170 cm. To change the height initially entered, press the **Up arrow** or **Down arrow** key. Each key pressing changes the present value by 0.5 cm. Holding the keys pressed alter the change speed, first slowly and then quickly.
2. To display the calculated BMI value, press the **BMI** key now. The BMI value is displayed (**BMI** and its value are displayed alternately).
3. To display a person's body weight again, press the **BMI** key once again. The scale returns to the normal weighing mode.

**Conversion of BMI for feet and inches:**

1. Weigh a person in the way described previously and set a weight unit to **lb**.
2. Then press the **BMI** key and a body height of 5 feet will be displayed. To change this set value initially entered, press the **Up arrow** or **Down arrow**" key until the required body height is displayed. The value is changed by 1 each time. Then press the **BMI** key.
3. The display will show the value of 7 inches. To change this set value initially entered, press the **Up arrow** or **Down arrow**" key until the required body height is displayed (the value is changed by 0.5 inch each time).
4. Then press the **BMI** key and the height entered e.g. 5 feet and 9 inches will be displayed as **5 - 09.0**.
5. To display the calculated BMI value, press the **BMI** key now. The BMI value is displayed (**BMI** and its value are displayed alternately).
6. To display a person's body weight again, press the **BMI** key once again. The scale returns to the normal weighing mode.

The person's height entered is stored for the next calculation.
The standard value is returned by switching off and on again.

### 8.2.1 Classification of BMI values

Classification of weight for adults over 18 years on the basis of Body Mass Index according to WHO, 2000 EK IV and WHO 2004 (WHO - World Health Organization).

| **Category** | **BMI (kg/m$^2$)** | **Risk of diseases accompanying overweight** |
|---|---|---|
| Underweight | < 18.5 | low |
| Normal weight | 18.5 – 24.9 | average |
| Overweight | ≥ 25.0 | |
| Preobesity | 25.0 – 29.9 | slightly increased |
| I degree of obesity | 30.0 – 34.9 | increased |
| II degree of obesity | 35.0 – 39.9 | high |
| III degree of obesity | ≥ 40 | very high |

English

### 8.3 Tare function

The Tare function is used to let you subtract the additional weight, located on the scale platform in addition to a person, e.g. wheelchair.
This function can be performed manually or automatically.

**A: manual Tare function**

1. The scale is in weighing mode with unloaded scale plate, **0,0 kg** and **ZERO** values are displayed at the top left side.
2. Then press the **BMI/TARE** key shortly and the display will show the **tArE** symbol. This symbol is displayed alternately with the set value of **15,0 kg / 33 lb** which can be increased or decreased e.g. to set a wheelchair weight. The **Up arrow** key increases and the **Down arrow** key decreases the set value.
3. When the required weight value is obtained, press the **BMI/TARE** key and the programmed value will be shown on the display with a negative sign. Then position a patient with and additional weight on the scale plate (patient in wheelchair) and read a value after successful weighing.
4. To finish the manual „Tare" function, remove all weights from the scale plate and then hold the **BMI/TARE** key pressed for 3 seconds. The display will show the **WEIGH** symbol and then **0,0 kg** value.
5. The scale returns to normal weighing mode.

**B: automatic Tare function**

1. When the scale display with the unloaded scale plate will show the **0,0 kg** value, position e.g. a wheelchair on the scale plate. The display will show the **WEIGH** symbol and then wheelchair weight.
2. Then press and hold the **BMI/TARE** key pressed for at least 3 seconds. The display returns to the **0,0 kg** value, and the **TARE** symbol is shown at the left side of the display.
3. When a wheelchair is removed form the scale plate, the weight with the preceding negative sign is displayed.
4. After that position a wheelchair or additional weight together with a patient on the scale plate. When weighing is finished successfully, the display will show directly a patient weight without a wheelchair or additional weight.
5. The wheelchair weight is saved in the memory and therefore it is possible to weigh next patients in the same wheelchair.
6. To finish this Tare function, remove all weights from the scale plate and then hold the **BMI/TARE** key pressed for at least 3 seconds. The display will show the **WEIGH** symbol and then **0,0 kg** value. The stored tare value is also cancelled after switching off the scale.
7. The scale returns to normal weighing mode.

# 9 RS 232 C interface

Only additional devices which are compliant with EN 60601-1 standard can be connected.
The interface cable is delivered together with the scale as standard.

## 9.1 Technical data

9600 bauds,
8 data bits,
1 stop bit,
no parity,
no handshake,
8-bit ASCII code for data.

English

## 9.2 Manual data output with the Print key

When the **PRINT** key is pressed (for 3 seconds until two audible signals is heard), a user may start manual data output.

**Printing in weighing mode :**
(not in BMI mode)

| |
|---|
| 91,5 kg |

**Printing in BMI mode:**
(active BMI or BMI was determined earlier with presently displayed weight)

| | |
|---|---|
| GROSS WEIGHT | 91,5 kg |
| TARE WEIGHT | 0,0 kg |
| NET WEIGHT | 91,5 kg |
| PATIENT HEIGHT | 187,5 cm |
| PATIENT B.M.I. | 26.0 |

## 10 Error messages

| | |
|---|---|
| **„StOP“** | Weighing range is exceeded |
| | |
| **„------“** | Underload |
| | |
| **„LO BAT“** | Battery is discharged and requires charging. |
| | |
| „**ERR / BMI**“ | Error during BMI calculation<br>(data entered are incorrect).<br>BMI value is outside the range of 10...99. |
| | |
| **Err2** | Load cell is incorrectly connected.<br>Check cable and mechanical connections. |
| | |
| **Err3** | Refer to Err2 |
| | |
| **Err6** | No stable weighing value, adjusting is not possible.<br>Check cable connections and load cell environment for contact with other elements |
| | |
| **Err7** | Mathematical error during adjusting (it occurs when adjusting is tried without a calibration weight) |

# 11 Service, maintenance, disposal

## 11.1 Cleaning

Please disconnect the device from the power supply source before cleaning.

Do not use aggressive cleaning agents (solvents or similar agents), but a cloth dampened with mild soap suds. Ensure that no liquid penetrates into the device and wipe with a dry soft cloth.
Loose impurities can be removed carefully by using a brush or hand vacuum cleaner.
Do not tilt or turn the scale to carry out its cleaning because this may result in the scale damage.

To avoid cross contamination (mycosis, ...), the scale plate is to be cleaned regularly.
Recommendation: after each weighing which could result in potential contamination (e.g. when there is a direct skin contact during weighing).

**Remove any impurities immediately.**

## 11.2 Service, maintenance

The device may only be opened and maintained by trained service technicians who are authorised by KERN.
Disconnect the scale from mains supply before its opening.

## 11.3 Disposal

Disposal of packaging, batteries and device must be carried out according to valid national or regional law of the location where the device is used.

## 12 Troubleshooting

The scale should be switched off for a short time following an interruption in the program sequence and disconnected from mains supply. It is then necessary to repeat the weighing process from the beginning.

| Interruption | Possible cause |
|---|---|
| Weight display is not illuminated. | • The scale is not switched on.<br>• The mains supply connection has been interrupted (mains cable not plugged in/faulty).<br>• Mains failure.<br>• Batteries are incorrectly inserted or discharged<br>• No batteries. |
| Weight display changes continuously | • Draught/air movement<br>• Table/floor vibrations<br>• The weighing plate is in contact with foreign matters or is installed incorrectly.<br>• Electromagnetic fields/static charging (choose a different location for the scale, switch off an interfering device if possible) |
| The weighing result is obviously incorrect | • The scale display is not set to zero<br>• Incorrect adjustment.<br>• Great fluctuations in temperature.<br>• Warm-up time was ignored.<br>• Electromagnetic fields/static charging (choose a different location for the scale, switch off an interfering device if possible) |

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

# 13 Verification

If a scale is verified, then a verification office or manufacturer puts a verification mark and one or several seals (seals are damaged during removal) on the housing. Therefore, scale adjusting without a seal loss is not possible.

## 13.1 Adjusting

To perform necessary adjusting, the following procedure should be used:
First remove and insert back the jumper on the plate.

| Operation | Display |
|---|---|
| Switch on the scale with the **[ON/OFF]** key. | **StArt** |
| When the display shows the **StArt** symbol, press the **kg/lb** and **Wiederholen** (Repeat) keys simultaneously and hold them pressed for at least 3 seconds.<br>When the display shows the „CAL" symbol, release the keys.<br>Press the **Wiederholen** (Repeat) key | **CAL** |
| The display shows the „LOAD" symbol alternately with calibration weight initially set. | **LOAd**<br>**/**<br>**xx.x kg** |
| To set the calibration weight recommended in section 1, follow the following way (as an example).<br>Press and hold the **kg/lb** key pressed until counting upwards the right number occurs. Release the key when the required number is displayed. Pressing shortly the **kg/lb** key twice will move the displayed value to the left side.<br>Press and hold the **kg/lb** key pressed until counting upwards the right number occurs. Release the key when the required number is displayed. Pressing shortly the **kg/lb** key twice will move the displayed value to the left side. | **0,0 kg**<br>**0,1 kg**<br>**1,0 kg**<br>**1,8 kg**<br>**18,0 kg**<br>**180,0 kg** |
| **Important:** Scale plate must be unloaded.<br>Press the „**Wiederholen**" (Repeat) key | **CLEAr** |
| Press the **Wiederholen** (Repeat) key | **--------** |
| (Calibration weight is displayed) | **PUT**<br>**/**<br>**180,0 kg** |
| Put the calibration weight in the centre of the scale plate, and then press the **Wiederholen** (Repeat) key. | **CAL** |

| | |
|---|---|
| | **FACtOr / x,xxxx** |
| Press the **Wiederholen** (Repeat) key | **SAvE** |
| Press the **Wiederholen** (Repeat) key | **dOnE** |
| | **StArt** |
| | **0,0 kg** |
| Remove the calibration weight from the scale plate. | **0,0 kg** |

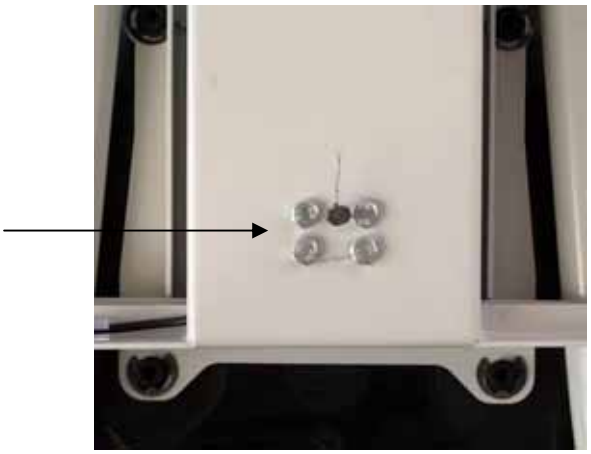
Direction: The procedure described above can be stopped at any time by pressing the **kg/lb** and **Wiederholen** (Repeat) keys simultaneously.



### 13.2 Seals

The scales with a separate operating panel have verification labels on the housing connections and screws.


In the case of chair scales, the load cell is protected on bottom by using the protective wire and seal.



Platforms are protected against opening by means of 1 or 2 protection marks located on the bottom.


Damage or removal of a seal invalidates the verification.

### 13.3 Validity period of verification (present status in Germany)

| | |
|---|---|
| Personal weighing scales in hospitals | 4 years |
| Personal weighing scales if placed outside hospitals | without time limit |
| Baby and mechanical scales Infant scales | 4 years |
| Bed scales | 2 years |
| Wheelchair scales | 2 years |

The hospitals also include rehabilitation clinics
(4-year validity of verification).

The hospitals do not include dialysis centres, care homes and consultation rooms
(verification validity without time limit).

(Data on the basis: „Verification office informs, scales in medical applications")

English