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# Operating instructions

## Step-On Personal balance

### KERN MPD

MPD 250K100NM  
MPD 200K-1EM  
Version 4.0  
2026-06  
GB



**CE** 0122  
0297

MPD\_M-BA-e-2640

|            |                                                                                                                                     |
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## KERN MPD

Version 4.0 2026-06

### Operating instructions

### Step-On Personal balance

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## 1 Technical data

| KERN (type)                                             | MPD 250K100NM                                | MPD 200K-1EM                                   |
|---------------------------------------------------------|----------------------------------------------|------------------------------------------------|
| Model                                                   | MPD 250K100M                                 | MPD 200K-1EM                                   |
| Display                                                 | 6-digit                                      |                                                |
| Weighing range (max)                                    | 250 kg                                       |                                                |
| Minimum load (Min)                                      | 2 kg                                         | 2 kg                                           |
| Verification value (e)                                  | 100 g                                        | 100 g                                          |
| Reproducibility                                         | 0.1 kg                                       | 0.1 kg                                         |
| Linearity $\pm$                                         | 0.1 kg                                       | 0.1 kg                                         |
| Accuracy for conformity assessment (first verification) | till to 50 kg = 0.5 e<br>>50 kg-100 kg = 1 e | till to 100 kg = 0.5 e<br>>100 kg-200 kg = 1 e |
| Display                                                 | LCD with 25mm high digits                    |                                                |
| Recommended adjustment weight, (Category)               | 200 kg<br>(M1)                               |                                                |
| Stabilization time (typical)                            | 3 sec.                                       |                                                |
| Warm-up time                                            | 10 min                                       |                                                |
| Operating temperature                                   | 0° C .... + 40° C                            |                                                |
| Humidity of air                                         | max. 80 % (not condensing)                   |                                                |
| Electric Supply                                         | Input voltage<br>110V-240V AC, 50/60 Hz      | -                                              |
| Balance<br>(B x D x H) mm                               | 365 x 490 x 120                              |                                                |
| Weighing plate<br>(B x D x H) mm                        | 365 x 360 x 80                               |                                                |
| Weight kg (net)                                         | 8.9                                          | 8.7                                            |
| Verification in accordance with 2014/31/EU              | Category III                                 |                                                |
| Medical product as per (EU) 2017/745                    | Category I with measuring function           |                                                |
| Rechargeable battery operation                          | Optional<br>6x1.2V 2000 mA                   | -                                              |
| Batteries                                               | 6 x 1.5 V AA                                 |                                                |

## 2 Declaration of conformity

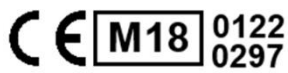
The current EC/EU Conformity declaration can be found online in:

**[www.kern-sohn.com/ce](http://www.kern-sohn.com/ce)**

**i** 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



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



Unique product identification



Is a medical device



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

**WF 170012**

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

Number here as example



Identification of the manufacturing date of the medical product.

Year and month here as example



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

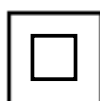


Identification of manufacturer of medical product  
including address

**Kern & Sohn GmbH**  
**Ziegelei 1**  
**D-72336 Balingen, Germany**  
**[www.kern-sohn.com](http://www.kern-sohn.com)**



“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



Mains connection



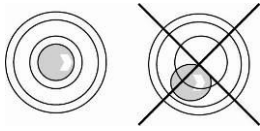
Sealing mark KERN SEAL



Supply voltage direct current



Information

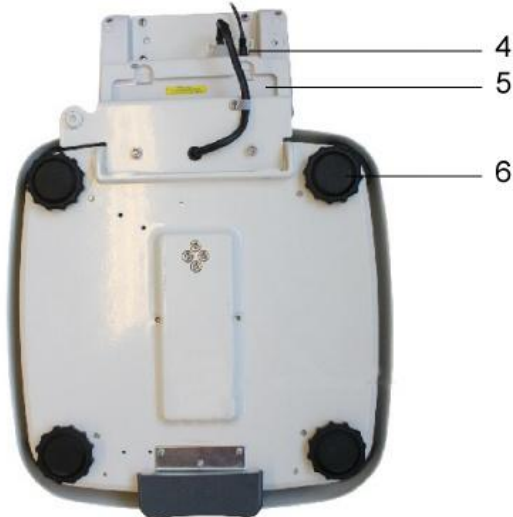


Level balance before use



Electrostatically endangered structural components

### 3 Appliance overview

|                                                                                                                                                                                                                                 |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
|  <p>1 Display unit<br/>2 Weighing platform (anti-slip surface)<br/>3 Foot switch</p>                                                           |  |
| <p>Lower side</p>  <p>4 Mains connection (only model MPD-NM)<br/>5 Rechargeable battery compartment<br/>6 Rubber feet (adjustable height)</p> |  |

#### 3.1 Overview of displays

| Display       | Designation          | Description                                |
|---------------|----------------------|--------------------------------------------|
| <b>STABLE</b> | Stability display    | Scales are in a steady state               |
| <b>ZERO</b>   | Zeroing display      | Weighing scale shows „0.0“.                |
| <b>GROSS</b>  | Gross weight display | Illuminated when gross weight is displayed |

## 4 Basic Information (General)



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:

- When using bodyweight scales and handrail scales, the person to be weighed should stand carefully in the middle of the weighing plate and remain still.

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

The scale is designed for continuous operation.

#### 4.1.2 Contraindication

No contraindication known.

### 4.2 Proper use

This weighing scale is designed for determining the weight of a person whilst standing, such as in doctor's surgeries. The balance is suitable for recognizing, preventing and controlling illnesses.



Scales fitted with a serial interface may only be connected to appliances in compliance with Directive EN60601-1.

- On personal weighing scales, the person should step onto the center of the weighing platform and remain standing without moving.

Once a steady display value is shown, you can read the weight result. The weighing scale is designed for continuous duty.



The weighing platform may only be stepped on by persons capable of standing on both feet on the weighing platform.

- The weighing platforms are fitted with an anti-slip surface that must not be covered during weighing a person.
- The balance should be checked for correct condition prior to each utilization by a person familiar with proper operation of the balance.

|                                                                                   |                                                                                                                                          |                                                                                    |
|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
|  | <p>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.</p> |  |
|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|

### 4.3 Non-intended product use / contraindications

|                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <ul style="list-style-type: none"> <li>• Do not use these scales for dynamic weighing processes.</li> <li>• Do not leave permanent load on the weighing pan. This may damage the measuring system.</li> <li>• 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.</li> <li>• 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.</li> <li>• The structure of the balance may not be modified. This may lead to incorrect weighing results, safety-related faults and destruction of the balance.</li> <li>• The balance may only be used according to the described conditions. Other areas of use must be released by KERN in writing.</li> <li>• 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.</li> </ul> |
|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

### 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](http://www.kern-sohn.com)) with regard to the monitoring of balance test substances and the test weights required for this. In KERN's accredited DKD calibration laboratory test weights and balances may be calibrated (return to the national standard) fast and at moderate cost.

#### **4.6 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. This applies especially also for values transferred via interface.

#### **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

The prevention of cross-contamination (fungal skin infections,.....) requires regular cleaning of the weighing platform. 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 personal balance for damage before any use
- Maintenance and reverification (in Germany MTK)  
The personal 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 personal 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
- Step onto and leave the personal balance only when a qualified person is present.

## 6 Electromagnetic compatibility (EMC)

### 6.1 General hints



The installation and use of the electrical personal balance MPD-M 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 personal balance MPD-M. Also in certain cases the personal balance MPD-M 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 personal balance MPD-M at another location.
- Connect the personal balance MPD-M 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 authorization relating to the use of the device.



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

## 6.2 Electromagnetic interferences

| <b>Guidelines and manufacturer's declaration – electromagnetic interferences</b>                                                                                                                                                               |                   |                                                                                                                                                                                                                                                                                                                                                                                                               |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| The personal balance MPD-M is designed for use in an electromagnetic environment that meets the requirements stated below. The customer or user of the personal balance MPD-M should ensure that operation takes place in such an environment. |                   |                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Emitted interference measurements</b>                                                                                                                                                                                                       | <b>Conformity</b> | <b>Electromagnetic environment - guideline</b>                                                                                                                                                                                                                                                                                                                                                                |
| HF emissions<br>as per CISPR 11 / EN 55011                                                                                                                                                                                                     | Assembly 1        | The personal balance MPD-M uses HF energy merely for its internal working. Its HF emission therefore is very low and it is highly unlikely to interfere with adjacent electronic devices.<br><br>The personal balance MPD-M is designed for use in all equipment including those in living areas and those connected directly to the public power grid that also supplies buildings used for living purposes. |
| HF emissions<br>as per CISPR 11 / EN 55011                                                                                                                                                                                                     | Class B           |                                                                                                                                                                                                                                                                                                                                                                                                               |
| Emission of harmonics<br>as per IEC 61000-3-2                                                                                                                                                                                                  | Category A        |                                                                                                                                                                                                                                                                                                                                                                                                               |
| Emission of voltage fluctuations / flicker<br>as per IEC 61000-3-3                                                                                                                                                                             | Conforms with     |                                                                                                                                                                                                                                                                                                                                                                                                               |

Do not operate the personal balance MPD-M directly next to other appliances or stacked with other devices. If such type of operation is necessary, observe the personal balance MPD-M to ensure normal operation in this arrangement.

### 6.3 Electromagnetic immunity to interferences

| <b>Guidelines and manufacturer's declaration - electromagnetic immunity to interferences</b>                                                                                                                                                   |                                                                                                                                                                                                                                            |                                                                                                                                                       |                                                                                                                                                                                                                                                                                                           |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| The personal balance MPD-M is designed for use in an electromagnetic environment that meets the requirements stated below. The customer or user of the personal balance MPD-M should ensure that operation takes place in such an environment. |                                                                                                                                                                                                                                            |                                                                                                                                                       |                                                                                                                                                                                                                                                                                                           |
| <b>Immunity to interferences tests</b>                                                                                                                                                                                                         | <b>IEC 60601 test level</b>                                                                                                                                                                                                                | <b>Conformity</b>                                                                                                                                     | <b>Electromagnetic environment - guideline</b>                                                                                                                                                                                                                                                            |
| Discharge static electricity (DSE)<br>as per IEC 61000-4-2                                                                                                                                                                                     | ± 6 kV contact discharge<br>± 8 kV air discharge                                                                                                                                                                                           | ± 6 kV<br>± 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<br>as per IEC 61000-4-4                                                                                                                                                                        | ± 2 kV for power lines<br>± 1 kV for input and output lines                                                                                                                                                                                | ± 2 kV<br>± 1 kV                                                                                                                                      | The quality of the supply voltage should match that of the typical business or hospital environment.                                                                                                                                                                                                      |
| Impulse voltages / surges<br>as per IEC 61000-4-5                                                                                                                                                                                              | ± 1 kV voltage<br>Live wire - live wire<br>± 2 kV voltage<br>Live wire - earth                                                                                                                                                             | ± 1 kV<br>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<br>as per IEC 61000-4-11                                                                                                                                               | < 5 % $U_T$<br>(> 95 % dip of $U_T$ )<br>for 1/2 period<br><br>40 % $U_T$<br>(> 60 % dip of $U_T$ )<br>for 5 periods<br><br>70 % $U_T$<br>(> 30 % dip of $U_T$ )<br>for 25 periods<br><br>< 5 % $U_T$<br>(> 95 % dip of $U_T$ )<br>for 5 s | Compliance with requirements under all postulated conditions<br><br>Controlled switch off<br>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 personal balance MPD by no-break power supply or a battery. |
| Magnetic field for supply frequency (50/60 Hz)<br>as per IEC 61000-4-8                                                                                                                                                                         | 3 A/m                                                                                                                                                                                                                                      | 3 A/m<br>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 immunity to interferences

The personal balance MPD-M is designed for use in an electromagnetic environment that meets the requirements stated below. The customer or user of the personal balance MPD-M should ensure that operation takes place in such an environment.

| Immunity to interferences tests                                    | IEC 60601 test level                                                                                                                                                                | Conformity                                                                                       | Electromagnetic environment - guideline                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|--------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Conducted HF disturbance variables<br><br>as per IEC 61000-4-6     | 3 $V_{rms}$<br>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<br><br>According to IEC 61000-4-3 | 3 $V_{rms}$<br>80 MHz to 2.5 GHz                                                                                                                                                    | 3 V/m<br><br> | <p>Recommended safety distance:<br/> <math>d = 1.2\sqrt{P}</math><br/> <math>d = 1.2\sqrt{P}</math><br/> for 80 MHz to 800 MHz<br/> <math>d = 2.3\sqrt{P}</math><br/> for 800 MHz to 2.5 GHz</p> <p>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 meters (m).</p> <p>The field intensity of stationary radio transmitters should for all frequencies be lower according to an in situ <sup>a</sup> examination than the conformity level.<sup>b</sup></p> <p>Interference may occur near devices bearing the symbol below.</p> |
| NOTE 1                                                             | Higher frequency range applies to 80 MHz and 800 MHz.                                                                                                                               |                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| NOTE 2                                                             | These guidelines may not be applicable in all cases.<br>The spreading of electromagnetic variables is influenced by absorption and reflections from buildings, objects and persons. |                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |

- <sup>a</sup> 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 personal balance MPD-M is to be used exceeds the conformity level above, you should observe the personal balance MPD-M in order to ensure the intended 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.
- <sup>b</sup> 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 personal balance MPD-M 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 personal balance MPD-M is designed for use in an electromagnetic environment in which HF disturbance variables are controlled. The customer or user of the personal balance MPD-M 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<br>W                                                                                                                                                                                                                                                                                                                                                                                                                      | The safety distance depends on the transmission frequency<br>m                                                                                                                      |                                        |                                         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 150 kHz to 80 MHz<br>$d = 1.2\sqrt{P}$                                                                                                                                              | 80 MHz to 800 MHz<br>$d = 1.2\sqrt{P}$ | 800 MHz to 2.5 GHz<br>$d = 2.3\sqrt{P}$ |
| 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.<br>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 plate, power supply 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, vapors 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. Change location or remove source of interference.

### 8.2 Unpacking

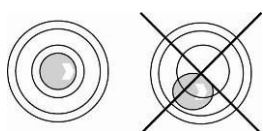
Remove the individual components of the balance or the complete balance from the packaging with care and install at the intended location. When using the power supply unit, ensure that the power cable does not produce a risk of stumbling.

### 8.3 Scope of delivery

**Serial accessories:**

| MPD 250K100NM                                                                                                                                          | MPD 200K-1EM                                                                                                   |
|--------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"><li>• Balance</li><li>• Mains adapter<br/>(in conformity with EN 60601-1)</li><li>• Operating instructions</li></ul> | <ul style="list-style-type: none"><li>• Balance</li><li>• Batteries</li><li>• Operating instructions</li></ul> |

## 8.4 Placing



⇒ Level balance with foot screws until the air bubble of the water balance is in the prescribed circle.

⇒ Check levelling regularly.

## 8.5 Mains connection (only model MPD 250K100NM)

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.

Always use genuine approved KERN power pack units as per directive EN 60601-1.

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



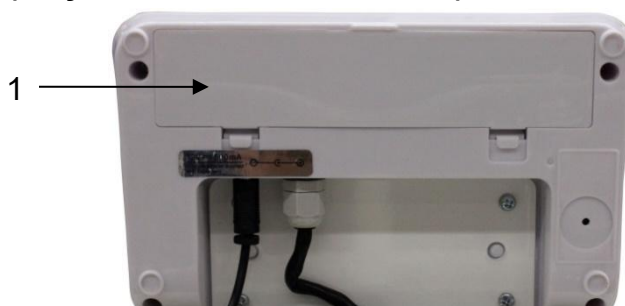
The LED remains illuminated as long as the weighing scale remains connected to the mains.

The LED display informs you during loading about the loading status of the rechargeable battery.

**green:** Rechargeable battery completely recharged

**blue:** Charging rechargeable battery

## 8.6 Rechargeable battery operation with optionally available rechargeable battery kit (only model MPD 250K100NM)



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

The appearance of the symbol  in the weight display indicates that the rechargeable battery 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 and store it separately. Leaking liquid could damage the balance.

## 8.7 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. |  |

## 8.8 Initial Commissioning

In order to obtain exact results with the electronic balances, your balance must have reached the operating temperature (see warm-up time chap.1). During this warm-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 Using the balance

### 9.1 Weighing



⇒ Turn on weighing scale by foot switch.



⇒ The balance will carry out a self-test. The balance is ready for operation as soon as the weight display “**0.0 kg**” appears.



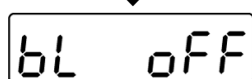
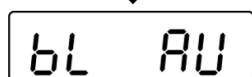
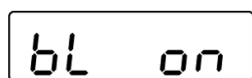
⇒ Have person stand in the center of the scales. Wait until the standstill display „**STABLE**“ appears, then read the weighing result.

### 9.2 Display background illumination



⇒ Turn on weighing scale by foot switch.

⇒ The balance will carry out a self-test. The balance is ready for operation as soon as the weight display “**0.0 kg**” appears.



⇒ Press and hold the foot switch. The setting options for the background illumination are displayed one after the other.

⇒ Select desired setting by pressing button shortly. The display flashes shortly, after that the selected setting is taken over.

|               |                                    |
|---------------|------------------------------------|
| <b>bL on</b>  | Background illumination always on  |
| <b>bL AU</b>  | Backlight turns off automatically  |
| <b>bL off</b> | Background illumination always off |

## 10 Error messages

### Display

OL or-----

-----or Zero

Err4

### Description

Weighing range has been exceeded (excess load)

Below weighing range (underload)

Zero setting range exceeded

(on start-up or when pressing the  key)

- Load on weighing pan
- Excess load, during zero setting of weighing scale
- Incorrect adjusting process
- Fault on load cell

Err6

### Value outside the A/D converter range

- Damaged weighing cell
- Damaged electronics

Err 19

### Unable to initialise zero point

- Measuring cell defective / overloaded
- Object on weighing pan / 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.

## 11 Servicing, maintenance, disposal

### 11.1 Cleaning



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

### 11.2 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.

### 11.3 Sterilisation

Sterilisation of the appliance not allowed.

### 11.4 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.

### 11.5 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.

## 12 Instant help for troubleshooting

In case of an error in the program process, briefly turn off the balance and disconnect from power supply. The weighing process must then be restarted from the beginning.

### Fault

### Possible cause

The displayed weight does not glow.

- The balance is not switched on.
- The mains supply connection has been interrupted (mains cable not plugged in/faulty).
- Power supply interrupted.
- 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 plate 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.
- Warm-up time was ignored.
- Electromagnetic fields / static charging (choose different location/switch off interfering device if possible)

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

## 13 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. 13.1.

The legal regulation of the country where the balance is used must be observed!



### **Verification of the balance is invalid without the seal.**

The seal marks attached on balances with type approval point out that the balance may only be opened and serviced by trained and authorized specialist staff. If the seal mark is destroyed, verification loses 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.**

### 13.1 Verification validity period (current status in D)

|                                                                                                    |           |
|----------------------------------------------------------------------------------------------------|-----------|
| Personal balances (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 weighing scales 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")

## 14 Adjustment

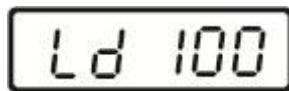
As the acceleration value due to gravity is not the same at every location on earth, each display unit with connected weighing plate must be coordinated - in compliance with the underlying physical weighing principle - to the existing acceleration due to gravity at its place of location (only if the 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.

|                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <ul style="list-style-type: none"><li>• 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: <a href="http://www.kern-sohn.com">http://www.kern-sohn.com</a>.</li><li>• Observe stable environmental conditions. For warm-up time required for stabilisation see chap. 1.</li></ul> |
|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

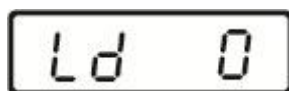
|                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p>The adjustment function is locked for verified balances.</p> <p>To disable the access lock, destroy the seal mark and actuate the adjustment switch. Position of the adjustment switch, see chap. 14.1</p> <p><b>Attention:</b></p> <p>After destruction of the seal 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.</p> |
|------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

### Procedure:

- ⇒ Switch off the balance.
- ⇒ Press adjustment switch and turn on weighing scale by operating foot switch (chap. 3).
- ⇒ Wait until the size of the adjustment weight (see chap. 1) required is displayed.



- ⇒ Place adjustment weight in the center of the weighing platform. Wait until „Ld 0“ is shown.



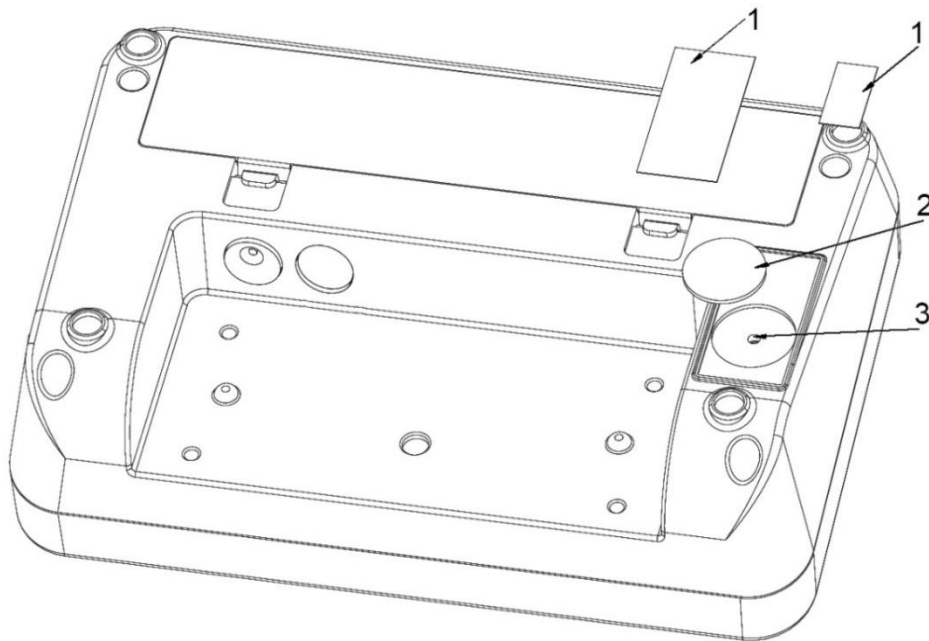
- ⇒ Take away adjustment weight. Ensure that there are no other objects on the weighing pan.



- ⇒ Wait for a few seconds until „**PASS**“ is displayed.
- ⇒ After successful adjustment the balance automatically returns to weighing mode.

#### 14.1 Adjustment switch and seal marks

Position adjustment switch and seal marks:



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