

# MILIAN Movement Monitor

## USER MANUAL

### Type, package contents

- **Milian Baby One:** Central unit MB-01, **1 sensor pad 30x50 cm**, 1 spiral for fastening the line, 2 AA batteries, 2 Velcro fasteners, Quick Start Guide, Instructions For Use, warranty card.

*Note: Recommended for use under a baby's nest, in a cradle or in a cot.*

- **Milian Baby Standard:** Central unit MB-01, **2 sensor pads 30x50 cm**, 2 spirals for fastening the lines, 2 AA batteries, 2 Velcro fasteners, Quick Start Guide, Instructions For Use, warranty card.

*Note: Recommended for use in a 60x120 cm cot.*

- **Milian Baby Plus with 3 sensor pads:** Central unit MB-01, **3 sensor pads 30x50 cm**, Y-distributor, 4 spirals for fastening the line, 2 AA batteries, 2 Velcro fasteners, Quick Start Guide, Instructions For Use, warranty card.

*Note: Recommended for use in a 60x140 cm cot.*

### Dear parents!

Thank you for buying the Milian baby breathing monitor!

Even the most careful parental supervision can't do what the Milian breathing monitor can do: constantly monitor every baby's vibrations and alert the parent in time when an abnormal movement or lack of movement is detected. Thus, the parent can intervene and prevent a process that could have more serious consequences. Although the device signals possible problems, it does not replace parental care. This device is not a life-saving device - however, **you and the Milian breathing monitor together can save lives!**

Read this manual **carefully** and use the product only in accordance with the Instructions For Use! The "Quick Start Guide" supplied with the device provides basic information on the operation of the device. However, to ensure safe use, you must be aware of the following:

**Function of the device:** monitor the movement of a healthy baby. In case of abnormal movement or lack of movement, the device warns the parent with a sound signal and short text information.

**Device operation:** The device detects the movement of the baby using one or more sensor pads. It continuously analyses the signals of the sensor pad, displays movement intensity and, if necessary, instructs the parent to intervene (sound, light, text display).

The sensor pad(s) can be placed under the mattress or on the mattress in accordance with the Instructions for Use.

1. Basic function: if the intensity of movement does not reach the set limit of 12 seconds, the device will emit three beeps in order to make the baby move more vigorously. If this fails, the device emits a sound signal to warn the parent. It is advisable to prepare for such an event by asking your paediatrician for advice in advance.

2. It can happen that the baby falls in deep sleep and breaths less often, but its movement is still above the set limit. In this case, the device will not emit any signal, as the intensity of movement is adequate. However, the MILIAN Baby breathing monitor also monitors the pace of movement and, if this does not reach 10 periods per minute, it alerts the parent with a beep and by displaying the message - SLOW -, which is designed specifically for this case. In this case, it is advisable to move the baby a little to eliminate the state of slow breathing.
3. During deep sleep (or when the baby is lying on its side) the number of breaths may be adequate, the signal strength may exceed the threshold value, but is constantly low, just exceeding the set limit. After three minutes of such condition, the device warns the parent by displaying - WEAK. This state can again be eliminated by gently moving the baby.

**By continuously analysing the baby's movements, the MILIAN breathing monitor can provide parents with signals in a timely manner that can prevent major problems.**

**Intended use:**

- This device cannot be used and is not suitable for the diagnosis, treatment or prevention of any disease!
- This device is not suitable for the prevention of Sudden Infant Death Syndrome (SIDS), as this is an unexpected and unprecedented event. However, early detection and readiness of the parents play a huge role in the success of resuscitation.
- This device is not a medical device.
- This device does not replace parental supervision and responsibility!
- It is recommended to take a baby first aid course!

**Warnings:** Attach the sensor pad cable to the cot so that it cannot be reached or pulled by the baby. You can use the included spiral cable clamp. Use the Velcro fastener delivered with the unit to attach the central unit of the device to the cot. The central unit must be placed on the cot so that your baby cannot reach it under any circumstances. The central unit in front of the baby should be separated by a cot barrier. Never cover the central unit and never place any objects on it! Never allow children to play with the device! Never allow the device to be operated by an older sibling! Proper operation of the device is the responsibility of the parent!

**IMPORTANT! NEVER USE THE SINGLE CHILD MODE FOR TWO CHILDREN!** Otherwise, the device will not distinguish between two babies and will emit the wrong signal!

**IMPORTANT! A MINIMUM OF 2 SENSOR PADS ARE REQUIRED FOR THE TWIN MODE!** Babies must sleep in a separate cot! When babies sleep in the same cot, they interfere with each other's movement detection!

**Restrictions:** As the device is a very sensitive movement monitor, several important rules must be followed when using it.

- Minimize vibrations and movements in the surrounding area! These include fan, air conditioning, draft, floor movement when walking, older children playing around the cot, etc.
- If the device is used in a cradle, the cradle must not be in contact with the adult bed, as adult movement may be transmitted to the device!
- The baby cot must not be within reach of another baby's cot or adult bed.
- The sensitivity of the device is set to monitor the movement of infants and young children. Do not use the breathing monitor for children older than 2 years or for children weighing more than 20 kg.
- The device can be used with any commercially available mattress that can be placed in the cot!

**Commissioning:** Carefully read and follow the "Quick Start Guide" delivered with this device.

It is important to place the sensor pads according to the baby's weight and cot size. The photo guide on the back of the box or the Installation Guide on our website in the "Documents" section (<https://milianbaby.hu/telepitesi-utmutato/>) or this User's Guide can help you.

In general, until the baby can roll or crawl away when sleeping and weighs more than 3.5 kg, place one sensor pad under the mattress, in the same direction as the baby. With this placement, the baby will lie over the sensor pad along its entire length, thus avoiding lying next to it. If the baby can roll or crawl away from its place, it is necessary to use another sensor pad. If the baby can crawl, it is advisable to place the sensor pads crosswise in the cot, 5-15 cm from each other.

It is also important to use **one** sensor pad, but **on the mattress** instead of under the mattress, **until the baby reaches a weight of 3.5 kg** to avoid a false alarm. In doing so, temporarily remove the mattress between the baby and the sensor pad for safe sensing until the baby weighs more than 3.5 kg. For the comfort of the baby, cover the sensor pad with a baby blanket or a double-folded soft blanket. If the baby weighs more than 3.5 kg, it is advisable to place the sensor pad under the mattress.

Similarly, place the sensor pads on the mattress if the baby is to be placed on its side, even if it weighs more than 3.5 kg. In this case, the parts of the body that are moving during sleep (abdomen, chest) are moving sideways and the baby is also lying on its hand, which is why much less movement is transmitted to the mattress and the sensing pad(s).

#### **Post-commissioning test:**

Turn on the device without the baby (press the power button for about 2 seconds), then watch the display. Stand a little further so that your movement does not interfere with the sensing. In this case, it is acceptable if 0-1 is displayed on the numeric display or there is a maximum one-line change on the graphical display.

When the state of rest is reached (for numeric display: first number displayed below the threshold value, **for graphical display:** sign below the threshold value for 3 seconds), after about 12 seconds, the device emits the first short beep, indicating that too much movement below the threshold has been detected. In this case, if the baby responds to the sound with movement, the device restarts the monitoring cycle. When practicing, push the mattress a little instead of the baby to restart the monitoring cycle.

If the device does not receive any movement feedback, it emits three short beeps and only then triggers the alarm, approx. 20 seconds after reaching the state of rest. In this case, only the parent can stop the alarm by pressing the button briefly.

If the test was successful without the baby, repeat it with the baby. If the baby is awake, the average value of the signal must reach at least 8-9 on the numerical display and 6-7-point lines on the graphic display in case of at least one sensor pad. When using two or more sensor pads, one side of the dot display or bar display may show a low value, while the other side of the display may indicate proper movement. This is perfectly normal when using more sensor pads: the second sensor pad is often located e.g., under the baby's feet and records its minor movements. As the graphic display shows the instantaneous value, we now see an uneven signal due to other muscle movements of the baby, which are becoming increasingly smoother and periodic during sleep.

When you take the baby out of the cradle, after temporary big signal change, the device must safely indicate that the baby has stopped moving. Here it should be noted that there are mattresses which, after taking the baby out, will indicate subsequent movement for a relatively long time, up to 10-20 seconds due to weight loss, which is perceived as movement by the device. Fortunately, this cannot happen in a real situation when the baby is in the cot.

If, when testing without the baby, you find that the device occasionally or continuously shows a value higher than 0-1 (1-2 dot lines on the graphic display) at rest, it means that it is detecting movement of external origin. Find out the origin of the disturbing movement and try to eliminate or reduce it!

It may happen that the external disturbing movement cannot be eliminated, for example in case of heavy street traffic. In this case, the movement detection threshold should be set 2 units higher than the recorded interference value. For example, in case of numeric display, if the interference value is 3, set the threshold "L" to 5. You can do this in the device menu as described in the "Quick Start Guide". This eliminates the possibility of external interference, but at the same time the device will be less sensitive to baby movements. Therefore, it may be necessary to place the sensor pad on the mattress until the baby weighs more than 4 kg.

Normally, it is not necessary to change the factory-set threshold value "L" = 3, only if it is not possible to filter out the external disturbing movements in any other way.

**IMPORTANT INFORMATION! THE FACTORY SET THRESHOLD VALUE "L = 3" MAY BE CHANGED ONLY IN JUSTIFIED CASES!**

Repeat the above test if you change the location of the device or cot. Nevertheless, the test should be performed once a week.

### **Displays:**

You can also use the traditional numeric display, but you can also set up 3 different continuous graphic displays. This way you can get an overview of the baby's current state of sleep, whether it is sleeping peacefully or is being disturbed by something. Using the graphical display, the parent can get other relevant information that they might not notice otherwise.

Each display mode can be set in the menu as described in the "Quick Start Guide".

**D - (DISPLAY)** - You can choose various display options (if "D" is displayed on the screen, press the button for 2 s, then toggle the following options by pressing the button briefly):

1. **DOTS** - the current value of movement is signalled by two dots moving up and down. Select by long pressing the button. This setting monitors the baby's current movement with great accuracy and this display saves energy. The movement detected by the sensor pads is displayed in a separate graphic column, which further increases the accuracy of movement monitoring. For example, if one sensor pad is below the upper part of the baby's body and the other is at the baby's foot, you can see the breathing rhythm and small vibrations of the baby's foot during sleep. The signs you will see when the baby is sleeping peacefully are different than the signs when its sleep is restless for some reason.
2. **COLS** - the current value of movement is signalled by two solid bars moving up and down. Select by long pressing the button. Like the DOTS display, this setting monitors the baby's current movement with great accuracy. Impressive but less energy efficient.
3. **NUMS** - every 3 seconds the numerical display shows the highest value of the detected movement. Select by long pressing the button. This traditional display is recommended if we are not interested in the quality of sleep, only the intensity of the baby's movements.
4. **GRAPH** - real-time graphical curve. Select by long pressing the button. This view is not available in the twin mode! Similar to the DOTS and COLS graphical display, but only the sensor pad with a higher movement value with extended view is displayed on the screen.

**M - (MEMORY REPLAY)** - Access from the menu as described in the "Quick Start Guide".

It is possible to view the displays for the last 12 minutes (6 minutes in twin mode). It is possible to view the displays for the last 12 minutes (6 minutes in twin mode).

It may be necessary to check the data stored in the memory if, for example, an alarm has occurred but the

baby is OK. In this case, it is not clear whether the alarm was true or false. Checking the data for the last 12 minutes before the alarm can help you determine the cause.

The data are replayed in 1-minute increments, back in time from the 13th minute. Therefore, the first display will be R13M (Replay 13 Minutes), then the 12th minute will be replayed, the original display speed will be accelerated to 3x. If the device is still new and no 12-minute data is stored in the memory, the device starts at the beginning of the actually recorded data, for example R5M, which means that 5 minutes will be replayed.

If you do not want to watch the whole 12 minutes, you can skip to the beginning of the next minute by briefly pressing the button. "J" (Jump) appears on the display for a short time.

During replaying, "X" on the display stands for switching the device on and off, "S" (Slow) stands for slow breathing and "W" (Weak) stands for low intensity breathing.

To pause, press and hold the button. When "Q" (Quit) appears, memory replay ends and the unit stops.

Pre-alarm data can be important; therefore this data will not be automatically overwritten the next time the device is switched on! When the device is switched on, MEM OFF indicates that memory writing is temporarily switched off. The data will be retained for three switching-ons, new data will start to be added to the memory after the fourth switching-on. Of course, it is not necessary to wait for 3 switching-ons. If you press and hold the button while MEM OFF is displayed, new data will start to be added to the memory, while old data will be deleted.

For more information and display settings, see the "Quick Start Guide."

### **Battery voltage monitoring:**

Batteries must be in good condition, otherwise the device cannot function properly. Therefore, it is important that the batteries are replaced when the device indicates that the batteries are discharged.

However, the device will not signal the need for battery replacement when switched on (when the baby is asleep) or during the night.

If the device assesses the battery status as appropriate after being switched on, the batteries can ensure the operation of the breathing monitor for another 12 hours.

When you switch the device off, it checks the battery status again and if it approaches an insufficient value (<2.8V), the device will emit a sound and the battery diagram will flash. In this case, the batteries must be replaced! If you do not replace them, the signalling will be repeated the next time the device is switched on. If, in the meantime, the battery has been discharged (<2.7V) and safe operation is endangered, it will not be possible to switch the device on and you will have to replace the batteries.

**With this sophisticated battery monitoring, you can avoid your baby being disturbed by signalling the battery status**, because when switching the device off, a warning sound will sound only when your baby is likely to be awake. If you then replace the batteries, there will be no sound signal at the next switching-on.

### **Ways of placing sensor pads with a top view of the cot:**

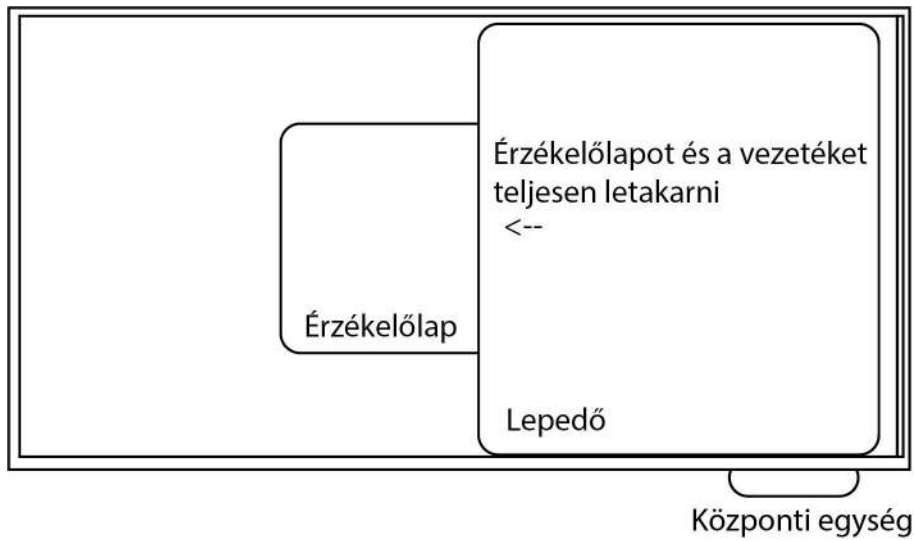
If the baby's weight **is under 3,500 grams**, 1 sensor pad should be placed on the mattress in the longitudinal direction. Cover the sensor pad and cable with a bed sheet and then place a baby blanket under the baby to make it feel comfortable. The baby must be placed above the sensor pad with its abdomen around the centre of the pad:

Completely cover the sensor pad and cable.

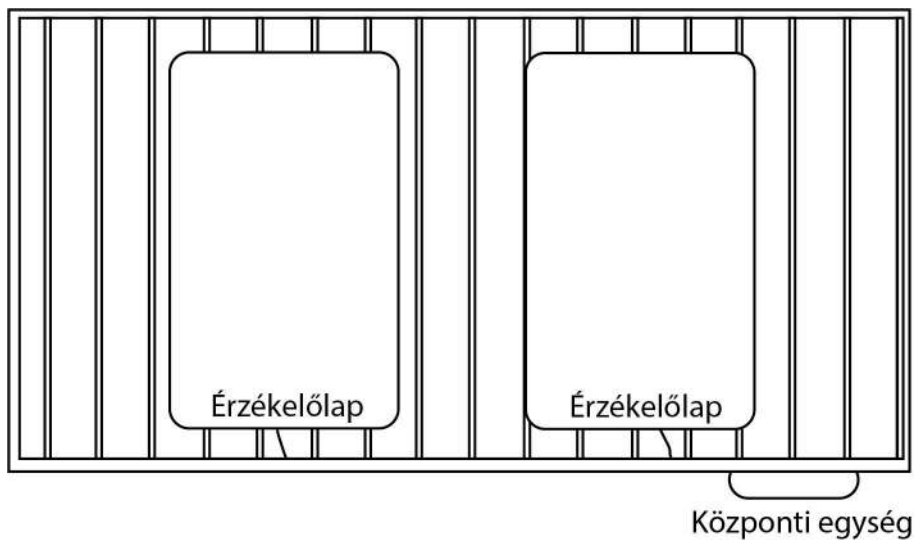
Bed sheet

When the baby's weight **is equal to or over 3,500 grams**, place 1 sensor pad between the bed frame and the mattress, unless the baby can roll or crawl away from its place. The baby must be placed on the sensor pad with its abdomen around the centre of the pad:

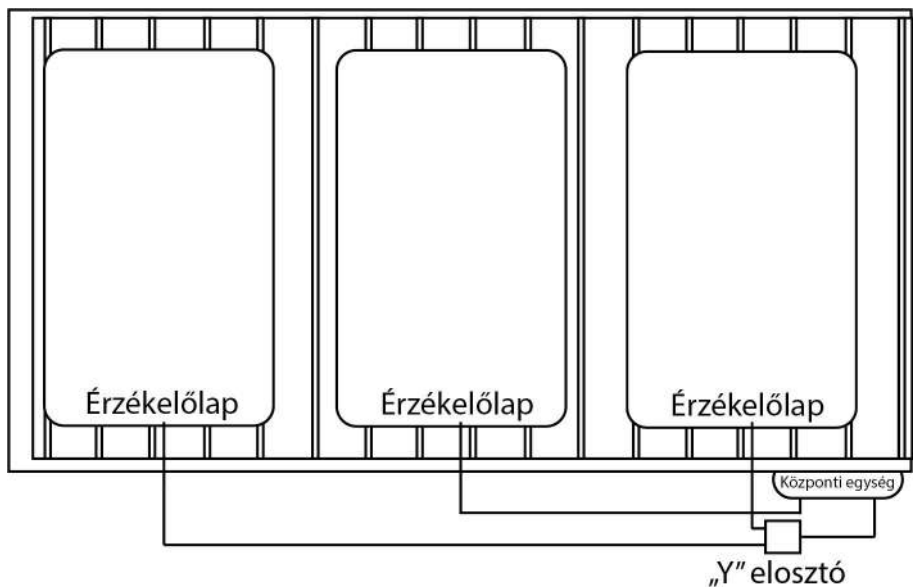
If the baby **weighs more than 3,500 grams and can already roll or crawl away**, place the sensor pads as shown in the illustration below:



Ideal arrangement for a **60 x 120 cm cot** with 2 sensor pads:



Ideal arrangement for a **60 x 120 cm cot** with 3 sensor pads and a Y-distributor:  
Place the sensor pad that is directly connected to the central unit in the centre.



Arrangement **for twins** with 1-1 or 2-2 sensor pads. The distance between the two cots must be at least 30 cm:

Sensor pad.  
Y-distributors.

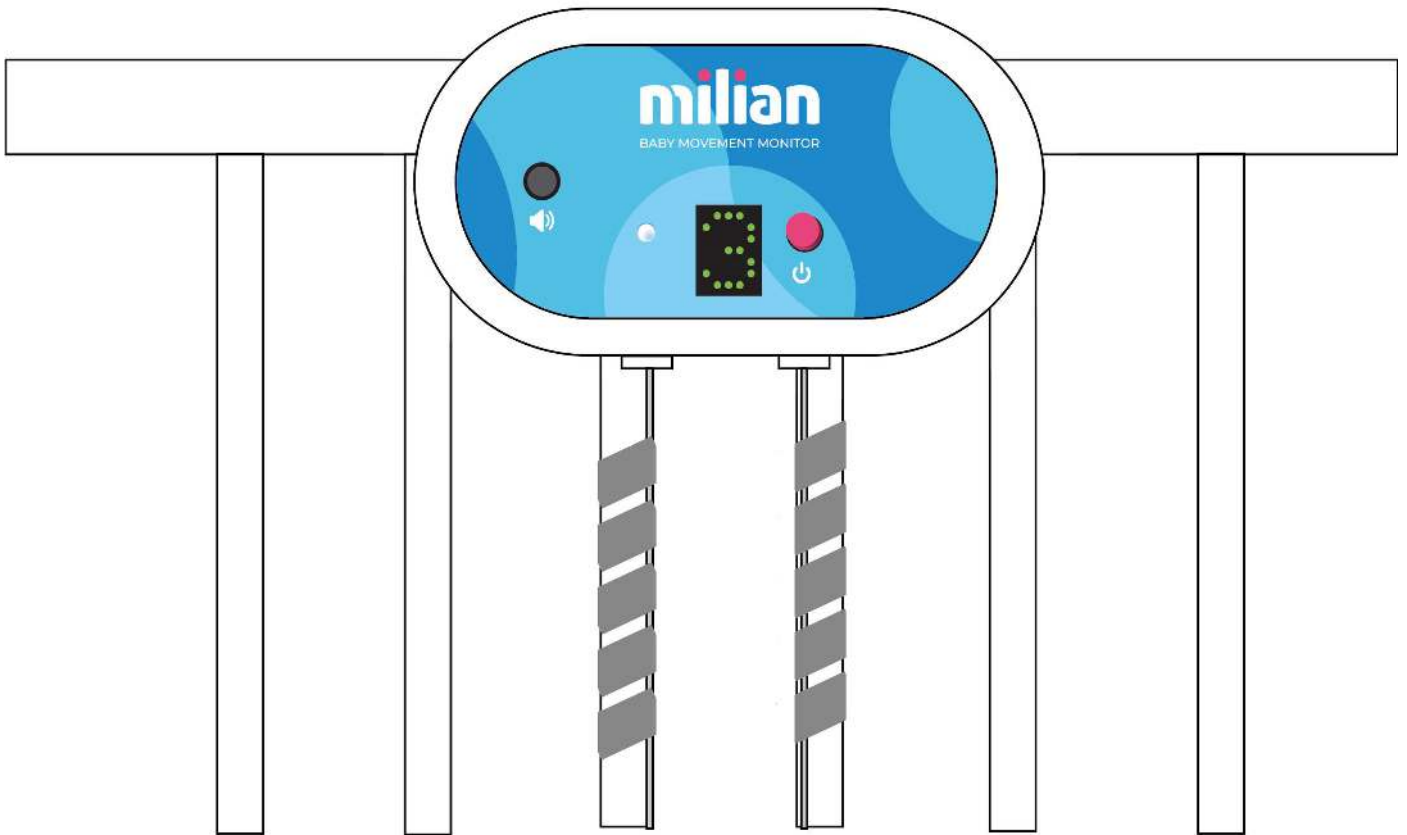
**Note:** While using the twin mode, it may be necessary to temporarily switch to the one baby mode, for example if one baby is asleep but the other baby needs to be fed. In this case, you do not have to enter the menu and switch to the one baby mode, just press and hold the power button (2 sec). The device offers to ignore the left cot first, then the right cot, indicating the cots by an arrow and an X sign. When the arrow appears and you release the button, the cot will not be monitored and no alarm will be triggered! This state is clearly indicated on the display by the following indications: <-x or x->. The cot indicated by the arrow is not monitored and no alarm will be triggered for it!

**Using the Velcro fasteners:** In the device package you will find 2 strong, self-adhesive Velcro fasteners, which can be used to attach the device to the cot. Attach one Velcro fastener to the bed in the desired place (a grease-free clean surface is required for proper adhesion). Attach the other half of the Velcro fastener to the back of the device as shown below:

Place for the Velcro fastener.



**Use of spirals for fastening the line:** The device package contains a spiral (s) for fastening the line, which must be placed on the vertical grid of the cot, as shown below. If necessary, wind the cables several times around the cot grid.





## Technical data, cleaning, maintenance:

The current consumption of the central unit is 0.3-0.5 mA, depending on the type of display.

The expected battery life is approx. 2000-3000 operating hours, provided by an alkaline battery with a capacity of 1500 mAh.

Two-stage signalling of battery voltage, safety limitation.

Display type: 5x7 point nut, green.

Type of sound signalling: piezoelectric, volume 75-80 dB.

Since the device's battery monitoring is set to 2 1.5 V "AA" alkaline batteries, **it is not possible to use a different type of batteries or** rechargeable batteries due to their different voltage.

The electrical noise emission (electrosmog) of the device is practically unmeasurable.

The device can be used in twin mode, provided that the instructions given in the Instructions for Use are followed.

Load capacity: 20 kg, provided the sensor pads are evenly placed under the mattress. If the sensor pad is placed above the mattress, the load capacity is 10 kg per sensor pad.

The plastics used are commonly used in healthcare (PVC, polycarbonate), they do not emit solvents, their use is safe. The sensor pads are protected against dripping water. They can be cleaned with a damp soap cloth and disinfected with sanitary cleaners.

The central unit is not protected against water. It can be cleaned with a damp cloth, materials used for sensor pads. It is recommended to clean the central unit and the sensor pads if they are dirty, but at least once a week. Apart from cleaning, the device does not require any other maintenance.

It is recommended to visually inspect the condition of the device, sensor pads and wires before each use. In the event of a problem or fault, contact the device manufacturer or distributor!

### **For instructions on how to insert the batteries, see the "Quick Start Guide".**

Information on safe handling of batteries

- Never use rechargeable batteries!
- Never use carbon-zinc batteries!
- Do not mix old and new batteries.
- Do not recharge non-rechargeable batteries.
- Insert the batteries in the correct direction.
- Remove discharged batteries from the device and handle them properly.
- It is recommended to use similar or identical batteries.
- Batteries may only be inserted or replaced by an adult.
- Make sure that used batteries do not fall into the hands of children and dispose of them at a designated collection point.
- Remove the batteries if you will not be using the device for a long time!
- When the device is no longer in use, dispose of it at the appropriate waste collection point, in accordance with valid regulations.
- The device can be used at temperatures from 10 °C to 35 °C, at max. humidity of 90%.