

# EMFIT

Instructions for Use

# Safebed<sup>®</sup>

Bed Exit and Occupancy Monitor

Applicable to products:  
Control unit D-1070-2G, t66 v.1.2.3  
Bed sensor L-0656SLC  
04 April 2013

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# 1. WARNINGS

## 1.1. Important information. Read before use.

- Must not be used in situations where a delay in the arrival of appropriate care, could lead to a potentially life-threatening situation.
- This device is designed only to be used as an aid for a caregiver.
- Pets can cause false notifications or prevent a notification when needed if they walk or lie on a bed fitted with this device.
- Do not use this device for any purpose other than that specified by the manufacturer.
- Do not connect the device to any other devices other than those specified by the manufacturer.
- Do not try to repair the device yourself.
- The device is designed to be used in the electromagnetic environment and conditions specified on pages 13–16. The client or user of the device must ensure that it is only used in the specified ambient conditions.
- Do not install this device near or on top of another device. However, if this cannot be avoided, the user must ensure that the device functions in the normal manner.
- Do not use X1, X2 or X3 connectors for any purpose other than that specified by the manufacturer. Do not connect the connectors to e.g. telecommunications or local area networks.
- If this device is used with a pressure care mattress filled using a compression pump, the device may not function normally in some cases.
- Do not let the device get wet.
- Remove the batteries when the device is not in use or when it is stored for an extended period. Alkaline batteries may become self-discharged, start leaking and contaminate the device.
- When removing the power supply from the socket, ensure that the plug part is not left in the socket. If the plug part is left in the socket, touching or trying to remove it carries the risk of an electric shock.
- Do not use any rechargeable batteries or lithium-ion batteries! Rechargeable or lithium-ion batteries carry the risk of melting, ruining the device and causing possible danger to the user.

## 1.2. Unintended adjustment of control unit settings:

- Adjusting the volume may lead to the notification sound not being heard.
- Incorrect positioning of the DIP switches may interfere with the normal operation of the device.
- Pressing the ON/OFF/Reset (SW1) press switch for too long will switch off the device.

# 2. SYMBOLS USED IN THIS MANUAL

The following instructions are designed to ensure the personal safety of the user and protect this device or any device connected to it from damage. These instructions use symbols to draw the user's attention to the instructions at hand. The symbols act as safety and warning signs. The symbols and their explanations are as follows:



This symbol means that, if the instructions are not adhered to, the situation may lead to a death or serious personal injury.



This symbol means that the section contains important information for the user.



This symbol indicates the maximum use and storage temperature.

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## 3. INTRODUCTION

- These instructions describe the use of the **Emfit Safebed** bed exit and occupancy monitor. The exact version number on the first page of this manual should be referred to and compared against the number on the sticker found on your device.
- Use the device only in the ambient conditions specified by the manufacturer. For detailed information, refer to "Technical Specifications" in this manual.
- Follow all instructions provided in this document concerning the installation, use and cleaning of the device.
- In accordance with the intended use defined in Section 3.1 below, the Emfit Safebed **is not** a medical device as defined in the Medical Device Directive 93/42/EEC. .

### 3.1. Intended use

The Emfit Safebed is intended to be used to assist in sensory bed exit and occupancy monitoring and to notify the user if the person recumbent on a mattress fitted with the under-mattress sensor leaves the bed or does not return to it within predefined time.

#### NOTE

The manufacturer cannot guarantee that the device will detect all bed exit episodes. It may also trigger a false bed exit notification.

### 3.3. About this manual

Read all warnings and reminders in this manual with care to avoid any hazardous situations and damage.

## 4. PACKAGE CONTENTS

- A control unit and two screws to attach the lid (**picture 1**)
- A bed sensor with two pieces 3M double-sided tape to fix the sensor (**picture 6**)
- A wall mounting bracket with two screws and two plugs (**picture 7**)
- Clip for bed side attachment (**picture 8**)
- This manual
- Two AA batteries
- Optionally a power supply (GlobTek model no: GTM41060-1505 and P/N: WR9QA3000LCP-N-MNK) (**picture 2**)

## 5. GENERAL

### 5.1. Control unit (**picture 1**)

The control unit activates for bed occupancy monitoring after it has noticed movements or micro-movements for 1 minute. After activation for occupancy monitoring, a notification is triggered if no movements or micro-movements are detected for at least 3 or 5 seconds (adjustable by DIP switch, see Chapter 6).

The control unit operates with 2 pcs AA size 1.5 V alkaline batteries. An optional AC adapter is available. Do not use any power supply other than that provided by Emfit Ltd. (model no. GTM41060-1505 and P/N:WR9QA3000LCP-N-MNK, manufactured by Globtek) (**picture 2**). In the event of a power failure, two high-quality 1.5V AA alkaline batteries can be used as an emergency power supply. Do not use any rechargeable batteries or lithium-ion batteries! Rechargeable or lithium-ion batteries carry the risk of melting, ruining the device and causing possible danger to the user.

The control unit has an input connector for the bed sensor (X3) and power supply (X1). The device also has a connector (X2) to transfer the notification to e.g. a nurse call system, a personal emergency phone or an external wireless transmitter.

Next to the input connector, there is a push button (SW1) that can be used to acknowledge a notification or as an on/off switch. (**picture 3**)

The control unit has 8 DIP switches (**picture 4**) to select the settings and a rotary switch to adjust the sensitivity of the device. (**picture 5**)

## 5.2. Bed sensor (picture 6)

The bed sensor produces a millivolt alternating current when detecting movement. The control unit calculates the frequency and scale of the movement from this signal and, on this basis, detects the person's presence in the bed. Heartbeat causes micro-movement that allow the device to detect the person's presence. When there is no micro or other movement, it recognizes this as the individual being absent and it gives a notification both by sound and via dry-contact optocoupler. There are no particular size or weight limitations, but sensitivity and the ability to recognize a user's micro-movements and thus, presence in bed, need to be tested in each case.

## 6. SETTING UP THE DIP SWITCHES

Open the lid of the control unit by lifting it from the side (picture 9). Inside, you will find eight DIP switches that are used to select the desired functions (picture 4). Remember to select the desired settings using the DIP switches before using the device.

The control unit has the following factory settings. DIP 1, 2, 3, 4, 5, 6, 7 and 8 all OFF (down). With these settings:

- Bed exit notification delay is 3 seconds.
- Output is in pulse mode
- The SW1 switch acts as the On/Off switch which means that the device can be switched on or off by pressing the switch for three (3) seconds.
- The notification sound is "very loud".



Disconnect the device from the (optional) power supply before opening the lid.



Disconnect the (optional) power supply and remove the batteries before setting up the DIP switches in order to implement the new settings.

### 6.1. Setting bed exit notification delay (DIP Switch #1 - #3)

| Time Delay  | Switch # 1 | Switch #2  | Switch #3  |
|---|------------|------------|------------|
| Shortest (3 -4 sec)   | OFF (down) | OFF (down) | OFF (down) |
| 5-7 seconds (use if after proper sensitivity adjustment false alarms occur) | OFF (down) | ON (up)    | OFF (down) |
| 3 minutes   | ON (up)    | ON (up)    | OFF (down) |
| 6 minutes   | OFF (down) | OFF (down) | ON (up)    |
| 10 minutes  | ON (up)    | OFF (down) | ON (up)    |
| 15 minutes  | OFF (down) | ON (up)    | ON (up)    |
| 30 minutes  | ON (up)    | ON (up)    | ON (up)    |

### 6.2. DIP switch #4 - #6 settings

| DIP # | OFF (down)  | ON (up)   |
|-------|---|---|
| #4    | Normal environmental noise filtering  | Strong environmental noise (for example air conditioning, laundry machine, traffic etc.) filtering to prevent false presence detection.   |
| #5    | Dry-contact output is pulse mode (about 1,5 sec pulse)  | Dry-contact output is constant type. Use only when necessary by other system to be connected with. Not to be used with batteries! Optional power supply is needed due to increased power consumption. |
| #6    | Power switch function at SW1 is enabled (device can be shut down and turned on by pressing SW1 for about 3 seconds) | Power switch function at SW1 disabled (device is always on).  |

### 6.3. Adjusting the notification sound volume (switches #7 and #8)

There are four volume levels: Very loud, loud, quiet and mute. The factory setting is very loud.

| Volume Level | Switch #7  | Switch #8  |
|--------------|------------|------------|
| Loud         | OFF (down) | OFF (down) |
| Normal       | ON (up)    | OFF (down) |
| Quiet        | OFF (down) | ON (up)    |
| Mute         | ON (up)    | ON (up)    |

The notification sound stops when the SW1 switch is pressed or when person returns to bed.



Disconnect the (optional) power supply and remove the batteries before setting up the DIP switches in order to implement the new settings

## 7. INSERTING BATTERIES AND BATTERY SERVICE LIFE



Disconnect the device from the (optional) power supply before opening the lid.

Product operates with 2 pcs high quality AA size 1.5 V alkaline batteries (operating voltage  $2 \times 1.5V = 3V$ ). Install and remove the batteries as follows:

- 1) Open the lid by removing the screws and lifting it from one side (for first-time assembly: the screws for the lid can be found in the pouch containing wall mounting parts). **(picture 9)**
- 2) Insert two high-quality AA size 1.5V alkaline batteries into the device following the polarity symbols at the bottom of the device. Close the lid and screw the screws back on. **(picture 10)**

The easiest way to remove a battery is by lifting it from the + end. **(picture 11)**

Estimated battery life is 3 months, when using high quality alkaline batteries, with 2800 mAh capacity (2pcs). Estimation is based on measured battery consumption in various conditions and then a calculation where device is on 50% of time (shut down 50% of time) and of that 50% of time there is someone in bed 75% of that time, there is two notifications per day and sound notification is on 30 seconds each time.

When the batteries are getting low, the red LED will begin to flash slowly. A “beep” sound will be heard after every 1.5 hours and the dry-contact output will give a low battery notification after every 3 hours.



**NOTE!** All alkaline batteries start to leak when empty, and a leak will contaminate the device. Remember to replace the batteries at least once a year to avoid any leaks. Remove the batteries when the device is not being used or when it is being stored for an extended period. Disconnect the power supply briefly to test the batteries. If the batteries are empty, the red light on the control unit will light up. The X2 connector and the connected system will also trigger a notification. Replace the batteries when necessary.



Do not use any rechargeable batteries or lithium-ion batteries! Rechargeable or lithium-ion batteries carry the risk of melting, ruining the device and causing possible danger to the user.

## 8. EXTERNAL POWER SUPPLY

Set up the power supply in the following manner:

- 1) Remove the plastic cover. **(picture 23)**
- 2) Select a suitable plug from the four alternatives. **(picture 24)**
- 3) Plug in the plug and ensure that it is not loose. **(picture 25)**



The control unit has been designed and tested to be used with the Globtek inc. power supply model no GTM41060-1505 and P/N: WR9QA3000LCP-N-MNK. Using any other power supply may interfere with the safe use of the device.



The power supply is fitted with a blue light which lights up when the power supply is connected. If the light is not on while the power supply is connected to the mains, the power supply is probably faulty and needs to be replaced.



When the power supply is connected, the batteries act as backup power supply in the event of a power failure. All alkaline batteries self-discharge and start to leak when empty, contaminating the device. Ensure that batteries are replaced at least once a year.



When removing the power supply from the socket, ensure that the plug part is not left in the socket. If the plug part is left in the socket, touching or trying to remove it carries the risk of an electric shock.

## 9. CONNECTORS AND CABLES

Connector symbols can be found at the bottom of the control unit. **(picture 3)**



X1 / connector for an external power supply. Only use Globtek inc. power supply model no. GTM41060-1505 and P/N: WR9QA3000LCP-N-MNK which can be obtained as an original accessory from Emfit Ltd.



X2 / AUX connector to connect the device to a nurse call system, a personal emergency phone or an external wireless transmitter. The connector may only be connected to a system safety voltage input with max. voltage below 25V(AC) / 60 (DC), where both poles have been separated from the electrical network. Max. load current 100mA.

X2 (AUX) Connector Pin Order **(picture 16)**

From left to right:

|        |                            |
|--------|----------------------------|
| Pin #1 | Common return              |
| Pin #2 | Normally Open (NO) send    |
| Pin #3 | Normally Closed (NC) send  |
| Pin #4 | Low Battery send (NC)      |
| Pin #5 | Not in use, do not connect |
| Pin #6 | Not in use, do not connect |
| Pin #7 | Not in use, do not connect |
| Pin #8 | Not in use, do not connect |



X3 / sensor connector. Only use the Emfit bed sensor.

Connect the bed sensor **(picture 13)**, the (optional) power supply **(picture 14)** and any connector cables **(picture 15)** according to the pictures.

## 10. INSTALLATION OF THE CONTROL UNIT

### 10.1. With wall mounting bracket

- 1) Fix the mounting bracket onto a wall with the plugs and screws supplied. **(picture 17)**
- 2) Slide the control unit onto the wall mounting bracket. **(picture 18)**
- 3) Press the control unit down until you hear a click. **(picture 19)**

## 10.1. With bed side clip

1) Press the control unit down to the clip (*picture 20*)

# 11. INSTALLATION OF THE BED SENSOR

- Place the bed sensor across the bed, under the mattress at approximately chest height. (*picture 12*)
- To prevent the bed sensor from moving, fix the sensor to the bed bottom or mattress using the double sided tape provided or e.g. cable ties (*picture 6*). The tape will not leave a mark and it will come off as a whole if removed.
- Check at least once a week that the bed sensor is properly positioned.
- If you are using the bed sensor with a spring mattress, always place the bed sensor between the mattress and the mattress topper!
- Always place the bed sensor under the mattress or mattress topper, never just under the sheet. The bed sensor must not come into direct contact with a person!
- The bed sensor is designed to last for a minimum of two (2) years placed under a foam mattress and against the hard base of a bed frame.
- With a spring mattress, the service life of the bed sensor is considerably shorter. When the bed sensor is placed on a spring mattress, the user's weight and movement will cause the sensor to crumple, which may affect the sensor's performance. The manufacturer recommends that users replace the sensor when it starts to look crumpled. When used with a spring mattress, the sensor should be replaced every year. The warranty does not cover damage caused by crumpling.
- If the bed sensor is used with a pressure care mattress that is adjusted using a compressor pump, the mattress may interfere with the sensor's performance. If you are unsure about the suitability of your mattress, please contact the manufacturer.

## 12. SW1 PRESS SWITCH (*PICTURE 21*)

### 12.1. ON/OFF switch

The SW1 switch acts as the on/off switch if this function is activated (DIP switch #6 is down).

Press the SW1 switch for three (3) seconds in order to activate or deactivate the control unit. When the control unit is switched on, you will hear a beep and the blue LED light will start to flash. When the device is switched off, you will hear a "beep-beep-boop" (high-high-low) sound. The blue LED light will go off.

### 12.2. Acknowledgement switch

The notification sound (if activated) can be muted by pressing the SW1 switch shortly. The device will make a "beep-beep" sound. NOTE! If you press the switch for too long, you might accidentally switch off the device. The notification sound will also stop when person returns to bed.

## 12. CALIBRATING THE "PRESENCE / ABSENCE" SENSITIVITY

### 13.1. Doing calibration

The sensitivity to notice correctly that person is in or out of bed, is adjusted in calibration mode. First the person to be monitored should be in bed and resting (not moving, talking or else) at least for one (1) minute until green light starts to blink with same speed as blue light. Also the monitor itself should lay on a table or be fixed on a wall. Sensor too must be in its correct place under mattress.

Start calibration by pressing three (3) times the SW1 switch (*picture 21*). You will hear 3 times low and high tone (kind of bu-beep, bu-beep, bu-beep). The calibration takes 18 seconds. If calibration was successful, the confirmation sound is the same 3 times bu-beep again.

### 13.2. Error messages and how to handle them

**One (1) long beep** - Device has not detected strong enough micro movement signal and has reached an adjustment limit. Device might not work optimally. Is the sensor positioned correctly in the bed and device was not in error -state (red led was not blinking)? If not: Correct the problem and re-try calibration. If yes: Adjust the rotary switch (*picture 5*) up 2 notches and re-try auto adjustment.

**Two (2) long beeps** - Device has detected too strong signal and has reached an adjustment limit. Device might not work optimally. Was person laying still during the calibration period? Re-try calibration again and see if second time would be succesful. If second time gives same error sound, adjust the rotary switch (*picture 5*) down 2 notches and do the calibration again.

You can always return sensitivity to factory default. First press SW1 three (3) times and soon after hearing the three sounds, press SW1 again 3 times. That interrupts adjustment and device returns to factory setting.





Adjust the sensitivity of the device every time the sensor is re-installed, if the user or the sensor changes.

## 14. SIGNAL LIGHTS (PICTURE 22)

### 14.1. Green – Presence

|               |  |
|---------------|--|
| Slow flash    | A person is on the bed or other movement is being made.                        |
| Flashing      | A person has been on the bed for 1 minute and the device has become activated. |
| Light is off. | No one is on the bed.  |

### 13.2. Blue – Device on/standby

|                                   |                                 |
|-----------------------------------|---------------------------------|
| Light is off.                     | Device is switched off.         |
| Flashing                          | Device is switched on.          |
| Light flashes faster a few times. | Device triggers a notification. |

### 13.3. Red – Malfunction

|   |   |
|---|---|
| Light is flashing with same speed as blue light | Bed sensor is defective or disconnected. Signal alarm sounds after 10 seconds and then every 45 seconds. There is also an alarm sent through the X2 connector after 30 seconds and then every 30 minutes. |
| Light is flashing half speed of the blue light. | Batteries are empty. Replace batteries.   |

## 15. CHECKS

### 15.1. Weekly checks

#### 1. Condition of the cables

Check the condition of the cables

#### 2. Position of the bed sensor

Check the position of the bed sensor under the mattress. The correct position is at the chest height of the user and across the bed.

### 15.2. Start-up and monthly checks

To ensure faultless performance, conduct the sensitivity test at least once a month and when ever the device is re-installed or sensor changed.

To test the sensitivity of the sensor, ask another person to lie on the bed completely still and without talking. Wait at least 1–2 minutes. If the green light does not begin flashing with same speed as blue light, or if the notification does not happen after leaving the bed (assuming delay is shortest), then do the calibration (see chapter 13).

## 16. TROUBLESHOOTING

Ensure that the device is properly installed. Test the device carefully every time its settings are adjusted.

|  |  |
|--|--|
| The device triggers a notification but the nurse call system does not. | Ensure that the connection cable to external system is connected to the X2 connector the right way.  |
| Notification sound is inaudible  | Check the volume setting. See chapter 6.3.   |
| The device triggers a notification even if person is in bed.           | Check the condition, installation and position of the bed sensor.<br>Check that the sensitivity is correct. See chapter 13.  |
| The green light flashes even if no one is on the bed.                  | Ensure that the bed sensor and its cables are not affected by external movement and remove any distractions.   |
| The green light is not flashing even if someone is on the bed.         | Check the condition of the bed sensor and its cables. Faulty sensor or cable may cause distractions so that the green light is on all the time. Check that the sensitivity is correct. See chapter 13. |

If you experience any problems with the use of the device, please contact the manufacturer.

## 17. CLEANING

You can wipe the bed sensor and cables, control unit and external power supply with a damp cloth, neutral cleaning product or mild disinfectant.



Disconnect the external power supply always before cleaning the device. Dry all parts well after cleaning.



## 18. DISPOSAL OF THE DEVICE AFTER USE

In conformity with the Waste Electrical and Electronic Equipment Directive (WEEE Directive), the device must be collected separately and returned to an authorised collection facility. The owner must take the device to the waste collection point specified by local authorities.

For more information on how to dispose of the device, please contact the relevant authorities.

## 19. DECLARATION OF CONFORMITY (EU)



The manufacturer, Emfit Ltd., hereby declares that the Emfit SafeBed complies with the essential requirements of EMC directive 2004/108/EC and CE mark directive 93/68/EEC and carries the CE marking accordingly.

## 20. EMFIT LIMITED WARRANTY STATEMENT

In the unlikely event that your product needs guarantee service, please contact your dealer, distributor or manufacturer. To avoid any unnecessary inconvenience on your part, we recommend you read this instruction manual carefully before seeking guarantee service.

### YOUR GUARANTEE

By this Guarantee, Emfit guarantees the product to be free from defects in materials and workmanship at the date of original purchase for a period of two (2) years from that date.

If within the guarantee period the product is determined to be defective (at the date of original purchase) due to improper materials or workmanship, Emfit will, without charge for labour or parts, repair or (at Emfit's discretion) replace the product or its defective parts subject to the terms and limitations below. Emfit may replace defective products or parts with new or refurbished products or parts. All products and parts replaced become the property of Emfit.

### TERMS

Guarantee services will be provided only if the original invoice or sales receipt (indicating the date of purchase, model name and dealer's name) is presented with the defective product within the guarantee period. Emfit may refuse free-of-charge guarantee service if these documents are not presented or if they are incomplete or illegible. This Guarantee will not apply if the model name or serial number on the product has been altered, deleted, removed or made illegible.

This Guarantee does not cover transport costs and risks associated with transport of your product to and from Emfit.

This Guarantee does not cover:

- a) periodic maintenance and repair or parts replacement due to wear and tear. Notice! Emfit bed sensor wears and tears significantly faster when installed on soft base like spring mattress.
- b) consumables (components that are expected to require periodic replacement during the lifetime of a product such as non-rechargeable batteries)
- c) damage or defects caused by use, operation or treatment of the product inconsistent with normal use
- d) damage or changes to the product as a result of:
  - i. misuse, including:
    - treatment resulting in physical, cosmetic or surface damage or changes to the product
    - failure to install or use the product for its normal purpose or in accordance with Emfit's instructions on installation or use
    - failure to maintain the product in accordance with Emfit's instructions on proper maintenance
    - installation or use of the product in a manner inconsistent with the technical or safety laws or standards in the country where it is installed or used
  - ii. the condition of or defects in systems with which the product is used or incorporated except other Emfit's products designed to be used with the product
  - iii. use of the product with accessories, peripheral equipment and other products of a type, condition and standard other than prescribed by Emfit
  - iv. repair or attempted repair by persons who are not Emfit employees
  - v. adjustments or adaptations without Emfit's prior written consent, including:
    - upgrading the product beyond specifications or features described in the instruction manual, or
    - modifications to the product to conform it to national or local technical or safety standards in countries other than those for which the product was specifically designed and manufactured
  - vi. neglect
  - vii. accidents, fire, liquids, chemicals, other substances, flooding, vibrations, excessive heat, improper ventilation, power surges, excess or incorrect supply or input voltage, radiation, electrostatic discharges including lighting, other external forces and impacts.

This guarantee covers only hardware components of the product.

#### **EXCLUSIONS AND LIMITATIONS**

Except as stated above, Emfit makes no warranties (express, implied, statutory or otherwise) regarding product or accompanying or constituent software quality, performance, accuracy, reliability, fitness for a particular purpose, or otherwise. If this exclusion is not permitted or fully permitted by applicable law, Emfit excludes or limits its warranties only to the maximum extent permitted by applicable law. Any warranty that cannot be fully excluded will be limited (as far as permitted by applicable law) to the duration of this Guarantee. Emfit's only obligation under this Guarantee is to repair or replace products subject to these Guarantee terms and conditions. Emfit is not liable for any loss or damage relating to products, service, this Guarantee or otherwise, including - economic or intangible losses - the price paid for the product - loss of profits, revenue, data, enjoyment or use of the product or any associated products - indirect, incidental or consequential loss or damage. This applies whether that loss or damage relates to: impaired or non-operation of the product or associated products through defects or unavailability while with Emfit, which caused downtime, loss of user time or business interruption inaccuracy of output from the product or associated products.

This applies to loss and damages under any legal theory, including negligence and other torts, breach of contract, express or implied warranty, and strict liability (even where Emfit has been advised of the possibility of such damages).

Where applicable law prohibits or limits these liability exclusions, Emfit excludes or limits its liability only to the maximum extent permitted by applicable law. For example, some countries prohibit the exclusion or limitation of damages resulting from negligence, gross negligence, wilful misconduct, deceit and similar acts. Emfit's liability under this guarantee will in no case exceed the price paid for the product, but if applicable law permits only higher liability limitations, the higher limitations apply.

#### **YOUR LEGAL RIGHTS RESERVED**

Consumers have legal (statutory) rights under applicable national laws relating to the sale of consumer products. This guarantee does not affect statutory rights you may have nor those rights that cannot be excluded or limited, nor rights against the person from whom you purchased the product. You may assert any rights you have at your sole discretion.

## 21. TECHNICAL SPECIFICATIONS

### 21.1. Control unit

|                              |  |
|------------------------------|--|
| Model:                       | D-1070-2G  |
| Operating voltage:           | 3V DC with batteries/ 5V DC with external power supply   |
| Input and output connectors: | Power supply, AUX and bed sensor   |
| Dry-contact output:          | Max. 100mA A, <60V DC, <25V AC   |
| Switches and controls:       | SW1 (On/Off/Reset switch), 8 pcs DIP switches for settings (volume, delay), one 10-position rotary switch for adjusting sensitivity. |
| Signal lights:               | 3 LEDs: green, blue and red  |
| Notification delays:         | Absence i.e. no movements treshold delay 3 or 5 sec, or 3, 6, 10, 15 or 30 min   |
| Mounting:                    | Wall mounting, bed-side or table   |
| Measurements:                | 96 x 127 x 34mm  |
| Weight (g):                  | 120g   |
| Colour:                      | White  |
| IP rating:                   | IP20   |
| Casing:                      | Plastic  |

### 21.2. Sensor

|                                   |                  |
|-----------------------------------|------------------|
| Model:                            | L-0656SLC        |
| Type:                             | Bed sensor       |
| Placing:                          | Under a mattress |
| Portability:                      | Yes              |
| Measurements mm (length x width): | 60 x 560mm       |
| Thickness:                        | 1.4mm            |
| Weight:                           | 180g             |
| Colour:                           | White            |
| Surface material:                 | PVC              |
| Cable length:                     | 1.8m             |
| IP rating:                        | IP20             |

### 21.3. Ambient conditions

|                                    |          |
|------------------------------------|----------|
| Operating temperature:             | 10–40°C  |
| Storage and transport temperature: | -30–50°C |
| Relative humidity:                 | 20–75%   |

### 21.4. Product class

|   |  |
|---|--|
| Product class in accordance with the Directive 93/42/EEC: | Class II   |
| Electrical safety class:                                  | Internal and external power supply / Class II device |

## 22. ELECTROMAGNETIC CONDITIONS

### System specification:

D-1070-2G monitor

L-0656SLC bed sensor

GlobTek power supply model: no GTM41060-1505 and P/N:WR9QA3000LCP-N-MNK

### Cable specification:

Power cable (non-shielded) max. Length 2 m

Sensor cable (shielded) max. length 3.0 m

**Note! RF communications equipment can effect medical electrical equipment!**

| Guidance and manufacturer's declaration – electromagnetic emissions   |          |  |
|---|----------|--|
| The Emfit Safebed is intended for use in the electromagnetic environment specified below. The customer or the user of the equipment should assure that it is used in such an environment. |          |  |
| RF emissions<br>CISPR 11  | Group 1  | The Emfit Safebed uses RF energy only for its internal function. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.   |
| RF emissions<br>CISPR 11  | Class B  | The Emfit Safebed is suitable for use in all establishments, including domestic establishments and those directly connected to the public low-voltage power supply network that supplies buildings used for domestic purposes. |
| Harmonic emissions<br>IEC 61000-3-2   | Class A  |  |
| Voltage fluctuations/<br>flicker emissions<br>IEC 61000-3-3   | Complies |  |

| Guidance and manufacturer's declaration – electromagnetic immunity  |  |                          |  |
|---|--|--------------------------|--|
| The Emfit Safebed is intended for use in the electromagnetic environment specified below. The customer or the user of the equipment should assure that it is used in such an environment. |  |                          |  |
| Immunity test   | IEC 60601 test level   | Compliance level         | Electromagnetic environment  |
| Electrostatic discharge (ESD)<br>IEC 61000-4-2  | ±6 kV contact<br>±8 kV air                                   | IEC-60601-1-2 test level | Floors should be wood, concrete or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30 %. |
| Electrical fast transient/burst<br>IEC 61000-4-4  | ±2 kV for power supply lines<br>±1 kV for input/output lines | IEC-60601-1-2 test level | Mains power quality should be that of a typical commercial or hospital environment.  |
| Surge<br>IEC 61000-4-5  | ±1 kV line(s) to line(s)                                     | IEC-60601-1-2 test level | Mains power quality should be that of a typical commercial or hospital environment   |


|  |   |                                 |   |
|--|---|---------------------------------|---|
| <p>Voltage dips, short interruptions and voltage variations on power supply input lines<br/>IEC 61000-4-11</p> | <p>&lt;5 % UT<br/>(&gt;95 % dip in UT)<br/>for 0.5 cycle<br/>40 % UT<br/>(60 % dip in UT)<br/>for 5 cycles<br/>70 % UT<br/>(30 % dip in UT)<br/>for 25 cycles<br/>&lt;5 % UT<br/>(&gt;95 % dip in UT)<br/>for 5 sec</p> | <p>IEC-60601-1-2 test level</p> | <p>Mains power quality should be that of a typical commercial or hospital environment. If the user of the The Emfit Safebed enquires continued operation during power mains interruptions, it is recommended that the Emfit Safebed be powered from an uninterruptible power supply or battery.</p> |
| <p>Power frequency (50/60 Hz) magnetic field<br/>IEC 61000-4-8</p>   | <p>3 A/m</p>  | <p>IEC-60601-1-2 test level</p> | <p>Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment.</p>  |

**NOTE UT is the a.c. mains voltage prior to application of the test level.**

This space was left blank on purpose

**Guidance and manufacturer's declaration – electromagnetic immunity**

The Emfit Safebed is intended for use in the electromagnetic environment specified below. The customer or the user of the equipment should assure that it is used in such an environment.

| Immunity test                 | IEC 60601 test level        | Compliance level           | Electromagnetic environment – guidance  |
|-------------------------------|-----------------------------|----------------------------|---|
| Conducted RF<br>IEC 61000-4-6 | 3 Vrms<br>150 kHz to 80 MHz | 3 V<br>150 kHz to 80 MHz   | <p>Portable and mobile RF communications equipment should be used no closer to any part of the Emfit Safebed, including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter.</p> <p>Recommended separation distance</p> $d = 1,2\sqrt{P}$  |
| Radiated RF<br>IEC 61000-4-3  | 3 V/m<br>80 MHz to 2.5 GHz  | 3 V/m<br>80 MHz to 2.5 GHz | $d = 1,2\sqrt{P} \quad 80 \text{ MHz} - 800 \text{ MHz}$ $d = 2,3\sqrt{P} \quad 800 \text{ MHz} - 2.5 \text{ GHz}$ <p>where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and d is the recommended separation distance in metres (m).</p> <p>Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey, <sup>a</sup> should be less than the compliance level in each frequency range. <sup>b</sup></p> <p>Interference may occur in the vicinity of equipment marked with the following symbol:</p>  |

**NOTE 1** At 80 MHz and 800 MHz, the higher frequency range applies.

**NOTE 2** These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

<sup>a</sup> Field strengths from fixed transmitters, such as base stations for radio (cellular/cordless) telephones and land mobile radios, amateur radio, AM and FM radio broadcast and TV broadcast cannot be predicted theoretically with accuracy. To assess the electromagnetic environment due to fixed RF transmitters, an electromagnetic site survey should be considered. If the measured field strength in the location in which the Emfit Safebed is used exceeds the applicable RF compliance level above, the Emfit Safebed should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as reorienting or relocating the Emfit Safebed.

<sup>b</sup> Over the frequency range 150 kHz to 80 MHz, field strengths should be less than 3 V/m.

**Recommended separation distances between portable and mobile RF communications equipment and the Emfit Safebed.**

The Emfit Safebed is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of the Emfit Safebed can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the Emfit Safebed as recommended below, according to the maximum output power of the communications equipment.

| Rated maximum output power of transmitter W | Separation distance according to frequency of transmitter |                                       |  |
|---|---|---------------------------------------|--|
|   | 150 kHz – 80 MHz<br>$d = 1,2\sqrt{P}$                     | 80 MHz – 800 MHz<br>$d = 1,2\sqrt{P}$ | 800 MHz – 2.5 GHz<br>$d = 2,3\sqrt{P}$ |
| 0.01  | 0.12 m  | 0.12 m                                | 0.23 m                                 |
| 0.1   | 0.38 m  | 0.38 m                                | 0.73 m                                 |
| 1   | 1.2 m   | 1.2 m                                 | 2.3 m                                  |
| 10  | 3.8 m   | 3.8 m                                 | 7.3 m                                  |
| 100   | 12 m  | 12 m                                  | 23 m                                   |

For transmitters rated at a maximum output power not listed above, the recommended separation distance d in metres (m) can be determined using the equation applicable to the frequency of the transmitter, where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer.

**NOTE 1** At 80 MHz and 800 MHz, the separation distance for the higher frequency range applies.

**NOTE 2** These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

## 23. MANUFACTURER

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## 24. APPENDIX – RELATED PICTURES



