



# NurseCall N46 Wall Transmitter



**BOSCH**

en User Manual US



# Table of Contents

<b>1</b>	<b>Identification</b>	<b>5</b>
1.1	Document	5
1.2	Customer support addresses	6
<b>2</b>	<b>Generalities</b>	<b>7</b>
2.1	NurseCall System	7
2.2	NurseCall N46 Wall Transmitter	7
<b>3</b>	<b>Safety Instructions</b>	<b>8</b>
3.1	Introduction	8
3.1.1	Principle	8
3.1.2	Importance of safety instructions	8
3.1.3	Disregarding safety rules	8
3.2	Environmental conditions	8
3.3	General safety instructions	9
3.3.1	Observation and information	10
3.4	Special safety instructions	10
<b>4</b>	<b>Description</b>	<b>11</b>
4.1	General description	11
4.1.1	Top view	11
4.2	Main functions	12
4.2.1	Red emergency call button	12
4.2.2	Blue assistance call button	12
4.2.3	Green acknowledgment button	12
4.2.4	Alarm signaling	12
4.3	Options	12
4.3.1	Identification of the nurse group	12
4.3.2	Relay contacts for external signals	12
<b>5</b>	<b>Installation</b>	<b>13</b>
5.1	Unpacking	13
5.1.1	List of contents	13
5.2	Installation	14
5.2.1	Generalities	14
5.2.2	Wall installation	14
5.2.3	Connecting to the power supply	15
5.2.4	Reset	15
5.2.5	Transmitter Identification	15
5.2.6	Operation Check	15
5.2.7	Replacing the battery	16
5.2.8	Configuration and Wiring	17
5.3	Inputs and Outputs	18
5.4	General inputs	18
5.5	Wired Outputs	18

5.6	Wired Inputs	18
5.7	General configuration	19
<b>6</b>	<b>Use</b>	<b>20</b>
6.1	Call for Help	20
6.2	Call for Assistance	20
6.3	Call Acknowledgement (Staff Presence)	21
6.4	Call for Help 2 (reserve)	21
6.5	Technical Alarm	21
6.6	Caregiver Arrival	21
6.7	Caregiver Departure	22
6.8	Daily Message and Battery Low Message	22
6.9	Error Message	22
<b>7</b>	<b>Operation</b>	<b>23</b>
7.1	Description of the six different states	23
7.2	Legend of illustrations	24
7.3	Operation with the staff presence processing activated	24
7.3.1	Device behavior when pressing a button	24
7.3.2	Device behavior during coded key insertion and removal	27
7.4	Operation with the staff presence processing deactivated	29
7.4.1	Device behavior upon pressing a button	29
7.4.2	Device behavior during coded key insertion and removal	30
<b>8</b>	<b>Storage</b>	<b>31</b>
8.1	Short term storage conditions	31
8.2	Long term storage conditions	31
<b>9</b>	<b>Disposal</b>	<b>32</b>
9.1	Disassembly	32
9.2	Local disposal locations	32
9.3	Returning to the manufacturer	32
9.4	Materials	32
9.4.1	Battery	32
<b>10</b>	<b>Appendix</b>	<b>33</b>
10.1	Electrical specifications	33
10.2	Dimensions and weight	33
10.3	Operating temperature	33
10.4	FCC warning statement	33

# 1 Identification

## 1.1 Document

Name	No.
User Manual US	970.035

**Table 1.1** Document No.

Version	Description
v1.0   2009.06	First Edition

**Table 1.2** Version Management

## 1.2 Customer support addresses

**TeleAlarm SA Bosch Group**

Rue du Pont 23  
CH-2300 La Chaux-de-Fonds  
Switzerland  
Phone: +41 32 327 25 40

**Bosch Security Systems BV**

Postbus 80002  
NL-5600 JB Eindhoven  
Netherlands  
Phone: +31 (0)900 8212499

**Bosch Security Systems France**

Atlantic 361  
361, avenue du Général de Gaulle  
F-92147 Clamart  
France  
Phone: + 33 (0)825 12 8000

**Bosch Security Systems nv/sa**

Torkonjestraat 21F  
B-8510 Marke  
Belgium  
Phone: +32 (0)56 20 02 40

**Bosch Sicherheitssysteme GmbH  
Haus-ServiceRuf**

Ingersheimer Straße 16  
D-70499 Stuttgart  
Germany  
Phone: +49 (0)711 3653 1000

**Bosch Security Systems AB**

Vestagatan 2  
416 64 Göteborg  
Sweden  
Phone: +46 (0)31 722 5300

**Bosch Security Systems Ltd**

Broadwater Park  
North Orbital Road  
Denham  
UB9 5HN  
United Kingdom  
Phone: +44 (0)1895 878088

## 2 Generalities

### 2.1 NurseCall System

Alarms and Messages arriving from NurseCall Transmitters such as the NurseCall N46 Wall Transmitter are managed and stored by the NurseCall Main Unit. This unit is compatible with the NurseCall Master.

**NOTICE!**

The document "NurseCall General Overview" explains the system concept.

---

### 2.2 NurseCall N46 Wall Transmitter

The NurseCall N46 Wall Transmitter is a multifunction terminal radio transmitter, designed for patients and nursing staff to make an emergency call, summon assistance or cancel a call directly in the patient's room. It is part of a NurseCall system, and is easily expandable.

In the NurseCall system, the NurseCall N46 Wall Transmitter allows the resident of a home or the patient of a clinic to easily alert the care personnel if needed. The patient simply has to push the large red button. The system is then able to control and to monitor the progress of the care personnel.

The alarm and event transmission is performed by radio. There is no need for a wired connection between the NurseCall N46 Wall Transmitter and the NurseCall Main Unit, this makes the system installation easy and allows great mobility.

Depending on the model, two relay outputs are available and may be used to connect alarm and staff presence indicators such as, for instance, the signal lamps installed above the door.

Two LED signal lamps allow the progress to be monitored on the device.

In this document you will find all the information you need for the installation and the use of the NurseCall N46 Wall Transmitter.

## 3 Safety Instructions

**WARNING!**

The User / Installer should read and understand this chapter before any intervention on the NurseCall N46 Wall Transmitter.

### 3.1 Introduction

#### 3.1.1 Principle

**NOTICE!**

In case of unclear information, please contact your local representative.

#### 3.1.2 Importance of safety instructions

Each safety and protection instruction in this manual must be adhered to in order to avoid personnel injuries, property damages or environmental pollution.

In a similar manner, the legal bylaws, the measures in prevention of accidents and for the protection of the environment, as well as the recognized technical rules aiming at appropriate and safe working conditions which as applied in the country and at the place of use of the NurseCall N46 Wall Transmitter must be adhered to.

#### 3.1.3 Disregarding safety rules

Disregarding the safety rules, as well as existing legal and technical regulations, may lead to accidents, to property damages or to environmental pollution.

### 3.2 Environmental conditions

**WARNING!**

The NurseCall N46 Wall Transmitter must not be located near a water tap or any other source of water.

The electrical safety of the NurseCall N46 Wall Transmitter is only guaranteed if the electrical installation is in accordance with the national regulations and if this installation works properly.

The NurseCall N46 Wall Transmitter may not be used in buildings prone to fire and explosion hazards.

**CAUTION!**

The NurseCall N46 Wall Transmitter may not be used under exposure to the direct sunlight, to heat, to dust or to an excessive humidity (only use the equipment in a clean environment).

- Install the NurseCall N46 Wall Transmitter in a dry place, away from any source of heat.

**CAUTION!**

Interferences

Avoid immediate proximity to other electric devices such as a television.

### 3.3 General safety instructions

**DANGER!**

Electrocution

During maintenance operations, when the NurseCall N46 Wall Transmitter is powered and its casing is removed, the NurseCall N46 Wall Transmitter may not be left unattended.

**CAUTION!**

The NurseCall N46 Wall Transmitter may only be connected to the electrical sources as described in *Section 5.2 Installation*, page 14.

**CAUTION!**

Maintenance and repairs may only be performed in accordance with the instructions and by authorized technical personnel only.

The sole possession of the User Manual US does not allow the personnel to perform any kind of repair on the NurseCall N46 Wall Transmitter.

Take into account all the warnings and follow all the instructions displayed on the NurseCall N46 Wall Transmitter and those which are printed in the documentation.

Never try to use replacement pieces other than those authorized by the manufacturer of the NurseCall N46 Wall Transmitter.

**CAUTION!**

It is mandatory to use the products specified in the present User Manual US to clean the NurseCall N46 Wall Transmitter. If you plan to use another product, only do so after having obtained the authorization of the manufacturer.

**WARNING! Electro Static Discharge**

The NurseCall N46 Wall Transmitter contains highly sensitive electronic components. It should be opened only in an **ESD** protected environment with respect to the following precautions:

- Discharge yourself from electrostatic loads by touching a grounded conductive surface before opening the unit.
- Avoid touching conductive parts inside the NurseCall N46 Wall Transmitter if not absolutely necessary.

**CAUTION!**

Never let any liquid enter the system. In case of liquid spill inside the NurseCall N46 Wall Transmitter, act immediately as follows:

---

1. Switch off the NurseCall N46 Wall Transmitter by taking out the battery or removing the power supply.
2. Dry up the NurseCall N46 Wall Transmitter.
3. Clean the NurseCall N46 Wall Transmitter.
4. Check its electrical functions.

**NOTICE!**

For further information, please contact your local representative.

---

**3.3.1****Observation and information**

In case of defective operation or any other technical incident for which no remedy is described in this manual, please contact immediately your local representative.

**3.4****Special safety instructions**

Appropriate safety instructions linked to specific risks are described in the corresponding section of this manual.

## 4 Description

### 4.1 General description

#### 4.1.1 Top view

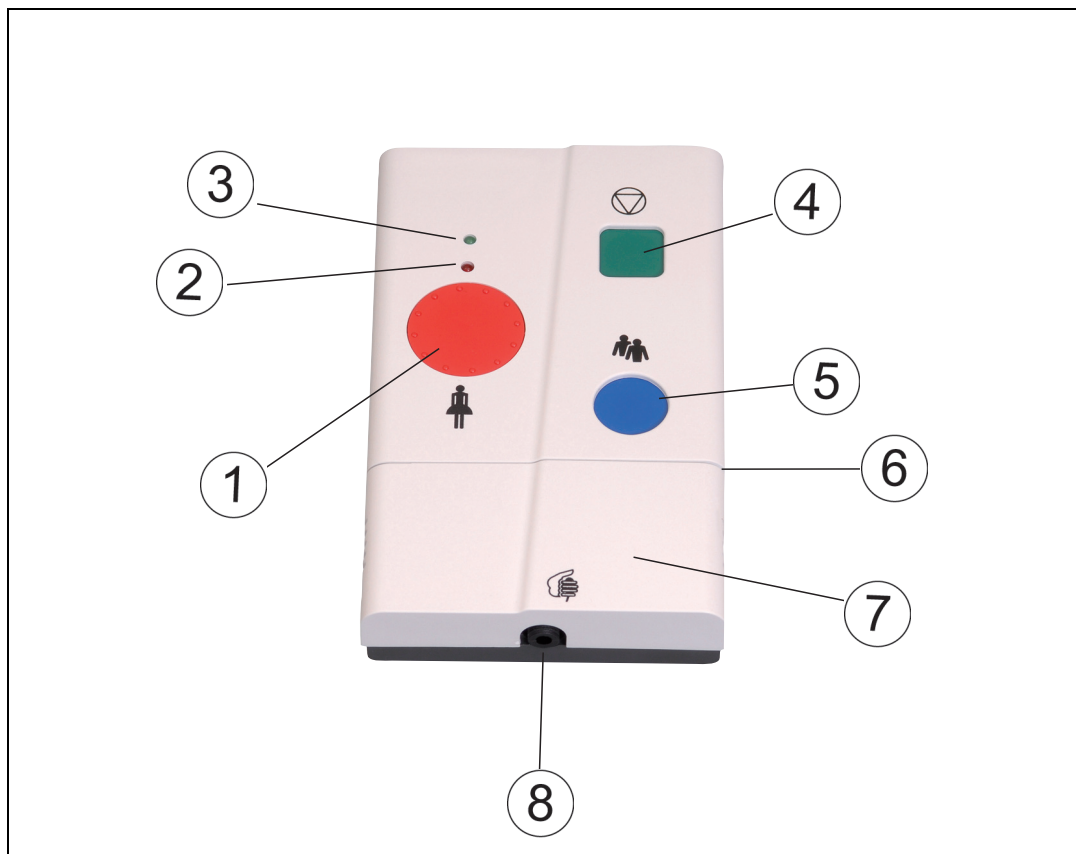


Fig. 4.1 Top view

1. **Red** emergency call button
2. LED indicator for alarm
3. LED indicator for presence
4. **Green** acknowledgment button, to acknowledge an alarm locally.
5. **Blue** assistance call button
6. Socket for coded key insertion (option)
7. Installation compartment
8. Jack plug for pear-push button

## 4.2 Main functions

The main function of the NurseCall N46 Wall Transmitter is to enable easier handling of emergencies and help, directly from the patient's room.

### 4.2.1 Red emergency call button

Its large red button with textured surface makes it easy to identify and to press, launching an emergency call.

### 4.2.2 Blue assistance call button

If, upon arriving, nursing staff requires additional help, a call for assistance can be sent by pressing the round blue button.

### 4.2.3 Green acknowledgment button

In all cases, there is an automatic call repetition until cancel of the call. Cancelling can be made directly on the room transmitter with the smaller green button.

### 4.2.4 Alarm signaling

The presence and alarm LED indicators enhance the signaling of alarms.

The NurseCall N46 Wall Transmitter is easily expandable, as a socket for pear-push button is directly accessible.

## 4.3 Options

Two main options can be implemented in the NurseCall N46 Wall Transmitter:  
Identification of the nurse group and relay contacts for external signals.

### 4.3.1 Identification of the nurse group

This can be made via a socket for coded presence plugs (max. 4 different), allowing the use of programmable function keys to log on and log off.

### 4.3.2 Relay contacts for external signals

Optionally, relay contacts for room signal lights and connecting ports for wired room installation can be used.

## 5 Installation

### 5.1 Unpacking

The NurseCall N46 Wall Transmitter is carefully packed for transportation. The components contained in the box are protected, but should be handled with care. Store the packaging material for further use (storage or transport).

**NOTICE!**

In case of defective or missing equipment, do not try to install the NurseCall N46 Wall Transmitter. Contact immediately your local representative.

1. Take all components out of the box and place the NurseCall N46 Wall Transmitter on the working space.
2. Check each component in the box, in accordance with the list of contents below.
3. Check that the NurseCall N46 Wall Transmitter and its accessories have not been damaged during transportation.

#### 5.1.1

**List of contents**

Reference	Description
RM.905.FI RM.906.FI	NurseCall N46 Wall Transmitter
2 screws	
2 screw anchors	
1 CR2450 3V Lithium battery	
970.030	NurseCall N46 Wall Transmitter User Manual US

**Table 5.1** Packing list

## 5.2 Installation

### 5.2.1 Generalities

- Install the NurseCall N46 Wall Transmitter in a dry place, away from any source of heat.



#### CAUTION!

Interferences

Avoid immediate proximity to other electric devices such as a television.

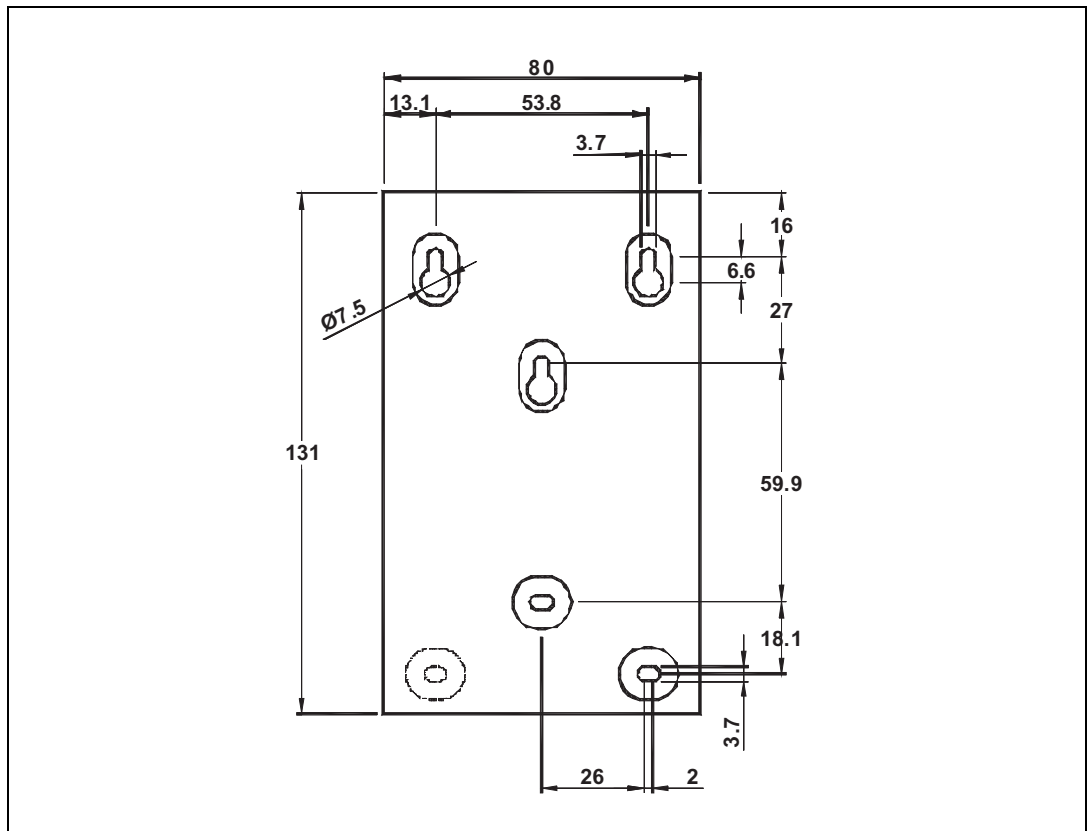
### 5.2.2

#### Wall installation

The NurseCall N46 Wall Transmitter can be fixed with two to five screws on a wall. Two holes at 60 mm interval are provided for direct mounting on connection boxes.

The three upper holes are used for positioning the device and cannot be reached from the installation compartment.

Two of the lower holes can be reached from outside and thus used for fixing the device.



### 5.2.3 Connecting to the power supply

The NurseCall N46 Wall Transmitter can be powered by a lithium battery or/and an external 12-24 VDC power supply. If the device is powered with an external power supply, the battery is not necessary, but it can be used as a backup power supply in case of power loss.

If the device is powered by the battery only, the battery life is about 2 years. However, it is recommended to change the battery once a year.

If the device is powered by an external power supply and the battery is used as backup power supply, it is recommended to check it at regular intervals (for instance once a year) and to change it if necessary.



#### CAUTION!

When powering the device, the external 12-24 VDC power supply must be equipped with a setting off safety device, that is easy to access. The power supply must also be equipped with a safety fuse of lower value, e.g. 100 or 125 mA.

---

### 5.2.4 Reset

All parameters are reset when powering up the device (battery or external power supply). This operation causes the synchronization of the daily message.

In order to perform a reset, make sure to remove both the battery and the external power supply, make a short-circuit on the two pins marked **Reset** before powering the device up again. See Section Fig. 5.2 Configuration and Wiring, page 17.



#### NOTICE!

All connections as well as the configuration need to be carried out before powering the device (insertion of the battery and/or application of the external power supply).

---

### 5.2.5 Transmitter Identification

All NurseCall N46 Wall Transmitters are provided with their own radio identification code that is assigned in the factory. During the installation, it is necessary to set the relationship between the identification code of the Transmitter and the place where it is installed (floor/room/bed or single number). This identification is programmed on the NurseCall Main Unit (refer to the NurseCall Main Unit User Manual).

### 5.2.6 Operation Check

Once the transmitter has been installed and setup properly, it is recommended to check all functionalities of the device. The radio transmission can be checked by sending an acknowledgement call by pressing the green button.

## 5.2.7 Replacing the battery



### WARNING!

- May explode if exposed to fire;
- Use only original batteries intended for use with your NurseCall N46 Wall Transmitter. Using other type of batteries could be dangerous;
- Do not expose the battery to liquids;
- Do not let the metal contacts on the battery touch another metal. This could damage the battery;
- Do not disassemble or modify the battery;
- Do not expose the battery to extreme temperatures, and never above 60 °C (+140 °F).
- For maximum battery capacity, use the battery at room temperature;
- Keep out of reach of children;
- Use the battery for the intended purpose only;
- Do not allow the battery to be put into the mouth. Battery electrolytes may be toxic if swallowed.



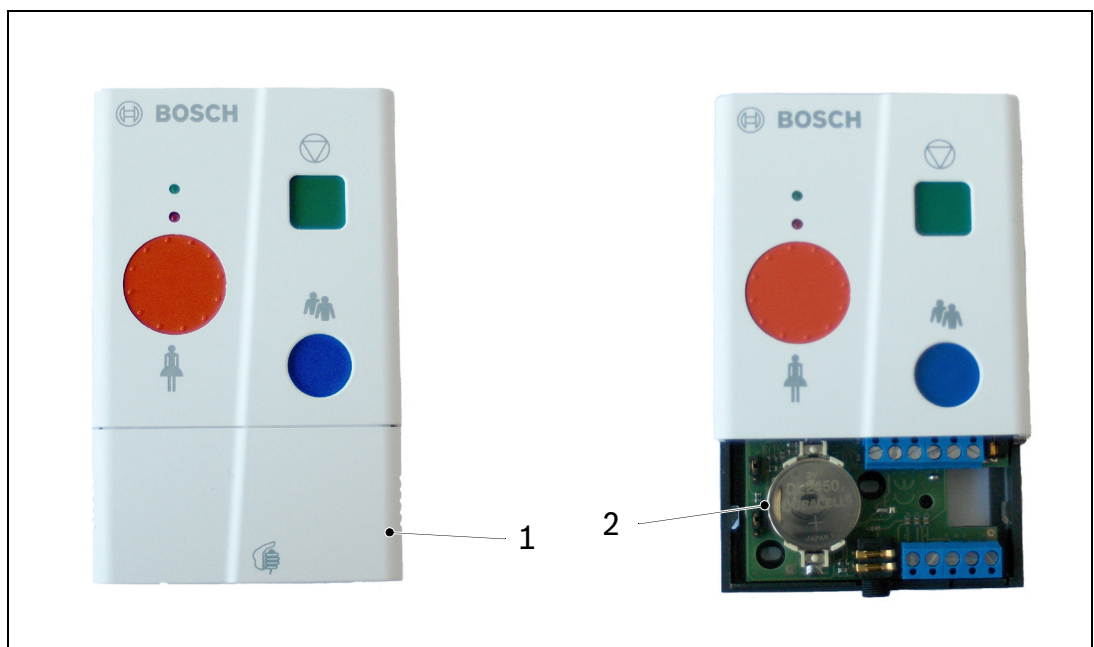
### CAUTION!

There is a risk of explosion if battery is replaced by a wrong type or if not connected correctly. The battery should be replaced exclusively by Authorized Personnel. Dispose of used batteries according to instructions and regulations.

Battery type is 3V CR2450/DL2450.

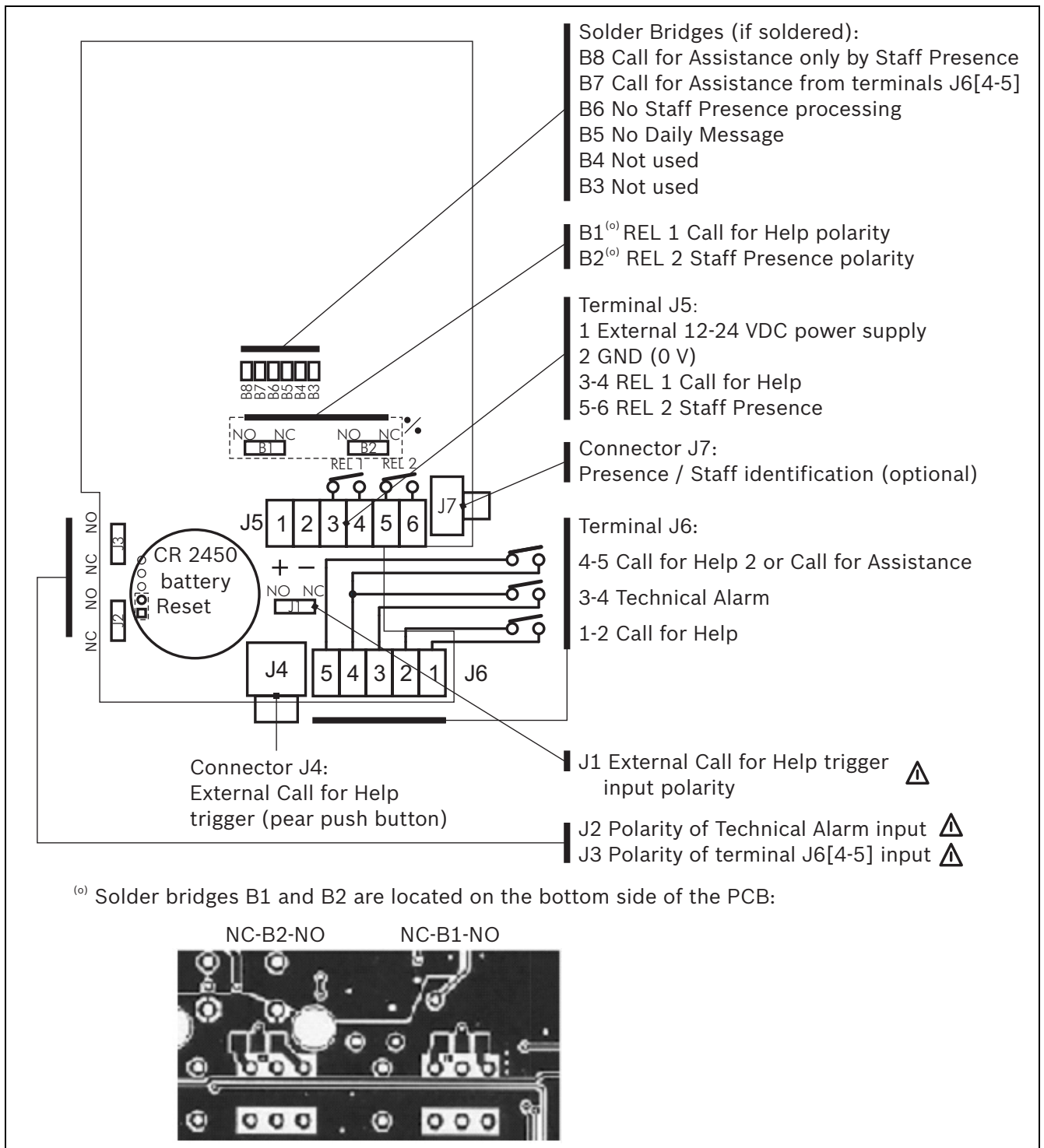
### Procedure

1. Open the compartment cover (1) by sliding it downwards and then towards you.
2. Carefully remove the used battery (2).
3. Place the new battery. The positive terminal must be facing you.
4. Replace the compartment cover.



**Fig. 5.1** Replacing the battery

## 5.2.8 Configuration and Wiring



**Fig. 5.2** Configuration and Wiring



### NOTICE!

Setting up one or more inputs to "NC" position results to higher power consumption. This configuration should be used with external power supply or will reduce the battery life.

## 5.3 Inputs and Outputs

### 5.4 General inputs

The \* marks a factory setting.

External trigger	J4	Jack 3.5 mm	J1	NO*	Closing contact causes a Call for Help
				NC	Contact opening causes a Call for Help

Power supply	J5	1		+	12 to 24 V DC
		2		-	GND 0V

### 5.5 Wired Outputs

Call for Help Relay	J5	3-4	B1	NO*	A Call for Help causes the closing of the relay contact
				NC	A Call for Help causes the opening of the relay contact

Staff Presence Relay	J5	5-6	B2	NO*	Staff Presence signaling causes the closing of the relay
				NC	Staff Presence signaling causes the opening of the relay

### 5.6 Wired Inputs

Call for Help	J6	1-2			The contact closing causes a Call for Help.
---------------	----	-----	--	--	---

Technical Alarm	J6	3-4	J2	NO*	The contact closing causes a Technical Alarm
				NC	The contact opening causes a Technical Alarm

Call for Help 2 or Call for Assistance	J6	4-5	J3	NO*	The contact closing causes a Call for Help 2 or a Call for Assistance
				NC	The contact opening causes a Call for Help 2 or a Call for Assistance

## 5.7 General configuration

The \* marks a factory setting.

Bridge	State	Function
B3	Open*	Technical Alarms are not repeated.
B4	Soldered*	Calls are not repeated.
B5	Open*	A daily message is sent every 24 hours.
	Soldered	Daily messages are suppressed.
B6	Open <sup>(o)</sup>	Staff Presence Processing is activated.
	Soldered <sup>(o)</sup>	Staff Presence Processing is disabled.
B7	Open*	Activation of J6 [4-5] terminal input causes a Call for Help 2.
	Soldered	Activation of J6 [4-5] terminal input causes a Call for Assistance.
B8	Open*	The Assistance Call does not depend on the presence of the Care Personnel.
	Soldered	The Assistance Call is possible only if the Care Personnel has signaled his/her presence.

<sup>(o)</sup> NurseCall N46 Wall Transmitters that feature the output relays are delivered with the Staff Presence Processing activated (B6 open). Models that do not feature the output relays are delivered with the Staff Presence Processing disabled (B6 soldered).

## 6 Use

Every time a NurseCall N46 Wall Transmitter is used by pressing a button or activating a wired input, the device sends a radio signal and the lamps indicates its actual state. Optionally, two relays allow the transmission of status to a remote display such as the signal lamps placed on top of the door.

Each radio message is sent with a different code which allows the receiver (NurseCall system) to recognize the performed action.

**NOTICE!**

It is recommended to keep the button pressed until the lamp placed above the red button lights up.

---

### 6.1 Call for Help

The Call for Help can be triggered in three different ways:

- by pushing the red Call for Help button
- by pushing the external switch connected to the J4 connector, for example a pear push button.
- by pushing the external button connected to terminals 1 & 2 of the terminal block J6.

The Call for Help is repeated approximately every 2 minutes until a call acknowledgement takes place, up to a maximum of 20 minutes. This repeat function can be disabled by setting the solder bridge B4.

A Call for Help is signaled by red flashes on the signal lamp and optionally, by the activation of the relay Call for Help.

**NOTICE!**

In some cases, the action Call for Help generates a Call for Assistance action. See *Section State before action: Alarm with staff presence*, page 25.

---

### 6.2 Call for Assistance

The Call for Assistance is triggered by pushing the Call for Assistance button (blue).

The Call for Assistance is repeated approximately every 2 minutes until a call acknowledgement takes place, up to a maximum of 20 minutes. This repeat function can be disabled by setting the solder bridge B4.

A Call for Assistance is signaled by red double flashes on the signal lamp and by the alternate action/release of the relay Call for Help.

## 6.3 Call Acknowledgement (Staff Presence)

The call acknowledgement is triggered by pushing the Acknowledgement button (green).

The call acknowledgement stops immediately all repetitions of the calls.

Optionally, a call acknowledgement triggers the Staff Presence signal:

- by green flashes on the signal lamp and by activating the Staff Presence relay when the Caregiver pushes the Acknowledgement button when entering the room.
- by switching off the lamp and releasing the Staff Presence relay when the Caregiver pushes the Acknowledgement button and leaves the room.

## 6.4 Call for Help 2 (reserve)

The Call for Help 2 is triggered by pushing the external button connected to terminals 4 and 5 of the terminal block J6.

The call can be triggered by closing (NO) or opening (NC) the contact.

The Call for Help 2 is repeated about every 2 minutes until a call acknowledgement takes place, up to a maximum of 20 minutes. This repeat function can be disabled by setting the solder bridge B4.

The Call for Help 2 is signaled in the same way as the Call for Help on the signal lamp and the relays.

## 6.5 Technical Alarm

The Technical Alarm is triggered by activating the contact connected to terminals 3 and 4 of the terminal block J6.

The alarm can be triggered by closing (NO) or opening (NC) the contact 3.

Normally, the Technical Alarm is not repeated, but it is possible to activate the repetition of the technical alarms by setting the solder bridge B3. In this case, the Technical Alarm is repeated about every 2 minutes until a call acknowledgement takes place, up to a maximum of 20 minutes.

The Technical Alarm is signaled in the same way as the Call for Help on the signal lamp and the relays.

## 6.6 Caregiver Arrival

The Caregiver Arrival message is triggered when the Caregiver inserts the coded key in the connector on the side of the housing (J7), when entering the room. This message will appear if the optional coded key function is available on the device.

Up to four categories of Caregivers may be identified by using different keys.

The Caregiver Arrival message is not repeated.

Insertion of the coded key is signaled by green flashes on the signal lamp and by activating the Staff Presence relay.

## 6.7 Caregiver Departure

The Caregiver Departure message is triggered when the Caregiver removes the coded key from the housing, when leaving the room.

The Caregiver Departure message is not repeated.

Removing the coded key is signaled by switching off the green flashes on the signal lamp and by releasing the Staff Presence relay.

## 6.8 Daily Message and Battery Low Message

The radio transmission can be checked by way of the daily message which is automatically sent about every 24 hours. When the battery voltage is too low, the daily message is replaced by a Battery Low message. The duration of the daily message is 1.7 seconds

The transmission of the Daily Message can be disabled by setting the solder bridge B5 (this does not influence the transmission of the Battery Low message).

## 6.9 Error Message

The Error Message is sent one time if the device has detected a general dysfunction, or if one of the following triggering devices remains in its activated position for up to 4 minutes:

- Call for Help
- Acknowledgement button
- Call for Assistance
- Call for Help 2



### NOTICE!

The device connected to the Technical Alarm input is allowed to remain in the activated position; without transmission of the Error Message.

---

## 7 Operation

### 7.1 Description of the six different states

During operation, the NurseCall N46 Wall Transmitter can be set to one of six following states:

State	Description
Stand-by	No call is being processed.
Alarm without staff presence	The patient has triggered a Call for Help but the Care Personnel has not yet responded.
Alarm with staff presence	The Care Personnel has responded after a Call for Help.
Assistance without staff presence	A Call for Assistance has been triggered without the presence of the Care Personnel.
Assistance with staff presence	A Call for Assistance has been triggered in the presence of the Care Personnel.
Staff Presence without alarm	The Care Personnel has responded without a previous call from the patient.

Each state is indicated by the signal lamp and by a special position of the output relays.

It is possible to configure the NurseCall N46 Wall Transmitter in order that:

- the Call for Assistance can be triggered only if the Care Personnel is present.
- the device does not manage the Staff Presence. This mode makes sense only if the output relays are not provided or not used.

The transition to a specific condition depends on the device configuration, of its actual condition and of the action completed; as shown on the charts in the following chapters.



#### NOTICE!

When the NurseCall N46 Wall Transmitter is powered by an external power supply, the signal lamps follow the state of the corresponding relay outputs.

## 7.2 Legend of illustrations






















Legend	Description
A 	The contact of the Call for Help relay is closed
A 	The contact of the Call for Help relay is open
A 	The contact of the Call for Help relay opens and closes alternately
p 	The contact of the Staff Presence relay is closed
p 	The contact of the Staff Presence relay is open
	The signal lamps are off
 color	A signal lamp lights up in the indicated color
 color	A signal lamp flashes in the indicated color
 color	A signal lamp flashes quickly in the indicated color

Table 7.1

## 7.3 Operation with the staff presence processing activated

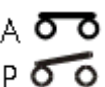

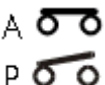





### 7.3.1 Device behavior when pressing a button

State before action: Stand-by

Action	State	Relay contact	Signal lamp	Radio Message
	Stand-by	A  p 		(none)
Call for Help	Alarm without staff presence	A  p 	 red	<i>Call for Help</i>
Call Acknowledgement	Staff presence without alarm	A  p 	 green	<i>Acknowledgement</i>
Call for Assistance	Assistance without staff presence **	A  p 	 red	<i>Call for Assistance</i>

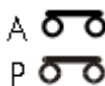







\*\* If the function Assistance only in case of Staff Presence is activated and the NurseCall N46 Wall Transmitter is not in Staff presence state, the Call for Assistance causes a state Alarm without Staff Presence and a Call for Help radio message.

**State before action: Alarm without staff presence**













Action	State	Relay contact	Signal lamp	Radio Message
	Alarm without staff presence	A  P	 red	(none)
Call for Help	Alarm without staff presence (unchanged)	A  P	 red	<i>Call for Help</i>
Call Acknowledgement	Alarm with staff presence	A  P	 green	<i>Acknowledgement</i>
Call for Assistance	Assistance without staff presence **	A  P	 red	<i>Call for Assistance</i>

\*\*If the function Assistance only in case of Staff Presence is activated and the NurseCall N46 Wall Transmitter is not in Staff presence state, the Call for Assistance causes a state Alarm without Staff Presence and a Call for Help radio message.













**State before action: Alarm with staff presence**

Action	State	Relay contact	Signal lamp	Radio Message
	Alarm with staff presence	A  P	 green	(none)
Call for Help	Assistance with staff presence	A  P	 green	<i>Call for Assistance</i>
Call Acknowledgement	Stand-by	A  P		<i>Acknowledgement</i>
Call for Assistance	Assistance with staff presence	A  P	 green	<i>Call for Assistance</i>













**State before action: Assistance with staff presence**

Action	State	Relay contact	Signal lamp	Radio Message
	Assistance with staff presence	A  P 	 green	(none)
Call for Help	Assistance with staff presence (unchanged)	A  P 	 green	<i>Call for Assistance</i>
Call Acknowledgement	Alarm with staff presence	A  P 	 green	<i>Acknowledgement</i>
Call for Assistance	Assistance with staff presence	A  P 	 green	<i>Call for Assistance</i>

**State before action: Assistance without staff presence**

Action	State	Relay contact	Signal lamp	Radio Message
	Assistance without staff presence	A  P 	 red	(none)
Call for Help	Assistance without staff presence (unchanged)	A  P 	 red	<i>Call for Assistance</i>
Call Acknowledgement	Alarm with staff presence	A  P 	 green	<i>Acknowledgement</i>
Call for Assistance	Assistance without staff presence	A  P 	 red	<i>Call for Assistance</i>

**State before action: Staff presence without alarm**

Action	State	Relay contact	Signal lamp	Radio Message
	Staff presence without alarm	A  P 	 green	(none)
Call for Help	Alarm with staff presence	A  P 	 green	<i>Call for Help</i>
Call Acknowledgement	Stand-by	A  P 		<i>Acknowledgement</i>
Call for Assistance	Assistance with staff presence	A  P 	 green	<i>Call for Assistance</i>

### 7.3.2 Device behavior during coded key insertion and removal


**NOTICE!**

The coded key insertion and removal functions are optional.

**State before action: Stand-by**

Action	State	Relay contact	Signal lamp	Radio Message
	Stand-by	A P		(none)
Coded key insertion	Staff presence without alarm	A P	green	Staff arrival with code
Coded key removal	Stand-by	A P		Staff departure with code

**State before action: Alarm without staff presence**







Action	State	Relay contact	Signal lamp	Radio Message
	Alarm without staff presence	A P	red	(none)
Coded key insertion	Alarm with staff presence	A P	green	Staff arrival with code
Coded key removal	(not possible)			

**State before action: Alarm with staff presence**





Action	State	Relay contact	Signal lamp	Radio Message
	Alarm with staff presence	A P	green	(none)
Coded key insertion	Alarm with staff presence	A P	green	Staff arrival with code
Coded key removal	Stand-by ***	A P		Staff departure with code

\*\*\* If the call has not been acknowledged, removing the key will turn the NurseCall N46 Wall Transmitter in Alarm without Staff Presence state.







**State before action: Assistance with staff presence**

Action	State	Relay contact	Signal lamp	Radio Message
	Assistance with staff presence	A  P	 green	(none)
Coded key insertion	Assistance with staff presence (unchanged)	A  P	 green	<i>Staff arrival with code</i>
Coded key removal	Assistance without staff presence	A  P	 red	<i>Staff departure with code</i>

**State before action: Assistance without staff presence**

Action	State	Relay contact	Signal lamp	Radio Message
	Assistance without staff presence	A  P	 red	(none)
Coded key insertion	Alarm with staff presence	A  P	 green	<i>Staff arrival with code</i>
Coded key removal	(not possible)			



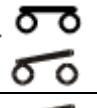

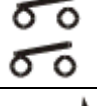



**State before action: Staff presence without alarm**

Action	State	Relay contact	Signal lamp	Radio Message
	Staff presence without alarm	A  P	 green	(none)
Coded key insertion	Staff presence without alarm (unchanged)	A  P	 green	<i>Staff arrival with code</i>
Coded key removal	Stand-by	A  P		<i>Staff departure with code</i>





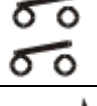



## 7.4 Operation with the staff presence processing deactivated

### 7.4.1 Device behavior upon pressing a button









#### State before action: Stand-by

Action	State	Relay contact	Signal lamp	Radio Message
	Stand-by	A  P		(none)
Call for Help	Alarm without staff presence	A  P	 red	<i>Call for Help</i>
Call Acknowledgement	Stand-by	A  P		<i>Acknowledgement</i>
Call for Assistance	Assistance without staff presence *	A  P	 red	<i>Call for Assistance</i>

#### State before action: Alarm without staff presence

Action	State	Relay contact	Signal lamp	Radio Message
	Alarm without staff presence	A  P	 red	(none)
Call for Help	Alarm without staff presence (unchanged)	A  P	 red	<i>Call for Help</i>
Call Acknowledgement	Stand-by	A  P		<i>Acknowledgement</i>
Call for Assistance	Assistance without staff presence *	A  P	 red	<i>Call for Assistance</i>

#### State before action: Assistance without staff presence

Action	State	Relay contact	Signal lamp	Radio Message
	Assistance without staff presence	A  P	 red	(none)
Call for Help	Assistance without staff presence (unchanged)	A  P	 red	<i>Call for Assistance</i>
Call Acknowledgement	Stand-by	A  P		<i>Acknowledgement</i>
Call for Assistance	Assistance without staff presence	A  P	 red	<i>Call for Assistance</i>

## 7.4.2 Device behavior during coded key insertion and removal



### NOTICE!

The coded key insertion and removal functions are optional.

#### State before action: Stand-by

Action	State	Relay contact	Signal lamp	Radio Message
	Stand-by	A P		(none)
Coded key insertion	Stand-by (unchanged)	A P		Staff arrival with code
Coded key removal	Stand-by (unchanged)	A P		Staff departure with code

#### State before action: Alarm without staff presence

Action	State	Relay contact	Signal lamp	Radio Message
	Alarm without staff presence	A P	red	(none)
Coded key insertion	Alarm without staff presence (unchanged)	A P	red	Staff arrival with code
Coded key removal	Alarm without staff presence (unchanged)	A P	red	Staff departure with code

#### State before action: Assistance without staff presence

Action	State	Relay contact	Signal lamp	Radio Message
	Assistance without staff presence	A P	red	(none)
Coded key insertion	Assistance without staff presence (unchanged)	A P	red	Staff arrival with code
Coded key removal	Assistance without staff presence (unchanged)	A P	red	Staff departure with code

There is no state change when the coded key is inserted or removed.

## 8 Storage

One can distinguish between long term storage and short term storage.

If the NurseCall N46 Wall Transmitter must be temporarily stored, it may not be necessary to wrap it completely.

However, if you wish to store the NurseCall N46 Wall Transmitter for a longer time, for instance in a storage room or any similar location, it is recommended to use original packing material.

### 8.1 Short term storage conditions

Unwrapped NurseCall N46 Wall Transmitter in a room:

- Protection against direct sunlight and dust.

### 8.2 Long term storage conditions



#### **NOTICE!**

The NurseCall N46 Wall Transmitter does not lose its programmed parameters when the power supply and the backup battery are disconnected.

---

NurseCall N46 Wall Transmitter in its original packing material in a storage room:

- Backup battery removed;
- Protection against direct sunlight and dust.

## 9 Disposal

This chapter describes the appropriate disposal of the NurseCall N46 Wall Transmitter.

The NurseCall N46 Wall Transmitter is marked with a crossed-out wastebasket symbol.

This means that, at the end of its useful lifespan, the product shall be disposed separately from ordinary household wastes in accordance to the EU Directive 2002/96/EC.

The product and its accessories shall be delivered to an appropriate collection facility that will permit recycling, treatment and environmentally compatible disposal. This will prevent negative impact on the environment and human health and promotes the recycling of materials. For more information on available collection facilities, contact your local waste collection service or your local representative.

### 9.1 Disassembly

Only authorized personnel are allowed to disassemble a NurseCall N46 Wall Transmitter.

### 9.2 Local disposal locations

The nearest disposal locations are established in accordance with the currently applicable laws. Ask the local authorities.

### 9.3 Returning to the manufacturer

If there is no practical disposal place, the NurseCall N46 Wall Transmitter may be returned to your local representative.

### 9.4 Materials

The NurseCall N46 Wall Transmitter must be returned to an authorized point of recycling.

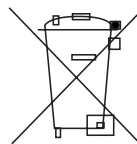
In order to protect people and environment, the NurseCall N46 Wall Transmitter must be recycled in an adequate manner. Consequently, all applicable laws and bylaws must be respected.

#### 9.4.1 Battery



#### NOTICE!

The battery should never be placed in municipal waste. Use a battery disposal facility if available.



**Fig. 9.1** Crossed-out wastebasket symbol

- Please check local regulations for disposal of batteries or call your local representative for information.

## 10 Appendix

### 10.1 Electrical specifications

External power supply & consumption	12-24 VDC Transmission: < 40 mA Idle mode: < 10 mA
Battery power supply & consumption	3V lithium battery CR2450 Transmission: < 30 mA Idle mode: < 10 µA
Battery life	Approx. 2 years

**Table 10.1** Electrical specifications

### 10.2 Dimensions and weight

Casing dimensions	[mm]
Depth	26
Width	82
Height	132
Casing weight	[g]
Weight (including antenna and power supply adaptor)	200

**Table 10.2** Dimensions and weight

### 10.3 Operating temperature

Operating temperature	0 - 55°C
-----------------------	----------

**Table 10.3** Environmental conditions

### 10.4 FCC warning statement

This equipment complies with Part 15 of the FCC rules. Any changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

This device complies with Part 15 of the FCC rules subject to the following two conditions:

1. This device may not cause harmful interference
2. This device must accept all interference received, including interference that may cause undesired operation.





**TeleAlarm SA Bosch Group**

Rue du Pont 23  
CH-2300 La Chaux-de-Fonds  
Switzerland  
Phone +41 32 327 25 40  
Fax +41 32 327 25 41  
**ch.securitysystems@bosch.com**  
**www.telealarm.com**

**Bosch Security Systems France**

Atlantic 361  
361, avenue du Général de Gaulle  
F-92147 Clamart  
France  
Phone + 33 (0)825 12 8000  
(0, 15 € TTC/Min)  
Fax + 33 (0)820 900 960  
(0, 12 € TTC/Min)  
**fr.securitysystems@bosch.com**  
**www.boschsecurity.fr**

**Bosch Sicherheitssysteme GmbH**

**Haus-ServiceRuf**  
Ingersheimer Straße 16  
D-70499 Stuttgart  
Germany  
Phone +49 (0)711 3653 1000  
Fax +49 (0)711 811 5125 294  
**Haus-Service.Ruf@de.bosch.com**  
**www.bosch-sicherheitsprodukte.de**

**Bosch Security Systems Ltd**

Broadwater Park  
North Orbital Road  
Denham  
UB9 5HN  
United Kingdom  
Phone +44 (0)1895 878088  
Fax +44 (0)1895 878089  
**uk.securitysystems@bosch.com**  
**www.boschsecurity.co.uk**

**Bosch Security Systems BV**

Postbus 80002  
NL-5600 JB Eindhoven  
Netherlands  
Phone +31 40 25 77 200  
Fax +31 40 25 77 202  
**nl.securitysystems@bosch.com**  
**www.boschsecurity.nl**

**Bosch Security Systems nv/sa**

Torkonjestraat 21F  
B-8510 Marke  
Belgium  
Phone +32 (0)56 20 02 40  
Fax +32 (0)56 20 26 75  
**be.securitysystems@bosch.com**  
**www.boschsecurity.be**

**Bosch Security Systems AB**

Vestagatan 2  
SE-416 64 Göteborg  
Sweden  
Phone +46 (0)31 722 5300  
Fax +46 (0)31 722 5340  
**se.securitysystems@bosch.com**  
**www.boschsecurity.se**