# NurseCall NC8 Main Unit

NC8_MU_UM_EN_V1.1_2021.12

TeleAlarm®
A KATEK Brand

en User Manual

# Table of Contents

# 1 Safety instructions

NOTICE!
The user and installer should read and understand this chapter before any intervention on the NurseCall NC8 Main Unit.

## 1.1 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 NC8 Main Unit must be adhered to.

## 1.2 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.

## 1.3 Environmental conditions

NOTICE!
The NurseCall NC8 Main Unit must not be located near a water tap or any other source of water. The product must not be subjected to dripping water.
The electrical safety of the unit is only guaranteed if the electrical installation is conform to the national regulation and if this installation works properly.
The NurseCall NC8 Main Unit may not be used in buildings prone to fire and explosion hazards.

NOTICE!
The NurseCall NC8 Main Unit 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 NC8 Main Unit in a dry place, away from any source of heat.

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

CAUTION!
Connect the power adapter in a power outlet near the unit.
Make sure that it remains easily accessible.

## 1.4 General safety instructions

DANGER!
Electrocution
During maintenance operations, when the NurseCall NC8 Main Unit is powered and its casing is removed, it may not be left unattended.

CAUTION!
The NurseCall NC8 Main Unit may only be connected to the electrical sources as described in *Section A.1 Electrical specifications, page 55*.

CAUTION!
Maintenance and repairs may only be performed in conformance with the instructions and by authorized technical personnel only.
The sole possession of the user manual does not allow the personnel to perform any kind of repair on the NurseCall NC8 Main Unit.
Take into account all the warnings and follow all the instructions displayed on the NurseCall NC8 Main Unit and those which are printed in the documentation.
Never try to use replacement pieces other than those authorized by the manufacturer of the NurseCall NC8 Main Unit.

CAUTION!
It is mandatory to use the products specified in the present user manual to clean the NurseCall NC8 Main Unit. If you plan to use another product, only do so after having obtained the authorization of the manufacturer.

DANGER!
The NurseCall NC8 Main Unit contains highly sensitive electronic components. It should be opened only in an **ESD** protected environment with respect to the following precautions:
1. Discharge yourself from electrostatic loads by touching a grounded conductive surface before opening the unit.
2. Avoid touching conductive parts inside the unit if not absolutely necessary.

CAUTION!
Never let any liquid enter the system. In case of liquid spill inside the NurseCall NC8 Main Unit, act immediately as follows:
1. Switch off the unit using the main switch under the casing.
2. Unplug the power supply adapter.
3. Dry up the unit.
4. Clean the unit.
5. Check that the unit switches on correctly.

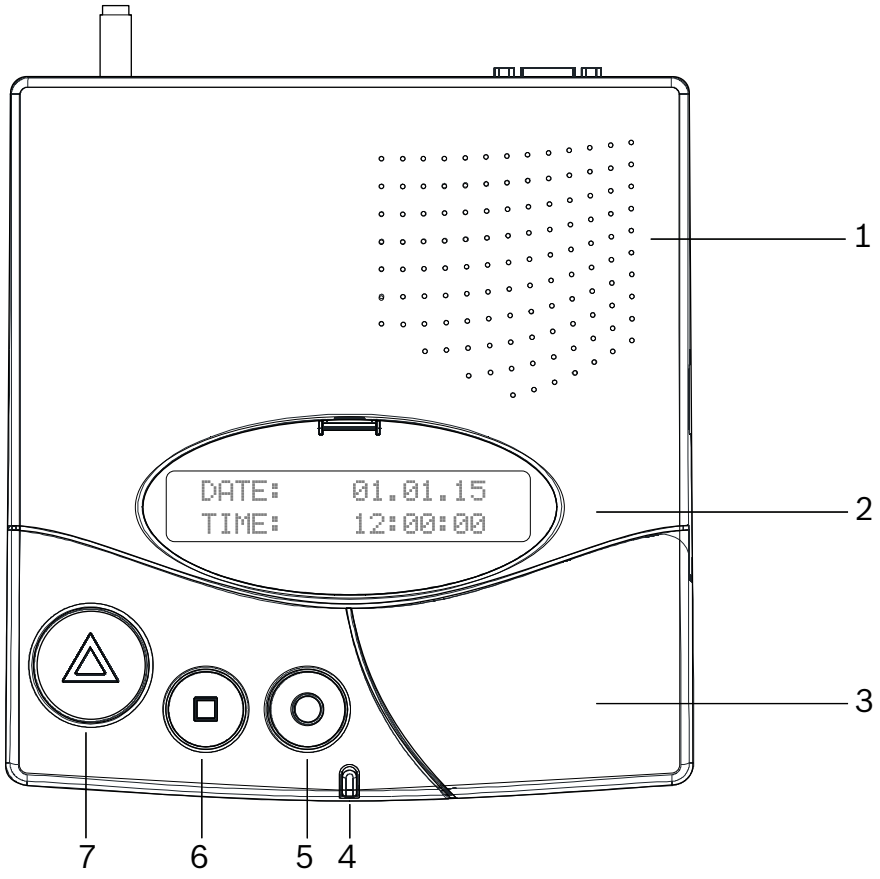
### 1.4.1 Observation and information

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.

# 2 Description

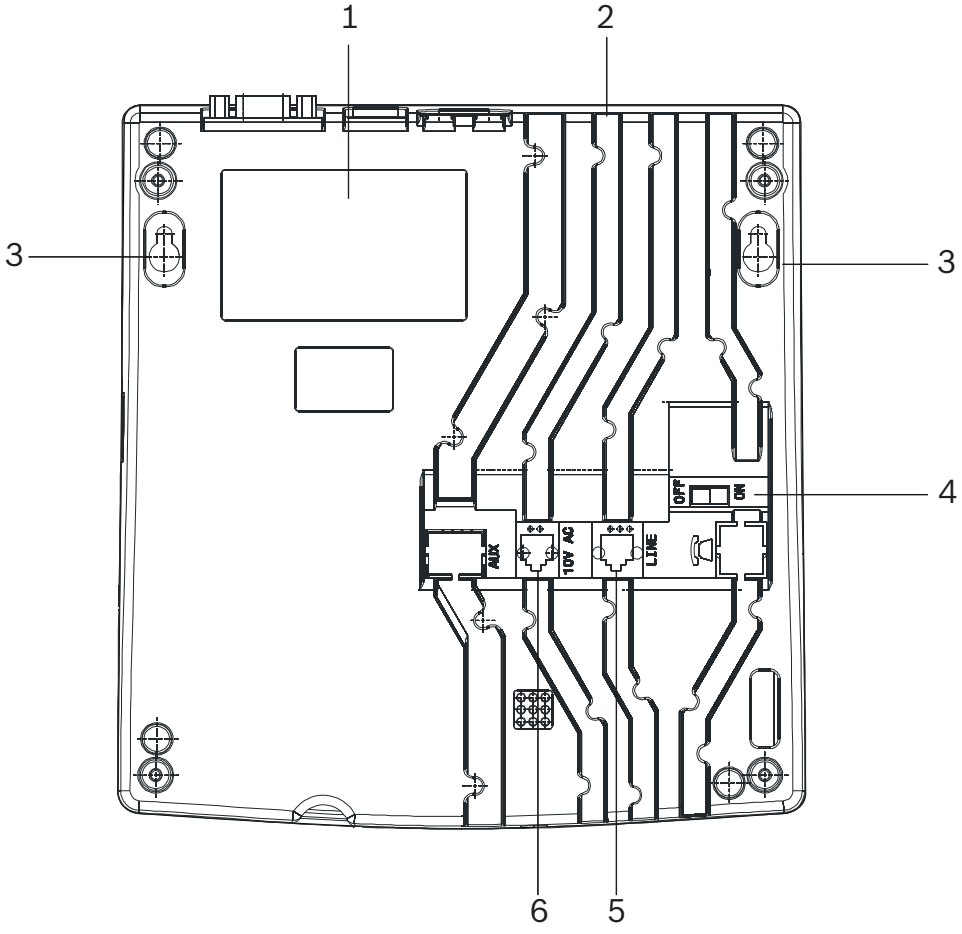
## 2.1 General description

### 2.1.1 Top view



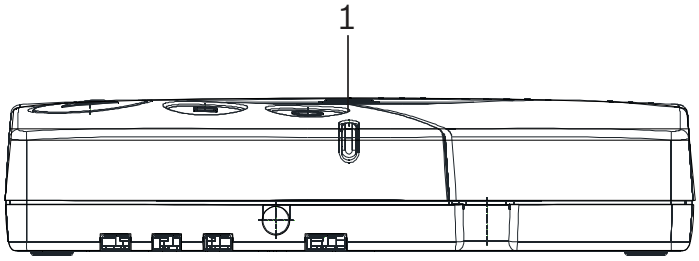

1. Loudspeaker.
   See *Section 2.2.1 Loudspeaker, page 11*.
2. Display.
   See *Section 2.2.2 Display, page 11*.
3. Keyboard, under the cover.
   See *Section 2.2.3 Keyboard, page 11*.
4. LED Indicator
5. **Yellow** button
   Used to view more details about the event or alarm currently displayed (date and time, position, etc...).
6. **Green** button
   Used to acknowledge an alarm locally, see *Section 5.2.3 Local acknowledgement, page 46*.
7. **Red** button with light
   This button is not used. Pressing the button does not activate a function.
   The light blinks red during an alarm.

### 2.1.2 Bottom view




1. Identification label.
2. Cable channels.
3. Wall mounting holes (distance between holes, 157 mm).
   See *Section 3.2.3 Wall installation, page 16* for a detailed description.
4. ON/OFF switch.
5. LINE socket, used for firmware update.
   See *Section A.7.1 LINE socket (unit bottom), page 63* for wiring.
6. Socket for the Power supply adapter 230VAC/12VDC.
   See *Section A.7.2 Power socket (unit bottom), page 63* for wiring.

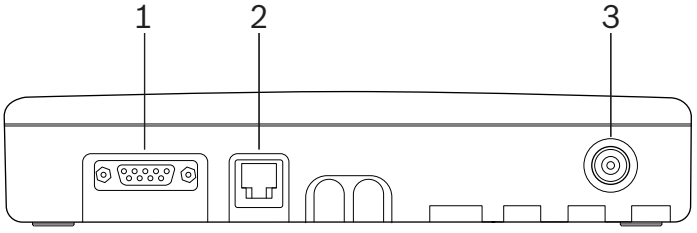
### 2.1.3 Front view




1. LED Indicator

| **Status** | **LED** |
|---|---|
| Standby mode (normal operation) | Green (permanent) |
| Backup battery low | Green (blinking) |
| Power supply disconnected | Green (flashing) |
| Help, assistance or fire | Red (blinking) |
| Programming mode | Orange (blinking) |

### 2.1.4 Rear view




1. RS-232 connector
   See *Section A.7.3 RS-232 socket (unit rear), page 63* for wiring.
2. RS-485 connector
   See *Section A.7.4 RS-485 socket (unit rear), page 64* for wiring.
3. Antenna connector

## 2.2 Detailed description

### 2.2.1 Loudspeaker

When one of the following alarms or messages is received by the NurseCall NC8 Main Unit, the internal loudspeaker is activated until acknowledgement.

| **Status** | **Loudspeaker** |
|---|---|
| Power supply disconnected | Dual-tone beep every minute |
| Call for help, reserve call, technical call | 4 second interval, one tone |
| Error message | 15 second interval, one tone |
| Disconnection of a relay unit from RS485-bus | 1 minute interval, one tone |
| Call for assistance / fire alarm | Continuously dual-tone beep |
| Local acknowledgement | Short beep |

### 2.2.2 Display

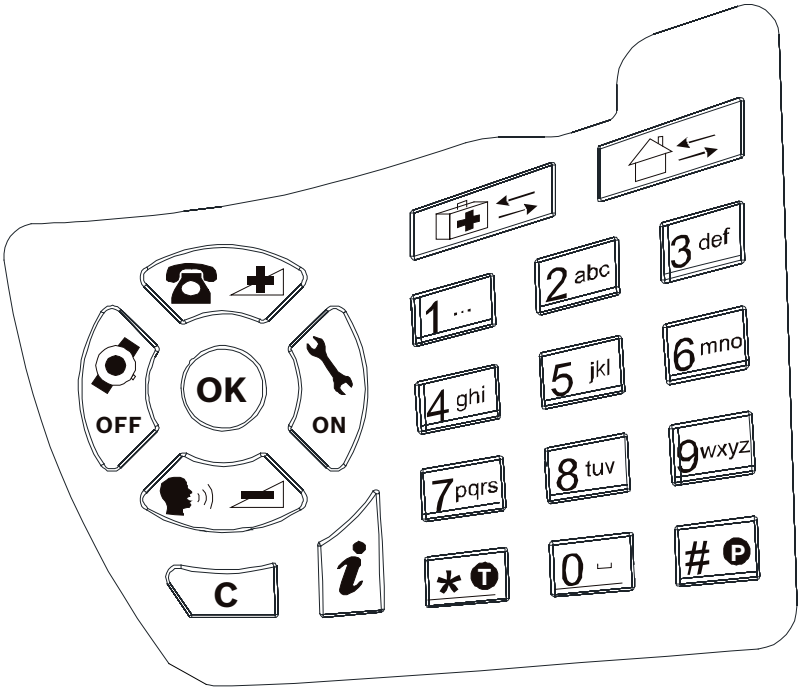
The NurseCall NC8 Main Unit is equipped with a 2 x 20 characters display that guides the operator during the programming. During normal operation, alarms and messages are displayed.

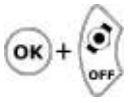
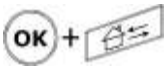
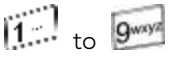
```
NurseCall Main Unit
V2.20 BN111.240.00B
```

NOTICE!
This user manual is written for the unit language **English USA**. Certain displays may differ for the unit language **English UK**.

### 2.2.3 Keyboard

The keyboard has 21 alphanumeric keys. They are used to program the NurseCall NC8 Main Unit or during normal operation.



| Keys | Programming Mode | Normal Operation |
|---|---|---|
|  | Access to parameters programming.<br>See *Section 4.3 Parameters, page 25*. | Not used. |
|  | Access to transmitters programming.<br>See *Section 4.5 Transmitters, page 39*. | Not used. |
|  | Scroll up to the next parameter. | Increase the volume of the loudspeaker. See *Section 5.1 Adjusting the loudspeaker volume, page 44*. |
|  | Scroll down to the next parameter. | Decrease the volume of the loudspeaker. See *Section 5.1 Adjusting the loudspeaker volume, page 44*. |
|  | Set a parameter value to OFF or to go to the previous programming field. | Scroll down to the previous alarm/ event. |
|  | Set a parameter value to ON or to go to the next programming field. | Scroll up to the next alarm/event. |
|  | Confirm a value or a command. | Not used. |
|  | Cancel an entry or a command.<br>Quit the programming mode. | Not used. |
|  | Check the value of a parameter or a transmitter. | Check the status of the backup battery. See *Section 7.3 Monitoring the backup battery, page 50*. |
|  | Not used. | Not used. |
|  | NPS programming function. See *Section 4.1.2 Programming with the NPS software, page 22*. | Not used. |
|  | Enter a value. | Not used. |
|  | Erase all programmed acknowledgement transmitters during a specific procedure.<br>See *Section 4.5.8 Erasing all acknowledgement transmitters, page 43*. | Not used. |
|  | Disable the beep codes and delete the POS indication.<br>See *Section 4.3.5 RS-232 output setting, page 27* and *Section Example of programming, Page 28*. | Not used. |

| Keys | Programming Mode | Normal Operation |
|---|---|---|
| 0 – | Enter a value or to set the default values.<br>See *Section 4.3.5 RS-232 output setting, page 27*. | Launch the event/alarm display mode. |
| * then # | No effect. | Lock and unlock the keyboard. |

### 2.2.4 RS-232 interface

A 9-pole SUB-D connector at the rear of the housing can be used for connection to

- a printer
- a paging system
- a DECT phone system
- a PC with Alarm Management Software.

▶ For the hardware configuration of this interface, see *Section 3.2.6 Connecting the RS-232, page 17*.

▶ For the programming of this interface, see *Section 4.3.5 RS-232 output setting, page 27*.

▶ For the wiring of the connector, see *Section A.7.3 RS-232 socket (unit rear), page 63*.

**Connection to a printer**

To protocol all events, a printer with serial connection (RS-232 Interface) and endless paper should be used. Printers with a parallel port can be used together with an intermediate serial - parallel converter.

NOTICE!

The paper printout corresponds to the indication at the display of the NurseCall NC8 Main Unit.

**Characteristics**

- Data rate: 9600 Bauds.
- Transmission: asynchronous
- 10 bit-structure (1 start bit, 8 data bits without parity, 1 stop bit).

The operating status of the printer cannot be tested (switched on/off, paper status).
An RS-232 printer is mandatory.

**Connection to a paging system**

The NurseCall system uses several protocols: standard ESPA 4.4.4. with RPE670/i-Page, POCSAG, DeTeWe and Medicall 800.

▶ See *Section A.5 Paging systems specifications, page 57* for more information about these protocols.

**Connection to a DECT phone system**

The NurseCall system can transfer the received alarms to DECT handsets Multitone.

▶ See *Section A.6 DECT phone system specifications, page 62* for more information about this system.

**Connection to a PC using an Alarm Management Software**

At connection / disconnection of a PC using an Alarm Management Software, events are generated. The loudspeaker is disabled during the connection.

NOTICE!
Alarms/messages arriving in the alarm buffer are repeated every 3 minutes until acknowledgement. A technical failure, for example a power outage, is treated as an event. No acknowledgement is therefore necessary. See *Section 5.2 Consulting the alarm or event buffer, Page 44*.

### 2.2.5 RS-485 interface

One NurseCall NC8 Main Unit and up to 32 NurseCall Relay Units can be connected by a RS-485 bus. The bus must be connected to pins 2 and 5 of the RS-485 socket.

▶ For connector wiring, see *Section A.7.4 RS-485 socket (unit rear), page 64*.

NOTICE!
Keep polarity equal when connecting further units to the RS485 bus!

NOTICE!
Maximum RS485-bus length: 1200 m.
Use only one twisted pair cable for the interconnection.

NOTICE!
The receiver units located at the two ends of the bus must be terminated with a 100 Ohm resistor. See *Section 3.2.8 Connecting the RS-485, page 19* for more information about the jumper setting.

In this configuration, you always should connect the NurseCall NC8 Main Unit first. The NurseCall Relay Units must then be connected to the RS485-bus one by one, not at the same time.

**Relay output**

In the same connector, a potential free contact is available. It is a low current switching contact. The relay (potential free, switching power max. 48 V / 0.5 A) is activated at a call for help, call for assistance or fire alarm. This relay can be set as closing or switching contact (cycle of 10 seconds on / 10 seconds off). This feature can be used to drive a signal lamp for example.

▶ For connector wiring, see *Section A.7.4 RS-485 socket (unit rear), page 64*.

▶ For relay setting, see *Section 4.3.7 Output relay setting, page 32*.

### 2.2.6 Antenna

The antenna is connected to the NurseCall NC8 Main Unit using the adapter supplied with the unit.

▶ See *Section 3.2.4 Installing the antenna, page 16*.

# 3 Installation

## 3.1 Unpacking

The NurseCall NC8 Main Unit 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).

1. Take all components out of the box and place the NurseCall NC8 Main Unit on the working space.
2. Check each component in the box, in accordance with the list of contents below.
3. Check that the NurseCall NC8 Main Unit and its accessories have not been damaged during transportation.

In case of defective or missing equipment, do not try to install the NurseCall NC8 Main Unit.

▶ Contact immediately your local representative.

### 3.1.1 List of contents

| **Description** |
|---|
| NurseCall NC8 Main Unit |
| Power supply adapter (Europe) 230VAC/12VDC |
| Antenna 868MHz 1/2 L=17 cm FME |
| Straight adapter BFME-TNC |
| Right angled bended adapter BFME-ETNC |
| 2 m Cable FCC 6/4 |

# 3.2 Installation

## 3.2.1 Generalities

▶ Install the NurseCall NC8 Main Unit in a dry place, away from any source of heat.

Tools required:

- Torx T20 screwdriver.
- Torx T10 screwdriver.

## 3.2.2 Installation on a piece of furniture

It is recommended to place the NurseCall NC8 Main Unit on a non-slippery surface. However, do not place anything (blanket or lace) on top of the unit.

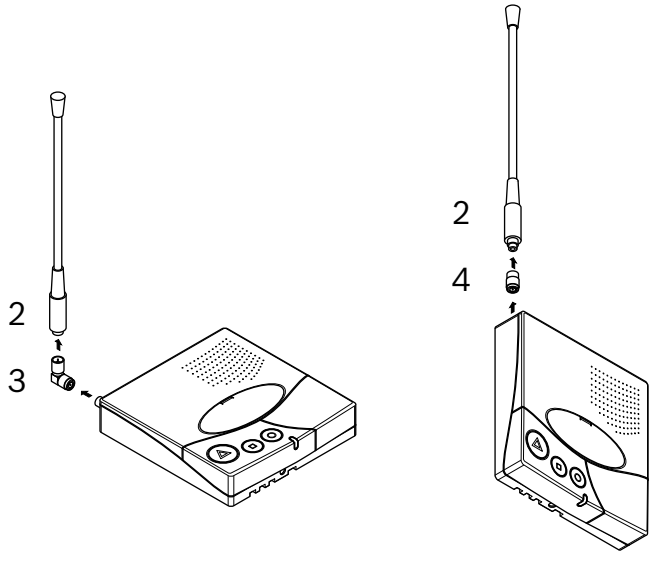
## 3.2.3 Wall installation

You can fasten the NurseCall NC8 Main Unit on a smooth wall surface using two screws. The distance between holes is 157 mm.
Power and phone line cords should be placed inside the cable channels on the bottom of the NurseCall NC8 Main Unit.

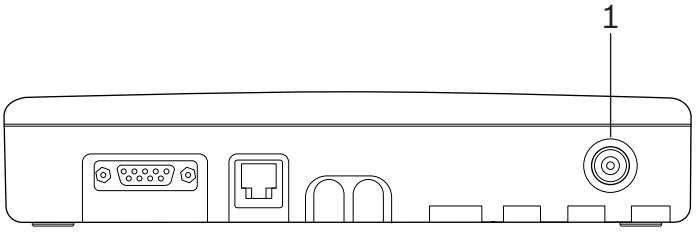
## 3.2.4 Installing the antenna

CAUTION!
The internal antenna parameter could be set, it must be changed to use the external antenna !

1. Use the straight adapter (4) for wall installation or the right angled bended adapter (3) for installation on a piece of furniture.




2. Fasten the adapter (3) or (4) on the antenna connector (1).



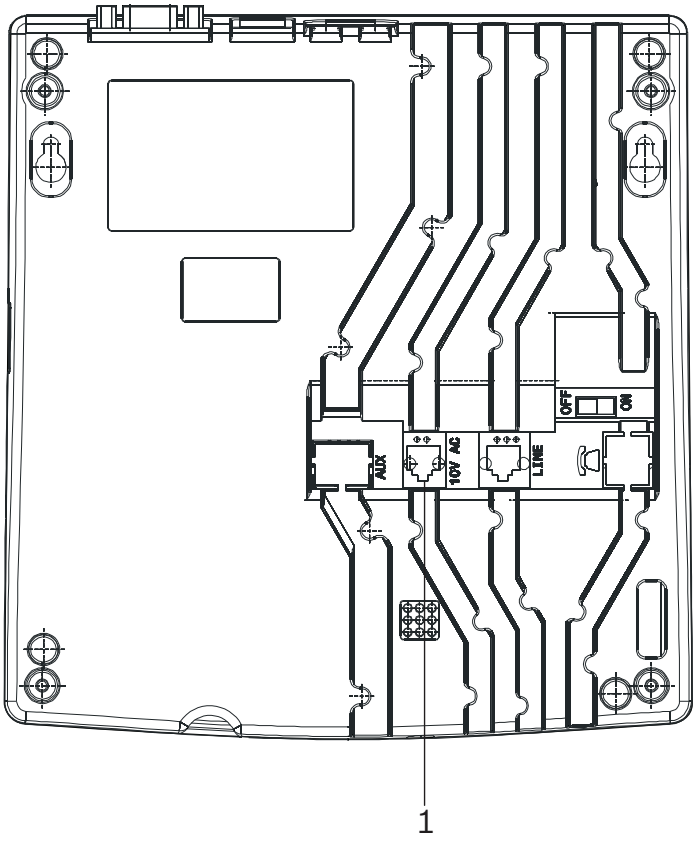

3. Fasten the antenna (2) on the adapter.

### 3.2.5 Connecting to the mains

The NurseCall NC8 Main Unit is powered by an adapter (230VAC/12VDC).

CAUTION!
In case of a different supply, the equipment must fulfill isolation requirements according to EN62368 standard (last edition).

1. Plug the power adapter into a power outlet placed near the unit. It should be easily accessible at any time.

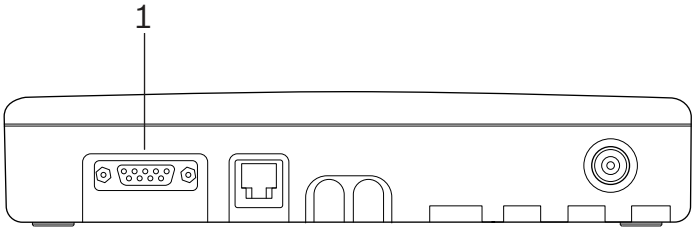



2. Connect the cable to the socket labeled 10V AC (1), under the unit.

For connector wiring, see *Section A.7.2 Power socket (unit bottom), page 63*.

### 3.2.6 Connecting the RS-232

▶ Connect the device to the 9-pole SUB-D connector (1) at the rear part of the housing.

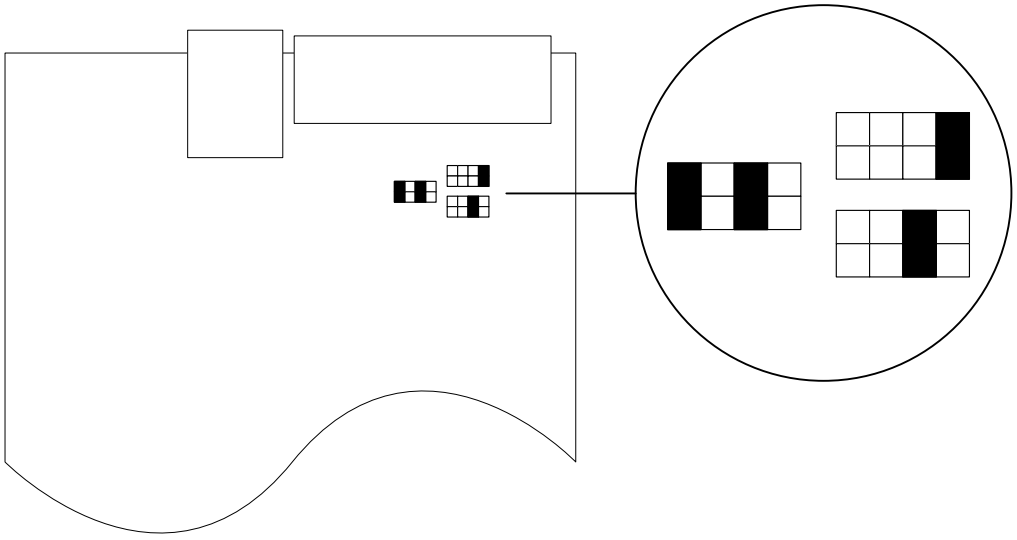



For connector wiring, see *Section A.7.3 RS-232 socket (unit rear), page 63*.

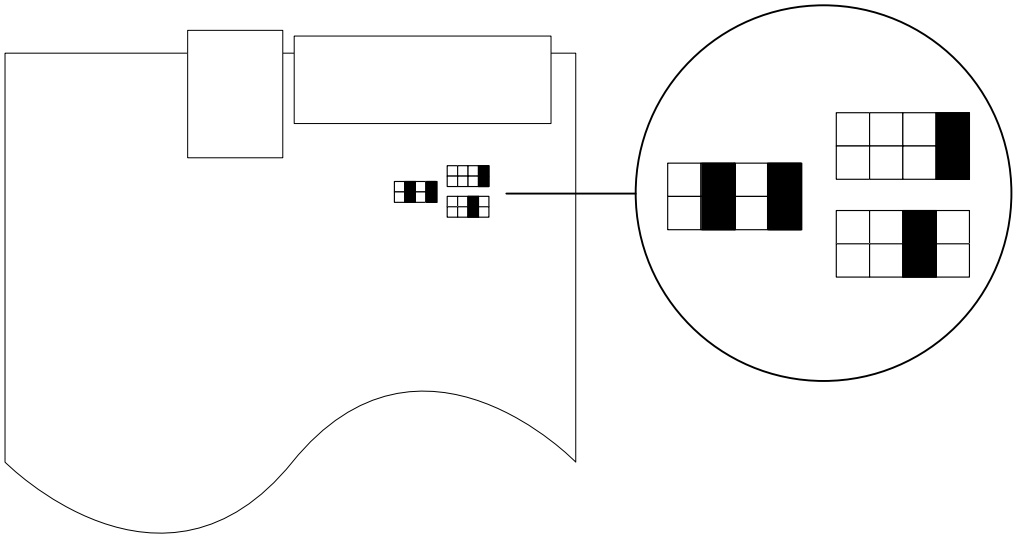
### 3.2.7 Setting the jumpers on the communication board

1. Disassemble the unit; see *Section 7.5.1 Disassembling the unit, page 51*.
2. Remove the communication board; see *Section  Removing the communication board, page 51*.
3. Set the jumpers as required in your configuration. By default the jumpers are set for connection to a DECT phone system.

**Setting the jumpers for a DECT phone system, Alarm Management Software, NPS programming or Medicall 800:**



**Setting the jumpers for Paging systems (except Medicall 800) and printers:**



4. Assemble the communication board and the unit. This is basically the reverse of the disassembling procedure, see *Section 7.5.1 Disassembling the unit, page 51*.

### 3.2.8 Connecting the RS-485

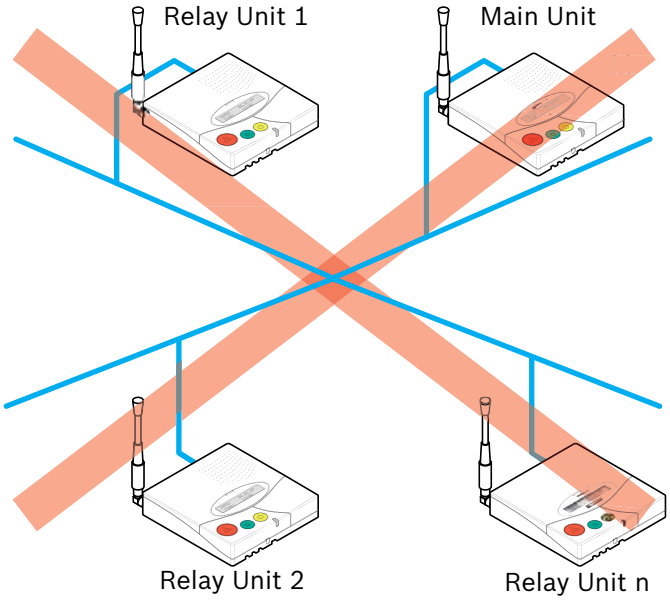
One NurseCall NC8 Main Unit and up to 32 NurseCall Relay Units can be connected to an RS-485 bus. Please contact a specialist for a correct installation.

▶ See *Section A.7.4 RS-485 socket (unit rear), page 64* for connector wiring.

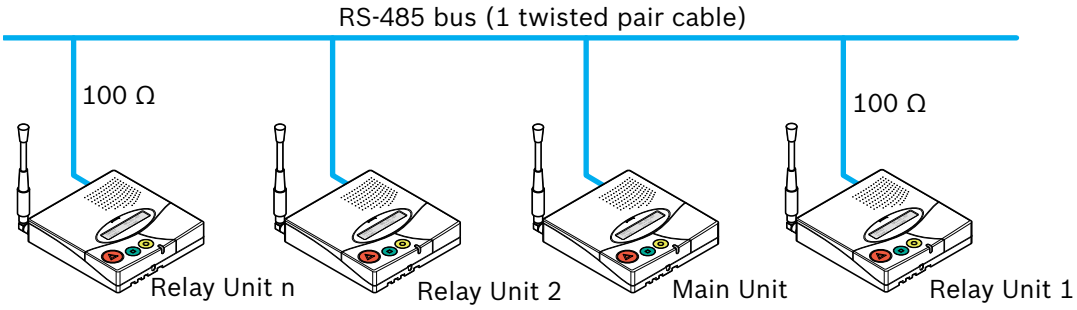
CAUTION!

Do not use a star connection for the RS-485 network!

Incorrect connection:




Correct connection:



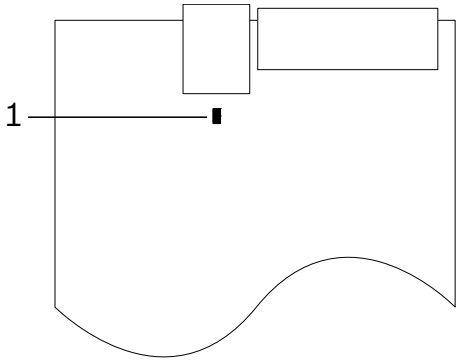

NOTICE!

The NurseCall NC8 Main or Relay Units located at the two ends of the bus must be terminated with a 100 Ohm resistor.

### 3.2.9 Setting the 100 Ohm termination jumper

Within the NurseCall Main or Relay Units, the RS-485 interface can be configured with a jumper.

1. Disassemble the unit as described in *Section 7.5.1 Disassembling the unit, page 51*.
2. Remove the communication board as described in *Section Removing the communication board, page 51*.
3. Put the 100 Ohm termination jumper J112 (1).




4. Assemble the communication board and the unit. This is basically the reverse of the disassembling procedure, see *Section 7.5.1 Disassembling the unit, page 51*.

NOTICE!

If you do not want to disassemble the NurseCall NC8 Main Unit, you also can short-out pins 3 and 4 of the connector. This has the same effect as the jumper setting described above.

See *Section A.7.4 RS-485 socket (unit rear), page 64* for connector wiring.

# 4 Programming

## 4.1 Generalities

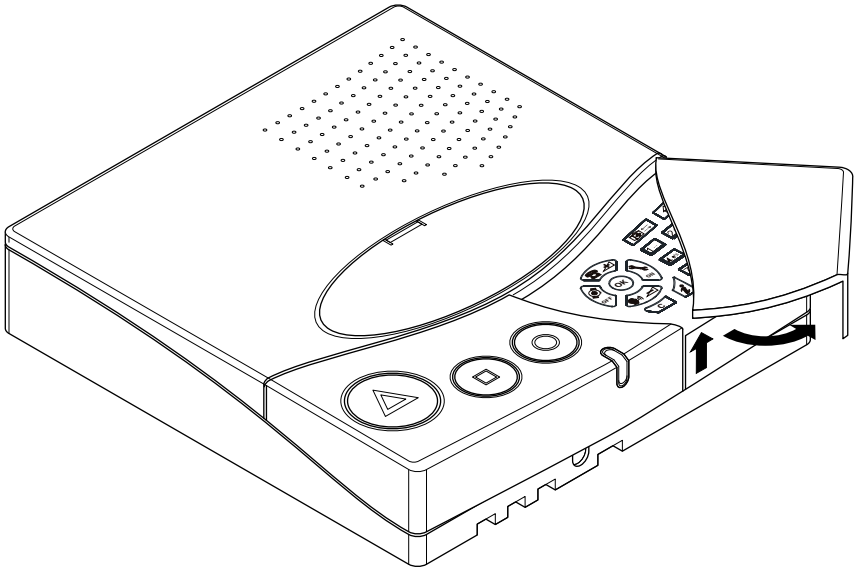
NOTICE!
In the programming mode, the NurseCall NC8 Main Unit does not display any alarm or message!

NOTICE!
The NC8 receiver card RE80 can only be programmed/updated by the NCCM program !

The NurseCall NC8 Main Unit can be programmed either remotely by using a specific software package called NPS or directly by using the keyboard and display.

### 4.1.1 Programming with the keyboard

- Open the cover carefully and use the programming keys.



- To access the parameters programming, press OK then .
  See *Section 4.3 Parameters, page 25* for more details.
- To access the special settings programming, press three times quickly.
  See *Section 4.4 Special settings, page 35* for more details.
- To access the transmitters programming, press OK then .
  See *Section 4.5 Transmitters, page 39* for more details.

### 4.1.2 Programming with the NPS software

The NurseCall system can be programmed with a specific software called NPS.

NOTICE!
In order to program the NurseCall NC8 Main Unit with this software, you should connect your PC to the NurseCall NC8 Main Unit with an RS-232 cable.

▶ To connect and set the interface, see *Section 3.2.6 Connecting the RS-232, page 17*.

**Enable the programming**

1. Press OK then .


2. Confirm the command with OK.


### 4.1.3 Exit the programming mode and cancel entries

▶ Press C once or several times.

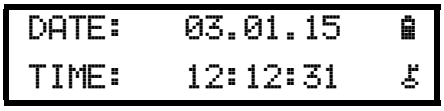
### 4.1.4 Key not allowed

▶ If you have pressed a key by mistake during the programming, a high-pitched beep is generated.

### 4.1.5 Locking and unlocking the keyboard

▶ Press *1 then #0 within one second to lock or unlock the keyboard.

This function locks only the keyboard to prevent any false manipulation. The colored buttons on the left hand side are still available.
When the keyboard is locked, a small lock appears at the bottom right of the display:




### 4.1.6 Programming time-out

▶ Programming of the NurseCall NC8 Main Unit terminates automatically if no entries are made on the keyboard for more than **one minute**.

## 4.2 First use

At first use or when resetting all the parameters, you must program:

▶ the unit language
▶ the locating mode
▶ the display mode for the transmitters' identification

See *Section 4.4.2 Resetting all the parameters, page 35*.

### 4.2.1 List of original factory settings

| Parameter | Original Factory Setting | Page |
|---|---|---|
| Language | English USA | *24* |
| * Locating mode (set at first use. To change the value, reset the unit) | Off | *24* |
| * Display mode (set at first use. To change the value, reset the unit) | Floor/room/bed | *24* |
| Output RS-232 | None | *27* |
| Forwarding of transmitter ID via the RS-232 interface | Off | *27* |
| RPE 670 / i-page for paging systems | No | *28* |
| Day / night mode | No | *28* |
| Night start for paging or phone DECT systems | 18h00 | *28* |
| Night end for paging or phone DECT systems | 06h00 | *28* |
| ID paging for paging systems | 2 | *28* |
| ID NurseCall for paging systems | 1 | *28* |
| Beep codes allocated to each pager | Help:7; Assi: 5; Ackn: 2 | *28* |
| Number of digits for ESPA 4.4.4. | 3 | *28* |
| Mix Mode ESPA 4.4.4 / Alarm Management Software | No | *28* |
| Technical events sent to a specified pager group | Off | *28* |
| Digit for the POCSAG paging system address | 4 | *30* |
| First digit for DeTeWe paging system address | 1 | *30* |
| Local acknowledgement | Yes | *31* |
| Access code for local acknowledgement | No | *31* |
| Output relay function | Closing | *32* |
| Output relay mode | Help + Assistance | *32* |
| Accompany mode | No | *32* |
| Lower limit for the accompany mode | 231 | *32* |
| Radio noise check | Yes | *33* |
| Relay output in case of a radio noise event | Off | *33* |
| Tracking function | No | *33* |
| Dementia criterion | No | *34* |
| Range of automatic dementia gates | Standard 231-254 | *34* |
| Assistance alarm from S87L transmitter | Off | *34* |
| Assistance and fire priority | No | *36* |
| Special texts in German | No | *36* |
| Set to Universal NurseCall | No | *37* |
| Conversion code for Universal NurseCall | No | *37* |
| Last 300 ID codes blocked for Universal NurseCall | No | *37* |
| Maximum number of alarm transmitters | 500 | *38* |
| Maximum number of acknowledgement transmitters | 5 | *38* |
| Maximum number of events buffered | 100 | *38* |
| Disabling the daily messages check | Off | *38* |
| Repeat alarms timing to RS-232 output | 3 minutes | *38* |
| Speaker volume | Midrange | *44* |

### 4.2.2 Language

Select the unit language.


▶ See *Section 4.3.3 Programming the unit language, page 26* for more details.

### 4.2.3 Locating mode

NOTICE!
It is mandatory to perform a reset if you wish to change the value for the locating mode.
See *Section 4.4.2 Resetting all the parameters, page 35*.

Enable (**ON**) or disable (**OFF**) the indication of the transmitter position (locating mode) on the NurseCall NC8 Main Unit display.


▶ Press  to disable or  to enable the locating mode.

WARNING!
When the locating mode is disabled, the accompany mode, tracking function and dementia criterion are no longer available in the parameters programming.

### 4.2.4 Display mode

NOTICE!
It is mandatory to perform a reset if you wish to change the value for the display mode.
See *Section 4.4.2 Resetting all the parameters, page 35*.

Select the display mode for the transmitters' identification.


1. Press  to select **NUMBER** or  to select **FL,RO,BE** (floor, room, bed).
2. If you select **NUMBER**, then you must choose between a 3-digit display (single number) and an extended 4-sign display (digits and letters).


▶ Press  to select the 3-digit display **0-254** or  to select the 4-sign display **0-ZZZZ**.

3. If you select **FL,RO,BE** (floor, room, bed), you must choose between an acknowledgment on **FL+RO** (floor and room only) or **FL+RO+BE** (floor, room, and bed).

```
ACKNOWLEDGEMENT ON
(FL+RO / FL+RO+BE)
```

▶ Press  to select **FL+RO** or  to select **FL+RO+BE** (floor, room, bed).

NOTICE!
When acknowledging a transmitter in mode **FL+RO**, all the transmitters located at this floor and room will be acknowledged.

## 4.3 Parameters

### 4.3.1 Access to parameters

1. Press OK then  to access the parameters.

```
%     OK:Program
        i:Info
```

2. Press OK to program these parameters or  to check the value of each parameter.

```
% Parameter Nr. 00
Language          ↓
```

3. Scroll with  and  . Press OK to confirm. Press C to escape.

### 4.3.2 List of parameters

| No. | Parameter | Reference |
|---|---|---|
| 00 | Language | *Section 4.3.3 Programming the unit language, page 26* |
| 01 | Date and time | *Section 4.3.4 Date and time setting, page 26* |
| 02 | RS-232 output | *Section 4.3.5 RS-232 output setting, page 27* |
| 03 | Local acknowledgement | *Section 4.3.6 Local acknowledgement setting, page 31* |
| 04 | Relay Output | *Section 4.3.7 Output relay setting, page 32* |
| 05 | Accompany mode | *Section 4.3.8 Accompany mode, page 32* |
| 06 | Radio noise check | *Section 4.3.9 Radio noise check, page 33* |
| 07 | Tracking function | *Section 4.3.10 Tracking function, page 33* |
| 08 | Dementia criterion | *Section 4.3.11 Dementia criterion, page 34* |
| 09 | Assistance alarm | *Section 4.3.12 Assistance alarm from S87L transmitter, page 34* |

### 4.3.3 Programming the unit language

NOTICE!
This parameter is set at first use. Here you can change it.
See *Section 4.2 First use, page 22*.

Choose between 7 language settings:
- 0 = English USA
- 1 = English UK
- 2 = French
- 3 = German
- 4 = Italian
- 5 = Dutch
- 6 = Swedish

1. Select the parameter Nr. **00**.


2. Press (OK).

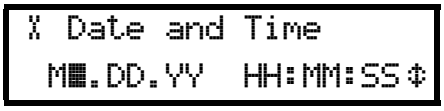

3. Select the language with (+) and (−).
4. Confirm the language selected with (OK).

NOTICE!
This user manual is written for the unit language **English USA**. Certain displays may differ for the unit language **English UK**.

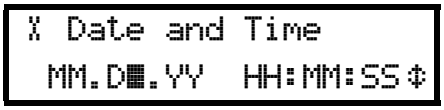
### 4.3.4 Date and time setting

1. Select the parameter Nr. **01**.


2. Press (OK).




3. Set the month with (+) and (−).
4. Go to the day with (ON).



5. Set the day with  and  .
6. Go to the year with  .

```
% Date and Time
 MM.DD.Y■  HH:MM:SS⇕
```

7. Set the year with  and  .
8. Repeat the same operation for the time setting (**HH:MM:SS**).
9. Confirm the setting with  .

### 4.3.5 RS-232 output setting

NOTICE!
Within the NurseCall NC8 Main Unit, the RS-232 interface should be configured with jumpers.
See *Section 3.2.7 Setting the jumpers on the communication board, page 18*.

Select one of the following:
- None
- Printer
- Alarm Management SW
- PAGING
- DECT

1. Select the parameter Nr. **02**.

```
% Parameter Nr. 02
RS-232 Output      ⇕
```

2. Press  .

```
% RS-232 Output
None               ↓
```

3. Set the desired value with  and  . Confirm with  .

NOTICE!
For the values **None** and **Printer**, you do not have to define more parameters.

**Setting the interface to Alarm Management Software**

```
% RS-232 Output
Alarm Management SW⇕
```

1. Select **Alarm Management SW** in the RS-232 Output menu. Confirm with  .

```
%Alarm Management SW
TRansm.ID>RS232:Off⇕
```

2. Activate (**On**) or deactivate (**Off**) the forwarding of transmitter ID via the RS-232 interface with  and  . Default value is **Off**.

**Example of programming**

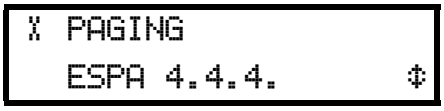
Hereafter is an example of the programming, with the following characteristics:

- Locating mode = ON
- Display mode = FL/RO/BE
- Protocol = ESPA 4.4.4
- RPE 670 / i-Page system = YES
- Day / night transfer function = YES

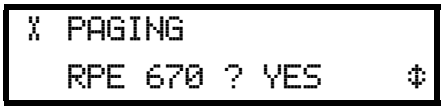
▶ See *Section A.5 Paging systems specifications, page 57*.

1. Selected **PAGING** in the RS-232 Output menu. Confirm with  .


2. Select the protocol (**ESPA 4.4.4**, **POCSAG**, **DeTeWe** or **Medicall 800**). Confirm with  .




3. Activate (**YES**) or deactivate (**NO**) the RPE 670 system with  and  .




4. Confirm with  .
5. Enter the ID number of the paging system (0-9) and the NurseCall system (0-9).


Select a field with  and  , change a value with  and  . Confirm with  .

6. Activate (**YES**) or deactivate (**NO**) the day / night transfer with  and  .


7. Confirm with  .
8. If the day / night transfer is activated, set the night start time. Default value is 18:00.

Select a field with  and  , change a value with  and  . Confirm with  .

9. Set the night end time and confirm your setting with  . Default value is 6:00.

```
% PAGING ESPA 4.4.4.
Night End : 06:00:00
```

10. Decide how many characters per information (criterion, floor, room, bed, position) should be filtered to the paging/DECT system. The upper line shows the outcome.

```
CRITERI<-
CRIT 07 + 0 SPACES
```

Choose **0** to **11** characters for the criterion, followed by **0** to **9** spaces.

Select a field with  and  , change a value with  and  . Confirm with  .

11. If the FL,RO,BE display is selected, set the filter. The upper line shows the outcome.

```
INFO.: fff   rrr 00b
FL:3+3 +RO:3+1 +BE:3
```

Select a field with  and  , change a value with  and  . Confirm with  .

12. If the locating mode is activated, set the filtering of the position.

```
BE POS xyz
SPACES  : 1
```

To delete the **POS** indication, press  . This is for pagers with only numeric indications.

```
BE xyz
SPACES  : 1
```

Change the number of spaces (0-9) with  and  . Confirm with  .

13. Set the beep codes that will be allocated to each pager.
    Default values are, for HELP: 7; for ASSI: 5; for ACKN: 2.

```
 BEEP CODE #=Disable
HELP:7 ASSI:5 ACKN:2
```

To disable the message that indicates the beep code, press  . A hash (#) then appears instead of a value. To set a value again for the beep code, press  . Confirm with  .

14. If you have activated the ESPA 4.4.4 protocol and deactivated the RPE 670 system, select the number of digits (2, 3 or 4) with  and  . Confirm with  .

```
% PAGING ESPA 4.4.4.
NB.DIGITS : 3      ⇕
```

15. Activate (YES) or deactivate (NO) the mix mode with  and  .

```
% PAGING ESPA 4.4.4.
MIX MODE : NO      ⇕
```

16. Confirm with  .

17. Select a pager group to which the technical events will be sent:

```
% TECHNICAL EVENTS
TO PAGER GROUP: OFF⇕
```

18. Select a pager group between 01 and 24 with  and  . By default, it is OFF.

The following events are sent to the selected pager group:
- LOW BATTERY
- RADIO NOISE
- POWER OUTAGE
- BAT.ACK.TRANSM
- LOW ACCU

NOTICE!
The message "LOW BATTERY" is now considered as an event and no longer as an alarm.

Specific parameter for POCSAG
Enter the digit for the POCSAG system address. Choose from 4 and 9. Default value is 4.

```
% ADDRESS -->001■xxx
```

Change the value of the digit with  and  . Confirm with  .

Specific parameter for DeTeWe
Enter the first digit for the DeTeWe system address. Choose from 1 and 9. Default value is 1.

```
% 1.NUM ---> 1
```

Change the value of the digit with  and  . Confirm with  .

Example of filtering with ESPA 4.4.4.
- Display mode FR,RO,BE with Locating mode ON

– Criterion filtering: 2 characters and 1 space

```
CR <-
CRIT 02 + 1 SPACES
```

– Display mode filtering: 1 character + 1 space for the floor number
2 characters + 0 space for the room number
2 characters for the bed number

```
INFO.: f rr0b
FL:1+1 +RO:2+0 +BE:2
```

– Locating mode filtering: 6 spaces between bed number and POS xyz.

```
BE      POS xyz
SPACES  : 6
```

In this example, a call for help from floor 008, room 023, bed 1 with the actual position 248 will generate the following sequence: "HE_8_2301_____POS_248".

### 4.3.6 Local acknowledgement setting

1. Select the parameter Nr. **03**.

```
% Parameter Nr. 03
Local Ack.          ⇕
```

2. Press OK.

```
% Local Ack.
 Possible ? YES     ⇕
```

3. Activate (**YES**) or deactivate (**NO**) the acknowledgement at the NurseCall NC8 Main Unit.
4. Confirm with OK.

```
 ACCESS CODE  ■■
```

5. If you have selected **YES**, enter the access code. Press 4 GHI then 5 JKL .

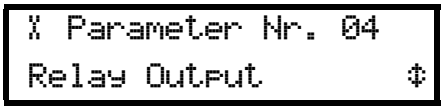
```
% Local Ack.
Access Code ? YES   ⇕
```

6. Select **YES** if each acknowledgement must be done by entering the code **45** or **NO** if a direct acknowledgement with the **Green** button shall be enabled. Confirm with OK.

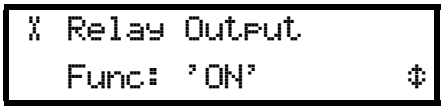
### 4.3.7 Output relay setting

This parameter sets the relay as a "closing" or "switching" contact.

1. Select the parameter Nr. **04**.




2. Press (OK).



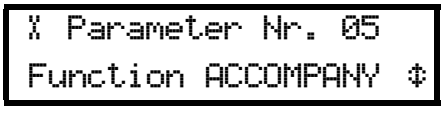

3. Select **ON** if you wish a "closing" relay or **ON/OFF** if you wish a "switching" relay.


4. Select the relay activation according to alarms. Choose between:
   - Mode **HELP & ASSIST**
   - Mode **ASSISTANCE**
   - Mode **FIRE**
5. Confirm with (OK).

### 4.3.8 Accompany mode

NOTICE!
The accompany mode is not available if the locating mode is set to **OFF**.
See *Section 4.2.3 Locating mode, page 24*.

1. Select the parameter Nr. **05**.



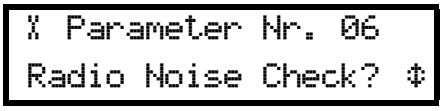

2. Press (OK).


3. Activate (**YES**) or deactivate (**NO**) the accompany mode. The default parameter is **NO**.


4. If you select **YES**, define the range of the doors that will be activated in the accompany mode. The first number is the lower limit, use  and  to choose from 231 to 250. The second number (254) is the upper limit and cannot be changed.
5. Confirm with (OK).

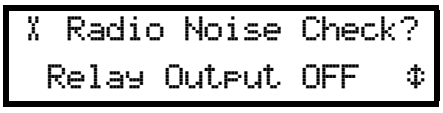
### 4.3.9 Radio noise check

1. Select the parameter Nr. **06**.




2. Press OK.


3. Select **YES** or **NO**. The default parameter is **YES**.




4. If you select **YES**, you must choose to activate (**ON**) or deactivate (**OFF**) the relay output. If you choose **ON**, the contact closes in the case of a radio noise event. If you choose **OFF**, the contact stays open. The default parameter is **OFF**.

   Select with  and  .

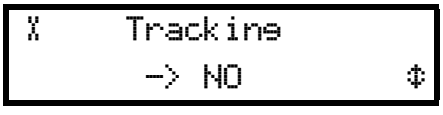
5. Confirm with OK.

### 4.3.10 Tracking function

NOTICE!
The tracking function is not available if the locating mode is set to **OFF**.
See *Section 4.2.3 Locating mode, page 24*.

1. Select the parameter Nr. **07** and press OK.


2. Activate (**YES**) or deactivate (**NO**) the tracking function. Confirm with OK.

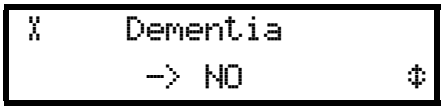


### 4.3.11 Dementia criterion

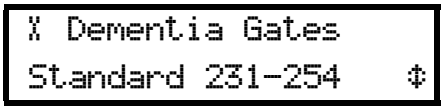
NOTICE!
The dementia criterion is not available if the locating mode is set to **OFF**.
See *Section 4.2.3 Locating mode, page 24*.

1. Select the parameter Nr. **08** and press (OK).


2. Activate (**YES**) or deactivate (**NO**) the dementia function.




If you select **YES**, define the range of automatic dementia gates. Choose the standard range (231 to 254) or the extended range (128 to 254). Confirm with (OK).




### 4.3.12 Assistance alarm from S87L transmitter

NOTICE!
Assistance after Clear Alarm can be set with the NCCM program in each transmitter separately

1. Select the parameter Nr. **09** and press (OK).


2. Deactivate (**OFF**) or set the time frame between **05** and **30 seconds**. Confirm with (OK).

## 4.4 Special settings

After pressing 0- three times quickly, you can enter special codes.

```
Enter Code
```

### 4.4.1 Displaying firmware version

1. Type the code 194155.
2. The version of the firmware will be displayed for a few seconds.

```
Software REV B
V2.20 BN111.240.00B
```

### 4.4.2 Resetting all the parameters

CAUTION!
Disconnect the RS-485 bus before performing a reset. When you are finished, the RS-485 bus can be connected again.

The following procedure resets all the programmed parameters of the NurseCall NC8 Main Unit to the original factory settings. See *Section 4.2.1 List of original factory settings, page 23*.

NOTICE!
This reset is mandatory if you wish to change the locating mode or the display mode. See *Section 4.2.3 Locating mode, page 24* and *Section 4.2.4 Display mode, page 24*.
It is also mandatory before setting the NurseCall NC8 Main Unit as Universal NurseCall or as Standard NurseCall. See *Section 4.4.7 Standard NurseCall selection, page 36* and *Section 4.4.8 Universal NurseCall selection, page 37*.

1. Type the code 194156.

```
RESET TOTAL ?
(OK) = YES
```

2. A confirmation is required.
   Press OK to confirm the reset or C if you wish to cancel the reset.
3. When the unit resets, it emits a short melody and displays a temporary message.

```
Please Wait...
```

4. After a few seconds, the unit goes back to the first use display.
5. Select the language, the locating mode and the display mode.

▶ See *Section 4.2 First use*.

### 4.4.3 Assistance and fire priority

This command sets the assistance call and the fire alarm as priority calls.
This means that alarms of these types will be displayed first.

1. Type the code **123991**. The unit plays a melody and a confirmation message is displayed.

```
ASSISTANCE & FIRE
     PRIORITY
```

### 4.4.4 Assistance and fire non priority

This command sets the assistance call and the fire alarm as non-priority calls. This means that the last alarm is displayed, whatever its type. This is the default value.

1. Type the code **123992**. The unit plays a melody and a confirmation message is displayed.

```
ASSISTANCE & FIRE
   NONPRIORITY
```

### 4.4.5 Special texts in German

This command sets special texts in German. The displayed criteria are:

- BAD/WC instead of TECHNIK
- HILFE-2 instead of NOTRUF2

1. Type the code **123007**. The unit plays a melody and a confirmation message is displayed.

```
MULTITONE TEXTE
BAD/WC + HILFE-2
```

### 4.4.6 Standard texts in German

This command sets standard texts in German. This is the default value.

1. Type the code **123008**. The unit plays a melody and a confirmation message is displayed.

```
 STANDARDTEXTE
TECHNIK + NOTRUF2
```

### 4.4.7 Standard NurseCall selection

This command sets the NurseCall system as "Standard NurseCall". This is the default value.

CAUTION!
It is mandatory to perform a reset before changing this value.
See *Section 4.4.2 Resetting all the parameters, page 35*.

1. Type the code **001998**. The unit plays a melody and a confirmation message is displayed

```
UNIVERSAL NC ? NO !
  ............
```

## 4.4.8 Universal NurseCall selection

NOTICE!
It is mandatory to perform a reset before changing this value.
See *Section 4.4.2 Resetting all the parameters, page 35*.

This command sets the NurseCall system as "Universal NurseCall". If this mode is selected, the following parameters are automatically set:

- display mode: FL,RO,BE (floor/room/bed); see *Section 4.2.4 Display mode, page 24*.
- RS-232 output: Alarm Management SW; see *Section 4.3.5 RS-232 output setting, page 27*.
- Buffer: 100 events; see *Section 4.4.11 Maximum number of events buffered, page 38*.

The "Universal NurseCall" breaks the limitation of 300/500 transmitters by using a concept in which the transmitters are not recorded inside the NurseCall NC8 Main Unit. In fact, the NurseCall NC8 Main Unit transfers directly each incoming radio ID code received from the transmitter or from a Relay Unit to its RS-232 communication port. The Alarm Management Software handles the radio codes. The ID code is sent according to the display mode floor/room/bed.

Example:
ID code 1234 => Floor = 1; Room = 23; Bed = 4.

ID code range
A transmitter ID code will be always in the range 1 to 4094 (not 4095).

CAUTION!
The unit could add an offset to the ID code, depending on the transmitter type :

- The S87L will be always interpreted without OFFSET!
- All other devices will be interpreted with an OFFSET of 13122, excepted if the Criterion "FIRE" is programmed. In this case the OFFSET will be of 6561.
- For all transmitters the Daily message and the Acknowledgment message will be interpreted with an OFFSET of 13122.

Procedure

1. Type the code **001999**. The unit plays a melody and a confirmation message is displayed.

```
UNIVERSAL NC ? YES !
  ............
```

2. Set the CONVERSION CODE **OFF** or **ON** with  and  .

```
 CONVERSION CODE  ?
<OFF           ON>
```

▶ If you select **ON**, the offset is ignored.

### 4.4.9 Maximum number of alarm transmitters

This command sets the maximum number of alarm transmitters (300=**OFF** or 500=**ON**). The default value is **ON** (500).

▶ Type the code **001001**. A confirmation message is displayed.

### 4.4.10 Maximum number of acknowledgement transmitters

This command sets the maximum number of acknowledgement transmitters (5=**OFF** or 32=**ON**). The default value is **OFF** (5).

▶ Type the code **001002**. A confirmation message is displayed.

### 4.4.11 Maximum number of events buffered

This command sets the maximum number of events buffered (18=**OFF** or 100=**ON**). The default value is **ON** (100).

▶ Type the code **001003**. A confirmation message is displayed.

CAUTION!
When changing the value with this command, the event buffer is erased.

### 4.4.12 Disabling the daily messages check

Periodically, a message is sent by each transmitter in order to confirm its good functioning condition. To avoid saturating the event buffer, you can disable the daily message check performed by the NurseCall NC8 Main Unit by using this command and setting the parameter **ON**.
Activate (**ON**) or deactivate (**OFF**) the disabling of the daily message check.
The default value is **OFF** (daily message check enabled).

▶ Type the code **001007**. A confirmation message is displayed.

### 4.4.13 RS232 message setting

This command sets the delay in minutes for the repetition of the messages on the RS-232 interface. Toggle "every 3 minutes" (**OFF**) or "every 1 minute" (**ON**). The default value is **OFF**.

▶ Type the code **001009**. A confirmation message is displayed.

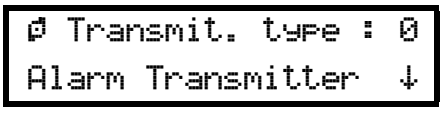
# 4.5 Transmitters

## 4.5.1 Starting programming

▶ To access the programming of transmitters , press OK then  .

## 4.5.2 Programming an alarm transmitter

1. Select the alarm transmitter type with  and  .




2. Confirm with OK.


3. Press OK to program the transmitter.


4. Press the button of the transmitter.


XXXX is the ID code of the transmitter.

▶ If the transmitter is not accepted, see *Section 6 Troubleshooting and error messages, page 48*.

5. Depending on the choice that you have made for the display mode, enter the value for the floor, the room and the bed, or for a single 3-digit number, or for a 4-sign display. See *Section 4.2.4 Display mode, page 24*.

▶ The following example is for a 4-sign number display:


Enter a value for each sign. Press once to enter the digit of the key that you are pressing. Press several times to enter a capital letter of the corresponding key. Example: to enter Z, press 4 times on the key  . Press  to erase and go back. Confirm with OK.

6. Enter the pager group value:

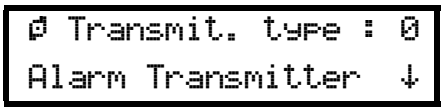

7. Confirm the value with OK.

The unit goes then back to the alarm transmitters menu.

NOTICE!
To program the maximum number of alarm transmitters (300 or 500), see *Section 4.4.9 Maximum number of alarm transmitters, page 38* .

### 4.5.3 Checking an alarm transmitter

1. Select the alarm transmitter type with  and  .



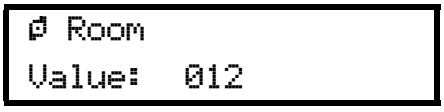

2. Confirm with  .


3. Press  to check the transmitter.


4. Press the button of the transmitter.


XXXX is the ID code of the transmitter.
The transmitter's location is displayed. The following example is for a floor/room/bed display:


5. Press  to see the room value.



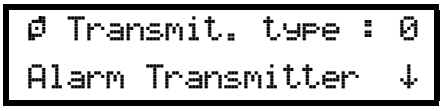

6. Press  to see the bed value.


7. Press  to see the pager value.


8. Press  . The unit then goes back to the alarm transmitters menu.

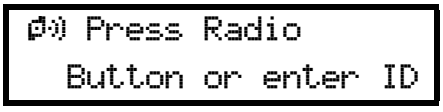
### 4.5.4 Erasing an alarm transmitter

1. Select the alarm transmitter type with  and  .




2. Confirm with  .


3. Press  to erase the transmitter.




4. Press the button of the transmitter or enter the transmitter's ID code.

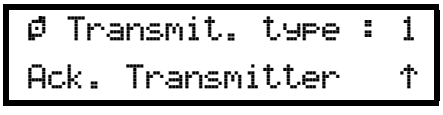

XXXX is the ID code of the transmitter.

5. Press  to continue erasing the transmitter or  to abort.


The unit then goes back to the alarm transmitters menu.

### 4.5.5 Programming an acknowledgement transmitter

1. Select the acknowledgement transmitter type with  and  .




2. Confirm with  .


3. Press  to program the transmitter.


4. Press the button of the transmitter.


XXXX is the ID code of the transmitter.
The unit then goes back to the acknowledgement transmitters menu.

▶ If the transmitter is not accepted, see *Section 6 Troubleshooting and error messages, page 48*.

NOTICE!
To program the **Free** value to **5** or **32**, see *Section 4.4.10 Maximum number of acknowledgement transmitters, page 38*.

### 4.5.6 Checking an acknowledgement transmitter

1. Select the acknowledgement transmitter type with  and  .

```
Transmit. type : 1
Ack. Transmitter   ↑
```

2. Confirm with OK.

```
     OK:Program
   0:Erase i:Info
```

3. Press  to check the transmitter.

```
Press Radio
   Button
```

4. Press the button of the transmitter.

```
Ack. Transmit.:1
Free:4     Code XXXX
```

XXXX is the ID code of the transmitter.

The unit then goes back to the acknowledgement transmitters menu.

### 4.5.7 Erasing an acknowledgment transmitter

1. Select the acknowledgement transmitter type with  and  .

```
Transmit. type : 1
Ack. Transmitter   ↑
```

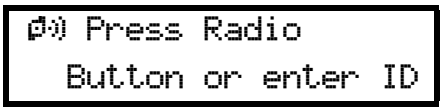
2. Confirm with OK.

```
     OK:Program
   0:Erase i:Info
```

3. Press  to select the erase function.

```
'OK'= 1 Ack.Trans.
  '*'= ALL !
```

4. Press OK to erase **ONE** acknowledgement transmitter.



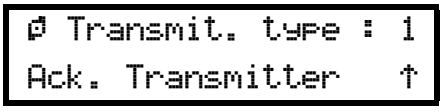

5. Press the button of the transmitter or enter the transmitter's ID code.


6. Press OK to continue erasing the transmitter or C to abort.


XXXX is the ID code of the transmitter.
The unit then goes back to the acknowledgement transmitters menu.

### 4.5.8 Erasing all acknowledgement transmitters

1. Select the acknowledgement transmitter type with + and −.




2. Confirm with OK.


3. Press 0 to select the erase function.


4. Press * to erase **ALL** the acknowledgement transmitters.


5. Press OK to continue erasing the transmitters or C to abort.


The unit then goes back to the acknowledgement transmitters menu.

# 5 Operation

## 5.1 Adjusting the loudspeaker volume

When the NurseCall Main Unit is in standby mode:

- ▶ Press  to increase the volume.
- ▶ Press  to decrease the volume.

## 5.2 Consulting the alarm or event buffer

The NurseCall Main Unit uses an alarm buffer and an event buffer for display indication.
The following alarms and messages are stored into the alarm buffer:

- call for help
- call for assistance
- reserve call (call for help 2)
- technical call
- fire alarm
- battery low message
- error message
- disconnection of a NurseCall Relay Unit from the RS-485 bus

If alarms are repeated, only the least recent entry remains in the buffer. The call for assistance replaces the call for help, the reserve call and the technical call in the alarm buffer.

In addition to all the alarms, all possible entries are stored in the event buffer.
The following messages are directly stored into the event buffer:

- acknowledgement N86, sent by an N86 Wall Transmitter, S85, S87 or S87L Transmitters
- local acknowledgement, an acknowledgement at the NurseCall NC8 Main Unit or Relay Unit
- daily message check
- power outage of a receiver unit
- return of power at a receiver unit
- backup battery low of a receiver unit
- interruption of the RS-232 connection interface between the NurseCall system and a PC
- return of the RS-232 connection interface between the NurseCall system and a PC
- connection of a NurseCall NC8 Relay Unit to the RS485-bus
- transmission of the event "door" by a RAC Wireless Contact.

NOTICE!
The alarm and event buffers have a capacity of 18 or 100 entries.
See *Section 4.4.11 Maximum number of events buffered, page 38*.

The event buffer will normally be filled with the last 18 or 100 entries.
In the alarm buffer, only the active alarms are present.

### 5.2.1 Switching between alarm and event buffers indication

The alarm buffer is indicated by default. If you are in the event buffer, the unit changes automatically to the alarm buffer after 1 minute without activity.
If there are no entries in the alarm buffer, the display shows the actual date and time.

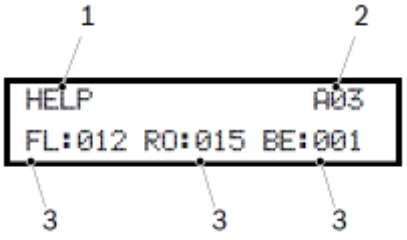
- ▶ To switch from alarm to event buffer and vice versa, press 0 .
- ▶ Scroll the alarms or the events with and .

### 5.2.2 Display indications

With the **Yellow** button, you can switch between three available information blocks.
The following information is displayed when an alarm or a message arrives:

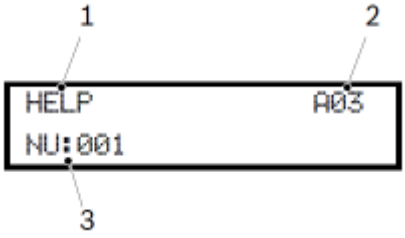
**First information block**

– In case of a "floor/room/bed" display mode:



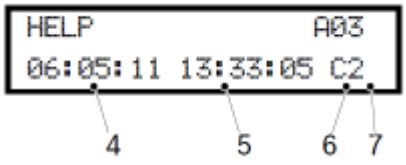

1. criterion of the alarm or message
2. alarm (A) or event (E) followed by its order in the buffer
3. identification of the transmitter location (floor/room/bed numbers)

– In case of "single number" display mode:




1. criterion of the alarm or message
2. alarm (A) or event (E) followed by its order in the buffer
3. identification of the transmitter location (three digits or four signs)

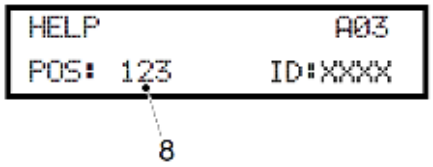
**Second information block**




4. date of the event;
5. time of the event;
6. main unit (space) or relay Unit (A...f) identification number;
7. quality of the received radio signal.

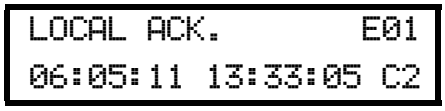
This information is visible in all display modes.

Third information block



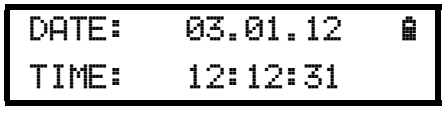

8. position of the last passed beacon, visible in all display modes. If no beacon is registered or if the alarm is sent outside of the range of a beacon, the POS **000** will be displayed.
   XXXX is the ID code of the transmitter that has triggered the alarm.

In the alarm buffer, the total number of entries is indicated on top at the right. You can immediately see how many alarms are active. In this example, there are a total of three alarms in the alarm buffer. In the event buffer, the position of the event in the buffer is indicated:




Here, E01 corresponds to the latest entry in the event buffer.

Unit displaying the current date and time:




Unit displaying an active alarm:


Unit displaying an event in the buffer:


### 5.2.3 Local acknowledgement

The local acknowledgement is performed on the NurseCall NC8 Main Unit with the **Green** button. You can decide if you have to enter a code to confirm the acknowledgement or not.
See *Section 4.3.6 Local acknowledgement setting, page 31*.

NOTICE!
The alarm receiving an acknowledgement is removed from the alarm buffer. The alarm and its acknowledgement can then be found in the event buffer.

### 5.2.4 Disconnecting a Relay Unit

If a Relay Unit stops communicating with the Main Unit, an alarm "Relay Off" is generated on the Main Unit. This alarm can only be acknowledged on the Main Unit by

pressing the **Green** button, followed by the code **45**. Thereafter, an event "No Relay" is generated.
As soon as the Relay Unit communicates again with the Main Unit, the Event "Relay On" is generated. This operation is independent of the local acknowledgement setting.

# 6 Troubleshooting and error messages

## 6.1 "Radio in use" message

If you program a transmitter already stored as an alarm transmitter, an error message displays


Press OK to program the transmitter, this overwrites the values. Press C to abort.

## 6.2 "Alarm Transmitter NOT stored" message

If you erase an alarm transmitter that is not already stored, an error message is displayed:


The unit repeats the error message then skips back to the erasing menu.

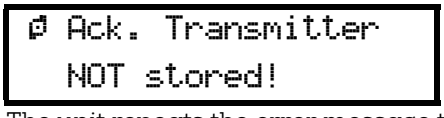
## 6.3 "Alarm Transmitter already stored" message

If you program an acknowledgement transmitter that is already stored as an alarm transmitter, an error message is displayed:


The unit then skips back to the programming menu.

## 6.4 "Ack. Transmitter NOT stored" message

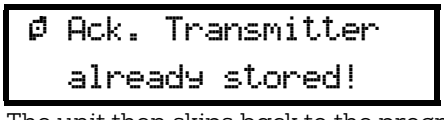
If you erase an acknowledgement transmitter that is not already stored, an error message is displayed:




The unit repeats the error message then skips back to the erasing menu.

## 6.5 "Ack. Transmitter already stored" message

If you program a transmitter that is already stored as an acknowledgement transmitter, an error message is displayed:




The unit then skips back to the programming menu.

## 6.6 The green button does not work

**Problem**: you have tried unsuccessfully to acknowledge an alarm with the **Green** button.
**Cause**: the local acknowledgement is disabled.
**Solution**: activate the local acknowledgement function.
See *Section 4.3.6 Local acknowledgement setting, page 31*.

# 7 Maintenance

## 7.1 Checking the system

Check the correct function of your NurseCall NC8 system.

▶ Perform periodically an alarm test.

## 7.2 Monitoring the power supply

In case of a power failure, the NurseCall NC8 Main Unit emits a beep and the following message is displayed alternatively with the date and time display:

```
Main Power
Error
```

The backup battery ensures that the NurseCall NC8 Main Unit remains operational even in the case of a power failure. When fully charged, the battery ensures a power backup of 24 hours.
When power returns after a power failure, the battery is recharged. If it has been completely discharged, it will reach its full capacity after 24 hours of charging time.

## 7.3 Monitoring the backup battery

The status of the battery is indicated on the top right of the display.

▶ To check the backup battery voltage, press  . The following message is displayed:

```
Checking
Local Battery
```

NOTICE!
At startup, an automatic check is made.
During normal operation, an automatic check is made every 30 minutes.

▶ If the remaining battery capacity drops below 25 %, the following message is displayed:

```
Local Battery      0
Empty
```

▶ If the NurseCall NC8 Main Unit detects that the backup battery is defective, the following message is displayed:

```
Local Battery      
Failure
```

NOTICE!
If the backup battery is defective, replace it as described in *Section 7.5.2 Backup battery replacing, page 52*.

## 7.4 Cleaning

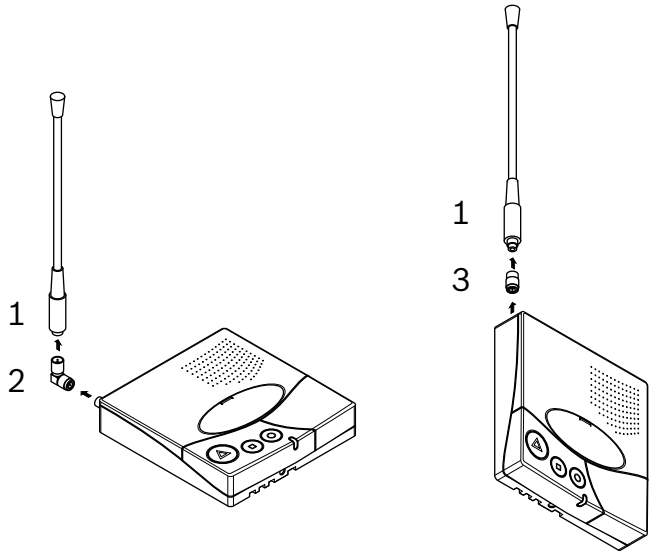
- ▶ Avoid using cleaning products or detergents.
- ▶ Wipe off your NurseCall NC8 Main Unit occasionally with a dry cloth.

## 7.5 Parts replacement

### 7.5.1 Disassembling the unit

**Removing the antenna**

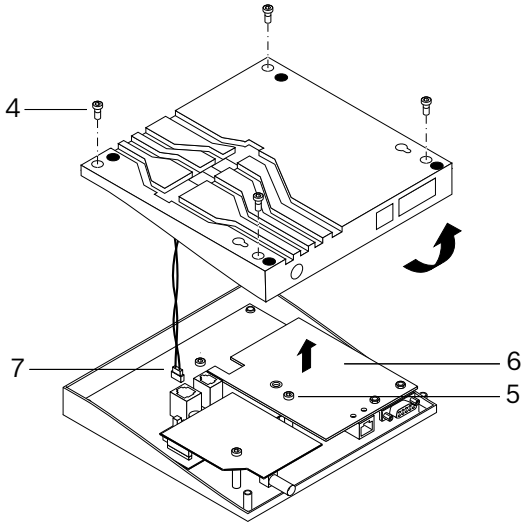
1. Remove the antenna (1) and its adapter (2) or (3).




**Removing the communication board**

DANGER!
Do not damage the battery cable, its connector (7) or the serial communication board connectors.

1. With a Torx T20 screwdriver, unscrew and remove the 4 screws (4).
2. With a Torx T10 screwdriver, unscrew and remove the screw (5).
3. Carefully remove the communication board (6).




## 7.5.2 Backup battery replacing

Important Safety Instructions

The battery should charge for 24 hours before using the NurseCall NC8 Main Unit for the first time, after replacing the battery or after a long power shortage. Battery type is 6V NiMH.

NOTICE!

The battery will charge correctly between 5 ºC (41ºF) and 45 ºC (113 ºF). A battery that is new or that has not been used for a long time can have reduced capacity at first use.

A rechargeable battery can be charged and discharged many times. However, it will eventually wear out. This is not a defect. It is recommended to replace batteries that cannot ensure a minimum power back-up time of 8 hours at full charge.

CAUTION!

- May explode if exposed to fire.
- Use only original batteries intended for your NurseCall NC8 Main Unit.
- Do not expose the battery to liquids.
- Do not let the battery's contacts 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 ºC (140 ºF).
- 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 put the battery in the mouth. Battery electrolytes may be toxic if swallowed.

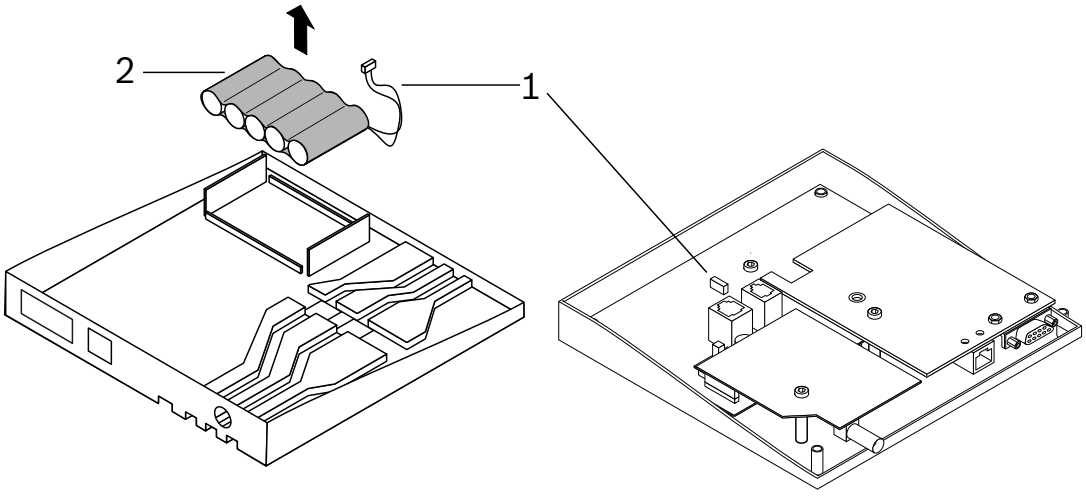
CAUTION!

There is a risk of explosion if battery is replaced by a wrong type.
The battery should be replaced exclusively by authorized personnel.
Dispose of used batteries according to instructions and regulations.

Procedure

1. Disassemble the unit as described in *Section 7.5.1 Disassembling the unit, page 51*.
2. Disconnect the battery cable (1).
3. Carefully remove the backup battery (2).

4. Place the new backup battery.
5. Connect the new battery cable (1).



# 8 Disposal

The NurseCall NC8 Main Unit is marked with a crossed-out wastebasket symbol.
This means that, at the end of its lifetime, the product should be disposed separately from ordinary household waste in accordance with the EU Directive 2012/19/EU.
The product and its accessories should be delivered to an appropriate collection facility that ensure recycling, treatment and an environmentally compatible disposal. This prevents any 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.

Old unit batteries should be disposed of in the same manner.

## 8.1 Disassembly

Only authorized personnel are allowed to disassemble a NurseCall NC8 Main Unit.

## 8.2 Returning to the manufacturer

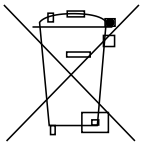
If there is no practical disposal place, the NurseCall NC8 Main Unit may be returned to your local representative.

## 8.3 Materials

The NurseCall NC8 Main Unit must be returned to an authorized point of recycling.
In order to protect people and environment, the NurseCall NC8 Main Unit must be recycled in an adequate manner. Consequently, all applicable laws and bylaws must be respected.

## 8.4 Battery

NOTICE!
The battery should be disposed of as household waste. Use a battery disposal facility when available.



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

# A Appendix

## A.1 Electrical specifications

| | |
|---|---|
| Voltage | 100-240V AC ±10% |
| Current | 280 mA |
| Frequency | 50/60 Hz |
| Average consumption | 2.5 W |

## A.2 Dimensions and weight

| Casing dimensions | [mm] |
|---|---|
| Depth | 190 |
| Width | 180 |
| Height | 40 |

| Antenna | [mm] |
|---|---|
| Height | 170 |

| Casing weight | [g] |
|---|---|
| Weight (including antenna and power supply adapter) | 860 |

## A.3 Environmental conditions

| | |
|---|---|
| Operating temperature | 5 - 40°C |

## A.4 List of criteria

| Criterion | Nb | Alarm (A) or Event (E) | Sent to DECT/ Paging systems | Comment |
|---|---|---|---|---|
| ERROR | 00 | A | Yes | System malfunction, e.g. component defective |
| LOW BATTERY | 02 | A | Yes | Battery at low level (Transmitter) |
| ACK. N46 | 03 | E | No | Acknowledgement (Sent by N86, S85 or S87) |
| DOOR | 04 | E | No | Door open or door closed |
| TECHNICAL | 05 | A | Yes | Technical Call (N86) |
| HELP | 07 | A | Yes | Call for Help |
| UNKNOWN | 08 | E | No | Not used |
| ASSISTANCE | 11 | A | Yes | Assistance Call |
| 24 HOURS | 12 | E | No | Daily message check |
| RESERVE | 13 | A | Yes | Reserve Call (N86) |
| RADIO NOISE | 15 | E | No | Bad radio transmission (noise) |
| FIRE | 16 | A | Yes | Fire Alarm |
| ACK. TRANSM.1 | 17 | E | No | Acknowledgement (Ack. Transmitter No. 1) |
| LOCAL ACK. | 18 | E | No | Local Acknowledgement (Main Unit or Relay Unit) |
| POWER OUTAGE | 19 | E | No | Main Unit or Relay Unit not powered |
| POWER BACK | 20 | E | No | Power back (Main Unit or Relay Unit) |
| COMPUTER OFF | 21 | E | No | Alarm management PC off |
| COMPUTER ON | 22 | E | No | Alarm management PC on |
| BAT.ACK.TRANSM | 23 | E | No | Battery at low level (One of the Ack. Transmitter) |
| RELAY ON | 24 | E | No | Relay Unit connected on RS-485 Bus |
| RELAY OFF | 25 | A | No | Relay Unit disconnected from RS-485 Bus |
| NO RELAY | 26 | E | No | Relay Unit off acknowledged (Main Unit) |
| LOW ACCU | 27 | E | No | Accumulator discharged (Main Unit or Relay Unit) |
| ACK. TRANSM.2 | 28 | E | No | Acknowledgement (Ack. Transmitter No. 2) |
| ACK. TRANSM.3 | 29 | E | No | Acknowledgement (Ack. Transmitter No. 3) |
| ACK. TRANSM.4 | 30 | E | No | Acknowledgement (Ack. Transmitter No. 4) |
| ACK. TRANSM.5 | 31 | E | No | Acknowledgement (Ack. Transmitter No. 5) |
| ACK. TRANSM.xx | xx | E | No | Acknowledgement (Ack. Transmitter No. xx) |
| ACK. TRANSM.32 | 58 | E | No | Acknowledgement (Ack. Transmitter No. 32) |
| DEMENTIA | 60 | A | Yes | Dementia Alarm |

CAUTION!
Using criteria other than those given in this list can result in incorrect functionality in the NurseCall NC8 System!

NOTICE!
All events are buffered into the event buffer of the NurseCall NC8 Main Unit. All alarms and events are sent to the printer. All alarms and events except the events "COMPUTER OFF" and "COMPUTER ON" are sent to the Alarm management Software.

NOTICE!

The Criteria "Assistance" and "Emergency" sent with a Position number will be converted by the Main Unit to the criteria "Help" with Position number

## A.5 Paging systems specifications

The NurseCall system can be used with the following protocols: ESPA 4.4.4, POCSAG, Medicall 800 and DeTeWe. The following alarms or messages are sent to all systems:

- Assistance
- Fire
- Help
- Dementia
- Technical
- Error
- Low battery
- Reserve

For all these alarms, an acknowledgement message related to the generated alarm is sent.

### A.5.1 ESPA 4.4.4. protocol

**Characteristics**

- Data rate: 9600 Bauds
- Transmission: asynchronous
- 10 bit-structure (1 start bit, 7 data bits with even parity, 1 stop bit)
- Half-duplex mode.

Only alarms arriving to the alarm buffer are transmitted, except "Relay Off". Acknowledgement messages are also transmitted. The transmission is fully alpha-numeric. Alarms are repeated every 1 or 3 minutes until acknowledgement.

**ESPA 4.4.4. with RPE 670 / i-Page**

Alarms are sent to the user number attributed to the transmitter.
The default group is **00**.

| **Group** | **User number** |
|---|---|
| 00 | 12GG |
| 01 | 13GG |
| 02 | 14GG |
| 03 | 15GG |
| 04 | 16GG |
| 05 | 17GG |
| 06 | 18GG |
| 07 | 19GG |
| 08 | 20GG |
| 09 | 21GG |
| 10 | 22GG |
| 11 | 23GG |
| 12 | 24GG |

| Group | User number |
|---|---|
| 13 | 25GG |
| 14 | 26GG |
| 15 | 27GG |
| 16 | 28GG |
| 17 | 29GG |
| 18 | 30GG |
| 19 | 31GG |
| 20 | 32GG |
| 21 | 33GG |
| 22 | 34GG |
| 23 | 35GG |
| 24 | 36GG |

ESPA 4.4.4. general

Certain protocols, such as Multitone Access 3000 compact, can be connected if configured correctly (ESPA 4.4.4. ; RPE 670 = NO).

Alarms or messages are sent to the paging system user number attributed to the transmitter. The number of digits (2, 3 or 4) for the user number can be set, see *Section Example of programming, page 28*. Hereafter is an example with 3 digits in the user numbers. The default group is 00 and the first number is always 99, 999 or 9999 (depending on the setting).

| Group | User number |
|---|---|
| 00 | 999 |
| 01 | 998 |
| 02 | 997 |
| 03 | 996 |
| 04 | 995 |
| 05 | 994 |
| 06 | 993 |
| 07 | 992 |
| 08 | 991 |
| 09 | 990 |
| 10 | 989 |
| 11 | 988 |
| 12 | 987 |
| 13 | 986 |
| 14 | 985 |
| 15 | 984 |
| 16 | 983 |
| 17 | 982 |
| 18 | 981 |
| 19 | 980 |

| Group | User number |
|---|---|
| 20 | 979 |
| 21 | 978 |
| 22 | 977 |
| 23 | 976 |
| 24 | 975 |

NOTICE!
In "floor/room/bed" display mode, use only alpha-numeric pagers which display at least 16 characters.

Change day / night
If the change day / night is activated, the NurseCall system transfers all alarms during night to the group 24. During the day, all groups 00 - 24 can be used. When switching from day to night or vice versa, the message "Day-Night" is sent to the activated pagers.

Priority alarms
The assistance and fire alarms are priority calls sent to all activated pagers.

Call repetition
If alarms or messages are not acknowledged after approximately 7 minutes, call repetitions are also sent to the group 23.

## A.5.2 POCSAG protocol

Characteristics
- Data rate: 9600 Bauds
- Transmission: asynchronous
- 10 bit-structure (1 start bit, 7 data bits, no parity, 1 stop bit)
- Simplex mode

Only alarms arriving to the alarm buffer are transmitted, except "Relay Off".
Acknowledgement messages are also transmitted. The transmission is only numeric.
Alarms are repeated every 1 or 3 minutes until acknowledgement.
Alarms are sent to the POCSAG user number attributed to the transmitter.
The default group is **00**.

| Group | User number |
|---|---|
| 00 | 001x000 |
| 01 | 001x008 |
| 02 | 001x016 |
| 03 | 001x024 |
| 04 | 001x032 |
| 05 | 001x040 |
| 06 | 001x048 |
| 07 | 001x056 |
| 08 | 001x064 |
| 09 | 001x072 |

| Group | User number |
|---|---|
| 10 | 001x080 |
| 11 | 001x088 |
| 12 | 001x096 |
| 13 | 001x104 |
| 14 | 001x112 |
| 15 | 001x120 |
| 16 | 001x128 |
| 17 | 001x136 |
| 18 | 001x144 |
| 19 | 001x152 |
| 20 | 001x160 |
| 21 | 001x168 |
| 22 | 001x176 |
| 23 | 001x184 |
| 24 | 001x192 |

▶ The **x** digit can be programmed. *Section Specific parameter for POCSAG, page 30.*

Change day / night
If the change day / night is activated, the NurseCall system transfers all alarms during night to the group 24. During the day, all groups 00 - 24 can be used. When switching from day to night or vice versa, the message "Day-Night" is sent to the activated pagers.

Priority alarms
The assistance and fire alarms are priority calls sent to all activated pagers.

Call repetition
If alarms or messages are not acknowledged after approximately 7 minutes, call repetitions are also sent to the group 23.

## A.5.3 DeTeWe protocol

Characteristics
- Data rate: 9600 Bauds
- Transmission: asynchronous
- 11 bit-structure (1 start bit, 8 data bits with odd parity, 1 stop bit)
- half-duplex mode.

Only alarms or messages arriving to the alarm buffer are transmitted, except "Relay Off". The transmission is fully alpha-numeric. Acknowledgement messages are also transmitted.
Alarms are sent to the DeTeWe user number attributed to the transmitter.
The default group is **00**.

| Group | User number |
|---|---|
| 00 | x00 |
| 01 | x01 |
| 02 | x02 |

| Group | User number |
|---|---|
| 03 | x03 |
| 04 | x04 |
| 05 | x05 |
| 06 | x06 |
| 07 | x07 |
| 08 | x08 |
| 09 | x09 |
| 10 | x10 |
| 11 | x11 |
| 12 | x12 |
| 13 | x13 |
| 14 | x14 |
| 15 | x15 |
| 16 | x16 |
| 17 | x17 |
| 18 | x18 |
| 19 | x19 |
| 20 | x20 |
| 21 | x21 |
| 22 | x22 |
| 23 | x23 |
| 24 | x24 |

▶ The **x** digit can be programmed. See *Section Specific parameter for DeTeWe, page 30*.

**Change day / night**
The DeTeWe protocol does not handle the day / night transfer.

**Priority alarms**
The assistance and fire alarms are priority calls sent to all activated pagers.

## A.5.4 Medicall 800 protocol

**Characteristics**
- Data rate: 9600 Bauds
- Transmission: asynchronous
- 10 bit-structure (1 start bit, 8 data bits, no parity, 1 stop bit)
- Half-duplex mode.

Only alarms arriving to the alarm buffer are transmitted (except "Relay Off"). Acknowledgement messages are also transmitted. Each alarm is sent only with the pager group information corresponding to the transmitter that has sent the alarm. This is performed without any criterion distinction.

**Change day / night**
The Medicall 800 protocol does not handle the day / night transfer.

**Call repetition**
If alarms or messages are not acknowledged after approximately 3 minutes, call repetitions are issued.

## A.6 DECT phone system specifications

NOTICE!
The system can transfer the received alarms to DECT handsets, e.g. of the types Multitone.

### A.6.1 Multitone DECT systems with Access Integrator

NOTICE!
Data rate: 9600 Bauds. Transmission: asynchronous with a 10 bit-structure (1 start bit, 7 data bits with even parity, 1 stop bit) in half-duplex mode.

Only alarms or messages arriving to the alarm buffer are sent (except "Relay Off"). The transmission is fully alpha-numeric. Acknowledgement messages are also transmitted. Alarms or messages are repeated every 1 or 3 minutes until acknowledgement. See *Section 4.4.13 RS232 message setting, page 38*.

The transmission to the DECT system is a team call. Each team number must be matched with each paging group (default paging group= 00).

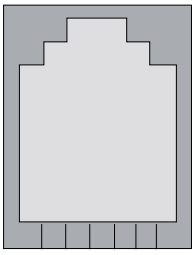
**Change day / night**
If you have activated the change day / night, the NurseCall system transfers all alarms during night to the group 24. During the day, all groups 00 - 24 can be used. When switching from day to night or vice versa, the message "Day-Night" is sent to the activated pagers to signalize the change.

**Priority alarms**
The assistance and fire alarms are priority calls sent to all activated DECT handsets.

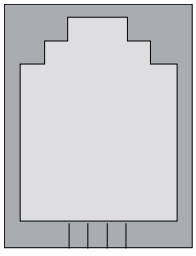
**Call repetition**
If alarms or messages are not acknowledged after approximately 7 minutes, call repetitions are also sent to the group 23.

# A.7 Connectors

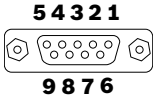
## A.7.1 LINE socket (unit bottom)

| LINE socket | Wiring |
|---|---|
|  | 1. Flash Data GND<br>2. Not used<br>3. Not used<br>4. Not used<br>5. Not used<br>6. Flash Data IN/OUT |

## A.7.2 Power socket (unit bottom)

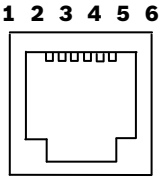
| 12V AC socket | Wiring |
|---|---|
|  | 1. Not used<br>2. AC-1 12VAC<br>3. AC-2<br>4. GND |

## A.7.3 RS-232 socket (unit rear)

| RS-232 socket | Wiring |
|---|---|
|  | 1. ---<br>2. TXD (RXD)<br>3. RXD (TXD)<br>4. ---<br>5. GND<br>6. ---<br>7. CTS<br>8. RTS<br>9. --- |

The values in brackets are for the jumper setting for Paging. See *Section Setting the jumpers for Paging systems (except Medicall 800) and printers:, Page 18*.

### A.7.4 RS-485 socket (unit rear)

| RS-485 socket | Wiring |
|---|---|
|  | 1. Relay output (a)<br>2. RS485 (A)<br>3. Termination = RS485 (A)<br>4. RS485(A) when jumper end line is placed<br>5. RS485 (B)<br>6. Relay Output (b) |

## A.8 CE declaration

The CE Declaration can be found at the following address:
http://www.telealarm.com/

**TeleAlarm SA**
rue du Pont 23
2300 La Chaux-de-Fonds
Switzerland
**www.telealarm.com**