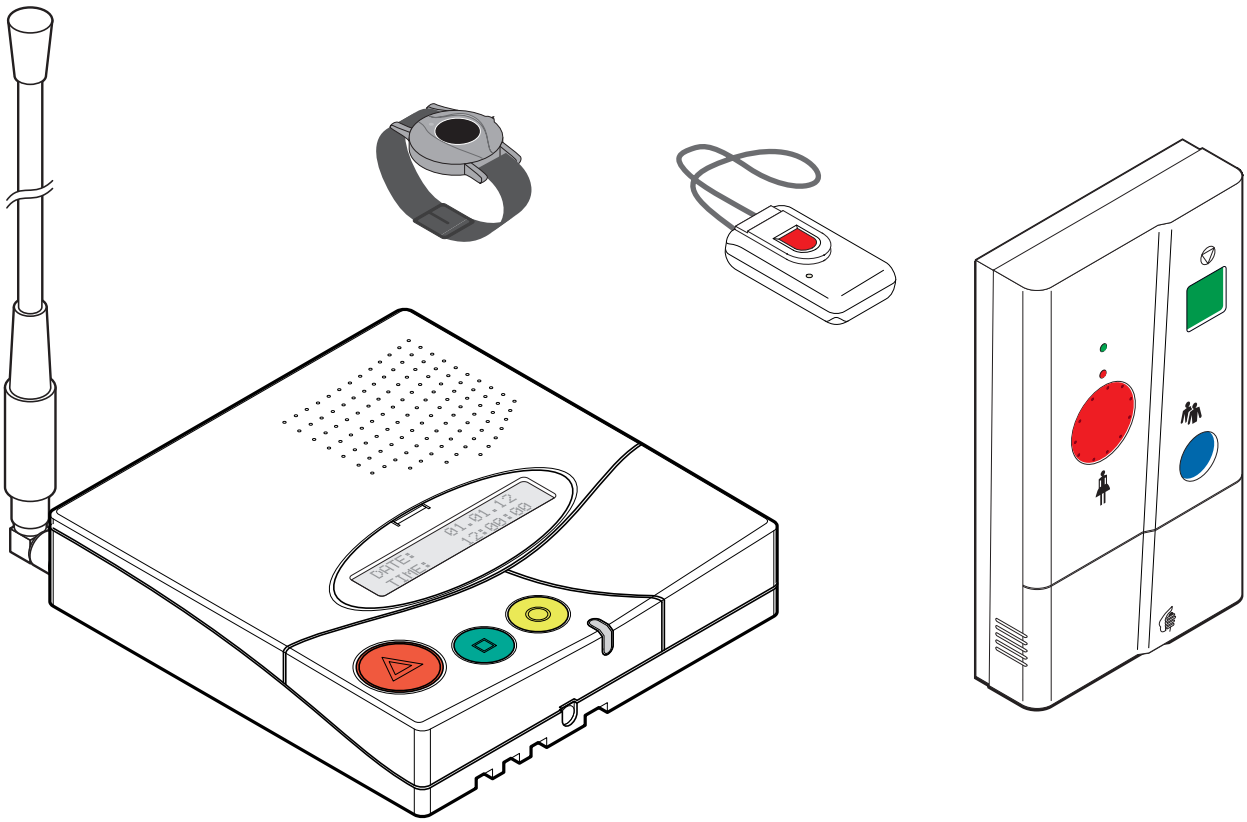


NurseCall

F.01U.262.694 | V1.1 | 2015.09

TeleAlarm®
swiss design

General Overview

Table of Contents

1 Generalities

1.1 Your modern NurseCall system

The NurseCall system offers an excellent solution for care and organization in homes for elderly people or hospitals.
It can be installed in new or existing building thanks to its system of radio transmission.
Up to 500 transmitters can be managed by the NurseCall system.

1.2 Alarm/messages identification

Several data can be processed by the NurseCall system:
- Identification of an alarm/message;
- Floor number / room number / bed number or as a single or 4-digit alphanumeric number;
- Date and time;
- Quality of radio signal received;
- Storage type (alarm or event);
- Identification of the unit receiving the alarm/message (Main / Relay).
- Local position if locating mode is selected.
- Accompany function (dementia & tracking)
- Assistance alarm

1.3 Radio transmission system

Each NurseCall device is equipped with a radio transmitter or receiver.
All alarms/messages are transmitted from any part of the controlled building.
Further receiver units (Relay Units) are connected to the Main Unit by RS-485 bus.
Maximum RS-485 bus length: up to 1200 m.

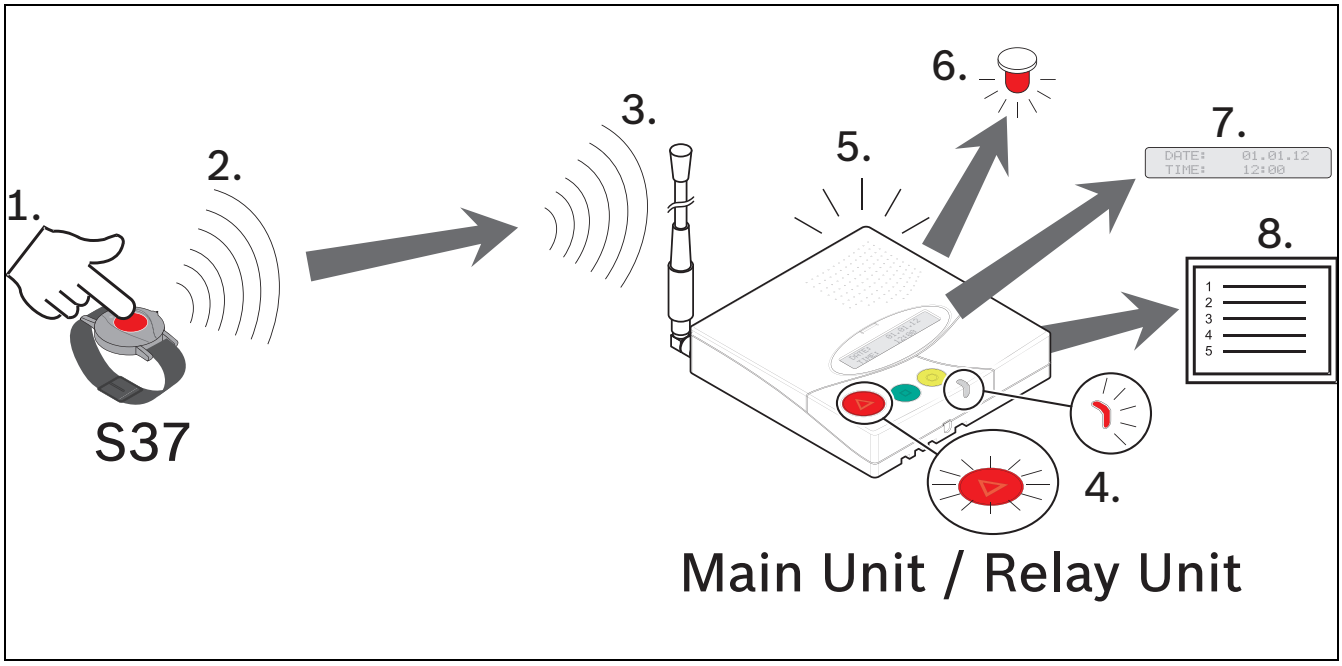
1.4 Simplified installation and programmation

Thanks to radio transmission, the system is highly flexible and quickly installed.

The attribution of a floor number / room number / bed number or a single number to a transmitter can be selected (0 to 254 or 0000 to ZZZZ). The attribution is programmed in the NurseCall Main Unit.

2 General principle of operations

Guiding principle of the NurseCall System operation.

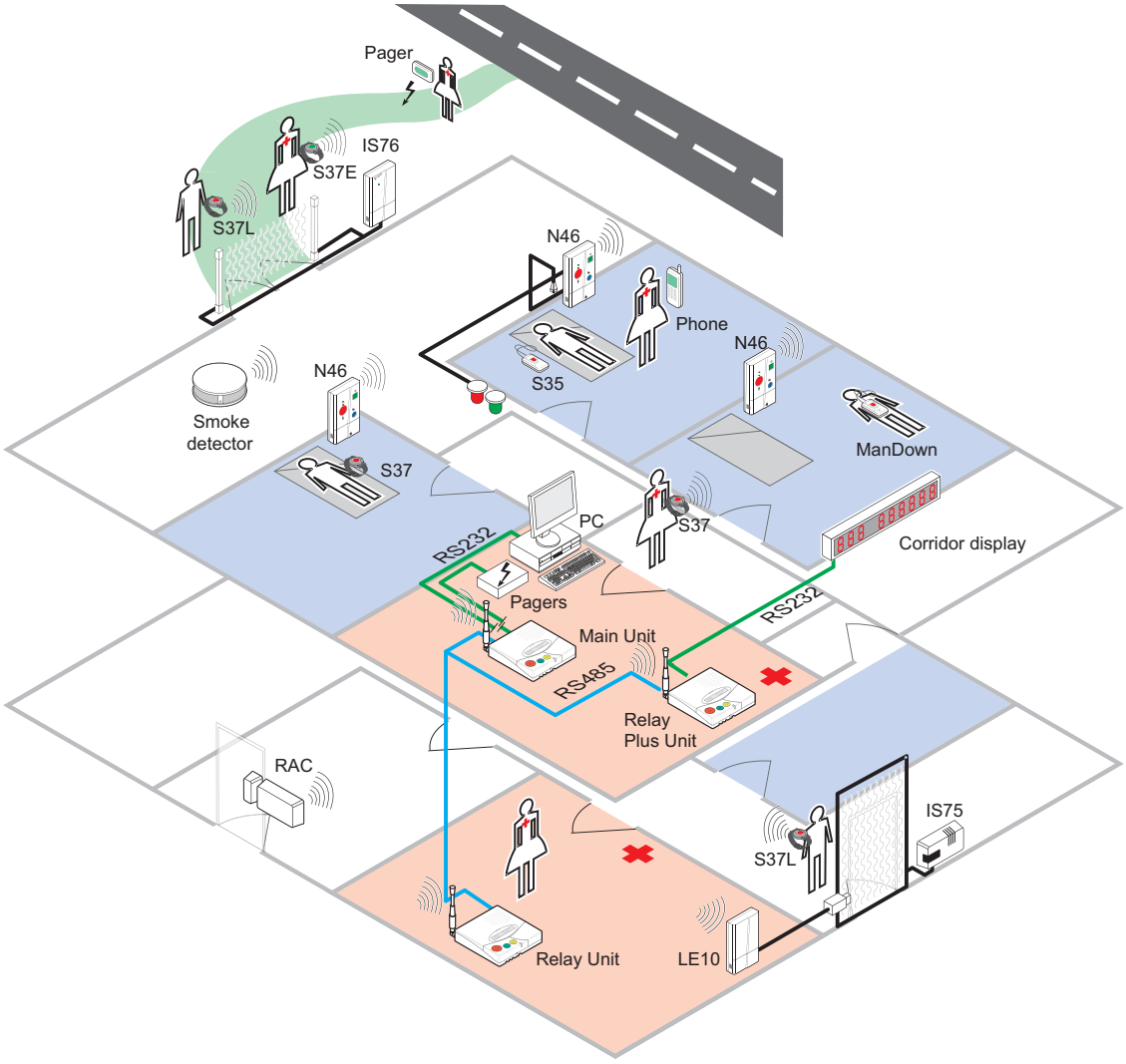


1. An alarm or a call for help is activated on a NurseCall device;
2. Alarm is sent by radio-transmission to the central system: Main Unit or Relay Unit;
3. The Main Unit or Relay Unit receives the alarm through its antenna;
4. The **Red** button and the LED Indicator are blinking;
5. An audio signal indicates that an alarm is received;
6. A visual signal can be activated;
7. The Main Unit or Relay Unit shows alarm/event corresponding data;
8. The list of alarms/events can be transferred from Main Unit internal buffers to a computer, for alarms and events management (monitoring, logging, printing, etc). The alarm can also be sent to a DECT or a paging system.

NOTICE!

The local acknowledgement is performed on the NurseCall Main Unit with the **Green** button. The acknowledgement can also be performed from several devices (S35, S37 and N46).

2.1 Example of NurseCall application

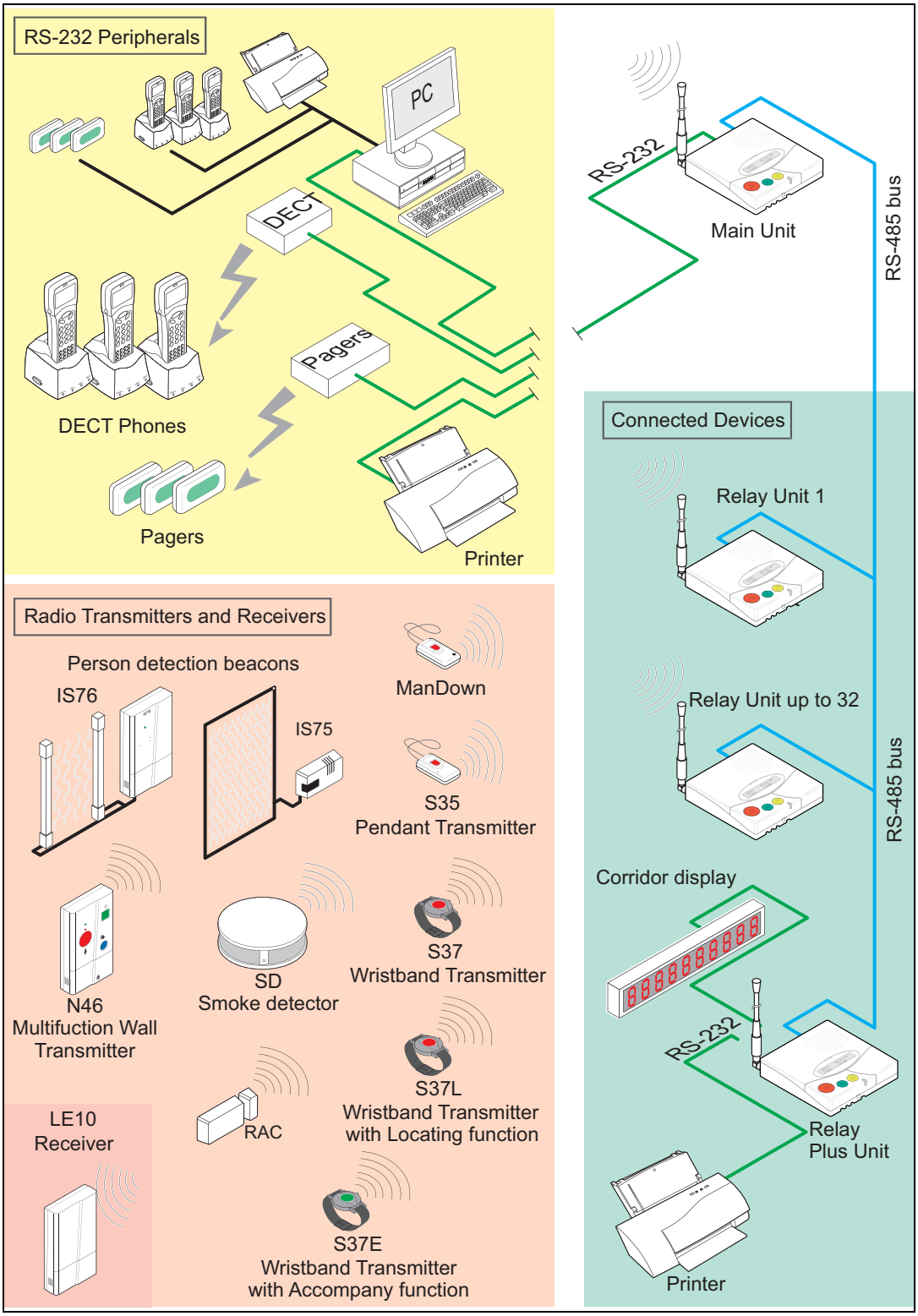


Name	Designation	Description on page	Function on page
Main Unit	NurseCall System management	9	16 and following
Relay Unit	NurseCall System extension	9	16 and following
Relay Plus Unit	NurseCall System extension	9	16 and following
N46	Multifunction Wall Transmitter	10	17
S35	Pendant Transmitter	10	16
S37	Wristband Transmitter	11	16
S37L	Wristband Transmitter with Locating function	11	18, 19 and 20
S37E	Wristband Transmitter with Accompany function	11	20
SD	Smoke Detector	12	21
RAC	Wireless Contact	12	22
LE10	Radio Receiver	15	19
IS75	Person Detection Beacon	13	18 and 19
IS76	Person Detection Beacon	14	18 and 19
	ManDown Sensor	12	21
	Paging and DECT phone system	15	-

3 Transmitters, receivers and optional peripherals

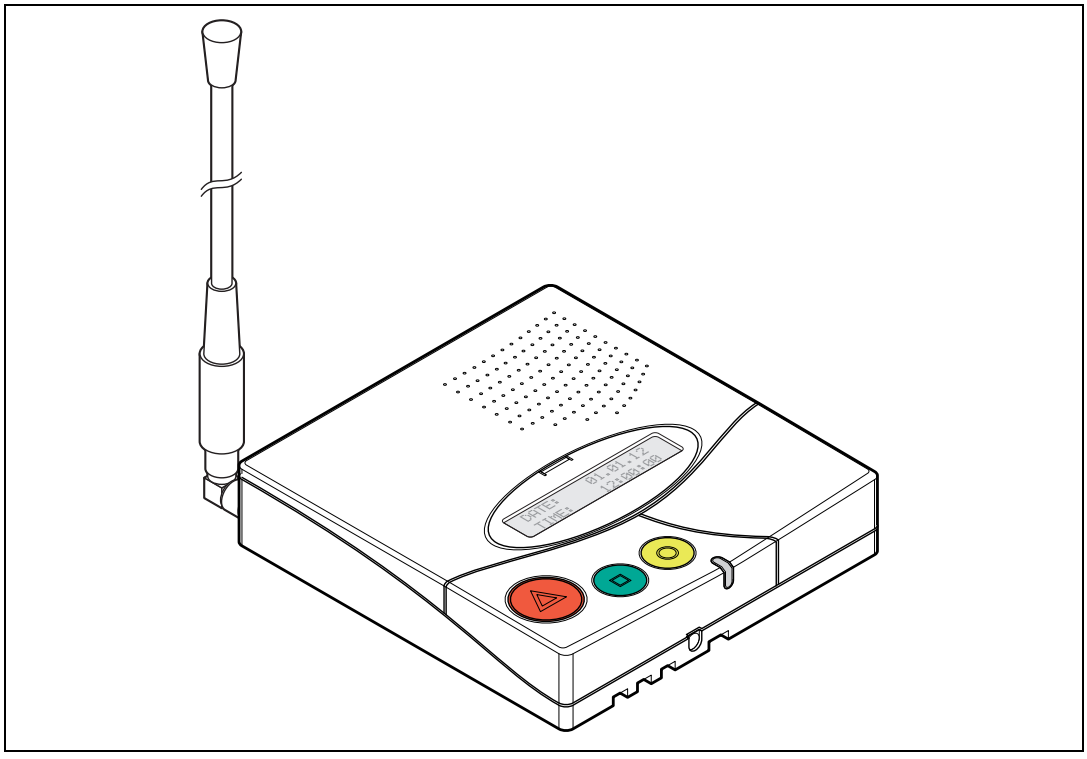
The elements are described in the following pages.

3.1 Interconnection diagram



3.2 Description of elements

3.2.1 Main Unit



Main Unit, Relay Unit and Relay Plus Unit are externally similar.
Alarms and messages arriving from NurseCall transmitters are managed and stored by the NurseCall Main Unit.

If the NurseCall Main Unit is connected to optional peripherals using the RS-232 interface, the information is additionally transmitted to these peripherals.

One Main Unit is mandatory per NurseCall system.

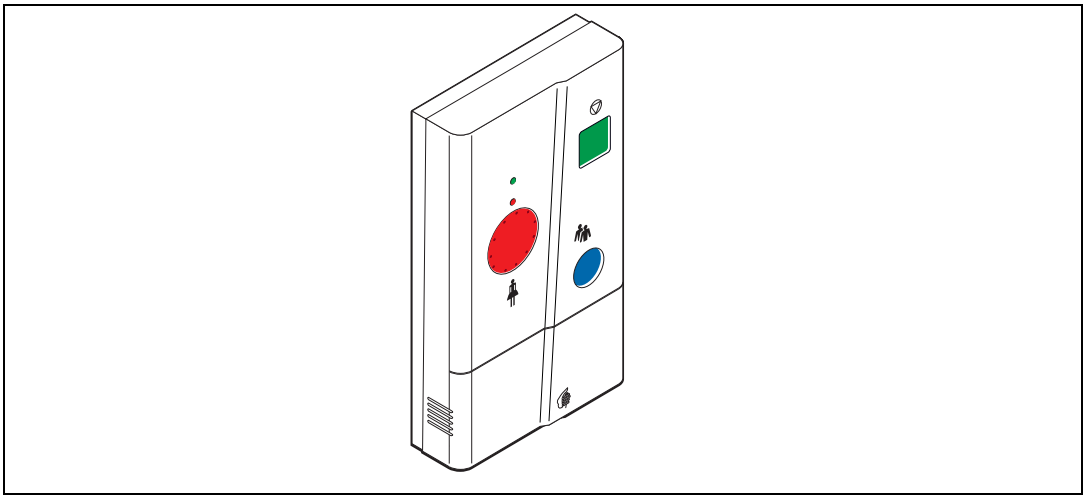
3.2.2 Relay Unit

The Relay Unit allows to improve the reception range and can be used as well as a remote user console (display and keyboard). It works in conjunction with the Main Unit via RS-485 data communication.

3.2.3 Relay Plus Unit

As the Relay Unit, the Relay Plus Unit improves the reception range and can be used as a remote user console (display and keyboard). It works in conjunction with the Main Unit via RS-485 data communication. In addition to the Relay Unit, it allows the management of a printer/display peripheral.
The Relay Plus Unit connected to the RS-485 bus can be used in order to connect an additional printer or a corridor display. In such a configuration, the in-house paging system can be combined with a printer without a PC.

3.2.4 N46 Multifunction Wall Transmitter



The N46 Multifunction Wall Transmitter allows the resident of a home or the patient of a clinic to easily alert the care personnel. The person simply has to push the **Red** button.

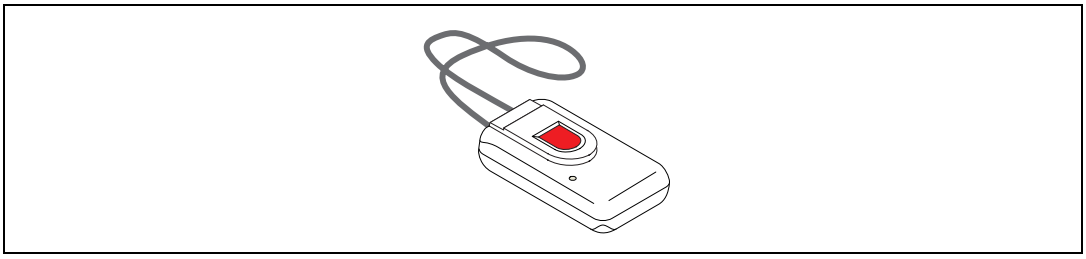
If, upon arriving, the nursing staff requires additional help, a call for assistance can be sent by pressing the **Blue** button. This call is re-sent at intervals until it is cancelled. To cancel the call for help, press the **Green** button.

▶ See *Section 4.2 "Room" Call for Help*, page 17.

The N46 has many functionalities:

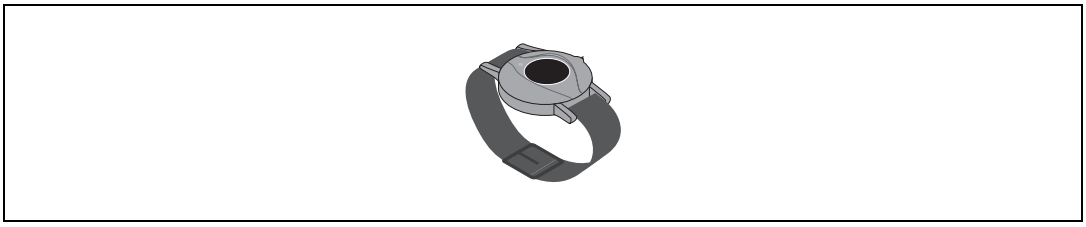
- simple and quick installation (no cabling required);
- emergency call and assistance call buttons;
- socket for pear-push button;
- screw terminal for external buttons;
- cancel function;
- programmable function keys for logging on / logging off by nursing staff;
- 3 V lithium battery or external 12-24 V DC;
- periodic self-checking, battery-level monitor;
- optionally: a relay for control of signal lamps.

3.2.5 S35 Pendant Transmitter



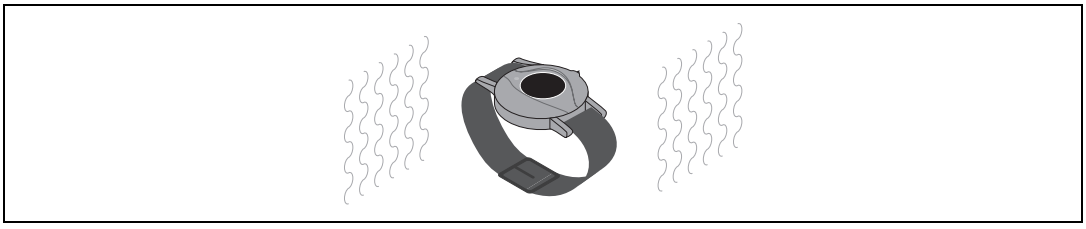
The S35 Pendant Transmitter enables the user to summon help at any time by pressing a button or by pulling the transmitter.

3.2.6 S37 Wristband Transmitter



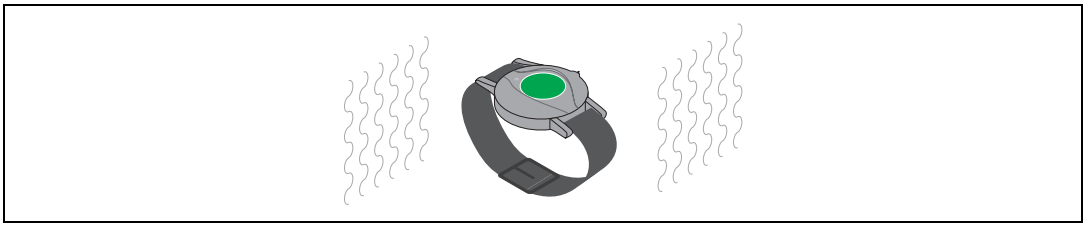
The S37 Wristband Transmitter enables the user to summon help at any time by pressing a button.

3.2.7 S37L Wristband Transmitter with Locating function



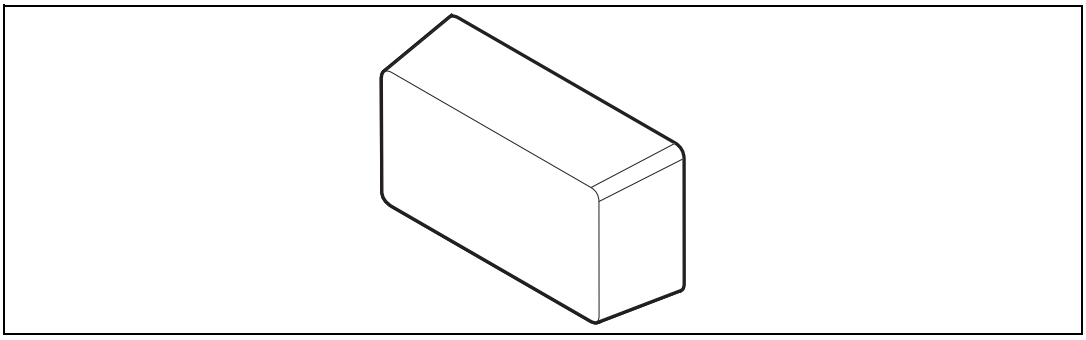
The S37L Wristband Transmitter is used to locate the person. The transmitter sends the call for help and the position of the last passed beacon.
It can also be used to automatically generate an alarm if the person wearing it approaches a forbidden door/zone ("Dementia" alarm).
This system requires IS75 or IS76 Person Detection Beacons.

3.2.8 S37E Wristband Transmitter with Accompany function



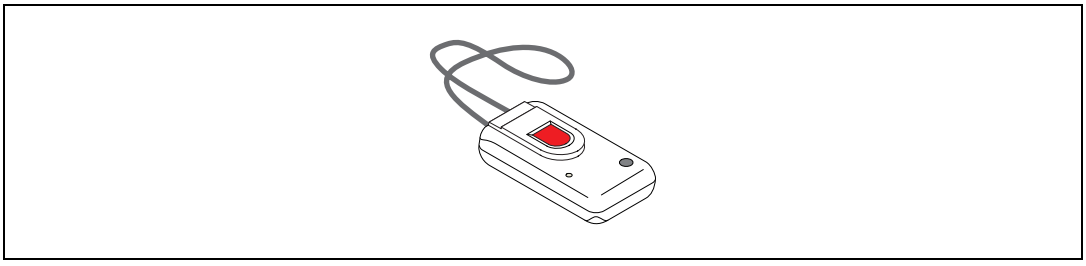
The S37E Wristband Transmitter is used to allow staff to accompany a person holding a S37L Transmitter. The S37E Transmitter sends a special code at the corresponding position of the last passed beacon.
It automatically prevents from generating an alarm if the person holding a S37L is accompanied by staff holding a S37E, near a forbidden door/zone ("Dementia" alarm).
This system requires IS75 or IS76 Person Detection Beacons.

3.2.9 RAC Wireless Contact



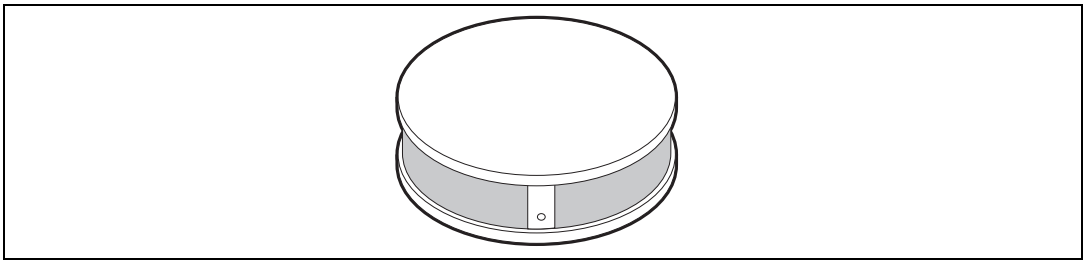
The RAC Transmiter is equipped with a magnetic contact. It allows alarm/event transmission when detecting the opening or closing of a door equipped with a magnet.
You can also connect a wire contact system to the connector block of the RAC. This allows to convert the signal to a radio-transmitted call for help.

3.2.10 ManDown Sensor



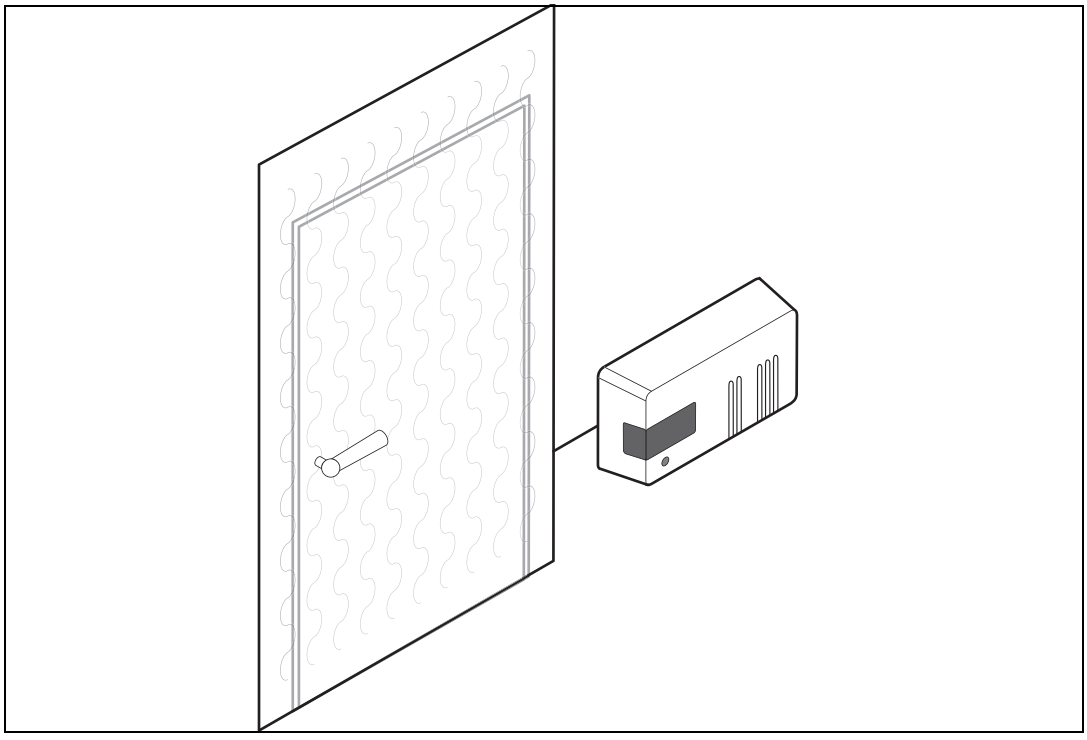
The ManDown Sensor allows detection of the patient position. In case of a horizontal position for more than 30 seconds, the ManDown Sensor sends an alarm.

3.2.11 Smoke Detector



The Wireless Smoke Detector allows to integrate smoke detection in the NurseCall system.

3.2.12 IS75 Person Detection Beacon



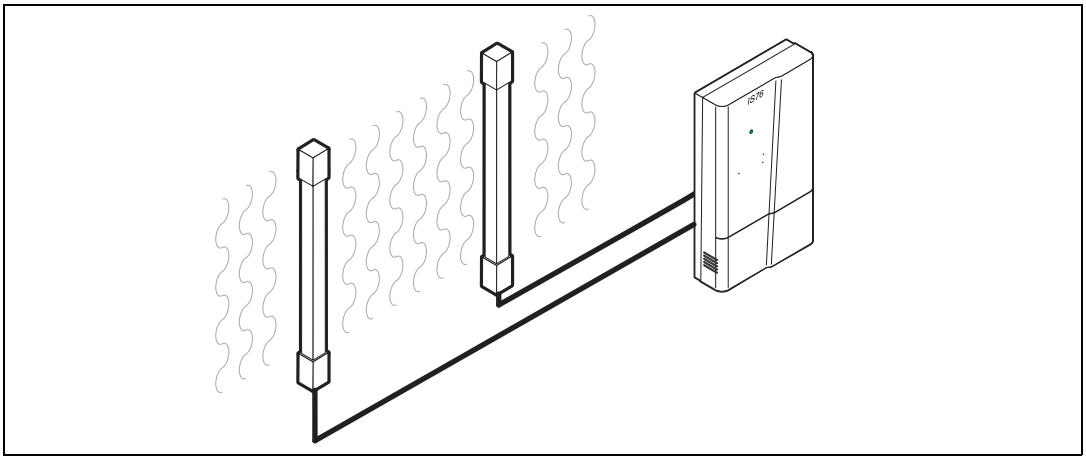
The NurseCall system can optionally be equipped with the locating function. Beacon modules IS75 or IS76 should be installed on doors or corridors in the supervised building.

By carrying out a loop using a simple wire connected to the IS75, a coded magnetic field is generated. This system allows the "L" type alarm transmitters to transmit a position information along with its identification code. This information may be used to locate the patient that has triggered a call for help, or transmit an alarm as soon as a "Dementia" patient is going through an exit door.

When passing one of these modules, the S37L Wristband Transmitter refreshes its actual position. At alarm triggering, the S37L Wristband Transmitter does not only transmit its identification, but also the position of the last passed beacon.

The locating information is available on all receiver units.

3.2.13 IS76 Person Detection Beacon



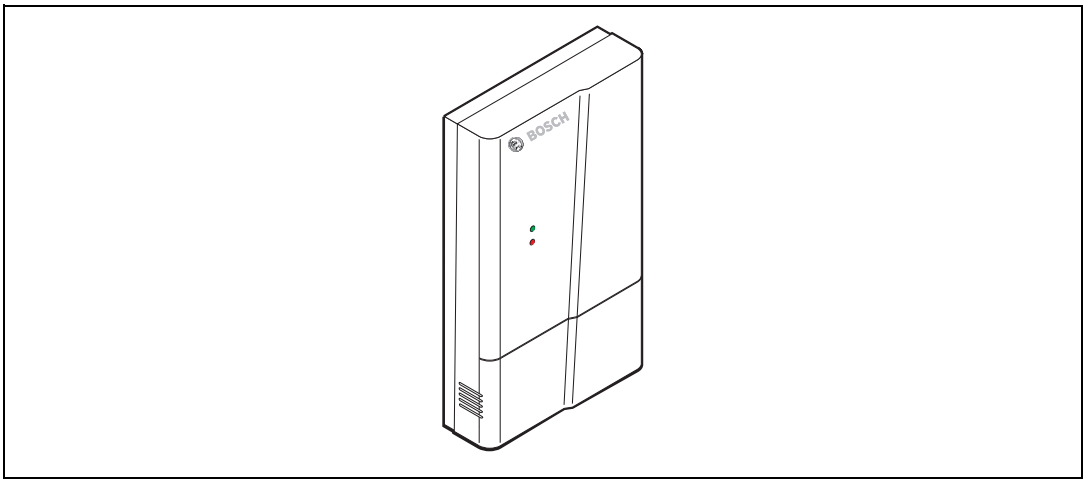
The NurseCall system can optionally be equipped with the locating function. Beacon modules IS75 or IS76 should be installed on doors or corridors in the supervised building.

If it is not possible to realize a wire loop or if the reinforcement of the door is metallic, the IS76 system is used. One or two "Ferrite Antennas", depending on the width of the door, generate a coded magnetic field. This system allows the "L" type Alarm Transmitters to transmit a position information along with its identification code. This information may be used to locate the patient that has triggered a call for help, or transmit an alarm as soon as a "Dementia" patient is going through an exit door.

When passing one of these modules, the S37L Wristband Transmitter refreshes its actual position. At alarm triggering, the S37L Wristband Transmitter does not only transmit its identification, but also the position of the last passed beacon.

The locating information is available on all receiver units.

3.2.14 LE10 Receiver



The LE10 Radio Receiver allows to control a set of output relays dedicated to various applications with the NurseCall system.

LE10 Radio Receiver as small stand alone call system
After receiving a radio signal from a programmed radio transmitter, the relay output switches a siren or a lamp to indicate locally a wireless call.

LE10 Radio Receiver connected to a NurseCall system via relay contact
After receiving a radio signal from a programmed radio transmitter, the relay will be switched. This relay output is connected to a wired NurseCall system by wire and hereby a call will be generated or forwarded.

LE10 Radio Receiver as part of a NurseCall dementia system
After receiving a signal from a dementia transmitter, the relay will be activated to close a monitored door.

3.2.15 RS232 Peripheral devices

Printer
Printer with serial connection (RS-232 interface) and endless paper should be used to protocol all events. Printers with a parallel port can be used together with an intermediate serial - parallel converter.

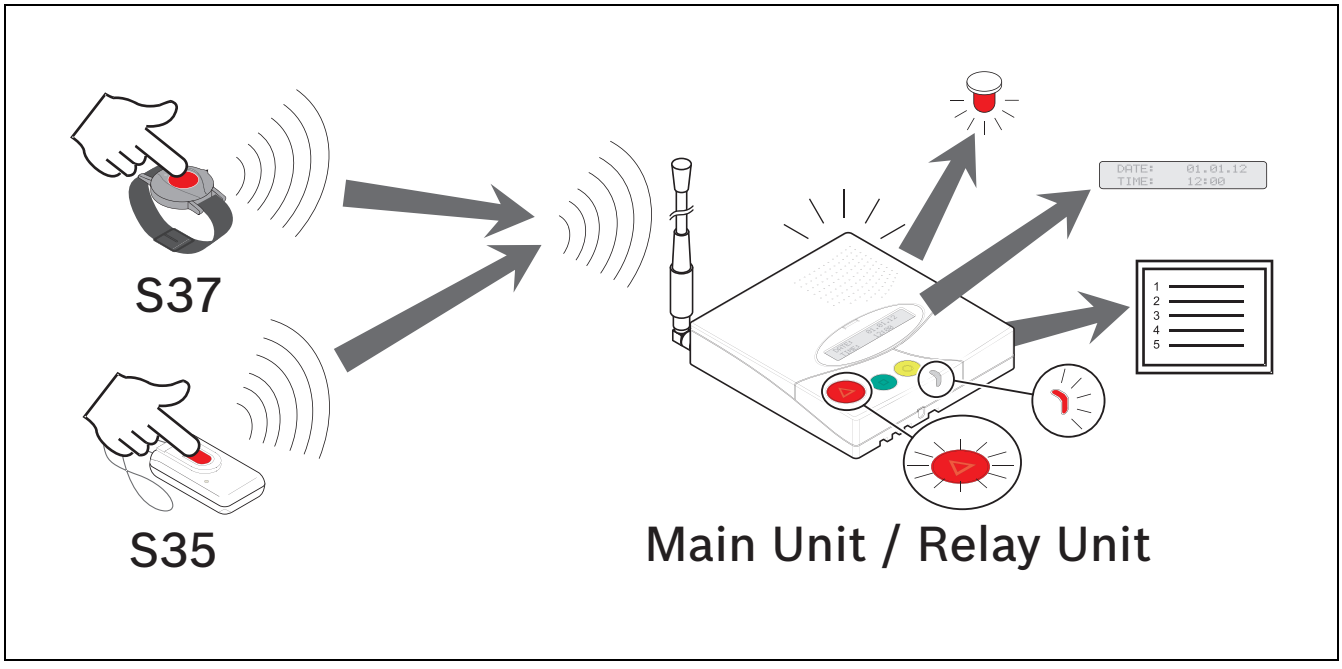
Paging and Phone (DECT system)
The NurseCall system uses several protocols: ESPA 4.4.4., POCSAG, DeTeWe, Medicall 800, and DECT phone systems e.g. Multitone DECT systems with P318 interface.

PC (with Alarm Management Software installed)
PC to manage alarms or messages.

4 NurseCall functions description

The interaction of NurseCall elements and peripherals in several examples of use is explained in the following pages.

4.1 "Mobile" Call for Help



By pressing the **Red** button of the S35 or S37 Transmitters, the person activates a call for help.

The care personnel is informed by the NurseCall system through the Main Unit (or Relay Unit) and the connected devices:

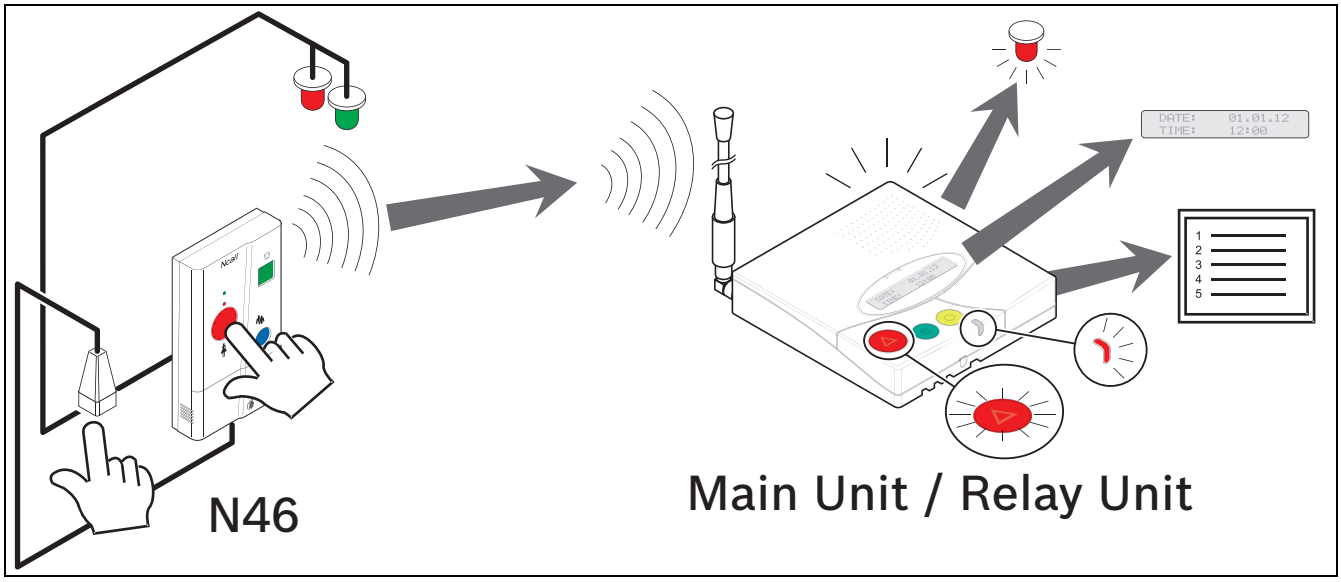
- the **Red** button and the LED Indicator are blinking;
- alarm/event data is displayed;
- optionally, a red light can be connected to the Main Unit (or Relay Unit) internal contact and placed in the corridor;
- the alarm is stored in the buffer.

NOTICE!
The local acknowledgement is performed on the NurseCall Main or Relay Unit with the **Green** button.

It is also possible to trigger an assistance call by pressing the button of the S35Q, S37Q or S37L transmitters between 0 and 30 seconds after a reset by a magnet.

▶ For more information on S35 or S37, see their specific documentation.

4.2 "Room" Call for Help



By pressing the **Red** button of the N46 Multifunction Wall Transmitter or the pear push button, the patient activates a call for help.

The care personnel is informed by the NurseCall system through the Main Unit (or Relay Unit) and connected devices:

- the **Red** button and the LED Indicator are blinking;
- alarm/event data is displayed;
- optionally, a red light can be connected to the Main Unit (or Relay Unit) internal contact and placed in the corridor;
- the alarm is stored in the buffer.

The acknowledgement can be done with the **Green** button on the N46, on the Main Unit or on the Relay Unit.
By pressing again the **Green** button on the N46, the care person shows he/she is leaving the room.
By presssing the **Blue** button, the care person can request assistance.

In this example, two signal lights are placed in the corridor to indicate alarm statutes:
Green light:

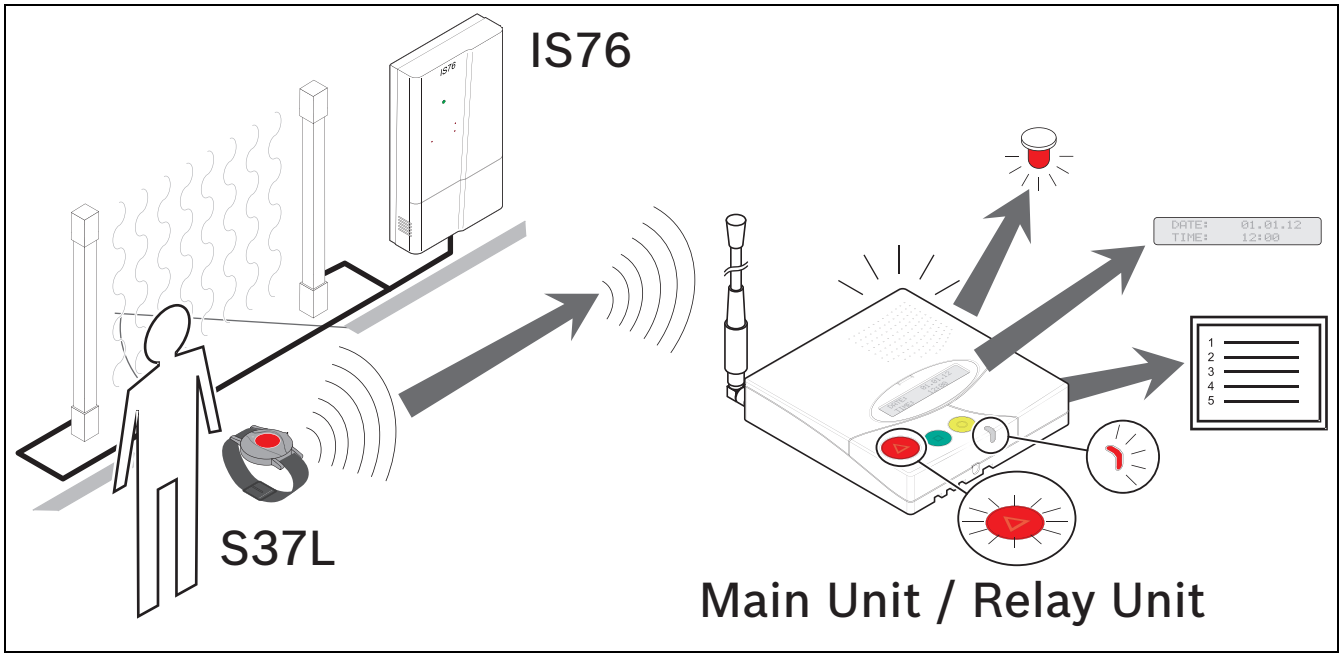
- OFF: no alarm;
- ON: care personnel is in the room.

Red light:

- OFF: no alarm;
- ON: calling for help;
- blinking: calling for assistance.

▶ For more information on N46, see its specific documentation.

4.3 Locating mode

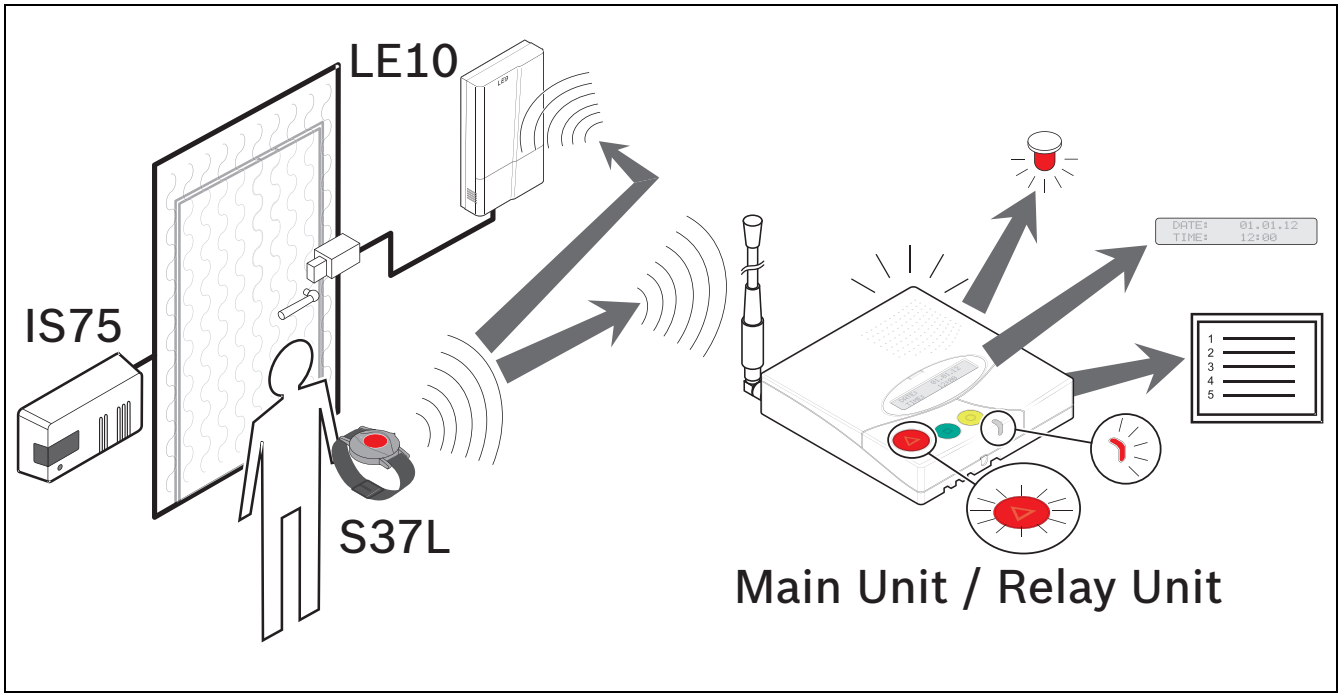


The S37L Wristband Transmitter with Locating function automatically detects the coded magnetic field of the IS75 or IS76 beacon.
At alarm triggering, the S37L sends the call for help and the position of the last passed beacon.

NOTICE!
Locating can be used with IS76 or IS75 Person Detection Beacons.

- ▶ For more information on IS75 or IS76, see their specific documentation.
- ▶ For more information on S37L, see its specific documentation.

4.4 "Dementia" mode



NOTICE!
The "Dementia" mode uses the Locating functions (S37L and IS75 or IS76 Beacons).

The S37L Wristband Transmitter with Locating function automatically detects the coded magnetic field of the IS75 or IS76 beacon.

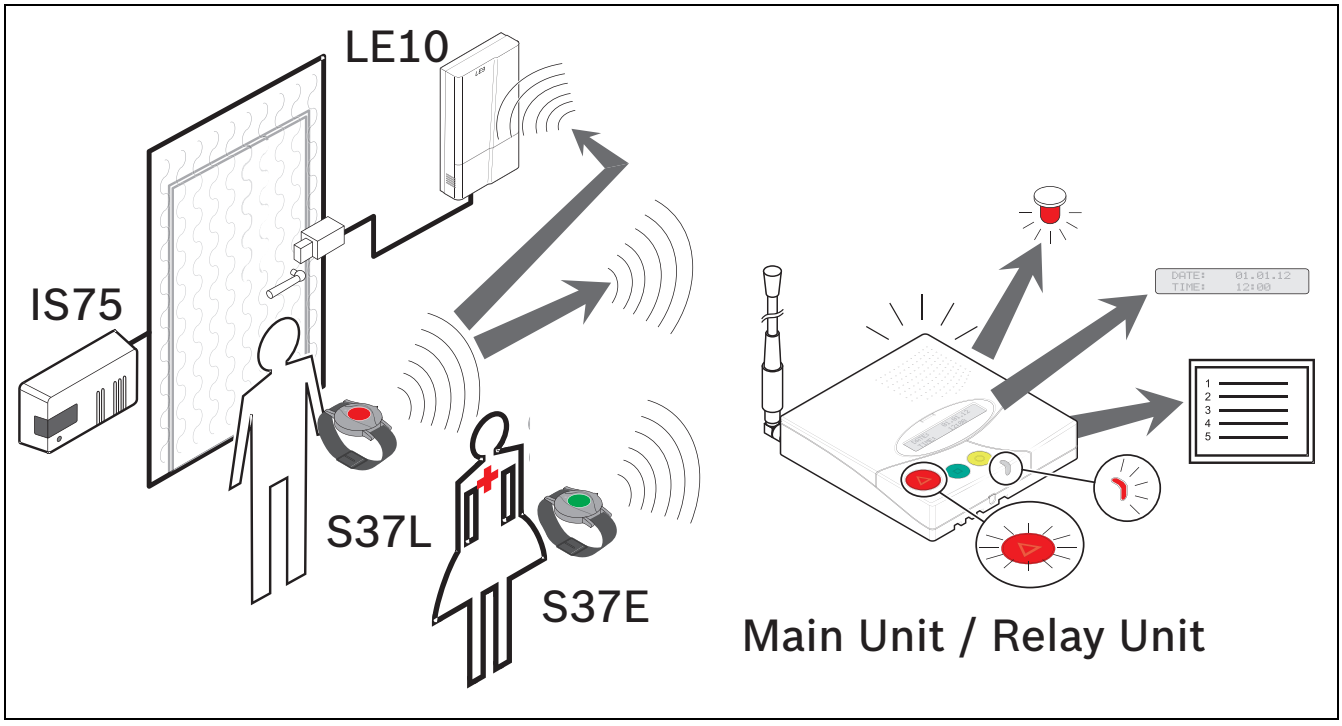
If the door has a "Dementia" code, the S37L sends the call for help and the position of this door automatically.

In our example, the system is combined with an LE10 to lock the door automatically.

NOTICE!
The "Dementia" mode can be used with IS75 or IS76 Person Detection Beacons.

- For more information on IS75 or IS76, see their specific documentation.
- For more information on S37L, see its specific documentation.
- For more information on LE10, see its specific documentation.

4.5 Accompany mode



NOTICE!
The accompany mode uses the Locating functions (S37L and IS75 or IS76 Beacons).

The S37E Wristband Transmitter with Accompany function automatically detects the coded magnetic field of the IS75 or IS76 beacon.

The S37E Wristband Transmitter allows staff to accompany a person holding an S37L Transmitter. The S37E Transmitter sends a special code at the corresponding position of the last passed beacon.

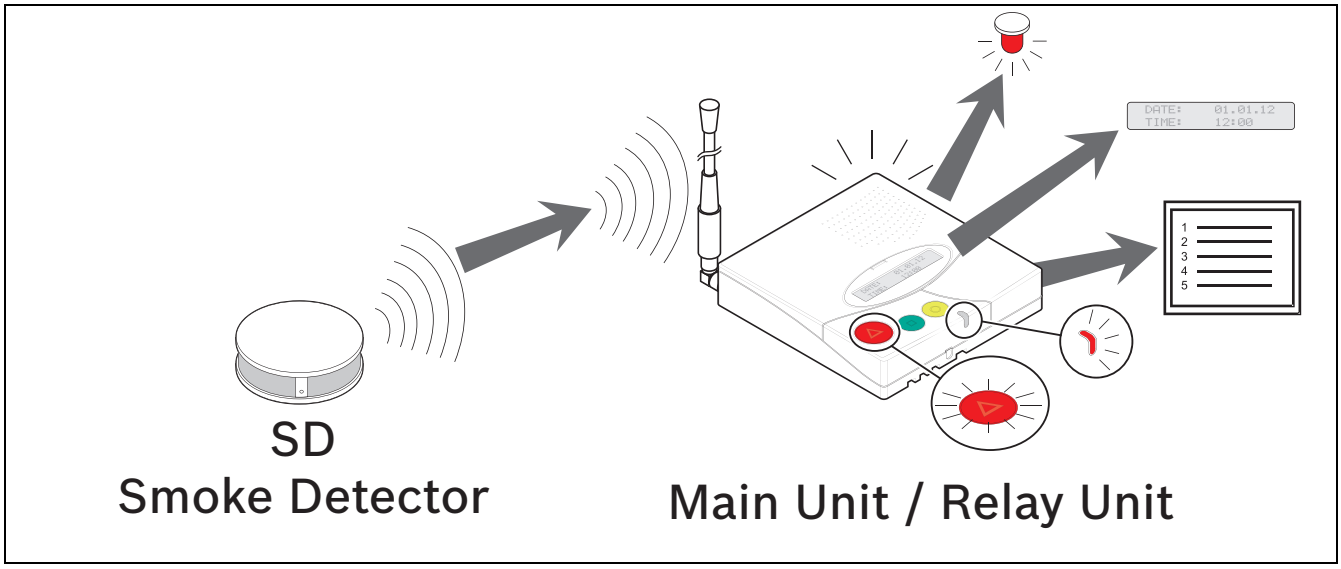
It automatically stops from generating an alarm if the person holding an S37L is accompanied by staff holding an S37E, near a forbidden door/zone ("Dementia" alarm)

In our example, the system is combined with an LE10 to unlock the door automatically.

NOTICE!
The accompany mode can be used with IS75 or IS76 Person Detection Beacons.

- ▶ For more information on IS75 or IS76, see their specific documentation.
- ▶ For more information on S37E, see its specific documentation.
- ▶ For more information on LE10, see its specific documentation.

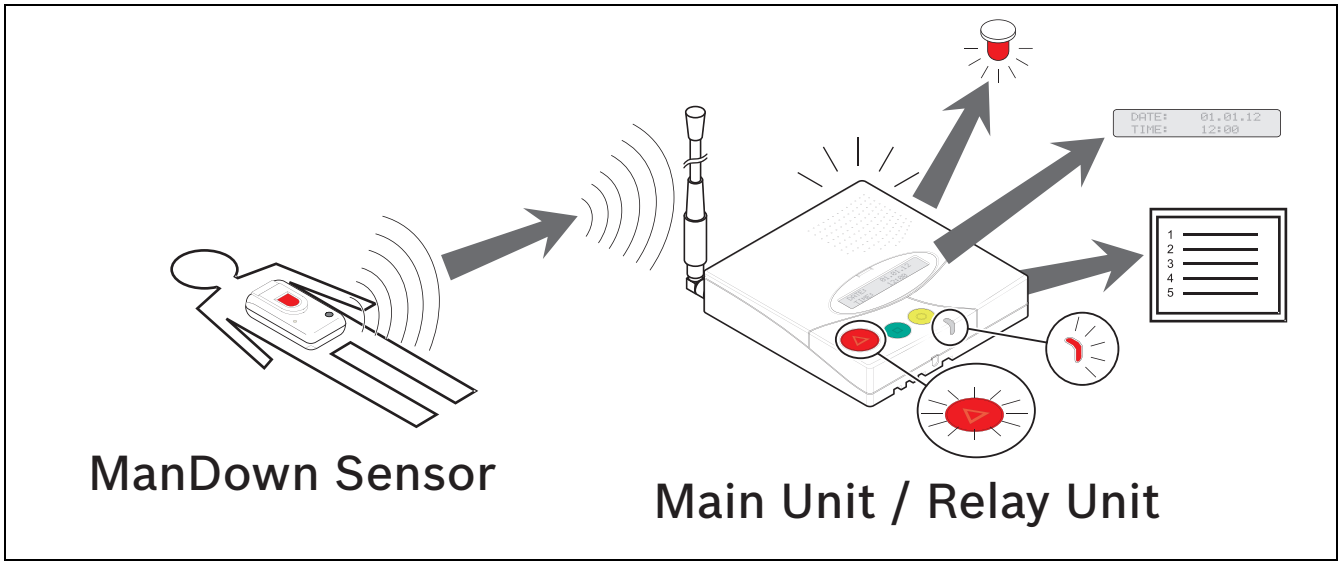
4.6 Smoke detection



When detecting smoke, the Smoke Detector sends an alarm to the Main Unit.

▶ For more information about Smoke Detector, see its specific documentation.

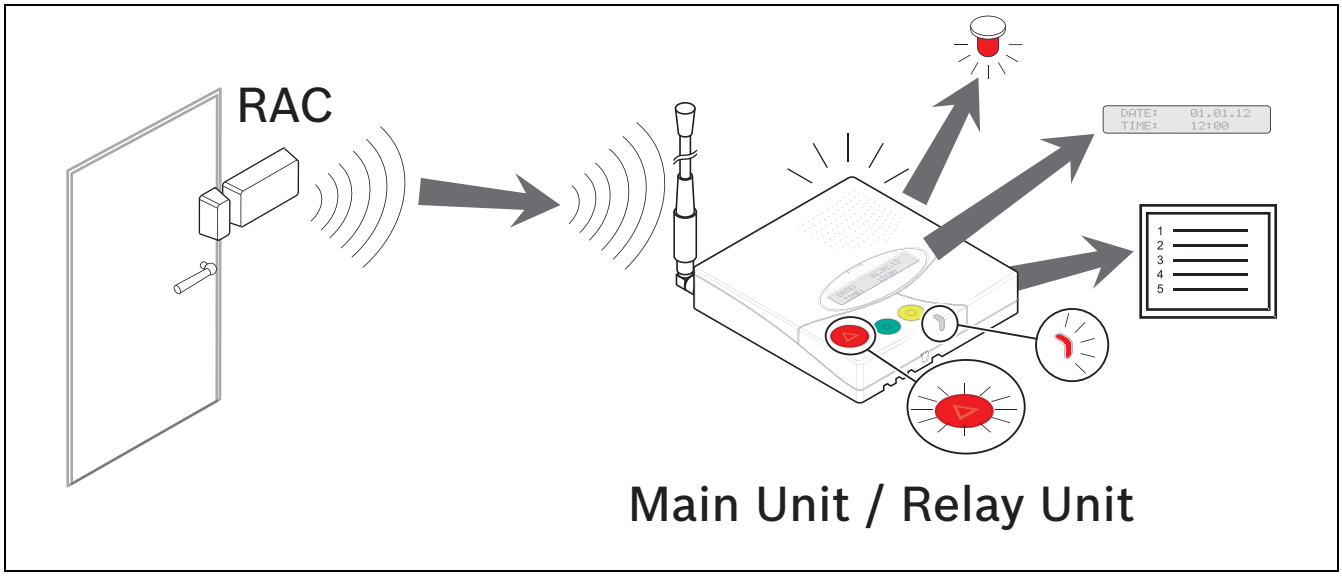
4.7 ManDown function



The ManDown Sensor automatically sends an alarm after 30 seconds, if the patient position deviates more then 60° from a vertical position.

▶ For more information on the ManDown Sensor, see its specific documentation.

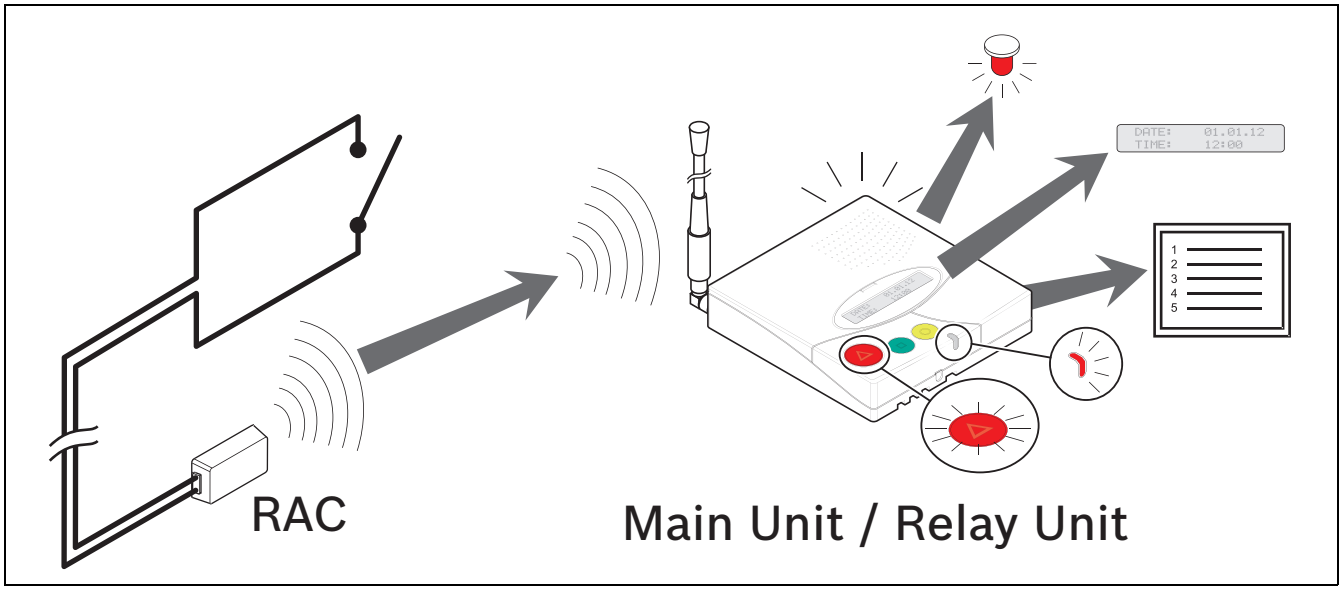
4.8 Door opening / closing detection



Detection of mechanical movement by a magnetic contact.
The RAC Wireless Contact can be used for door or window opening / closing detection.

▶ For more information on the RAC Wireless Contact, see its specific documentation.

4.9 Remote contact opening / closing detection



Detection of the remote contact opening / closing. The RAC Wireless Contact converts the wire contact signal to a wireless signal.

▶ For more information on the RAC Wireless Contact, see its specific documentation.

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