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# NOVO - Technical Handbook

Handbook for Technical Adminstrators NE41 15013-02 v1.0

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Document number: NE41 15013-02 v1.0
Draft date: 2017-09-07

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# Content

# Document revision history

| Revision Date | Version | Revision details |
|---|---|---|
| 2017-09-07 | 1.0 | v1.0 draft |

# 1 Introduction

## 1.1 Intended use

The Care Phone NOVO is a unit designed for the purpose of providing security and a sense of comfort and safety for the user. The unit is primarily designed for people living in their own apartment or in nursing homes.

## 1.2 About this handbook

This documentation is mainly a technical handbook but can be used as a user manual for advanced users.

The technical handbook is valid for all versions of NOVO (i.e NOVO IP/GSM, NOVO PSTN/GSM and NOVO PSTN). To determine your version, please refer to the bottom label on your product.

*Throughout this technical handbook common functions etc. will be described for all NOVO versions and where applicable the special characteristics for a certain version will be specified.*

Information notes and warnings intended for maintenance personnell and/or users are emphasized in these instructions by the pictogram's defined here.

### Pictograms

*The Information sign and corresponding text is intended for information which might be useful but not critical for the reader and/or user.*

*The Warning triangle sign and corresponding text is intended for critical information to which the user and/or reader should pay special attention.*

### Highlighted text

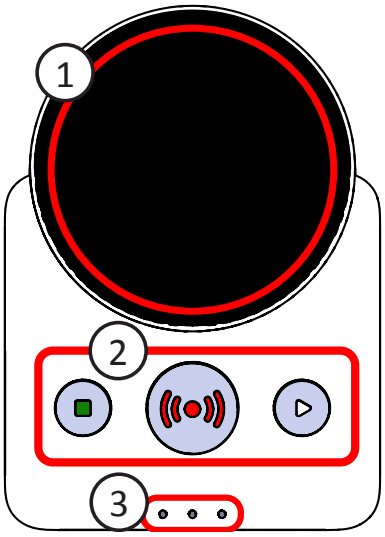
In the running text certain text is **highlighted** to emphasize terms etc..

# 2 The main unit

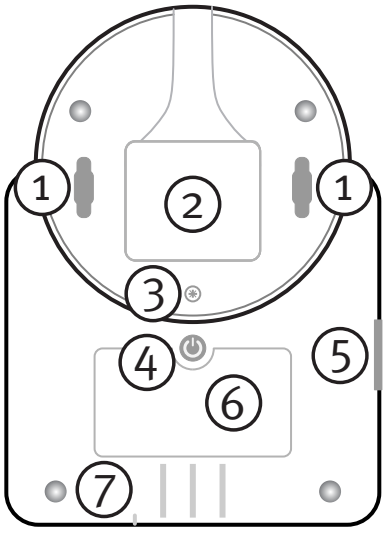
NOVO comes in three versions: NOVO IP/GSM, NOVO PSTN/GSM and NOVO PSTN.

## 2.1 Overview

Care phone NOVO appears as in the picture below. The unit has been designed to make it as simple as possible to handle with maximum safety. The size of the plastic cover is: 117 x 161 x 65 mm.




Care phone NOVO top view




Care Phone NOVO bottom view

| # | Denomination |
|---|---|
| 1 | Speaker |
| 2 | Buttons |
| 3 | Front LEDs |

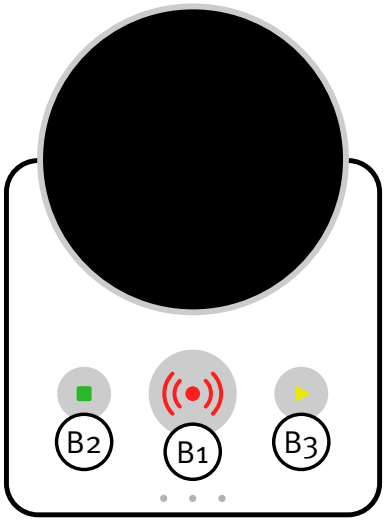
**Table 1.** NOVO top view parts

| # | Denomination |
|---|---|
| 1 | Keyholes (for hanging up the unit) x 2 |
| 2 | Connector well (under the connector lid) |
| 3 | Bottom cover screw |
| 4 | Power button |
| 5 | SIM card hatch* |
| 6 | Product label area |
| 7 | Microphone |

**Table 2.** NOVO bottom view parts

## 2.2 Buttons

The NOVO unit has three distinct buttons located on the upper case.




**Picture 1.** Buttons on care phone NOVO

| # | Denomination | Colour |
|---|---|---|
| B1 | Alarm button | Red |
| B2 | Reset button | Green |
| B3 | Extra button | Yellow |

**Table 3.** NOVO unit buttons

### 2.2.1 Alarm button (B1)

A user alarm can be activated by pressing the red **Alarm button (B1)** on the main unit. This button is also used in Control Mode and Service Mode.

### 2.2.2 Reset button (B2)

Before making the alarm call NOVO is waiting a number of seconds enabling the user to reset the alarm. If the **Reset button (B2)** is pressed during this period, the alarm is interrupted. A number of tones (di-du-da) indicates this and the NOVO returns to idle mode.

This button is also used in Control Mode and Service Mode.

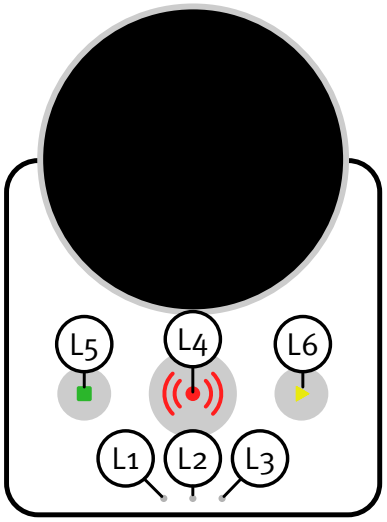
### 2.2.3 Extra button (B3)

The **Extra button (B3)** by default is to indicate Home/Away. For more information about Home/Away please refer to 4.1.2 Home/Away.

This button is also used in Control Mode, Service Mode and Daily Report.

## 2.3 LEDs

The main unit has six (6) LEDs.



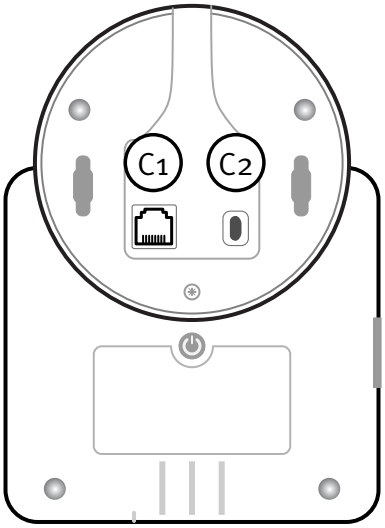

**Picture 2.** NOVO unit LEDs

| # | Colour | Position (seen as above) |
|---|---|---|
| L1 | Green | Leftmost LED in front |
| L2 | Red | Middle LED in front |
| L3 | Yellow | Rightmost LED in front |
| L4 | Red | Behind the Alarm button (B1) |
| L5 | Green | Behind the Reset button (B2) |
| L6 | Yellow | Behind the Extra button (B3) |

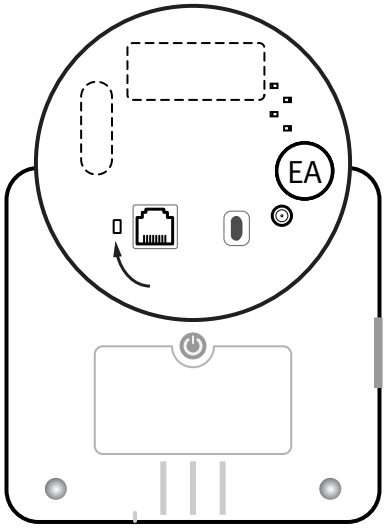
**Table 4.** NOVO unit LEDs

The LED indications are described in chapter 3 Indications

## 2.4 Connectors on NOVO IP/GSM and NOVO PSTN/GSM




**Picture 3.** NOVO IP/GSM with connector lid removed




**Picture 4.** NOVO IP/GSM with accumulator lid removed

The connectors are located in a well under the connector lid in the bottom of the speaker. Access the well by removing the connector lid.

| Connector# | Denomination | Type |
|---|---|---|
| C1 | IP | RJ 45 (Ethernet) |
| C2 | AC | Micro-USB |
| EA | External antenna | SMA Connector (female) |

**Table 5.** NOVO IP/GSM connectors denominations and physical characteristics

### 2.4.1 IP connector (C1)

The IP connector (C1) is a RJ45 (Ethernet) female connector and used for IP traffic over cable.

### 2.4.2 AC connector (C2)

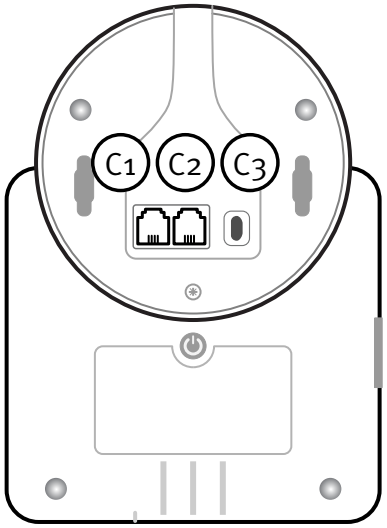
The AC adaptor conforms to the European directive EuP II. Connect the adaptor to the outlet marked **AC** in the bottom well of the NOVO, see 2.4 Connectors on NOVO IP/GSM and NOVO PSTN/GSM.

*Only use the AC adaptor for your market. Please refer to Appendix C Recommended AC adaptors and accumulators .*

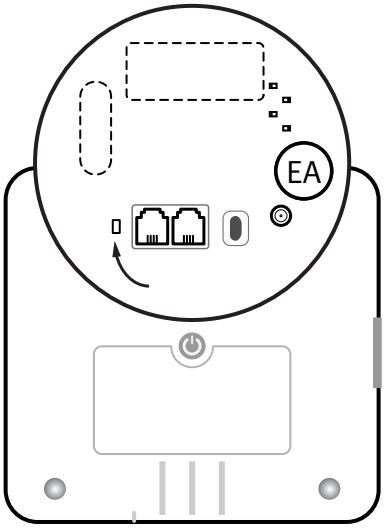
## 2.5 External GSM antenna (EA)

See 2.6.5 External antenna.

## 2.6 Connectors on NOVO PSTN/GSM and PSTN




**Picture 5.** NOVO PSTN/GSM with connector lid removed




**Picture 6.** NOVO PSTN/GSM with accumulator lid removed

The connectors are located in a well under the connector lid in the bottom of the speaker. Access the well by removing the connector lid.

| Connector# | Denomination | Type |
|---|---|---|
| C1 | TELE | RJ11 (4/6) |
| C2 | LINE | RJ11 (4/6) |
| C3 | AC | Micro-USB |
| EA | External antenna | SMA Connector (female) |

**Table 6.** NOVO PSTN/GSM connectors denominations and physical characteristics

### 2.6.1 TELE connector (C1)

The TELE connector (C1) is a RJ11 female connector and used for PSTN traffic.

### 2.6.2 LINE connectorLINE (C2)

The TELE connector (C1) is a RJ11 female connector and used for PSTN traffic.

### 2.6.3 AC connector (C3)

The AC adaptor conforms to the European directive EuP II. Connect the adaptor to the outlet marked **AC** in the bottom well of the NOVO, see 2.4 Connectors on NOVO IP/GSM and NOVO PSTN/GSM.

*Only use the AC adaptor for your market. Please refer to Appendix C Recommended AC adaptors and accumulators .*

### 2.6.4 External GSM antenna (EA)

See next section, 2.6.4.

### 2.6.5 External antenna

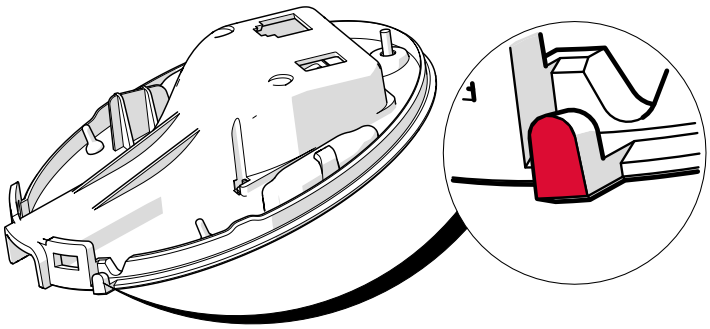
*Applies only to NOVO IP/GSM and NOVO PSTN/GSM.*

NOVO supports the use of an external antenna and the use of the internal or external antenna is determined by a configuration parameter in the unit's software. The external antenna is intended to be used in case of poor GSM network signal quality.

The antenna can be placed in indoor or outdoor environment. Mount the antenna with the tape and/or the screws in the package. Place the antenna where the optimal signal strength can be achieved given the location for the installation.

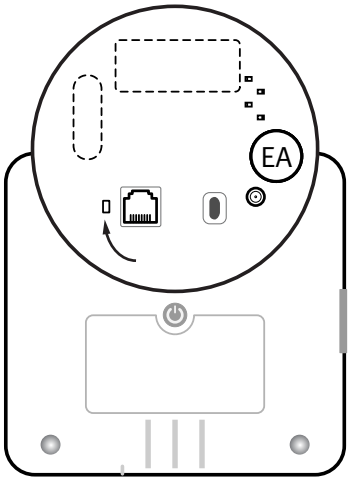
#### Connecting the external antenna

1. If an external antenna is to be used the plastic flange (marked in red in the illustration below) must be removed from the bottom cover.



**Picture 7.** Remove the plastic flange if an external antenna is to be used

2. Locate the SMA contact (**EA**).

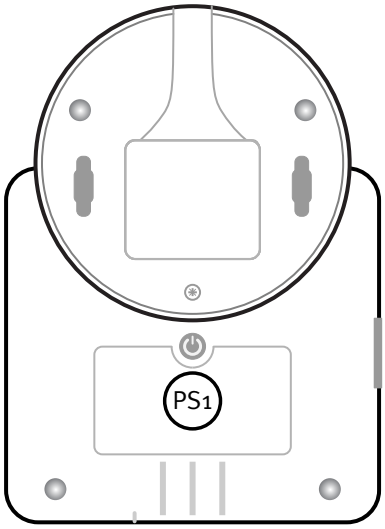



**Picture 8.** SMA connector (EA).

3. Remove the power and network cable.
4. Turn off the unit with the On/Off button if it is turned onRemove the accumulator lid by unscrewing the screw just below the connector lid.
5. Gently screw the antenna connector clock wise onto the SMA contact**(EA)**.
6. Place the cable between the small plastic "heels" to lead the antenna out of the cover.

7. Refit the bottom cover.
8. Refit the AC and eventually IP cable and start up the unit.
9. Activate the external antenna in the Service Menu, see 6.3.4 Set external GSM antenna to On/Off.
10. Test the GSM network signal, see 6.3.2 Radio/GSM coverage mode.

## 2.7 On/Off button (PS1)

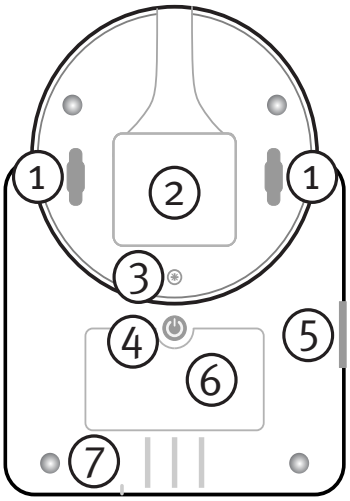



**Picture 9.** On/Off button location

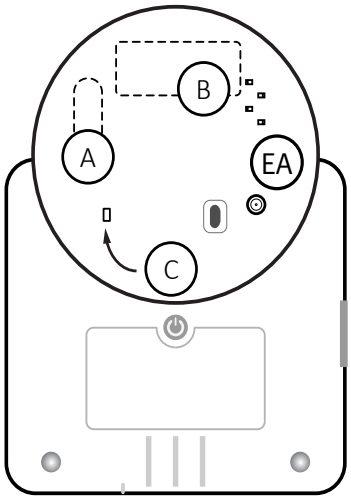
The **On/Off button (PS1)** is not connected in series with the power source. This means that the processor (CPU) can control when the unit shall be powered on and off. The CPU can for instance shut off the unit to save the backup accumulator and can also override the switch so that the end user cannot turn off the unit.

*Please note that it isn't enough to disconnect the AC plug to shut off the unit, since the unit then uses the backup accumulator as power source.*

## 2.8 Accumulator lid




**Picture 10.** Accumulator lid screw (#3)




**Picture 11.** Accumulator compartment

The pictures above displays the internal accumulator compartments for the standard and large accumulator as well as the accumulator connector.

| # | Denomination |
|---|---|
| A | Standard capacity accumulator compartment |
| B | Large capacity accumulator compartment |
| C | Accumulator connector |

**Table 7.** Accumulator compartment denominations

The accumulator lid is opened by removing the cover screw (number 3 in the left picture above). Under the lid is the accumulator compartment for the backup accumulators. If an accumulator must be replaced, please note that the accumulator must to be of correct type and delivered from NEAT.

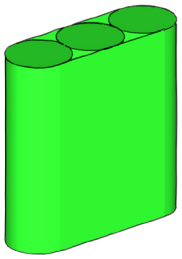
*Always disconnect the AC adaptor and if connected the Ethernet cable before opening the accumulator lid.*

Accumulator replacement should only be performed by trained personnel.

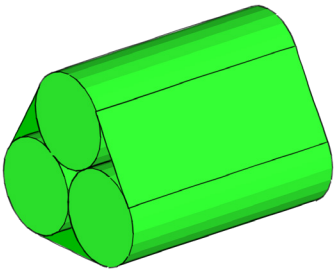
NOVO can be equipped with either of two accumulator types:

- the standard accumulator with 400 mAh capacity.
- a large capacity accumulator with 2000 mAh capacity.

Below are schematic illustrations of the accumulators.



**Picture 12.** Standard NOVO accumulator



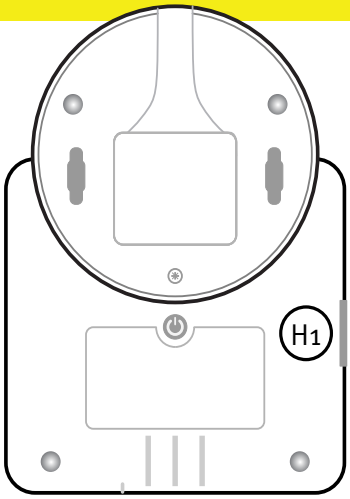
**Picture 13.** NOVO large capacity accumulator

### 2.8.1 Replacing the accumulator

1. Power off the unit and remove the power and network cable.
2. Remove the bottom plate by unscrewing the screw below the connector lid.
3. Detach the connector from the socket and remove the old accumulator.
4. Refit a new accumulator and attach the connector to the socket .
5. Refit the accumulator lid and connectors.

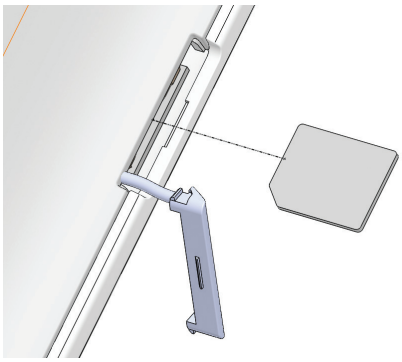
## 2.9 Mounting the SIM card

*Applies only to NOVO IP/GSM and NOVO PSTN/GSM.*




**Picture 14.** SIM Hatch (H1) location

*Depending on model the SIM-hatch is made of either rubber (soft) or plastic (hard). SIM cards should only be changed by the customer on NOVO products with the rubber hatch. To change SIM card on a NOVO product with the plastic hatch send the unit to service.*



**Picture 15.** Insert SIM card into SIM card slot

1. Power off the unit.
2. Open the SIM card hatch cover (H1). Note that the hatch should not be entirely removed.
3. Insert the SIM card according to the sketch in the bottom label.
4. Refit the SIM card hatch cover (H1).
5. Power on the unit. A reboot is required for the GSM-module to initialize properly after inserting the SIM-card.

## 2.10 Mounting the NOVO

### 2.10.1 Key holes

There are two key holes for wall mounting the unit. The holes are designed to be used together with screws with a head diameter of 7-8 mm. The screw head should be approximately 4 mm out of the wall for best fit.

A drawing and measures is found in Appendix A NOVO IP/GSM Mounting holes.

# 3 Indications

## 3.1 Visual indications

### 3.1.1 Front LEDs

Normally the LEDs (L1-L3) at the front are off. When an error occurs, the corresponding LED will be lit up. The signification of the LEDs are described on the bottom label on the unit.

When the unit is in accumulator operation, the LEDs flashes instead of being continuously lit. See the tables below for all indications.

#### 3.1.1.1 LED indications for NOVO IP/GSM and NOVO PSTN/GSM

| | L1 (Network) | L2 (AC) | L3 (Accumulator) |
|---|---|---|---|
| Normal mode, no failures | Off | Off | Off |
| Network failure (IP/GSM/LINE) | On | Off | Off |
| AC failure | Off | 0.5s On/4.5s Off | Off |
| Accumulator failure | Off | Off | On |
| Network and AC failure | 0.5s On/4.5s Off | 0.5s On/4.5s Off | Off |
| Network and accumulator failure | On | Off | On |
| AC and accumulator failure | Off | 0.5s On/4.5s Off | 0.5s On/4.5s Off |
| Network, AC and accumulator failure | 0.5s On/4.5s Off | 0.5s On/4.5s Off | 0.5s On/4.5s Off |
| Radio interference | 0.5s On/0.5s Off | 0.5s On/0.5s Off | 0.5s On/0.5s Off |
| SIM card failure | 0.5s On/0.5s Off | Off | Off |
| AC and SIM card failure | 0.5s On/4.5s Off | 0.5s On/4.5s Off | Off |

**Table 8.** Front LED (L1 - L3 ) indications

Downloading software from the internet is indicated by blinking (1s) the Reset button LED (L5) every 20 seconds.

***Firmware uppgrade indication***

After the firmware is downloaded the unit automatically re-boots. During firmware upgrade, L1, L2 and L3 all flashes with the cadence 100ms on/100ms off.

### 3.1.1.2 LED indications for NOVO PSTN

*The table below applies to NOVO PSTN*

| | L1 (LINE ) | L2 (AC) | L3 (Accumulator) |
|---|---|---|---|
| Normal mode, no failures | Off | Off | Off |
| Line failure | On | Off | Off |
| AC failure | Off | 0.5s On/4.5s Off | Off |
| Accumulator failure | Off | Off | On |
| Line and AC failure | 0.5s On/4.5s Off | 0.5s On/4.5s Off | Off |
| Line and accumulator failure | On | Off | On |
| AC and accumulator failure | Off | 0.5s On/4.5s Off | 0.5s On/4.5s Off |
| Line, AC and accumulator failure | 0.5s On/4.5s Off | 0.5s On/4.5s Off | 0.5s On/4.5s Off |
| Radio interference | 0.5s On/0.5s Off | 0.5s On/0.5s Off | 0.5s On/0.5s Off |
| AC failure | 0.5s On/4.5s Off | 0.5s On/4.5s Off | Off |

**Table 9.** Front LED (L1 - L3 ) indications

## 3.1.2 Alarm button (L4) LED indications

The following indications will normally be in effect on the Alarm button led (L4).

| | AC Mode | Accumulator Mode |
|---|---|---|
| Normal operation | On* | Off |
| Call in progress/Conversation | 0.5s On/0.5s Off | 0.5s On/0.5s Off |
| Wait between calls | 1.0s On/1.0s Off | 1.0s On/1.0s Off |
| No more call attempts** | 2.5s On/2.5s Off | Off |

**Table 10.** Alarm button (L4) indications

* May be changed to Off by configuration, see below.

** “No more call attempts” means that the NOVO has tried to call the alarm receiver, but all call attempts has failed. It has not been possible to transfer the alarm”.

## 3.1.3 Reset button LED (L5) indications

L5 is specifically used for:

| | AC Mode | Accumulator Mode |
|---|---|---|
| Firmware download | 0.5s On/0.5s Off | 0.5s On/0.5s Off |
| Passive notifcation | 0.5s On/0.5s Off | 0.5s On/0.5s Off |

**Table 11.** Reset button LED (L5) indications

## 3.1.4 Extra button LED (L6) indications

L6 is specifically used for:

| | AC Mode | Accumulator Mode |
|---|---|---|
| Away mode | On | 0.5s On/4.5s Off |
| Home mode | Off | Off |

**Table 12.** Extra button LED (L6) indications

### 3.1.5 Control mode LED indications

When the unit enters Control Mode LEDs 1-3 are off and LEDs L4-L6 are lit.

### 3.1.6 Service mode LED indications

When the unit enters Service Mode L4 is on and L6 flashes (0.5s On/0.5s Off).

### 3.1.7 Unit boot/startup

During boot/startup the visual indications are in two (2) steps:

6. The boot is indicated by LEDs L1-L3 as “running lights”, i.e. the LEDs are lit and closed in sequence starting with L1, then L2 and L3 and then restarts at L1. Normally this is a very quick sequence and should finish within 3 seconds.
7. The next step is startup and now all LEDs are lit and stay lit during the step. This normally takes 1-3 seconds where after the LEDs are all off except L4 which is lit (default).

If everything is fine and no errors occurs the all LEDs should stay off. If there are any errors or alarm events the LEDs indicates this according to “3.1.1 Front LEDs”.

## 3.2 Acoustic indications

NOVO has the ability to play pre-recorded sounds, i.e. voice messages for improved interaction with the user.

### 3.2.1 After activating an alarm

When the NOVO is calling, by default it plays a melody as a pre-call melody. This is configurable.

### 3.2.2 Disconnection signal

Call disconnection is indicated by a tri-sound (di-du-da) in the loudspeaker. This signal is configurable.

### 3.2.3 Warning functions in Idle mode

If an AC, accumulator or line failure occurs an acoustical warning sound followed by a speech message is played in the speaker.

The indication is a short beep every 2 seconds for the first 60 seconds and then a short beep every 30 seconds. The acoustical indication can be muted by pressing the **Reset button (B2)**, but the visual indication continues.

If a new failure occurs, the acoustical indication is reset to start with a short beep every 2 seconds etc. regardless if the first failure is attended or not.

# 4 Alarm functions

## 4.1 User initiated alarms

These are the alarms initiated by the user, e.g. by pressing the **Alarm button** (**B1**) on the NOVO or on the portable trigger SMILE. It can also be when an accessory like WALL, PIR or a SMOKE is activated.

Depending on the alarm type received the alarms will be handled differently by NOVO.

### 4.1.1 Passive alarm

A Passive alarm will be generated if an alarm event hasn't occurred during a certain time. E.g. if an infrared detector is connected to NOVO as a Passive alarm the unit will not send any alarm as long as the infrared detector detects movements. If there is no activity for a certain time, e.g. 8 hours, then NOVO sends an alarm.

The Passive alarm timer starts when an alarm event has occurred that is connected to the Passive alarm. This can be:

- A radio signal from e.g. PIR or INKA
- A push on the **Reset button (B2)**

Please note that the timer doesn't start until the alarm event has occurred the first time.

If the **Extra button (B3)** is configured to Passive alarm a warning signal will be generated 60 seconds before the Passive alarm is sent. If any button or transmitter is activated during this period, the passive timer will be reset and no alarm is sent. If no activation occurs a Passive alarm will be sent to the alarm central.

### 4.1.2 Home/Away

Home/Away is a function for the user to communicate to the alarm central that "I will leave the premises for a while", thus temporarily disabling passive functions and also the Radio transmitter surveillance.

#### In Away mode the follwing is valid:

- The passive function is paused (the timer does not run)
- The radio supervision is paused for portable alarm transmitters (such as the pendant – SMILE/ATOM)
- Indication of **Away mode (L6)**
- A radio message with alarm type **User alarm from trigger** or **User alarm from button** will result in both user alarm and a **Home indication alarm** and change from Away mode back to Home mode.
- Pressing button **Extra Buttom (B3)** will result in a **Home indication alarm** and change from away mode back to home mode.

#### When returning from Away mode to Home mode

- The passive function is resumed (timers are reloaded to initial value)
- Radio supervision is resumed (timers are reloaded with initial value)

### 4.1.3 Presence/Ready

The **Presence mode** is intended to determine when personnel is present in the user's home.

The mode can be changed either from radio messages or buttons. If the alarm type is active an indication is sent according to the configured call sequence.

**In Presence mode the following is valid:**

- A radio message containing alarm types **User alarm from trigger** or **User alarm from button** instead results in an **Assistance alarm** if this is activated.
- When the time in **Presence mode** exceeds the parameter **Max time in Presence mode** the unit automatically resumes **Ready mode**.
- L1, L2 and L3 will flash 0.5 s every 4 seconds. If another indication is active the LED state is inverted during the flash, i.e. off during 0.5 s instead of on.

## 4.2 Technical Alarms

*For digitally connected units technical alarms can be configured to automatically send this alarms to NEAT Carephone Management Portal (CMP) for continous connectivity and functionality supervision. The descriptions of the technical alarms in the sections below are valid for alarms sent to an alarm receiver (not the CMP).*

### 4.2.1 Radio transmitter surveillance

The care phone can handle a number of connected transmitters with radio test alarm activated. If there hasn't been any radio test alarm for a certain period, NOVO can be configured to send a **Radio out of range** alarm to the central indicating that there is some trouble with the transmitter. NOVO can also send a **Radio within range** indication when the transmitter is working again.

## 4.3 Accumulator alarm

If the backup accumulator voltage level in the care phone too low an **Accumulator alarm** is sent to alert the maintenance personnel. The reason for the alarm can be:

- The AC adaptor isn't connected and/or malfunctioning and NOVO has been accumulator powered for a long time.
- There is a mains failure and the unit is powered by the backup accumulator.
- The accumulator is getting worn out.

The unit checks the accumulator status at regular intervals. When the AC adaptor is connected the default is one check every 24 hours (configurable). If the unit is powered from the accumulator the status is checked every minute.

Should the voltage level fall below the threshold value an **Accumulator alarm** is sent. The user is also warned by L3 on the front of the unit and by an acoustic signal. To mute the acoustical warning, see 3.2.3 Warning functions in Idle mode

## 4.4 Automatic test alarm

To let the alarm receiver know that the care phone is working, NOVO can send test alarms to the alarm receiver at regular intervals. The default value is one test alarm each 24 hours. This interval can be changed and the function can also be turned off.

The first test alarm will be sent after a random time between 5 and 60 minutes after installation. The second test alarm will be sent after a random period between 1 minute and the number of hours given by the time interval.

## 4.5 Battery alarm

If the battery voltage level in SMILE or other connected battery powered radio equipment is getting low the unit sends an alarm by radio to NOVO which then immediately sends a **Battery alarm** to alert the maintenance personnell that the unit needs to be replaced.

## 4.6 Radio interference

If a continuous radio interference signal is detected for more than 30 seconds the unit indicates this by flashing all warning LEDs, see 3.1.1 Front LEDs and sends a **Radio interference alarm** to the alarm receiver.

## 4.7 Mains failure

When the unit detects a mains failure, the unit will be powered from the internal backup-accumulator. The user will be warned by L2 on the front of the unit and by an acoustic signal, to deactivate this warning signal, see 3.2.3 Warning functions in Idle mode.

At mains failure, the unit sends a **Mains failure** alarm after a certain period. By default the alarm is sent one hour after mains failure occurred.

To avoid that many units call at the same time, a random period of 5-60 minutes, will be added before the alarm is sent. If time to Mains failure alarm is set to one hour (default), the alarm will be sent after 65 to 120 minutes after the mains failure occurred.

## 4.8 Mains return

When the AC is returned and the care phone has sent a **Mains failure alarm**, NOVO can be configured to send a **Mains OK indication**. To avoid that many units call at the same time, the time from AC returns to the alarm is sent will be a random time between 5 and 30 minutes.

## 4.9 External alarms

External alarm can be sent from additional accessories, such as door/window sensors, motion detectors or smoke detectors.

# 5 The alarm call

Anything that creates some kind of action in the NOVO is called an alarm event. An alarm event can be any of:

- pressing the **Alarm button (B1)**
- a mains failure
- radio interference

These alarm events can be user initiated or initiated by internal functions such as monitoring functions, timers or external alarm events.

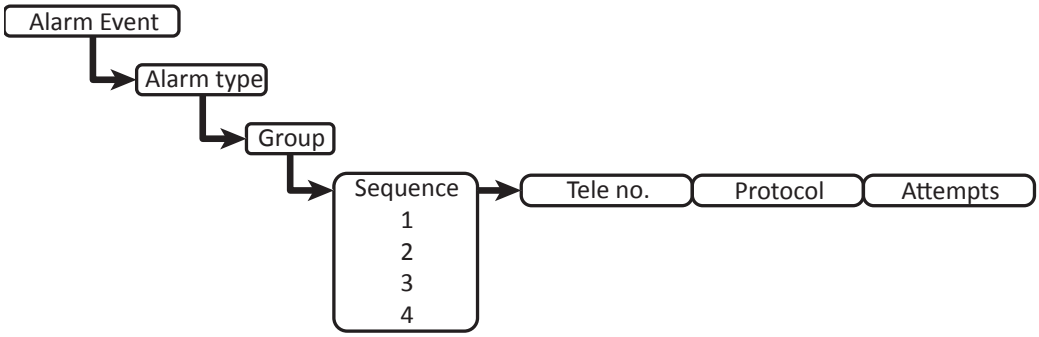
The alarm event is associated with a certain alarm type and the alarm type is associated with an alarm group an the alarm group is associated with a sequence.

A sequence contains a number of steps where each step is an instruction what action to perform. It can be calling an alarm central with voice conversation or it can be a silent action, i.e. sending an alarm to the alarm central without voice conversation to inform that an alarm event has taken place, e.g. there has been a mains failure.

These steps forms a chain and when a sequence is initiated NOVO performs the action in the first step and depending on the settings of the executed step it can either continue to the next step or stop the execution of the sequence.

## 5.1 Call routing

The reason for the alarm i.e. the alarm source, decides what alarm type that will be used in the alarm call. The alarm type forms a part of a group which points to a call sequence. The sequence consists of up to 10 steps with telephone number, protocol and number of call attempts.




**Picture 16.** General decription of the call structure

## 5.2 Alarm events

An alarm can be initiated by one of the following alarm events:

A radio signal from a radio transmitter, e.g. ATOM, SMILE, WALL or similar

- A push on any button
- An internally activated alarm

Depending on the alarm event, the alarm can be routed to different alarm receivers in sequence. The type of alarm event is called alarm type, see next section.

## 5.3 Alarm types

The alarm type describes the reason for the alarm. For each alarm type a number of properties of the alarm call is decided in the configuration.

### 5.3.1 Radio equipment alarms

When an alarm arrives from a radio transmitter, the alarm type is normally decided from what alarm type that is connected to the corresponding radio position.

### 5.3.2 Alarms from Alarm button (B1) or Extra button (B3)

When the user presses the **Alarm button (B1)**, the alarm type is always User alarm from button. The **Extra button (B3)** can be configured to send an optional alarm type.

### 5.3.3 Internally activated alarms

The following alarms are activated internally:

- Reminder alarm
- Passive alarm
- Automatic ready indication
- Test alarm
- Mains failure alarm
- Mains OK indication
- Accumulator alarm

### 5.3.4 Undefined alarm types

All alarm types are not defined in every protocol. If an alarm type isn't defined the unit will try with the next position in the sequence to see if this position holds another protocol. This will be done immediately. The same thing happens if a telephone number or alarm code is missing. In the **Home Phone** protocol, however, there is no requirement for any alarm code.

## 5.4 Alarm type groups

NOVO supports 16 alarm type groups, numbered from 1-16 and every alarm type must belong to one of these groups.

## 5.5 Alarm sequences

NOVO supports up to eight (8) sequences where each sequence can contain up to ten (10) steps. For each step in the sequence the following parameters can be configured:

- Call type
- Carrier type
- Call attempts
- Continue efter success

### 5.5.1 Call type

NOVO supports up to twelve (12) call types, named **A** to **L**. Every call type contains the following parameters:

- Telephone number/address
- Protocol
- Port
- Username
- Password
- Optional voice number

### 5.5.2 Carrier type

Depending on version NOVO supports up to two carriers:

| Version | IP | GSM | PSTN |
|---|---|---|---|
| NOVO IP/GSM | X | X | |
| NOVO PSTN/GSM | | X | X |
| NOVO PSTN | | | X |

**Table 13.** Version carriers

Normally a primary and a secondary carrier is set where the second carrier can be configured as fallback in the alarm event of communication error on the primary carrier.

### 5.5.3 Call attempts

If a call fails, the unit waits and then re-tries the number of times specified by the call attempt parameter in the current step of the alarm sequence. When the maximum number of call attempts is reached, the sequence continues to the next step. The time to wait between calls is specified by the parameter Wait between call attempts, see below. There is also a global parameter for the maximum total number of call attempts in one call sequence.

#### Wait between call attempts

If no-one answers the call, NOVO re-tries and between the call attempts there is a waiting period which can be set.

For some alarm types it is possible to interrupt the call during this waiting period by pressing the **Reset button (B2)**. If a new alarm with higher priority arrives during this waiting time this will also interrupt the sequence and start a new alarm session.

#### Continue after success

Normal behavior is that the unit stops the call sequence when a call has been successful. However it is possible to set this parameter so the unit instead continues to the specified step in the alarm sequence after the successful call. If the call attempt failed, the unit continues to the next step as normal.

### 5.5.4 Acknowledgement of the alarm call

The care phone requires that the receiving personnell in some way acknowledge that they have received the alarm call. The acknowledgment is usually a DTMF tone sent from the telephoneIn connection to this NOVO can also be configured to require that the alarm call is disconnected by the receiving personnel.

### 5.5.5 Repetitions of the sequence

The call sequence can be configured to make several repetitions if there is no answer from the receiving part.

## 5.6 Alarm code

Each NOVO unit has a uniqe number ID which can contain up to 32 characters and is used to identify the caller in the alarm central.

## 5.7 Indications during an alarm call

NOVO has several ways to the progress and status of an alarm call. Below is a list of the default indications for a user initiated alarm call.

*Please note that certain alarm types, e.g. mains failure or radio inteference, by default are "silent" i.e. they do not play the pre-call signal, dial tones or the disconnection sound when done etc..*

#### Pre-call signal

After a user initiated alarm e.g. after pushing the **Alarm button (B1)** NOVO plays a pre-call signal in the speaker to alert the user that the alarm is being initiated. During the pre-call signal it is possible to cancel the alarm call attempt by pressing the **Reset button (B2)**. NOVO confirms the cancellation by playing a sound and the unit resumes Idle mode.

#### Dial tones in speaker

After the pre-call signal the unit starts dialling and the dial tones are played in the speaker.

#### Alarm LED blinks during call attempt

During the alarm call attempt (and before the alarm central answers) the **Alarm button LED (L3)** blinks (0.5s On/0.5s Off) to indicate that an alarm call is in progress.

#### Call answered

When the alarm call is answered by the alarm central receiver NOVO initiates a data transmission sequence before the alarm central operator's voice is heard. The data transmission is silent to the caller.

#### Failed call

If the call attempt somehow fails, e.g. the alarm central does not answer in a timely fashion or the call is unintentionally cut before the alarm central sends a disconnection command to NOVO the unit indicates this by blinking the **Alarm button LED (L3)** 1s On/1s Off. Depending on the settings in the Alarm sequence new call attempt may occur.

#### Disconnection sound at end of successful call

After a successful alarm call to the alarm central NOVO disconnects and plays a disconnection signal in the speaker to indicate that the call is now terminated.

#### Failed alarm, sound/blink

If the alarm central answers the call but somehow fails to acknowledge the alarm the unit returns to Idle mode but indicates a failed alarm by blinking the **Alarm button LED (L3)** (2.5s On/2.5s Off). Depending on the settings in the Alarm sequence new call attempts may occur.

## 5.8 Protocols

NOVO supports most occuring protocols in the market.

The protocol determines the parameters for the communication session and consist of a data transmission part (i.e. alarm code, alarm type etc.) and the conversation (voice) part. For an analogue alarm receiver this is sent with DTMF tones and for an IP-based alarm receiver this is sent digitally.

### Home Phone

When the care phone is configured to call to a normal telephone, NOVO must use the **Home Phone** protocol. To control the conversation in **Home Phone** protocol, the alarm receiving party can press the buttons on their telephone according to below.

| Command | Meaning |
|---|---|
| 1 | Increase conversation volume |
| 2 | Go into duplex mode |
| 3 | Decrase conversation volume |
| 4 | Send Phone ID |
| 7 | Go into simplex mode, activate the microphone |
| 8 | Go into simplex mode, activate the speaker |
| 0 or 6 | Disconnect the call |
| 9 | Deny call, Go to Next |

**Table 14.** Home Phone protocol conversation control commands

## 5.9 Conversation

To ensure the care phone doesn't stay in conversation mode forever there is a maximum time for the conversation, normally set to 5 minutes (configurable). If a tone command is sent from the receiving party the timer is reset and the conversation can continue another 5 minutes (default).

20 seconds before end of conversation time the care phone sends a warning tone to the receiving party and the operator/personnell can then press a button to extend the conversation time.

## 5.10 Examples

### 5.10.1 Example 1 - a simple alarm sequence

The user presses the alarm button on the portable trigger, e.g. SMILE. This triggers an alarm event in NOVO and the logic finds that this is alarm event is associated to the alarm type **User alarm from trigger**. This alarm type belongs to an alarm type group associated to sequence #1. In this case sequence #1 consists of 1 step. This step consist of some parameters:

| Step | Call type | Carrier type | Call attempts |
|---|---|---|---|
| 1 | A | GSM | 2 |

**Table 15.** Example of steps in a sequence

Let's take a look at step 1. The **Call type** (A) is built up by a set of parameters, see the table below.

The number of **Call attempts** (2) decides how many times step 1 will be repeated in the alarm event of a failed call attempt. Each repetition is performed after a given time and is configurable.

The Call types consist of call specific parameters and depening on the protocol different information is required.

| Call type | Address/phone number | Protocol | Port | Username | Password | Optional voice number |
|---|---|---|---|---|---|---|
| A | www.alarm.com | SCAIP | 555 | username | password | N/A |
| B | www.alarm.com | SCAIP | 555 | username | password | N/A |

**Table 16.** Example of call type parameters

### 5.10.2 Example 2 - SCAIP over IP/GSM

Calling a digital alarm reciver requires some additional connection parameters since NOVO communicates with the alarm central like a computer, i.e. it is required to set an IP address (e.g. 192.168.1.10) or a DNS hostname (e.g. www.alarm.com) and a communications port and in some cases login credentials.

| Step | Call type | Carrier type | Call attempts |
|---|---|---|---|
| 1 | A | IP | 2 |
| 2 | B | GSM | 2 |

**Table 17.** Example of steps in a sequence

In this example NOVO attempts to call the alarm receiver over IP and GSM.

| Call type | Address/phone number | Protocol | Port | Username | Password | Optional voice number |
|---|---|---|---|---|---|---|
| A | www.alarm.com | SCAIP | 555 | username | password | N/A |
| B | www.alarm.com | SCAIP | 555 | username | password | N/A |

**Table 18.** Example of call type parameters

### 5.10.3 Example 3 - NEAT Talk/CPC to an analogue alarm receiver

When calling an analogue alarm receiver the protocol used must correspond to the alarm receiver and the carrier must be either IP or GSM.

*If carrier type is IP the corresponding SIP account settings must be set.*

Below is an example of the sequence steps and call type parameters.

| Step | Call type | Carrier type | Call attempts |
|---|---|---|---|
| 1 | B | IP | 3 |
| 2 | C | GSM | 2 |

**Table 19.** Example of steps in a sequence

| Call type | Address/phone number | Protocol | Port | Username | Password | Optional voice number |
|---|---|---|---|---|---|---|
| B | +4646112157 | CPC | 5060 | username | password | N/A |
| C | +4646112157 | NEAT Talk | 45005 | username | password | N/A |

**Table 20.** Example of call type parameters

In the example above there are two steps with two call types, each step is designated a carrier (IP and GSM) and step #1 makes three call attempts and if these call attempts fails NOVO continues to step #2 and make two attempts.

The call types are defined with the phone numbers and protocol.

### 5.10.4 Example 4 - Using Home Phone protocol

When using the Home Phone protocol the carrier must be either IP or GSM and the call type must include an analogue number.

| Step | Call type | Carrier type | Call attempts |
|---|---|---|---|
| 1 | C | GSM | 3 |

**Table 21.** Example of steps in a sequence using Home Phone protocol

In the example there is one step in the sequence, the carrier is set to GSM and there will be 3 call attemps. The call type (set to C in the example) calls the phone number +4646112165 and no other parameters are required.

| Call type | Address/phone number | Protocol | Port | Username | Password | Optional voice number |
|---|---|---|---|---|---|---|
| C | +4646112157 | Homephone | N/A | N/A | N/A | N/A |

**Table 22.** Example of call type parameters when using the Home Phone protocol

# 6 Programming/configuration modes

## 6.1 General

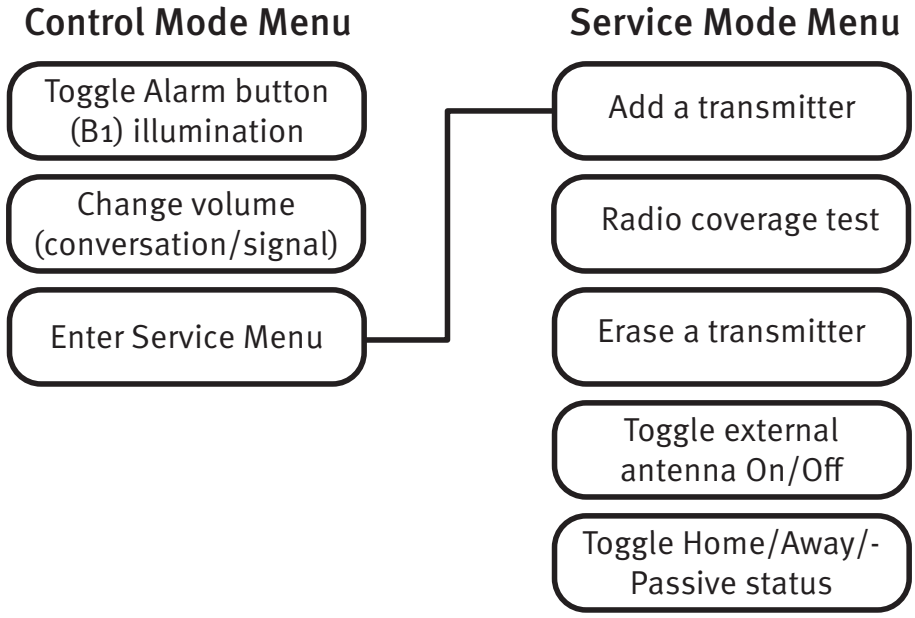
Depending on version configuration can be done by the unit buttons, via the NEAT Management Portal (CMP), with a software programmer, a HAND terminal or with the LPP protocol.

| Version | Buttons | Software | CMP | HAND | LPP |
|---|---|---|---|---|---|
| NOVO IP/GSM | X | X | X | | |
| NOVO PSTN/GSM | X | X | X | X | X |
| NOVO PSTN | X | X | | X | X |

**Table 23.** Version programming options

NOVO is normally in Idle Mode, i.e. is not processing any user-initiated (e.g. user alarm) nor automatic alarm event/action (e.g. test alarm).

Control Mode and Service Menu are ways of easily configuring the unit. The diagram below displayes the tree structure of the menues and its commands.




**Picture 17.** Control Mode and Service Mode tree structure

*In NOVO PSTN the menu item **Toggle external antenna** is not enabled and the menu item **Radio coverage Test** is replaced by **Walk test mode**.*

## 6.2 Control mode (CM)

Enter CM (Control Mode) by shortly pressing button PS1 when unit is in Idle mode. When the unit is in CM all LEDs L4-6 are lit. The unit returns automatically to Idle Mode after function execution or 5 seconds of inactivity.

| # | Control Mode functions |
|---|---|
| 1 | Toggle **Alarm button (B1)** illumination |
| 2 | Change volume (conversation/signal) |
| 3 | Enter Service Menu |

**Table 24.** Control Mode functions

### 6.2.1 Toggle Alarm button (B1) illumination

Press and hold **Alarm button (B1)** for more than 3 seconds to toggle **Alarm button (B1)** illumination. The new status is played in the speaker.

### 6.2.2 Change volume

Press and hold **Reset button (B2)** for more than 3 seconds to toggle conversation level. The level is indicated by one, two or three “blipps” and in the relevant level in the speaker. Release **Reset button (B2)** at desired level is and press again (and hold) within 5 seconds to toggle signal level. After each selection the unit “blipps” to confirm.

### 6.2.3 Enter Service Mode

Press **Extra button (B3)** for more than 3 seconds to enter Service Mode.

## 6.3 Service Mode (SM)

Enter Control Mode (see above) and then press button **Extra button (B3)** for more than 3 seconds. When the unit enters Service Mode the **Alarm button LED (L1)** is lit and **Extra buttion LED (L3)** blinks and the voice message for adding a transmitter (function #1) is played in the speaker. Select the function by pressing **Alarm button (B1)** or step to next function by pressing **Extra button (B3)**. To indicate the current function available a corresponing voice message is played in the speaker.

After finishing configuration of a selected function NOVO automatically returns back to the Service Menu. Step to next function by pressing **Extra button (B3)** or exit by pressing **Reset Button (B2)**.

The table below list the functions in the Service Mode menu.

**Service Mode functions**

| # | NOVO IP/GSM and NOVO PSTN/GSM | NOVO PSTN |
|---|---|---|
| 1 | Add transmitter | Add transmitter |
| 2 | Radio/GSM coverage mode | Walk test mode |
| 3 | Remove transmitter | Remove transmitter |
| 4 | Set external GSM antenna to On/Off | Change Home/Away/Passive status |
| 5 | Change Home/Away/Passive status | N/A |

**Table 25.** Service Mode functions

### 6.3.1 Add a transmitter

NOVO features Plug&Play programming of radio peripherals as well as traditional position programming for older radio peripherals not supporting Plug&Play.

In total 48 radio peripherals can be added to NOVO. 8 as traditional position programed devices and 40 as Plug&Play peripherals.

NOVO supports a large number of the alarm types for traditional position programming and in the default configuration the alarm types are positioned as listed in the table below.

| Position | Denomination |
|---|---|
| 1 | User alarm from trigger |
| 2 | User alarm from trigger |
| 3 | User alarm from trigger |
| 4 | Smoke |
| 5 | Fall alarm |
| 6 | Door alarm |
| 7 | Bed alarm |
| 8 | Passive alarm |

**Table 26.** The most common alarm types and their positions (default)

*Please note that the table above is a default configuration. Other configurations may apply to your unit.*

To add a peripheral, go to **Add transmitter** in the service menu and enter the function by pressing **Alarm button (B1)**. NOVO is now open for programming a Plug&Play radio peripheral by just activating the peripheral (e.g. pressing the Alarm button on SMILE). A short beep confirms the addition of the peripheral.

If the device is not a Plug&Play device, press the **Extra button (B3)** to enter the first of the eight position indicated with one short “beep”, press the **Extra button (B3)** again to step to position 2, now indicated with two short “beeps” etc. At desired position, press the **Alarm button (B1)** to enter the position and

add the transmitter by activating the unit. A short beep confirms the addition and the beep also communicates the transmitter battery status. The beeps means the following:

- One short beep — action OK and transmitter battery OK
- One long beep — action OK and transmitter battery low
- An error sound — the transmitter is already present at another radio position or it does not support Plug&Play if the error sound appears while trying to add the device as a Plug&Play device.

Exit function by pressing **Reset Button (B2)**.

### 6.3.2 Radio/GSM coverage mode

*This is only valid for NOVO IP/GSM and NOVO PSTN/GSM.*

The Radio/GSM coverage mode uses the LEDs to display the radio/GSM signal strength and is updated every 2 seconds. L4 and L6 are lit alternately to L5, i.e. when L4 and L6 are lit, L5 is off.

| Signal | L1 | L2 | L3 | L4 | L5 | L6 |
|---|---|---|---|---|---|---|
| Very weak (1) | Flash | Off | Off | Flash | Flash | Flash |
| Weak (2) | On | Off | Off | Flash | Flash | Flash |
| Average - (3) | On | Flash | Off | Flash | Flash | Flash |
| Average + (4) | On | On | Off | Flash | Flash | Flash |
| Strong (5) | On | On | Flash | Flash | Flash | Flash |
| Very strong (6) | On | On | On | Flash | Flash | Flash |
| GSM not installed | Flash | Flash | Flash | Flash | Flash | Flash |
| GSM not active | Off | Off | Off | Flash | Flash | Flash |

**Table 27.** LED indications when in Radio/GSM coverage test

In Radio/GSM coverage mode (it's also possible to test the radio connection between a connected transmitter and the NOVO-unit, i.e. Walk test mode.

If Radio/GSM coverage test is initiated directly after startup, the test indicates "GSM not installed" until the GSM module is initiated and running.

End the Radio/GSM coverage test by pressing **Reset Button (B2)**.

#### Walk test mode

When in Radio/GSM coverage, activate the connected transmitter, (e.g pressing the Alarm button on SMILE) and NOVO responds with a "blipp" if the radio coverage is OK. On SMILE the LED blinks green to acknowledge radio coverage is OK.

### 6.3.3 Remove transmitter

It is possible to remove one or all radio peripherals regardless of whether it is a Plug&Play or position programed peripheral.

#### Remove a known and working peripheral

Enter Remove transmitter from the service menu by pressing the **Alarm button (B1)**. Activate the peripheral and press the **Alarm button (B1)** until time out. The transmitter is now removed from the NOVO configuration.

#### Remove a peripheral at a specific position

Enter remove transmitter from the service menu by pressing the **Alarm button (B1)**. Press the **Extra button (B3)** to enter the first of the eight position indicated with one short "beep". Press the **Extra button (B3)** again to step to position 2, now indicated with two short "beeps" etc. At the desired position, press the **Alarm button (B1)** to timeout in order to remove the transmitter at the position.

#### Remove all peripherals

Enter "Remove transmitter" from the service menu by pressing the **Alarm button (B1)**. Press and hold the **Alarm button (B1)** until the general beep is played. Release and then press and hold the **Alarm button (B1)** again until the confirmation beep is played. All radio peripherals are now erased.

Exit to SM by pressing **Reset Button (B2)**.

*The only way to remove a broken Plug&Play device from the NOVO configuration is to erase all transmitters or perform the action via the NEAT Management Portal or with a software programmer. When a full removal is performed, don't forget to re-add the user peripherals in the installation.*

### 6.3.4 Set external GSM antenna to On/Off

*Not applicable to NOVO PSTN.*

External antenna status is played in speaker. Change status by pressing **Alarm button (B1)** › 3 seconds. The new status is played in speaker and NOVO automatically returns to SM.

### 6.3.5 Change Home/Away/Passive On/off

Change status by pressing **Alarm button (B1)** › 3 seconds.

## 6.4 Programing NOVO PSTN units with LPP commands

NOVO units with PSTN functionality can be programmed with the Local Programming Protocol (LPP). This protocol uses DTMF dialtones, i.e. the same dial tones that are used in a regular, analogue telephone and programming can de done over the PSTN line (e.g. from a cellular phone) or with a HAND unit.

For more information about HAND please refer to HAND User Manual, NE41 07001-02.

The parameters available for programming with LPP are:

| Parameter | DTMF Command | HAND Command |
|---|---|---|
| Telephone no A | 0 0 # N N N # | [TEL A] NNN [OK] |
| Telephone no B | 0 1 # N N N # | [TEL B] NNN [OK] |
| Alarm code | 1 5 # N N N # | [CODE] NN [OK] |
| Protocol | 4 5 # N N N # | [PROT] NN [OK] |
| Set time | 8 4 # H H M M # | 84 [OK] HHMM [OK] |
| Exit programming | 9 0 # # | [END] |

**Table 28.** LPP programming parameters

# 7 NOVO Programmer

## 7.1 Installation

NOVO can be configured via our software NOVO Programmer. This software can be obtained from your reseller or distributor.

NOVO Programmer is tested to work with Microsoft Windows versions:

- Windows 7
- Windows 8
- Windows 8.1
- Windows 10

*Install the NOVO Programmer as a local computer administrator.*

When NOVO Programmer is started a dialog window asks for a password, Press “Enter” to bypass the password and start NOVO Programmer in “Basic” mode.

For further functionality your reseller or distributor can provide you with a password for extended functionality in NOVO Programmer.

## 7.2 Menues

### 7.2.1 File menu

“New”, “Open”, Save” “Save as...” is used for handling the configuration files.

### 7.2.2 Communication menu

“Read from unit (CTRL+R)” reads the current configuration from the connected NOVO into NOVO Programmer and “Write to unit (CRTL+W)” writes the current configuration in NOVO Programmer into the connected NOVO.

*After the configuration file is written to NOVO the unit is disconnected from an re-connected to Windows. Depending on your Windows system settings the “Auto play” dialog window may open. This dialog window can safely be closed.*

### 7.2.3 Option menu

#### Select languague

Select the user interface languague from the list. The languague change is implemented instantaneoulsy.

#### Properties

This window displays the paths to the log and languague files. These paths are read only! The path to the configuration files is editable by clicking the button “Browse” and selecting the new path where saved configuration files will be stored.

#### Password

To enter extended functionality enter the password and click OK. Open an existing or create a new configuration file to access the extended functions.

### 7.2.4 Help menu

The “About” dialog window displays some general info about the NOVO programmer, contact information and the possibility to send a mail to NEAT.

## 7.3 NOVO Programmer Tabs

### 7.3.1 Basic

#### Alarm code

Enter the user’s alarm code.

#### PIN code for SIM card

If the SIM card requires a PIN code, enter the four digits here otherwise leave empty.

*If the SIM cards is blocked by too many erroneous attempts it must be removed from NOVO and inserted into a regular mobile phone to unlock it with a PUK code.*

#### Own number

If the configuration parameters require the subscription phone number enter it here.

#### Own number from SIM card

Depending on the GSM network operator the phone number can be stored and read from the SIM card. If this is the case, the phone number will be displayed here.

# 8 Misc

## 8.1 Real Time Clock (RTC)

NOVO is equipped with a real time clock (RTC) which is running continously, even when power is turned off and/or running on accumulator.

The RTC can be set by NTP servers (if connected to internet via GSM/GPRS).

NOVO supports Daylight Savings Time and this is configurable.

## 8.2 Alarm log

The last alarms are logged and synhcronized to CMP. To view the alarm log, access CMP or contact your distributor. The data stored in this log is:

- Time when the alarm was added to the alarm queue
- Alarm type
- Result (whether the alarm was succesful or not)
- Last call duration
- Last call result, see the table below

| Result | Meaning |
|---|---|
| Success | OK |
| Failed | No contact after all call attempts performed |
| Not finalized | Call sequence not completed due to unknown error |
| Queue full | Alarm queue was full |
| Not active | Alarm type was not active |
| Cancelled | The user cancelled the alarm |

**Table 29.** Alarm log results

After a manual restart (done with the I/O button) all alarms in the alarm log with result “Not finalized” are automatically changed to “Cancelled”.

All other restarts (e.g. after a firmware upgrade or after a power failure) results in all alarms with status “Not finalized” are sent again.

# 9 Important

## 9.1 Use and maintenance

- Do not damage the unit or its parts. If damaged, immidiately contact authorized personnel.
- Do not expose to direct sunlight.
- Keep away from dust, moist and dirt.
- Do not drop, knock, twist or shake the device.
- Do not warm up the device or use it near fire.

## 9.2 Cleaning

- All parts in the NOVO kit can be cleaned with a mild soap solution and a damp cloth. Dry with a dry cloth.
- Strong chemicals, grease and other harsh substances must not be used when cleaning or handling the parts in the NOVO kit.
- NOVO must be disconnected from the power socket before cleaning.
- After cleaning, control that the home care phone works properly by sending a test alarm to the alarm receiver/central.

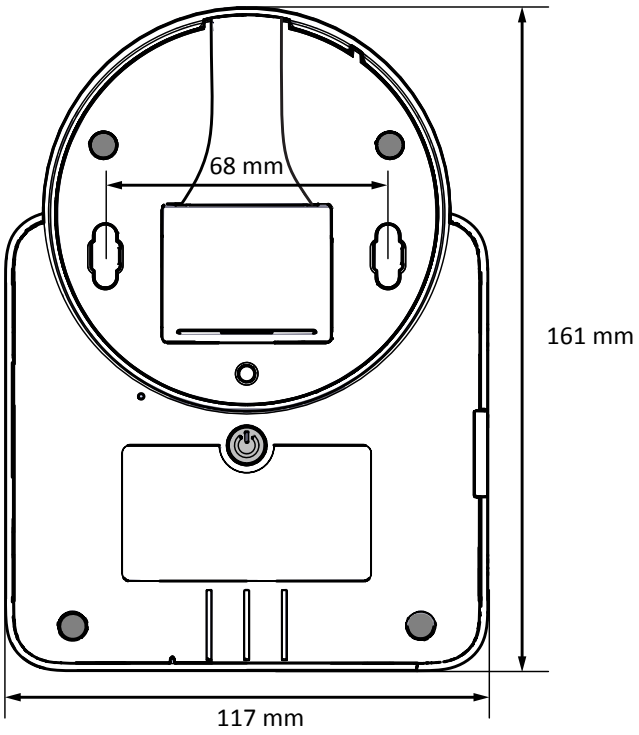
## 9.3 Safety Notes

- Read instructions prior to use.
- Always test the system per instructions prior to use.
- Always check the function of the product after making adjustments.
- This product may not be suitable for all persons and should not be a substitute for the routine visual monitoring protocol by caregiver.
- Must not be used in situations where a delay in the arrival of appropriate medical care, could lead to a potentially life-threatening situation.
- Our units are NOT intended for any life support device, thus intending a device whose malfunction may result in damage to a life.
- Check the device regularly and replace when necessary.
- Do not integrate with other systems other than those specified in this document.
- Always keep the device dry. Exposure to excessive moist can cause malfunction.
- The product will not cause electromagnetic disturbances under normal working conditions.
- The product can be placed near other products or devices as long as mechanical vibration is not present.
- Remove batteries if the unit is to be out of use or stored for an extended period of time.

## 9.4 Disposal

At the end of the product's use life, please dispose of it at appropriate collection points provided in your country. For disposal or recycling information, please contact your local authorities or the Electronic Industries Alliance (EIA, www.eiae.org). In the European Union, the bin label indicates that this product should not be disposed of with household waste. It should be deposited at an appropriate facility to enable recovery and recycling or returned to your distributor.

# Appendix A NOVO IP/GSM Mounting holes




**Picture 18.** NOVO unit key hole measures

# Appendix B Alarm types and Alarm type groups

| | |
|---|---|
| **Assistance alarms** | Assistance alarm |
| | Enuresis |
| **Assult alarms** | Assault alarm |
| | Burglar alarm |
| **Emergency alarms** | Emergency alarm |
| **External sensor alarms** | Bed alarm |
| | Carpet alarm |
| | Door alarm |
| **Other alarms** | Double press |
| | Long press |
| | Manoeuvre |
| | Measurement data |
| | Medical dispenser |
| | Position info |
| | Radio test alarm |
| | Reset alarm |
| | Tamper alarm |
| | Technical failure |
| | User call 1 |
| | User call 2 |
| | User defined |
| **Presence alarms** | Action indication |
| | Automatic ready indication |
| | Log call |
| | Presence indication |
| | Ready indication |
| | Reminder alarm |
| **Smoke detector alarms** | Co Gas |
| | Gas alarm |
| | Smoke detector alarm |
| | Temperature alarm |
| | Water alarm |
| **Technical alarms** | Accumulator alarm |
| | Accumulator fully charged |
| | Battery alarm |
| | Daily report / Event |
| | Heartbeat |
| | Mains failure alarm |
| | Mains OK indication |

| | |
|---|---|
| | Network return |
| | No network |
| | Radio interference |
| | Radio out of range |
| | Radio within range |
| | Service call |
| **Test alarm** | Test alarm |
| **User alarms** | Away indication |
| | Bogus call |
| | Epilepsy alarm |
| | Fall alarm (man down) |
| | Home indication |
| | Inactivity |
| | Passive alarm |
| | Pull cord alarm |
| | User alarm from button |
| | User alarm from trigger |
| | User alarm from trigger, battery low |

**NOVO Unit**

| | |
|---|---|
| Measures, W x H x D | 175 x 130 x 68 mm |
| Temperature range | +5 - +55 °C |
| Weight (incl. backup accumulator) | 300 g (standard capacity accumulator) or 355 g (large capacity accumulator) |
| Communication | IP/GSM (GPRS), PSTN/GSM (GPRS) or PSTN |
| Power supply | 230 $V_{AC}$/5 $V_{DC}$ |
| Max power consumption | <5 W |
| **Accumulator** | |
| Type | NiMH |
| Voltage | 3.6 $V_{DC}$ |
| Capacity | 400 mAh or 2000mAH |
| Stand-by backup time | up to 450h |
| **Speaker** | |
| Max power | 2 W |
| Impedance | 8 ohm |
| **Radio** | |
| Max transmission power | 10mW |
| Radio frequency | 869.2125 MHz (Social alarms, transmission) |
| | 869.2375 MHz (Acknowledge) |
| Security level | Category 1 (Highest) |
| Radio range | Up to 300 meters, free air |
| **Approvals** | EN69050-1:2006+A1+A2+A11+A12:2011 |
| | EN 301489-1 v1.9.1 |
| | EN 301489-3 v1.6.1 |
| | EN 301489-7 v1.3.1 |
| | EN 300220-1 v2.4.1 |
| | EN 300220-2 v2.4.1 |
| | EN 301511 v9.0.2 |
| | CGF-CC v3.4.0 |
| | EN 50134-2 - Social alarms |
| | |

**SMILE**

| | |
|---|---|
| Measures, W x H x D | 34 x 42 x 15 mm |
| Weight (incl. backup accumulator) | 14 g |
| Radio frequency | 869.2125 MHz (Social alarms, transmission) |
| | 869.2375 MHz (Acknowledge) |
| IP Code | IP67 |
| Temperature range | +5 - +55 °C |

# Appendix C Recommended AC adaptors and accumulators

**Recommended AC adaptors for user markets**

| | |
|---|---|
| EU | NE31 07006-14 |
| UK | NE31 07006-16 |
| US | NE31 07006-21 |

**Recommended accumulators**

| | |
|---|---|
| 400 mAh | NE31 14002-02 |
| 2000 mAh | NE31 14004-03 |