

KNOP



THIS USER GUIDE APPLIES FOR SOFTWARE VERSION 1.X

User guide for LAK901



KNOP ELEKTRONIK A/S

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Intended use

The LAK901 is designed to work with KNOP's 90X Series wireless devices.

An alarm transmission occurs when the LAK901 detects a sound at a certain level. Pay attention to the range described in the section "Checking the coverage area".

LAK901 is intended to assist patients and staff in situations where the patient cannot activate a normal calling system, but can call with sound.

LAK901 is equipped with a position reader, so that the current position of the product can be used in KNOP's position system.

With LAK901 it is possible to make an emergency call to another colleague with a single press on the KNOP logo.

The operation is done via built in a graphic screen and is operated on a small keyboard.

The LAK901 has a rechargeable battery and can be charged with a micro-USB cable.

It is possible to connect an external microphone and external monitor with speaker. These parts are available as accessories.

First time startup

It is recommended that the LAK901 be charged to 100% or connected to the power supply before use.

When connecting the charger, the product switches on automatically if it is switched off, otherwise press **Ent** briefly and the product switches on.

The first time the product is switched on, the desired language must be selected.



Press **↑** **↓** to change the setting.

ENTER Press **Ent** to accept the new language.

OFF Turn off the product press **Esc**.

The LED

The LED indicates a fault/warning/status:

Green: Transmitting telegram.

→ Green flash: Telegram replied.

→ Red flash: Telegram *not* replied.

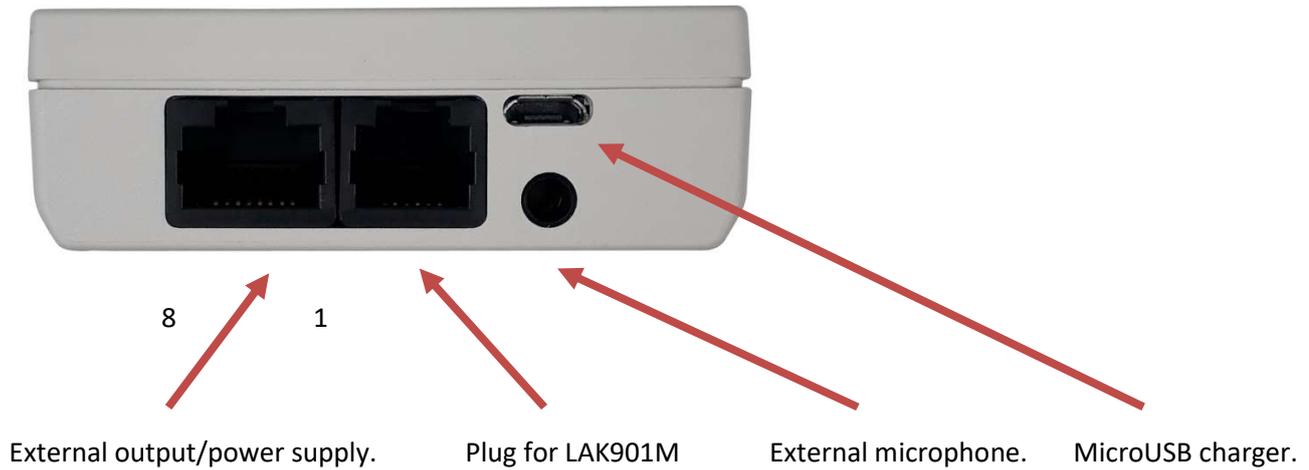
Short red flash: Low battery, recharge the battery.

Short green flash: Hibernating (only if display have not turn off).

Connections

There are four connectors in the product.

1. External relay output and external power supply.
2. Connection to LAK901M, external listening monitor.
3. External KNOP microphone.
4. Charger connector, MicroUSB.



1. Minus
2. Plus, 8-15V @100mA
- 3.
- 4.
- 5.
6. Relay (NO)
7. Relay (COM)

Home screen

A charger must be connected before the unit is turned on after unpacking.

The screen turns off automatically after approx. 15 seconds after last key press.

By pressing one of the keys, the display lights up, after which the clock and date are displayed as well as the status.

The name of the user, if coded, is displayed at the top.



Home screen options:



Name of e.g. the product or place can be changed if desired.



Clock is valid when text is white.



The clock must be set when the text is yellow.



Microphone status and activation.



Microphone activated and timing started.



Time has been achieved.



Blocking activated, microphone alarm not possible while running.



Charger is connected.



The battery is charged.



Charging is recommended.



The battery is empty, must be changed soon.



Unknown battery status, please wait.



Internal microphone on.



Internal microphone off.



External microphone on.



External microphone off.



Timers are enabled and within active period.



Timers are enabled and outside active period.



Timers are disabled.

Alarm call

It is possible to transmit either a panic call or an alarm call from the product to e.g. staff to indicate "I need help" with a client or as an assault alarm.

The call must be acknowledged from a recipient, after which "OK" is displayed. If this does not happen, "FAILED" is displayed. If the call fails, the call is repeated twice automatically.

The call is activated by pressing the KNOP logo.

Panic call:



Call sent.

Call failed.

Call received.

Alarm call:



Call sent.

Please wait

Call failed.

Call received.

Battery alarm

The product indicates the battery status on the screen as well as when the battery is discharged with sound indications.

-  The battery is charged.
-  Charging is recommended.
-  The battery is next used, must be charged soon.

At the same time there are a few short beep sounds approx. every 5 minutes, indicating low battery, while displaying the following screen:



Main menu

By pressing  and  holding at the same time for 1 second, either on screen off or in the home screen, the main menu appears. However, the product must be on.

General operation of the menu:



Current function of  .

In this example, the function of  the button is  (accept) and the function of  the button is  (cancel/exit).



The green arrow shows which menu item can be selected by pressing .

Press   to move the green arrow either up/down or right/left in the menu.

Note: After approx. 30 seconds of inactivity the menu returns to the home screen automatically.

Main Menu - Off (Hibernate)



ENTER Select **Hibernate** and press **Ent**.

EXIT Press **Esc** to exit the menu.



YES Press **Ent** to accept.

EXIT Press **Esc** to exit the menu.

The product is switched on again by pressing the **Ent** key.

If you want the product to be completely switched off, this can be done in the menu item "Settings -> Turn off".

Sleep can be used if you do not want calls from the product for a period of time.

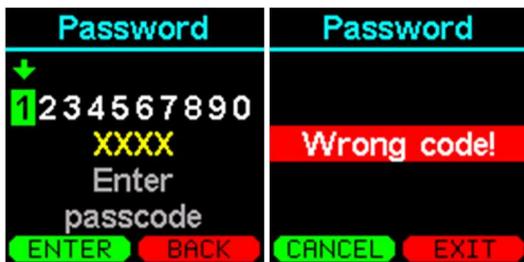
Hibernation uses more power than the power off feature.

Main menu - Settings



- ENTER** Select **Settings** and press **Ent**.
- EXIT** Press **Esc** to exit the menu.

If a password has been programmed, this must now be entered.



- Press **↑** **↓** to change the value (0 - 9).
- ENTER** Press **Ent** to select the number.
- BACK** Press **Esc** to delete the last digit or return to the main menu.

In case of incorrect code:

- CANCEL** Press **Ent** to try again.
- EXIT** Press **Esc** to exit the menu.

The settings menu now appears:



The software version and product ID are displayed in the first two lines, these cannot be changed.

- S/W: 10.0** Software version.
- ID: 12345** Product ID og serial number.

- ENTER** Select a menu item and press **Ent**.
- EXIT** Press **Esc** to exit the menu.

Main menu - Settings - Sensitivity

Adjust the sensitivity of the microphone and the reaction time.



ENTER Select **Sensitivity** and press **Ent** next select **Microphone** and press **Ent**.
EXIT Press **Esc** to exit the menu.



Sensitivity can be set between 0 - 100% and the activation time 0 - 5.0 seconds.



The microphone cannot hear anything.

The microphone hears something.

Press **Up** **Down** to change the sensitivity of the microphone.

NEXT Press **Ent** to change the activation time.

EXIT Press **Esc** to leave the menu without changes.



The activation time can be set between 0 and 5.0 seconds.

Press **Up** **Down** to change the sensitivity of the microphone.

NEXT Press **Ent** to test the settings.

BACK Press **Esc** to go back to sensitivity adjustment.



Activate the microphone with the desired sound. Microphone  icon as red when something is heard. As soon as something is heard, activation time starts, something must be heard all the time, in the set time, otherwise the time starts all over again. If something is heard during the entire period, the hourglass  turns red corresponding to an alarm activation.

 Press  to save the settings.

 Press  to return to activation time adjustment.

Microphone frequency filter

The frequency filters are used to attenuate unwanted noises. Depending on what sounds the client is able to provide, you can advantageously set the filters to optimize this. For example, is it only possible to say sounds such as O and B, these are in the range 500Hz, you can advantageously set the filters to 250Hz (bass filter) and 1000Hz (treble filter) where precisely these sounds will be dominant. On the other hand, it is hissing sounds e.g. S and T are 2000Hz (bass filter) and 6000Hz (treble filter) better.

By default, the files are set to 250Hz (bass filter) and 4000Hz (treble filter) which cover the normal speech range.

Examples:

- Whistling sounds or whistles are typically high tones in the treble and the filters can advantageously be set to 2000Hz in the bass filter and 6000Hz in the treble filter.
- If the client has primarily humming sounds, it is typically in the bass range and the files can be set to 250Hz in the bass filter and 1000Hz in the treble filter.
- If the client can use the speech area both man and woman, the default setting is 250Hz in the bass filter and 4000Hz in the treble filter is typically.



 Select **Advanced** and press .

 Press  to exit the menu.



ENTER Select the menu **Bassfilter** or **Treble filter** and press **Ent**.
EXIT Press **Esc** to exit the menu.



ENTER Select the desired frequency and press **Ent**.
EXIT Press **Esc** to leave the menu without changes.

Blcoking time

After activating the microphone and sending an alarm, a lock-in time can be selected. During the blocking time, the product cannot send an audio-activated alarm until the time has elapsed. It is possible to turn off the blocking time. The function reduces the number of repeated alarms in the same activation. The product is set to 90 seconds by default.



ENTER Select the menu **Blocking time** and press **Ent**.
EXIT Press **Esc** to exit the menu.



- ENTER** Select the desired time and press **Ent**.
- EXIT** Press **Esc** to leave the menu without changes.

Reset microphone settings



- ENTER** Select **Reset** and press **Ent**.
- EXIT** Press **Esc** to exit the menu.



- YES** Press **Ent** to reset to defaults.
- EXIT** Press **Esc** to exit the menu.

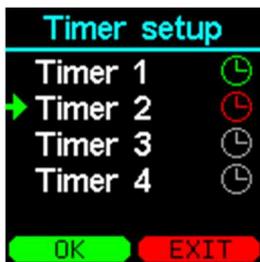
Main menu - Settings - Timer

The product has four timers that can turn the microphone on and off during the day and week.

IMPORTANT: If the clock is not set, time control is automatically switched off and thus the microphone is always active.



- ENTER** Select **Timer setup** and press **Ent**.
- EXIT** Press **Esc** to exit the menu.



-  The timer is programmed but is not within the programmed time.
-  The timer is programmed and is within the programmed time.
-  The timer have not programmed.

- ENTER** Select the desired timer and press **Ent**.
- EXIT** Press **Esc** to exit the menu.



- Activated: Yes** Timer on
- Activated: No** Timer off

- Start: 8:00** Start time
- Stop: 16:00** Stop time

MTWTFSS The timer is on at the days marked green.

Save? Save timer.

Activation:



- FLIP** Press **Ent** switches between on and off.
- EXIT** Press **Esc** to leave the menu without changes.

Start/stop time:



- Press **↑** **↓** to change hours/minutes.
- NEXT** Press **Ent** skifte til næste indstilling.
- BACK** Press **Esc** to return to the menu.

Activated on day(s):



- ENTER** Press **Ent** change selected days.
- EXIT** Press **Esc** to leave the menu without changes.



Press   to move to another day.

 Press  switch between off (red) and on (green) at the selected day.

 Press  to return to the menu.

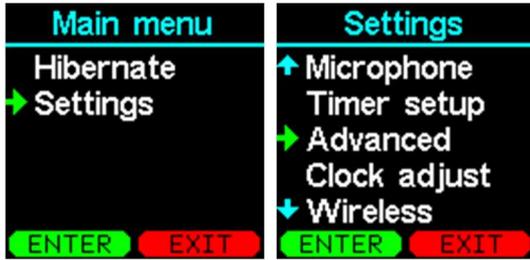
Save!



 Press  to save the settings.

 Press  to leave the menu without changes.

Main menu - Settings - Advanced



ENTER Select **Advanced** and press **Ent**.
EXIT Press **Esc** to exit the menu.

Light & Sound



ENTER Select the desired menu and press **Ent**.
EXIT Press **Esc** to exit the menu.

Backlight: Display brightness.
 Light function: **Off**, display turn on when operating the unit.
Activity, display turns on by sound and alarm.
Auto/dimmed, the display is off in battery mode otherwise dimmed.
 Key sound: The volume of a keystroke.



SAVE Press **Ent** to save the settings.
EXIT Press **Esc** to leave the menu without changes.

Language

Set the desired language in the product.



- ENTER** Select **Language** and press **Ent**.
- EXIT** Press **Esc** to exit the menu.



- Press **Up** **Down** to change the setting.
- ENTER** Press **Ent** to accept the new language.
- EXIT** Press **Esc** to leave the menu without changes.

Daylight-saving



- ENTER** Select **Daylight-saving** and press **Ent**.
- EXIT** Press **Esc** to exit the menu.



Press   to change the setting.

ENTER Press  to accept new setup.

EXIT Press  to leave the menu without changes.

Product name

The name of the unit can be changed to a more telling name e.g. "Peterson", which in this example is the client of this product. It is an optional feature. By default, LAK901 is displayed.



ENTER Select **Product name** and press .

EXIT Press  to exit the menu.



Press   to change the letter.

ENTER Press  select the letter.

BACK Press  to delete last letter.

ENTER Press  for about 1 second to switch between lowercase and uppercase letters.

ENTER Press  for about 3 seconds to jump to the save icon.

BACK Press  for about 3 seconds to exit the menu.

Press  for switching between normal and special letters.



ENTER To save the name, select the symbol  and press .

EXIT Press  to leave the menu without changes.

Password

To avoid accidental change of settings, the menu can support with a password. The password is a four digit code. The code "0000" means no code!
Once a password has been created, it must be entered before accessing the settings menu.

To delete a password, enter "0000"!



- ENTER Select **Password** and press **Ent**.
- EXIT Press **Esc** to exit the menu.



- Press **↑** **↓** to change the value (0 to 9).
- ENTER Press **Ent** to select the number.
- BACK Press **Esc** to delete the last digit.
- BACK Press **Esc** and hold down the key for 2 seconds to exit the menu.



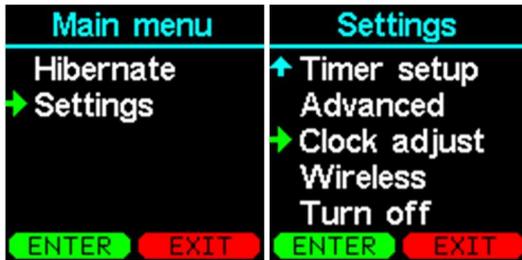
- SAVE Press **Ent** to save the code.
- EXIT Press **Esc** to leave the menu without changes.

Note: It can only be saved when all four digits are selected.

Main menu - Settings - Set clock

It is important that the time and date are set correctly so that timers work correctly.

If the clock is not set, it is not possible to have timers activated.



- ENTER** Select **Clock adjust** and press **Ent**.
- EXIT** Press **Esc** to exit the menu.

Indstil ur:



- Press **↑** **↓** to change the setting.
- NEXT** Press **Ent** to go to the next setting.
- BACK** Press **Esc** to go back or exit the menu.

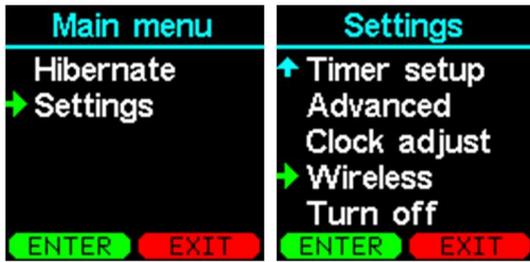
Save new clock setting:



- SAVE** Press **Ent** to save the settings.
- BACK** Press **Esc** to leave the menu without changes.

Note: If the product uses a KNOP system (MR902 / RP902 / USB900), the watch is updated automatically.

Main menu - Settings – Wireless



- ENTER** Select **Wireless** and press **Ent**.
- EXIT** Press **Esc** to exit the menu.

KNOP logo

The KNOP logo of the product can be used to make an alarm, if it is programmed on recipients. The button can either send a normal alarm call, emergency call or disconnected.

- Disconnected, the KNOP button sends nothing.
- Everyone, sends an emergency call to all recipients who have the opportunity to receive the call.
- Normal, sends a call to the recipient in which this product and the button are encoded.



- ENTER** Select **KNOP logo** and press **Ent**.
- EXIT** Press **Esc** to exit the menu.

Select the desired function.



- ENTER** Press **Ent** to save the settings.
- EXIT** Press **Esc** to leave the menu without changes.

Radio

It is possible to turn the wireless transmitter on or off in the product. It is advisable to switch off the transmitter if only the relay output on the product is used so that the product does not transmit unnecessarily and the battery life is extended.



- ENTER** Select **RADIO** and press **Ent**.
- EXIT** Press **Esc** to exit the menu.

Deactivated, no sound-activated alarms are sent.
Activated, sound-activated alarms are sent.

If the KNOP logo is set to send an alarm, it will work in both cases.



- ENTER** Press **Ent** to save the settings.
- EXIT** Press **Esc** to leave the menu without changes.

Main menu - Settings - Switch off

Turns off the product completely and can only be switched on afterwards by pressing **Ent**.



ENTER Select **Turn off** and press **Ent**.

EXIT Press **Esc** to exit the menu.



YES Press **Ent** to accept.

EXIT Press **Esc** to exit the menu.

If you just want the product to sleep, this can be done in the menu item "Settings ➔ Off".

Note: Clock and date are reset.

Maintenance

Software update of LAK901

It is possible to update the software in LAK901, as well as download and upload setup with KNOPTool. For a more detailed description, refer to KNOPTool at www.knop.dk.

Cleaning

The product can be cleaned with a damp cloth or alcohol swab.

Disposal

The product must not be disposed of with ordinary household waste, but treated in accordance with the municipality's instructions for electronic waste.



Control of coverage area

One person activates the product at short intervals, while another systematically walks around the area and marks on a sketch of the building and the area where there is coverage. The sketch is laid out in the office so that everyone who has to operate the system can see where there is coverage. No alarms can be received outside the coverage area.

The coverage area can be increased by using KNOP's repeater system.

Contact your dealer for details.

Factory defaults

Switch off the product completely, remember to remove the adapter or external supply before.

Immediately afterwards, hold down **Ent Esc** simultaneously for approx. 1 second, release **Ent** and hold **Esc** while the LED flashes red.

Hold down the button until the LED lights up green.

Then release the **Esc** button.

The product can / must then be switched on again by pressing **Ent**.

Restart of product

Hold down **Esc** for approx. 30 seconds until the product restarts. Then release the **Esc** button.

The product can then be turned on again by pressing **Ent**.

Battery failure and replacement

The product shows "BATTERY ERROR" when the battery needs to be replaced.

The battery may only be replaced with an original battery supplied by KNOP Electronics.
See the enclosed instructions for the new battery.



Accessories

External microphone, monitor and battery can be ordered from Knop Elektronik A/S. Please visit our website www.knop.dk.

Technical data LAK901:

Battery:	Lithium battery
Battery operating time:	Approx. 14 days with 10 alarm calls per day depends on product setup.
Charging:	microUSB approx. 90 minutes.
Frequency:	869.2125 MHz
Range:	Up to 1500 m between LAK901 and RX901B *)
Display:	Graphic LCD.
Menu texts:	7 languages: Danish, Norwegian, Swedish, Finnish, German, English and Spanish.
Surrounding environment:	Indoor use. <90% humidity non-condensing.
Ambient temperature:	0-40 ° C
Enclosure type:	White ABS
Cabinet dimensions:	65 x 120 x 20 mm.
Density:	IP20
Weight incl. Batteries:	100g

We reserve the right to make changes.

*) Measured outdoors with free visibility between transmitter and receiver.

In buildings, the range can be reduced.

Check the coverage area as described in the relevant section.

The coverage area can be increased with KNOP's repeater system MR902 / RP901 series.

We reserve the right to make changes.

