User manual
RX901B

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Warning and safety instructions

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- The battery in this product complies with the relevant IEC safety standards for batteries.

- Please read the safety instructions on the power supply before use.

- The power supply unit must meet the relevant IEC safety standards.

- When replacing the power supply unit or the charging plate, original and/or approved units must be used.

- The battery must not be replaced, and the product must be sent for repair.

- Please read the intended use before putting it into service.

- The product is not water-resistant unless noted in product specification.

Contraindications

In general, the product cannot be used if:

- The disabled client/patient is mentally ill.
- The disabled client/patient is critically ill.
- The client/patient is unable to use the transmitters.

Lifetime after mounting of the device

The battery, if applies, must be replaced when the battery replacement information appears on the display and according to the user manual.

Lifetime is evaluated in relation to the pressure button. This is made according to the supplier's specification.

Lifetime battery (products using battery, only)

KNOP calculates the life of the batteries. See specification in the user manual.

Intended use

In general, the different variants of the medical device (transmitters/receiver system from KNOP Elektronik) are made as assistive aid for impaired/disabled patients to be able to call for assistance.

The various variants of the medical equipment consist of a combination of products (transmitter and receiver) designed to call for help to impaired/disabled patients; The transmitter-receiver system can be activated in different ways:

- For example, patients who actively do this and are aware that they are calling for help, such as e.g., people with walking difficulties who need help going to the toilet.

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- Or disabled patients who are not aware that they are inadvertently putting pressure on the sendere.g. during a seizure.

- Or patients with intellectual and cognitive deficits who are not aware that a receiver is receiving a signal from their transmitter when they leave a house or room.

The system is not designed for critically or mentally ill persons.

General product description

The products manufactured by KNOP elektronik consist of several variants of transmitters and receivers that can be combined with each other. In addition, these products are used in combination with positioning and repeater systems.

These products are medical devices intended to call for assistance and are used for disabled/mobile people, such as those with walking difficulties who need help going to the toilet. The transmitters are activated, for example, by a sound or by pressure (e.g. by pressure with a finger or a breath through the mouth). The recipient is supervised by health care personnel or lay people in private homes.

The system is not designed for critically or mentally ill people.

Part of product	Function in the product system
Transmitter	The transmitter can send the signal obtained from the patient to the receiver monitored by the healthcare personnel or lay person. The transmitter products can be activated by button, sound, blow or movements.
Receiver	The transmitters can be coded into all the receivers and to several receivers at the same time. Some receivers also have a summon button for calling assistance from their coworkers.
Repeatersystem	If it is needed to cover a more comprehensive and larger area a repeater system is used. The repeater system also gives an increased functionality as e.g. that an alarm automatically is received at first at the healthcare person closest to the client.
Positionsystem	If a sender is equipped with a position receiver it can be used in connection with a Position system. Not all product variants include position receivers. Typically, it is seen in connection with nursing homes and security for patients with dementia. The receivers can be portable or stationary.

Product description

RX901B is a receiver designed to work with KNOP 90X series wireless devices.

The unit can be worn in a pocket or on a necklace around the neck.

Up to 250 transmitters can be encoded and assigned a name of your choice.

The last 50 calls are stored in a list where you can see the time of the call, where the call came from, and whether it was acknowledged.

With an RX901B, it is possible, for example, to divide patients (residents) in a care institution into groups, e.g. in connection with shift schedules, where the night shift has to serve more patients than the day shift.

RX901B is equipped with a position reader, so it can be used in the KNOP positioning system.

With RX901B it is possible to make an emergency call to another colleague with a single touch.

Operation is menu-structured in a graphic display and controlled by the keyboard.

RX901B is equipped with a rechargeable battery and wireless charging.

The product is waterproof (IP65).

Commissioning

It is recommended that RX901B be charged to 100% before use.
The supplied wireless charger connects to the adapter via the USB cable.
RX901B is placed on top of the charging plate and the RX901B's display lights up, showing the battery's charge level in percent.
If the device is fully discharged, it may take up to 5 minutes for the display to light up.

Package contents: **RX901B in the charger:**

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

Press ⬆️ ⬇️ to move the green arrow to the desired language.
Press **Ent** to select a language.

Home screen

The first time the device is to be switched on after unpacking, it should be placed on the charger.

When RX901B is not connected to the charger, the screen will turn off approximately 10 seconds after the last operation.

Pressing any key turns on the display and shows the time and date.

The user's name is displayed at the top, otherwise, it is coded "RX901B".

Home screen options:

   The name of e.g. a product or a location can be changed to the desired name.

The current time and date are displayed in white text.

   The clock must be set.

Battery mode:
Battery OK.

Charging recommended.

The battery is almost empty and needs charging.

Alarm sound:
The alarm sound is on.

The alarm sound is switched off.

Vibrator:
The vibrator is activated.

The vibrator is switched off.

System - displayed only if the system is connected:
The system is connected.

Connecting to the system.

Interruption of the system signal.

The system signal has been lost.

Press ⬇ to see the call list.

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Reception of alarms

When the receiver receives an alarm from a coded transmitter, the name, type and time of the reception and any position are displayed.

Sven	Client's name
Room 10	Optional text if encoded.
TX901	Type of transmitter.
Door	Positioning for the alarm.
1. Green	Button/function type.

The individual texts are only displayed if they are encoded or known.

Press `Ent` to confirm the alarm.
Press `Esc` to reject.

Note: In the simple system, the alarm call is handled in the same way, regardless of whether it is accepted or rejected, instead of the KNOP repeater system (MR90X/RP90X) where the alarm is automatically forwarded to other receivers.

If the alarm is not answered, short sounds are heard approximately every five minutes.

When a message is received from a transmitter, e.g. with a low battery, the message below is displayed.
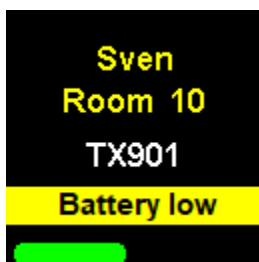
Press `Ent` to confirm the alarm.

Note: "Last call" displays the "low battery" message for the transmitter where the battery needs to be replaced.

Emergency call

It is possible to send an emergency call (or alarm) from the recipient to e.g. other users to indicate "I need help" at a patient or as an assault alarm.

The emergency call is activated by pressing the KNOP logo.

When the emergency call is sent, the receiver vibrates once and when the emergency call is received by another user, the receiver vibrates three times.

Transmitting	Accepted	Failed

Batteryalarm

The receiver indicates the battery status on the display and in case of discharged battery with sound indications.

Battery mode:

Battery OK.
Charging recommended.
The battery is almost empty and needs charging.

If the symbol changes to red, put the device in the charger immediately.
At the same time, a few short beeps will be heard about every five minutes, indicating low battery, while the screen below is displayed:

Clients and transmitters

Before you can encode a transmitter in the receiver, you must create a client to which the transmitter belongs.

A client can be a person, a room, or something else. For example, the client can be **Sven** (used as an example).

Our examples our client is called **Sven** can have one or more transmitters associated with him.

For example, **Sven** (our client) has a wristband transmitter, a bed alarm, a motion sensor, and other products.

When **Sven** activates an alarm from his products, the display shows that the alarm comes from **Sven** and which product is the sender, so that the cause of the alarm is known from the beginning.

This of course assumes that names etc. are encoded in the desired way.

Clients created under Settings / Client / New client:

Main menu	Settings	Clients
↑Hibernate	Ver: 3.8.1	→Add client
Select Group	ID: 123456	Sven
Vibrator: On	Clients	All TX's.
Sound: Low	→Edit group	
→Settings	↓Set clock	

Add under Setting / Client / Client (Sven) / Add TX unit:

Main menu	Settings	Clients	Sven
↑Hibernate	Ver: 3.8.1	Add client	↑Add TX unit
Select Group	ID: 123456	→Sven	Select group
Vibrator: On	Clients	All TX's.	Client name
Sound: Low	→Edit group		→Client text
→Settings	↓Set clock		Delete

Main menu

If you press ⬇ and ⬆ at the same time, either when the screen is off or on the home screen, the main menu opens.

The green arrow on the left shows which line in the menu can be selected.

Main menu
➤ Call list
Hibernate
Select Group
Vibrator: On
Sound: Low
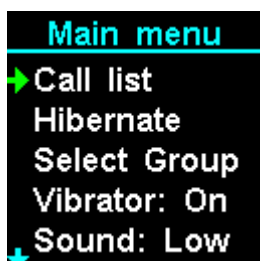
Operation:

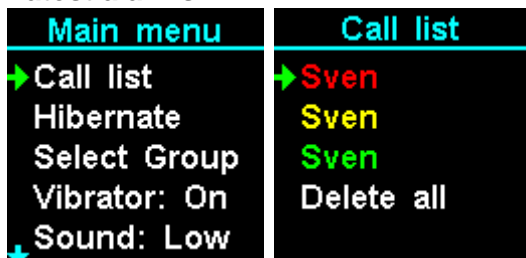Press ⬆ to move the green arrow either up or to the right in the menu.

Press ⬇ to move the green arrow either down or left in the menu.

Press **Esc** to leave the menu.

Press **Ent** to select the menu item with the green arrow next to it.

*NOTE:* After about 60 seconds of inactivity, the menu closes automatically.

Latest alarms:

Main menu	Call list
➤ Call list	➤ Sven
Hibernate	Sven
Select Group	Sven
Vibrator: On	Delete all
Sound: Low	

⬇ ⬆ Scroll between alarms.

GREEN   Means that the alarm was accepted.
RED   Means that the alarm was rejected.
YELLOW   Means the alarm went unanswered.

See more information about the alarms:

Call list	Sven
Sven	Room 10
Room 10	TX901
Batt.: 40%	Door
8:21:38	
Accepted	Output: 1
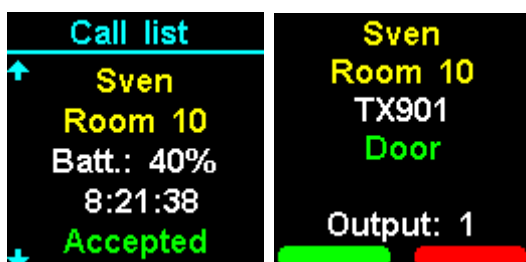
Ent See the client's position and which transmitter the alarm is coming from.

⬇ ⬆ Scroll through multiple alarms.

Call list
Sven
Room 10
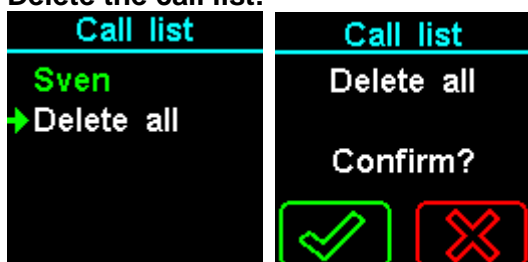Batt.: 40%
8:21:38
Accepted

When an alarm is received from a transmitter that has, for example, a low battery, the message is displayed.

⬇ ⬆ to scroll through other alarm calls.

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Delete the call list:
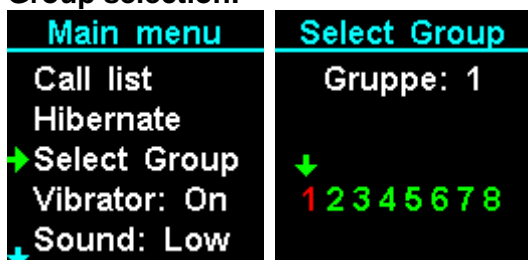
Press **Ent** to confirm.

Suspend/Hibernate receiver:

Ent Confirm or **Esc** to reject.

The receiver is switched on by pressing **Ent**.
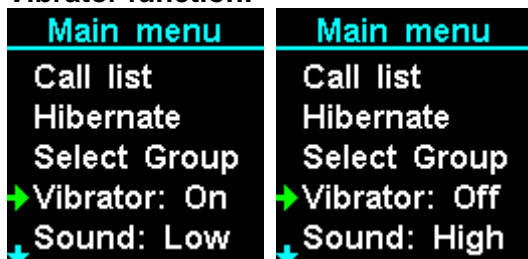
Group selection:

Ent Select or deselect a group.
Esc Return to menu.
⬇ ⬆ Moves arrow to the group you want to change.

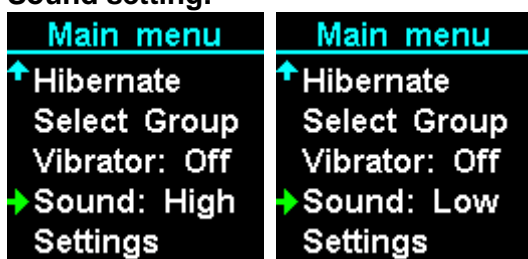**1** Group selected
1 Group deselected

Vibrator function:

Ent Activate or deactivate the vibrator function.
Esc Return to menu.

Sound setting:

Ent Choose between **High**, **Low** or **Off** sound when receiving alarm calls.

Settings and encoding:

Main menu	Settings	Settings	Settings
Hibernate	Ver: 3.8.1	Set clock	Outgoing
Select Group	ID: 064067	Click: Low	System menu
Vibrator: Off	Clients	Product name	Positions
Sound: High	Edit group	Passcode	Language
Settings	Set clock	Outgoing	Turn off

Ver: 3.3.14   The software version of the product.

ID: 58651   Serial number of the product.

Add new client:

Settings	Clients
Ver: 3.8.1	Add client
ID: 123456	Sven
Clients	All TX's.
Edit group	
Set clock	

Select **Add client** or select client and press `Ent`.

It will ask for the client's name and optional text. Remember to add TX devices.

Change client:

Sven	Clients	Sven
Add TX unit	Add client	Room 10
Select group	Sven	TX901
Client name	All TX's.	Add TX unit
Client text		Select group
Delete		Client name

Sven
Room 10
TX901

Client name.
Optional text, e.g., name of room.
Product already encoded on the client.

Add transmitters:

Sven	Add TX device
Room 10	Activate new
TX901	TX device...
→ Add TX unit	
Select group	✕
Client name	
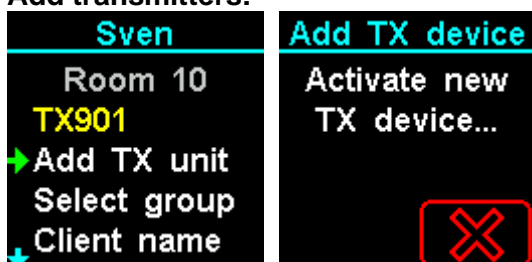
Now activate the desired transmitter.

Add TX device
ID: 35000
TX901
Add?
✓ ✕

Accept new transmitter.

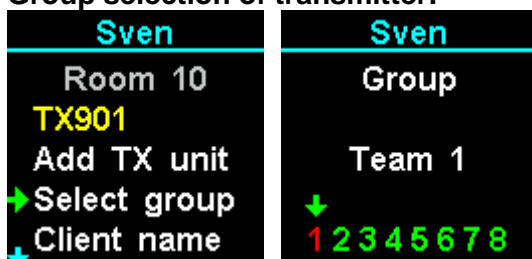| Add TX device |
|---------------|
| Transfer: |
| Allan |
| Confirm? |
| ✓ ✕ |
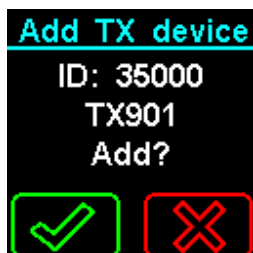
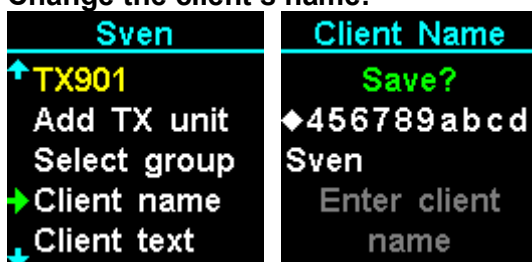If the transmitter is already encoded, the menu below appears, allowing you to move a transmitter between clients.

Group selection of transmitter:

Sven	Sven
Room 10	Group
TX901	
Add TX unit	Team 1
→ Select group	↓
Client name	1 2 3 4 5 6 7 8

Ent Select or deselect a group.
Esc Return to menu.
⬇ ⬆ Moves arrow to the group you want to change.

1 Group selected
1 Group deselected

Change the client's name:

Sven	Client Name
↑ TX901	Save?
Add TX unit	◆456789abcd
Select group	Sven
→ Client name	Enter client
Client text	name

⬇ ⬆ Choose letter.
Ent Select letter.
Esc Delete last letter.
To save the text select symbol ◆ and press **Ent**.

Add/change client optional text:

Sven	Sven
↑ Add TX unit	Save?
Select group	◆456789abcd
Client name	Room 10
→ Client text	Enter client
Delete	optional text

⬇ ⬆ Choose letter.
Ent Select letter.
Esc Delete last letter.
To save the text select symbol ◆ and press **Ent**.

Delete client:

Sven	Sven
↑Add TX unit	Delete:
Select group	Sven
Client name	Confirm?
Client text	✓ ✗
➜Delete	

Ent Confirm delete.
Esc Return to menu.

Change encoded transmitter:

Settings	Clients	Sven	Sven	Sven
Ver: 3.8.0	Add client	Room 10	↑Optional text	↑Alarm signal
ID: 48	→Sven	→TX901	Alarm signal	Call texts
→Clients	Allan	Add TX unit	Call texts	Call: Normal
Group	All Tx's.	Select group	→Call: Normal	Timer setup
↓Set clock		↓Client name	↓Timer setup	→Delete

TX901	Product name of the transmitter.
ID: 60372	Transmitter ID.
Ver.: 1.0	The software version of the transmitter.
Batt.: 40%	Battery level in the transmitter (if applies).
Signal 1	Selected audio signal when alarm is received.

Change name of the transmitter:

Sven	Optional text
↑Batt.: 40%	Save?
Signal 1	◆456789abcd
→Optional text	
Alarm signal	Enter TX
↓Call texts	optional text

⬇ ⬆ Choose letter.

Ent Select letter.

Esc Delete last letter.

To save the text select symbol ◆ and press Ent.

Change alarm signal:

Sven	Sven
↑Batt.: 40%	TX901
Signal 1	
Optional text	Signal 1
→Alarm signal	↓
↓Call texts	1 2 3 4 5

⬇ ⬆ Scroll between audio signals.

Ent Select audio signal.

Change call text:

Sven	Edit text	1. Green
↑Signal 1	→1. Green	Alarm button
Optional text	2. Red	→1. Green
Alarm signal	3. Yellow	2. Red
→Call texts	4. Blue	3. Yellow
↓Call: Normal	↓KNOP button	↓4. Blue

This is a TX901 example.
It is possible to change the shown text for a button etc.
In KNOPtool used defined texts can be made.

Reset call text:

Sven	Edit text	Call texts
↑ Signal 1	↑ Extern 2	Reset texts
Optional text	Extern 3	
Alarm signal	Extern 4	Confirm?
→ Call texts	Low battery	
↓ Call: Normal	→ Reset texts	✓ ✗

Restore call texts to factory setup.

Accepted alarm types:

Sven	Sven
↑ Optional text	↑ Optional text
Alarm signal	Alarm signal
Call texts	Call texts
→ Call: Normal	→ Call: All
↓ Timer setup	↓ Timer setup

Ent Toggle between **Normal** and **All**.

All accepts both types of alarms Normal and Emergency calls.

Transmitter activation timer:

Sven	Sven
↑ Alarm signal	→ Timer: Off
Call texts	Start 1 00:00
Call: All	Stop 1 00:00
→ Timer setup	Start 2 00:00
Delete	Stop 2 00:00

Ent Toggle between **On** and **Off**.
⇩ ⇧ Change hour/minutes.
Ent Change selection.

Remove unit from client:

Sven	Sven
↑ Alarm signal	Delete:
Call texts	TX901
Call: All	Confirm?
Timer setup	
→ Delete	✓ ✗

Ent Delete confirm.
Esc Return to menu.

Group settings:

Settings	Setup group
Ver: 3.8.1	Group: 1
ID: 123456	
Clients	↓
→Edit group	1 2 3 4 5 6 7 8
↓ Set clock	

⬇ ⬆ Move between groups.
Ent Select group.

Group activation timer on/off:

Group: 1	Group: 1
→Timer: Off	→Timer: On
Group name	Group name
Timer setup	Timer setup

Ent Toggle between **On** and **Off**.
Esc Return to menu.

Don't forget to set the time in "Settings - Set clock".

Change group name:

Group: 1	Group: 1
Timer: On	Save?
→Group name	◆456789abcd
Timer setup	Gruppe: 1
	Enter
	group name

⬇ ⬆ Choose letter.
Ent Select letter.
Esc Delete last letter.
To save the text select symbol ◆ and press **Ent**.

Change the timer:

Group: 1	Group: 1
Timer: On	Start 07:00
Group name	Stop 15:00
→Timer setup	

⬇ ⬆ Change hours or minutes.
Ent Select items.
Esc Return to menu.

Set clock:

Settings	Set clock
↑ ID: 123456	2022-10-27
Clients	11:21
Edit group	Automatic
→Set clock	Year: 2022
↓ Click: Low	

⬇ ⬆ Change item.
Ent Scroll between **Year**, **Months**, **Time** and **Date**.

Note: If the receiver receives a clock update from a KNOP product or USB901, the clock is automatically set accordingly.

Button click sound:

Settings	Settings
↑ Clients	↑ Clients
Edit group	Edit group
Set clock	Set clock
➜ Click: Low	➜ Click: High
↓ Product name	↓ Product name

Ent Toggle between **Low**, **High** and **Off**.

Esc Return to menu

Change the product (user) name:

Settings	Name
↑ Edit group	Save?
Set clock	◆456789abcd
Click: High	RX901
➜ Product name	Enter
↓ Passcode	product name

⇩ ⇧ Choose letter.

Ent Select letter.

Esc Delete last letter.

To save the text select symbol ◆ and press **Ent**.

Change passcode:

Settings	Passcode
↑ Set clock	
Click: Low	New code
Product name	↓
➜ Passcode	Code:123**4**
↓ Outgoing	

⇧ ⇩ Select digits (0 to 9).

Esc Delete last digit.

The code must always be 4 digits.

Function of the KNOP button:

Settings	Outgoing
↑ Click: Low	➜ Call: All
Product name	
Passcode	
➜ Outgoing	
↓ System menu	

Ent Change function, choose between **All**, **Normal** or **Off**.

Connecting and changing system code:

Settings	System menu
↑ Product name	➜ System: Off
Passcode	ID: 0
Outgoing	
➜ System menu	
↓ Positions	

Ent Select either system **Off** or **On**".

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Set the system ID:

System menu	System ID
System: Off	Enter ID
→ID: 0	of MR902
	↓
	ID:1234**5**
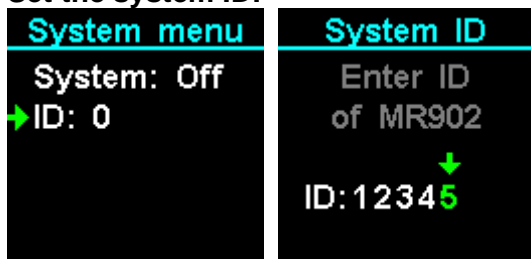
Press ⬆ ⬇ to change the value (0 to 9).
Press **Ent** to select a number.
Press **Esc** to delete the last digit.

Positions:

Settings	Positions
↑Outgoing	Door
System menu	→Show position
→Positions	Add new
Language	**Door**
Turn off	

Door
Door
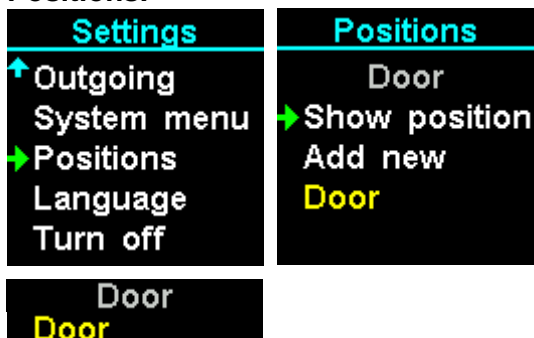
Current position.
Already encoded.

View position:

Positions	Show position
Door	Pos.: 255
→Show position	Door
Add new	
Door	✗
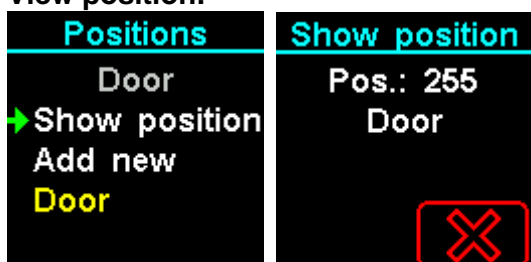
Shows the current position of where you are.

Add position:

Positions	Add position
Code: 255	Pos.: 255
Show position	Add?
→Add new	
	✓ ✗
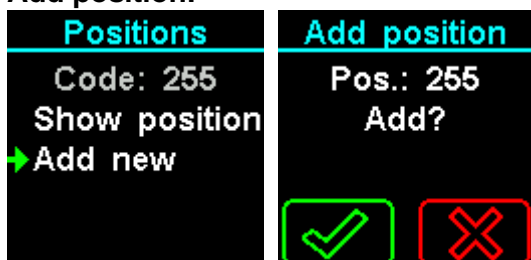
Ent Save new position
Esc Return to menu.

Note that the receiver must be within range of a position field.

Change position name:
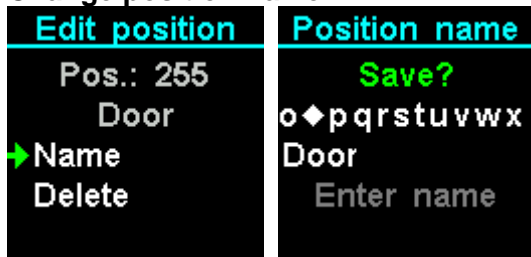
Edit position	Position name
Pos.: 255	Save?
Door	o◆pqrstuvwx
→Name	Door
Delete	Enter name

⬇ ⬆ Choose letter.
Ent Select letter.
Esc Delete last letter.
To save the text select symbol ◆ and press **Ent**.

Remove position:

Edit position	Edit position
Pos.: 255	Pos.: 255
Door	Door
Name	Delete?
➤Delete	✓ ✗

`Ent` Delete position.
`Esc` Return to menu.

Languages:

Settings	Language
↑Outgoing	➤Dansk
System menu	Svenska
Positions	Norsk
➤Language	Suomalainen
Turn off	English

⬇ ⬆ choose language.
`Ent` Accept the chosen language.
`Esc` Return to menu.

Turn off the product:

Settings	Turn off
↑Outgoing	
System menu	
Positions	Confirm?
Language	
➤Turn off	✓ ✗

`Ent` Confirm **Turn off**.
`Esc` Return to menu.

Note: The clock and date are reset.

To turn on the receiver, place the receiver on the charger.

Maintenance

Software update of RX901B:

It is possible to update the software in RX901B, as well as to download and transfer settings with the KNOPtool. For further descriptions please check the KNOPtool manual.

Cleaning

The product can be cleaned with a moist cloth or wipe.

Spare parts and accessories

Spare parts and accessories can be ordered from Knop Elektronik A/S at www.knop.dk.

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Check the coverage area

One person activates a transmitter (e.g. TX901) at short intervals, while another person systematically walks around the area and marks on a sketch the building and the area where there is coverage. The sketch is placed in the office so that everyone who has to manage the system can see where there is coverage. Outside the coverage area, alarms cannot be received.

The coverage area can be extended using the KNOP repeater system.

Contact your retailer for more information.

Technical data

Battery:	1 pc. Li-Ion 3.7V 450 mAh
Operating time with battery:	Approximately 3 days with 50 alarm calls per day.
Charging:	Wireless, approx. 4 hours.
Power supply unit:	230VAC adapter USB 5VDC/1.0A
Frequency HF:	869.2125 MHz
Range:	Up to 1500 m free range for an RX901B [1]
Display:	Graphical LCD
Menu texts:	5 languages: Danish, Finnish, English, Norwegian, and Swedish.
Log function:	Saves the last 50 alarm calls.
Memory:	250 transmitters 150 positions POS901
Surrounding environment:	Indoor use. < 90% humidity without condensation.
Ambient temperature:	0 - 40°C
Cabinet type:	Color RAL9003 ABS
Cabinet dimensions:	45 x 90 x 16 mm. Incl. neck strap with safety lock that breaks when you pull it.
Density:	IP65
Weight incl. batteries:	56g

The right to make changes is reserved.

[1] Measured outdoors with an unobstructed view between transmitter and receiver. In buildings, the range is reduced.

Explanation of symbols and approvals

CE	**This product complies with:** Directive 2017/745/EU MDR Directive 1907/2006/EU REACH Directive 2011/65/EU RoHS Directive 2012/19/EU WEEE ISO 14971:2019 Risk Management for Medical devices EN 301 498-1 V2.2.3 Electro Magnetic Compatibility EN 301 489-3 V3.1.1 Electro Magnetic Compatibility EN 50130-4:2011 + 2014 Immunity alarm systems EN 300 220-1 V3.1.1 Short Range Devices EN 300 220-2 V3.1.1 Short Range Devices EN 300 220-3 V2.1.1 Short Range Devices EN 60601-1-2:2014 + 2015 Electromagnetic compatibility (Medical) EN 62368-1:2020 Electrical safety EN 50581:2012 Hazardous substances
(symbol)	The product must not be used if the packaging is damaged.
MD	**Medical Device** Class 1, rule 1
(symbol)	**Manufacturer** KNOP Elektronik A/S, Fabriksvej 20, DK-7600 Struer, Denmark
(symbol)	Read the manual(s) before installation and commissioning at www.knop.dk.
((ᵗ))	Interference may occur in an environment with equipment marked with this symbol.
(symbol)	Must be protected against liquids.
(symbol)	0 °C to +40 °C, temperature limit for transport/storage and use.
(symbol)	The product must not be disposed of with normal household waste.
SRN	**Single Registration Number** DK-MF-000025631
UDI	**Unique Device Identifier** 05744002850298
REF	**Product reference** RX901B Receiver
SN	**Serial Number** Placed on the product
IP	**Ingress Protection kode** IP65