



Wireless nurse call system NC-5000

Product Manual

Contents

Safety Instruction	2-4
Name and Function	5-7
How to use transmitter	8-9
How to use wireless adapter box	10-12
How to use portable receiver	13-16
Testing the system	17
Troubleshooting	18-19
Specification	19

Before Using NC-5000

Thank you for purchasing our product “NC-5000” .
Be sure to read our manual thoroughly before using and keep this manual for any future references.
NC-5000 is designed to support monitoring patients.
Using a NC-5000 will not prevent injury, and is not a guarantee of safety.



Safety Instruction

Before using NC-5000, be sure to read this safety instruction carefully.

*Product specifications described in this material are subject to change without notice for reasons of modification and/or improvement.







■ Hazard definition

The following terms are used throughout this manual to bring attention to the presence of hazards of various risk levels, or to important information concerning use of the product.

	Warning	Indicates an imminently hazardous situation which, if not avoided, may result in death or serious injury.
	Caution	Indicates a potentially hazardous situation which, if not avoided, may result in injury or property damage.

* “Caution” indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

■ Example of Picture Indication

	This icon indicates “not allowed.”		This icon indicates “do not get it wet.”
	This icon indicates disassembly is prohibited.		This icon indicates to “force completion of the following procedure.”
	This icon indicates “do not touch with a wet hand.”		This icon indicates to “unplug the AC adaptor.”

Warning

IMPORTANT SAFETY INSTRUCTION

Unplug NC-5000 from the wall outlet and refer servicing to qualified service personnel under the following conditions.



- When smoke, an unusual noise, or an odor comes from the unit please contact the store that you purchased from for repair. Please do not attempt to repair it.
- When water or other foreign objects gets into the unit.
- When the plug-in or the cord becomes hot.
- When you drop or break the unit.

**Do not disassemble or alter the product.**

Do not attempt to disassemble or alter the product. It may cause fire and electric shock. Contact your distributor for inspection, adjustment and repair.

**Do not wet**

Do not wet the product. It may cause a fire and an electric shock.

**Do not harm AC adapter's cord**

Follow instruction below; fail to do so may damage the cord.

- Do not put heavy item on the cord.
- Do not add or process the cord.
- Do not forcefully bend the cord.
- Do not harm the cord.
- Do not twist or pull the cord.
- Do not put closely to the heating materials

Ask your distributor for an exchange when the AC adapter's cord is damaged. Fail to do so may result in fire or electric shock.

**Precautions when using the AC adapter**

- If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
- Do not bundle the AC power cord.
- If an extension cord is used with this product, make sure that the total of the ampere ratings on the products plugged into the extension cord do not exceed the extension cord ampere rating.

**Operate this product only with the specified voltage**

Use Wireless Guard System with specified voltage (AC 120V). Failure to do so may cause a fire and an electric shock.

**Inspect a plug into the outlet regularly**

Remove the dust and dirt between the plug and the outlet regularly. Failure to do so may result in short circuit and fire.

**Do not put container filled with water or any kind of liquid on top of the product.**

If water/liquid spills or enters inside of the product, it may cause a fire and an electric shock.

**Caution****Handle the AC adapter with caution**

- Do not plug in/out with wet hands. It may cause an electric shock.
- Never pull on the cord when unplugging from the electrical outlet. Always grasp the AC cord plug when unplugging.

**Do not use the product with an electrical blanket or other electrical items.**

This may cause a damage to the product or an electric shock.

**Caution with where you set up**

- Do not set up this product in humid or dusty places. Failure to do so may be the result of fire and an electric shock.
- Do not set up in a direct sunshine area. Failure to do so may be the result of fire and trouble.

**Do not put heavy item on the product**

This may be the result of trouble of this product.

**Do not set up at unstable place**

Do not set up anywhere that is unstable, shaky or at a shelf. It may drop or fall down and may be the result of an injury.



Rechargeable Battery caution

Follow the instruction below.

Failure to do so may lead to batteries' explosion and liquid leak of battery, which may lead to fire and injury, or cause mess and damage around the surrounding.

- Use the specified battery.
- Never disassemble the battery.
- Non-rechargeable batteries are not to be recharged.
- Remove the batteries when not using the device for an extended period of time.



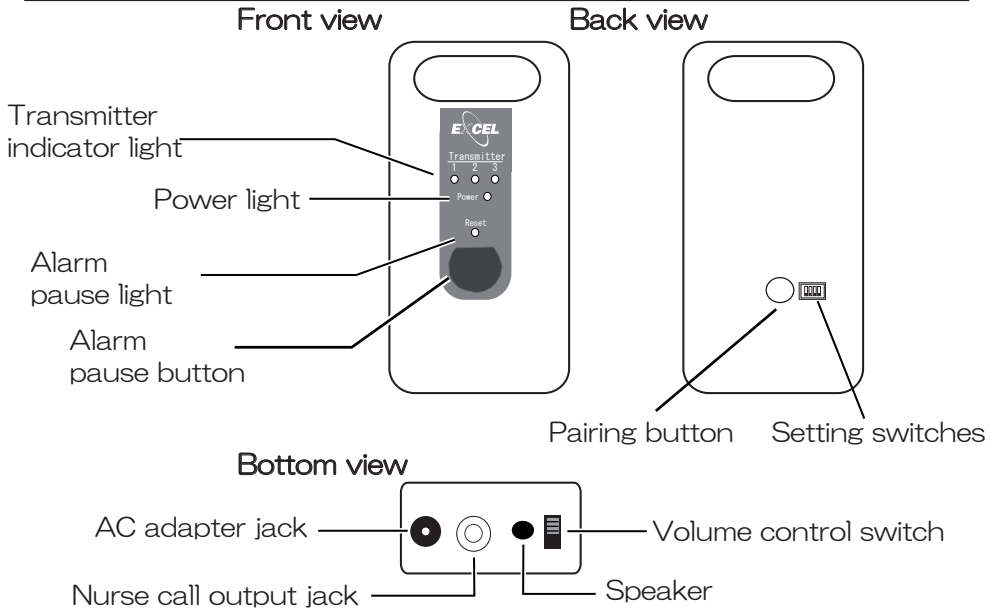
Precaution during the time of non-operation for a long period of time, and maintenance.

For your safety, unplug the AC adapter from the outlet.

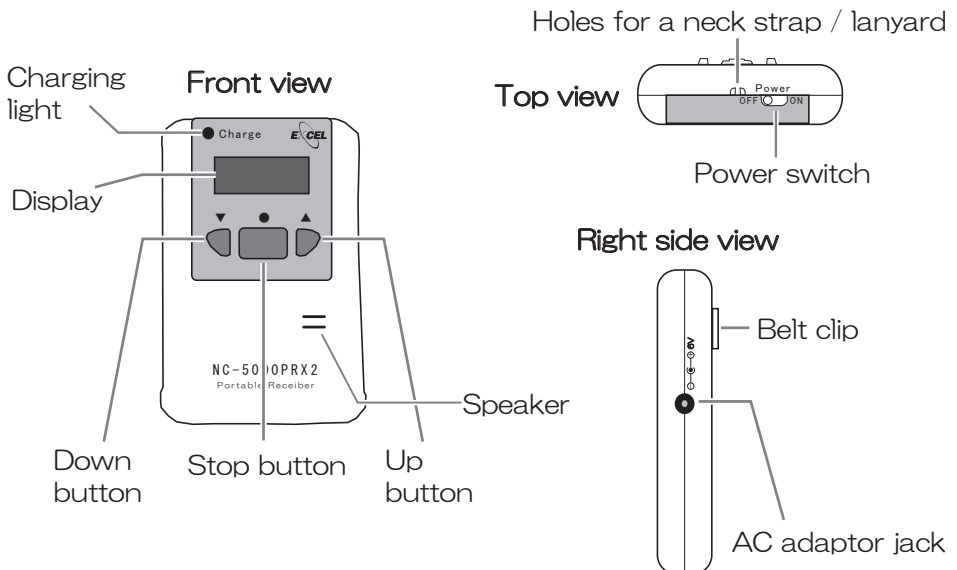
Fail to do so, it may cause a fire.

Names of the parts

Wireless Adapter Box

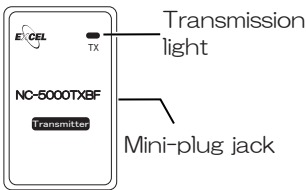


Portable Receiver



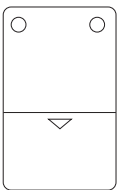
Sensor connection transmitter

Front view

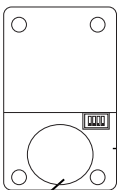


Back view

With a cover view



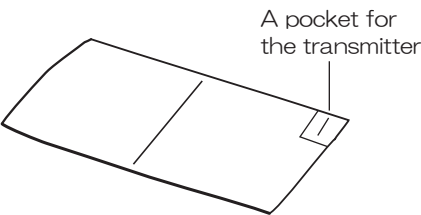
Without a cover view



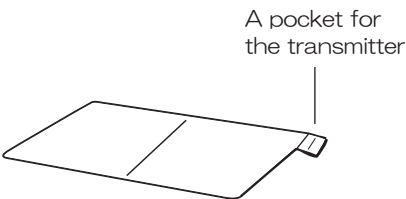
Battery holder

Setting switch

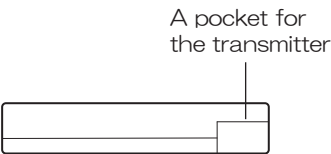
Floor sensor mat



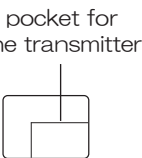
Bed sensor pad



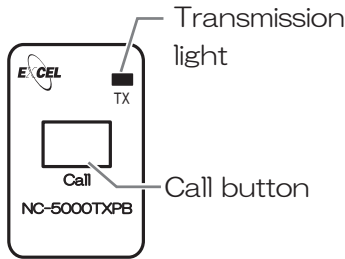
Side-rail sensor pad (Large)



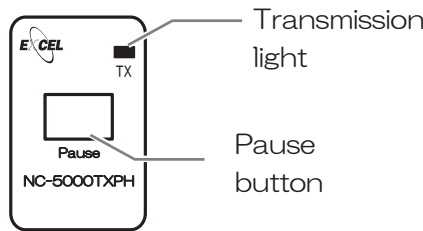
Side-rail sensor pad (Small)



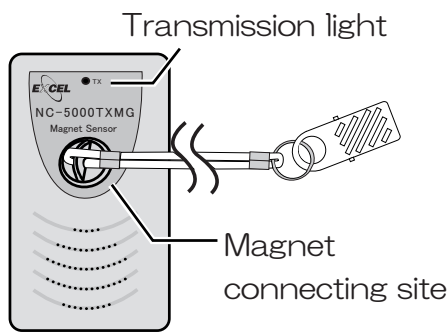
Portable nurse call button



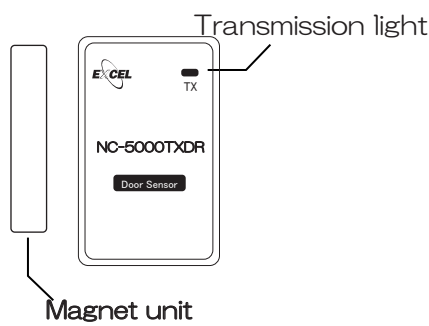
Portable pause button for the wireless adaptor box



Magnet sensor

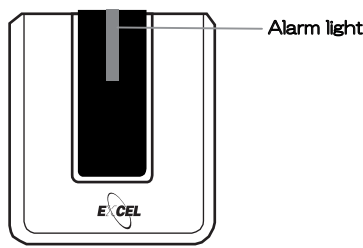


Door sensor

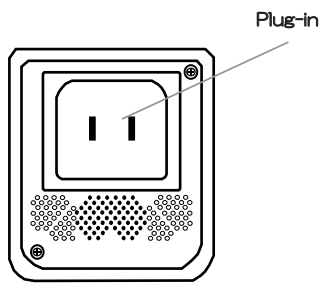


Repeater

Front view



Back view



How to use the transmitters

How to use sensor connection transmitter









Excel' s bed and/or floor sensor can be connected to the transmitters. For the bed sensor, when an individual' s body weight decreases on the bed (e.g., sitting up or moving close to the edge of the bed) the sensor delivers an alert signal to the receiver wirelessly. When the weight turns back to on the bed, the sensor delivers a reset signal* to the receiver. For the floor sensor mat, when an individual' s weight creates a pressure on the mat (e.g., stepping on the mat) the sensor deliver an alert signal to the receiver wirelessly.

* Reset signal can' t make pair with the receiver.

Step 1: Based on the sensor that you use, select one of the detection modes by changing the switch positions on the back of the transmitter (please see the diagram below).

Step 2: When appropriate positions of the switches are selected connect the transmitter to the detection sensor and place the transmitter in the pocket.

Step 3: Register or pair the detection sensors with the receiver. Please refer to each receiver' s manual for the pairing process.

Switch positions								
Detection modes	—				Departing from the bed	Wandering	—	
Alert delay duration	0 sec	1 sec	2 sec	4 sec	—			
Out of range Detection	—						OFF	ON

Factory settings

Bed sensor: Departing from the bed mode with an alert delay time of 2 sec.

Floor sensor and side-rail pads: Wandering mode with a delay time of 0 sec.

In normal use, the switch 3 is always ON. If you don' t need detection outside of a wireless signal transmission range**, you can disable it by switching the switch 3 to OFF. After switching the switch 3, you must turn the power off (eject sensor plug) and wait for 10 seconds to shut down completely, and turn the power on(insert sensor plug) again.

** Please refer to page.12 or page.16 about this feature.

How to use the nurse call button

When a call button located on the center is pressed an alert signal is transmitted to the receiver.

Step 1: Register or pair the nurse call button with the receiver.

Please refer to each receiver's manual for the pairing process.

How to use the magnet sensor

When a magnet attached to the main unit (a bed or a wheelchair) separates from the main unit an alert signal is sent wirelessly to a nurse call station or an alarm sound is generated to warn an individual in a wheelchair.

Step 1: Register or pair the nurse call button with the receiver.

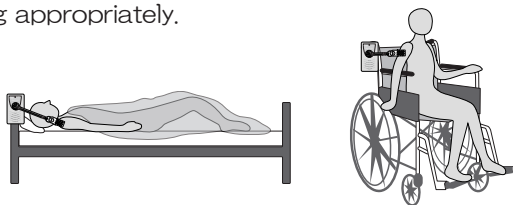
Please refer to each receiver's manual for the pairing process.

Step 2: Attach the magnet to the connecting site on the unit

Step 3: An accessory hanger is used to place the magnet sensor on the side of a wheelchair or bed.

Step 4: A clip that is connected between the magnet and a string now can be attached to an individual's clothing. Adjust the length of the string appropriately.

Examples



How to use the door Sensor

When the individual opens the door the door sensor/transmitter units are forced to separate from each other. This triggers an alert signal sent to the receiver.

Step 1: Register or pair the nurse call button with the receiver.

Please refer to each receiver's manual for the pairing process.

Step 2: The door sensor/transmitter and the magnet unit should be installed to an individual's room door



When the receiver displays a battery is low icon and a designated number of transmitter from the transmitter that needs its batteries replaced please replace the batteries immediately.

How to use the repeater

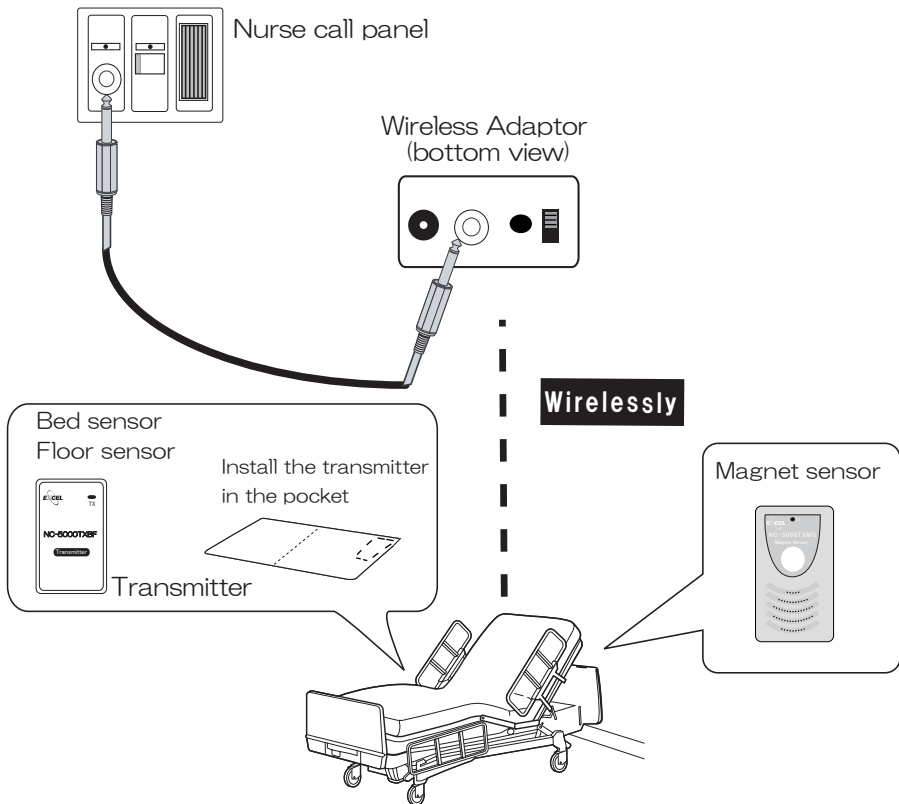
There is no need to adjust the settings of the wireless nurse call system. Simply, the repeater can be plugged in an existing power outlet.

How to use wireless adapter box

When a detection signal is received in the adaptor box the signal is transmitted through an existing nurse call system to inform a caregiver.

How to use an existing nurse call system with Excel' s caring devices

- Step 1: The transmitter should be connected to a desired detection sensor(s).
Step 2: The wireless adaptor should be connected to an existing nurse call panel (see the diagram below) and the AC adaptor plugged into an outlet.



The Excel Engineering' s various caring sensors can be connected to an existing nurse call system through the wireless adaptor Box.

*In order to identify your specific needs, please let us know your nurse call system manufacturing company' s name and the type of nurse call connector pin needed.

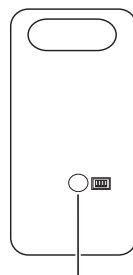
How to pair the transmitter

The transmitters must be paired with the adaptor box.

One adaptor box can be paired with up to 3 transmitters.

- Step 1: Plug the AC adaptor into the wireless adaptor box and then plug into an outlet. Please confirm that the power light on the wireless adaptor turns green.
- Step 2: Press the pairing button located on the back side of the wireless adaptor box. Please confirm that the power light now starts flashing. Now you are in the pairing mode.
- Step 3: Activate the desired caring detection sensor. The first transmission light should light up.
- Step 4: Press the pairing button to complete the pairing process.
- Step 5: If you want to pair multiple sensors (up to 3 sensors) repeat Step 3 for each. Please confirm that the corresponding transmission lights turn on. Then, press the pairing button to complete the process.

Wireless adaptor box



Pairing button

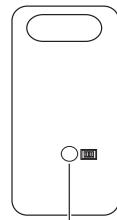
How to unpair the transmitter

- Step 1: Plug the AC adaptor into the wireless adaptor box and then plug into an outlet. Please confirm that the power light on the wireless adaptor turns green.
- Step 2: Hold down the pairing button for at least 5 seconds. All of the lights should turn off. This completes the unpairing process.



Even if multiple transmitters are paired is paired, all transmitters will be unpaired after this procedure.

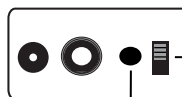
Wireless adaptor box



Pairing button

How to select alarm volume

The wireless adaptor box can alert a caregiver without activating a nurse call system. An alarm is generated from the wireless adaptor box itself. There is a speaker built in the unit. The volume settings are “loud,” “quiet,” and mute. The volume switch is located on the bottom of the wireless adaptor box.



Volume control switch

Speaker

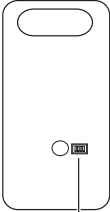
Indication of low battery status on the transmitter

- Step 1: When the transmitters' batteries are low, the wireless adaptor box's transmission light starts flashing as the adaptor box receives a transmission signal from the transmitters.
Please replace the batteries in the transmitter.
- Step 2: To reset the flashing transmission light on the wireless adaptor box, simply unplug the AC adaptor.

How to change the nurse call activation options and the pause duration settings of the pause button box

There are setting switches located on the back side of the wireless adaptor box. The nurse call activation options and the pause duration settings of the pause button box can be changed by changing the setting switch configuration.

Wireless adaptor box



Setting switches

Switch configuration						
Nurse call activation options	—				One time	Continuous
Pause duration	1 min	2 min	3 min	5 min	—	—

Informing a caregiver if a transmitter is outside of a wireless signal transmission range

When a paired transmitter is outside of the wireless signal transmission range or not functioning properly and no wireless signal transmission is detected for longer than 1 minute, the wireless adaptor box will sound an alarm and a corresponding transmission light starts flashing*. When the transmitter is back into the wireless signal range or starts functioning properly the alarm stops automatically**. This function will be activated when the transmitter sending and wireless adapter box receiving this signal.

*The flashing speed is faster than that of when the transmitter's battery is low
** It may up to 30 seconds when the transmitter is back into the wireless signal range or start functioning properly.

How to use the portable receiver

When the caring sensor is turned on, a designated number assigned for the transmitter will be displayed.

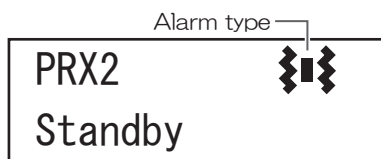
The receiver also starts an alarm sound or vibration.

To stop the alarm sound or the vibration, press the stop button on the receiver.

How to read the display

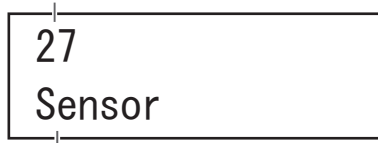
The portable receiver's display changes based on desired settings. Displayed numbers and texts will disappear if no activities detected. If you press any button or a detection signal is received the numbers and texts will reappear. When an alarm signal is received, a designated number that is assigned for the transmitter will appear on the display. The receiver also starts an alarm sound or vibration. To stop the alarm sound or the vibration, press the stop button on the receiver. This will cause the receiver to be in a standby mode.

Standby mode display example



Receiving a detection signal display example

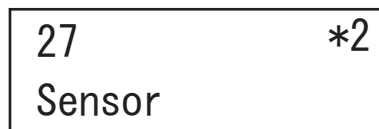
Designated number assigned for the transmitter



Detection sensor type (Call btn / Sensor)

When multiple detection signals are received

A number of detection sensors which have been activated are displayed on the top right corner of the display



When you want to check multiple designated numbers assigned for the transmitters

1. When the "up" button is pressed the next number assigned for another transmitter will be displayed. Each time you press the "up" button, it displays the number based on a chronological order (i.e., the oldest one to the most recent one).
2. When the "down" button is pressed it displays the most recent designated number assigned for the transmitter. Each time you press the "down" button, it displays the number based on a chronological order (i.e., the most recent one to the oldest one).

When you want to stop receiving a detection signal from a specific transmitter

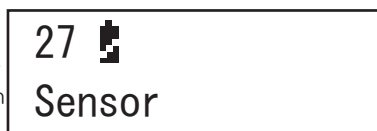
Select the designated number assigned to a specific transmitter and then press the pause button.



It is NOT possible to stop receiving detection signals from multiple transmitters simultaneously.

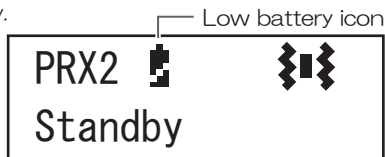
Transmitter's "Low battery" notification function

When batteries on the transmitter become low a "low battery" icon will appear next to the designated number assigned for the transmitter. When this icon appears on the display please replace the batteries immediately.



About rechargeable batteries in the portable receiver

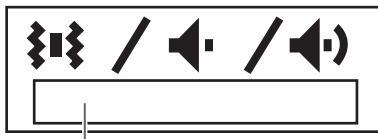
When the rechargeable batteries in the portable receiver become low an alarm sounds one time and a “Low battery” icon appears on the display. When this happens please use the AC adaptor to recharge the batteries immediately. The power light on the receiver turns on while the batteries are being recharged. When the recharging process is complete the power light turns off. Since the batteries are located inside the housing case, please contact the store where you purchased or our company directly when battery replacement is necessary (e.g., the batteries have a short operation time).



How to change the vibration and the alarm sound settings on the receiver

The vibration and the alarm volume (loud/soft) settings used to alert a caregiver can be changed. While the display shows “standing by...” press the “up” and “down” buttons simultaneously for 2 seconds. The display now shows the setting mode.

The method of alert (i.e., vibration, alarm loud, and alarm soft) can be selected by using the “up” and “down” button. Once you select your desired settings press the “stop” button to complete the settings. If you do not select the settings within 30 seconds display goes back to the “stand by mode.

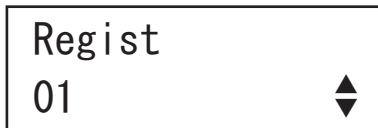


In this box, a selected alert method's description will appear.

From the left: Vibrate
Alarm Lo
Alarm Hi

How to pair the transmitters with the portable receiver

1. Turn off the power on the portable receiver then, while pressing down the “stop” button turn on the power. Now, the display shows “pairing mode” message. Press “stop” button to start the pairing mode.
2. Use the “up” and “down” buttons to select an appropriate transmitter. Each time you press “up” , it will show “01” , “02” , “03” ... On the other hand, each time you press “down” it will show “Reset” , “30” , “29” , “28” ... If a transmitter is already paired and a designated number is assigned, that number will be skipped. Therefore, only available numbers will be displayed.
3. When the transmitter that is assigned a number is turned on, the portable receiver sounds beep once and the display shows the type of newly paired transmitter. Then, the display goes back to the pairing mode.
4. Finally, when the portable receiver's power is turned off this will complete the pairing mode.



If the pairing procedure is not performed within 30 seconds the display goes back to the “stand by ... mode. It is not necessary to perform a setting procedure for the repeater. If you attempt to pair a transmitter that is already paired and assigned a number, the display shows “already paired.”

How to unpair the transmitters

Unpairing by using the portable receiver

- Step 1. Turn off the power switch on the portable receiver. While pressing the “stop” button turn on the power switch. When the display shows the “pairing mode” release the “stop button.”
- Step 2. While you are in the “pairing mode” press the “down” button once. When the display shows no numerical numbers press the “stop” button for 1 second. The display should show “reset mode.”
- Step 3. While you are in the “reset mode” select the number that is assigned for a specific transmitter that you want to unpair by pressing the “up” or “down” button. Once you select one press the “stop” button. If you want to unpair all the transmitters you must select “all.”
- Step 4. The display shows a confirmation page. If the information is correct then select “yes.” Press the “stop” button to complete the unpairing process.
- Step 5. When you turn off the power switch the “reset mode” will end.

Reject
01

⬆️⬆️

Reject
All

⬆️⬆️

01
No/Yes



If you want to unpair multiple transmitters repeat Steps 3 and 4 for each. While you are in the “reset mode” and if no selection is made within 30 seconds the display goes back to the normal mode automatically.

Unpairing by using the transmitter

- Step 1. Turn off the power switch on the portable receiver. While pressing the “stop” button turn on the power switch. When the display shows the “pairing mode” release the “stop button.”
- Step 2. Press the “down” button once. The display shows “reset.”
- Step 3. While the display shows “reset” activate an already paired transmitter (which you want to unpair). The message, “reset completed,” will appear on the portable receiver’s display.
- Step 4. When you turn off the power switch the “reset mode” will end.

Regist
Reject

⬆️⬆️

Regist
Done



If you want to unpair multiple transmitters repeat Step 3 for each. While you are in the “pairing mode” and if no selection is made within 30 seconds the display goes back to the normal mode automatically.

Alarm auto stop function

When paired transmitter with the bed sensor sends a reset signal while the portable receiver is alarming by same transmitter's alarm signal, the receiver will stop alarming from same transmitter automatically.

Informing a caregiver if a transmitter is outside of a wireless signal transmission range

When a paired transmitter is outside of the wireless signal transmission range or not functioning properly and no wireless signal transmission is detected for longer than 1 minute, the portable receiver will sound an alarm and appear on the display to number and a message. When the transmitter is back into the wireless signal range or starts functioning properly the alarm stops and number and a message disappear from the display automatically*. This function will be activated when the transmitter sending and portable receiver receiving this signal.

* It may up to 30 seconds when the transmitter is back into the wireless signal range or start functioning properly.

27 Lost

Testing the system

When you complete all desired settings please test each device individually to confirm all devices are functioning properly.

How to check if the transmitters function properly

For the nurse call button:

Press the request button.

The transmission light on the transmitter should light up.

For the floor and side rail pads:

Expose the transmitter from the pocket.

When each sensor is activated the transmission light on each transmitter should light up.

For the bed and chair pads:

Expose the transmitter from the pocket.

When each sensor is activated the transmission light on each transmitter should light up.

For the magnet sensor:

Pull and separate the magnet from the magnet sensor.

The transmission light on the magnet sensor should light up.

For the door sensor:

Pull and separate the magnet from the door sensor.

The transmission light on the door sensor should light up.

How to check if the repeater functions properly

When the transmitter is activated, the alarm light on the repeater should light up.

How to check if the wireless adaptor box functions properly

When the transmitter is activated, a designated transmission light lights up and activates the nurse call system.

How to check if the portable receiver functions properly

When the transmitter is activated, the display on the portable receiver should show a designated number and type of paired detection sensor.

This should also trigger an alarm sound and vibration.

When the “stop” button on the portable receiver is pressed, the displayed number and texts will disappear, and the alarm sound and the vibration should stop.

Troubleshooting

Transmitters

Probelms	Potential causes	Solutions
The transmission light does not light up...	No batteries?	Insert batteries.
	Low batteries?	Install fresh batteries.
	The batteries are installed incorrectly?	Check the directions of the batteries.

Repeater

The alarm light does not light up...	The AC adapter is plugged in incorrectly?	Plug in the AC adapter firmly and correctly.
	The repeater is located outside of the signal transmission range.	Locate the repeater within the signal transmission range.
		If there is an obstacle between the transmitter and the repeater relocate/ remove the obstacle.

Wireless adaptor box

The transmission light on the transmitter lights up but the transmission light on the wireless adaptor does not turned on...	A wrong designated number could have been assigned...	Unpair the transmitter and then re-pair the transmitter.
	The wireless adaptor box is located outside of the signal transmission range.	If there is an obstacle between the transmitter and the adaptor box relocate/remove the obstacle.
		Locate the wireless adaptor box within the signal transmission range.
The transmission light on the adaptor box lights up but a nurse call system is not activated...	A nurse call connector may not be plugged in or plugged in incorrectly.	Plug in the nurse call connector correctly.
I cannot pair the transmitter...	3 transmitters are already paired	Unpair the transmitter and then re-pair the one you want

Portable receiver

The transmission light on the portable receiver lights up but it does not start the alarm sound...	The portable receiver has no power	Turn on the power
	The portable receiver needs to be recharged.	Plug in the AC adaptor and recharge the unit.
	The transmitter is not paired.	Pair the transmitter.
	The portable receiver is located outside of the signal transmission range.	If there is an obstacle between the transmitter and the receiver relocate/remove the obstacle. Locate the portable receiver within the signal transmission range.

Specification

Product Name	Portable Receiver	Wireless Adapter Box	Repeater
Product Number	NC-5000PRX2	NC-5000NRX-XX	NC-5000RP2
Power Source	AC adapter (DC6V/ 300mA/ lithium ion polymer rechargeable battery)	AC adapter (DC5V/ 300mA)	Plug-in
Dimensions (mm)	60 x 91 x 20	82 x 157 x 33	77 x 86 x 37
Weight(g)	68	200	90
Operating condition	Temperature: 5 ~ 40°C Humidity: 45 ~ 85%		
Frequency	2.4 GHz		

Product Name	Transmitter for Sensor	Door Sensor	Call Button	Pause Button	Magnet Sensor
Product Number	NC-5000TXBF	NC-5000TXDR	NC-5000TXPB	NC-5000TXPH	NC-5000TXMG
Power Source	CR2032(3V)	CR2032(3V)	2 N batteries	2 N batteries	2 AA batteries
Dimensions (mm)	41 x 69 x 9	41 x 69 x 9	50 x 85 x 18	50 x 85 x 18	62 x 111 x 31
Weight(g)	23	25	56	56	140
Operating condition	Temperature: 5 ~ 40°C Humidity: 45 ~ 85%				
Frequency	2.4 GHz				
Battery Life	Approximately 1 year				