

**exta life**  
**RADIO MOTION SENSOR**  
RCR-21



**zameL**

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Do not dispose of this device with other waste! In order to avoid harmful effects on the environment and human health, the used device should be stored in designated areas. For this purpose, you can dispose of household waste free of charge and in any quantity to a collection point set up, as well as to the shop when you buy new equipment.

Hereby, ZAMEL Sp. z o. o. declares that the radio equipment type RCR-21 is in compliance with Directive 2014/53/EU. The full text of the EU declaration of conformity is available at the following internet address: [www.zamel.com](http://www.zamel.com)

## TECHNICAL DATA

Rated voltage:	3.0 + 3.6 V (internal 1/2 AA battery) 6 + 24 V AC / DC (external voltage source)
Connection of external power source:	only through PCL-21 power cradle
Maximum power consumption:	0.2 W
Transmission power:	ERP < 20 mW
Transmission:	radio - 868.5 MHz
Battery lifetime:	up to 2 years*
Transmission methods:	• transmission only (with battery power supply) • transmission / receiving (with external power supply)
Operating range:	up to 300 m in open area**
Possibility to increase the range:	yes - through REP-21 retransmitter
Co-operation with system elements:	• with EFC-01 controller • with selected EXTA LIFE receivers
Functionality***:	• motion detection, • capability to work with or without twilight sensor, • regulated sensitivity (range size of objects) • built-in accelerometer, • configurable NO/NC output
Measuring sensors used:	digital - built-in into the sensor
Illuminance measurement range:	1 + 100,000 lx
Operating range****:	1,5 + 8 m
Sensor's angle of view:	120°
Switch off delay:	10s + 1h
Synchronisation time:	1 + 24 h set with a 10 min. step
Operating modes:	• without twilight sensor • night (1 + 20 lx) • day (20 + 100,000 lx)
Output:	OC type - configurable (NO / NC) - through PCL-21 cradle
Motion signalling:	yes - LED
Configuration of selected parameters:	yes - only with external power supply (PCL-21 cradle)
Possibility of software update:	yes
Housing protection rating:	IP20
Installation:	any - only to be operated indoors • magnetic pad - installation with double-sided tape • optionally: placing in the power cradle PCL-21 - mounted with screws
Installation method:	
Operating temperature range:	-10 + +55 °C
Dimensions:	Ø 50 mm, height: 32 mm (38 mm with the magnetic pad)
Weight:	35 g

\* Battery life largely depends on the number of transmissions per day and the operating temperature. The indicated lifetime applies to default sensor settings and operation at a temperature close to room temperature.

\*\* The operating range applies to an open area and ideal conditions without obstacles and without external interference signals. If there are obstacles or sources of strong interference signals between the sensor and the controller, a reduction in the range provided by the manufacturer should be provided for, which in some situations may reach even 90%. This also applies if the sensor is mounted on a metal surface or in a metal switchgear. High power overhead and underground power lines as well as mobile phone transmitters situated in close proximity to the devices also have a negative impact on the operating range.

\*\*\* Some functions are only available when using the PCL-21 power cradle

\*\*\*\* Applies to a sensor mounted at a height of approx. 2.2 m. The range is only adjusted through the mobile application (configuration options).

## DESCRIPTION

RCR-21 sensor is designed to detect motion. Additionally, it has a built-in illuminance sensor that controls the operation according to the intensity of sunlight. The sensor can work directly with selected EXTA LIFE receivers or the EFC-01 controller. In the case of a controller after connecting the sensor with logical functions, the sensor can participate in automating of the control processes of various devices in home installations. RCR-21 is based on a PIR digital sensor that enables a fairly precise change of sensitivity which in turn translates into adjustment of the operating range and the size of detected objects. The sensor is equipped with an accelerometer with anti-tamper function. Motion detection is signalled by a LED that can be switched off. The sensor can be powered by batteries (by default) or an external voltage source (6 + 24 V AC/DC) through a PCL-21 power cradle. In the case of external power supply, sensor configuration is possible. The power cradle also allows for using the sensor output, for instance to connect it to the alarm system. The magnetic pad enables quick installation of the sensor, guarantees full mobility and convenient directing. The sensor is to be operated indoors only (IP20).

## CHARACTERISTICS

- motion detection based on a digital PIR sensor,
- built-in illuminance sensor,
- co-operation with EFC-01 controller and EXTA LIFE receivers,
- direct co-operation with selected receivers bypassing the controller,
- work with or without twilight sensor,
- regulated sensitivity (range and size of detected objects)
- anti-tamper function based on the accelerometer,
- configurable NO/NC output (connected only through a PCL-21 cradle),
- battery or external power supply (through a PCL-21 cradle),
- possibility of configuration (only with external power supply),
- possibility of software upgrade,
- quick installation using a magnetic pad,
- mobility and a convenient way of directing,
- indoor installation only.

## APPEARANCE

Illuminance sensor

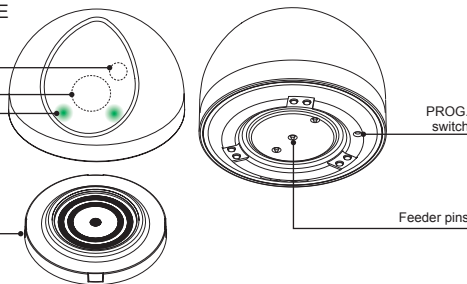
PIR sensor

Signalling LEDs

Magnetic pad

PROG. switch

Feeder pins



## SENSOR POWER SUPPLY - OPTIONS

In the factory settings, RCR-21 is supplied with 3.6 V voltage from a single ½ AA battery. Alternatively, the device can be powered by batteries or an external voltage source 6 + 24 V AC/DC through the PCL-21 power cradle.

### NOTES:

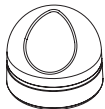
- The sensor can be supplied with external voltage only through the PCL-21 cradle.
- When placing the sensor on the cradle, the battery does not have to be removed.

The power supply type determines the functions available to the sensor's user:

Function	Battery supply	Cradle power supply
System search	manually - only after the PROG. button is pressed	automatically - search through the application
Sending information to the controller about motion detection / cessation, sensor interruption (anti-tamper function), about the current value of illuminance	yes	yes
Standard functionality from the application level	yes	yes
Operating mode selection	yes - choice between the work without twilight sensor and night mode only	yes - work without twilight sensor / night mode / day mode
Co-operation with an EXTA LIFE receiver bypassing the controller	yes	yes
Sensor configuration (setting of switch-off delay, synchronisation time, output configuration, configuration of anti-tamper function, sensitivity adjustment)	no	yes
Software update	yes	yes

The power supply method is signalled in the mobile application. In the case of battery power, the sensor informs about the battery status and provides information on the time when the last synchronisation of the sensor with the controller occurred. The time of the last change of the sensor status and the time of the tamper (alarm) occurrence is provided both in the case of external and battery power supply.

External voltage only through the PCL-21 cradle



Internal battery power supply



RCR-21 ID: 2686979  
Czujnik ruchu Ruch

Zasilanie zewnętrzne

RCR-21 ID: 2686979  
Czujnik ruchu Ruch

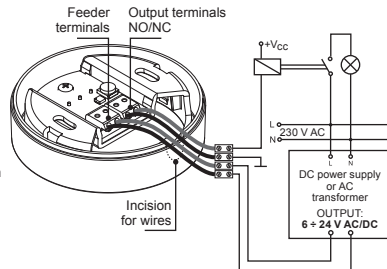
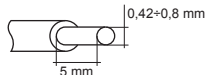
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## CONNECTING POWER TO THE PCL-21 CRADLE

The PCL-21 cradle works correctly in the voltage range from 6 to 24 VAC/DC. Polarity (polarisation) of the connected voltage can be any.

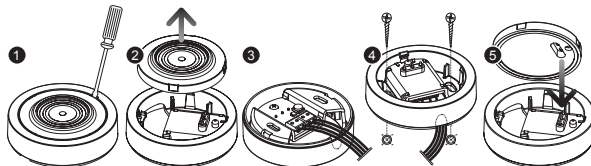
Due to the installation in self-locking connectors, it is recommended to use 'solid-core' cables with wire cross-section of 0.14+0.5 mm<sup>2</sup> (wire diameter of 0.42+0.8 mm). In the case of stranded-core wire cables, it may be necessary to tin the ends.



### NOTE:

- V<sub>CC</sub> voltage has to be within the limits of 6 + 24 V.
- Voltage applied to the +Vcc terminal may differ from the sensor supply voltage.
- The output (through the configuration screen) can be set as normally open NO (closed after motion detection) or normally closed NC (opened after motion detection). The output can be inactive.

## PCL-21 POWER CRADLE INSTALLATION



1 Gently pry the contact plate with a flat screwdriver.

2 Take the contact plate out of the cradle.

3 Connect the cables under the connectors and pull them through the incision.

4 Fix the cradle to the bedding with mounting screws in the target place of the sensor's operation.

5 Gently put the contact plate into the cradle, paying attention to its orientation with respect to the connector in the cradle.

## ADDING SENSOR TO THE EFC-01 CONTROLLER

- Switch on the EFC-01 controller and log in correctly to the mobile application EXTA LIFE.
- Go to the screen Devices » Sensors and press the button "+". The controller will enter the sensor search mode. The search process takes the maximum of 60 s. After this time, the process needs to be resumed by pressing the "+" button again in the screen Sensors.

### 3. Battery-powered sensor

1 Press the PROG. button for a short time (0.5 s)

2 The LEDs will blink green and the sensor will appear in the list of sensors to be paired

### Externally powered sensor

1 The LEDs blink green and after some time the sensor will appear automatically in the list of sensors to be paired

- Press the button 'Stop' and select the sensor to be paired. Next, press the button 'Pair'.

When pressing the button "TEST", the LEDs in the paired sensor will light up green (this allows for identifying the sensor)

- After pairing, the sensor is visible on the screen "Sensors".

If the given sensor does not appear in the list of sensors to be paired during the search process:

- check whether the sensor is no longer paired with the controller / is visible in the list of sensors (if so, the sensor will not be displayed again during the pairing process),
- check whether the sensor is not marked as paired (this can happen during an error in the removal process - consequently, the sensor is not visible in the list of sensors but is still marked as 'paired') - then reset the sensor to factory settings.

## APPEARANCE OF THE SENSOR IN THE APPLICATION

The RCR-21 sensor is visible in the application right after pairing. The sensor can be named individually and can be assigned an individual icon. It can be assigned to HOME category or to a user

**NOTE: The illuminance sensor is only used for motion sensor operation depending on the time of day or intensity of sunlight. The currently measured value of illuminance is only displayed in the configuration screen in case of selecting night or day mode.**

**Battery-powered sensor**

**Externally powered sensor**

**context menu**

- information about the last sensor status change
- information about battery status
- information on the time when the sensor last sent synchronisation data to the controller
- an icon changing depending on the current sensor status: no motion / motion / battery discharged
- information on the sensor's power supply from an external voltage source
- information about the anti-tamper alarm if the anti-tamper function is enabled (in addition, the alarm occurrence is signalled by an icon)

Items in the context menu:

- **Change the name** – allows for entering the sensor name.
- **Change the icon** – allows for assigning the icon to the sensor.
- **Configure** – allows for going to the sensor configuration screen (only for sensors powered by an external voltage source).
- **Assign to category** – allows for assigning the sensor to a category created in the screen HOME.
- **Assign receiver** – allows for assigning the sensor to the selected EXTA LIFE system receiver (applies only to the receivers that co-operate directly with the RCR-21 sensor bypassing the controller).
- **Users** – allows for assigning the sensor to a specific standard user.
- **Version information** – allows for displaying information about the current version of the sensor's software and its update.
- **Delete** – allows for removing the sensor from the system (from the EFC-01 controller).

## SENSOR PARAMETRISATION

Change of configuration parameters is possible only for a sensor powered by an external voltage source through the PCL-21 cradle. If the sensor was added to the system as a battery-powered sensor (using the PROG. button), then in order to carry out its parametrisation, one should



Connect 6+24 V AC/DC power to the PCL-21 cradle and place the sensor in the cradle

Carry out sensor pairing again

Change the option "Configure" for the given measurement channel from the level of context menu

If the sensor was added to the system as a sensor powered with an external power supply, then go straight to Step 3 to parameterise it.

RCR-21 sensor configuration screen

- **Switch off delay** - the time after which the sensor sends receiver disabling frame. The time is counted from the moment of cessation of motion in the sensor detection area. It is set in the range from 10 s to 1 h with a 1s step.
- **Synchronisation time** - the time after which the sensor powered with a battery sends mandatory status information to the controller. Based on it, the user can check whether the sensor communicates correctly with the controller. It is set in the range from 1 h to 24 h with a 10 min. step. The default value is 12 h.
- **Optical signalling** - allows for switching on / off optical signalling when motion is detected by the sensor. Optical signalling is enabled by default.
- **Operating mode** - allows for selecting 1 out of 3 operating modes:
  - without light sensor - the motion sensor works all the time regardless of the value of illuminance,
  - night - the motion sensor works only when the illuminance level falls below the set threshold. The activation threshold is set in the range from 1 to 20 lx ("night"),
  - day - the motion sensor works only when the illuminance level is higher than the set threshold. The activation threshold is set in the range from 20 to 100,000 lx ("day"),
- **Measured value** - illuminance value measured by the sensor. The measurement is initiated when entering the configuration screen. The value is only displayed in the case of selecting night or day mode.
- **Output type** - the parameter specifies whether sensor output in "no motion" status is 'normally open' or 'normally closed'. The output can be inactive. These options only apply to co-operation with a PCL-21 power cradle.
- **Anti-tamper function** - enables switching on / off the accelerometer. If the accelerometer is on, then RCR-21 is able e.g. to detect an attempt to remove the sensor from the cradle. By default, the anti-tamper function is disabled. Sensitivity of the accelerometer is determined by

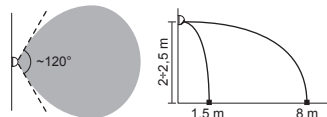
the parameter "Accelerometer sensitivity" set from 1 to 3 with a step of 1, where 3 means the highest sensitivity.

- **Alarm reset** - the button enables resetting the alarm related to activation of anti-tamper protection.
- **Sensitivity** - the parameter enabled setting the detection sensitivity of the digital PIR sensor built-in into the RCR-21 sensor. Sensitivity is set in the range from 1 to 10 with a step of 1, where: 1- means the lowest sensitivity, 10 - means the highest sensitivity. The default value is 5. Change of sensitivity causes a change both in sensor detection range and in the size of detected objects. The parameter should be set experimentally depending on the sensor use. Setting of sensitivity is based on changing parameters such as 'threshold', 'detection time' and 'window time'. In the case of standard sensitivity change, the parameters are experimentally selected and tabulated. In order to change these parameters manually, go to Advanced Settings.
  - Threshold - parameter set in the range from 0 to 255, where:
    - 255 - high level of detection (high sensitivity) - triggering of the PIR sensor by small objects
    - 0 - low level of detection (low sensitivity) - small objects at some distance from the PIR sensor do not cause its trigger (default value: 222).
  - Detection count - determines how many pulses need to be counted by the PIR sensor, to send a motion information frame. To be selected from 1 to 4 pulses (default value: 3).
  - Window Time - time during which the number of pulses specified by the parameter Detection count has to occur. Set in the range from 2 to 8 s with a 2s step (default value: 6s).

In order to save the current configuration, press the button "SAVE".

## SENSOR OPERATION

Sensor operation depends on the set operating mode.



### 1. MODE WITHOUT TWILIGHT SENSOR

- The sensor detects motion all the time regardless of the illuminance value. When motion is detected, the activation frame (used to control the receiver directly) and the status frame is sent owing to which the sensor status is visible in the application. At the moment when the object stops moving or leaves the sensor's detection area, 'delay time' is counted down as set in the configuration screen (20 s by default). After counting down this time, the sensor sends the disabling frame and the status frame again. If motion is detected again during counting down the 'delay time', counting down the time stops and the sensor is waiting for the motion to stop. When motion ceases, the time is counted down from the beginning.
- By default, motion detection is signalled by the LEDs lighting up. The signalling can be turned off from the configuration screen.

### 2. NIGHT MODE

- The sensor detects motion only when the illuminance level is lower than the set threshold. The threshold can be set within the range of 1 to 20 lx from the application using the configuration screen (threshold set with a 1 lx step) or using PROG button. In the second case, the sensor takes the value measured when selecting the night mode from the sensor menu as the threshold value. If the measured value exceeds 20 lx, the sensor still takes 20 lx as the threshold value. The remaining operating principle is the same as for the mode without twilight sensor.

### 3. DAY MODE

The sensor detects motion only when the illuminance level is higher than the set threshold. The threshold can be set within the range of 20 to 100,000 lx from the application level using the configuration screen (threshold set with a 1 lx step). The remaining operating principle is the same as for the mode without twilight sensor.

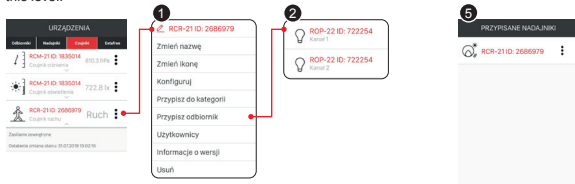
#### Notes:

- Motion detection method (sensor range, and size and speed of motion of detected objects) depends on the settings of the corresponding parameters in the configuration screen ('Sensitivity' or 'Advances settings').
- Each 'Synchronisation time' defined in the configuration, the sensor sends status information to the controller. This is information that the sensor is working, it is visible in the system and communicates correctly with the EFC-01 controller.
- If the RCR-21 sensor has enabled anti-tamper function, the sensor reports an alarm when the function activates. Information about the alarm is indicated by the icon and, additionally, the user has information when the anti-tamper function was triggered. In order to remove information about the alarm, press the button "Reset" at 'Alarm reset' item in the configuration screen. The user sets the accelerometer sensitivity, thus deciding which action is to trigger the anti-tamper alarm (this could be, for instance, a slight interruption of the sensor or its removal from the magnetic pad / power cradle). Sensitivity is set in the range from 1 to 3, where 1 means the lowest sensitivity.

## ASSIGNING THE RCR-21 SENSOR TO RECEIVER FROM EXTA LIFE APPLICATION LEVEL

The RCR-21 sensor can be assigned to the selected EXTA LIFE system receiver from the application level. After such assignment, the sensor works with the receiver directly, bypassing the controller. Information about the currently status of the sensor is only sent to the controller. In order to assign:

1. From the sensor menu level, select option "Assign receiver".
2. A list will be displayed showing all receivers paired with the controller to which you can directly assign the RCR-21 sensor.
3. Select the right receiver (or its channel) from the list - after the selection, the assignment will be confirmed by a message "Devices are paired".
4. If the "Invalid data" message is displayed when attempting to assign, the given has already been assigned to a receiver (channel).
5. Sensor assignment can be checked from the level of configuration menu of the selected receiver on the screen "Sensor assignment". You can also delete the sensor from the receiver at this level.



## DELETING THE SENSOR FROM THE SYSTEM

When deleting the RCR-21 sensor from EXTA LIFE system, we may encounter three situations:

### 1. The sensor has been added to the system and operates as a battery sensor

- In order to delete it, select the option "Delete" from the context menu.
- Positive deletion will be confirmed by a message.

### 2. The sensor has been added to the system and operates as a sensor powered from an external voltage source (sensor located in the cradle)

- In order to delete it, select the option "Delete" from the context menu.
- Positive deletion will be confirmed by a message.

### 3. The sensor has been added to the system as a sensor powered from an external voltage source but works as a battery sensor (taken out of the cradle)

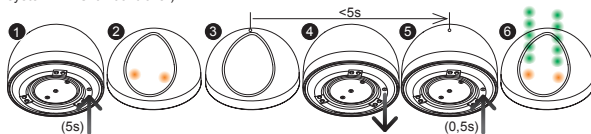
- In order to delete it, place the sensor on the power cradle.
- Select the option "Delete" from the context menu.
- Positive deletion will be confirmed by a message.

**NOTE:** If the sensor is not placed in the cradle, the application will show a message at the first attempt to delete it that the sensor needs to be placed in the cradle in order to be deleted. If the deletion attempt is repeated after this message, then sensor will be deleted from the controller (it will not be visible in the sensor list) but the sensor itself will not have a marker that the device has been removed. Consequently, the sensor will not be searched again during the pairing process. It is then necessary to reset the sensor to its factory settings.

## RESET OF THE SENSOR TO FACTORY SETTINGS

Reset to factory settings restores the default values of configuration parameters and resets the marker informing about the sensor's pairing with the EXTA LIFE system controller.

**NOTE:** In order to search the sensor again in the pairing process (which applies to power supply from an external voltage source), the marker informing about pairing has to be removed (reset) and the sensor cannot be found in the screen Devices » Sensors (it must be removed from the system / EFC-01 controller).



Press the PROG button for more than 5s

The LEDs will light up orange and go out after 1s - keep PROG button pressed.

When the LED goes out, release the PROG button and press it again for a short time (0.5s) in less than 5s after the LED goes out

The LEDs will quickly blink orange, then they will blink 5 times green and the sensor will move to normal operation

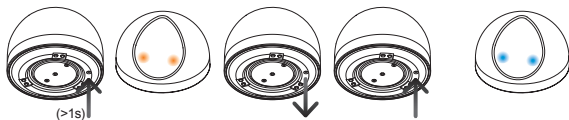
## OPERATING MODE SELECTION

Using the PROG button, the user can choose one of two modes of operation:

1. Work without light sensor (the motion sensor works all the time).
2. Work with light sensor (the sensor works only when the illuminance is lower than the set threshold). The trigger threshold is set in the range from 0 to 20 lx based on the current measurement when choosing the mode with light sensor. If the currently measured level is  $> 20$  lx, the reference value is the limit value, i.e. 20 lx.

### OPERATING MODE SELECTION:

1. Press the PROG button for  $>$  than 1s. After pressing the button, the LEDs light up orange.
2. When the LEDs go out, release the button PROG.
3. Next, by pressing the button PROG for a short time (0.5 s), select the proper operating mode:
  - the LEDs lit up red - work without light sensor,
  - the LEDs lit up green - work with the light sensor.
4. After approx. 3s, the sensor will quickly blink blue and the user will exit the mode programming procedure.



Press the PROG button more than 1s

The LEDs will light up orange and go out after 1s

When the LEDs go out, release the button PROG

By pressing the button PROG for a short time, select the proper operating mode:

- LEDs light is red - work without light sensor.
- LEDs light is green - work with the light sensor.

After 3s of selection of the operating mode, the LEDs will blink blue - exit from the programming procedure. If the mode with light sensor is selected, the sensor measures the illuminance during this time. This value is taken as the threshold value.

**NOTE:** Do not cover the aperture if the mode with light sensor is selected so as not to distort the result of illuminance measurement.

In order to programme a new threshold value, enter the operating mode programming procedure again and select the mode with light sensor again.

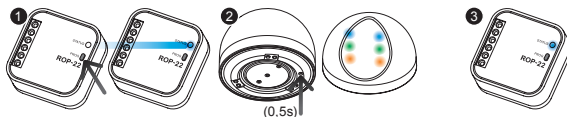
## DIRECT CO-OPERATION OF RCR-21 SENSOR WITH SELECTED EXTA LIFE RECEIVERS

The RCR-21 sensor can operate directly with selected EXTA LIFE receivers bypassing the EFC-01 controller. This co-operation only applies to such receivers as: ROP-21, ROP-22, ROM-22, ROM-24. In the case of other receivers, use an EFC-01 controller and a logical function module.

## SENSOR PAIRING WITH SELECTED EXTA LIFE RECEIVERS

1. Press the PROG. button for a short time (0.5s) on the receiver..
2. When the receiver enters the programming procedure of the given channel, press for a short time (0.5 s) the PROG button in the RCR-21\* sensor.
3. After pressing the PROG button, the LEDs in the sensor light up orange and then blink green, which signals the sending of programming frames. The stage of assigning the sensor to the receiver ends with the LEDs lighting up blue.

Example: Programming of RCR-21 to the first channel ROP-22

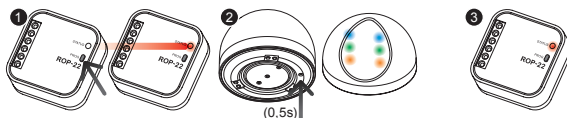


Press the PROG. button for a short time (0.5s) on the receiver. Wait a moment until the LED STATUS lights up blue

Press the PROG. button for a short time (0.5s) on the RCR-21 as quick as possible. The LEDs in the sensor will blink orange, green and finally blue

The STATUS LED will blink and go out. This means that the sensor is correctly assigned to the 1st channel of the receiver

Example: RCR-21 programming for the second ROP-22 channel



Press the PROG. button for a short time (0.5s) on the receiver. Wait approx. 5s until the STATUS LED lights up red (programming of channel 2).

Press the PROG. button for a short time (0.5s) on the RCR-21 as quick as possible. The LEDs in the sensor will blink orange, green and finally blue

The STATUS LED will blink and go out. This means that the sensor is correctly assigned to the 1st channel of the receiver

## DISCHARGED BATTERY SIGNALLING

Battery discharge status is only signalled in the mobile application by the icon and appropriate message displayed under the sensor's name. If the sensor works with an external supply (is placed in the PCL-21 power cradle), information about discharged battery is not displayed.

The need to replace the battery is signalled when its voltage decreases to  $< 2.1$  V.

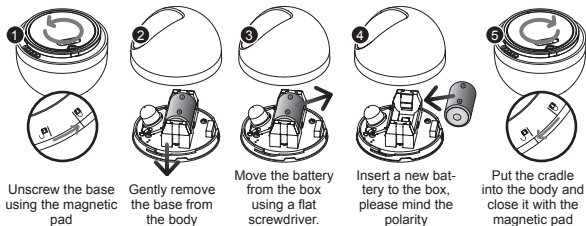


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## BATTERY REPLACEMENT



### ATTENTION!

**DANGER OF EXPLOSION IF THE BATTERY IS REPLACED WITH A BATTERY OF WRONG TYPE! DISPOSE OF WORN OUT BATTERIES AS STATED IN THE INSTRUCTIONS.**

## SOFTWARE UPDATE

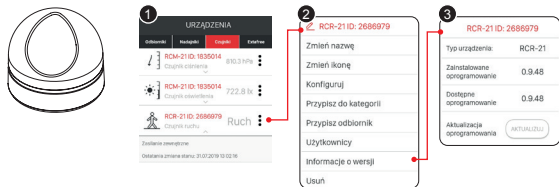
Update requirements:

- the update can only be performed by a user with Root or Administrator rights,
- update is available for the sensor powered by the PCL-21 cradle (recommended methods) and for a battery powered sensor (obligatory method).

If a new version of the software appears, the application will signal the need to update the sensor. Updates can also be checked on the screen 'Version information'. If the button 'Update' is highlighted, a newer software version is available.

**NOTE:** Update does not work through the REP-21 retransmitter. If the signal from the sensor passes through the retransmitter, in order to update move the sensor closer to the controller (or possibly temporarily remove the retransmitter from the system and again add it after the update is completed).

### Case 1 - Sensor placed on PCL-21 cradle (powered externally)

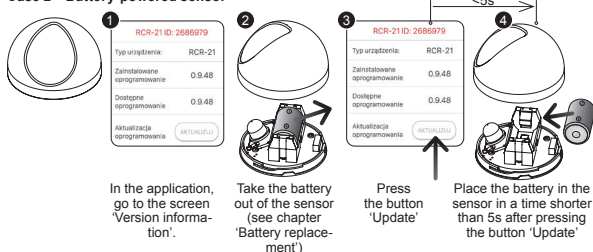


From the context menu, go to the screen 'Version information'. The update starts after pressing the button 'Update'. During the update, the sensor and the controller are switched to service frequency and control is not possible. Successful completion of the update is indicated by a message "Device successfully updated".

If the sensor update fails for some reason, it is marked as a sensor with an update error from the controller side. The sensor loses its functionality (as indicated by steady blinking of the green LED STATUS). However, it can be recovered again by repeating the upgrade process.

**NOTE: in case of error during the upgrade, do not remove the sensor from the system or reset it to factory settings. It may cause a full loss of functionality and necessity to return the product to the service.**

### Case 2 - Battery-powered sensor



After placing the battery in the sensor, the update process begins. Its course is exactly the same as when powered from an external voltage source. It is possible to retry the update process in case of an error.



## WORK WITH REP-21 RETRANSMITTER

The sensor can work with a REP-21 retransmitter. This co-operation is required if problems are found in radio communication between the sensor and the controller. It is then recommended to install the REP-21 retransmitter between these devices. Co-operation between the sensor and the retransmitter can be implemented in two ways::

### **I. Sensor entered directly into the retransmitter (bypassing the controller)**

In order to enter the sensor directly into the REP-21 retransmitter:

1. Press the button PROG. for a short time (0.5s) on the REP-21 retransmitter.
2. When the LED in the retransmitter lights up blue, in less than about 3 s press for a short time (0.5s) the PROG. button in the sensor. The sensor will send data to the retransmitter.
3. The programming procedure ends with the LED going out in the retransmitter.

After such assignment, the status frame (informing about the sensor status in the application) is retransmitted along with control frames for the selected EXTA LIFE receiver (it is important in case of direct co-operation between the sensor and the receiver).

### **II. Sensor and retransmitter added to the EFC-01 controller**

When the sensor and retransmitter are added to the controller, one can deal with two cases::

#### **1 The retransmitter and sensor are paired with the EFC-01 controller**

In this case, only status frames are retransmitted automatically. It is required to pair the retransmitter with the EFC-01 controller. The sensor has to be added to the system using the PCL-21 power cradle.

In a case when the sensor was typically added as a battery sensor (using the button PROG.), it is necessary to put it on the power cradle and pair it again (exactly as in the case of Configuration). After pairing, the sensor can be removed from the cradle and it can still work as a battery sensor.

#### **2 Sensor added to the retransmitter through the option "Assign sensor"**

This solution should be used when:

- the sensor operates with battery power and we do not have a PCL-21 power cradle,
- the sensor works directly with the selected EXTA LIFE receiver.

Select the option "Assign sensor" from the retransmitter menu, and then select the sensor to be entered into the retransmitter. After such assignment, the status frame (informing about the sensor status in the application) is retransmitted along with control frames for the selected EXTA LIFE receiver (in case of direct co-operation between the sensor and the receiver).