



WIRELESS REPEATER

CN-Repeater-AC

Installation Guide

1 General Information

1.1 Wireless repeater CN-Repeater-AC (hereinafter, the CN-Repeater) is intended for operation as a part of multicomponent control panels (hereinafter, the CP) and for retransmission of information from wireless security and fire detectors or other terminal devices (hereinafter, the TD).

Retransmission is fulfilled within 433.05 ... 434.79 MHz frequency range via a wireless two-way communication by the «CN-Contact-R» protocol.

1.2 Two frequencies: main and reserve are used for radio exchange with the CP. Changeover to the reserve frequency is fulfilled automatically in case of interference at the main one.

1.3 The transmitter radiated power does not exceed 10 mW.

1.4 The CN-Repeater is powered by AC mains with 230 V nominal voltage.

1.5 Reserve power is supplied by the built-in storage battery LIR14500 type with nominal voltage 3.7 V and capacity 600 mA*h. Storage battery is withdrawable.

1.6 On-stream time in normal conditions with fully-charged storage battery in working order is not less than 24 hours.

1.7 The CN-Repeater generates and transmits by radio communication to CP the following messages:

- «Norm»;
- «Tamper» – in the event of case tampering;
- «Main power supply failure» – under main voltage supply absence;
- «Reserve power supply failure» – under storage battery discharge with voltage drop lower than 3.5_{0.3} V.

1.8 The CN-Repeater fulfills storage battery additional charging (with exception of bootloader mode). Storage battery is not charged at battery voltage lower than 2.5 V and under the temperature lower than 0 °C.

1.9 Regular radio communication session period is assigned by the command from the CP at 10, 15, 30 sec, 1, 2, 5, 10 min intervals.

1.10 The CN-Repeater operation modes are displayed by two LED indicators (see Table 3).

1.11 The CN-Repeater is designed to operate continuously, around the clock inside closed premises of residential buildings and production buildings and facilities.

1.12 The CN-Repeater is resistant to the impact of electromagnetic fields, electrostatic discharges and nanosecond pulse interferences.

2 Specifications

Table 1

Parameter	Value
Supported wireless devices, items	Up to 31
Power supply, V AC	230 V (184 – 253 V), 50 Hz (±3 Hz)
Maximum consumed power from mains, VA	1.5
Operating temperature, °C	minus 20 ... +45
Storage battery charging temperature range, °C	0 ... +45
Permissible humidity at a temperature 40 °C, %	93
IP rating	IP30
Dimensions, mm, not more than	66 x 66 x 35
Weight, kg, not more than	0.2
Average service life, years	10

3 Scope of Delivery

Each CN-Repeater unit package contains the items listed in Table 2.

Table 2

Name	QNT
Wireless repeater CN-Repeater-AC	1 pc.
Antenna	1 pc.
Screw 3-3x30.016	2 pcs.
Wall plug «SORMAT» NAT 5x25	2 pcs.
Storage battery LIR14500 type (capacity not less than 600 mAh)	1 pc.
Wireless repeater CN-Repeater-AC. Installation Guide	1 copy

4 Protective Measures

4.1 Exploitation of the CN-Repeater should be fulfilled in accordance with rules of technical exploitation and protective measures for electricity-generating equipment.

4.2 Provider of dangerous voltage in the power source is mains socket.

4.3 Assembling and disassembling should be fulfilled only when CN-Repeater is de-energized. Storage battery should be removed.

4.4 CN-Repeater binding and quality appraising procedures should be carried out during storage battery power supply only.

5 Design

The CN-Repeater layout with removed cover is shown in Figure 1. The base (1) comprises the following elements:

- hole (6) for cover fixation;
- two holes (2) for CN-Repeater fastening to mounting surface;
- recess (13) for power cord wiring.

Printed circuit board (PCB) (7) comprises the following elements:

- pin contacts START (3);
- contacts BOOT for USB-UART hook up (4) for firmware upgrade;
- tamper (5);
- antenna hook-up socket (8);
- green LED indicator (9);
- red LED indicator (10);
- storage battery in the holder (11);
- mains socket 230 V AC (12).

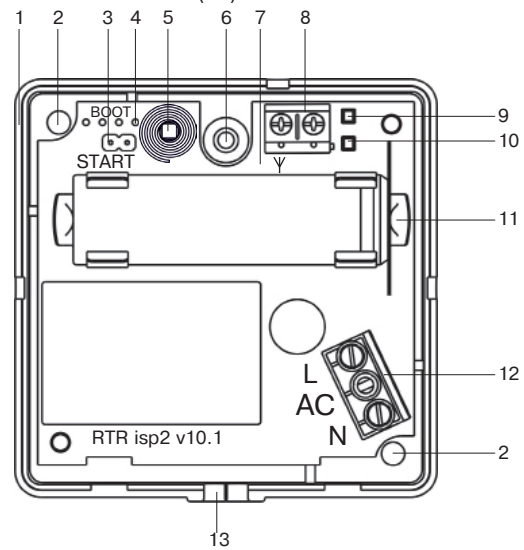


Figure 1 – CN-Repeater-AC with removed cover

6 External Connections

Lead-in power supply cords should be protected by double insulation and should have diameter 0.75 ... 1.5 mm².

7 LED Indication

Table 3

Operation mode	LED Indication
Energizing	Green LED indicator continuous lighting
Binding	Green LED indicator intermittent lighting
Binding is finished	Red LED indicator short-term (2 sec) lighting
Identification	Alternate green and red indicators blinking
Bootloader mode	Red LED indicator blinking
Quality appraising	See Table 4

8 Switching ON and setting Up

As a general matter, operating procedure consists of the following steps:

- CN-Repeater binding with CP (CN-Repeater logging in the CP);
- choosing place of installation and communication quality appraising;
- CN-Repeater mounting on the place of installation.

9 Binding

9.1 Main power supply should be switched off to avoid contact with mains socket with dangerous voltage. Binding procedure should be fulfilled with the CN-Repeater supplied by storage battery. The previous settings are deleted after binding has been finalized.

9.2 Prepare CP to logging the new device («Binding» procedure) in accordance with the CP Manual. During CN-Repeater binding procedure only one CP, prepared for the procedure, should be located in the radio coverage zone.

9.3 Untwist the screw on the CN-Repeater front side and remove the cover. Remove an insulator between storage battery «+» contact and holder.

9.4 Turn on the device manually from the accumulator by shorting the START contacts with any conductive object until red and green indicators are on (indication of start).

9.5 Push tamper contact and then close START contacts over again until binding LED indication appears.

9.6 Fulfill binding. Successful binding is displayed by the red indicator shot-term lighting.

Notes:

1. Frequent flashing (4 Hz) of green led indicates the binding mode.
2. The binding mode is active for 100 seconds. Repeat instructions given in clause 9.5 to renew binding.
3. To exit from the binding mode reconnect the START contacts.
4. Don't leave the CN-Repeater with closed contacts as it will lead to full discharge and damage of the accumulator. The flashing of green led (1 Hz) indicate that the START contacts are closed.

10 Choosing Place of Installation

10.1 It is not recommended to install the CN-Repeater in the following places:

- on massive metal constructions and closer than 1 m from them;
- near source of radio interferences;
- inside metal constructions.

10.2 It is recommended to locate the CN-Repeater in such a position, in which antenna has vertical orientation.

11 Communication Quality Appraising

11.1 Main power supply should be switched off to avoid contact with mains socket with dangerous voltage. Energize the CN-Repeater from the storage battery by closing START contacts by current-conducting item till green LED lighting up.

11.2 Carry the CN-Repeater binded in the CP to assumed place of installation and locate it in such a position, in which antenna has vertical orientation.

11.3 Press and hold the tamper contact for a few minutes.

11.4 Release tamper contact.

11.5 Appraise CN-Repeater communication quality with the CP by LED indication (see Table 4).

Table 4 – LED indication of communication quality appraisal

LED Indication		Communication Quality Appraisal	Recommendations
Color	Mode		
Green	Three blinks	Excellent	Install the Detector at this place
Green	Two blinks	Good	
Green	One blink	Communication established	Choose another place for installation
Red	Four blinks	No communication	

12 Storage and Transportation

12.1 The CN-Repeater are transported without power supply battery. The CN-Repeater in their original packaging are resistant to:

- transport jolting with the acceleration up to 30 m/sec² at impact frequency range from 10 to 120 per minute or 15 000 strikes;
- ambient temperature range minus 50 ... +50 °C;
- relative air humidity (95 ± 3) % at a temperature +35 °C.

12.2 The CN-Repeater in original package may be transported by any means of transportation in closed vehicles over any distances in compliance with the existing shipping rules concerning the respective means of transportation.

12.3 After transportation under the conditions different to exploitation conditions the CN-Repeater shall be ready to operate after a maximum of six hours.

12.4 The storage room shall be free from current-conducting dust, acid vapors, alkali and gases that cause corrosion and destroy insulation.

12.5 The battery must be charged during storage. The battery must be removed from the holder or an insulator must be installed between the "+" contact of the battery and the holder.

13 Manufacturer's Guarantees

13.1 «RIELTA» JSC guarantees conformity of the CN-Repeater to the requirements of technical conditions provided the transportation, storage, installation and operation conditions are observed.

13.2 The guaranteed shelf life of the CN-Repeater is 63 months since the date of manufacture.

13.3 The guaranteed useful life is 60 months since the day of putting into operation.

13.4 The CN-Repeater that are found non-conforming to the requirements of technical conditions shall be repaired by the manufacturer, provided the installation and operation rules have been complied.

13.5 For warranty service contact address:

Research and technology business company «C.Nord» LLC

199 – 201, Obvodny Canal Embankment, Saint-Petersburg, Russia, 190020

Tel: +7 (812) 327-16-36

E-mail: cnord@cnord.ru, support@cnord.ru

www.cnord.ru

Note – Warranty obligations are not applied to power supply battery.