RiDom

Repeater «Ri-R-1»

Installation guide

1 GENERAL INFORMATION

1.1 Repeater «Ri-R-1» (hereinafter – Ri-R-1) is used to relay information from wireless security and fire detectors or other terminal devices (hereinafter – TD).

1.2 Ri-R-1 operates as part of the smart home security system RiDom, communicating with the «Ri-HUB-1» control center (hereinafter referred to as the Hub) via the «Ri-Contact-R» radio channel protocol.

1.3 Ri-R-1 does not require any official licensing or registration as a radio frequency device.

1.4 The Ri-R-1 is powered by AC mains with a nominal voltage of 230 V, 50 Hz or 110 V, 60 Hz.

1.5 Ri-R-1 remains operational in the supply voltage range of 85–305 volts.

1.6 Ri-R-1 generates two types of notifications:
- normal status;
- opening of the case;
- failure of the main power supply;
- failure of the backup power supply.

1.7 Ri-R-1 recharges the battery (except for the loader mode). The battery will not charge when the voltage is below 2.5 V or the ambient temperature is below 0°C.

1.8 The frequency of regular radio exchange sessions with the transmission of the status is set by a command from the Hub from for the range of 10, 15, 30, 60 seconds, 2, 5, 10 minutes.

1.9 The Ri-R-1 is designed for continuous 24/7 operation

1.10 Ri-R-1 is resistant to electromagnetic interference.

2 SPECIFICATIONS

Table 1

Parameter	Value
Frequency range	868,7...869,2 MHz
Radiation power, no more	25 mW
AC supply voltage range	85–305 V, 50/60 Hz
Maximum power consumption	1,5 VA
Battery charging range	0... +45 °C
Battery operation time, not less	24 hours
Protection class	IP30
Dimensions	65x66x28 mm
Weight	0,2 kg
Average service life	10 years
Operational conditions	
Operating temperature range	-20... +45 °C
Permissible air humidity at a temperature of +40 °C, without moisture condensation	Up to 93 %

3 SCOPE OF SUPPLY

Table 2

Name	Qty.
Repeater «Ri-R-1»	1 pc.
Antenna	1 pc.
Screw 3-3x30.016	2 pc.
Dowel NAT 5x25 SORMAT	2 pc.
Installation guide for the «Ri-R-1»	1 copy

ATTENTION! Only persons with a safety qualification group III at least and having a permit to work with voltages up to 1000 V are allowed to work on the installation and maintenance of the Ri-R-1.

4 SAFETY MEASURES

4.1 When installing and operating the Ri-R-1, the «Rules for technical operation and safety regulations for electrical installations up to 1000 V» must be observed.

4.2 The power terminal block is the source of dangerous voltage.

4.3 Installation and dismantling should be carried out with the power off and the battery removed.

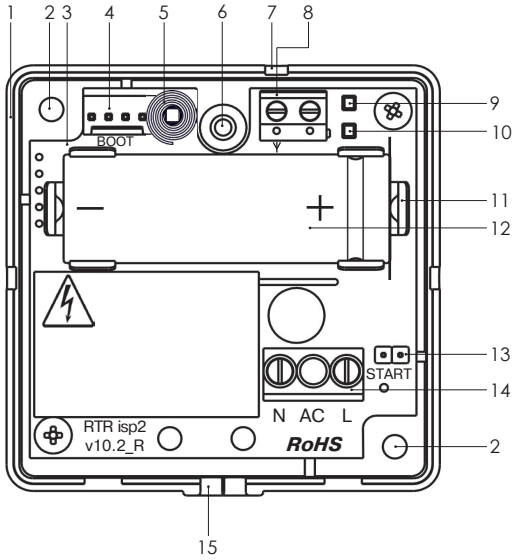
4.4 Linking and checking the quality of communication should be carried out only from the battery.

4.5 When installing the battery, observe the correct polarity indicated in pic. 1.

5 VIEW AND DESIGN

The appearance of the Ri-R-1 with the cover removed is shown in Figure 1. The base of the body (1) contains:
- two openings (2) for installation of the Ri-R-1 to the mounting surface;
- opening (6) for attaching the case cover;
- opening for antenna installation (7);
- a cutout (15) for laying the power wire.

The following elements are located on the printed circuit board (3):
- BOOT contacts (4) for updating the firmware using a USB-UART converter;
- case opening sensor (5);
- antenna connection block (8);
- red LED indicator (9);
- green LED indicator (10);
- battery holder (11);
- battery (12) with an insulator;
- pin contacts START (13);
- AC terminal block (14).



Picture 1 – «Ri-R-1», front view with removed case

6 EXTERNAL CONNECTION

The power wires must be double insulated with a cross section of 0.75 to 1.5 mm^2.

7 INDICATION

Table 3

LED mode	Indication
External power supplied	Continuous green LED light
«Linking»	Intermittent green LED light
«Linking » complete	Short-term (2 s) turning on of the red LED
«Identification»	single red indicator light with a period of 4 s
indication	Alternating green and red LEDs
Loader	Turning on the red LED
«Connection quality»	See table 4

8 CHOOSING THE PLACE OF INSTALLATION

Ri-R-1 is designed for indoor installation only.

It is recommended to mount the Ri-R-1 so that the antenna orientation remains vertical.

Do not install Ri-R-1 under the following conditions:

1. On massive metal structures and closer than 1 m to them;
2. Closer than 1m to metal water pipes;
3. Near sources of radio interference;
4. Inside metal structures.
5. Outdoors.
6. In rooms with temperature and humidity outside the allowable.

9 CONNECTING THE RI-R-1 TO THE SYSTEM

9.1 Disconnect the Ri-R-1 from the mains, the connection must be made with the Ri-R-1 powered from the battery.

9.2 Make sure there is only one Ri-R-1 and one Hub in the radio visibility zone prepared for registration of a new device.

9.3 Remove the cover by unscrewing the screw on the front side. Remove the insulator.

9.4 Carry out a manual start from the battery by closing the START contacts with a screwdriver (Pic. 1, pos. 13) until the green and red LEDs turn on (start indication).

9.5 After the start indication is over, close the START contacts with a screwdriver again until the green LED turns on.

9.6 Open the RiDom application. In the My Devices tab, click ⊕ and then Add device. Select the repeater «Ri-R-1» from the list of devices and follow the prompts of the application.

9.7 When successfully connected to the Hub, the Ri-R-1 indicator will turn red for 2-3 seconds, then you can see the Ri-R-1 in the application, as well as all information about it. The linking mode time is limited to 100 seconds. To resume the «Linking» mode, briefly close the START contacts with a screwdriver for 2-3 seconds.

9.8 Install the case cover back.

Notes:

1. Linking mode is indicated by fast flashing (4 Hz) of the green LED.
2. To exit the «Linking» mode, close the START contacts again.
3. Do not leave the Ri-R-1 with the START contacts closed – this will lead to a complete discharge and failure of the battery. Closed START contacts are indicated by slow flashing (1 Hz) of the green LED.

10 RADIO CONNECTION QUALITY EVALUATION

10.1 Mains voltage must be turned off to avoid touching the power terminals block. Perform a manual start from the battery according to paragraph 9.4.

10.2 Bring the connected Ri-R-1 to the intended place of installation and turn it so that the antenna is in a vertical position.

10.3 Press the contact of the tamper switch (fig.1, pos.5) and hold it for a few seconds.

10.4 Release the tamper switch.

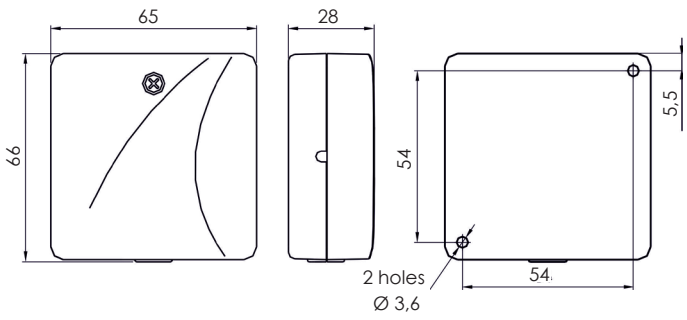
10.5 Within 5 seconds the Ri-R-1 will indicate the quality of communication with the Hub by turning on the LED indicator (see Table 4).

Table 4 – Connection quality indication

Indication		Connection quality	Recommendations
Color	Mode		
Green	Three blinks	Perfect	Installation in this location is allowed
Green	Two blinks	Good	
Green	One blink	Weak	Installation in this location is not allowed
Red	Multiple blinks	No connection	

11 OVERALL AND INSTALLATION DIMENSIONS

(all dimensions are indicated in mm)



Picture 2

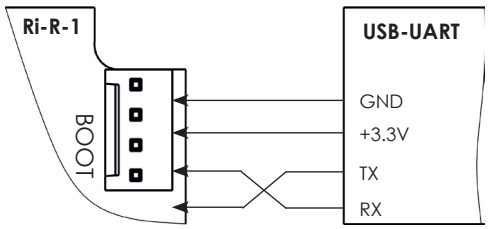
12 LOADER MODE

Attention! Turn off the power and remove the battery while updating the software (hereinafter referred to as the software).

Bootloader mode is an additional mode for updating the internal software.

The update is performed using a USB-UART converter, a PC and the Ladoga RK Configurator program (https://rielta.ru/prog/ Configurator_Installer.exe).

Switching to the bootloader mode is carried out automatically when the converter is connected.



Picture 3 – Converter connection diagram

13 STORAGE AND TRANSPORTATION

13.1 Ri-R-1 in their original packaging are resistant to:

- transport jolting with the acceleration up to 30 m/sec^2 at impact frequency range from 10 to 120 per minute or 15 000 strikes;
- ambient temperature range minus 50 ... +55 °C;
- relative air humidity (95 ± 3) % at a temperature +35 °C.

13.2 Ri-R-1 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.

13.3 After transportation under the conditions different to exploitation conditions the Ri-R-1 shall be ready to operate after a maximum of six hours.

Note: The storage premises should not contain any current-conducting dust, acid and alkali fumes, or corrosive or destroying insulation gases.

14 DISPOSAL INFORMATION

14.1 The Ri-R-1 does not contain precious metals, hazardous or toxic substances that can harm human health or the environment, and does not pose a danger to life, human health and the environment at the end of its service life.

14.2 In this regard, the disposal of the Ri-R-1 can be carried out according to the rules for the disposal of general industrial waste.

15 MANUFACTURER WARRANTY

15.1 LLC NPP RIELTA guarantees that the Ri-R-1 meets the requirements of technical specifications within 39 months from the date of manufacture, subject to the conditions of transportation, storage, installation and operation.

15.2 Warranty period of operation of the Ri-R-1 is 36 months from the date of commissioning within the warranty period of storage.

15.3 If during the warranty period the Detector, which is subject to the rules of transportation, installation and operation, is found to be inconsistent with the requirements of the technical specifications, it is to be replaced or repaired by the manufacturer.

16 DATE OF MANUFACTURE

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month, year

ridom.ru

Made in Russia

v10.2R

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