

Installation Guide

1 General Information

Wireless zone extension repeater «Ladoga BRSS-RK-RTR», «Ladoga BRSS-RK-RTR» ver. 1 (hereinafter, the BRSS-RK-RTR) are designed for connection of terminal devices (hereinafter, TD) located in poor-reception zone to «Ladoga-BRSS-RK-485» ver.1 and «Ladoga-BRSS-RK-485» ver. 2 and to others external devices (hereinafter, Coordinator), supporting wireless two-way communication by the «RIELTA-Contact-R» protocol ver. 6 and higher.

BRSS-RK-RTR retransmits received information by the «RIELTA-Contact-R» protocol ver. 6 and higher.

Total number of TD connected to BRSS-RK-RTR is not more than 31.

Ladoga BRSS-RK-RTR ver. 1 is distinct in possibility of installation and control of reserve power supply (hermetically sealed, lead-acid storage battery (hereinafter, ACC)) with nominal voltage 6 V and capacity 1.2 A*h and maximum dimensions 97 x 58 x 24 mm.

Ladoga BRSS-RK-RTR is powered by an external stabilized DC power supply with nominal voltage 10...15 V.

Ladoga BRSS-RK-RTR ver. 1 is powered by an external non-stabilized DC power supply with nominal voltage 10 ... 15 V.

BRSS-RK-RTR provides the possibility of hooking up to external device (hereinafter, ED): personal computer (hereinafter, «PC») or any other device supporting CDC-ACM interface of the virtual communication port via USB and is intended for internal software update.

2 Specifications

Table 1

Parameter	Value	
	BRSS-RK-RTR	BRSS-RK-RTR ver.1
Power supply, V DC	10 ... 15	10 ... 15
Maximum consumed current, mA	50	50 without ACC 170 with ACC
Operating temperature, °C	from minus 30 to +50	from minus 30 to +50 (without ACC)*
Dimensions, mm, maximum	82 x 57 x 32	165 x 115 x 43
Weight, kg, maximum	0.06	0.19 (without ACC)
IP rating	IP20	
Operating frequency range, MHz	433.05 – 434.79	
Maximum output power, mW	10	

* – operating temperature of BRSS-RK-RTR ver.1 with installed ACC is specified by the ACC maximum permissible temperature

BRSS-RK-RTR ver. 1 provides transmission of message about reserve power supply discharge under voltage value at the ACC terminals equal to (5.6 ± 0.2) V.

BRSS-RK-RTR ver. 1 provides ACC disconnection under voltage value at the ACC terminals equal or lower than (5.3 ± 0.2) V.

BRSS-RK-RTR ver. 1 is equipped with two cutout fuses (with fuse rating 0.5 A) to prevent external power supply and ACC reversed polarity connection.

BRSS-RK-RTR is designed for continuous operation around the clock.

3 Scope of Delivery

Each BRSS-RK-RTR unit package contains items listed in Table 2.

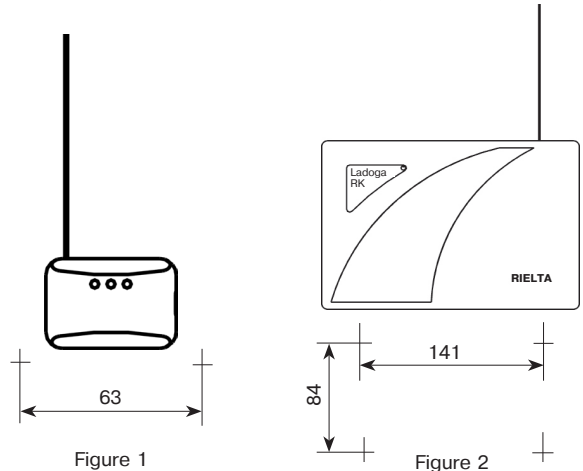
Table 2

Name	QNT	
	-	Ver. 1
Wireless zone extension repeater «Ladoga BRSS-RK-RTR»	1 pc.	-
Wireless zone extension repeater «Ladoga BRSS-RK-RTR» ver. 1	-	1 pc.
Antenna	1 pc	1 pc
Screw 3-3x30.016	2 pcs.	4 pcs.
Wall plug NAT 5x25 SORMAT	2 pcs.	4 pcs.
Lead-acid storage battery with nominal voltage 6 V and capacity 1.2 A*h and maximum dimensions 97 x 58 x 24 mm	-	1 pc.*
Wireless zone extension repeater «Ladoga BRSS-RK-RTR». Installation Guide	1 copy	-
Wireless zone extension repeater «Ladoga BRSS-RK-RTR» ver. 1. Installation Guide	-	1 copy

* – Supplied optionally

4 Design

BRSS-RK-RTR and BRSS-RK-RTR ver.1 design and markup scheme are shown in Figures 1 and 2 correspondingly.



On the front panel yellow, red and green LED indicators are located. The LEDs display the BRSS-RK-RTR status (see Table 3). The following elements are arranged under the BRSS-RK-RTR cover: terminals for external power supply connection, antennas, ACC (for BRSS-RK-RTR ver. 1) and microswitch for tamper protection.

5 BRSS-RK-RTR connection

BRSS-RK-RTR and BRSS-RK-RTR ver. 1 connection is fulfilled in accordance with connection patterns 3 and 4 correspondingly.

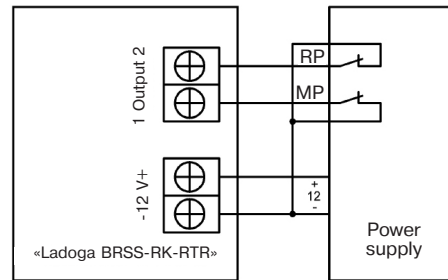


Figure 3

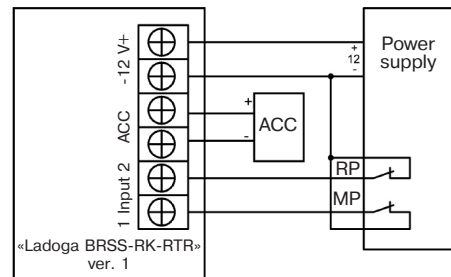


Figure 4

BRSS-RK-RTR ver. 1 provides activation and operation from preliminary charged ACC during adjustment and setting-up procedures without connection to external power source. Such operation allows to choose optimal place of installation ensuring stable radio communication with Coordinator and TD until wires are installed from the external power supply to BRSS-RK-RTR ver. 1. To begin ACC operation of BRSS-RK-RTR ver. 1 it is necessary to press button «Start». Leave «+CB-» terminals on the PCB disconnected.

6 LED Indication

LED indication modes are listed in Table 3.

Table 3

Operation mode	LED Indication
Binding	LED indicator intermittent lighting green
Binding is finished	LED indicator short-term (2 sec) lighting red
Identification	Alternate green and red indicators blinking
Communication quality appraising	See Table 4
Bootloader mode	Red LED indicator steadily blinking
ACC discharge	Yellow LED indicator steadily blinking (for BRSS-RK-RTR ver. 1)
External power supply malfunction	Yellow LED indicator periodical blinking (for BRSS-RK-RTR ver. 1)

7 Switching ON and Setting up

- 7.1 Open cover and install antenna into terminal block.
- 7.2 Prepare control panel (CP) to logging the new device («Binding» procedure) in accordance with the CP manual.
During binding procedure only one CP, which is prepared for the procedure, should be located in the BRSS-RK-RTR radio coverage zone. Supply 12 V on terminals «-12 V+».
- 7.4 Close «RESET» pin contacts located on the BRSS-RK-RTR PCB.
- 7.5 Assure yourself of periodical green LED blinking («Binding» mode). Open pin contacts.
- 7.6 Fulfill binding procedure in accordance with the CP manual.
- 7.7 Wait until red LED indicator short-trem blink.

Note – Binding mode is active during 100 sec since the BRSS-RK-RTR energizing. To restart binding it is necessary to repeat Cls. 7.5 – 7.8.

8 Communication Quality Appraising

- 8.1 Bring the BRSS-RK-RTR prepared for operation to the assumed place of installation and locate it in such a position, that antenna has vertical orientation.
- 8.2 Press tamper contact and hold it during 3 s or more.
- 8.3 Release tamper contact.
- 8.4 Appraise BRSS-RK-RTR communication quality with the CP by LED indication modes (see Table 4).

Note – A delay of up to 4 sec between tampering and LED indication switching on is possible.

Table 4 – LED Indication during communication quality appraising

LED Indication		Communication Quality Appraisal	Recommendations
Color	Mode		
Green	Three blinks	Excellent	Install the BRSS-RK-RTR at this place
Green	Two blinks	Good	
Green	One blink	Communication established	Choose another place of installation
Red	A series of blinks	No communication	

9 Recommendations on Installation

- 9.1 Appraise communication quality at the assumed place of BRSS-RK-RTR installation.
- 9.2 Install BRSS-RK-RTR at the place where communication quality is appraised as «excellent» or «good» (see Cl. 8).
- 9.3 It is not recommended to install BRSS-RK-RTR at the following places:
 - on massive metal constructions and closer than 1 m to them;
 - closer than 1 m to lines of force as well as water or gas pipes;
 - near sources of interference;
 - inside metal constructions.
- 9.4 Power supply wires should be located far enough from the power cables. Install BRSS-RK-RTR in such a position, that antenna has vertical orientation.

10 Transferring Control over Detectors to BRSS-RK-RTR

Transferring control over detectors to BRSS-RK-RTR is fulfilled in accordance with a «Rielta-Contact-R» protocol ver. 6 and higher.

11 Firmware Update

Update of an internal software is carried out by means of PC with «Ladoga-RK» Configurator installed. Before connecting to the PC via USB interface unit, disconnect BRSS-RK-RTR external and reserve power supply and then install jumper on «Reset» contacts.

12 Storage and Transportation

- 12.1 The BRSS-RK-RTR in original package may be transported by any transport facility in closed vehicles over any distances in compliance with the existing shipping rules concerning the respective means of transport.
- 12.2 The storage room shall be heated and ventilated, as well as free from current-conducting dust, acid vapors, alkali and gases that cause corrosion and destroy insulation.
- 12.3 During storage power supply battery should be charged and removed from the holder. In other case, when the battery remains installed into the holder, it's contact «+» should be isolated from the holder by isolation film.

13 Manufacturer's Guarantees

- 13.1 «RIELTA» JSC guarantees conformity of the BRSS-RK-RTR to the requirements of technical conditions provided the transportation, storage, installation and operation conditions are observed.
- 13.2 The guaranteed shelf life of the BRSS-RK-RTR 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 BRSS-RK-RTR that is found non-conforming to the requirements of technical conditions shall be repaired by the manufacturer, provided the installation and operation rules have been complied.

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

14 Packing Certificate

Wireless zone extension repeater

- «Ladoga BRSS-RK-RTR»,
- «Ladoga BRSS-RK-RTR» ver. 1,

has been manufactured in compliance with the active technical documentation and classified as fit for operation and packed by «RIELTA» JSC.

Packing date _____
month, year