WIRELESS ALARM BUTTON

«Ladoga-KTS-RK» vers.1

Installation Guide

1 General Information

1.1 Wireless alarm button «Ladoga-KTS-RK» vers.1 (hereinafter, KTS-RK), is designed for hand-operated generation and transmission control commands (messages) via wireless two-way communication by the «RIELTA-Contact-R» protocol with the control panel (hereinafter, CP) ensuring operation by the «RIELTA-Contact-R» protocol.

1.2 KTS-RK comprises 3 control buttons for messages transmission.

1.3 KTS-RK operates within 433.05 − 434.79 frequency range. The transmitter power does not exceed 10 mW.

1.4 KTS-RK ensures operation at the main and backup operating frequencies. The changeover to backup operating frequency is fulfilled automatically.

1.5 KTS-RK is powered from one lithium power supply battery CR2450.

1.6 For KTS-RK performance control, two-colored (red and green) LED indicator and vibrating motor are used.

1.7 The KTS-RK controls power battery state and sends the «Low Battery» message when the battery voltage drops lower than $2.4_{-0.4}$ V.

1.8 The KTS-RK provides immunity to electromagnetic interference.

1.9 Industrial interferences created by the KTS-RK do not exceed the limits for the facilities used in housing, commercial zones or production areas with low power consumption.

1.10 The KTS-RK ensures safe operation under normal climatic conditions (according to Russian National State Boreal Climate Standard: environment temperature within the range +15 °C ...+35 °C, relative humidity in the range of 25 % ... 75 %, atmosphere pressure 86 − 106 kPa)

2 Specifications

Table 1

Parameter	Value
Operating temperature	minus 20 ... +50 °C
Permissible relative humidity at +25 °C without moisture condensation	up to 98 %
Dimensions, maximum	38x67x18 mm
Weight, maximum	0.025 kg
IP rating	IP54
Battery life under normal climatic conditions and overall usage 2 times in 24-hours period, not less	12 months
Average service life, not less	8 years

3 Scope of delivery

The scope of delivery is shown in Table 2.

Table 2

Name	QNT.
Wireless alarm button «Ladoga-KTS-RK» vers.1	1 pc.
Lithium power supply battery CR2450	1 pc.
Wireless alarm button «Ladoga-KTS-RK» vers.1. Installation Guide	1 copy

4 Design

The main component elements of KTS-RK: base and cover (1) with PCB (2). The battery holder (3) and vibrating motor (4) are located on PCB. LED indicator (5), the control commands transmission key buttons (6,7,8).

In case of joint operation with CP these key buttons can be used as follows:
- 🔒 key button (6) − for arming;
- ◯ key button (7) − for an «Alarm» message transmitting;
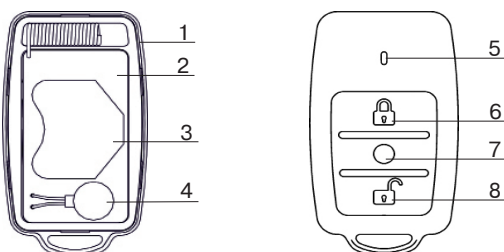- 🔓 key button (8) − for disarming.

Figure 1

5 LED Indication

The KTS-RK generates messages with the following variants of LED indication:
- «Binding» mode indication;
- State indication is switched on for 3 sec upon receipt the relevant command from the CP;
- Indication of the «Alarm memory» mode switched on for 15 minutes after pressing the button to transmit the «Alarm» notification, provided the notification has been successfully delivered to the CP;
- No communication with CP indication is switched on for 3 sec in case of CP reply absence.

Upon the successful delivery of the control command to CP, the Detector switches ON the vibrating motor for a short time.

The indicator modes in terms of the KTS-RK state are listed in Table 3.

Table 3

State	LED Indication	Notes
Operation in «Binding» mode	LED indicator blinking green	Request for logging in CP
«Binding» mode completed	LED indicator lighting red for 2 − 3 sec	
Long pressing indication	LED indicator lighting red	
State Indication	LED indicator lighting red for 3 sec	Response to the relevant command from CP
	LED indicator periodical blinking red for 3 sec	
	LED indicator lighting green for 3 sec	
	LED indicator periodical blinking green for 3 sec	
Mode indication «Alarm memory»	LED indicator periodical blinking red every 15 sec for 15 min	Transmission of the «Alarm» message to the CP
No connection with CP	LED indicators alternate lighting green and red for 3 sec	
Communication quality appraisal	See sect. «Communication Quality Appraisal»	

6 Binding with the CP

«Binding» mode is provided for the KTS-RK logging in the CP and for service information exchange.

6.1 Take off the cover of the KTS-RK. Install CR2450 power supply battery to the holder. Put the cover on its place, close the case.

6.2 Prepare to logging in CP in compliance with CP Installation Guide.

6.3 Press and release any key button. The LED indicator would periodically light red for 3 sec, thus conforming the KTS-RK is operating in the «Binding» mode.

6.4 Under the noted indication absence push all tree buttons simultaneously for 2 or more seconds. At this time vibrating motor should turn ON and the LED indicator should light green. Hold the buttons until LED indicator lights red and the vibrating motor turns OFF.

7 Features

7.1 The KTS-RK establishes communication with CP only after all buttons are released.

7.2 If three buttons were pushed simultaneously (reset), communication with CP would not been established.

7.3 The KTS-RK ensures possibility to send status message after the delay upon the relevant command from CP.

8 Communication Quality Appraisal

For appraising the possibility of KTS-RK operation in the particular place, it is necessary:
- Push and release (6) and (8) buttons simultaneously;
- Make sure that the KTS-RK does not indicate communication failure with CP;
- Wait for the status LED indication switching off (if correspondent command was transmitted);

After it the KTS-RK displays communication quality with CP in accordance with Table 4.

Table 4

LED Indication	Communication Quality Appraisal	Recommendations
Three green blinks	Excellent	Usage is possible
Two green blinks	Good	
One green blink	Communication established	Use the «Ladoga-RK» system repeater
LED indicator alternate lighting red and green	No communiction with CP	

9 Storage and Transportation

9.1 The KTS-RK are transported without power supply battery. The KTS-RK 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 ... +50 °C;
- relative air humidity (95 ± 3) % at a temperature +35 °C.

9.2 The KTS-RK 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.

9.3 After transportation under the conditions different to exploitation conditions the KTS-RK shall be ready to operate after a maximum of 6 hours.

10 Manufacturer's Guarantees

10.1 The manufacturer guarantees conformity of the KTS-RK to the requirements of technical conditions provided the transportation, storage, installation and operation conditions are observed.

10.2 The guaranteed shelf life of the KTS-RK is 63 months since the date of manufacture.

10.3 The guaranteed useful life is 60 months since the day of putting into operation. The conditions and useful life of the power batteries are defined by its manufacturer.

10.4 The KTS-RK 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 with.

Note - Warranty obligations is not applied to the power supply batteries.

11 Packing Certificate

Wireless alarm button «Ladoga-KTS-RK» vers.1 has been manufactured in compliance with the active technical documentation, classified as fit for operation and packed by «Development and Production Enterprise RIELTA» LLC.

Packing date _____
month, year