

«Ladoga MK-RK» ver. 2

Installation Guide

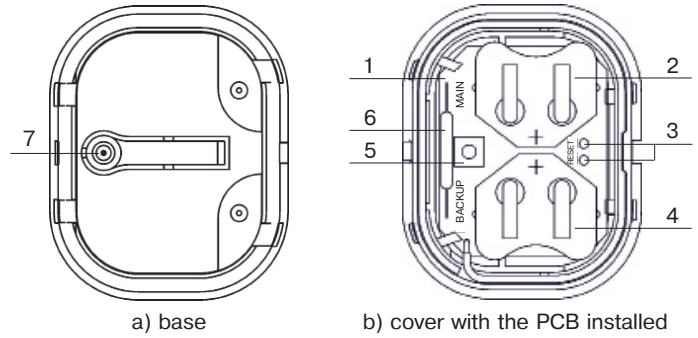


Figure 1 – The Detector design

1 General Information

1.1 Wireless magnetic contact security Detector «Ladoga MK-RK» ver. 2 (hereinafter, the Detector) is intended for opening or shifting control of doors, windows or other structural elements with transmission of messages via two-way wireless channel by the protocol «Rielta-Contact-R» to the control panel (hereinafter, the CP).

1.2 Opening or shifting control is fulfilled by built-in magnetic contact monitoring.

1.3 Detector operates within 433.05 – 434.79 MHz frequency range. Their transmission power does not exceed 10 mW.

1.4 The Detector operates at the main and backup operating frequencies. The changeover to backup operating frequency is fulfilled automatically.

1.5 Radio communication is initiated by the Detector at 10, 15, 30 sec, 1, 5, 10 min intervals chosen in the process of their binding with the CP. Alarm and tamper messages are transmitted immediately.

1.6 The Detector is powered from main and backup power supply batteries – CR2450.

1.7 The Detector state is displayed by a two-color LED indicator.

1.8 The Detector generates and transmits the following messages:

- «Norm» – under closed built-in magnetic contacts;
- «Alarm» – under opened built-in magnetic contacts;
- «Tamper» – in the event of case tampering or removal from the installation surface;

- «Main Power Supply Low Battery» – under the main power supply battery voltage drop over 2.2_{-0.2} V;

- «Backup Power Supply Low Battery» – under the backup power supply battery voltage drop over 2.2_{-0.2} V.

1.9 The Detector is designed to operate continuously, around the clock.

1.10 The Detector has immunity to electromagnetic interference.

2 Specifications

Table 1

Parameter	Value
Distance between the Detector and the magnet: - to open the contact, not more than - to close the contact, not less than	20 mm 5 mm
Operating temperatures range, °C	minus 20 to +55
Permissible relative humidity at 35 °C temperature, %, up to:	98
Ambient class	Boreal climate
IP rating	IP54
Dimensions, mm, max	65 x 55 x 20
Weight, kg, max	0.05
Battery life under normal climate conditions and specified broadcast period than 30 sec, not less: - main power supply battery, months - backup power supply battery, months	36 2
Average service life, years	8

3 Scope of Delivery

Each Detector unit package contains the items listed in the Table 2.

Table 2

Name	QNT
Wireless magnetic contact security Detector «Ladoga MK-RK» ver. 2	1 pc.
Power supply lithium battery CR2450	2 pcs.*
Screw 3-3x30.016	3 pcs.
Master element (Magnet)	1 pc.
Wireless magnetic contact security Detector «Ladoga MK-RK» ver. 2. Installation Guide	1 copy
* Installed	

4 Design of the Detector

The Detector consists of a case with the openable fixation hole (7) and a cover with the printed circuit board (PCB) installed (1). The PCB contains: main power supply battery holder (2), «RESET» contacts (3), backup power supply battery holder (4), case tamper (5), and built-in hermetic contact (6).

5 Indication

The following types of indication are generated by the Detector:

- «Binding» – procedure of logging of the Detector in the CP;
- «Identification» indication is activated by relevant commands received from the CP, remains active during 15 min or until the Detector cover is opened;
- LED indication of the Detector state is activated after the Detector cover is closed and remains active during 15 min in the absence of other LED indication types, provided that alarm «Tamper» message is not generated during this time or the command from the CP to disable the Detector state indication is not transmitted.

The types of LED indication are shown in the Table 3.

Table 3

The Detector State	Indication	Note
End of the «Binding» procedure	LED indicator lighting red for 2 – 3 sec	
«Binding» procedure	LED indicator periodical blinking green	The Detector logging in the CP
«Identification» indication	LED indicator alternate blinking red and green	By the relevant command from the CP
«Alarm»	Single-shot LED indicator lighting red for 4 sec	State indication is ON, «Identification» indication is OFF
Communication Quality Appraisal	See sect. Communication Quality Appraisal	
«Norm»	Indication is OFF	

6 Binding with the CP

The «Binding» mode is intended for the Detector logging in the CP and service information exchange.

6.1 Prepare the CP in accordance with CP Installation Guide.

6.2 Initially install the backup power supply battery to the holder plate (4) on the PCB, thereupon install the main power supply battery to the holder plate (2).

6.3 Periodical LED indicator blinking green is evidence of binding process.

6.4 In case of mentioned above LED indication absence, short-circuit «RESET» terminals for 2 – 3 sec.

6.5 Successful binding procedure complying is indicated by LED indicator lighting red for 2 – 3 sec.

6.6 The time limit for the binding process of the Detector is 100 sec. To restart the binding procedure, short-circuit «RESET» terminals for 2 – 3 sec.

7 Communication Quality Appraisal

7.1 For radio communication quality appraisal it is necessary to:

- set the Detector on the assumed place of installation;
- push and then release case tamper.

7.2 After case tamper releasing the Detector generates case tamper alarm message, transmits it via radio communication channel and represents communication quality with CP by LED indication in accordance with the Table 4.

Table 4

LED Indication		LED Indication	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 or use «Ladoga-RK» system repeater
Red	Four blinks	No communication	

8 Installation of the Detector

8.1 Before installing a Detector, remove its cover and withdraw the PCB. Install the Detector at the place, where communication quality is appraised as «Good» or «Excellent».

8.2 Locate the Detector and magnet as it is shown in figure 2.

8.3 The place of installation should be protected from occasional impacts: blows, vibration.

8.4 Remove the cover with the PCB.

8.5 Fasten the base to the mounting surface. The main method of the Detector fixation is attaching it to the mounting surface by means of double-sided tape.

For the reliable fastening of the Detector act as follows:

- the installation surface should be flat, dry and clean;
- remove protective film from the double-sided tape;
- press the Detector tightly to the place of installation and hold it for 2 – 3 sec;
- to ensure wall tamper protection fasten the Detector with screw through the openable hole (7) on the base.

8.6 Install the cover with the PCB on the base.

Attention! To ensure power resource economy, switch OFF the Detector, if the CP is de-energized for a long time.

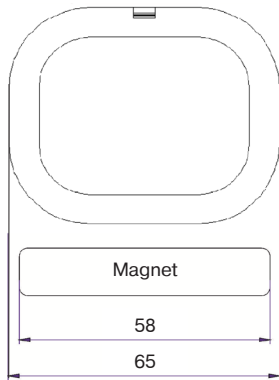


Figure 2

9 Storage and Transportation

9.1 The detector are transported without power supply battery. The detector 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.

9.2 The detector 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 detector shall be ready to operate after a maximum of six hours.

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

10 Manufacturer's Guarantees

10.1 «RIELTA» JSC guarantees conformity of the Detector to the requirements of technical conditions provided the transportation, storage, installation and operation conditions are observed.

10.2 The guaranteed shelf life of the Detector is 63 months since the date of manufacture.

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

10.4 The Detectors 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.

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

11 Acceptance and Packing Certificate

Wireless magnetic contact security Detector «Ladoga MK-RK» ver. 2 has been manufactured in accordance with current technical documentation is classified as fit for operation and is packed by «Development and Production Enterprise RIELTA» LLC.

Packing date _____
month, year