WIRELESS PASSIVE INFRARED DETECTOR «FOTON-SH2-RK»

Installation Guide

1 Product Overview

Detector «Foton-SH2-RK» (hereinafter, the Detector) is intended for detecting intrusion into a protected premises through door or window openings and generating an alarm message.

The Detector highlights:

- transmitsion of status messages via two-way communication channel by the «Rielta-Contact-R» protocol in the 433.05 – 434.79 MHz frequency range to the control panel (hereinafter, CP) supporting the «Rielta-Contact-R» wireless two-way data exchange protocol;
- case tamper protection;
- immunity to interference caused by small animals and ambient light.

2 Features of the Detector

- Dual-element pyrodetector.
- «Vertical curtain» detection zone.
- Temperature compensation of the detection sensitivity.
- The maximum Detector installation height is 5 m.
- Two-way installation using four fastening surfaces of the Detector base: either above the protected opening, or in the corners of window openings, door cases, etc.
- High resistance to ambient light – 12000 lx.
- Immunity to electromagnetic interference.
- Case tamper protection.
- Four possible operating frequencies available. The operating frequency number is assigned automatically by the CP during the binding process.
- Automaticl switching to the backup operating frequency in case of challenging interference situation on the main one.

3 Specifications

Table 1

Features	Value
Installation height	up to 5 m
Types of detection zones	continuous vertical curtain
Radio exchange period	from 10 sec to 10 min (programmed in the process of binding with the repeater)
Operating temperature range	from minus 20 °C to +50 °C
Dimensions	maximum 80 x 47 x 42 mm
Weight	maximum 120 g
IP rating	IP41
Battery life (under normal conditions and Radio exchange period of at least 30 sec)	up to 5 years

The Detector is powered by a CR123A type lithium battery (3 V).

4 Scope of Delivery

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

Table 2

Name	QNT
Wireless passive infrared detector «Foton-SH2-RK»	1 pc.
Screw 3-3x30.016	2 pcs.
Wall plug NAT 5x25 SORMAT	2 pcs.
CR123A lithium power supply battery	1 pc.
Wireless passive infrared detector «Foton-SH2-RK». Installation Guide	1 copy

5 Informativity

The Detector ensures transmission and indication of the following messages:

- «Alarm» – when a human is moving within the detection zone across it's side border, within the speed range of 0.3 to 3 m/sec at a distance of 3 m;
- «Tamper» – the Detector case is tampered;
- «Norm» – there are no other messages;
- «Low-battery»;
- «Communication quality» – the communication quality appraisal is indicated;
- «Binding» – when the Detector is initialized in the system;
- «Identification» – by a relevant command from the CP.

6 Detection Pattern

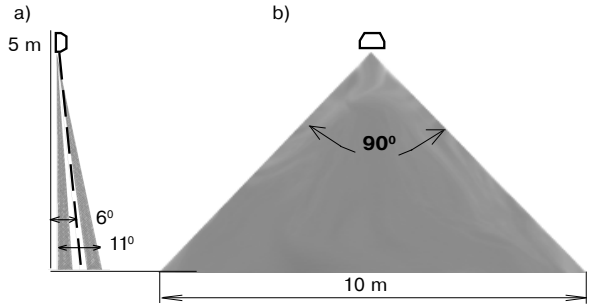

Figure 1

7 LED Indication

Table 3

Detector Status	LED Indication	
	LED Status	Operation Mode
«Binding»	LED indicator blinks green intermittently at 0.5 Hz frequency	
«Alarm»*	LED indicator lights red for at least 0.5 sec	if indication is enabled
«Identification»	LED indicators blinks red and green alternately at 1 Hz frequency	By a command from the CP
«Connection quality»	See «Communication Quality Appraisal»	
Binding procedure completed	LED indicator lights red for 2 sec	

*) – Alarm indication is deactivated 15 min after the Detector cover is closed and reactivated after it has been opened or by a command from the CP.

8 Binding with the CP

The binding procedure is intended for logging of the Detector in the CP and transmitting of service information to it.

8.1 Prepare the CP for the Detector binding in accordance to the CP manual.

8.2 Install the CR123A power-supply battery.

8.3 LED indicator blinking green displays the Detector readiness for the binding procedure.

In case the LED indicator does not blink, close the «RESET» contacts for a short period.

8.4 After a successful binding with the CP, the LED indicator lights red for 2 sec.

8.5 The «Binding» procedure is limited to 100 sec. After it expires, the Detector changes to the sleep mode. To resume the «Binding» mode, the «Reset» contacts must be closed for a moment.

9 Choosing an Installation Place for the Detector

The Detector must be located in the radio-coverage zone of it's CP. Therefore, it is advisable to appraise the quality of communication with the repeater beforehand. The procedure of communication quality appraising is described in the chapter «Communication Quality Appraisal».

When choosing locations for the Detector installation, it is advisable to take note of the fact that the detection zone may be limited by non-transparent objects (curtains, curtain holders, door trims, etc.), as well as glass partitions. There must be no air conditioners, space heaters or heating radiators in the Detectors detection zone. The maximum Detector installation height is 5 m. The Detector installation options are shown in Figure 2.

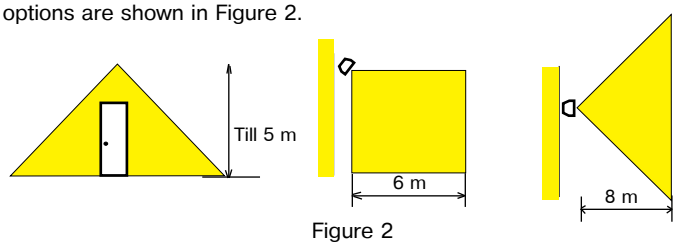

Figure 2

10 Communication Quality Appraisal

Before installing the Detector to it's place of operation, it is advisable to appraise the CP communication quality. Follow these steps.

10.1 Prepare the Detector for operation and put it on it's place of operation with a closed cover.

10.2 Open the Detector case, whereupon the Detector will indicate the quality of CP communication.

Table 4

LED indication	Communication Quality Appraisal	Recommendations
LED indicator blinks green three times	Excellent	Install the Detector at this place
LED indicator blinks green two times	Good	
LED indicator blinks green one time	Communication established	Choose another place for installation or use a repeater*)
LED indicator blinks red four times	No communication	
*) – «Ladoga BRSS-RK-RTR» or «Ladoga BRSS-RK-RTR» ver. 1		

11 Installing the Detector

11.1 Remove the Detector cover by pressing on the back wall of the Detector base (Figure 3) and pressing the edges of the cover by the fingers of the other hands at the points shown in Figure 4.

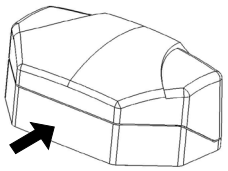

Figure 3

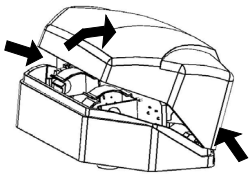

Figure 4

11.2 Insert a flat screwdriver between the PCB and the back wall of the base, depress the base wall and remove the PCB (Figure 5).

11.3 Depending on the chosen location of the Detector, determine the Detector base sides for fastening to the installation place and drill fastening holes or press them out with a screwdriver (Figure 6).

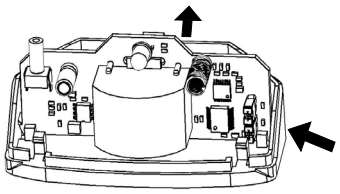

Figure 5

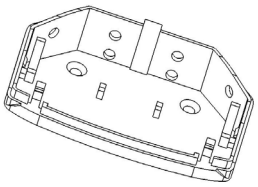

Figure 6

11.4 Fasten the base at the chosen place.

11.5 Install the PCB in the base and latch it on both sides.

11.6 Reinstall the Detector cover by engaging it over the latch on the front wall of the base and latch the cover onto the base.

12 Functional Testing

12.1 Install power-supply battery and wait for 1 min.

12.2 Start walking through the detection zone at a speed rate 0.5 – 1 m/s. When two zone lines are crossed, the Detector transmits an alarm message. Make sure the «Alarm» message has been received in the respective zone of the CP.

12.3 Cross the detection zone on the other side and define it's other border. When there is no motion in the detection zone, alarm messages should not be generated.

12.4 In case the detection zone is impaired by some objects (curtain holders, curtains, door trims), the position of the Detector should be changed.

If additional alignment of the detection zone is needed, you may use a universal swivel bracket (available optionally).

ATTENTION! The Detector «Foton-SH2-RK» must be checked at least annually in order to test it's performance.

13 Detector Behavior

13.1 After loss of communication with the CP, the Detector continues searching for the CP. In case the CP is disabled for a long time, it is recommended to power off the Detector.

13.2 It should be taken into account that in case the Detector is operated within +5 °C to minus 20 °C temperature range, the battery life may be less than 5 years.

14 Storage and Transportation

14.1 The Detectors in their original packing may be shipped by any transport means in covered vehicles (in railway, cars, trucks, sealed heated compartments of aircraft, ship cargo holds, etc). The Detector is resistant to:

a) transport jolting with the acceleration of 30 m/sec^2 with impact frequency from 10 to 120 impacts/sec or 15000 impacts with the same acceleration;

b) ambient temperature minus 50 ... +50 °C;

c) relative air humidity (95 ± 3) % at the ambient temperature +35 °C.

14.2 After transportation under the conditions different to exploitation conditions, the detector will be ready to operate after a maximum of six hours.

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

15 Manufacturer's Guarantees

15.1 The Manufacturer guarantees conformity of the Detector to it's Technical Specifications if conditions of transportation, storage, assembling and operation are observed. The guaranteed storage period is 63 months since the date of manufacturing the Detector.

15.2 The guaranteed period of operation is 60 months since the date of commissioning within the storage period guaranteed.

15.3 The Detectors that are found to non-conforming to it's Technical Requirements shall be repaired by the Manufacturer, provided the installation and operation rules have been complied with.

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

16 Acceptance and Packing Certificate

Wireless passive infrared detector «Foton-SH2-RK»,

batch No _____ ,

manufactured in accordance with current technical documentation is classified as fit for operation and is packed by «RIELTA» JSC.

Person responsible for acceptance and packing

Representative of QCD _____ _____.
Date, month, year

Made in Russia

Rev. 4 of 18.11.16
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