



WIRELESS SECURITY PASSIVE INFRARED DETECTORS



«Foton-12-RK» «Foton-12B-RK»

Installation Guide

1 Product Overview

Wireless security passive infrared detectors «Foton-12-RK», «Foton-12B-RK» (hereinafter, the detectors) are intended for detecting intrusion into a protected premises, with generation of alarm messages via wireless two-way communication channel within the 433.05 – 434.79 MHz frequency range by the «Rielta-Contact-R» protocol.

The detector is intended to operate as a component of any control panel (hereinafter, CP) supporting the «Rielta-Contact-R» wireless two-way communication protocol.

The detector is powered from two 3 V DC power supply batteries, the main one (CR123A type) and the backup (CR2450 type) located inside the detector case.

The detectors are designed to operate continuously, around the clock.

2 Features of the Detectors

- Dual-element pyrodetector.
- Protection against ingress of insects to the pyrodetector.
- Temperature compensation of detectability.
- Ease of installation and detection zone orientation provided by means of swivel bracket (supplied).
- Immunity to small animals.
- Automatical switch to a backup operating frequency in case of challenging interference situation at the main one.
- Built-in backup power supply.

3 Specifications

Table 1

Features	Value
Operating temperatures range	minus 20 to +55 °C
Relative air humidity at 25 °C	up to 98 %
IP rating	IP41
Range of detected speeds	0.3 – 3 m/sec
Installation height	2.3 m
Dimensions, maximum	92 x 57 x 48 mm
Weight, maximum	0.13 kg
Average service life, not less than	8 years
Battery life (under normal conditions)	at least 5 years

4 Scope of Delivery

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

Table 2

Name	QNT	
	12-RK	12B-RK
Wireless security passive infrared detector «Foton-12-RK»	1 pc.	
Wireless security passive infrared detector «Foton-12B-RK»		1 pc.
Swivel bracket	1 pc.	1 pc.
Screw 3-3x30.016	2 pcs.	2 pcs.
CR123A lithium power supply battery	1 pc.	1 pc.
CR2450 lithium power supply battery	1 pc.	1 pc.
Wireless security passive infrared detectors «Foton-12-RK», «Foton-12B-RK». Installation Guide	1 copy	1 copy

5 Informativity

The Detector ensures transmission and indication of the following messages:

- normal state message;
- alarm message;
- tamper message;
- main power supply low-battery message;
- backup power supply low-battery message;
- «Binding» mode operation indication;
- «Identification» mode operation indication;
- communication quality indication.

6 Versions of Detectors

6.1 Wide Angle Detector «Foton-12-RK»

Types of detection zones..... Wide angle
Maximum detection range..... 12 m
Horizontal detection angle..... 90°

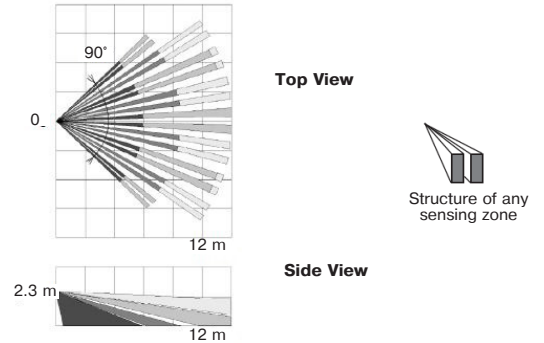


Figure 1 – «Foton-12-RK» Detection Pattern

6.2 Vertical Curtain «Foton-12B-RK»

Types of detection zones..... Vertical curtain
Maximum detection range..... 15 m
Horizontal detection angle..... 8°
Vertical detection angle..... 100°

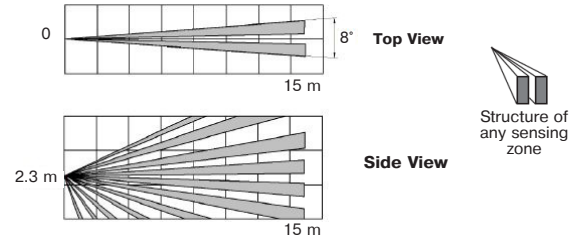


Figure 2 – «Foton-12B-RK» Detection Pattern

7 LED Indication

Table 3

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

* Alarm indication is deactivated in 15 min after the detector cover is closed and activated after it has been opened or at a command from the CP.

8 Binding with the CP

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

8.1 Prepare the CP for the Detector binding in compliance with the CP Installation Guide.

8.2 Install the CR2450 backup power supply battery into the holder located on the reverse side of the detector printed circuit board (PCB).

8.3 Install the PCB into the detector case, and then install the CR123A main power supply battery or remove the isolator.

8.4 The LED indicator blinking green displays the detector readiness for the binding procedure or remove the isolator.

In case the LED indicator does not blink, close the «Reset» contacts for a short time period using any metal object.

8.5 After a successful binding with the CP, the LED indicator lights red for 2 s.

8.6 The time during which the detector operates in the «Binding» mode is limited to 100 s. 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 the Installation Place

The detector must be located in the radio-coverage zone of its CP. Therefore, it is advisable to appraise the quality of communication with the receiver beforehand. The procedure of appraising the quality of communication is described in Chapter 10.

When choosing the detector installation place, it is advisable to take note of the fact that the detection zone may be limited by non-transparent objects (curtains, houseplants, cabinets, bookcases, etc.), as well as by glass and mesh partitions. There must be no windows, air conditioners, space heaters or heating radiators in the detector visibility zone.

When installing the detector, choose its orientation in the effect that the expected paths of intrusion would cross the sensing zones of the detector.

The detector should be installed at a distance not closer than 0.5 m from electric cables.

There must be no animals or birds in the protected premises.

10 Communication Quality Appraising

Before installing the detector, it is advisable to check the Detector communication quality with the CP. The following must be done for that purpose.

10.1 Prepare the detector for operation and put it on its place of operation with a closed cover.

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

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	Use «Ladoga-RK» system repeater
LED indicator blinks red four times	No communication	

11 Installing the Detector

- Remove the detector cover after depressing the latch located at the bottom of the detector base with a screwdriver (Figure 3).

- If the detector is installed without a bracket, the PCB must be removed.

- Choose the installation place, mark out and drill the installation openings in the wall with regard to the position of the holes on the detector base (or swivel bracket).

- Fasten the detector base in the chosen place; In case the detector is fastened to the swivel bracket (see Figure 4), remove the M3x20 screw from the swivel bracket. Holding the parts of the bracket together, put the square lug on the outer sphere of the bracket with the corresponding recess in the base of the detector and fasten the detector to the bracket with the screw. Tighten the screw slightly, so that the base stays in position on the swivel bracket, but can still be turned.

- Reinstall the PCB.

- Close the cover.

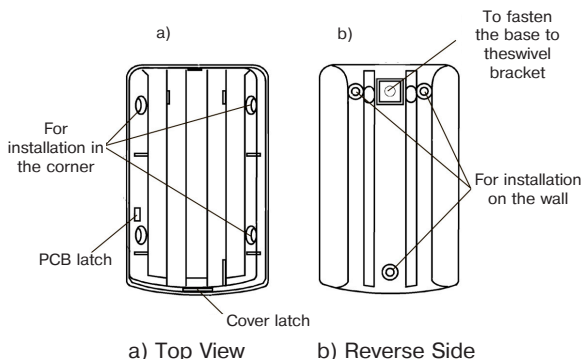


Figure 3 – Base

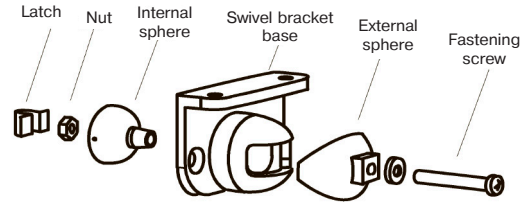


Figure 4 – Exploded View of the Swivel Bracket

12 Functional Testing

Tests must be performed in the absence of unauthorized persons in the secured area

Start walking across the detection zone. After 3 – 4 steps across the detection zone, the detector must display the detection by the red blink of the LED indicator. Wait for 10 s and continue walking across the detection zone. There must be no LED indication if there are no moving objects in the room. If the detector fails to detect moving objects in the detection zone, then its position on the swivel bracket should be changed.

13 Detector Behavior

13.1 The Detector is powered on and off by the installation and removal of the main power supply battery.

13.2 Upon the loss of communication with the CP, the Detector continues to search for the CP. In case the CP is disabled for a long time, it is recommended to power off the detector (see Cl. 13.1).

13.3 It must be taken into account that in case of the Detector operation within +5 °C to minus 20 °C temperature range, the power supply batteries life may be less than 5 years.

ATTENTION! Detectors «Foton-12-RK» and «Foton-12B-RK» must be checked at least annually in order to test their functional ability.

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, ship cargo holds, etc). The Detector is resistant to:

a) transport jolting with the acceleration 30 m/sec² with impact frequency from 10 to 120 impacts/sec or 15000 impacts with the same acceleration;

b) the 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 shall be ready to operate after a maximum of six hours.

14.3 The storage room shall 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 the requirements of specification if conditions of transportation, storage, assembling and operation are observed.

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

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

15.3 If non-conformity of the Detector to technical requirements is detected during the guaranteed period if rules of operation are observed it should be repaired by the Manufacturer.

Note – The guaranteed period for the Detectors isn't applied to the power supply batteries.

16 Packing Certificate

Wireless security passive infrared detectors «Foton-12-RK», «Foton-12B-RK» 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

Rev. 7 of 13.05.2020
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v7.1/10R

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