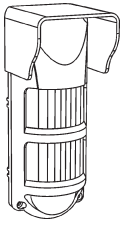




# WIRELESS SECURITY PASSIVE INFRARED WIDE-ANGLE DETECTOR FOR OPEN AREAS «Pyrone-8-RK»



## Installation Guide

### 1 Product Overview

1.1 Wireless security passive infrared wide-angle detector for open areas «Pyrone-8-RK», (hereinafter, the detector) is designed for detecting intrusion into a protected zone of closed or opened areas, 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.

1.2 The detector radiated power does not exceed 10 mW.

1.3 The detector is powered from two power supply batteries, the main and the backup one CR123A type, located inside the detector case and providing normal operation of the detector for 3 years under normal climatic conditions, if broadcasting period is not less than 60 sec.

1.4 The detector generates and transmits the following messages via radio communication:

- «Norm» – under the other messages absence;
- «Alarm» – if the intrusion to the secured zone is detected;
- «Tamper» – upon the case tampering;
- «Main Power Supply Low-battery» – when the main battery supply voltage drops up to 2.4<sub>-0.4</sub> V and lower;
- «Backup Power Supply Low-battery» – when the backup battery supply voltage drops up to 2.4<sub>-0.4</sub> V and lower.

The detector provides the following indication:

- «Binding» – during the procedure of logging the detector in the CP;
  - «Identification» – by receiving the relevant command from the CP.
- 1.5 The radio exchange is initiated by the detector with the periods: 10, 15, 30 sec, 1, 2, 5, 10 min. The broadcast period is assigned in the process of the detector adjustment. Tamper messages are transferred immediately.

1.6 The detector is equipped with:

- three passive IR channels to detect intrusion into a secured area;
- two-color light indication (red and green) of the detector status and the quality of communication with the control panel at the device installation site;
- the ability to adjust sensitivity using a DIP-switch on the board and remotely via the Rielta-Contact-R radio protocol;
- RESET jumper to switch the detector to the «Binding» mode;
- tamper switch to control the opening of the detector case;
- a temperature measuring device for transfer of the temperature data to the control panel and provision of the temperature compensation to ensure reliable detecting ability.

1.7 Two frequencies (main and reserve) are used for radio signals exchange between the detector and CP.

Switching to a backup operating frequency in case of an imperfect interference situation at the main one is realized automatically.

1.8 The detector has immunity to:

- pets up to 20 kg movement inside the detection zone;
- background illumination difference impact up to 20 000 lx;
- background illumination change at a rate of 5 °C/min.

1.9 The Detector is resistant to the radio interference.

1.10 The detector design ensures it's normal round-the-clock operation outdoors.

### 2 Features

The detector has wide-angle detection zone.

The detection zone position can be aligned by means of the swivel bracket.

To ensure protection against an atmospherical condensation, the weather shield is provided.

### 3 Specifications

Table 1

Parameter	Value
Maximum detection range	12 m
Permissible installation height	2 - 3 m
Detectable speed range	from 0.3 to 3 m/sec
Viewing angle of the detection zone in the horizontal plane	90°
IP rating	IP54
Overall dimensions	180 x 75 x 80 mm
Weight	0.2 kg
Average operation life	8 years
Duration of operation of the detector in normal climatic conditions and with a set broadcast period of 60 s	5 years
<b>Operational conditions</b>	
Operating temperature range	-40 to +55 °C
Temperature measurement tolerance	± 2,0 °C
Permissible relative humidity at a temperature of +25 °C, with moisture condensation	up to 100 %

### 4 Scope of Delivery

The announcer scope of delivery is listed in Table 2.  
Table 2

Name	QNT
Wireless security passive infrared wide-angle detector «Pyrone-8-RK»	1 pc.
Weather shield	1 pc.
Swivel Bracket	1 pc.
Antenna	1 pc.
Wall plug NAT 5x25 SORMAT	2 pcs.
Screw 3-3x30.016	2 pcs.
Power supply battery CR123A Plastic potting compound	2 pcs.*
Plastic sealer	1.0±0.5 g
Wireless security passive infrared wide-angle detector «Pyrone-8-RK».	1 copy
Installation Guide	
* Installed	

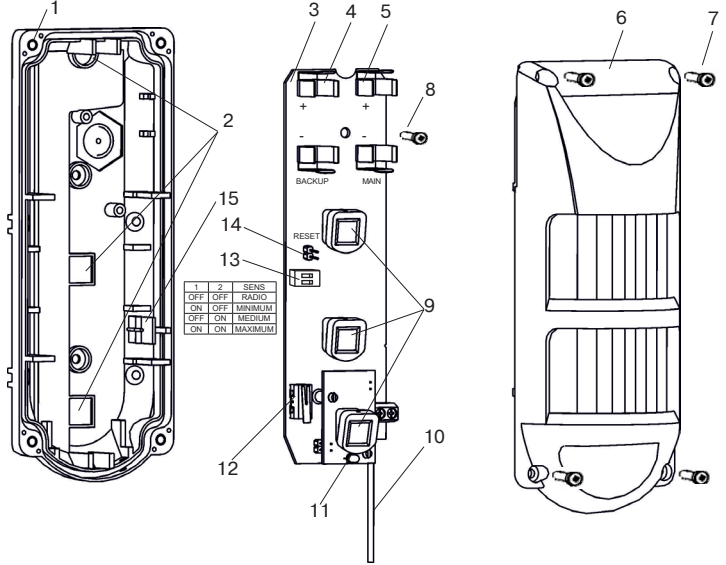
### 5 Design

The Detector (Figure 1) consists of base (1), PCB (3) and cover (6).

The PCB contains: two power supply battery CR123A holders (the main (5) and the backup (4), three infrared pyrodetectors (9), antenna (10) (supplied), two-color LED indicator (11), tamper (12), DIP-switch (13), «RESET» contacts (14).

Swivel bracket (1) and weather shield (2) are available. The PCB is fixed on the base by means of latch (15) and screw (8).

The cover (6) is fixed to the base (1) by four screws (7) with a sealing gasket.



Picture 1 – «Pyrone-8-RK» design

### 6 Settings and connection (registration in CP)

6.1 The linking procedure allows to register the detector in the control panel and transfer service information to it.

6.2 Prepare the control panel for detector registration in accordance with the instructions on the control panel.

6.3 Observing polarity, first install the battery in the holder (4), and then the battery in the holder (5) or remove the insulators in the same sequence.

6.4 The presence of intermittent green light of the indicator indicates that the detector is ready for the pairing procedure. If there is no indication, briefly close the RESET contacts.

6.5 If the connection with the control panel is successful, the indicator turns red for 2 s.

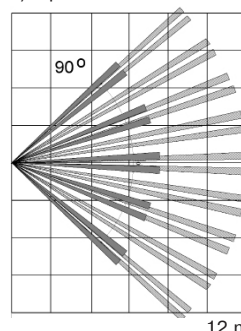
6.6 The time during which the detector is in the «Linking» mode is limited to 100 s, after which the detector goes into sleep mode. To resume the «Linking» mode, it is necessary to briefly close the RESET contacts.

### 7 Choosing the Installation Place

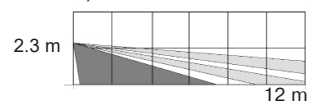
The detection zone (see Figure 2) should reliably cover overall controlled area. The detector should be installed at the height (2.3 ± 0.1) m. Take note of the fact, that the detection zone should not be limited by non-transparent objects (branch of trees and bushes, plants, mesh fences, etc). There must be no items exposed to the temperature jumps within the detector visibility zone (such as sun-heated walls and wall-parts).

The communication quality with the CP at the place of the detector installation should provide reliable message transmission (See Cl. 9 Communication Quality Appraisal).

a) top view



b) side view



Picture 2 – Detection zone diagram

## 8 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 Appraisal»	
Binding procedure completed	LED indicator lights red for 2 sec	

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

## 9 Communication Quality Appraisal

Before installing the detector, it is advisable to check the Detector communication quality with the CP. In this regard:

1. Prepare the detector for operation and put it on its place of operation with a closed cover;
2. Open the detector case, whereupon the detector will indicate the quality of communication with CP.

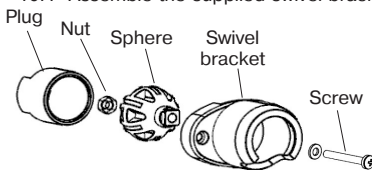
Table 4

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	Choose another place for installation or use a repeater*
LED indicator blinks red four times	No communication	

\* «Ladoga-RK» system repeater

## 10 Installation

10.1 Assemble the supplied swivel bracket:



Picture 3 – The Swivel Bracket Design

- place the screw-nut into the sphere recess;
- enclose the swivel bracket base into the sphere;
- insert the plug into the swivel bracket base.

10.2 Install and fix the assembled swivel bracket to the wall/ceiling at the chosen place of installation. The swivel bracket case should be used as a pattern for marking fixation holes on the installation surface.

10.3 Fix the base to the installed swivel bracket by means of mounting screw passing it through the one of the openable holes (2).

10.4 After fixing the base on the swivel bracket pack off the opening (2) by the plastic potting compound (supplied).

10.5 Reinstall the printed circuit board, secure it with the latch (15) and screw (8).

10.6 Connect antenna (10) to the PCB through the hole in the Detector base.

10.7 Put on the Detector cover and turn its case in the chosen direction.

## 11 Adjustment

11.1 The detector adjustment includes the detection zone position alignment and sensitivity level choosing.

11.2 To determine the limits of the detection zone, start movement across the detection zone at a speed of 0.5 – 1 m/sec 60 sec after switching the detector in «Activated» mode.

11.3 Upon every detection of a movement, the detector transmits the «Alarm» message via radio communication. During the first 15 min after the cover closing, the «Alarm» message is duplicated by the LED indicator switching red in a short-run.

11.4 The position of the detection zone is changed by rotating the detector body in the bracket.

The formation of an «Alarm» notification in the absence of movement within the detection zone indicates a complex interference environment. In this case, it is recommended to limit the sensitivity of the detector.

Table 5 shows the maximum detection range depending on the set sensitivity.

Table 5

DIP-switch position		Sensitivity	Maximum length, m
1	2		
OFF	OFF	Controlled remotely by radio commands	
ON	OFF	MINIMUM	8
OFF	ON	MEDIUM	10
ON	ON	MAXIMUM	10

After changing the sensitivity, check the boundaries of the detection zone.

The light indication of the «Alarm» notification automatically turns off 15 minutes after closing the detector case. If it is necessary to continue the adjustment, remove and reinstall the detector cover.

### Modes of operation

The detector provides three modes of operation: «Deactivated», «Activated» and «Identification». The modes changeover is ensured by the relevant command from the CP.

Under operation in the «Deactivated» mode, the detector transmits the «Alarm» message immediately with contemporary starting unscheduled radio communication session. «Norm» message is transmitted during regular radio communication sessions.

Under operation in the «Activated» mode, the detector immediately transmits messages about it's state changing with contemporary starting unscheduled radio communication session.

Under the «Identification» mode, started by the relevant command from the CP, the LED indicator blinks red and green alternately (See Table 3). The «Identification» mode allows to locate the detector with the preset address.

## 12 Storage and Transportation

12.1 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/sec<sup>2</sup> 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.

12.2 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.

12.3 After transportation under the conditions different to exploitation conditions the detector shall be ready to operate after a maximum of six hours.

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

## 13 Manufacturer's Guarantees

13.1 The manufacturer guarantees conformity of the Detector to the Technical Specifications requirements provided the transportation, storage, installation and operation conditions are observed.

13.2 The guaranteed shelf life of the Detector is 27 months since the date of manufacture.

13.3 The guaranteed useful life is 24 months since the day of putting into operation within the guaranteed shelf life.

13.4 The Detectors that are found non-conforming to the Technical Specifications requirements shall be repaired by the manufacturer, provided the installation and operation rules have been complied.

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

## 14 Packing Certificate

Wireless security passive infrared wide-angle detector «Pyron-8-RK» 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