



WIRELESS PASSIVE INFRARED DETECTOR

«Pyrone-4RK»

Installation Guide



1 General Information

1.1 Wireless passive infrared detector «Pyrone-4RK» (hereinafter, the Detector) is 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.

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

1.3 The Detector is powered by one lithium power-supply battery CR123A type.

1.4 The Detector signal processing is amplitude-time.

1.5 The Detector comprises two-color (red and green) LED indicator for the Detector operation control, providing possibility of LED indication disabling.

1.6 For choosing the sensitivity level, the Detector comprises a DIP-switch. «Reset» contacts ensure the Detector changeover to the «Binding» mode.

1.7 The Detector ensures generation and transmission of seven messages types about the following modes and events:

- Normal state;
- Alarm;
- Tampering or removal from the mounting surface;
- Battery discharge;
- Operation in «Binding» mode;
- Operation in «Identification» mode;
- Quality of communication.

1.8 Radio exchange sessions are initiated by the Detector with the following rates: 10 s, 15 s, 30 s, 1 min, 5 min, 10 min. Session rate is assigned during the Detector adjustment procedure. «Alarm» and «Tamper» messages are transmitted immediately.

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

1.10 The Detector has immunity to movement of:

- a) secondary prototype unit (mouse);
- b) fancy breed cat or dog with weight up to 10 kg moving on the floor within the detection zone at the distance not less than 2 m from the Detector;
- c) medium-sized dog with weight up to 20 kg moving on the floor within the detection zone at the distance not less than 2 m from the Detector;
- d) long-hair animals with weight up to 40 kg with temperature contrast 6 °C.

1.11 The Detector has the ability to change the sensitivity, which is adjusted in accordance with the protocol «Rielta-Contact-R».

1.12 The Detector ensures with standability to electromagnetic interferences.

2 Features

- Dual-element pyrodetector.
- Distortions prevention in the detection zone by means of spherical lens.
- Protection against ingress of insects to the pyrodetector.
- Changing pet immunity mode via the radio protocol.
- Thermal compensation of detecting ability.
- Automatic switching to a backup operating frequency in case of an imperfect interference situation on the main one.

3 Field of Application

The Detector can be installed in apartments, as well as in shops, offices, museums and industrial facilities. The Detector may be installed in premises that are inhabited by pets weighing up to 40 kg (20 kg).

4 Specifications

Table 1

Parameter	Value
Detection zones	8 long-range zones, 4 short-range zones
Maximum detection range, not less than	12 m
Recommended installation height	2.3 ± 0.1 m
Average time to failure in standby mode	60 000 h
IP rating	IP41
Overall dimensions	88x60x47 mm
Weight, maximum	0.1 kg
Battery life (under normal climatic conditions and with a radio exchange period equal to at least 60 sec)	8 years
Average service life	8 years
Operational conditions	
Operating temperature	from minus 20 °C to +55 °C
Permissible humidity at a temperature +25 °C	98 %

Detection zone Pattern

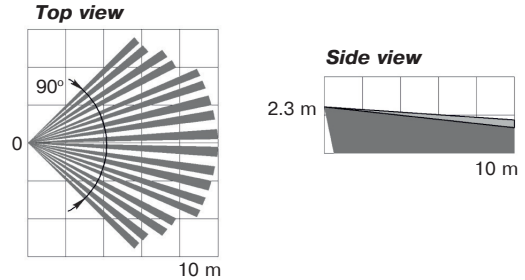


Figure 1 - Detection zone pattern

5 Scope of Delivery

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

Table 2

Name	QNT.
Wireless passive infrared detector «Pirone-4RK»	1 pc.
Swivel bracket	*
CR123A lithium power supply battery	1 pc.**
Wireless passive infrared detector «Pirone-4RK». Installation Guide.	1 copy
* Supplied optionally	
** Installed	

6 Design

The detector consists of a cover (1) with a printed circuit board (the PCB) (2) and a base.

The cover with a PCB is shown in Fig. 2 a).

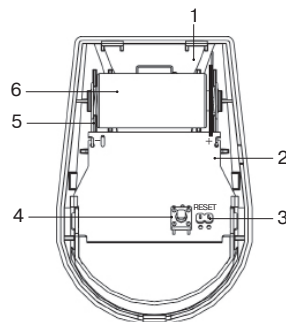
The PCB comprises:

- RESET contacts (3);
- tamper sensor (4);
- battery holder (5);
- lithium battery CR123A (6) with an insulator.

The base (Fig. 2 b) comprises:

- hole for mounting the base to the swivel bracket (7);
- wall mounting holes (8);
- PCB latches (9)
- corner mounting holes (10);
- holes for wall tamper latch (11);
- hole for cover lock (12).

a) a cover with a PCB



b) the base

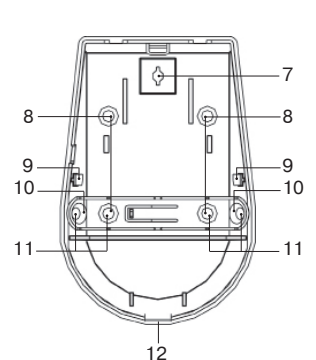


Figure 2 - «Pyrone-4RK» Design

7 LED Indication

Table 3

Detector State	LED Indication	
	LED status	Operation mode
«Binding»	LED indicator blinks green	
«Alarm»*	LED indicator lights red for at least 0.5 sec	if indication is enabled
«Identification»	LED indicator blinks red and green alternately at 1 Hz frequency	by a command from the CP
«Connection quality»	See «Communication Quality Appraising»	
Binding procedure completed	LED indicator lights red for 2 sec	

* Alarm indication is deactivated 15 minutes after the Detector cover is closed and activated after it has been opened or by a command from the CP.

8 Binding with the Control Panel

The Binding procedure is intended for logging of the Detector in the control panel (hereinafter, the CP) and transmission of service information to it.

Prepare the CP for the Detector logging in accordance to the CP manual.

8.1 Open the case cover by releasing the latch with a screwdriver (figure 3).

8.2 Install the battery type CR123A (or remove the insulator if the battery is already installed).

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

8.5 The «Binding» procedure is limited to 70 sec. After it expires, the Detector switches to the sleep mode. To resume the «Binding» mode, «Reset» contacts should be temporary closed.

8.6 Set the detector sensitivity in accordance with the relevant application conditions (Table 4).

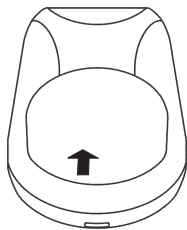


Figure 3

Table 4

Parameter	Pet Immunity	Maximum Range
0	disabled	12 m
1	10 kg	10 m
2*	20 kg	10 m
3	40 kg	8 m

* Default setting

9 Choosing Place of Installation

9.1 The Detector must be located in the radio-coverage zone of it's CP. Therefore, it is advisable to appraise quality of communication beforehand. The procedure of communication quality appraising is described in the chapter №11 «Communication Quality Appraising».

9.2 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 glass and mesh partitions. There must be no windows, air conditioners, space heaters or heating radiators in the Detector visibility zone. The presence of furniture items on which an animal may climb in the detection zone may cause a false alarm.

9.3 The Detector should be installed at a distance not less than 0.5 m from electric cables.

10 Communication Quality Appraising

Before installing the Detector to it's place of operation, it is advisable to appraise the CP communication quality as follows:

- Prepare the Detector for operation and put it on it's location place with a closed cover;
- Open the Detector case, whereupon the Detector will indicate the quality of CP communication.

Table 5

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 repeaters of the Ladoga RK system
LED indicator blinks red four times	No communication	

11 Installing the Detector

Before installing the detector, it is necessary to remove the cover with the PCB. For this purpose:

- remove the cover of the Detector;
- drill the holes (Figure 2 b) in the base of the Detector case. They will be used for fastening the Detector;
- choose the installation place, mark out and drill the installation holes in the wall with regard to the position of the holes on the Detector base;
- fasten the Detector base in the chosen place;
- put on the cover.

Note – To exclude false alarms in pet immunity mode, the Detector should be installed vertically.

12 Functional Testing

Start movement across the detection zone. After 3 – 4 steps inside the detection zone, the Detector should indicate intrusion by short-term LED lighting red. Wait for 10 s and after it continue movement across the detection zone. Under movement absence inside the protected area, LED indication should not light.

13 Detector Behavior

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

13.2 After loss of communication with the CP, the Detector will continue to search for the CP. If the CP is disabled for a long time, it is recommended to power off the Detector.

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 battery life may be less than 8 years.

ATTENTION! The Detector must be checked at least annually in order to test it's performance.

14 Storage and Transportation

14.1 The Detectors 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.

14.2 The Detectors 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.

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

14.4 During storage period lithium batteries should be removed from the holders or isolators should be installed between a battery "+" and a holder.

The storage premises should not contain any current-conducting dust, acid and alkali fumes, or corrosive or destroying insulation gases.

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 their Technical Requirements shall be repaired by the Manufacturer, provided that the installation and operation rules have been complied with.

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

16 Packing Certificate

Wireless passive infrared detector «Pyron-4RK» 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

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v13

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