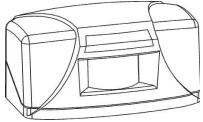




# WIRELESS PASSIVE INFRARED DETECTOR



## «PYRONE-SH2-RK»



### Installation Guide

#### 1 General Information

1.1 Wireless passive infrared detector «Pyrone-SH2-RK» (hereinafter, the Detector) is designed for detecting intrusion into the protected closed hazardous area of a room through door and window openings, for generating and transmitting alarm messages to the control panel (hereinafter, CP) via two-way wireless channel by the «Rielta-Contact-R» protocol.

1.2 The Detector provides vertical curtain detection zone.

1.3 The Detector ensures supervision of two-wired loop (hereinafter, Loop) with hooked up external detectors.

1.4 The detector can put in operation in two-channel or one-channel mode. In the second variant the Loop state is bypassed. The mode is chosen at the stage of the Detector logging in the CP.

1.5 The Detector operates within 433.05 – 434.79 MHz frequency range. Transmission power does not exceed 10 mW.

1.6 For radio signals exchange with the CP, the Detector ensures operation at the main and backup operating frequencies. The changeover to backup operating frequency is fulfilled automatically.

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

1.8 The Detector is powered from the CR123A lithium power supply battery.

1.9 The states of the Detector are displayed by a two-color LED indicator.

1.10 The Detector provides the temperature compensation of detectability.

1.11 The Detector generates and transmits the following messages via radio communication:

- «Norm in zone 1» – under the movement absence within the detection zone;
- «Norm in zone 2» – under the Loop resistance value in the limits 3.7 – 6.5 kΩ;
- «Intrusion to Zone 1» – under the human movement within the detection zone limits, transverse to the detection zone side boundary within the speed range from 0.3 to 3 m/sec at the distance up to 3m;
- «Intrusion to Zone 2» – under resistance value in «Loop 2» 6.9 kΩ or more or less than 3.4 kΩ;
- «Tamper» – in the event of case tampering ensuring access to the PCB;
- «Power Supply Low Battery» – under the power supply battery voltage drop over 2.4<sub>-0.4</sub> V.

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

1.13 The Detector has immunity to electromagnetic interference.

#### 2 Specifications

Table 1

Parameter	Value
Maximum mounting height, m	5
Detection angle	90°
Monitored Loop resistance range, kΩ: - in «Norm in Zone 2» state - in «Intrusion to Zone 2» state	3.7 ... 6.5 below 3.4 or above 6.9
Operating temperature, °C	from minus 20 ... +50
Relative humidity at +35 °C, %, up to	95
Dimensions, not more, mm	80 x 47 x 42
Weight, not more, kg	0.12
IP rating	IP41
Ambient class	Boreal climate
Battery life under normal climatic conditions and assigned radio exchange period not less than 30 sec, years, not less	5
Average service life, not less, years	8

#### 3 Scope of Delivery

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

Table 2

Name	QNT
Wireless passive infrared detector «Pyrone-SH2-RK»	1 pc.
Lithium power supply battery CR123A	1 pc.
Resistor C2-23-0.125 W 5.1 kΩ	1 pc.
Screw 3-3x30.016	2 pcs.
Wall plug NAT 5x25 SORMAT	2 pcs.
Wireless passive infrared detector «Pyrone-SH2-RK». Installation Guide	1 copy

#### 4 Detection Pattern

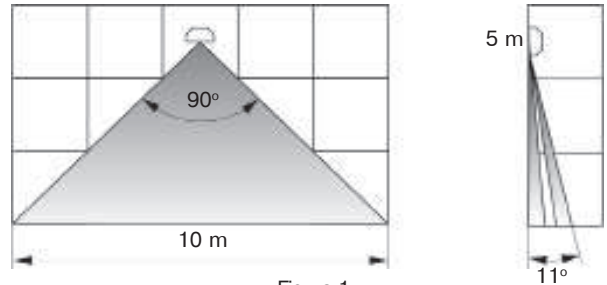


Figure 1

#### 5 Indication

The following types of indication are generated by the Detector:

- a) «Binding» – procedure of logging of the Detector in the CP;
- b) «Identification» indication is activated by relevant commands received from the CP, remains active during 15 min or until the Detector cover is opened;
- c) LED indication of the Detector state is activated after the Detector cover is closed and remains active during 15 min under conditions:
  - other LED indication types absence;
  - alarm «Tamper» message is not generated during this time;
  - absence of command from the CP disabling the Detector state indication.

The modes of LED indication are listed 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 blinking green with 0.25 sec period	The Detector logging in the CP
	LED indicator blinking green with 1 sec period	The Detector logging in the CP in two-channel mode
«Identification» indication	LED indicator alternate blinking red and green	By the relevant command from the CP
«Intrusion to Zone 1»	Single-shot LED indicator lighting red for 4 sec*	«Identification» indication is ON
«Intrusion to Zone 2»	LED indicator blinks red*	
Communication Quality Appraisal	See sect. Communication Quality Appraising	
«Norm in Zone 1» «Norm in Zone 2»	Indication is OFF	

\* ) – the Detector state indication

#### 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 In case, when it is necessary to fulfill logging of the Detector in one-channel mode, hook nothing to the connecting blocks.

6.3 Place the power supply battery to the holder, located on the opposite side of the Detector PCB.

6.4 Periodical LED indicator blinking green is evidence of binding process. 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 Appraising

7.1 For radio communication quality appraising it is necessary to:

- place supply battery to the holder plate;
- install the PCB to the base;
- 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		Communication Quality Appraisal	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 a repeater*)
Red	Series of blinks	No communication	

\*) – «Ladoga-RK» system repeater

**8 Installation**

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. Maximal mounting height of the Detector is 5 m. Variants of installations are shown in Figure 2.

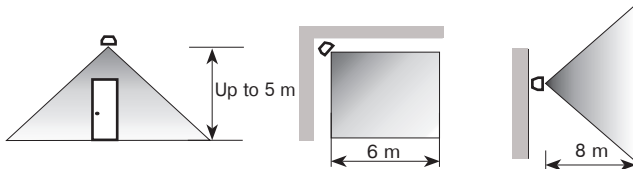


Figure 2

8.1 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.

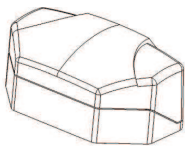


Figure 3

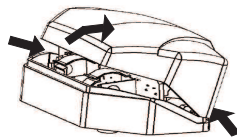


Figure 4

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

8.3 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).

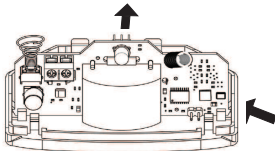


Figure 5

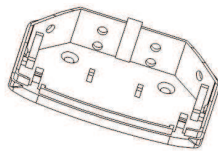


Figure 6

8.4 If necessary, connect an external detector (for example, hermetic contact) to the connecting blocks as it shown in Figure 7. Hook up the terminal (EOL) resistor  $R_{term}$  (5.1 kΩ resistor) to the end of the loop. The length of the loops must not exceed 5 m. The connections must be soldered or screwed.

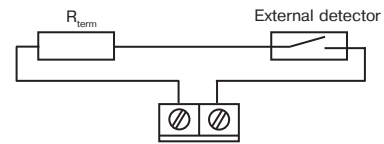


Figure 7

- 8.5 Fasten the base at the chosen place.
- 8.6 Install the PCB in the base and latch it on both sides.
- 8.7 Reinstall the Detector cover by engaging it over the latch on the front wall of the base and latch the cover onto the base.

**9 Functional Testing**

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

9.2 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.

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

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

**10 Storage and Transportation**

10.1 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.

10.2 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.

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

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

**11 Manufacturer's Guarantees**

11.1 The Manufacturer guarantees conformity of the Detector to it's Technical Specifications if conditions of transportation, storage, assembling and operation are observed.

11.2 The guaranteed storage period is 63 months since the date of manufacturing the Detector.

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

11.4 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.

**12 Acceptance and Packing Certificate**

Wireless passive infrared detector «Pyrone-SH2-RK» manufactured in accordance with current technical documentation is classified as fit for operation and is packed by «RIELTA» JSC.

Packing date \_\_\_\_\_  
month, year