SECURITY COMBINED PIR + GLASS BREAK DETECTOR

«Pyrone-7D»

Installation Guide

1 General Information

Security combined detector «Pyrone-7D» (hereinafter, the Detector) is designed for application as a component of security systems.

The Detector has the following two independent detection channels:

- glass break channel (hereinafter, GB channel);
- passive infrared channel (hereinafter, PIR channel).

GB channel is intended for detecting destruction of engineering structures made of plate glasses as well as glass bricks with further «Alarm» message generation by GB channel relay contacts opening (hereinafter, «AL GB»).

PIR channel is assigned for detecting intrusion into protected area of closed premises (movement within protected area) with further «Alarm» message generation by PIR channel relay contacts opening (hereinafter, «AL PIR»).

PIR channel provides wide-angle detection zone and pet immunity to animals up to 20 kg with thermal contrast t = 8 °C.

The Detector is resistant to to the impacts of ambient light, radio noise, as well as disturbance from small animals: mice, rats, birds in cages if a distance to them is not less than 2,5 m.

The Detector design provides possibility to mount it direct to the wall or in the corner of a room, as well as on the wall or in the corner of a room by means of swivel bracket.

PIR channel provides wide-angle detection zone.

2 Features

- Microprocessor-based signal processing;
- Self-test mode;
- Possibility of GB channel sensitivity adjustment;
- Pet immunity;
- Possibility of LED indication disabling;
- Feature of alarm memory delivered via PIR and GB channels.

3 Specifications

Table 1

Parameter	Value
PIR channel detection zone	10 x 10 m
Maximum detection range: - GB channel - PIR channel	 6/10 m 8/10 m
Maximal commutated current, under the voltage not more than 42 V	30 mA
Sensitivity: - GB at first operating frequency - GB at second operating frequency	 select: minimal/+12 dB high/norm
Warm-up time after switching on	60 s
Alarm message duration	2 s
Consumption current, not more than	35 mA
Minimal area of protected glass	0,1 m2
Operating voltage	9 ... 17 V
Operating temperature	from minus 20 up to +55° C
Relative humidity at +25 °C without moisture condensation	98 %
Ambient class	Boreal Climate (background temperature 15 - 35 °C, relative humidity 25 – 75 %, air-pressure 86-106 kPa)
IP rating	IP30
Dimensions	110 x 58 x 45 mm
Weight, not more	0,1 kg
Average life in standby mode	60 000 h

The Detector ensures safe operation under the impact of:

- sinusoidal vibration with acceleration of 0,981 m/s^2 (0,1 g) within the frequency range 10 – 55 Hz.
- aluminum alloy hammer ($AlCu_4SiMg$) blow at a speed (1,500 ± 0,125) m/s, with impact energy (1,9 ± 0,1) J.

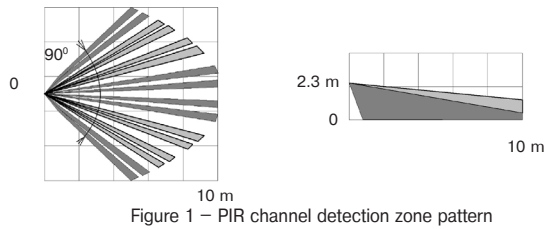

Figure 1 – PIR channel detection zone pattern

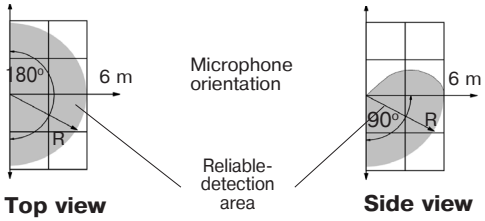

Figure 2 – GB channel detection zone pattern

4 Scope of Delivery

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

Table 2

Name	QNT
Security combined detector «Pyrone-7D»	1 pc.
Security combined detector «Pyrone-7D». Installation Guide	1 copy

5 LED Indication

Indication of messages is fulfilled in accordance with the Table 3.

Table 3

Message	Channel	LED Color		
		yellow	red	green
Warm-up time		*	+/-	*
Norm		–	–	–
Interference indication	GB first operating frequency	–	–	++
	GB second operating frequency	–	–	+
	PIR	+	–	–
Alarm	GB	–	*	*
	PIR	*	*	–
Alarm Memory	GB	–	-/+	+/-
	PIR	+/-	-/+	–
Failure	Power supply	*	- -/++	*

Notation:
- LED is OFF;
++ double blinks;
+/-,-/+ LED is blinking at 1 Hz frequency;
--/++ LED is blinking at 2 Hz frequency.
* LED is ON;
+ single-shot blinks;

6 Field of Application

The Detector can be installed in flats, shops, offices, museums and other confined areas.

7 Choosing Place of 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 by glass and mesh partitions. There must be no windows, air conditioners, space heaters or heating radiators in the PIR detection zone.

Distance between the Detector and the farthest point of the monitored glass should not exceed 6 m. The Detector microphone should be oriented strictly towards the protected surface of a glass construction.

In case of 1m̀ area monitoring maximal distance to the Detector should be increased up to 9 m. Recommended installation height is (2,3 ± 0,1) m

The Detector wires should be laid at a distance not less than 1 m from power supply cables.

PIR channel detection zone pattern is shown in Figure 1.

8 Installation of the Detector

- Put off access hole of the Detector (2);
- Remove cover with the printed circuit board (PCB) (4,3) from the base (1) by pulling towards yourself and downward;
- Open holes in the base for the Detector wiring and fastening the base;
- Choose the place of installation, mark the places for mounting holes with regard to the openings on the detector base, drill holes in the place of installation;
- Pass the wire through the mounting holes in the base, leaving enough length of the wire for hooking up to the Detector terminals;
- Fix the base of the detector on the chosen place;
- Install cover with PCB to the base.

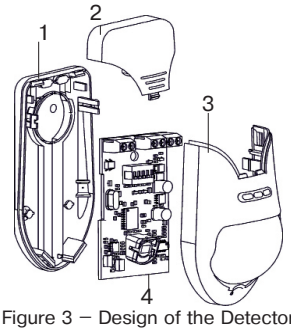

Figure 3 – Design of the Detector

9 Connection

Fulfill connections in accordance with Figure 4.

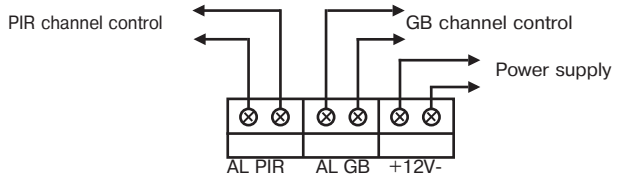

Figure 4 – The Detector connection pattern

- Set up operation mode by means of DIP-switches «1», «2», «3», «4», «5» (designation of DIP-switches is specified in Tables 3 and 4) in accordance with particular application conditions;
- Install the access hole on its place.

Table 4

DIP-switch	ON	OFF
SENS GB	+12 dB	min
SENS PIR	10 m 10 kg	8 m 20 kg

10 Functional Testing

10.1 PIR Channel Testing

Step out of the detection zone. In a minute after supply unit is on make sure, that the LED indicators are switched off

In case of interference presence, find out the cause of them and eliminate it.

Moving in the direction perpendicular to the security-sensitive area at a speed (0,5–1) m/c, define border of the PIR channel detection zone by yellow LED indicator switching ON.

Moving at a speed 3 m/s away from the detection zone area, check the Detector sensitivity by red and yellow LED indicators switching on.

After 2 – 4 steps within the detection zone, the Detector should generate Alarm message during 3 s.

If it is necessary, change the detection zone orientation by turning the Detector in horizontal plane, after what define zone location once more and repeat sensitivity adjustment.

For reliable exclusion of false alarm caused by pets it s not recommended to incline the Detector in vertical plane for more than 2°.

10.2 GB Channel Testing

Set up DIP-switches «1» and «2» in OFF position (minimal sensitivity value).

Remove the «SENS GB» DIP-switch (minimal sensitivity).

Suspend a steel ball (21,5 ± 0,5) mm in diameter weighting (40 ± 8) g on a 35 cm long thread near the monitored glass standing clear of it, deflect it at an angle of 30-70° (see Table 5). Deliver a test blow to the remote section of the protected glass. Don't occlude the Detector during blow delivering. If the test blow is accompanied by double LED indicator blinking, the Detector is considered to be adjusted. If there is no green LED double blinking, it is necessary to increase the sensitivity value by means of «1» and «2» DIP-switches and to repeat of GB testing procedure.

Table 5

Glass thickness, mm	<3	3–4	4–5	5–6	6–7	>7
Ball deflection angle for ordinary, armed and ornamental glass, °	30	35	40	45 *	50	55
Ball deflection angle for hardened and laminated glass, °	45	50	55	60	65	70
*) – Inclination angle for glass block						

11 Alarm Message Memory

Set up DIP-switch «4» in ON position. In this mode LED indicators are alternately blinking in accordance with Table 3 during 15 min.

12 LED Indicator Disabling

For masking the Detector operation, possibility of LED indicator disabling is provided by setting «5» DIP-switch in OFF position. In this mode LED indication is switching on during first minute after Detector energizing, as well as in Alarm Memory and Failure modes.

Attention! The Detector must be checked at least annually in order to test its performance.

13 Storage and Transportation

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 rate 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.

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

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

14 Manufacturer's Guarantees

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

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

The guaranteed useful life is 60 months since the day of putting into operation within the guaranteed shelf life.

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

15 Acceptance and Packing Certificate

Passive infrared detector «Pyrone-7D»,

serial number _____,

has been manufactured in compliance with the active technical documentation and classified as fit for operation and packed by «Development and Production Enterprise RIELTA » LLC.

Person in charge of acceptance and packing

QC representative_____ _____.

day, year, month

Made in Russia

Rev. 5 of 01.12.2020
№00576
v4

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