



SECURITY COMBINED PIR + GLASS BREAK DETECTOR

«Pyrone-7»

Installation Guide

General Information

Security combined detector «Pyrone-7» (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.

PIR channel is assigned for detecting intrusion into protected area of closed premises.

The Detector is resistant 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 can be installed on the wall or in the corner of the room.

Features

- Sensing element of detection channels:
PIR channel - dual-element pyrodetector;
GB channel - microphone.
- Spherical lens provides high detectability.
- Microprocessor-based signal processing.
- Self-test mode.
- Possibility of PIR and GB channels sensitivity modes changing.
- Protection against ingress of insects to the pyrodetector.

Specifications

Table 1

Parameter	Value
PIR channel detection zone	12 x 10 m
Maximum detection range	6 m
- GB channel	12 m
- PIR channel	
Output PIR and GB relay contacts	voltage up to 42 V, current up to 30 mA
Power supply voltage	9 ...17 V
Current in standby mode, not more than	35 mA
Sensitivity of:	select:
- GB channel (high frequency)	minimal/+12 dB
- PIR channel	high/norm
Minimum controlled glass area	0,1 m ²
Warm-up time after switching on, not more than	60 s
Operating temperature	from minus 20 °C up to +45 °C
Relative humidity at +25 °C without moisture condensation	90 %
IP rating	IP30
Dimensions, max	110 x 58 x 45 mm
Weight, not more	0,1 kg
Service life	8 years

PIR channel detection zone pattern is shown in Figure 1.

GB channel detection zone pattern is shown in Figure 2.

The Detector ensures safe operation under the impact of sinusoidal vibration with acceleration of 0,981 m/s² (0,1 g) within the frequency range 10 – 55 Hz.

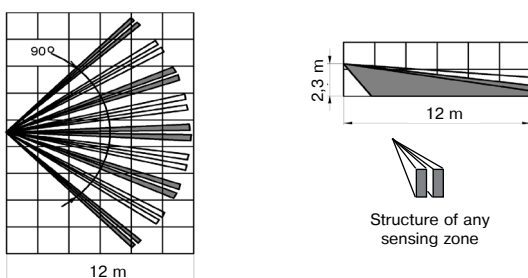


Figure 1 – PIR channel detection zone pattern

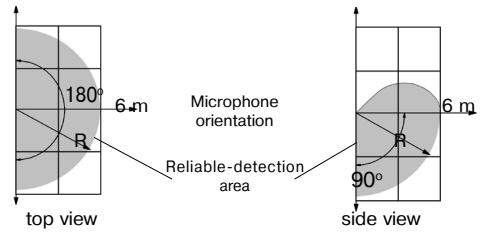


Figure 2 – GB channel detection zone pattern

Scope of Delivery

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

Table 2

Name	Qty
Security combined detector "Pyrone-7"	1 pc.
Security combined detector "Pyrone-7". Installation Guide	1 copy

LED Indication

LED indicators on the front cover are used for the Detector state displaying. Messages indication is fulfilled in accordance with the Table 3.

Table 3

Detector state	LED			Relay	
	Red	Yellow	Green	AL1	AL2
Norm	OFF	OFF	OFF	Closed	Closed
Switching ON	ON 50 s	-	ON 3 s	Opened for not less than 3 s	Opened for not less than 50 s
ALARM GB	ON	ON	ON	Opened for not less than 2 s	-
ALARM PIR	ON	-	-	-	Opened for not less than 2 s
Power supply voltage drop	Blinking 1 Hz	Blinking 1 Hz	Blinking 1 Hz	Opened for not less than 2 s	Opened for not less than 2 s
Interfering signal at 1 frequency	-	ON	-	-	-
Interfering signal at 2 frequency	-	-	ON	-	-

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 1 m² area monitoring maximal distance to the Detector should be increased up to 9 m. Recommended installation height is 2,3 m.

The Detector wires should be laid at a distance not less than 0,5 m from power supply cables.

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 the 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.

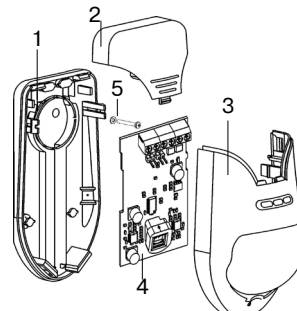


Figure 3 – Design of the Detector

Connection

- Terminals for wire hooking up are located at the top of the PCB;
- Fulfill connections in accordance with Figure 4;

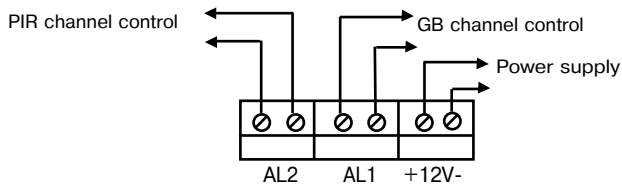


Figure 4

- Set operation mode by means of DIP-switches in accordance with particular application conditions (See Table 4);
- Install the access hole.

Table 4

DIP-switch	Installed	Removed
GB sensitivity	+12 dB	min
PIR sensitivity	High	Normal

Switching On and Testing

After energizing the Detector is starting operation in standby mode during 50 s. It is displayed by green and red LED indicator lighting. The green indicator switches off in 3 – 5 s, the red one – in 50 – 55 s, thus confirming the Detector availability and its proceeding to the standby mode.

Functional Testing

During operation in standby mode, the Detector generates "Norm" message (by GB and PIR channels relay contacts closing). For correctness of the installation place choice checking, it is necessary to fulfill functional testing of GB and PIR channels.

1. PIR Channel Testing

Energize the detector and wait for 60 – 70 s before test starting. Define border of the Detection zone by the LED indicator switching ON. Start moving across the detection zone at different distances from the Detector (including maximal distance too). After 3 – 5 steps, the Detector should generate «Alarm» message, repeated by LED indicator switching on. Under the absence of movement inside the detection zone, alarm message should not be generated.

2. GB Channel Testing

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 green LED indicator switching on, the Detector is considered to be adjusted. If green LED remains in OFF position, it is necessary to increase the sensitivity value by means of «SENS GB» DIP-switch applying and repeat of GB testing procedure.

Install cover on the Detector and fulfill the same testing by delivering blows to different places of the other monitored glasses (after each blow green LED indicator should switch ON). If it is necessary, repeat sensitivity adjustment.

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 blocks

Self-Testing Mode

The Detector fulfills self-testing automatically. During self-testing power supply voltage value is checked. If power supply voltage drops lower than 8 V, «Failure» message is generated by GB and PIR channels relay contacts opening. The message is repeated by red LED indicator lighting for the time of the failure duration. After failure reasons elimination, the Detector switches to standby mode.

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

Storage and Transportation

The Detectors in their original packaging 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.

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

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.