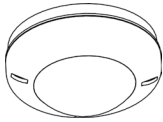




**SECURITY COMBINED PIR +  
GLASS BREAK DETECTOR**



**«ORLAN-2»**



**Installation Guide**

**1 General Information**

Security combined PIR + glass break ceiling-mounting detector «Orlan-2» (hereinafter, 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 plate glass.

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

The Detector generates an alarm message by output relay contacts opening.

**2 Features**

Table 1

| Parameter   | Value                                     |
|---|---|
| PIR channel detection zone diameter at mounting height of 5 m, not less         | 9 m                                       |
| Minimum controlled glass area, not less   | 0,1 m <sup>2</sup><br>0,05 m <sup>2</sup> |
| PIR channel detected speed range  | 0,3...3 m/s                               |
| Power supply, V DC  | 9...15 V                                  |
| Maximal current, commutated by executive relay contacts at maximal voltage 72 V | 30 mA                                     |
| Warm-up time after energizing, not more   | 60 s                                      |
| Operating temperature   | From minus 20 to +45 °C                   |
| PIR channel detection angle in horizontal plane                                 | 360°                                      |
| GB detection angle:<br>- horizontal<br>- vertical                               | 120°<br>90°                               |
| IP rating   | IP30                                      |
| Relative humidity without moisture condensation                                 | 95% at 25 °C                              |
| Current consumption, maximum  | 35 mA                                     |
| Dimensions (diameter x height), not more  | 105 x 48 mm                               |
| Weight, not more  | 100 g                                     |
| Average service life  | 8 years                                   |

**3 Choosing the Installation Place**

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. Maximal installation height is 5 m. 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. The Detector wires should be laid far enough from power supply cables.

PIR channel detection zone pattern is shown in Figure 1.

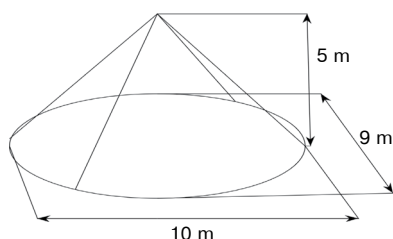


Figure 1 – PIR channel detection zone pattern

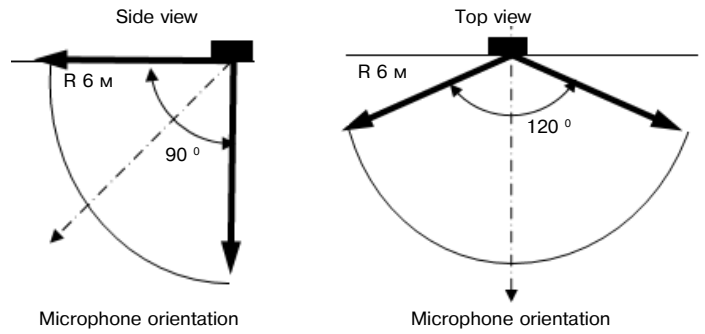


Figure 2 – GB channel detection zone pattern

**4 Installation of the Detector**

- Put off the Detector cover by its turning counter-clockwise until tight (See Figure 3);

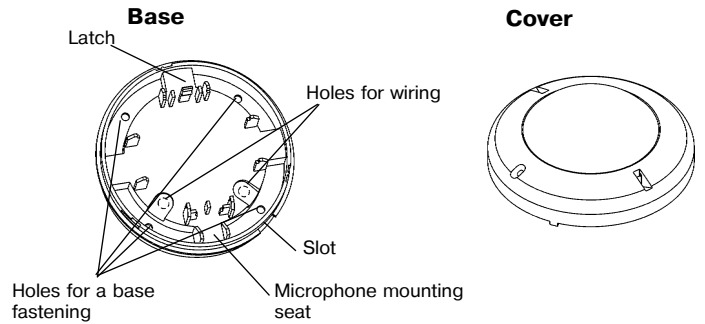


Figure 3 – Base and cover of the Detector

- put off the printed circuit board (PCB) by unfastening the latch, located on the base;
- Drill the holes in the base (See Figure 3) 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 several centimeters of installation wire for its fastening to the socket inside the case;
- Fix the base of the detector on the chosen place
- set down PCB and microphone on their places.

**5 Connection**

Fulfill connections in accordance with Figure 4.

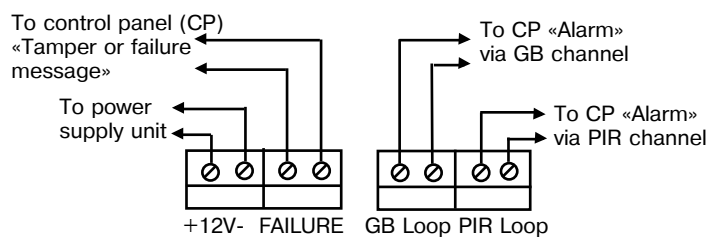


Figure 4 – The Detector connection pattern

- Set operation mode by means of DIP-switches in accordance with particular application conditions (DIP-switches assignment is listed in the Table 2);
- Install the Detector cover on its place.

Table 2

| Mode                | DIP-switch | DIP-switch Position |                    |
|---------------------|------------|---------------------|--------------------|
|                     |            | ON                  | OFF                |
| GB sensitivity      | «1»        | max                 | - 6 dB             |
| GB sensitivity      | «2»        | max                 | -12 dB             |
| Installation height | «3»        | 5 m                 | 2,5 m              |
| Alarm memory        | «4»        | ON                  | OFF                |
| Indication          | «5»        | ON                  | OFF                |
| Test mode           | «6»        | ON                  | OFF (standby mode) |

## 6 Functional Check

### 1. PIR Channel Check

For the installation at 5 m height set DIP-switch «3» to position «ON» (See Table 2). If the height of the premises ceiling is less than 3 meters, it is recommended to set DIP-switch «3» to «OFF» position, ensuring increase of the interference-immunity level. It is recommended to use this mode of the Detector operation for small premises with high-interference environment.

Energize the detector and wait for 1.5 – 2 minutes. Begin moving across the detection zone with the speed 0.5 – 1 m/s. The detector must generate alarm message, therewith the red LED indicator switches ON and PIR loop contacts open. Wait until the LED indicator goes out and start moving across the detection zone other way around. The detector must generate alarm message. Under the absence of movement inside the detection zone, alarm message should not be generated.

### 2. GB Channel Check

Set DIP-switches «1», «2» to position «OFF» and «6» to position «ON» (minimal sensitivity level, testing mode). Put the cover on its place.

Suspend a steel ball 21-22 mm in diameter on a 35 cm long thread near the farthest part of the monitored glass (ordinary, ornamental, armed, laminated), deflect it at an angle of 30-70° (see Table 3, for hollow glass blocks - 45°). Deliver a test blow to the remote section of the protected glass.

Table 3

| 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.

During delivering a blow an operator himself should not occlude the Detector. If the test blow results in activation of an «Alarm» signal, the Detector is considered to be adjusted. If the test blows give no result, adjust the Detector sensitivity by means of DIP-switches «1» and «2» (Listed in Table 2). Thereupon repeat GB channel check.

It is permitted to use an electronic glass break simulator.

After adjustment procedure finishing, set DIP-switch «6» in «OFF» position (standby mode) and close the cover.

«Test» mode goes out in 15 minutes.

To reset the channel check mode, turn the DIP-switch «6» ON and OFF.

## 7 Informativity

The LED indication displays the state of the Detector (See Table 4)

Table 4

| LED Indication Mode   | LED Indicator (number of pulses in series) |         | Relay   |          |         |
|---|--|---------|---------|----------|---------|
|   | Green                                      | Red     | GB Loop | PIR Loop | FAILURE |
| Technical readiness<br>- GB<br>- PIR                              | OFF  | OFF (1) | +       | +        | -       |
| Norm  | OFF  | OFF     | -       | -        | -       |
| GB Alarm  | OFF  | ON      | +       | -        | -       |
| PIR Alarm   | OFF  | ON      | -       | +        | -       |
| Tamper  | OFF  | OFF     | -       | -        | +       |
| Failure:<br>- $U_{supply} < 9V$ ;<br>- $t^{supply} > 51^{\circ}C$ | (1)<br>(2)                                 | OFF     | +       | +        | +       |
| Alarm memory  | ON   | OFF     | -       | -        | -       |
| GB channel interferences:<br>Low frequency<br>High frequency      | 1 Hz<br>10 Hz                              | OFF     | -       | -        | -       |

«+» – Relay contacts opened  
(1) – Unitary flashes  
(2) – Double flashes

## 8 Alarm Message Storage

Set DIP-switch «4» in «ON» position. In this mode within 5 minutes after generation of GB Alarm or PIR Alarm messages, the green LED indicator is lighting during 15 min.

## 9 Indicator Disabling

For the Detector operation masking, possibility of indication disabling is available. Set DIP-switch r5" in rOFF" position. There is no visible Alarm LED indication in this mode.

## 10 Scope of Delivery

10.1 Each Detector unit package contains the items listed in Table 1.

Table 1

| Name  | Qnt    |
|---|--------|
| Security combined PIR + glass break ceiling-mounting detector «Orlan-2»                     | 1 шт.  |
| Screw 1-3 x 20.016  | 2 шт.  |
| Security combined PIR + glass break ceiling mounting detector «Orlan-2». Installation Guide | 1 экз. |

## 11 Manufacturer's Guarantees

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

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

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

11.4 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.

## 12 Storage and Transportation

12.1 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.

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

12.3 The Detectors in transport packaging should be stored no longer, than 3 months. Otherwise they should be released from transport packaging.

## 13 Acceptance and Packing Certificate

13.1 Security combined PIR + glass break ceiling-mounting detector «Orlan-2»,

batch number \_\_\_\_\_,

has been manufactured in compliance with the active technical documentation, classified as fit for operation and packed by «RIELTA» JSC.

Person in charge of acceptance and packing

QC representative \_\_\_\_\_  
(month, year)

Rev.1 of 20.05.14  
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Made in Russia

«RIELTA» JSC, www.rielta.ru

Chapavaeva Str. 17, Saint Petersburg Russian Federation 197101, rielta@rielta.ru

Tel./fax: +7 (812) 233-0302, 703-1360,

Technical support, tel. +7 (812) 233-29-53, 703-13-57, support@rielta.ru