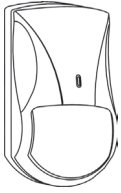




# PASSIVE INFRARED DETECTOR



## «FOTON-10A»

### Installation Guide

#### 1 Introduction

The detector «Foton-10A» (hereinafter, the detector) is designed for detecting intrusion into the protected space and generating an alarm message by opening the relay output contacts.

The detector ensures tamper protection. The «Tamper» message is generated by opening microswitch contacts.

The detector is resistant to the exposure of ambient light and radio interference, as well as to influence of small pets: mice, rats, birds, placed in the cages at a distance not less than 2.5 m.

The detector is compact, attractive, simple in installation, and maintenance. It is possible to install the detector on the wall or in the corner of the room or on the wall and ceiling by means of swivel bracket.

#### 2 Features

- Dual-element pyrodetector.
- Spherical Fresnel lens.
- Long range detection zone.
- Immunity to insects intrusion to the pyrodetector.
- Microprocessor-based signal processing.
- Selectable modes of testing, sensitivity, alarm memory and led indication.
- Self-test mode.
- The detector is rated for switching to the DC power source with output voltage 9 – 15 V.
- Possibility to install the detector on the swivel bracket (supplied) for the detection zone repositioning.
- Case tamper protection.

#### 3 Specifications

Table 1

Parameter	Value
Detection zone	Max. 20 m
Power supply, V DC	9 – 15 V, current 15 mA
Tamper output contacts	Closed – «Norm» message, current 30 mA, voltage 42 V
Alarm message duration	Not less than 2 sec
Detection zones	1 long-range, 2 middle-range, 6 short-range, 3 antisabotage
Sensitivity	Chosen by switch «1» (position 1/2)
Operating temperature range	minus 30 ... + 55 °C
Relative humidity	98 % under 25 °C without moisture condensation
IP rating	IP41
Dimensions, max	126 x 70 x 55 mm
Weight, max	110 g

Detection zone pattern is shown in Figure 1.

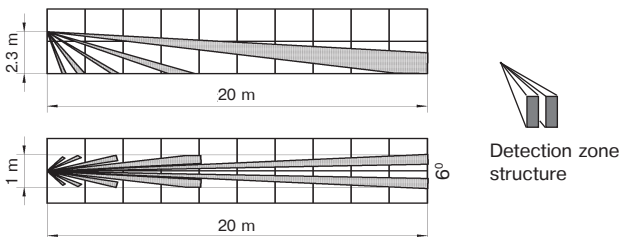


Figure 1 – Detection zone pattern

#### 4 Application

The detector can be installed for extended rooms in the flats, shops, offices, museums.

#### 5 Scope of Delivery

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

Table 2

Name	QNT
Passive infrared detector «Foton-10A»	1 pc.
Swivel bracket	1 pc.
Screw 3-3x30.016	2 pcs.
Passive infrared detector «Foton-10A». Installation Guide	1 copy

#### 6 Choosing the Place of Installation

The detector is designed for operation in the closed areas. When choosing the detector installation place, 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 range.

Recommended installation height:

- without swivel bracket – 2.3 m;
- by means of swivel bracket – 2.3 – 3 m (on condition that the detector tilt is adjusted).

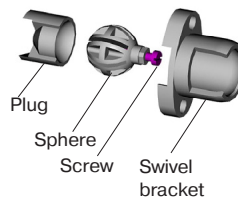
Power supply and alarm loop wires should be located far enough from power feed cables.

#### 7 The Detector Installation

- Unfasten the latch through the opening, which is situated downside the detector case by means of screwdriver and put off the detector cover (Figure 2).

- When installing the detector without swivel bracket it is necessary to put off the PCB by means of pushing up it's fixing arm.

##### Swivel Bracket Components



##### Detector Base

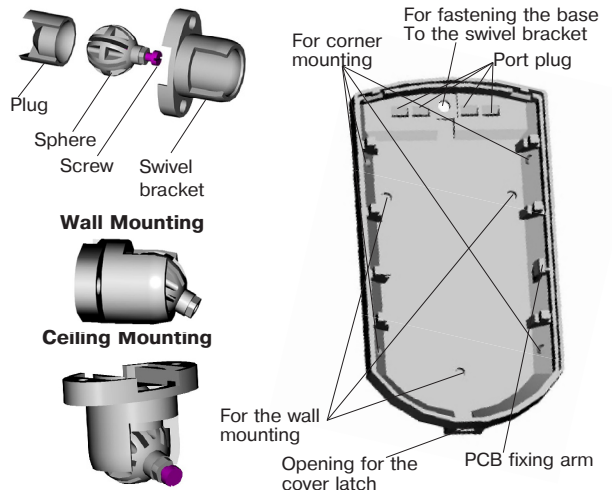


Figure 2 – The Detector Base and the Swivel Bracket

- Drill the holes in the base of the detector for wiring and fastening the detector (Figure 2).

- Choose the place of installation, mark the places for mounting holes with the regard to detector base (or swivel bracket) openings, drill the holes in the wall.

- Pass the wire through the mounting holes in the base, leave several centimeters of installation wire for it's fastening inside the case.

- Fix the base of the detector case on the wall (swivel bracket) at the chosen place. In case of swivel bracket using, unscrew the cap screw from the swivel bracket sphere. Fit the square bulge of the swivel bracket external sphere with the corresponded opening on the detector base. Plug in the screw to the opening in the top of the detector base and fix the connection by the screw.

- Put PCB on it's place.

#### 8 Connection

- The terminals for the detector connection are located at the top of PCB.

- Fulfill connections in accordance with the Figure 3a (for single alarm loop connection) and with Figure 3b (with alarm loop and tamper connection).

- Install the DIP-switches in accordance with application conditions.

- Put the detector cover on it's place.

- Install DIP-Switches «1», «2», «3» and «4» in accordance with application conditions.

- Put the detector cover on it's place.

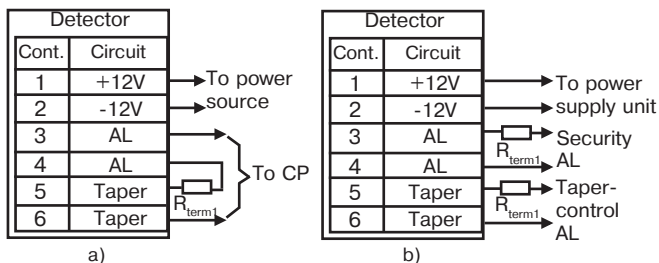


Figure 3

Table 3

Mode	DIP-switch	DIP-switch Position	
Sensitivity	«1»	«NORM»	«HIGH»
Testing	«2»	«SENS» (Sensitivity determination)	«ZONE» (Detection zone determination)
Indication Disabling	«3»	«IND» (ON)	«OFF» (LED indicator is disabled)
Alarm Memory	«4»	«MEM» (Alarm memory ON)	«OFF» (Alarm memory OFF)

### 9 LED Indicator

The Led indicator located at the front of the cover displays the detector mode.

Table 4

Message	Led Indicator Color	LED Indication State
«Warm-up Time»	RED	Blinking with 1 Hz frequency
«Norm»	-	LED Indication is OFF
«Alarm»	RED	LED Indication is on during 3 sec
«Malfunction»	RED GREEN	Alternate switching during 15 min
«Alarm Memory»	GREEN	LED Indication is ON during 15 min

### 10 Functional Check

After energizing of the detector, the self-testing process is realized during one minute. It ensures control of the following parameters: input voltage, ambient temperature, operation capacity of the amplifier channel. During the procedure, the LED indicator is blinking red (irrespective of the DIP-switch «3» position), relay contacts are opened.

### 11 Testing Mode

Upon the expiry of the warm-up time, the detector turns to standby mode and is able to generate alarm message. During the process within 5 minutes it is possible to check the detector parameters. The checking procedure provides two modes.

#### 1) Detection zone position location

DIP-switches position: «2» – «ZONE», «3» – «IND». The mode is intended for each beam of detection zone positioning in the secured premises. Under the condition of each beam crossing the LED indicator switches for 0.25 sec. Optimized speed of movement at maximal distance – 0.5 m/sec.

**Note** – In this mode the alarm message generated in compliance with the adjusted sensitivity mode is not displayed by LED indication.

In the motion absence in the detection zone the LED indicator must not light. Upon the expiry of 5 minutes check procedure, the detector transfers to normal mode. If DIP-switch is in position «3» – «IND», generation of alarm message is displayed by LED-indicator lighting for the 3 sec period.

#### 2) Sensitivity mode adjustment

DIP-switches position: «2» – «SENS», «3» – «IND». The mode is intended for detector sensitivity appraisal (the distance, which is possible to pass through the detection zone up to the point, where the movement is detected, and alarm message is generated). The LED indicator blinks for 0.25 period under the condition of detection zone beam crossing, and for 3 sec during alarm message generation.

**Note** – If the detector does not identify movement within the detection zone, it is necessary to change detector position by means of swivel bracket (in case of wall mounting the horizontal turning angle of the detector on swivel bracket –  $\pm 45^\circ$ , vertical – not less than  $20^\circ$ ).

**High sensitivity** – DIP-switch position: «SENS» – «HIGH», it is basic operation mode. The alarm message is generated after 2 – 4 footpaces within the detection zone area (after LED indicator blinks once for 0.25 sec).

**Normal sensitivity** – DIP-switch position: «SENS» – «NORM». This mode is recommended for the premises with severe interference conditions. The alarm message is generated after 4 – 5 footpaces within the detection zone (after LED indicator blinks once for 0.25 sec).

Stop after each alarm message generation and wait until the LED indicator is disabled for 8 – 10 sec and more, then continue movement through the detection zone.

### 12 LED Indication Disabling

For the detector operation masking, the LED indication disabling mode is available. DIP-switch «3» – «OFF».

In this mode the LED indicator is lighting for only one minute after detector energizing, as well as in «Alarm Memory» and «Malfunction» modes.

### 13 Alarm Memory Mode

DIP-switch «4» – «MEM». The LED indicator is lighting green in 5 min after alarm memory generation. Duration of indication – 15 min.

### 14 Self-Test Mode

The detector provides self-testing of the following parameters: amplifier operability, input voltage, ambient temperature. If the ambient temperature range is close to  $36^\circ\text{C}$ , the sensitivity threshold changes, the level of sensitivity is automatically adjusted, what leads to detectability enhance (temperature compensation).

In case of self-test failure (amplifier malfunction, voltage drop lower than  $8.9_{-0.9}^0$  V, ambient temperature out of permissible temperature range), «Malfunction» message is generated by opening the relay output contacts repeated by alternate LED indicator blinking red and green.

«Malfunction» message duration – 15 min. After elimination of malfunction, the detector turns to self-test mode.

**ATTENTION!** The detector must be checked at least once annually for functional testing.

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

### 16 Manufacturer's Guarantees

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.

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

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.

### 17 Packing Certificate

Passive infrared detector «Foton-10A» 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