

Installation Guide

5 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.

The presence in the detection area of furniture items that an animal can get on, can lead to false alarms.

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

6 Detection zone pattern

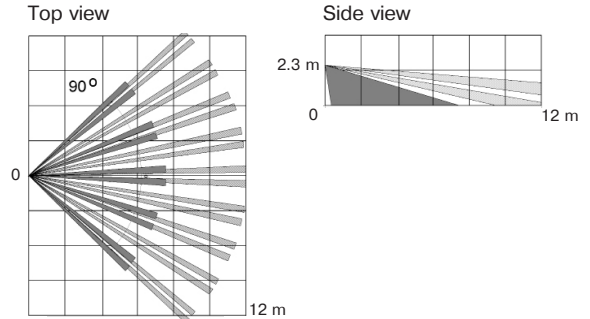


Figure 1

7 Installation

Before installation of the detector put off the cover and the PCB. For this purpose act as follows:

- 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;

1 General Information

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

1.2 The detector is resistant to influence of small pets: mice, rats, birds, as well as to the exposure of ambient light and radio interference, slow temperature changes, convective airflow, power supply voltage pulses, electrostatic discharge, VHF electromagnetic field.

1.3 The detector ensures false alarm absence in case of movement on the floor of small pets with weight up to 10 kg (cats and fancy-breed dogs), in case the detector installation height is not less than 2.3 m.

1.4 The detector comprises two-color LED indicator for it's operability control, microswitch (tamper contact) for tampering detection and DIP-switch, providing testing and alarm memory modes setting, as well as indicator disabling.

The detector generates the following messages:

- «Norm» (Normal state of the detector) – by the relay contacts closing repeated by red LED indicator switching off;
- «Alarm» – by the relay contacts opening repeated by LED indicator lighting red;
- «Tamper» (unauthorized access into a case) – by microswitch contacts opening when the detector is tampered;
- «Warm-up Time» (technical availability) – by relay contacts opening repeated by LED indicator blinking red during one minute after the detector energizing;
- «Alarm Memory» – is displayed by a green LED indicator lighting during 15 min in 5 min after «Alarm» message generation.

1.5 The detector is designed to operate continuously around the clock.

2. Features

- Dual-element pyrodetector.
- Spherical Fresnel lens.
- Wide angle detection zone.
- Immunity to insect's intrusion to the pyrodetector.
- Microprocessor-based signal processing.
- The following adjustable modes: testing, sensitivity, alarm memory and led indication.
- Self-test mode.
- Is rated for switching to the DC power source with output voltage 9 – 15 V.
- Case tamper protection.

3 Specifications

Table 1

Parameter	Value
Maximum detection range	12 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
Recommended mounting height	2.3 m
Operating temperature	minus 30 ... +55 °C
Relative humidity under 25 °C without moisture condensation	98 %
IP rating	IP41
Dimensions, maximum	90 x 60 x 50 mm
Mass, not more	110 g
Average service life, not less than	8 years

4 Scope of delivery

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

Table 2

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

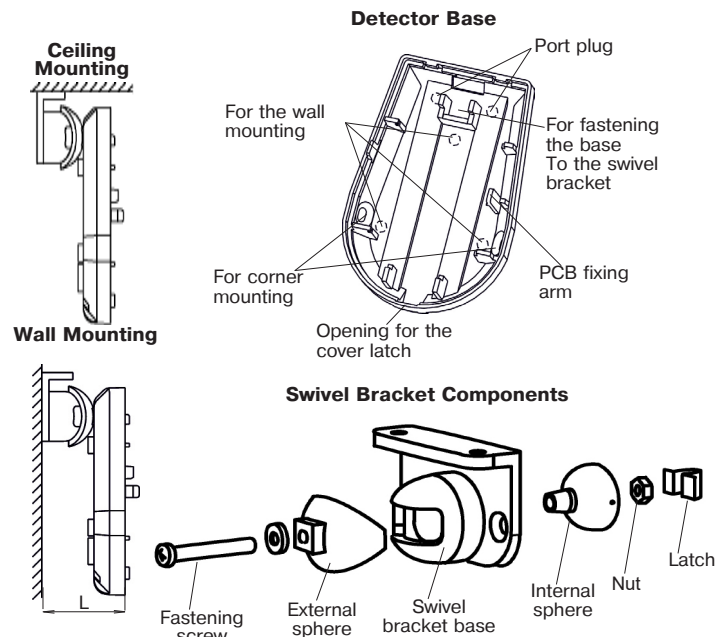


Figure 2 – Detector base and swivel bracket

- 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 connection to the terminals;
- fix the base of the detector case on the wall at the chosen place;
- put the PCB on it's place (if it was put off).

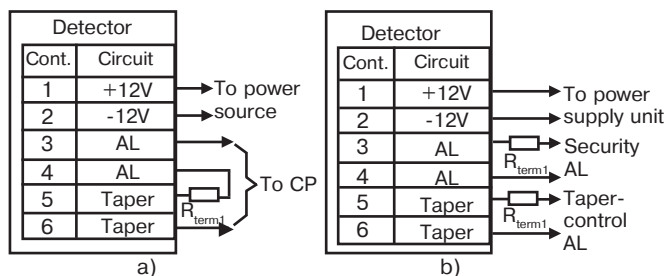
Note

1 In case of swivel bracket using, turn out the cap screw M3x20 from the swivel bracket sphere. Holding the assembled swivel bracket, fit the square bulge of the swivel bracket external sphere with the corresponded opening on the detector base. Turn the detector base to the left full point and then to the right. Plug in the screw into the opening in the top of the detector base and fix connection by the screw. Set the detector base to the operating position and fasten it by a cap screw M3x20.

2 To ensure the best result in immunity to pets movement, it is recommended to mount the detector without any inclination.

8 Connection

The terminals for the detector connection are located on the PCB top.
 - Fulfill connections in accordance with the Figure 3a (single alarm loop connection) and with Figure 3b (both alarm loop and tamper connections).



- Install DIP-switches «1», «2» and «3» in accordance with application conditions (See Table 3).
- Put the detector cover on it's place.

Table 3

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

9 LED Indication

The LED indicator located at the front of the cover displays the detector status (see Table 4).

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
«Failure»	RED GREEN	Alternate blinking during 15 min
«Alarm memory»	GREEN	LED Indication is ON during 15 min

10 Functional Check

After energizing of the detector, 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 «2» 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 an Alarm message. In the meantime, it is possible to check the detector parameters during 5 min. The checking procedure provides two modes:

Detection zone position location

DIP-switches position: «1» – «OFF», «2» – «ON». This mode is intended for each beam of detection zone positioning in the secured premises. Under the condition of each beam crossing the LED indicator blinks once for 0.25 sec. Optimized speed of movement at maximal distance – 0.5 m/sec.

Note – In this mode Alarm LED indication is off.

In the motion absence in the detection zone, the LED indicator must not light. Upon the expiry of 5 min check procedure, the detector transfers to normal mode, at which alarm message generation is displayed by the LED lighting during 3 sec, if the DIP-switch in «2» position.

Sensitivity adjustment

DIP-switches position: «1» – «ON», «2» – «ON». This mode is intended for detector sensitivity appraising (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 sec at each detection zone beam crossing, and in case of alarm message generation LED indicator is lighting during 3 sec.

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

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

12 LED Indication Disabling

For the detector operation masking, the LED indication disabling mode is available. To disable indication, set DIP-switch «2» in «OFF» position.

In this mode the LED indicator is lighting for the first one minute after detector energizing, so does in «Alarm Memory» and «Failure» modes.

13 Alarm Memory Mode

For alarm memory mode activation set DIP-switch «3» in «ON» position. The LED indicator is lighting green in 5 min after alarm memory generation. Duration of lighting is 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 °C, the sensitivity threshold changes, the level of sensitivity is automatically adjusted, what leads to detectability enhance (so called temperature compensation).

In case of self-test procedure failure (amplifier malfunction, voltage drop lower than (8.4 ± 0.5) V, or ambient temperature out of permissible temperature range), «Failure» message is generated by opening the relay output contacts repeated by alternate LED indicator lighting red and green.

«Failure» message duration is 15 min. After elimination of a cause of failure, 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-10MD» 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