



PASSIVE INFRARED DETECTOR

«FOTON-17»

Installation Guide

General Information

Passive infrared detector «Foton-17» (hereinafter, the Detector) is intended for detecting intrusion into a closed protected space and generating an alarm message. The Detector provides additional confirmation response of intruder detection via TV channel.

The Detector provides case tamper protection by means of microswitch contacts opening.

The Detector has immunity to impacts of ambient light, radio interference and small animals movement.

The Detector is easy in installation and servicing. Possible ways of installation are: wall and corner mounting in ordinary way, or wall and ceiling mounting by means of the swivel bracket.

Features

- Sensing element – dual-element pyrodetector.
- Spherical lens.
- Protection against ingress of insects to pyrodetector.
- Microprocessor-based signal processing.
- TV-camera has two operation modes:
 - starts operation when alarm message is generated;
 - operates continuously.

It is recommended to choose continuous operation mode of TV cameras for detection zone alignment.

When camera is on, LED indicator is periodically blinking green at a frequency 0.5 Hz.

The Detector provides possibility of the following parameters choosing:

- testing mode;
- sensitivity level;
- LED indication mode;
- period of TV-camera operation.
- The Detector ensures self-test mode.
- The Detector generates failure message when ambient temperature exceeds +46 °C.
- The Detector is powered by DC power supply with output voltage (10 ... 15) V.
- Swivel bracket for the detection zone alignment is included in the scope of delivery.

Specifications

Table 1

Parameter	Value
Detection zone	12 m x 10 m
Power supply, DC	10.0 ... 15.0 V, current 150 mA
Output relay contacts	closed – «Norm» message, current 30 mA, voltage 72 V
Alarm message duration	not less than 2 sec
TV signal duration after alarm message generation	is set by DIP-switches «4» & «5»
Detection zones	10 long-range zones, 6 middle-range zones, 3 short-range zones, 2 anti-sabotage zones
Sensitivity	is selected by DIP-switch «1»
TV-camera	black-and-white video signal; detection angle in horizontal plane 90° TV camera resolution 350 TVL
Operating temperature	minus 30 °C ... +50 °C
Relative humidity without moisture condensation at a temperature +25 °C	95 %
Dimensions	126 x 80 x 60 mm
Weight, not more than	200 g

Detection zone pattern is shown in Figure 1.

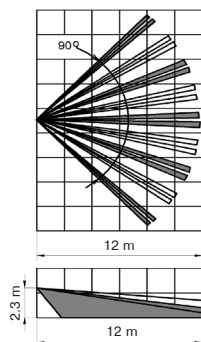


Figure 1 – Detection Zone Pattern

Scope of Delivery

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

Table 2

Name	QNT
Passive infrared detector «Foton-17»	1 pc.
Swivel bracket	1 pc.
Screw 1-3x20.016	2 pcs.
Passive infrared detector «Foton-17». Installation guide	1 copy

Field of Application

The Detector is used as a component of alarm equipment complexes.

Choosing Place of Installation

The Detector is intended for operation in closed non-heated premises with lighting in the protected room not less than 15 lx.

Choosing place of installation one should pay attention to the fact, that the detection zone should not be limited by non-transparent objects (curtains, houseplants, cabinets, bookcases, etc.), which can create «dead zones», preventing the intruder detection. Also there must be no windows, air conditioners, space heaters or heating radiators as well as incandescent lamps near the Detector.

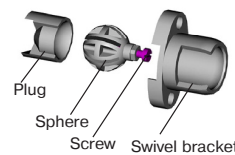
The Detector should be installed at 2.3 m height. If the Detector is mounted on the swivel bracket, the installation height is 2.3 ... 3 m. In this case align the detection zone position and check receiving TV camera image of the protected area.

Power supply and alarm loops should be wired far enough from power supply cables.

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).
- Put off the PCB by means of pushing up it's fixing arm.
- Drill the holes in the base of the Detector for wiring and fastening the Detector (Figure 2).

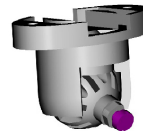
Swivel bracket Components



Swivel bracket wall mounting



Swivel bracket ceiling mounting



Base

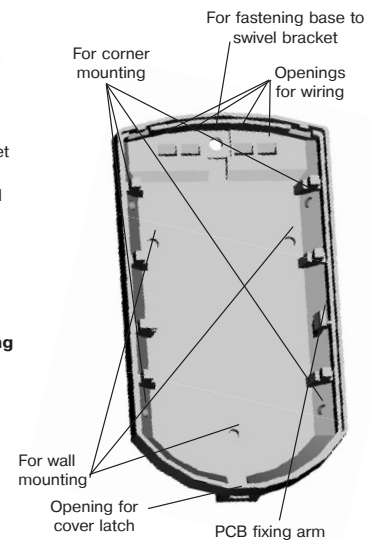


Figure 2 – The Detector Base and the Swivel Bracket

- 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 (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.

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 «1», «2», «3», «4» and «5» in accordance with application conditions.
- Put the Detector cover on it's place.

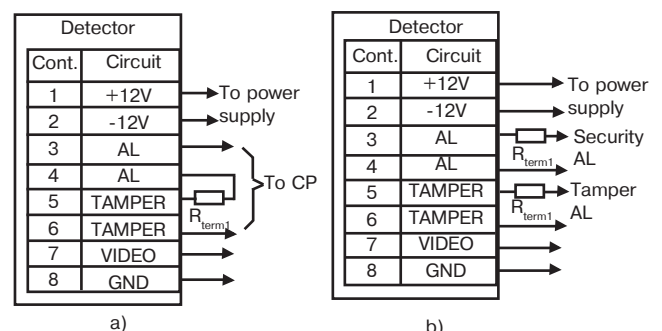


Figure 3

Table 3 – DIP-switches Setting

Mode	DIP-switch	DIP-Switches Position	
		ON	OFF
Sensitivity	«1»	Normal	High
Testing	«2»	Sensitivity adjustment	Detection zone alignment
Indicator	«3»	ON	OFF
Alarm message duration	Alarm message duration is set by DIP-switches «4» & «5» position. See Table 4		

Table 4

DIP-switches		Alarm message duration
«4»	«5»	
OFF	OFF	Continuously
ON	OFF	10 sec
OFF	ON	30 sec
ON	ON	120 sec

LED Indication

Two-color LED indicator located at the front cover displays the Detector mode.

Table 5 – The Detector state during message transmission.

Message	LED Color	LED State	TV-camera State
«Warm-up Time»	RED	Periodical blinking at 1 Hz frequency during 1 min	Operation during 1 min
«Norm»	-	OFF	OFF
«Alarm»	RED	ON	ON
«Failure»	GREEN	Periodical blinking at 1 Hz frequency during 15 min	OFF
«Temperature problem»	GREEN	Periodical blinking at 1 Hz frequency during thermal excursion period	Operation 10 sec during an alarm message generation
«TV monitoring»	GREEN	Periodical blinking at 0.5 Hz frequency during TV-camera operation	Continuous operation

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 «3» position), relay contacts are opened, TV-camera is in operation.

Testing Mode

Upon the expiry of the warm-up time, the Detector is ready for operation. Checking procedure provides two testing modes, lasting 5 min.

1) Detection zone position location

DIP-switches position: «2» – OFF, «3» – 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 switches for 0.25 sec. Optimal speed of movement at maximal distance – 0.5 m/sec.

2) Sensitivity mode adjustment

DIP-switches position: «2» – ON, «3» – 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 period under the condition of detection zone beam crossing, and for 5 sec during alarm message generation.

High sensitivity level – DIP-switch «1» is in OFF position. It is the basic operation mode. «Alarm» message is generated after 2 – 4 steps within the detection zone (after single LED indicator switching ON for 0.25 sec period).

Normal sensitivity level – DIP-switch «1» is in ON position. This mode is recommended for the rooms with severe interference conditions. «Alarm» message is generated after 4 – 5 steps within the detection zone (after two-shot LED indicator switching ON for 0.25 sec period).

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

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°).

Under absence of movement inside the detection zone, LED indicator should not light.

Upon the expiry of 5 min of either of the two testing modes, the Detector automatically changes to normal mode of operation (if DIP-switch «3» is in ON position, alarm message generation is displayed by LED indicator lighting red).

The detection zone position in space can be appraised visually by changing camera to continuous mode of operation and monitoring movements by video display unit.

LED Indicator Disabling

For the Detector operation masking, the mode of LED indicator disabling is provided. DIP-switch «3» is in OFF position. In this mode LED is operable only during first minute after energizing or during failure message generation.

Self-Test Mode

The Detector provides self-testing of the following parameters: amplifier operability, input voltage, ambient temperature.

In case of self-test failure (amplifier failure, voltage drop lower than 10.0 V, ambient temperature out of permissible temperature range), «Failure» message is generated by opening the relay output contacts repeated by periodical LED indicator blinking green at 1 Hz frequency, the camera is switched OFF.

«Failure» message duration – 15 min. After elimination of malfunction, the Detector returns to switching and self-test mode.

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

ATTENTION! In the secured zone there must be warning about CCTV monitoring of the object area.

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.

The Detectors in their original packing may be stored not more than 3 months. During this period the Detector package should not have bloodshot spots and impurities.

Upon the expiry of 3 months, the Detector should be released from the package.

Manufacturer's Guarantees

The Manufacturer guarantees conformity of the Detector to its Technical Specifications if conditions of transportation, storage, assembling and operation are observed. The guaranteed storage period is 27 months since the date of manufacturing the Detector.

The guaranteed period of operation is 24 months since the date of commissioning within the storage period guaranteed.

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

Acceptance and Packing Certificate

Passive infrared detector «Foton-17»,

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