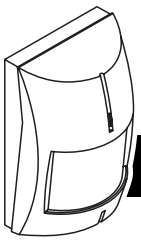
GRAPHITE



DIGITAL PASSIVE INFRARED DETECTOR

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The GRAPHITE digital motion detector is characterized by high sensitivity, as well as high immunity to interference and false alarms. The detector construction is based on an advanced signal processor with a high resolution transducer. A dual pyroelectric element is used in the detector. An advanced digital temperature compensation feature enables operation within a wide range of temperatures. Other advantages of the detector include alarm memory and remote on/off switching of the LED indicator.

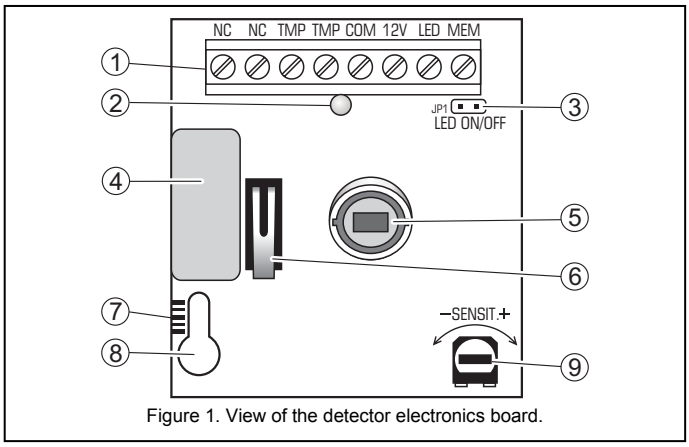

Figure 1. View of the detector electronics board.

Explanations for Figure 1:

1 – terminals:
- **NC** – relay (NC).
- **TMP** – tamper contact.
- **COM** – common ground.
- **12V** – power supply input.
- **LED** – the input enables the LED indicator to be remotely switched ON/OFF, if the jumper is removed from the LED ON/OFF pins. The LED will signal violations, when the LED input is short-circuited to the common ground. For control of the input, you can use the OC type output of the control panel, programmed e.g. as SERVICE MODE INDICATOR or BI SWITCH.
- **MEM** – the alarm memory control input. It is required that the OC type output of the alarm control panel, programmed as ARMED STATUS INDICATOR be connected to the input. When the input is shorted to the ground and the detector registers a motion, thus triggering the alarm, the LED blinking will signal the alarm memory. The alarm memory signaling will continue until the input is shorted to the ground again. Cut-off of the input from the ground (disarming) will not erase of the alarm memory.

2 – LED indicator. It lights red for approx. 2 seconds after registration of movement by the detector and activation of the relay (opening of the NC contacts). It allows the installer to check the detector performance and to approximately determine the supervised area. Blinking of the LED indicates alarm memory.

3 – LED ON/OFF pins. Setting the jumper will activate signaling by means of the LED, irrespective of the LED input status.

4 – alarm relay.

5 – pyroelectric element.

6 – tamper contact.

7 – graduation for positioning the pyroelectric element against the lens (see Table 1 and Figure 4).

8 – mounting screw hole.

9 – potentiometer for detector sensitivity adjustment.

For 30 seconds after power-up, the detector remains in the **starting state**, which is signaled by short flashes of the LED indicator. Only after this time the detector will enter the ready state.

The detector is monitoring power supply voltage and availability of the signal path. In case of a voltage drop below 9V (±5%), lasting longer than 2 seconds, or detection of a fault in the signal path, the detector will signal a trouble by activating the alarm relay and steady lighting of the LED. The signaling continues as long as the trouble exists.

Installation

The detector is designed for indoor installation. It can be mounted on the wall, either directly or on the included holder (mounting on the holder is recommended by the manufacturer).

It is advisable that you exercise particular care during installation so as not to soil or damage the pyroelectric element.

Remember during installation that the detector should not be directed towards heat sources or air-conditioning outlets, as well as objects exposed to strong solar radiation.

1. Open the housing as shown in Figure 2.

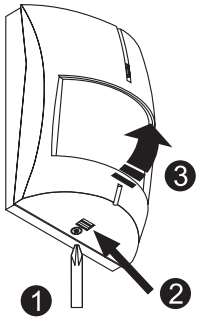

Figure 2. The way to open the housing.

2. Remove the electronics board.
3. Make suitable holes for screws and cable in the rear housing panel.
4. Pass the cable through the prepared opening.
5. Secure the rear housing panel to the included holder or the wall.

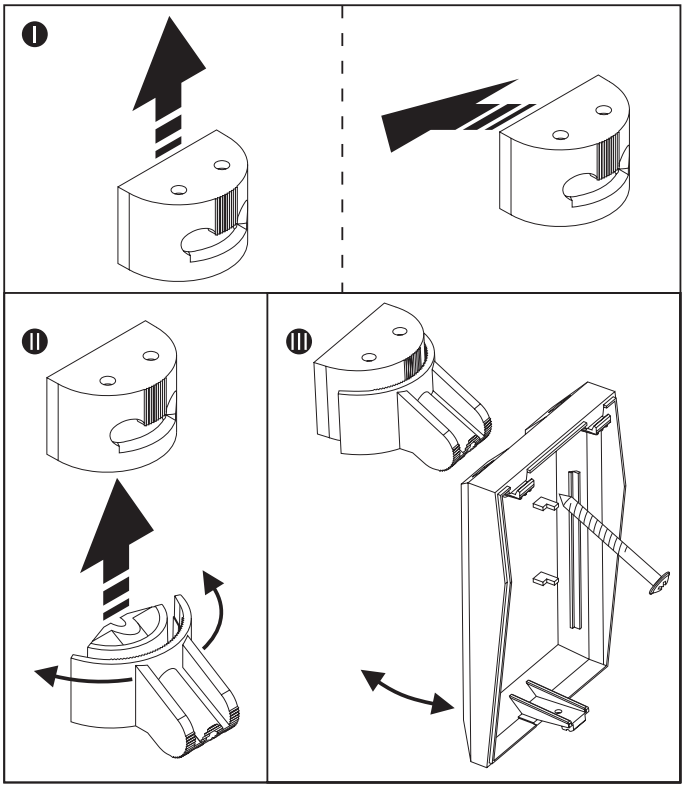

Figure 3. Mounting the detector on holder.

6. Fasten the electronics board, taking into account the height at which the detector is mounted (see Table 1 and Figure 4).

Mounting height	Graduation position against housing index
above 2.4m	middle graduation mark above the index
2.4m	**middle graduation mark aligned with the index**
below 2.4m	middle graduation mark below the index

Table 1. Positioning the pyroelctric element against the lens.

Note: *If the detector is installed at a height above 2.4m, it is recommended that the holder be used, and the detector be mounted in inclined position.*

7. Connect the wires to corresponding terminals.
8. Using potentiometer, determine sensitivity of the detector.
9. Close the detector housing.

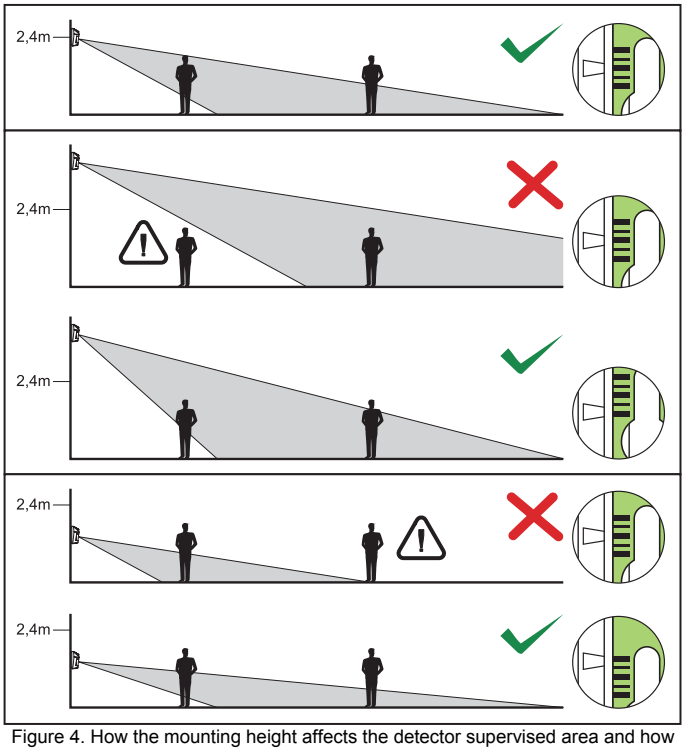

Figure 4. How the mounting height affects the detector supervised area and how the pyroelectric element should be positioned against the lens to optimize the area.

Start-up

1. Turn power supply on (the LED will start blinking, which indicates the starting state).
2. When the detector enters the ready state (the LED stops blinking), carry out a test for the detector range, i.e. check that a movement within the supervised area will activate the alarm relay or cause the LED light up. During the test, the LED ON/OFF pins must be shorted, or the LED input must be shorted to the common ground.
3. If necessary, change the detector sensitivity.

Technical data

Nominal supply voltage (±15%)	12V DC
Average current consumption (±10%)	11mA
Violation signaling time	2s
Operating temperature range	-10...+55°C
Detectable motion speed	up to 3 m/s
Dimensions	62x96x48mm
Recommended mounting height	2.4m

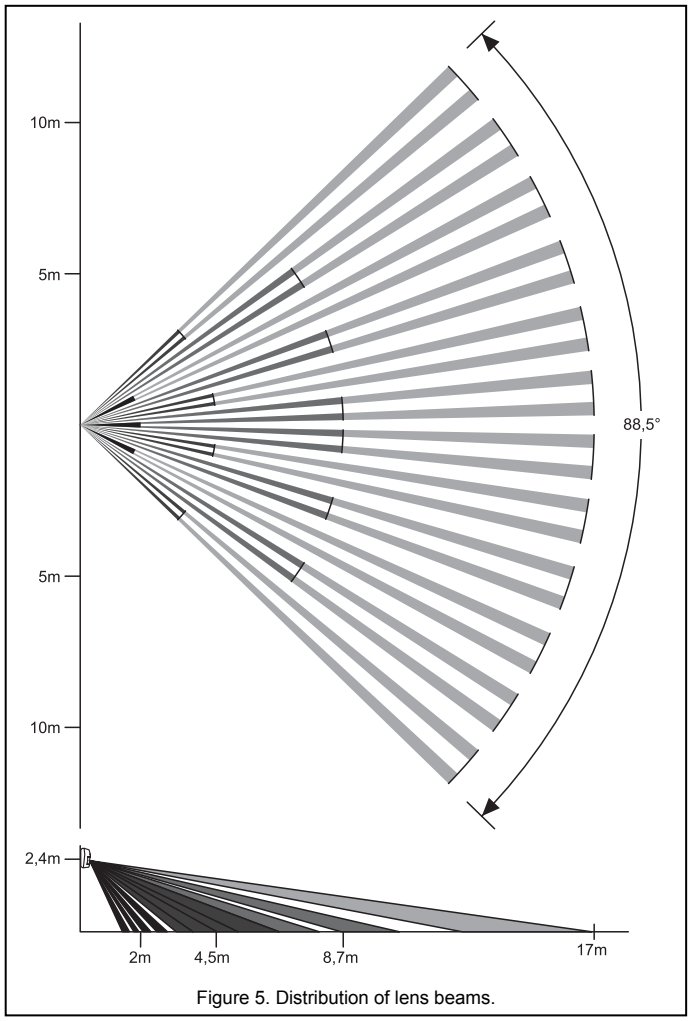

Figure 5. Distribution of lens beams.

Note: *Effective range of the detector may differ from that shown in the drawing.*

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