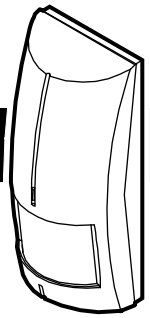
SILVER 9.35

DIGITAL DUAL TECHNOLOGY MOTION DETECTOR



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1. Features

- Combined PIR and microwave technology.
- Digital motion detection algorithm.
- Digital temperature compensation.
- Selectable operation modes: basic or advanced.
- Microwave based anti-mask feature.
- Remote LED enable/disable.
- Alarm memory.
- Supervision of detector signal path and supply voltage.
- Capability of separate sensor testing.
- Tamper protection against enclosure opening.

2. Specifications

Supply voltage	12 V DC ±15%
Standby current consumption	18 mA
Maximum current consumption	25 mA
Relay contacts rating (resistive load)	40 mA / 16 V DC
Microwave frequency	9.35 GHz
Detectable speed	0.3...3 m/s
Alarm signaling time	2 s
Security grade according to EN50131-2-4	Grade 2
Standards complied with	EN50131-1, EN50131-2-4, EN50130-4, EN50130-5
Environmental class according to EN50130-5	II
Operating temperature range	-30...+55 °C
Maximum humidity	93±3%
Dimensions	62 x 136 x 49 mm
Recommended installation height	2.4 m
Weight	126 g

The declaration of conformity may be consulted at www.satel.eu/ce

3. Operation modes

Basic – the detector indicates an alarm if both sensors detect motion within a time period shorter than 3 seconds.

Advanced – the detector indicates an alarm if:

- both sensors detect motion within a time period shorter than 3 seconds;
- within a time interval less than 3 seconds, the microwave sensor detects motion and the PIR sensor detects some changes in coverage area, insufficient however to be recognized as motion;
- within 15 minutes' period, the microwave sensor detects motion 16 times, but PIR sensor does not detect any changes in coverage area.

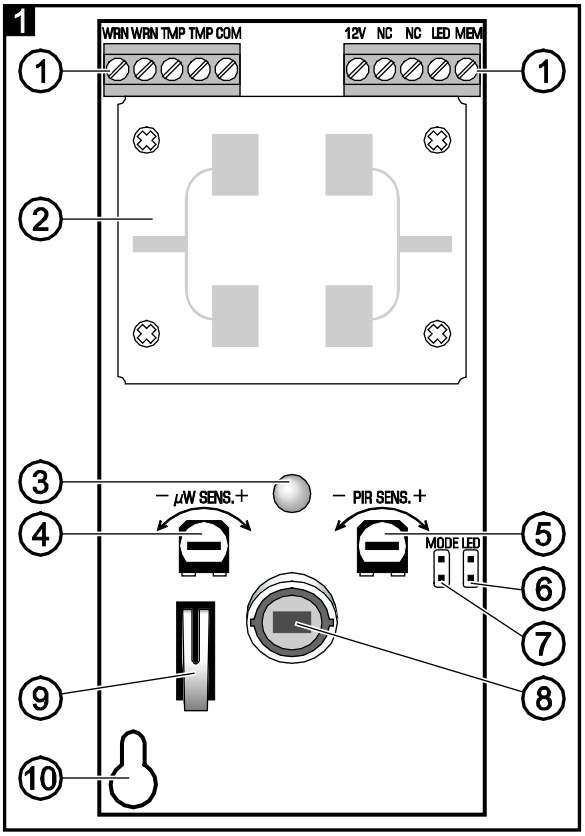
4. Anti-mask feature

Detection by the microwave sensor of an object moving at a distance of 10-20 centimeters from the detector is interpreted as an attempt to mask the detector and results in opening the anti-masking relay contacts for two seconds. Objects permeable to microwaves, but isolating the infrared radiation are not detected by the anti-masking feature.

5. Supervision features

In the event of the signal path failure or the voltage drop below 9 V (± 5%) for more than 2 seconds, the detector will signal a trouble. The trouble is indicated by the activation of alarm relay and the steady red light of LED indicator. The trouble signaling will continue as long as the trouble persists.

6. Electronics board



(1) terminals:

- **WRN** - anti-masking relay (NC).
- **TMP** - tamper contact (NC).
- **COM** - common ground.
- **12V** - power supply input.
- **NC** - alarm relay (NC).
- **LED** - remote LED control (the LED pins must be open). The LED is enabled when the input is short-circuited to common ground. To control the input, you can use the OC type output of the control panel, programmed e.g. as SERVICE MODE INDICATOR or BI SWITCH.
- **MEM** - alarm memory control. When the input is short-circuited to common ground and the detector signals alarm, the LED will indicate the alarm memory. Disconnecting the input from common ground will not clear the alarm memory. Signaling the alarm memory will continue until the input is shorted to common ground again. To control the input, you can use the OC type output of the control panel, programmed e.g. as ARM STATUS.

(2) microwave sensor.

(3) two-color LED to indicate:

- alarm – LED lit up red for 2 seconds;
- motion detection by one of the sensors – LED lit up green for 2 seconds;
- warm-up – LED flashing alternately red and green;
- trouble – LED lit up red.

(4) potentiometer for sensitivity adjustment of the microwave sensor. Please bear in mind that microwaves can penetrate e.g. glass, gypsum walls, non-metallic doors, etc.

(5) potentiometer for sensitivity adjustment of the PIR sensor.

(6) LED pins – enable/disable LED indicator. The LED indicator is enabled when the pins are shorted (remote LED control is not possible then).

⑦ MODE pins – selecting the detector operation mode:
- pins shorted – basic mode;
- pins open – advanced mode.

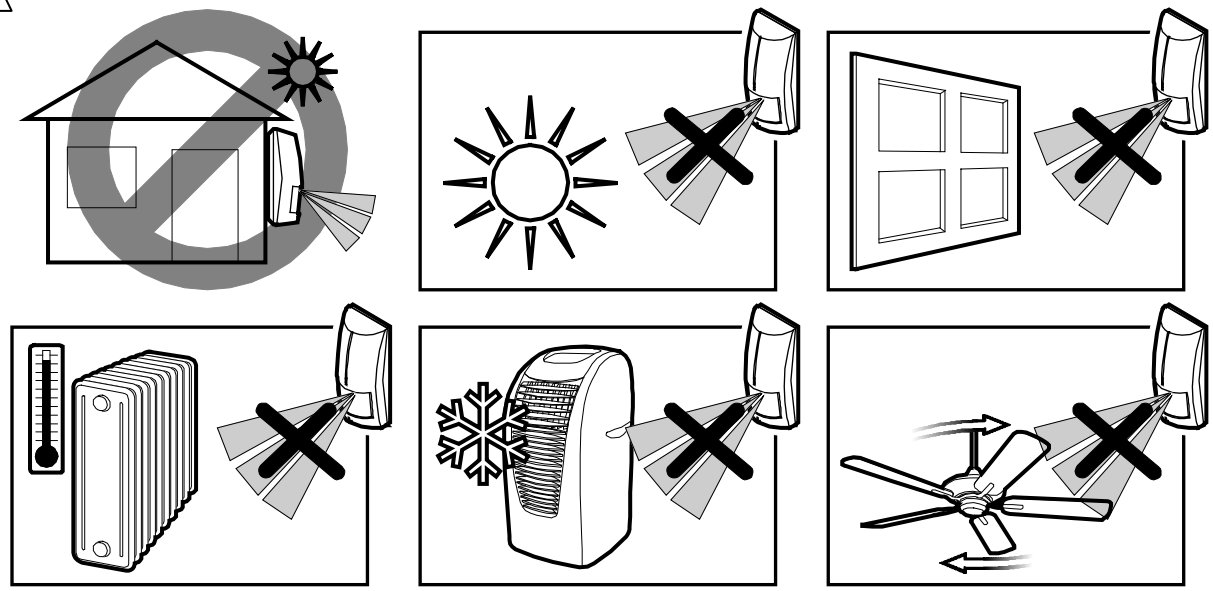
⑧ dual pyroelectric sensor.

⑨ tamper contact.

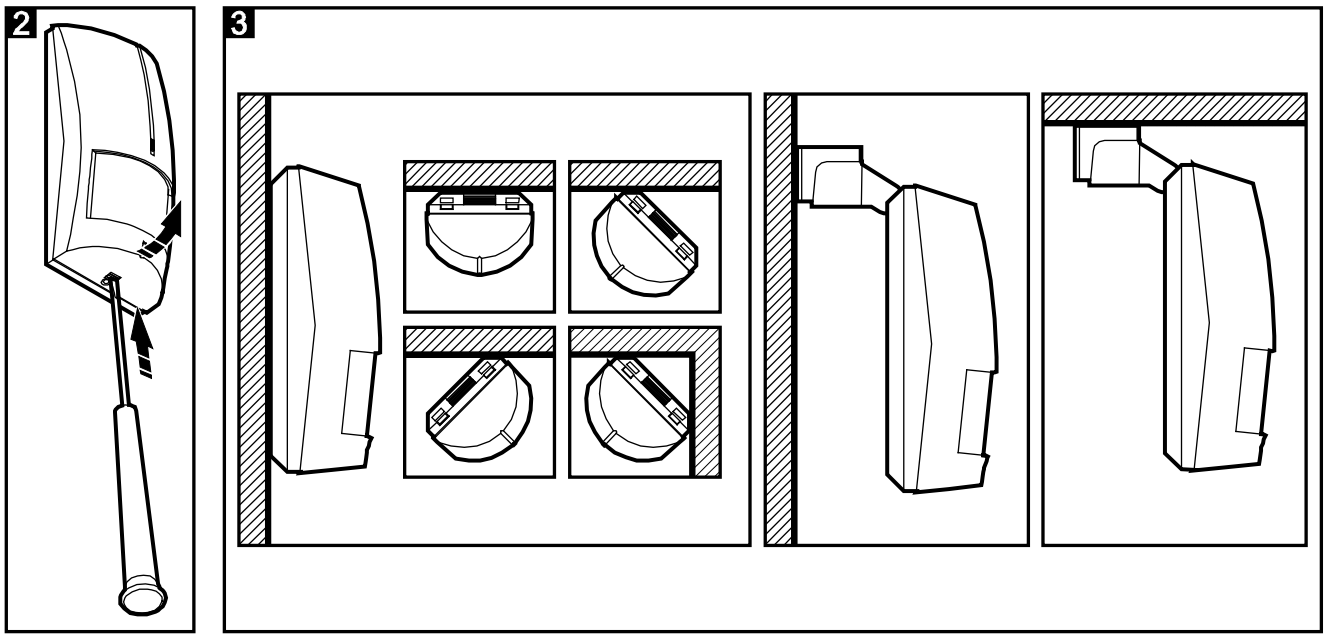
⑩ fixing screw hole.

7. Installation

Do not touch the pyroelectric sensor, so as not to soil it.

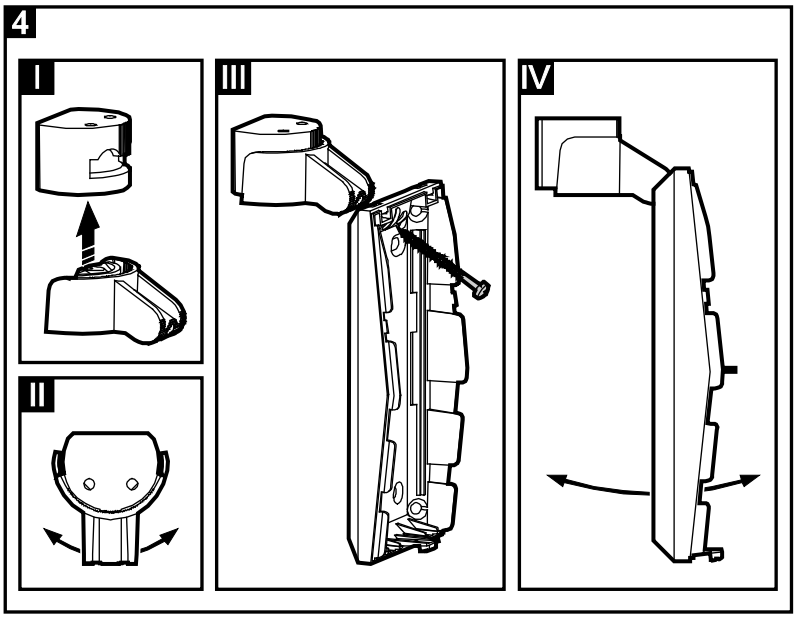


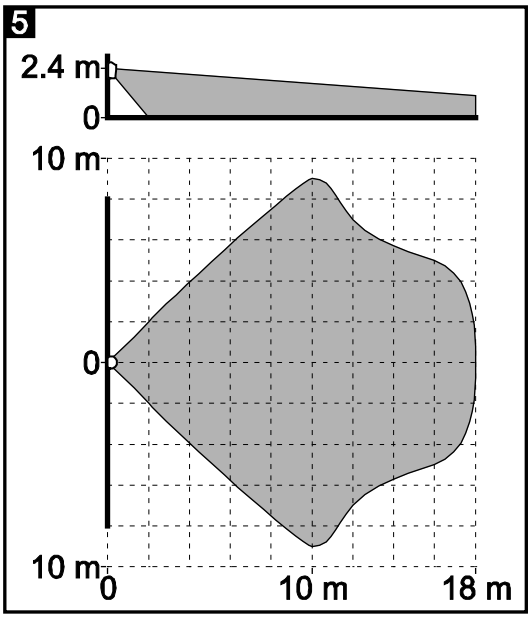
1. Open the enclosure (Fig. 2).
2. Remove the electronics board.
3. Make the openings for screws and cable in the enclosure base.
4. Pass the cable through the prepared opening.
5. Fix the enclosure base to the wall or to the attached bracket (Fig. 3 and 4).



6. Fasten the electronics board.

7. Connect the wires to the corresponding terminals.
8. Using potentiometers and jumpers, set the working parameters of the detector.
9. Close the detector enclosure.





8. Start-up and walk test

1. Turn the power on. The detector warm-up lasts 30 seconds. During that time, the detector stabilizes and the LED indicator (if enabled) is alternately flashing red and green.
2. After completion of the warm-up, check that motion within the coverage area (Fig. 5) will activate the alarm relay and the LED indicator will light up red.

9. Separate testing of sensors

To test the microwave sensor, do the following:

1. Before you turn the power on, put the jumper on the MODE pins.
2. Turn the power on and, during the warm-up, remove the jumper from the MODE pins. After completion of the warm-up, the LED should flash green every 3 seconds.
3. Check that movement within the coverage area will activate the alarm relay and the LED indicator will light up green.

To test the PIR sensor, do the following:

1. Before you turn the power on, remove the jumper from the MODE pins.
2. Turn the power on and, during the warm-up, put the jumper on the MODE pins. After completion of the warm-up, the LED should flash red every 3 seconds.
3. Check that movement within the coverage area will activate the alarm relay and the LED indicator will light up red.

Note: *The sensor separate testing mode is automatically exited after 20 minutes.*

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