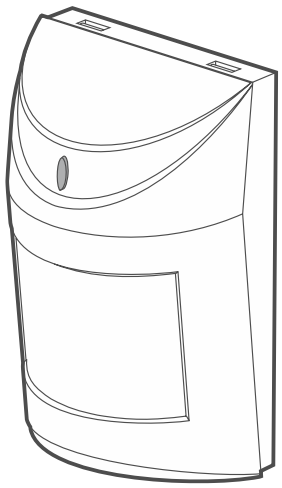
Digital passive infrared detector

AQUA S

Firmware version 4.00

EN



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IMPORTANT

The device should be installed by qualified personnel.

Prior to installation, please read carefully this manual.

Changes, modifications or repairs not authorized by the manufacturer shall void your rights under the warranty.

SATEL aims to continually improve the quality of its products, which may result in changes in their technical specifications and software. Current information about the changes being introduced is available on our website.
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The declaration of conformity may be consulted at www.satel.pl/ce

The following symbols may be used in this manual:

 - note,

 - caution.

CONTENTS

The AQUA S detector detects motion in the protected area. This manual applies to the detector with electronics version 4.2.

1. Features

- Motion detection with passive infrared sensor (PIR).
- Selectable detection sensitivity.
- Digital motion detection algorithm.
- Digital temperature compensation.
- Wide-angle lens.
- Ability to replace the lens with a curtain or long-range one.
- Built-in end-of-line resistors (2EOL: 2 x 1.1 kΩ).
- LED indicator.
- Supervision of supply voltage.
- Tamper protection against enclosure opening.
- Adjustable mounting bracket included.

2. Specifications

Power supply ..... 12...24 VAC/DC -10% / +15%
Standby current consumption
AC power ..... 11.5 mA
DC power ..... 5 mA
Maximum current consumption
AC power ..... 12.5 mA
DC power ..... 6 mA
EOL resistors ..... 2 x 1.1 kΩ
Outputs
alarm (NC relay, resistive load) ..... 40 mA / 27 VAC/DC
tamper (NC) ..... 100 mA / 27 VAC/DC
Relay contact resistance ..... 26 Ω
Alarm signaling period ..... 2 s
Detectable speed ..... 0.3...3 m/s
Warm-up period ..... 30 s
Recommended installation height ..... 2.4 m
Coverage area (installation at 2.4 m, EWA lens) ..... 15 m x 16 m, 108°
Complied with standards ..... EN 50130-5, EN 50131-1, EN 50130-4
Environmental class according to EN 50130-5 II
Operating temperature range ..... -10...+55 °C
Maximum humidity ..... 93±3%
Dimensions ..... 63 x 96 x 49 mm
Weight ..... 92 g

3. Description

The alarm output will turn on for 2 seconds when the infrared sensor (PIR) detects motion.

Supply voltage control

When the voltage drops below 9 V (± 5%) for more than 2 seconds, the detector will indicate a trouble. The trouble is indicated by the alarm output and the LED turning on. Signaling will continue as long as the trouble exists.

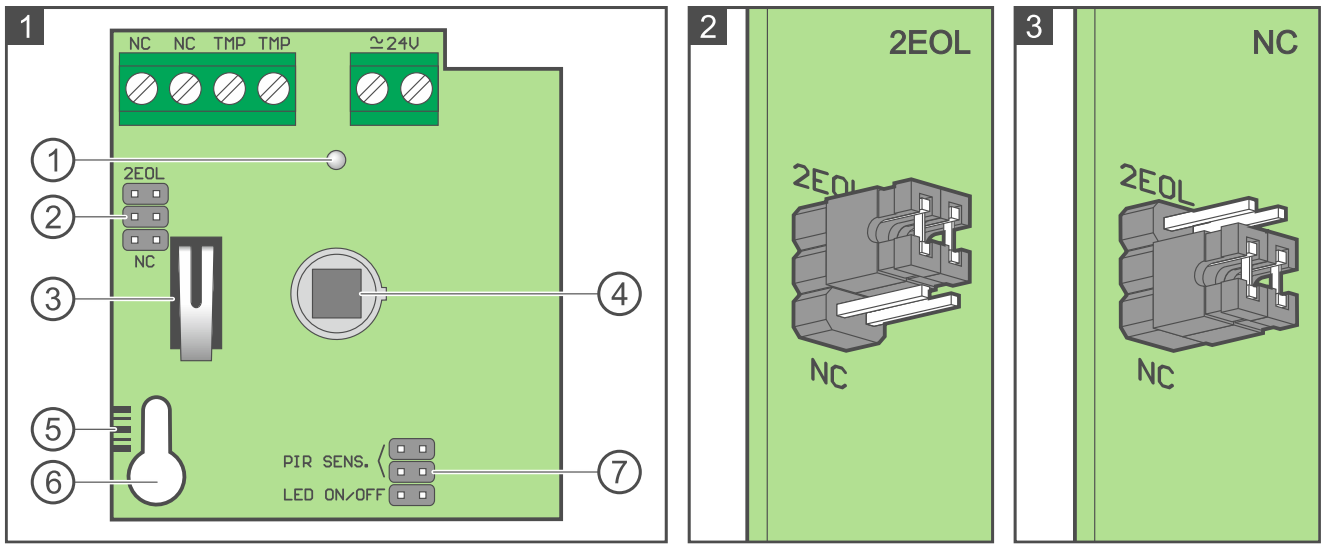
LED indicator

The LED indicates:

- warm-up – blinking rapidly for 30 seconds,
- alarm – ON for 2 seconds,
- trouble (low supply voltage) – ON for entire duration of the trouble.

4. Electronics board

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



(1) red LED indicator.

(2) pins for configuration of the detector outputs. Available settings are shown in the figures:

2 – built-in resistors are used – connect the detector outputs as shown in Fig. 11.

3 – built-in resistors are not used – connect the detector outputs as shown in Fig. 12.

(3) tamper switch (NC).

(4) PIR sensor (dual element pyrosensor).

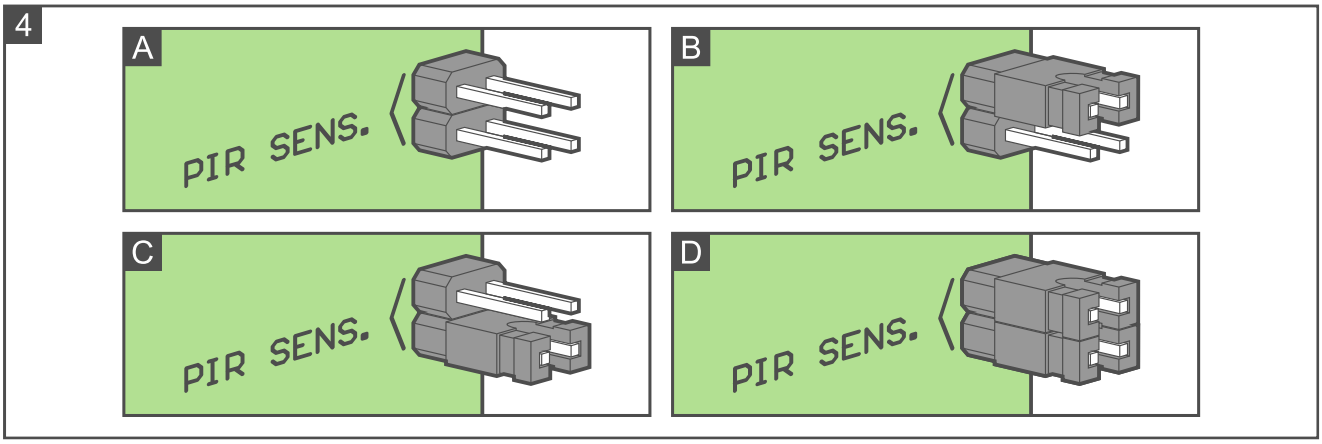
(5) scale for positioning of pyroelectric sensor against the lens (see: Fig. 10).

(6) fixing screw hole.

(7) detector configuration pins:

PIR SENS. – selecting the PIR sensor detection sensitivity – see: Fig. 4 (A – low sensitivity, B and C – medium sensitivity, D – high sensitivity).

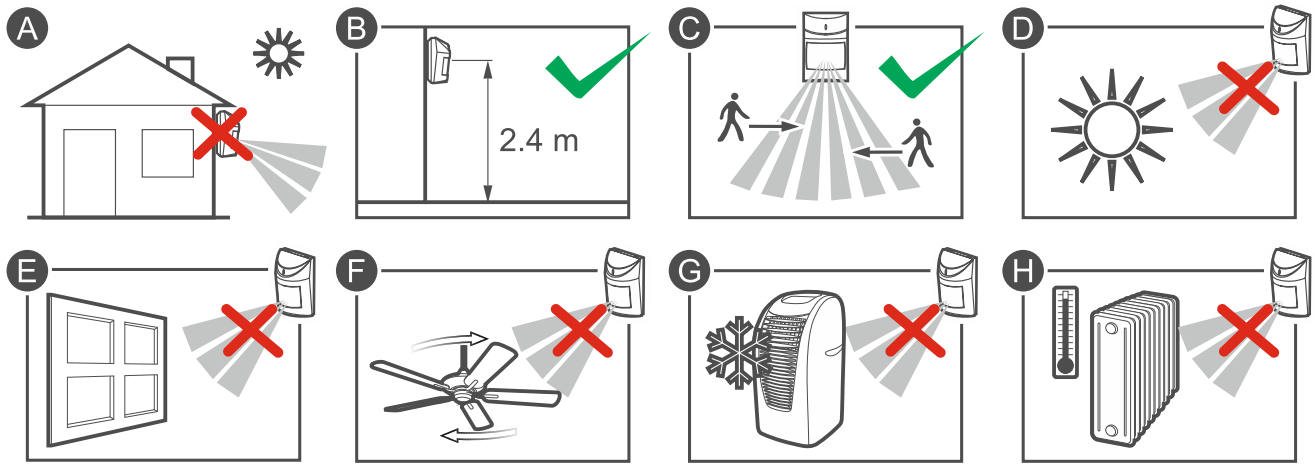
LED ON/OFF – enabling/disabling the LED (jumper on – LED enabled; jumper off – LED disabled).



Terminals

NC - alarm output (NC relay).
TMP - tamper output (NC).
⎓24V - 12...24 VAC/DC power input.

5. Selecting a mounting location



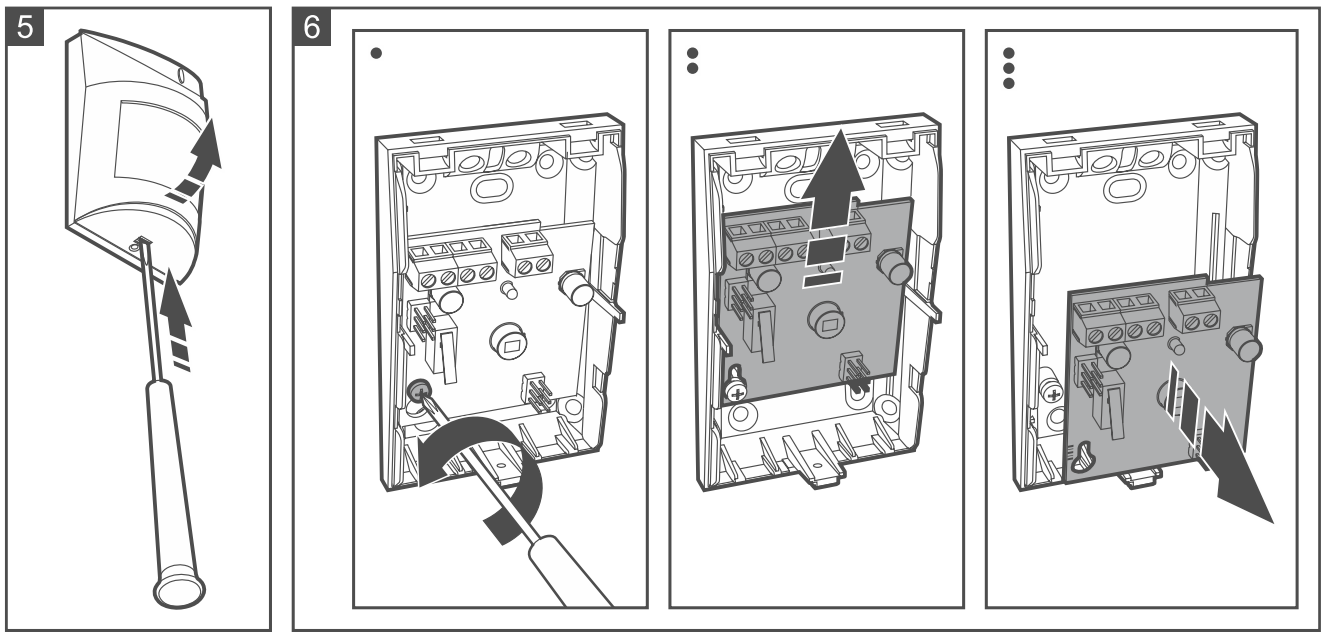
- Do not install the detector outdoors (A).
- Install the detector at the recommended height (B).
- When choosing the installation location, keep in mind that the detector performance will be the best where the expected direction of the intruder movement will be across the coverage pattern (C).
- Do not install the detector in places where it will be exposed to direct sunlight (D) or light reflected from other objects (E).
- Do not point the detector towards fans (F), air conditioners (G) or heat sources (H).

6. Installation

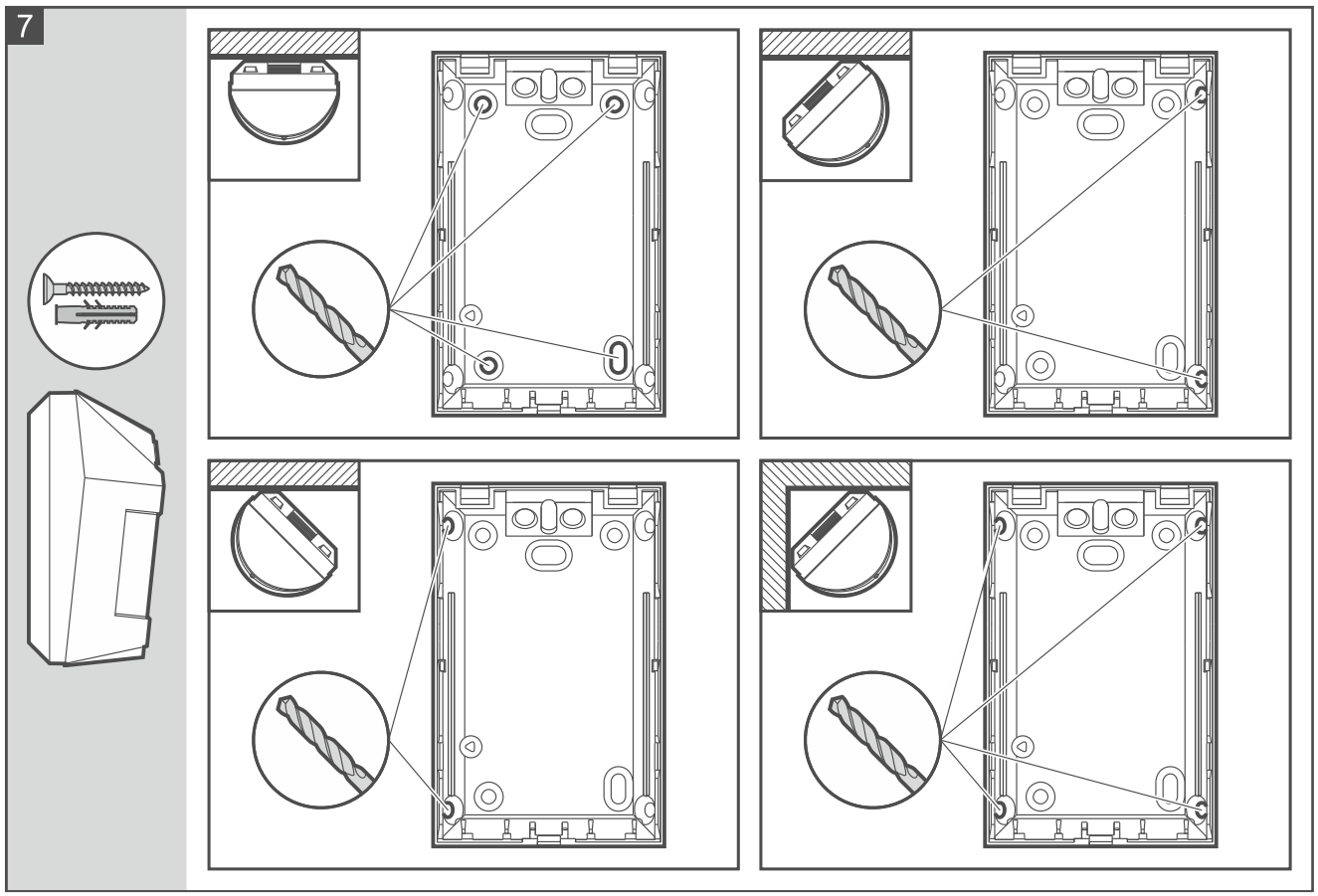
Disconnect power before making any electrical connections.

The detector is designed for indoor installation.

1. Open the enclosure (Fig. 5).
2. Remove the electronics board (Fig. 6).



3. Make the openings for screws (Fig. 7 and 8) and cable (Fig. 9) in the enclosure base.
4. Pass the cable through the prepared opening.



5. Secure the enclosure base to the wall (Fig. 7) or a bracket fastened with screws to the wall or ceiling (Fig. 8). The wall plugs (anchors) delivered with the device are intended for concrete, brick, etc. For other types of surface (drywall, styrofoam), use the appropriately selected wall plugs.

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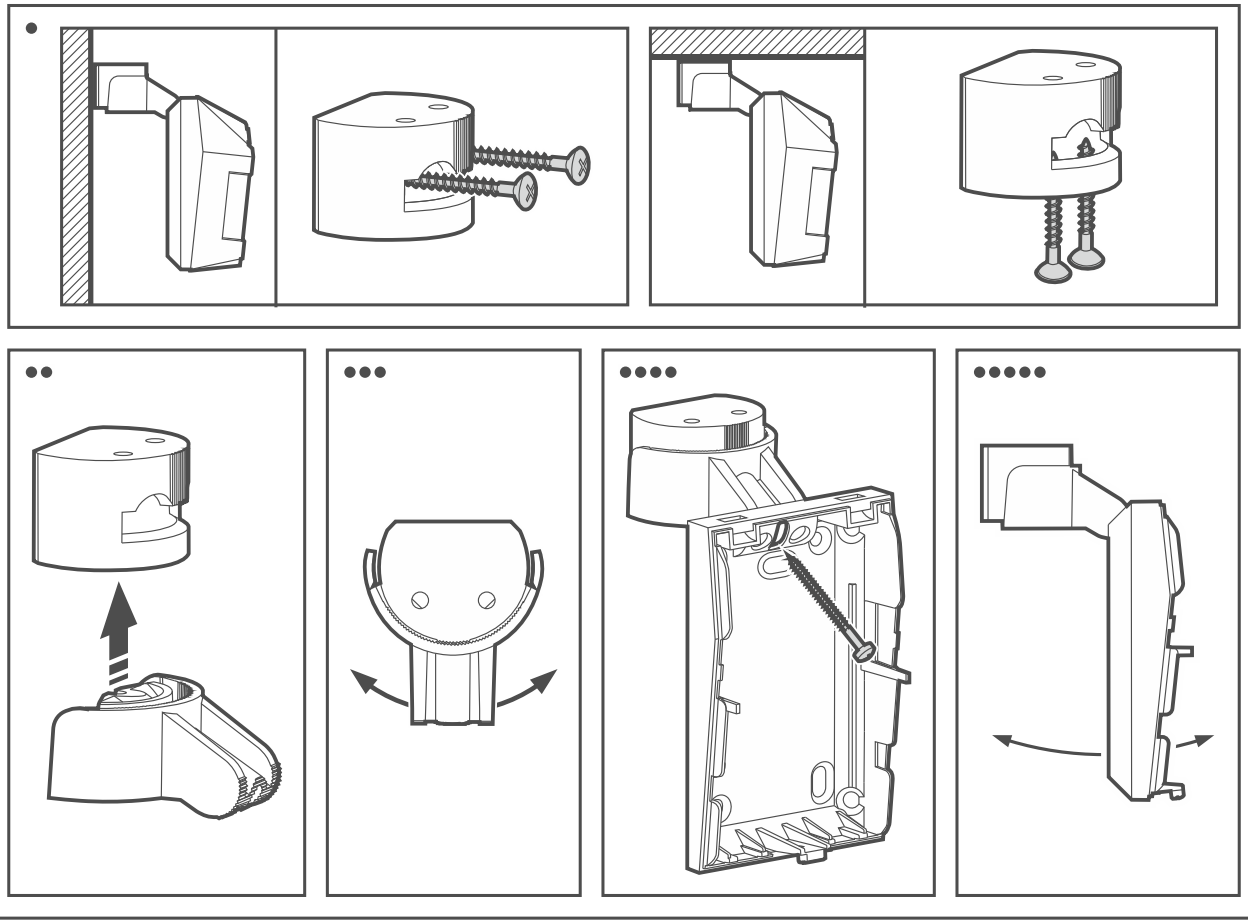

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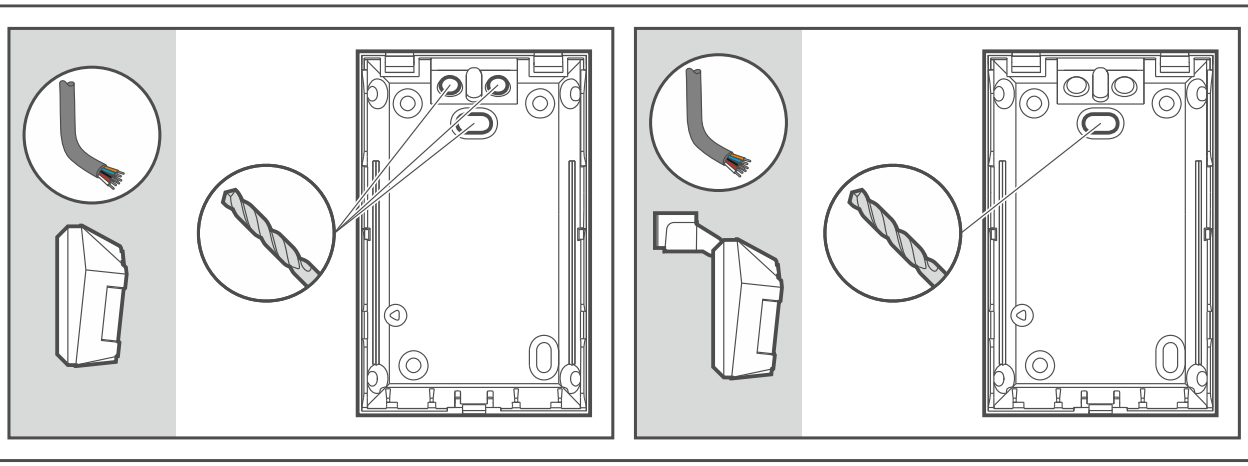
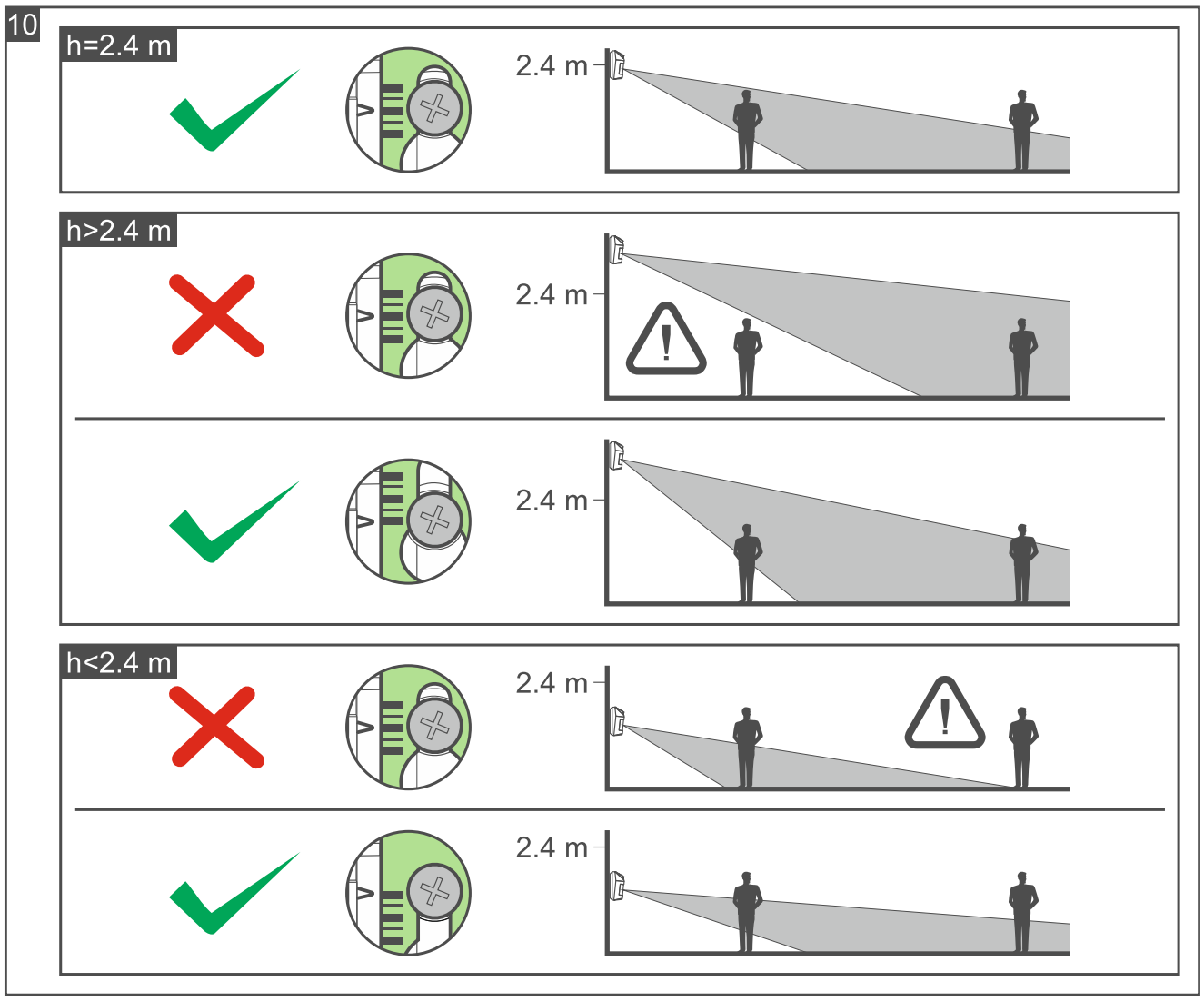
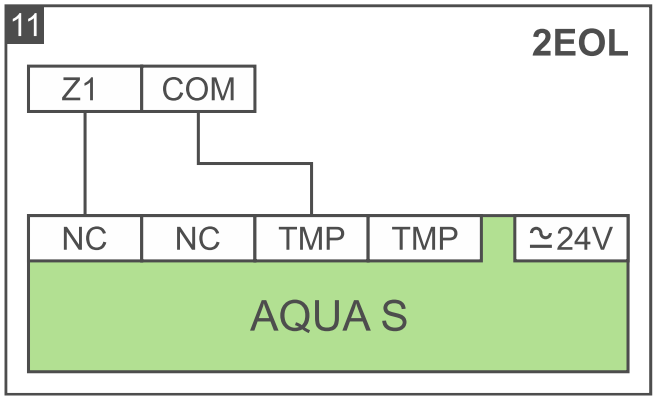
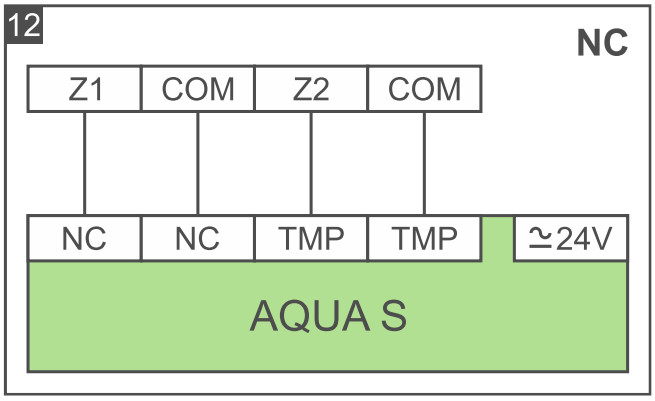


6. Fasten the electronics board. The scale next to the mounting screw hole facilitates positioning of the electronics board, depending on the detector installation height (Fig. 10).
7. Connect the wires to the corresponding terminals.
8. Configure the detector settings.
9. Replace the cover.







7. Start-up and walk test

The LED indicator should be enabled during the walk test.

1. Power on the detector. The LED will be flashing for 30 seconds to indicate warm-up of the detector.
2. When the LED stops flashing, check if moving within the detector coverage area will make the LED to light up. Fig. 13 shows the maximum detection range of a detector mounted at a height of 2.4 m.
3. If needed, readjust the sensitivity (Fig. 4) and check the detector operation.

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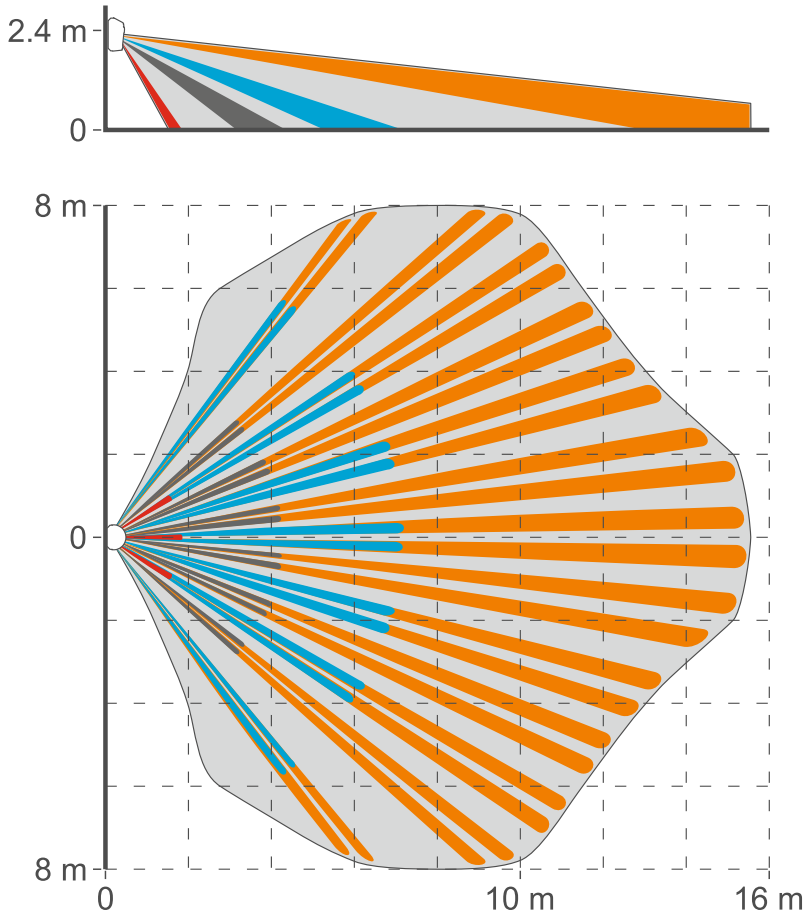

Fig. 13 shows the detection range of the AQUA S detector with the factory-installed wide-angle EWA lens. You can install a different lens. The lenses offered by SATEL:

- *LR – long range lens with access zone monitoring: range 30 m; main beam 3 m wide at the end of range.*
- *VB – vertical barrier array: range 22.5 m; beam 2.2 m wide at the end of range.*