

DA-5

Request to Entry and Exit PIR Detector



Installation Instructions

1. INTRODUCTION

The DA-5 is a PIR motion detector designed for use with access control and automatic door opening systems. It can be installed at various heights on the wall above the door (Figure 1) or on the ceiling (Figure 2), with its detection pattern directed at the floor in front of the door. Upon detection of motion, the on-board changeover relay energizes for a predetermined period. The relay pull-in time is adjustable between 1 and 60 seconds with an on-board timer control.

Operating power for the DA-5 may be supplied from a 12 or 24V AC or DC source. A jumper is provided on the printed circuit board for selecting the input voltage.

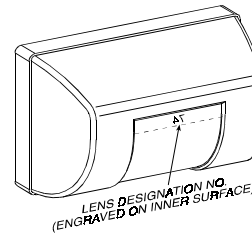


Figure 1. Wall Mount Configuration

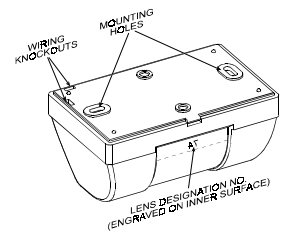


Figure 2. Ceiling Mount Configuration

2. SPECIFICATIONS

OPTICAL

Detection Lens: Lens No. 74.

Detection Zones: 3 zones (A, B and C). 7 beams per zone.

ELECTRICAL

Input Voltage: 12/24VAC/DC (protected against reverse polarity)

Current Drain:

@ 12 VDC: 7mA standby, 50mA max; 14mA standby, 65mA max.

@ 24 VDC: 7mA standby, 50mA max; 15mA standby, 80mA max.

Output Relay Pull-in Period: 1 to 60 seconds, adjustable.

Relay Switching Capability: 2 A max. at 28 V AC or DC.

Detector Type: Dual-element pyroelectric sensor.

MOUNTING

Alternatives: Wall or ceiling mounting above the door. Surface mountable on top of a standard single-gang electrical switchbox.

Height: 2.15 - 3 m (7 - 10 ft)

ENVIRONMENTAL

Operating Temperature: -10°C to 50°C (14°F to 122°F)

Storage Temperature: -20°C to 60°C (-4°F to 140°F)

Intended Use: Indoors or water/rain-protected outdoors areas.

PHYSICAL

Size: 105 x 65 x 53 mm (4-1/10 x 2-1/2 x 2.1 in).

Weight: 95 gr (3.3 oz).

Color: White.

3. INSTALLATION

3.1 Construction Details

A. General Data

The unit consists of a plastic base to which the electronic module is fastened, and a cover assembly with a curved surface to which the milky white lens is attached. The cover must be removed for:

- Installation and wiring
- Adjusting the timer
- Selecting the input voltage
- Inverting the lens for ceiling installation.

B. Lens Description

The DA-5 uses lens No. 74 that has 3 arrays of lens segments (Fig 3). Each array provides a detection zone, and all 3 zones combine to form the entire detection pattern (see Fig. 5 - 8).

Any detection zone or lens segment may be masked (para. 3.8). The lens is factory set as required for wall mounting, but may be easily inverted for ceiling mounting (para. 3.4).

C. Cover Removal

To separate the cover from the base, insert a screwdriver blade into the slot provided between the cover and the base. Twist the screwdriver slightly or move the handle down. The cover will swing outward, ready for removal by hand.

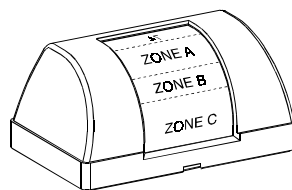


Figure 3. Lens Division into Detection Zones

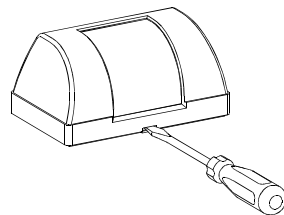


Figure 4. Removing the Cover

3.2 Detection Patterns

A. Over-the-Door Wall Mounting

The DA-5 may be wall-mounted at various heights above the door, centered with respect to the doorframe. Increasing the mounting height will cause the coverage pattern to expand, as demonstrated in Fig. 5 - 8. Note that detection zones B and C partially overlap.

B. Ceiling Mounting

If the DA-5 is mounted on the ceiling, the detection patterns will resemble those obtained with the unit mounted at the corresponding height on the wall.

3.3 Ceiling Installation

Ceiling mounting, requires the lens be inverted in its window.

The lens is held in place by a flexible plastic retainer. The lens number 74 is engraved on the inner (grooved) surface of the lens near the top rim (see Figure 9).

To invert the lens, proceed as follows:

- Hold the cover assembly in the palm of your hand.
- Seize the flat extractor tab (part of the lens retainer) between two fingers of your other hand.
- Press the extractor tab slightly down and pull it toward the opposite side of the cover. This will dislodge the lens retainer, which can then be removed.
- Push the lens carefully out. Invert it (180° rotation) and place it again in the lens window. The lens number should now be near the 4 small plastic stoppers. Verify that the lens is snug against the lens window frame.
- Insert the straight, smooth edge of the lens retainer into the deep end of the lens window. Then press the extractor tab down until the near edge of the lens retainer snaps into place.

cover (para. 3.1C). Two elongated holes are available in the base for wall mounting (Fig. 10).

Note: The spacing between the mounting holes permits installation of the DA-5 on a standard single-gang electrical switchbox.

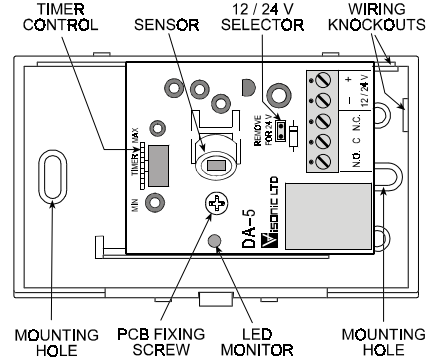


Figure 10. Components Layout

3.5 Wiring

The wiring configuration depends on the door control circuit in use. The output relay contacts of the DA-5 can switch currents up to 2A at 28vAC or DC. Refer to Fig. 11 and connect as follows:

A. Wire the output relay's C and N.O. (or C and N.C.) contacts to switch the door control device on and off, as required for the door control circuit in use.

Warning! Verify that the input voltage jumper is positioned correctly. For 12V operation, install it across the two pins. If the power source is 24 V, remove the jumper and install it on a single pin to prevent it from getting lost.

B. Connect the power supply leads to the 12/24 V (+) and (-) terminals. The unit accepts both AC and DC inputs. When using an AC supply, disregard the (+) and (-) markings.

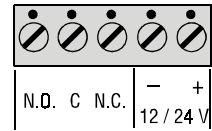


Figure 11. Terminal Block.

C. Seal all wire entry holes with RTV (clear silicone sealant) to prevent insects and air currents from entering the unit.

3.6 Timer Adjustment

The relay timer is adjustable from 1 second to 1 minute, as required for triggering the door control mechanism. Rotate the knob towards MIN to decrease the relay pull-in time, and towards MAX to increase the relay pull in time. The results of your adjustment can be verified by watching the on-board LED, which will be lit as long as the output relay is energized.

Note: for an accurate timer adjustment test, the cover must be installed.

3.7 Testing

- Mount the cover by pushing it onto the base until it snaps into place with a click.
- Apply power to the DA-5 and wait 5 minutes for the unit to warm up and stabilize before testing.
- Test the DA-5 by walking towards the door through the detectors field of view. Verify that the LED lights and the relay pulls in each time the detection pattern is crossed. If operation is erratic, readjust the timer control of the DA-5.
- If the coverage pattern is too far from the door, you can mask the farthest beam array (para. 3.6).

3.8 Beam Masking

Ordinary opaque masking tape can be used to mask individual lens segments of any one of the three detection zones, or an entire zone (Fig. 3). The masking tape will prevent the infrared energy from reaching the sensor through the blocked segment.

Cut a masking tape patch that fits the dimensions of the lens area you wish to block. Apply it accurately to the inner (grooved) surface of the appropriate segment(s). In some cases, more than one layer of the masking tape may be required to completely block the infrared energy.

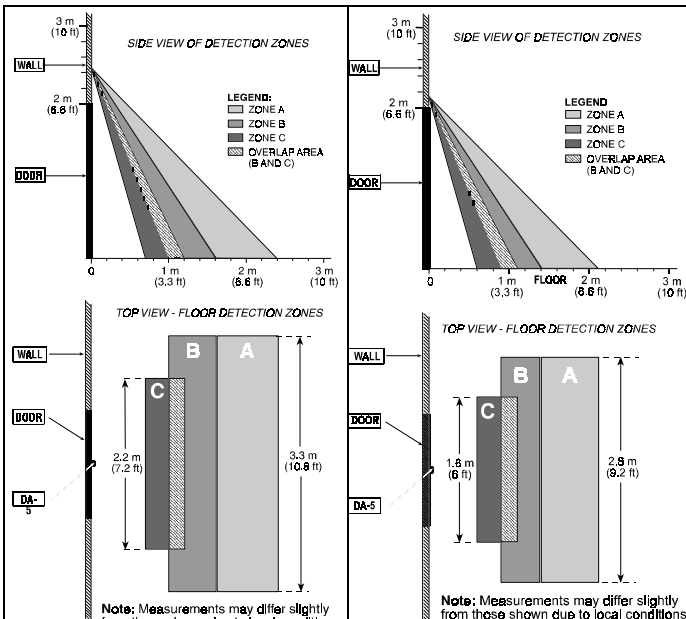


Figure 5. Mounting Height -2.45 m (8 ft)

Figure 6. Mounting Height -2.15m (7 ft)

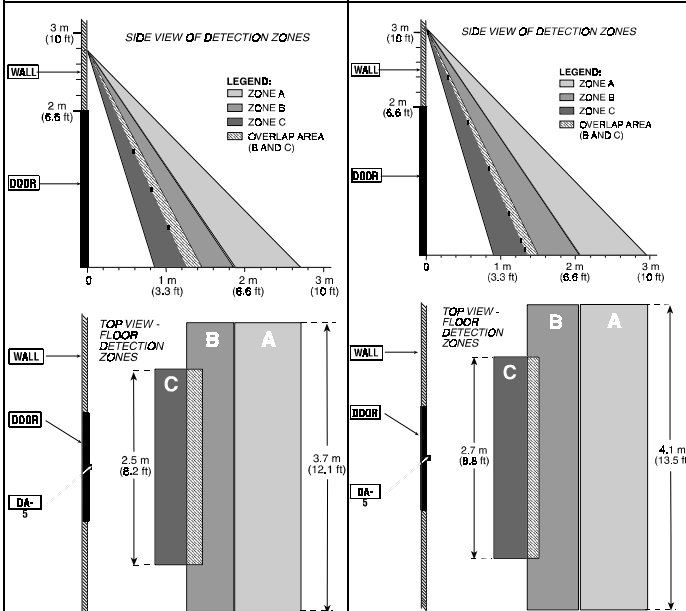


Figure 7. Mounting Height-2.78m (9 ft)

Figure 8. Mounting Height-3.05m (10 ft)

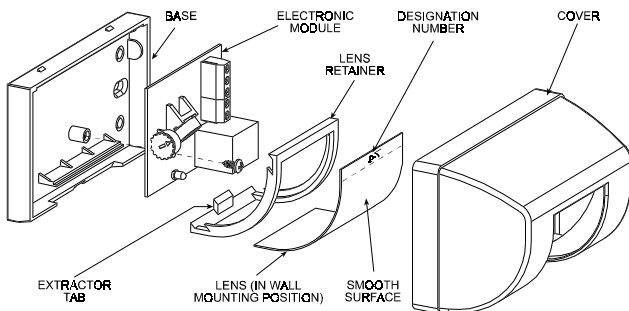


Figure 9. DA-5 Exploded View

3.4 Installation

The DA-5 is suitable for indoor or water/rain protected outdoor installations. The minimum height for wall installation is 2.15m (7ft) slightly above the door frame's center. Remove the DA-5

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Warning: The user should follow the installation and operation instructions and among other things test the Product and the whole system at least once a week. For various reasons, including, but not limited to, changes in environmental conditions, electric or electronic disruptions and tampering, the Product may not perform as expected. The user is advised to take all necessary precautions for his /her safety and the protection of his/her property.

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