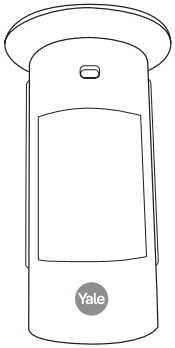
# Outdoor Motion Detector Manual

AC-OPIR

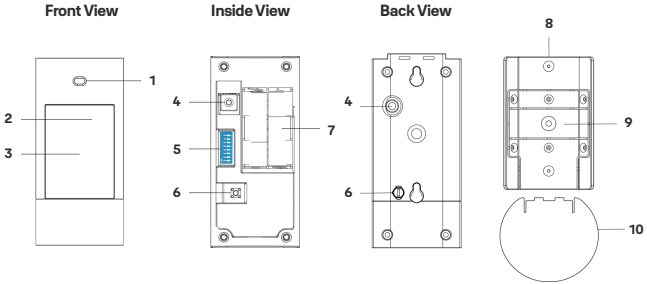



The AC-OPIR, a battery operated Outdoor Motion Detector, allows economical and effortless outdoor installation while providing exceptional detection capabilities.
The built-in sensor with detection sensitivity eliminates the chance of false alarms caused by small animals or other outdoor disturbances.

The anti-masking feature allows for detection of attempts to blind the detector by placing objects in its field of view.

In addition, the adjustable Detection Range gives an effective zoning solution for every installation environment, providing peace of mind whilst protecting your premises.

# Identifying the Parts




1. **Digital Proximity Detector**
   The detector is used to detect any masking (blocking) attempt by an intruder.
2. **LED indicator**
   The LED indicator is used to indicate the system status.
3. **PIR Sensor**
   The sensor is intended to detect moving objects.
4. **Test Button**
   The Test button is used for testing the radio performance and for learning purpose.
5. **DIP Switch Block**
   There are 8 DIP Switches for setting function & detection sensitivity levels.
6. **Tamper Switch**
   AC-OPIR is protected by the tamper switch against any unauthorised removal from the mounting plate or mounting location.
7. **Battery Compartment**
8. **Mounting Plate**

9. **Breakaway Area**
   The Breakaway Area has 6 knockouts (2 for surface mounting and 4 for corner mounting) where plastic is thinner for screw mounting. When the Detector is forcibly removed from mounting location, the Break Away area will detach and activate the tamper alarm.
10. **Protective Shield**
    The protective shield protects the Digital Proximity Detector from rain.

**LED Indicator**

In Normal operation mode, the LED Indicator remains off except:

- When the Outdoor Motion Detector is in low battery condition, each time it transmits a detected movement, the LED will flash for 6 times.
- When the Tamper Switch is triggered, the LED will flash for 6 times to indicate it is transmitting "Tamper" signal.
- When the Tamper condition persists, each time it transmits a detected movement, the LED will flash for 6 times.
- In Test mode, the LED will flash for 6 times whenever a movement is detected.

If the LED flashes to indicate signal transmission, it will flash twice rapidly upon receiving acknowledgement from the hub.

**Test Mode**

The Outdoor Motion Detector can be put into Test mode for 10 minutes by pressing the Test button once. In Test mode, sleep timer is disabled and LED indicator will light up for two seconds whenever a movement is detected. The Outdoor Motion Detector will automatically exit Test Mode after 10 minutes, and return to normal mode.

To put the Outdoor Motion Detector into constant Test mode, please adjust DIP switch 1 (please refer to DIP Switch Position Table).

**Battery**

- The Outdoor Motion Detector uses two AA lithium batteries as its power source.
- The Outdoor Motion Detector features low battery voltage detection. When low battery is detected, a low battery signal will be sent to the Sync hub along with regular signal transmissions for the Sync hub to display the status accordingly.

**To Change Battery:**

Step 1: Navigate the Sync hub into Programming mode using the Yale Home app
Step 2: Remove the Outdoor Motion Detector from mounting position and unscrew to open top cover.
Step 3: Remove the old batteries and press the tamper button a few seconds to fully discharge.
Step 4: Insert two new AA Batteries.
Step 5: Screw back the top cover.
Step 6: Mount back the Outdoor Motion Detector to mounting location.
Step 7: Navigate the Sync hub to exit Programming mode and return to operation mode in the Yale Home app. The procedure is complete.

**Supervisory Signal**

- After installation, the Outdoor Motion Detector will automatically transmit Supervisory signals periodically to the Sync hub at random intervals of 30 to 50 minutes.
- If the Sync hub has not received the signal from the Outdoor Motion Detector for the preset period of time, the Sync hub will indicate on its display that the particular Outdoor Motion Detector is experiencing an out-of-signal problem.

**Sleep Timer**
The Outdoor Motion Detector features an automatic "sleep time" of approximately one minute for power conservation. After transmitting a detected movement, the Outdoor Motion Detector will not retransmit for one minute. Any further movement detected within this one-minute sleep period will extend the sleep time by another minute. This way, continuous movement in front of Outdoor Motion Detector will not unduly exhaust the battery.

**Double Knock Function**
The Outdoor Motion Detector has a double knock function. If the double knock function is enabled, the Outdoor Motion Detector will report an alarm to the Sync hub only if two movements are detected within 10 seconds. If the double knock function is disabled, the Outdoor Motion Detector will report an alarm to the Sync hub when a movement is detected.

**Proximity Detection**
- The Outdoor Motion Detector has a digital proximity detector that can detect any masking (blocking) attempt by an intruder.
- When a masking event is detected, and the masking condition lasts for 2 minutes, AC-OPIR will send a tamper open signal to the Sync hub to notify user of the condition.
- After masking/blocking is removed for 2 minutes, AC-OPIR will send tamper restore signal to the Sync hub.

**Note:**
Any PIR trigger movement will clear currently detected masking event/condition. A masking event must be detected and last for 2 minutes for the tamper open report to be transmitted.

**DIP Switch Position Table**

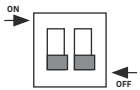
The function of each DIP Switch is listed in the table below. The DIP Switch is either ON or OFF. Top position indicates ON and bottom position indicates OFF.

| DIP | Position | Function |
|---|---|---|
| Switch 1 | ON | Test Mode |
| | OFF | Normal Mode (Default) |
| Switch 2 | ON | Reserved |
| | OFF | |
| Switch 3 | ON | PIR facing a wall within 10m |
| | OFF | PIR facing an open space (no wall within 10m) (Default) |
| Switch 4 | ON | PIR facing a lawn (default) |
| | OFF | PIR facing a concrete/stone ground |

| DIP | | Sensitivity Level |
|---|---|---|
| Switch 5 | Switch 6 | |
| ON | ON | Low; 60kg pet (default) |
| ON | OFF | Medium; 35kg pet |
| OFF | ON | High; 20kg pet |
| OFF | OFF | Reserved |
| DIP | Position | Function |
| Switch 7 | ON | Double Knock Enable (default) |
| | OFF | Double Knock Disable |
| Switch 8 | ON | Pet Immune Enable (default) |
| | OFF | Pet Immune Disable |

**Note:**

After changing Dip Switch settings, please re-power on the AC-OPIR for it to operate with new Dip Switch Settings.




**Tamper Protection**

- AC-OPIR is protected by a tamper switch which is compressed when it is hooked onto the mounting bracket.
- Whenever the Outdoor Motion Detector is removed from the mounting plate, the tamper switch will be activated.
- When the Outdoor Motion Detector is forcibly removed from mounting location, the break away area on the mounting plate will detach, also allowing the tamper switch to be activated.
- The Outdoor Motion Detector will send a tamper open signal to remind the user of the condition whenever the tamper switch is activated.

**Getting Started - Learning the Outdoor Motion Detector into the Sync hub**

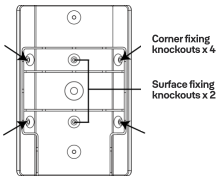
- Loosen the fixing screws and remove the cover assembly.
- Based on your needs, set Sensitivity Switch as shown in DIP Switch Position Table.

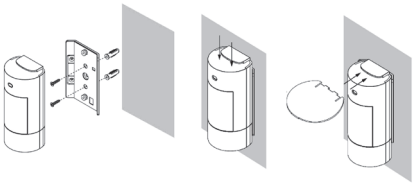
- Insert two AA Batteries into the battery holder taking care to connect the polarity correctly.
- The LED indicator will flash for 60 seconds. The Outdoor Motion Detector is warming up. During the warming period, the Outdoor Motion Detector is not activated. It is recommended that you stay away from the detection area during this time. After the warming period is over, the LED dims and the Outdoor Motion Detector is ready to operate.
- Put the Sync hub into learning mode using the Yale Home app. Please refer to Sync hub manual for details.
- Press the Test button once. The LED indicator will flash for three times.
- If the Sync hub receives the signal, it will display the information accordingly. Refer to the Sync hub manual to complete the learn-in process.
- After the Outdoor Motion Detector is learnt-in, put the Sync hub into Walk Test mode using the Yale Home app. Hold the Motion Sensor in the desired location, and press the Test button to confirm this location is within the signal range of the Sync hub.
- When you are satisfied that the Outdoor Motion Detector works in the chosen location, you can proceed to installation.

**Note:**
Walk Test should be conducted to confirm proper operation and coverage of the Outdoor Motion Detector.
When learning Outdoor Motion Detector or conducting Walk Test, please avoid obstructing the anti-masking detector with your hand, otherwise tamper open signal will transmitted to the Sync hub if masking condition lasts for 2 minutes.

**Mounting & Installation Method**
- Mounting with mounting plate:
- The Outdoor Motion Detector is designed to be mounted on either a flat surface or in a corner situation with fixing screws and plugs provided.

- The provided mounting plate has knockouts, where the plastic is thinner and can be broken for mounting purpose. Two knockouts are for surface fixing and four knockouts are for corner fixing as shown in the picture.
- To Mount AC-OPIR with Mounting Bracket:
  1) Use the mounting plate as a template to drill holes on the wall for plugs.
  2) Push in the plugs and fix the mounting plate on the wall with the screws.
  3) Mount AC-OPIR with the hooks of the mounting plate latched on the back cover of the AC-OPIR, and then push downwards until you hear a click sound to lock the hook.
  4) Insert the protective shield (the protective film from both sides must first be removed).**Note:**

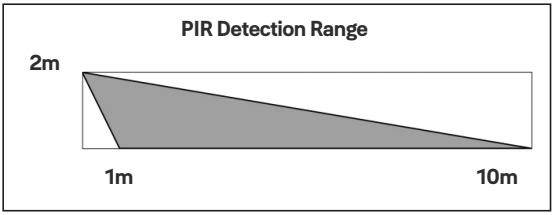


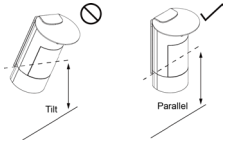
After Outdoor Motion Detector is mounted, if the Yale Home app displays the Tamper fault status for the device, please make sure the anti-masking detector is not obstructed by any object and wait for two minutes to see if the Tamper Open status is cleared. If Tamper Open status persists after two minutes, please remove Outdoor Motion Detector from the mounting location, and check if the Tamper Switch is properly compressed against the mounting plate.

**Installation Recommendations**
It is recommended to install the Outdoor Motion Detector in the following locations:

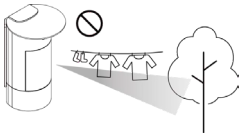
- 2M (measured from bottom of the Outdoor Motion Detector) above ground level for best performance.
- The operating temperature is -10° to 45°C.
- In a corner for the widest view.
- Where an intruder would normally move across the Outdoor Motion Detector's field of view.
- A surface or corner where animals cannot access.
- The Outdoor Motion Detector has a detection range of 10M when mounted 2m above ground.



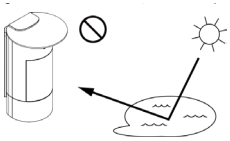

**Limitations**
- Do not install the Outdoor Motion Detector completely exposed to direct sunlight.
- Avoid large obstacles in the detection area.
- Do not point directly at sources of heat, such as fires and boilers, or install above radiators.
- Never attempt to disassemble or modify the unit.



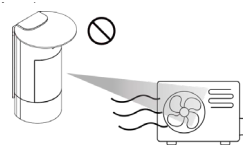

Please install the Outdoor Motion Detector straight up. Do not tilt it.



Do not install the Outdoor Motion Detector where objects moved by wind such as trees and laundry, may block the Outdoor Motion Detector's field of view.



Clear all light reflecting surfaces from the detection area, as well as water puddles.



Avoid pointing the unit at the path of either intake or exhaust airflow from such as air conditioning units or tumble dryer outlets.

**IMPORTANT NOTICE**

Adjust the Dip Switches according to the installation location of the Outdoor Motion Detector for ideal performance. If Dip Switch settings do not match with installation environment, the Outdoor Motion Detector's performance will be hindered and may cause either false alarm or inability to detect movement.

The Outdoor Motion Detector detects differences between the moving object and the background.

If the object is idle (i.e. not moving), the Outdoor Motion Detector is unable to detect it.
The Outdoor Motion Detector has a directional characteristic and is most effective at detecting intruder moving across field of detection. It is less sensitive for detecting motion directly towards the Outdoor Motion Detector.

For best performance, remember to adjust the mounting height of Outdoor Motion Detector with respect to the height of the tallest pet in the house. Taller dogs require the Outdoor Motion Detector to be mounted higher for pet friendliness.

The Outdoor Motion Detector has about 1M of blind spot under it when mounted at 2M high. The blind spot area will enlarge if you mount the Outdoor Motion Detector higher than 2M, and reduce if lower than 2M.

Unless required, we suggest keeping the Outdoor Motion Detector mounting location at 2M for optimum performance. If you change the mounting height, please conduct detection test to make sure the Outdoor Motion Detector can detect intruder normally at the chosen height.

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