

GUIDE TO CHOOSING BETWEEN PIR AND HF SENSORS



PIR SENSORS (Passive Infrared)




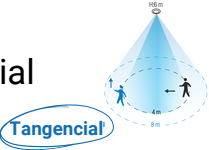
HF SENSORS (High Frequency)






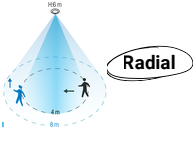
Detect heat emitted by moving bodies using a pyroelectric sensor that captures changes in infrared radiation.

Emit high-frequency radio waves and detect changes in the reflected frequency, allowing detection of movements over a broader range and through certain materials.



PIR Key Benefits

- Saves energy/Focused Detection:** Activates lighting only when motion is detected. No penetration, confined detection area
- Better Human Detection:** by measuring temperature changes
- Fewer False Alarms:** Less likely to trigger due to non-human movements.
- Accurate Detection of Sideways Movement:** Sensitive to tangencial movement

HF Key Benefits

- Precise Detection/Extended Coverage:** Sensitive to small movements, even behind walls and obstacles.
- Does not required any drilling** on the fixture.
- Consistent and Reliable Detection:** Resilent to heat source, smoke and air conditioner
- Comprehensive Movement Detection:** Sensitive to radial movement.


PIR Ideal Uses

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- Indoor Areas:** Offices, hallways, and rooms.
 - Security Applications:** Alarm systems.
 - Controlled Environments:** Where thermal changes are minimal.

HF Ideal Uses


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- Outdoor Areas:** Garages, gardens, and parkings.
 - Industrial Environments:** Warehouses and factories.
 - Separate areas:** Bathrooms and changing rooms with partitions.

Specific example



Corporate Offices: PIR sensors were installed in hallways and meeting rooms to optimise light usage. Configured to activate lighting only when motion is detected, reducing energy consumption outside of working hours.


Specific example



Logistics Warehouses: HF sensors were used to detect movements through shelves and boxes. These sensors ensured adequate lighting in aisles and work areas, improving safety and operational efficiency. HF sensors are ideal for spaces with high or extreme temperatures.

PIR Common Problems


Solution to False Triggers

PIR Sensors: Sensitive to pets or heaters.

Solution: Adjust the sensor's location.

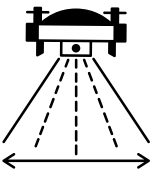
HF Common Problems

Solution to False Triggers

HF Sensors: Triggered by minor movements or vibrations.


Solution: Correctly configure motion detection and motion sensitivity settings

Installation / Configuration

PIR Sensors: Critical positioning to avoid dead zones.


Solution: Follow installation guides and adjust positioning.

Installation / Configuration

HF Sensors: Sensitivity to electromagnetic interference.


Solution: Install away from interference sources.

Solution: Inadequate Coverage

PIR Sensors: Limited by physical obstacles.

Solution: Use in open spaces or combine with other sensors.

Solution: Inadequate Coverage

HF Sensors: Detect through thin walls.

Solution: Ideal for areas with obstacles or partitions.

OPPOSITES ATTRACT?
PIR AND HF SENSORS: THE PERFECT MATCH



Two-in-one: DUAL SENSE is the result of the combination of PIR and HF sensor features

- Either HF or PIR:** When either sensor is triggered, the light will turn on.
- Both HF and PIR:** The light will only turn on when both sensors are triggered simultaneously. This maximises detection accuracy and reduces false triggers caused by heat sources, air conditioning, ventilation fans, lifts, etc.

For more information, please write to info@hytronik.com

