

# True Occupancy Smarter Control



Human breath and  
heart beat



Head Counting



Motion Tracking



35%  
Occupancy Rate



2026

Website: [www.hytronik.com](http://www.hytronik.com)

# Detects Human Heat, Heartbeat and Breathing

**The light stays on, even when you're perfectly still.**

Most “motion sensors” only react to movement — often switching off too early and leaving people in the dark, or staying on and wasting energy.

Hytronik Occupancy Sensors – [Beyond Motion Detection](#)

Hytronik offers a range of occupancy sensing technologies for presence recognition, and people-counting capability—to ensure accurate detection even when occupants remain still during reading, typing, or meetings.

Lights stay on when people are truly present and switch off when spaces are empty, delivering both comfort and energy savings.

# Why Motion Sensors Just aren't Enough?

In offices, bathrooms, stockrooms or hospitals, motion sensors often fall short:

Lights turning off while people are still inside  
Interruptions during presentations or focused work  
Frustrated users waving their arms to bring the lights back on



Scene 1  
Conference Room Disruption  
"Presentation Interrupted"



Scene 2  
Restroom Lights Off  
"Unexpected Darkness"



Scene 3  
Office Lights Dimmed  
"Focus Interrupted"

**These all-too-familiar frustrations highlight one thing clearly :**  
people are expecting a lighting system that truly understands when they are present.



**"Can't detect me here."**

Yet motion sensors only see movement, not presence.



**"Don't waste my time."**

Installers spend hours adjusting sensitivity, only to get a "barely acceptable" result.



**"Stop wasting energy."**

Extending hold times keeps lights on in empty rooms — defeating the purpose entirely.



**"Stop making me look bad."**

Every blackout becomes a complaint call, hurting the installer, the facility manager, and even the luminaire brand.

# A lighting system that truly understands when someone is in the room.

The truth is simple:

No complicated settings.

No endless timers.

No waving arms.

That's what Hytronik occupancy sensors are designed to do.

## Solve Real Problems



- No more lights switching off while people are still inside.
- No wasted energy in empty spaces.
- No risk of non-compliance with building standards.

## Smarter Detection



- Capable of sensing not just movement, but the unique signals of human heat, heartbeat, and breathing.
- Daylight harvesting → dim or switch off based on natural light.
- Wide mounting options for offices, classrooms, corridors, and healthcare.

## Easy Integration



- Available in Bluetooth, DALI-2, and On/Off relay control.
- Works seamlessly with drivers, dimmers, and building management systems



## Where It Make a Difference



**Offices**



**Meeting Room**



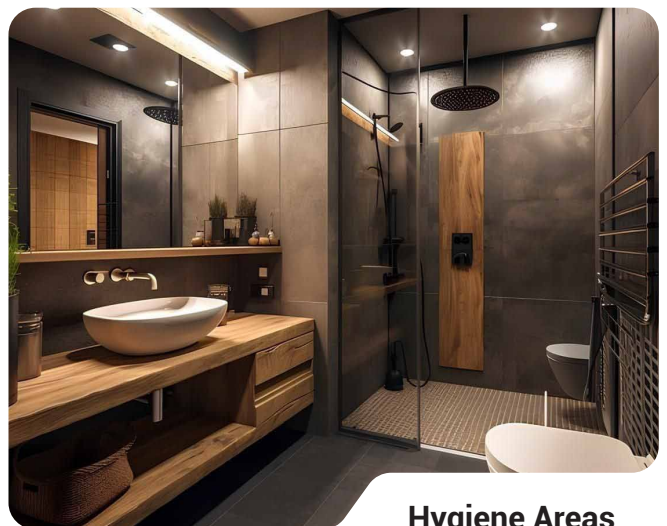
**Classroom**



**Study Spaces**



**Healthcare**



**Hygiene Areas**

# True Occupancy Sensor Range

Hytronik offers a comprehensive occupancy sensor range designed to match diverse project requirements:



On/Off control

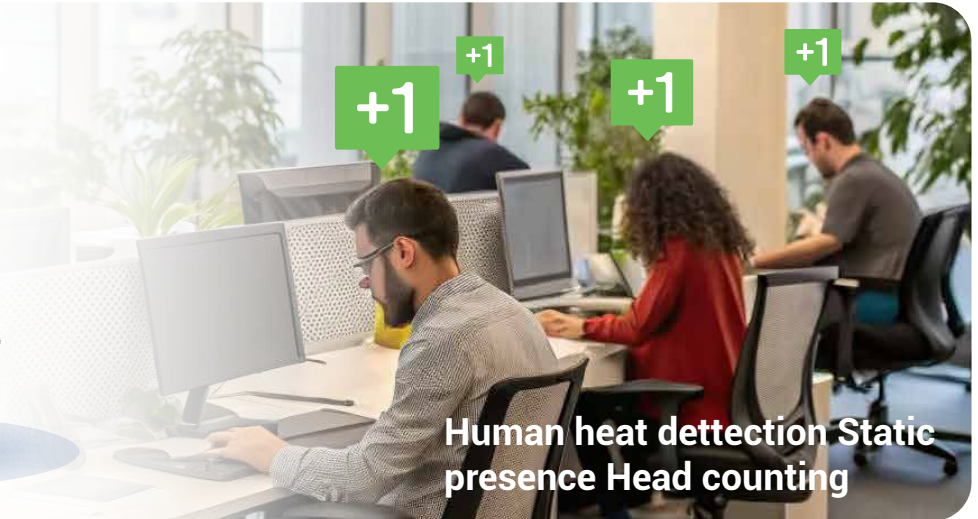


DALI / DALI-2



Bluetooth Mesh

## Thermal Detection



Human heat detection  
Static presence  
Head counting

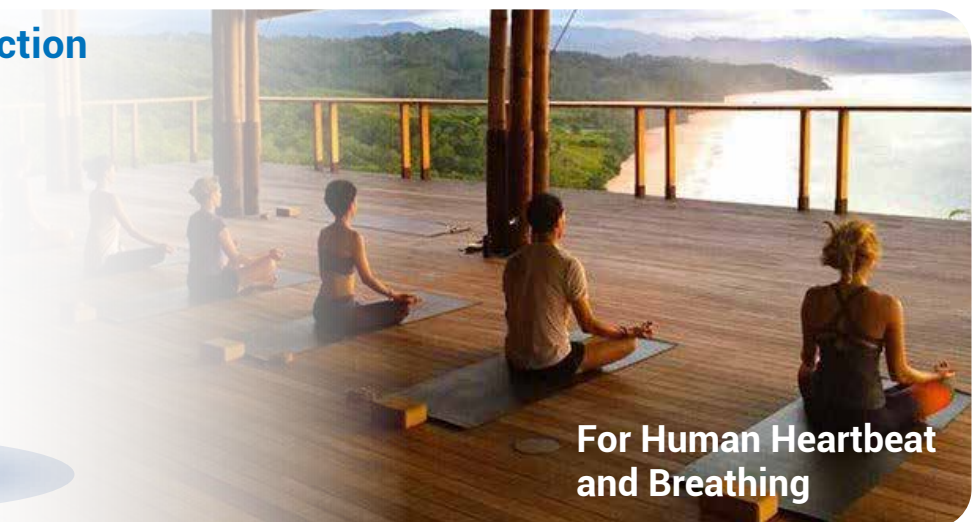


PIR Minor Movement Detection

## Passive Infrared (PIR) Detection



## Microwave (HF) Detection





For Human Heartbeat  
and Breathing





# Product Overview







## Thermal Detection

| Products   | Input Voltage | Output    | Detection method | Install Height     | Daylight Sensor Dimming Function | IP Rate | Active Lux Switching |
|--|---------------|-----------|------------------|--------------------|----------------------------------|---------|----------------------|
|  <b>NEW</b><br><br><b>HBTS01</b> | 220-240 VAC   | Bluetooth | Thermal          | Low-bay<br>max. 3m | Photocell                        | IP20    | ✓                    |

## Passive Infrared (PIR) Detection

| Products   | Input Voltage | Output                | Detection method                                       | Install Height     | Daylight Sensor Dimming Function                   | IP Rate                                 | Active Lux Switching |
|--|---------------|-----------------------|--|--------------------|--|---|----------------------|
|  <b>NEW</b><br><br><b>HBIR29/WM</b> | 220-240 VAC   | DALI<br>80mA DALI PSU | PIR<br>(New Robust Antenna / True Occupancy Detection) | Low-bay<br>max. 3m | Photocell<br>Tri-level Control<br>Daylight Harvest | IP20/IP54<br>(IP54 only to facial part) | ✓                    |

## Microwave(HF) Detection

| Products   | Input Voltage | Output   | Detection Method                                      | Install Height     | Daylight Sensor  | IP Rate | Active Lux Switching |
|--|---------------|--|---|--------------------|--|---------|----------------------|
| <br><br><b>HBMW28/PRO</b>      | 220-240 VAC   | On/Off<br>800VA/1200W  | HF<br>(New Robust Antenna / True Occupancy Detection) | Low-bay<br>max. 3m | Photodiode   | IP20    | ✓                    |
| <br><br><b>HBMW29/PRO</b>      | 220-240 VAC   | DALI-2<br>I guaranteed : 30mA<br>I max : 50mA<br>U rated : 15VDC | HF<br>(New Robust Antenna / True Occupancy Detection) | Low-bay<br>max. 3m | Photocell<br>Tri-level Control<br>Daylight Harvest<br>Circadian Rhythm | IP20    | ✓                    |
| <br><br><b>HBMW28DCVFC/PRO</b> | 220-240 VAC   | Bluetooth  | HF<br>(New Robust Antenna / True Occupancy Detection) | Low-bay<br>max. 3m | Photocell  | IP20    | ✓                    |

\*Please always check the latest datasheet for technical requirements-----<http://hytronik.com>

# Thermal Detection

Low-bay

Bluetooth Transceiver



NEW



HBTS01

## Key Benefits

- Bluetooth commissioning, simple and fast device setup.
- Directional awareness, detects movement direction with precision.
- Privacy protected, camera-level sensing without visual data.
- Head counting, accurately counts people within detection range.
- Heatmap generation, visualizes traffic flow and dwell patterns.
- MQTT configurable, flexible parameter settings via broker.
- Zone management, multiple configurable sensing areas.
- Data integration, combines sensor data for area statistics.
- Versatile use, ideal for offices, malls, and public spaces.

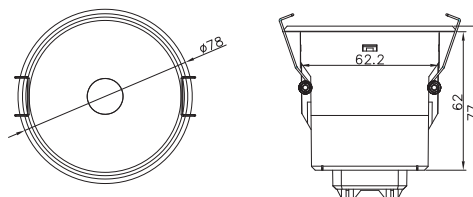
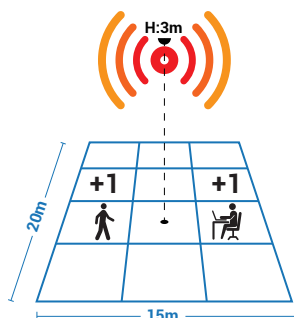
## Detection Range (Max.)

Height

3m

Resolution [infrared pixel]

15 × 20m



## Main Functions



Head Counting



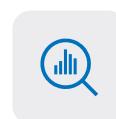
Motion Tracking



Occupancy Rate



Space Management



Data Intelligence Analysis

## Technical Specifications

| Output           | Operating voltage  | Stand-by power | Operating temperature range | Thermal accuracy |
|------------------|--------------------|----------------|-----------------------------|------------------|
| Bluetooth Output | 220~240VAC 50/60Hz | <1w            | -10°C~65°C                  | ± 2°C            |

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# Passive Infrared (PIR) Detection

DALI/DALI-2



HBIR29/WM

## Key Benefits

- Integrated High-sensitive PIR occupancy sensor and light sensor
- Allow for subtle motion detection, designed specifically for offices and quiet public spaces.
- 2/3 Push inputs option for flexible manual control
- Accessories available for surface/ ceiling mounting styles
- Upgrade DALI fixtures with Bluetooth control without extra wirings
- Supports reading luminaire, energy, and diagnostics data provided by the connected D4i drivers.
- Wireless configuration via Koolmesh app

## Detection Range

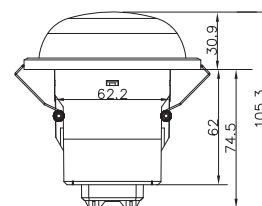
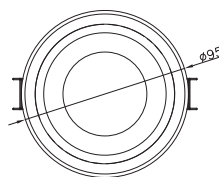
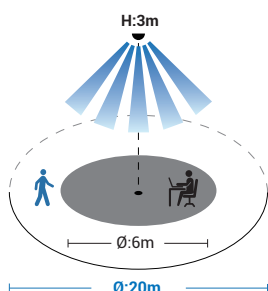
(Max.)

Height

3m

Range Ø

20m



## Main Functions



DALI broadcast output



Minor movements detection



Support D4i & DT8 LED Drivers



Daylight harvest



Tri-level control



2 Push inputs



RTC real time clock



Circadian rhythm (HCL)

## Technical Specifications

| Output                       | Operating voltage  | Stand-by power | Warming-up | IP rating |
|------------------------------|--------------------|----------------|------------|-----------|
| DALI/DALI-2<br>80mA DALI PSU | 220~240VAC 50/60Hz | <1w            | 20s        | IP20/IP54 |

\*Please always check the latest datasheet for technical requirements-----<http://hytronik.com>

# Microwave(HF) Detection

On/Off Control



HBMW28/PRO

## Key Benefits

- Detect the breathing and heartbeat of static occupants
- Adjustable for motion / static sensitivity & detection range
- Zero crossing detection circuit
- Meets the latest RED standards of certification
- Wireless commissioning via Koolmesh app

## Detection Range

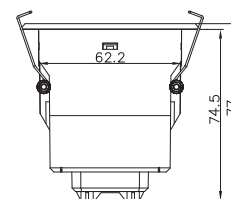
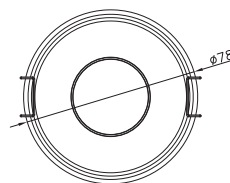
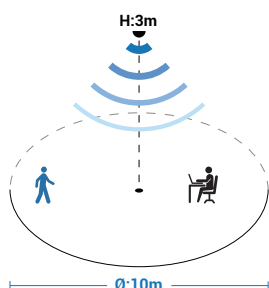
(Max.)

Height

3m

Range Ø

10m



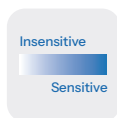
## Main Functions



On/off control



Zero cross detection



Adjustable detection

## Technical Specifications

| Output  | Operating voltage  | Max. withstandable in-rush current | Stand-by power | Warming-up |
|---|--------------------|------------------------------------|----------------|------------|
| On/off<br>800VA (capacitive)<br>1200W (resistive) | 220~240VAC 50/60Hz | 120A @ 160 $\mu$ s                 | < 0.5W         | 20s        |

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# Microwave(HF) Detection

DALI/DALI-2



HBMW29/PRO

## Key Benefits

- Detect the breathing and heartbeat of static occupants
- Adjustable for motion / static sensitivity & detection range
- Zero crossing detection circuit
- Tri-level control & Daylight harvest
- Meets the latest RED standards of certification
- Supports reading luminaire, energy, and diagnostics data provided by the connected D4i drivers.
- Wireless commissioning via Koolmesh app

## Detection Range

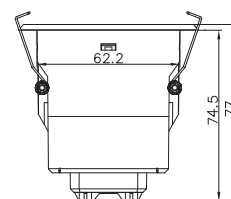
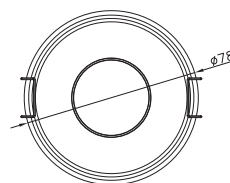
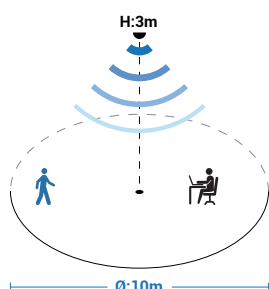
(Max.)

Height

3m

Range Ø

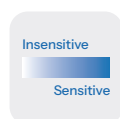
10m



## Main Functions



DALI output



Adjustable detection



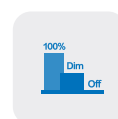
Support D4i &  
DT8 drivers



RTC real time clock



Daylight harvest



Tri-level control

## Technical Specifications

| Output  | Operating voltage  | Max. withstandable in-rush current | Stand-by power | Warming-up |
|---|--------------------|------------------------------------|----------------|------------|
| DALI bus power supply<br>I guaranteed : 30mA<br>I max : 50mA<br>U rated : 15VDC | 220~240VAC 50/60Hz | /                                  | <1W            | 20s        |

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# Microwave(HF) Detection

## Bluetooth Output



HBMW30/PRO

### Key Benefits

- Detect the breathing and heartbeat of static occupants
- Adjustable for motion / static sensitivity & detection range
- Meets the latest RED standards of certification
- Wireless commissioning via Koolmesh app

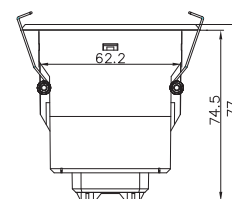
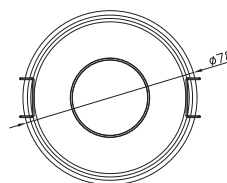
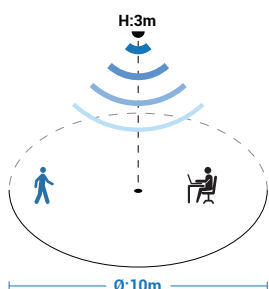
### Detection Range (Max.)

Height

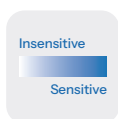
3m

Range Ø

10m



### Main Functions



Adjustable detection



Daylight harvest



Tri-level control



RTC real time clock

### Technical Specifications

| Output    | Operating voltage  | Max. withstandable in-rush current | Stand-by power | Warming-up |
|-----------|--------------------|------------------------------------|----------------|------------|
| Bluetooth | 220~240VAC 50/60Hz | /                                  | <0.3W          | 20s        |

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## Accessories



### Ceiling/surface metal mount box (IP54 options)



Silicon gasket (for IP54 protection)



Three color options



HA09/W



HA09/B



HA09/G

## Installation Application

Ceiling mounting



Surface mounting

# Build Confidence with Hytronik

Trusted by lighting control integrators and building automation specialists who need occupancy detection that behaves predictably on site.



## Proven Performance Trusted Compliance

### Effortless calibration

Optimized for real environments, set up and go

### Superior accuracy

Outperforms conventional presence sensors

### Future-ready

Designed for EU Cyber Resilience Act (CRA)

### Proven in the field

Validated over many days and projects

### Compliance you can rely on

CE, RED, GDPR

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# Don't settle for motion.



# Choose true occupancy detection.



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SENSORS & LIGHTING CONTROL

**Koolmesh**®  
— TAILOR MAKE YOUR SOLUTION



Learn how the technology works:

<https://hytronik.com/solutions/lightingcontrol-features/trueoccupancy-detection>

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