HBIR29/WM

Bluetooth DALI PIR Lowbay wide range | minor movement detection | Integrated 60 mA PSU

Benefits

Sensitive: Detects micro movement for improved occupancy accuracy

Integrated: Built-in DALI power supply reduces external power

Flexible: Allowing push switch & app setup

Applications

Offices

Meeting Rooms

Quiet Public Spaces (Libraries, Galleries)

Check Out the Complete System Solution on the Website:
https://www.hytronik.com/product/HBIR29-WM

Product Description

HBIR29/WM integrates a high-sensitivity PIR occupancy sensor and a light sensor, with one DALI channel output (60mA DALI power supply built in). It is particularly suitable for offices and quiet public spaces sensitive to environmental changes, enabling precise motion detection. The device features two push-button inputs for flexible manual control and adds intelligent Bluetooth control to existing DALI fixtures without extra wiring, simplifying system upgrades. D4i driver support allows energy monitoring, fault reporting, and diagnostics data collection. All settings can be configured wirelessly via the Koolmesh app, ensuring efficient commissioning and maintenance.

Functions and Features

See additional details at the end of datasheet

Built-in DALI PSU

D4i Data Access Via App

D4i Driver Compatibility

DT6/DT8 Lighting Control

Koolmesh - See bluetooth contol below

Power-Loss Time keeping (RTC)

Push-Button Input

Specifications

Main Capabilities	
Dimming (Output) Interface	DALI/DALI-2

Sensor Data	
Detection angle	360°
Max. Detection range (Diameter)	20.0 m
Maximum Mounting Height	5.0 m
Detection area	314 m^2

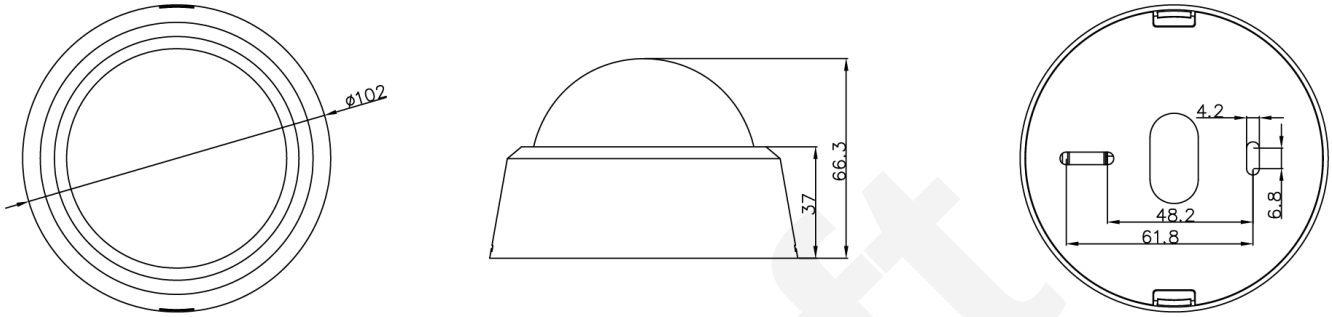
Electrical Data	
Bluetooth frequency	2.4 GHz - 2.483 GHz
Bluetooth range	10-30m
Bluetooth transmit power	4 dBm
Bluetooth system	Koolmesh
Operating voltage range	220-240 VAC 50/60 Hz
Stand-by power (Psb)	<1W
Warming-up	20 s
DALI bus maximum rated current (I_n max)	90 mA
DALI bus nominal DC voltage range (Un)	16 V
DALI bus nominal current (I guaranteed)	60 mA

Specifications

Technical	
Product height	66.3 mm
Product length	102.0 mm
Product width	102.0 mm
Ambient temperature	-20 ~ +50 °C
Storage temperature	-20 ~ +50 °C
Humidity max	20 ~ 90%
IP Rate	IP54

Standard	
EMC	EN 55015, EN 61000-3-2, EN61000-3-3, EN 61547
LVD	AS/NZS 60669-1/-2-1, EN 60669-1, EN 60669-2-1
RED	EN 300328, EN 301489-1/-17

Technical Drawing

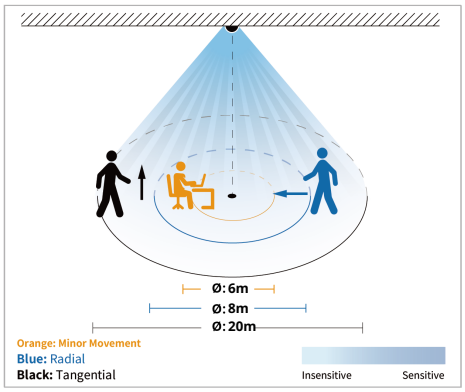


Detection Range

Single Person Walk & Small Movement (Ceiling mount)

The data below is tested under following conditions:
- Single person walking
- Sensor not connected to any driver that may have soft-on period
- Testing temperature Ta = 20°C
- The testing is conducted in an open and spacious indoor eld, without noticeable obstacles or inuences that may affect PIR performances

Detection example 2.5m mounting height:

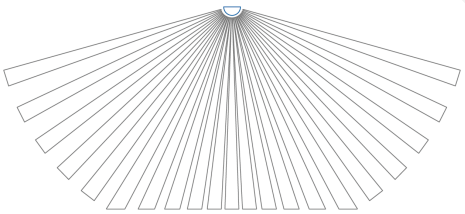


Minor Movement				
H[m]	2.5	3	4	5
Ø[m]	6	6	none	none

Tangential movement				
H[m]	2.5	3	4	5
Ø[m]	20	20	20	20

Radial movement				
H[m]	2.5	3	4	5
Ø[m]	8	8	8	8

Detection schematic diagram



Commissioning Instructions and Precautions

A. Installation Notes

1. This product should be installed by a qualifed electrician.
2. Ensure the luminaire power is disconnected before installation or removal of the device.
3. Avoid installing the sensor near air vents, heat sources, or moving objects that may cause false triggering.
4. Do not cover the PIR lens or light sensor, as this may affect detection accuracy.

Warning: For additional important documents, including installation precautions, product guidelines, and guarantee conditions, please refer to the official downloads.

https://hytronik.com/service/downloads

Dimming Interface Operation Notes

The provided Switch-Dim interface allows for a simple dimming method using commercially available non-latching (momentary) wall switches. Detailed Push switch configurations can be set on Koolmesh app.

Note: Single press, double press, and press-and-hold actions can each be independently assigned to one function via the app. Once configured, each action triggers only its assigned function. Multiple functions cannot be activated by a single press action.

Switch function	Action	Descriptions
Emergency Self-Test Function	Single press (>0.1s) Double press Press and hold (>= 1s)	• Disable • Function test • Duration test • Erminated test
Fire Alarm Function	Refer to http://faq.koolmesh.c om/docu/en/	• Able to connect the Fire Alarm system. • Once the fire alarm system is triggered, all the luminaries controlled by the Push Switch will enter the preset scene (normally it's full on), after the fire alarm system gives the ending signal, all the luminaries controlled by this Push Switch will revert back to normal status.
ON OFF Switch (Latching Switch)	/	• Upgrade a standard on/off control to Bluetooth control, enabling one latching switch to control multiple luminaires or zones, reducing wiring and switch count.
Normal PUSH (Retractive Switch)	Single press (> 0.1s) Double press Press and hold (>= 1s)	• ON/OFF • OFF only • Recall this scene • Sensor take over • Not in use
Sensor-Link	/	•Hold time/scene •Stand-by time/scene •Upgrade a normal on/off motion sensor to a Bluetooth-controlled motion sensor

Koolmesh - Operating guide

Bluetooth 5.0 SIG Mesh

Smartphone(ios) Smartphone (Android) iPad Web

For additional information, including project and network, device, and scenes, please refer to: http://faq.koolmesh.com/faq/en/index.html

Shared Koolmesh App Features

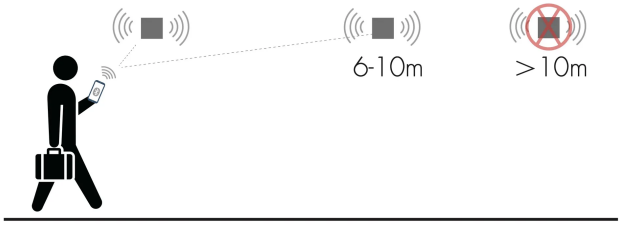
- Alert for excess lux / temperature / humidity via multi-meter HBLM01
- Astro timer (sunrise and sunset)
- Bulk commissioning (copy and paste settings)
- Compatible with Shelly energy metering
- Continuous development in progress...
- Device firmware update over-the-air (OTA)
- Device social relations check
- Different permission levels via authority management
- Floorplan feature to simplify project planning
- Grouping luminaires via mesh network
- Internet-of-Things (IoT) featured
- Koolmesh Pro iPad for on-site configuration
- Network sharing via QR code or keycode
- Offline commissioning
- One-key device replacement
- Quick setup mode & advanced setup mode
- Remote control via Hytronik gateway & touch screen HPAD-TSJASE1
- Scenes
- Schedule
- Staircase function for quick setup
- Test mesh network connection quality
- Web platform for project deployment & data analysis

Device-specific Koolmesh App features

- Compatible with EnOcean kinetic switches
- Detailed motion sensor settings
- Dusk/Dawn photocell (Twilight function)
- Dynamic daylight harvest auto-configuration
- Motion sensor range test
- Motion sensor trigger diagnosis
- Push switch configuration

Smart Phone to Device Range

1. The smart device with the installed App typically has a range of 10m, which may vary between devices.
2. During the commissioning process, the installer must be within range of the devices while searching for them to add to the network.
3. Once the devices are added to the network via the App, they will begin communicating within the wireless mesh.
4. After the network is complete, all devices can be accessed from the smart device within a 20m range of a single point.



Bluetooth Network Components

HBGW02

Bluetooth Mesh Gateway | Ethernet or Wi-Fi 2.4GHz | wall/flat surface mounting
www.hytronik.com/product/HBGW02

HBGW02/D

Bluetooth Mesh Gateway | Dual-band Wi-Fi | wall/flat surface mounting
www.hytronik.com/product/HBGW02-D

HBGW03/R

BACnet Gateway | Dual-band Wi-Fi or Ethernet | DIN rail/wall/flat surface mounting
www.hytronik.com/product/HBGW03-R

HBKS01/W

Bluetooth Kinetic Switch | One-gang | Wireless Control
www.hytronik.com/product/HBKS01-W

HBKS01D/W

Bluetooth Kinetic Switch | Single Rocker | White Color
www.hytronik.com/product/HBKS01D-W

HBKS02/W

Bluetooth Kinetic Switch | Two-gang | White Color
www.hytronik.com/product/HBKS02-W

HBKS02D/W

Bluetooth Kinetic Switch | Double Rocker | White Color
www.hytronik.com/product/HBKS02D-W

HBKS03/W

Bluetooth Kinetic Switch| Three-gang | White Color
www.hytronik.com/product/HBKS03-W

HBLM01

Multi-meter | Bluetooth & NFC | Lux Measurements
www.hytronik.com/product/HBLM01

HPAD-TSJASE1

Bluetooth Touch Tablet | Gateway Integrated | Switch Boxes
www.hytronik.com/product/HPAD-TSJASE1

Functions and Features

Built-in DALI PSU

Built-in DALI PSU means the DALI bus power supply is integrated into the product, eliminating the need for an external DALI power unit.
This reduces wiring complexity, saves installation space, and simplifies commissioning, making the system more compact and efficient.

D4i Data Access Via App

When the system is used together with the Koolmesh app, it can access D4i driver data such as luminaire information, energy consumption, and diagnostic data via the Bluetooth network. Access to D4i data is enabled by the software platform and depends on the Bluetooth-to-DALI interface of the connected device, not on the standalone hardware functionality of the sensor or module.

D4i Driver Compatibility

Designed to operate with D4i-certified drivers within D4i luminaires, supporting standard DT6 / DT8 control behaviour in D4i systems.

DT6 / DT8 Lighting Control

Supports DT6 (single-channel dimming) and/or DT8 (tunable white / colour) lighting control via DALI, enabling brightness and colour temperature adjustment based on control logic such as occupancy or daylight.

Power-Loss Time keeping (RTC)

The Real-Time Clock (RTC) is an essential component in Hytronik BLE devices, especially those used in circadian-rhythm lighting systems. It preserves accurate time and date information during power-off conditions or unexpected power failures, allowing the device to resume scheduled operations and time-based functions correctly once power is restored. The RTC ensures continuity for features such as daily profiles, time-triggered scenes and data logging, maintaining overall system reliability. RTC retention duration varies by product and can be influenced by installation conditions such as ambient temperature; prolonged exposure to high temperatures or direct sunlight may reduce the available backup time.

Push Button Input

This product integrates push-button (momentary switch) inputs, allowing external potential-free switches to trigger basic lighting control functions. Each input can be configured for actions such as on/off switching, dimming or scene recall, providing flexible manual control and user interaction within the lighting system. The push-button inputs operate independently of the sensor's automatic functions, enabling seamless coexistence of manual and sensor-based lighting control.

Check out for further explanation of features

https://hytronik.com/solutions/lighting-control-features