Installation and Instruction Manual

HYTRONIK®

True Occupancy Sensor with 🚀 Bluetooth® 5.0 SIG Mesh
DALI-2 output & Low-bay

HBMW29/PRO

1. Technical Specifications

Operation frequency	2.4 GHz - 2.483 GHz
Transmission power	4 dBm
Range (Typical indoor)	10~30m
Protocol	🚀 Bluetooth® 5.0 SIG Mesh
Operating voltage	220~240VAC 50/60Hz
Stand-by power	<1W
Output	I guaranteed : 30mA I max : 50mA U rated : 15VDC
Sensor principle	Occupancy Motion detection
Ceiling-mounted Detection range (Max.)*	Installation Height : 3m Detection Range (Ø) :8m
Wall-mounted Detection range (Max.)*	Installation Height : 3m Detection Range :6m
Detection angle	360⁰
Operation temperature	Ta:-25⁰C~+60⁰C
IP rating	IP20/IP54

2. Download the App

Free App for set-up and commissioning

🚀 Bluetooth® 5.0 SIG mesh

HYTRONIK Koolmesh

| iOS | for iOS | for Android |
| Android | | |

Smartphone app for both iOS & Android platform

for iPad

Koolmesh Pro app for iPad

Web — for Web

Web app/platform: www.iot.koolmesh.com

3. Installation

Mechanical Structure & Dimensions

Standard Back Caps

OR
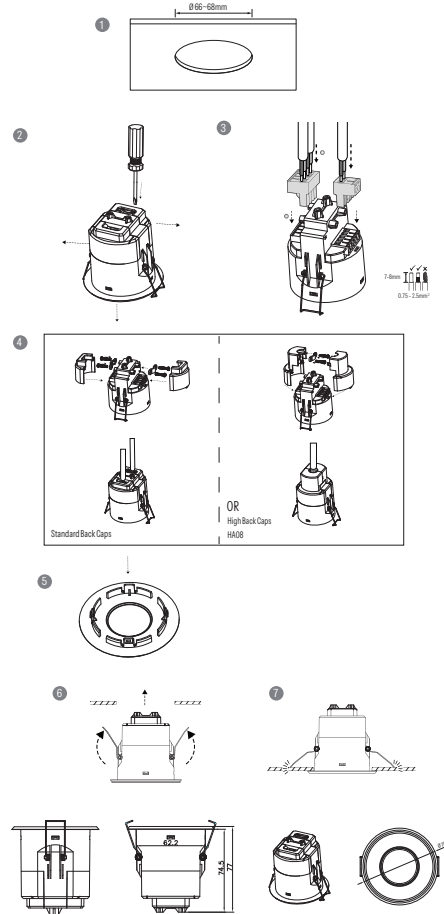
High Back Caps HA08

1. Ceiling (drill hole φ66~68mm)
2. Carefully prise off the cable clamps.
3. Make connections to the pluggable terminal blocks.
4. Secure the cables with screws for better stability (provide high back caps HA08 option).
5. Fit desired lens.
6. Clip fascia to body.
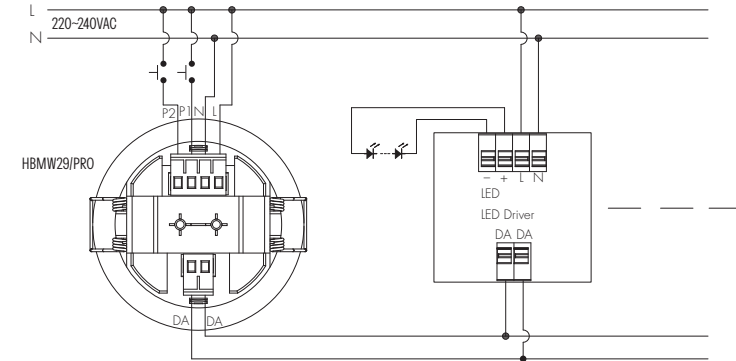7. Bend back springs and insert into ceiling.

Wire Preparation

0.75 - 2.5mm
8mm
(min 6mm, max 11mm)
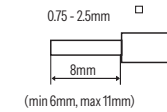
Pluggable screw terminal. It is recommended to make connections to the terminal before fitting to the sensor.

1. 200 metres (total) max. for 1mm² CSA (Ta = 50℃)
2. 300 metres (total) max. for 1.5mm² CSA (Ta = 50℃)

Wiring Diagram

HBMW29/PRO

L
N 220~240VAC

LED
LED Driver

———This product should be installed by a qualified electrician.

Sensor Installation and Commissioning Guidelines

A. Installation Preparation

1. Make sure the room is empty with no moving people or machinery when first powered up for 1 minute.
2. There is a 20-second warm-up time for the sensor. Please do the commissioning after warm-up.
3. When the sensor is powered off, repeat the initial steps once it's re-powered

B. Sensor Placement

1. The distance between sensors should be at least 3 meters.
2. Sensors should not directly face sources of microwave interference, such as other microwave sensors, microwave ovens, or wireless routers. Maintain a distance of at least 3 meters.
3. The installation environment should avoid object vibrations, strong airflows, curtain movements, water flow in pipes, window glass vibrations, and wind-induced movements of metal roofs. Aim for a stable environment with minimal variables.
4. The sensor is highly sensitive and suitable for stable and quiet environments like offices and hotels, but not for industrial settings.

C. Sensor Operation

1. Movements within 0.3 meters of the sensor, such as waving an arm, might not trigger the sensor, as it will identify and filter out such large movements.
2. In test mode, a red LED will flash when the sensor is triggered. There are no visual indications in normal mode.
3. If the sensor is too sensitive, use the HRC-12 remote controller to lower the sensitivity.
4. Avoid accidentally entering semi-auto mode.
5. Pay attention to the daylight sensor threshold value, which needs to be adjusted according to the installation environment.

4. Detection Pattern & Optionanl Acceories

Placement Guide and Typical Range

Smart Phone to Device Range

6-10m   >10m
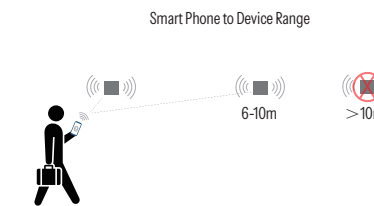
The smart device with the App installed will have a typical range of 10m, but varies from device to device. During commissioning, the installer will need to be in range of the devices when searching for devices to add to the network.

Once the devices have been added to the network via the App, the devices will start communicating within the wireless mesh. This means that once the network is complete, all devices are accessible from the smart device when in a 20m range of a single point.

Ceiling-mounted application
Installation height: 3m
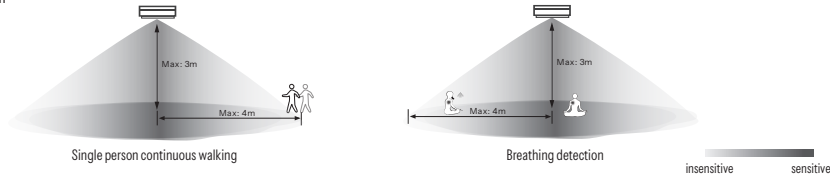
Single person continuous walking   Breathing detection

insensitive   sensitive
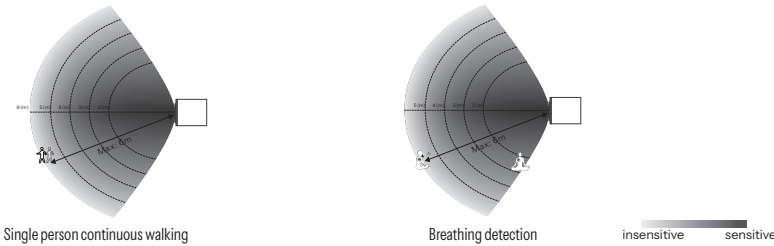
*When it's in breathing & true occupancy detection mode and in sitting situation, facing to sensor directly will have a better detection range than 90 degrees side facing to sensor.
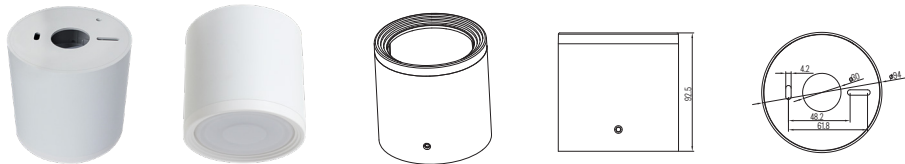
Wall-mounted application
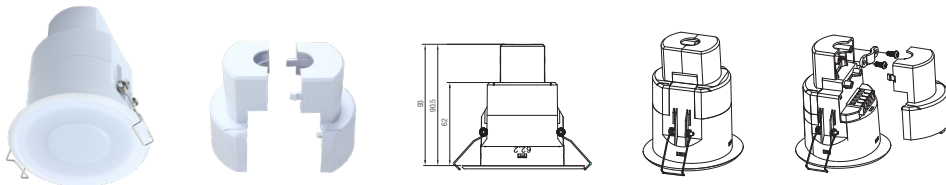Installation height: max.3m

Single person continuous walking   Breathing detection

insensitive   sensitive

*When it's in breathing & true occupancy detection mode and in sitting situation, facing to sensor directly will have a better detection range than 90 degrees side facing to sensor.

*Note: Optional Accessory HA09 & HA08 can not be uesd together.
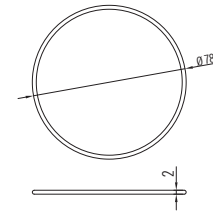
Small silicon water-proof gasket dimension(size:mm)   Big silicon water-proof gasket dimension(size:mm)
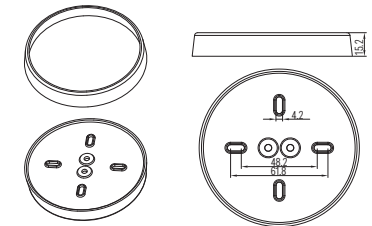
5. Dimming Interface Operation Notes

Switch-Dim
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.

Switch Function	Action	Descriptions	
Push switch	Short press (<1 second) * Short press has to be longer than 0.1s, or it will be invalid.	- Turn on/off - Turn on only - Turn off only	- Recall a scene - Quit manual mode - Do nothing
	Double push	- Turn on only - Turn off only - Recall a scene	- Quit manual mode - Do nothing
	Long press (≥1 second)	- Dimming - Colour tuning - Do nothing	
Sensor-link (VFC signal only)	/	- Upgrade a normal on/off motion sensor to a Bluetooth controlled motion sensor	
Emergency Self-Test Function	Short press (<1 second) * Short press has to be longer than 0.1s, or it will be invalid.	- Start Self test (Monthly) - Stop Self test	- Start Self test (Annually) - Invalid
	Long press (≥1 second)	- Start Self test (Monthly) - Stop Self test	- Start Self test (Annually) - Invalid
Fire Alarm (VFC signal only)	Refer to **Koolmesh**® App User Manual V2.1	- 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.	

6. Additional Information / Documents

1.To learn more about detailed product features/functions, please refer to www.hytronik.com/download →knowledge →Introduction of App Scenes and Product Functions

2. Regarding precautions for Bluetooth product installation and operation, please kindly refer to www.hytronik.com →download/knowledge →Bluetooth Products - Precautions for Product Installation and Operation

3. Data sheet is subject to change without notice. Please always refer to the most recent release on www.hytronik.com/products/bluetooth technology →Bluetooth Sensors

4. Regarding Hytronik standard guarantee policy, please refer to www.hytronik.com/download →knowledge →Hytronik Standard Guarantee Policy

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