

Installation and Instruction Manual

Flush Mount Occupancy Motion Sensor On/off control & Low-bay

HYTRONIK®

HBMW28/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	<0.5W
Warming-up	20s
Load rating	800VA (capacitive) 800W (resistive)
Max withstandable in-rush current	120A@160µs
Sensor Model	Occupancy Motion detection
Ceiling-mounted	Installation Height: 3m Detection range (Max.):* Detection Range (Ø): 8m
Wall-mounted	Installation Height: 3m Detection range (Max.):* Detection Range (Ø): 5m
Detection angle	360°
Operation temperature	Ta: -20°C ~ +50°C
Storage temperature	-40°C ~ +70°C
IP rating	IP20 / IP54
Relative humidity	10 ~ 90%

2. Download the App

Free App for set-up and commissioning

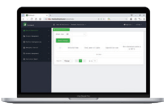
Bluetooth® 5.0 SIG mesh



Smartphone app for both iOS & Android platform



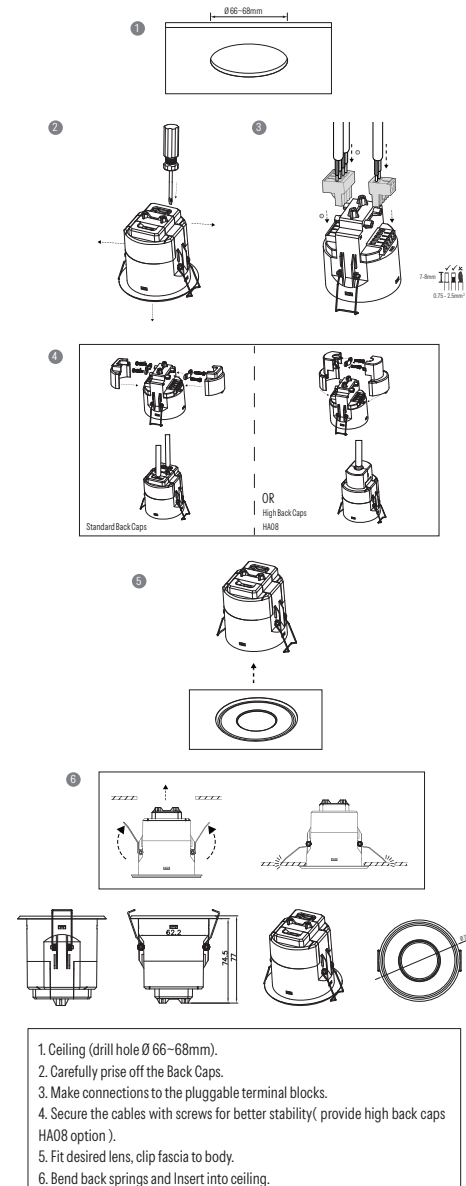
Koolmesh Pro app for iPad



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

3. Installation

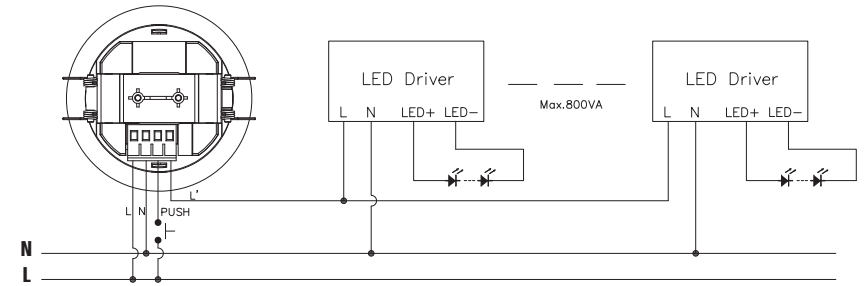
Mechanical Structure & Dimensions



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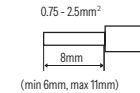
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4. Wiring Diagram



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

Wire Preparation



Pluggable screw terminal. It is recommended to make connections to the terminal before fitting to the sensor.

5. 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. Avoid accidentally entering semi-auto mode.
4. Pay attention to the daylight sensor threshold value, which needs to be adjusted according to the installation environment.

Placement Guide and Typical Range

Smart Phone to Device Range



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.

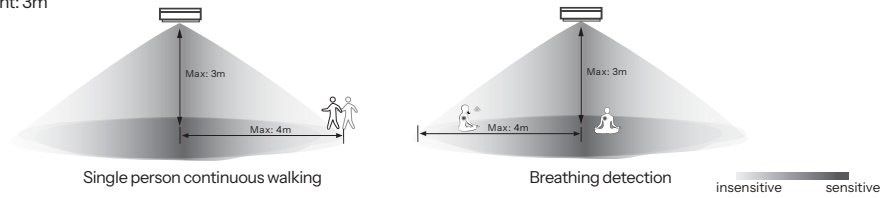
Once the devices have been added to the network via the App, the devices will start communicating within the wireless mesh. This means that once the network is complete, all devices are accessible from the smart device when in a 20m range of a single point.

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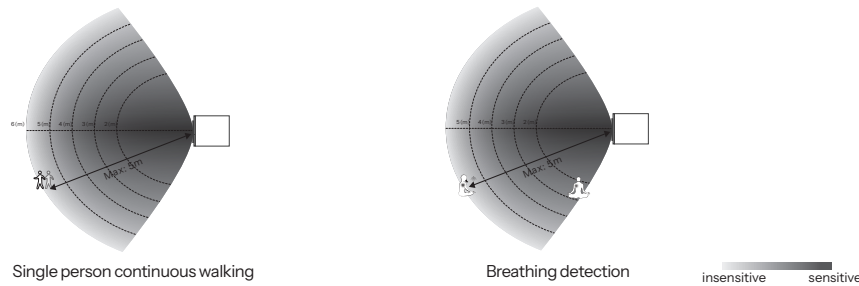
6. Detection Pattern & Optional Accessories

Ceiling-mounted application
Installation height: 3m



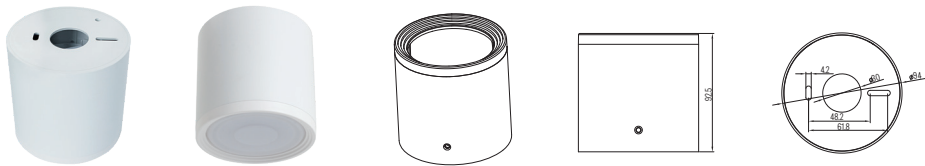
*When it's in breathing & true occupancy detection mode and in sitting situation, facing to sensor directly will have a better detection range than 90 degrees side facing to sensor.

Wall-mounted application
Installation height: max.3m

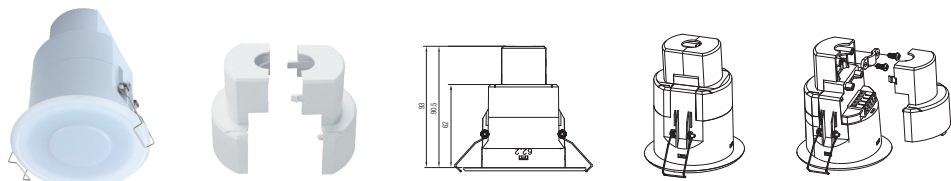


*When it's in breathing & true occupancy detection mode and in sitting situation, facing to sensor directly will have a better detection range than 90 degrees side facing to sensor.

Optional Accessory --- Ceiling/Surface Metal Mount Box: HA09/W, HA09/B, HA09/G



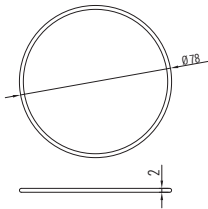
Optional Accessory --- HA08



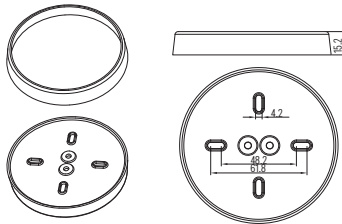
*Note: Optional accessory HA09 & HA08 can not be used together.

Big and small silicon gasket used to make IP54 degree protection (mounted into HA09 housing for ceiling mount)

Small silicon water-proof gasket dimension(size:mm)



Big silicon water-proof gasket dimension(size:mm)



7. 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 (<1second) * 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 (≥1second)	- 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 (<1second) * 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 (≥1second)	- Start Self test (Monthly) - Stop Self test	- Start Self test (Annually) - Invalid
Fire Alarm (VFC signal only)	Refer to http://fag.koolmesh.com/doc/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.	

8. Additional Information / Documents

- To learn more about detailed product features/functions, please kindly refer to <https://hytronik.com/product/hbmw28-pro>
- Regarding precautions for Bluetooth product installation and operation, please kindly refer to <https://hytronik.com/service/downloads> (Bluetooth Products Precautions for Product Installation and Operation)
- Regarding precautions for Microwave sensor installation and operation, please kindly refer to <https://hytronik.com/service/downloads> (Microwave Sensors Precautions for Product Installation and Operation)
- Data sheet is subject to change without notice. Please always refer to the most recent release on <https://hytronik.com/products/motion-daylight-sensors>
- Regarding Hytronik standard guarantee policy, please kindly refer to <https://hytronik.com/service/downloads> (Guarantee Conditions document)