

PIR Standalone Motion Sensor with  Bluetooth® 5.0 SIG Mesh

HBIR36

Low-bay

HBIR36/H

High-bay

HBIR36/R

Reinforced Low-bay

HBIR36/RH

Reinforced High-bay

HBIR36/W

Wide range Low-bay

HYTRONIK®



CB



CE

IP20



























RED



Product Description








HBIR36 is a Bluetooth PIR standalone motion sensor with 2 x 100VA trailing edge output. It is ideal for typical retrofit or refurbishment projects with traditional lamps. With Bluetooth wireless mesh networking, it makes communication between luminaires much easier without time-consuming hardwiring, which is always a headache especially for old buildings – you do not need any extra wirings to upgrade old buildings with smart lighting! Meanwhile, simple device setup and commissioning can be done via **Koolmesh™** app.

App Features

-  Quick setup mode & advanced setup mode
-  Tri-level control
-  Daylight harvest
-  Floorplan feature to simplify project planning
-  Web app/platform for dedicated project management
-  Koolmesh Pro iPad version for on-site configuration
-  Grouping luminaires via mesh network
-  Scenes
-  Detailed motion sensor settings
-  Dusk/Dawn photocell (Twilight function)
-  Push switch configuration
-  Schedule to run scenes based on time and date
-  Astro timer (sunrise and sunset)
-  Staircase function (primary & secondary)
-  Internet-of-Things (IoT) featured
-  Device firmware update over-the-air (OTA)
-  Device social relations check
-  Bulk commissioning (copy and paste settings)
-  Dynamic daylight harvest auto-adaptation
-  Power-on status (memory against power loss)
-  Offline commissioning
-  Different permission levels via authority management
-  Network sharing via QR code or keycode
-  Remote control via gateway support HBGW01
-  Interoperability with Hytronik Bluetooth product portfolio
-  Compatible with EnOcean BLE switches
-  Continuous development in progress...



Hardware Features

-  2 x 100VA trailing edge output
-  2 Push inputs for flexible manual control
-  IP20/IP54 Ceiling/Surface mount box available as accessory
-  Two types of blind inserts / blanking plates
-  User-friendly design for installation
-  High bay version available (up to 15m in height)
-  5-year warranty



Fully support EnOcean self-powered switch module PTM215B (HBES01/W & HBES01/B)

Bluetooth 5.0 SIG mesh







Smartphone app for both iOS & Android platform





Koolmesh Pro app for iPad





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

Technical Specifications

| Bluetooth Transceiver | |
|------------------------|---|
| Operation frequency | 2.4 GHz - 2.483 GHz |
| Transmission power | 4 dBm |
| Range (Typical indoor) | 10~30m |
| Protocol |  Bluetooth® 5.0 SIG Mesh |

| Sensor Data | |
|-----------------|--|
| Sensor Model | PIR max* detection range |
| HBIR36 | Installation Height : 6m Detection Range(Ø) : 9m |
| HBIR36/R | Installation Height : 6m Detection Range(Ø) : 10m |
| HBIR36/W | Installation Height : 6m Detection Range(Ø) : 18m |
| HBIR36/H | Installation height: 1.5m (forklift) 12m (person) Detection range (Ø): 24m |
| HBIR36/RH | Installation height: 20m (forklift) 12m (person) Detection range (Ø): 40m |
| Detection angle | 360° |

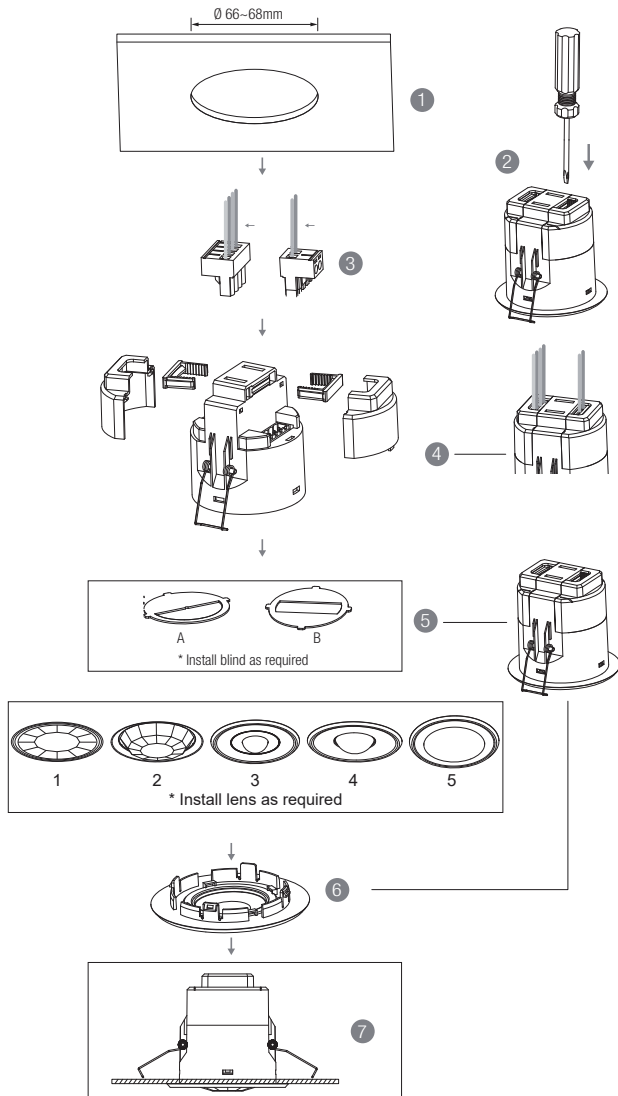
* For more details of detection range, please refer to "detection pattern" section.

| Input & Output Characteristics | |
|--------------------------------|--|
| Operating voltage | 230VAC 50Hz |
| Stand-by power | <1W |
| Load ratings | 2x100VA (Capacitive) 2x150W (Resistive) |
| Warming-up | 20s |

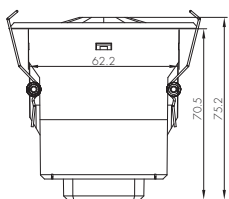
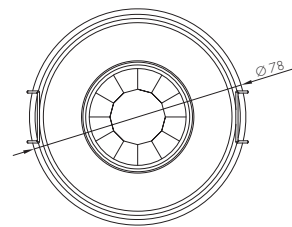
| Safety & EMC | |
|-----------------------|--|
| EMC standard (EMC) | EN55015, EN61000, EN61547 |
| Safety standard (LVD) | EN60669-1, EN60669-2-1 AS/NZS60669-1/-2-1 |
| RED | EN300328, EN301489-1/-17 |
| Certification | CB, CE, EMC, RED, RCM |

| Environment | |
|-----------------------|-------------------|
| Operation temperature | Ta: -20°C ~ +45°C |
| IP rating | IP20 |

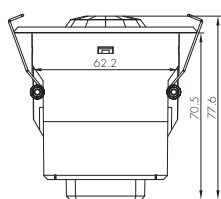
Mechanical Structure & Dimensions



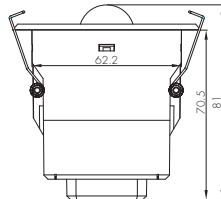
1. Ceiling (drill hole \varnothing 66~68mm)
2. Carefully prise off the cable clamps.
3. Make connections to the pluggable terminal blocks.
4. Insert plug connectors and secure using the provided cable clamps, then clip terminal covers to the base.
5. Fit detection blind (if required) and desired lens.
6. Clip fascia to body.
7. Bend back springs and insert into ceiling.



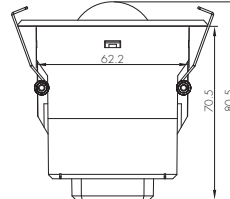
HBR36



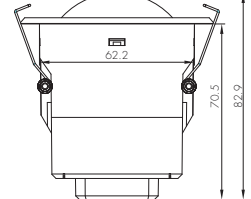
HBR36/R



HBR36/W

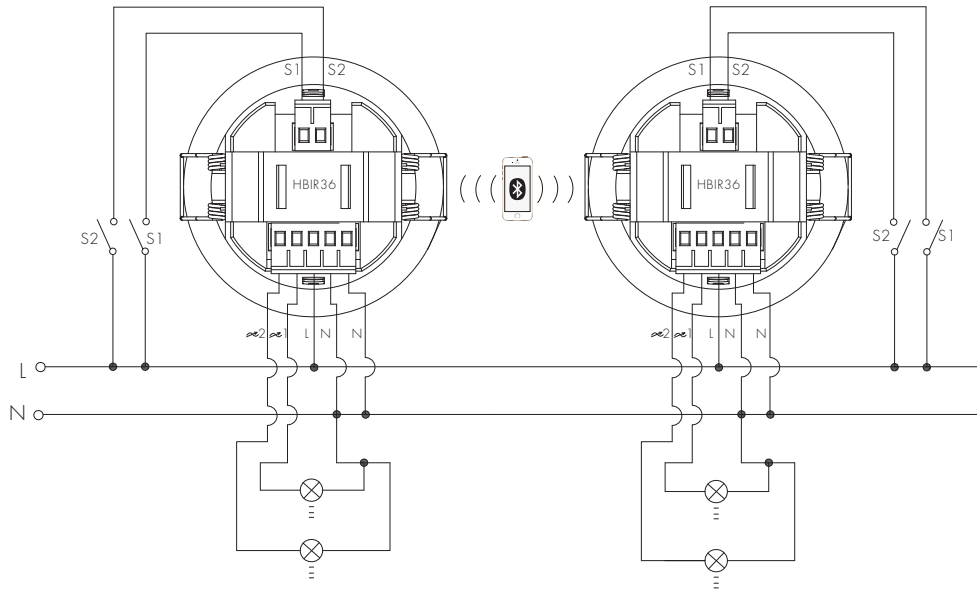


HBR36/H

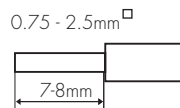
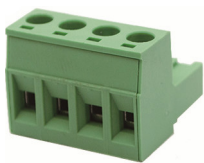


HBR36/RH

Wiring Diagram



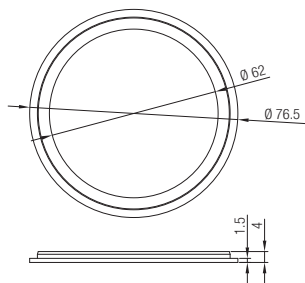
Wire Preparation



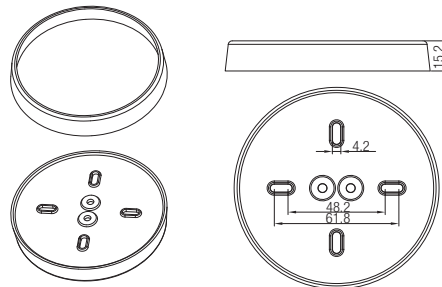
Pluggable screw terminal. It is recommended to make connections to the terminal before fitting to the sensor.

Big and small silicon gasket used to make IP54 degree protection when HBR36 series device mounted into HA09 housing for ceiling mount

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

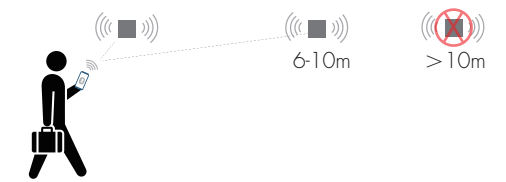


Big silicon water-proof gasket dimension(size:mm)



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.

1. HBR36 (Low-bay)

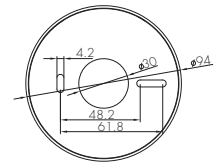
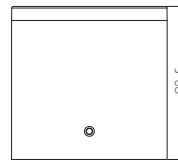


HBR36: Low-bay flat lens detection pattern for **single person** @ $T_a = 20^\circ\text{C}$

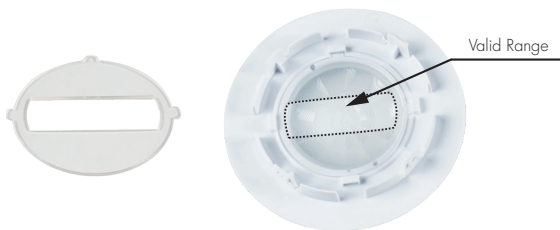
(Recommended ceiling mount installation height **2.5m-6m**)

| A: Tangential movement | B: Radial movement | Mount height | Tangential (A) | Radial (B) |
|------------------------|--------------------|--------------|-------------------------------|-------------------------------|
| | | 2.5m | max 50m ² (Ø = 8m) | max 13m ² (Ø = 4m) |
| | | 3m | max 64m ² (Ø = 9m) | max 13m ² (Ø = 4m) |
| | | 4m | max 38m ² (Ø = 7m) | max 13m ² (Ø = 4m) |
| | | 5m | max 38m ² (Ø = 7m) | max 13m ² (Ø = 4m) |
| | | 6m | max 38m ² (Ø = 7m) | max 13m ² (Ø = 4m) |

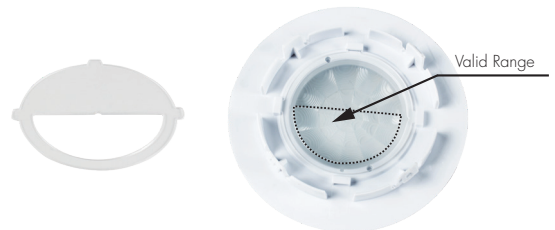
Optional Accessory --- Ceiling/Surface Metal Mount Box: HA09/W, HA09/B, HA09/G



Optional Accessory --- Blind Insert for Blocking Certain Detection Angles



Blind Option 1 --- Aisle Detection



Blind Option 2 --- 180° Detection

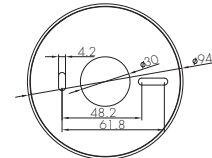
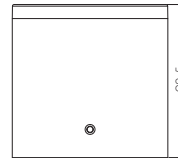
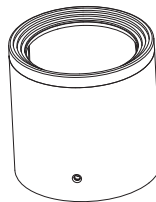
2. HBIR36/R (Reinforced Low-bay)



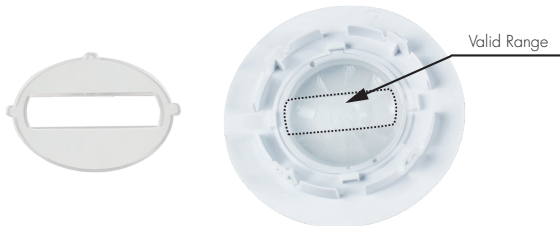
HBIR36/R: Low-bay convex lens detection pattern for single person @ Ta = 20°C
(Recommended ceiling mount installation height **2.5m-6m**)

| A: Tangential movement | B: Radial movement | Mount height | Tangential (A) | Radial (B) |
|---|---|--------------|--------------------------------|-------------------------------|
|  |  | 2.5m | max 79m ² (∅ = 10m) | max 20m ² (∅ = 5m) |
| | | 3m | max 79m ² (∅ = 10m) | max 20m ² (∅ = 5m) |
| | | 4m | max 64m ² (∅ = 9m) | max 20m ² (∅ = 5m) |
| | | 5m | max 50m ² (∅ = 8m) | max 20m ² (∅ = 5m) |
| | | 6m | max 50m ² (∅ = 8m) | max 20m ² (∅ = 5m) |

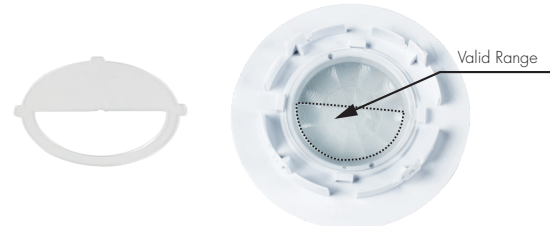
Optional Accessory --- Ceiling/Surface Metal Mount Box: HA09/W, HA09/B, HA09/G



Optional Accessory --- Blind Insert for Blocking Certain Detection Angles



Blind Option 1 --- Aisle Detection



Blind Option 2 --- 180° Detection

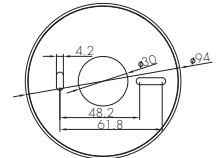
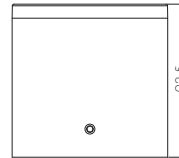
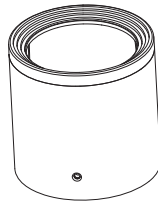
3. HBIR36/W (Wide range Low-bay)



HBIR36/W: Low-bay convex lens detection pattern for **single person** @ Ta = 20°C
 (Recommended ceiling mount installation height **2.5m-6m**)

| A: Tangential movement | B: Radial movement | Mount height | Tangential (A) | Radial (B) |
|------------------------|--------------------|--------------|---------------------------------|-------------------------------|
| | | 2.5m | max 254m ² (∅ = 18m) | max 28m ² (∅ = 6m) |
| | | 3m | max 254m ² (∅ = 18m) | max 28m ² (∅ = 6m) |
| | | 4m | max 154m ² (∅ = 14m) | max 28m ² (∅ = 6m) |
| | | 5m | max 113m ² (∅ = 12m) | max 28m ² (∅ = 6m) |
| | | 6m | max 79m ² (∅ = 10m) | max 13m ² (∅ = 4m) |

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



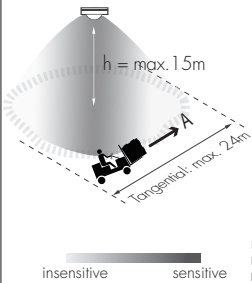
4. HBIR36/H (High-bay)



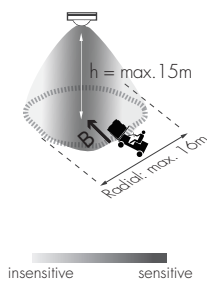
HBIR36/H: High-bay lens detection pattern for forklift @ $T_a = 20^\circ\text{C}$

(Recommended ceiling mount installation height **10m-15m**)

A: Tangential movement



B: Radial movement



Mount height

Tangential (A)

Radial (B)

10m

max 380m² (Ø = 22m)

max 201m² (Ø = 16m)

11m

max 452m² (Ø = 24m)

max 201m² (Ø = 16m)

12m

max 452m² (Ø = 24m)

max 201m² (Ø = 16m)

13m

max 452m² (Ø = 24m)

max 177m² (Ø = 15m)

14m

max 452m² (Ø = 24m)

max 133m² (Ø = 13m)

15m

max 452m² (Ø = 24m)

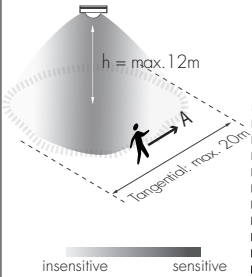
max 113m² (Ø = 12m)



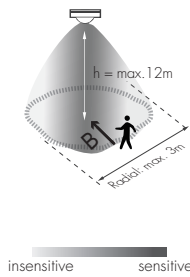
HBIR36/H: High-bay lens detection pattern for single person @ $T_a = 20^\circ\text{C}$

(Recommended ceiling mount installation height **2.5m-12m**)

A: Tangential movement



B: Radial movement



Mount height

Tangential (A)

Radial (B)

2.5m

max 50m² (Ø = 8m)

max 7m² (Ø = 3m)

6m

max 104m² (Ø = 11.5m)

max 7m² (Ø = 3m)

8m

max 154m² (Ø = 14m)

max 7m² (Ø = 3m)

10m

max 227m² (Ø = 17m)

max 7m² (Ø = 3m)

11m

max 269m² (Ø = 18.5m)

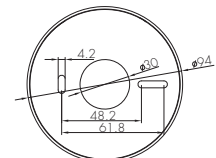
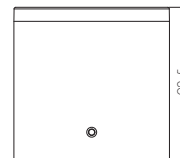
max 7m² (Ø = 3m)

12m

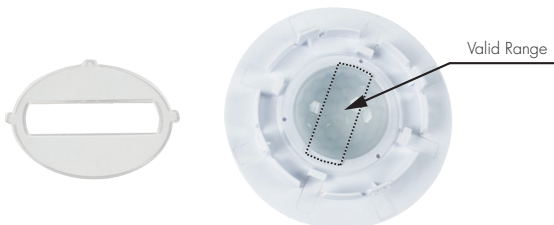
max 314m² (Ø = 20m)

max 7m² (Ø = 3m)

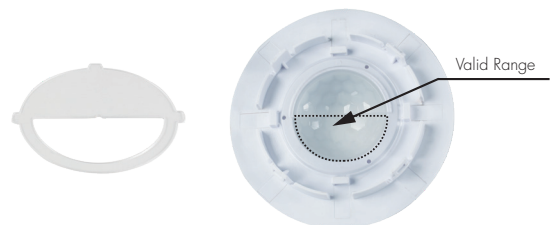
Optional Accessory --- Ceiling/Surface Metal Mount Box: HA09/W, HA09/B, HA09/G



Optional Accessory --- Blind Insert for Blocking Certain Detection Angles



Blind Option 1 --- Aisle Detection



Blind Option 2 --- 180° Detection

5. HBIR36/RH (Reinforced High-bay with 3-Pyro)



HBIR36/RH: Reinforced high-bay lens detection pattern for **forklift** @ Ta = 20°C
 (Recommended ceiling mount installation height **10m-20m**)

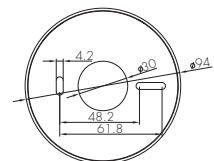
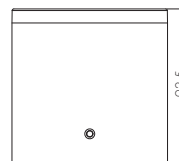
| A: Tangential movement | B: Radial movement | Mount height | Tangential (A) | Radial (B) |
|------------------------|--------------------|--------------|----------------------------------|---------------------------------|
| | | 10m | max 346m ² (Ø = 21m) | max 177m ² (Ø = 15m) |
| | | 11m | max 660m ² (Ø = 29m) | max 177m ² (Ø = 15m) |
| | | 12m | max 907m ² (Ø = 34m) | max 154m ² (Ø = 14m) |
| | | 13m | max 962m ² (Ø = 35m) | max 154m ² (Ø = 14m) |
| | | 14m | max 1075m ² (Ø = 37m) | max 113m ² (Ø = 12m) |
| | | 15m | max 1256m ² (Ø = 40m) | max 113m ² (Ø = 12m) |
| | | 20m | max 707m ² (Ø = 30m) | max 113m ² (Ø = 12m) |



HBIR36/RH: Reinforced high-bay lens detection pattern for **single person** @ Ta = 20°C
 (Recommended ceiling mount installation height **2.5m-12m**)

| A: Tangential movement | B: Radial movement | Mount height | Tangential (A) | Radial (B) |
|------------------------|--------------------|--------------|---------------------------------|-------------------------------|
| | | 2.5m | max 38m ² (Ø = 7m) | max 7m ² (Ø = 3m) |
| | | 6m | max 154m ² (Ø = 14m) | max 7m ² (Ø = 3m) |
| | | 8m | max 314m ² (Ø = 20m) | max 7m ² (Ø = 3m) |
| | | 10m | max 531m ² (Ø = 26m) | max 13m ² (Ø = 4m) |
| | | 11m | max 615m ² (Ø = 28m) | max 13m ² (Ø = 4m) |
| | | 12m | max 707m ² (Ø = 30m) | max 13m ² (Ø = 4m) |

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



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 | / | - 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. |

Additional Information / Documents

- To learn more about detailed product features/functions, please refer to [www.hytronik.com/download ->knowledge ->Introduction of App Scenes and Product Functions](http://www.hytronik.com/download->knowledge->Introduction%20of%20App%20Scenes%20and%20Product%20Functions)
- 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](http://www.hytronik.com/download->knowledge->Bluetooth%20Products%20-%20Precautions%20for%20Product%20Installation%20and%20Operation)
- Regarding precautions for PIR Sensors installation and operation, please kindly refer to [www.hytronik.com/download ->knowledge ->PIR Sensors - Precautions for Product Installation and Operation](http://www.hytronik.com/download->knowledge->PIR%20Sensors%20-%20Precautions%20for%20Product%20Installation%20and%20Operation)
- 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](http://www.hytronik.com/products/bluetooth%20technology->Bluetooth%20Sensors)
- Regarding Hytronik standard guarantee policy, please refer to [www.hytronik.com/download ->knowledge ->Hytronik Standard Guarantee Policy](http://www.hytronik.com/download->knowledge->Hytronik%20Standard%20Guarantee%20Policy)