Bluetooth® 5.0 PIR Motion Sensor with Zhaga

HIR60 — Low bay
HIR60/R — Mid bay with IP65

HYTRONIK®

Zhaga DALI CE UKCA RED UKCA

Product Description

HIR60 & HIR60/R are Bluetooth 5.0 SIG mesh PIR motion sensors, designed with Zhaga D4i (Book 20 connection) that enables lighting designers/manufactures to freely connect to Zhaga Book 20 LED Drivers via plug'n'play. It's embedded with Bluetooth module, PIR sensor and also a daylight sensor, and yet comes with a surprisingly super-mini size! 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.

HIR60

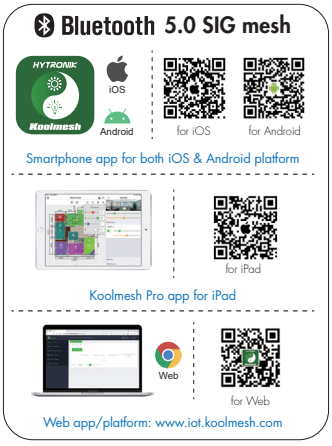
HIR60/R

App Features

- Quick setup mode & advanced setup mode
- Tri-level control
- Daylight harvest
- Circadian rhythm (Human centric lighting)
- 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)
- Schedule to run scenes based on time and date
- Astro timer (sunrise and sunset)
- Staircase function (master & slave)
- 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
- Continuous development in progress…

Hardware Features

- 5-in-1: Bluetooth 5.0 + Zhaga + D4i + PIR motion sensor + Daylight sensor
- Optional accessories for different mounting style
- MINI Super compact mini size
- Plug'n'Play via Zhaga Book 20 connection
- 5-year warranty
- IP65 IP65 rated design for HIR60/R
- DALI coming soon...
- D4i coming soon...



Technical Specifications

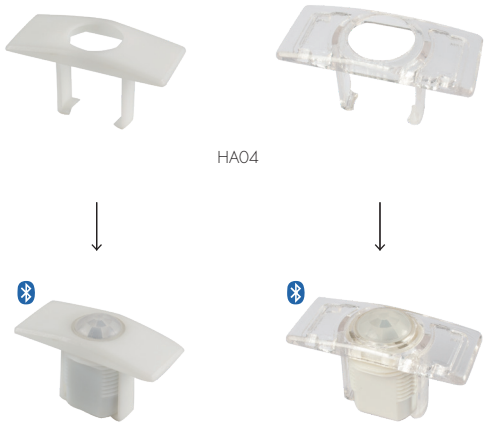
Bluetooth Transceiver	
Operation frequency	2.4 GHz - 2.483 GHz
Transmission power	4 dBm
Range (Typical indoor)	10~30m
Protocol	Bluetooth® 5.0 SIG Mesh

Environment	
Operation temperature	Ta: -20°C ~ 50°C
Storage temperature	-40°C ~ +70°C
Relative humidity	10 ~ 90%
IP rating	IP20

PIR Sensor Properties (HIR60 & HIR60/R)	
Sensor principle	PIR detection
Operation voltage	9.5~22.5VDC
Input current	Approx. 30mA
Detection range *	HIR60 Max installation height: 3m Max detection range (∅): 12m HIR60/R Max installation height: 8m (for person) Max installation height: 12m (for forklift) Max detection range (∅): 20m
Detection angle	360°

* The detection range is heavily influenced by sensor placement (angle) and different walking paces. It may be reduced under certain conditions.

Optional Accessories



HA04

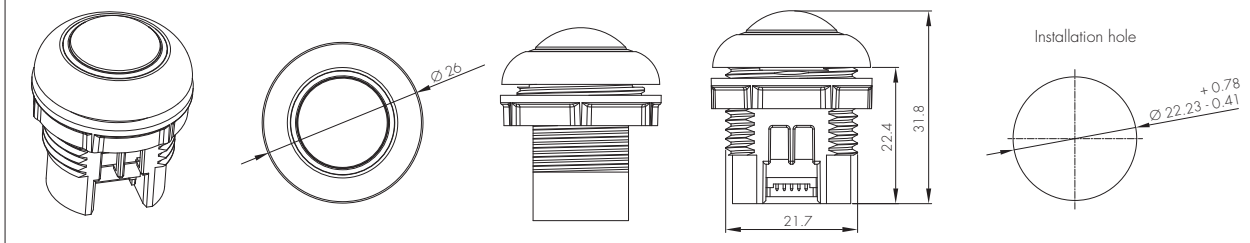
HA05

Demenstration of installation for transparent version

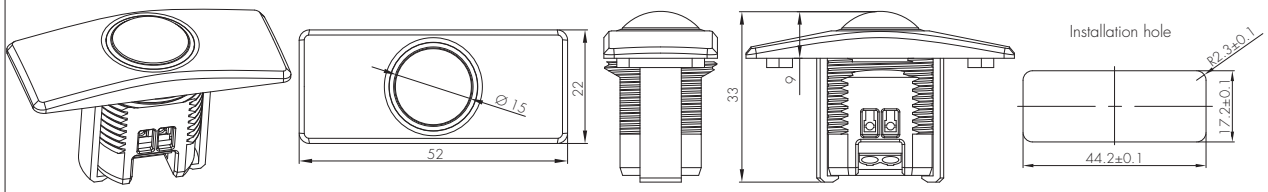
→

Mechanical Structure & Dimensions

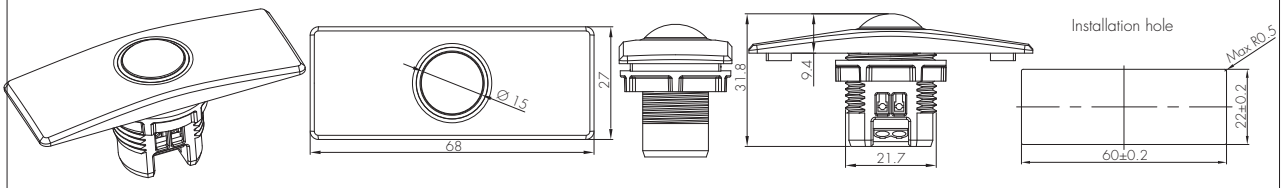
HIR60



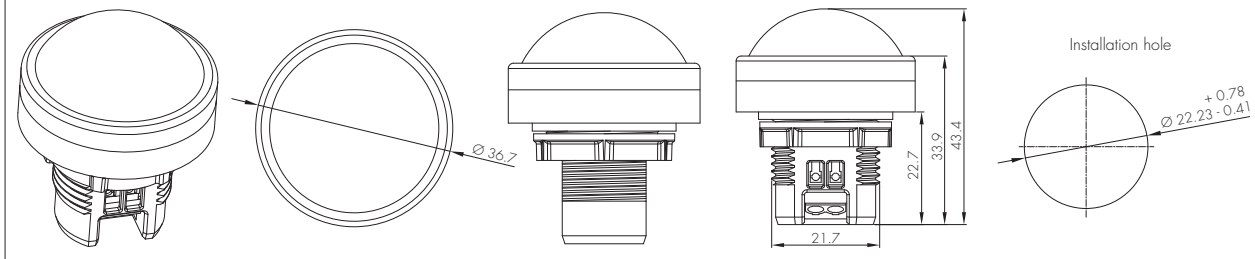
HIR60 with HA04



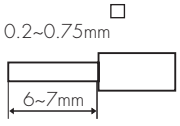
HIR60 with HA05



HIR60/R (IP65)



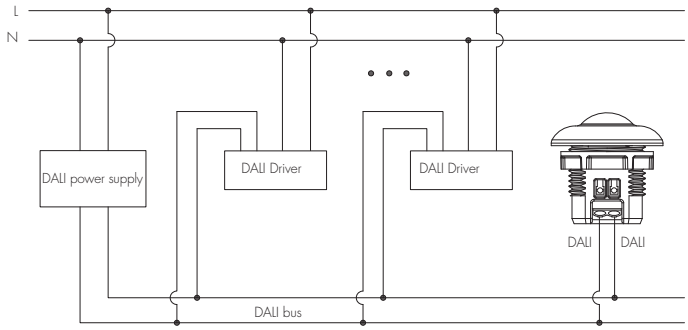
Wire Preparation



To make or release the wire from the terminal, use a screwdriver to push down the button.

Wiring Diagram

DALI Driver



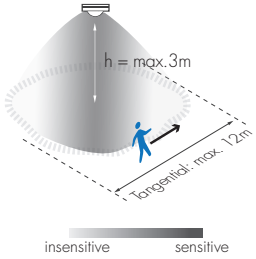
Detection Pattern - - Diagram 1

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 field, without noticeable obstacles or influences that may affect PIR performances.

HIR60

Tangential movement



Mount height	Tangential Movement
3m	max 113m² (Ø = 12m)

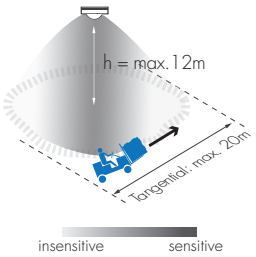
Detection Pattern - - Diagram 2

The data below is tested under following conditions:

- Forklift driving;
- 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 field, without noticeable obstacles or influences that may affect PIR performances.

HIR60/R

Tangential movement



Mount height	Tangential Movement
8m	max 201m² (Ø = 16m)
9m	max 227m² (Ø = 17m)
10m	max 254m² (Ø = 18m)
11m	max 314m² (Ø = 20m)
12m	max 314m² (Ø = 20m)

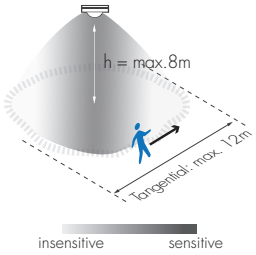
Detection Pattern - - Diagram 3

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 field, without noticeable obstacles or influences that may affect PIR performances.

HIR60/R

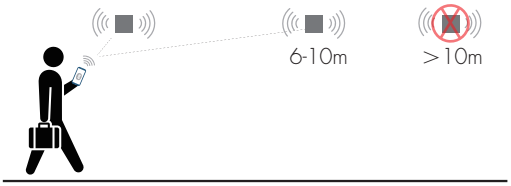
Tangential movement



Mount height	Tangential Movement
3m	max 38m² (Ø = 7m)
4m	max 50m² (Ø = 8m)
5m	max 50m² (Ø =8m)
6m	max 64m² (Ø = 9m)
7m	max 95m² (Ø = 11m)
8m	max 113m² (Ø = 12m)

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.

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. 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

4. 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

5. Regarding Hytronik standard guarantee policy, please refer to
   www.hytronik.com/download ->knowledge ->Hytronik Standard Guarantee Policy