

Bluetooth® PIR Motion Sensor Compatible with Zhaga Book 20

HIR60/NLC      HIR60/NLC/R

Technology Partner **SILVAIR**

**HYTRONIK**®



## Product Description

HIR60/NLC & HIR60/NLC/R are Bluetooth 5.0 SIG mesh PIR motion sensors, designed with Zhaga Book 20 connection that enables lighting designers/manufacturers 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! Meanwhile, all commissioning and settings can be done via SILVAIR app.



HIR60/NLC



HIR60/NLC/R

## Functions and Features

- Bluetooth® mesh compliant
- 4-in-1: Bluetooth + Zhaga + PIR motion sensor + Daylight sensor
- Optional accessories for different mounting style
- Super compact mini size
- Plug'n'Play via Zhaga Book 20 connection
- Daylight harvesting

(Note: The component may not be suitable for daylight harvesting usage due to not being precise in lux measurements. Please only use daylight harvesting feature if user conducted field tests and accepts the the tolerance level.)

- Scene control, Task tuning (0-100%)
- Compact form factor
- Autonomous sensor-based control
- OTA firmware upgrade
- Continuous dimming
- Individual/group addressing
- Decentralized control (no single point of failure)
- User-friendly design for installation
- IP65 rated design for HIR60/NLC/R
- 5-years warranty




## The access to SilvaIR apps

mobile app: SilvaIR on the App Store

web app: [platform.silvaIR.com](https://platform.silvaIR.com)

## Technical Specifications

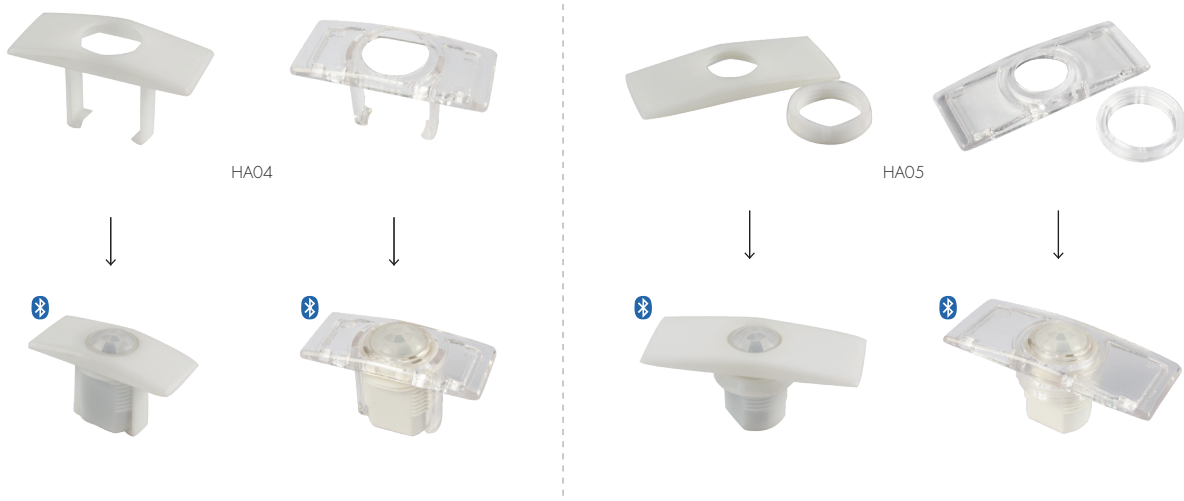
| Bluetooth Transceiver  |   |
|------------------------|---|
| Operation frequency    | 2.4 GHz - 2.483 GHz   |
| Transmission power     | 4 dBm   |
| Range (Typical indoor) | 10~30m  |
| Protocol               |  Bluetooth® Mesh |

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

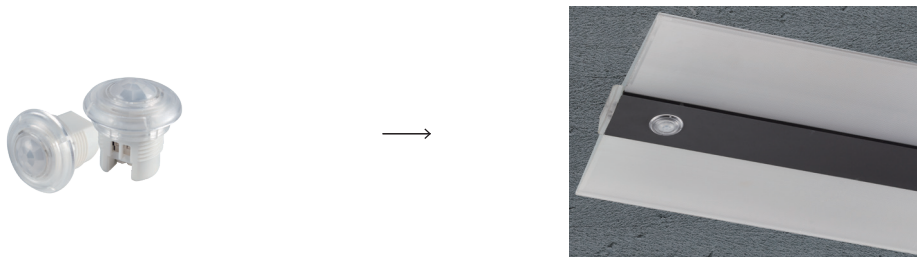
| PIR Sensor Properties (HIR60/NLC & HIR60/NLC/R) |  |
|---|--|
| Sensor principle                                | PIR detection  |
| Operation voltage                               | 9.5~22.5VDC  |
| Input current                                   | Approx. 30mA   |
| Detection range *                               | HIR60/NLC<br>Max installation height: 3m<br>Max detection range (Ø): 12m<br><br>HIR60/NLC/R<br>Max installation height: 8m (for person)<br>Max installation height: 12m (for forklift)<br>Max detection range (Ø): 14m |
| 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

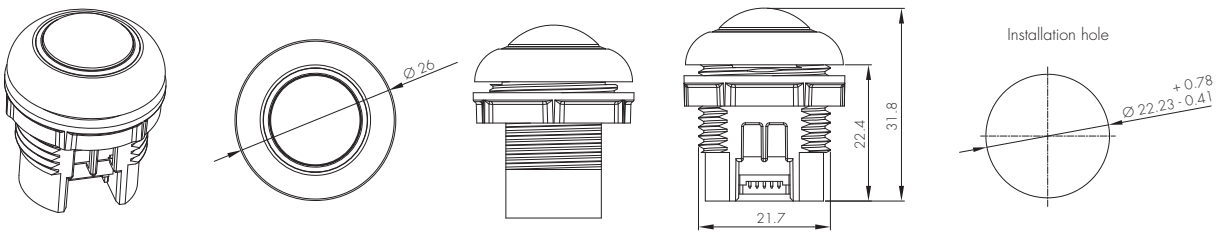


## Demonstration of installation for transparent version

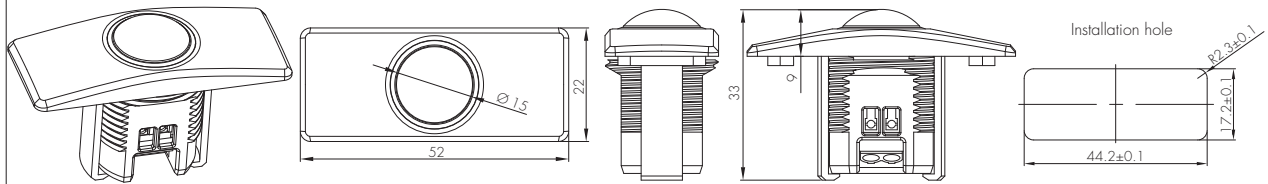


## Mechanical Structure & Dimensions

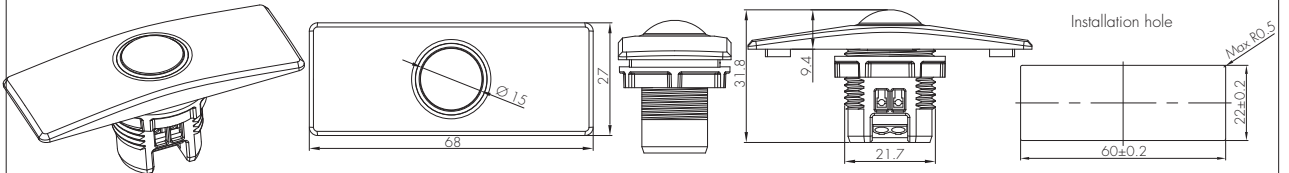
HIR60/NLC



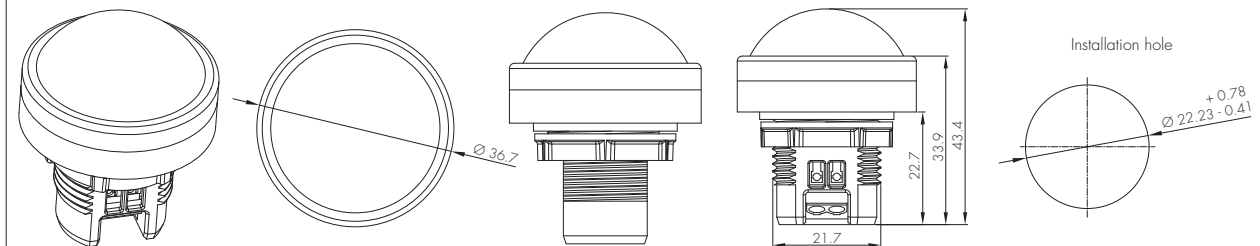
HIR60/NLC with HA04



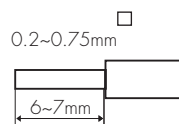
HIR60/NLC with HA05



HIR60/NLC/R (IP65)



## Wire Preparation

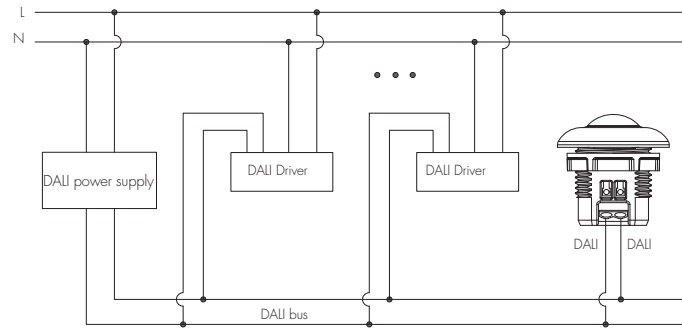


To make or release the wire from the terminal, use a screwdriver to push down the button.

- 1.100 metres (total) max. for 0.5mm<sup>2</sup> CSA (Ta = 50°C)
- 2.150 metres (total) max. for 0.75mm<sup>2</sup> CSA (Ta = 50°C)

# Wiring Diagram

## DAI Driver



## Detection Pattern -- Diagram 1

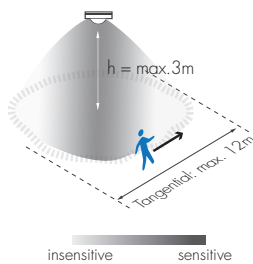
The data below is tested under following conditions:

- Single person walking;
- Sensor not connected to any driver that may have soft-on period;
- Testing temperature  $T_a = 20^\circ\text{C}$ ;
- The testing is conducted in an open and spacious indoor field, without noticeable obstacles or influences that may affect PIR performances.



HIR60/NLC

Tangential movement



| Mount height | Tangential Movement                                  |
|--------------|--|
| 3m           | max 113m <sup>2</sup> ( $\varnothing = 12\text{m}$ ) |

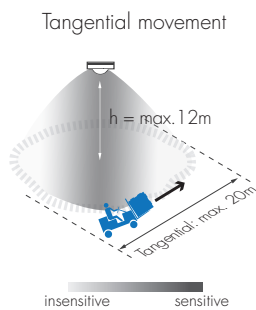
## Detection Pattern -- Diagram 2

The data below is tested under following conditions:

- Forklift driving;
- Sensor not connected to any driver that may have soft-on period;
- Testing temperature  $T_a = 20^\circ\text{C}$ ;
- The testing is conducted in an open and spacious indoor field, without noticeable obstacles or influences that may affect PIR performances.



HIR60/NLC



| Mount height | Tangential Movement             |
|--------------|---------------------------------|
| 8m           | max 201m <sup>2</sup> (Ø = 16m) |
| 9m           | max 227m <sup>2</sup> (Ø = 17m) |
| 10m          | max 254m <sup>2</sup> (Ø = 18m) |
| 11m          | max 314m <sup>2</sup> (Ø = 20m) |
| 12m          | max 314m <sup>2</sup> (Ø = 20m) |

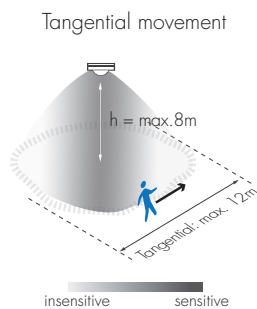
## Detection Pattern -- Diagram 3

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  $T_a = 20^\circ\text{C}$ ;
- The testing is conducted in an open and spacious indoor field, without noticeable obstacles or influences that may affect PIR performances.



HIR60/NLC/R



| Mount height | Tangential Movement             |
|--------------|---------------------------------|
| 3m           | max 38m <sup>2</sup> (Ø = 7m)   |
| 4m           | max 50m <sup>2</sup> (Ø = 8m)   |
| 5m           | max 50m <sup>2</sup> (Ø = 8m)   |
| 6m           | max 64m <sup>2</sup> (Ø = 9m)   |
| 7m           | max 95m <sup>2</sup> (Ø = 11m)  |
| 8m           | max 113m <sup>2</sup> (Ø = 12m) |

### 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. 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)
2. Data sheet is subject to change without notice. Please always refer to the most recent release on [www.hytronik.com/products/bluetooth technology ->Partnership](http://www.hytronik.com/products/bluetooth%20technology->Partnership)
3. 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)