

# Installation and Instruction Manual

**HYTRONIK**®

**IP65 HF Zhaga book 18 Standard Motion Sensor**  
D4i Certified, High-Bay

**SAM15/BLE**

## 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
Stand-by power	<0.5W
Operating voltage & current	12-36V @ 30mA
Bus current consumption	2mA
DALI Input voltage	9.5-22.5V
Sensor principle	High Frequency (microwave)
Lux Range	0-1000 lux
Detection range*	Max installation height: 15m (forklift) 12m (single person) Max detection range: φ15m (forklift) φ20m (single person)
Detection angle	360°
Sensitivity	10% / 30% / 50% / 75% / 100%
Operation temperature	Ta: -20°C ~ +50°C
Storage temperature	Ta: -35°C ~ +55°C
Relative humidity	20 ~ 90%
IP rating	IP65
Insulation	Class II

## 2. Download the App

Free App for set-up and commissioning

**Bluetooth® 5.0 SIG mesh**

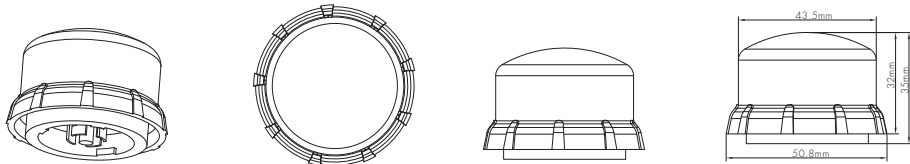
**Koolmesh** for iOS **Koolmesh** for Android

Smartphone app for both iOS & Android platform

**Koolmesh Pro app for iPad**

Web app/platform: [www.iot.koolmesh.com](http://www.iot.koolmesh.com)

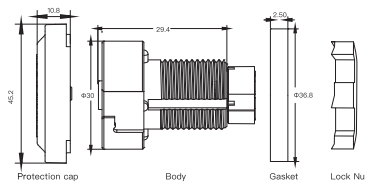
## 3. Mechanical Structure & Dimensions



## 4. Receptacle Accessory

The HA18SKT receptacle is designed to be compatible with the SAM15 and HIR15 series products. It provides a Zhaga Book 18 standard interface, suitable for roadway lighting, area lighting, and occupancy lighting applications.

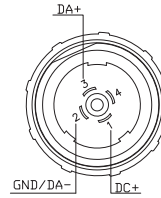
## Mechanical Structure & Dimensions



For more details, please refer to <https://hytronik.com/product/ha18skt>

Note: HA18SKT not included in the package.

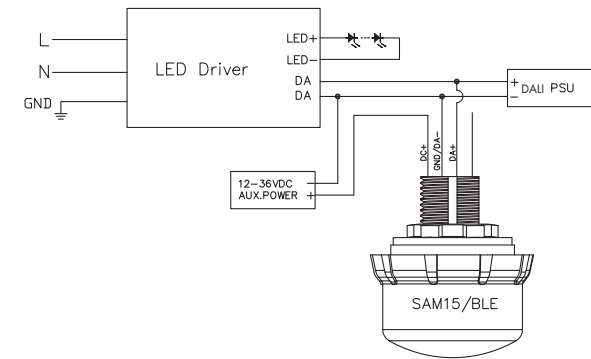
## 5. Wiring Diagram Notes



- The total current on the DALI bus must not exceed 250mA.
- When using D4i drivers, if the total current exceeds this limit, a third-party DALI controller can shut down the DALI bus power supply via command.
- Multiple master devices should not be connected in parallel.
- Terminal block 4 is left unpopulated by default. No wiring required.
- When utilizing a single SAM15/BLE, refrain from connecting more than 3 D4i drivers to prevent potential equipment damage due to exceeding the DALI bus current.
- Ensure that only one device (either the LED D4i Driver or the SAM15/BLE sensor) has the DALI power supply enabled. By default, the DALI power supply of the SAM15/BLE sensor is disabled. If activation is required, it must be done manually via the Koolmesh app.

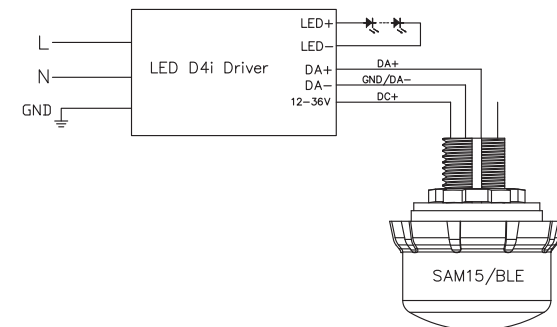
## Wiring Diagram 1

Standard Driver with External AUX & PSU



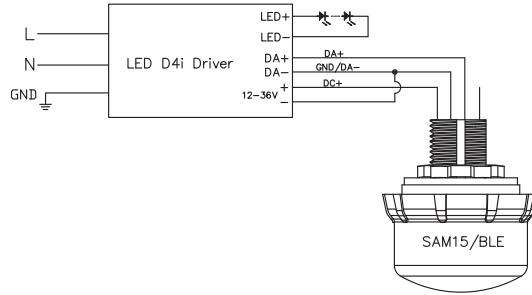
## Wiring Diagram 2

D4i Driver with Common Negative



### Wiring Diagram 3

D4i Driver with Isolated Negative



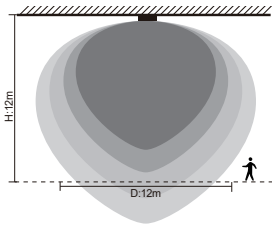
### 6. Detection Range

The data above 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 sensor detection area shown in this table is relevant for an empty space.

In areas with hard surfaces such as metal racking and/or glass corridors then the detection range can be extended from these internal reflections by up to 30%.



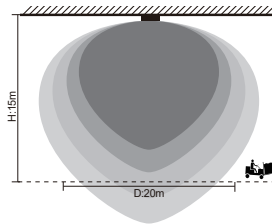
Height (m)	Sensitivity				
	100%	75%	50%	30%	10%
	Diameter (Ø : m)				
12	12	9	6	none	none
8	13	10	6	2	none
5	14	11	7	5	2
3	15	12	8	6	5

The data above is tested under following conditions:

- Forklift driving at a speed of 15km/h;
- Sensor not connected to any driver that may have soft-on period;
- Testing temperature  $T_a = 20^\circ\text{C}$ ;

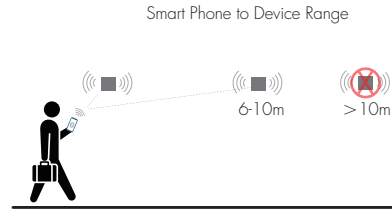
The sensor detection area shown in this table is relevant for an empty space.

In areas with hard surfaces such as metal racking and/or glass corridors then the detection range can be extended from these internal reflections by up to 30%.



Height (m)	Sensitivity
	100%
	Diameter (Ø : m)
15	20

### Placement Guide and Typical 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.

### 7. Additional Information / Documents

1. To learn more about detailed product features/functions, please kindly refer to <https://hytronik.com/product/sam15-ble>
2. 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)
3. 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)
4. Data sheet is subject to change without notice, Please always refer to the most recent release on <https://hytronik.com/products/motion-daylight-sensors>
5. Regarding Hytronik standard guarantee policy, please kindly refer to <https://hytronik.com/service/downloads> (Guarantee Conditions document)