

IP65 HF Zhaga book 18 Standard Motion Sensor with Bluetooth® 5.0 SIG Mesh

SAM15/BLE

D4i Certified, High-Bay

Product Description

SAM15/BLE is a Bluetooth high-bay HF motion sensor with dimming, tunable white and daylight control. It includes Photocell Advance technology, using two photocells to differentiate natural from artificial light. Compatible with Zhaga Book 18 and D4i Certified, it features an IP65 rating and 1.5m installation height, making it suitable for industrial and outdoor environments. The Bluetooth wireless mesh networking makes communication much easier without any hardwiring, which eventually adds value to luminaires and saves costs for projects. Meanwhile, simple device setup and commissioning can be done via **Koolmesh®** app.



TYPE D

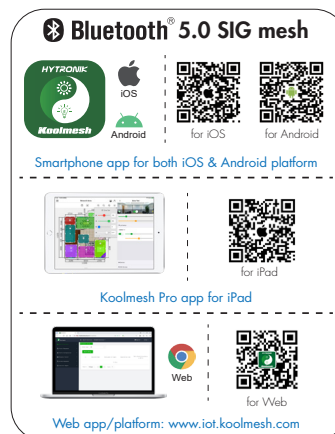
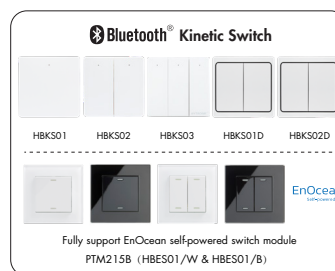
App Features

- 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)
- 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

- D4i Certified (Type D)
- Support the control of DT6/DT8 and D4i drivers
- Photocell Advance™
- Zhaga Book 18 standard
- IP65 design
- Robust HF antenna design wireless interference
- High-bay (up to 1.5m height)
- 5-year warranty

Note: This device currently does not Supports reading luminaire, energy, and diagnostics data provided by the connected D4i drivers.



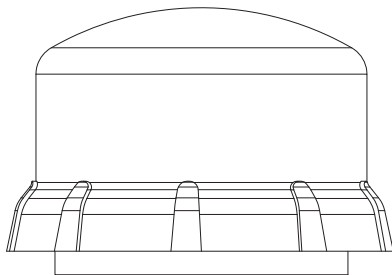
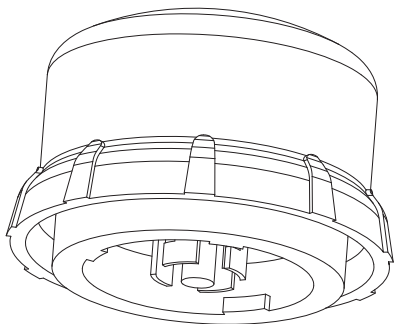
Technical Specifications

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

Input & Output Characteristics	
Operating voltage & current	12-36V @ 30mA
Stand-by power	<0.5W
DALI Input voltage	9.5-22.5V
Bus current consumption	2mA

Environment	
Operation temperature	Ta: -20°C ~ +50°C
Storage temperature	Ta: -35°C ~ +55°C
Relative humidity	20 ~ 90%
IP rating	IP65
Insulation	Class II

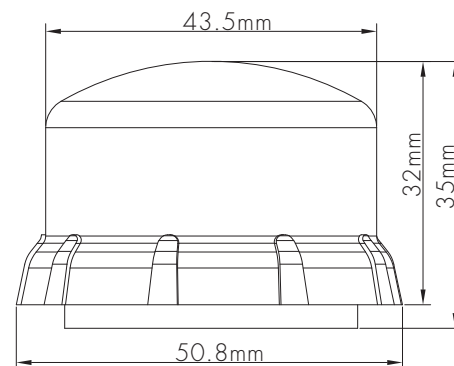
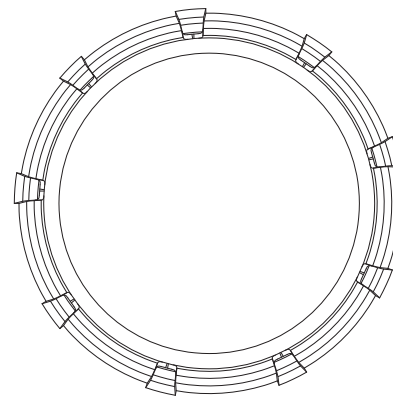
Mechanical Structure & Dimensions



Sensor Data	
Sensor principle	High Frequency (microwave)
Detection range*	Max installation height: 15m (forklift) 12m (single person) Max detection range: ϕ 20m (forklift) ϕ 12m (single person)
Detection angle	360°
Lux range	0-1000Lux
Sensitivity	10% / 30% / 50% / 75% / 100%

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

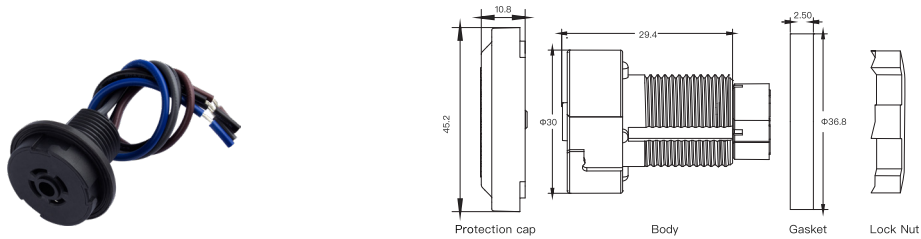
Safety & EMC	
EMC standard (EMC)	EN61547, EN50015
Safety standard (LVD)	EN61347-1 EN61347-2-11
Certification	CE, UKCA
RED	EN300440, EN300328, EN301489-1/-3/-17 EN50663
Compliance	RoHs, Reach
DALI standard	IEC62386-101/103
D4i	Single master, Type D



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.

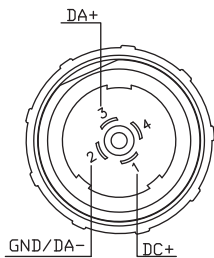
Mechanical Structure & Dimensions



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

Note: HA18SKT not included in the package.

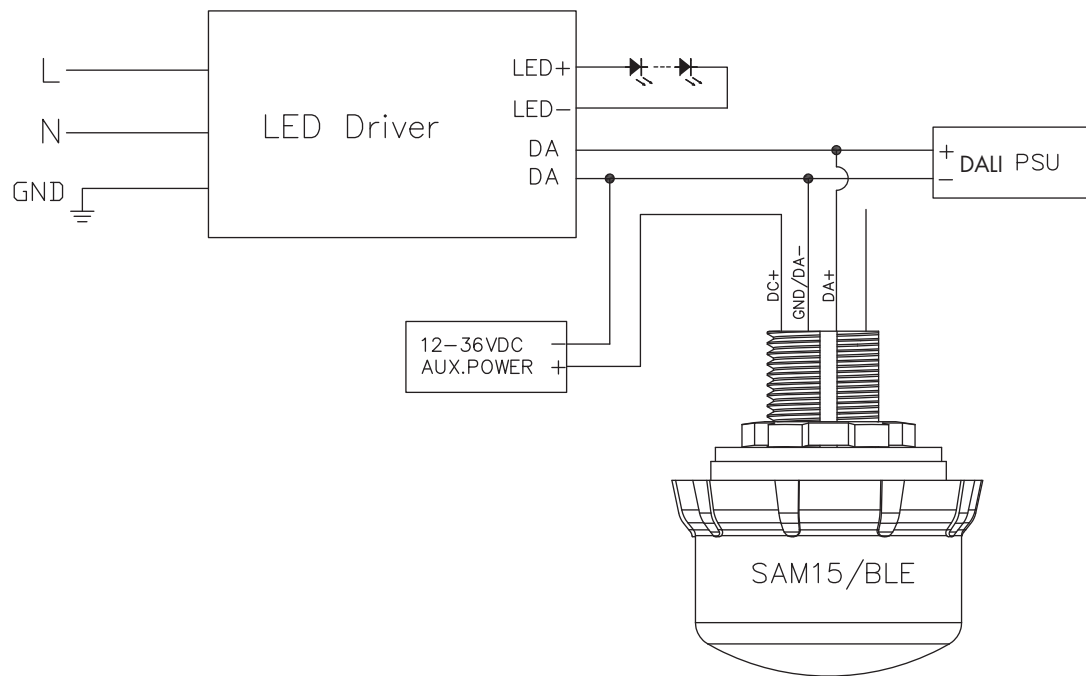
Wiring Diagram Notes



- Terminal block 4 is left unpopulated by default. No wiring required.
- The DALI bus must be powered by an external DALI PSU or a D4i driver with integrated bus power. SAM15/BLE does not provide DALI bus power.
- For reliable operation, ensure at least one DALI PSU is present on the bus. If multiple PSUs are connected in parallel, the total output must not exceed 250 mA. (For better compatibility, a single PSU is recommended.)

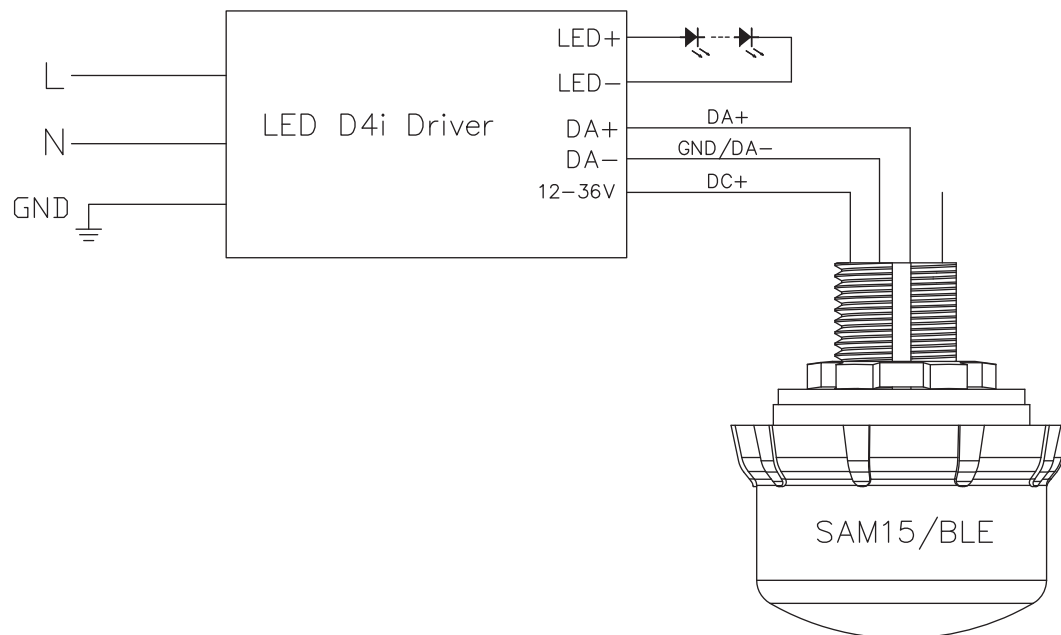
Wiring Diagram 1

Standard Driver with External AUX & PSU



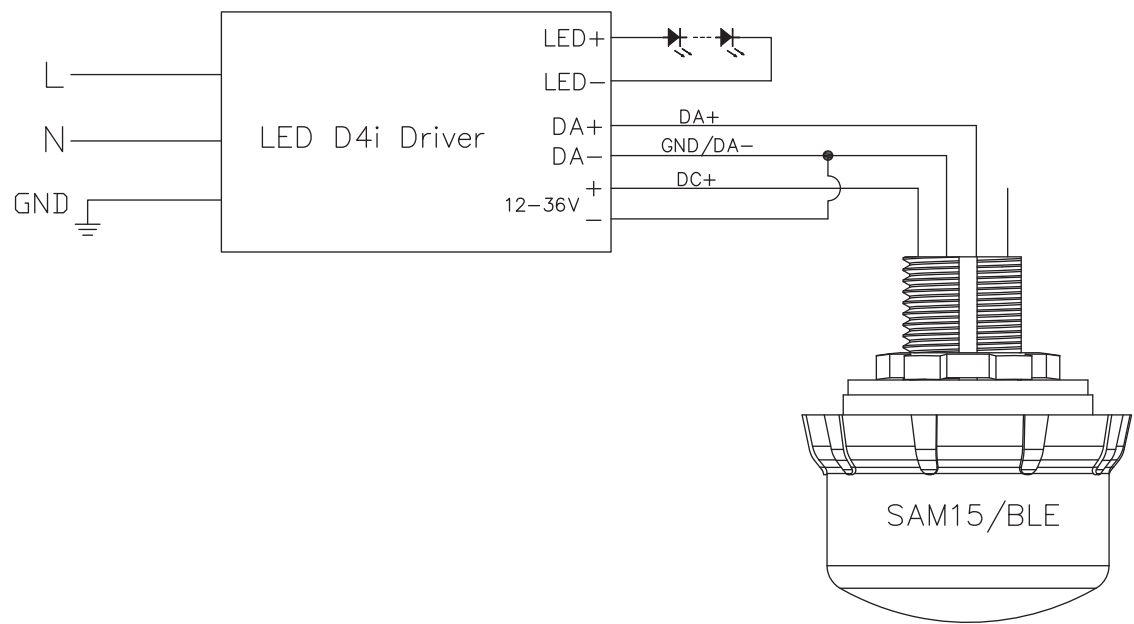
Wiring Diagram 2

D4i Driver with Common Negative



Wiring Diagram 3

D4i Driver with Isolated Negative

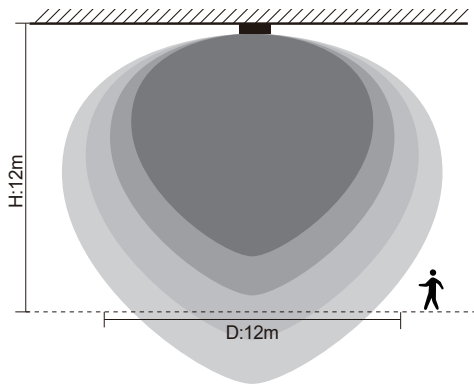


Detection Range

*The sensor detection area shown in this table is based on an open space.
In environments with hard surfaces such as metal racking or glass corridors, the detection range may be extended by up to 30% due to reflections or signal penetration.

The data above is tested under following conditions:

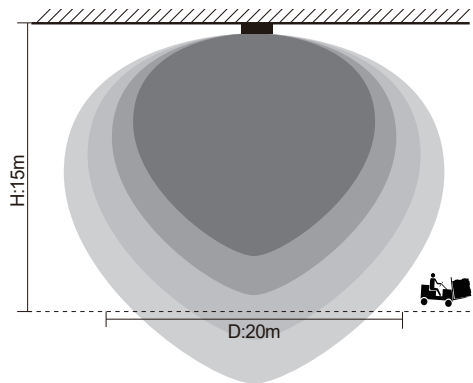
- Single person walking;
- Sensor not connected to any driver that may have soft-on period;
- Testing temperature Ta = 20°C;



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 5km/h;
- Sensor not connected to any driver that may have soft-on period;
- Testing temperature $T_a = 20^{\circ}\text{C}$;



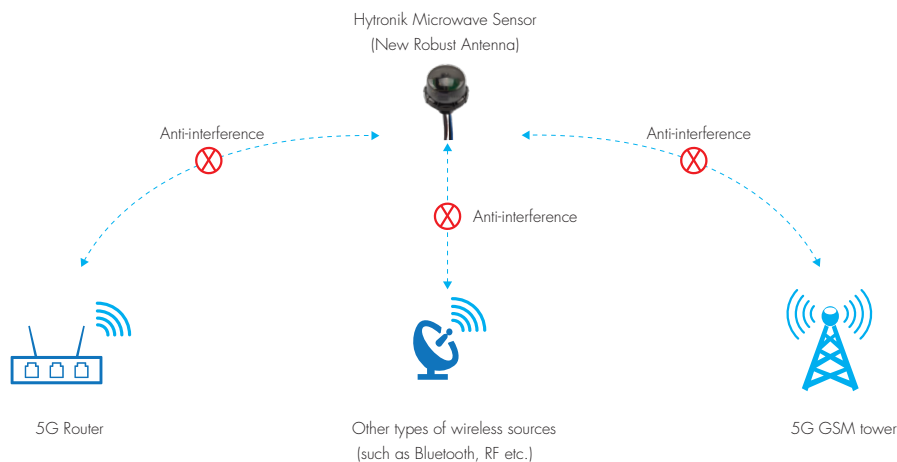
Height (m)	Sensitivity
	100%
15	Diameter (Ø: m)
	20

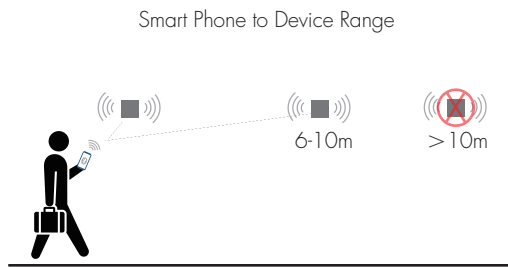
Robust HF Sensors Design – Anti-interference Technology



Hytronik's microwave motion sensor uses 5.8GHz high frequency (HF) antenna in the product design. With the increasing density of wireless environments such as 5G GSM tower and 5G Wi-Fi coverage, this has created extra challenges for sensor's operation because the air is shared by all kinds of wireless signals, and transmissions from any device at the similar frequency could potentially cause interference. The effects of interference which can be noticed by users are usually false triggering of sensors (turning on/off erratically), or lights staying on even after hold time etc.

To get around such tough environment, Hytronik has developed a new series of robust HF modules, designed to be loaded with our own special sophisticated software algorithms. These robust HF modules can withstand different types of wireless interferences in the real application. We believe this is the ultimate solution towards demanding installation environments in the future.





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.

Commissioning Instructions and Precautions

A. Installation Preparations

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

B. DALI-2 Compliance

2. This product has been tested in accordance with IEC 62386 and complies with the relevant DALI-2 application parts.

DALI-2 testing was performed using the official DALI test sequence software (version 2.4.0.0), covering the applicable IEC 62386 parts (e.g. Part 101, Part 103, Part 351). DALI-2 certification verifies compliance within the defined test scope.

However, certification does not eliminate the possibility of system-level compatibility issues arising from differences in device implementation or system design among manufacturers. Therefore, functional verification and on-site testing are required as part of the final system commissioning to ensure proper operation and compliance with project requirements.

Warning: For additional important documents, including installation precautions, product guidelines, and guarantee conditions, please refer to <https://hytronik.com/service/downloads>

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)