

PIR Motion Sensor for Track System with Bluetooth® 5.0 SIG Mesh

HBIR29/TK

DALI Output

Product Description

HBIR29/TK is a Bluetooth PIR standalone motion sensors for the track system, with 3-phase dial and one DALI channel output (80mA DALI power supply built in). HBIR29/TK also design with a metal surface box and the installation only requires simple insertion into the track, it is ideal for both commercial and domestic downlight lighting. With Bluetooth wireless mesh networking, it makes communication between luminaires much easier without time-consuming hardwiring, which eventually saves costs for projects (especially for retrofit upgrade projects!). All simple device setup and commissioning can be done via **Koolmesh** app.

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App Features

- Quick setup mode & advanced setup mode
- Web app/platform for project deployment & data analysis
- Koolmesh Pro app on iPad for on-site configuration
- Floorplan feature to simplify project planning

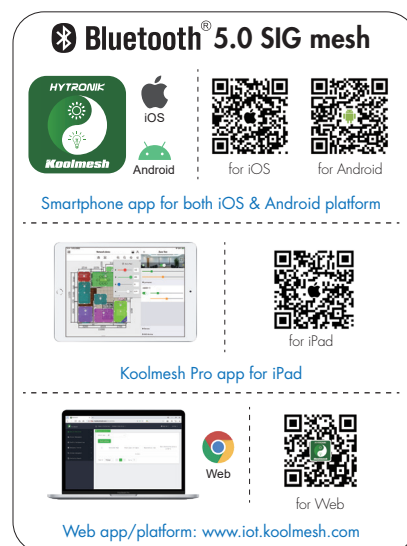
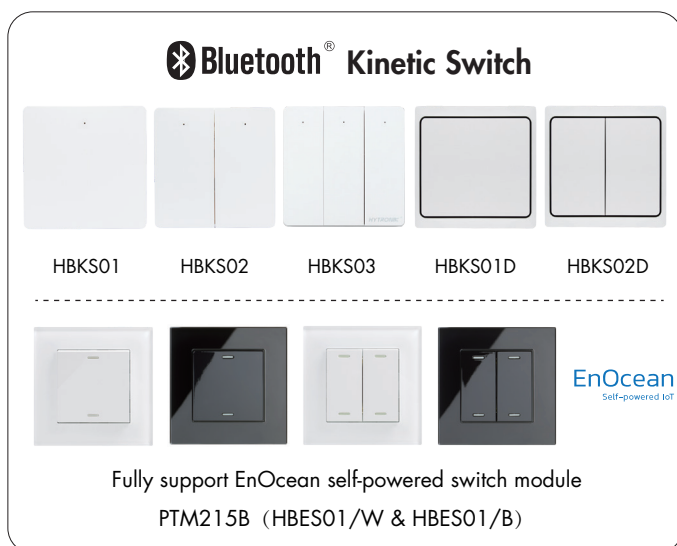
coming soon

- One-key device replacement
- Device social relations check
- Staircase function (primary & secondary)
- Remote control via gateway support HBGW01
- Heat map
- Dynamic daylight harvest auto-adaptation
- Grouping luminaires via mesh network
- Scenes
- Dusk/Dawn photocell (Twilight function)
- Tri-level control
- Daylight harvest
- Circadian rhythm (Human centric lighting)
- Push switch configuration
- Detailed motion sensor settings
- Schedule
- Astro timer (sunrise and sunset)
- Power-on status (memory against power loss)
- Offline commissioning
- Bulk commissioning (copy and paste settings)
- Different permission levels via authority management
- Network sharing via QR code or keycode
- Interoperability with Hytronik Bluetooth product portfolio

- Compatible with EnOcean BLE switches
- Internet-of-Things (IoT) featured
- Device firmware update over-the-air (OTA)
- Continuous development in progress...

Hardware Features

- 80mA DALI broadcast output
- Support to control DT8 LED drivers
- RTC retains timekeeping for about 10 days during power loss (For optimal performance, install the device facing down and at around 25°C. Prolonged exposure to direct outdoor sunlight may reduce RTC time to 2 days.)
- Black & White Metal surface mount box
- Blind inserts / blanking plates option
- User-friendly design for installation
- 5-year warranty



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 detection
HBIR29/TK	Installation Height : 6m Detection Range(Ø) : 10m
Detection angle	360°

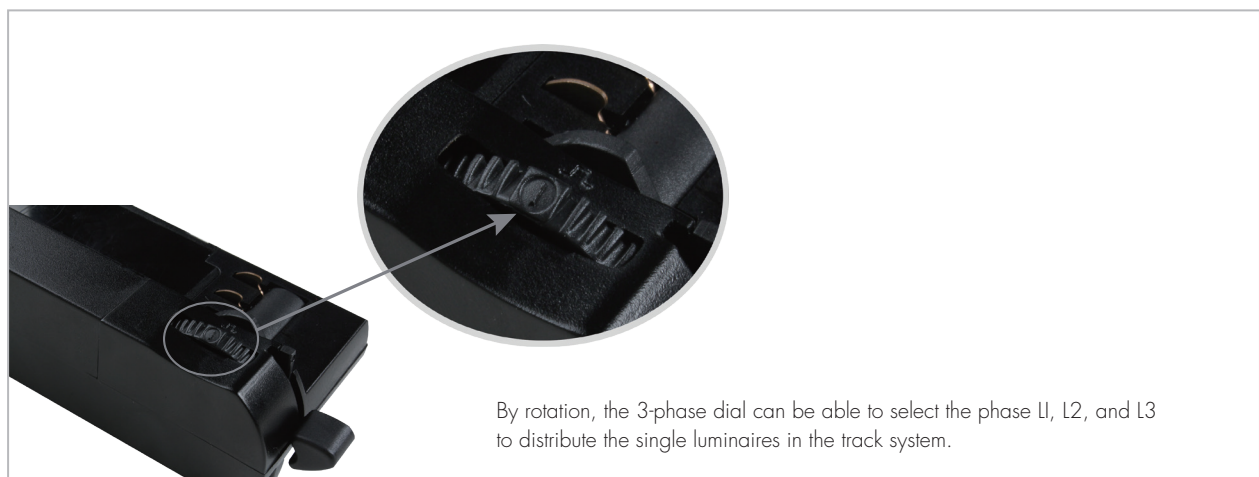
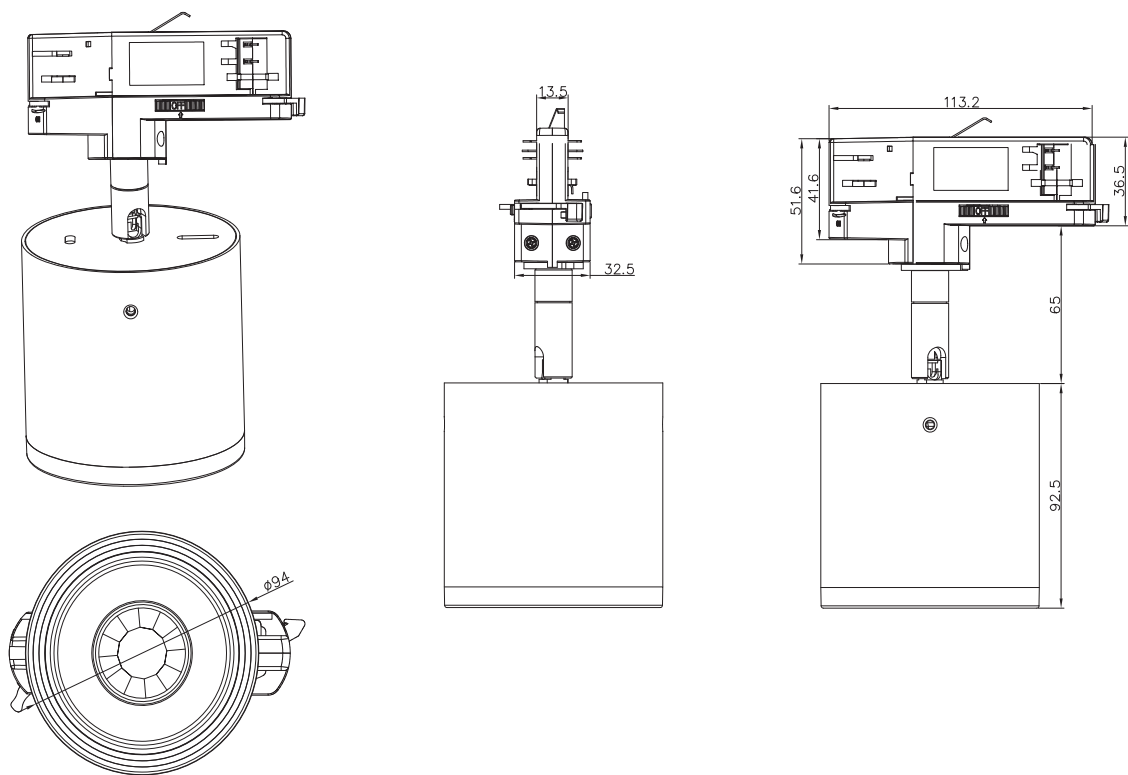
* For more details of detection range, please refer to "detection pattern" section.

Environment	
Operation temperature	Ta: -20°C ~ +50°C
IP rating	IP20

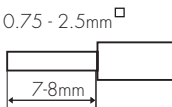
Input & Output Characteristics	
Operating voltage	220~240VAC 50/60Hz
Stand-by power	<1W
DALI bus power supply	I guaranteed : 80mA I max : 250mA U rated : 15VDC
Warming-up	20s

Safety & EMC	
EMC standard (EMC)	EN55015, EN61000-3-2/-3-3, EN61547
Safety standard (LVD)	EN60669-1, EN60669-2-1 EN60570, EN61347-1/2-11
RED	EN300328, EN301489-1/-17 EN50663
Certification	CE, UKCA, RED, RCM

Mechanical Structure & Dimensions



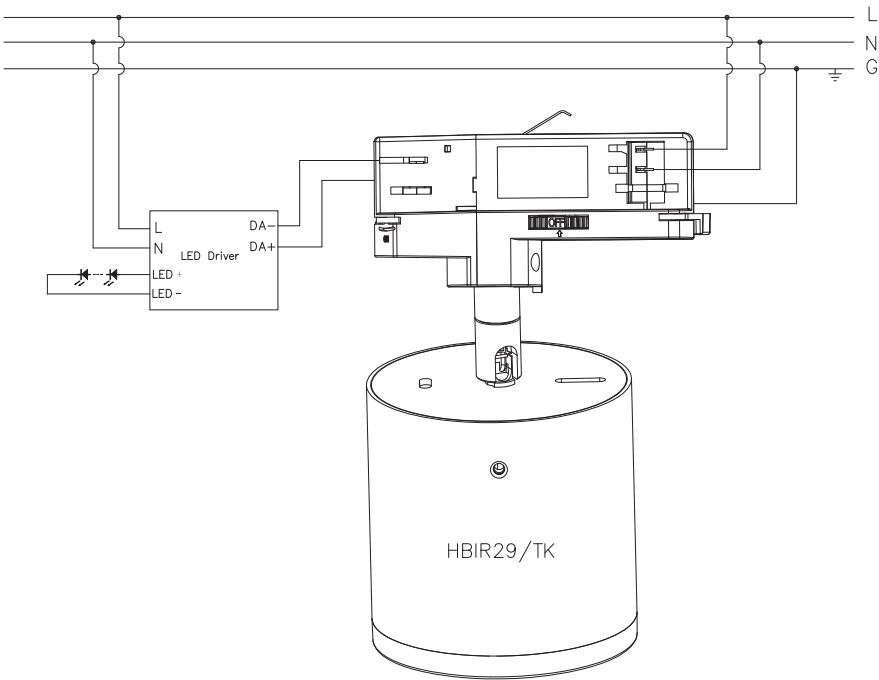
Wire Preparation



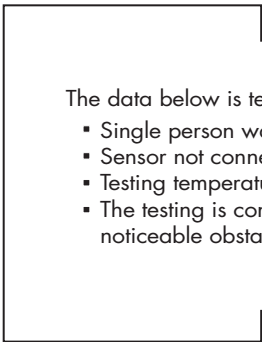
Pluggable screw terminal. It is recommended to make connections to the terminal before fitting to the sensor.

- 1. 200 metres (total) max. for 1 mm² CSA (Ta = 50°C)
- 2. 300 metres (total) max. for 1.5 mm² CSA (Ta = 50°C)

Wiring Diagram

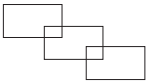


Detection Pattern & Optional Accessory



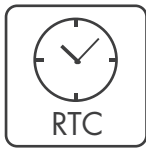
The data below is tested under following conditions:

- 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.



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

Functions and Features



The Real Time Clock (RTC) is a critical component in many of our BLE (Bluetooth Low Energy) products, particularly those designed to support circadian rhythm systems. The primary function of the RTC is to maintain accurate time and date information, even when the device is powered off or experiences a power failure. This is crucial for ensuring that the device can resume its correct operation and provide time/date or functionality once power is restored.

Placement Guide and Typical Range

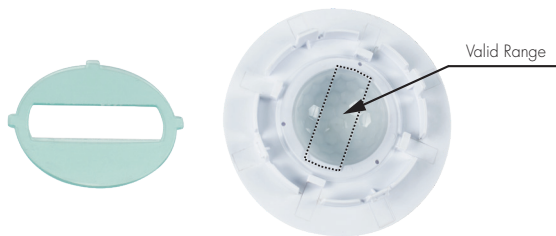
Smart Phone to Device Range



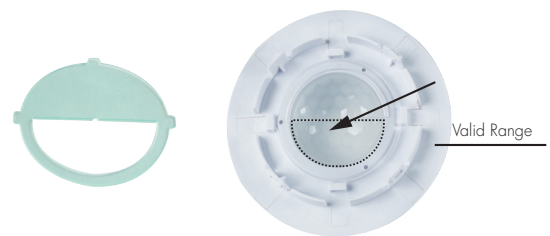
The smart device with the App installed will have a typical range of 10m, but varies from device to device. During commissioning, the installer will need to be in range of the devices when searching for devices to add to the network.

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.

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



Blind Option 1 --- Aisle Detection



Blind Option 2 --- 180° Detection

Additional Information / Documents

1. To learn more about detailed product features/functions, please kindly refer to <https://hytronik.com/product/hbir29-tk>
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 PIR Sensors installation and operation, please kindly refer to <https://hytronik.com/service/downloads> (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 <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)