

# HIR63/TKN

Bluetooth DALI PIR Lowbay | 6 Wires 3 Circuits | Integrated 30 mA PSU



## Benefits

- Adjustable: Max. 180° vertical tilt + 360° horizontal rotation
- Stabl: With built-in DALI PSU ensuring reliable power supply
- Simple: Allowing fast wireless commissioning via app

## Applications

- DALI track light project renovation and upgrade
- Offices, Retail stores, Warehouse
- Museums, Galleries

Check Out the Complete System Solution on the Website:  
<https://www.hytronik.com/product/HIR63-TKN>



## Product Description

HIR63/TKN is a Bluetooth DALI PIR sensor for track lighting systems, featuring a built-in DALI PSU to provide stable power while enabling intelligent coordination and control between luminaires via DALI broadcast. It supports motion and daylight-based control with dimming and tunable white functions to meet standard smart lighting needs. Featuring 180° vertical tilt and 360° horizontal rotation, all parameters can be wirelessly configured via the Koolmesh app. Its compact, all-in-one design makes it suitable for both commercial and residential track lighting applications.

## Functions and Features

See additional details at the end of datasheet



Adjustable Detection Angle



DT6/DT8 Lighting Control



Daylight Harvest



Human Centric Lighting (HCL)



Koolmesh - See bluetooth control below



Lux Off



Magnetic Reset switch



Tri-level Dimming

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## Specifications

### Main Capabilities

Dimming (Output) Interface	DALI/DALI-2
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### Sensor Data

Detection angle	360°
Lux range	<1000 lux
Max. Detection range (Diameter)	12.0 m
Maximum Mounting Height	3.0 m
Detection area	113 m <sup>2</sup>

### Electrical Data

Bluetooth frequency	2.4 GHz - 2.483 GHz
Bluetooth range	10-30m
Bluetooth transmit power	4 dBm
Bluetooth system	Koolmesh
Output Voltage	220-240VAC 50/60Hz
Stand-by power (Psb)	<1W
Warming-up	20 s
DALI bus maximum rated current (I <sub>n</sub> max)	60 mA
DALI bus nominal DC voltage range (U <sub>n</sub> )	15 V
DALI bus nominal current (I guaranteed)	30 mA

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## Specifications

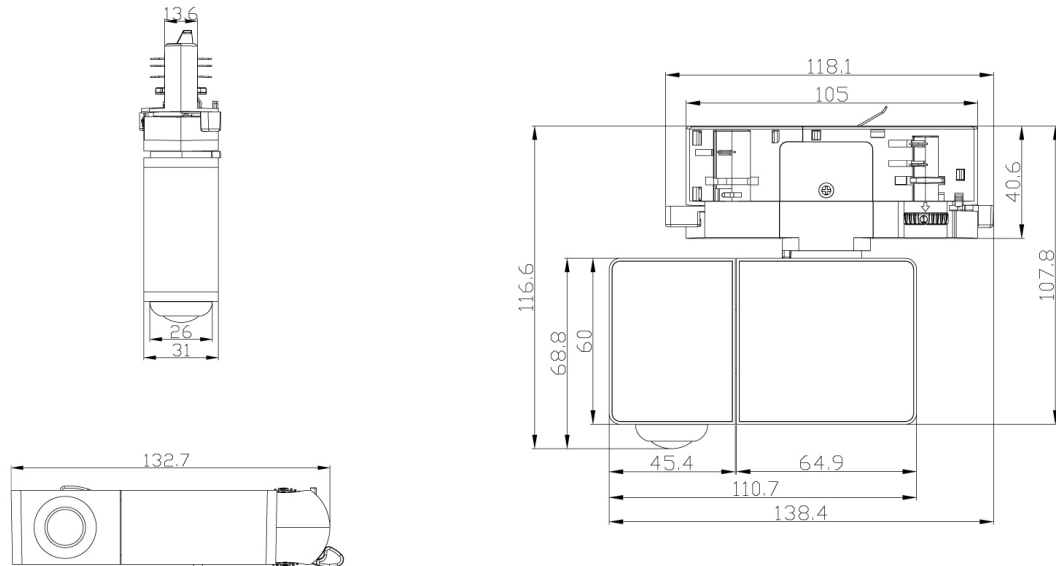
Technical	
Product height	116.6 mm
Product length	138.4 mm
Product width	31.0 mm
Ambient temperature	-20 ~ +50 °C
Storage temperature	-25 ~ +70 °C
Humidity max	10 ~ 90%
IP Rate	IP20

Standard	
EMC	EN 61000-3-2, EN61000-3-3, EN IEC 55015, EN IEC 61547
LVD	EN 60570-1, EN 61347-1/-2-11
RED	EN 300328, EN 301489-1/-17, EN 50663

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## Technical Drawing



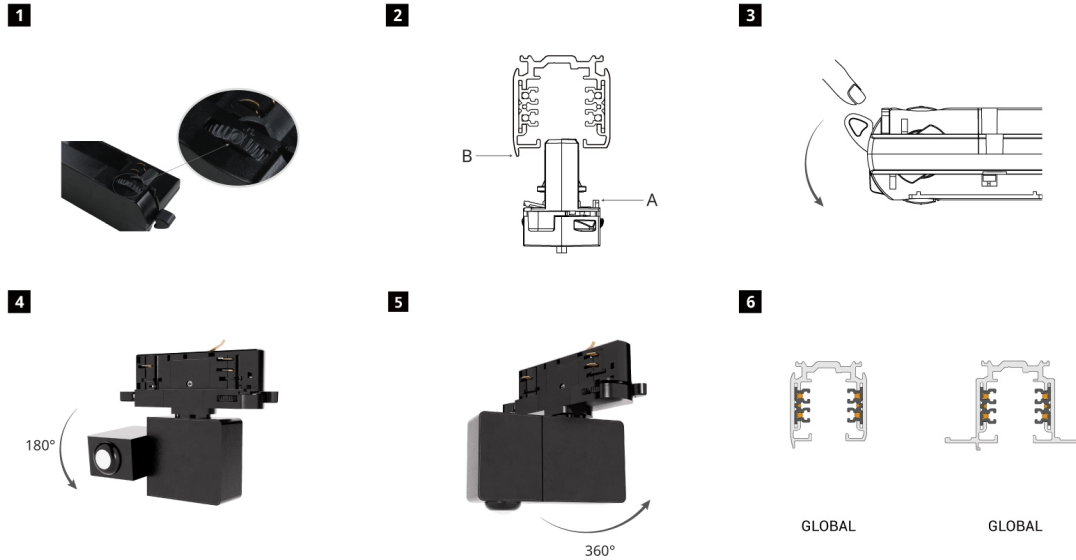
## Application Example



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## Installation Process



## Detailed Installation Instructions

### A. Set Track Adapter Phase

1. Before inserting into the track, rotate the integrated 3-phase dial to set the phase to L1, L2, or L3 for single luminaire distribution in the track system.

### B. Insert into Track

2. Align the track adapter with the track rail, ensuring A and B are correctly offset, then insert the device vertically into the track slot.

### C. Lock the Device

3. Rotate the cam lever until it reaches the locking position and the device is firmly secured in the track.

### Adjustments & Compatibility

#### D. Sensor head adjustment

4. The sensor head can be rotated vertically up to 180° to achieve optimal detection coverage.

#### E. Body adjustment

5. The main body supports up to 360° horizontal rotation with a mechanical stop, preventing continuous rotation and protecting internal connections, while ensuring stable and precise orientation.

#### F. 6 Wires Track System Compatibility

6. 6 Wires 3 circuits track adaptor is universal compatible.

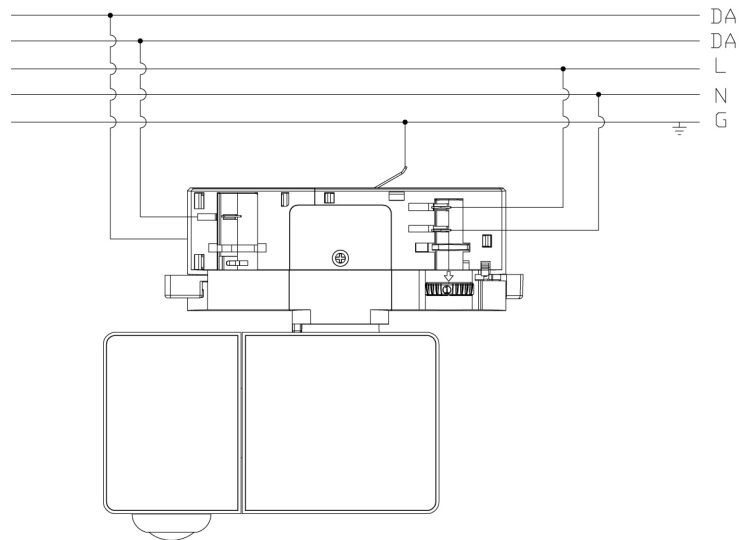
It works with the following brand tracks: GLOBAL

Note: Compatibility means the track adaptor is designed to fit the current track specifications of these brands. However, compatibility cannot be guaranteed if the track manufacturers change their track dimensions or specifications in the future.

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## Wiring Diagram



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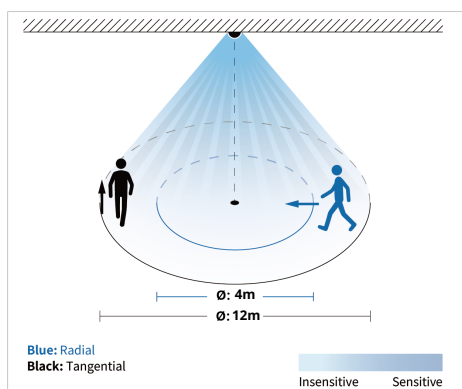
## Detection Range

### Single Person Walk (Ceiling mount)

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.

Detection example 2.5m mounting height:



### Tangential Movement

H[m]	2.5
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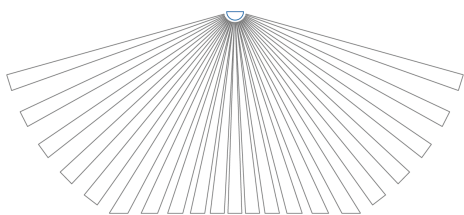
$\emptyset$ [m]	12
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### Radial Movement

H[m]	2.5
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$\emptyset$ [m]	4
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## Detection schematic diagram



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## Commissioning Instructions and Precautions

### A. Installation Preparations

1. This product should be installed by a qualified electrician.
2. For optimal performance, install the sensor away from direct light sources to prevent light interference.

### B. Wiring Precautions

1. Ensure the track power is disconnected before installation or removal of the device.

**Warning:** For additional important documents, including installation precautions, product guidelines, and guarantee conditions, please refer to the official downloads.

<https://hytronik.com/service/downloads>

## Dimming Interface Operation Notes

The Virtual Push interface provides a software-based dimming control method without the need for a physical wall switch. Push functions are simulated via the Koolmesh app, where detailed push behaviors and parameters can be flexibly configured.

Note: Single press, double press, and press-and-hold actions can each be independently assigned to one function via the app. Once configured, each action triggers only its assigned function. Multiple functions cannot be activated by a single press action.

Switch function	Action	Descriptions
Virtual- Emergency Self-Test Function	Single press (>0.1s) Double press	<ul style="list-style-type: none"><li>• Disable</li><li>• Function test</li><li>• Duration test</li><li>• Erminated test</li></ul>
Virtual-Normal PUSH (Retractive Switch)	Single press (>0.1s) Double press Press and hold (>=1s)	<ul style="list-style-type: none"><li>• ON/OFF</li><li>• OFF only</li><li>• Recall this scene</li><li>• Sensor take over</li><li>• Not in use</li></ul>

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## Koolmesh - Operating guide

Bluetooth 5.0 SIG Mesh



Smartphone(ios)



Smartphone (Android)



iPad



Web

For additional information, including project and network, device, and scenes, please refer to: <http://faq.koolmesh.com/faq/en/index.html>

## Shared Koolmesh App Features

- Alert for excess lux / temperature / humidity via multi-meter HBLM01
- Astro timer (sunrise and sunset)
- Bulk commissioning (copy and paste settings)
- Compatible with Shelly energy metering
- Continuous development in progress...
- Device firmware update over-the-air (OTA)
- Device social relations check
- Different permission levels via authority management
- Floorplan feature to simplify project planning
- Grouping luminaires via mesh network
- Internet-of-Things (IoT) featured
- Koolmesh Pro iPad for on-site configuration
- Network sharing via QR code or keycode
- Offline commissioning
- One-key device replacement
- Quick setup mode & advanced setup mode
- Remote control via Hytronik gateway & touch screen HPAD-TSJASE1
- Scenes
- Schedule
- Staircase function for quick setup
- Test mesh network connection quality
- Web platform for project deployment & data analysis

## Device-specific Koolmesh App features

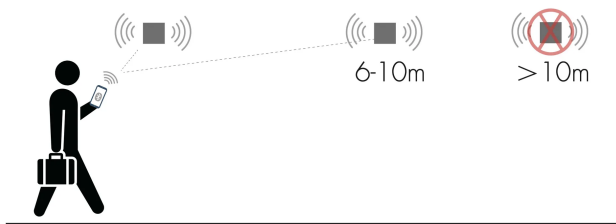
- Compatible with EnOcean kinetic switches
- Detailed motion sensor settings
- Dusk/Dawn photocell (Twilight function)
- Dynamic daylight harvest auto-configuration
- Motion sensor range test
- Motion sensor trigger diagnosis

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## Smart Phone to Device Range

1. The smart device with the installed App typically has a range of 10m, which may vary between devices.
2. During the commissioning process, the installer must be within range of the devices while searching for them to add to the network.
3. Once the devices are added to the network via the App, they will begin communicating within the wireless mesh.
4. After the network is complete, all devices can be accessed from the smart device within a 20m range of a single point.



## Bluetooth Network Components



### HBGW02

Bluetooth Mesh Gateway | Ethernet or Wi-Fi 2.4GHz | wall/flat surface mounting  
[www.hytronik.com/product/HBGW02](http://www.hytronik.com/product/HBGW02)



### HBKS02/W

Bluetooth Kinetic Switch | Two-gang | White Color  
[www.hytronik.com/product/HBKS02-W](http://www.hytronik.com/product/HBKS02-W)



### HBGW02/D

Bluetooth Mesh Gateway | Dual-band Wi-Fi | wall/flat surface mounting  
[www.hytronik.com/product/HBGW02-D](http://www.hytronik.com/product/HBGW02-D)



### HBKS02D/W

Bluetooth Kinetic Switch | Double Rocker | White Color  
[www.hytronik.com/product/HBKS02D-W](http://www.hytronik.com/product/HBKS02D-W)



### HBGW03/R

BACnet Gateway | Dual-band Wi-Fi or Ethernet | DIN rail/wall/flat surface mounting  
[www.hytronik.com/product/HBGW03-R](http://www.hytronik.com/product/HBGW03-R)



### HBKS03/W

Bluetooth Kinetic Switch | Three-gang | White Color  
[www.hytronik.com/product/HBKS03-W](http://www.hytronik.com/product/HBKS03-W)



### HBKS01/W

Bluetooth Kinetic Switch | One-gang | Wireless Control  
[www.hytronik.com/product/HBKS01-W](http://www.hytronik.com/product/HBKS01-W)



### HBLM01

Multi-meter | Bluetooth & NFC | Lux Measurements  
[www.hytronik.com/product/HBLM01](http://www.hytronik.com/product/HBLM01)



### HBKS01D/W

Bluetooth Kinetic Switch | Single Rocker | White Color  
[www.hytronik.com/product/HBKS01D-W](http://www.hytronik.com/product/HBKS01D-W)



### HBP02

Bluetooth Touch Panel | Real-time keeper | 4 Scenes  
[www.hytronik.com/product/HBP02](http://www.hytronik.com/product/HBP02)

## Functions and Features



### Adjustable Detection Angle

The product features an adjustable detection angle that allows both vertical and horizontal alignment of the sensor head. This enables installers to fine-tune the coverage area and optimize detection performance for different mounting heights, orientations and application environments.



### DT6 / DT8 Lighting Control

Supports DT6 (single-channel dimming) and/or DT8 (tunable white / colour) lighting control via DALI, enabling brightness and colour temperature adjustment based on control logic such as occupancy or daylight.



### Daylight Harvest

Right time, right place and the right amount of light! Daylight harvest (Also known as daylight regulating or daylight interaction) is a must in the future lighting norms. It automatically measures available natural light and adjusts artificial lighting output to maintain the target illuminance level. Using daylight sensor feedback, control signals are transmitted to the LED drivers via DALI or 0-10V interfaces, ensuring the required light output is delivered only when needed, improving visual comfort and reducing energy consumption.



### Human Centric Lighting (HCL)

Human Centric Lighting (HCL) helps reduce energy consumption while supporting human wellbeing and productivity in artificially lit environments. Through Hytronik's decentralised tunable white control with integrated time-based operation, HCL enables cost-effective circadian rhythm lighting without the complexity of centralised lighting systems. Designed as a simple and flexible solution, it is ideal for offices, schools, and healthcare applications requiring dynamic white light adjustment throughout the day.



### Lux Off

Lux Off disables lighting output when the measured ambient light level exceeds the preset lux threshold. In this condition, lighting remains off regardless of occupancy detection, ensuring artificial lighting is not activated when sufficient daylight is available, thereby reducing unnecessary energy consumption.



### Magnetic Reset Switch

The product features a magnetic reset function that restores factory default settings by applying a magnet (40 Gs) to the designated reset area within 10 mm for approximately 5 seconds. The omnipolar magnetic detection supports both north and south poles, enabling quick and convenient on-site reset and reconfiguration without physical access to switches or buttons.



### Tri-level Dimming

Hytronik's tri-level dimming products offer 3 levels of light control: 100% dimmed light off, with settable time periods between each phase, as well dimming level and daylight threshold.

\*All Hytronik's tri-level dimming products can also be configured as bi-level control (by setting the stand-by period to infinity), so that the light always remains in the dimmed mode in absence for areas where there are safety, security or enhanced comfort requirements.

## Check out for further explanation of features

<https://hytronik.com/solutions/lighting-control-features>