HBTD15V

Bluetooth Dimmer | 0-10V | Zhaga Book 18 Standard

Benefits

Standardized: Zhaga Book 18 design for easy luminaire integration

Reliable: RTC backup ensures stable timing during power loss

Wireless: External antenna enabling extended Bluetooth range

Applications

Warehouse

Logistic

Outdoor/Street lights

Check Out the Complete System Solution on the Website:
https://www.hytronik.com/product/HBTD15V

Product Description

HBTD15V is a Bluetooth broadcast dimmer with 0–10V output, compliant with Zhaga Book 18 and designed to enable precise dimming for 0–10V lighting systems. The external Bluetooth antenna extends the broadcast range for more reliable wireless communication. All configuration and commissioning can be completed quickly via the Koolmesh app.

Functions and Features

See additional details at the end of datasheet

0-10V Dimming

Bluetooth Range Extender

IP65 Protection

Koolmesh - See bluetooth contol below

LED Indicator

Photocell Advance

Power-Loss Time keeping (RTC)

Zhaga Book 18 Standard

Specifications

Main Capabilities	
Dimming (Output) Interface	0-10V

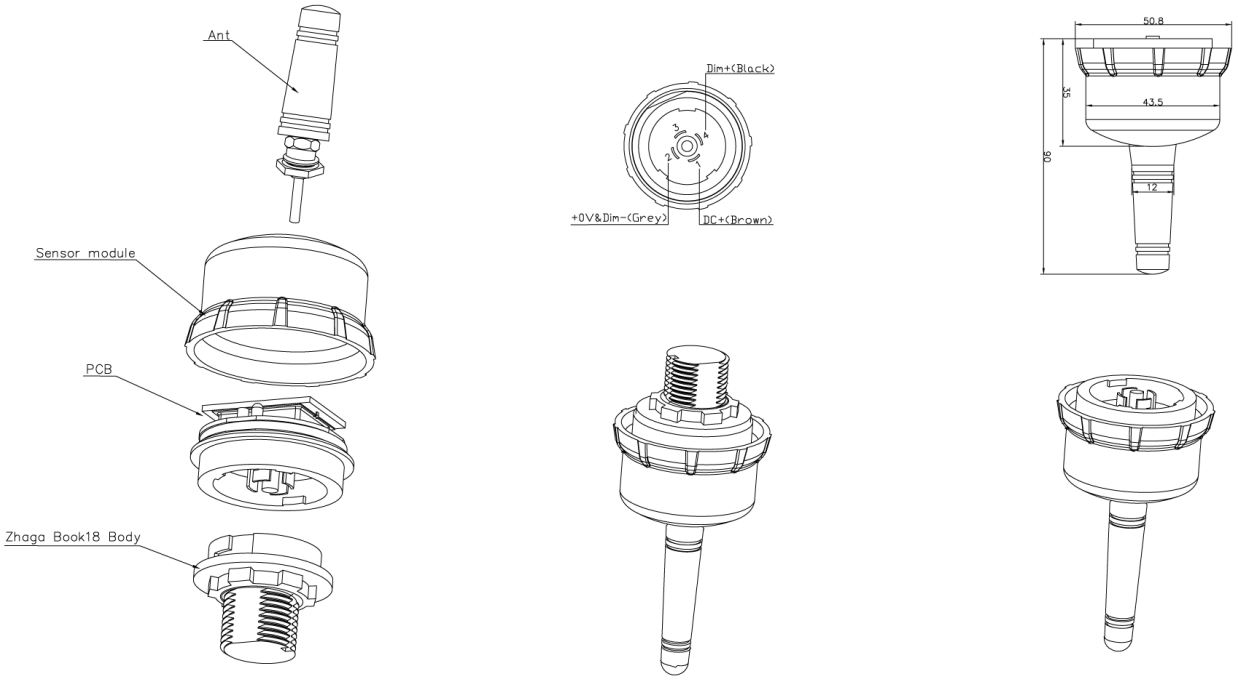
Electrical Data	
Bluetooth frequency	2.4 GHz - 2.483 GHz
Bluetooth range (Phone to Device)	10-50m
Bluetooth transmit power	4 dBm
Bluetooth system	Koolmesh
Operating voltage range	12-36 VDC
Output Voltage	0~10 V
Sink Current	Max. 100mA
Source Current	Max. 2mA
Stand-by power (Psb)	<0.5W

Specifications

Technical	
Product weight	42.0 g
Product height	90.0 mm
Product length	50.5 mm
Product width	50.5 mm
Ambient temperature	-20 ~ +50 °C
Storage temperature	-35 ~ +55 °C
Humidity max	20 ~ 90%
IP Rate	IP65

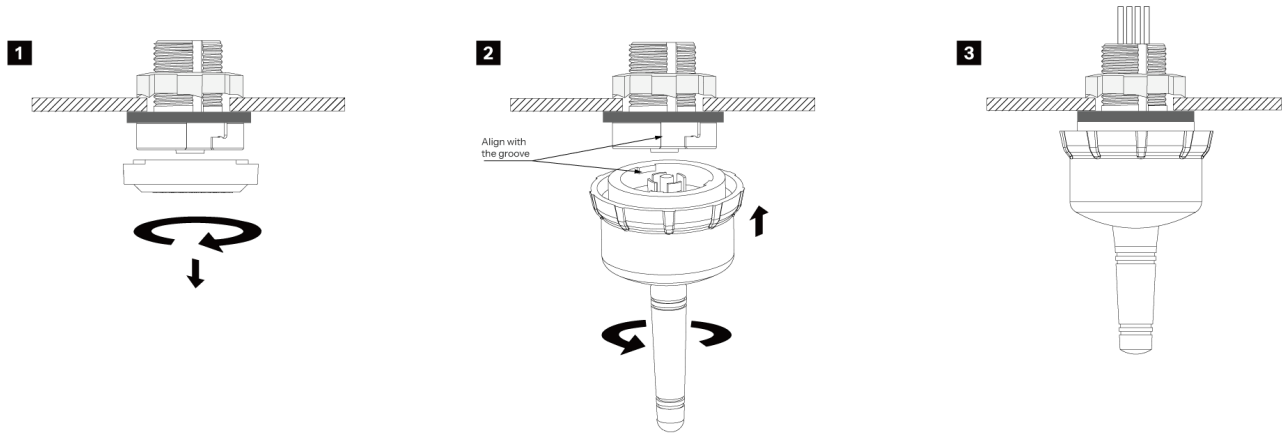
Standard	
EMC	EN 55015, EN 61547
LVD	EN 61347-1, EN 61347-2-11
RED	EN 300328, EN 301489-1/-17, EN 50663

Technical Drawing



Application Example

Installation Process



Detailed Installation Instructions

1. Remove the receptacle cap

Unscrew and remove the protective cap from the receptacle before installation.

2. Install the sensor

Align the large groove on the receptacle with the corresponding large protrusion on the sensor. Push the sensor upward firmly until fully seated, then rotate counterclockwise until a clear click is heard. Ensure the sensor cannot be pulled out to confirm it is securely locked.

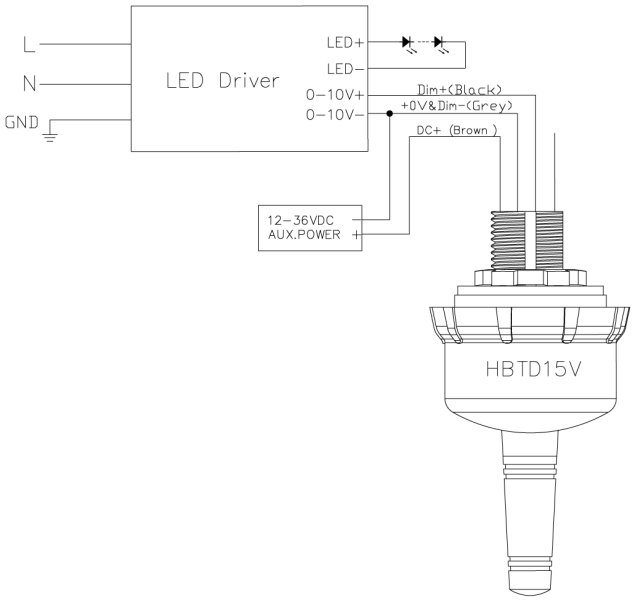
3. Installation complete

Note:

• Any luminaire that complies with the Zhaga Book 18 standard allows plug-and-play connection by simply mating the pins with the base.

• Socket not included, it must be supplied by the customer or purchased separately.

Wiring Diagram



Commissioning Instructions and Precautions

A. Installation Notes

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

2. Terminal block 3 is left unpopulated by default. No wiring required.

3. To ensure optimal performance and long-term stability, we recommend installing the product in a downward-facing orientation within the fixture. This setup minimizes direct exposure to sunlight and helps maintain ideal operating conditions for reliable and lasting use.

B. Bluetooth Range Notes

1. Device-to-device communication can extend up to 100m under indoor test conditions. In open outdoor environments, the transmission distance may be reduced due to fewer surrounding structures and signal reflections. Actual performance may vary depending on the installation environment.

C. RTC Notes

1. The RTC (Real-Time Clock) retains timekeeping for up to 10 days during power loss. For optimal performance, it is recommended to install the device facing down and in an environment around 25°C. Prolonged exposure to direct outdoor sunlight may reduce RTC time retention to 2 days.

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	• Disable • Function test • Duration test • Erminated test
Virtual-Normal PUSH (Retractive Switch)	Single press (>0.1s) Double press Press and hold (>=1s)	• ON/OFF • OFF only • Recall this scene • Sensor take over • Not in use

Options

Compatible products (for full functionality)

HA18SKT

Receptacle | Zhaga Book 18 Standard | Black Color
www.hytronik.com/product/HA18SKT

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/

Shared Koolmesh App Features

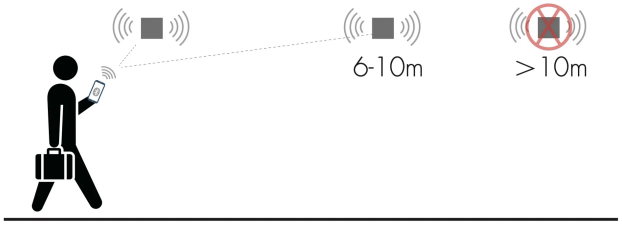
- Alert for excess lux / temperature / humidity via multi-meter HBLM01
- Astro timer (sunrise and sunset)
- Bulk commissioning (copy and paste settings)
- Compatible with Shelly energy metering
- Continuous development in progress...
- Device firmware update over-the-air (OTA)
- Device social relations 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
- Push switch configuration

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

HBGW02/D

Bluetooth Mesh Gateway | Dual-band Wi-Fi | wall/flat surface mounting
www.hytronik.com/product/HBGW02-D

HBGW03/R

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

HBKS01/W

Bluetooth Kinetic Switch | One-gang | Wireless Control
www.hytronik.com/product/HBKS01-W

HBKS01D/W

Bluetooth Kinetic Switch | Single Rocker | White Color
www.hytronik.com/product/HBKS01D-W

HBKS02/W

Bluetooth Kinetic Switch | Two-gang | White Color
www.hytronik.com/product/HBKS02-W

HBKS02D/W

Bluetooth Kinetic Switch | Double Rocker | White Color
www.hytronik.com/product/HBKS02D-W

HBKS03/W

Bluetooth Kinetic Switch| Three-gang | White Color
www.hytronik.com/product/HBKS03-W

HBLM01

Multi-meter | Bluetooth & NFC | Lux Measurements
www.hytronik.com/product/HBLM01

HPAD-TSJASE1

Bluetooth Touch Tablet | Gateway Integrated | Switch Boxes
www.hytronik.com/product/HPAD-TSJASE1

Functions and Features

0-10V Dimming

0–10V dimming provides an analog control interface that allows luminaires to dim smoothly down to their minimum rated light level. At 0 V, the luminaire remains on at its lowest brightness, as the 0–10V interface does not support switching off via the control signal and requires mains power switching for on/off control.This widely adopted standard ensures stable and consistent dimming performance when used with compatible LED drivers.

Bluetooth Range Extender

The product supports the use of an external Bluetooth antenna to extend wireless communication range and improve signal stability. This option enhances connectivity in installations where distance, obstacles or enclosure materials may reduce Bluetooth performance, providing greater flexibility in system design and device placement.

IP65 Protection

This product features an IP65-rated enclosure, providing complete protection against dust ingress and low-pressure water jets to ensure reliable operation in demanding indoor and outdoor environments. The robust environmental sealing supports long-term stability and consistent performance in applications such as warehouses, parking areas and industrial facilities.

LED Indicator

The product includes an LED indicator that provides visual feedback on operating status, configuration activity or fault conditions. The indicator allows users or installers to verify device behaviour quickly on site, supporting easier setup, troubleshooting and system monitoring.

Photocell Advance

This advanced daylight sensing function accurately measures ambient light levels while minimising interference from the luminaire itself, ensuring reliable dusk-to-dawn control and daylight priority over motion detection. It automatically switches lighting on and off and dynamically adjusts brightness in response to available natural light, delivering visual comfort and improved energy efficiency.

Power-Loss Time keeping (RTC)

The Real-Time Clock (RTC) is an essential component in Hytronik BLE devices, especially those used in circadian-rhythm lighting systems. It preserves accurate time and date information during power-off conditions or unexpected power failures, allowing the device to resume scheduled operations and time-based functions correctly once power is restored. The RTC ensures continuity for features such as daily profiles, time-triggered scenes and data logging, maintaining overall system reliability. RTC retention duration varies by product and can be influenced by installation conditions such as ambient temperature; prolonged exposure to high temperatures or direct sunlight may reduce the available backup time.

Zhaga Book 18 Standard

This product complies with the Zhaga Book 18 standard, providing a standardised mechanical, electrical and digital interface for indoor and outdoor luminaires, including high-bay and exterior applications. It enables plug-and-play interchangeability of sensor and connectivity modules, ensuring interoperability, future-ready upgrades and reliable operation in demanding installation environments.

Check out for further explanation of features

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