

HBTD54/N

Bluetooth DALI Dimmer | 6 Wires 3 Circuits | Integrated 80 mA PSU



Benefits

Compact: Enabling plug-in DALI to Bluetooth conversion for tracks

Smart: Providing Bluetooth dimming, tunable white, and multi-circuit control

Flexible: Allowing wireless setup and parameter adjustment via app

Applications

Designed for Global, and Powergear track systems

Offices, Retail stores, Warehouse

Museums, Galleries

Check Out the Complete System Solution on the Website:
<https://www.hytronik.com/product/HBTD54-N>



Product Description

HBTD54/N is a track dimmer that converts DALI signals into Bluetooth control, designed for track lighting systems to enable Bluetooth dimming and tunable white control for smart lighting upgrades. It supports independent or grouped control for up to three circuits and installs easily with simple plug-in insertion into the track without extra wiring. With Bluetooth Mesh technology, it allows wireless communication between luminaires, and all parameters can be conveniently configured via the Koolmesh app, making installation fast and flexible for commercial and residential track lighting applications.

Functions and Features

See additional details at the end of datasheet



DT6/DT8 Lighting Control



Koolmesh - See bluetooth control below



Over load Protection



Short-circuit Protection



Tunable White Control

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Specifications

Main Capabilities

Dimming (Output) Interface	DALI/DALI-2
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Electrical Data

Bluetooth frequency	2.4 GHz - 2.483 GHz
Bluetooth range	10-30m
Bluetooth transmit power	4 dBm
Bluetooth system	Koolmesh
Operating voltage range	220-240 VAC 50/60 Hz
DALI bus maximum rated current (I _n max)	100 mA
DALI bus nominal DC voltage range (U _n)	15 V
DALI bus nominal current (I guaranteed)	80 mA

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Specifications

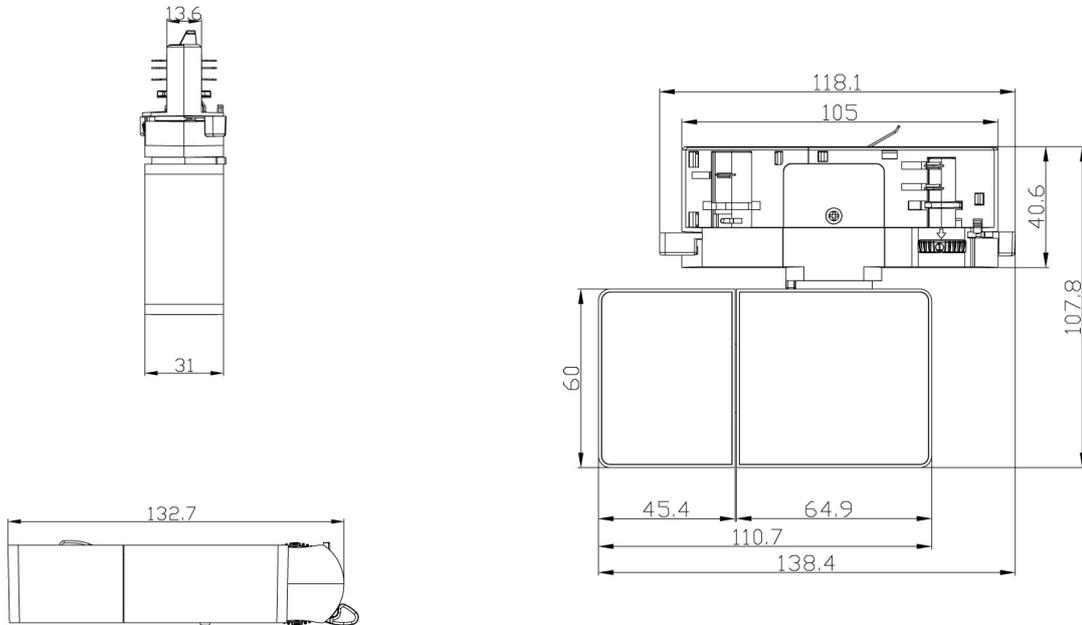
Technical	
Product height	107.8 mm
Product length	138.4 mm
Product width	31.0 mm
Ambient temperature	-20 ~ +45 °C
Storage temperature	-20 ~ +60 °C
Humidity max	10 ~ 90%
Case Temp.max	75.0 °C
IP Rate	IP20

Standard	
EMC	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.

D. 6 Wires Track System Compatibility

4. 6 Wires 3 circuits track adaptor is universal compatible.

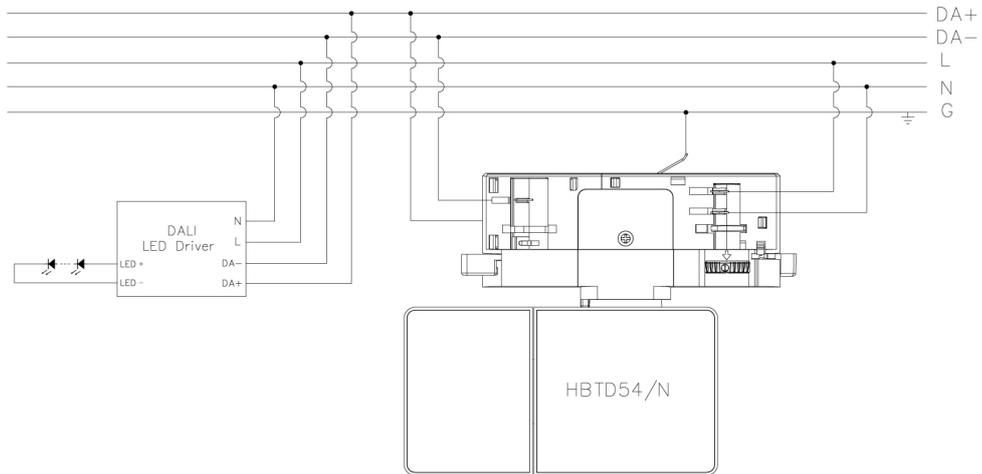
It works with the following brand tracks: GLOBAL

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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Commissioning Instructions and Precautions

A. Installation Preparations

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

B. Wiring Precautions

1. Ensure the track power is disconnected before installation or removal of the device.
2. Do not exceed the rated DALI bus load when connecting multiple devices.

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

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

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

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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

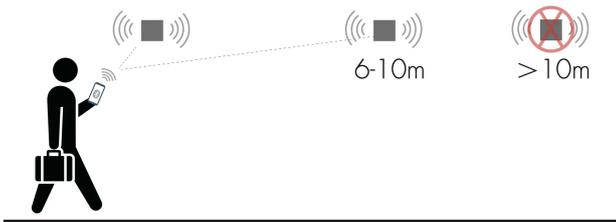
- Compatible with EnOcean kinetic switches

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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



HBKS02/W

Bluetooth Kinetic Switch | Two-gang | White Color
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



HBKS02D/W

Bluetooth Kinetic Switch | Double Rocker | White Color
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



HBKS03/W

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



HBKS01/W

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



HBLM01

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



HBKS01D/W

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



HBP02

Bluetooth Touch Panel | Real-time keeper | 4 Scenes
www.hytronik.com/product/HBP02

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Functions and Features



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.



Over load Protection

This product incorporates overload protection that limits or disables the output when the connected load exceeds the rated capacity. This protection helps prevent overheating, excessive component stress and unstable operation, ensuring safe and reliable system performance.



Short-Circuit Protection

This product incorporates short-circuit protection that automatically disables the output in the event of a short circuit. Normal operation is restored automatically once the fault condition is removed, protecting the device and connected components from damage.



Tunable White Control

Tunable White Control allows smooth adjustment of light colour temperature to create comfortable and adaptable lighting environments. By enabling dynamic white light changes throughout the day, it supports visual comfort and user wellbeing while helping improve energy efficiency in artificially lit spaces. With a simple and decentralised control approach, it provides a flexible solution for applications such as offices, schools, and healthcare environments where adjustable white light is required.

Check out for further explanation of features

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