HBEM54/N
Bluetooth to DALI Emergency Translater | 6 Wires 3 Circuits | Track System

HYTRONIK ®
SENSORS & LIGHTING CONTROL

Benefits

Standardized: 3-phase dial for phase selection

Intelligent: Providing emergency management and DALI dimming control

Powerful: Customizable EM tests and settings via Koolmesh

Applications

DALI Emergency applications

DALI track light system

Offices, Exibition, Commerce

Check Out the Complete System Solution on the Website:
https://www.hytronik.com/product/HBEM54-N

Product Description

HBEM54/N is a Bluetooth DALI emergency translator designed for track systems, providing intelligent emergency and dimming control for track luminaires. It supports monthly and annual emergency tests, automatic testing, fault notification, and report generation for DALI emergency drivers, while also compatible with DT6 and DT8 DALI drivers for dimming and tunable white control. The device features plug-and-play installation with no additional wiring required, and all parameters can be conveniently configured via the Koolmesh app, making it suitable for commercial and emergency lighting applications.

Functions and Features

See additional details at the end of datasheet

Automatic Email Alerts on Faults	Automatic Emergency Self Testing	Battery Status Monitoring	DT6/DT8 Lighting Control
Koolmesh - See bluetooth contol below	Open-Circuit Protection	Over load Protection	

Short-circuit Protection	Tunable White Control	Usage Data & Report History

Specifications

Main Capabilities	
Dimming (Output) Interface	DALI/DALI-2

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
Stand-by power (Psb)	<0.5W
DALI bus maximum rated current (I_n max)	100 mA
DALI bus nominal DC voltage range (Un)	15 V
DALI bus nominal current (I guaranteed)	80 mA

HBEM54/N

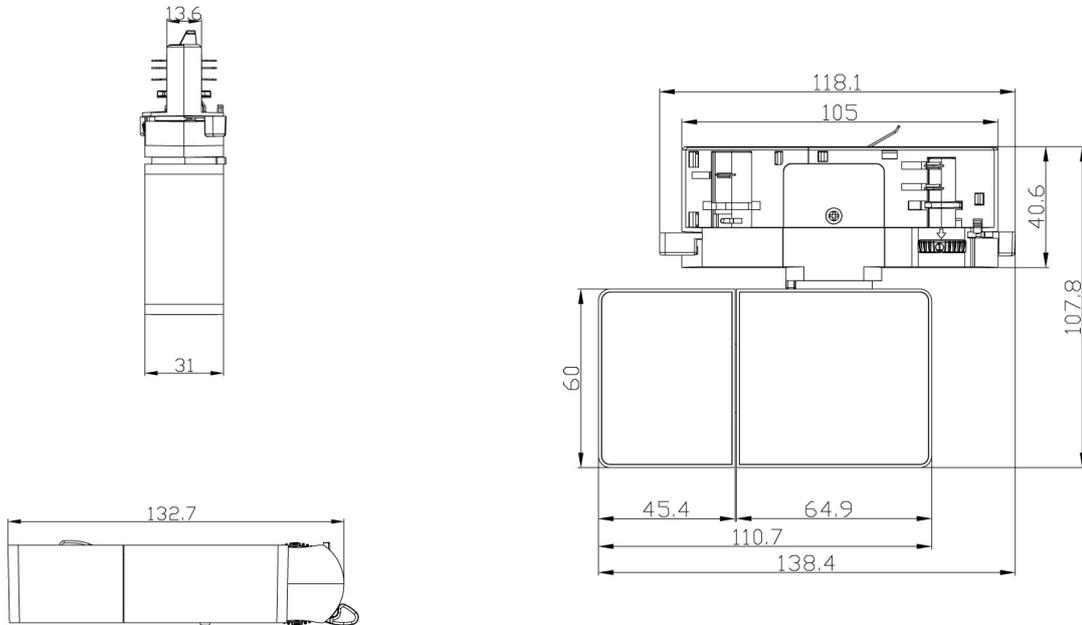**Bluetooth to DALI Emergency Translater | 6 Wires 3 Circuits | Track System**

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	EN 55015, EN 61547
LVD	EN 60570-1, EN 61347-1/-2-11
RED	EN 300328, EN 301489-1/-17, EN 50663

HBEM54/N

Bluetooth to DALI Emergency Translater | 6 Wires 3 Circuits | Track System

Technical Drawing

Application Example

Installation Process

1

2

B

A

3

4

GLOBAL

GLOBAL

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

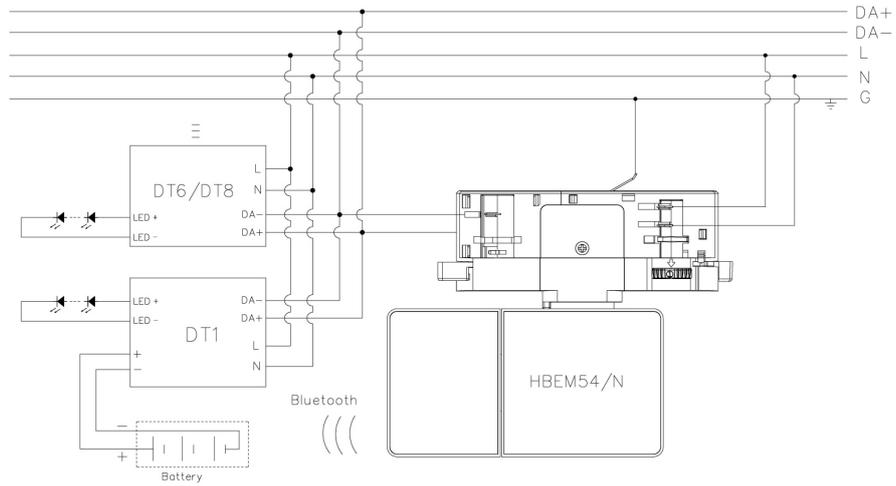4. 6 Wires 3 circuits track adaptor is universal compatible.

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.

Wiring Diagram

Commissioning Instructions and Precautions

A. Installation Preparations

1. This product should be installed by a qualifed 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

Dimming Interface Operation Notes

The provided Switch-Dim interface allows for a simple dimming method using commercially available non-latching (momentary) wall switches. Detailed Push switch configurations can be set on Koolmesh app.

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
Emergency Self-Test Function	Single press (>0.1s) Double press Press and hold (>= 1s)	• Disable • Function test • Duration test • Erminated test
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

HBEM54/N
Bluetooth to DALI Emergency Translater | 6 Wires 3 Circuits | Track System

HYTRONIK ®
SENSORS & LIGHTING CONTROL

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

Device-specific Koolmesh App features

Compatible with EnOcean kinetic switches

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.

6-10m   >10m
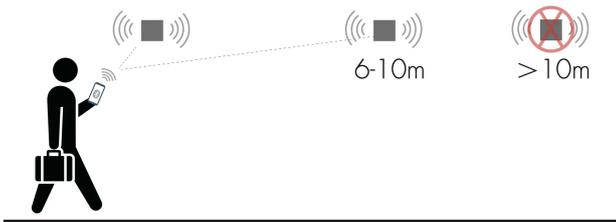
Bluetooth Network Components

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

HBP02

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

HYTRONIK ®
SENSORS & LIGHTING CONTROL

Functions and Features

Automatic Email Alerts on Faults

When a fault is detected, the system automatically sends email notifications to alert maintenance personnel, enabling timely intervention and reducing system downtime.

Automatic Emergency Self-Testing

The product supports automatic emergency self-testing to verify emergency lighting functionality and battery condition without manual intervention, ensuring reliable operation and compliance with emergency lighting requirements.

Battery Status Monitoring

Users can monitor battery status in real time via the Koolmesh app, including battery condition and operating status. This enables timely maintenance actions and helps ensure reliable emergency operation.

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.

Open-Circuit Protection

This product incorporates open-circuit protection to safeguard the device and connected system in the event of a disconnected load or open wiring condition. When an open circuit is detected, the output is automatically limited or disabled to prevent abnormal operation or component damage, ensuring safe and reliable system behaviour.

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.

Usage Data & Report History

The system stores usage data and historical reports, supporting inspections, maintenance analysis and compliance documentation.

Check out for further explanation of features

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