

HBEM54

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



Benefits

- Standardized: 3-phase dial for phase selection
- Intelligent: Providing emergency management and DALI dimming control
- Powerful: Customizable EM tests and real-time reporting via Koolmesh

Applications

- DALI Emergency applications
- DALI track light system
- Offices, Retail stores, Warehouse

Check out the complete system solution on the website:
<https://www.hytronik.com>



Product Description

HBEM54 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 based on koolmesh system , 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.

Hardware Features

See additional details at the end of datasheet



5-year Warranty



Short-Circuit Protection



Open-Circuit Protection



Overload Protection



Support the Control of
DT6/DT8 Drivers

Functions and Features

See additional details at the end of datasheet



Koolmesh
(See bluetooth control
features below)



Tunable White Control
/ HCL



Usage Data Report
History



Auto Functional
Duration Test



Battery Status
Via App



Auto Email Alerts
on Faults

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Specifications

Main Capabilities

Dimming (Output) Interface	DALI
Stand-by Power	<0.5W

Electrical Data

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

Technical

Ambient temperature	-10°C - +40°C
Storage temperature	-40°C - +70°C
Case temperature (Max.)	T _c : +75°C
Humidity	10% - 90%
IP rate	IP20
Insulation	Class II

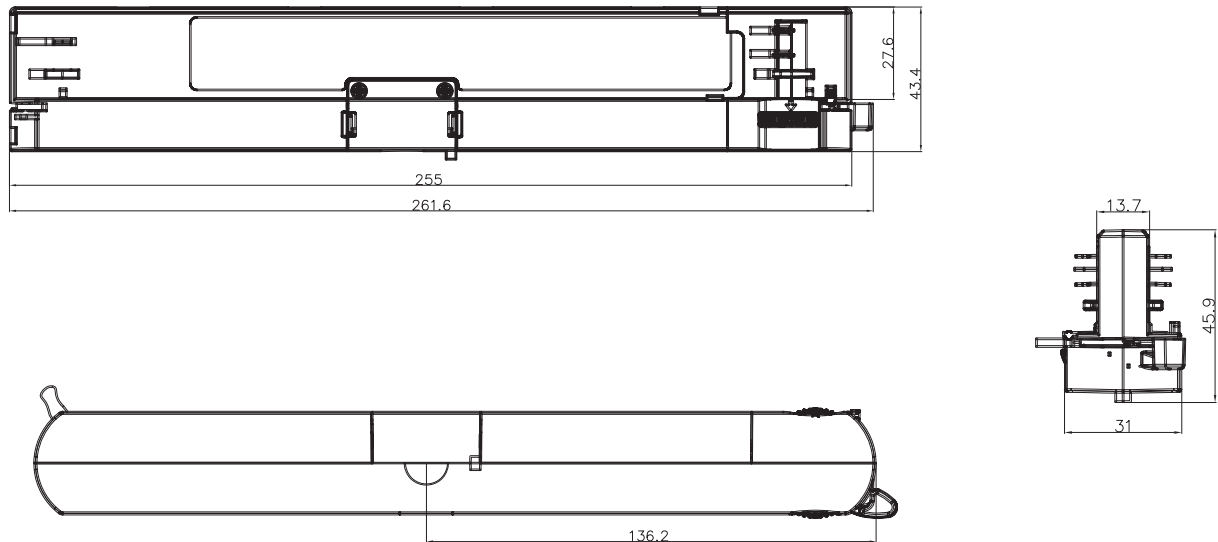
Standards

EMC	EN55015, EN61547
LVD	EN61347-1/-2-11, EN60570-1
RED	EN300 328, EN301489-1/-17, EN50663
Certification	CE , RED, EMC, LVD, UKCA

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Technical Drawing



Picture Application Example

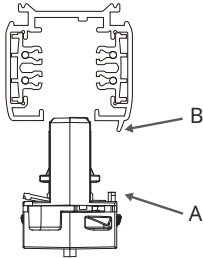


HBEM54

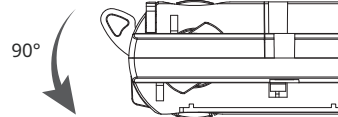
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Installation Process

1



2



3



Detailed Installation Instruction

A. Adapter mounting into the track

1. Insert the adapter into the track, so that the mechanical key (A) in the adaptor matches the groove (B) in the track.
2. Rotate of about 90° the lever of the cam until it reaches the locking position.

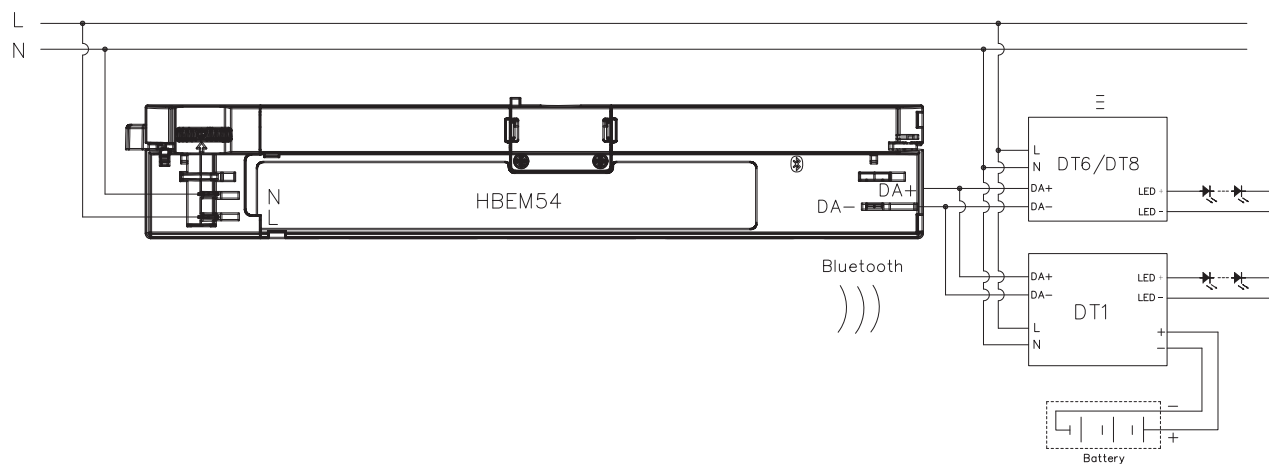
B. Phase selection

1. By rotation, the 3-phase dial can be able to select the phase L1, L2, and L3 to distribute the single luminaires in the track system.

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Wiring Diagram



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

Self-Test Functions

Self-test (Monthly)

The device performs routine tests on emergency lighting based on pre-programmed schedules via the app or upon receiving manual commands. During the monthly self-test, status information reported by the DALI emergency driver is monitored, including load connections (e.g. open-circuit, short-circuit) and battery connections (e.g. open-circuit, short-circuit, polarity reversal).

Self-test (Annually)

The annual test is mainly used to evaluate battery capacity and condition. Before the test begins, the battery must be fully charged in accordance with the DALI emergency driver requirements. Battery lifetime statistics will be analysed and presented graphically.

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.

Switch Function	Action	Descriptions
Emergency Self-Test Function	Short press (<1 second)* Short press has to be longer than 0.1s, or it will be invalid.	<ul style="list-style-type: none"> - Start Self-test (Monthly) - Stop Self-test - Start Self- test (Annually) - Invalid
	Long press (≥1 second)	<ul style="list-style-type: none"> - Start Self-test (Monthly) - Stop Self-test - Start Self- test (Annually) - Invalid
Push switch	Short press (<1 second)* Short press has to be longer than 0.1s, or it will be invalid.	<ul style="list-style-type: none"> - Turn on/off - Turn on only - Turn off only - Recall a scene - Quit manual mode - Do nothing
	Double push	<ul style="list-style-type: none"> - Turn on only - Turn off only - Recall a scene - Quit manual mode - Do nothing
	Long press (≥1 second)	<ul style="list-style-type: none"> - Dimming - Colour tuning - Do nothing
Sensor-link	/	<ul style="list-style-type: none"> - Upgrade a normal on/off motion sensor to a Bluetooth-controlled motion sensor

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

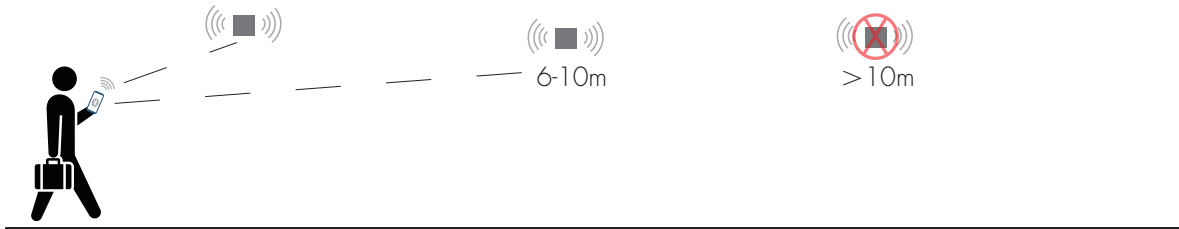
- | | | | |
|---|--|---|--|
|  | Quick setup mode & advanced setup mode |  | Power-on status (memory against power loss) |
|  | Web platform for project deployment & data analysis |  | Offline commissioning |
|  | Koolmesh Pro iPad for on-site configuration |  | Bulk commissioning (copy and paste settings) |
|  | Floorplan feature to simplify project planning |  | Different permission levels via authority management |
|  | One-key device replacement |  | Network sharing via QR code or keycode |
|  | Device social relations check |  | Interoperability with Hytronik Bluetooth product portfolio |
|  | Staircase function for quick setup |  | Internet-of-Things (IoT) featured |
|  | Remote control via Hytronik gateway & touch screen HPAD-TSASE1 |  | Device firmware update over-the-air (OTA) |
|  | Heat map |  | Alert for excess lux / temperature / humidity via multi-meter HBLM01 |
|  | Grouping luminaires via mesh network |  | Seamless integration with BMS via Hytronik BMS gateway |
|  | Scenes |  | Test mesh network connection quality |
|  | Schedule |  | Compatible with Shelly emergency metering |
|  | Astro timer (sunrise and sunset) |  | Continuous development in progress... |

Device-specific Koolmesh App features









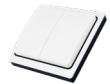



-  Compatible with EnOcean kinetic switches

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.



Bluetooth Network Components

	HBGW02 Bluetooth Mesh Gateway Dual-band Wi-Fi 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 DIN rail/wall/flat surface mounting Remote access/monitoring www.hytronik.com/product/HBGW02		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		HBKS01/W Bluetooth Kinetic Switch One-gang White Color 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
	Switch (EnOcean) - HBES01/B Bluetooth Kinetic Switch Single Rocker White Color www.hytronik.com/product/HBES01/B		Switch (EnOcean) - HBES01/W Bluetooth Kinetic Switch Three-gang White Color www.hytronik.com/product/HBES01/W

Functions and Features

5-year Warranty



All Hytronik products are supplied with a 5-year warranty against defect in design or manufacture. The warranty applies to all electronic control gears supplied by Hytronik and is applicable to the party to which the sale was made. The warranty is not transferable to a 3rd party and compatibility with external components are the responsibility of the finished goods manufacturer. With today's multi-national sourcing strategies, we offer an unrivalled universal warranty with support available in regions where Hytronik has its own office or authorized representation, regardless of where the Hytronik product was purchased. Furthermore, we operate a 24-hour response policy to any claim. The full warranty policy is available upon request or from our website.

Short-Circuit Protection



This product includes short-circuit protection, automatically shutting down output when abnormal current is detected. The protection restores after the fault is removed, ensuring system safety and preventing damage.

Open-Circuit Protection



This product features open-circuit protection, ensuring that the product and connected system are not damaged if the load or wiring is disconnected.

Overload Protection



This product supports overload protection, limiting or disabling output if the load exceeds the rated capacity. The protection mechanism helps avoid overheating, component stress, and operational instability.

Support the Control of DT6/DT8 Drivers



The sensor supports control of DT6 (single-channel), DT8 (tunable white/RGB) drivers, ensuring wide compatibility with DALI lighting systems. This allows the sensor to be integrated into various luminaire types, providing flexible control options for different lighting applications.

Tunable White Control / HCL



Lighting can reduce energy bills, it also can boost productivity and promote the wellbeing of humans in artificially lit environment. Hytronik has added to its de-centralised tunable white LED driver range with a new concept of time keeping for the most cost effective Circadian Rhythm Lighting. Different from other complex lighting systems, Hytronik circadian rhythm system offers a simple de-centralized human centric lighting solution for offices, schools and hospitals with the tunable white feature.

Functions and Features

Auto Functional Duration Test



This product complies with emergency lighting requirements and supports automatic monthly and annual functional testing. Test reports can be generated via the app, simplifying routine inspection, maintenance management, and compliance documentation.

Battery Status Via App



Users can check the battery status in real time via the Koolmesh app, including battery condition and operating status, helping ensure reliable emergency performance.

Auto Email Alerts on Faults



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

Usage Data Report History



The system stores usage data and historical reports, which can be retrieved at any time for inspection, maintenance analysis, and compliance documentation.

Check out for further explanation of features

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