SCB02/BLE

Super Connection Box | DALI Dimming & Switching | Flexible Lighting Control

Benefits

Fast: GST terminal design for quick and reliable wiring

Flexible: Multiple luminaire outputs and sensor/switch inputs

Efficient: App-based setup enabling fast commissioning

Applications

Decentralized Light Control

Retrofit Projects

Office Lighting Projects

Check out the complete system solution on the webside:

https://www.hytronik.com

Product Description

SCB02/BLE is a smart connection box for DALI lighting systems, enabling switching and dimming via Bluetooth control.It features a GST 6-pole terminal structure and supports up to 14 luminaire outputs for efficient wiring. Designed for SELV applications, it includes 4 RJ45 sensor ports and 10 switch inputs (8 push-button + 2 emergency). Configuration and commissioning are completed via the Koolmesh app, supporting up to 8 lighting channels plus VFC and ELT control.

Functions and Features

Push-Button Input

Koolmesh (See bluetooth contol below)

Specifications

Main Capabilities	
Dimming (Output) Interface	DALI / Switch

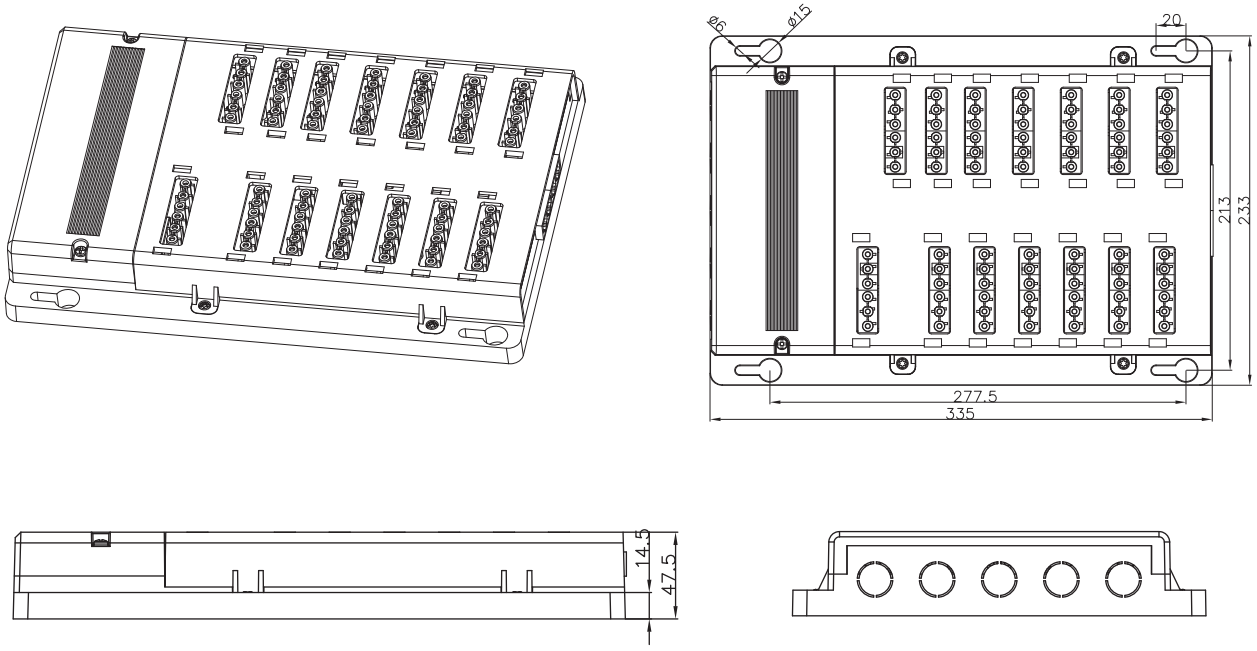
Electrical Data	
Bluetooth frequency	2.4 GHz - 2.483 GHz
Bluetooth transmit power	4 dBm
Bluetooth range	10-30 m
Bluetooth system	Koolmesh
Operating voltage	220-240VAC 50/60Hz
Push Interface voltage	15VDC
EM Interface voltage	15VDC
RJ45 Interface supply voltage	12VDC
RJ45 Interface supply current	250 mA (Max.)
DALI I guaranteed	40 mA
DALI I max	60 mA
DALI U rated	14-16 VDC
Rated load(Max.)	Total interface load: 12A
	Without relay switch: 10A capacitance, 10A resistance
	With relay switch: 3A capacitance, 6A resistance
	EM interface load: 3A capacitance, 6A resistance
	VFC load: 2A capacitance, 4A resistance
Stand-by power	< 3W

Specifications

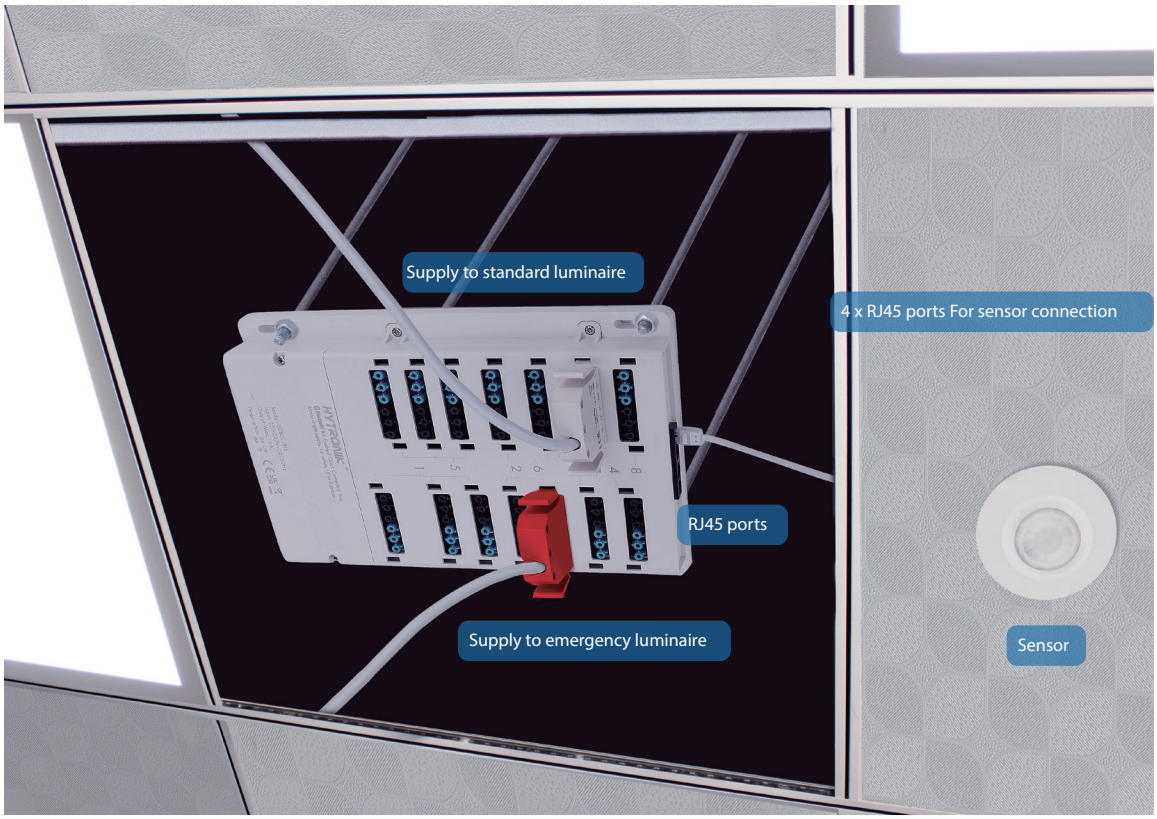
Technical	
Ambient temperature	-10°C - +40°C
Storage temperature	-40°C - +70°C
Humidity	10% - 90%
IP rate	IP20
Insulation	Class II

Standards	
EMC	EN55015, EN61000-6-1/-6-3, EN61547
LVD	EN60730-1 EN61347-1/-2-11, EN61984
RED	EN300328, EN301 489-1/-17, EN50663
Certification	CE , UKCA

Technical Drawing



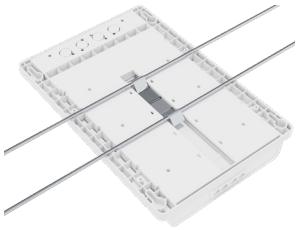
Picture Application Example



Installation Process

1

2



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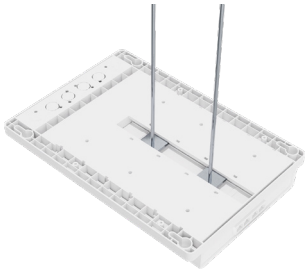

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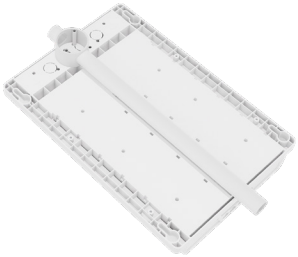


Detailed Installation Instructions

This product supports a variety of installation methods and can be flexibly selected according to the on-site environment.

1. Surface Mount

Can be fixed onto walls or ceilings using 4 x M6 screws.

2. Marco Tray Mount

Can be used with Marco clips on steel wire cable tray systems.

3. Channel Nut Mount

Can be fastened to the back using channel nuts.

4. Mounting Rods

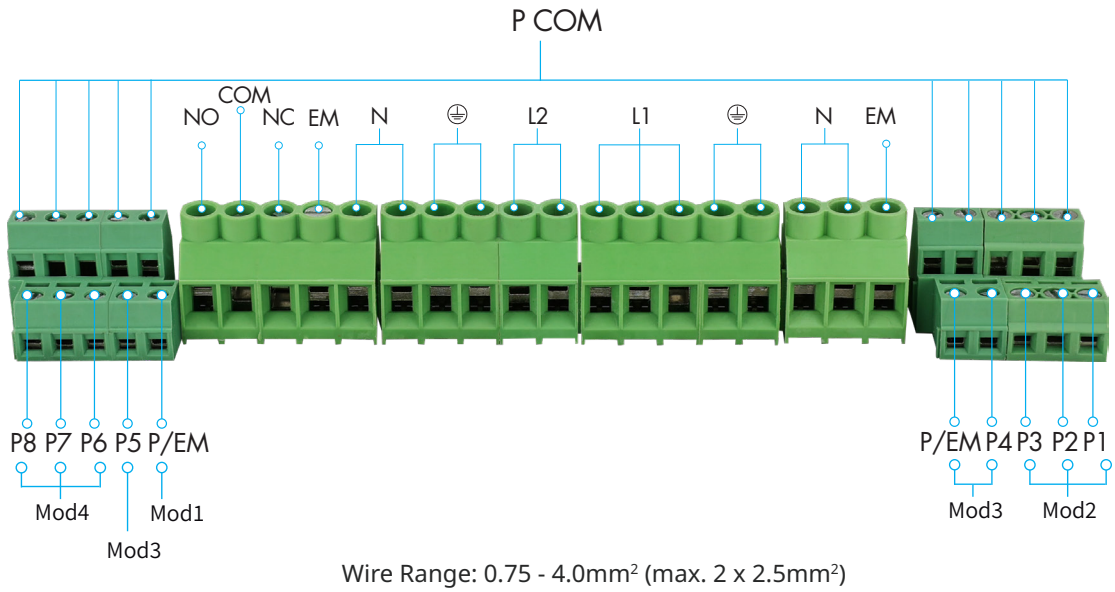
Can be fixed with mounting rods.

5. BESA / Junction Box Connection

Can be connected to a BESA or junction box.

Wire Preparation

Input Terminal



Wire Range: 0.75 - 4.0mm² (max. 2 x 2.5mm²)

Luminaire outlet

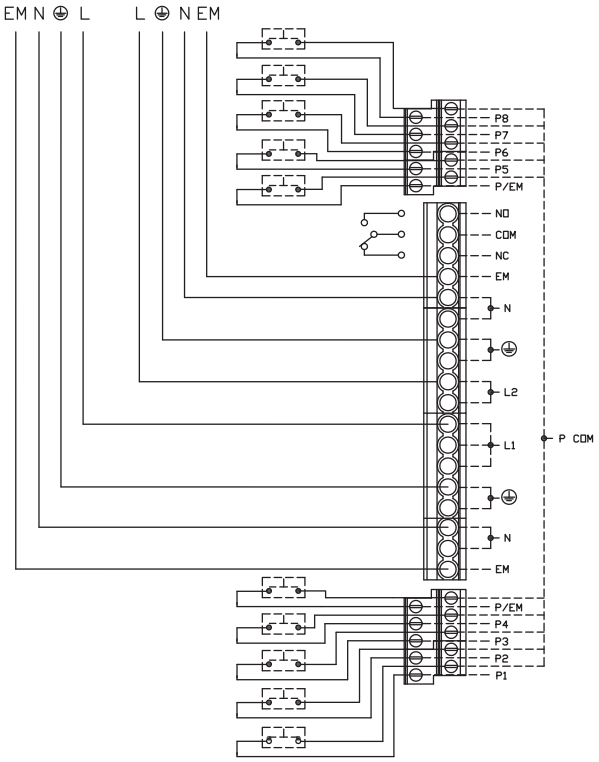
with DALI dimming

with relay switch +DALI dimming

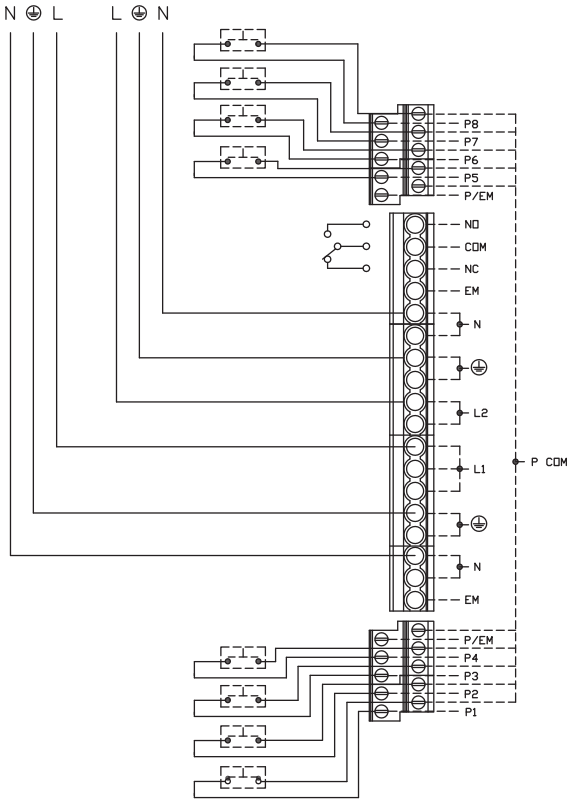
Bluetooth sensor interface

Wiring Diagram

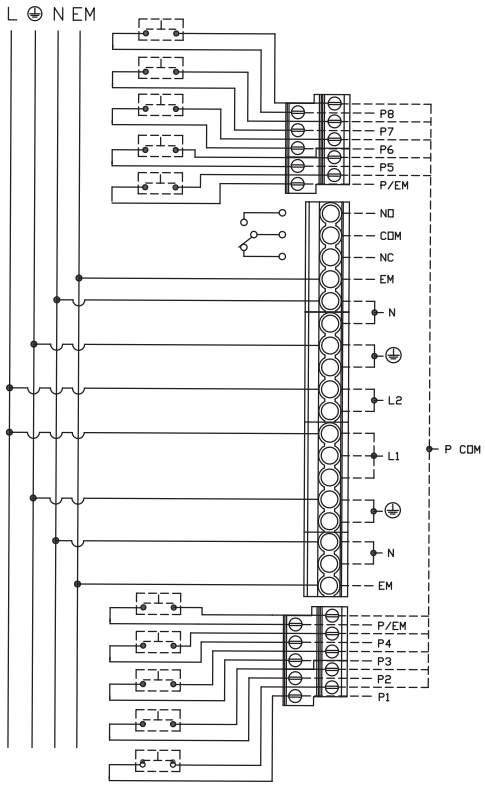
Dual Power Input With emergency control switch



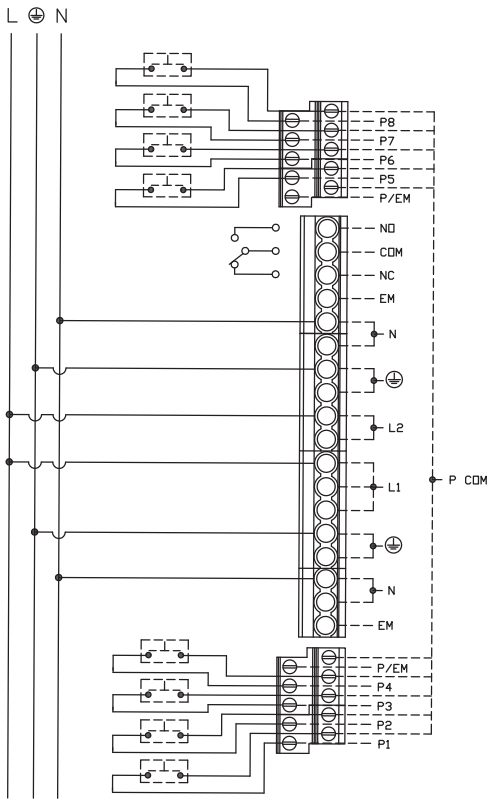
Dual Power Input No emergency control switch



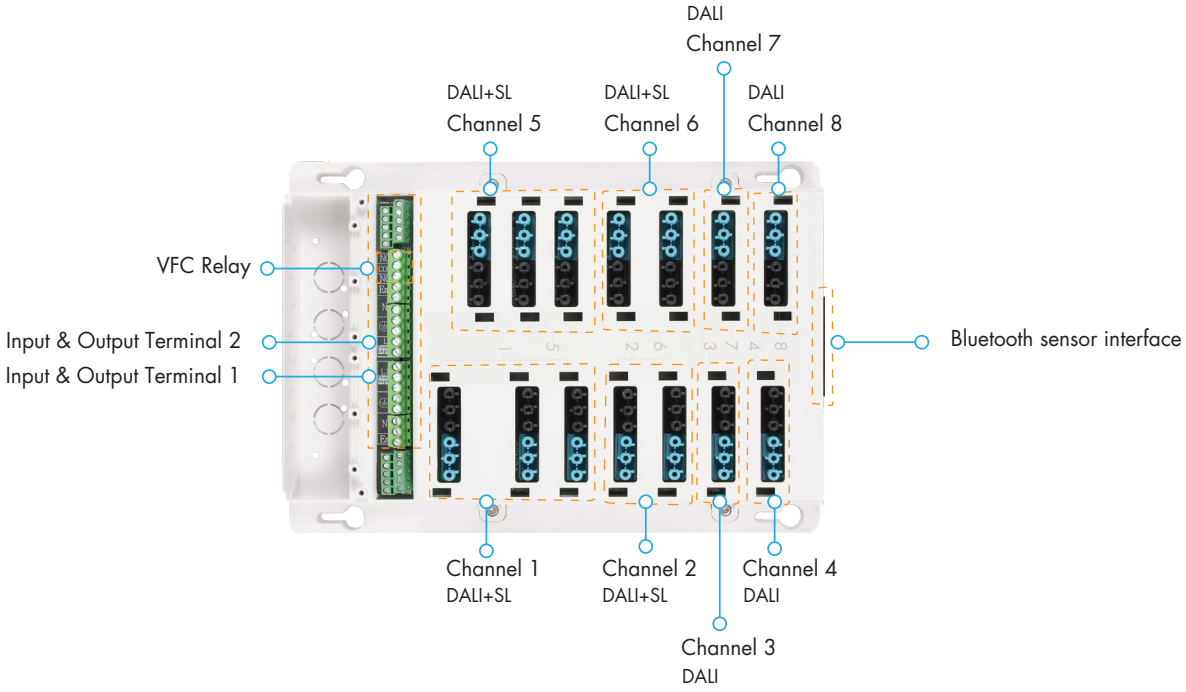
Single Power Input With Emergency Test Switch



Single Power Input No Emergency Test Switch



Channel Configuration & Control Mode



SCB02/BLE is a Bluetooth intelligent control fast junction box, through Bluetooth APP or PUSH, turn DALI signal and relay for dimming and color, or switch control.

According to different lamp types, it can be selected with relay switch +DALI channel (channel 1/2/5/6), or simple DALI control channel (channel 3/4/7/8), and provides emergency control interface, dry contact interface, 8 PUSH interfaces, 2 emergency control switch interface, 4 RJ45 Bluetooth sensor interface.

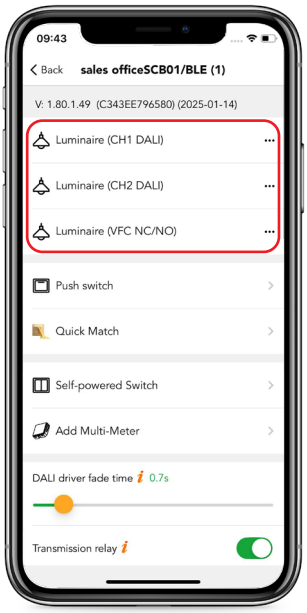
SCB02/BLE built-in 4 Bluetooth control modules, divided into 4 devices:

*SL = Switch Line (Relay Output)

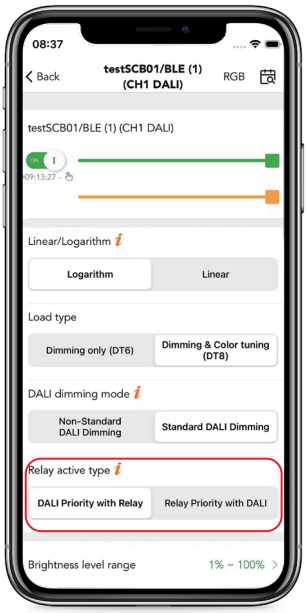
BT module	Channel	Outputs	Sockets	Inputs
1	CH1	DALI, SL	3	Push P/EM
	CH2	DALI, SL	2	
	VFC	VFC		
2	CH3	DALI	1	Push 1 Push 2 Push 3
	CH4	DALI	1	
3	CH5	DALI, SL	3	Push 4 Push 5 Push P/EM
	CH6	DALI, SL	2	
4	CH7	DALI	1	Push 6 Push 7 Push 8
	CH8	DALI	1	

APP Settings

1. The SCB02/BLE supports up to 14 luminaires. In the app, these outputs are organised into 8 + 1 channels, where the 9th channel is a VFC relay channel.
2. Channels 1, 2, 5, and 6 allow multiple luminaires to be connected and controlled together. Taking Channel 1 as an example, it has three physical terminal outputs, allowing up to three luminaires to be connected, but it appears as one single channel in the app, and all connected luminaires are controlled simultaneously.
3. The remaining channels provide independent DALI outputs for individual luminaires. The device supports both DALI mode and relay mode, but these two modes cannot operate at the same time.The simple setup can be done through the Koolmesh® app.



(Figure 1. Example for point 2)



(Figure 2. Example for point 3)

Note: When the relay is prioritized, the relay contact will open or close according to the light's state.When DALI is prioritized, the relay contact remains permanently closed.

Commissioning Instructions and Precautions

A. Installation Preparations

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

B. Device Adding in the App

1. This product integrates four Bluetooth modules. When adding the device in the app, it must be added four times, which will appear as: SCB02/BLE (1), SCB02/BLE (2), SCB02/BLE (3), and SCB02/BLE (4).

C. Additional Information

1. For more details, please refer to the app or contact us for technical support.

Warning: For additional important documents, including installation precautions, product guidelines, and guarantee conditions, please refer to 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
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
Sensor-Link	/	• Hold time/scene • Stand-by time/scene • Upgrade a normal on/off motion sensor to a Bluetooth-controlled motion sensor
ON OFF Switch (Latching Switch)	/	• Upgrade a standard on/off control to Bluetooth control, enabling one latching switch to control multiple luminaires or zones, reducing wiring and switch count.
Emergency SL (Switch Emergency/Lighting)	Single press (> 0.1s)	• ON/OFF emergency light, enter EM mode • *Note: At present, this function cannot be displayed within the app and can only be controlled via the physical button.
Fire Alarm Function	Refer to https://support.koolmesh.com/	• Able to connect the Fire Alarm system • Once the fire alarm system is triggered, all the luminaries controlled by the Push Switch will enter the preset scene (normally it's full on), after the fire alarm system gives the ending signal, all the luminaries controlled by this Push Switch will revert back to normal status.

Options

Compatible Products (for full functionality)

	PIR Lowbay | SELV（low-volt） DC | Ceiling mounting	HBIR38DC	www.hytronik.com/product/HBIR38DC
	Power-supply cable | GST type 6-pole male connector | White	HP03/W	www.hytronik.com/product/HP03-W
	Power-supply cable | GST type 6-pole male connector | Red	HP03/R	www.hytronik.com/product/HP03-R

Koolmesh - Operating guide

Bluetooth 5.0 SIG Mesh

Smartphone(ios) | Smartphone (Android) | iPad | Web

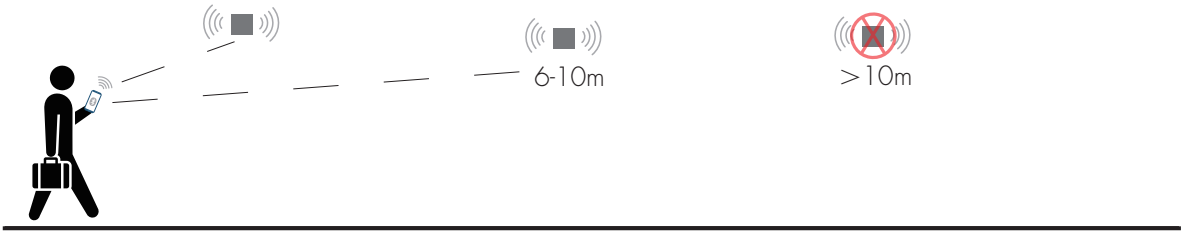
For additional information, including project and network, device, and scenes, please refer to: http://faq.koolmesh.com/faq/en/index.html

Shared Koolmesh App Features

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

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

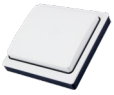
Bluetooth Touch Tablet | Gateway Integrated | Switch Boxes

www.hytronik.com/product/HPAD-TSJASE1

HBKS01/W

Bluetooth Kinetic Switch | One-gang | White Color

www.hytronik.com/product/HBKS01-W



HBKS01D/W

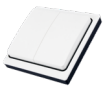
Bluetooth Kinetic Switch | Single Rocker | White Color

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) - HBESO1/B

Bluetooth Kinetic Switch | Single Rocker | White Color

www.hytronik.com/product/HBES01/B

Switch (EnOcean) - HBESO1/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 of ce 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.

Push-Button Input

This product integrates push-button (momentary switch) inputs, allowing external potential-free switches to trigger basic lighting control functions. Each input can be configured for actions such as on/off switching, dimming or scene recall, providing flexible manual control and user interaction within the lighting system. The push-button inputs operate independently of the sensor's automatic functions, enabling seamless coexistence of manual and sensor-based lighting control.

Check out for further explanation of features

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