HCD038/BT RGBW

Bluetooth DALI RGBW Converter | Integrated 80 mA PSU | Attachable sensor heads

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SENSORS & LIGHTING CONTROL

Benefits

Compact: Enabling direct Bluetooth-to-DALI conversion for modern luminaires

Versatile: Supporting PIR/daylight sensors and DALI RGBW for precise tuning

Wireless: Allowing fast parameter setup and commissioning via app

Applications

Master luminaire with sensor

Supermarket/Shop

Lounge

Check out the complete system solution on the webside:

https://www.hytronik.com

Product Description

HCD038/BT RGBW is a Bluetooth-enabled DALI dimming host that brings smart sensing and flexible lighting control to luminaires. It works with plug-and-play PIR or daylight sensor heads to provide on/off control, hold time, LUX threshold and sensor-type selection, and supports DALI RGBW drivers for precise dimming and colour tuning. All parameters and commissioning are performed easily and quickly via the Koolmesh app. With an integrated 80 mA DALI power supply, it delivers stable power for DALI control.

Hardware Features

See additional details at the end of datasheet

5-year Warranty	2 Push inputs	Support the control of DT6/DT8 and D4i drivers

Functions and Features

See additional details at the end of datasheet

Daylight Harvest	Tri level Control	Tunable White / HCL	Koolmesh (See bluetooth contol features below)

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Specifications

Main Capabilities	
Dimming (Output) Interface	DALI
Voltage Type	AC

Bluetooth Transceiver	
Blutehooth frequency	2.4 GHz - 2.483 GHz
Bluetooth transmit power	4 dBm
Bluetooth range	10~30m
Bluetooth system	Koolmesh

Electrical Data	
Operating voltage	220~240VAC 50/60Hz
DALI I guaranteed	30mA
DALI I max	80mA
DALI U rated	16VDC
Stand-by power	<1W
Warming-up	20s

Technical	
Ambient temperature	Ta: -20°C - +55°C
Storage temperature	-40°C - +70°C
Case temperature (Max.)	Tc: +60°C
Humidity	10% - 90%
IP rate	IP20
Insulation	Class Ⅱ

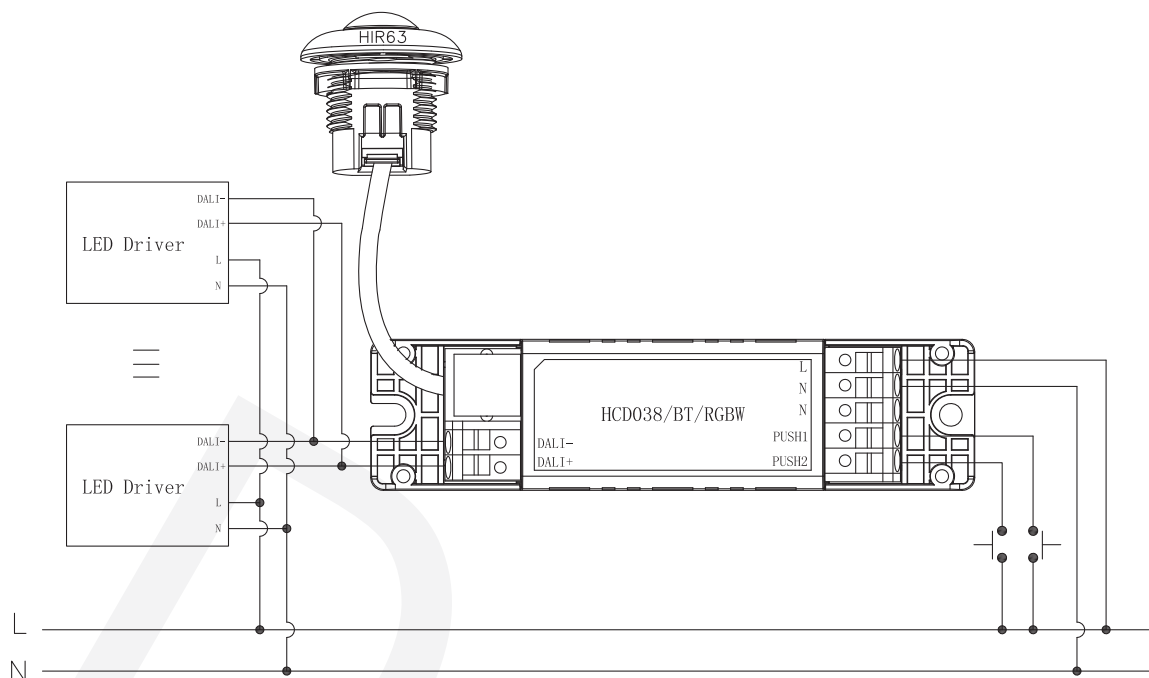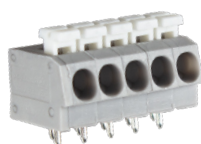| Standards	
EMC	EN55015, EN61000-3-2/-3-3, EN61547
LVD	EN IEC61347-1, EN IEC61347-2-11
RED	EN300328, EN301489-1/-17/3

Dimension Drawing
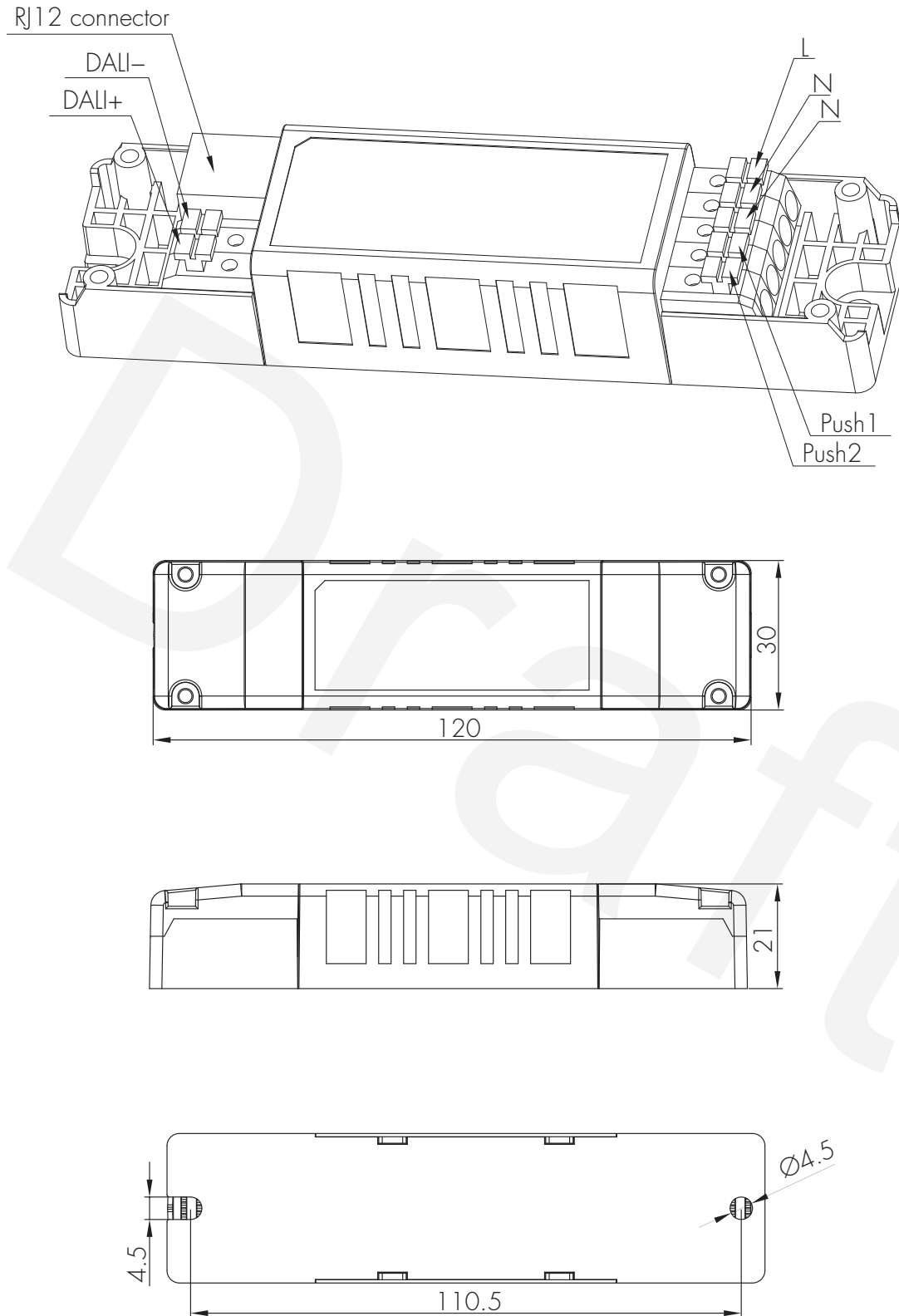
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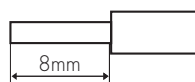
Wiring Diagram

Wire Preparation

0.75~1.5mm²

8mm

To make or release the wire from the terminal, use a screwdriver to push down the button.

1. 200 metres (total) max. for 1mm² CSA (Ta = 50℃)
2. 300 metres (total) max. for 1.5mm² CSA (Ta = 50℃)

Commissioning Instructions and Precautions

A. Installation Preparations

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

2. Ensure the total DALI load does not exceed the built-in 80 mA power supply capacity.

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

https://hytronik.com/service/downloads

RGBW Color light Settings via Koolmesh app

RGBW

You can adjust the color of the luminaire by dragging the RGBW slider or moving the position on the color wheel.

In addition to adjusting the color, you can also fine-tune the saturation of the luminaire as needed. This can usually be done by dragging the saturation bar.
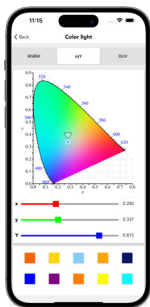
xyY

x-coordinate and y-coordinate: These two values define the position of the luminaire on the CIE 1931 chromaticity diagram, thus determining the color of the luminaire. You can adjust the color by dragging the color slider or by sliding directly on the coordinate axis.

Y value: This value represents the brightness of the luminaire. You can adjust it by dragging the brightness slider.
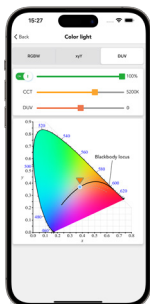
DUV

You can adjust the brightness and color temperature of the luminaire by dragging the brightness and color temperature sliders.

You can adjust the color by dragging the sliders or adjusting the DUV curve. Positive values usually mean the luminaire hue tends to be warmer, while negative values tend to be cooler.

Application Reference:

1. Art Galleries: Adjusting DUV ensures accurate color reproduction of exhibits, avoiding distortions caused by light color deviation.

2. Photo Studios: Adjusting DUV helps ensure the true color rendering of exhibits or photographed objects.

3. Office Spaces: Adjusting DUV provides a comfortable lighting environment, enhancing employee productivity.

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.

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.	- Start Self-test (Monthly) - Stop Self-test - Start Self- test (Annually) - Invalid
	Long press (≥1 second)	- Start Self-test (Monthly) - Stop Self-test - Start Self- test (Annually) - Invalid
Fire Alarm (VFC signal only)	Refer to http://faq.koolmesh.com/docu/en/	- Able to connect the Fire Alarm system - Once the fire alarm system is triggered, all the luminaires 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 luminaires controlled by this Push Switch will revert back to normal status.
Push switch	Short press (<1 second)* Short press has to be longer than 0.1s, or it will be invalid.	- Turn on/off - Turn on only - Turn off only - Recall a scene - Quit manual mode - Do nothing
	Double push	- Turn on only - Turn off only - Recall a scene - Quit manual mode - Do nothing
	Long press (≥1 second)	- Dimming - Colour tuning - Do nothing
Sensor-link	/	- Upgrade a normal on/off motion sensor to a Bluetooth-controlled motion sensor

Options

Accessories

	Reinforced Bluetooth Antenna	Easy installation	White colorV	HA01/W	www.hytronik.com/product/HA01/W
	Reinforced Bluetooth Antenna	Easy installation	Black color	HA01/B	www.hytronik.com/product/HA01/B

Compatible Products (for full functionality)

HIR05

PIR Lowbay | Ciradian Rhyhm | RJ12 connector to control body

www.hytronik.com/product/HIR05

HIR07

PIR Lowbay | Photocell Advance | RJ12 connector to control body

www.hytronik.com/product/HIR07

HIR63

PIR Lowbay | Ciradian Rhyhm | RJ12 connector to control body

www.hytronik.com/product/HIR63

SAM88

HF Lowbay | Daylight Harvest | RJ12 connector to control body

www.hytronik.com/product/SAM88

HIR63/R

PIR Midbay | Ciradian Rhyhm | RJ12 connector to control body

www.hytronik.com/product/HIR63/R

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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

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...

Device-specific Koolmesh App features

DALI-2 and D4i supported

Dynamic daylight harvest auto-configuration

Dusk/Dawn photocell (Twilight function)

Detailed motion sensor settings

Motion sensor range test

Push switch configuration

Compatible with EnOcean kinetic switches

Motion sensor trigger diagnosis

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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.

6-10m   >10m
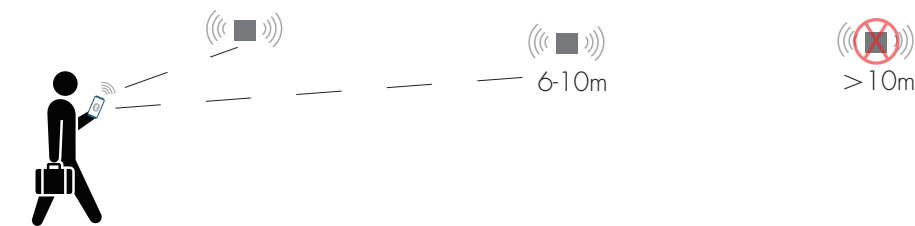
Bluetooth Network Components

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
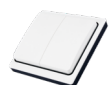
HBKS02D/W

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.

Daylight Harvest

Right time, right place and the right amount of light! Daylight harvest (Also known as daylight regulating or daylight interaction) is a must in the future lighting norms. The daylight sensor measures the available surrounding natural light and calculates how much artificial light is needed to reach the target lux level. The control output is passed to the drivers by DALI or 0/1-10V signals which then deliver the needed amount of light.

Tri-level (Corridor Function)

Hytronik's tri-level dimming products offer 3 levels of light control: 100% dimmed light off, with settable time periods between each phase, as well dimming level and daylight threshold. *All Hytronik's tri-level dimming products can also be configured as bi-level control (by setting the stand-by period to infinity), so that the light always remains in the dimmed mode in absence for areas where there are safety, security or enhanced comfort requirements.

Tunable White / 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 lightingl solution for offices, schools and hospitals with the tunable white feature.

2 Push inputs

This product integrates 2 push inputs, allowing external switches or buttons to trigger basic lighting control functions. Each push input can be configured for actions such as on/off control, dimming, or scene recall, offering flexibility for manual override and user interaction in a smart lighting system. The push inputs operate independently from the sensor's automatic functions, enabling seamless integration of both manual and sensor-based control.

Support the control of DT6/DT8 and D4i drivers

The product supports control of DT6 (single-channel), DT8 (tunable white/RGB), and D4i drivers, ensuring wide compatibility with DALI-2 lighting systems. Supports reading luminaire, energy, and diagnostics data provided by the connected D4i drivers. This allows the sensor to be integrated into various luminaire types, providing flexible control options for different lighting applications.

Check out for further explanation of features

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