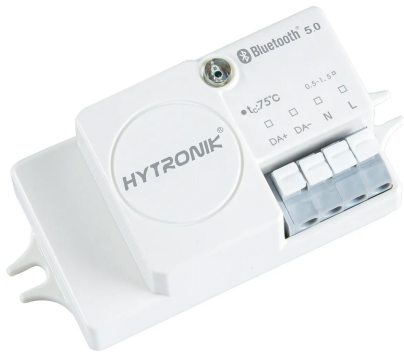


HCD405/BT

HF Lowbay | Bluetooth DALI with PSU | Photocell Advance

HYTRONIK[®]
SENSORS & LIGHTING CONTROL



Benefits

Compact: Super compact size - DALI with PSU

All-in-one: Occupancy, Daylight and Circadian Rhythm

Easy configuration: Wireless Bluetooth 5.0 SIG-Mesh

Applications

For round shape luminaire up to 6m height

Office / Meeting rooms

Schools / Classroom

Check Out the Complete System Solution on the Website:
<https://www.hytronik.com/product/HCD405-BT>



CB

CE



RED

Product Description

HCD405/BT is a Bluetooth built-in microwave sensor with 30mA DALI power supply built in. It is designed for professional lighting manufactures who would like to incorporate wireless control into their luminaires. With Bluetooth wireless mesh networking, it makes communication much easier without any hardwiring, which eventually adds values to luminaires and saves costs for projects. Meanwhile, simple device setup and commissioning can be done via Koolmesh app.

Functions and Features

See additional details at the end of datasheet



D4i Driver
Compatibility



DALI Broadcast
Output



DT6/DT8 Lighting
Control



Photocell
Advance



Zero-Cross Relay
Operation

HCD405/BT

HF Lowbay | Bluetooth DALI with PSU | Photocell Advance

Specifications

Main Capabilities

Dimming (Output) Interface	DALI
Connector Type	Standard 2 cables

Sensor Data

Detection angle	30° - 150°
Max. Detection range (Diameter)	10.0 m
Maximum Mounting Height	3.0 m
Detection area	78 m ²
Sensitivity	10%/ 30% /50% /75%/ 100%

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
Warming-up	20 s
DALI bus maximum rated current (I _n max)	80 mA
DALI bus nominal DC voltage range (Un)	16 V
DALI bus nominal current (I guaranteed)	30 mA
HF Transmission power	<0.2mW (HF)

HCD405/BT

HF Lowbay | Bluetooth DALI with PSU | Photocell Advance

Specifications

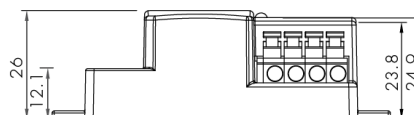
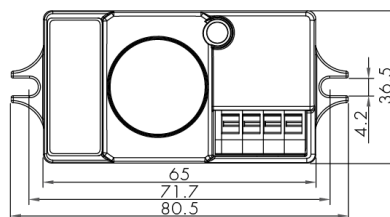
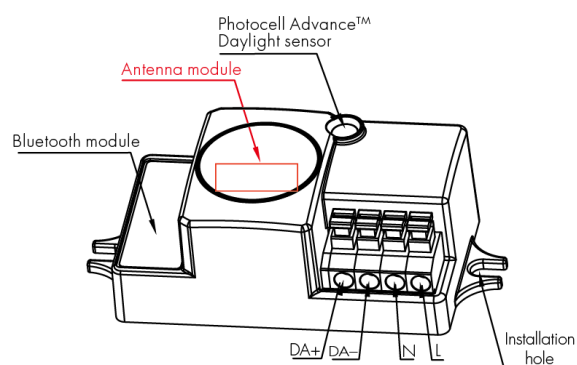
Technical	
Product weight	35.0 g
Product height	24.9 mm
Product length	80.5 mm
Product width	36.5 mm
Mounting hole	4.2 mm
Ambient temperature	-20 ~ +60 °C
Storage temperature	-40 ~ +70 °C
Humidity max	10 ~ 90%
Case Temp.max	75.0 °C
IP Rate	IP20

Standard	
EMC	EN 55015, EN 61000, EN 61547
LVD	EN 60669-1, EN 60669-2-1
RED	EN 300328, EN 301489-1/-17

HCD405/BT

HF Lowbay | Bluetooth DALI with PSU | Photocell Advance

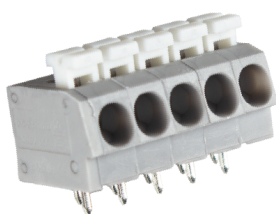
Technical Drawing



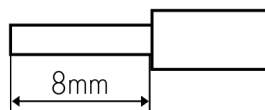
HCD405/BT

HF Lowbay | Bluetooth DALI with PSU | Photocell Advance

Wire Preparation

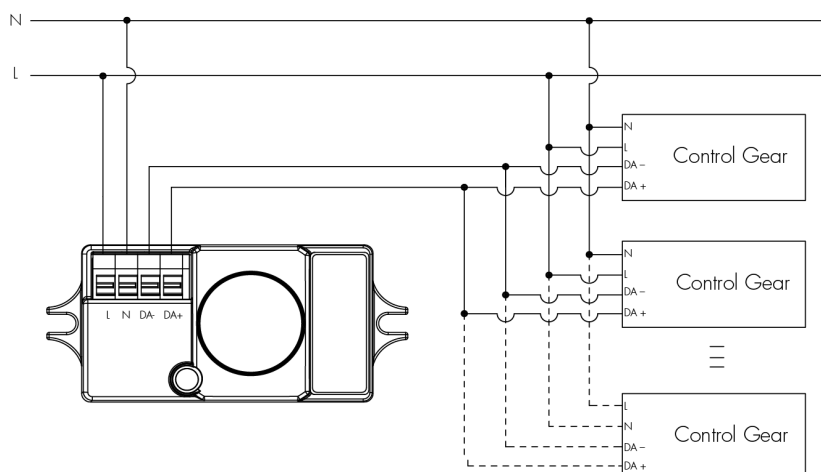


0.75~1.5mm²



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°C) 2. 300 metres (total) max. for 1.5mm² CSA (Ta = 50°C)

Wiring Diagram



HF Lowbay | Bluetooth DALI with PSU | Photocell Advance

Single Person Walk (Ceiling mount)

- Single person walking
- Sensor not connected to any driver that may have soft-on period
- Testing temperature $T_a = 20^{\circ}\text{C}$

The diagram shows a cross-section of a tunnel with a hatched ceiling. A person is walking on a path. A dashed line represents the trajectory of a falling object from the ceiling to the path. Concentric circles represent the area of influence. The innermost circle is labeled 'Sensitive' and has a diameter of $\varnothing:10\text{m}$. The outermost circle is labeled 'Insensitive'.

	Sensitivity
H[m]	100%
	$\varnothing$ [m]
3	10

Commissioning Instructions and Precautions

A. Installation Note

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

B. Bluetooth Antenna Note

1. This product is equipped with a built-in Bluetooth antenna. When the device is installed in a ceiling or recessed environment, ensure that the sensor head remains exposed and is not covered by metal structures or dense building materials, as this may affect Bluetooth communication performance. For optimal signal reliability, avoid installing the device inside fully enclosed metal housings or areas with strong signal interference.

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

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

HCD405/BT

HF Lowbay | Bluetooth DALI with PSU | Photocell Advance

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

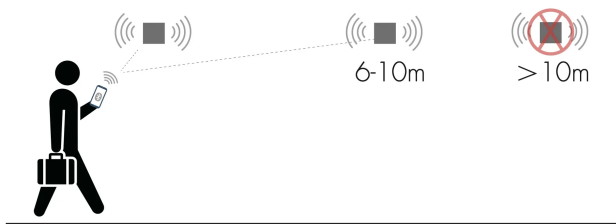
- | | |
|--|---|
|  Alert for excess lux / temperature / humidity via multi-meter HBLM01 |  Koolmesh Pro iPad for on-site configuration |
|  Astro timer (sunrise and sunset) |  Network sharing via QR code or keycode |
|  Bulk commissioning (copy and paste settings) |  Offline commissioning |
|  Compatible 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

- | | |
|--|---|
|  Adjustable motion & static sensitivity & Adjustable sensing distance |  Motion sensor range test |
|  Detailed motion sensor settings |  Motion sensor trigger diagnosis |
|  Dusk/Dawn photocell (Twilight function) | |

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



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



HPAD-TSJASE1

Bluetooth Touch Tablet | Gateway Integrated | Switch Boxes
www.hytronik.com/product/HPAD-TSJASE1

Functions and Features



D4i Driver Compatibility

Designed to operate with D4i-certified drivers within D4i luminaires, supporting standard DT6 / DT8 control behaviour in D4i systems.



DALI Broadcast Output

This product supports DALI broadcast output, allowing control commands to be sent simultaneously to all devices on the DALI bus without individual addressing.

This enables simple group control, synchronized operation, and fast commissioning within a DALI lighting system.



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.



Photocell Advance

This advanced daylight sensing function accurately measures ambient light levels while minimising interference from the luminaire itself, ensuring reliable dusk-to-dawn control and daylight priority over motion detection. It automatically switches lighting on and off and dynamically adjusts brightness in response to available natural light, delivering visual comfort and improved energy efficiency.



Zero-Cross Relay Operation

The product operates its relay at the AC zero-cross point, reducing inrush current through the relay contacts when switching the load. By minimising electrical stress during each switching event, this method supports higher load capability and extends the operational lifetime of the relay in practical lighting applications.

Check out for further explanation of features

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