

## DALI HF Motion Sensor with Bluetooth® 5.0 SIG Mesh

### HCD450VDS/BT (High-bay)

DALI/DALI-2 & 0/1-10V dimming control & Tri-level dimming & Daylight harvest & Circadian Rhythm

# HYTRONIK®

































### Product Description

HCD450VDS/BT is a Bluetooth DALI/DALI-2 high-bay HF motion sensor, with capability of up to 20m installation height. HCD450VDS/BT not only support the DALI/DALI-2 output, but also support 0/1-10V dimming control with relay output. It also supports 2 -channel on/Off control: Switched L + VFC. HCD450VDS/BT has a daylight sensor built-in, it supports the Tri-level dimming, daylight harvest and Human Centric Lighting/Circadian Rhythm. It is designed for professional lighting manufactures who would like to incorporate wireless control into their luminaires. HCD450VDS/BT is suitable for warehouse and large storage room applications. 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.








### App Features

-  Quick setup mode & advanced setup mode
-  Web app/platform for project deployment & data analysis
-  Koolmesh Pro app on iPad for on-site configuration
-  Floorplan feature to simplify project planning
-  coming soon
-  One-key device replacement
-  Device social relations check
-  Staircase function (primary & secondary)
-  Remote control via gateway support HBGW01
-  Heat map
-  Dynamic daylight harvest auto-adaptation
-  Grouping luminaires via mesh network
-  Scenes
-  Dusk/Dawn photocell (Twilight function)
-  Tri-level control
-  Daylight harvest
-  Circadian rhythm (Human centric lighting)
-  Detailed motion sensor settings
-  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
-  Compatible with EnOcean BLE switches
-  Internet-of-Things (IoT) featured
-  Device firmware update over-the-air (OTA)
-  Continuous development in progress...

### Hardware Features

-  DALI2: 40mA DALI broadcast output
-  0/1-10V & On/Off: 2x400W/120VAC 2x 1000W/220-277VAC capacitive
- $\leq 48\text{VDC}(\leq 2\text{A}); \leq 277\text{VAC}(\leq 3.6\text{A})$
-  IP65
-  High bay (up to 20m height)
-  5-year warranty, designed for long lifetime up to 50,000 hours.



Fully support EnOcean self-powered switch module PTM215B (HBES01/W & HBES01/B)

 **Bluetooth 5.0 SIG mesh**

Smartphone app for both iOS & Android platform

Koolmesh Pro app for iPad

Web app/platform: [www.iot.koolmesh.com](http://www.iot.koolmesh.com)

## Technical Specifications

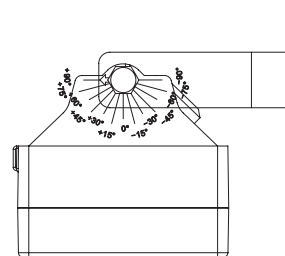
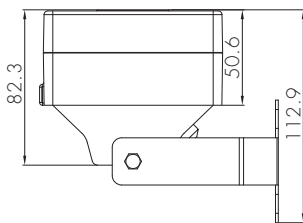
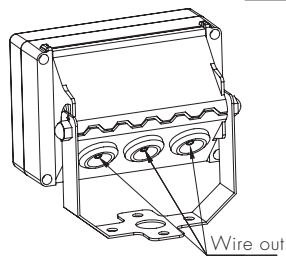
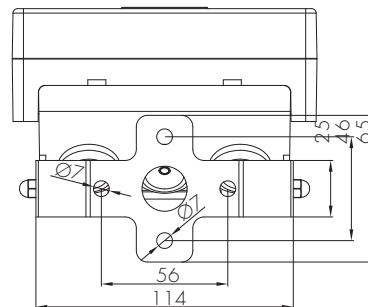
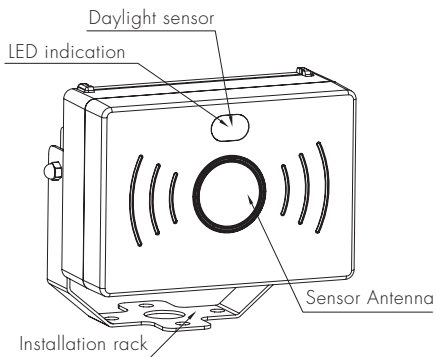
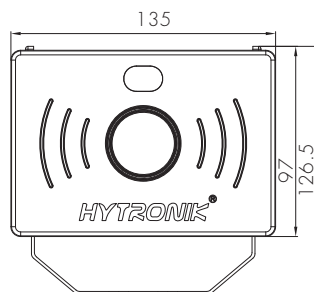
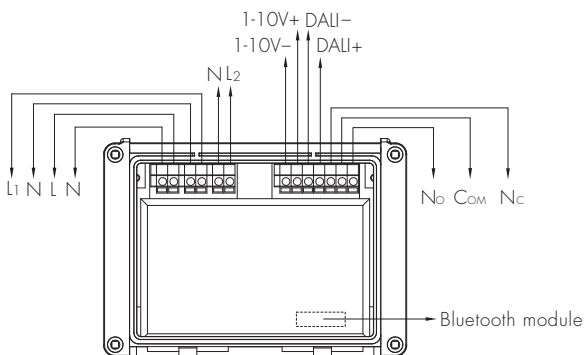
Bluetooth Transceiver	
Operation frequency	2.4 GHz - 2.483 GHz
Transmission power	4 dBm
Range (Typical indoor)	10~30m
Protocol	Bluetooth® 5.0 SIG Mesh
Input & Output Characteristics	
Operating voltage	120 ~ 277VAC 50/60Hz
Stand-by power	<2W
Output (Max loading)	DAI: 40mA DAI broadcast output (20 devices) 0/1-10V & On/Off: Sink: 2mA Max Source: 100mA Max Volfree: ≤ 48VDC(≤2A); ≤240VAC(≤4A)
Warming-up	30s
Environment	
Operation temperature	Ta: -20°C ~ +60°C
IP rating	IP65

Sensor Data	
Sensor principle	HF detection
Detection range*	Max installation height: 27m (forklift)
	Max installation height: 20m (single person)
	Max detection range: 17m x 14m
Detection angle	30~150°

\* The detection range is heavily influenced by sensor placement (angle) and different walking paces. It may be reduced under certain conditions.

Safety & EMC	
EMC standard (EMC)	EN55015, EN61547 EN61000-3-2/-3-3
Safety standard (LVD)	EN60669-1/-2-1
RED	EN300440, EN300328, EN301489-1/3-17, EN50663
Certification	CE, EMC, LVD, RCM, UKCA

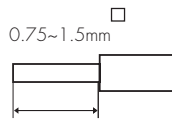
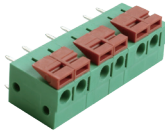
## Mechanical Structure & Dimensions





Note: We recommend the mounting distance between sensor to sensor should be more than 2m to prevent sensors from false-triggering.

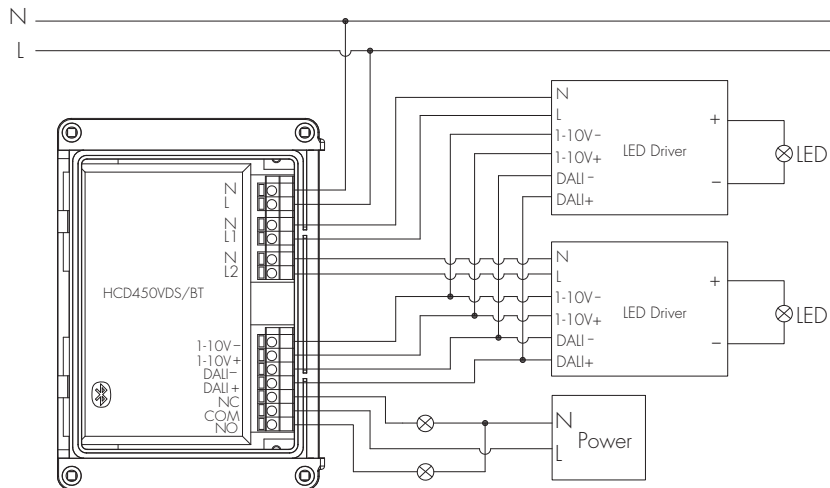
## Wire Preparation



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

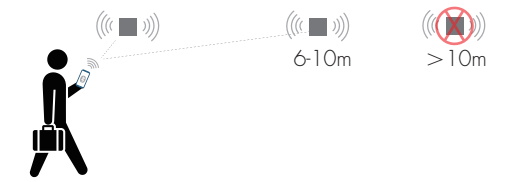
1. 200 metres (total) max. for 1 mm<sup>2</sup> CSA (Ta = 50°C)
2. 300 metres (total) max. for 1.5 mm<sup>2</sup> CSA (Ta = 50°C)

## Wiring Diagram



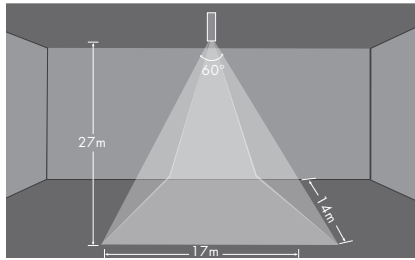
## Placement Guide and Typical Range

### Smart Phone to Device Range

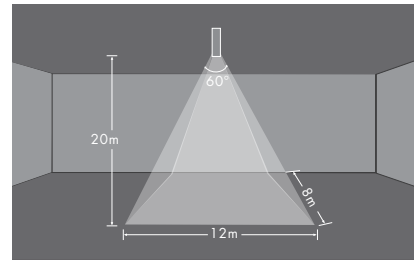


The smart device with the App installed will have a typical range of 10m, but varies from device to device. During commissioning, the installer will need to be in range of the devices when searching for devices to add to the network.

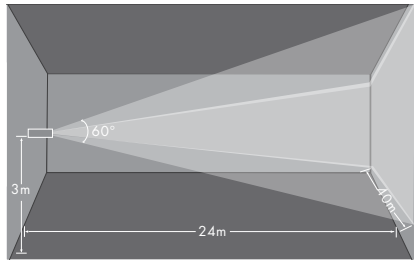
Once the devices have been added to the network via the App, the devices will start communicating within the wireless mesh. This means that once the network is complete, all devices are accessible from the smart device when in a 20m range of a single point.



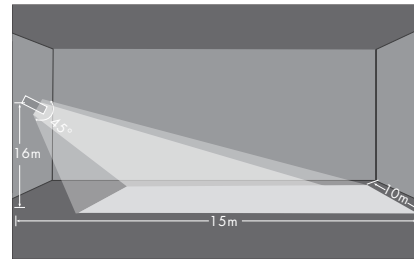
Forklift driving



Single person continuous walking



Single person continuous walking



Single person continuous walking

## Additional Information / Documents

1. To learn more about detailed product features/functions, please refer to [www.hytronik.com/download ->knowledge ->Introduction of App Scenes and Product Functions](http://www.hytronik.com/download->knowledge->Introduction%20of%20App%20Scenes%20and%20Product%20Functions)
2. Regarding precautions for Bluetooth product installation and operation, please kindly refer to [www.hytronik.com/download ->knowledge ->Bluetooth Products - Precautions for Product Installation and Operation](http://www.hytronik.com/download->knowledge->Bluetooth%20Products%20-%20Precautions%20for%20Product%20Installation%20and%20Operation)
3. Regarding precautions for microwave sensor installation and operation, please kindly refer to [www.hytronik.com/download ->knowledge ->Microwave Sensors - Precautions for Product Installation and Operation](http://www.hytronik.com/download->knowledge->Microwave%20Sensors%20-%20Precautions%20for%20Product%20Installation%20and%20Operation)
4. Data sheet is subject to change without notice. Please always refer to the most recent release on [www.hytronik.com/products/bluetooth technology ->Bluetooth Sensors](http://www.hytronik.com/products/bluetooth%20technology->Bluetooth%20Sensors)
5. Regarding Hytronik standard guarantee policy, please refer to [www.hytronik.com/download->knowledge ->Hytronik Standard Guarantee Policy](http://www.hytronik.com/download->knowledge->Hytronik%20Standard%20Guarantee%20Policy)