

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

Product Description

HCD450VDS/BT is a Bluetooth DALI/DALI-2 high-bay HF motion sensor with an installation height of up to 20m. It supports DALI/DALI-2 output, 0/1-10V dimming, and relay output, as well as 2-channel on/off control (Switched L + VFC). With a built-in daylight sensor, it enables tri-level dimming, daylight harvesting, and Human Centric Lighting/Circadian Rhythm. Designed for warehouses and large storage spaces, it allows wireless communication between luminaires without hardwiring via Bluetooth mesh, adding value to fixtures and reducing project costs. Device setup and commissioning are fast and simple via the **Koolmesh®** app.

HYTRONIK®



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
- 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

- DALI: 40mA DALI broadcast output
- 0/1-10V : Sink Current ≤ 100mA, Source Current ≤ 2mA
- IP65
- High bay (up to 20m height)
- 5-year warranty

Bluetooth® 5.0 SIG mesh



Smartphone app for both iOS & Android platform



Koolmesh Pro app for iPad



Web app/platform: www.iot.koolmesh.com

Bluetooth® Kinetic Switch



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

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	220 ~ 240VAC 50/60Hz
Max withstandable in-rush current	120A@160μs
Stand-by power	<2W
Output	DALI: 40mA DALI broadcast output Max load: 800VA(capacitive), 1000W(resistive) 0/1-10V: Sink Current ≤ 100mA Source Current ≤ 2mA VFC: ≤ 48VDC(≤2A); ≤240VAC(≤4A)
Warming-up	30s

*The Max withstandable in-rush current tested under 50% I_{peak} / 230Vac

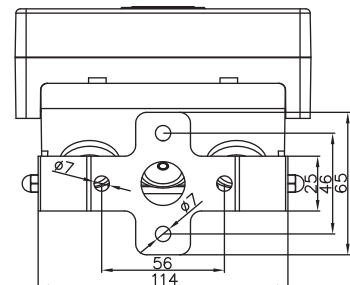
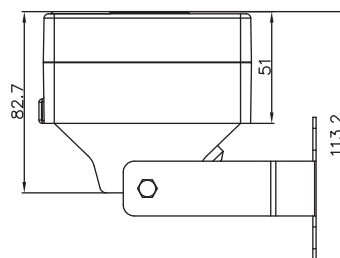
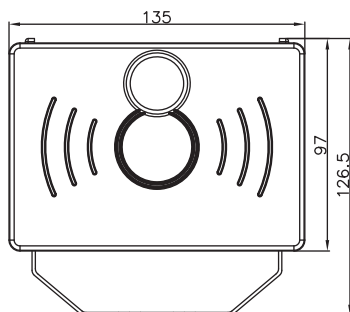
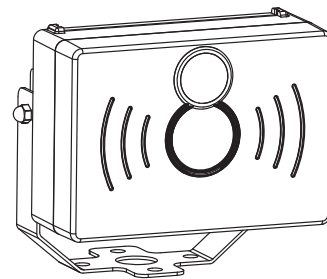
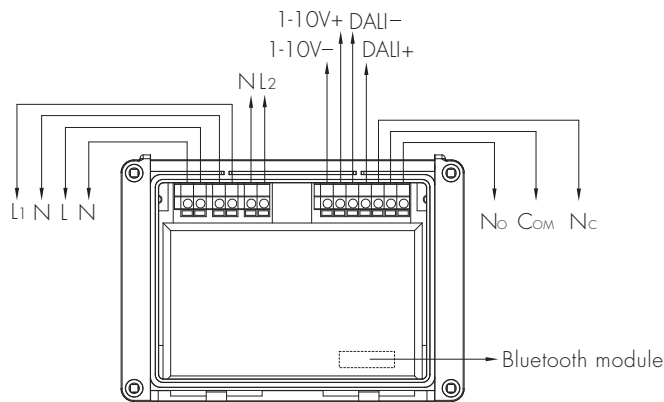
Environment	
Operation temperature	T _a : -20°C ~ +50°C
IP rating	IP65

Sensor Data	
Sensor principle	HF detection
Operation frequency	10.525GHz +/- 75MHz
Transmission power	<0.2mW
Detection range*	Max installation height: 27m (forklift) Max installation height: 20m (single person) Max detection range: 17m x 14m
Detection angle	30° ~ 150°

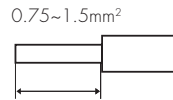
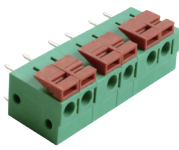
* The detection range is heavily influenced by sensor placement (angle) and different walking paces. It may be reduced under certain conditions.

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



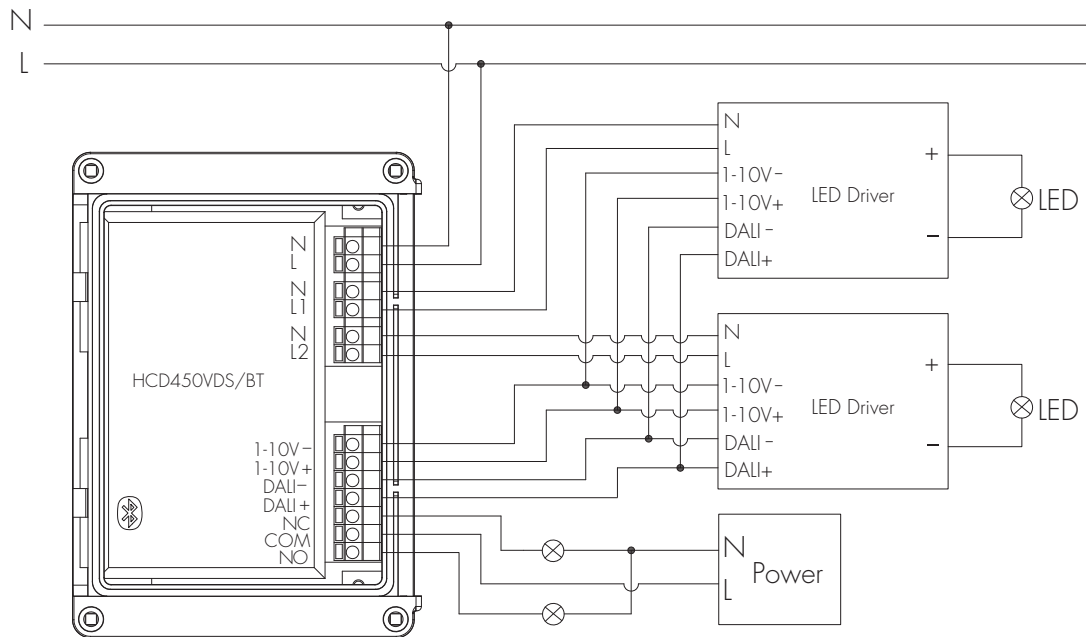
Wire Preparation



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

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

Wiring Diagram



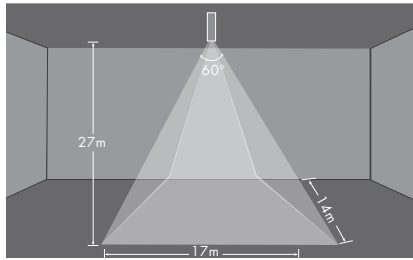
Placement Guide and Typical Range

Smart Phone to Device Range

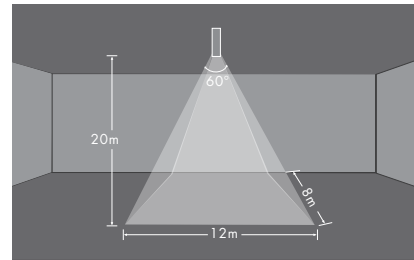


The smart device with the App installed will have a typical range of 10m, but varies from device to device. During commissioning, the installer will need to be in range of the devices when searching for devices to add to the network.

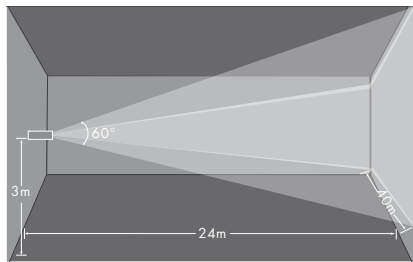
Once the devices have been added to the network via the App, the devices will start communicating within the wireless mesh. This means that once the network is complete, all devices are accessible from the smart device when in a 20m range of a single point.



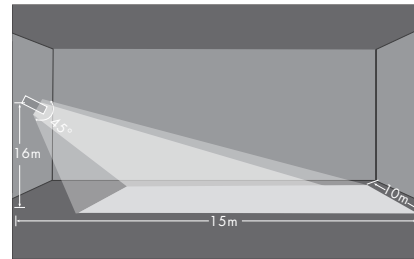
Forklift driving



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)