

DALI HF Motion Sensor

HCD450D2 (High-bay)

DALI command



Product Description

HCD450D2 is a DALI/DALI-2 high-bay HF motion sensor, with capability of up to 20m installation height. HCD450D2 built-in microwave sensor has been designed as DALI-2 input device with daylight sensor instance and HF motion sensor instance. It is suitable for warehouse and large storage room applications.



Features

- DALI-2 multi-sensor input device
- Compliant to IEC62386_101, 103, 303, 304
- IP65
- High bay (up to 20m height)
- Robust HF antenna design against wireless interference
- 5-Year Warranty

Technical Data

Input Characteristics

Model No.	HCD450D2
Input	220-240VAC 50/60Hz
Current Consumption	Max. 2mA from DALI Bus
Power Consumption	<1W
Output	DALI-2 Command
Warming-up	20s

Safety and EMC

EMC standard (EMC)	EN55015, EN61547, EN61000-3-2, EN61000-3-3
Safety standard (LVD)	EN61347-1/-2-11
Radio Equipment (RED)	EN300440, EN301489-1/-3, EN50663
Certification	CB, CE, EMC, RED, RCM
Compliance	IEC62386_101, 103, 303, 304

Sensor Data

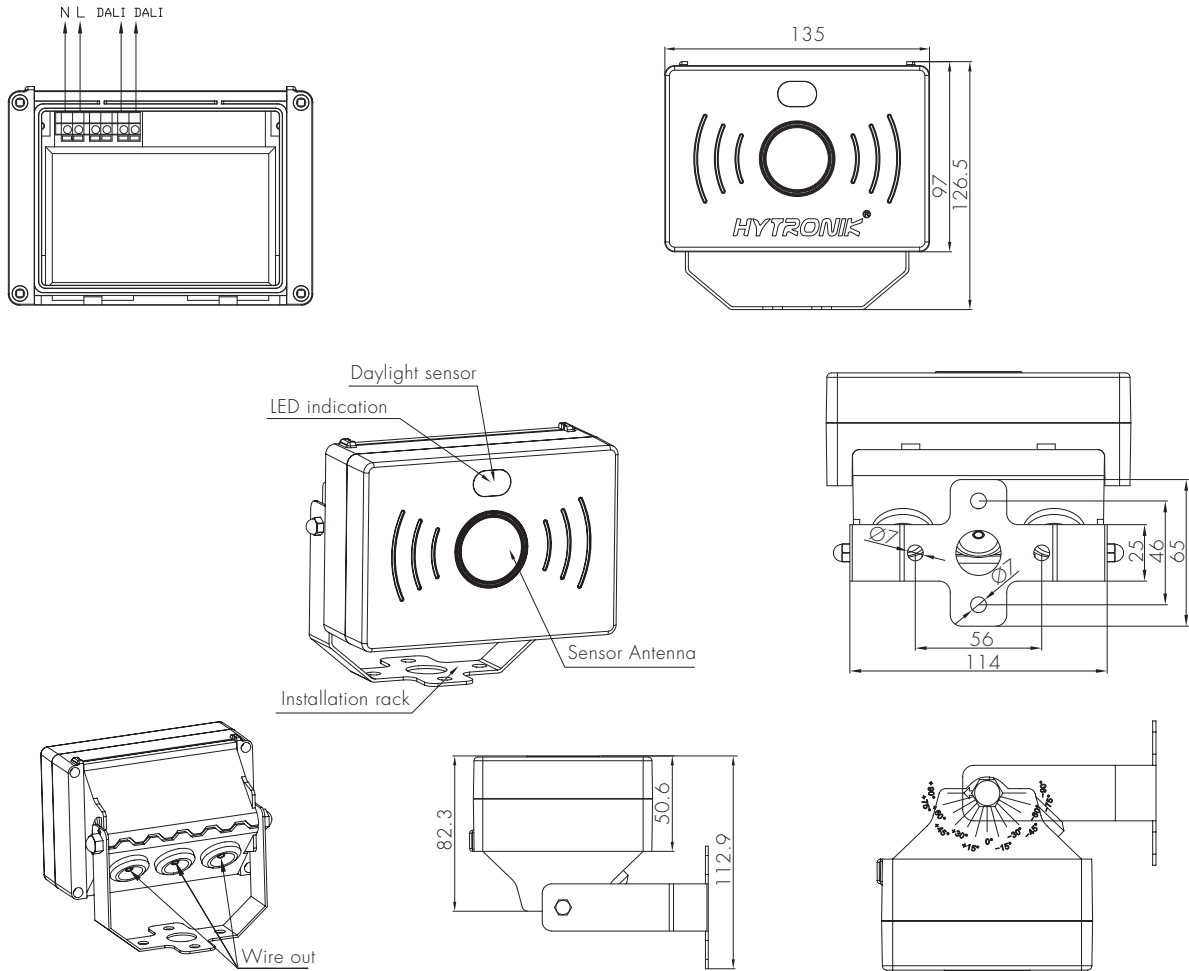
Model No.	HCD450D2
Sensor principle	High Frequency (microwave)
Operation frequency	10.525GHz
Frequency range	>10.5 GHz and <10.6 GHz
Transmission power	<0.5mW
Detection range(Max.)	Max installation height: 27m (forklift) Max installation height: 20m (human) Max detection range: 17 * 14m (L * W)
Detection angle	30° ~ 150°

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

Environment

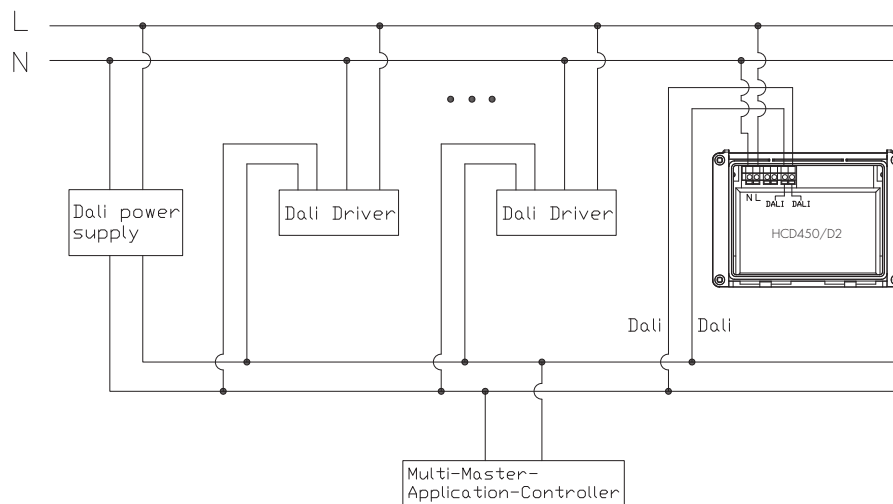
Operation temperature	Ta: -20°C ~ +60°C
Case temperature (Max.)	Tc: +75°C
Storage temperature	-40°C ~ 70°C
Relative humidity	20 ~ 90%
IP rating	IP65
Insulation	Class II

Mechanical Structure & Dimensions

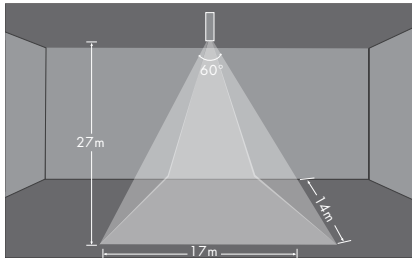


Note: We recommend the mounting distance between sensor to sensor should be more than 2m to prevent sensors from false-triggering.

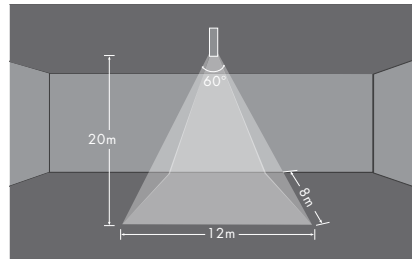
Wiring Diagram



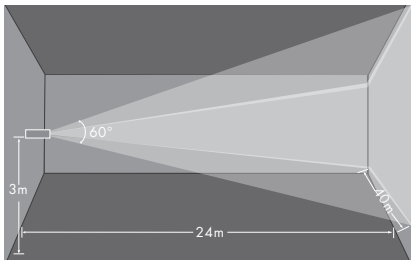
Detection Pattern



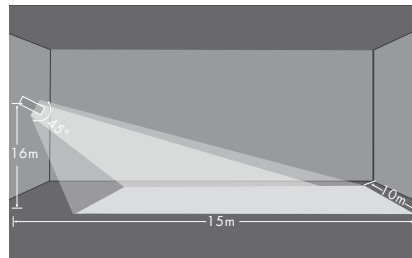
Forklift driving



Single person continuous walking



Single person continuous walking



Single person continuous walking

Sensitivity Adjustment

Setting the sensitivity can be achieved through the following command combination:

1. "ENABLE WRITE MEMORY": Enable BANK write function.
2. "DTR1:DTR0=0x1:0x2, WRITE MEMORY LOCATION =0x55": Set the Lock byte of BANK1 to 0x55. Here a total of 2 instructions are used. 0x1(binary) = 1(decimal), 0x2(binary) = 2(decimal), 0x55 (binary) = 85(decimal).
3. "DTR1:DTR0=0x1:0x11, WRITE MEMORY LOCATION = sensing gear value": set the sensitivity of BANK1 to "sensing gear value". 0x11(binary) = 17(decimal). Sensing gear value can be selected from 0x1 to 0x4, 0x1 is the weakest, 0x4 is the strongest.

*Before writing to the bank, two locks need to be unlocked to write normally.

- The first lock is the big lock for all banks. Unlock it with the command "ENABLE WRITE MEMORY".
- The second lock is that each bank has its own Lock byte. When the written value is 0x55, the small lock is unlocked.

*BANK is a memory space freely defined by the manufacturer. Writing a value after unlocking has two steps:

- Specify the write address, and pass in the address through DTR0 and DTR1.
- Pass in the written value with the write command "WRITE MEMORY LOCATION". This command will return the written value after the write is successful. Write fails without return value.

The following is an example of an instruction to set the sensitivity to 100%.

Type	Addr	Command	Data	Delay	Answer
DAI24	BCast	ENABLE WRITE MEMORY		100...	
DAI24	BCast	ENABLE WRITE MEMORY		100...	
DAI24		DTR1:DTR0	1:2	100...	
DAI24		WRITE MEMORY LOCATION	85	100...	85
DAI24		DTR1:DTR0	1:17	100...	
DAI24		WRITE MEMORY LOCATION	4	100...	4

Additional Information / Documents

1. 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
2. Regarding Hytronik standard guarantee policy, please refer to www.hytronik.com/download ->knowledge ->Hytronik Standard Guarantee Policy