

## DALI-2 HF Sensor

HCD405D2

DALI-2 command



### Product Description

HCD405D2 built-in microwave sensor has been certified as DALI-2 input device with daylight sensor instance and HF motion sensor instance. It is ideal for typical indoor applications such as office, classroom, healthcare and other commercial areas.



### Features

- DALI-2 multi-sensor input device
- Compliant to IEC62386\_101, 103, 303, 304
- Robust HF antenna design against wireless interference
- 5-Year Warranty

### Technical Data

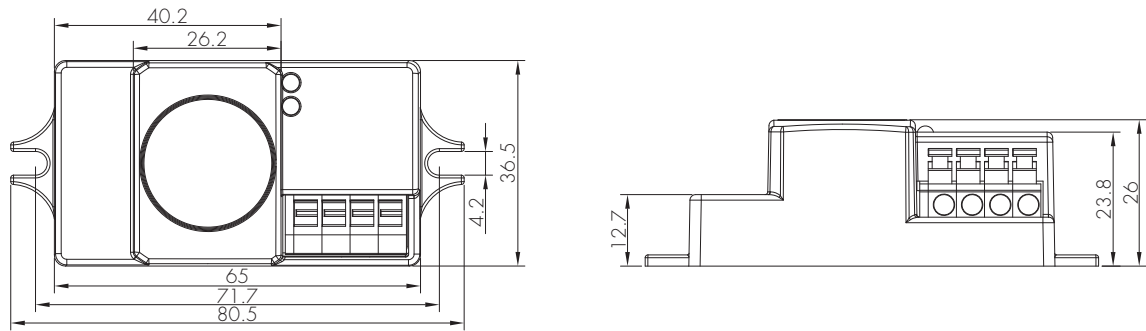
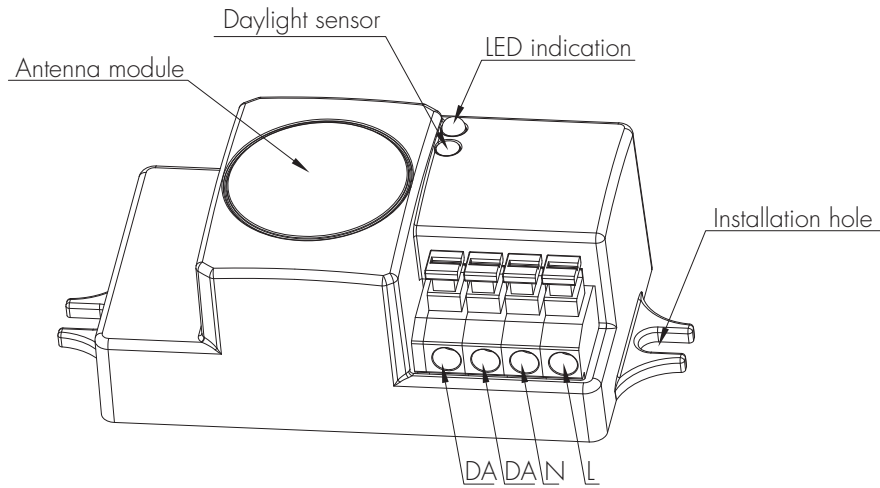
Input Characteristics	
Input	220-240VAC 50/60Hz
Current Consumption	Max. 2mA from DALI Bus
Power Consumption	<1W
Output	DALI-2 Command
Warming-up	20s

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	
Sensor principle	High Frequency (microwave)
Operation frequency	5.8GHz +/- 75MHz
Transmission power	<0.5mW
Detection range	Installation height: 3m Max. Diameter(Ø): 10m
Detection angle	30° ~ 150°

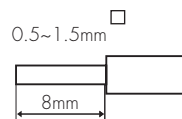
Environment	
Operation temperature	Ta: -20°C ~ +70°C
Case temperature (Max.)	Tc: +75°C
Storage temperature	-40°C ~ 70°C
Relative humidity	20 ~ 90%
IP rating	IP20
Insulation	Class II

## Mechanical Structure & Dimensions



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

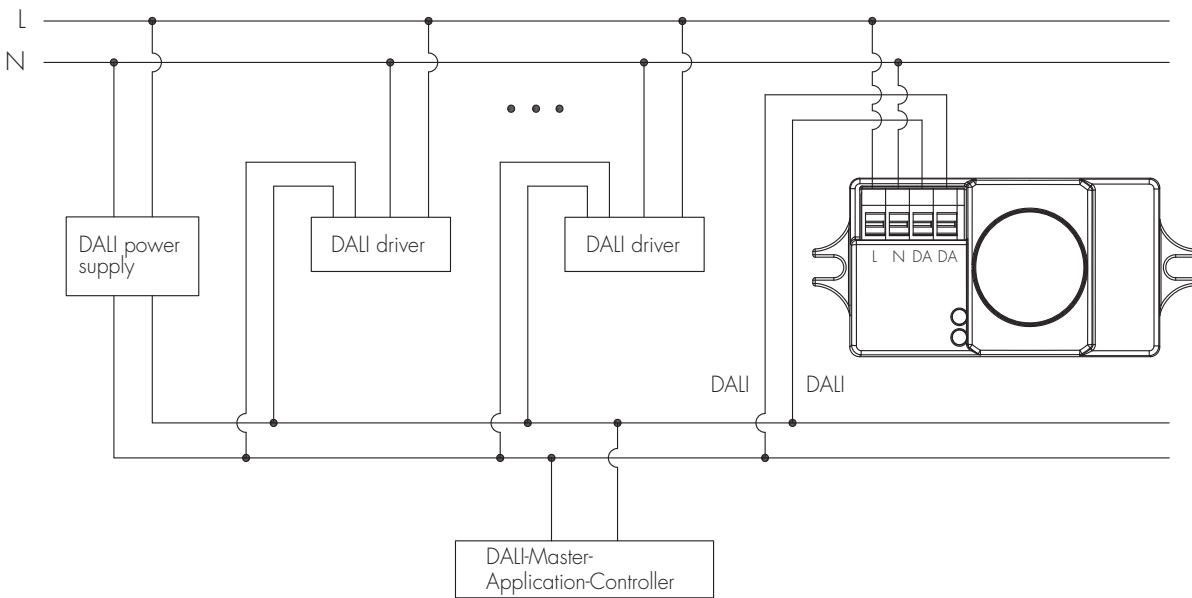
## Wire Preparation



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

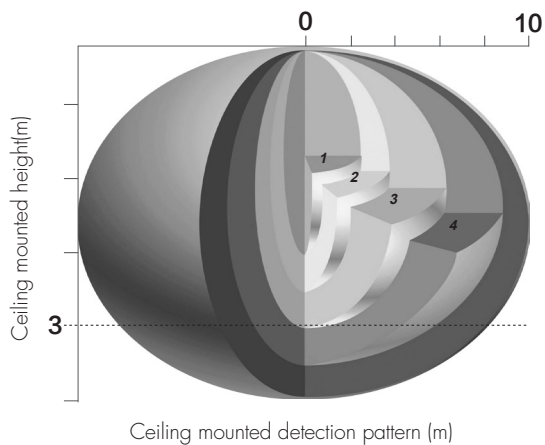
1. 200 metres (total) max. for 1mm<sup>2</sup> CSA (Ta = 50°C)
2. 300 metres (total) max. for 1.5mm<sup>2</sup> CSA (Ta = 50°C)

## Wiring Diagram



Note: HCD405D2 has been used as DALI-2 input device to only report DALI instance(light sensor instance and motion sensor instance) to DALI-2 application controller, who is the "main brain" to process the data communication between input devices and the control gear and assign different function.

## Detection Pattern



Height (m)	Sensitivity			
	100%	75%	50%	10%
Diameter (∅:m)				
3	10	8	6	4

## Sensitivity Adjustment

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

1. "ENABLE WRITE MEMORY": Enable BANK write function.
2. "DTR1:DRT0=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:DRT0=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](http://www.hytronik.com/download->knowledge->Microwave%20Sensors%20-%20Precautions%20for%20Product%20Installation%20and%20Operation)
2. 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)