

## DALI-2 HF Sensor

HCD038/D2 + SAM24  
DALI-2 command



### Applications





Occupancy detector with DALI-2 control suitable for indoor use:

- Office / Commercial Lighting
- Classroom
- Meeting Room

Use for new luminaire designs and installations



### Features

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

### Technical Specifications

| Input Characteristics |                        |
|-----------------------|------------------------|
| Input                 | 220-240VAC 50/60Hz     |
| Current Consumption   | Max. 2mA from DALI Bus |
| Power Consumption     | <1W                    |
| DALI Input voltage    | 9.5~22.5V              |

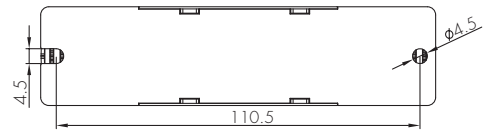
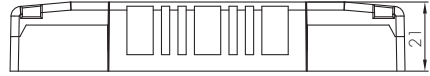
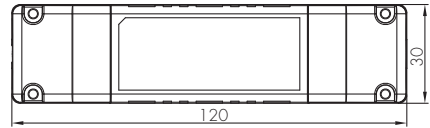
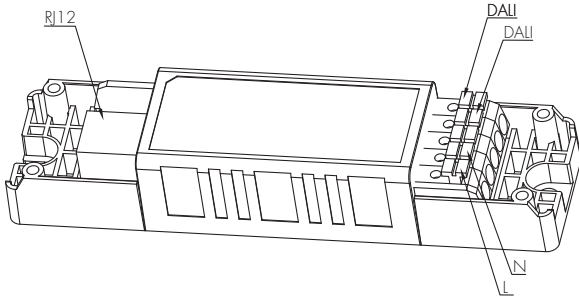
| Environment             |                   |
|-------------------------|-------------------|
| Operation temperature   | Ta: -20°C ~ +60°C |
| Case temperature (Max.) | Tc: +70°C         |
| Storage temperature     | -35°C ~ 70°C      |
| Relative humidity       | 20 ~ 90%          |
| IP rating               | IP20              |
| Insulation              | Class II          |

| 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         | CE, RCM, UKCA                              |
| Compliance            | IEC62386_101, 103, 303, 304                |

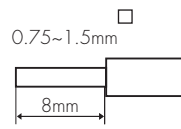
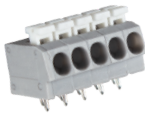
| HF Sensor Propertie |  |
|---------------------|--|
| Sensor principle    | High Frequency (microwave)                       |
| Operation frequency | 5.8GHz +/- 75MHz                                 |
| Transmission power  | <0.5mW   |
| Detection range     | Installation height: 3m<br>Max. Diameter(Ø): 12m |
| Detection angle     | 30° ~ 150°                                       |

## Mechanical Structure & Dimensions

Model HCD038/D2



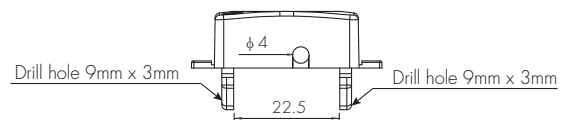
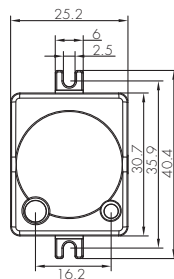
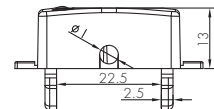
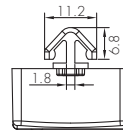
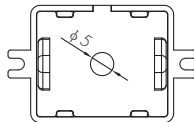
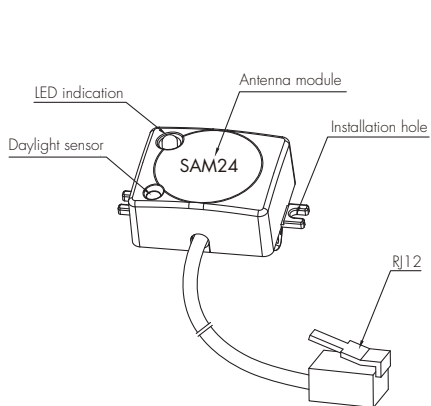
## Wire Preparation



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

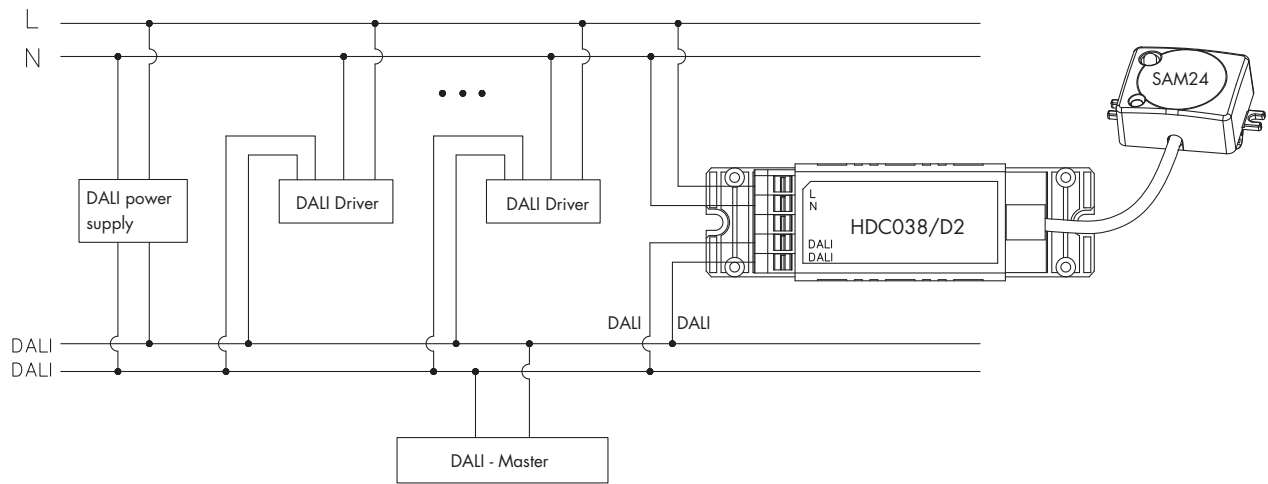
1. 200 metres (total) max. for 1mm<sup>2</sup> CSA (Ta = 50°C)
2. 300 metres (total) max. for 1.5mm<sup>2</sup> CSA (Ta = 50°C)

HF SensorDIM™  
Model SAM24



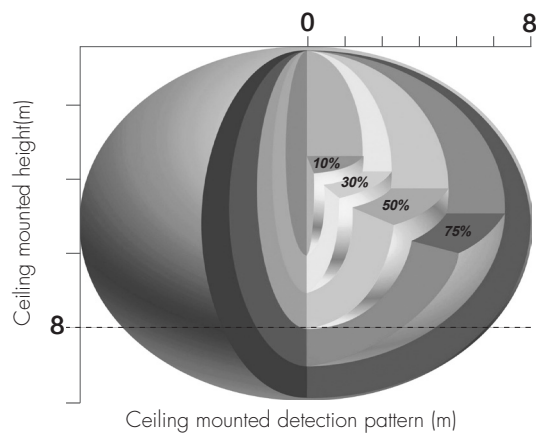
Drill hole for cable entry is 10mm x 10mm in square shape or  $\phi$  12mm in round shape

## Wiring Diagram



## Detection Range

Model SAM24



| Height (m) | Sensitivity    |     |     |      |
|------------|----------------|-----|-----|------|
|            | 100%           | 75% | 50% | 10%  |
|            | Diameter (Ø:m) |     |     |      |
| 8          | 8              | 6   | 4   | none |
| 5          | 10             | 8   | 6   | 2    |
| 3          | 12             | 10  | 8   | 4    |

## Sensitivity Adjustment

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

1. **"ENABLE WRITE MEMORY"**: Enable BANK write function.
2. **"DTR1:DRTO=0x1:0x2, WRITE MEMORY LOCATION =0x55"**: Set the Lock byte of BANK 1 to 0x55. Here a total of 2 instructions are used. 0x1(binary) = 1(decimal), 0x2(binary) = 2(decimal), 0x55 (binary) = 85(decimal).
3. **"DTR1:DRTO=0x1:0x11, WRITE MEMORY LOCATION = sensing gear value"**: set the sensitivity of BANK 1 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 DRTO 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:DRTO             | 1:2  | 100... |        |
| DAI24 |       | WRITE MEMORY LOCATION | 85   | 100... | 85     |
| DAI24 |       | DTR1:DRTO             | 1:17 | 100... |        |
| DAI24 |       | WRITE MEMORY LOCATION | 4    | 100... | 4      |

## Additional Information / Documents

1. Regarding precautions for Photodiode/Photocell Usages, please kindly refer to [www.hytronik.com/download](http://www.hytronik.com/download) ->knowledge ->Precautions for Photodiode/Photocell Usages
2. Data sheet is subject to change without notice. Please always refer to the most recent release on [www.hytronik.com/products/Motion Sensors](http://www.hytronik.com/products/Motion%20Sensors) ->Built-in HF Sensor
3. Regarding Hytronik standard guarantee policy, please refer to [www.hytronik.com/download](http://www.hytronik.com/download) ->knowledge ->Hytronik Standard Guarantee Policy