

Specification

Product series: **24GHz Large-space presence sensor (DALI 2.0 version)**

Product model: **MSA205**

Product version: **V1.0**

| Versions | Release/ change Date | Publishing |
|----------|----------------------|------------|
| V1.0 | 2022.12.13 | Jacky |

【Product Description】

MSA205 is Merrytek developed 24GHz DALI 2.0 millimeter microwave motion sensor, which carries Merrytek exclusive microwave antenna with big detection area and high sensitivity and accurate algorithm. Thanks to Merrytek sophisticated hardware and software, MSA205 can precisely detect chest minor motion caused by human breath and communicate with other device by DALI 2.0 protocol to provide fantastic automatically smart control in smart home、smart hotel and smart office lighting scenarios.

【Product feature】

- Precise human presence detection
- Conceal embedded mounting
- Presence and Absence signal output
- Environment daylight lux output
- DALI 2.0 protocol communication
- In accordance with IEC62386 101、103、303 and 304 command
- Detection sensitivity and hold time adjustable by remote or switch DIP
- International 24GHz ISM band adopted
- Max human presence detection area: 4-6m diameter
- Max minor motion detection area: 4-6m diameter
- Max movement motion detection area: 4-6m diameter
- Time interval from absence to presence: within 0.5s
- Time interval from presence to absence: more than 30s
- Super low RF power output and harmless to human health
- Product performance immune to temperature、humidity、noise、airflow、ash and sunshine



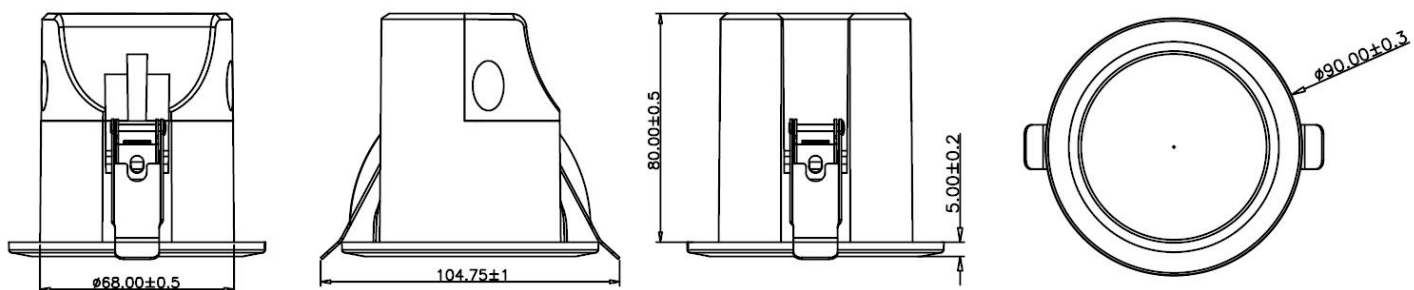
【Product dimension】

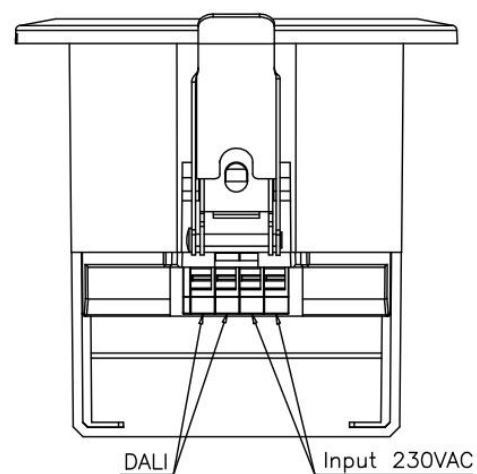
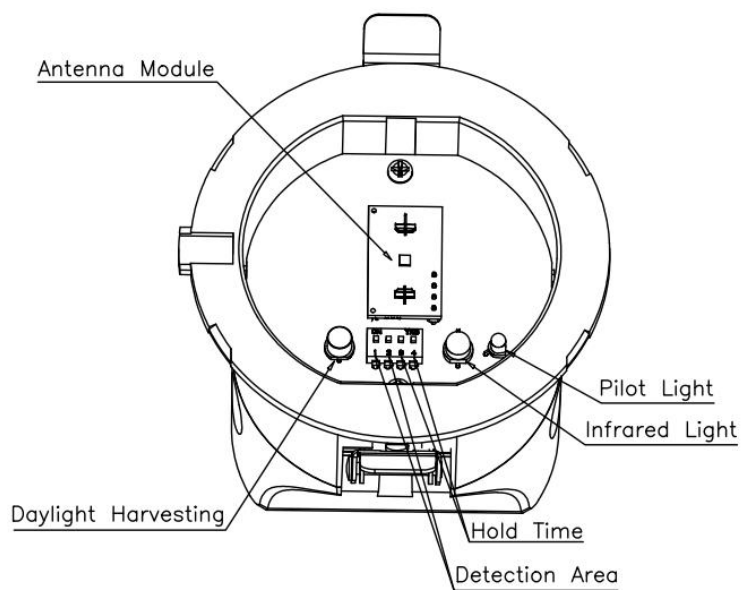
- Dimension: $\phi 105 \times 85 \text{mm}$
- Terminal: 4pin terminal

【Parameter】

| | | |
|--|---|---|
| Input/Output | Input voltage | 220-240V AC |
| | Rated voltage | 230V AC |
| | Working Current | ≤1W @230V AC |
| | Output signal | DALI2.0 |
| Sensor Parameter | Radar frequency | 24GHz -24.25GHz, ISM band |
| | Transmitting Power | 3dBmMax |
| | Detection Area | DIP switch setting: 100% 75% 50% 25% MH10 remote setting: 100% 75% 50% 25% |
| | Hold Time | DIP switch setting: 5S 1Min 3Min 5Min MH10 remote setting: 5S/ 30S /1Min / 3Min /5Min /10Min /20Min/30Min |
| | Daylight measure range | 0-1200Lux |
| | Detection range (based on 100% sensitivity) | Movement motion (based on 3m height mounting) : radius 2-3m Minor motion (based on 3m height mounting) : radius 2-3m Human presence (based on 3m height mounting) : radius 2-3m |
| | Remote control | available |
| | Rated mounting height | 2.5-4.0m (Typical height:3m) |
| | 3db beam angel | 80° (XZ axis) |
| | | 96° (YZ axis) |
| Application environment | Drill hole | φ75mm |
| | Working temperature | 0℃...+50℃ |
| | Storage temperature | -40℃~+80℃ |
| Certificate | RF certificate | In accordance with FCC/RED |
| | Environmental certificate | In accordance with EU RoHS |
| | IP rate | IP20 |
| Remark: "N/A" means Not applicable to this product | | |

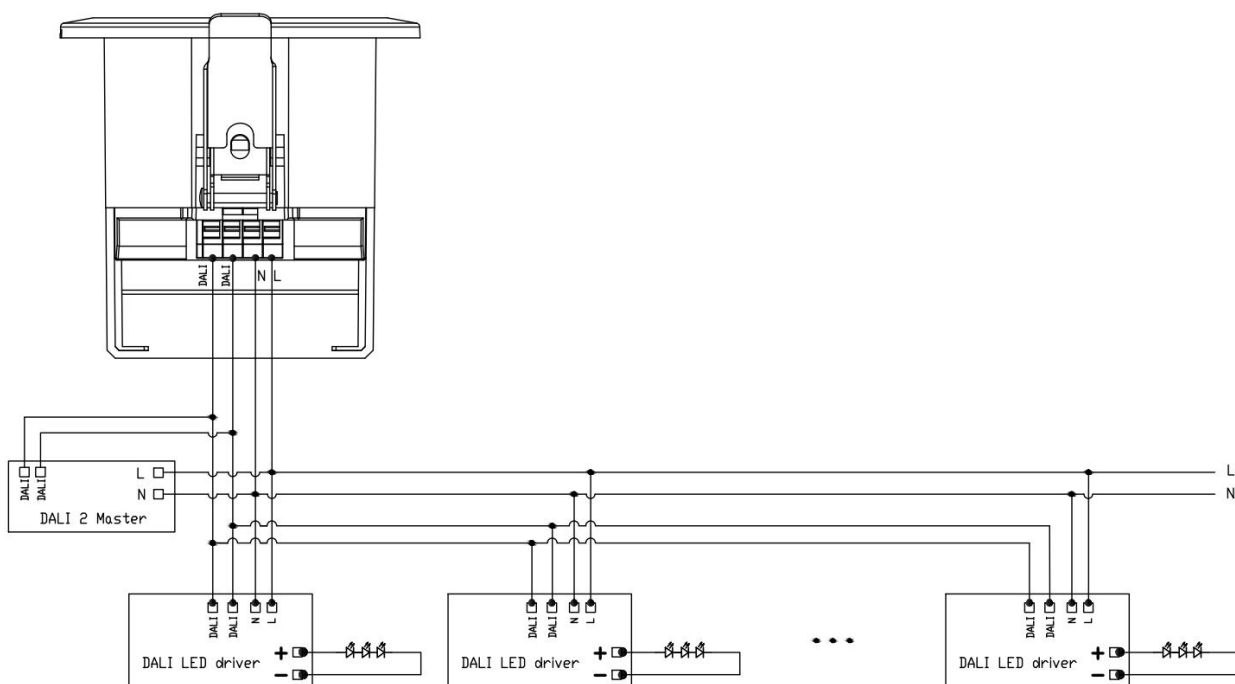
【Dimension and Function diagram】



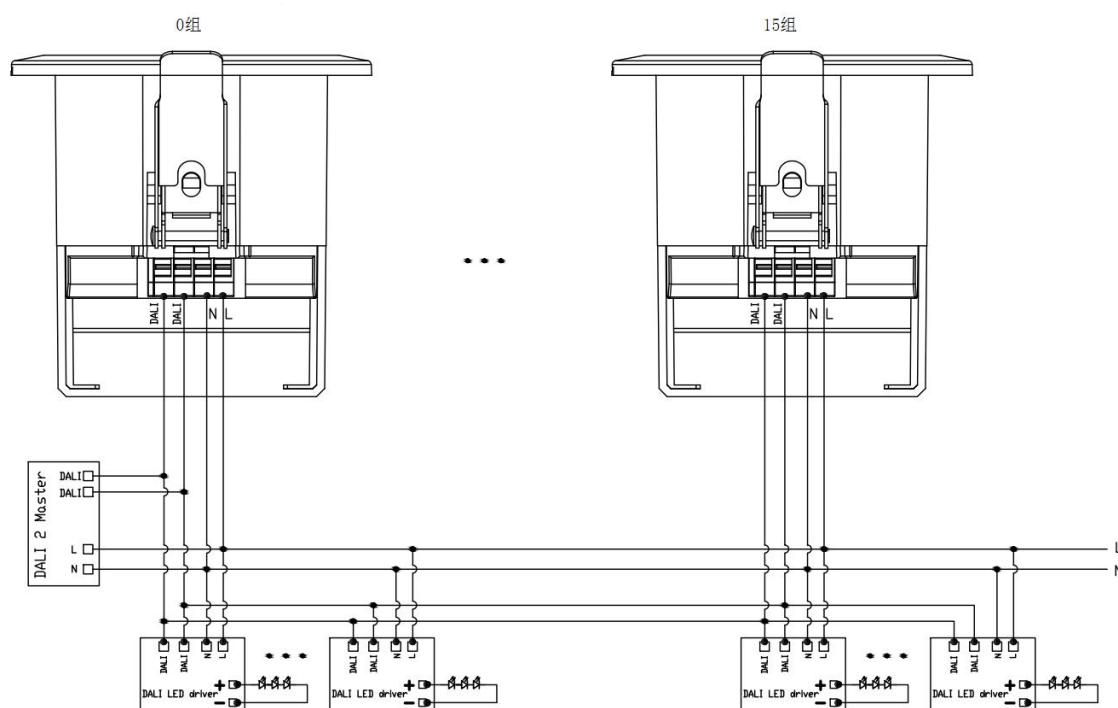


【Wiring instruction】

Single mode



Group mode



【Initialization】

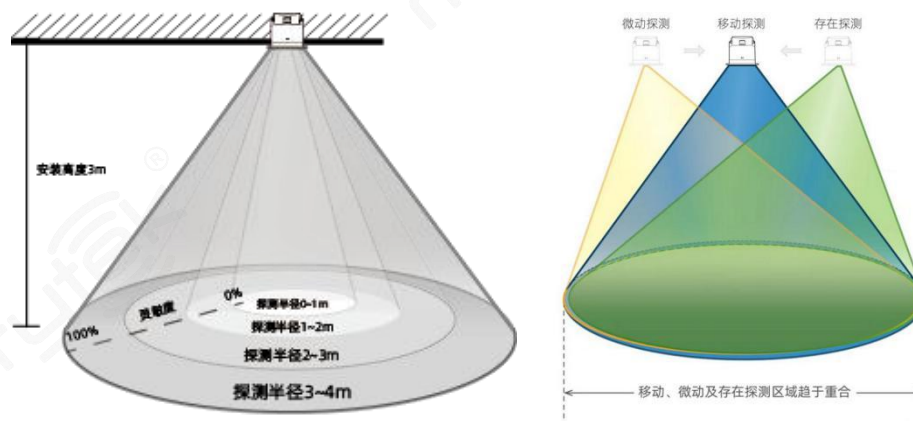
For the initial 20S interval once our motion sensor is powered, our motion sensor's sensing function is disabled and can't response to human motion. After that, our motion sensor can work normally and its indication light can be turned on or off by our MH10 remote control.

【Factory setting】

Detection sensitivity: 100% Hold time: 1 Minute

【Detection radiation】

MSA205 is highly recommended ceiling flush mounting and its detection radiation is as below shows:



【Motion signal description】

Our 24GHz millimeter motion sensor can precisely detect human movement motion and human presence signal to output presence and absence status, and below is human movement motion and human presence signal description

- **Movement motion:** It refers to human big movement behaviour, such as walking within our detection area
- **Human presence:** It refers to human vital signs, such as breathing and finger tapping within our detection

Remark: Only when our motion sensor is triggered by movement motion firstly, so that it can detect human presence

【Operation instruction】

- 1、Click Scan button under DALI Installation to search DALI 2.0 motion sensor device:

LOYTEC DALI Installation

LDALI-ME201-U
Logged in as admin
2022-12-23 08:19:32

Device Info
Data
Commission
■ BACnet
■ Buttons
■ CLC Bindings
■ DALI Groups
■ DALI Installation
■ DALI Scene
■ EnOcean
■ Modbus
■ OPC XML-DA Client
■ SBC Bindings

Config
Statistics
L-WEB
Documentation
Reset
Contact
Logout

networks under control

Channel 1

Wink duration: 30 sec
Mains-Off handling: Disabled
Mains-On delay: 600 ms
Mains-Off delay: 0 min
DALI Power: On
Manual Override: Auto

Save

Devices in Database (bus power usage assigned/total: 0/0 mA)

Filter by name...

Action on Selected: Execute

Reset

Lamps

| # | ▲ | Name | Type | Status | Serial No. | Short Addr. | Run Hrs | Nom. Pwr | Fmw Ver. |
|------------------|---|------|------|--------|------------|-------------|---------|----------|----------|
| No devices found | | | | | | | | | |

Sensors

| # | ▲ | Name | Type | Status | Serial No. | Short Addr. | Fmw Ver. | Bus Curr. |
|------------------|---|------|------|--------|------------|-------------|----------|-----------|
| No devices found | | | | | | | | |

Buttons

| # | ▲ | Name | Type | Status | Serial No. | Short Addr. | Fmw Ver. | Bus Curr. |
|------------------|---|------|------|--------|------------|-------------|----------|-----------|
| No devices found | | | | | | | | |

Scanned Devices not in Database

Scan Clear Results Save Assignment Auto Assign

| Name | Type | Serial No. | Short Addr.▲ |
|------------------|------|------------|--------------|
| Rescan necessary | | | |

Unassigned Devices

Filter by name...

Search

Action on Selected: Execute

| # | ▲ | Name | Type | Serial No. | Bus Curr. |
|------------------|---|------|------|------------|-----------|
| No devices found | | | | | |

networks under control

Wink duration: 30 sec
Mains-Off handling: Disabled
Mains-On delay: 600 ms
Mains-Off delay: 0 min
DALI Power: On
Manual Override: Auto

Save

Devices in Database (bus power usage assigned/total: 0/0 mA)

Filter by name...

Action on Selected: Execute

Reset

Lamps

| # | ▲ | Name | Type | Status | Serial No. | Short Addr. | Run Hrs | Nom. Pwr | Fmw Ver. |
|------------------|---|------|------|--------|------------|-------------|---------|----------|----------|
| No devices found | | | | | | | | | |

Sensors

| # | ▲ | Name | Type | Status | Serial No. | Short Addr. | Fmw Ver. | Bus Curr. |
|------------------|---|------|------|--------|------------|-------------|----------|-----------|
| No devices found | | | | | | | | |

Buttons

| # | ▲ | Name | Type | Status | Serial No. | Short Addr. | Fmw Ver. | Bus Curr. |
|------------------|---|------|------|--------|------------|-------------|----------|-----------|
| No devices found | | | | | | | | |

Scanned Devices not in Database

Scan Clear Results Save Assignment Auto Assign

| Name | Type | Serial No. | Short Addr.▲ |
|------------------|------|------------|--------------|
| Rescan necessary | | | |

Unassigned Devices

Filter by name...

Search

Action on Selected: Execute

| # | ▲ | Name | Type | Serial No. | Bus Curr. |
|------------------|---|------|------|------------|-----------|
| No devices found | | | | | |

41% - Found device: - -
0 lamps found (0 assigned, 0 unassigned)
0 sensors found (0 assigned, 0 unassigned)
0 buttons found (0 assigned, 0 unassigned)

Cancel

Devices in Database (bus power usage assigned/total: 0/0 mA)

Filter by name...

Action on Selected Execute Reset

Lamps

No devices found

Sensors

No devices found

Buttons

No devices found

Scanned Devices not in Database

Scan

Clear Results

Save Assignment

Auto Assign

Name

Type

Serial No.

Short Addr. ▲

Lamps

Wink

On

Off

Reset

Delete SA

Unassigned ▼

LED device

005243F600346926

00

Wink

On

Off

Reset

Delete SA

Unassigned ▼

LED device

002097F600130015

01

Sensors

Wink

Reset

Delete SA

Unassigned ▼

DALI 2.0 sensor

002097F600000000

E00

Wink

Reset

Delete SA

Unassigned ▼

DALI 2.0 sensor

002097F600000000

E01

Wink

Reset

Delete SA

Unassigned ▼

DALI 2.0 sensor

002097F600000000

E02

Unassigned Devices

Filter by name...

Search

Action on Selected Execute

Name ▲

Type

Serial No.

Bus Curr.

No devices found

2、Click DALI Groups to group the sensors

Channel 1

Save

#

0

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

Group

Group 1_00

Group 1_01

Group 1_02

Group 1_03

Group 1_04

Group 1_05

Group 1_06

Group 1_07

Group 1_08

Group 1_09

Group 1_10

Group 1_11

Group 1_12

Group 1_13

Group 1_14

Group 1_15

On/Off

Override

-

-

-

-

-

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Feedback

0

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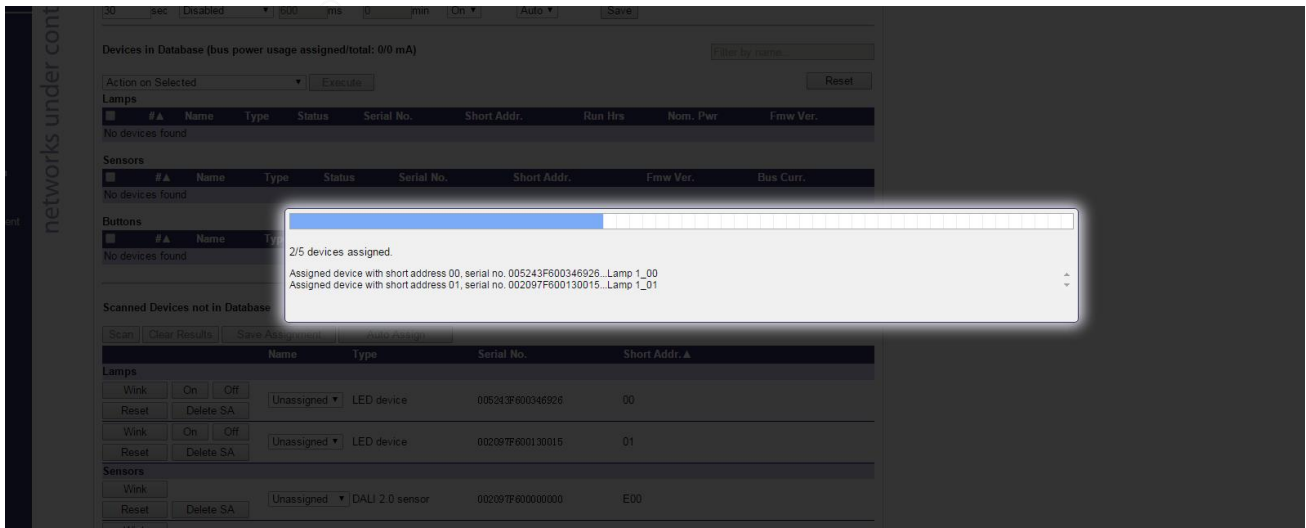
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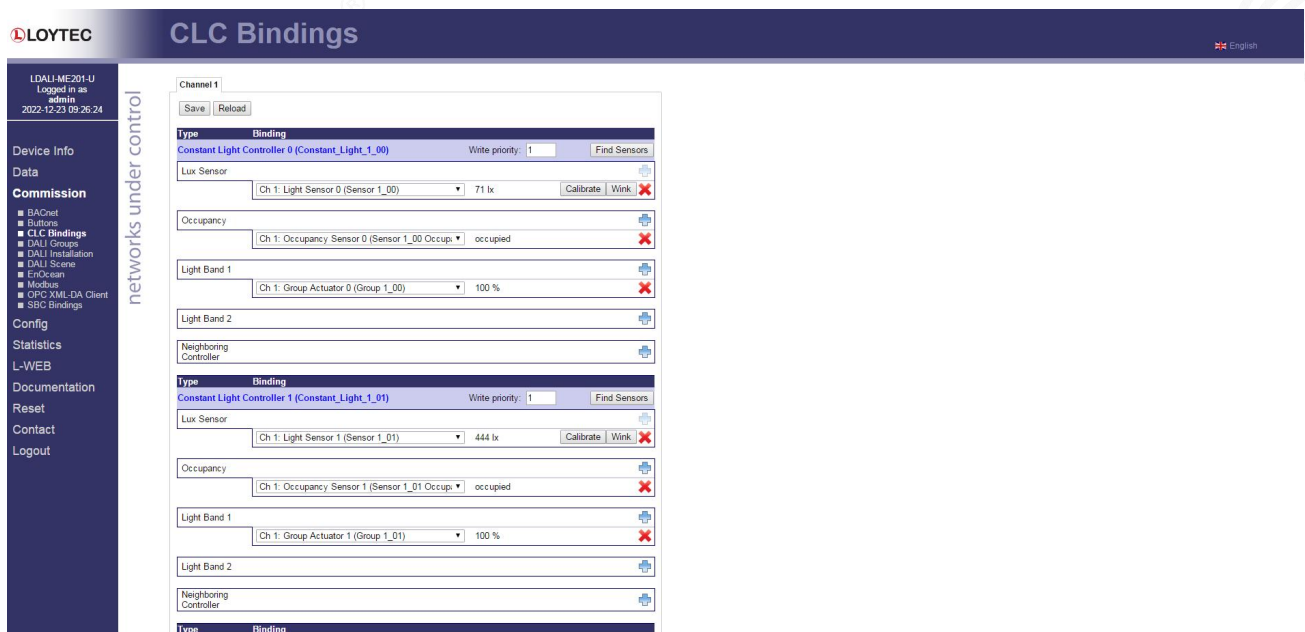
0

no devices in database

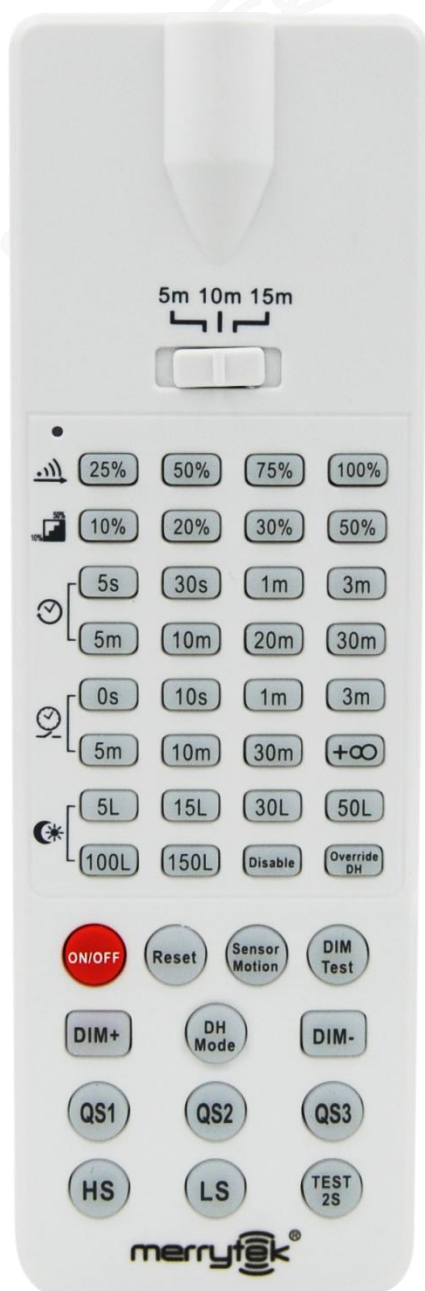
Save



3、Click CLC Bindings to link our DALI motion sensor with DALI lighting device and setting scenario control and daylight harvesting control etc



【Remote manual】



Detection range: 25%/50%/75%/100%

Hold time: 5s/30s/1min/3min/5min/10min/20min/30min

Daylightthreshold: 5lux/15lux/30lux/50lux/100lux/150lux/Disable

ON/OFF: disable sense function

Sensor motion: enable sense function

Reset: all parameter back as factory setting

QS1/QS2/QS3: High/Medium/Low sensitivity setting

HS: turn on indicator

LS: turn off indicator

【DIP setting】

Detection Area

| | S1 | S2 | |
|-----|----|----|------|
| I | ON | ON | 100% |
| II | - | ON | 75% |
| III | ON | - | 50% |
| IV | - | - | 25% |

Hold Time

| | S3 | S4 | |
|-----|----|----|------|
| I | ON | ON | 5S |
| II | - | ON | 1min |
| III | ON | - | 3min |
| IV | - | - | 5min |

【Disclaimer】

Based on the technical complexity of the product and the difference in the application environment, it is difficult to ensure a completely accurate or perfect description, so the information is only for user reference. We reserve the right to make changes to the product specifications without notifying the user, without making any legal promises and guarantees. At the same time, we encourage users to supplement or change the content of our specifications after trying our products.