

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



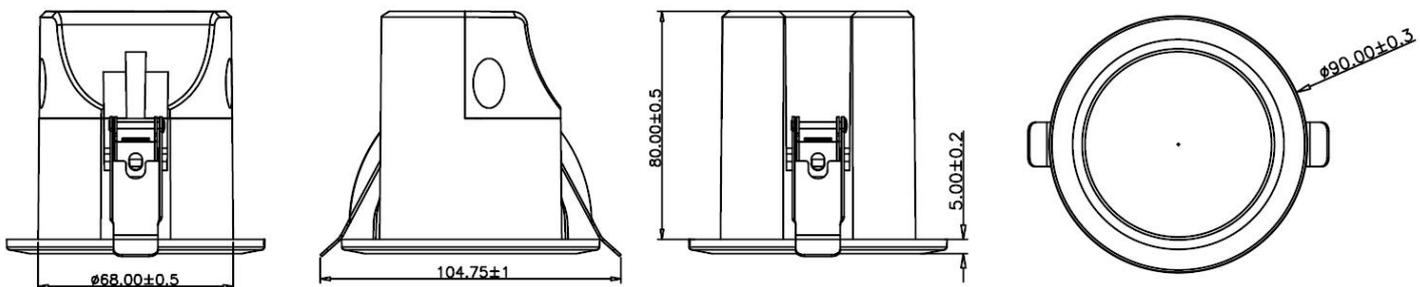
【Product dimension】

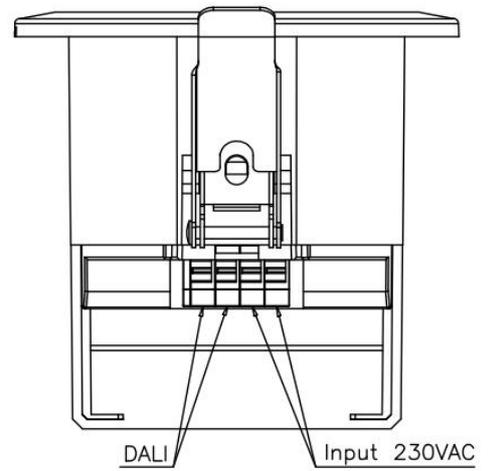
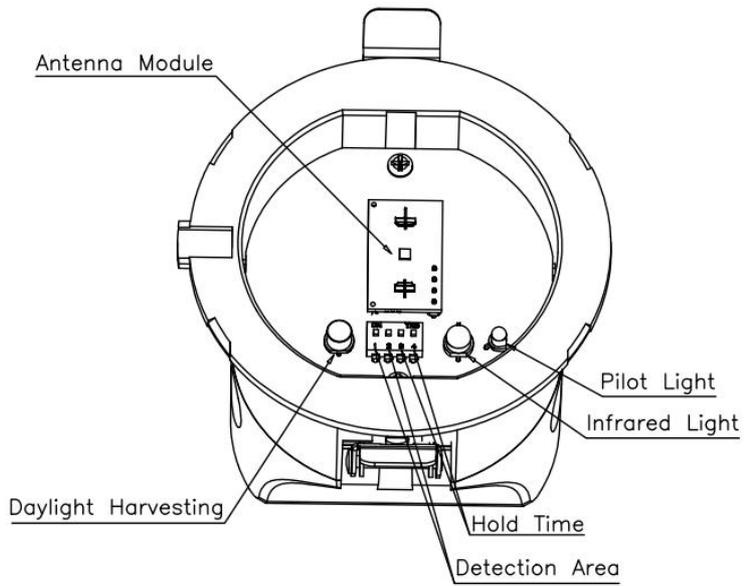
- Dimension: $\phi 105 \times 85 \text{mm}$
- Terminal: 4pin terminal

【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°C...+50°C
	Storage temperature	-40°C~+80°C
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		

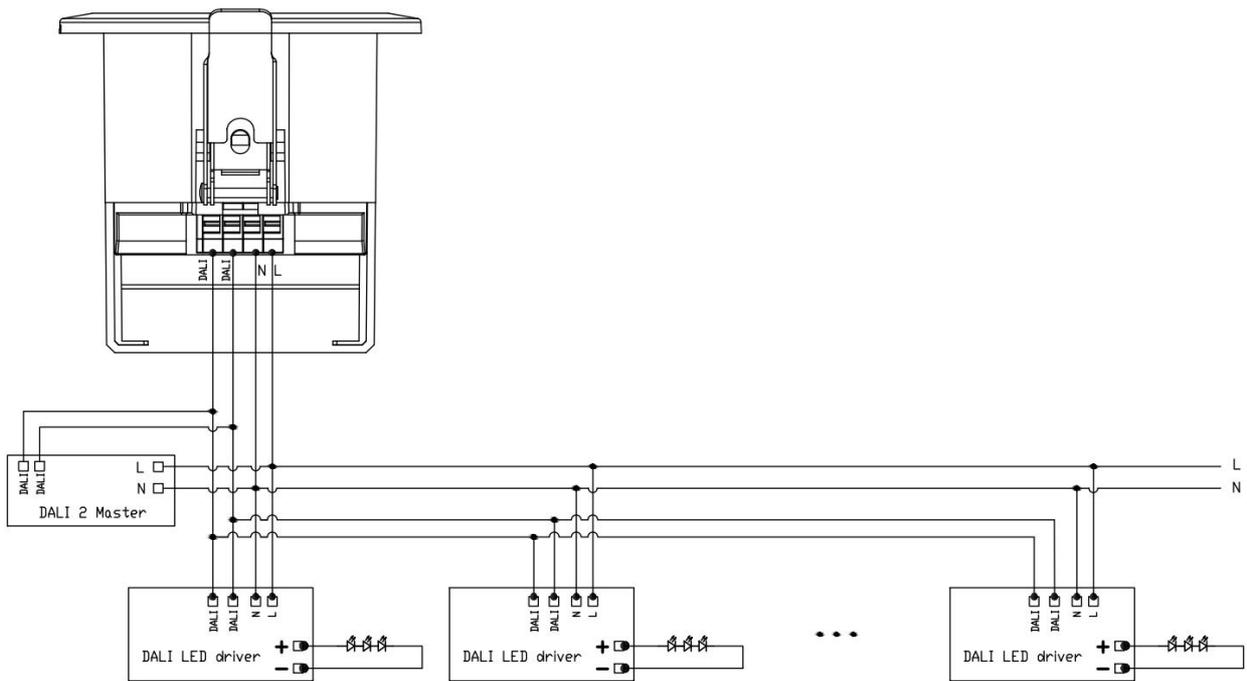
【Dimension and Function diagram】



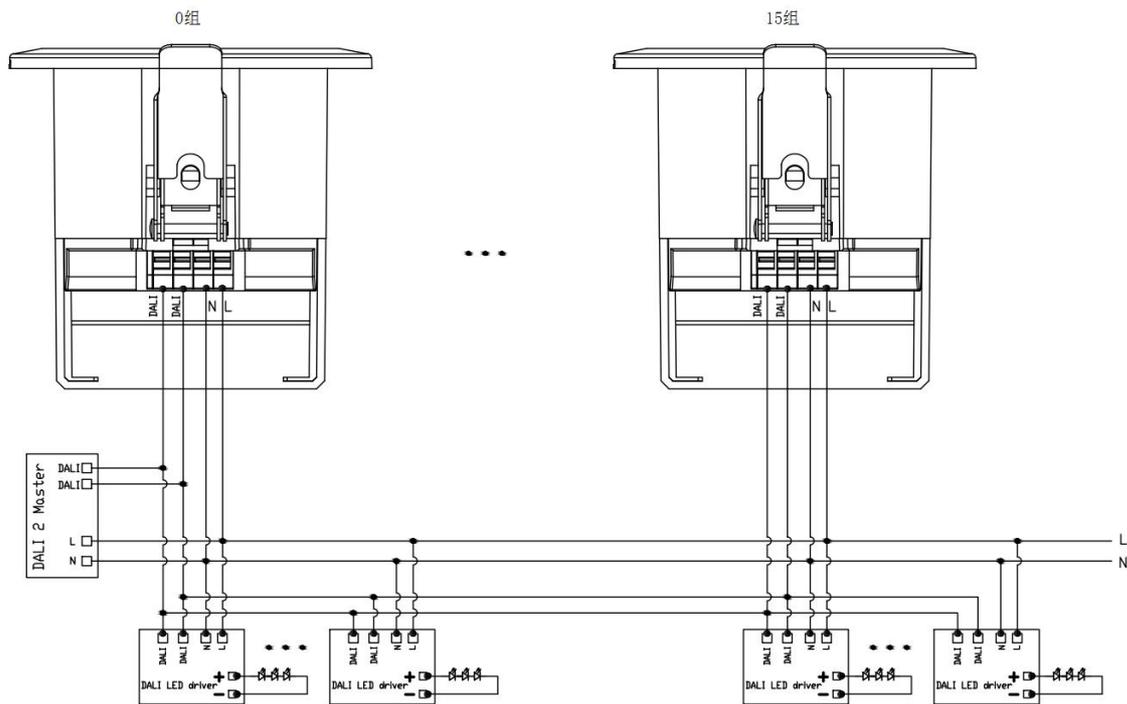


【Wiring instruction】

Single mode



Group mode



【Initialization】

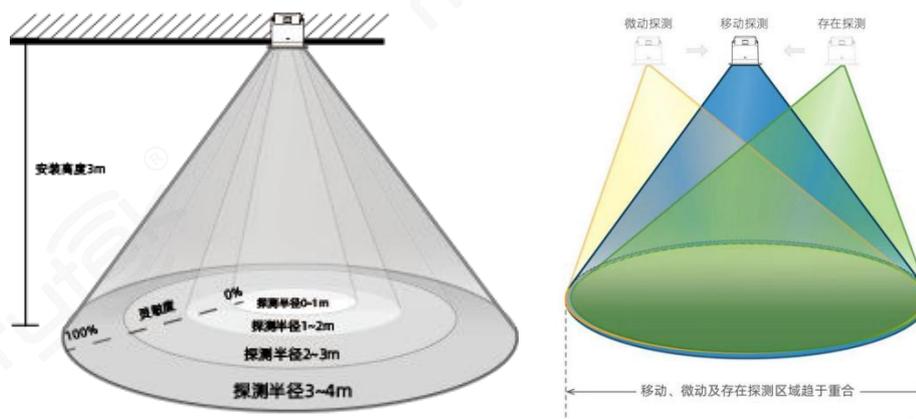
For the initial 20S interval once our motion sensor is powered, our motion sensor's sensing function is disabled and can't response to human motion. After that, our motion sensor can work normally and its indication light can be turned on or off by our MH10 remote control.

【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:

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 co

Devices in Database (bus power usage assigned/total: 0/0 mA) Filter by name...

Action on Selected

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

Name	Type	Serial No.	Short Addr.
Lamps			
<input type="button" value="Wink"/> <input type="button" value="On"/> <input type="button" value="Off"/>	<input type="button" value="Reset"/> <input type="button" value="Delete SA"/>	Unassigned ▼ LED device	005243F800346926 00
<input type="button" value="Wink"/> <input type="button" value="On"/> <input type="button" value="Off"/>	<input type="button" value="Reset"/> <input type="button" value="Delete SA"/>	Unassigned ▼ LED device	002097F800130015 01
Sensors			
<input type="button" value="Wink"/>	<input type="button" value="Reset"/> <input type="button" value="Delete SA"/>	Unassigned ▼ DALI 2.0 sensor	002097F800000000 E00
<input type="button" value="Wink"/>	<input type="button" value="Reset"/> <input type="button" value="Delete SA"/>	Unassigned ▼ DALI 2.0 sensor	002097F800000000 E01
<input type="button" value="Wink"/>	<input type="button" value="Reset"/> <input type="button" value="Delete SA"/>	Unassigned ▼ DALI 2.0 sensor	002097F800000000 E02

Unassigned Devices Filter by name...

Action on Selected

Name	Type	Serial No.	Bus Curr.
No devices found			

2. Click DALI Groups to group the sensors

LOYTEC DALI Groups

LDALI-ME201-U
Logged in as admin
2022-12-23 08:22:14

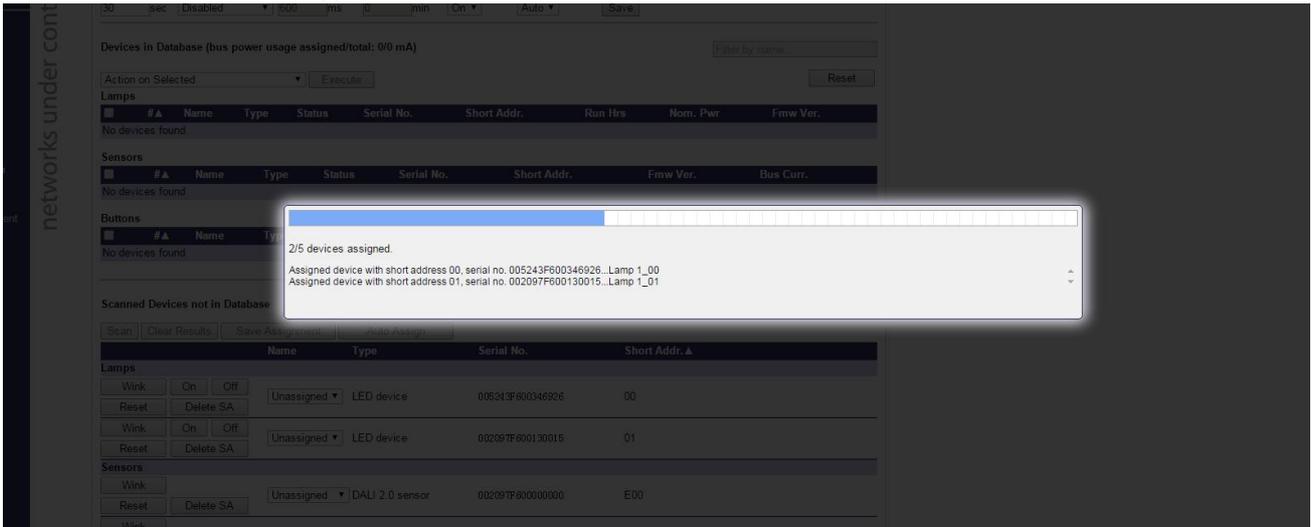
Device Info
Data
Commission
 ■ BACnet
 ■ Buttons
 ■ CLC Bindings
 ■ DALI Groups
 ■ DALI Installation
 ■ DALI Scene
 ■ EnOcean
 ■ Modbus
 ■ OPC XML-DA Client
 ■ SBC Bindings
 Config
 Statistics
 L-WEB
 Documentation
 Reset
 Contact
 Logout

networks under control

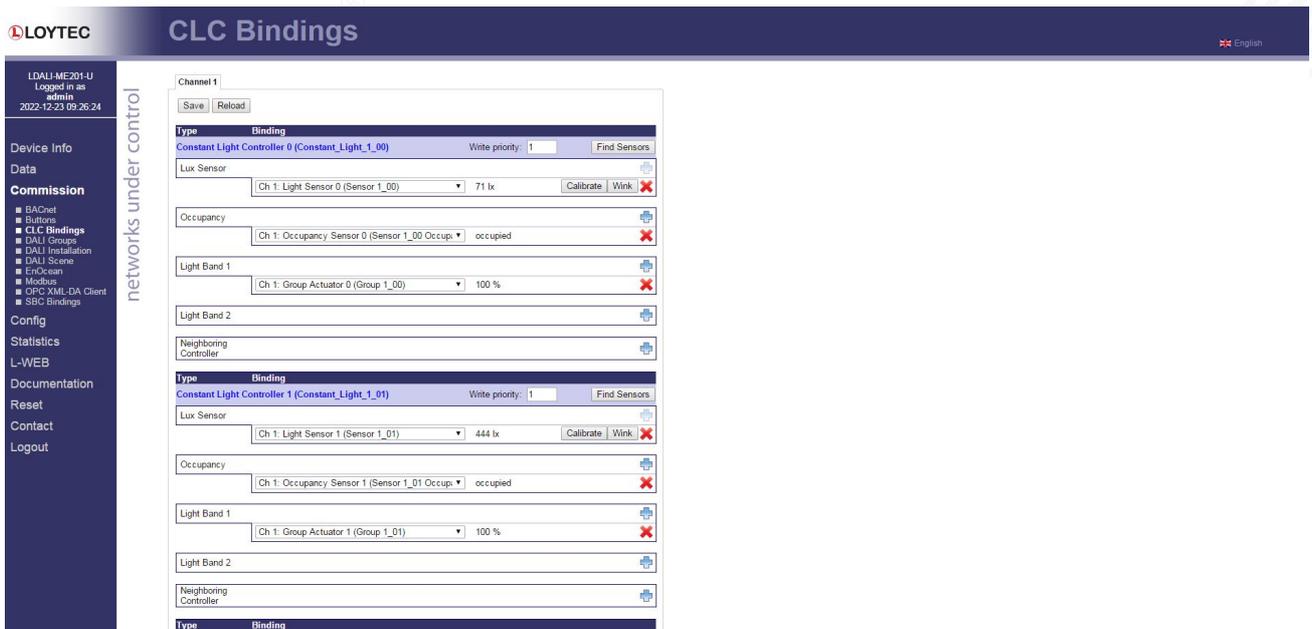
Channel 1

#	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
	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
Group																
On/Off	<input type="button" value="On"/>															
Override	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Feedback	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

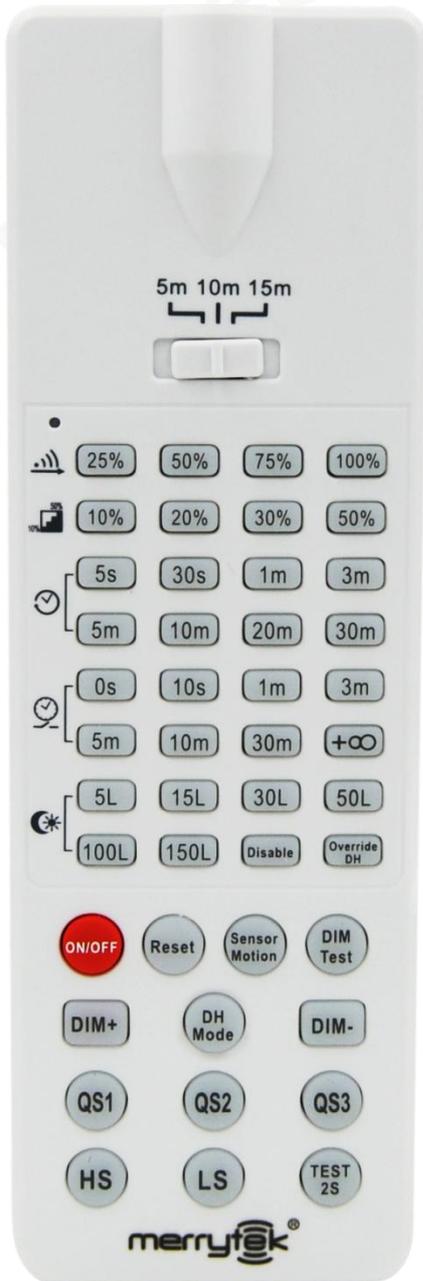
no devices in database



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.