

Specification

Product Name: 24GHz Large-space presence sensor (Dry contact version)

Product Model: MSA219D 99 A

Product Version: V1.0

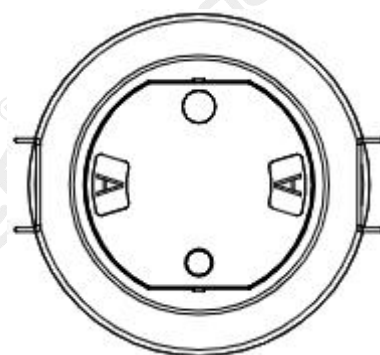
| Versions | Release/ change Date | Publishing |
|----------|-------------------------|------------|
| V1.0 | 2023.10.10 | Jacky |
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【Product Description】

MSA219D 99 A is a 24GHz radar sensor based on Merrytek patented orthogonal half-wave bending antenna. Its antenna is flipable from -30° to 30° and has high gain and wide detection range and is combined with Merrytek's unique software algorithm. It can accurately detect minor movements brought by human in almost all indoor spaces and provide fast and accurate human presence/absence information for smart home, smart hotel, smart office and other scenes.

【Product Feature】

- Exclusive Merrytek Lifebeing Presence Detection
- Accurate Presence/Absence Output
- Daylight Sensor Available
- NO/NC dry contact output available
- Detection antenna flipable from -30° to 30°
- 24Ghz ISM Band Millimeter Wave Radar technology
- Presence detection diameter: 5-7m Max
- Minor Motion detection diameter: 6-8m Max
- Motion detection diameter: 6-8m Max
- Presence, minor motion and motion detection range are highly coincide
- Round radiation. Effectively managing a whole space by a single sensor
- Absence switch to Presence within 0.5S
- Presence switch to Absence no less than 30S
- Flush mounting and Surface mounting installation available
- Sensor parameter adjustable by MH10 remote
- Sensing function based on millimeter wave radar technology
- Low RF power output. No harm to human health
- Not affected by temperature, humidity, noise, airflow, dust, light and other environments



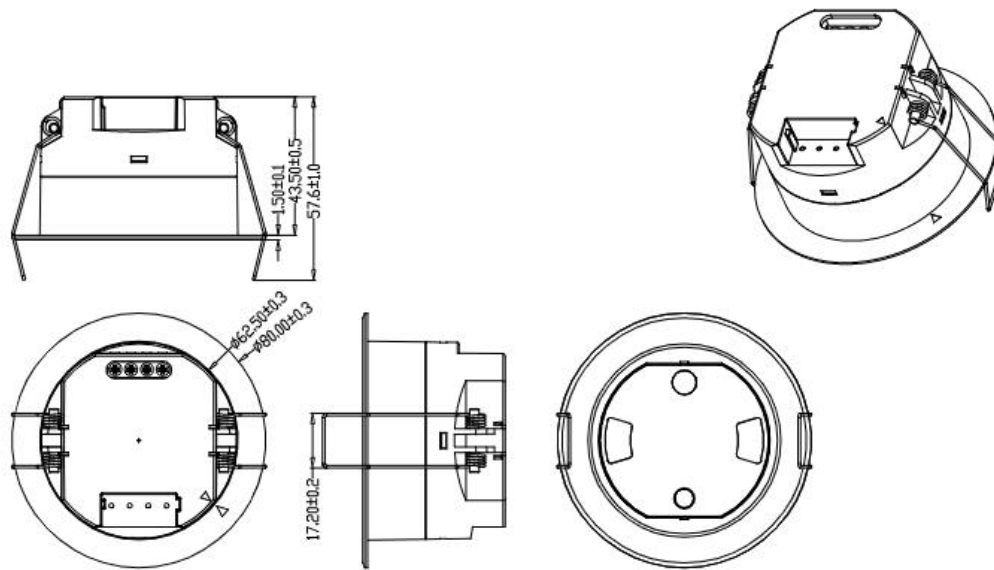
【Product dimension】

- Dimension: $\phi 80 \times 43.5 \text{mm}$
- Terminal: 4 pin terminal

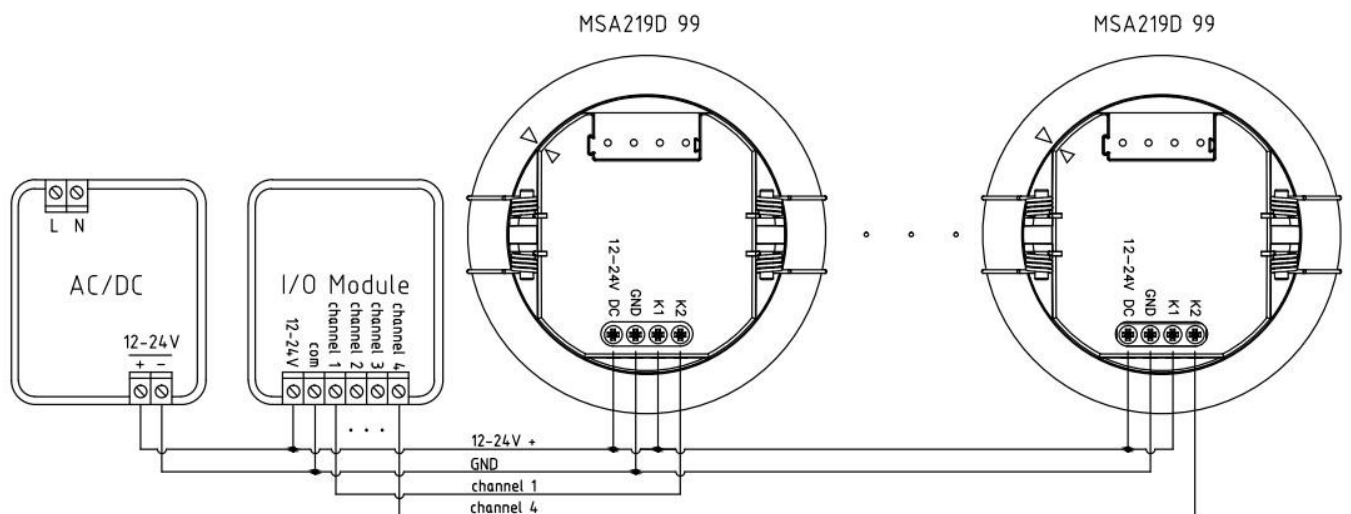
【Parameter】

| | | |
|----------------------------------|--|---|
| Input/Output | Input voltage | 12-24V DC |
| | Rated voltage | 24V DC |
| | Working Current | @12Vdc: 50mA max @24Vdc: 30mA max |
| | Working Power | ≤1W @24V DC |
| | Output signal | NO/NC dry contact (Factory setting is NO dry contact) |
| | Load type | Resistive (load voltage :Vdc≤36V,load current:100mA max) |
| Sensor Parameter | Radar frequency | 24GHz-24.25GHz ISM band |
| | Transmitting Power | 5mW Max. |
| | Detection Area | MH10 remote setting: 25%-100% |
| | Hold Time | MH10 remote setting:5s/30s/1min/ 3min/5min/10min/20min/30min |
| | Daylight sensor threshold | MH10 remote setting: 5Lux/15Lux/30Lux/50Lux/100Lux /150Lux/Disable |
| | Radius detection range(based on QS1 mode 100% sensitivity) | Motion detection (3m height) : 3-4m Minor motion detection (3m height) : 2.5-3.5m Presence (3m height) : 2.5-3.5m |
| | Remote control | Available |
| | Mounting height | 2.5-4.0m |
| | 3dB beam angle | 100° (horizontal) |
| | | 100° (vertical) |
| Application Environment | Drill hole | Φ70mm |
| | Working Temperature | 0℃...+50℃ |
| | Storage Temperature | -25℃~+80℃ |
| Certificate Standard | Certificate | FCC/RED |
| | Environmental Requirement | Compliant to RoHS |
| | IP Rating | IP20 |
| Note: "N/A" means not available. | | |

【Dimension and Function diagram】



【Wiring instruction】



Wiring layout suggestion:

1. Hand-in-hand wiring is highly recommended, yet star-topology or tree-topology is strongly deprecated
2. When there's more than 1pc sensor is a line, you shall consider all equipment current consumption shall not surpass your driver's loading capacity.

【Initialization】

When powered on, sensor indicator will turn off after flashing for 20S and will not detect moving signal during this time. After 20S, you can use our MH10 remote to adjust detection area、hold time and daylight sensor etc parameter.

【Factory setting】

Detection Area :100%

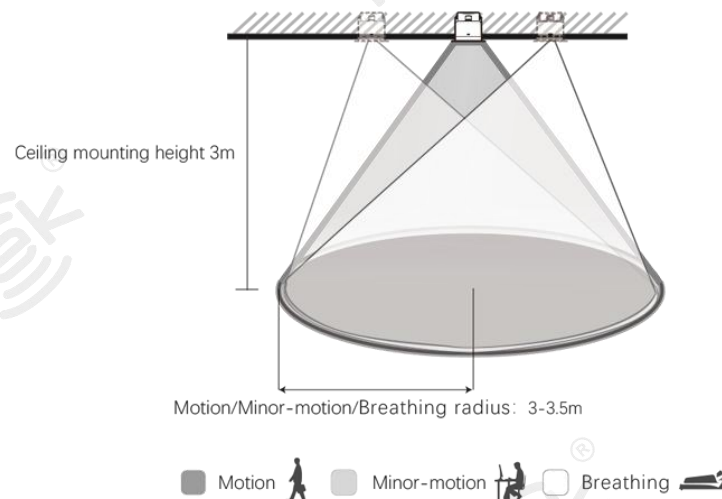
Hold Time :1min

Indicator light :open

Daylight Threshold :Disable

【Detection radiation】

MSA219D 99 A is highly recommended ceiling flush mounting and its detection radiation is as below shows:

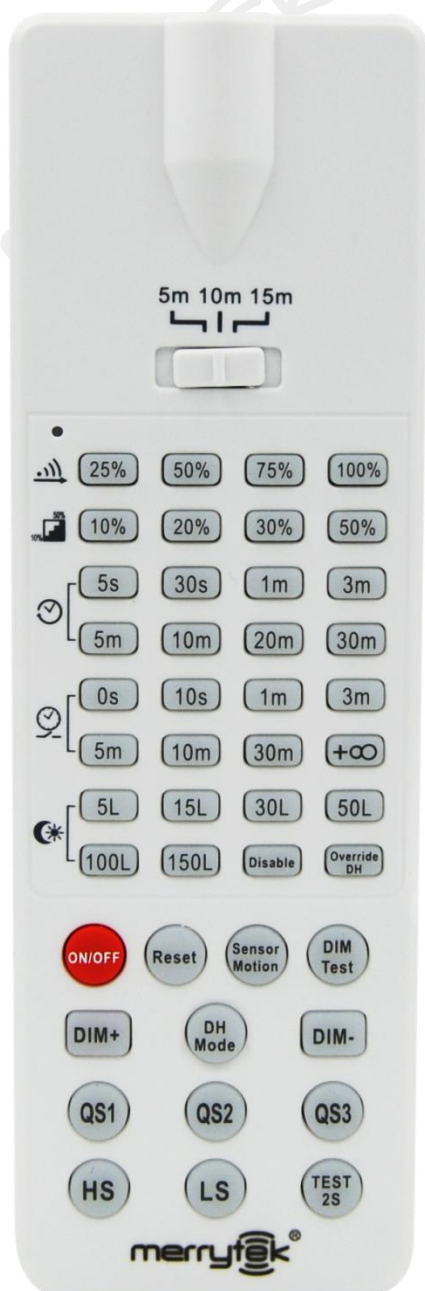


【Detection Signal】

The product detects human moving, minor moving, and presence signals, and realizes the detection of human-existing/no-human in non-sleep state. The following is a description of the moving, minor moving and presence signals:

- **Moving signal:** detect the human significant moving (walking) in the detection area.
- **Minor moving signal:** detect the human slight moving in the detection area, such as leaning forward, leaning forwarder and back, swinging limbs, shaking head, typing, playing with mobile phones and so on.
- **Presence signal:** detect human abdominal and thoracic expansion behaviors caused by breathing, but not detect moving signal and minor moving signal.

【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

【Disclaimer】

Due to the complexity of product technology and differences in application environment, it is difficult to guarantee a completely accurate or complete description, so this specification is only for user reference.

We will reserve the right to make changes to the product specifications without notifying the user, and do not make any commitments and guarantees in the legal sense.

At the same time, our company encourages users to supplement or modify the contents of our specifications after using our products.