

Specification

Product Name: 24GHz Medium-space presence sensor (Tuya zigbee version)

Product Model: MSA219 Z

Product Version: V1.0

Versions	Release/ change Date	Publishing
V1.0	2023.07.25	Jacky

【Product Description】

MSA219 Z is a 24GHz radar sensor based on Merrytek patented multi-array antenna. Its antenna is flipable from -30° to 30° to focus sensing on your target area. Meanwhile, thanks to its high gain, concentrated detection range and Merrytek's unique software algorithm. It can accurately detect human breath signal regardless of the challenge of damped minor movement when human enter deep-sleep and provide fast and accurate human presence/absence information for smart hotel's non-card-power-supply solution.

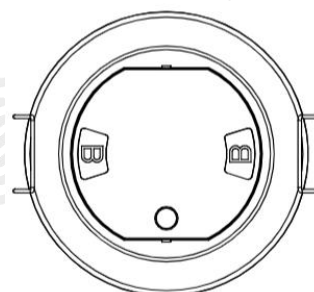
【Product Feature】

- Exclusive Merrytek Lifebeing Presence Detection
- Accurate Presence/Absence Output regardless of deep-sleep
- Tuya zigbee communication available
- Detection antenna flipable from -30° to 30°
- 24Ghz ISM Band Millimeter Wave Radar technology
- Movement/presence detection range: 1-2m diameter for the short side, 3-4m diameter for the long side
- Presence, minor motion and motion detection range are highly coincide
- Oval sensing 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 installation available
- Sensor parameter adjustable and group assignment by tuya app
- The alphabet side is long-sense side, and its perpendicular side is short-sense side
- 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

The alphabet side is long-sense side, and this side is suggested installed paralleled with bed orientation

【Product dimension】

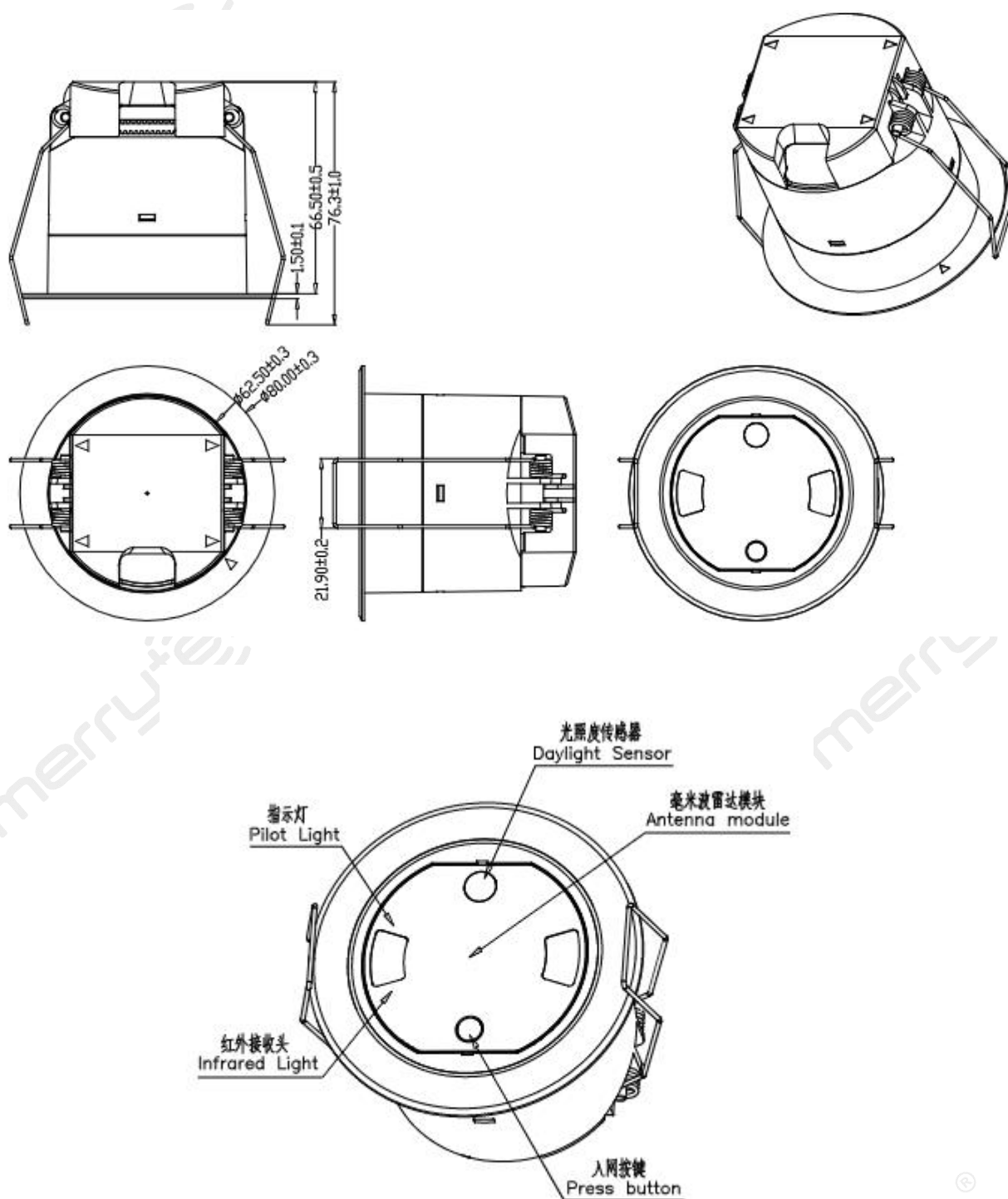
- Dimension: $\phi 80 \times 66.5 \text{mm}$
- Terminal: 2pin terminal



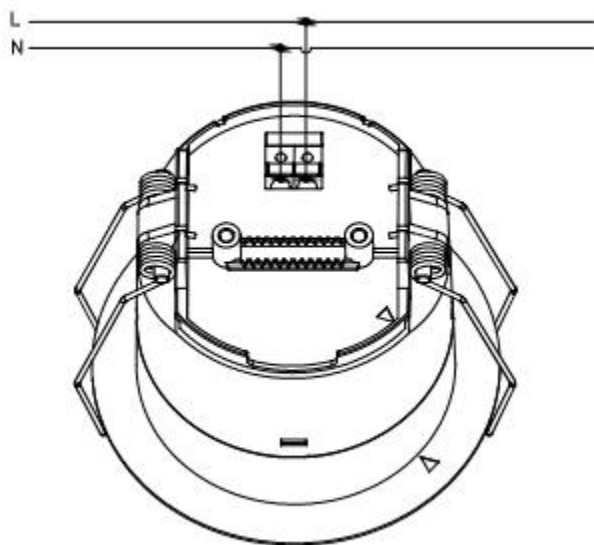
【Parameter】

Input/Output	Input voltage	100-240Vac 50Hz/60Hz
	Rated voltage	220V AC
	Working Current	50mA max
	Consumption	≤1W 220V AC
Wireless module	RF frequency	2.4GHz-2.484GHz ZigBee Transmitting Frequency: 10dB Receiving Sensitivity: -101±2dBm
Sensor Parameter	Radar frequency	24GHz-24.25GHz ISM 频段
	Transmitting Power	5mW Max.
	Detection Area	APP setting: 1 level-12 level
	Hold Time	APP setting: 30s /1min / 2min/3min /5min /10min /20min/30min
	Daylight measure range	0-1200Lux
	Radius detection range(based on 100% sensitivity and 3m mounting)	Movement (3m height) :short side 0.5-1m, long side1.5-2m Minor motion (3m height) :short side 0.5-1m, long side1.5-2m Presence (3m height) :short side 0.5-1m, long side1.5-2m
	Remote control	Available
	Mounting height	2.5-4.0m
	3dB beam angle	30° (horizontal)
		50° (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】

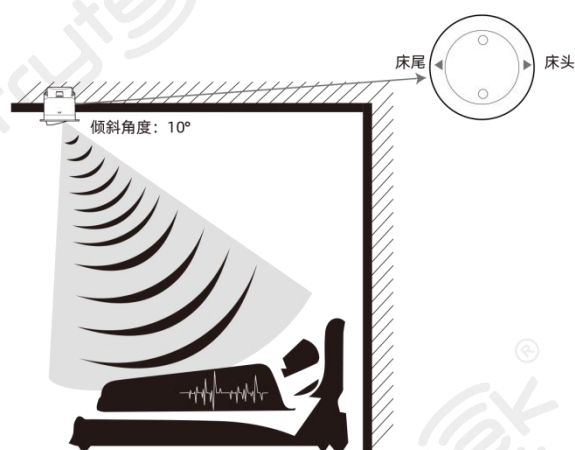
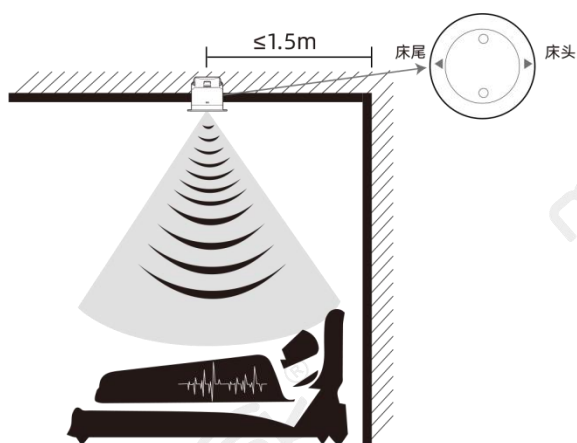


Wiring layout suggestion:

1. Our sensor is recommended layout in UPS circle to guarantee instant smart scene execution or electrical appliance operation

Installation suggestion

Our sensor is suggested installed heading to human chest or adjust its sensing antenna toward human chest for best detection result



【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 tuya app to adjust detection area, hold time and daylight sensor etc parameter.

【Factory setting】

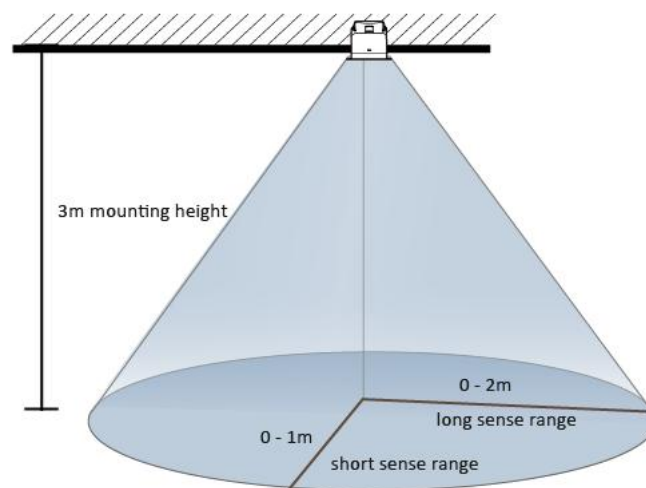
Detection Area :12 level

Hold Time : 5min

Indicator light : close

【Detection radiation】

MSA219 Z 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 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.

【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.