Specification

Product Name:	**5.8GHz Large-space presence sensor （Tuya zigbee version）**
Product Model:	**MSA050 Z1**
Product Version:	**V1.0**

Versions	Release/ change Date	Publishing
V1.0	2021.06.09	Jacky

【Product Description】

MSA050 Z1is a 5.8GHz radar sensor based on Merrytek patented low-impedance high-gain antenna. Its antenna has high gain and wide detection range and is combined with Merrytek's unique software algorithm so that It can accurately detect minor movements brought by human in almost all indoor spaces and provide fast and accurate front-end sensing input for smart home, smart hotel, smart office and other scenes.

【Product Feature】

- Exclusive Merrytek Lifebeing Presence Detection
- Accurate Presence/Absence Output
- Daylight Sensor Available
- Tuya zigbee wireless control available
- 5.8Ghz ISM Band Microwave Radar technology
- Presence detection diameter: 4-6m Max
- Minor Motion detection diameter: 6-8m Max
- Motion detection diameter: 6-8m Max
- Absence switch to Presence within 0.5S
- Presence switch to Absence no less than 30S
- Surface mounting installation available
- Sensor parameter adjustable by Tuya APP
- Sensing function based on millimeter wave radar technology
- Low RF power output. No harm to human health
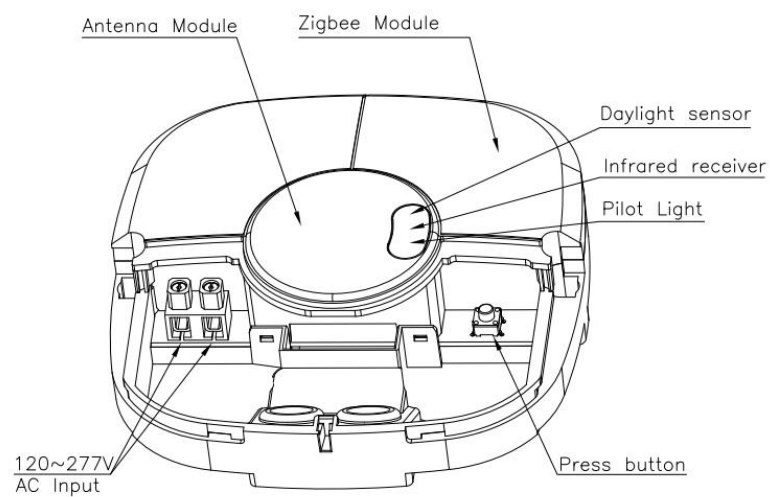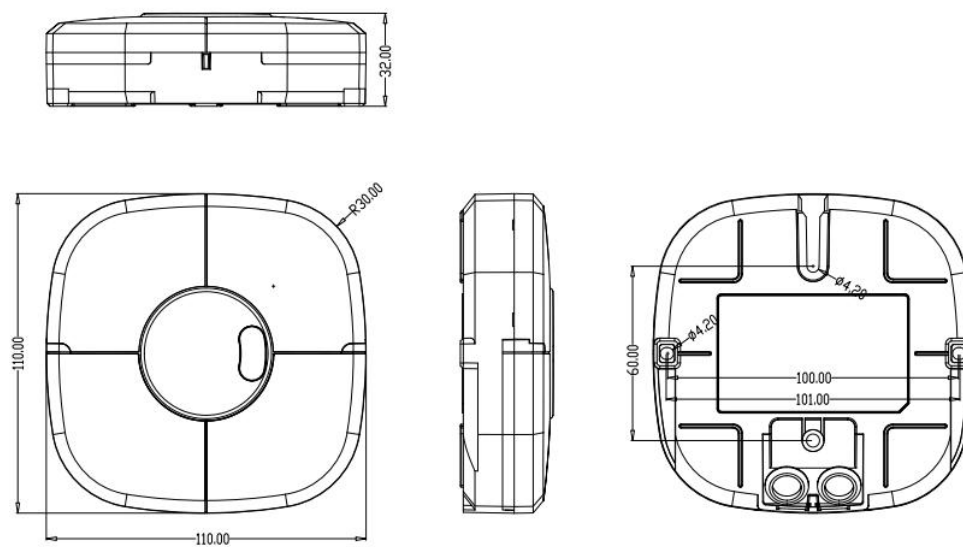- Not affected by temperature, humidity, noise, airflow, dust, light and other environments

【Product dimension】

- Dimension:110x110x32mm
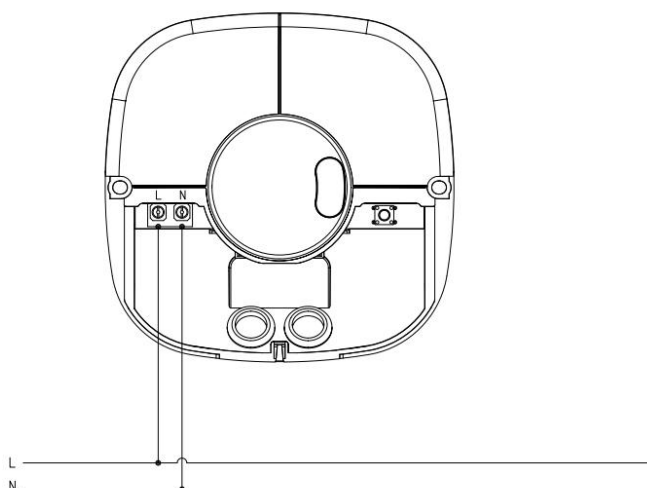- Terminal: 2pin terminal

【Parameter】

Input/Output	Input voltage	220-240VAC 50Hz/60Hz
	Rated voltage	220VAC
	Working Current	50mA max
	Working Power	≤1W 230VAC
Wireless module	Tuya zigbee	2.4GHz-2.484GHz ZigBee Transmitting Frequency: 10dB Receiving Sensitivity: -101±2dBm
Sensor Parameter	Radar Frequency	5.8GHz±75MHz ISM band
	Radar transmit power	5mW Max.
	Detection Sensitivity	APP setting: 0%~ 100%
	Hold Time	APP setting: 30s /1min / 2min/ 3min /5min /10min /20min/30min
	Daylight Sensor	0-1200Lux
	Radius detection range(based on 100% sensitivity)	Motion detection（3m height）: 3-4m Minor motion detection（3m height）: 3-4m Presence（3m height）: 2-3m
	Mounting height	2.5-4.0m typical value:3m
	Remote control	Available
	Detecting Angle	150°
Application Environment	Installation	Surface mounting
	Working Temperature	0℃...+50℃
	Storage Temperature	-25℃~+80℃
Certificate Standard	Certificate	CE/FCC/RED
	Environmental Requirement	Compliant to RoHS
	IP Rating	IP20
Note: "N/A" means not available.		

【Dimension and Function diagram】

Antenna Module
Zigbee Module
Daylight sensor
Infrared receiver
Pilot Light
120~277V AC Input
Press button

【Wiring instruction】

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Wiring layout suggestion：

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

【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.

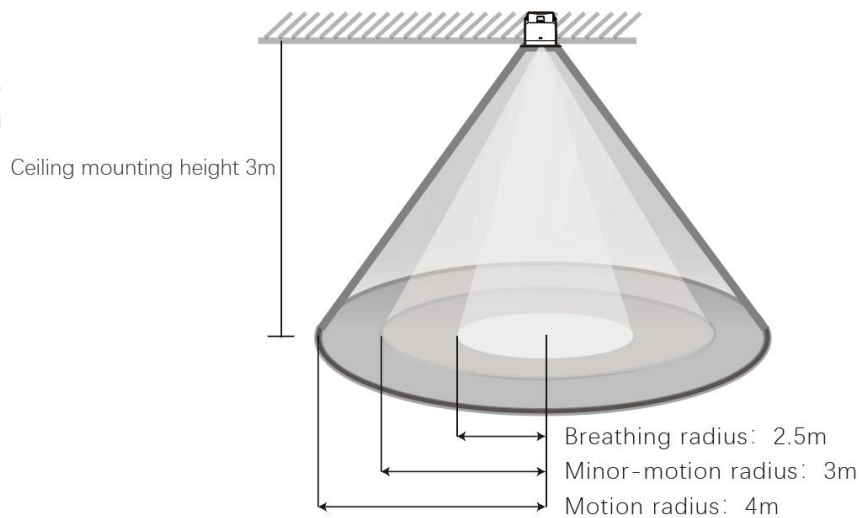## 【Factory setting】

Detection Sensitivity : 100%   Hold Time : 1min

Indicator light : ON

【Detection radiation】

MSA050 Z1 is highly recommended flush mounting and its detection radiation is as below shows:

Ceiling mounting height 3m

Breathing radius：2.5m
Minor‐motion radius：3m
Motion radius：4m

【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.

【**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.