

Specification

Product Name: 60GHz Medium-space presence sensor (KNX version)

Product Model: MSA219K 99 B

Product Version: V1.0

Versions	Release/ change Date	Publishing
V1.0	2023.12.05	Jacky

【Product Description】

MSA219K 99 B is a 60GHz 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.

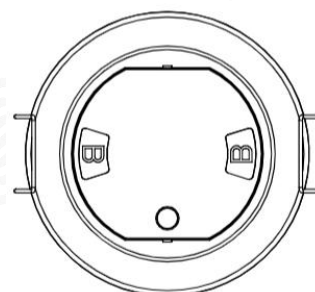
【Product Feature】

- Exclusive Merrytek Lifebeing Presence Detection
- Accurate Presence/Absence Output regardless of deep-sleep
- KNX communication available
- Detection antenna flipable from -30° to 30°
- 60GHz 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】

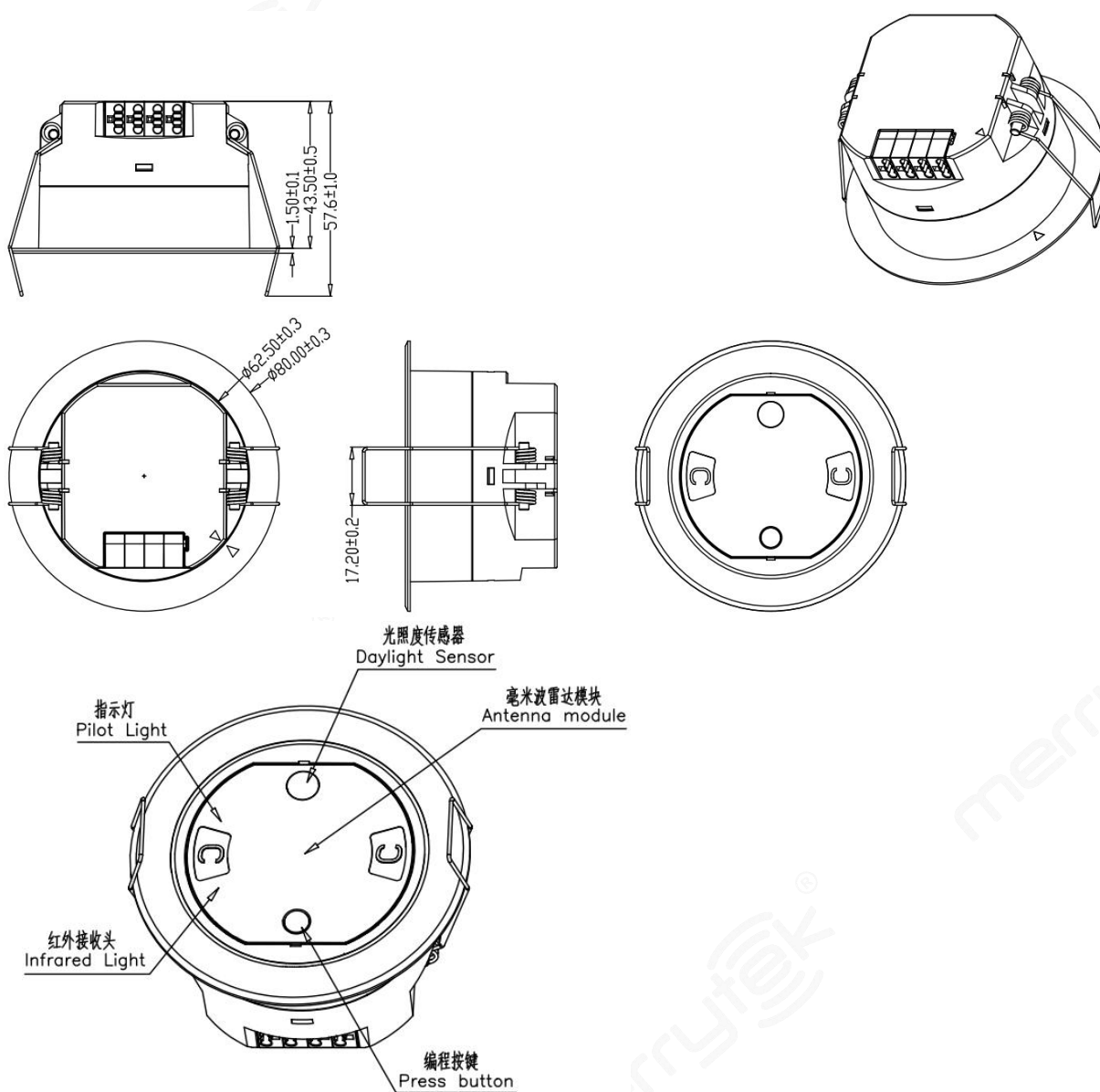
- Dimension: $\phi 80 \times 43.5 \text{mm}$
- Wiring: Auxiliary power supply: 4 yellow and white shrapnel lifting terminals
KNX bus terminal: 4 red and black KNX terminals



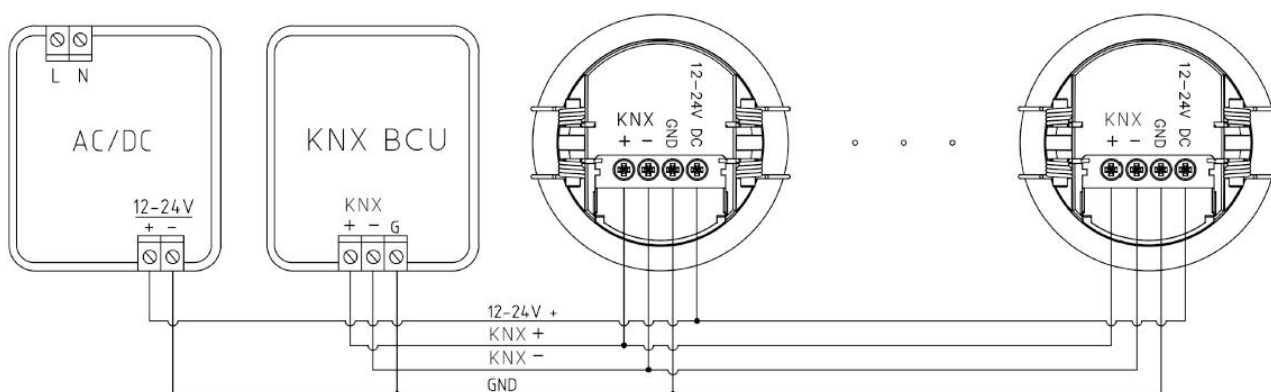
【Parameter】

Input/Output	Aux power supply voltage	12-24V DC
	KNX voltage	21-30V DC
	Aux power supply current	12V : 180mA 24V: 160mA
	KNX bus current	≤10mA
	Consumption	≤1W @24V DC
Sensor Parameter	Radar frequency	60GHz-64GHz
	Transmitting Power	5mW Max
	Detection Area	ETS setting : 1-100%
	Hold Time	ETS setting: 1s-30min
	Detecting Range (100% detection area, radius)	Movement/presence detection range: 1-2m diameter for the short side, 3-4m diameter for the long side
	Daylight measure range	1-65535 Lux
	Remote control	available
	Mounting height	2-3.5m, typical value: 3m
	3dB beam angle	30° (horizontal)
		30° (vertical)
Application Environment	Drill hole	Φ65-75mm
	Working Temperature	0℃...+50℃
	Storage Temperature	-40℃...80℃ humidity : ≤85%
Certificate Standard	Certificate	FCC/RED
	Environmental Requirement	Compliant to RoHS
	IP Rating	IP20
Note: "N/A" means not available.		

【Dimension and Function diagram】



【Wiring Diagram & Recommendations】



1. KNX bus wiring suggestion hand in hand to the end, star or tree wiring is not recommended to ensure the stability of signal transmission.
2. KNX bus wiring wire recommends KNX standard EIB shielded wire or Category 6 network cable, the length of the bus wiring is recommended not to exceed 400 meters, and the number of sensor connected to a bus is recommended to not exceed 12.
3. The number of sensors connected to a bus needs to fully consider the current load capacity of the power supply: that is the sum of the currents of all KNX devices (including sensors) shall not be greater than the load current of the KNX power supply.

【Start Process & Initialization】

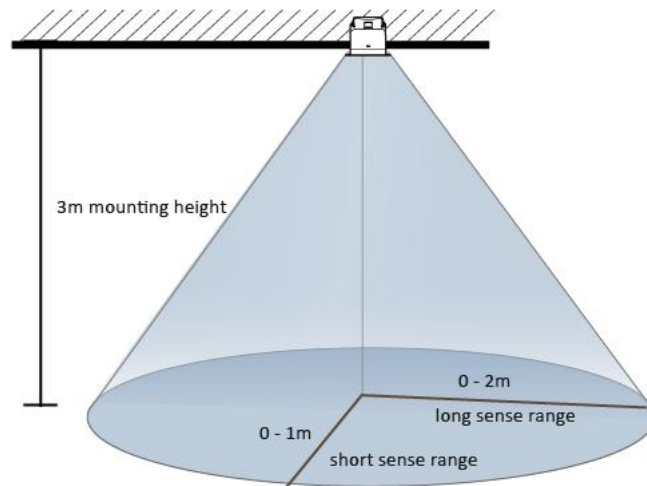
After routing the physical addresses and setting the channel parameters, follow these steps:

- (1) Connect Bus interface;
- (2) Set Bus and auxiliary power on (note: please make sure that product has auxiliary power supply, otherwise the device may not work properly);
- (3) Press the programming switch of the product, the LED light will turn red;
- (4) Use the bus interface to download the physical address through the ETS software. The programming LED light is off to indicate that the physical address download is successfully completed;
- (5) Download the application after setting the required application parameters.
- (6) After downloading the application, the product goes into initialization. During initialization, detection function is disable. After 20S, the initialization is completed, and the product works normally;

Note: Please use the latest version of ETS 5 or 5.7.2 version. Please obtain the ETS engineering configuration file of this sensor from our sales staff.

【Detection radiation】

MSA219K 99 B 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.