

# Specification

Product series: High-mounting PIR motion sensor (KNX version)

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Product model: MSA237K 99 IR

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Product version: V1.0

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| Version | Release Date | Revise record   | Publishing |
|---------|--------------|-----------------|------------|
| V1.0    | 2025.1.15    | Initial release | Jacky      |
|         |              |                 |            |

## 【Product description】

MSA237K 99 IR is a high-mounting PIR motion sensor with daylight detection function. Combined with the unique software algorithm of Merrytek, it can accurately detect human movements in almost all high-mounting scenario to trigger smart scene application in warehouse, lobby, workshop etc by KNX communication.

## 【Product Feature】

- PIR motion detection
- Accurate motion detection with KNX communication
- Daylight sensor detection available
- Detection area, hold time and daylight threshold can be set by remote/ETS
- Support KNX communication
- Support master-slave control
- Support 2 channel light control and 1 channel HVAC control output
- Max detection range: 8-10m in diameter
- 10m max mounting height
- Warehouse, workshop and lobby motion detection highly recommended
- Flush mounting, surface mounting and EU 86 box installation available



## 【Dimension】

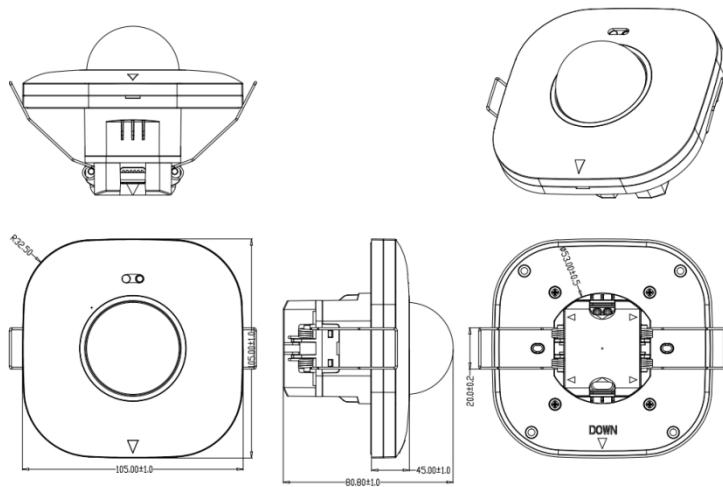
- Product size: 105x105x80.8mm(flush mounting)、105x105x65.8mm(surface mounting)
- Connection interface: 4-pin red and black KNX terminals

## 【Parameter】

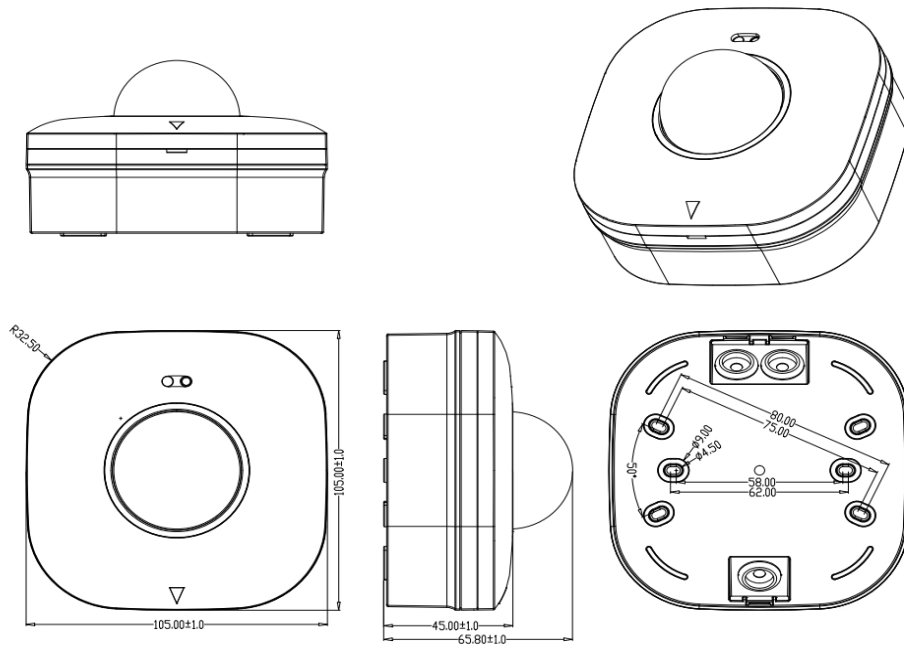
|                                |   |   |
|--------------------------------|---|---|
| <b>Input/Output</b>            | KNX Terminal Voltage                              | 21-30V DC   |
|                                | KNX Terminal Current                              | 3±1mA   |
|                                | Working Power                                     | ≤1W @24V DC   |
| <b>Sensor Parameter</b>        | Function  | PIR motion detection+ daylight sensor   |
|                                | Detection Area                                    | ETS/remote setting:0-100%   |
|                                | Hold Time   | ETS setting :3S-7200S   |
|                                | Radius detection range(based on 100% sensitivity) | 4-5m@25℃ based on 8m mounting height  |
|                                | Remote control                                    | Available   |
|                                | Mounting height                                   | 2.5-10m, typical value:8m   |
|                                | Detection angle                                   | 120°  |
| <b>Application environment</b> | Drill hole  | Φ55mm   |
|                                | Working temperature                               | -25℃...+50℃(detection range might differ based on different temperature )     |
|                                | Storage temperature                               | -40℃~+80℃   |
| <b>Certificate Standard</b>    | Certificate                                       | Compliant to CE   |
|                                | Environmental requirements                        | Compliant to RoHS   |
|                                | IP rating   | IP20(Flush mounting) IP54(Surface mounting)                                   |
|                                | Warranty  | 5 years ( available due to product quality problem under indoor application ) |
| "N/A" means not available      |   |   |

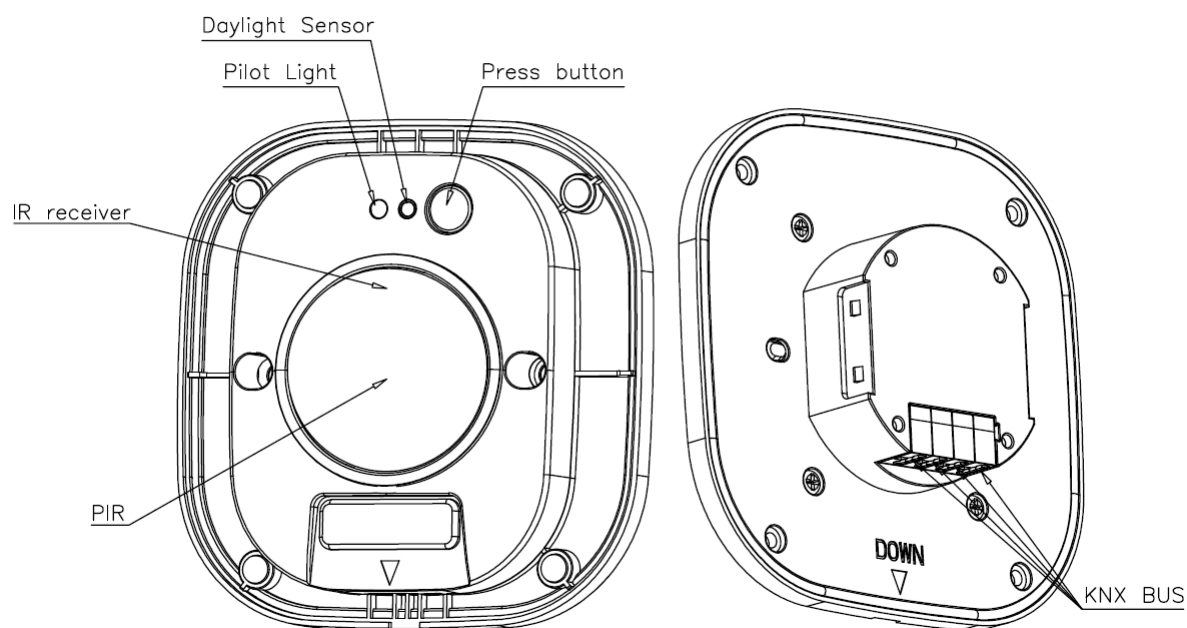
# 【Dimension and Function diagram】

## Flush mounting

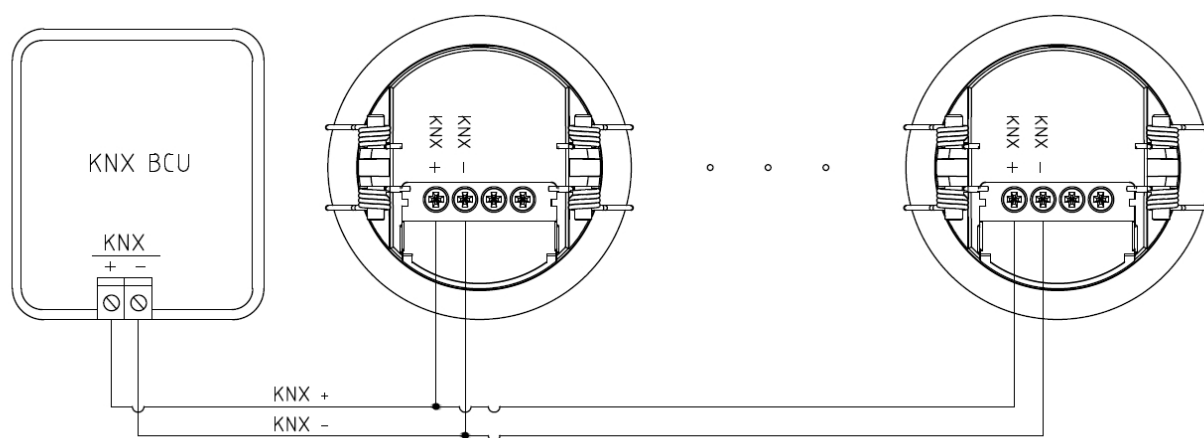


## Surface mounting





### 【Wiring instruction】



### Wiring layout suggestion:

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.**

### 【Initialization】

When powered on, sensor indicator will turn off after flashing for 10S and will enter a 20S detection cycle, if there's presence detected, then sensor will enter hold time calculating, if absence detected, then sensor relay will disconnect. During initialization, sensor will not detect moving signal and you can use our MH10 remote to adjust detection area, hold time and daylight sensor etc parameter.

### 【Factory setting】

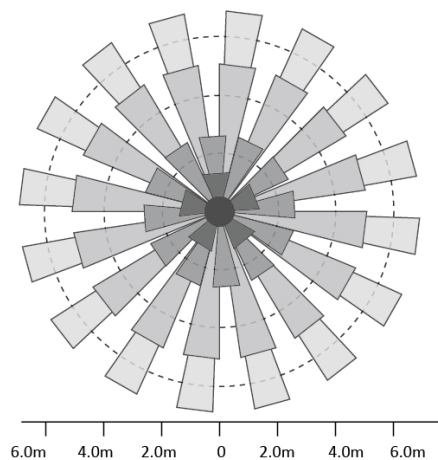
Detection Area: 100%

Hold Time: 30S

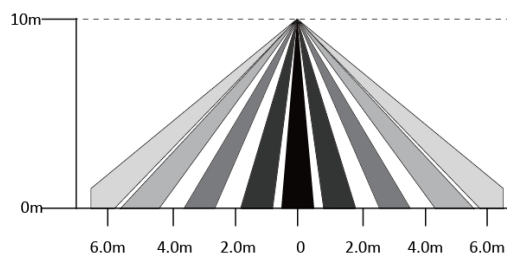
Indicator Light: open

## 【Detection radiation】

MSA237K 99 IR is highly recommended ceiling flush mounting and its detection radiation is as below shows:



Top view



Side view

## 【Detection Signal】

The product detects major human moving signals, following is a description of the moving, minor moving and presence signals:

- **Major movement:** detect the human significant moving (walking) in the detection area.
- **Minor movement:** 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.
- **Micro movement:** detect human abdominal and thoracic expansion behaviors caused by breathing, but not detect moving signal and minor moving signal.



Major movement



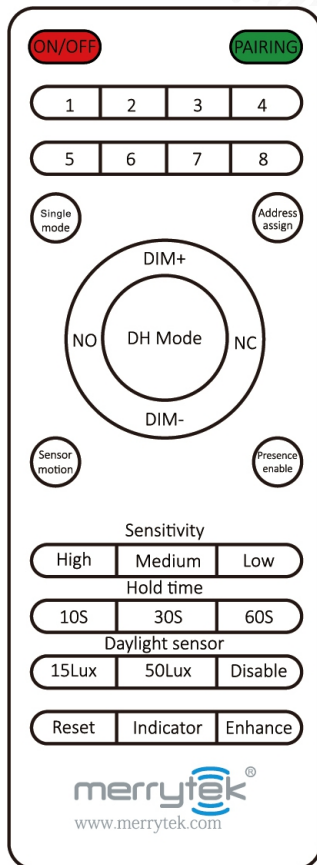
Minor movement



Micro movement

## 【Remote manual】

### MH18 remote



**Sensitivity :** High=100% detection range,Medium=50% detection range,Low=50% detection range

**Hold time:** short press to switch 10s/30s/60s hold time

**Indicator:**short press to open indicator,long press to close 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.