深圳市易探科技有限公司

Shenzhen EasyDetek Technology Co.,Ltd

EasyDetek易探

24GHz Human Presence Sensor

EDQ253 Specfication

EasyDetek Technology, Human Habitation Detection Radar

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EDQ253

Product Features

- 90Vac~260Vac 50/60Hz power input
- Tuya Zigbee Wireless Communication Protocol
- Small size, supporting embedded independent installation (with a hole diameter of 55mm)
- Adopting human detection technology, supporting motion, micro motion and presence detection
- 24G strong anti-interference antenna can effectively resist various wireless signal interferences such as wifi and Bluetooth
- Supporting left and right partition detection

Electrical Parameters

Input voltage	AC 90-260V 50/60Hz
Operating current	AC 220V-20mA
Communication mode	TUYA Zigbee3.0
Standby power	0.8W @220V

Functional Parameters

Motion sensing radius ①	1-5.5m
Presence sensing radius ①	0.5-4m
Hanging height	＜4m
Delay time	2-3600s
Illuminance value ②	0-12000lux

Output Parameters

Center frequency	24-24.25GHz
3dB beam angle	79.8° (xz plane) 72.7°(yz plane)

Environment & Lifespan

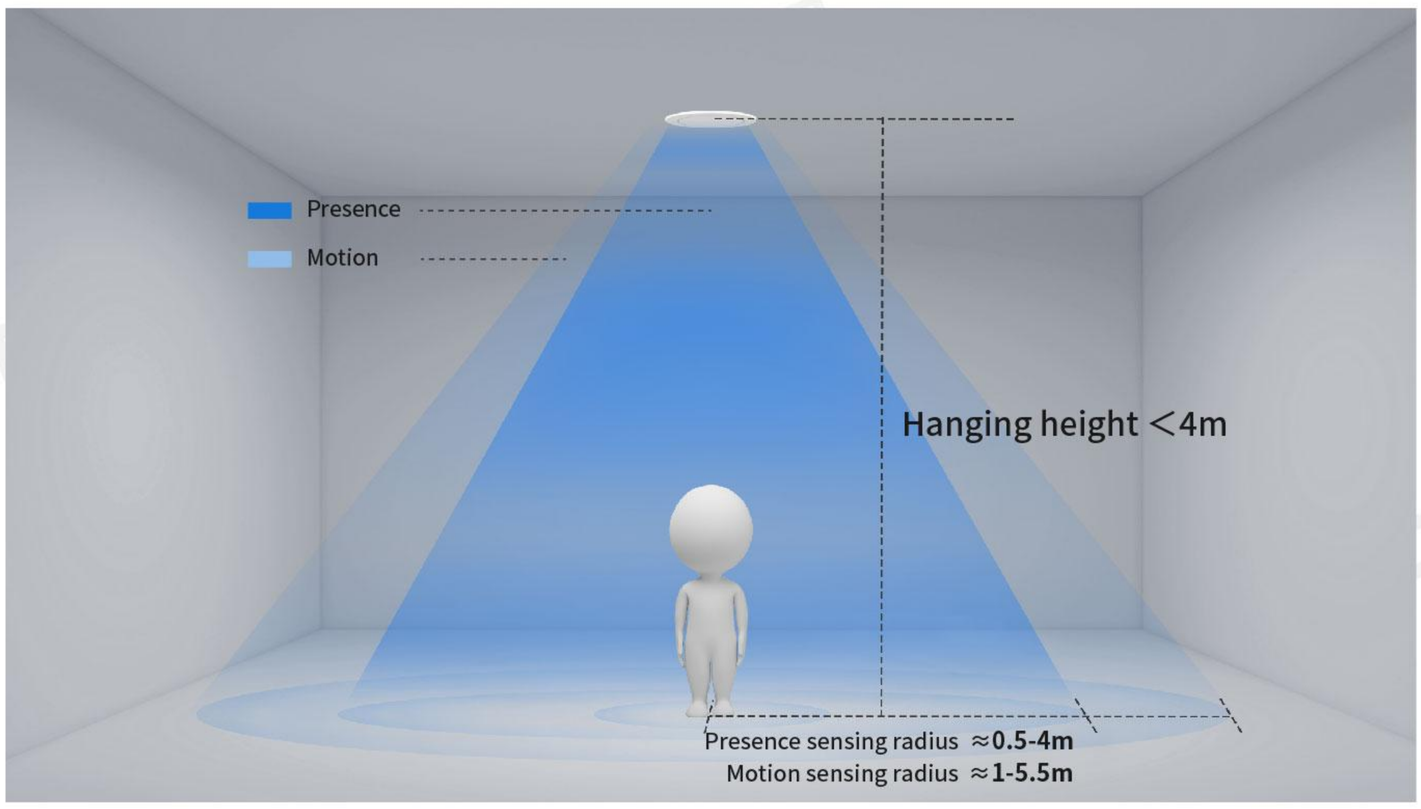
Operating temperature	-30~+60°C
Storage temperature	-35~+85°C

Note:

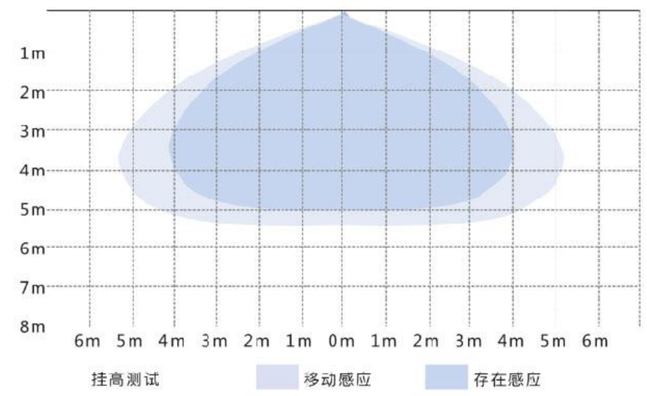
① The testing distance range is based on a sensor hanging at a height of 3m and indoor installation environment testing. The tester is 170cm tall, weighs 65-75kg, and walks at a speed of 1m/s.Installation in different scenarios may cause range changes, subject to actual testing

② Due to the spectral characteristics of photosensitive devices, the illuminance value is uniformly tested under natural light conditions.

Detection Schematic Diagram



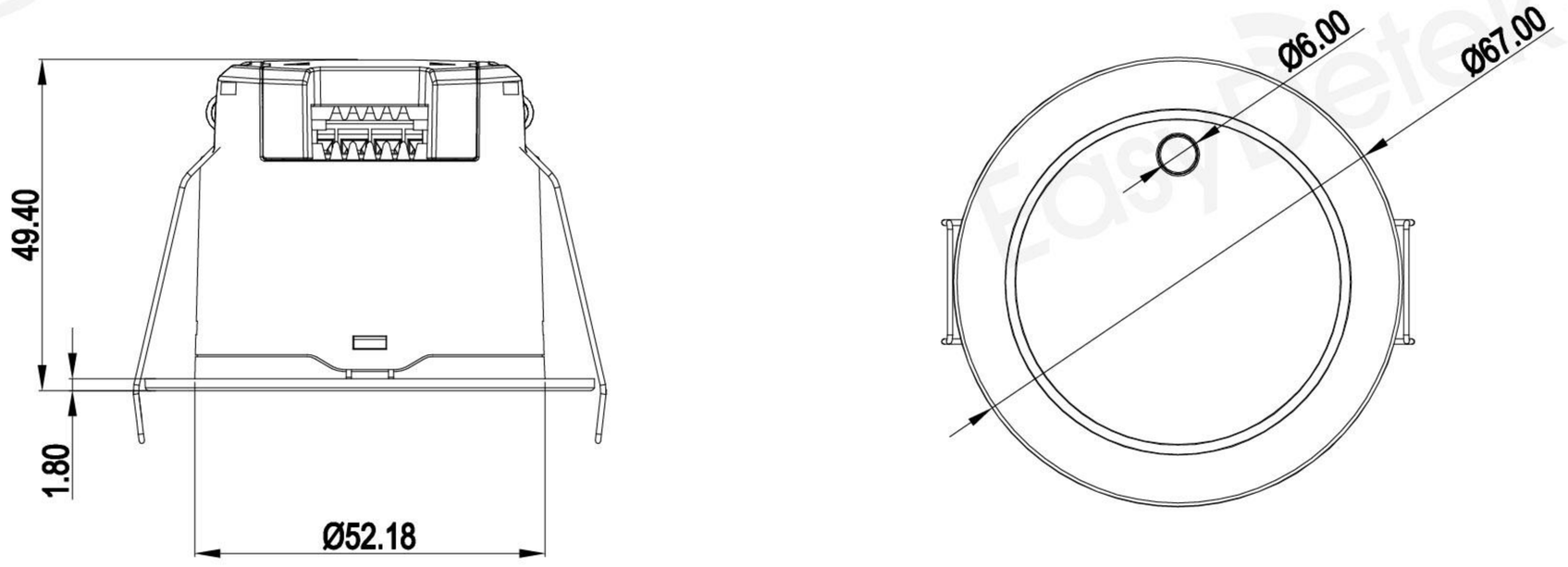
Radar induction schematic diagram



Presence sensing radius ≈0.5-4m
Motion sensing radius ≈1-5.5m

Product Dimension Diagram

Unit: (mm)



EDQ253 Dimensional tolerance：±0.2

Indication Status

1、Power on initialization: The LED indicator light stays on for 5 seconds. After initialization, the LED indicator light goes out and the sensor enters absence status.

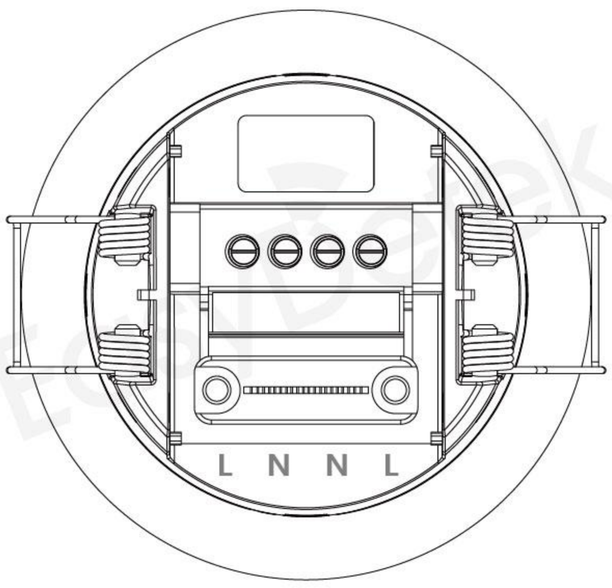
2、The indicator light keeps flashing: the device is in distribution network mode for 3 minutes, and the successful network connection indicator light stays on for 5 seconds.

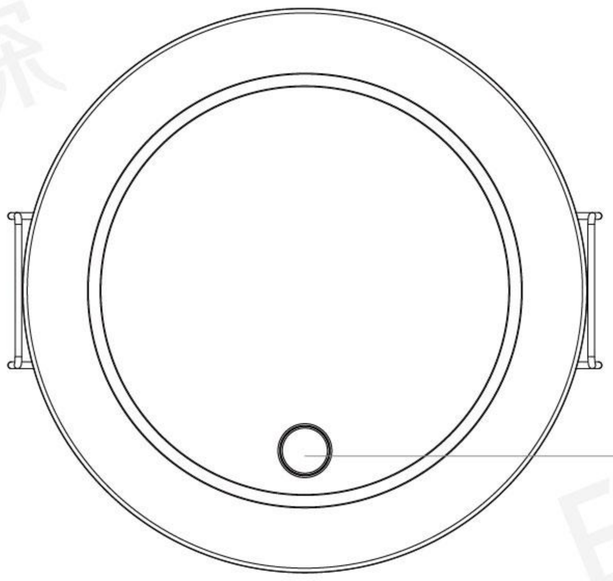
3、Operating mode: The sensor enters from absence to presence, and the LED indicator light flashes slowly once.

4、Parameter setting: The successful setting indicator light flashes twice

Note: when the motion is triggered multiple times within 5 seconds, the indicator light only flashes once.

Pin and Button Description

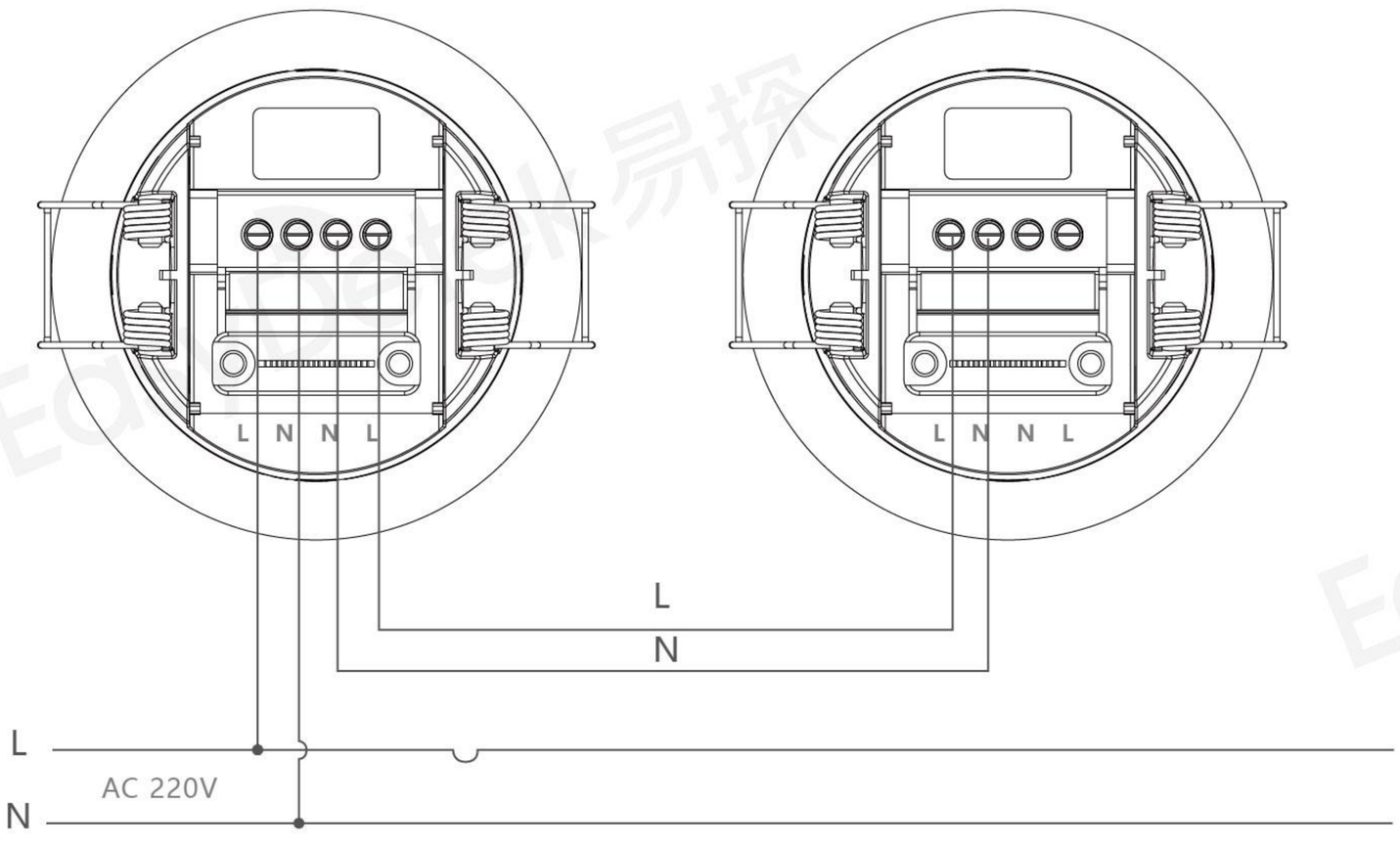




Pin	Description
L	Firewire input/output, output in parallel to the next power supply device
N	N line
N	N line
L	L line input/output, output in parallel to the next power supply unit
button①	Network entry and reset, opening for light reception.

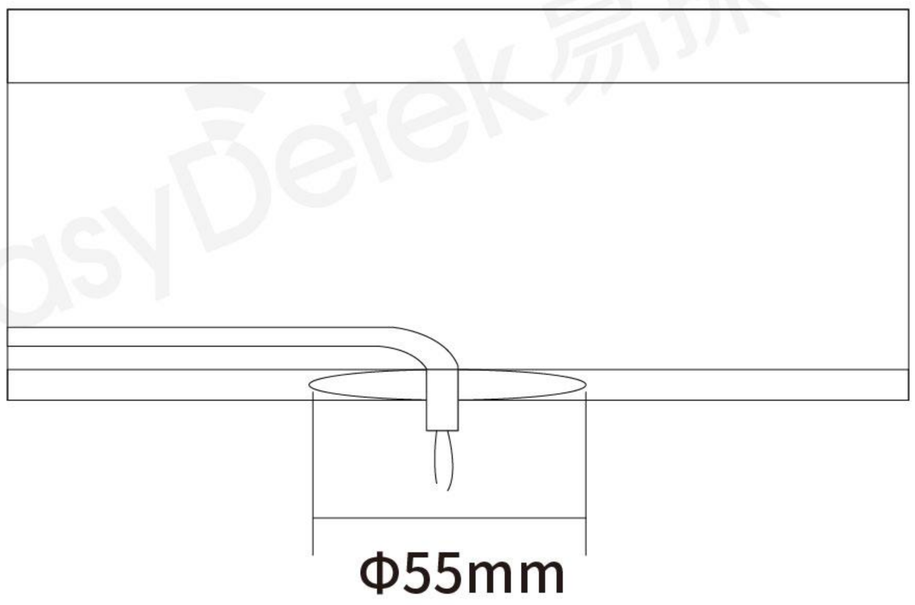
1.Distribution network: Pressing and holding the button for 3 seconds, and the indicator light will flash to enter distribution network mode. The successful distribution network indicator light will stay on for 5 seconds, and the failed distribution network indicator light will remain off for 5 seconds. The indicator light flashes for 3 minutes. If the APP does not perform any network access operation during this period, the device will resume normal operation after the time ends.
2.Parameter restoration to factory default values: Press and hold the button for 7 seconds, the indicator light will remain on, and then release it. Parameter restoration to factory default values: Delay for 30 seconds, sensing range 7th gear, illumination difference of 10lux, illumination compensation factor 1x.
3. The opening is for the position of the illuminance sensor and is designed to be integrated with the button.

Wiring Diagram

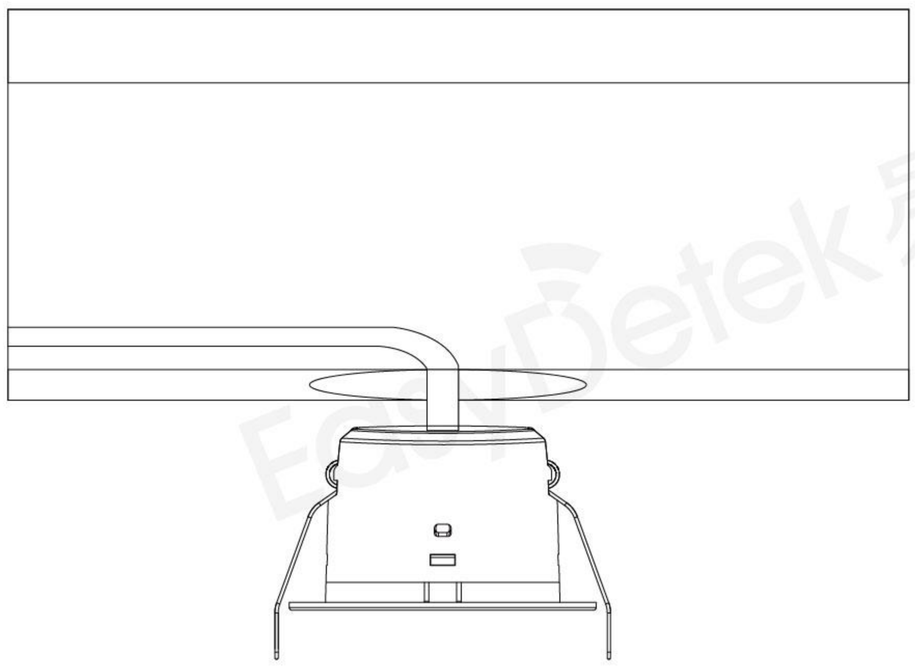


Installation Diagram

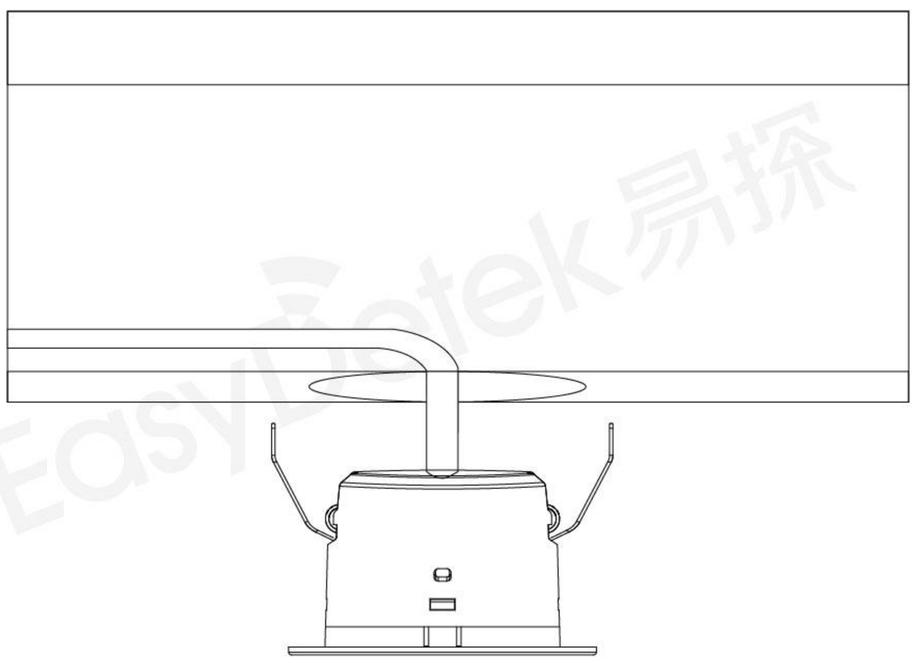
1、Ceiling perforation, reserved wires



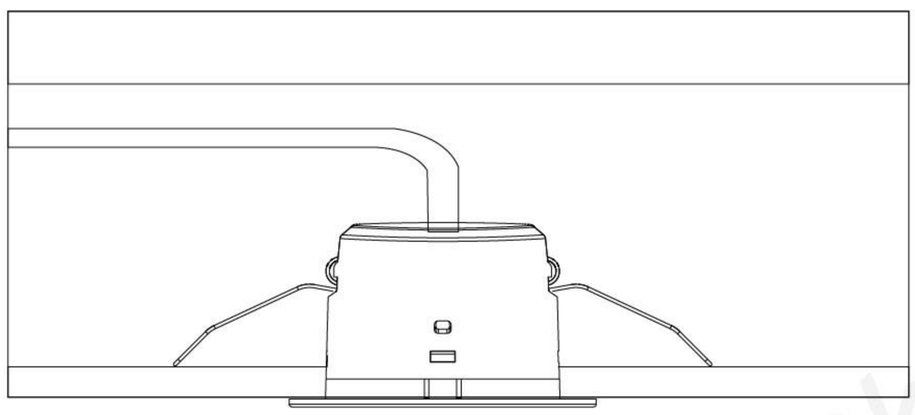
2、Equipment and wire connection



3、Adjust the installation buckle



4、Embedded and fixed, installation completed



Application Scenarios

Smart home

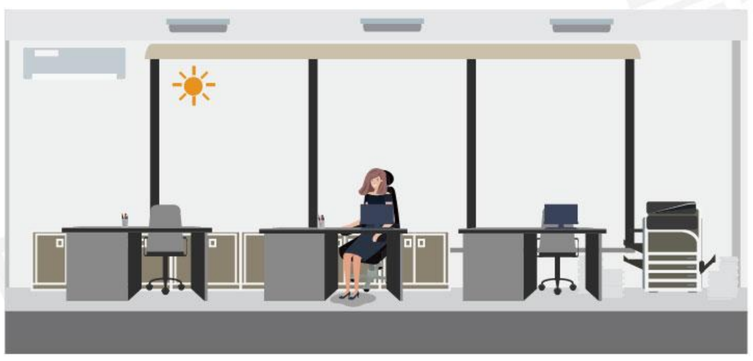
Smart light

Smart business

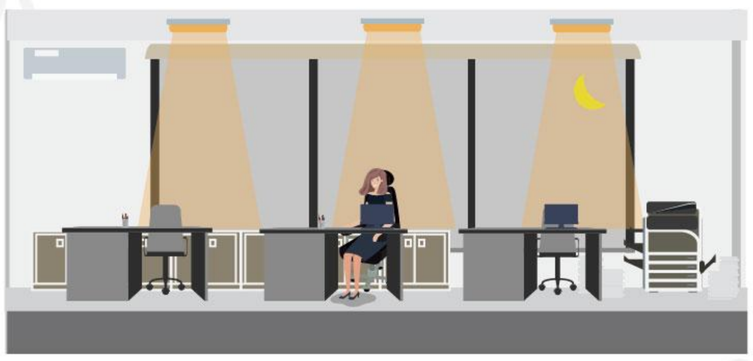
Medical and health care

Function Description

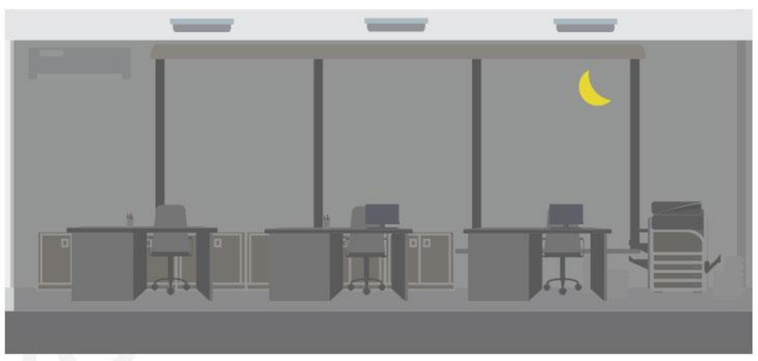
Illuminance Function On



When the ambient light is sufficient, the sensor detects moving objects and the light will not automatically turn on.

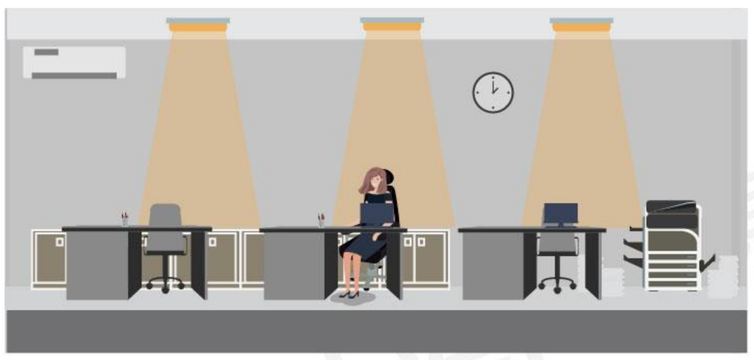


When the ambient light is insufficient, the sensor detects moving objects and the light automatically lights up.



The moving object leaves, and after a preset delay, the light will automatically turn off.

Illuminance Function Off



When the sensor detects a moving object, the light automatically lights up and enters the set delay time.

After the delay time, if the sensor cannot detect the moving object, the light fixture will turn off.

Tuya ZigBee Device Net Working Operation Guide

Tuya ZigBee triggers the sensor to enter the distribution network status in three ways:

1. The device has not been connected to the network before and is powered on for the first time. After initialization is completed, a distribution network command will be issued to put the device into distribution network mode. At this time, the indicator light will flash for 3 minutes

2. Pressing and holding the network button on the product cover for at least 3 seconds, and the indicator light will enter flash mode for 3 minutes.

3. Using the remote control's TEST 2S to trigger the distribution network and the indicator light will flash for 3 minutes.

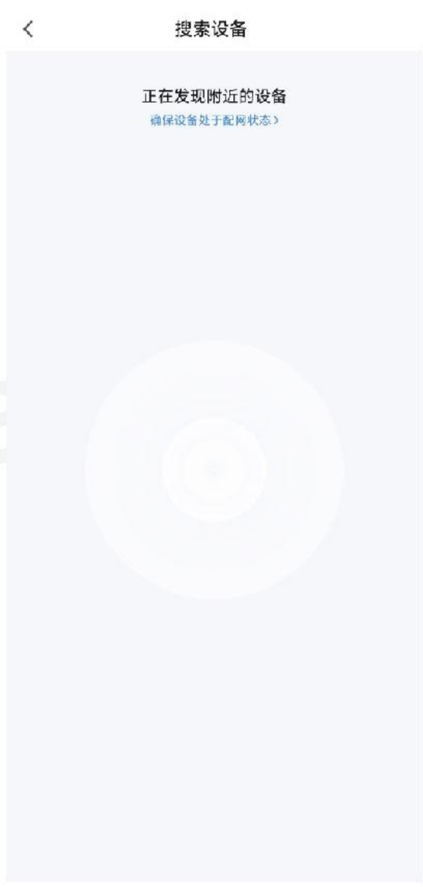
APP Network Access Operation Guide

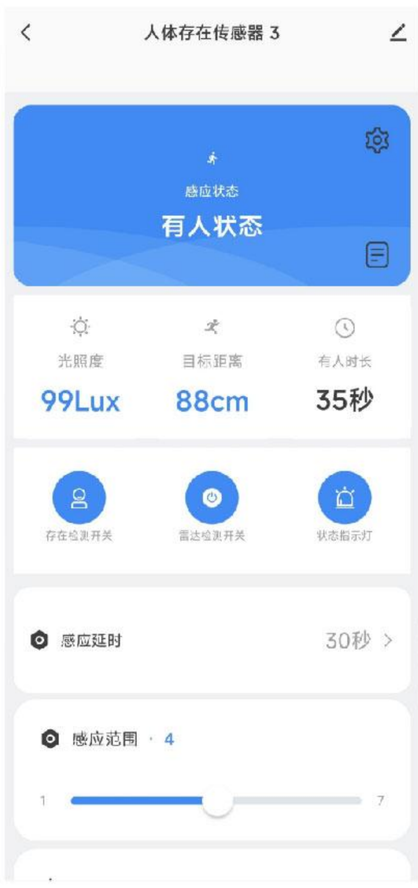
APP Access Guide:

1. Logging in to your account and enter the main interface of the Tuya Smart APP. Selecting an existing Tuya ZigBee gateway and go to the gateway homepage. If it is a multi-mode gateway, selecting the ZigBee device list option and click "Add Device" below. (Page 1)

Page 1

2. After clicking "Add Device", enter the search device interface. When a device in the distribution network is found, it will display that a device has been successfully added. Clicking "Finish" to indicate that the device has been successfully connected to the network and clicking the corresponding sensor to enter the parameter settings page. (Page 2)





Page 2

APP Function Description

Motion status: Displaying the current status of the person that the module should receive.

Illuminance: Displaying the current ambient illuminance.

Presence detection switch: The radar's presence detection function can be turned off separately, leaving only movement detection.

Radar detection switch: Turning off all radar sensing and do not respond to any external signals.

Secondary parameter setting interface, sensitivity level and sensing partition settings. Please refer to the supplementary information below for details.

Sensing status record: Querying the logs of sensing status reports.

Duration of presence/absence: Recording the duration of the presence/absence status.

Target distance: The theoretical straight-line distance between a person and the sensor when a person is detected.

Status indicator light: The flashing of the indicator light when the radar detects someone on/off.

Induction delay: Setting the delay time for the sensor to send unmanned signals.

Sensing range: Setting the sensing range of the sensor, divided into 7 levels.

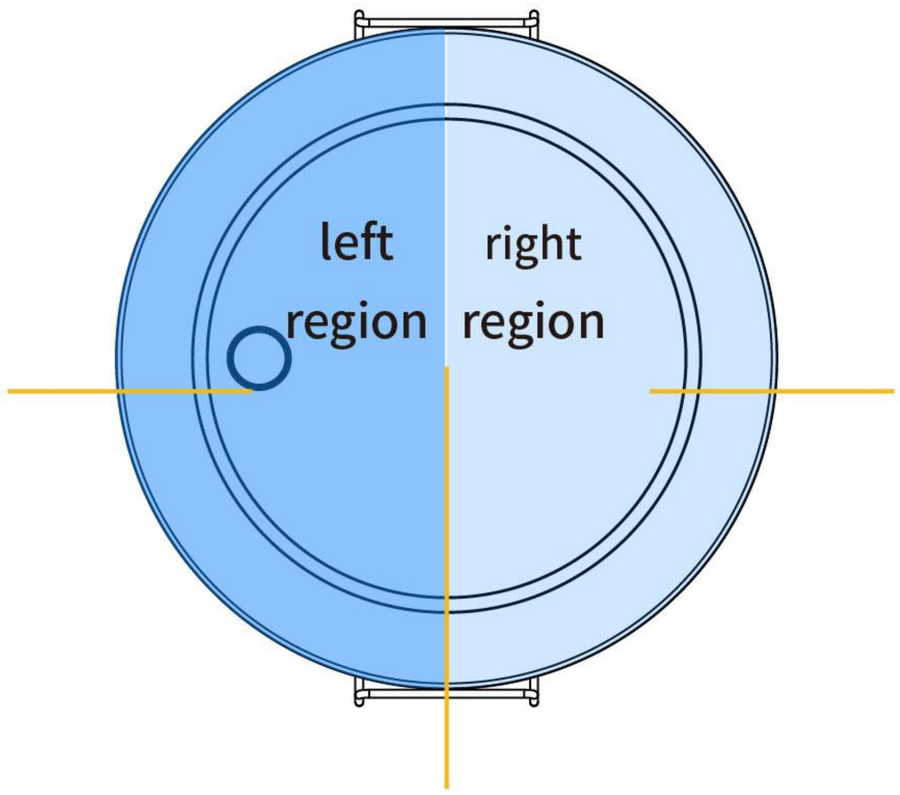
Illuminance difference: Setting the sensitivity of sensor illuminance reporting. If the illuminance changes beyond the set difference, the current illuminance will be immediately reported.

Illuminance compensation coefficient:the multiple that amplifies the current real-time illuminance.

Sensitivity: Setting the sensitivity of the sensor will affect the detection range of the sensor.

Detection area: divided into the entire area, left area and right area, with the entire detection surface working in the entire area; The left area only enables the left half sensing, and the right area only enables the right half sensing. The partition diagram is shown in the attached figure below.

Detection Area Left Zone:
When the left zone is selected, the corresponding sensing range of the right zone is not detected.



Detection Area Right Zone:
When the right zone is selected, the corresponding sensing range of the left zone will not be detected.

Partition Description: The default is to detect all areas. The partition is divided into left and right areas with spring buckles installed on both sides as the center line. The area with a light sensitive opening is the left area of the detection zone, and the corresponding other half is the right area of the detection zone.

Product Naming Rules

ED	Frequency Band	Product Categories	Product Subdivision	Product Number	Delay Time	Serial number
ED	Q	2	5	3	Y	
EasyDetek	C 5.8GHz	1 Microwave sensor module	0 Ultra-low-power series	0-9, A-Z	Y Has light sensor	
	X 10.5GHz	2. Microwave radar switch	1 Flagship series		N no light sensor	
	Q 24GHz	3 Radar antenna	2 Short-distance series		P programmable	
	V 60GHz	4 MCU	3 Adjustable series			
	W 77GHz	5 Microwave power supply	4 External antenna series			
		6 IC	5 General Series			
		7 Other	6 To be defined			
		8 Networking	7 To be defined			
			8 Basic series			
			9 High altitude series			

Historical Revision Records

Versions	Time	Descripcion	Note
V1.0	2024-4-12	first edition	-
V2.0	2024-7-16	Software and hardware version updated	-

Precautions

1、When installing the product, it should be kept at a distance of more than 50cm from the exhaust fan and air conditioning outlet. The vibration generated by the exhaust fan and air conditioning outlet during operation can cause false triggering of sensor detection. During installation, it is also necessary to avoid areas where external people or objects can cause vibrations.

2、The product has certain penetrability to thinner wooden boards and glass materials, and these two factors should be considered when installing the fabric points. At the same time, avoiding large areas of metal in front of the sensor to prevent accidental triggering.

3、When there is a large area of glass and smooth tiles on the decorative surface within the detection range of the sensor, electromagnetic wave reflection will be strengthened. It is recommended to adjust the sensing range appropriately according to the size of the space.

4、When multiple sensors are applied in the same site, it is recommended that the installation distance of the product be greater than 2.5 meters. Installing too close may cause periodic false alarms for individual sensors.

5、The electromagnetic waves emitted by sensors have different reflectivity of obstacles in practical application environments, resulting in different sensing ranges. This is a normal phenomenon, for example, in corridors and wide rooms, the sensing distance may vary slightly.

6、EasyDetek Technology Co., Ltd is committed to providing customers with high-quality and better experience radar sensors. Product version updates and iterations will not be notified separately.