

MiNi-ToF-Zigbee

ToF Small-Angle Occupation Sensor

Product Manual (Tuya Zigbee Version)

Installation Manual



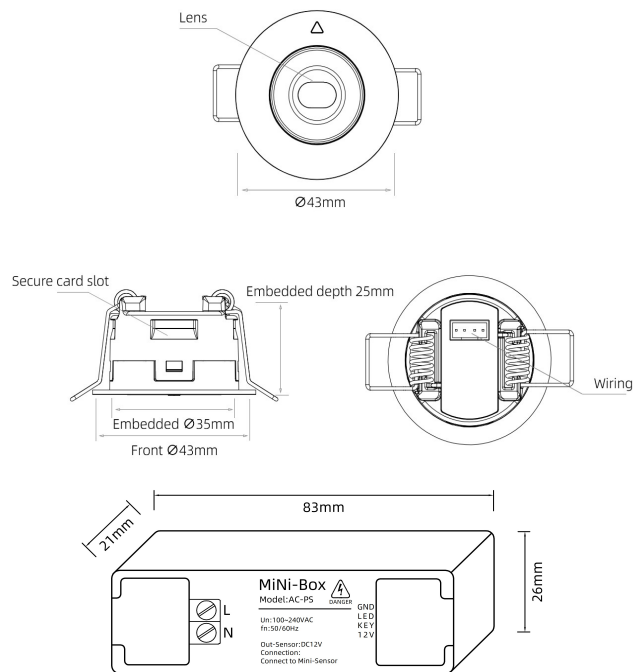
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Appearance

Product outer diameter 43mm, depth 25mm, opening 35mm. Ceiling depth ≥ 10cm, embedded installation.

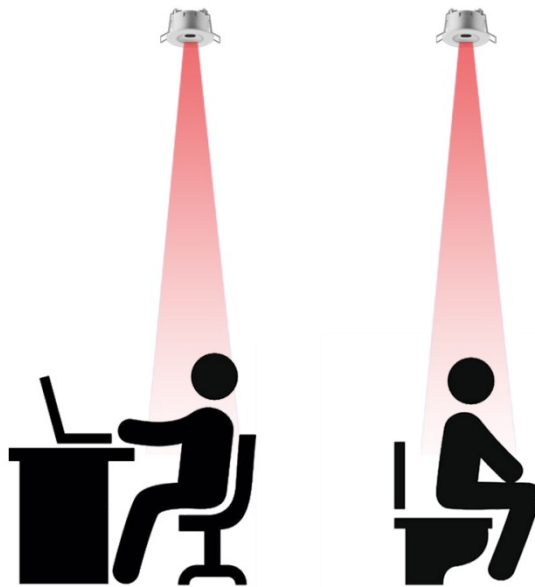


Default Parameters

Number	Function	Default Value
1	Delay	30 Seconds
2	Illumination	Enable
3	Indicator Light	Turn On
4	Existence Settings	Segment A: Start: 0cm End: 120cm Segment B: Start: 0cm End: 0cm
5	Near and Far Distance Settings	Near Distance: 100cm Far Distance: 200cm Limited Movement Time: 5S
6	Segment Settings	Segment A: Start: 100cm Time of Flight: 5S Section B: Start: 100cm Stay Time: 5S Section C: Start: 100cm Stay Time: 5S

Detection Principle

The ToF distance measurement sensor uses time-of-flight technology to accurately detect millimeter-level changes in distance between the precise detector and the target object, enabling precise detection of the target's presence, with high accuracy, long measurement range, fast response, and stronger anti-interference capability. It can be applied in various precise detection fields such as workstation sensing, public health occupancy, proximity detection, and mobile detection.



Application

Home

Stairs | Bathroom

Precise detection of targets, lights turn on when someone is present, automatically turn off when leaving, and lights remain off in a stationary state. Intelligent lighting control based on changes in ambient light

Application

Office

Workstation Sensing

Precise positioning of each workstation for occupancy detection and workstation management,

Lights turn on when people are present, and office equipment is activated; lights turn off and equipment shuts down automatically when people leave, saving energy.

Museum/Exhibition Hall

Exhibits | Exhibition Walls | Advertising Spaces

Accurately perceive the status of display points; trigger display scenarios upon arrival and immediately close upon departure.

Assist in achieving a more automated and intelligent display effect while conducting data statistics and management.

Energy Saving in Schools/Libraries

Classroom | Reading Room | Self-Study Room

Precise positioning of each location, lights/devices turn on when someone is present, and turn off when no one is present

Achieve precise energy savings by accurately monitoring the usage of each reading area

Elderly Care and Medical Services

Restroom | Stairs

Precise detection of target presence, assisting in abnormal monitoring

Lights turn on when someone is present, and automatically turn off when they leave, saving energy and improving efficiency

Smart Parking Lot

Entrance | Driveway | Parking Space

Precise detection of target presence, lights turn on when a car approaches, and automatically turn off after a person leaves the vehicle

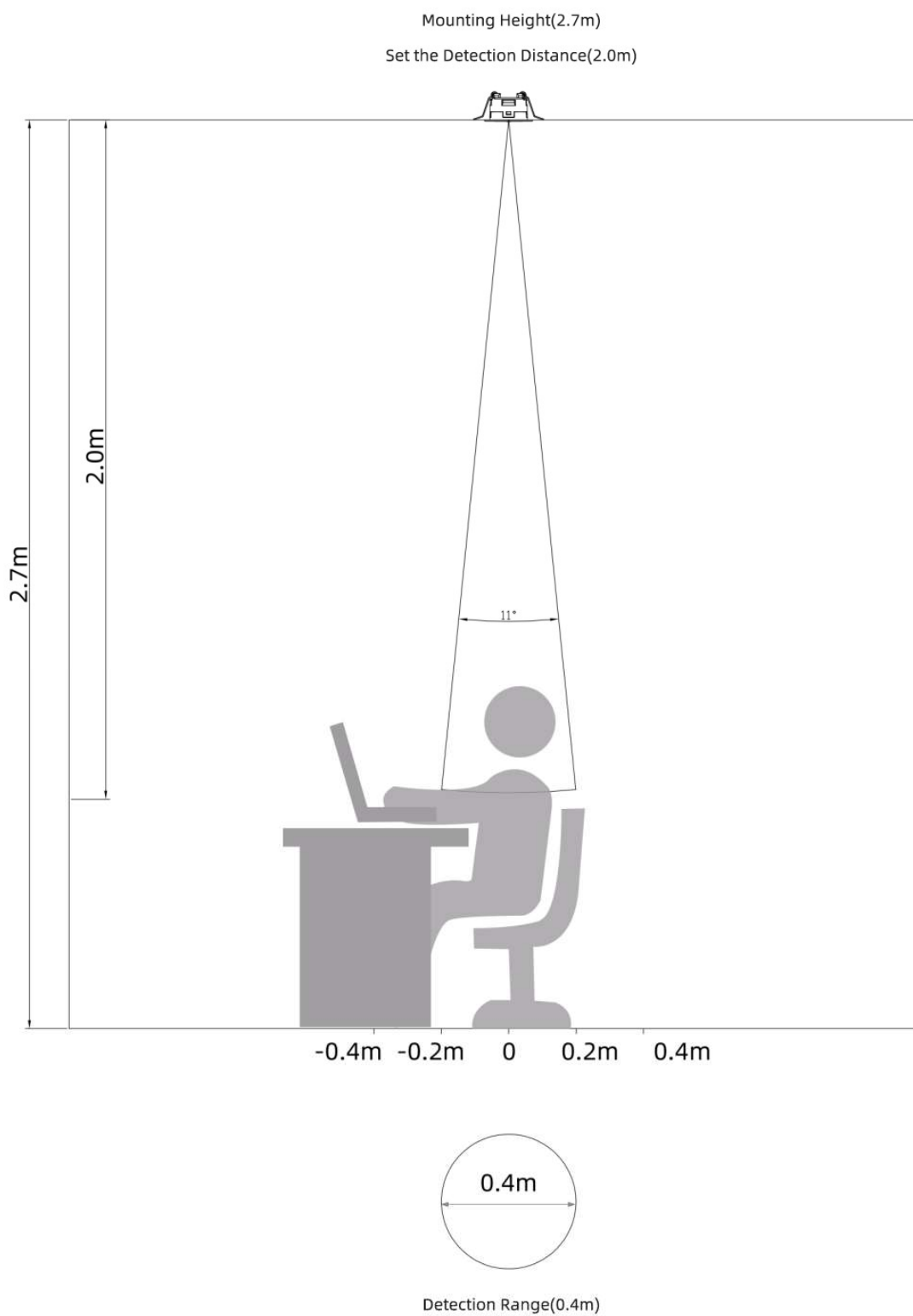
Can accurately detect the usage of each parking space, facilitating guidance and management

Intelligent lighting control based on changes in ambient light, precise energy saving

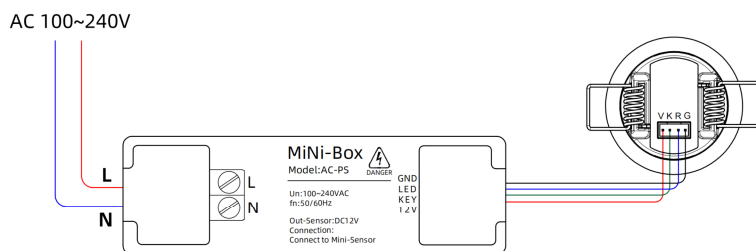
Specifications

Detection Method		ToF Time-of-Flight Sensor
Installation Height		2.0~4.0 meters
Detection Angle		11°
Detection Range		When setting the detection distance to 0.1~3.2 meters at a setting of 2.0 meters, the range diameter is ϕ 0.4 meters (Note that pure white and black colors may reduce detection accuracy)
Detection Distance		0.1~3.2 meters
Illuminance Sensing		0~2000 Lux (Accuracy $\pm 1\%$)
Delay Time		1~600 seconds
Product Dimensions		$\phi 43\text{mm} \times 25\text{mm}$
Cutout Dimensions		$\phi 35\text{mm}$, depth $\geq 100\text{mm}$
Product Weight		18g
Operating Environment		Temperature -20~45°C Humidity <95%
MiNi Box	Power Input	100~240VAC(<0.5W)
	Power Output	DC12V(<500mA)
MiNi Sensor	Power Input	DC12V(<0.5W)
LED Indicator		① Flashes for 3 seconds upon receiving configuration command ② Remains lit when detecting presence, brightness adjusts automatically according to ambient light ③ Can set to off mode (does not light up even when detecting presence)

Detection Range



Wiring



Settings

APP Download



Tuya Smart



Smart Life

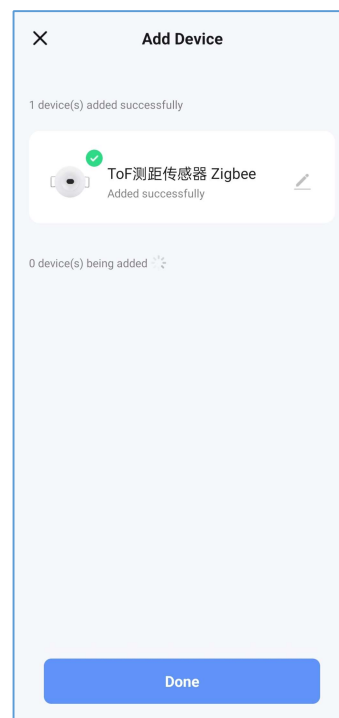
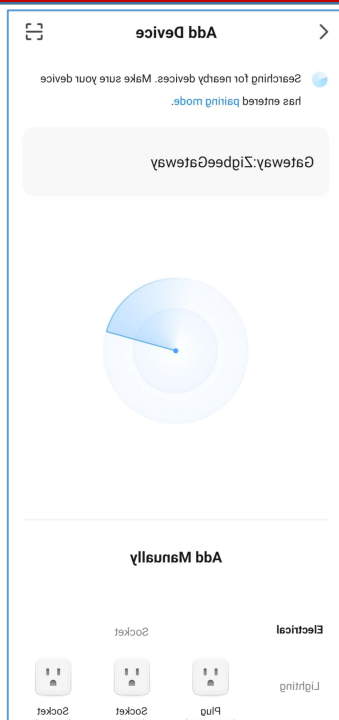
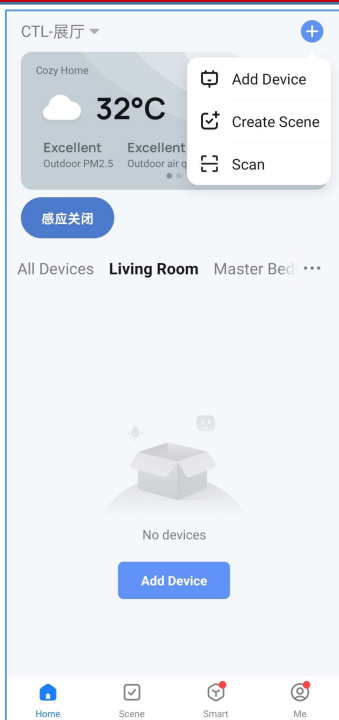


Scan the QR code to download

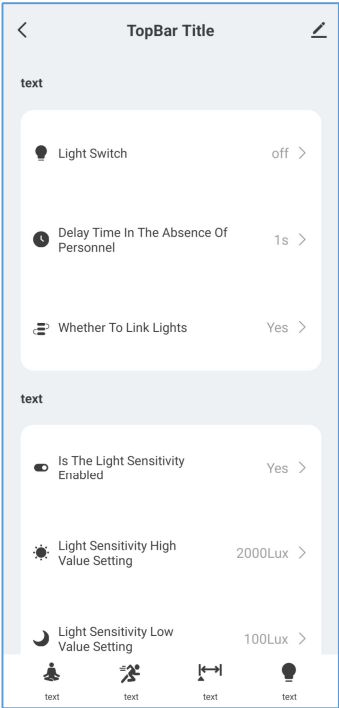
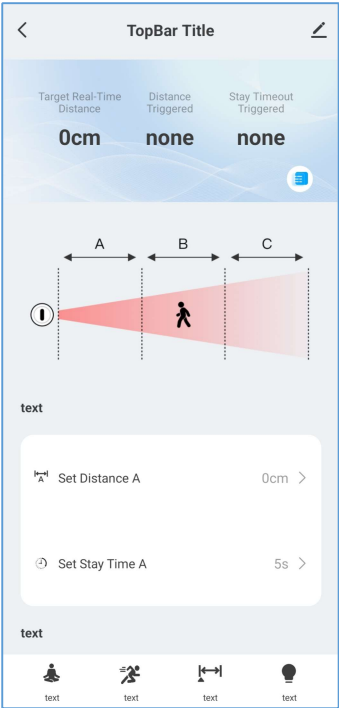
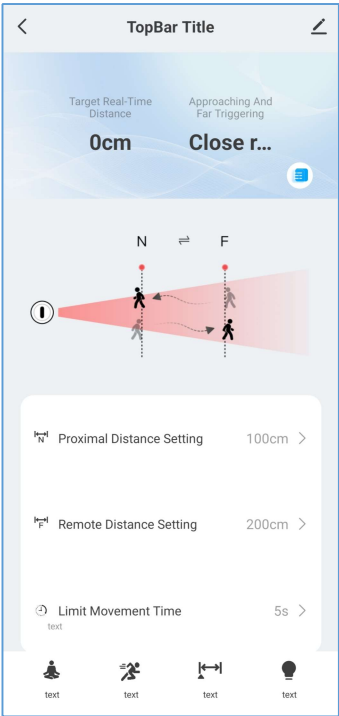
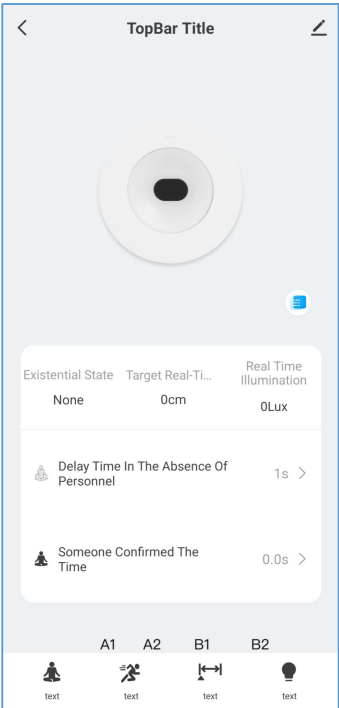
You can download by scanning this QR code, or directly search for the app name.

Device Networking

Connect the MiNi-Box to AC220V power, (remote control input *0#0#) wait for the indicator light to flash and enter pairing mode, then click to add device in the mobile APP and wait for the system to search for devices, finally click finish.

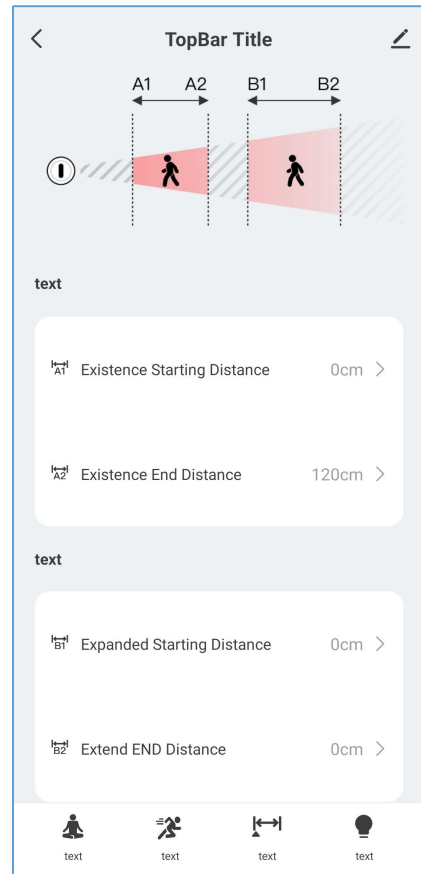
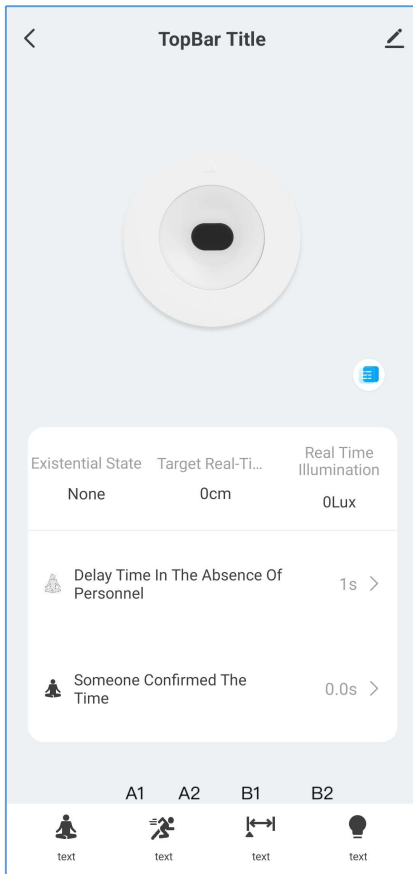


Interface Overview



Setting Instructions

1. Parameter Settings Exist



Glossary

Presence detection time: How long after continuously detecting someone, the output indicates someone is present

Segment A

Detection Distance/End Distance: From the starting detection distance to the ending detection distance of Segment A

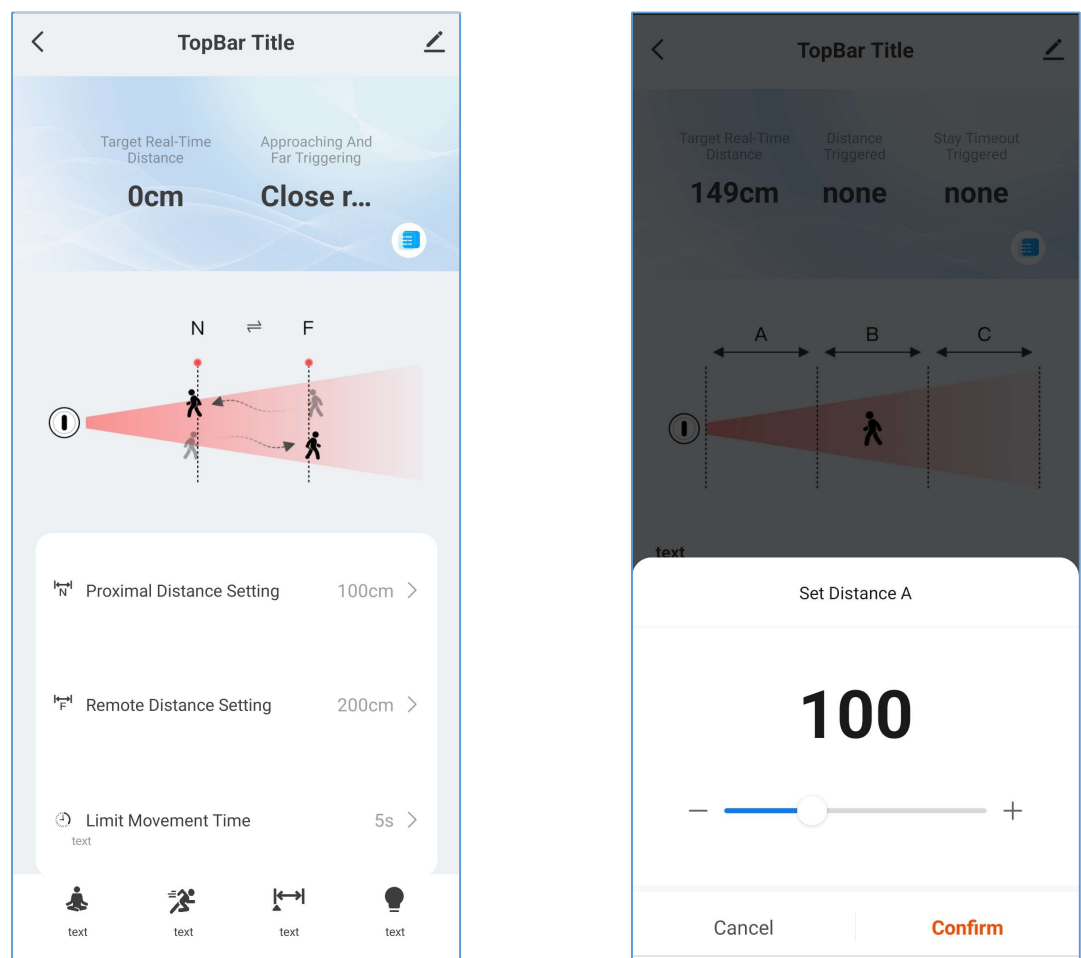
Segment B

Extended Distance/End Distance: From the starting detection distance to the ending detection distance of Segment B

Note: The sensor will not trigger when the detected object is beyond the second distance.

Setting Instructions

2. Approach and Retreat Parameter Settings



Glossary

Near Distance: The distance closer to the sensor

Far Distance: The distance further from the sensor

Limited Movement Time: The time limit for traversing between two points

Setting Instructions

3. Approach and Retreat Parameter Settings

TopBar Title

Target Real-Time Distance: 0cm

Distance Triggered: none

Stay Timeout Triggered: none

Diagram: A person moving towards a target area, divided into segments A, B, and C.

text

Set Distance A: 0cm >

Set Stay Time A: 5s >

text

text

text

text

TopBar Title

Set Stay Time A: 5s >

text

Set Distance B: 100cm >

Set Stay Time B: 5s >

text

Set Distance C: 100cm >

Set Stay Time C: 5s >

text

text

text

text

Glossary

Distance A: If the segment A distance is set to 100cm, then the segment A area is 0~100cm

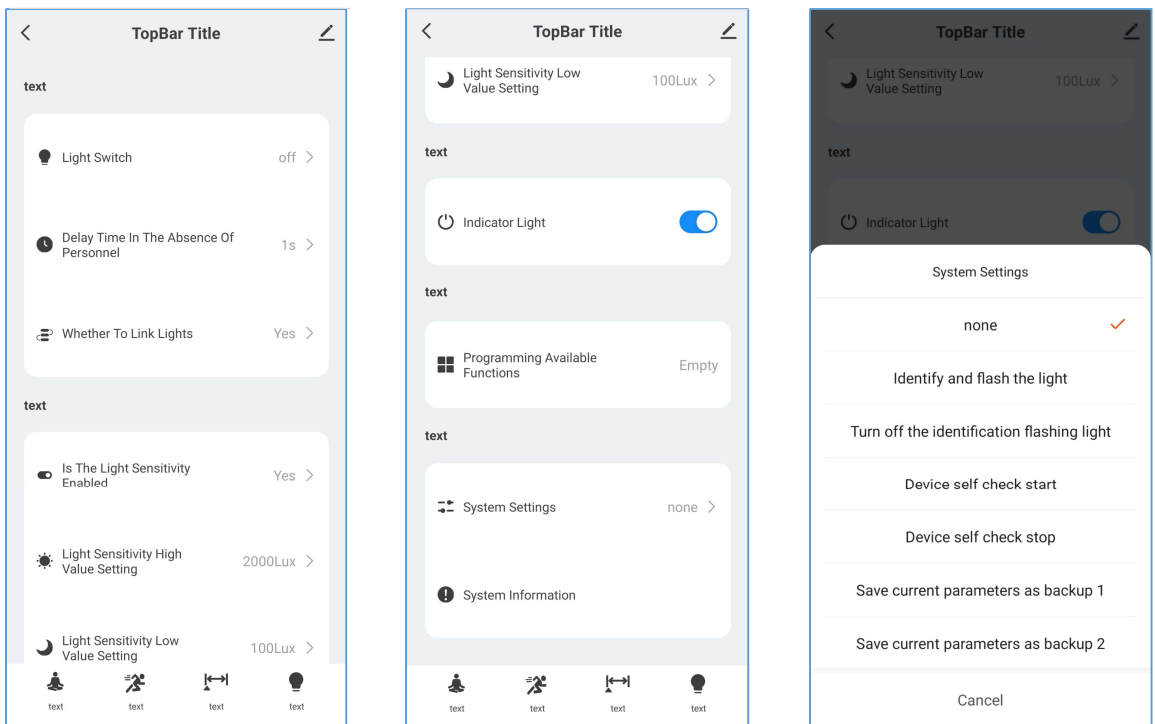
Distance B: The set distance is from the segment A distance to the segment B distance. If the segment A distance is set to 100cm and the segment B distance is set to 100cm, then the segment B range is 100~200cm

Distance C: The set distance is the distance set for segment A plus the distance set for segment B to the distance set for segment C

Stay Time: Triggered when the time spent in this interval exceeds the set time

Setting Instructions

4. Light Setting Parameter Configuration



Glossary

Light Switch: Can manually turn on or off the 1-channel light control of the MiNi-Box

Linked Lighting: Link the 1-channel light control of the MiNi-Box or automation scenes

Indicator Light Switch: Turn on/off the sensor indicator light

Save Current Parameters as Backup: Save all parameters as a backup, which can be restored when needed

Programming Examples

Induction Lighting

Use light on/off as trigger conditions to program automatic light on/off

- ※ The light sensing is enabled when someone is detected and the real-time illuminance is less than the low illuminance value, then the light will turn on.
- ※ When no one is detected and the delay ends, the light will turn off.
- ※ The light can be turned off without light sensing.

CancelSave

Light on

All day

If

When any condition is met

ToF测距传感器 Zigbee
Light Switch : on

Then

主灯
ON/OFF : ON

Precondition

More Settings

CancelSave

Light off

All day

If

When any condition is met

ToF测距传感器 Zigbee
Light Switch : off

Then

主灯
ON/OFF : OFF

Precondition

More Settings

Programming Examples

Panel Priority

Use the panel as a trigger condition for programming.

- ※ Panel trigger light non-linkage mode, sensor selects non-linkage light to execute off sensing.
- ※ Panel trigger light linkage mode, sensor selects linkage light to execute on sensing.

(The next time someone triggers and meets the light-on condition, the light will turn on.)

Cancel

Save

Unlink Switch

All day

If

When any condition is met

Keypad

Unlink Switch : ON

Then

ToF测距传感器 Zigbee[Living Room]

Whether To Link Lights : Deny

Precondition

More Settings

Cancel

Save

Link Switch

All day

If

When any condition is met

Keypad

Link Switch : ON

Then

ToF测距传感器 Zigbee[Living Room]

Whether To Link Lights : Yes

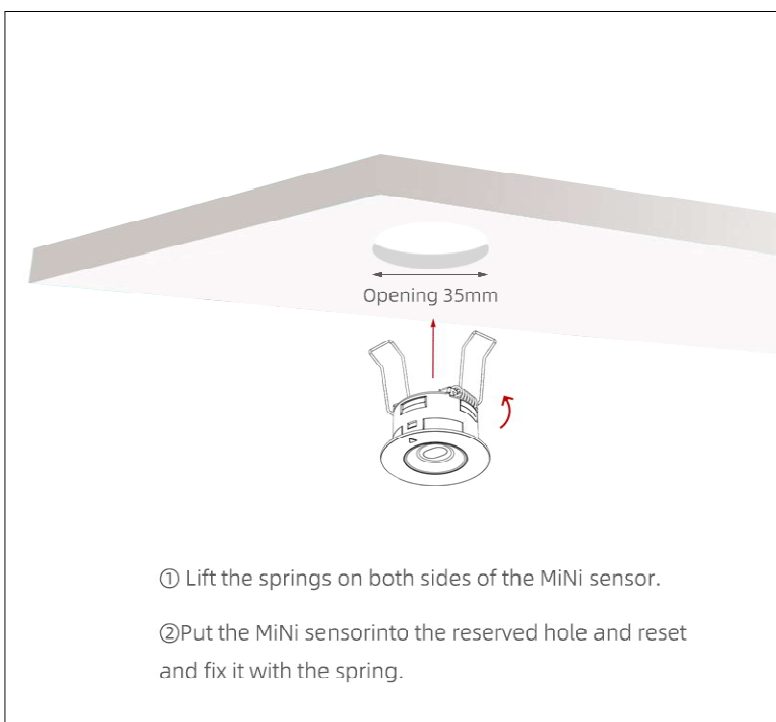
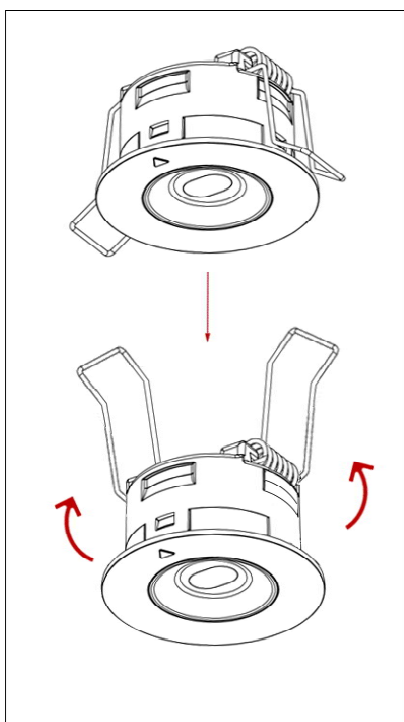
Precondition

More Settings

Installation

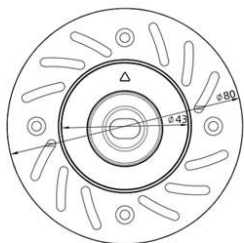


OPERATION STEPS FOR CEILING INSTALLATION

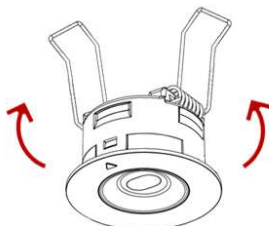


Installation

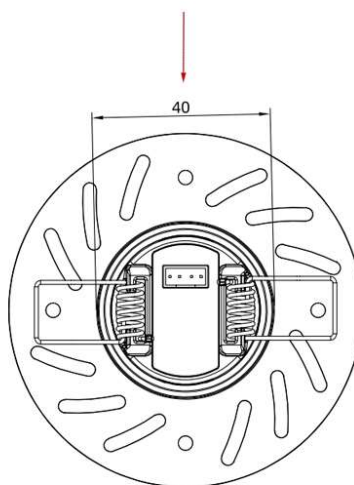
OPERATION STEPS FOR EMBEDDED INSTALLATION



① Prepare MiNi embedded parts, which shall be installed on the ceiling. Install the accessories at the hole position in advance, and open the hole for 40mm.

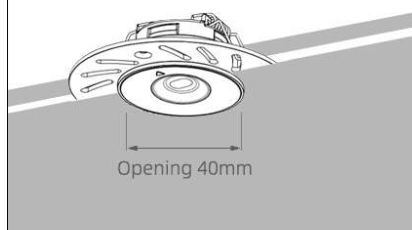


② Lift the spring of MiNi sensor, passing through embedded parts in the ceiling.

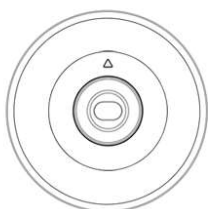


③ spring reset and fixation

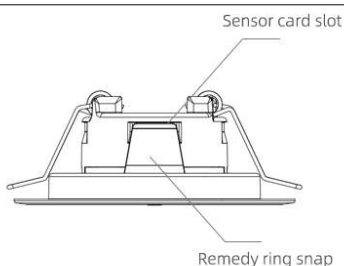
④ Complete frameless installation



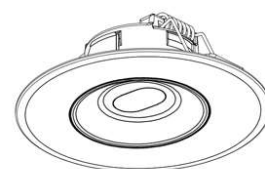
NOTE: IF THE RESERVED OPENING FOR CEILING INSTALLATION IS TOO LARGE, THE REPAIR RING CAN BE USED FOR INSTALLATION. COMBINE THE CLAMPING GROOVE ON THE SIDE OF MINI SENSOR WITH THE BUCKLE OF THE REPAIR RING TO CONFIRM THAT IT IS STABLE AND WILL NOT FALL OFF, AND THEN CONTINUE TO INSTALL AND FIX IT ON THE CEILING NORMALLY.



MiNi repair ring



Install the repair ring on the sensor



Proceed with the installation

Installation

Installation Instructions

Installation Environment Requirements

To ensure the correct operation and detection accuracy of this product, please install according to the following environmental requirements. Operating in unsuitable environments may interfere with detection results:

Dynamic Interference Objects: Please avoid having continuously moving non-human objects in the sensing area, such as animals, continuously swinging curtains, or large potted plants facing the wind outlet.

Static Interference Objects: There are obstructing objects in the sensing area, such as cardboard boxes, large potted plants, etc.;

High brightness or strong reflective objects in the sensing area can cause interference, reducing accuracy or distance.

Direct light sources will significantly shorten the distance.

High brightness or strong reflective objects in the sensing area can cause interference, reducing accuracy or distance.

Note that dark-colored objects will reduce detection accuracy.

Installation Location: Avoid installing this product on metal base boxes, metal tops, mirrors, water ripple ceilings, or large reflective surfaces, or within ventilation ducts, as these environments may cause self-excitation and false alarms.

Packaging and Installation

1. When using tools to open the packaging box, please pay attention to safety to avoid injuring the product or yourself.
2. After unpacking, please promptly check whether the product and accessories are complete.
3. To avoid suffocation hazards for infants or children, packaging materials should be destroyed immediately or placed out of reach of children.
4. Do not discard packaging materials carelessly; they should be disposed of properly according to local sanitation department regulations.

Electrical Safety

1. Before wiring, please ensure that the power supply is turned off.
2. Please strictly follow the wiring diagram and requirements for wiring operations.
3. Handle with care during installation to avoid colliding with circuit board components, and prevent the device from falling or the casing from deforming or breaking.
4. All line voltages and main cables must use cables certified by national or professional testing organizations.
5. Appropriate short-circuit and overload protection must be provided in the distribution cabinet, and ensure that the voltage does not exceed the specifications stated in the product manual.

Installation Distance and Stability

1. During installation, ensure that the sensor is within the set distance and is not obstructed.
2. During installation, ensure that there are no strong or direct light sources in the installation environment.
3. When mounted on a wall, ensure that the sensor is more than 30cm above the ground, and there should be no wall within 1m on the side.

Product Specifications and Changes

If there are changes to the product design specifications, no further notice will be given. The actual product may differ slightly from the illustrations.

Disclaimer

Please strictly follow the installation guidelines above. The company is not responsible for any interference or equipment performance issues caused by improper installation. Ensure that all installation steps and environmental requirements are properly executed to guarantee optimal performance and accuracy of the device. If you have any questions or encounter problems during the installation process, it is recommended to contact us for assistance in a timely manner.

Maintenance

Clean the exterior of the detector

Regularly: When the surface of the detector's external lens is dirty or obstructed.

Cleaning materials: Soft cloth - wipe with clean water that does not contain any chemical agents.

●Attention!

Do not use chlorine-containing or abrasive products or alcohol to remove particularly noticeable dirt.

1. Clean the top cover of the body with a cloth soaked in water.
2. Wipe with a dry cloth after cleaning.

Handling and Disposal

●Important Notice!

Do not dispose of discarded components or any other product materials carelessly in the environment.

Seek assistance from a waste recycling company for disposal.

Troubleshooting

Fault	Cause of Fault	Solution
LED indicator light is not on	Incorrect power supply voltage (Disconnected, low voltage)	Check the product power supply, refer to the power supply voltage specifications
	The LED light is set to the off state	Set the LED light to the on state
No one is in the detection area, the indicator light is also on	There is an object blocking the area (such as a cardboard box or green plants)	Remove the object from the detection area or change the position of the detector
	The person has not completely left the detection area	The person leaves the detection area, and the delay ends
	Detection distance is too large	Adjust the detection distance according to the setting table
	Wiring is incorrect	Please wire according to the correct wiring method
The LED indicator light is on, but there is no signal output	The person has not completely left the detection area	The person leaves the detection area, and the delay ends
	Illumination value is set too low	Check the illumination value, turn off or increase the illumination value

Warranty

Warranty Period

The device enjoys a 2-year warranty period from the original date of purchase.

Repair Method

During the warranty period, non-human-caused failures will result in free replacement of the device.

The replaced device will enjoy the remaining duration of the original 2-year warranty.

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