Specification

Product Name: Networking DC Controller

Product Model: MC079D RC ZB1

Version	Release/ change Date	Reason	Released by
V1.0	2024.02.22	Optimized interface	James. Guo

【Product Feature】

- Patented high-gain microwave sensor, high anti-interference ability, no false trigger in metal installation site, especially designed for warehouse.
- 12V DC input, for DC systems or LED power supplies with 12V DC auxiliary power output.
- Using TUYA Bluetooth IOT module and supporting TUYA devices interconnects.
- PWM high/low level, 0-10V dimming, 2-step dimming and 3-step dimming function.
- Match Zhaga Book 18 base, plug-in design, waterproof.
- Daylight priority function.
- 12m maximum installation height, suitable for most warehouses.

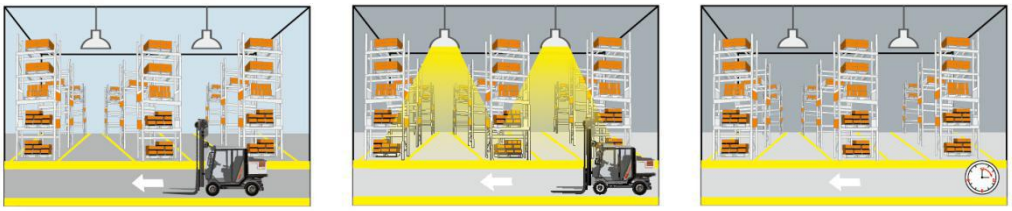
【Parameters】

Input			
Input Voltage	11-13VDC		
Operating Current	< 50mA		
Ripple Voltage	<100mVp-p		
Output			
Dimming Signal	0-10VDC dimming signal		
Sensor parameters			
Operating Frequency	5.8 GHz ±75 MHz，ISM wave.		
Transmitting Power	3mW Max		
Detection Area	25%/50%/75%/100% Set by remote control or APP		
Hold Time	5s/30s/1min/3min/5min/10min/20min/30min Set by remote control or APP		
Stand-by Period	0s/10s/1min/3min/5min/10min/30min/+∞ Set by remote control or APP		
Daylight Sensor	Daylight Threshold	5Lux/15Lux/30Lux/50Lux/100Lux/150Lux/Disable	
	Daylight Priority	ON	OFF
		5lux/15Lux/30Lux/50Lux	150Lux
		100Lux	200Lux
		150lux	300Lux
Stand-by DIM Level	10%(1.4-1.6V) 20%(1.9-2.1V) 30%(2.9-3.1V) 50% (4.9-5.1V) Set by remote control or APP		
Detecting Area (100% sensitivity radius)	Ceiling Mounting(height: 10m): r≥4m@0.3m/s, r≥3m@1m/s; Wall Mounting(height: 2m): d≥23m@0.3m/s, d≥14m@1m/s		
Mounting Height	Typical value: 10m (12m Max)		
Wireless parameters			
Module Name	TUYA Bluetooth Module		
Operating Frequency	2.4-2.484GHz		
Transmitting Power	10dBm(max:10.5dBm)		

Transmitting Distance	60m(visible distance)
Wireless Standard	Low power Bluetooth 4.2/5.0
Environment	
Operating Temperature	-25~60℃
Storage Temperature	-40℃…+80℃ Humidity≤85% (non-condensing)
Certification standards	
Certificate	CE
Environmental Requirement	Compliant to RoHS
IP Rating	IP65
Other	
Wiring Method	Suitable for Zhaga Book 18 connector
Installation	Build-in
Dimension	See Dimension diagram
Package	Clapboard + paper carton(K=A)
Net Weight	
Lifetime	5 years warranty@Ta

【Function description】

1) On/OFF Function (stand-by period be set to “0s”)

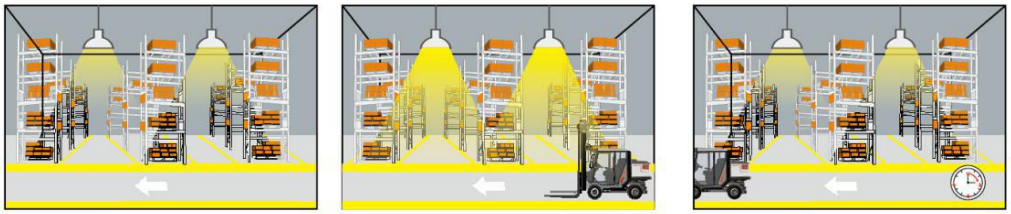


① With sufficient ambient light, the light will not be switched on even if with motion signal.

② With insufficient ambient light, the sensor switches on the light when motion is detected.

③ After elapse of hold time, the sensor switches off the light when no motion is detected.

2) 2-step dimming function (stand-by period be set to “+∞”)

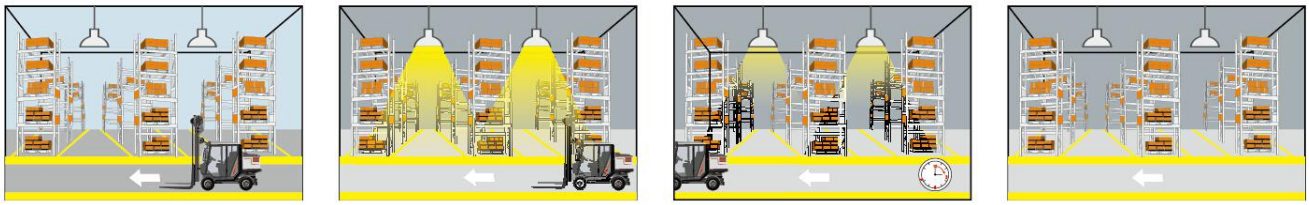


① If there is no motion detected, the light will be remained at a low light level all the time.

② When motion is detected, the sensor will switch on the light to 100% brighteness

③ After elapse of hold time, the sensor dims the light at the present low light level if no motion is detected.

3) 3-step dimming function (stand-by period be set to “10s/1min/3min/5min/10min/30min”)



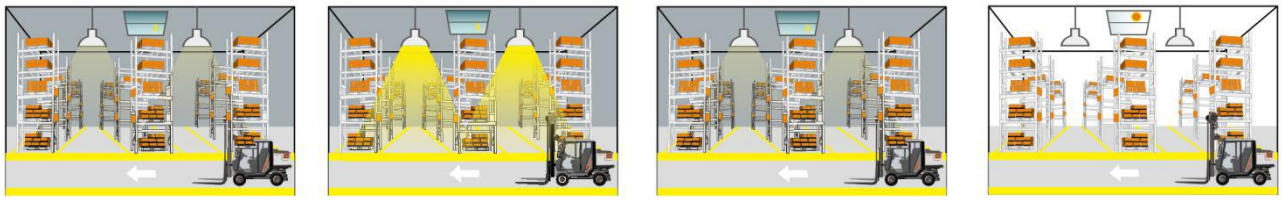
1 With sufficient ambient light, the light will not be switched on even if with motion signal.

2 With insufficient ambient light, the sensor switches on the light when motion is detected.

3 After elapse of hold time, the sensor dims the light at a low light level if no new motion is detected.

4 After elapse of standby period, the sensor switches off the light if no motion is detected in the detection zone.

4) Daylight priority（(Set Stand-by Period to “DH Mode+5Lux/15Lux/30Lux/50Lux/100Lux/150Lux”）



1 Lamps turn on at a low light level in the night.

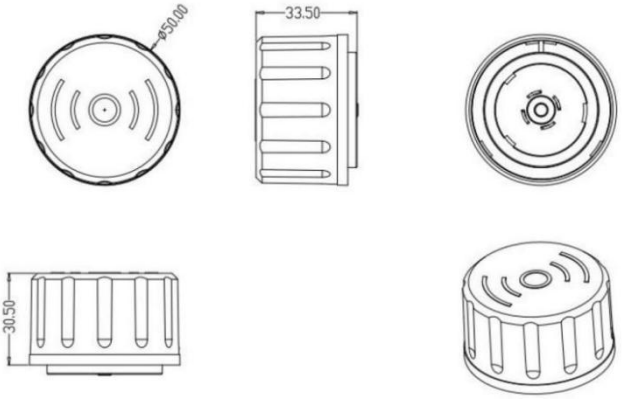
2 Motion detected, lamp automatically lights up to 100%.

3 After hold time, the lamp gradually dims to a low light level if no movement detected.

4 Lamps turn off under enough ambient light.

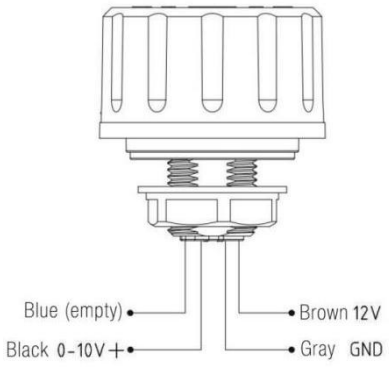
【Product Information】

- Dimension (Unit：mm)

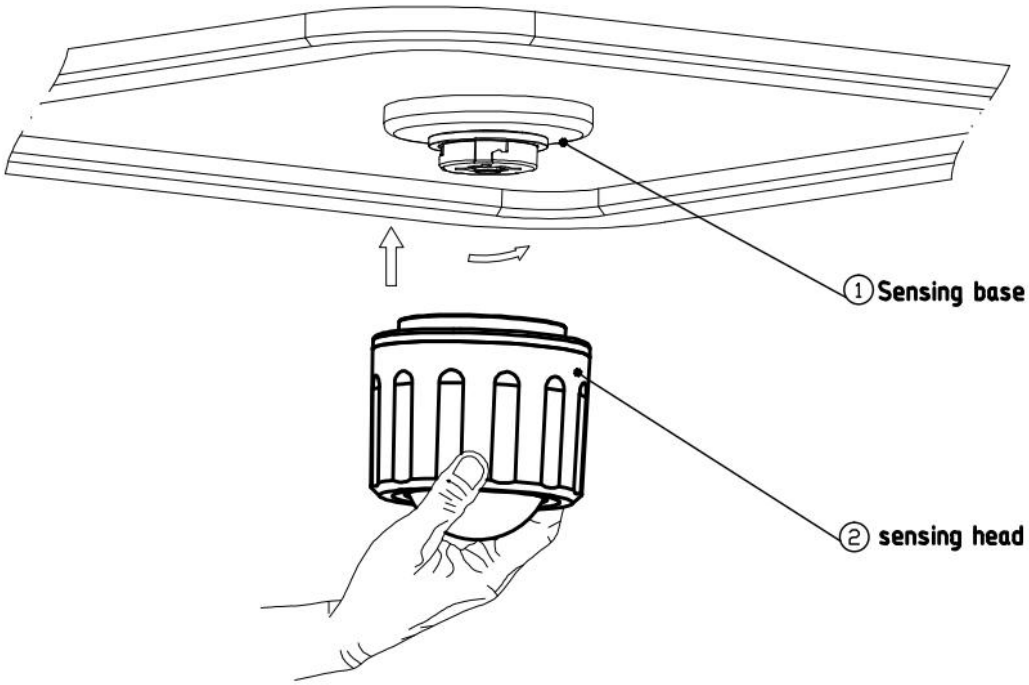


- Wiring

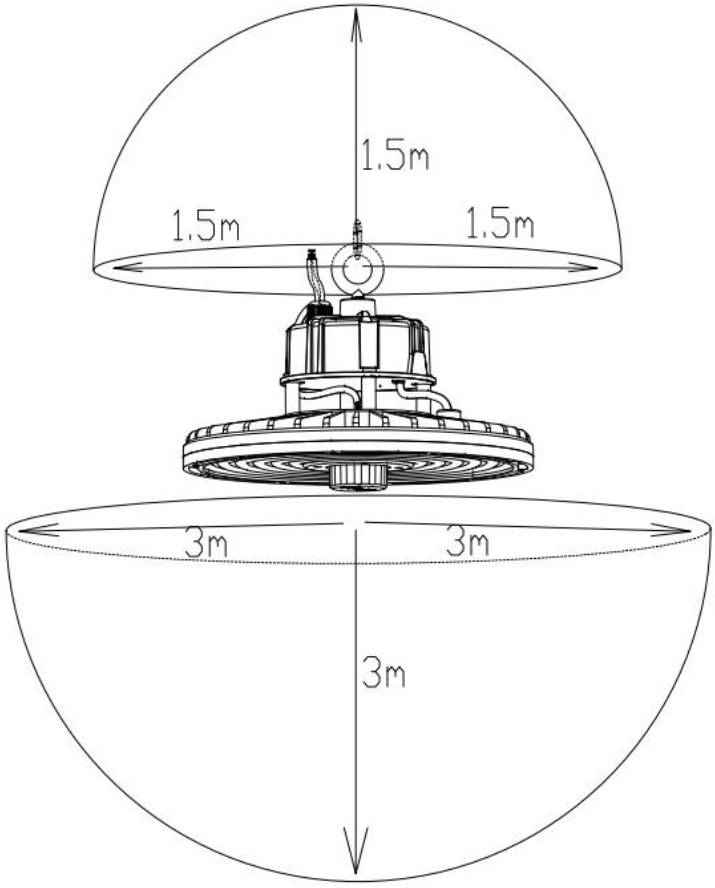
*The sensor is designed for connect one load only. Connect more than one loads may damage the sensor.



【Installation Instruction】



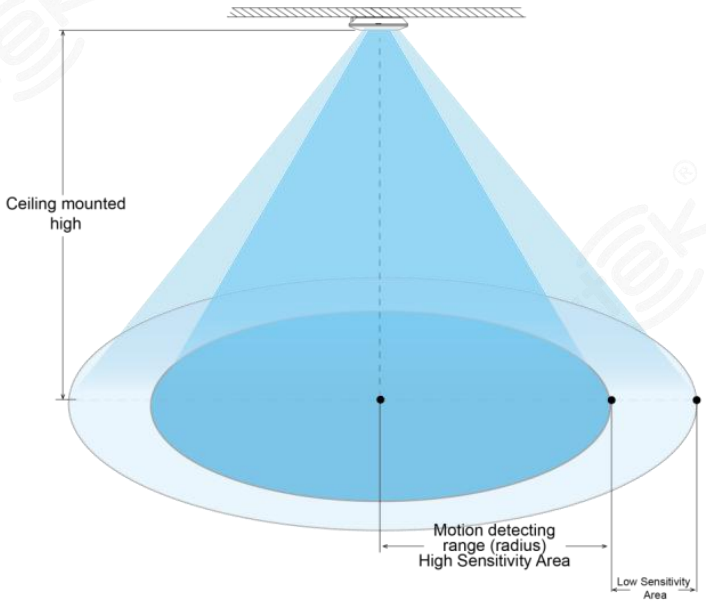
Installation environment



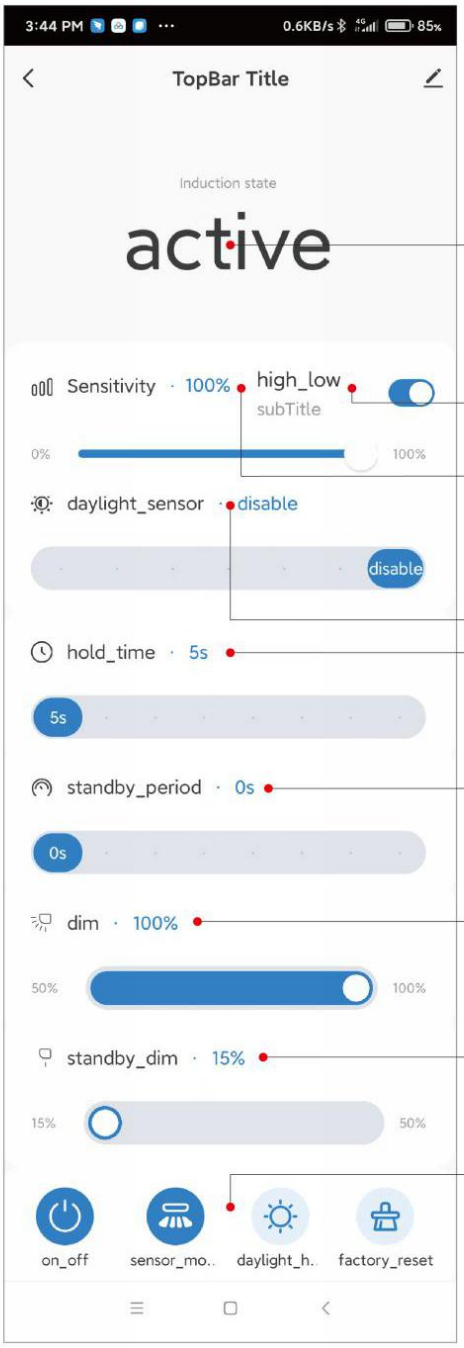
Note

There should be no metal objects within 1.5 to 3m around the microwave sensor when installing, otherwise false trigger may be caused by reflection around the sensor.

【Detection Range】



【APP Interface】



*The operation interface and the location of various parameters may be updated constantly.
The picture is for reference only, take practicality as standard.

Analyzing the states of human's activity:
1) No-human state: there is no one in the detecting area.
2) Activity state: someone is moving greatly, such as walking.
Reporting the states:
1) Reporting immediately when no-one state changes to activity state.
2) "Hold time" starts after everyone leaves detecting area. Reporting no-human state after "hold time" ends.

Selecting "High/Low Sensing" can change the sensitivity in chosen detecting area

Adjusting "Sensitivity" can change the detecting sensitivity: 0%/25%/50%/75%/100%

Adjusting "daylight_sensor" can change the daylight value: 5Lux/15Lux/30Lux/50Lux/100Lux/150Lux/Disable

"Hold_time" starts after everyone leaves detecting area. Reporting no-human state after "hold_time" ends. Adjusting "hold_time" to 30s/1min/2min/3min/5min/10min/20min

Adjusting "standby_period" can change the time of low brightness: 0S/30S/1min/3min/5min/10min/30min/+∞

Adjusting "dim" can change the proportion of full brightness: 50%-100%

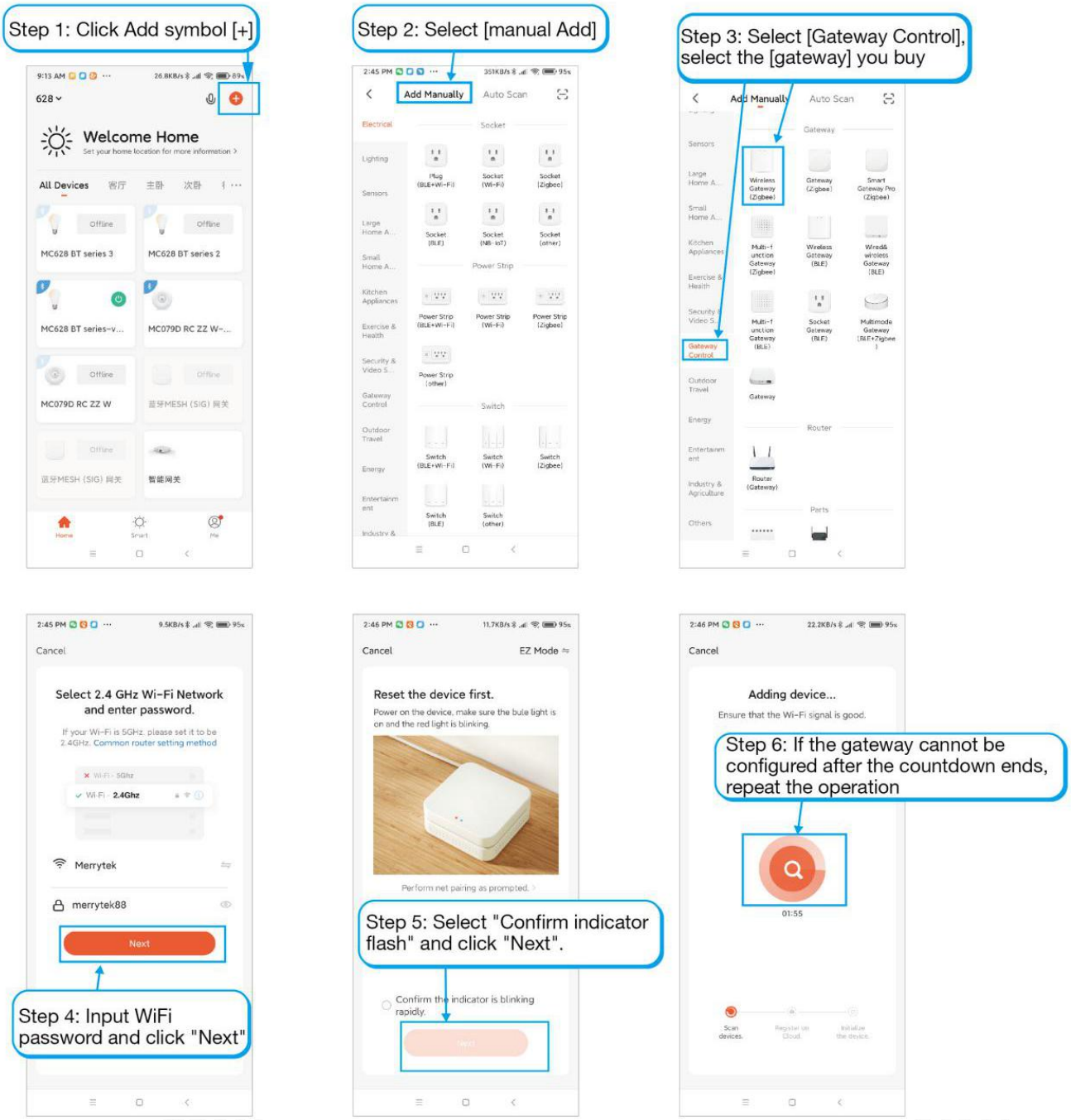
Adjusting "standby_dim" can change the proportion of low brightness: 15%-50%

on_off:
Clicking "on_off", light remains on or off constantly and sensing function is disabled.
sensor_motion:
Clicking "sensor_motiom", constant on/off mode is changed to sensing mode.
daylight_harvesting:
Clicking "daylight_harvesting", daylight priority mode turns on.
factory_reset:
Clicking "factory_reset", all settings are changed to factory setting.

【Initialization&Networking】

(1) When powering on for the first time, the sensor will turn the light on to 100% brightness, and the light will be turned off after 10 seconds. During initialization, movement signal will not be detected.

(2) Download TUYA APP on the phone, install and register. Open APP and connect Bluetooth gateway.



Connecting gateway automatically when first power on. The sensor will turn the light on to the preset brightness. Movement signal will not detected. Sensor can work normally. At this moment, Bluetooth module can be paired. The sensor parameters can be set by APP after pairing successfully.

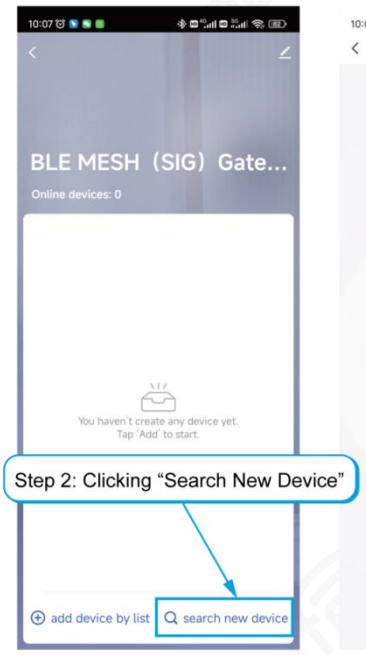
(3) If connecting to gateway is failure when power on, the sensor can be connect to gateway by pressing the “TEST2S” button on the MH10 remote control(light flashes three time). The sensor parameters can be

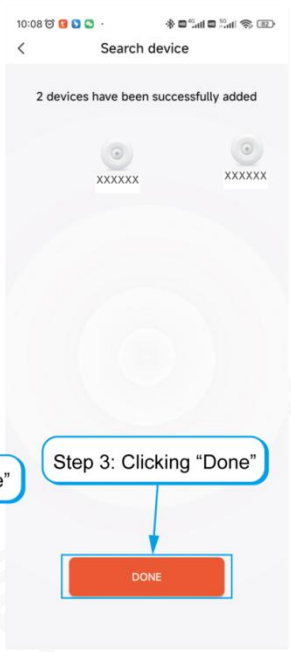
set by APP after connecting successfully.

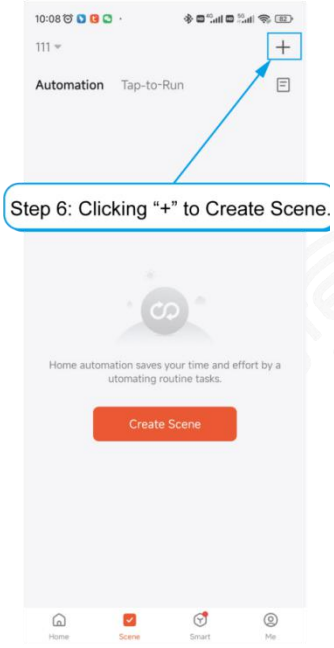
* Using phone to screen the below QR code to download APP.

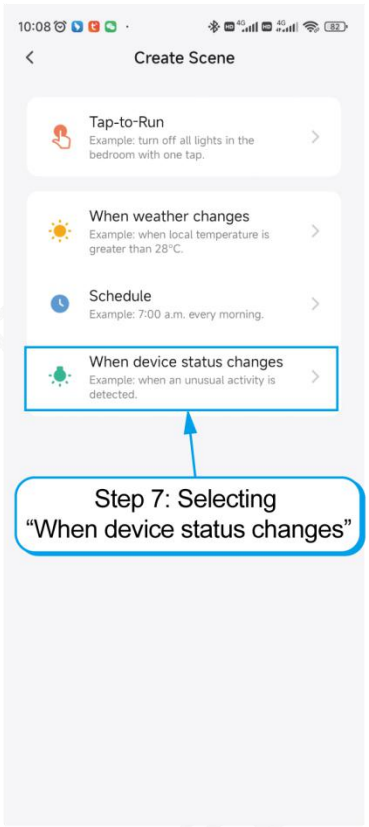
Tuya Smart APP

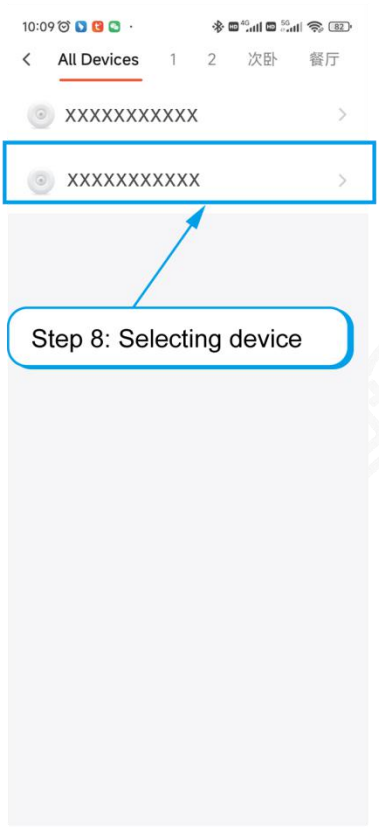
(4) Interconnection Setting(need gateway)：

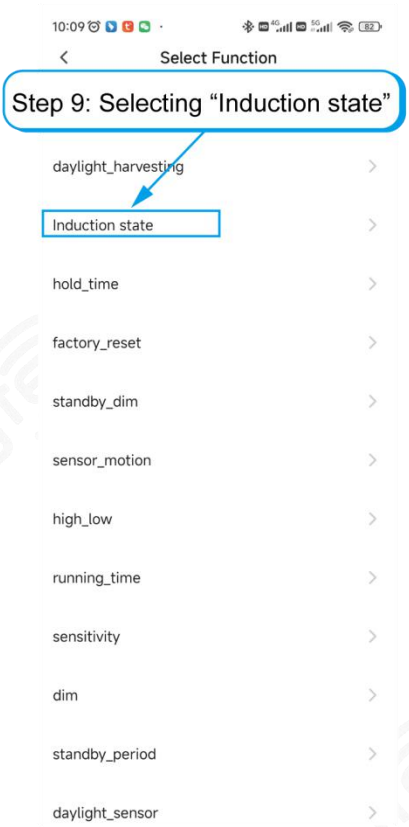


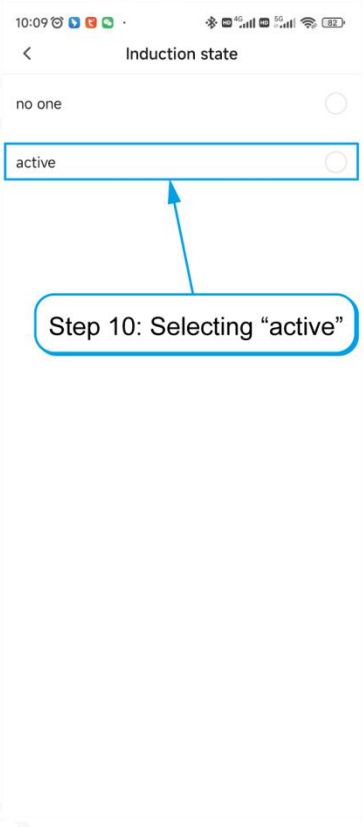




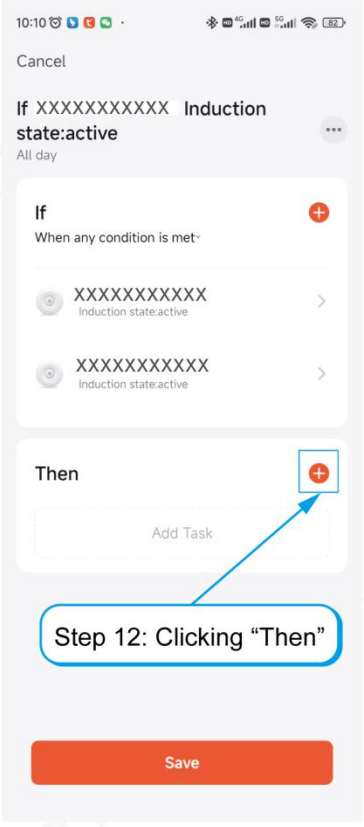

Create Scene
Tap-to-Run
Example: turn off all lights in the bedroom with one tap.
When weather changes
Example: when local temperature is greater than 28°C.
Schedule
Example: 7:00 a.m. every morning.
When device status changes
Example: when an unusual activity is detected.
Step 7: Selecting "When device status changes"

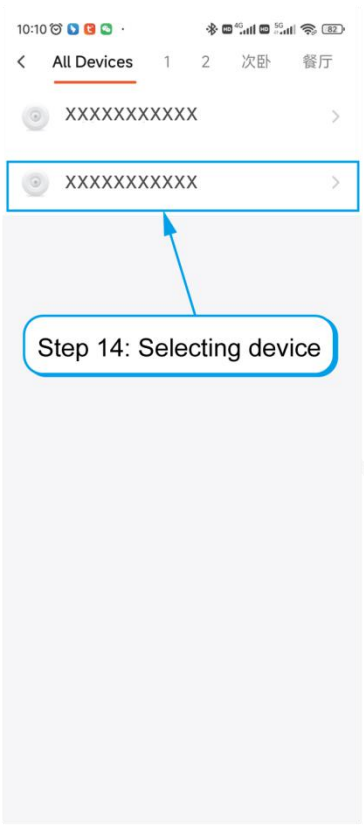

All Devices
1
2
次卧
餐厅
XXXXXXXXXX
XXXXXXXXXX
Step 8: Selecting device

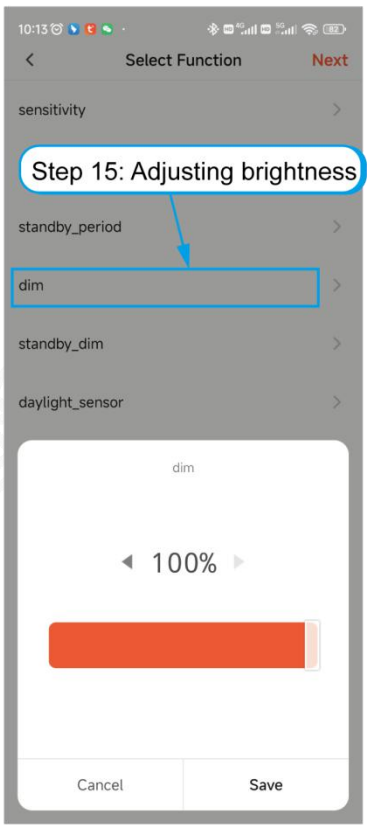

Select Function
Step 9: Selecting "Induction state"
daylight_harvesting
Induction state
hold_time
factory_reset
standby_dim
sensor_motion
high_low
running_time
sensitivity
dim
standby_period
daylight_sensor

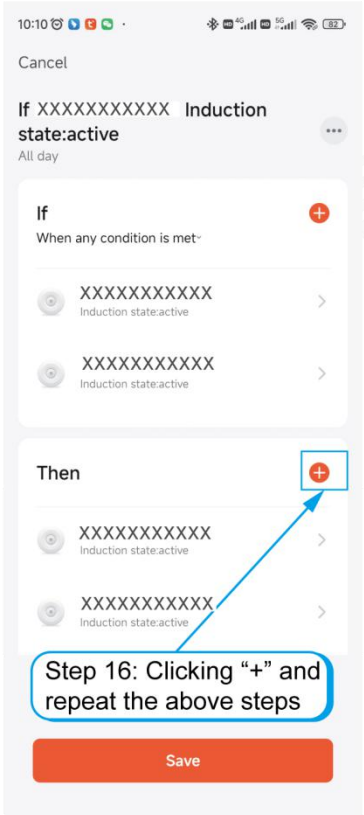

Induction state
no one
active
Step 10: Selecting "active"

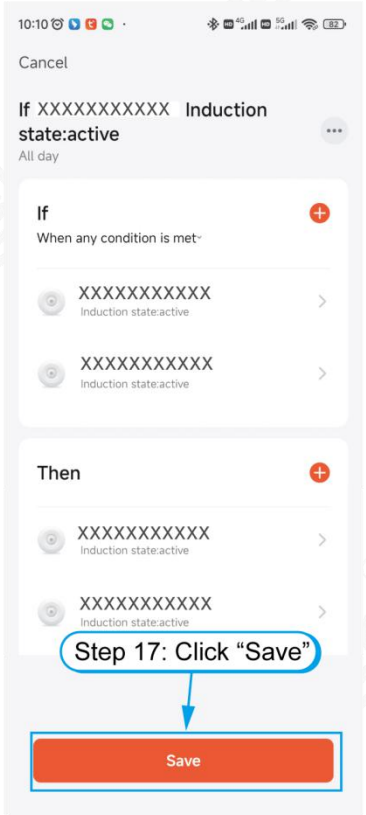

Cancel
If XXXXXXXXXX Induction state:active
All day
If
When any condition is met
XXXXXXXXXX
Induction state:active
Then
Step 11: Clicking "+" and repeat the above steps
Save


Cancel
If XXXXXXXXXX Induction state:active
All day
If
When any condition is met
XXXXXXXXXX
Induction state:active
XXXXXXXXXX
Induction state:active
Then
Add Task
Step 12: Clicking "Then"
Save









【Default setting】

Sensitivity: 100%, Hold time: 5s, Daylight sensor: Disable, Stand by period: 0s, Stand by DIM level: 10%

【Application Notice】

● The sensor should be installed by a professional electrician. Please turn off the power before installing, wiring, changing the setting of the DIP switch.

● Sensitivity area is related to moving speed of objects, size of moving objects, mounting height, mounting angle, working environment, reflecting materials and etc. Given detecting area is typical value that was measured by 165cm high testers in an indoor open environment.

● This product is suitable for ceiling mounting. If wall mounting, the detecting area will enlarge which makes microwave penetrate wall or light not turn off. Please lower the sensitivity area or contact the manufacturer for technical support. Daylight threshold is in a sunny environment with no shadows and ambient light diffuse reflection conditions. The values illuminantion detected by sensor may vary in different environment, at different times, in different seasons, and in different climates.

● The parameters of the sensor may need to be connect again in different installation environments. Please refer to the following instructions or contact the manufacturer.

● This sensor is for indoor use only. It will affect the waterproof effect for outdoor use. Wind, rain, and moving objects around will cause false triggering.

● The mounting height is no more than 12. The best height is 10 meters. The distance between any sensors should be greater than 3m.

● When the sensor is installed in a metal lamp, metal reflective surface, or a narrow enclosed object, the microwave will be reflected repeatedly and cause false triggering. Please reduce the sensitivity or contact the manufacturer for technical support.

● Please ensure that there are no moving signals around the sensor, such as fan, DC motor, sewer pipe, air outlet and so on. Otherwise the sensor may generate false trigger.

● Microwaves cannot penetrate metal. Do not place the sensor in a closed metal lamp or a half-closed metal lamp and no metal or glass cover above sensor.

● Different 0-10V driver, different low brightness.

● Require stabilized DC power supply with stable output voltage and low ripple, the power supply ripple should be less than 100mV, and the load current should be greater than 60mA.

● Due to continuous improvement, the contents of this instruction could be changed without prior notice.