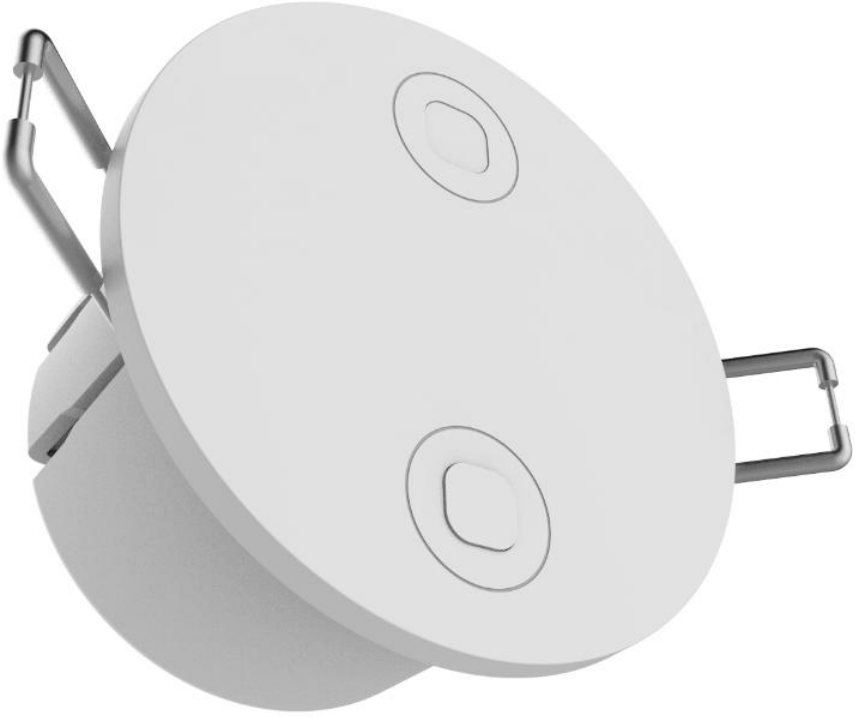
HUMAN PRESENCE RADAR

(MILLIMETER WAVE)

MG1-5RZ—MANUAL



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Instruction

The human presence sensor is based on the enhanced Doppler radar signal processing system and the physiological parameters of the human to realize human biological motion perception.

Synchronous perception technology can realize wireless perception of personnel status in specific places, and realize scene linkage through wireless signal notification gateway;

Suitable for homes, hotels, offices and other places.

Product Features

- Detect and synchronously perceive the status of people, whether they are in motion or static(sitting, micro movement).
- Continuously detect the status of stationary person to ensure real-time data output.
- It can quickly detect the distance of human from the radar.
- It can detect various motion amplitude and ensure real-time data output.
- Limit the detection objects to persons with biological characteristics(moving or stationary), and eliminate the interference of other inanimate objects in the environment.
- Effectively eliminate interference from non living objects and also achieve detection of non living moving objects.

Technical Advantage

- Strong environment adaptability: Not affected by light, sunshine, temperature, haze etc.
- High-precision: Higher accuracy of speed, distance and angle measurement.
- Simple and fast: real-time output of measurement data.
- Safe: no privacy leakage.

- Low output power, no harm to human body.

Comparison of different types of body sensors

Name	Presence Detection	Proximity/Distance Detection	State Detection	compared with millimeter wave technology
PIR Infrared sensor	×	✓	×	When the human body is static, it cannot be detected. It is greatly affected by environmental temperature changes, with high false alarm rate and uncontrollable distance
Infrared array module	✓	✓	×	Easily affected by environmental heat sources, the cost is high
Ultrasonic transducer	×	✓	×	It can only measure the large motion amplitude, and the distance is only 3-5m, so it cannot realize high-precision parameter measurement
Heart rate sensor	×	×	✓	not convenient to wear
Camera	✓	✓	×	Image, video and other unstructured data, high post-processing requirements, privacy risks
Millimeter wave radar	✓	✓	✓	_

Technical parameters

Voltage input: AC 110V~220V

Communication protocol: Zigbee communication

Communication distance: 100m(Open area)

Radar frequency: 5GHz

Transmitting power of millimeter wave radar: ≤10dBm (10mW)

Detection Angle: A three-dimensional fan-shaped area with a horizontal angle of 90°and an elevation of 60°. When monitoring vertically downwards, the detection surface is oval.

Response speed: It will report in about 0.5 seconds when the human body is detected. After the person leaves, report on none within about 1 minute.

Working temperature: -10℃~+55℃

Working humidity: Relative humidity ≤ 95%RH

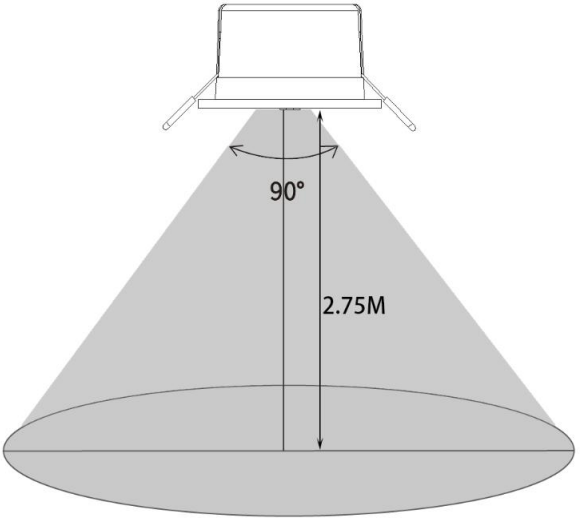
Product size: 80x45.5mm

Installation barrel diameter: 65mm

Installation method: Ceiling mounted

Installation Height

The recommended installation height is ≤ 2.75m, with a horizontal vertical angle of 90° to the ground and a horizontal deviation angle of ≤ 3°, ensuring that the main beam of the radar covers the detection area and that there are no obvious obstructions or coverings in front of the radar.

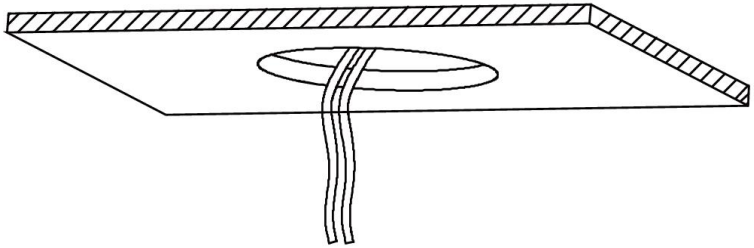


Installation instructions

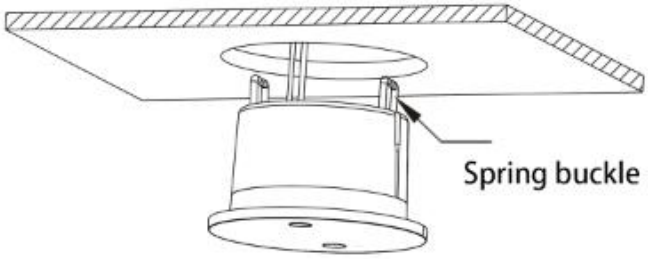
According to the layout of the room, select the installation location with effective detection range to ensure that the room can be effectively covered.

The embedded size of the product is 65mm. It is suggested to open a standard hole with a diameter of 66-68mm on the top of the decoration.

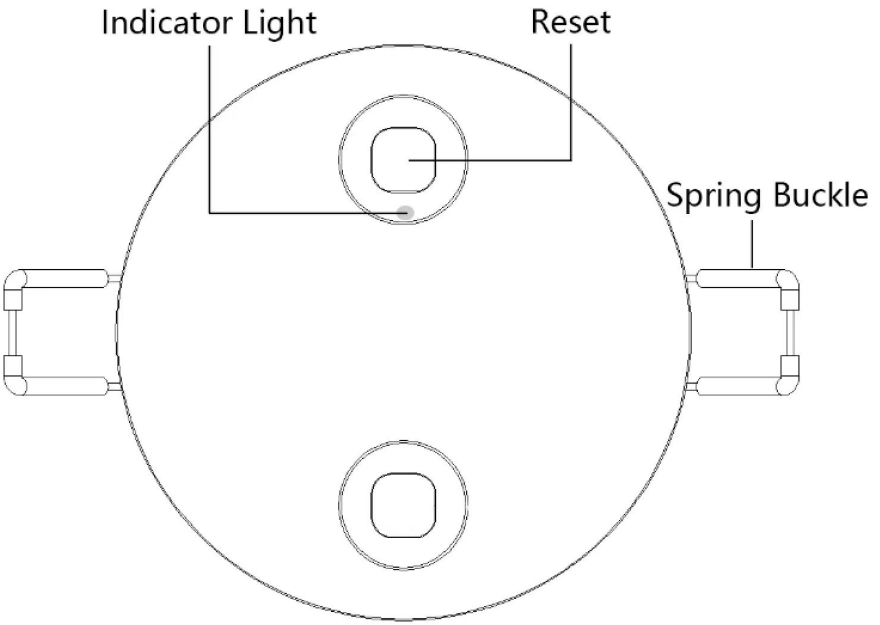
Lead out the wire from the opening, strip the lead wire and connect it to the product wire, it is recommended to use the internal power supply, no positive and negative points of the double line.



Refer to the picture to fix the spring buckle:



Product illustration



Network Pairing

(1) Scan the QR code with your mobile phone or go to the app store and search for "eWeLink" to download and install the eWeLink app. If you have already installed the app, open it directly. If you do not have an account yet, please click the "Register" button and complete the registration. Once you have successfully logged in, you can connect the device.

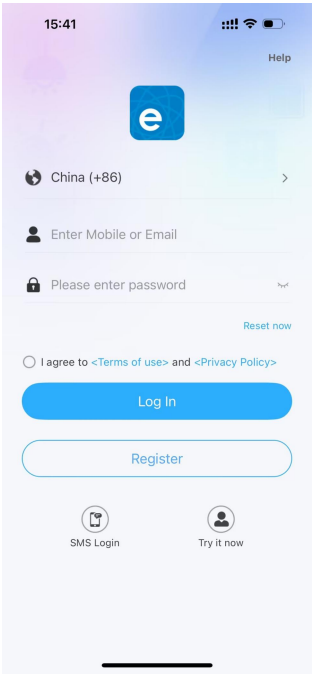
eWeLink

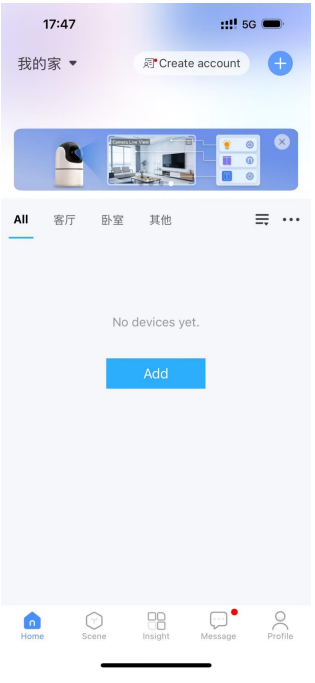
Download on the App Store

GET IT ON Google Play

Scan to download “eWeLink” free App

(2) Open the eWeLink app homepage, then click "Add Device" or the "+" icon in the upper right corner.





(3) Use a Type-C data cable to connect the gateway and ensure continuous power supply (the gateway must remain powered on at all times).

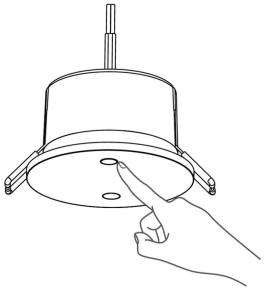
① Press and hold the gateway reset button for 5–10 seconds until the gateway network configuration indicator blue light starts flashing. Open the eWeLink app and click "Add Device". Note that the Wi-Fi network used for connection must support only the 2.4GHz band (5GHz band is not supported). Wait for the device to be added. Once successfully added, the gateway is paired with the eWeLink app.

② When powered on, the gateway network configuration indicator blue light remains steady on, indicating that the gateway has started.

③ While in network configuration mode, when the radar search indicator green light flashes, the device is in device-adding network configuration mode and is ready to connect Zigbee devices.

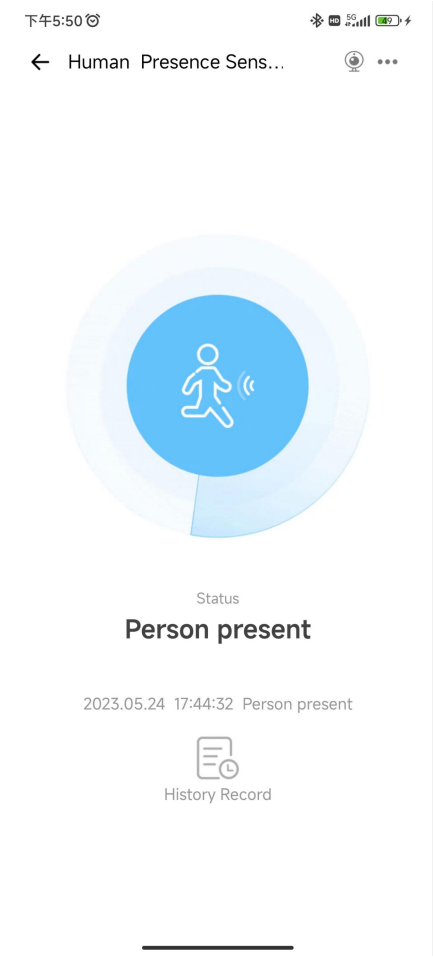
(Note: Zigbee devices must first connect to the gateway before adding the device.)

(4) The product will automatically power on when connected to electricity. Press and hold the button for 5–10 seconds to enter pairing mode. At this time, the device's red light will flash. When the red light turns off, it indicates that the device has successfully joined the network, and it will then enter monitoring mode with the light off.

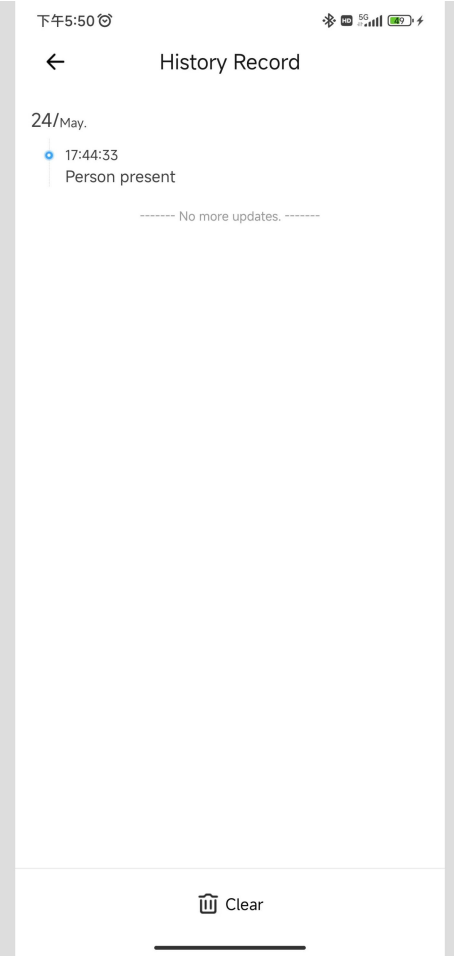


(5) Open the Zigbee gateway and select "Add Device". The gateway will then automatically search for devices. Follow the prompts in the eWeLink app to complete the pairing process.

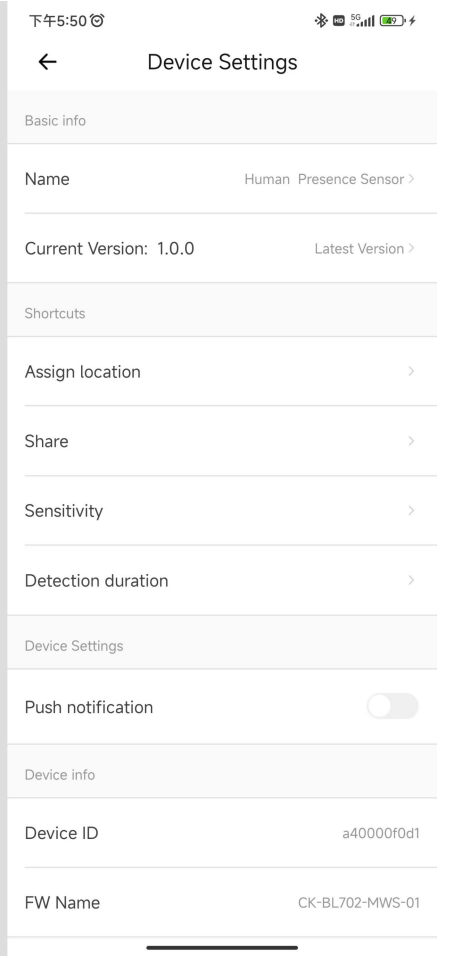
APP UI



App Homepage



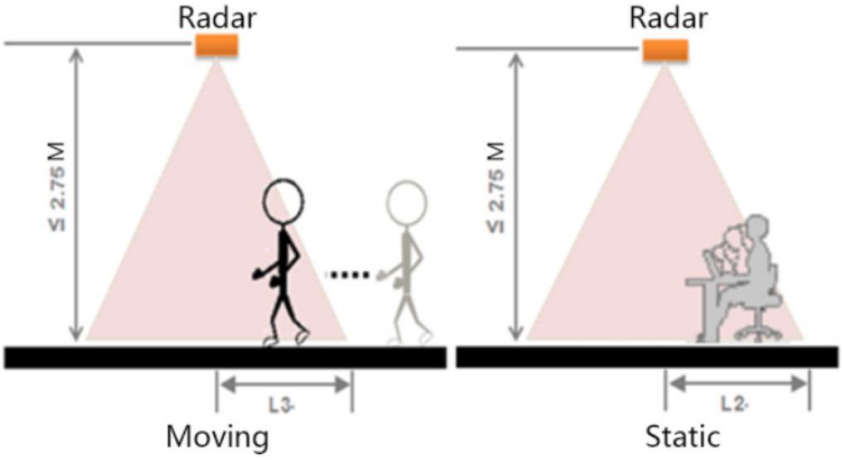
History Record Interface



Device Settings Interface

Function Description

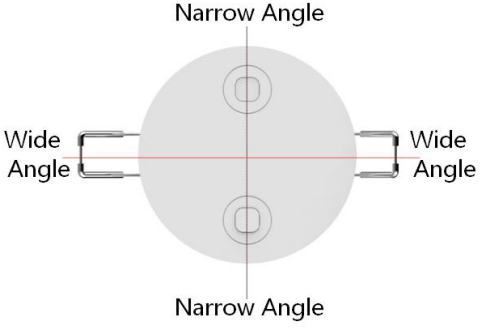
The sensitivity of radar to human body sensing varies in different states (static, moving). When the installation height is about 2.75 meters, the installation direction is vertical downwards. The following diagram shows the ceiling installation.



Affected by the radar installation height and radar beam range, in the state of no interference, the maximum distance L3 and L2 for human motion and static detection is a radius of 4m.

(Note: there will be an error of ±0.5m in the movement monitoring range due to different installation environments.)

Radar range parameter diagram:



The monitoring range for different application scenarios and sensitivities varies. Please refer to the following chart:

Moving, micro motion/ static monitor distance Unit: m(Radius)			
Angle|Sensitivity	High	Middle	Low
Narrow angle	4m	3m	2m
Wide angle	4m	3m	2m

(Note: this data is only used as reference data, and there may be an error of ± 0.5m between the actual detection distance and the reference data.)

Detailed description of functional points:

◆**Sensitivity setting:** Sensitivity can be set on the APP, and the moving, micro motion/sit monitoring distance of the radar varies under different sensitivities.

(For specific data, please refer to the moving, micro motion/sit monitoring distance chart)

◆ **Detection duration:** You can set the Detection duration on the APP (range: 01min~11h59min), and the system defaults to report the unmanned state for about 5 minute.

◆ **Motion monitoring function:** When a person is moving within the motion monitoring range, the radar will report the presence of a person, with the reporting time being approximately 0.5 seconds. If the person remains in this range while moving, the radar will continuously report the presence of a person. When the person leaves the motion monitoring range, under the condition of no interference, the radar will report the absence of a person, and the default reporting time for the absence of a person is approximately 5 minutes.

- **Micro-motion / sedentary monitoring function:** When a person remains still within the micro-motion/sedentary monitoring range, the radar will report the "person present" status within 0.5 seconds. As long as the person does not leave the micro-motion/sedentary monitoring range, the radar will continue to report the "person present" status. When the person leaves the micro-motion/sedentary monitoring range, under the condition of no interference, the radar will report the "no person" status, with a reporting time of approximately 5 minute.

Applications and Precautions

- No interference: The radar can pass through cotton fabrics and clothes without being affected by light and fog.
- Weak interference: Radar can pass through a certain thickness of wooden boards, glass, gypsum board walls, and plastic, ensuring that there are no issues with daily home environments.
- Strong interference: Radar cannot pass through metal, so do not be obstructed by metal.
- If a single radar cannot cover a certain area, the number of radars can be increased. Installing less than 3 radars in the same area will not cause mutual interference.
- It is best to install the radar in the same direction to avoid interference from the opposite side of the radar.
- The radar needs fixed installation, and vibration and shaking may cause false alarms in the radar.
- Startup time description: Due to the fact that when this product starts working after initial power on, it is necessary to completely reset the internal circuit of the module and fully evaluate the environmental noise in order to ensure the normal operation of the module. Therefore, during the initial power on operation of the module, it is necessary to have a stable power on time of ≥ 30 seconds to ensure the effectiveness of subsequent output parameters.

Trouble removal

◆ No one,but a false report into a human state:

1) If the wall is too thin, the radar signal sweeps through the wall to the person next door, and false report happened.

2) Radar power is unstable, causing false report.

3) Moving objects, such as fans, wind-blown plants or swaying metal, large pets, electric fans, working washing machines and so on cause the false report.

◆ There is someone, but mistakenly reported that there was no one:

The human body is out of range or obscured by metal and thick desks and chairs.

Warranty Card

Warranty policy

◆Within 7 days from the date of sale, if the product experiences performance failure, consumers can choose to return, exchange, or repair it.

◆Within 15 days from the date of sale, if there is a performance malfunction, consumers can choose to exchange or repair it.

◆Within 12 months from the date of sale, if there are any quality issues with the product, we can provide you with warranty services.

Non warranty policy

◆ No "three guarantees" certificate or the validity period of the "three guarantees" is exceeded.

◆ Damage caused by failure to use, maintain, and store according to product instructions.

◆ Damage caused by unauthorized disassembly and repair by our company.

◆ Damage caused by force majeure.

◆ The normal fading and wear of the product during use are not covered by the warranty.