Life Detection Radar

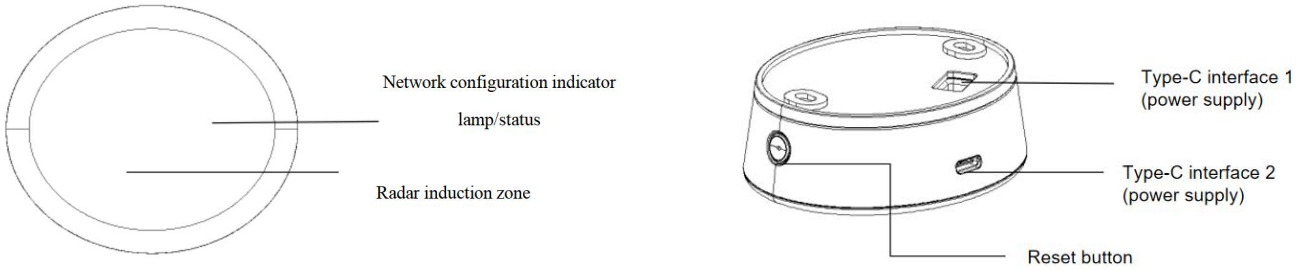
Model: VDA1-Z / VDA1-W

User Manual

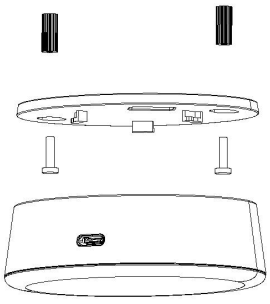
1. Product introduction

The life detection radar is based on the millimeter wave radar to realize human biological presence perception and human movement perception. It keeps recording human existence, residence time, and body movement amplitude, and can realize scenario linkage through wireless signal notification gateway. The product is installed indoors on the top. The human body detection is free from the influences of temperature, humidity, noise, air flow, dust, lighting, the state of staying completely still, etc.

2. Appearance



3. Instructions and considerations on installation



① Secure the product to the rooftop. Perform drilling and install expansion bolts or stick it to the wall;

② Push in the expansion bolts, and fix the base plate of mounting bracket;

③ Align the radar base with the clips of the mounting bracket, and rotate to fasten the radar;

④ The product is designed into an ellipse. The long side is the far end to the radar, while the short side is the near end.

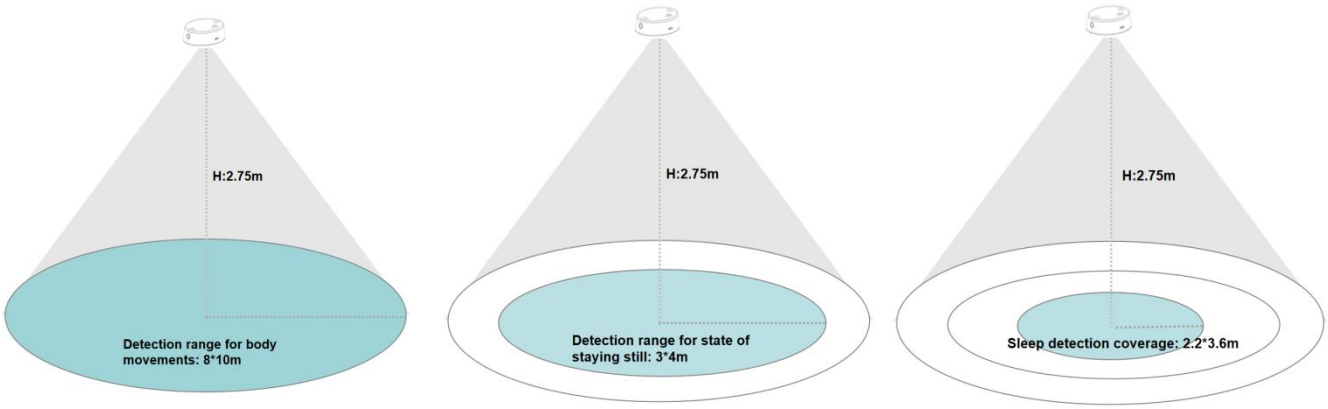
⑤ Power on the device, configure the network, and connect the App

Installation considerations: Top mounting

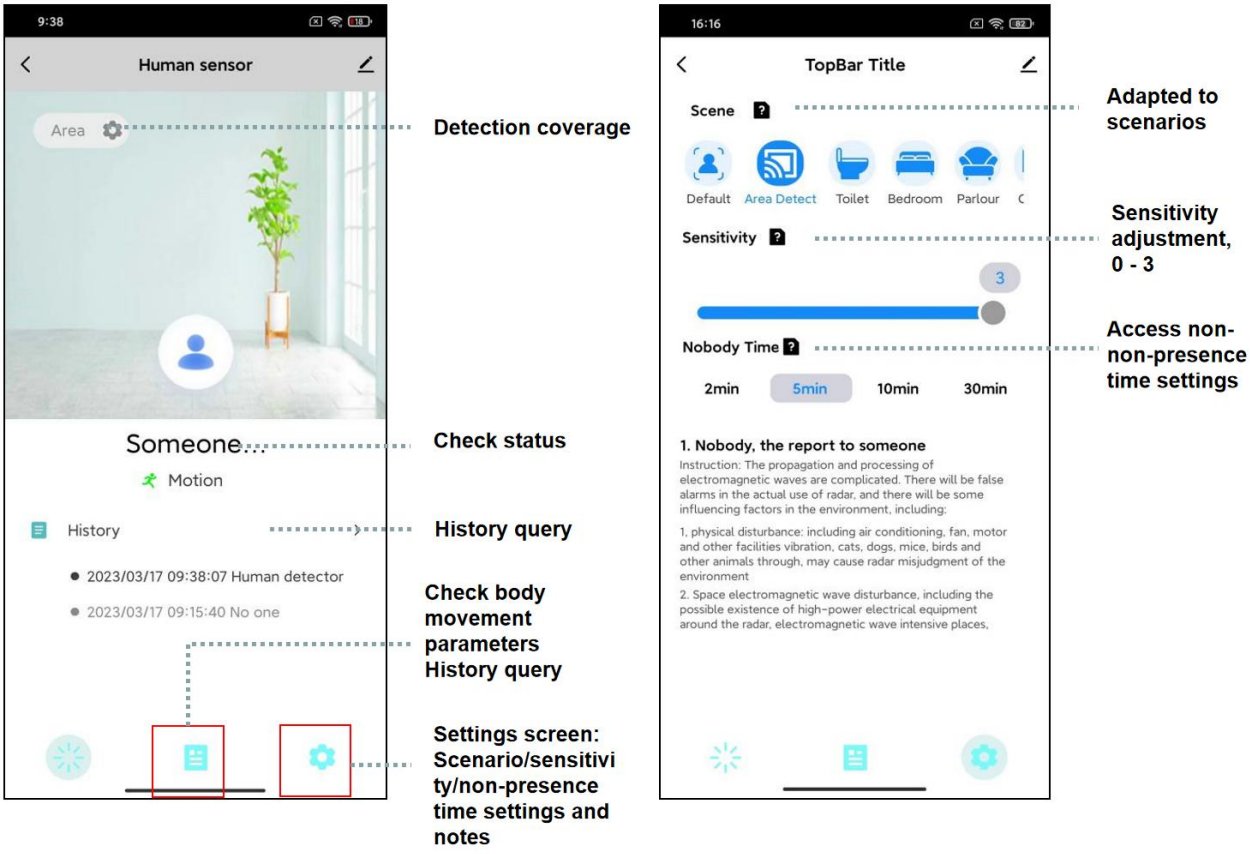
*** Please mount the radar on the top to ensure detection accuracy!**

- **Human existence**

The approximate detection range of the top-mounted radar for body movements is 8 m × 10 m, for staying still 3 m × 4 m, and for sleep scan 2.2 m × 3.6 m. The mounting position of the radar should be designed based on the room structure.



4. App interface



5. Instructions on network configuration

- **Zigbee device —— Model VDA1-Z**

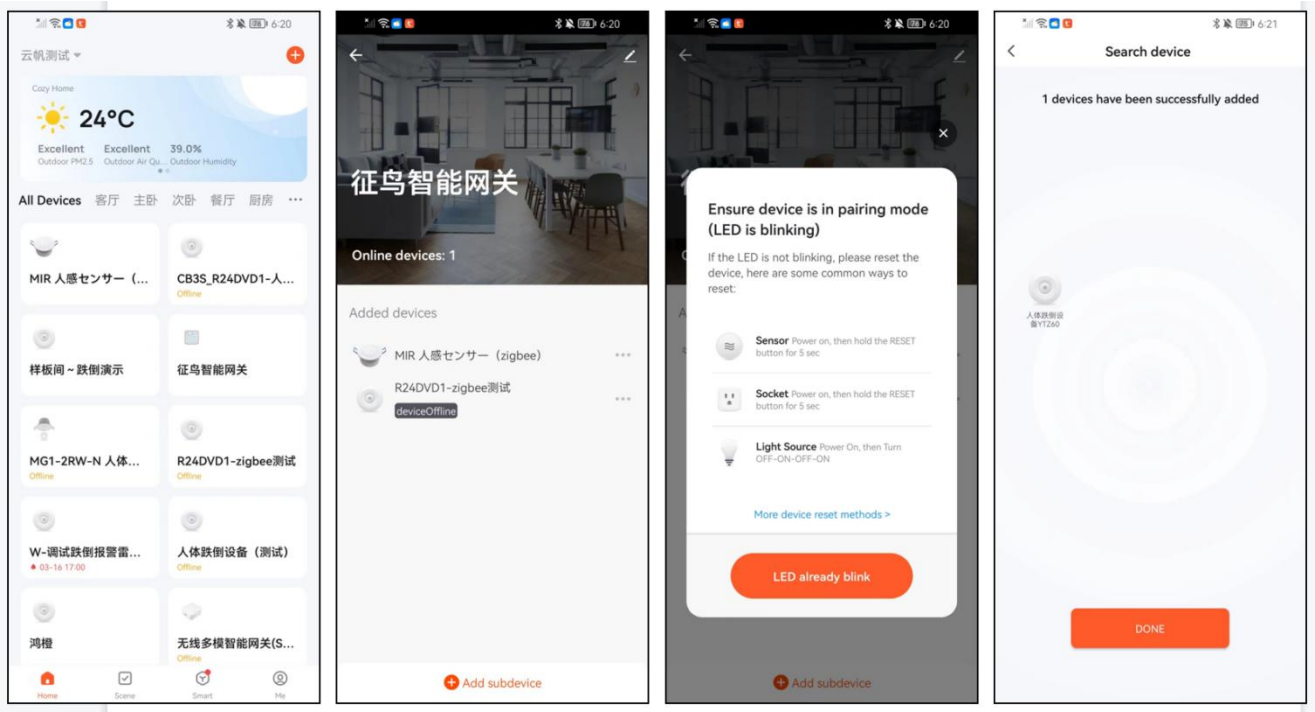
* Download from app shops: TUYA app

① The prerequisite to use a Zigbee radar is the provision of Zigbee gateway, which makes network configuration possible

② Access the gateway, and connect Tuya Zigbee device via “Add a sub-device”

③ Press and hold the button for 5 s until the lamp starts to flash, and the radar will enter the network configuration mode. Tap [The indicator lamp is flashing] on the app and proceed to the next step.

④ The gateway will then keep searching for Zigbee devices. Follow the instructions, and you’ll get to add a Zigbee device.



- **Wi-Fi device —— Model VDA1-W**

Press and hold the button on the product until the LED lamp is out and starts to flash, and the radar will be reset to network configuration mode. Network can be configured in two methods: (Note: You need to connect your cellphone to a 2.4G Wi-Fi service instead of a 5G one)

Method 1 (Auto discovery by Bluetooth):

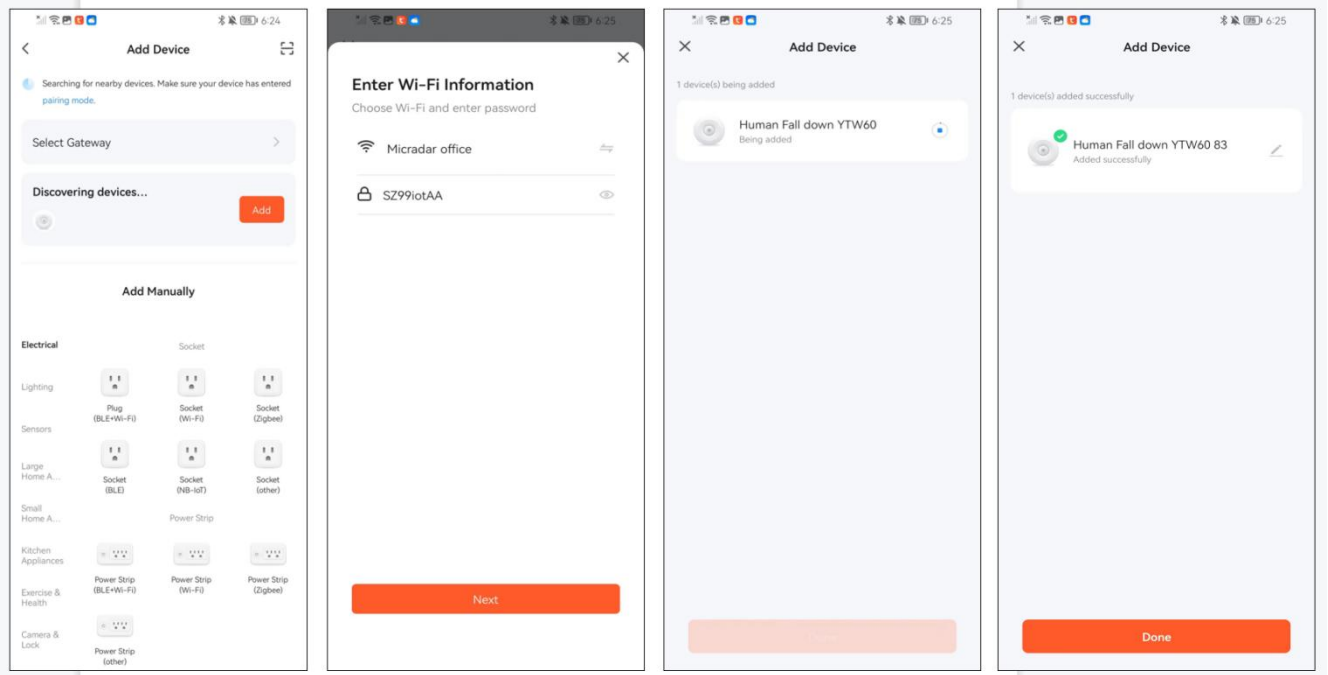
A dialogue will pop up on the app interface: “Found devices to be added: 1”. Tap Add, and the app will automatically add the device for network configuration.

Method 2 (Wi-Fi quick connection):

(1) Tap the “Red Plus” in the upper right of the app interface to access the screen of product category selection. Tap the “Auto discovery” in the upper right to search for devices. Once done, tap “Next”.

(2) Fill out the required fields for Wi-Fi service, and tap “Next” to access network configuration.

(3) Wait for the app to configure WiFi network, after which you can pair to Tuya WiFi radars.

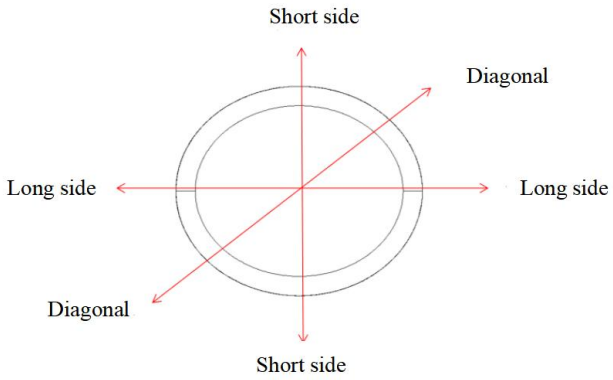


6. Detection range of radars

The millimeter-wave radar can detect human presence via major movements or subtle motions when someone sits still. When human presence is detected, the presence report command will be triggered, with the indicator lamp constantly on; and when no human presence is detected, the non-presence command will be triggered, with the indicator lamp turned off.

Detection range diagram:

Below is the diagram for detection range of human presence



Scenarios settings (Detection range settings)

Scenario mode	Distance to trigger detection (diameter)
Default	Wide-angle 14 m / narrow-angle 12 m / oblique angle 13 m
Office	Wide-angle 12 m / narrow-angle 10 m / oblique angle 11 m
Hotel	Wide-angle 11 m / narrow-angle 7 m / oblique angle 10 m
Living room	Wide-angle 8 m / narrow-angle 6 m / oblique angle 7 m
Bedroom	Wide-angle 5 m / narrow-angle 4 m / oblique angle 4 m
Area detection	Wide-angle 3 m / narrow-angle 2 m / oblique angle 3 m
Toilet	Wide-angle 2 m / narrow-angle 2 m / oblique angle 2 m

Note: The overall detection range is more like an ellipse, and the sensitivity for the range of sit-still tests is always 3.

7. Sensitivity settings*

The sensitivity settings help adapt the product for various conditions of use, so as to avoid false alarms for non-presence and omissions for presence.

Sensitivity (1 - 3): The sensitivity is adjustable in the range of 1 - 3, with 3 being the default. By setting a different value, you can adjust the range for the state of staying still.

Sensitivity	Distance of staying still detection (diameter)
Sensitivity 1	Wide-angle 8 m / narrow-angle 7 m / oblique angle 8 m
Sensitivity 2	Wide-angle 6 m / narrow-angle 6 m / oblique angle 6 m
Sensitivity 3	Wide-angle 5 m / narrow-angle 4 m / oblique angle 4 m

8. Indicator lamp states & performance breakdowns

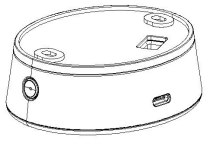
Indicator lamp states

Red lamp flashes	Matching network for the device
Red lamp off	Normal state/No-button state
Red lamp on	Button triggering

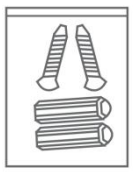
Performance breakdowns

Name	Performance breakdowns
Life detection radar	Surface damage due to structure or material factors Indicator lamp is not working Reset button is not working Zigbee/Wi-Fi link error Human presence detection failed

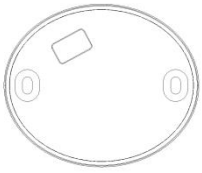
9. Packing list



Radar × 1



Screw fixings package × 1



Mounting base × 1

User Manual × 1

Power cord × 1

* The appearances and lists in this manual are for reference only.
* In case of any changes in the app functions, the latest version should prevail

10. Product parameters

Functions	Specification
Product name	Life detection radar
Model	VDA1-Z / VDA1-W
Product measurements	29.5×73×86mm
Working Frequency of radar	24.05~24.25GHz
Installation method	Top mounting
Distance of detection	3~6m
Angle of detection	90° horizontally & 60° vertically
USB power supply	5V/1A
Wi-Fi protocol	Zigbee / Wi-Fi
Working temperature	-10℃~+50℃
Working humidity	20% - 85% (Non-condensing)

11. Others

Requirements on label use for limitation of hazardous substances in electrical and electronic products

Names and content of hazardous substances in product

	Hazardous substances					
	Lead (Pb)	Mercury (Hg)	Cadmium (Cd)	Hexavalent chromium (Cr(VI))	Polybrominated biphenyls (PBB)	Polybrominated diphenyl ethers (PBDE)
PCB components	○	○	○	○	○	○
Plastic parts	○	○	○	○	○	○
Metal parts	○	○	○	○	○	○
Loudspeaker	○	○	○	○	○	○
AC adapter	○	○	○	○	○	○

This sheet is prepared pursuant to SJ/T 11364.

○ indicates that the content of the hazardous substance in all homogeneous materials of the component complies with the limits set forth in GB/T26572.

× indicates that the content of the hazardous substance in at least one of the homogeneous materials of the component is beyond the

limit set forth in GB/T26572. Note: The Product is designed with the philosophy of environmental protection, for which effective measures have been taken to control the hazardous substances. As for hazardous substances indicated with “x”, they can’t be substituted for due to the limits of technology development.
EFUP: The label indicates that within the period (10 years), no hazardous substances contained in the electric and electronic products will leak or mutate under normal conditions of use, and no severe pollution to the environment and no major damage to health and property will occur during use.
Recycling hints: In an effort to take better care of earth, when the product is no longer needed or has reached the end of its service life, please deliver it to an organization accredited in the field of recycling for disposal as per the applicable laws and regulations of the country in respect of recycling and disposal of waste electrical and electronic products. Improper use or disposal might have a bad influence on the environment and people’s health.