Human Fall Detection Voice Alarm Radar Sensor



Product model: FDV3-W

Using Instruction_V1.0

Human Fall Detection Voice Alarm Radar Sensor Instruction **FDV3-W**

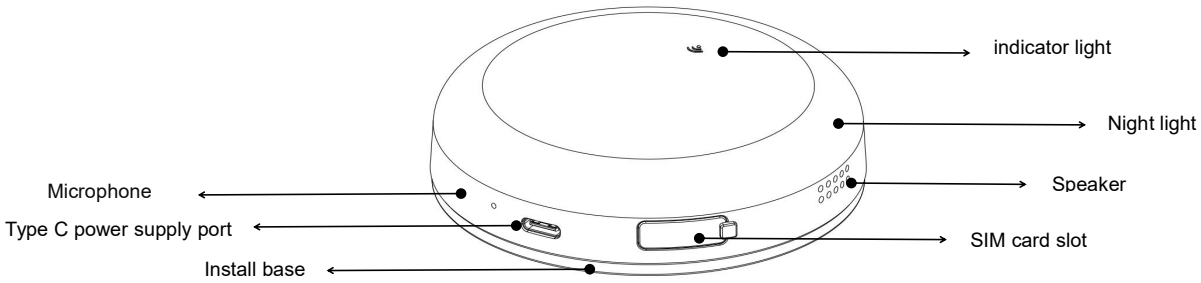
1. Product Introduction

The FDV3-W Human Fall Detection Radar Sensor with Voice Alarm is a device designed to monitor human spatial activity and behavior information. It supports human presence detection and fall detection alarm functions, while also providing voice interaction and night light illumination features.

Through a 2.4 GHz Wi-Fi network, the device transmits data to the cloud platform, enabling smart scene linkage and device status reporting.

Product Features	Function Description
Human presence	Occupied/unoccupied, active/static
Alarm status	Fall alarm, dwell alarm, low posture alarm
Parameter Settings	Installation height, fall time, dwell time
Night light linkage	Turn on/off night light according to occupied / unoccupied
Voice control	radar alarm for fall detection, voice call for help, voice commend learning
Historical records	Human presence record, fall alarm record

*This product requires an MQTT Server for operation.



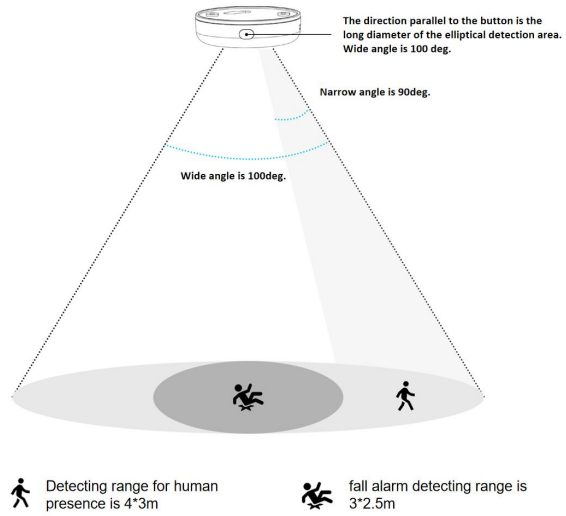


2. Installation Method

2.1. Radar detection range

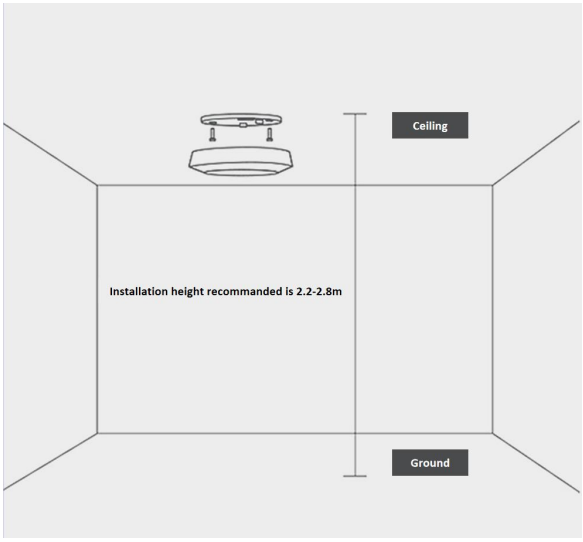
The wide angle is 100° and the narrow angle is 90°.

human presence detection range is approximately 4m * 3m, static dwell alert and fall detection range is 3m*2.5m



2.2. Installation Position Recommendations

The device needs to be installed horizontally at the top. The installation height range is 2.2-2.8m, with a recommended installation height of 2.4m. The radar should be securely installed directly above the detection area, covering the main human activity area.



2.3. Installation Precautions

The radar is sensitive to slight movements within the space. During detection, it's important to avoid vibrations. When installing, try to avoid placing the device near items such as exhaust hoods, fans, flowing water, and vents. Additionally, the device should be kept away from moving objects as much as possible.

2.4. Power Connection

After confirming the installation location, plug the power adapter into the power outlet, and connect the USB plug of the device power cable to the adapter. Then perform the Wi-Fi provisioning process for the device. The network indicator LED will show different statuses during the process. Please refer to the section "Status Indicator Description" for details.

2.5. Download MQTT Client

By default, the device is configured to connect to a public MQTT server platform before shipment. Users can use an MQTT client tool (MQTT X) to configure their own server information. For detailed instructions, please refer to the document "FDV3-W Wi-Fi Provisioning Guide" and complete the configuration process.

For bulk purchase orders, the customer’s MQTT server information can be pre-configured at the factory before shipment.

2.6. Device Binding

Since the device is directly connected to the server platform after shipment and supports transparent data transmission, there is currently no dedicated App interface for device binding.

B2B customers can develop their own device binding process based on the App demo provided by us.

2.7. Device Verification

- Radar Detection Verification:

Place the device facing a person. When human presence is detected, the night light will turn on. Then place the device with the LED ring side facing down on a table. Move away from the device by 2–3 meters. The night light should turn off after no human presence is detected within 30 seconds.

- Voice Interaction Verification:

Perform voice interaction according to the content described in "Voice Prompt Keywords".

- Data Verification:

After the device is connected to the network, use the MQTT X tool to connect to the public MQTT server, subscribe to the corresponding product topic, and verify whether the device data is reported successfully. For detailed data formats, please refer to the document "FDV3-W Data Communication Protocol Specification".

3. Product Operation Details

3.1 Powering Up the Product

After the device is powered on, it will detect whether there is someone by default. If there is someone, the night light will light up and the distribution network indicator will flash in red. Press and hold the distribution button for 5 seconds and the blue indicator will light up and flash, indicating that you can start using "Tuya" "Smart" App adds a device and configures the network for the device. If there is no network distribution action within 90s, the timeout state will occur, and the network distribution indicator light will

return to the red light flashing state.

3.2 How to use the device

Fall alarm radar mainly detects falls in the lying posture, and reports the fall status after 5 seconds when this posture is detected.

3.3 Product Configuration

On the configuration page, configure the installation height of the device from the ground based on the actual installation height. Set the fall time according to your requirement (5-180s) and dwell time.

3.4 Product Operation

3.4.1 Human presence/absence detection

- When presence detected, night light turns on
- When absence detected, night light turns off
- Night light can be controlled via voice commands to turn on/off

3.4.2 Fall alarm

If the fall status detected, device will emit a voice inquiry such as [Have you fallen down] . User can reply with sentence like [I have fallen down] to ask for help. Alarm via the app will be pushed to the guardian immediately in real time.

3.4.3 Keywords of voice commands

Functions	Voice commands	Device announcement
User actively call for help when trouble happens	Help me please! Can you help me? Could you help me? I need help!	Do you need help? Have you fallen down?
Reply by users	I have fallen down I fell down I fall down I fell	Notifying the guardian immediately Guardians notified, please wait a moment.
Reply by users	I am OK I'm OK I'm alright I didn't fall Nobody fall down	OK！

Turn on light	Turn on the light Turn on light	The light is on
Turn off light	Turn off the light Turn off light	The light is off
Customized keywords with learning mode	Enter learning mode	You have entered learning mode. If you need to learn, please say start learning.
Start learning mode	Start learning	Starting learning : I need help Starting learning : I fell Starting learning: Nobody fall down Learning process has been completed
Factory reset mode	The device has been factory reset	Please say that again The device has been factory reset

3.4.4 Device learning mode

This product has a local language learning function, which can facilitate users in different regions to control the device in dialects or other languages. It also allows users to customize the voice command using for calling help according to their hobbies. Please make sure the voice broadcast button in the App is turned on before entering the learning mode.

1) Wake the device using voice command

【Help me please】【Can you help me】【Could you help me】【I need help】

2) Enter learning mode

Users can actively send voice commands of [enter learning mode] or click the [Voice Learn] button in the App to enter voice learning mode.

3) The device voice announces [OK, entered learning mode. To start learning, please say, start learning]

4）Active voice command from the user [Start learning]

5）The device voice announces [Please study in a quiet environment and follow the prompts:]

6）Device voice broadcast [Starting learning, I need help]

The content replied by the user can be customized as any contents. The device will broadcast [Please say that again] and user should repeat the content. After the two input contents are consistent, the device prompts [Learning Success] and then the process is successful. If the two input contents are inconsistent or the surrounding environment is noisy, the device prompts [Learning Failure] and user need to learn it again.

7)Device voice broadcast [Starting learning, I fell].

The content replied by the user can be customized as any contents. The process is the same as the last one.

8）Device voice broadcast [Starting learning, Nobody fall down]

The content replied by the user can be customized as any contents. The process is the same as the last one.

9) The device can learn a total of three voice commands. User can restore the device to the default factory mode and learn again to change the customized sentences. Users can also restore the device's default voice commands using button of [Voice Reset] in the App.

10）Exit learning mode

User can send a voice command of [Stop Learning] if they need to exit the learning mode midway. If there is no reply for more than 10 seconds during the learning process, the learning mode will be exited by default and the device will broadcast as [OK, exit learning mode]

4. Restore default factory settings

User can restore the device to factory mode by pressing and holding the device reset button for 5 seconds, or by using voice commands [Restore default factory settings].

5. Device function descriptions

① **Occupied（Parameter Name：**someoneExists）

Indicates that there is someone in the current detection environment. The response time for triggering the presence of someone is less than 300ms, which is more sensitive than PIR infrared detection.

② **Unoccupied（Parameter Name：**someoneExists）

It means there is no one in the current detection environment. The device will continue to determine whether there is still micro-motion in the area. When it is determined that it is unoccupied for more than 30 seconds, the device will output the unmanned status.

* If the device has been unable to enter unoccupied status, it is recommended to check whether there is micro-motion interference in the space, such as fluttering curtains, moving sweeping robots, or animals.

③ **Active（Parameter Name：**motionStatus）

It means that someone is moving in the current detection environment, and the radar will continue to detect the movement of people

④ **Static（Parameter Name：**motionStatus）

Represents the status of someone standing, sitting or lying quietly in the current detection environment. The radar will continue to detect changes in the status of the person and report it.

⑤ **Alert status（Parameter Name：**fallStatus）

The device detects when a person falls within the detection area. The fall status will remain active until the person safely gets up and resumes a normal posture.

If a person remains stationary for an extended period within the detection area (such as unconsciousness or lying/sitting without movement), the device will indicate a stationary stay status. This status will remain active until the person resumes movement.

⑥ **Static Dwell switch and fall switch（Parameter Name： residentWarningDurationSwitch / fallSwitch）**

Turn on and off static dwell alarm and fall alarm. The default status is on.

⑦ **Fall alarm time setting（Parameter Name：**fallDuration）

After a person falls, the alarm will be pushed after a specified period of time. The setting range is 5s-180s. If you need to push the notification immediately, it is recommended to set as 5s.

⑧ **Static dwell time setting(Parameter Name：**residentWarningDuration**)**

After the person stay stationary for a specified period of time, the static dwell alarm will be pushed. The setting range is 1-60 minutes. If you need to push notification immediately, it is recommended to set it to 1 minute.

⑨ **Intelligent height（Parameter Name：**installAngle）

Before installation, you need to set this parameter according to the actual installation height. The device supports an installation height range of 2.2-2.8 meters.

⑩ **Fall sensitivity setting（Parameter Name：**fallSensitivity）

Fall sensitivity represents the degree of fall detection ability, divided into 1-3 levels, and the default level of level 3 is the most sensitive.

⑪ **Night light control switch（Parameter Name：**nightLightSwitch）

Turn the night light on/off. The device supports remote control of the night light through an API interface.

6. Product parameters

Product number	FDV3-W
Previous Model Number	FDVW3
Rated input	5V⎓ 3A
Wireless connections	2.4G WIFI
Radar frequency	60G
Operating temperature	-10℃ ~ +60℃
Working humidity	0 ~ 95% RH，no condensation
Power adapter output	5V⎓ 3A
Power adapter input	180V — 240V～50/60Hz 0.6A

7. Status indicator light description

The red indicator light flashes and alternates on and off for 500ms (90s timeout)	Device network status
No indicator light is on	In normal state/no button state
The blue indicator light is on	Button trigger
The green indicator light stays on for 3 seconds and then goes out	Connected to the router and connected to the cloud
The red indicator light is always on	Device goes offline
Night light on	someone exists
Night light goes out	unmanned

8. Name and content of harmful substances in products

	Harmful Substance					
	Pb	Hg	Cd	Cr(VI)	PBB	PBDE
Circuit board components	○	○	○	○	○	○
Plastic parts	○	○	○	○	○	○
Metal parts	○	○	○	○	○	○
Speaker	○	○	○	○	○	○
Power Adapter	○	○	○	○	○	○

This form is prepared in accordance with the provisions of SJ/T11364.



○ Indicates that the content of the hazardous substance in all homogeneous materials of this part is within the limit requirements specified in GB/T26572.

× indicates that the content of the hazardous substance in at least one homogeneous material of the component exceeds the limit requirements specified in GB/T26572.

9. After-sales service

The after-sales service of this product is implemented in strict accordance with the "Consumer Rights and Interests Protection Law of the People's Republic of China" and the "Product Quality Law of the People's Republic of China". The service content is as follows:

Warranty Policy

During the validity period of the Three Guarantees, you can enjoy free returns, exchanges, and repair services in accordance with these regulations. Returns, exchanges, and repairs should be handled with invoices.

Service type	Service Policy
return the goods	Return of product due to quality reasons within 7 days from the day after receipt
Exchange	Exchange for product quality reasons within 15 days from the day after receipt
Repair	Repair due to product quality within 1 year from the day after receipt

Friendly reminder: Since packaging boxes are required to ensure the safety of product transportation during transportation, it is recommended that you keep the packaging boxes for at least 30 days from the day after signing for receipt.

10. Product performance fault table

Name	Performance glitches
Human fall alarm sensor FDV3-TUY	1. Surface cracks caused by structural or material factors 2. The indicator light fails 3. The network distribution button fails 4. Human body induction failure 5.Night light failed

Non-warranty regulations

- Unauthorized maintenance, misuse, collision, neglect, abuse, liquid intrusion, accident, modification, incorrect use of non-product accessories, or tearing or altering labels and anti-counterfeiting marks.
- The three-pack validity period has expired.
- Damage caused by force majeure.
- Situations that do not meet the performance failures listed in the "Product Performance Failure Table".
- This product and its accessories may have performance failures listed in the "Product Performance Failure Table" due to human reasons.