PRODUCT DATASHEET

TECHNICAL DOCUMENTATION

HUMAN-PRESENCE RADAR MODULE

PS-CM-WF

Ceiling Mount mmWave Human Presence Sensor — WiFi

Document No.	PS-TDS-CM-WF	**Version**	V1.0
Model	PS-CM-WF	**Issue Date**	2026-11-08

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Document Information

Document title	presencesensor.com Product Datasheet	**Model**	PS-CM-WF
Series	Human Presence Detection (presence)	**Document No.**	PS-TDS-CM-WF
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Prepared by	PresenceSensor Engineering Team	**Reviewed by**	Product Department
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1 Product Overview

Ceiling-mount mmWave radar presence sensor with direct WiFi 2.4 GHz connectivity, so no gateway is required — suited to retrofit hotel and apartment projects. Detects stationary occupants and breathing-level micro-motion to 2.5 m, with a 10 m motion range and 120° field of view.

- Model: PS-CM-WF
- Product: Ceiling Mount mmWave Human Presence Sensor — WiFi
- Series: Human Presence Detection (presence)
- Frequency band: 24 GHz

2 Key Features

- Detects motion, micro-motion and stationary occupants — a sleeping guest still reads as present
- Direct WiFi 2.4 GHz link; no gateway needed for retrofit projects
- 2.5 m micro-motion range covers the bed area of a standard guest room
- 10 m motion range and 120° field of view; one unit covers a standard room
- DC 5 V supply, standby consumption below 0.5 W

Features are typical for this series. Refer to the latest datasheet for model-specific values.

3 Applications

Guest room occupancy for HVAC and lighting setback, meeting room and office presence detection, serviced apartment and short-term rental checkout detection, and non-intrusive occupancy monitoring in senior living and healthcare.

4 Technical Specifications

Frequency band	24 GHz ISM	**Modulation**	FMCW
Supply voltage	DC 5 V	**Operating current**	—
Average power	Standby < 0.5 W	**Detection range**	Motion 10 m / micro-motion 2.5 m
Field of view	120°	**Range resolution**	—
Interface	WiFi 2.4 GHz (802.11 b/g/n)	**Output**	Occupancy state (motion /

			micro-motion / breathing)
Operating temp.	-10 °C to +55 °C	**Storage temp.**	—
Dimensions	Φ86 mm × 35 mm, IP54	**Antenna**	On-board antenna
Certification	CE / FCC / RoHS / ISO 9001	**Remarks**	Specifications subject to the latest datasheet.

Table 1 Technical specifications. Subject to the latest datasheet without prior notice.

5 Wiring

The sensor is powered from a DC 5 V supply and reports presence over WiFi 2.4 GHz. Terminals are V+ (red), V− (black) and GND (green).

Pin	Name	Type	Description
1	V+	Power	DC 5 V input (red)
2	V-	Power	0 V return (black)
3	GND	Power	Ground (green)
4	—	—	—
5	—	—	—

Table 2 Pin definition. Refer to the datasheet of the specific model.

6 Dimensions and Installation

6.1 Dimensions

Module outline dimensions and mounting holes are shown in the dimension drawing below (unit: mm).



Figure 1 Module dimensions

6.2 Installation

Recommended ceiling mounting at 2.6-3.0 m; wall mounting at 1.5-2.0 m. Adjust the tilt angle according to the detection area.



Figure 2 Installation and detection coverage

Refer to the Installation Guide of the specific model for the relationship between mounting height, tilt angle and detection coverage.

7 Communication and Configuration

7.1 Communication Protocol

Default UART: 256000 bps, 8 data bits, 1 stop bit, no parity. See the Serial Communication Protocol for frame format and commands.

7.2 Configuration Tool

The configuration tool supports parameter read/write, range gate setup, sensitivity adjustment and firmware upgrade.

7.3 Typical Application Circuit



Figure 3 Typical application circuit

8 Model Selection

The series is organized by frequency band and sensing function. Select a model based on detection range, mounting method and interface.

Model	Band	Series	Typical Application
PS-CM-WF	24G	Human Presence Detection	Indoor presence detection, smart lighting, building energy saving, security automation, elderly care
PS-CM-ZB	24G	Human Presence Detection	Indoor presence detection, smart lighting, building energy saving, security automation, elderly care
PS-CM-MTR	24G	Human Presence Detection	Indoor presence detection, smart lighting, building energy saving, security automation, elderly care
PS-CM-60G	60G	Human Presence Detection	Indoor presence detection, smart lighting, building energy saving, security automation, elderly care

Table 3 Model selection. See the product center on the website for the complete model list.

9 Document Downloads

The following documents are available for this model on its product page at {SITE_BRAND}.

Category	File	Version	Description
Development	—	—	Datasheet / user manual / protocol
Development	—	—	Schematics / footprint / 3D model

Application	—	—	Configuration tool
Utility	—	—	Serial driver / terminal

Table 4 Document list. File names and versions follow the download page.

10 Ordering Information and Support

Please specify the model, quantity and interface when ordering. For samples, quotations or technical support:

- Website: presencesensor.com
- Products: presencesensor.com/products
- Support: sales@presencesensor.com
- Sales: sales@presencesensor.com

Appendix A Revision History

Version	Date	Description	Prepared / Reviewed
V1.0	2026-11-08	Initial release	PresenceSensor Engineering Team
—	—	—	PresenceSensor Engineering Team
—	—	—	PresenceSensor Engineering Team

Table 5 Revision history. Update the version and date for every revision.