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2026 MWRANGE

PRODUCT CATALOG

MWRANGE

Smart spaces, creating a better life.

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Company Overview

Shenzhen Mwrangle Intelligence Co., Ltd. is a professional company specializing in microwave and millimeter-wave radar sensing technology. We focus on multi-sensor fusion and smart space sensing and control solutions, providing full-chain services covering R&D, manufacturing, sales, and technical support. With over 15 years of experience in microwave, RF, and radar sensing technologies, we continuously drive innovation in product design, manufacturing processes, and service systems, delivering reliable products and long-term value to our customers.

OUR VISION

To empower smart space management and drive global digital transformation.

OUR MISSION

To innovate radar, and sensing technologies for smart space applications and support the development of new productive forces.

OUR TEAM

A practical and collaborative team culture built on integrity, responsibility, and continuous innovation.

CORE VALUES

Customer-focused, technology-driven, innovation-led, and win-win collaboration.

Company Introduction

Mwrange' s founding team comes from top universities like Harbin Institute of Technology, UESTC, and Wuhan University, with over 15 years of experience in electromagnetic waves, lasers, voice, and antennas.

We focus on technology, innovation, and service, continuously developing new products. By working closely with customers, Mwrange builds strong markets at home and abroad for sustainable growth.



MWRANGE

Self-operated factory with over 20 million units annual capacity, equipped with advanced Yamaha production lines, AOI inspection, and full-process 6S management with digital traceability.

“MW” is an abbreviation honoring Maxwell, the father of electromagnetic theory. “Range” means scope or domain.

Together, they define our focus: smart space management technology to empower applications.



Company Strength

Our honor wall reflects our commitment to quality and outstanding innovation achievements.





Advanced Equipment

We use advanced international equipment and technology to ensure high precision, efficiency, and consistent product quality.

Quality Management

Certified to ISO 9001 and ISO 14001, we strictly control quality throughout the entire production process.





Innovation Strength

Focusing on radar, laser, capacitive, and voice sensor fusion, we excel in innovative applications to deliver products that exceed user expectations.

PRODUCT Product Applications

From microwave, laser, and millimeter-wave to voice sensing, MWRANGE is dedicated to creating smart sensing solutions that integrate communication and control. Our products are widely used in homes, garages, bathrooms, lighting, security, and more, offering customers customized, multi-dimensional smart upgrades.



Microwave Radar

5.8GHz/10GHz bands
Widely used across various fields.



Millimeter-Wave Radar

24GHz/60GHz bands
Presence, speed, distance, and angle detection.



PIR Sensing

PIR sensing
Low- and mid-height lighting, and smart building management.



Voice Sensing

Offline voice control
Smart bathrooms and AI applications.



Multi-Sensor

Radar, voice, geomagnetic, communication, and other integrated applications.

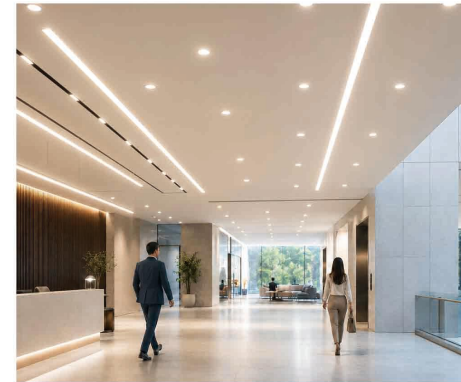


Solutions

Sensing + Communication/Control
Intelligent applications across multiple fields

Application Scenarios

Mwrange' s smart sensing sensors are widely used in public lighting, smart home, smart bathroom, and smart security. Combining radar, PIR, laser, voice, and other sensing technologies, we deliver more efficient, intelligent, and secure space management.



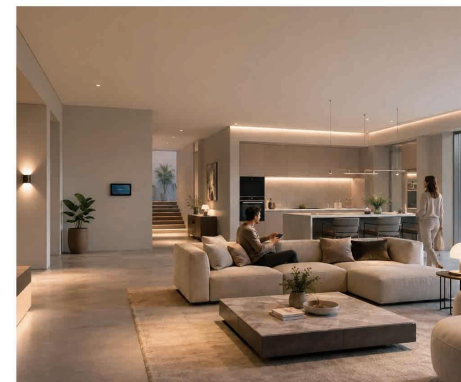
Smart Lighting

Commercial&Office Lighting | Industrial Lighting
Public Area Lighting | Outdoor Lighting | Emergency Lighting



Smart Bathroom

Smart Toilet | Bathroom Cabinet Mirror |
Smart Bathroom Heater | Public Sanitary Ware



Smart Home

Human Presence Sensor | Smart Control Panel
Pet Electrical Appliances | AI Toys



Smart Security

Automatic Door Control | Intrusion Alarm
Smart Door Lock | Warning Radar

Smart Lighting

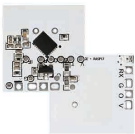
- Covers commercial, industrial, public area, outdoor, and emergency lighting applications. Integrates radar sensing technology for intelligent control, energy saving, and enhanced lighting automation.

Sensors for Commercial & Office Lighting

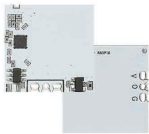
- **Commercal Lighting:** Designed for modern commercial and office environments with intelligent motion sensing and automatic lighting control.
Typical Applications: Office panels, downlights, linear lights, meeting room lights, corridor lights, smart switches.



Sensors for Commercial & Office Lighting



RA5P17



RA5P18



RA5L13B

Specifications	RA5P17	RA5P18	RA5L13B
Dimensions	16.5*16.5*3mm	18.5*18.5*2 mm	38*20*8mm
Operating Voltage	DC 4.5~12V	DC 4.5~12V	DC 5~12V
Operating Current	0.5~14mA	0.5~1mA	8~12mA
Sensing Radius	2~4m(Ceiling 3m)	2~4m(Ceiling 3m)	2/4m(Two levels, Ceiling 3m)
Sensing Distance	3~10m(Wall 1.5m)	6~10m(Wall 1.5m)	4/8m(Two levels, Wall 1.5m)
Output/Control	DC 0~3.3V / TTL, PWM	DC 0~3.3V / TTL, PWM	DC 0~3.3V / TTL, 4P DIP

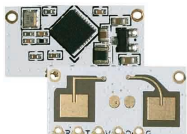
Application



RA5G20



RA5G22



RA24A08

Specifications	RA5G20	RA5G22	RA24A08
Dimensions	20*20*3mm	22*20*6mm	9.3*18*3mm
Operating Voltage	DC 5.5~12V	DC 4.5~12V	DC 4.5~8V
Operating Current	20~22mA	19~21mA	20mA(Peak current: 200mA)
Sensing Radius	3~5m(Ceiling 3m)	2~4m(Ceiling 3m)	0~4m(Ceiling 3m)
Sensing Distance	3~10m(Wall 1.5m)	6~10m(Wall 1.5m)	0~6m(Wall 1.5m)
Output/Control	DC 0~5V / TTL	DC 0~5V / TTL, IR	DC 0~3.3V / TTL, PWM, UART

Application





Sensors for Commercial & Office Lighting

- AC 120~270V Sensor Switch : AC-powered, recessed or surface-mounted, automatically detects presence and light levels.
Typical applications: Offices, hotels, corridors, stairways, lobbies, and general indoor commercial lighting.



RAPIK45



RAPIK46



RAPIK06



RA5K45

Specifications	RAPIK45	RAPIK46	RAPIK06	RA5K45
Dimensions	φ65*φ45*63mm	φ83*23.2mm	62*38*45mm	φ65*φ45*38mm
Frequency	PIR	PIR	PIR	HF 5.8GHz
Operating Voltage	AC 120~277V	AC 120~277V	AC 120~277V	AC 120~277V
Installation	Ceiling Recessed	Ceiling Surface	Built in (Fixture)	Ceiling Recessed
Range/Hold/Lux	Adjustable levels	Adjustable	Adjustable levels	Adjustable levels
Control	3P DIP	VR , 3 Rotator	9P DIP , IR	6P DIP

Sensors for Commercial & Office Lighting

- AC120-277V Fixture-intergrated Sensors: Built directly into fixtures, ideal for recessed panels, downlights, and ceiling luminaires.
Typical applications: Office ceilings, conference rooms, retail lighting, and commercial indoor environments.



RA5K01



RA5K02



RA5K09



RA5K10

Specifications	RA5K01	RA5K02	RA5K09	RA5K10
Dimensions	73*37*25mm	52*33*17.5mm	72*36*30mm	72*36*30mm
Frequency	HF 5.8GHz	HF 5.8GHz	HF 5.8GHz	HF 5.8GHz
Operating Voltage	AC 120~277V	AC 120~277V	AC 120~277V	AC 120~277V
Installation	Built in (Fixture)	Built in (Fixture)	Built in (Fixture)	Built in (Fixture)
Range/Hold/Lux	Adjustable levels	Adjustable levels	Adjustable levels	Adjustable levels
Control	6P DIP	4P DIP	9P DIP	VR , 3 Rotator

Application





Sensors for Commercial & Office Lighting

- **DC Built in Sensors:** DC-powered, compact built-in sensor for low-voltage fixtures, easy integration.
Typical applications: Linear lights, downlights, compact ceiling fixtures, and low-voltage residential or commercial lighting.



RA5G42



RA5G51



RA5G09

Specifications	RA5G42	RA5G51	RA5G09
Dimensions	57*20*9.5mm	62*19*8mm	70*16*15mm
Frequency	HF 5.8GHz	HF 5.8GHz	HF 5.8GHz
Operating Voltage	DC 12V	DC 6.5-15V	DC 12V
Installation	Built in (Fixture)	Built in (Fixture)	Built in (Fixture)
Range/Hold/Lux	Adjustable levels	Adjustable levels	2~4m / 5s~30min / 0~400Lux
Output/Control	DC 0~10V / IR	DC 0-10V / IR , 4P DIP	0-10V / IR

Application



Sensors for Commercial & Office Lighting

- **DC External Sensor:** SIndependent external sensor, adjustable detection range and output, flexible installation.
Typical applications: Corridors, staircases, parking areas, and spaces requiring centralized or extended lighting control.



RAPIW01



RAPIW02



RAPIW03

Specifications	RAPIW01	RAPIW02	RAPIW03
Dimensions	58*21*14mm	φ35.5*φ20*38mm	61*24.5*13mm
Frequency	PIR	PIR	PIR
Operating Voltage	DC 12~15V	DC 12~15V	DC 12~15V
Installation	External (Fixture)	External (Fixture)	External (Fixture)
Range/Hold/Lux	3~4m / 2 levels / <200 Lux	3~4m / 2 levels / <200 Lux	3~4m / 2 levels / <200 Lux
Output/Control	0-10V	0-10V / IR	0-10V / IR

Application





Sensors for Industrial Lighting

- **Industrial Lighting:** Provides reliable sensing performance in factories, warehouses, and industrial environments with high ceilings and large spaces.

Typical applications: High-bay, warehouse lighting, tri-proof lights, industrial lamps, workshop lighting.



RA5H25/RA5H31D



RA5W49/A/B/Z



RAPIW49/A/B/Z

Specifications	RA5H25/31D	RA5W49/A/B/Z	RAPIW49/A/B/Z
Dimensions	25*30*7mm/φ31*12mm	φ49*(24+X)mm	φ47.5*(36+X)mm
Operating Voltage	DC 5.5~12V	DC 10~15V	DC 10~15V
Operating Current	33~35mA/33~52mA	32~35mA	5~10mA
Sensing Radius	5~10m(Ceiling 15m) 3~8m(Ceiling 15m)	3~8m(Ceiling 13m)	3~6m(Ceiling 12m)
Output/Control	DC 0~3.3V TTL,PWM / IR	DC 0~10V / IR	DC 0~10V / IR
Remarks	Light control priority	IP65, Light control priority	IP65, Light control priority

Application



Sensors for Outdoor Lighting

- **Outdoor Lighting:** Supports intelligent outdoor illumination with stable sensing performance in various environments.

Typical applications: Street lights, garden lights, wall lights, pathway lighting, landscape lighting.



RA5Q32



RA24W80Z



RAXLS1

Specifications	RA5Q32	RA24W80Z	RAXLS1
Dimensions	32*65*10mm	22*20*6mm	φ81*59.5mm
Operating Voltage	DC 2.1~3.7V Light Control Voltage1.1~2.2V	DC 4.5~12V	AC220V
Operating Current	1.68mA(24-hour Standby)	19~21mA	Load Power220V≤300W
Sensing Radius	5~6m(Ceiling 3m)	2~4m(Ceiling 3m)	/
Output Signal	DC 2.1~3.7V(Drive Current 7.4A)	6~10m(Wall 1.5m)	/
Remarks	IR	DC 0~5V / TTL, IR	Light on: 5-25Lux Light off: 50-100Lux

Application





Public Lighting | IoT Lighting

- IoT Lighting: IoT lighting uses a self-organizing mesh network, Automatically connect and expand coverage. It supports group control and self-learning optimization for efficient lighting management.
Typical Applications: Underground parking garages, warehouses, and industrial spaces



	RA5N18	RA5N51	RA5W50L	RA10N09
Specifications	RA5N18	RA5N51	RA5W50L	RA10N09
Dimensions	18*39*3mm	18*39*11mm	φ50*35mm	70*16*15mm
Operating Voltage	DC 5~12V	DC 5~12V	DC 10~15V	DC 5~12V
Operating Current	28~30mA	28~30mA	33~35mA	12.5mA
Sensing Radius	3~5m(Ceiling 3m)	2~4m(Ceiling 3m)	3~8m(Ceiling 13m)	2~4m(Ceiling 3m)
Sensing Distance	6~10m(Wall 1.5m)	6~10m(Wall 1.5m)	8~45m(Wall 1.5m)	6~8m(Wall 1.5m)
Output/Control	DC 0~3.3V ,PWM	DC 0~3.3V ,PWM	DC 0~10V	PWM
Others	Bluetooth via APP	Bluetooth via APP	Bluetooth/IR ,IP65	Bluetooth via APP

Application



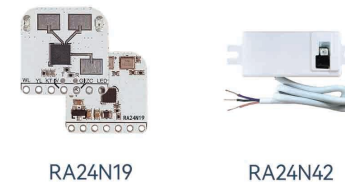
Public Lighting | IoT & Fire Emergency Lighting

IoT Lighting



- IoT Lighting: Widely used in various scenarios with energy saving, stable performance and easy management.

Typical Applications: Networked tube lights, networked linear lights.

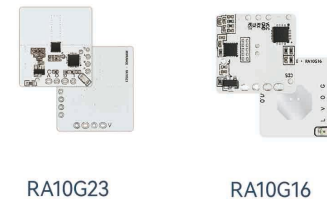


Specifications	RA24N19	RA24N42
Dimensions	18*18*3mm	57*20*9.5mm
Operating Voltage	DC 5~8V	DC 5~8V
Operating Current	30mA(350mA Peak)	30mA(350mA Peak)
Sensing Radius	0~4m(Ceiling 3m)	0~4m(Ceiling 3m)
Sensing Distance	0~7m(Wall 1.5m)	0~7m(Wall 1.5m)
Control	Bluetooth	Bluetooth

Fire Emergency Control



- Fire Emergency Control: Applied in DC carrier systems, effectively filtering out signal interference.
Typical Applications: Sensor switches, centralized emergency lights (central power), self-powered emergency lights.



Specifications	RA10G23	RA10G16
Dimensions	22*20*2mm	16*16*3mm
Operating Voltage	DC 4.5~12V	DC 4.5~12V
Operating Current	4 mA	4mA
Sensing Radius	3~4m(Ceiling 3m)	3~4m(Ceiling 3m)
Sensing Distance	0.1~8m(Wall 1.5m)	0.1~8m(Wall 1.5m)

Smart Bathroom

- Covers smart toilets, mirrors, ventilation systems, and bathroom automation applications. Integrates radar sensing technology for touchless control, human presence detection, hygiene improvement, and intelligent operation.

Sensors for Smart Toilet

- Smart Bathroom: Mwrange' s radar sensing technology enables automatic lid opening, closing, and flushing functions.
Typical Applications:Automatic lid opening, foot sensor detection, voice control



RA24R28



RA24R30



RACASG26



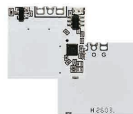
RACASG32

Specifications	RA24R28	RA24R30	RACASG26	RACASG32
Dimensions	65*31*14mm	65*31*14mm	69*31*16mm	φ32*50*11mm
Operating Voltage	DC 4.5~12V	DC 4.5~12V	DC 5V	DC 5V
Operating Current	60mA	60mA	60~500mA	60~500mA
Voice Commands	/	/	40~100 Comands	40~100 Comands
Sensing Distance	0.4~2m(Adjustable)	0.4~2m(Adjustable)	0.4~2m(Adjustable)	/
Applications	Automatic Lid Opening	Automatic Lid Opening	Voice Control, Smart Lid Opening	Voice Control

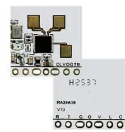
Application



Sensors for Smart Bathroom



RA5P18



RA24A18



RAC10Q22

Specifications	RA5P18	RA24A18	RAC10Q22
Dimensions	18*18*2 mm	18*18*3mm	22*62*97mm
Operating Voltage	DC 4.5~12V	DC 4.5~8V	DC 2.7~4.2V
Operating Current	0.5~1mA	20mA(250mA Peak)	210μA;Rated power 5W
Sensing Radius	2~4m(Ceiling 3m)	2~4m(Ceiling 3m)	/
Sensing Distance	6~10m((Wall 1.5m)	0~6m((Wall 1.5m)	1~3m/OFF/3~5m (Wall 1m)
Application	Bathroom Heater	Bathroom Heater	Cabinet Light、Light Strip

Application



Smart Home

- Covers residential automation, home appliances, security, and intelligent living applications. Integrates radar sensing technology for presence detection, smart control, energy saving, and enhanced user experience.

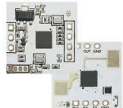
Human True Presence Sensor

- True Presence Sensor:** Designed for accurate human presence detection with high sensitivity and stable performance. Supports detection of static and micro movements, enabling intelligent automation, energy saving, and touchless control in various smart applications.

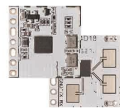
Typical Applications: Home, office, hotel, corridor, elevator lobby, stairwell, hallway.



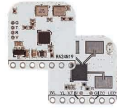
RA24A12



RA24A18



RA24D18



RA24N19

Specifications	RA24A12	RA24A18	RA24D18	RA24N19
Dimensions	12*8*3mm	18*18*3mm	18*18*3mm	18*18*3mm
Operating Voltage	DC 3.3V	DC 4.5~8V	DC 4.5~8V	DC 5~8V
Operating Current	20mA(200mA Peak)	20mA(200mA Peak)	30mA(200mA Peak)	30mA(200mA Peak)
Sensing Radius	0~4m(Ceiling 3m)	0~4m(Ceiling 3m)	0~4m(Ceiling 3m)	0~4m(Ceiling 3m)
Sensing Distance	0~8m(Wall 1.5m)	0~6m(Wall 1.5m)	0~6m(Wall 1.5m)	0~7m(Wall 1.5m)
Output/Control	TTL,PWM / UART	TTL,PWM / UART	TTL,PWM / UART, BLE Wechat	TTL,PWM / UART, Tuya

Application



Human True Presence Sensor



RA24K42



RA24K45



RA24Z45



RA24K46

Specifications	RA24K42	RA24K45	RA24Z45	RA24K46
Dimensions	φ65*φ45*38mm	φ65*φ45*38mm	φ65*φ45*38mm	φ83*23.2mm
Operating Voltage	DC 12~24V	AC 120~277V	AC 120~277V/DC12~24V	AC 120~277V
Operating Current	30mA	/	30mA	Load Power220V/≤300W
Sensing Radius	0~4m(Adjustable)	1/2/4/5m(Ceiling 3m)	0~6m(Ceiling 3m)	1~4m(Ceiling 3m)
Output Signal	Dry Contact	Relay Output	AC 120~277V/DC	AC 120~277V
Remarks	BT, BLE Wechat	6P DIP	UART/ Tuya-Zigbee	VR , 3 Rotator

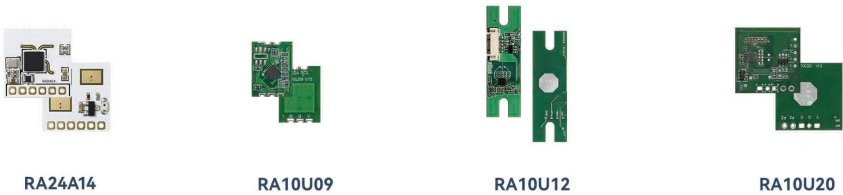




Sensors for Pet Devices

- **Pet Devices:** Detect pet approach or departure to automatically trigger functions, ensuring pets are well cared for.

Typical Applications: Pet water dispensers, smart litter boxes, pet feeders.



Specifications	RA24A14	RA10U09	RA10U12	RA10U20
Dimensions	14*14*3mm	12.15*9*3mm	40*12*5mm	20*20*2mm
Operating Voltage	DC 4.5~8V	DC 2.7~4.8V	DC 2.7~4.8V	DC 4.5~12V
Operating Current	20mA(200mA Peak)	50~75μA	50~75μA	50~75μA
Sensing Distance	0~6m(Wall 1.5m)	0.1~4m(Wall 1m)	0.1~4m(Wall 1m)	0.1~4m(Wall 1.5m)
Output/Control	TTL, PWM / UART	TTL / UART, IIC	TTL / UART, IIC	TTL
Remarks	UART	Castellation hole	/	/



Smart Home | Smart Appliances & AI Toys



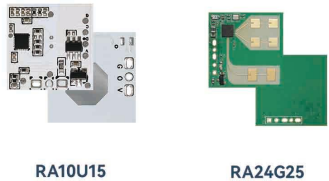
- **Smart Panels:** Supports intelligent control interfaces with motion and presence sensing functions.
Typical Applications: Smart switches, touch panels, scene control systems, home automation panels.



Specifications	RA10U08	RA24U09
Dimensions	12.15*7.5*3mm	12.15*9*3mm
Operating Voltage	DC 2.7~4.8V	DC 3~3.6V
Operating Current	50~75μA	20~30μA
Sensing Distance	0.1~4m(Wall 1m)	0.1~4m(Wall 1m)
Output/ Control	TTL / UART, IIC	TTL.PWM /UART
Remarks	Castellation hole	Castellation hole



- **AI Toys:** Automatically trigger voice, lighting, or motion responses to enhance fun and interactivity.
Typical Applications: Push toys, AI smart toys, interactive voice dolls, etc.



Specifications	RA10U15	RA24G25
Dimensions	15*15*2mm	25*25*1mm
Operating Voltage	DC 4.5~12V	DC 5~6V
Operating Current	75μA	20mA
Sensing Distance	0.1~8m(Wall 1.5m)	0~30m(Left/Right)
Remarks	/	0~120km/h

Smart Security

Smart Door Locks



- **Smart Door Lock:** Enables automatic wake-up of the door lock, triggers welcome lighting, or contactless unlocking.

Typical Applications: Smart door locks made of various materials



RA10U08/09



RA5U35D

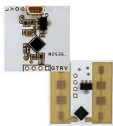
Specifications	RA10U09	RA5U35D
Dimensions	12*9*2mm	35*13*3mm
Operating Voltage	DC 2.7~4.8V	DC 2.7~4.8V
Operating Current	50~75μA	40~75μA
Sensing Distance	0.1~4m(Wall 1m)	0.3~2m(Wall 1m)

Automatic Door



- **Automatic Door Control:** Provides accurate motion and presence detection for automatic access systems.

Typical Applications: Smart sensors made of various materials



RA24R25/B/C



RA24W25

Specifications	RA24R25	RA24W25
Dimensions	25*25*6mm	120*80*50mm
Operating Voltage	DC 5~18V	DC 12~24V
Operating Current	5~50mA	130mA(Max)
Sensing Distance	0~12m(Wall 4m)	0~12m(Adjustable)

Intrusion Alarm



- **Intrusion Alarm:** Enhances security systems with motion detection and abnormal activity monitoring.

Typical Applications: Alarm systems, security sensors, area monitoring, anti-intrusion devices.



RA24A08



RA24A09

Specifications	RA24A08	RA24A09
Dimensions	9.3*18*3mm	9.3*30*3mm
Operating Voltage	DC 4.5~8V	DC 3.3V
Operating Current	20mA(250mA Peak)	350μA
Sensing Distance	0~6m(Wall 1.5m)	1.3~6m(Wall 1.5m)
Output/Control	DC 0~3.3V TTL,PWM UART	

Alert Radar

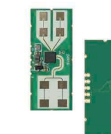


- **Warning Radar:** Detects distance and speed of rear targets and sends warnings through sound, light, or data.

Typical Applications: Bicycle tail lights, vehicle blind spot monitoring, rear radar for electric bicycles, traffic speed measurement



RA24G25



RA24R16/19

Specifications	RA24G25	RA24R16/19
Dimensions	25*25*1mm	16*38*2mm
Operating Voltage	DC 5~6V	DC 5~6V
Operating Current	20mA	18~20mA
Sensing Speed	0~120km/h	0~120km/h
Sensing Distance	0~30m	0~210m / 0~110m
Sensing Direction	Left, Right	N/A / Left, Right

Market & Service

We focus on the global market, providing efficient and customized sensor solutions and technical services! We offer one-stop customization from core modules to complete systems, support multiple cooperation models, and help customers quickly realize smart product upgrades to meet diverse industry needs.



► Gold Service

Customer-centric with deep insight into needs, providing optimal solutions and adding value to products, supported by 24/7 technical assistance. Integrating core technologies and strong innovation to ensure reliable system delivery. Efficient development and agile operations respond promptly to customer demands, delivering a quality-first experience beyond competitors.

► Focused on Radar, Complemented by Other Sensors

Market Development Plan: Centered on customers with radar sensing needs, led by SENSOR+ to drive future sensing. Through integrated solutions, we precisely target core customer demands, empowering smart lighting, toilets, home automation, door locks, security, transportation, and industrial automation.

► Rooted in China, Expanding Globally

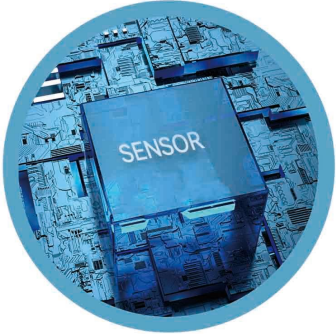
Firmly rooted in China with a global vision. We not only cultivate the domestic market but also strive to deliver cross-border innovation and services — strengthening the reputation of "Made in China" as a symbol of global trust.

Clients & Partners

► Cooperative Clients



► Strategic Partners



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