

Specification

Product Name: 5.8GHz Large-space presence sensor (Dry contact version)

Product Model: MSA021D RC

Product Version: V1.0

Versions	Release/ change Date	Publishing
V1.0	2021.8.13	Jacky

【Product Description】

MSA021D RC is a 5.8GHz radar sensor based on Merrytek patented low-impedance high-gain antenna. Its antenna has high gain and wide detection range and is combined with Merrytek's unique software algorithm so that it can accurately detect minor movements brought by human in almost all indoor spaces and provide fast and accurate front-end sensing input for smart home, smart hotel, smart office and other scenes.

【Product Feature】

- Exclusive Merrytek Lifebeing Presence Detection
- Accurate Presence/Absence Output
- NO/NC dry contact output available
- Daylight Sensor Available
- 5.8Ghz ISM Band Microwave Radar technology
- Presence detection diameter: 4-6m Max
- Minor Motion detection diameter: 6-8m Max
- Motion detection diameter: 6-8m Max
- Absence switch to Presence within 0.5S
- Presence switch to Absence no less than 30S
- Flush mounting installation available
- Sensor parameter adjustable by MH10 remote or DIP switch
- Low RF power output. No harm to human health
- Not affected by temperature, humidity, noise, airflow, dust, light and other environments



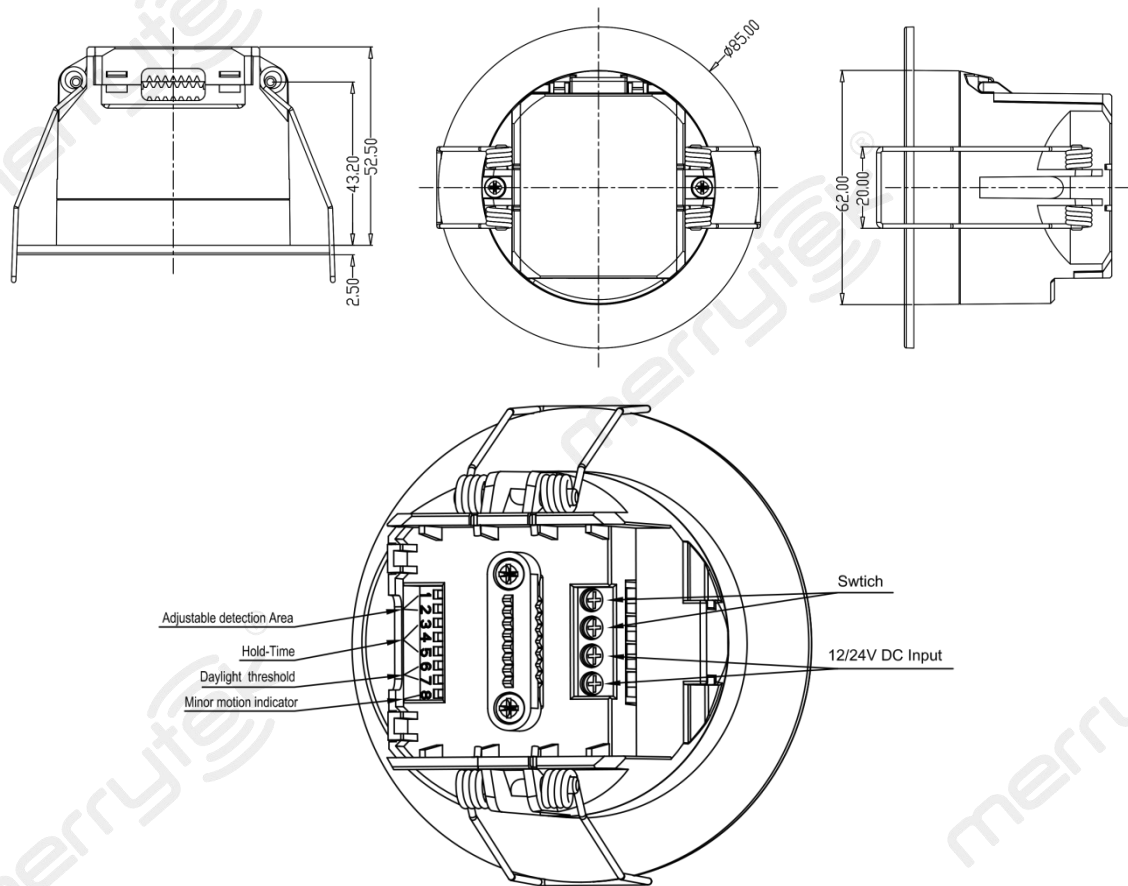
【Product dimension】

- Dimension: ϕ 85x52.5mm
- Terminal: 4pin terminal

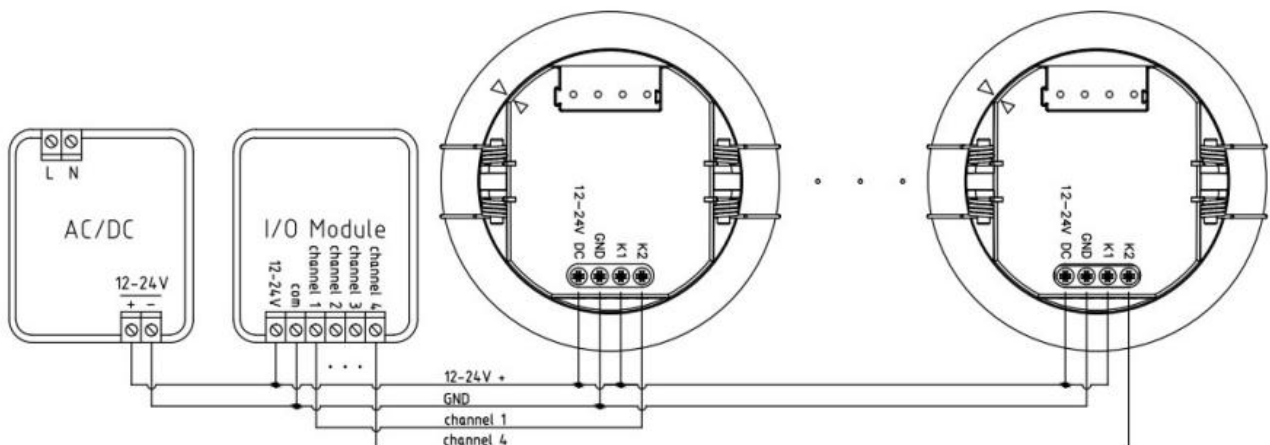
【Parameter】

Input/Output	Input voltage	12-24V DC
	Rated voltage	12V DC
	Working Current	50mA max
	Working Power	≤1W 12V DC
	Output signal	NO/NC dry contact (Factory setting is NO dry contact)
Sensor Parameter	Radar frequency	5.8GHz±75MHz ISM band
	Transmitting Power	5mW Max
	Detection Sensitivity	25%-100%
	Hold Time	5S-30Min
	Radius detection range(based on 100% sensitivity)	Motion detection (3m height) : 3-4m Minor motion detection (3m height) : 3-4m Presence (3m height) : 2-3m
	Daylight sensor threshold	5-150lux/Disable
	Remote control	Available
	Mounting height	2-4m
	Detecting Angle	150°
Application Environment	Drill hole	Φ 65-70mm
	Installation	Flush mounting
	Working Temperature	0℃...+50℃
	Storage Temperature	-25℃~+80℃
Certificate Standard	Certificate	FCC/RED
	Environmental Requirement	Compliant to RoHS
	IP Rating	IP20
Note: "N/A" means not available.		

【Dimension and Function diagram】



【Wiring instruction】



Wiring layout suggestion:

1. Hand-in-hand wiring is highly recommended, yet star-topology or tree-topology is strongly deprecated
2. When there's more than 1pc sensor is a line, you shall consider all equipment current consumption shall not surpass your driver's loading capacity.

【Initialization】

When powered on, sensor indicator will turn off after flashing for 20S and will not detect moving signal during this time. After 20S, you can use our MH10 remote to adjust detection area、hold time and daylight sensor etc parameter.

【Factory setting】

Detection Sensitivity :100%

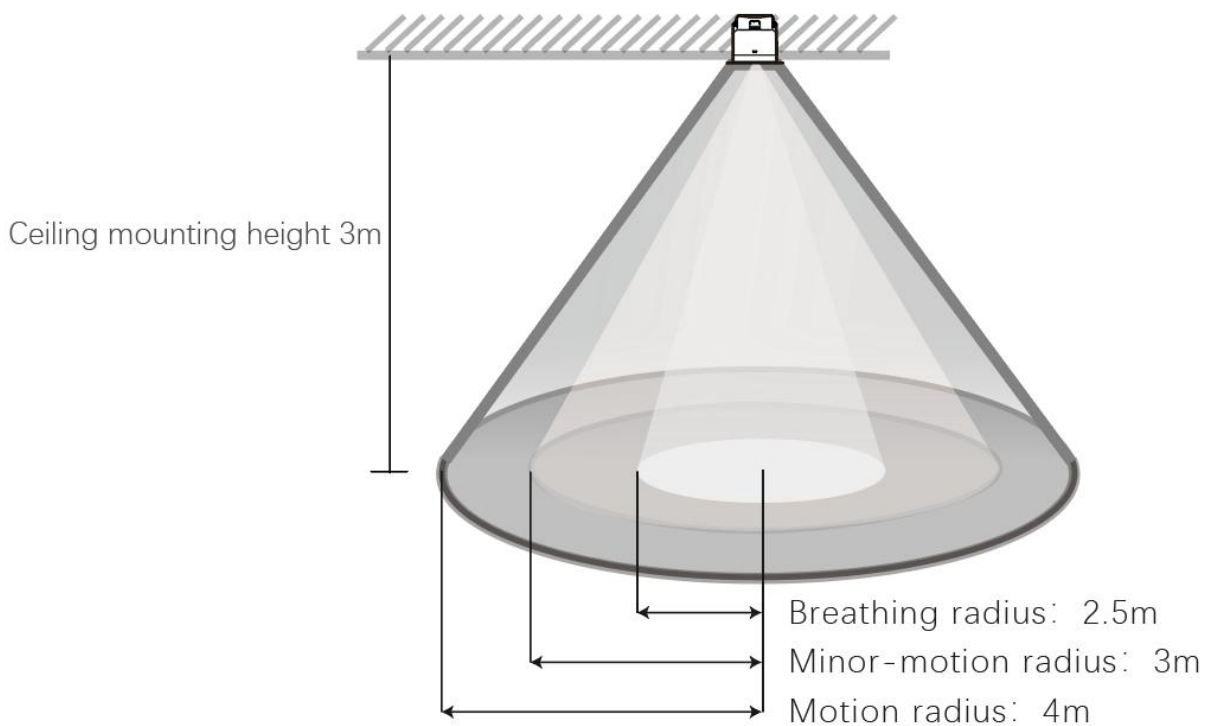
Hold Time: 30S

Indicator light : ON

Daylight sensor : Disable

【Detection radiation】

MSA021D RC is highly recommended ceiling flush mounting and its detection radiation is as below shows:



【Detection Signal】

The product detects human moving, minor moving, and presence signals, and realizes the detection of human-existing/no-human in non-sleep state. The following is a description of the moving, minor moving and presence signals:

- **Moving signal:** detect the human significant moving (walking) in the detection area.
- **Minor moving signal:** detect the human slight moving in the detection area, such as leaning forward, leaning forwarder and back, swinging limbs, shaking head, typing, playing with mobile phones and so on.
- **Presence signal:** detect human abdominal and thoracic expansion behaviors caused by breathing, but not

detect moving signal and minor moving signal.

【DIP setting】

Detection Sensitivity

	1	2	
I	ON	ON	100%
II	-	ON	75%
III	ON	-	50%
IV	-	-	25%

Hold Time

	3	4	5	
I	ON	ON	ON	5S
II	ON	-	ON	30S
III	ON	ON	-	1min
IV	ON	-	-	3min
V	-	ON	ON	5min
VI	-	-	ON	10min
VII	-	ON	-	20min
VIII	-	-	-	30min

Remark: Hold time shall be more than 1min if you want presence detection function

Daylight Sensor

	6	7	
I	ON	ON	5Lux
II	ON	-	25Lux
III	-	ON	50Lux
IV	-	-	Disable

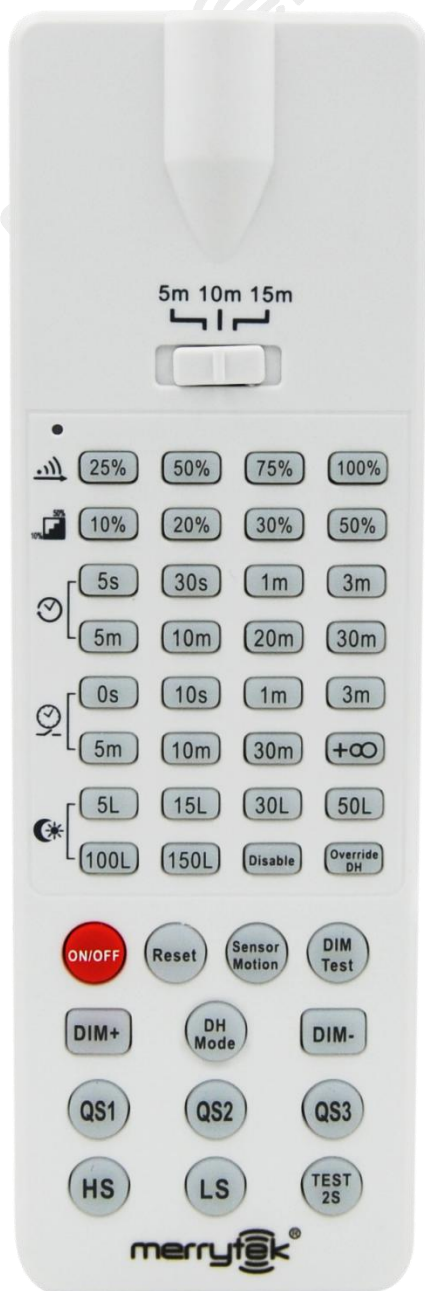
Once daylight sensor set as Disable,our motion sensor will detect human movement regardless of environment lux

Indicator light

	8	
I	ON	open
II	-	close

Remark: Indicator default setting is ON and can be adjusted by DIP or MH10 remote control

【Remote manual】



Detection range: 25%/50%/75%/100%

Hold time: 5s/30s/1min/3min/5min/10min/20min/30min

Daylight threshold: 5lux/15lux/30lux/50lux/100lux/150lux/Disable

ON/OFF: disable sense function

Sensor motion: enable sense function

Reset: all parameter back as factory setting

QS1/QS2/QS3: High/Medium/Low sensitivity setting

HS: turn on indicator

LS: turn off indicator

【Disclaimer】

Due to the complexity of product technology and differences in application environment, it is difficult to guarantee a completely accurate or complete description, so this specification is only for user reference.

We will reserve the right to make changes to the product specifications without notifying the user, and do not make any commitments and guarantees in the legal sense.

At the same time, our company encourages users to supplement or modify the contents of our specifications after using our products.