

SPECIFICATION

Product Name: Microwave Motion Sensor

Model No.: MC612V D RC

Issue Date: September 29, 2021

CUSTOMER APPROVED

PRODUCT DIRECTOR APPROVED	SALES CHECKED	R&D CHECKED	PREPARED
邵景	邵景	邵景	邓明

Shenzhen Merrytek Technology Co.,Ltd

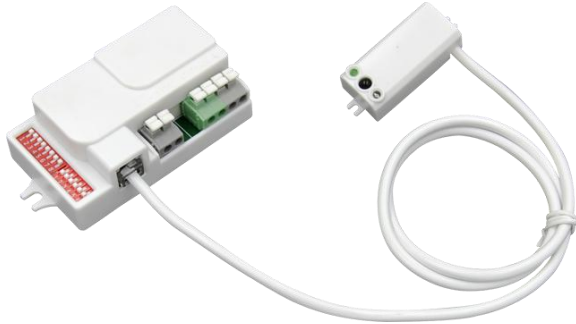
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1. Features



- Built-in microwave sensor and light sensor for automatic on/off and dimming.
- Working voltage 120/277V
- Parameters can be adjusted through DIP switch and remote control.
- Suitable for more lamps with mini split head.
- Ambient threshold function can be used as a light learning function.
- The initial brightness of the lamps can be changed through DIM+, DIM- buttons.
- 4 kinds of quick settings (scene) are customized.
- 0-10v port can be connected to MS01 to achieve daylight harvesting function.
- 5 years warranty.

2. Parameters

Input	Input Voltage Range	108-305V AC 50/60Hz
	Rated Input Voltage	120/277VAC 50/60Hz
	Stand-by Power	< 1.0W
	Surge Test	Between L and N: 1KV
Output	Operating Mode	ON/OFF 0-10V
	Type of Load	Resistive or Capacitive
	Load Power	120V, 50/60Hz, 3.6A, ballast; 277V, 50/60Hz, 3.4A, ballast;
	Load surge current	50A (test twidth 500us @277Vac at 50% Ipeak, cold start at full load) or 80A (test twidth 200us @230Vac at 50% Ipeak, cold start at full load)
Interface	0-10V Dimming	< 50mA (Non constant current source) 10%(1.4-1.6V) 20%(1.9-2.1V) 30%(2.9-3.1V) 40% (3.9-4.1V)
Sensor Parameters	HF Operating frequency	5.8 GHz ±75 MHz, ISM Wave Band.
	HF Radiated power	0.5mW Max.
	Hold time	5S/30S/1min/5min/10min/15min/30min Remote Controller Setup: 5S/30S/1min/3min/5min/10min/20min/30min
	Stand-by dim Level	10%/20%/30%/40% Remote Controller Setup :10%/20%/30%/50%
	Stand-by Period	0s/1min/3min/5min/10min/30min/+∞ Remote Controller Setup: 0S/10S/1min/3min/5min/10min/30min/+∞
	Detection Area	100%/75%/50%/25% Remote Controller Setup:100%/75%/50%/25%

	Daylight Sensor	5Lux/15Lux/30Lux/50Lux/100Lux/150Lux/Disable Remote Controller Setup: 5Lux/15Lux/30Lux/50Lux/100Lux/150Lux/Disable
	Detecting Radius	4-6m radius (3m mounting height)
	Mounting Height	6m MAX
	Detecting Angle	150°(wall mounting), 360°(ceiling mounting)
Operating Environment	Operating temperature	-35℃~70℃
	Storage temperature	-40℃~80℃ Humidity: 10%-95%
Certificate Standards	Safety standards	UL60730
	EMC standards	Part 15CRSS-210 Issue 9
	Environmental Requirement	ROHS
	Certificate	UL RC
Others	Input/output terminal specifications	L /N /L':0.75-1.5mm ² 1-10V dimming port: 0.75-1.0mm ²
	IP rating	IP20
	Protection Class	Class II
	Installation requirement	Built-in
	Installation Size	Inch: 3.43 (mm: 87)
	Packaging requirement	Clapboard +Outer Carton (K=A)
	Weight	220g
	Life	5 years warranty @Ta 230V full load

Note

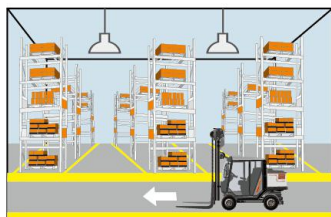
1. "N/A" means not available.

2. The detection range of the sensor is related to the moving speed and size of moving object, mounting height, installation height and angle, installation site, reflectors around the sensor etc. The data in the document is typical value and tested by a 165cm person in an open indoor area.

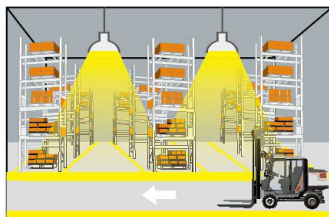
The detection range at wall mounting will be longer at ceiling mounting. Please reduce detection sensitivity at wall mounting or contact us to confirm the sensor data settings.

3. Function

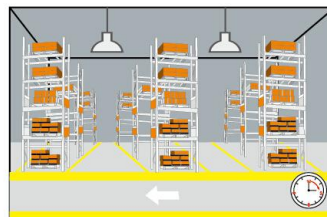
1) On/OFF Function (stand-by period be set to "0"s), Please set other sensor data according to practical applications.



① With sufficient ambient light, the light will not be switched on even if with motion signal.

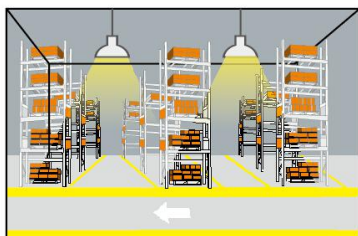


② With insufficient ambient light, the sensor switches on the light when motion is detected.

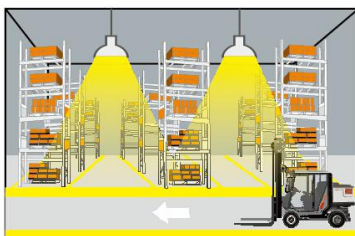


③ After elapse of hold time, the sensor switches off the light when no motion is detected.

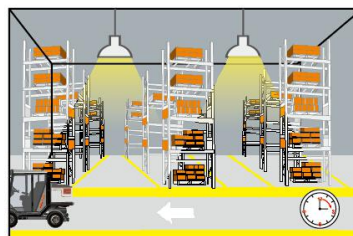
2) 2-step dimming function (stand-by period be set to "+∞"), Please set other sensor data according to practical applications.



① If there is no motion detected, the light will be remained at a low light level all the time.

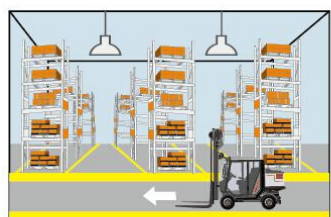


② When motion is detected, the sensor will switch on the light to 100% brightness

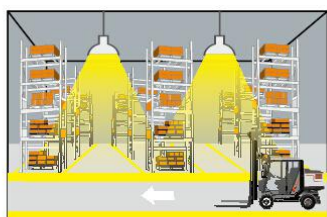


③ After elapse of hold time, the sensor dims the light at the present low light level if no motion is detected.

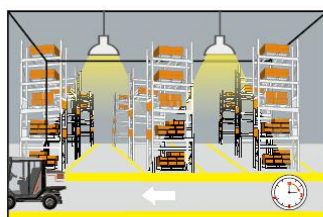
3) 3-step dimming function (stand-by period be set to "10S/1min/3min/5min/10min/30min"), Please set other sensor data according to practical applications.



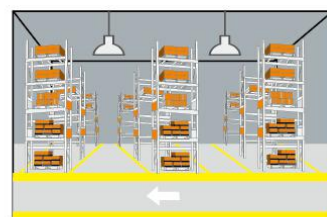
① With sufficient ambient light, the light will not be switched on even if with motion signal.



② With insufficient ambient light, the sensor switches on the light when motion is detected.

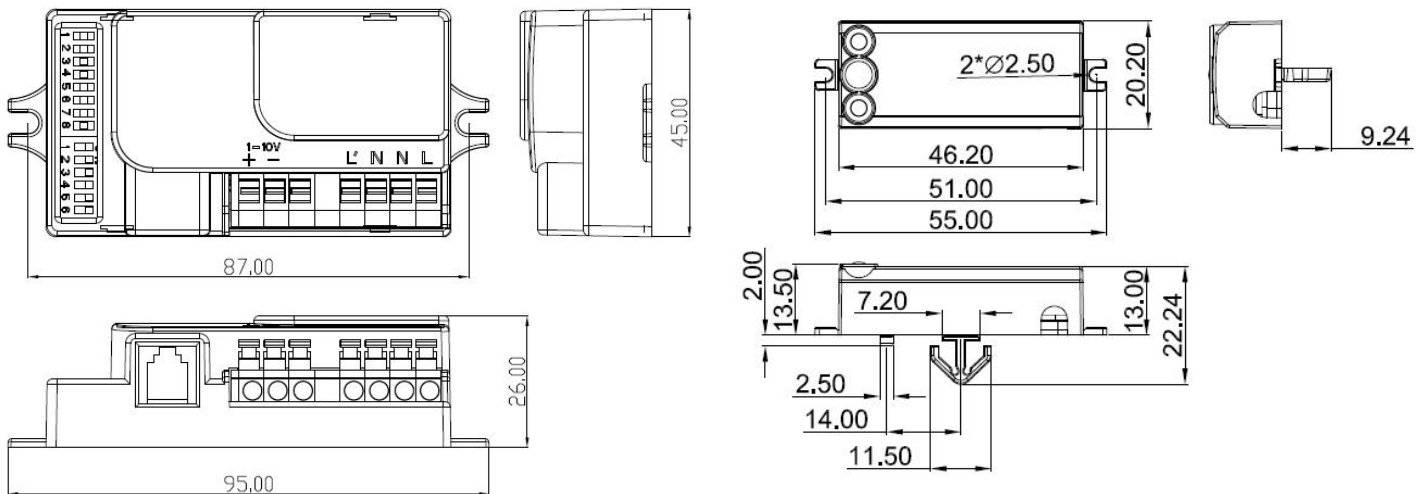


③ After elapse of hold time, the sensor dims the light at a low light level if no new motion is detected.



④ After elapse of standby period, the sensor switches off the light if no motion is detected in the detection zone.

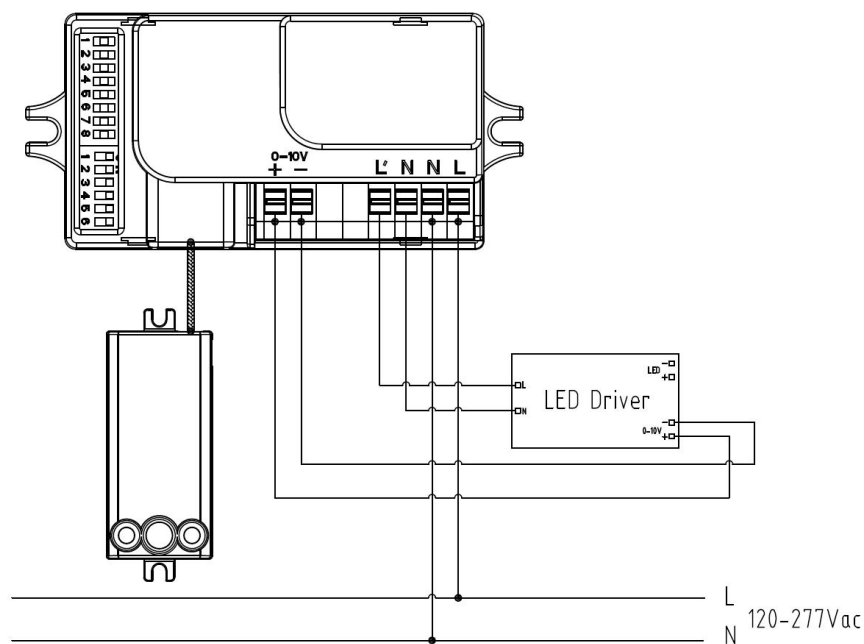
4. Dimension (Unit: mm)



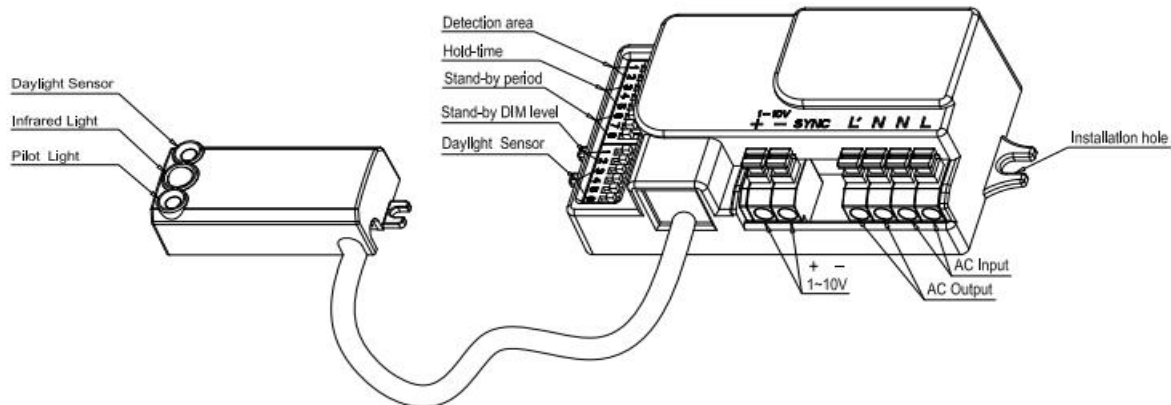
Main part

Detachable Sensor

5. Wiring Diagram



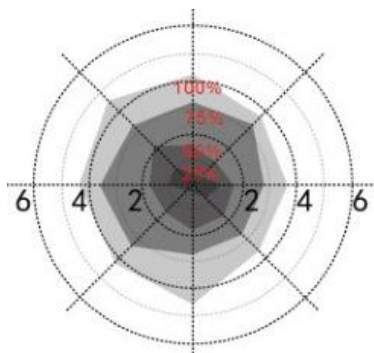
6. Structure



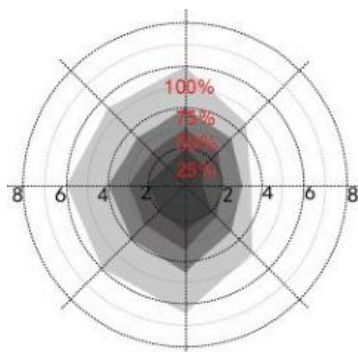
7. Radiation Pattern

Ceiling mounting

Ceiling mounted height: 3m
Sensitivity: 100%/75%/50%25%

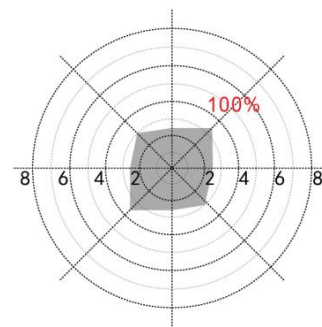


Normal moving (Speed:1m/s)

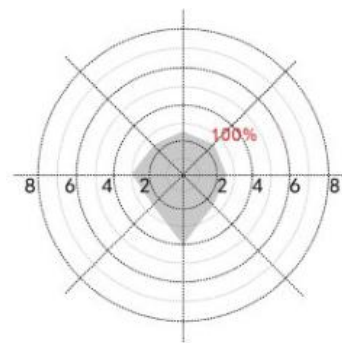


Slow moving (Speed 0.3m/s)

Ceiling mounted height: 6m
Sensitivity:100%



Normal moving (Speed:1m/s)



Slow moving (Speed: 0.3m/s)

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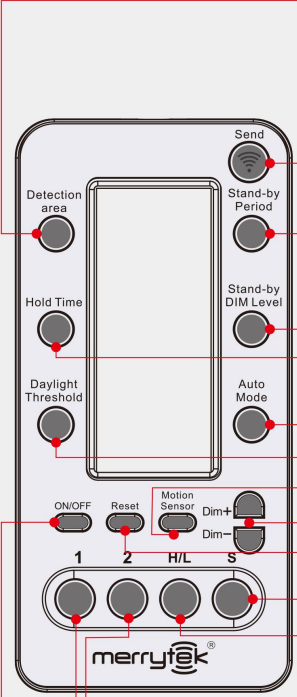
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8. Remote Control

Remote Control Settings	Button	Remarks
	Detection area	Short press to set detection area 25% / 50% / 75% / 100%, long press (>3s) to transmit selected value.
	Send	Short press to transmit all selected value on remote screen.
	Stand-by Period	Short press to set standby period: 0S / 10S / 1min / 3min / 5min / 10min / 30min / +∞ Long press >3s to transmit selected value
	Stand-by DIM Level	Short press to set standby dimming level 10% / 20% / 30% / 50%. Long press >3s to transmit selected value
	Hold Time	Short press to set hold time 5S / 30S / 1min / 3min / 5min / 10min / 20min / 30min Long press >3s to transmit selected value
	Auto Mode	Short press to set working mode: MD=Motion+daylight threshold; MP=Motion +Daylight priority (daylight switch) / Daylight harvesting; P= Daylight priority / Daylight harvesting Long press >3s to transmit selected mode Note: MP or P is not available for all models, please follow spec. sheet of motion sensor.
	Daylight Threshold	Short press to set Daylight threshold 5Lux / 15Lux / 30Lux / 50Lux / 100Lux / 150Lux / Disable. Long press >3s to transmit selected value When set Daylight threshold to Disable, sensor will switch on light when detect motion regardless of ambient brightness level.
	Motion Sensor	Short press to quit from constant on/off mode, sensor start to work (the previous setting stays in validity)
	Dim+/Dim-	Short press to set occupancy light level 50%-100% in MD mode; set target lux level in MP(Motion+Daylight harvesting) mode Dim level will change 5% each time press this button
	Reset	Short press to return to factory default setting.
	S	NA for user
	H/L	Short press to set high H sensitivity (open area application) / L low sensitivity (applied in reflection surface around area)
	2	2nd optional quick setting, short press to show the setting configuration, long press >3s to save this configuration. Press "Send" to transmit selected quick setting
	1	1st optional quick setting, short press to show the setting configuration, long press >3s to save this configuration. Press "Send" to transmit selected quick setting
	ON/OFF	Short press to switch on/off light, sensor function will recover after turn off and on power Long press >3s to switch on/off light, sensor function won't recover only if press "Motion sensor"

9. Settings

Detection Area

	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	-	-	5min
V	-	ON	-	10min
VI	-	-	ON	15min
V II	-	-	-	30min

Stand-by Period

	6	7	8	
I	ON	ON	ON	0s
II	ON	-	ON	1min
III	-	ON	ON	3min
IV	ON	-	-	5min
V	-	ON	-	10min
VI	-	-	ON	30min
V II	-	-	-	+∞

Stand-by DIM Level

	S1	S2	Preset Brightness
I	ON	ON	10%
II	ON	-	20%
III	-	ON	30%
IV	-	-	40%

Daylight Sensor

S3	S4	S5	S6	Brightness
ON	ON	ON	ON	5Lux
-	ON	ON	ON	15Lux
ON	-	ON	ON	30Lux
-	-	ON	ON	50lux
ON	ON	-	ON	100lux
ON	ON	ON	-	150lux
-	-	-	-	Disable

10. Initialization

ON/OFF and 3-step dimming function:after power on, the sensor automatically turns on light at 100% brightness. After 10sec, it turns off the light. During the initialization, the sensor is not able to detect movement.

2-step dimming function:after power on, the sensor automatically turns on light at 100% brightness. After 10sec, it turns to low brightness level (preset by Standby Dim Level). During the initialization, the sensor is not able to detect movement.

11. Factory settings

Detection area: 100% Hold time: 8S Stand-by Period: 0S Stand-by dim level: 10% Daylight Sensor: Disable

12. Application Notice

- 1) The sensor should be installed by a professional electrician. Please turn off the power before installing, wiring, changing the setting of the DIP switch.
- 2) The sensor which installed in the plastic and glass lampshade will reduce the sensitivity. For every 3mm increase in thickness, the sensitivity will be reduced by 20%.
- 3) The dimming performance could be different from different 0-10v drivers.
- 4) The light sensitivity threshold is in a sunny environment, no shadow and ambient light diffuse reflection. Ambient lux level could be different in different environment, weather, climate, time-of-day and season.
- 5) The parameters of the sensor may need to be reconfigured in different installation environments. Please refer to the following instructions or contact the manufacturer.
- 6) This sensor is for indoor use only. It will affect the waterproof effect for outdoor use. Wind, rain, and moving objects around will cause false triggering.

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- 7) The distance between any inductive sensors should be greater than 3m.
- 8) When the sensor is installed in a metal lamp, metal reflective surface, or a narrow enclosed environment, the microwave will be reflected repeatedly and cause false triggering. Please reduce the sensitivity or contact the manufacturer for technical support.
- 9) Do not place the sensor close to high-density objects such as metal, glass, concrete walls, etc, false triggering could happen.
- 10) Please ensure that there are no moving signals around the sensor, such as fan, DC motor, sewer pipe, air outlet, etc., the sensor may generate false trigger.