Specification

Product Name: **AC sensor（microwave)**

Product Model: **MC083V 99**

Versions	Release/ change Date	Reason	Publishing
V1.0	21th Sept, 2024		James Guo

【Product Feature】

- Patented microwave antenna, mounting height is 15m Max, suitable to install in most of warehouses
- Work with 1-10V dimmable LED driver, easy to achieve 2-step or 3-step dimming function
- Supports high-sensitivity and low-sensitivity modes (for metal ceilings, metal reflector mounting environments)
- Sensor data can be set by DIP switch & remote control.
- 5 years warranty
- UL listed certificate

【Parameter】

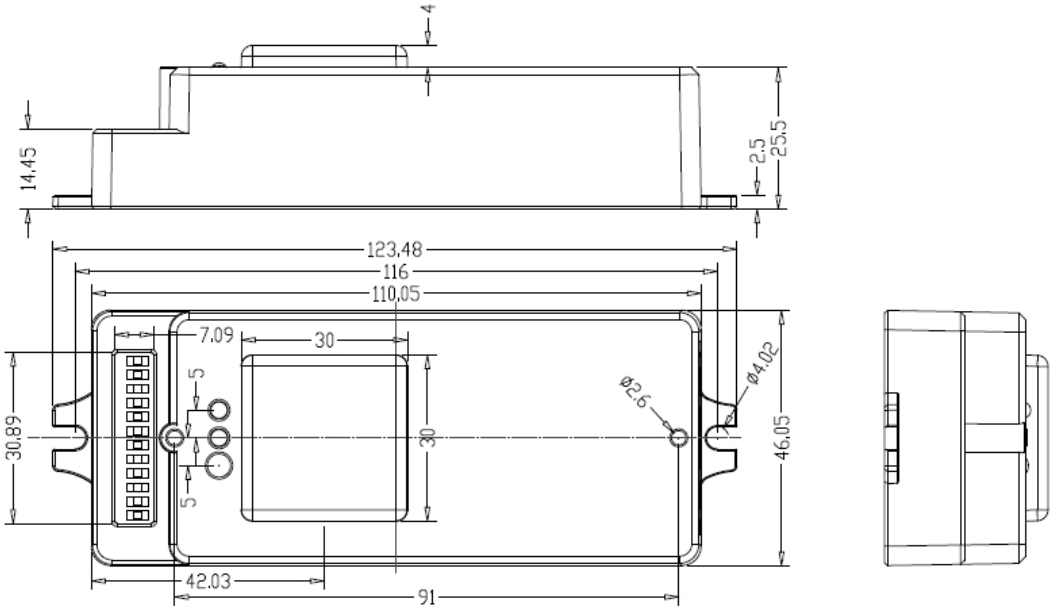
<table>
<tr><td colspan="5">Input</td></tr>
<tr><td>Rated Voltage</td><td colspan="4">120/277V AC 50/60Hz（US）；220-240VAC 50/60Hz（Europe)</td></tr>
<tr><td>Stand-by Power</td><td colspan="4">≤0.5W</td></tr>
<tr><td>Surge Test</td><td colspan="4">1kV(L/N,EN61000-4-5)</td></tr>
<tr><td colspan="5">Output</td></tr>
<tr><td>Output Control</td><td colspan="2">ON-OFF</td><td colspan="2">0-10VDC Dimming Signal</td></tr>
<tr><td>Load Capacity</td><td colspan="2">4A @120Vac</td><td colspan="2">3A @277Vac</td></tr>
<tr><td>Max. Surge Capacity</td><td colspan="4">50A (50% Ipeak, twidth =200us, 230Vac full load, cold start);</td></tr>
<tr><td>0-10VDimming</td><td colspan="4">< 50mA （Non-constant current source）
10%（1.4-1.6V） 20%（1.9-2.1V） 30%（2.9-3.1V） 50% （4.9-5.1V）</td></tr>
<tr><td colspan="5">Sensor Parameter</td></tr>
<tr><td>Operating Frequency</td><td colspan="4">5.8 GHz ±75MHz, ISM wave band.</td></tr>
<tr><td>Transmitting power</td><td colspan="4">3mW Max.</td></tr>
<tr><td rowspan="2">Hold time</td><td colspan="4">5S/30S/1min/3min/20min/30min/60min（setting by DIP）</td></tr>
<tr><td colspan="4">5s/30s/1min/3min/5min/10min/20min/30min (setting by remote）</td></tr>
<tr><td rowspan="3">Stand-by dim Level</td><td colspan="4">20%(1.9-2.1V)/30%(2.9-3.1V)（setting by DIP）</td></tr>
<tr><td colspan="4">10%(1.4-1.6V)/20%(1.9-2.1V)/30% （2.9-3.1V）/50%(4.9-5.1V)(setting by remote）</td></tr>
<tr><td colspan="4">5s/30s/1min/3min/5min/10min/20min/30min (setting by remote）</td></tr>
<tr><td rowspan="2">Stand-by Period</td><td colspan="4">0S/5S/5min/10min/30min/60min/+∞（setting by DIP）</td></tr>
<tr><td colspan="4">0s/10s/1min/3min/5min/10min/30min/+∞ (setting by remote）</td></tr>
<tr><td rowspan="2">Detection</td><td colspan="4">100%/75%/50%/25%（setting by DIP）</td></tr>
<tr><td colspan="4">100%/75%/50%/25% （setting by remote）</td></tr>
<tr><td rowspan="5">Daylight Sensor</td><td rowspan="2">Daylight threshold</td><td colspan="3">5lux/15lux/30lux/50lux/100lux/150lux/Disable</td></tr>
<tr><td colspan="3">5lux/15lux/30lux/50lux/100lux/150lux/Disable （setting by remote）</td></tr>
<tr><td rowspan="3">Daylight priority</td><td>ON</td><td colspan="2">Off</td></tr>
<tr><td>5lux/15lux/ 30lux/50lux</td><td colspan="2">Turn on Value+（50-150Lux）</td></tr>
<tr><td>100lux</td><td colspan="2">Turn on Value+（50-150Lux）</td></tr>
<tr><td>150lux</td><td colspan="2">Turn on Value+（50-150Lux）</td></tr>
<tr><td>Detecting Radius</td><td colspan="4">ceiling mounting12m r≥3m@1m/s, 39.4ft r≥10ft@3.28ft/s
Testing condition: 100% sensitivity, open 60 ㎡ indoor area.</td></tr>
<tr><td>Mounting Height</td><td colspan="4">12m（15m Max ）(39.4ft Max 49.2ft)</td></tr>
<tr><td colspan="5">Environment</td></tr>
<tr><td>Operating Temperature</td><td colspan="4">-25~60°C(-13~140°F)</td></tr>
</table>

Storage Temperature	-40℃~80℃(-40~176°F), Humidity: ≤85%(Non-condensing)
Certificate Standard	
Certificate	UL(pending) CE
Environmental Requirement	Compliant to RoHS 2.0, Reach
Safety standards	EN61058-1,UL60703-1
EMC standards	EN300440; EN301489-1; EN55015; EN61547; EN61000-3-2; EN61000-3-3; EN62479
IP Rating	IP20
Product Class	Class Ⅱ
Other	
Wiring	AC wire：（L：Black；N：White；L'：Red） 1-10V：（GND：Pink；10V：Purple）
Installation	Built-in
Package	Bubble bag + Clapboard + Carton(K=A)
Net Weight	129.4±5g
Lifetime	5 years warranty @Ta

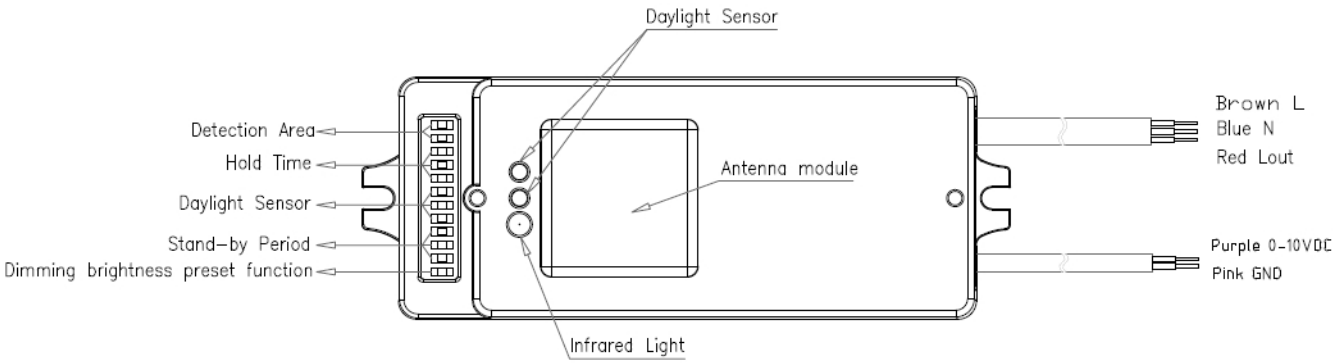
【Function】

☑ON-OFF function	Stand-by Period be set "0s"
☑2-step dimming	Stand-by Period be set "+∞"
☑3-step dimming	Stand-by Period be set "5S/5min/10min/30min/1h"
□Daylight harvesting	N/A
☑Daylight priority	Stand-by Period be set "+∞"

【Product Information】

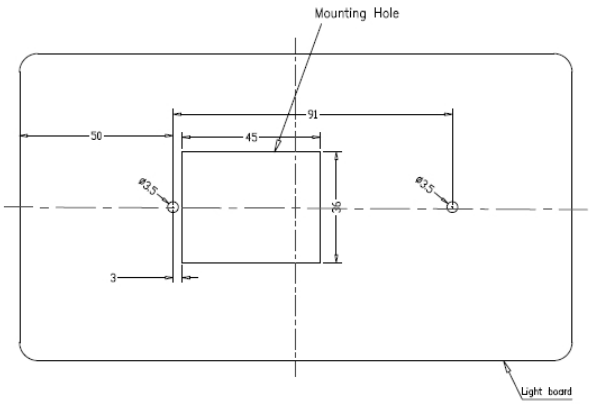


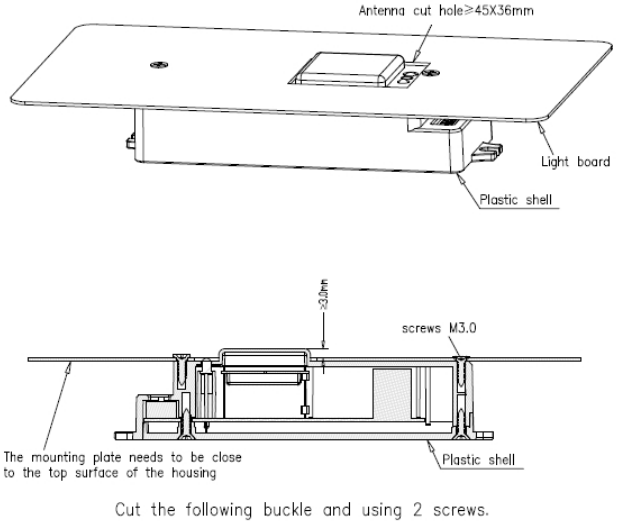
【Wiring diagram】

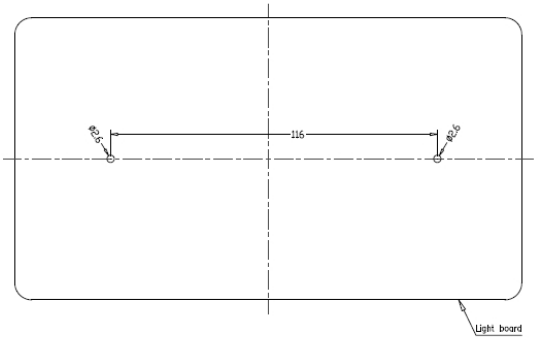


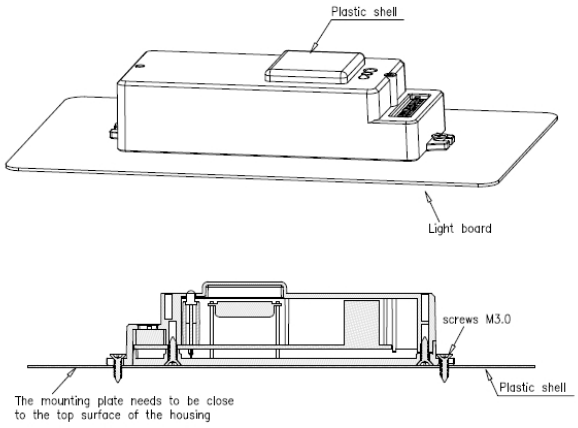
*The sensor is designed for connect one load only. Connect more than one loads may damage the sensor.

【Installation Instruction】









Cut the following buckle and using 2 screws.

【DIP Switch Setting】

1. Detection Area

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

2. Hold Time

	3	4	5	
Ⅰ	ON	ON	ON	5s
Ⅱ	-	ON	ON	30s
Ⅲ	ON	-	ON	1min
Ⅳ	-	-	ON	3min
Ⅴ	ON	ON	-	20min
Ⅵ	-	ON	-	30min
Ⅶ	-	-	-	60min

3. Daylight Sensor

	6	7	8	
Ⅰ	ON	ON	ON	5lux
Ⅱ	-	ON	ON	15lux
Ⅲ	ON	-	ON	30lux
Ⅳ	-	-	ON	50lux
Ⅴ	ON	ON	-	100lux
Ⅵ	-	ON	-	150lux
Ⅶ	-	-	-	Disable

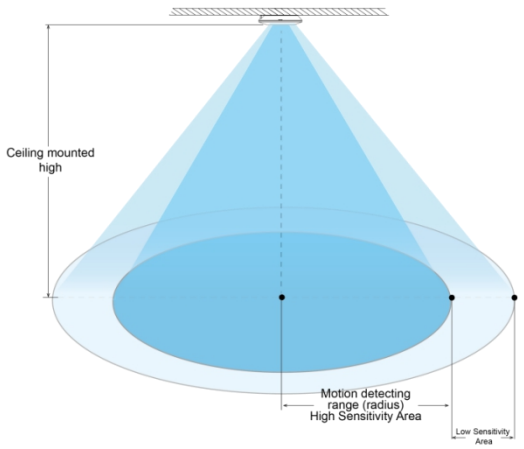
4. Stand-by Period

	9	10	11	
Ⅰ	ON	ON	ON	0s
Ⅱ	-	ON	ON	5s
Ⅲ	ON	-	ON	5min
Ⅳ	-	-	ON	10min
Ⅴ	ON	ON	-	30min
Ⅵ	-	ON	-	60min
Ⅶ	-	-	-	+∞

5. Stand-by dim Level

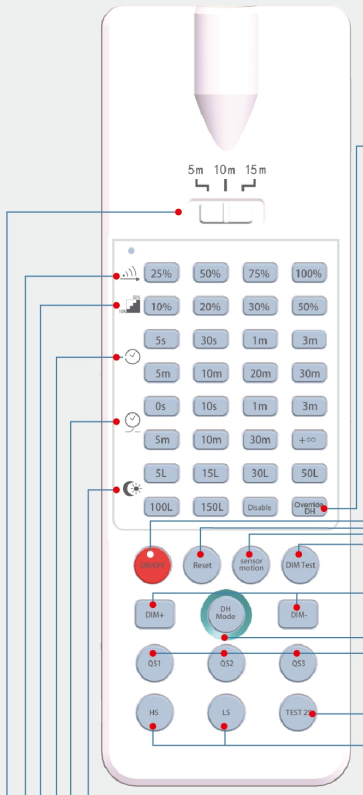
	12	
Ⅰ	ON	30%
Ⅱ	-	20%

【Detection Range】



【Remote control】

MH10
Instruction

Remote Control Setting	Button	Remarks
		Press the "ON/OFF" button, the load light enters the normal on/off mode, and the sensing function is disabled. In the normal on/off mode, the "DIM+/DIM-" function can be used to maintain the load light brightness after powering on again. In the normal on mode, the load light enter ON after powering on again. If the load light is OFF, the load light is ON for 2 seconds and then enter OFF after powering on again.
		Press “Reset" button, all parameters are same as setting of DIP switch or factory settings. Note: Only the product has DIP switch, it will revert to the current DIP setting.
		Press "Sensor motion" button, the light quits from the normal on/off mode, and the sensor starts to work. (The latest setting stays in validity)
		Press "DIM Test" button, the 0-10V dimming works to test whether the 1-10Vdc dimming ports are connected properly. After 2s, it returns to the latest setting automatically.
		Long Press 3s "Override DH" button to exit the Daylight priority mode or Daylight harvesting mode, and then enter the Daylight Sensor mode. (The latest setting stays in validity)
		Short press "DIM+/DIM-" button to set occupancy light level, the brightness of the load light adjusts at 2% per unit. Long press "DIM+/DIM-" button to set occupancy light level, the brightness of the load light adjusts at 1% per unit. Dimming range: 10%-100%. (apply for normal on mode and sensor with daylight harvesting function)
		Long Press 3s to enter the Daylight priority function or Daylight harvesting function. Note: Short press "Disable" button will exit the Daylight priority mode and the Daylight Sensor is uncontrolled.
		<table><tr><th>Scence Options</th><th>Dection Area</th><th>Hold Time</th><th>Stand-by period</th><th>Stand-by dim level</th><th>Daylight Sensor</th><th>Induction way</th></tr><tr><td>QS1</td><td>100%</td><td>5min</td><td>10min</td><td>10%</td><td>30Lux</td><td>HS</td></tr><tr><td>QS2</td><td>100%</td><td>10min</td><td>30min</td><td>10%</td><td>Disable</td><td>HS</td></tr><tr><td>QS3</td><td>100%</td><td>20min</td><td>30min</td><td>10%</td><td>Disable</td><td>HS</td></tr></table> Note: The sensor parameters can be adjusted by pressing the corresponding button. When user press any button to change the sensor parameters, the last setting prevails. If the sensor doesn't have the function of the above parameters, that parameter is invalid. (Stand-by period and Stand-by DIM Level are not applicable to ON-OFF Sensor. Induction way is not applicable to low-mount sensor)
		Press the "TEST 2s" botton can enter the test mode anytime. At test mode, the sensor parameters as below: Detection Area is 100%, Hold Time is 2s, Stand-by Dim Level is 10%, Stand-by Period is 0s, Daylight sensor is disabled. This function only for testing. Quit the test mode by pressing "RESET" or any other function buttons. This mode has no memory function. After powering on again, the parameters are restored to the last setting. Note: If the sensor have the wireless networking function, the botton provides the functions is entering the distribution network mode.
		Press "HS" botton to set the detection area to high sensitivity. Press "LS" botton to set the detection area to low sensitivity. The Induction mode is adjusted at the setting detection area. Note: This button is invalid for low-mount sensor.
		Daylight Sensor Set up Daylight Sensor: 5Lux/15Lux/30Lux/50Lux/100Lux/150Lux/Disable
		Stand-by period Set up Stand-by period: 0s/10s/1min/3min/5min/10min/30min/+∞ Note: Stand-by period is not applicable to ON-OFF Sensor.
		Hold time Set up Hold time: 5s/30s/1min/3min/5min/10min/20min/30min
		Stand-by dim level Set up stand-by dim level: 10%/20%/30%/50% Note: Stand-by DIM Level is not applicable to ON-OFF Sensor.
		Detection Area Set up Detection Area: 25%/50%/75%/100%
		Remote Distance Toggle bottom can set the remote distance of remote control and sensor.

Remote controland code setting conversion

1.DIP switch setting convert to remote control

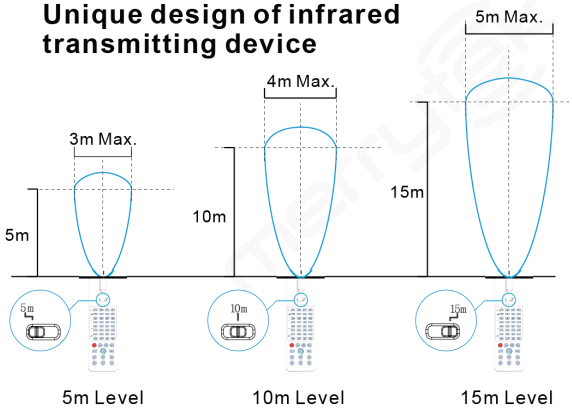
Press any bottom except "RESET" on the remote control, and the sensor settings convert to the function currently selected by the remote control. (No function button settings invalid)

2.remote control convert to DIP switch setting

a.Press the "RESET" button on the remote control, and all settings return to the DIP switch settings of the sensor.

b.Turn off the power, toggle any DIP switch, connect to the power, and all settings return to the DIP switch settings when supply power again.

Unique design of infrared transmitting device



【Initialization】

After power on, the sensor automatically turns on light to 100% brightness and turns off light in 10seconds. During initialization, sensor is not able to detect movement.

【Default setting】

Sensitivity: 100%, Hold time: 5s, Daylight sensor: Disable, Stand-by Period: 0s, Stand-by DIM Level:20%

【Application Notice】

● The sensor should be installed by a professional electrician. Please turn off the power before installing, wiring, changing the setting of the DIP switch.

● Sensitivity area is related to moving speed of objects, size of moving objects, mounting height, mounting angle, working environment, reflecting materials and etc.. Given detecting area is typical value that was measured by 165cm/65kg testers in an indoor open environment.

● The detection area of the microwave sensor when installed on the wall will be greatly increased compared to when installed on the ceiling. If adopts wall ceiling, please reduce the sensitivity or contact our company to confirm the usage settings. The daylight thresholds are measured on a sunny day without shadow and in an ambient light diffuse reflection status. Different environment and climate cause different brightness values that daylight sensor measures.

● Sensor parameters may need to be reconfigured in different installation environments, please refer to the following instructions or contact the manufacturer.

● Sensor is for indoor use only. The waterproof effect for outdoor or half-outdoor use will be affected. Wind, rain, and moving objects may cause false triggering.

● The installation height of the sensor product cannot exceed 15 meters, and the optimal height is 12 meters. The distance between the two sensors should be greater than 3m.

● When the sensor is installed in a metal lamp, on a metal reflective surface, or in a small closed environment, the microwave will be reflected multiple times and cause false triggering. Please reduce the sensitivity of the sensor or contact the manufacturer for technical support.

● Please make sure that there are no moving signals such as fans, DC motors, sewer pipes, air outlets, etc. around the sensor, otherwise the sensor may cause false triggering.

● Microwaves cannot penetrate metal. Do not place product in a closed or a half-closed metal lamp. Neither metal nor glass is not allowed to cover above the product.

● For the new installation environment, it is recommended to test 5pcs samples before installation.