Specification

Product Name: DC Controller (24G microwave version)

Product Model: MC182D 99

Versions	Release/ Change Date	Reason	Released by
V1.0	2024.10.31		James.Guo

【Product Features】

- Built-in installation presence sensor
- Adopt 24GHz patented microwave antenna technology, support 4m max. installation height
- With German RF technology, 5 years product warranty
- Motion, minor-motion, and daylight sensor function
- Applicable for washrooms, living rooms, kitchens and other environments where motion, minor motion detection required
- Remote control available for parameter configuration

【Parameters】

Input		
Rated Voltage	12±1VDC	
Working Current	45±5mA	
Ripple Voltage	<100mVp-p	
Output		
Output Signal	0-10VDC/PWM dimming signal	
Sensor Parameters		
Working Frequency	24GHz~24.25GHz，ISM band	
Transmitting Power	6dBm Max.	
Detection Area	25%/50%/75%/100% (Remote control setting)	
Hold Time	5s/30s/1min/3min/5min/10min/20min/30min (Remote control setting)	
Stand-by Period	0s/10s/1min/3min/5min/10min/30min/+∞ (Remote control setting)	
Stand-by DIM Level	10%/20%/30%/50% (Remote control setting)	
Daylight Sensor	Normal daylight:	5Lux/15Lux/30Lux/50Lux/100Lux/150Lux/Disable (Remote control setting) (Ambient light diffusion)
	Daylight harvesting	100L/200L/300L/400L/500L/600L/Disable （enter daylight harvesting mode；reference to remote manual）
Detection Range (Radius)	Ceiling installation 3m high Motion and minor motion: r≥2.5m Test condition: 100% sensitivity, 60 ㎡ indoor open space	
Installation Height	3m (4m Max)	
Environment		
Working Temperature (Ta)	-20℃-50℃	
Storage Temperature	-40℃~+80℃ humidity: ≤85% (non-condensing)	
Certification Standards		
Certification	CE	
Environmental Requirements	Comply with RoHS 2.0 , Reach requirements	

IP Rating	IP20
Protection Class	Class II
Others	
Wiring	3 pin PH2.0 terminal
Installation Requirements	External zhaga book20 installation
Packaging Requirements	Clapboard + Carton (K=A)
Net Weight	9.5±3g
Lifetime	5 years warranty @Ta

【功能描述】

☑ ON-OFF Function	Stand-by Period set ”0s”
☑ 2-step Dimming	Stand-by Period set “+∞”
☑ 3-step Dimming	Stand-by Period set “10s/1min/3min/5min/10min/30min”
☐ Daylight Priority	N/A
☑ Daylight Harvesting	Remote set DH Mode+Daylight Sensor “5Lux=100Lux/15Lux=200Lux/30Lux=300Lux/50Lux=400Lux/100Lux=500Lux/150Lux=600Lux”

Big motion signal active

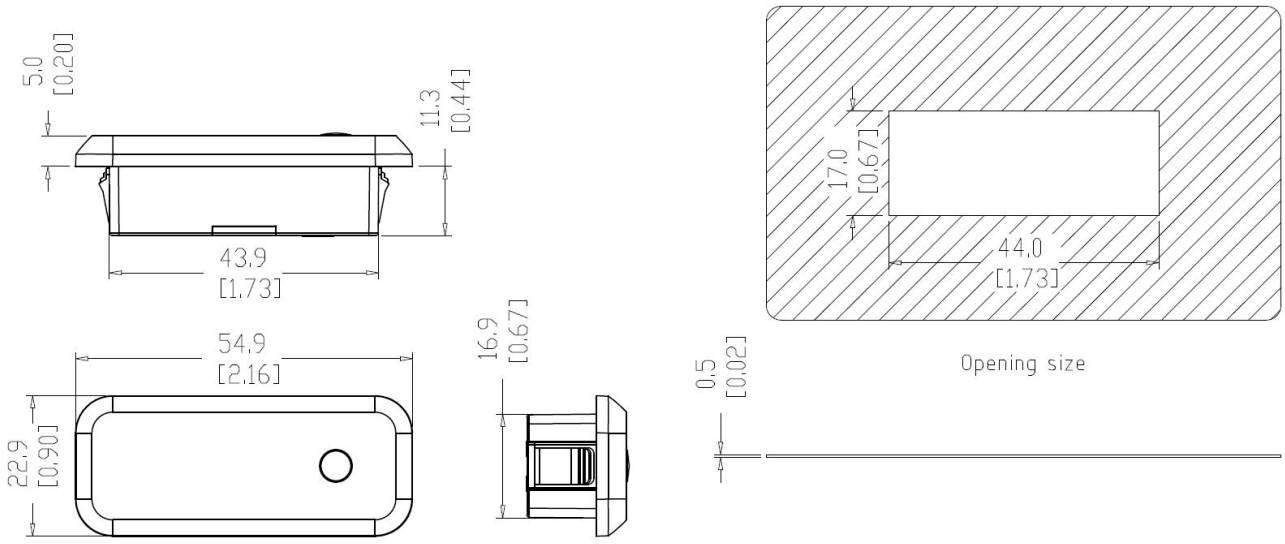
Minor motion signal maintain

Human presence: detect the human body in the detection area to carry out big movement signals (walking) to trigger the induction and output high level (such as control lights on and off), and then detect minor motion signals (body leaning forward, backward, limb swinging, shaking the head, typing, playing mobile phones and other minor motions.) as well as the detection of human respiratory vital signs caused by the abdominal cavity, chest expansion etc to maintain output high level (such as control lights always on)

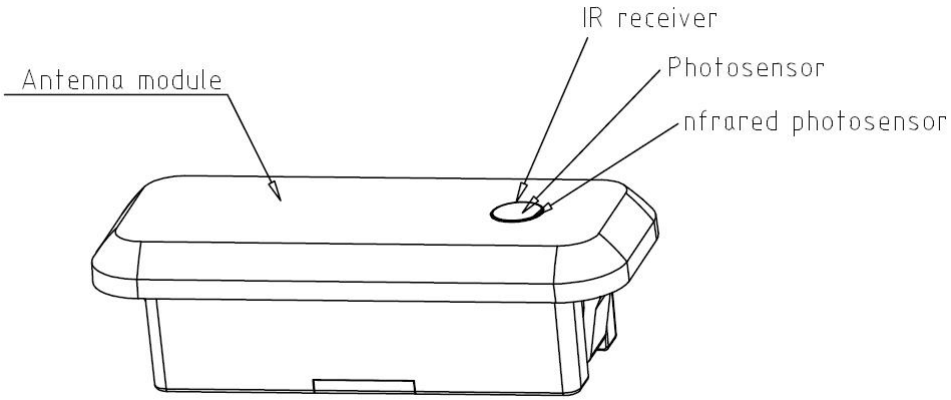
Human absence: no signal detected in the detection area and output low level (control lamp off)

【Diagram】

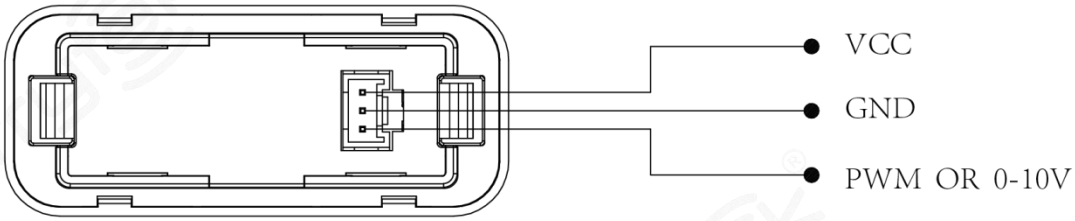
- Dimension (unit: mm)



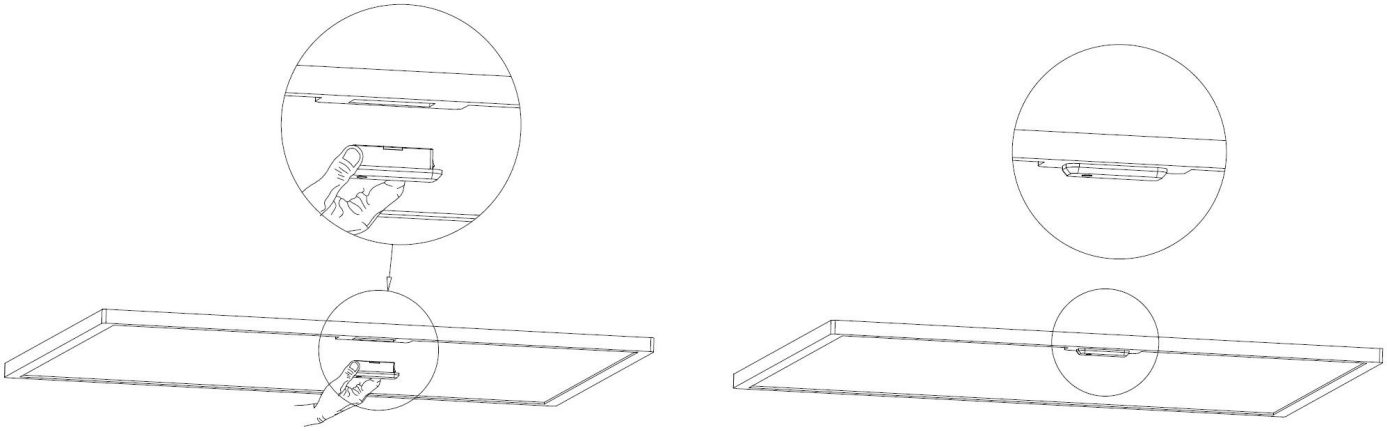
- Function



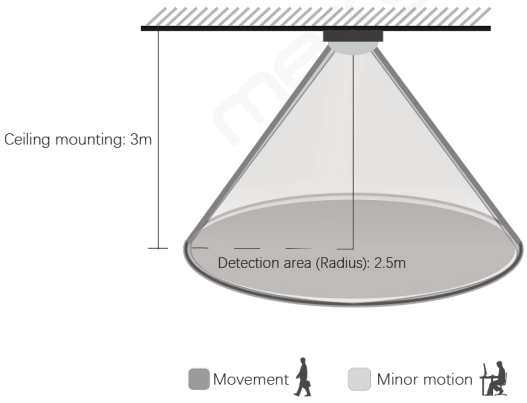
- Wiring



- Installation instruction

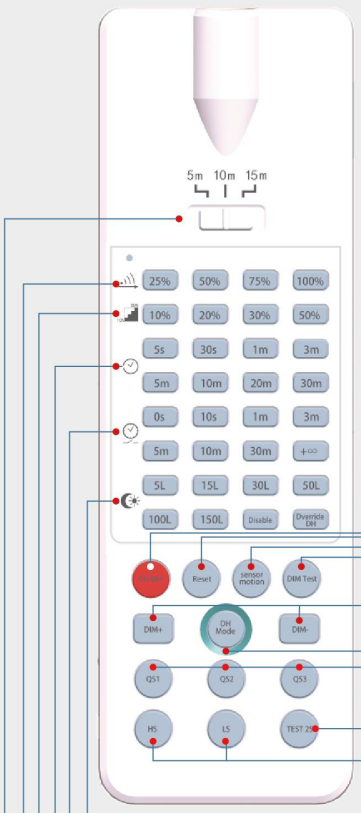


【Detection Range】



【Remote Manual】

MH10
Instruction

Remote Control Setting	Button	Remarks
	ON/OFF	Press the "ON/OFF" button, the light enters the constant ON/OFF mode, and the sensing function is disabled. In ON/OFF mode, DIM+/DIM- function is available, it maintains the same brightness after powering on again. Power off under NO mode and then power on, the lamp enters constant OFF mode. Power off under constant ON mode and then power on, the load lamp lights 2s and then enters NC mode.
	Reset	Press "Reset"button, all parameters are same as setting of DIP switch or factory settings.
	Sensor motion	Press "Sensor motion" button, the light quits from the constant on/ off mode, and the sensor starts to work (The latest setting stays in validity)
	DIM Test	Press"DIM Test" button, the 1-10 V dimming works to test whether the10Vdc dimming ports are connected properly. After 2s, it returns to the latest setting automatically.
	DIM+ DIM-	Short press to transmit a dimming signal, and the brightness ofthelamp will be adjusted with +/-2% each time; dimming range:50%-100 %. Long press continous dimming(Only available for daylight priority function sensor) Note: the maximum brightness can be set with this button;
	DH Mode	Long press" DH Mode" >3s to enter the daylight priority function or the daylight harvesting function; Press "Override DH" quit daylight priority function or "Reset" return to factory default
	Q1 Q2 Q3	Scence Options / Dection Area / Hold Time / Stand-by period / Stand-by dim level / Daylight Sensor / Induction model QS1 / 100% / 5min / 10min / 10% / 30Lux / Hs QS2 / 100% / 10min / 30min / 10% / Disable / Hs QS3 / 100% / 20min / 30min / 10% / Disable / Hs Note: Users can press any button to adjust parameters, subject to the last setting. When the sensor does not have the above parameter function, the parameter setting is invalid. Hold time, dim level are not applicable to ON/OFF sensor, Sensor mode is not available for low installation sensor.
	TEST 2S	Press the "RESET" and then Press the "TEST 2S" bottom can enter the test mode any time At the mode the sensor parameters as below:Detection Area is 100%, Hold Time is 2s.Stand-by Dim setup Level,Stand-by Period is 0s, This function only for testing. Quit the mode by pressing "RESET"or any other function buttons.
	HS LS	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 thereshold for daylight priority: 5LUX/15LUX /30LUX/50LUX/100LUX/150LUX/Disable
		Stand-by period Set up stand-by time:0S/10S/1min/3min/5min/10min/20min/30min/+∞
		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%
		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 control and code setting conversion

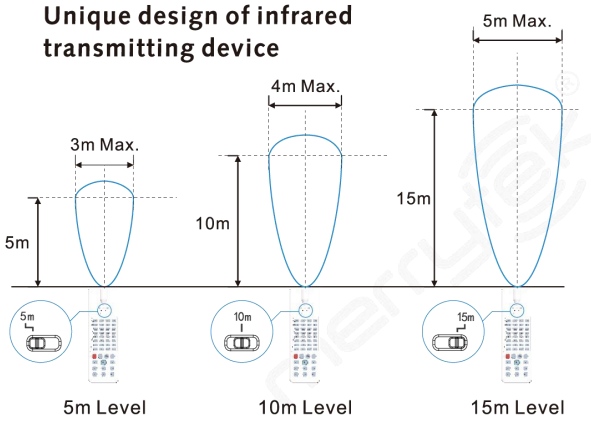
1.DIP switch setting convert to remote control Press any bottom except "RESET" on the remote control, and the sensor settings convert to the function currently selected by the remote control. (No function button settings invalid)

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 at 100% brightness, and self-check for 10s. During the initialization, the sensor is not able to detect movement. It enters sensing mode after initialization, and during which, the lamp maintains at 100% brightness.

【Factory 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 configuration.

● The product has good penetration ability to plastic, wood, etc., but the microwave module antenna should not have metal accessories or metal shells, glass shells, etc.in direct front or nearby, otherwise it will affect the antenna transmission and reception.

● The sensing distance will be affected by the installation height, the size of the object to be detected, the speed of movement, the impact of the installation environment, and the sensing distance in different directions will have a certain degree of variability.

● The daylight threshold is in a sunny environment, no shadows, and ambient light diffuse reflection conditions. In different periods, climates, and environments, the daylight value detected by the light sensor may be different.

● The installation distance of the product is recommended to be more than 1.5m; the installation distance between the product and the router should be more than 1.5m, so as not to cause interference to the normal operation of the microwave sensor.

● The mounting plane of the product (e.g. aluminium substrate, PCB board) needs to be at a certain height difference from the antenna plane of the microwave module, and the antenna plane of the microwave module should be higher than the nearby plane by more than 5mm in order to achieve the best detection effect.

● DC regulated power supply with stable output voltage, low current and ripple coefficient must be used, the ripple of the power supply should be less than 50mV, and the minimum load current of the power supply should be more than 120mA, and it is also recommended to set up an electrolytic capacitor of not less than 100uF at input power supply VCC terminal.

● Product installation as far away as possible from large metal equipment, pipelines, air conditioning vents, exhaust vents, smoke machines and other scenes, so as to avoid equipment vibration affect the detection effect.

● Microwave module should avoid close to the AC drive power supply, be away from the drive power supply rectifier bridge, transformer, switching tubes and other high-power devices, to avoid high frequency signals interference to normal operation of the microwave module.

● Product design: the antenna surface of the microwave module and its nearby circuits to avoid the flow

of large currents, avoiding transformers or high frequency components nearby, distance should be more than 10mm as far as possible.

● When wiring, the antenna side and the component side on the back of the product should not be covered by wires or have large currents flowing through, so as not to affect the normal operation of the sensor.

● The front of the product and nearby can not be equipped with metal accessories or glass block, so as not to affect the normal operation of the sensor, while the thickness of the plastic as far as possible to choose less than 1mm, too thick will affect the detection of microwave modules and directionality; microwave antenna plane and the shell distance should be greater than 3.2mm

● The antenna surface of the product and the metal plane (aluminium substrate, iron shell) need to be a certain height difference, the recommended distance is more than 0.5mm.

When product structure, power supply mode/circuit, sensor antenna front cover, etc. changes, pls notify the sensor manufacturer to confirm, so as not to cause the product to work improperly. Otherwise, the manufacturer does not bear any corresponding responsibility for the abnormality.