

Specification

Product Name: 2.4G RF Networking Microwave Sensor

Product Model: MC182D IR B, MC182D IR 1 B

Versions	Release/ Change Date	Reason	Released by
V2.0	July 14, 2026	Recompile	Leun Huang

【Product Features】

- Adopt PIR motion detect technology, support 4m max. installation height
- Motion and daylight sensor function, standard zhaga20 interface
- Applicable for office, classroom environments where motion detection required
- Grouping networking by 2.4G wireless, no need pairing or gateway.
- Output 0-10V dim or PWM dim, 2-step/3-step dim function.
- All sensor parameters can be set by remote control.
- 5 years product warranty



【Parameters】

Model		MC182D IR B		MC182D IR 1 B	
Input	Rated voltage	12±1VDC			
	Operating current	≤ 36mA			
	Ripple voltage	<100mVp-p			
Output	Output signal	0-10VDC dimming signal		5V PWM dimming signal	
Sensor parameters	Detection mode	PIR detection			
	Detection area	Set via MH15	100%/50%/25%		
		Set via MH17	100%/75%/50%/25%		
	Hold time	Set via MH15	30s/1min/3min		
		Set via MH17	5s/30s/1min/3min/5min/10min/20min/30min		
	Daylight sensor	Daylight Threshold	Set via MH15	5Lux/50Lux/Disable	
			Set via MH17	5Lux/15Lux/30Lux/50Lux/100Lux/150Lux/999Lux(Disable)	
		Daylight Harvesting	Set via MH17	100Lux/200Lux/300Lux/400Lux/500Lux/600Lux/999Lux(Disable)	
	Stand-by Period	Set via MH15	5min/10min/ +∞		
		Set via MH17	0s/10s/1min/3min/5min/10min/30min/99（+∞）		
	Stand-by Dim Level	Set via MH15	10%/30%		
		Set via MH17	15%/20%/30%/50%		
	Detection range (radius)	Ceiling installation 3m high: r≥3m@0.6~1m/s, Tangent test Test condition: 100% sensitivity, 60 m² indoor open space, environmental temperature: 25℃			
Installation height	Typical 3m (4m Max), see note 1 & 2				
Wireless parameters	Operating Frequency	2.400-2.480GHz			
	Transmitting Power	7dBm Max.			
	Group	One group max nodes 32 Pcs including all Tx + Rx members of a group			
	Transmitting Distance	≥15m (Point-to-point open area transmission distance, built-in luminaires)			

Environment	Working temperature (Ta)	-25℃-55℃
	Storage temperature	-40℃~+80℃ Humidity: ≤85% (non-condensing)
Certification standards	Certified	CE
	Environmental requirements	Comply with RoHS 2.0, Reach requirements
	IP Rating	IP20
Other	Wiring	3 pin PH2.0 terminal
	Installation requirements	Zhaga book20 installation
	Packaging requirements	Clapboard + Carton (K=A)
	Net weight	16±3g
	Lifetime	5 years warranty @Ta (indoor)

Note:

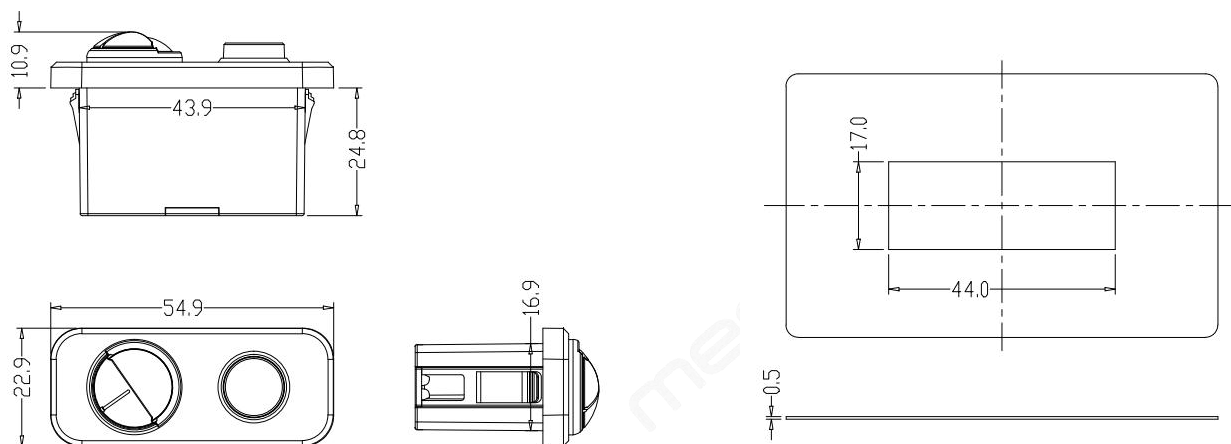
1. When ambient temperature approaches the human body temperature range (36℃~37℃/96.8~98.6°F), PIR motion detection will significantly weaken or non-responsive.
2. When ambient temperature or LED tray temperature is higher than 55℃/131°F, false triggering may happen, please try to reduce detecting sensitivity to improve. If stays false triggering, the PIR sensor should not suitable to be used in the space.

【Function description】

ON-OFF function	Settings	Stand-by Period be set to “0s”
	Description	The light turns on when motion is detected and either the Daylight Sensor is disabled or ambient brightness is below the set value, staying on for the preset Hold Time (which resets if motion is detected again) before turning off.
2-step dimming function	Settings	Stand-by Period be set to “+∞”
	Description	The light turns on upon motion detection when either the Daylight Sensor is disabled, remains on for the Hold Time, then switches to dimmed mode - any retriggering during this period resets the Hold Time.
3-step dimming function	Settings	Stand-by Period be set to “10s/1min/3min/5min/10min/30min”
	Description	The sensor activates full brightness when motion is detected (with Daylight Sensor disabled or ambient light below threshold), maintains full brightness for the Hold Time, then dims to low brightness for the Stand-by Period before turning off completely - any subsequent motion detection during this period resets the Hold Time.
Daylight harvesting function	Settings	Long press the P button on the MH17 remote control to set the Daylight harvesting function.
	Description	When the product enters Daylight Harvesting mode, the brightness of the luminaire is automatically controlled according to the values set by the remote control, interacting with ambient brightness (when ambient brightness is higher than the preset/target value, the luminaire automatically adjusts to dimmer brightness; when lower, it automatically adjusts to brighter brightness).
Grouping	Settings	Remote group “TX: 0~15” and set Rx signal (Rx1~Rx4) for sensor

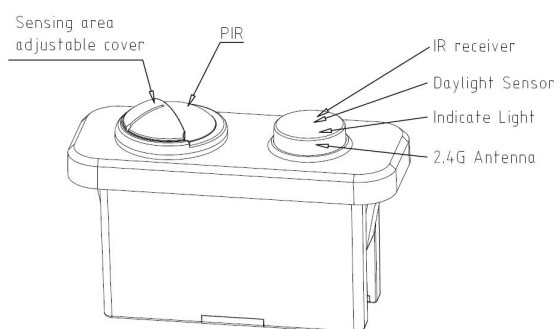
【Diagram】

- Dimension (unit: mm)

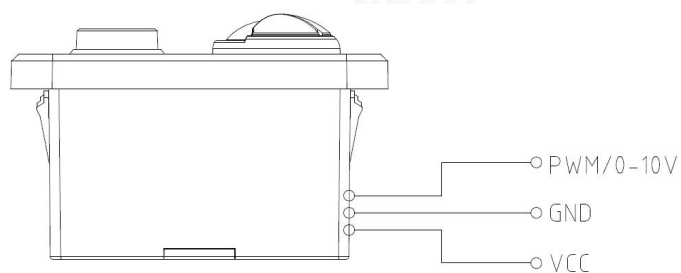


Cut-out dimension

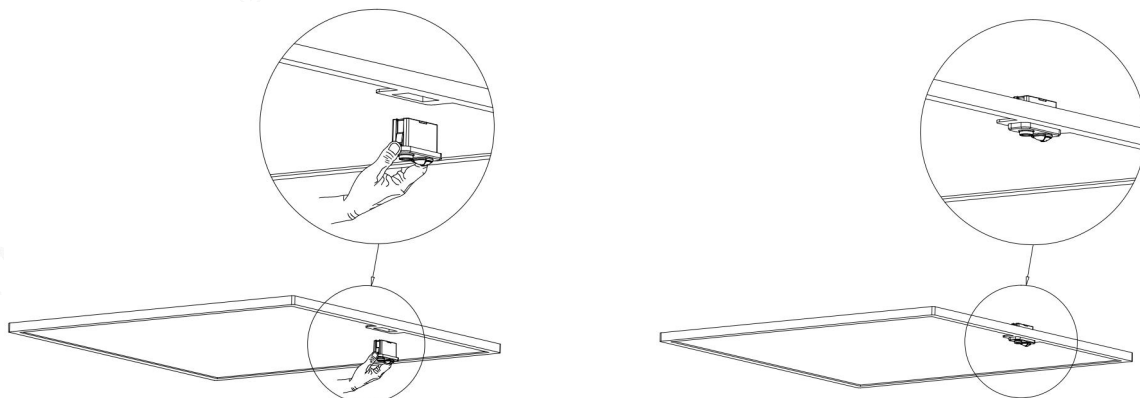
- Function



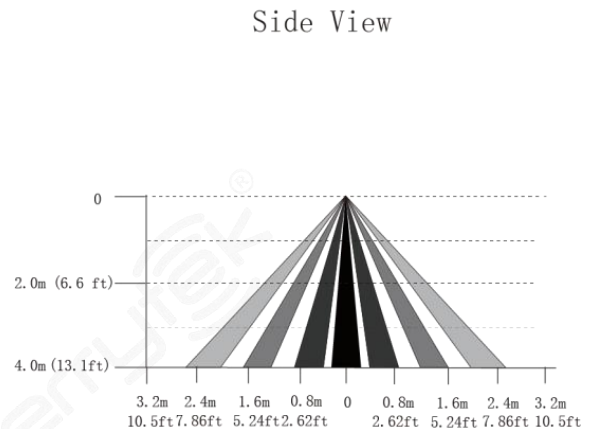
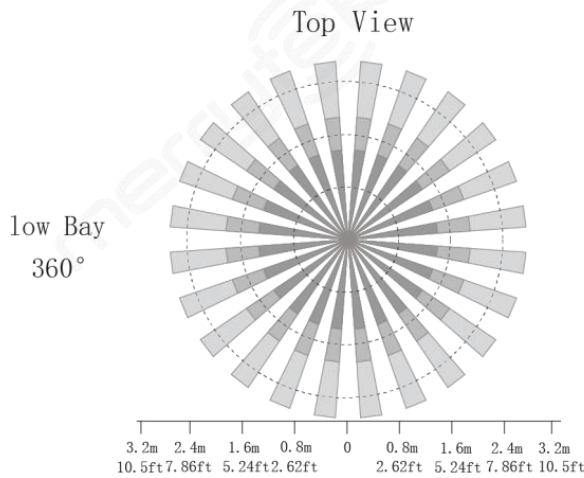
- Wiring



- Installation instruction

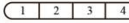
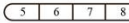
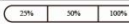
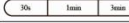
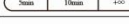
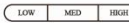


【Detection Range】



【Remote】

MH15

Remote Control Setting	Function	Button	Remarks
	Enable/disable Grouping	 	Short press  to disable grouping function and light flashes once. Short press  to recover grouping function and light flashes once.
	Tx Grouping		Long press the same button code to create groups for the sensors, and the light flashes once. Each sensor only can be added in the same Tx, the last setting Tx is available.
	Look Up Sensors in The Same Group		Short press the button code, all LED lights(Tx) in the same group, will flash 3 times.
	Rx Grouping		Short press  and press one of Tx group code that is "1" to "8" within 3 seconds, the sensor can receive the same code same as Tx. Max 4 Rx groups can be set. For examples, 1.Short press  of sensor A and press  , then press  and  within 3 seconds, sensor A can receive group code "1" and "2". 2.Rx of Sensor A has been set as "1", "2", "3" and "4", once short press  and  the sensor only can receive "2", "3", "4" and "5".
	Synchronize Sensor Parameters		Short press Tx code from "1" to "8", the LED lights in the same group will flash 3 times, wait for the flashing to complete, and then short press  , the sensor parameters will be copied to other members in the same group (The dimming level set by "+/-" cannot be synchronized). Once successfully synchronize all sensor parameters, all lights in the same group will flash 3 times.
	Stand-by Dim Level Setting		Short press the button to set Stand-by Dim Level of LED light to 10% or 30%(the duty cycle of the sensor), and the light flashes once.
	Motion Trigger Brightness Setting		Short press "+" or "-" to increase or decrease the brightness level by 2% (the duty cycle of the sensor) each time. Dimming range is 15%-100%. Long press "+" or "-" to increase or decrease continuously brightness level.
	Sensor Parameters Setting		Short press Detection Area and the light flashes once.
			Short press Hold time and the light flashes once.
			Short press Stand-by Period and the light flashes once.
			Daylight threshold Short press the button to set the required daylight threshold and the light flashes once.
	Disable Sensor Function/ Light Normally On Or Off		Short press this button, the sensor function is disabled and all lights in the group stay on. If power is cut while the lights are on, they will stay on after re-powering. Long press this button for 3sec, the sensor function is disabled and all lights in the group stay off. If power is cut while the lights are off, they will turn on for 2 seconds after re-powering and then turn off again.
	Enable Sensor Function		Short press the button and the led lights in the same Tx group will flash once, all sensor parameters are back to the last setting.
	Factory Reset		Short press  , and while keeping the remote aimed at the sensor, hold for 3 seconds, all parameters will back to the setting of factory reset. The light will flash once. This operation applies to a single luminaire only, will not reset all luminaires in the same TX group.

Remote Control Setting	Function	Button	Remarks																																				
	Screen wake-up		Short press to wake the screen when off.																																				
	One-click transmission of all parameters		Short press to transmit the parameters displayed on the screen. The transmission will take 3-5 seconds, during this period, make sure the remote control is aimed at the sensor. The lamp will flash once if transmit successfully.																																				
	Transmit a single parameter		Short press to transmit the flashing parameter on the screen, and the light will flash once after successful transmission.																																				
	Parameters & configuration		Press "↑" button to select parameter items, and press "←" to choose desired gear or value. 1. General parameters (see Figure 1) <table><tr><th>Icons</th><th>Parameter Items</th><th>Options</th></tr><tr><td>D</td><td>Detection Sensitivity</td><td>100%/75%/50%/25%</td></tr><tr><td>LUX</td><td>Daylight Sensor</td><td>5lux/15lux/30lux/50lux/100lux/150lux/999 (999: daylight sensor disable)</td></tr><tr><td>SD</td><td>Stand-by Dim Level</td><td>15%/20%/30%/50%</td></tr><tr><td></td><td>Hold time</td><td>5s/30s/1min/3min/5min/10min/20min/30min</td></tr><tr><td></td><td>Stand-by Period</td><td>0s/10s/1min/3min/5min/10min/30min/99/99: stand-by period +∞)</td></tr></table> 2. Wireless grouping parameters (see Figure 2, only available for sensors with wireless networking function) <table><tr><th>Icons</th><th>Parameter Items</th><th>Options</th></tr><tr><td>Tx</td><td>Transceiver (Master device transmit group)</td><td>A total of 16 groups can be set from 00 to 15, and sensors in the same group can network with each other</td></tr><tr><td>Rx1 Rx3 Rx4</td><td>Receiver (Slave device receive group code)</td><td>16 groups can be set from 00 to 15 respectively, and wireless signals with the same group code as Tx can be received</td></tr></table> 3. Other parameters (MC, MLC series products not applicable) <table><tr><th>Icons</th><th>Parameter Items</th><th>Options</th></tr><tr><td>SE</td><td>Scene selection</td><td>A total of 10 scenes can be set from 01 to 10</td></tr><tr><td>CH</td><td>Channel setting</td><td>A total of 30 channels can be set from 01 to 30</td></tr></table>	Icons	Parameter Items	Options	D	Detection Sensitivity	100%/75%/50%/25%	LUX	Daylight Sensor	5lux/15lux/30lux/50lux/100lux/150lux/999 (999: daylight sensor disable)	SD	Stand-by Dim Level	15%/20%/30%/50%		Hold time	5s/30s/1min/3min/5min/10min/20min/30min		Stand-by Period	0s/10s/1min/3min/5min/10min/30min/99/99: stand-by period +∞)	Icons	Parameter Items	Options	Tx	Transceiver (Master device transmit group)	A total of 16 groups can be set from 00 to 15, and sensors in the same group can network with each other	Rx1 Rx3 Rx4	Receiver (Slave device receive group code)	16 groups can be set from 00 to 15 respectively, and wireless signals with the same group code as Tx can be received	Icons	Parameter Items	Options	SE	Scene selection	A total of 10 scenes can be set from 01 to 10	CH	Channel setting	A total of 30 channels can be set from 01 to 30
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	Enable low sensitivity mode		Short press to enable low sensitivity mode for a single product, the screen will display "L" and the lamp will flash once after successful setting. This mode can be applied in highly reflective environments where the sensor is unable to turn off the light.																																				
Enable daylight harvesting mode		Long press and the screen display "P" to enable daylight harvesting mode, the lamp flashes 1 time after successful setting. The target floor/desk illuminance can be selected and the lamp will adjust its brightness automatically according to natural light levels (see Figure 3). Optional settings are 100lux/200lux/300lux-/400lux/500lux/600lux/999/999: target lux level is maximum, light will not dim). Short press "P" to quit daylight priority mode or daylight harvesting mode. The lamp flashes 1 time. "P" will not displayed on the screen.																																					
Dim level	 	Short press  to increase the dim level by 2% each time. Long press to continuously increase the brightness. Short press  to decrease dim level by 2% each time. Long press to continuously decrease the brightness, with a minimum brightness of 15% (The minimum brightness of some products can be adjusted to 50%. Please refer to the actual product for specific details).																																					
Quick setting		Long press to save parameters displayed on the screen to the QS (Quick Setting) mode. When need to quickly set parameters for a single lamp, briefly press this button to recall the stored parameters, then short press  to quickly configure each parameter, the light will flash once after successful setting.																																					
Disable sensor mode/ light permanently OFF		Short press to turn off the sensor function. The light will flash once after successful setting. If multiple products are in the same group, briefly press to turn off the sensor function for all products in the same group. Long press to turn off the light, which can be controlled to permanently OFF. If there are several lights in the same group, all lights will be OFF.																																					
Enable sensor mode/ light permanently ON		Short press to restore the sensor function. The light will flash once after successful setting, and sensor parameters will be the last configured settings. If multiple products are in the same group, briefly press to turn on the sensor function for all products in the same group. Long press to turn ON the light, which can be controlled to permanently ON. If there are several lights in the same group, all lights will be ON.																																					
Reset		Briefly press to reset the sensor, and light flash once, restoring the sensor parameters to the default factory settings.																																					
Turn the screen backlight on/off		Long press to turn the screen backlight on/off. Short press to turn the sensor indicator on/off (if available).																																					
Enable wireless settings options/ wireless networking function		Long press to open the wireless settings options on the remote control. Briefly press to enable the wireless networking function. Upon successful setting, the light will flash once.																																					
Disable wireless settings options/ wireless networking function		Long press to close the wireless settings options on the remote control. Briefly press to disable the wireless networking function. Upon successful setting, the light will flash once.																																					
Look up		Short press to query the specific parameter settings of the current wireless networking sensor. Upon successful query, the sensor will flash once, and the screen will display all sensing parameters and networking parameters of the sensor. Note: 1. After each query, wait 5 seconds before querying again. 2. Sensors without wireless networking function not available for parameter query.																																					
Synchronize		Short press to synchronize the current sensor parameter settings to other sensors in the same group (network settings cannot be synchronized). The synchronization process takes 3-5 seconds, during this period, make sure the remote control is aimed at the sensor. Upon successful synchronization, the lights in the same group will flash three times.																																					
Network pairing		N/A																																					
Color temperature control		N/A																																					
Switch sensor mode		N/A																																					

Fig.1

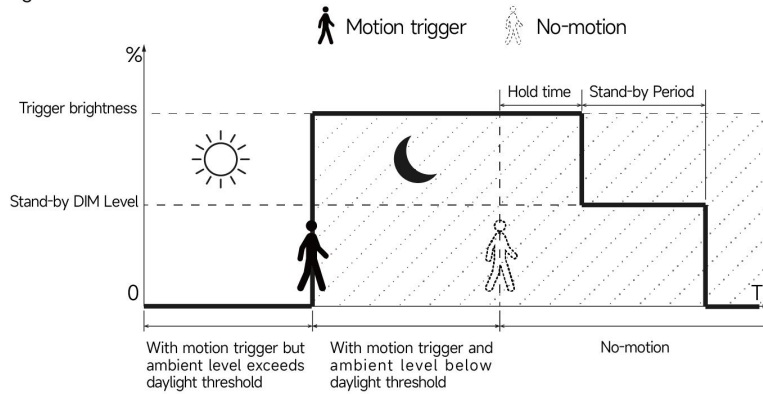


Fig.2

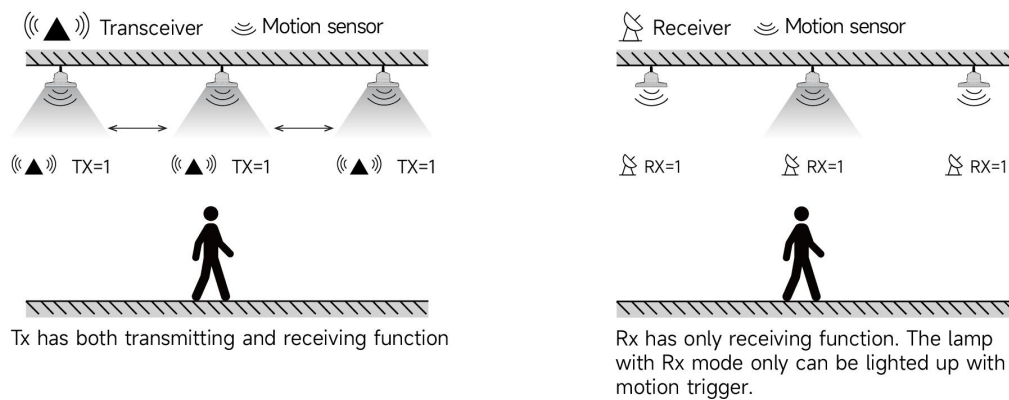
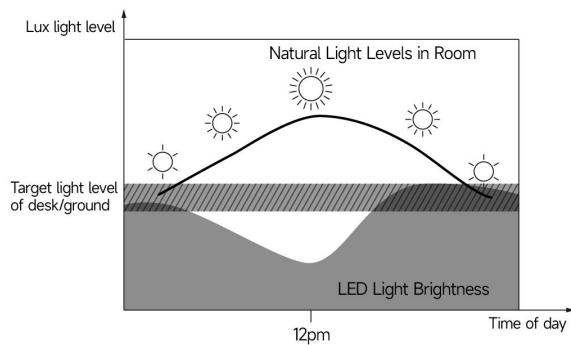


Fig.3



【Initialization】

1. Stand-by Period is not set to $+\infty$, the light will lights up to 10sec and then power off. Then lights up to 100% once motion is detected. During the initialization, the sensor will not detect any daylight, motion or remote IR signal.
2. Stand-by Period is set to $+\infty$, the light will lights up to 10sec and then dim to a pre-set Stand-by Dim Level. Then lights up to 100% once motion is detected. During the initialization, the sensor will not detect any daylight, motion or remote IR signal.

【Factory Setting】

Sensitivity: 100%, Hold time: 5s, Daylight sensor: Disable, Stand-by period: 0s, Stand-by dim level: 10%

【Application Notice】

- The sensor should be installed by a professional electrician. Please turn off the power before installing, wiring and changing parameters.
- PIR sensor can't penetrate any materials, please make sure no obstacle between sensor and moving people/object.
- Sensor may hard to detect people if wear thick clothes in cold winter.
- Heat signals will be regarded as moving signals to trigger the sensor. Avoid facing sensor to air condition or other heating source.
- Sensor is for indoor use only. Outdoor sunlight could affect the detection of sensor.
- The dimming performance could be different when work with different PWM / 0-10V drivers.
- The daylight threshold is measured in a sunny environment without shadow and ambient light diffuse reflection. Ambient lux level could be different in different environment, weather, climate, time-of-day and season.
- Detection distance is related to height of people, mounting height, mounting angle, working environment temperature and etc. When ambient temperature approaches the human body temperature range ($36^{\circ}\text{C}\sim 37^{\circ}\text{C}/96.8\sim 98.6^{\circ}\text{F}$), PIR motion detection will significantly weaken or non-responsive. When ambient temperature or LED tray temperature is higher than $55^{\circ}\text{C}/131^{\circ}\text{F}$, false triggering may happen, please try to reduce detecting sensitivity to improve. If stays false triggering, the PIR sensor should not suitable to be used in the space.
- Given detecting area is typical value that was measured by 165cm high testers in an indoor open environment.
- This product have to use with voltage-stabilized DC power supply whose input voltage is stable and ripple factor is low(ripple factor is lower than 100mV; load current is greater than 50mA).
- When installing in new environment, please install and test at least 5pcs product firstly before mass installation.
- PIR is a pyroelectric infrared sensor that detects changes in infrared rays. Pls pay attention to the following matters during actual use, such as: detecting heat sources other than the human body, the temperature of the heat source does not change or the heat source does not move, and other related environmental factors and violations of the PIR application principle impact.
- When detecting heat sources other than the human body due to the following phenomena, the PIR may be falsely triggered.
 1. When small animals enter the detection range
 2. When far-infrared rays from sunlight, car headlights, incandescent lamps, etc. are directly exposed to the sensor
 3. When the temperature in the detection range changes drastically due to warm air, cold air from cold greenhouse equipment, water vapor from humidifiers, etc.
- When detecting heat sources due to the following phenomena, the PIR may not trigger
 1. When there are substances such as glass and acrylic that block the transmission of far-infrared rays between the sensor and the detection object.
 2. The heat source within the detection range hardly moves or moves at high speed.
- Due to continuous improvement, the contents of this instruction could be changed without prior notice.