Specification

Product Name: **Network Controller (PIR)**

Product Model: **MC182D IR B/MC182D IR 1 B （2.4G RF)**

Versions	Release/ Change Date	Reason	Released by
V1.0	2025.02.07		James.Guo

【Product Features】

- Built-in installation presence sensor, standard zhaga20 interface
- Adopt PIR motion detect technology, support 4m max. installation height
- 5 years product warranty
- Motion and daylight sensor function
- 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.

【Parameters】

Input		
Rated Voltage	12±1VDC	
Working Current	60±5mA	
Ripple Voltage	<100mVp-p	
Output		
Output Signal	MC182D 99 B1	MC182D 99 1 B1
	0-10VDC dimming signal	PWM dimming signal
Sensor Parameters		
Detection mode	PIR detection	
Detection Area	100% /75%/50%/25%（MH17）；100% / 50%/25%（MH15）	
Hold Time	30s/1min/3min/5min/10min/20min/30min（MH17）； 30s/1min/3min（MH15）	
Stand-by Period	0s/10s/1min/3min/5min/10min/30min/+∞（MH17）； 5min/10min/ +∞（MH15）	
Stand-by DIM Level	10%/ 20%/ 30%/ 50% (MH17);10%/ 30%(MH15)	
Daylight Sensor	Daylight threshold	5Lux/15Lux/30Lux/50Lux/100Lux/150Lux/999Lux(Disable)(MH17) 15Lux/50Lux/(Disable)(MH15)（Ambient light diffusing state)
	Daylight harvesting	100L/200L/300L/400L/500L/600L/Disable （MH17press“P”enter daylight harvesting mode）
Stand-by Dim Level	10%/ 20%/ 30%/ 50% (MH17);10%/ 30%(MH15)	
Detection Range (Radius)	Ceiling installation 3m high:0.6~1m/s ≥3m；tangential direction testing Motion and minor motion: r≥2.5m Test condition: 100% sensitivity, 60 ㎡ indoor open space。Ambient temperature 25℃	
Installation Height	3m (4m Max)	
Wireless Parameters		
Operating Frequency	2.400-2.483GHz	
Transmitting Power	6dBm	
Group	One group max nodes 32 Pcs	

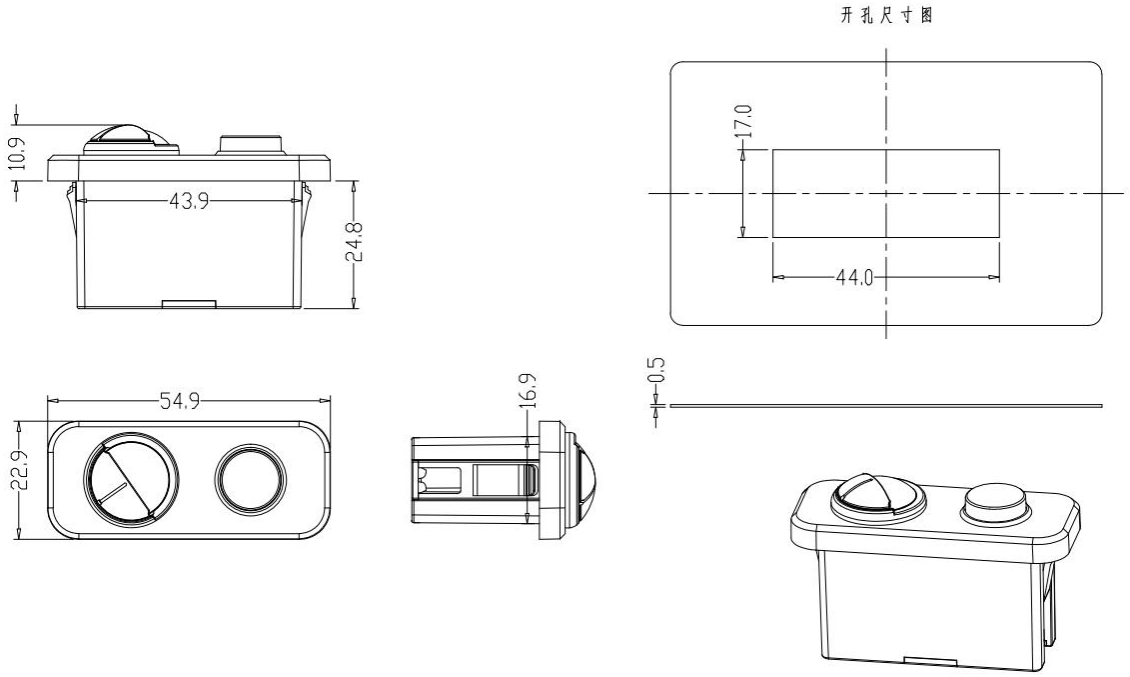
Transmitting Distance	15m MAX(Point-to-point open area transmission distance)
Environment	
Working Temperature (Ta)	-25℃-55℃
Storage Temperature	-40℃~+80℃ humidity: ≤85% (non-condensing)
Certification Standards	
Certification	CE
Environmental Requirements	Comply with RoHS 2.0 , Reach requirements
IP 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	16±3g
Lifetime	5 years warranty @Ta indoor

【Function description】

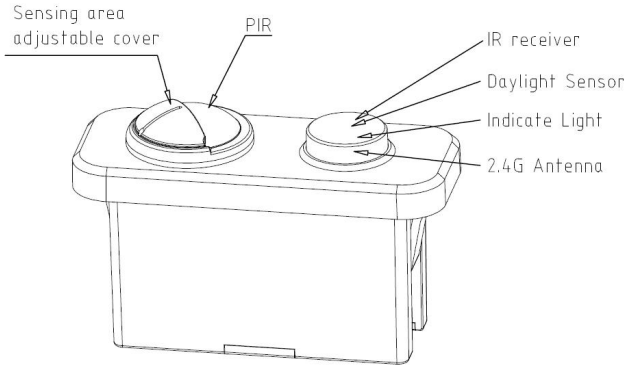
ⓥON-OFF function	Stand-by Period be set to “0s”
ⓥ2-step dimming	Stand-by Period be set to “+∞”,
ⓥ3-step dimming	Stand-by Period be set to “10s/1min/3min/5min/10min/30min”
ⓥDaylight harvesting	Stand-by Period be set to “510s/1min/3min/5min/10min/30min”
◯Daylight priority	N/A
ⓥGrouping	Remote group “1-16” and set Rx signal for sensor

【Diagram】

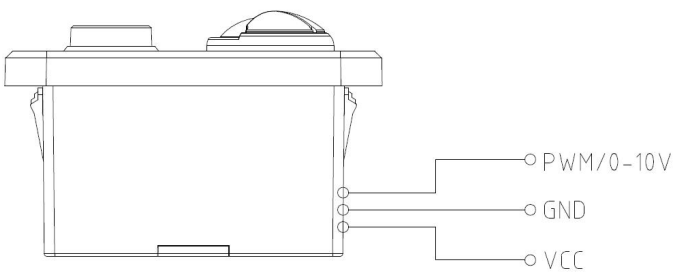
- Dimension (unit: mm)



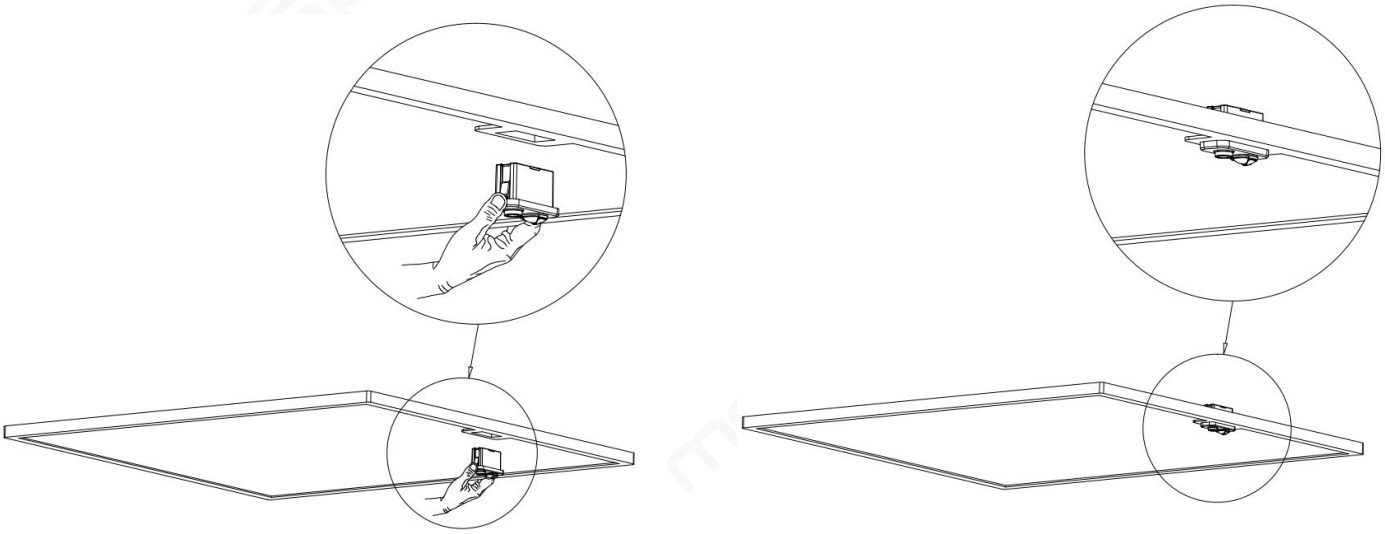
- Function



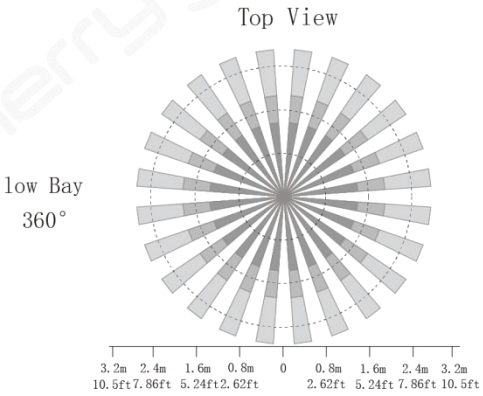
- Wiring

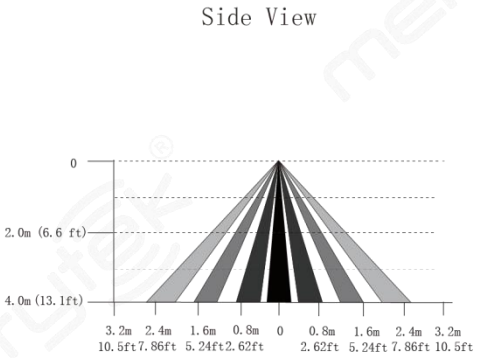


- Installation instruction



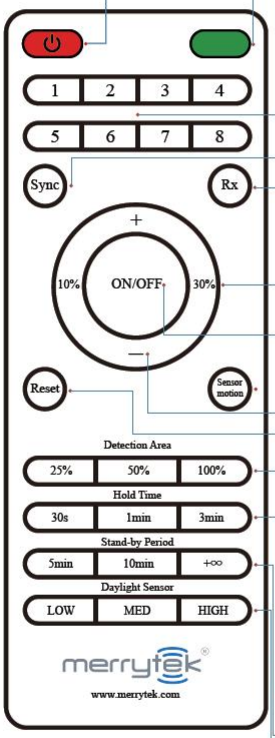
【Detection Range】





【Remote】MH15

Instruction

Remote Control Setting	Button	Remarks
		
		Turn off wireless transmission
		Recover wireless transmission
	1 2 3 4 5 6 7 8	Set the main channel number: Long press a channel number to group the sensors. One flash of the indicator indicates successful grouping. Up to 8 different groups can be established. Short press the channel number, and the light in the same group flashes 3 times. Each sensor can only be set to 1 main channel number at most, based on the most recently set main channel number. Note: Each channel number can be set to a maximum of 32 sensors.
	Sync	Short press the channel No. , the lights in the same group will flash 3 time. And then short press the sync button to synchronize sensor parameters to all lights in the same group, including detection area, hold time,stand-by period, daylight senor and stand-by dim level. After the synchronization is successful, the lights in the same group will flash 3 time.
	Rx	Set the secondary channel number: Press the Rx button first, and then press any button of groups 1-8 within 3s, and the sensor can receive the signal of the channel. Up to 4 groups of signals can be set to receive. For example: Device A first presses Rx and 1, and then presses Rx and 2, and the device can receive networking signals of groups 1 and 2. If all 4 groups of signals are set, and then a new secondary channel number is set, the first set channel will be removed. For example, device B has set secondary channel numbers of groups 1, 2, 3, and 4. At this time, press Rx and 5, and the sensor can receive secondary channel numbers of groups 2, 3, 4, and 5. Note: Each channel number can set up to 32 sensors.
	10% 30%	Short press this button to set the stand-by dim level, 10% or 30%.
	ON/OFF Sensor motion	In any state, short press this button to turn on the current lamp, and the lamp is in a constant on state; long press this button to turn off the current lamp, and the lamp is in a constant off state (memory after power failure). Press the Sensor Motion button to exit and restore the sensing mode, and the parameters will remember the last setting.
	+ −	Detection Area (10%-100%)
	Reset	Long pressing for 3s to recover factory setting and clear groups. Detection Sensitivity: 100%, Hold time: 10s, Daylight sensor: disable, Stand-by period: 0s, stand-by dim level: 10%.
	25% 50% 100%	Short press to select detection area, 25% is the shortest range. 100% is the maximum.
	30s 1min 3min	Hold Time: 30s, 1min, 3min
	5min 10min +∞	Stand-by Period: 5min, 10min, +∞
	LOW MED HIGH	Daylight sensor: 1. Stand-by period set to 5min or 10min or +∞. Enable daylight threshold mode. Light will turn on when ambient light level below the threshold value if with motion trigger. 2. Long press +∞, daylight priority is enabled. Light will automatically turn ON/OFF according to ambient light level against setting below. 3. Press "HIGH" button, Daylight sensor is disabled.

Daylight Harveting	Reference Daylight Threahold
LOW	200Lux
MED	300Lux
HIGH	Disable

MH17

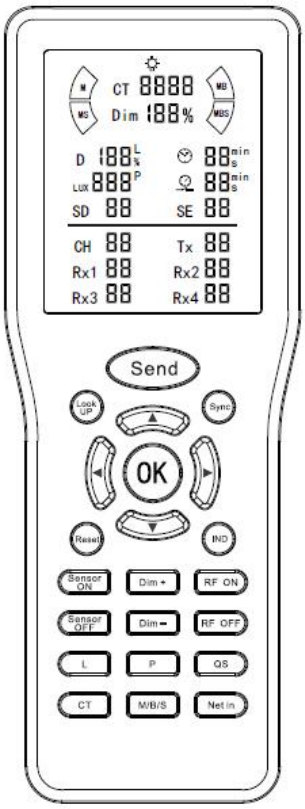
<table>
<tr><th>Remote Control Setting</th><th>Function</th><th>Button</th><th>Remarks</th></tr>
<tr><td rowspan="15"> 
</td><td>Screen wake-up</td><td rowspan="2">Send</td><td>Short press to wake the screen when off.</td></tr>
<tr><td>One-click transmission of all parameters</td><td>Short press to transmit 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.</td></tr>
<tr><td>Transmit a single parameter</td><td>OK</td><td>Short press to transmit the flashing parameter on the screen, and the light will flash once after successful transmission.</td></tr>
<tr><td>Parameters & configuration</td><td></td><td>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 code)</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 Rx2 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></td></tr>
<tr><td>Enable low sensitivity mode</td><td>L</td><td>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.</td></tr>
<tr><td>Enable daylight priority/ daylight harvesting mode</td><td>P</td><td>Short press and the screen display “P” to enable daylight harvesting mode, the lamp flashes once after successful setting. (see Figure 3).
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 5lux=100lux/15lux=200lux/30lux=300lux/50lux=400lux/100lux=500lux/150lux=600lux/999=Disable (999: target lux level is maximum, light will not dim).
Short press “P” to quit daylight harvesting mode. The lamp flashes 1 time. “P” will not displayed on the screen.</td></tr>
<tr><td>Dim level</td><td>Dim +
Dim -</td><td>Short press Dim + to increase the dim level by 2% each time. Long press to continuously increase the brightness.
Short press Dim - 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).</td></tr>
<tr><td>Quick setting</td><td>QS</td><td>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 Send to quickly configure each parameter, the light will flash once after successful setting.</td></tr>
<tr><td>Disable sensor mode/ light permanently OFF</td><td>Sensor OFF</td><td>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.</td></tr>
<tr><td>Enable sensor mode/ light permanently ON</td><td>Sensor ON</td><td>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.</td></tr>
<tr><td>Reset</td><td>Reset</td><td>Briefly press to reset the sensor, and light flash once, restoring the sensor parameters to the default factory settings.</td></tr>
<tr><td>Turn the screen backlight on/off</td><td>IND</td><td>Long press to turn the screen backlight on/off.
Short press to turn the sensor indicator on/off (if available).</td></tr>
<tr><td>Enable wireless settings options/ wireless networking function</td><td>RF ON</td><td>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.</td></tr>
<tr><td>Disable wireless settings options/ wireless networking function</td><td>RF OFF</td><td>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.</td></tr>
<tr><td>Look up</td><td>Look UP</td><td>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.</td></tr>
<tr><td>Synchronize</td><td>Sync</td><td>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.</td></tr>
<tr><td>Network pairing</td><td>Net in</td><td>For sensors with Bluetooth or ZigBee networking function, long press this button to put the sensor into pairing mode and the light flash.</td></tr>
<tr><td>Color temperature control</td><td>CT</td><td>Briefly press to adjust the color temperature if the sensor supports color temperature control
Color temperature option: 2700K/3000K/3500K/4000K/4500K/5000K</td></tr>
<tr><td>Switch sensor mode</td><td>M/B/S</td><td>Short press to switch sensor modes (if the sensor supports the corresponding modes)
M: motion mode MS: motion + minor motion MB: motion + breathing MBS: motion + minor motion + breathing</td></tr>
</table>

Fig.1

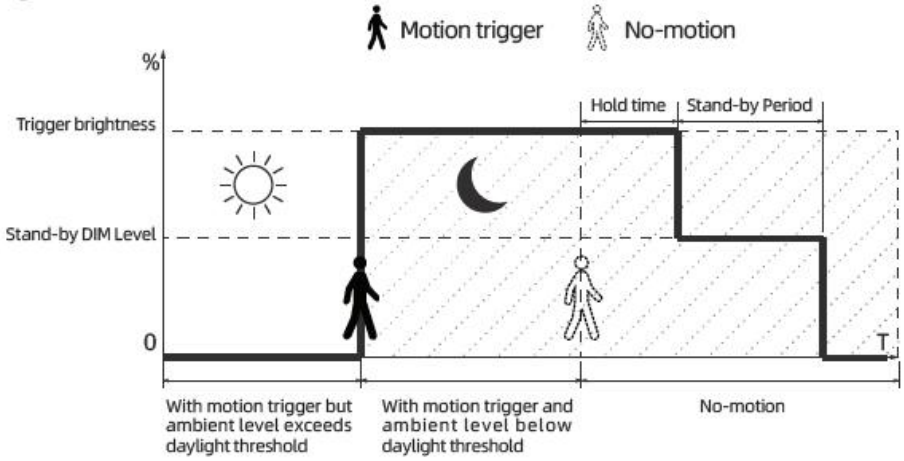
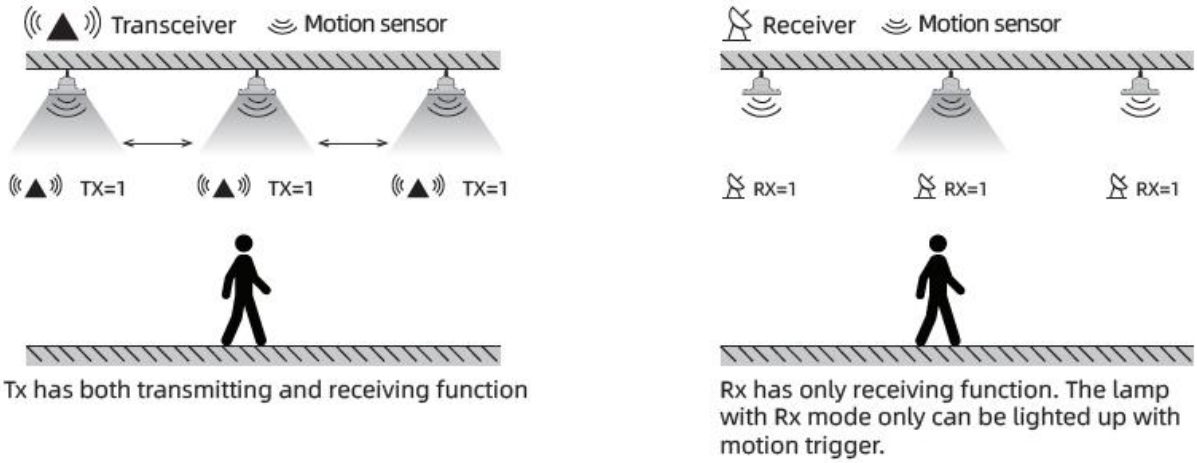


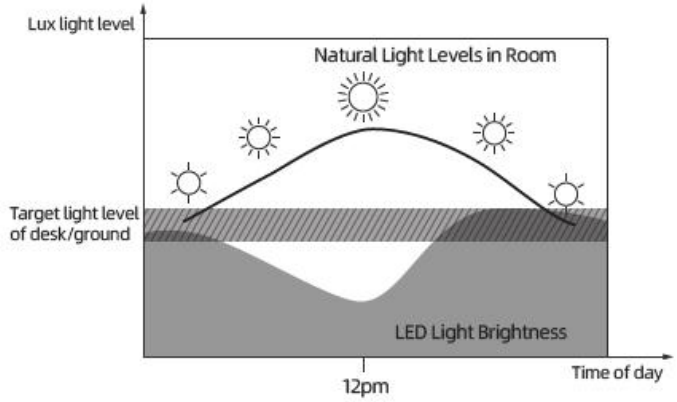
Fig.2



Tx has both transmitting and receiving function

Rx has only receiving function. The lamp with Rx mode only can be lighted up with motion trigger.

Fig.3



【Initialization】

After power on, the sensor automatically turns on light at 100% brightness and self-check for 45s-60s. 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: 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.
- Due to continuous improvement, the contents of this instruction could be changed without prior notice.
- The dimming performance could be different when work with different 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℃~37℃/96.8~98.6℉), PIR motion detection will significantly weaken or non-responsive. When ambient temperature or LED tray temperature is higher than 55℃/131℉, 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 25mA).
- 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.