

INSTRUCTION

Product Name: LifeBeing sensor(1-10v)

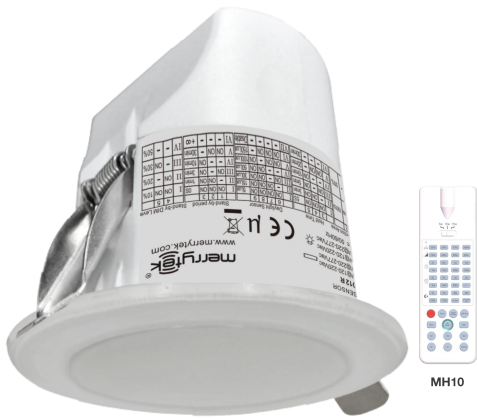
Model No.: MSA012 R

Issue Date: July 16, 2020

Attention

1. The product shall be installed by a professional electrician. Please disconnect the power before installation, wiring or changing the setting of by DIP switch
2. Please read the relevant contents of this manual carefully before using the product.
3. This product is only suitable for indoor environment.
4. Ensure that the product is installed in a relatively dry and ventilated environment.
5. Before the product is powered on, please confirm that the input voltage range meets the requirements of the manual.
6. Keep out of reach of children.

1. Feature



- 1) Adopt Merrytek patented LifeBeing detected technology, which can detect movement, slight motion and breathing signal.
- 2) Built-in daylight harvesting technology to achieve accurate constant light.
- 3) Parameters can be adjusted by remote control, easy to install and debug.
- 4) Built-in 17A relay for connecting multiple loads.
- 5) Wide voltage 120-277Vac input.
- 6) Flush mounting installation.
- 7) Brightness of the lamp can be changed as needed through DIM+, DIM- buttons on the remote control.
- 8) Patented Low Impedance antenna helps anti-interference and RED compliance for bulk order.
- 9) 5 years warranty.

2. Parameters

Input	Operating voltage	108-305VAC 50/60Hz
	Rated voltage	120V-277VAC 50/60Hz
	Stand-by power	<1W
Output	Working Mode	ON/OFF function, 1-10V dimming
	Type of Load	Inductive / Resistive / LED load
	Load Capacity	800W(Inductive) ; 1000W(Resistive) ; 800W(LED load)
	Max. Surge Capacity	17A relay 50A (50% I _{peak} , t _{width} =500uS, 230Vac full load, cold start);
Dim Interface	1-10V Dimming	1-10Vdimming, load current:50mA Max
	Wiring	press terminal
Sensor parameters	Operating frequency	5.8 GHz ±75 MHz, ISM band.
	Transmitting power	0.5mW Max.
	Hold time	5S-30Min
	Dim Level	10%/20%/30%/50%
	Stand-by Period	0s/1min/3min/10min/30min/+∞
	Detection Area	100%/50% (remote control:100%/75%/50%/25%)
	Daylight Sensor	5lux~150lux/Disable (remote control)
	Detection range (radius)	Big motion: 3-4m (Speed: 0.3m/s) Minor motion: 3-4m Breathing: 2-3m
	Mounting height	Recommend 2.5-4m
	Detecting Angle	150°

Operating environment	Operating Temperature	-25℃...+50℃ /Humidity:85% (Non condensing)
	Storage Temperature/humidity	-35℃...+80℃ /Humidity:85% (Non condensing)
Certificate Standards	LVD standards	EN61058-1
	EMC standards	EN300440; EN301489-1; EN55015; EN61547; EN62479
	Environmental Requirement	Compliant to RoHS
	Certificate	CE RoHS RED
Others	Wiring	"L N ground" port diameter: 0.75-1.5mm ² ; 1-10V dim port diameter: 0.75-1.0mm ²
	IP Rating	IP20
	Protection Class	Class II
	Installation	Flush mounted
	Cut size	Ø70-Ø80mm
	Life time	5 years warranty@Ta 230V full load

3. Function

Instructions of signal detection: the sensor detects human walking, minor motion(such as body movement, turn up head and others minor movements) and breathing to realize the detection of human existence in non-sleep state.



Big motion signal active

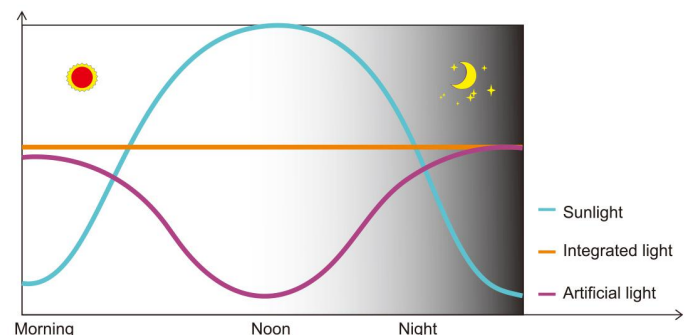


Minor motion& Breathing signal maintain

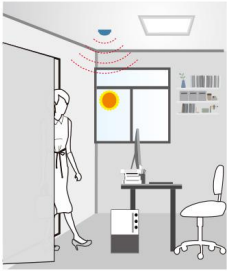


- * **Big motion signal:** Big motion for sensor triggering
- * **Minor motion signal:** very small movement even only body motion can be collected , the indicator flashes once.
- * **Breathing signal:** when no slight motion signal, only breathing signal can be collected, the indicator flashes for 3 times by detecting 3 effective breathing signals.

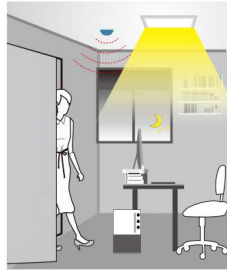
Built-in daylight sensor, MSA012 R adjusts the luminaires illuminance automatically to maintain a target illuminance, while detecting the natural light intensity. Thus the purpose of complementing natural light and artificial light is achieved. It can be used in offices, airports, shopping malls and other occasions where the brightness of lights needs to be adjusted according to daylight during the day.



1) ON/OFF function(stand-by period be set to “0”s, without DH)



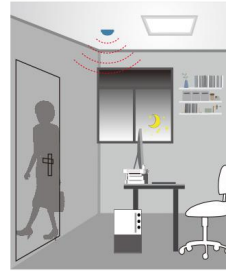
- When the ambient light is sufficient, the light will not turn on even if the moving signal is detected.



- When the ambient light is insufficient, a moving signal is detected and the light will turn on automatically.

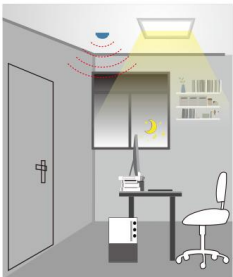


- The body, head and other small movements in normal work can be detected, and the light is always on.

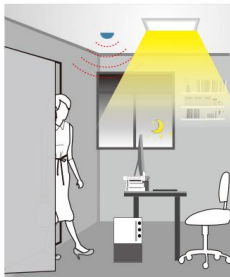


- When the sensor fails to detect movement and inching signal, the light will automatically turn off after the delay time.

2) Step dimming function (stand-by period be set to “+∞”, without DH)



- When the sensor does not detect the movement signal, the light remains low bright.



- When the moving signal is detected, the light will turn on automatically.

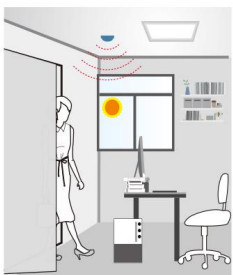


- The body, head and other small movements in normal work can be detected, and the light is always on.

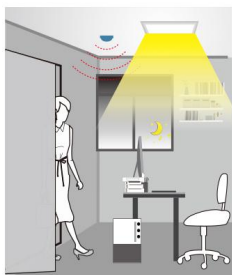


- When the sensor does not detect movement and inching signal, the light will automatically turn on low after the delay time.

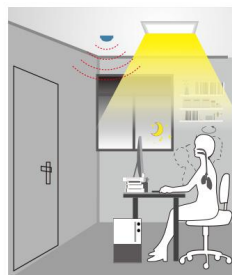
3) 3 step dimming function (stand-by period be set to “1min/3min/10min/30min”, without DH)



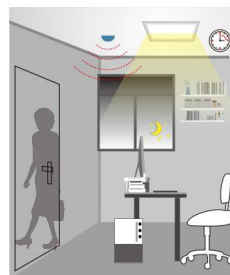
- When the ambient light is sufficient, the light will not turn on even if the moving signal is detected.



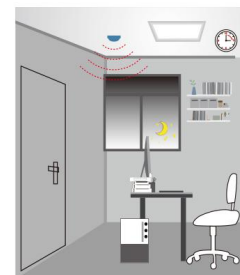
- When the ambient light is insufficient, a moving signal is detected and the light will turn on automatically.



- The body, head and other small movements in normal work can be detected, and the light is always on.

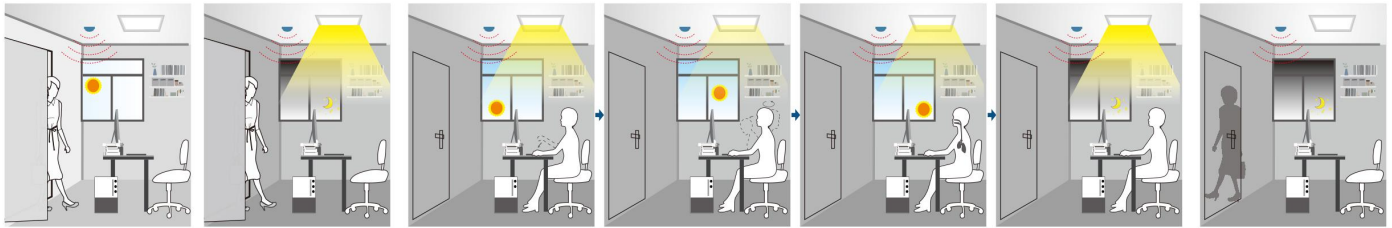


- When the sensor does not detect movement and inching signal, the light will automatically turn on low after the delay time.



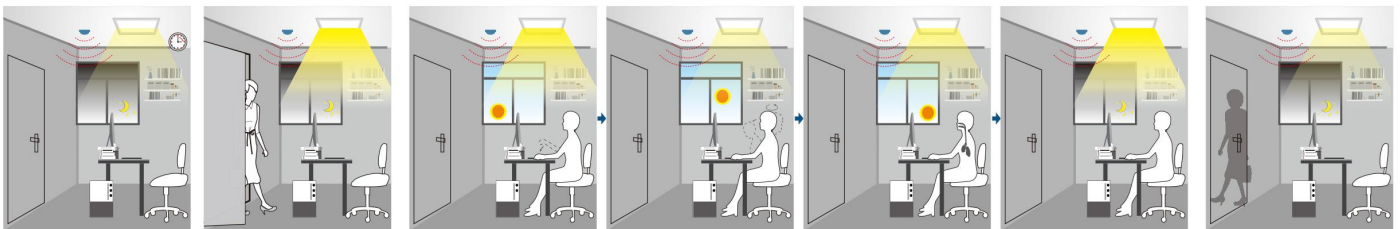
- After the waiting time, there is still no moving signal detected, and the light will automatically turn off.

4) Minor motion & daylight harvesting function(stand-by period be set to “0s”, with DH)



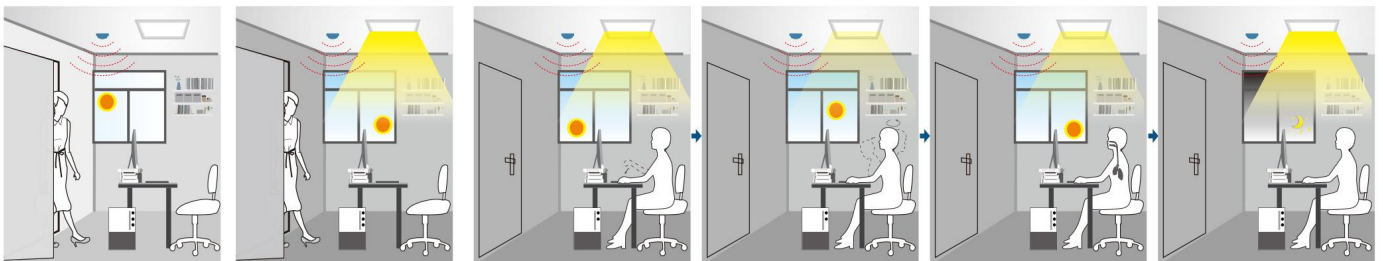
- When the ambient light is sufficient, the light will not turn on even if the moving signal is detected.
- When the ambient light is insufficient, a moving signal is detected and the light will turn on automatically.
- The body, head and other small movements in the work can be detected, and the luminescence ratio of the lamp itself can be adjusted according to the strength of the ambient light to maintain a constant desktop illumination.
- When the ambient light is sufficient, the light will not turn on even if the moving signal is detected.

5) 2 step dimming function of minor motion(stand-by period be set to “+∞”, with DH)

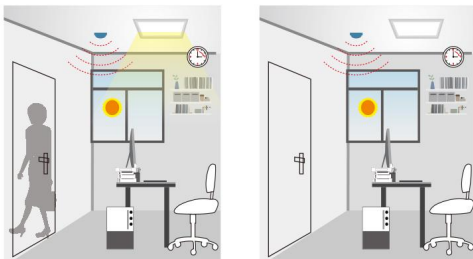


- When the moving signal is detected, the light will turn on automatically.
- When the sensor does not detect the movement signal, the light remains low and bright.
- The body, head and other small movements in the work can be detected, and the luminescence ratio of the lamp itself can be adjusted according to the strength of the ambient light to maintain a constant desktop illumination.
- When the sensor does not detect any movement signal, the light will automatically turn on low after the delay time.

6) 3 step dimming function of minor motion(stand-by period be set to “1min/3min/10min/30min”, with DH)

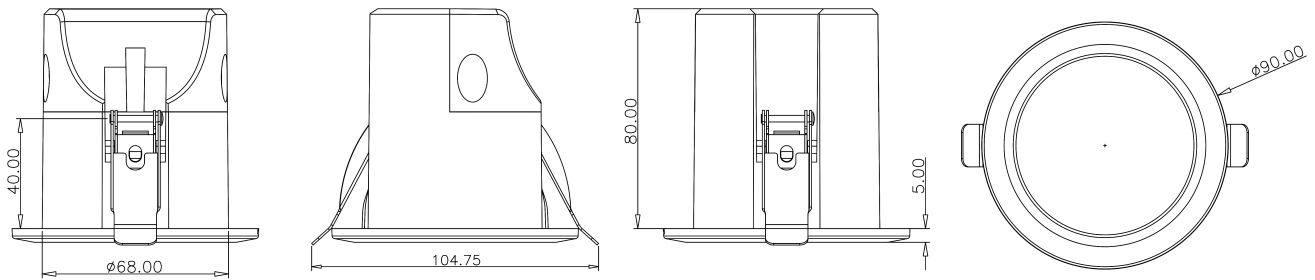


- When the ambient light is sufficient, the light will not turn on even if the moving signal is detected.
- When the ambient light is insufficient, a moving signal is detected and the light will turn on automatically.
- The body, head and other small movements in the work can be detected, and the luminescence ratio of the lamp itself can be adjusted according to the strength of the ambient light to maintain a constant desktop illumination.

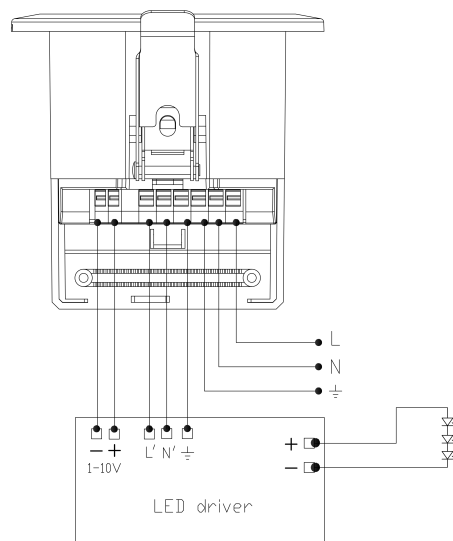


- When the sensor does not detect any movement or micro-movement signal, the light will automatically turn on low after the delay.
- After the waiting time, there is still no moving signal detected, and the light will automatically turn off.

4. Dimension (mm)

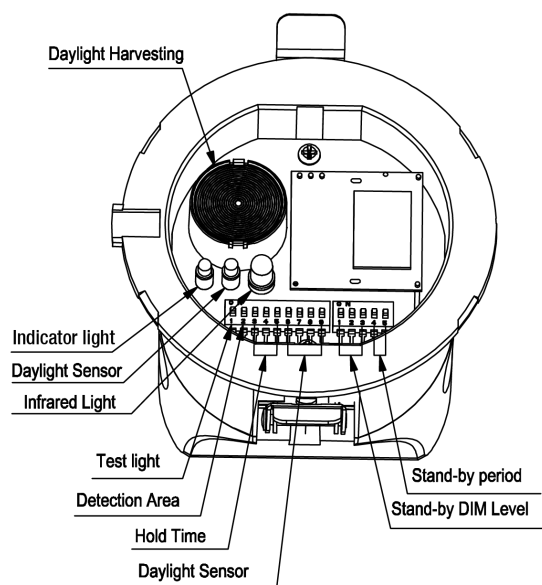


5. Wiring



Note: When connecting multiple loads, please refer to the surge value, total load, and detection range.

6. Structure



Shenzhen Merrytek Technology Co.,Ltd

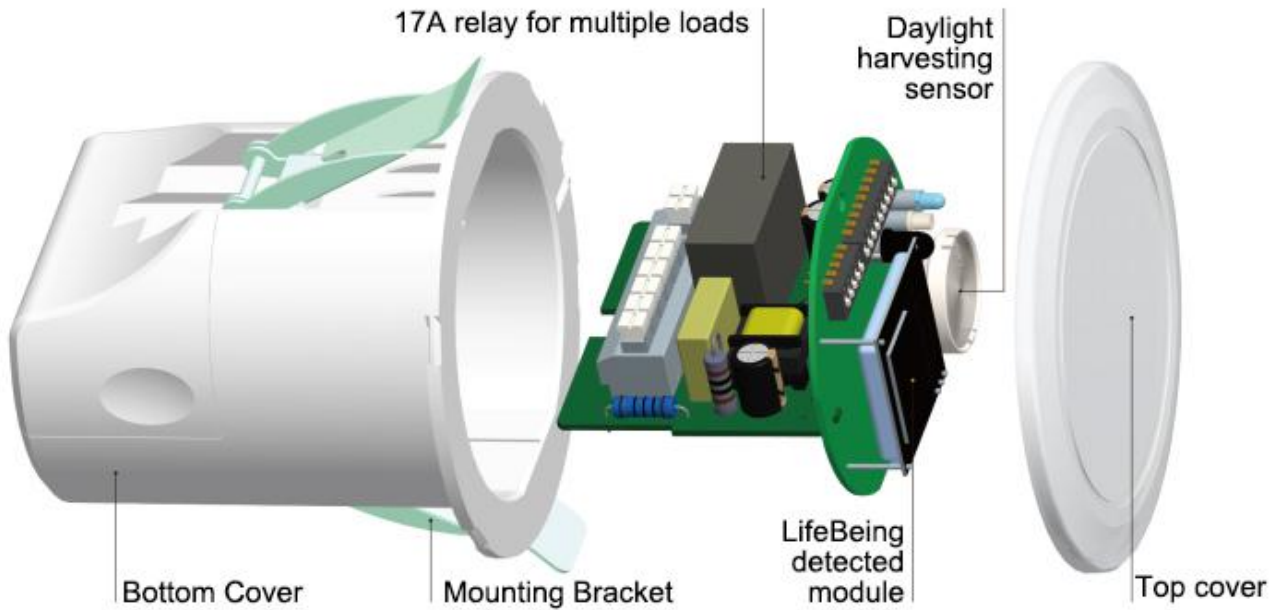
Add: No.17th Building, Dianda Guyuan Industrial Park, Mashantou, Matian, Guangming District, Shenzhen, China, 518106

Tel: +86 (0)755-2305 7253

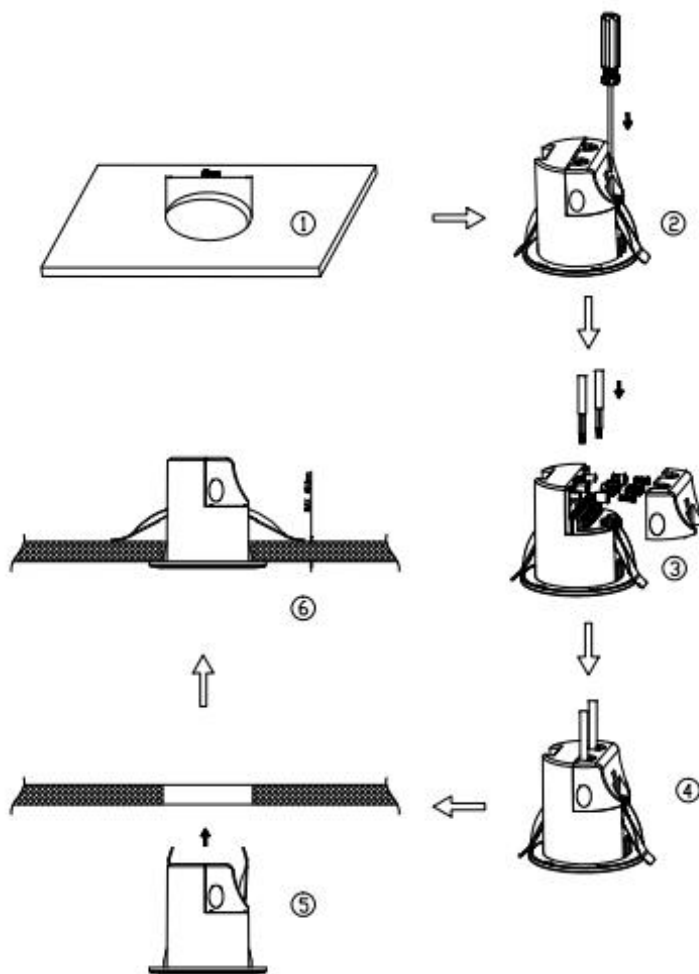
Fax: +86 (0)755-2786 3012

Website: www.merrytek.com

All technical information is subject to the physical performance, Merrick reserves the right to final interpretation

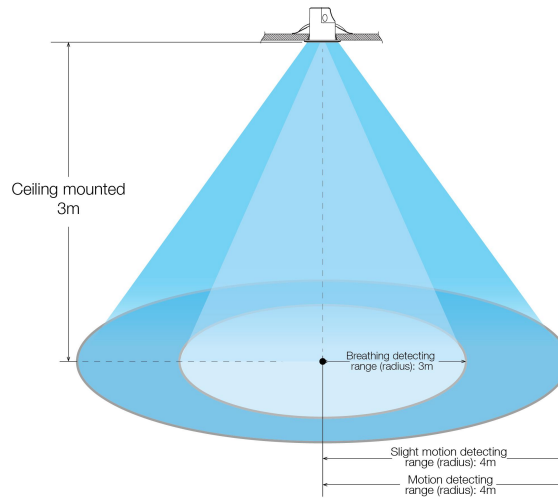


7. Installation Instruction



1. Cut a hole $\phi 70-80\text{mm}$ for flush mounting in the ceiling.
2. Open cover by small straight screw.
3. Loosing clamp and wiring(see 5 wiring).
4. Screw clamp and put the cover.
5. Open spring clip outward and install.
6. Adjust and make sensor flat with ceiling.

8. Detection pattern



9. Dip switch settings

1) Indicator light

	1	
I	ON	open
II	-	close

Note: The indicator is on by factory setting, it can be turned off by dialing the code or LS button on the remote control

2) Detection Area

	2	
I	ON	100%
II	-	50%

3) Hold Time

	3	4	5	
I	ON	ON	ON	5S
II	-	ON	ON	30S
III	ON	-	ON	1min
IV	-	-	ON	3min
V	ON	ON	-	5min
VI	-	-	-	10min

Note: To realize the presence sensing function (breathing detection), it is necessary to set the Hold time to be greater than 1 min or more. 5S is only for testing.

Shenzhen Merrytek Technology Co., Ltd

Add: No.17th Building, Dianda Guyuan Industrial Park, Mashantou, Matian, Guangming District, Shenzhen, China, 518106

Tel: +86 (0)755-2305 7253

Fax: +86 (0)755-2786 3012

Website: www.merrytek.com

All technical information is subject to the physical performance, Merrick reserves the right to final interpretation

4) Daylight Sensor

	6	7	8	9	
I	ON	ON	ON	ON	5Lux
II	-	ON	ON	ON	15Lux
III	ON	-	ON	ON	30Lux
IV	-	-	ON	ON	50Lux
V	ON	ON	-	ON	100Lux
VI	ON	ON	ON	-	150Lux
VII	-	-	-	-	Disable

Note: When set to disable, no matter whether the light is sufficient or not, the sensor will turn on the light as long as there is motion detected.

5) Stand-by Period

	1	2	3	
I	ON	ON	ON	0S
II	-	ON	ON	1min
III	ON	-	ON	3min
IV	-	-	ON	10min
V	ON	ON	-	30min
VI	-	-	-	+∞

Note: "0s" only for on/off function, while "+∞" only for 2 step dimming.

6) Stand-by DIM Level

	4	5	brightness	constant voltage output
I	ON	ON	10%	1.5±0.1V
II	ON	-	20%	2V±0.1V
III	-	ON	30%	3V±0.1V
IV	-	-	50%	5V±0.1V

10. Remote Settings

Remote Control Setting	Button	Remarks
	ON/OFF	Press the "ON/OFF" button, the light goes to constant on/off mode, sensor is disabled. Press any button to quit from this mode and the sensor starts to work. No memory for ON-OFF setting after power off. Sensor mode will auto resume after restart power supply.
	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	N/A
	DIM + DIM -	Short press "DIM+ / DIM-" button to transmit dimming signal. The brightness of the lamp adjusts at 5 % per unit. (only apply for sensor with daylight harvesting function)
	DH Mode	Long Press > 3s to quit Daylight Harvesting function to enter Daylight Threshold mode (subject to the last setting).
	Q1 Q2 Q3	N/A
	TEST 2S	Press the "TEST 2S" button can enter the test mode anytime. At the 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 disable. This function only for testing. Quit the mode by pressing "RESET" or any other function buttons.
	HS LS	HS: open the indicator light. LS: close the indicator light.
	Daylight Sensor	Set up daylight threshold: 5Lux/15Lux/30Lux/50Lux/100Lux/150Lux/ Disable
	Stand-by period	Set up stand-by time: 0S/10S/1min/3min/5min/10min/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.

11. Initialization

The first power on, sensor enter self-test mode, and the self-test will be completed after 60 seconds to enter the normal working state. During the initialization, the external motion signal will not be detected, remote control signal not be received.

12. Factory Settings

Indicator light: open Detection Area: 100% Hold Time: 1min Daylight Sensor: Disable Stand-by
Period: 0S Stand-by DIM Level: 10%

13. Application notice

- 1) The sensor should be installed by a professional electrician. Please disconnect the power before installing, wiring or changing the setting of the DIP switch.
- 2) Put the sensor as far as possible from large areas of metal plate, glass and other materials with high medium density to avoid triggering by mistake.
- 3) Avoid using objects that have been vibrating for a long time around the sensor, such as shaking fans, etc. The vibration signal will be regarded as the motion signal to trigger the sensor.
- 4) Each time the product is set by remote control, the indicator light flashes 3 times quickly, which means the setting is successful.
- 5) During the initialization period, the sensing function is not activated, and the sensing parameters cannot be set remotely.
- 6) There is no daylight harvesting function by factory setting, use remote control to start it.
- 7) Please turn off the indicator light in normal use to avoid affecting the daylight harvesting function.
- 8) Used in an open office with a large number of people, 30s Hold time is OK, but in the independent office the Hold time needs to be 1min or more than 3min.
- 9) The microwave sensor has the ability to penetrate the wall of the building, and the microwave penetrating outside the wall may cause false triggering when it detects moving objects outside. In order to avoid false triggering, please don't install the sensor close to glass door/window, plaster wall and wood wall. And, select appropriate detection area during installation, for example:
 - A. When the product is used in a room of 2m *2m or smaller, the detection area should be set to 25%(use the remote control),
 - B. When used in a room of about 3m *3m, the detection area should be set to 50%;
 - C. When applied in a room of about 4m *4m, the detection area should be set to 75%(use the remote control);
 - D. When used in a room of about 5m *5m or bigger, the detection area should be set to 100%;