INSTRUCTION

Product Name: LifeBeing sensor (DALI control)

Model No.: MSA019

Issue Date: 2020-08-01

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) Built-in DALI interface, which can work with DALI1.0 & DALI2.0 drivers.
4) With PUSH port, can manual ON-OFF and dimming.
5) Support multiple access, multi-point acquisition of sensor data, transmissing the datas via broadcast mode grouping work
6) 5 years warranty.

2. Parameters

Input	Operating voltage	108-305VAC 50/60Hz
	Rated voltage	120V-277VAC 50/60Hz
	Stand-by power	<1W
Dim interface	DALI interface	DA+ DA- (Max. Lead length:300M; Max. Output current: 200mA)
	PUSH interface	Manual ON-OFF & dimming (set the Max. brightness）
	Interface terminal connection	Press terminal
Sensor parameters	Operating frequency	5.8 GHz ±75 MHz, ISM band.
	Work mode	Master /Salve When multiple sensors are networked, only one is set to master and others to slaves.
	Transmitting power	5mW Max.
	Hold time	5S/30S/1min/3min/5min/10min (Remote control: 5S/30S/1min/3min/5min/10min/20min/30min)
	Stand-by dim Level	10%/20%/30%/50% (Remote control: 10%/20%/30%/50%)
	Stand-by period	0s/1min/3min/10min/30min/+∞ (Remote control: 0s/10S/1min/3min/5min/10min/30min/+∞)
	Detection Area	100%/50% (Remote control: 100%/75%/50%/25%)
	Daylight Sensor	5lux/15Lux/30Lux/50Lux/100lux/Disable (Remote control: 5lux/15Lux/30Lux/50Lux/100lux/150lux/Disable)
	Detection range (radius)	Movement: 3-4m (Speed: 0.3m/s) Slight motion: 3-4m Breathing: 2-3m
	Mounting height	Recommend 2.5-4m
	Detecting Angle	150°(wall mount), 360°(ceiling mount）
Operating environment	Operating Temperature	0℃…+50℃ /Humidity: 85% (Non condensing)

	Storage Temperature/humidity	-40℃…+80℃ /Humidity: 85% (Non condensing)
Certificate Standards	LVD standards	EN61058-1, EN61058-1-2
	EMC standards	EN55015, EN61547, EN61000-3-2, EN61000-3-3
	Environmental Requirement	Compliant to RoHS
	Certificate	CE
Others	Wiring	"L N ground" port diameter: 0.75-1.5 mm^2 "DALI2" port diameter: 0.75-1.0mm^2
	IP Rating	IP20
	Protection Class	Class II
	Installation	Flush mounted
	Installation dimension	Cut size: Ø70-Ø80
	Life time	5 years warranty@Ta 230V full load

3. Function

Instructions of signal detection: the sensor detects human walking, slight 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.

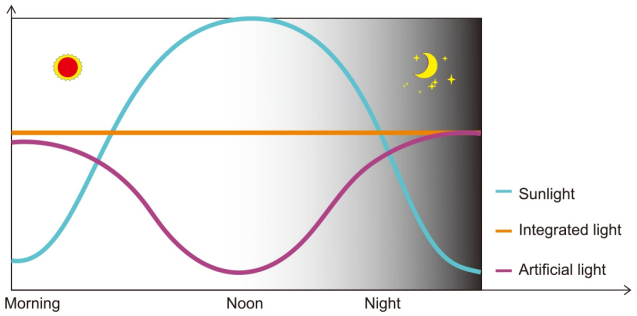
Movement signal active

Slight motion& Breathing signal maintain

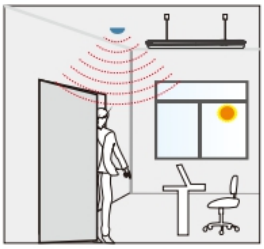
* Movement signal: Big movement for sensor triggering
* Slight motion signal: very small movement even only body motion can be collected, the indicator flashes once.
* Breathing signal: when no slight motion signal, only breathing signal can be collected, the indicator flashes for 3 times by detecting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

Daylight harvesting:

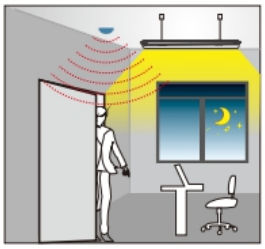
Built-in daylight harvesting sensor, according to the target lux level, automatic detect the natural light level to adjust artificial light level automatically, realizing the natural light and artificial light complementary, maintaining the target lux level. It can be used in offices, airports, shopping malls and other places where need keep constant lux level.



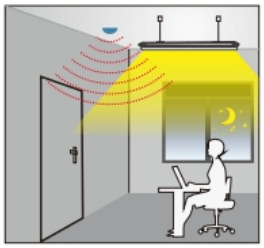
1. On-off function (Stand-by period: 0s, without DH)



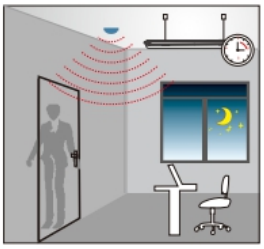
❶ When the ambient light is sufficient, the light will not turn on even if the moving signal is detected.



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

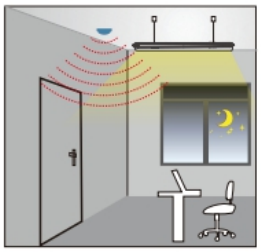


❸ The body, head and other small movements in normal work can be detected, and the light is always on.

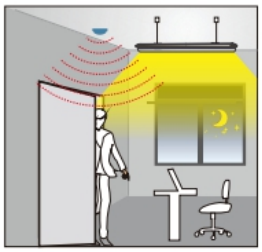


❹ When the sensor fails to detect movement and inching signal, the light will automatically turn off after the delay time.

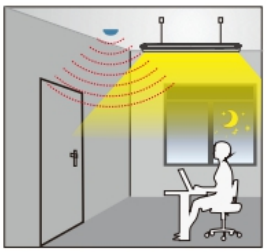
2. 2 steps dimming function (stand-by period: +∞, without DH)



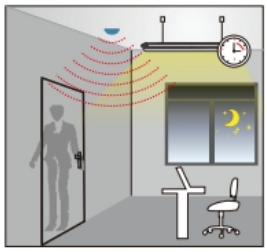
❶ When the sensor does not detect the movement signal, the light remains low bright.



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

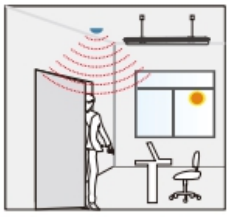


❸ The body, head and other small movements in normal work can be detected, and the light is always on.

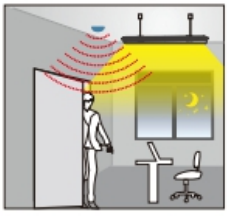


❹ When the sensor does not detect movement and inching signal, the light will automatically turn on low after the delay time.

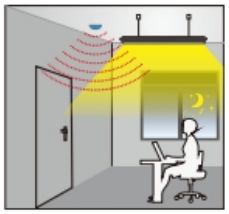
3. 3 steps dimming function (stand-by period: 1min/3min/10min/30min", without DH)



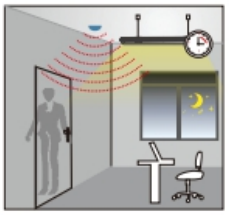
❶ When the ambient light is sufficient, the light will not turn on even if the moving signal is detected.



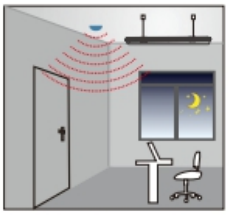
❷ When the ambient light is insufficient, a moving signal is detected and the light will turn on automatically.



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

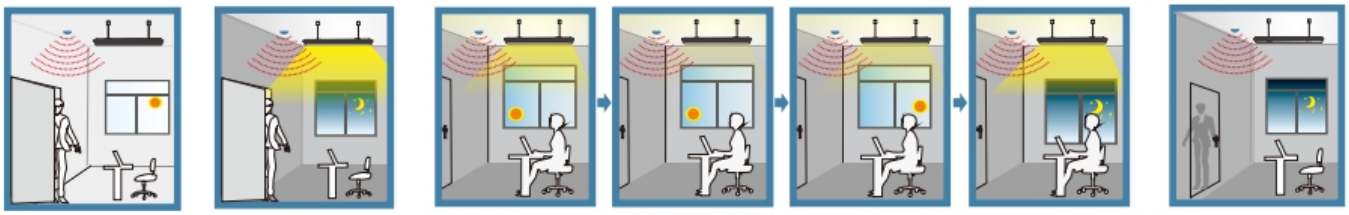


❹ When the sensor does not detect movement and inching signal, the light will automatically turn on low after the delay time.



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

4. ON/OFF function (With DH, Stand-by: 0s)



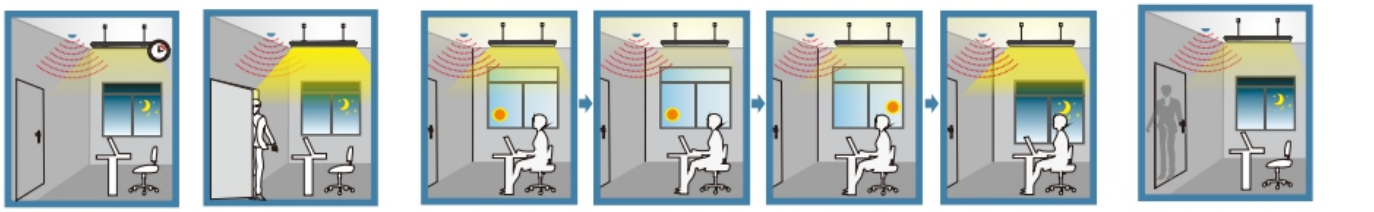
❶ When the ambient light is sufficient, the light will not turn on even if the moving signal is detected.

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

❸ 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.

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

5. 2 Steps dimming function (With DH, Stand-by period: +∞)



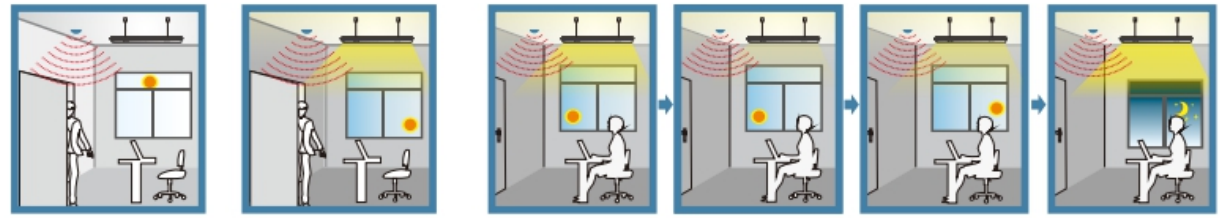
❶ When the moving signal is detected, the light will turn on automatically.

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

❸ 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.

❹ When the sensor does not detect any movement signal, the light will automatically turn on low after the delay time.

6. 3 Steps dimming function (With DH, stand-by period:1min/3min/10min/30min)



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

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

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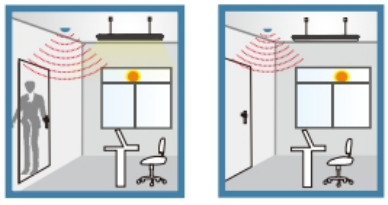
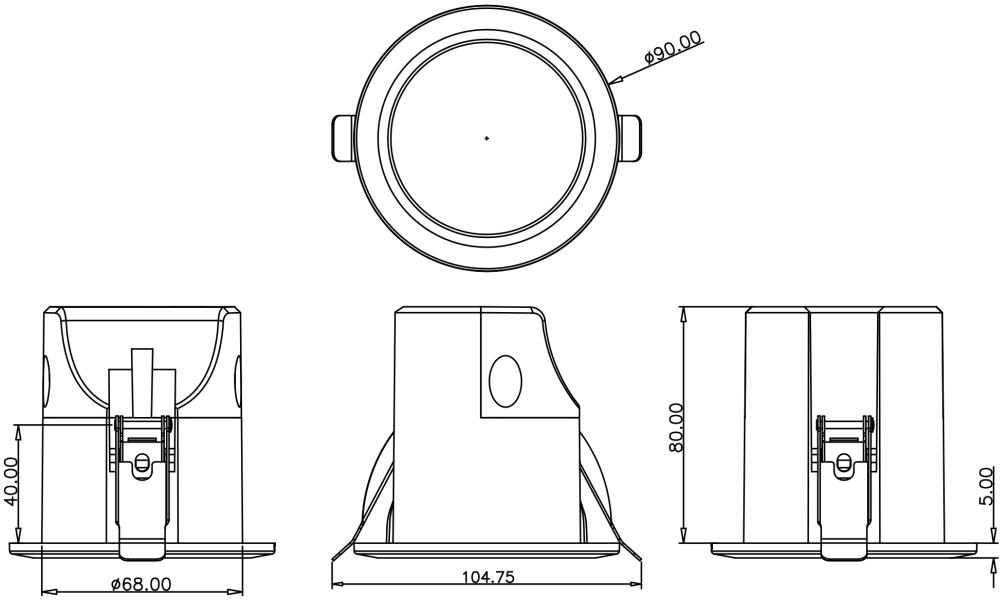


❹ When the sensor does not detect any movement or micro-movement signal, the light will automatically turn on low after the delay.

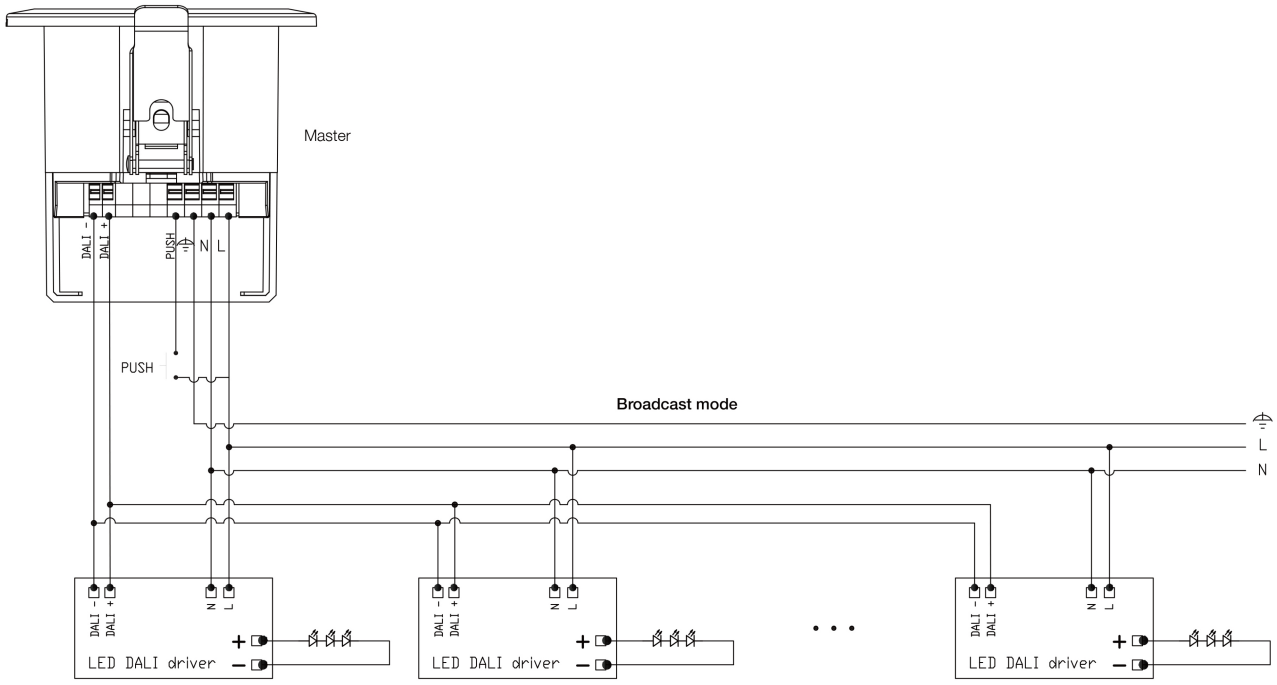
❺ After the waiting time, there is still no moving signal detected, and the light will automatically turn off.

4. Dimension (mm)

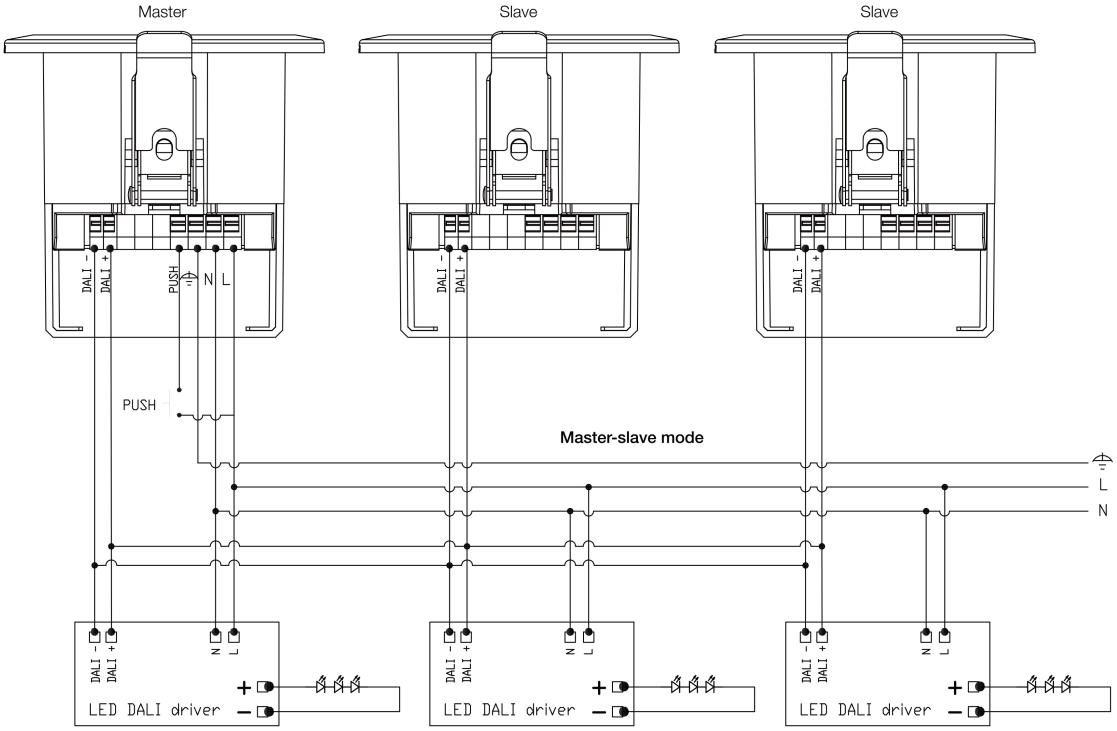


5. Wiring

1.Broadcast mode：



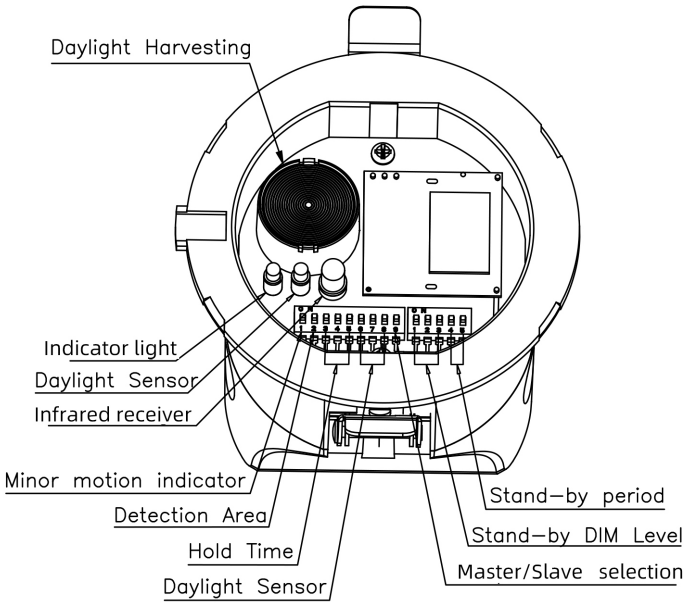
2. Master-slave mode：



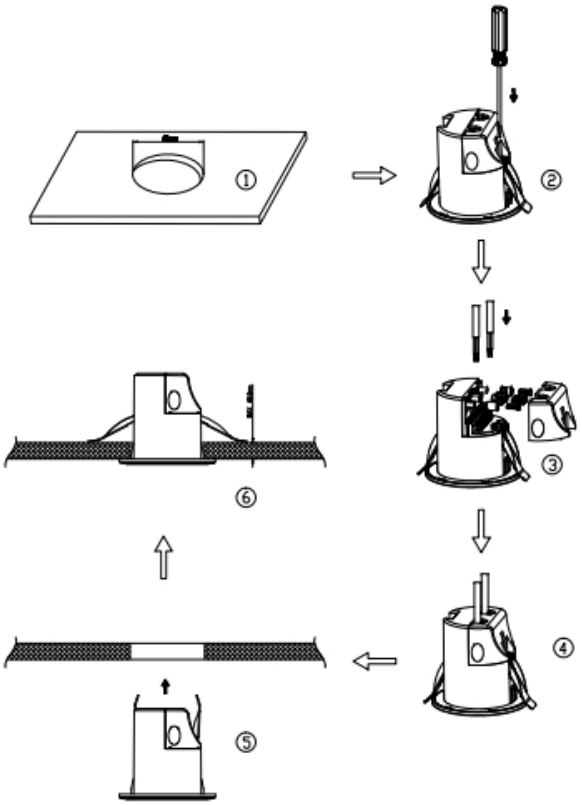
Note：

1. When multiple sensors are connected, only one sensor can be the master, others should be slaves. Under Broadcast mode or master-slave mode, one sensor must be the master.
2. When working normally, the hold time depend on the setting of the last triggered sensor.
3. It's recommended to connect 64pcs DALI drivers when one sensor is connected; 40pcs DALI drivers when 2 sensors; 30pcs DALI drivers when 3ps sensors; 20pcs DALI drivers when 4pcs sensors. Up to 4pcs DALI sensors can be connected to one DALI bus.

6. Structure

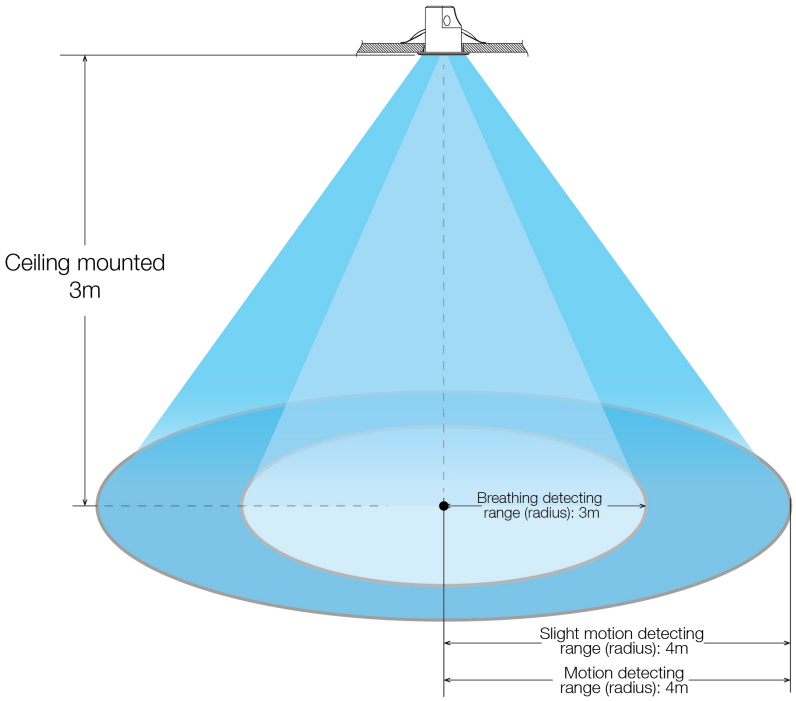


7. Installation instruction



1. Cut a hole 70-80mm on the ceiling
2. Carefully open the side cover and expose the screws and clamp
3. Wiring (note that input and output cannot be connected backwards)
4. Install the clamp screw and cover the side cover
5. Bend the spring clamp backward to push the pre-opened hole in the ceiling
6. Ensure smooth and reliable installation

8. Detection pattern



9. Dip switch settings

1) Indicator light

	1	
Ⅰ	ON	open
Ⅱ	-	close

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：It's necessary to set the hold time 1min+ to realize breathing detecting.

4) 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	-	-	-	Disable

*If daylight sensor is disable, the light will be on when movement is detected even if the lux level is enough or not.

5) Mode Selection (master-slave mode)

	9	
Ⅰ	ON	Master
Ⅱ	-	Slave

6) Stand-by Period

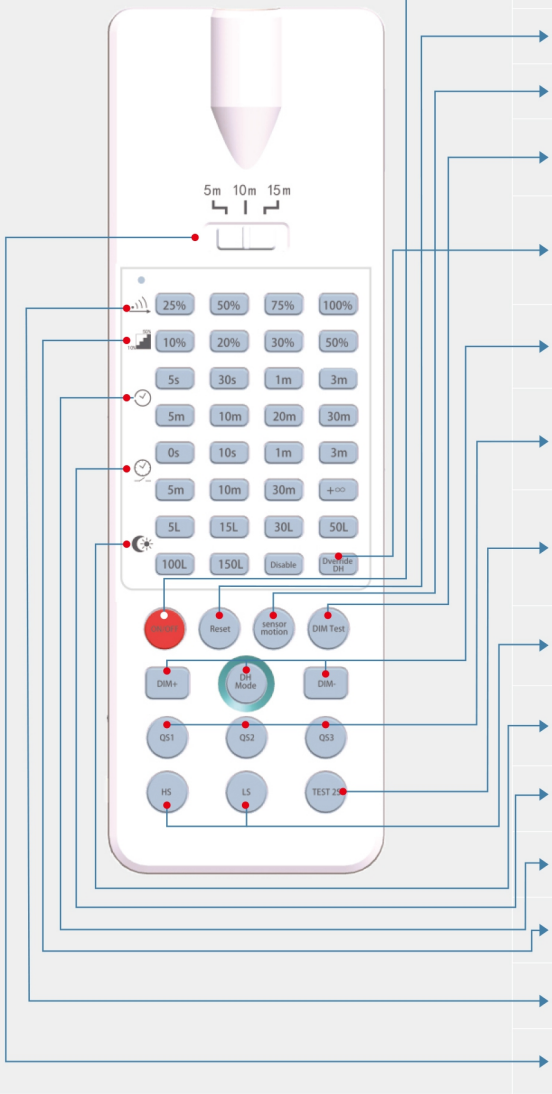
	1	2	3	
Ⅰ	ON	ON	ON	0S
Ⅱ	-	ON	ON	1min
Ⅲ	ON	-	ON	3min
Ⅳ	-	-	ON	10min
Ⅴ	ON	ON	-	30min
Ⅵ	-	-	-	+∞

* The sensor works as ON-OFF function when stand-by period is 0s.
* The sensor works as 2-step dimming function when stand-by period is +∞.

7) Stand-by DIM Level

	4	5	brightness	
Ⅰ	ON	ON	10%	DALI driver is set as linear curve.
Ⅱ	-	ON	20%	
Ⅲ	ON	-	30%	
Ⅳ	-	-	50%	

10. Remote control

Panel settings	Button	Function Description
	ON/OFF	Press "ON/OFF" button. When the load lamp enters the mode normal or off, press "RESET" button and "Auto mode" button to exit the mode normal on or off. No memory for ON-OFF setting after power off. Sensor mode will auto recover after restart power supply.
	Reset	Press "reset "button to return all settings back to current DIP settings.
	Sensor motion	Press the "Sensor motion" button. Switch from on/off mode to inductive mode (function return subject to the last setting)
	DIM Test	N/A
	Override DH	Long press ＞3s, exit daylight harvesting mode, back to daylight threshold mode
	DIM+ DIM- DH Mode	Short Press transmit dimming signal button, each adjustment has been 2% as the unit to increase or decrease the length. Long press ＞3s, open daylight havesting function
	QS1 QS2 QS3	N/A
	TEST 2S	In any state, press "TEST 2s" button to TEST the mode today. At this time, the sensor sensitivity is 100%, delay time is 2s, preset brightness is 10%, waiting delay is 0S, brightness and darkness are not controlled: this function is only used for testing. Press "RESET" or other function key to exit this mode.
	HS LS	HS: Turn ON indicator light LS : Turn OFF indicator light
		Light sensor Setting: 5Lux/15Lux/30Lux/50Lux/100Lux/150Lux/ Disable
		Stand-by Time Setting: 0S/10S/1min/3min/5min/10min/30min/+∞
		Hold Time Setting：5S/30S/1min/3min/5min/10min/20min/30min
	50% 10%	Stand-by Dim Level Setting：10%/20%/30%/50%
		Detection area Setting：25%/50%/75%/100%
	5m 10m 15m	Remote Distance Toggling the button can set the distance of remote control controlling sensor

Remote control / DIP setting switch over

1. Adjusting the DIP when power off, the settings back to current DIP settings.
2. When press any buttons on remote controller, the settings back to current remote control settings.

11. PUSH function

Short press PUSH can control the output on/off to achieve ON-OFF function, long press PUSH can dim the light level.

12. Initialization

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

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) Avoid the detection window of the daylight sensor of the detector irradiated by an invalid light source, which will interfere with the measurement of ambient light.

5) The microwave sensor has a certain penetrating ability to the wall of the building, and the microwave penetrating to the outside of the wall may cause false alarm when it ACTS on the moving objects outside the fortified area.In order to avoid triggering by mistake, the installation position and appropriate induction range should be selected during installation

6) The data on detection pattern is typical value tested in factory, the detection range could be affected by moving speed,installation height, motion object and different environment.