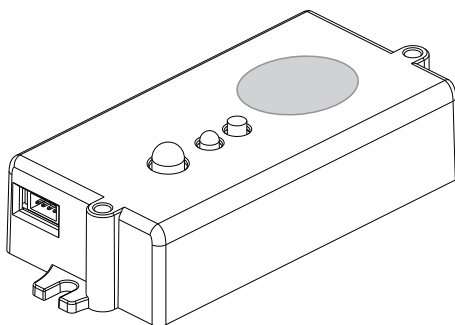


OPERATING INSTRUCTION

GRAVITALED

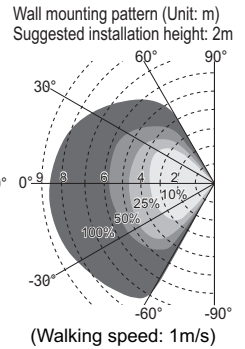
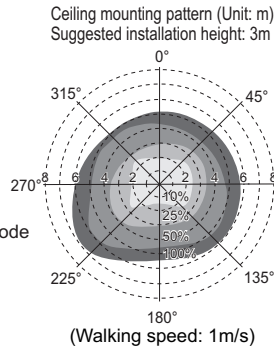


Mavo-WS

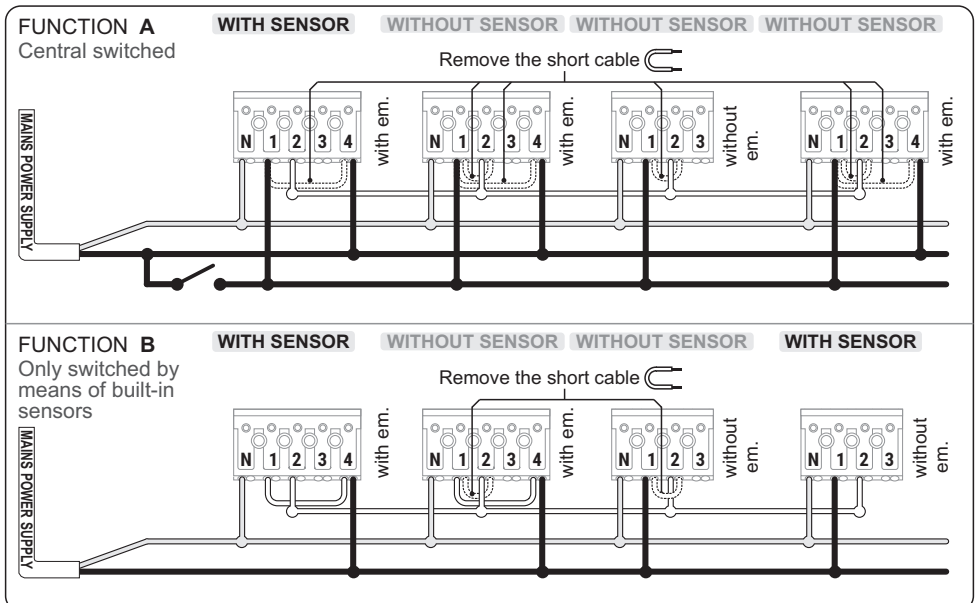
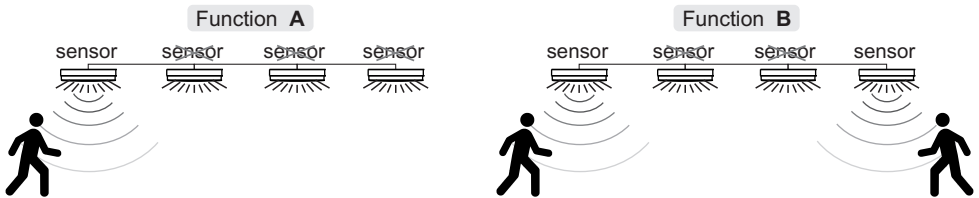


DESCRIPTION OF WIRELESS MICROWAVE SENSOR

- Input Voltage: 7-13V
- Input Current: $\geq 100\text{mA DC}$
- Output: 5V ON/OFF
- Stand-by power: $< 0.5\text{W}$
- Sensitivity: 10%/25%/50%/100%
- Hold-time: 10S/30s/1min/5min/15min/30min
- Stand-by time: 0s/1min/5min/10min/30min/+ ∞
- Daylight sensor:
 - ON** Disable/50Lux/30Lux/15Lux/10Lux/5Lux
 - OFF** Disable/200Lux/150Lux/100Lux/75Lux/50Lux
- **MODE:** Daylight priority mode/Daylight threshold mode
- Operation frequency: 5.8 GHz $\pm$ 75MHz
- Transmitting power: $< 0.5\text{mW}$
- Detection range: Max installation height: 6m
Max detection range (ϕ): 12m
- Detection angle: 120°
- RF transmission distance: 30m in open area



MASTER/SLAVE FUNCTION



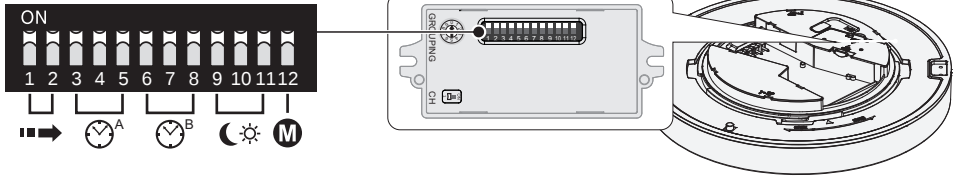
The number of slaves is limited. (Max. 30 pcs)

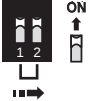
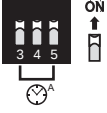
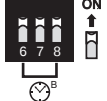
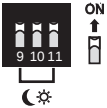
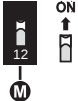
L

N

Output of sensor

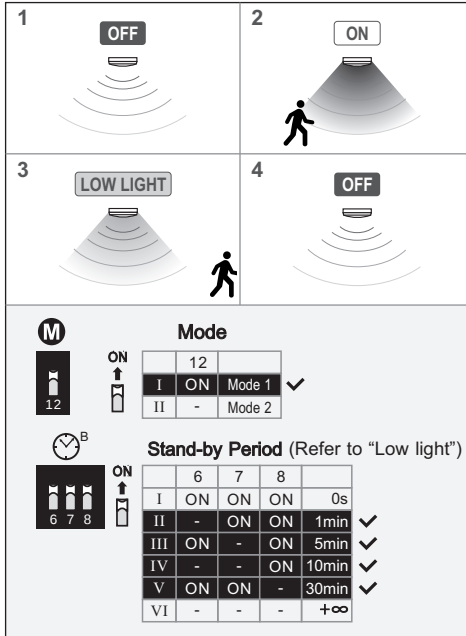
PARAMETER SETTING OF WIRELESS MICROWAVE SENSOR



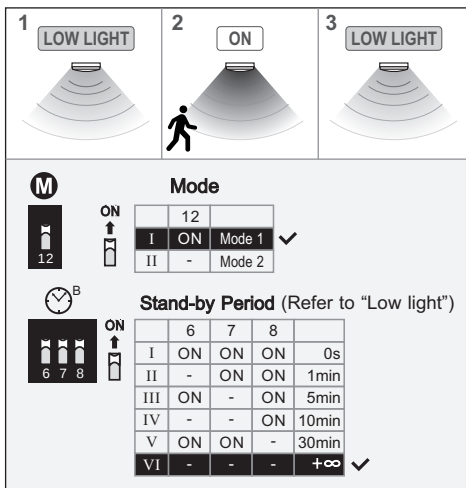
SYMBOL	FEATURE	DESCRIPTION	OPTIONAL SETTINGS	APPEARANCE	DIPSWITCH-SETTINGS																																										
	Detection area	The detection range that the motion sensor can detect.	100% 50% 25% 10%	 ON	<table><tr><th></th><th>1</th><th>2</th><th></th></tr><tr><td>I</td><td>ON</td><td>ON</td><td>100%</td></tr><tr><td>II</td><td>-</td><td>ON</td><td>50%</td></tr><tr><td>III</td><td>ON</td><td>-</td><td>25%</td></tr><tr><td>IV</td><td>-</td><td>-</td><td>10%</td></tr></table>		1	2		I	ON	ON	100%	II	-	ON	50%	III	ON	-	25%	IV	-	-	10%																						
	1	2																																													
I	ON	ON	100%																																												
II	-	ON	50%																																												
III	ON	-	25%																																												
IV	-	-	10%																																												
	Hold time	The time period that the light stays on at 100% brightness when motion is detected.	10s 30s 1min 5min 15min 30min	 ON	<table><tr><th></th><th>3</th><th>4</th><th>5</th><th></th></tr><tr><td>I</td><td>ON</td><td>ON</td><td>ON</td><td>10s</td></tr><tr><td>II</td><td>-</td><td>ON</td><td>ON</td><td>30s</td></tr><tr><td>III</td><td>ON</td><td>-</td><td>ON</td><td>1min</td></tr><tr><td>IV</td><td>ON</td><td>ON</td><td>-</td><td>5min</td></tr><tr><td>V</td><td>-</td><td>ON</td><td>-</td><td>15min</td></tr><tr><td>VI</td><td>-</td><td>-</td><td>-</td><td>30min</td></tr></table>		3	4	5		I	ON	ON	ON	10s	II	-	ON	ON	30s	III	ON	-	ON	1min	IV	ON	ON	-	5min	V	-	ON	-	15min	VI	-	-	-	30min							
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IV	ON	ON	-	5min																																											
V	-	ON	-	15min																																											
VI	-	-	-	30min																																											
	Standby-period	The time period that the light stays on at standby dim level before switching off. Note: This setting applies only when Mode 1 is selected.	0s 1min 5min 10min 30min +∞	 ON	<table><tr><th></th><th>6</th><th>7</th><th>8</th><th></th></tr><tr><td>I</td><td>ON</td><td>ON</td><td>ON</td><td>0s</td></tr><tr><td>II</td><td>-</td><td>ON</td><td>ON</td><td>1min</td></tr><tr><td>III</td><td>ON</td><td>-</td><td>ON</td><td>5min</td></tr><tr><td>IV</td><td>ON</td><td>ON</td><td>-</td><td>10min</td></tr><tr><td>V</td><td>-</td><td>ON</td><td>-</td><td>30min</td></tr><tr><td>VI</td><td>-</td><td>-</td><td>-</td><td>+∞</td></tr></table>		6	7	8		I	ON	ON	ON	0s	II	-	ON	ON	1min	III	ON	-	ON	5min	IV	ON	ON	-	10min	V	-	ON	-	30min	VI	-	-	-	+∞							
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IV	ON	ON	-	10min																																											
V	-	ON	-	30min																																											
VI	-	-	-	+∞																																											
	Daylight	In Mode 1: When the daylight level falls below the LUX value set under column "ON", the light responds to motion. When the daylight level rises above this set value, the light remains switched off. Note: The LUX value under the "OFF" column does not apply when MODE 1 is selected. In Mode 2: When the daylight level falls below the selected value under column "ON", the light switches on at standby level automatically and switches to 100% based on motion. When the daylight level rises above the selected LUX value under column "OFF", the light switches off.	ON Disable 50Lux 30Lux 15Lux 10Lux 5Lux OFF Disable 200Lux 150Lux 100Lux 75Lux 50Lux	 ON	<table><tr><th></th><th>9</th><th>10</th><th>11</th><th>ON</th><th>OFF</th></tr><tr><td>I</td><td>ON</td><td>ON</td><td>ON</td><td>Disable</td><td>Disable</td></tr><tr><td>II</td><td>-</td><td>ON</td><td>ON</td><td>50Lux</td><td>200Lux</td></tr><tr><td>III</td><td>ON</td><td>-</td><td>ON</td><td>30Lux</td><td>150Lux</td></tr><tr><td>IV</td><td>ON</td><td>ON</td><td>-</td><td>15Lux</td><td>100Lux</td></tr><tr><td>V</td><td>-</td><td>ON</td><td>-</td><td>10Lux</td><td>75Lux</td></tr><tr><td>VI</td><td>-</td><td>-</td><td>-</td><td>5Lux</td><td>50Lux</td></tr></table>		9	10	11	ON	OFF	I	ON	ON	ON	Disable	Disable	II	-	ON	ON	50Lux	200Lux	III	ON	-	ON	30Lux	150Lux	IV	ON	ON	-	15Lux	100Lux	V	-	ON	-	10Lux	75Lux	VI	-	-	-	5Lux	50Lux
	9	10	11	ON	OFF																																										
I	ON	ON	ON	Disable	Disable																																										
II	-	ON	ON	50Lux	200Lux																																										
III	ON	-	ON	30Lux	150Lux																																										
IV	ON	ON	-	15Lux	100Lux																																										
V	-	ON	-	10Lux	75Lux																																										
VI	-	-	-	5Lux	50Lux																																										
	Mode	Mode 1: Daylight Threshold Mode – The light remains off when motion is detected if the daylight level is above the LUX value set under column "ON". And the light responds to the motion when the daylight level falls below this selected LUX value. Mode 2: Daylight Priority Mode - The light remains off when motion is detected if the daylight level is above the LUX value set under column "OFF". And when the daylight level drops below the selected LUX value under column "ON", the light automatically turns on to the standby level and switches to 100% based on motion.	Mode 1 Mode 2	 ON	<table><tr><th></th><th>12</th><th></th></tr><tr><td>I</td><td>ON</td><td>Mode 1</td></tr><tr><td>II</td><td>-</td><td>Mode 2</td></tr></table>		12		I	ON	Mode 1	II	-	Mode 2																																	
	12																																														
I	ON	Mode 1																																													
II	-	Mode 2																																													

DESCRIPTION OF SENSOR FUNCTIONS

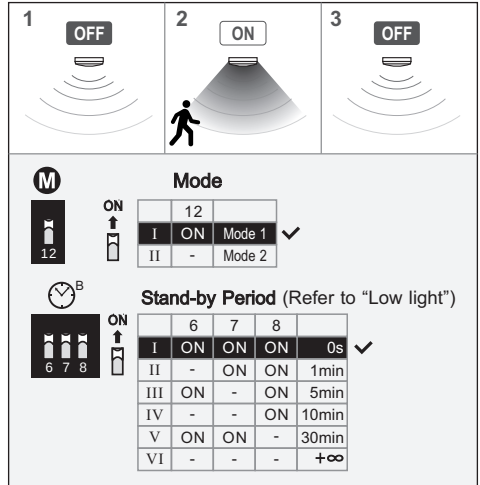
A Normal light-control function
Sensor with **On/Low light(10%)/Off**,
three-step dimmable.



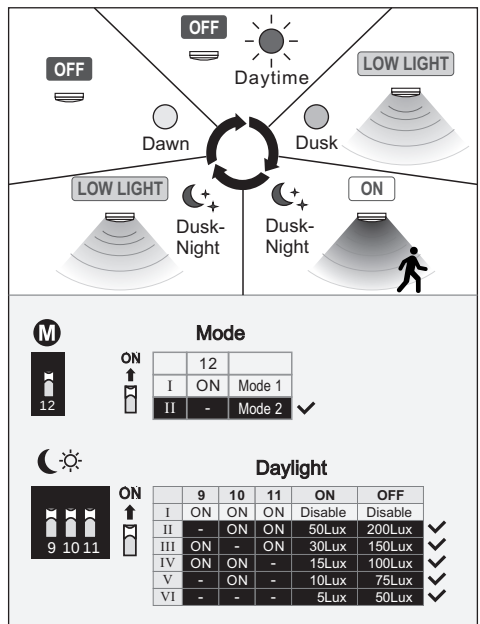
C Normal light-control function
Sensor with **On/Low light(10%)**.



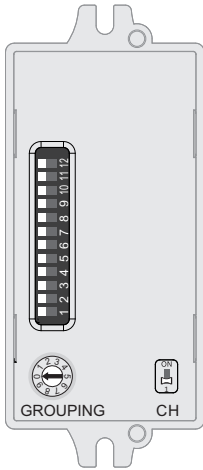
B Normal light-control function
Sensor with **On/Off**, two-step dimmable.



D Photocell prioritized function
Sensor with **On/Low light(10%)**



RF GROUPING INSTRUCTIONS



DIP setting:

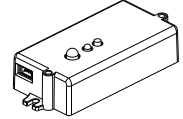
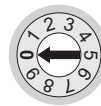
ON	Multi-Channel Receiving Mode
—	Single-Channel Receiving Mode

Rotary Switch:



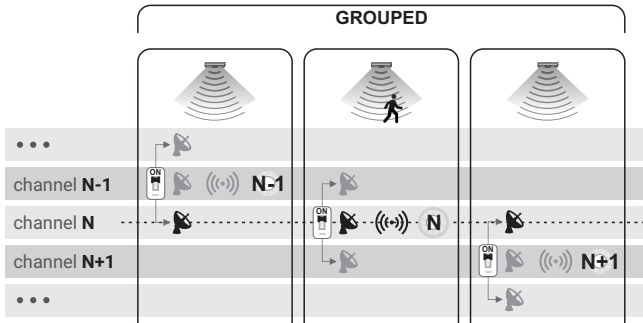
Numbers 1–9 indicate selectable channels. A total of 9 channels are available, allowing up to 9 different groups.

0: Wireless transmission is turned off.



Multi-Channel Receiving Mode:

In multi-channel mode, the sensor can receive signals transmitted on both the same channel and its adjacent channels. Sensors set to the same channel and sensors on adjacent channels automatically form a group.



Multi-Channel Receiving Mode



Selected Channel



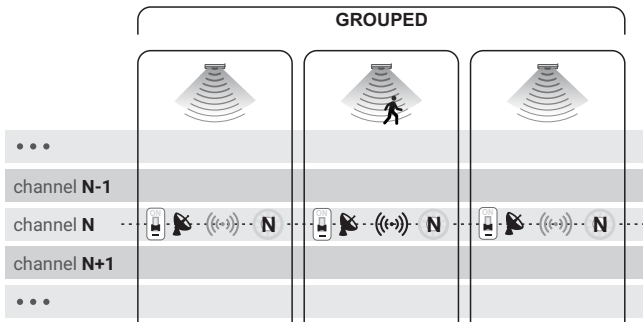
Master Sensor



Slave Sensor

Single-Channel Receiving Mode:

In single-channel mode, the sensor can only receive signals transmitted on the same channel. Sensors set to the same channel form a group, while sensors on different channels remain in separate groups.



Single-Channel Receiving Mode



Selected Channel

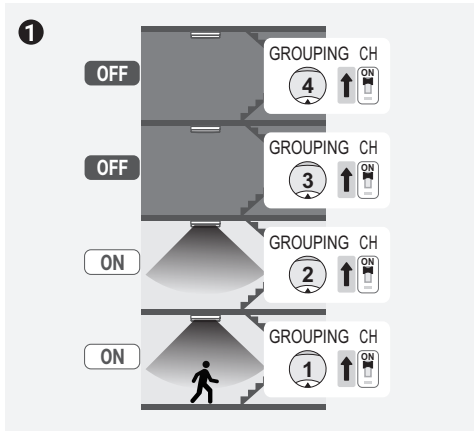


Master Sensor

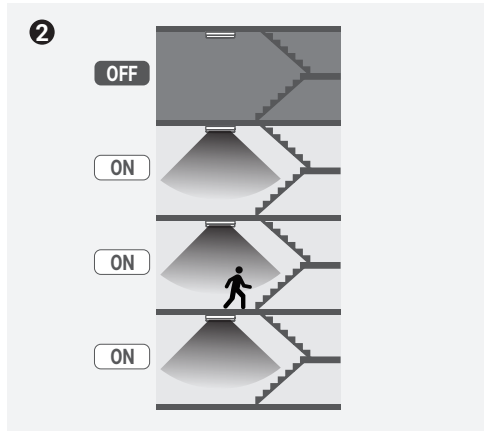


Slave Sensor

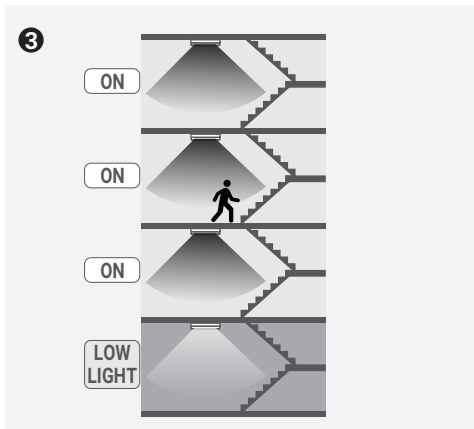
A Typical application, For staircase (The light from LMS008RF serves as both master and slave)



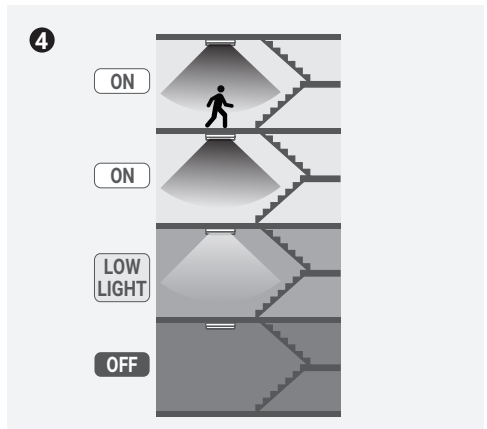
The 1st light detects motion, it turns on and sends the signal to the 2nd light on the 2nd floor and switches it on.



The person walks to the 2nd floor, the 2nd light detects motion and sends the signal to the 3rd light on the 3rd floor and turns it on.



The person walks to the 3rd floor, the 3rd light detects motion and sends the signal to the 4th light on the 4th floor and turns it on. Meanwhile, the 1st light dims to stand-by brightness after hold time.

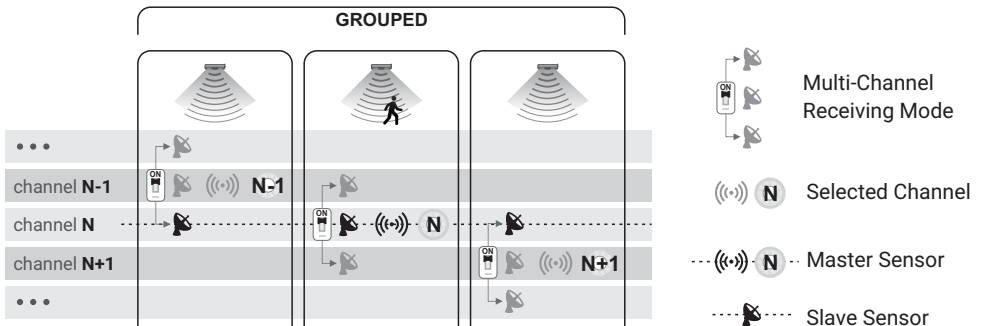
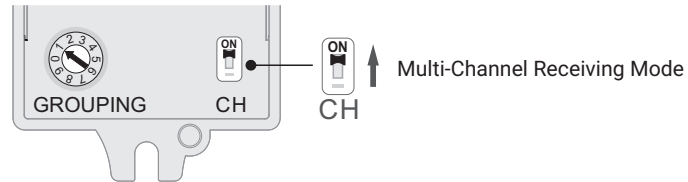


The person walks to the 4th floor, the 4th light detects motion and sends the signal to the next light on the next floor and turns it on. While the 1st light turns off after stand-by period and the 2nd light dims to stand-by brightness after hold time.

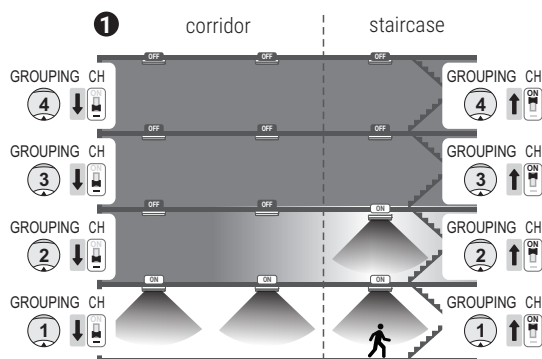
SETTING DESCRIPTION

RF grouping:

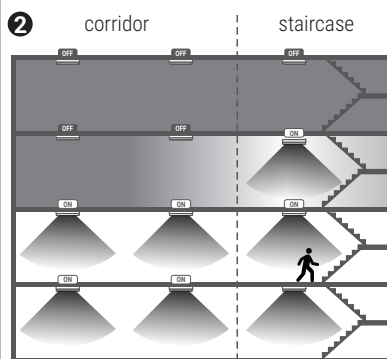
1. Set all sensors to Multi-Channel Receiving Mode.
2. Keep the arrow on each rotary switch pointing to the same channel. Once configured, lights on the same channel and lights on adjacent channels will automatically form a group.



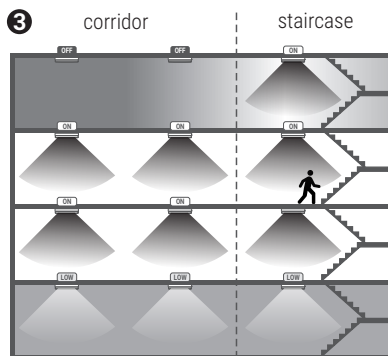
B Typical application, For staircase and corridor (The light with LMS008RF serves as both master and slave)



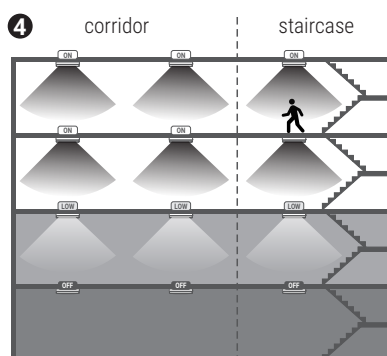
The 1st staircase light detects motion and turns on, and it sends the signal to the corridor lights on the same floor and switches them on. Meanwhile, the 2nd staircase light on the 2nd floor receives signal from the 1st light and turns on.



The person walks to the 2nd floor, the 2nd staircase light detects motion and sends the signal to the corridor lights on the same floor and turns them on. Meanwhile it sends the signal to the 3rd staircase light on the 3rd floor and switches it on.



The person walks to the 3rd floor, the 3rd staircase light detects motion and sends the signal to the corridor lights on the same floor and turns them on. Meanwhile it sends the signal to the 4th staircase light on the 4th floor and switches it on. While all the lights on the 1st floor dim to stand-by level after hold time.

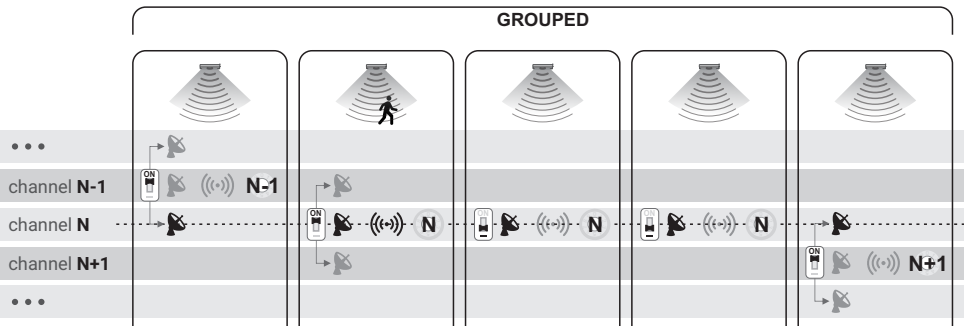
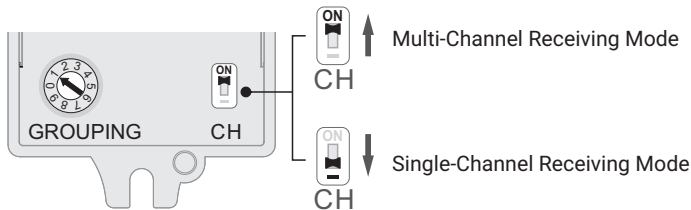


The person walks to the 4th floor, the 4th staircase light detects the motion and sends the signal to the corridor lights on the same floor and turns them on. Meanwhile, it sends the signal to the next staircase light on the next floor and switches it on. While all the lights on the 1st floor turn off after stand-by period, and all the lights on the 2nd floor dim to stand-by level after hold time.

SETTING DESCRIPTION

RF Grouping

- 1. Set the sensors in staircase lights to Multi-Channel Receiving Mode, and the ones in corridor lights to Single-Channel Receiving Mode.
- 2. Keep the arrow on each rotary switch pointing to the same channel. Once configured, Multi-CH sensors group with lights on the same and adjacent channels, while Single-CH sensors group only with lights on the same channel.



Single-Channel Receiving Mode

Multi-Channel Receiving Mode

Selected Channel

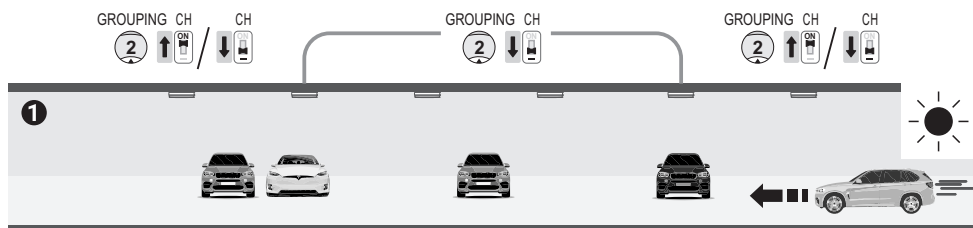
Master Sensor

Slave Sensor

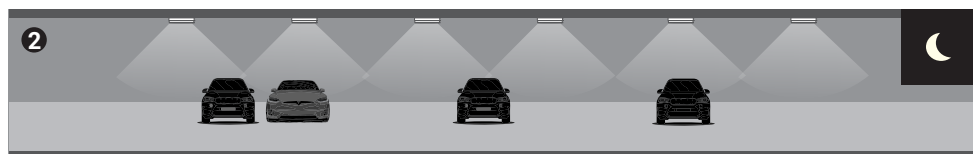
Typical application, For carpark
(The light with LMS008RF serves as both master and slave)

Sensors set to Daylight Priority Mode with 2 steps

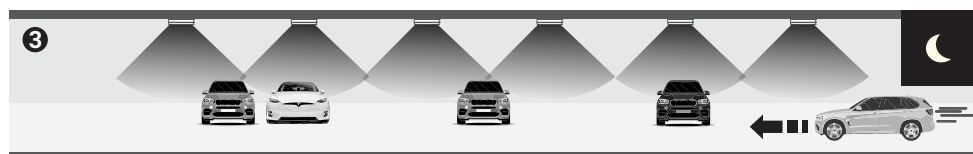
Detection area	Hold time	Standby-period	Daylight	Mode																																																																																																																																													
<table><tr><th></th><th>1</th><th>2</th><th></th></tr><tr><td>I</td><td>ON</td><td>ON</td><td>100%</td></tr><tr><td>II</td><td>-</td><td>ON</td><td>50%</td></tr><tr><td>III</td><td>ON</td><td>-</td><td>25%</td></tr><tr><td>IV</td><td>-</td><td>-</td><td>10%</td></tr></table>		1	2		I	ON	ON	100%	II	-	ON	50%	III	ON	-	25%	IV	-	-	10%	<table><tr><th></th><th>3</th><th>4</th><th>5</th><th></th></tr><tr><td>I</td><td>ON</td><td>ON</td><td>ON</td><td>10s</td></tr><tr><td>II</td><td>-</td><td>ON</td><td>ON</td><td>30s</td></tr><tr><td>III</td><td>ON</td><td>-</td><td>ON</td><td>1min</td></tr><tr><td>IV</td><td>ON</td><td>ON</td><td>-</td><td>5min</td></tr><tr><td>V</td><td>-</td><td>ON</td><td>-</td><td>15min</td></tr><tr><td>VI</td><td>-</td><td>-</td><td>-</td><td>30min</td></tr></table>		3	4	5		I	ON	ON	ON	10s	II	-	ON	ON	30s	III	ON	-	ON	1min	IV	ON	ON	-	5min	V	-	ON	-	15min	VI	-	-	-	30min	<table><tr><th></th><th>6</th><th>7</th><th>8</th><th></th></tr><tr><td>I</td><td>ON</td><td>ON</td><td>ON</td><td>0s</td></tr><tr><td>II</td><td>-</td><td>ON</td><td>ON</td><td>1min</td></tr><tr><td>III</td><td>ON</td><td>-</td><td>ON</td><td>5min</td></tr><tr><td>IV</td><td>ON</td><td>ON</td><td>-</td><td>10min</td></tr><tr><td>V</td><td>-</td><td>-</td><td>-</td><td>30min</td></tr><tr><td>VI</td><td>-</td><td>-</td><td>-</td><td>+∞</td></tr></table>		6	7	8		I	ON	ON	ON	0s	II	-	ON	ON	1min	III	ON	-	ON	5min	IV	ON	ON	-	10min	V	-	-	-	30min	VI	-	-	-	+∞	<table><tr><th></th><th>9</th><th>10</th><th>11</th><th>ON</th><th>OFF</th></tr><tr><td>I</td><td>ON</td><td>ON</td><td>ON</td><td>Disable</td><td>Disable</td></tr><tr><td>II</td><td>-</td><td>ON</td><td>ON</td><td>50Lux</td><td>200Lux</td></tr><tr><td>III</td><td>ON</td><td>-</td><td>ON</td><td>30Lux</td><td>150Lux</td></tr><tr><td>IV</td><td>ON</td><td>-</td><td>-</td><td>15Lux</td><td>100Lux</td></tr><tr><td>V</td><td>-</td><td>ON</td><td>-</td><td>10Lux</td><td>75Lux</td></tr><tr><td>VI</td><td>-</td><td>-</td><td>-</td><td>5Lux</td><td>50Lux</td></tr></table>		9	10	11	ON	OFF	I	ON	ON	ON	Disable	Disable	II	-	ON	ON	50Lux	200Lux	III	ON	-	ON	30Lux	150Lux	IV	ON	-	-	15Lux	100Lux	V	-	ON	-	10Lux	75Lux	VI	-	-	-	5Lux	50Lux	<table><tr><th></th><th>12</th><th></th></tr><tr><td>I</td><td>ON</td><td>Mode 1</td></tr><tr><td>II</td><td>-</td><td>Mode 2</td></tr></table>		12		I	ON	Mode 1	II	-	Mode 2
	1	2																																																																																																																																															
I	ON	ON	100%																																																																																																																																														
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	9	10	11	ON	OFF																																																																																																																																												
I	ON	ON	ON	Disable	Disable																																																																																																																																												
II	-	ON	ON	50Lux	200Lux																																																																																																																																												
III	ON	-	ON	30Lux	150Lux																																																																																																																																												
IV	ON	-	-	15Lux	100Lux																																																																																																																																												
V	-	ON	-	10Lux	75Lux																																																																																																																																												
VI	-	-	-	5Lux	50Lux																																																																																																																																												
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II	-	Mode 2																																																																																																																																															



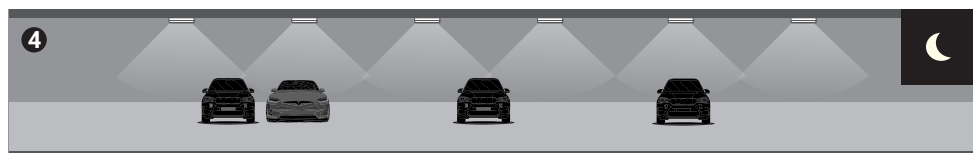
With sufficient natural light, the sensor is not triggered by motion.



With insufficient natural light, the sensor is enabled and the light enters stand-by level.



When the sensor of lights detects motion, it switches on and sends the signal to all the lights in the same group and turns them on.



After the hold time, all the lamps in the same group dim to stand-by level.

Sensors set to Daylight Threshold Mode with 3 steps

Detection area

I	ON	ON	100%	✓
II	-	ON	50%	✓
III	ON	-	25%	✓
IV	-	-	10%	✓

Hold time

I	ON	ON	ON	10s	✓
II	-	ON	ON	30s	✓
III	ON	-	ON	1min	✓
IV	ON	ON	-	5min	✓
V	-	ON	-	15min	✓
VI	-	-	-	30min	✓

Standby-period

I	ON	ON	ON	0s	✓
II	-	ON	ON	1min	✓
III	ON	-	ON	5min	✓
IV	ON	ON	-	10min	✓
V	-	ON	-	30min	✓
VI	-	-	-	+∞	✓

Daylight

9	ON	ON	ON	ON/OFF	OFF	
II	-	ON	ON	Disable	Disable	✓
III	ON	-	ON	50Lux	50Lux	✓
IV	ON	ON	-	30Lux	30Lux	✓
V	-	ON	-	15Lux	15Lux	✓
VI	-	-	-	10Lux	5Lux	✓

Mode

I	ON	Mode 1	✓
II	-	Mode 2	✓

GROUPING CH

2

↑

ON

CH

↓

OFF

GROUPING CH

2

↓

ON

CH

↓

OFF

GROUPING CH

2

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ON

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GROUPING CH

2

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OFF

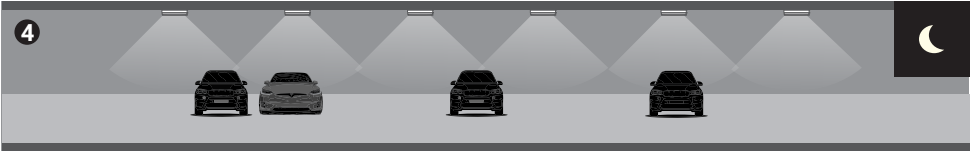
With sufficient natural light, the sensor is not triggered by motion.



With insufficient natural light, the sensor is enabled.



When the sensor of lights detects motion, it switches on and sends the signal to all the lights in the same group and turns them on.



After the hold time, all the lamps in the same group dim to stand-by level.

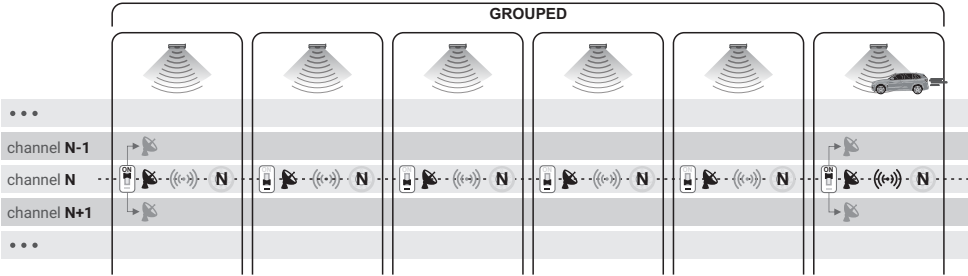
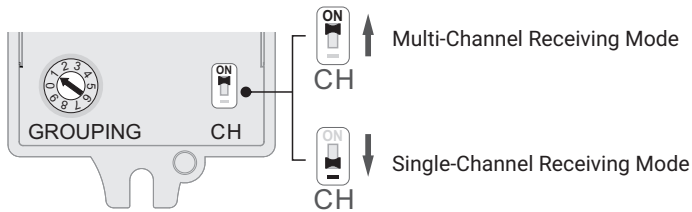


All the lights in the same group switch off automatically after the stand-by period.

SETTING DESCRIPTION

RF Grouping

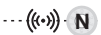
- 1. All sensors can operate in either Single-Channel Receiving Mode or Multi-Channel Receiving Mode
- 2. Keep the arrow on each rotary switch pointing to the same channel. Once configured, Multi-CH sensors group with lights on the same and adjacent channels, and Single-CH sensors group only with lights on the same channel.



 Single-Channel Receiving Mode

 Multi-Channel Receiving Mode

 Selected Channel

 Master Sensor

 Slave Sensor

SENSOR OVERRIDE

