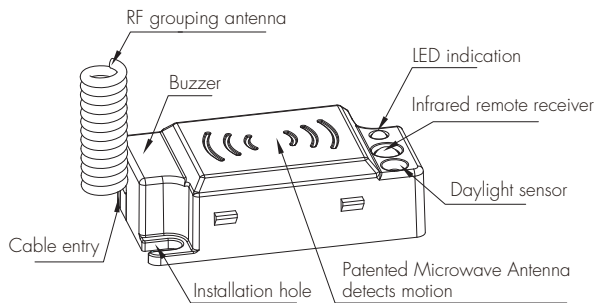


# RF Wireless Occupancy Sensor with Detached Antenna

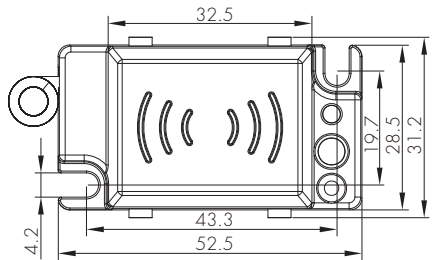
Model: HC438V + SAM8(1-10V)  
HCD438 + SAM8(DALI)  
HRC-04 Remote Control



## RF Grouping, OCC sensor, Detached Antenna

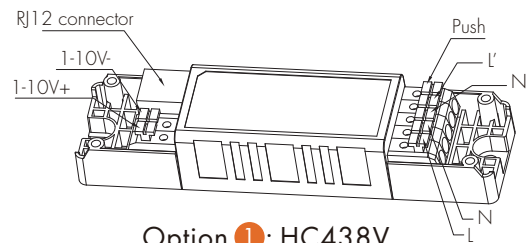


Model: SAM8

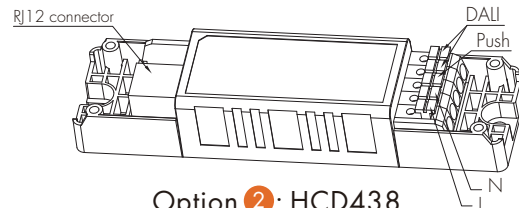


Mechanical structure (unit: mm)

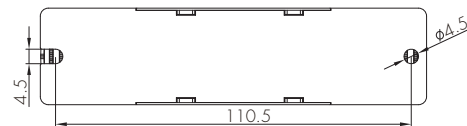
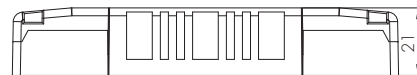
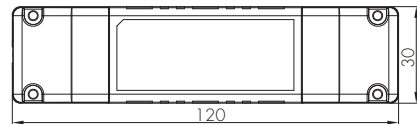
## Main body



Option 1: HC438V



Option 2: HCD438



Mechanical structure (unit: mm)



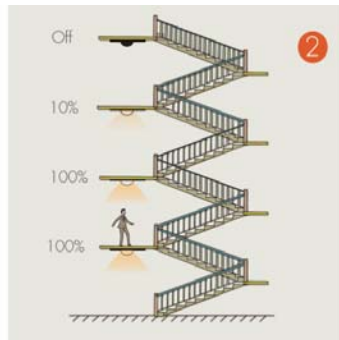
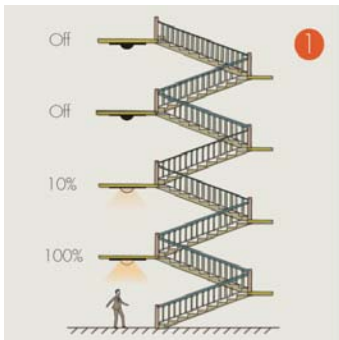
Hytronik's popular Transceiver Model HC428V/RF upgraded as RF Wireless Grouping with remote control (HRC-04) for commissioning ease and SAM8 compact detached antenna unit for improved mounting flexibility inside flat / narrow fixtures. SAM8 supports both 0-10V dimming (with sensor block HC438V) and DALI (with sensor block HCD438). Both sensor blocks support universal input voltages: 120 - 277VAC.

Establish groups with remote; any number within the RF group transmission reach: 30m radius indoor and 50m radius in open areas. Each transceiver can be programmed to respond to up to 15 separate groups. When transceiver detects motion, it sends RF ON signal to all transceivers in receiving groups. Distributed, intelligent control for daylight sensing threshold, hold time, stand-by time and dim level.

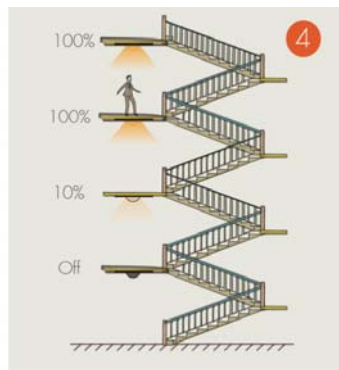
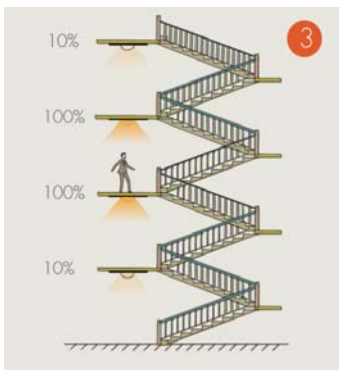


## Typical Applications

### 1 For staircase (SAM8 with HC438V or HCD438)



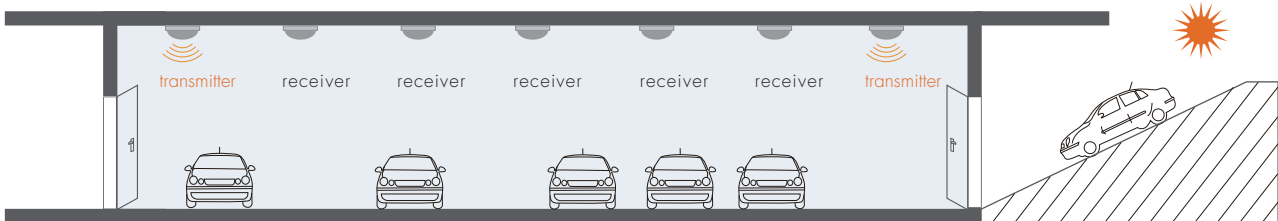
- 1 The 1st floor sensor detects motion, its fixture turns on FULL and sends RF signal to 2nd floor sensor and any others programmed to be in the same group. The 2nd floor fixture turns on full or to dim level programmed, as does each fixture in group. The group should contain enough fixtures to provide safe lighting levels, perception of safety and elimination of undesirable tunnel effects.
- 2 As occupant moves to 2nd floor, this sensor detects motion and turns its fixture on full and sends RF signal to each sensor in group. The first floor sensor's "hold time" (programmed hold time timer) starts after no motion is detected. Through remote programming, each fixture provides only as much light as is needed.



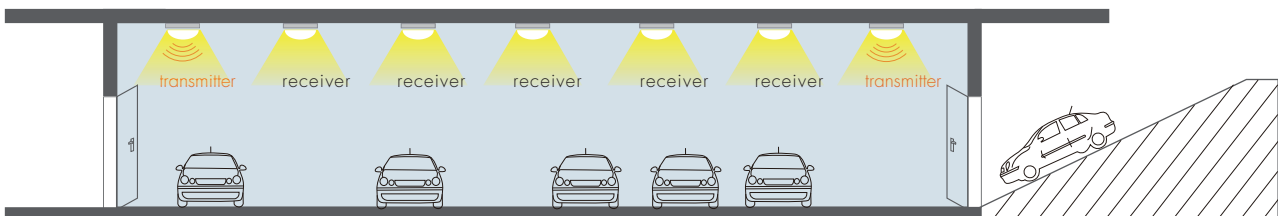
- 3 With occupant on 3rd floor, this sensor detects motion and sends RF signal to a different grouping of sensors to turn on their fixtures on floors above and below. Meanwhile, after its programmed hold-time, the 1st floor sensor dims to its programmed dim level and its stand-by timer starts. This fixture stays dim for as long as its programmed stand-by period.
- 4 This propagation continues with new groupings as occupant moves to 4th floor and this sensor detects motion. Meanwhile, the 1st floor sensor reaches its programmed stand-by time and turns off. The 2nd floor sensor reaches its programmed hold-time and dims according to its own programmed dim level and stand-by-period time.

Note the convenience of remote control programming with the HRC-04 to establish the groupings and to program the output level for each fixture in multiple groups (up to 15 per fixture) when RF signals triggers group to turn on. In this enclosed stairwell example, there are no windows so daylight monitoring threshold function is disabled via programming.

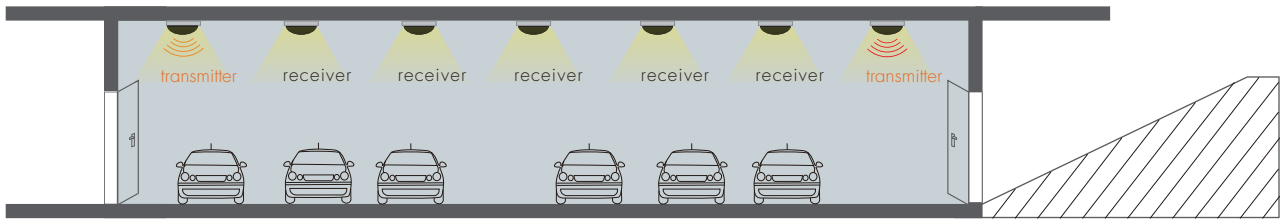
### 2 For carpark (SAM8 with HC438V or HCD438)



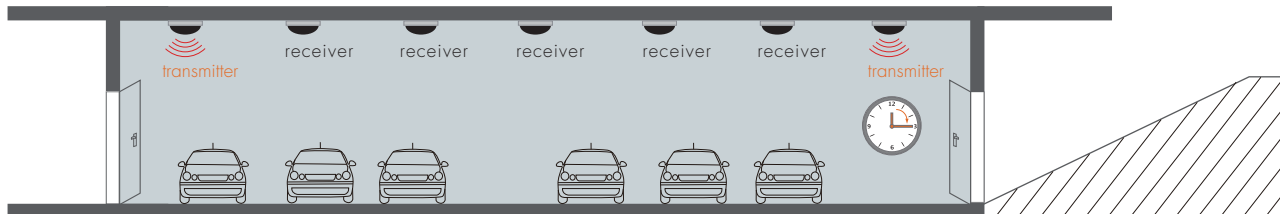
With sufficient natural light, the sensor is not triggered by motion.



With insufficient natural light, the sensor is triggered by motion, the transmitter switches on the light and send RF ON signal to all slaves.



After the hold-time, the whole group of lamps dim to pre-defined dimming level when no movement is detected.



The whole group of lamps switch off automatically after the stand-by period.

## Product Functions and Features

- 1 Daylight monitoring function with threshold control (add model DS02 photosensor for complete daylight harvesting)
- 2 Wall switch manual override (push function)
- 3 Wire loop-in and loop-out

## Settings (Remote Control HRC-04)

### ON/OFF Permanent ON/OFF function

Press this button, the light goes to permanent on or permanent off mode, sensor is disabled.  
\* Press "Auto Mode", "Reset", "Scene mode" or "Ambient daylight threshold" buttons to quit from this mode.

### Auto Mode Sensor mode

Press "Auto Mode" button, the sensor starts to work and all settings remain the same as the latest status before the light was switched on/off.

### RESET Reset function

Press "RESET" button, all settings go back to default settings:

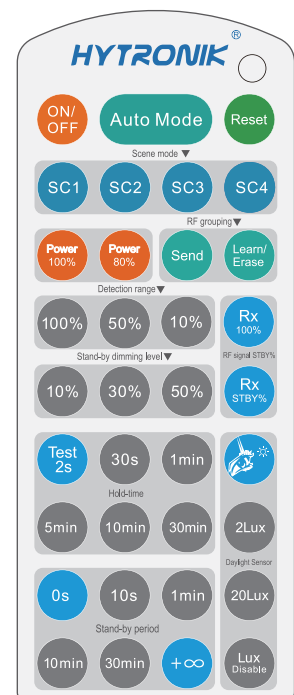
Detection range: 100%;      Hold-time: 1min;      Stand-by period: 5min;  
Stand-by dimming level: 20%;      Daylight sensor: Lux disable;      Rx STBY%

### Power 100% 80% Power output

Press these buttons to select full Output level. 80% button allows for energy savings and reverse dimming to compensate for LED lumen depreciation over time. Supports fluorescent 10,000hr initial burn-in.

### Ambient daylight threshold

Press this button, the latest surrounding lux value overwrites previous lux value learned, and is set as the daylight threshold.



HRC-04

Note: the buzzer beeps one time when RC receives signal successfully.



## Brightness on RF signal

Press these buttons to determine the full ON level for all grouped fixtures receiving RF signal after motion is detected by one transceiver in group. "Rx STBY%" button activates the receiving group to turn ON at programmed stand-by level, instead of the full ON with "Rx 100%" button.



## Test mode

The button "Test 2s" is for testing purpose only. The sensor goes to test mode (hold-time is 2s) automatically after commissioning, meanwhile the stand-by period and daylight sensor are disabled.

\* This mode can be ended by pressing "reset", or any button of "scene mode" and "hold-time".



## Lux disable

Press this button to disable the daylight sensor for threshold control. When motion is detected, the fixture will always turn ON, regardless of ambient light level.

## Scene mode

There are four scene mode fixed programs built-into the remote control. Select as application appropriate. Each scene can be modified using the remote. The sensor will remember the remote updates even after power outage. The green "RESET" button on remote reverts to original defaults:

Scene options	Detection range	Hold-time	Stand-by period	Stand-by dimming level	100% /STBY%	Daylight sensor
SC1	10%	1 min	1 min	10%	STBY%	Disable
SC2	10%	5min	5min	30%	STBY%	Disable
SC3	50%	10min	30min	30%	STBY%	Disable
SC4	100%	30min	1 hour	50%	100%	100Lux



## Detection range

Select as appropriate to adjust/ reduce sensor sensitivity, detection range from 100%.

Typical 100% sensor motion detection range is 9m. Please refer to detection pattern below.



## Hold-time

Hold-time is time fixture remains at programmed full power level AFTER no motion is detected.



## Daylight sensor

Select daylight sensor threshold level at MIN 2 LUX or MIN 20LUX. Ambient light must below this MIN LUX threshold for sensor to turn fixture ON. Press Blue button to sample ambient light. Press Lux Disable button for fixture to always turn On when motion is detected.

## Stand-by period (tri-level control)

Press the buttons of "stand-by period" to set stand-by period at 0s / 10s / 1min / 10min / 30min / +∞.

Note: "0s" means on/off control; "+∞" means bi-level control, light never switches off when daylight sensor is disabled.

## Stand-by dimming level

Press the buttons of "stand-by dimming level" to set the stand-by dimming level at 10% / 30% / 50%.

Short press "Learn/Erase" button on RC to activate pairing mode, and the receiver unit will beep once every second for 3min.

Note: the unit can only pair up to 30 units.

Step 1

Beeper is on for 3min



The receiver unit

Short press "Learn/  
Erase" button

Short press "Send" button on RC, the commander unit will beep one time to send the transmission signal.

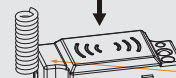
Upon receiving the transmission signal, the receiver unit will rapidly beep 3 times in 1s to indicate the success of pairing. Repeat this step to pair more units. The receiver unit will quit the pairing mode after 3min or press the "Learn/Erase" button again.

Step 2

The beeper beeps one time



The commander unit

Short press  
"Send" button

The receiver unit

Beeper beeps rapidly  
when RF signal is received

Erase:

Long press "Learn/Erase" button for 3s, and the receiver unit clears all commands it has received before.

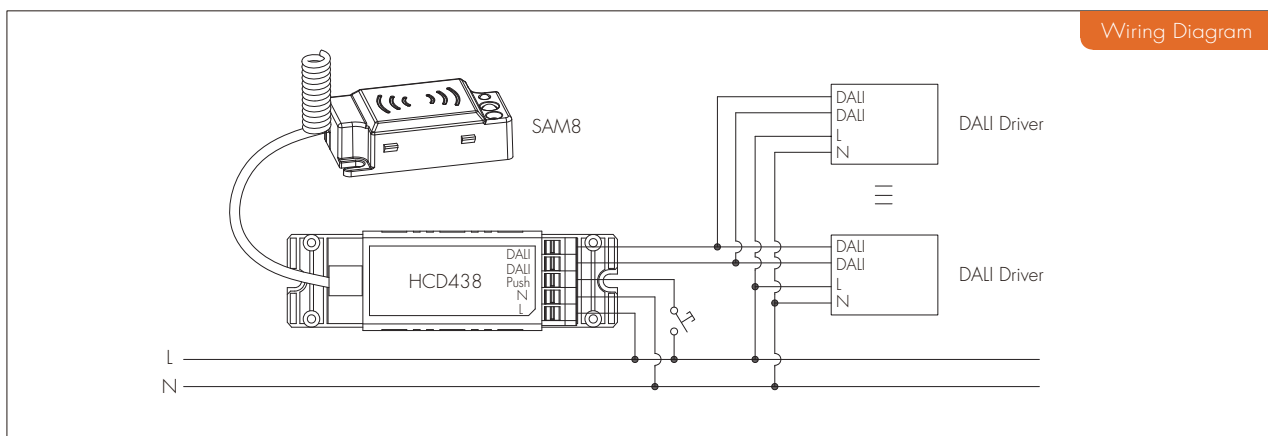
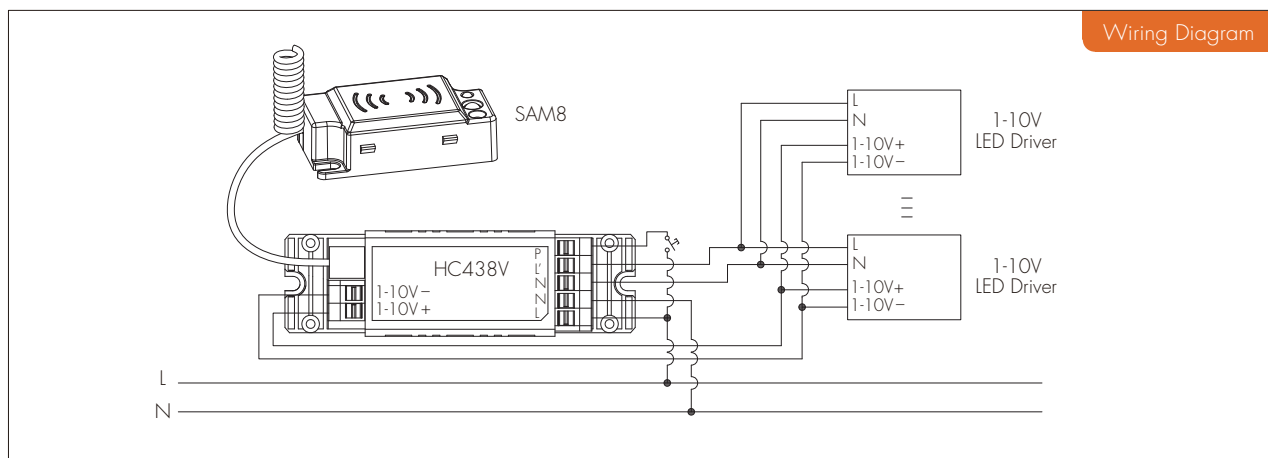
The beeper rapidly beeps for about 5s. This is the indication of a successful reset and previous groupings are all erased.

Step 3

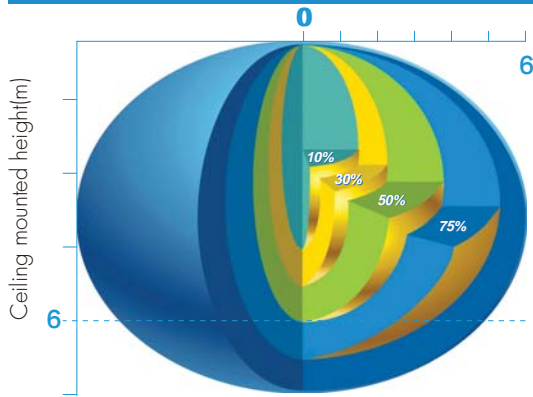
Beeper is on



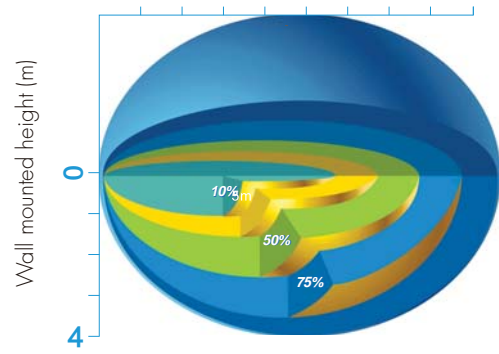
The receiver unit

Long press "Learn/  
Erase" button

## Detection Pattern



Ceiling mounted detection pattern (m)



Wall mounted detection pattern (m)

## Technical Data

Operating voltage	120-277VAC
Switched power (HC438V)	120V~/1.7A/200VA; 277V~/1.5A/400VA (capacitive load)
Switched power (HCD438)	DALI Output, max. 15 devices/broadcast 30mA 16VDC
Warming-up time	20s
Stand-by power	< 0.5W
Detection area	10% /50% /100%
Hold-time	Test 2s /30s /1min /5min /10min /30min
Stand-by period	0s/10s/1min/10min/30min/ +∞
Stand-by dimming level	10%/30%/50%
Daylight threshold	2Lux /20Lux, disable, real-time sampling
HF (microwave) frequency	5.8GHz+/-75MHz
HF (microwave) power	<0.2mW
Detection range	Maximum (DxH): 12m x 6m
Detection angle	30~150°
RF. Transmission distance	30 meters indoor, 50 meters in the open area
Mounting height	Max. 6m
Max. case temperature (Tc)	80°C
Operating temperature	-35°C ~ +70°C
RF frequency	915MHz (FSK mode)
Certificate	cULus listed; FCC