

Wireless Networking of Luminaires

HF motion detector (MC003V/CP) + RF wireless transceiver (MW01)



Introduction

- Used in wireless networking of luminaires, easy installation and free of wire.
- With fixed code, very easy to set up any-to-any communication.
- By digital receiving and transmitting method, high anti-interference capability and no interference to any RF sensitive device, for example, electronic keys of cars.
- With advanced code detection technology, no code missing.
- Merrytek takes the lead in using the rotary coding switch in RF transceiver, very easy to create groups.

Are you looking for a wireless lighting control system? Merrytek supplies you a perfect wireless control solution consisting of HF motion detector MC003V/CP and RF wireless transceiver MW01. High reliability, easy to install and free of wire!

MC003V/CP is an active motion detector with HF system 5.8GHz. Motion can be detected through plastic, glass and thin non-metal materials.

MW01 is an innovative and unique wireless transceiver with frequency range 433Mhz. Due to use full digital receiving & transmitting and fixed address code for creation of groups, it has high reliability and stability.

Also, the RF module integrates advanced code check technology, significantly improved transmission reliability. Make sure exact signal transmitting and receiving, no code missing.

In addition, Merrytek takes the lead in adopting the rotary coding switch to set up groups, very simple to achieve any-to-any communication.



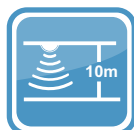
Max.8M



Light Sensor



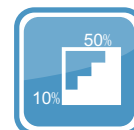
Hold Time
10s~30min



Mounting Height
10m Max.



Wireless Networking,
Free of Wire.



Automatic
Dimming



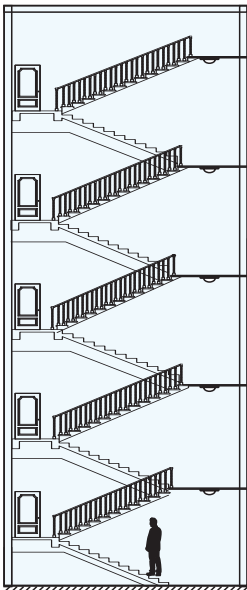
5 Years
Guarantee

RF Wireless Control

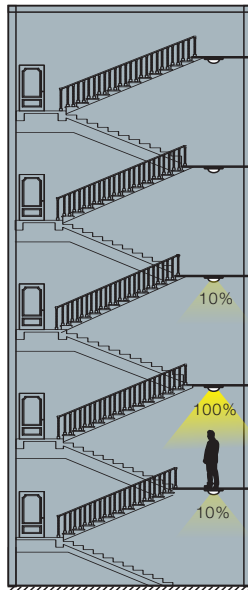
Motion detector MC003V/CP + RF wireless transceiver MW01 + 1-10V dimmable LED driver (Any brand)

Any-to-any communication

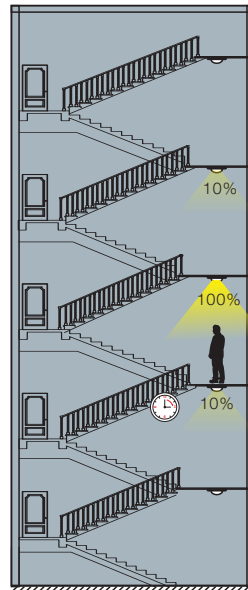
Once any motion is detected, the motion signal will be transmitted to other grouped sensors through RF transceiver. See example below. When the person walks to one of floors, the lamps in adjacent floors will switch on at a preset low light level synchronously.



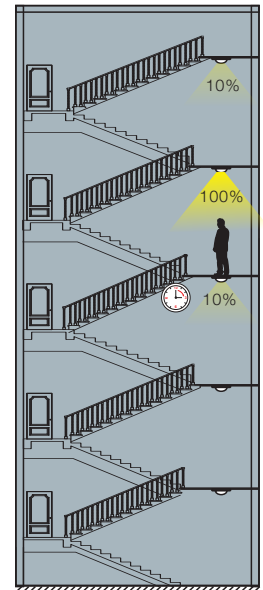
With sufficient ambient light, all lamps switch off even if there is motion in the detection zone



With insufficient ambient light and the person walks to the 2nd floor, the 2nd lamp switches on at 100%, and the 1st and 3rd lamps switch on at a low light level (Preset in the sensor).

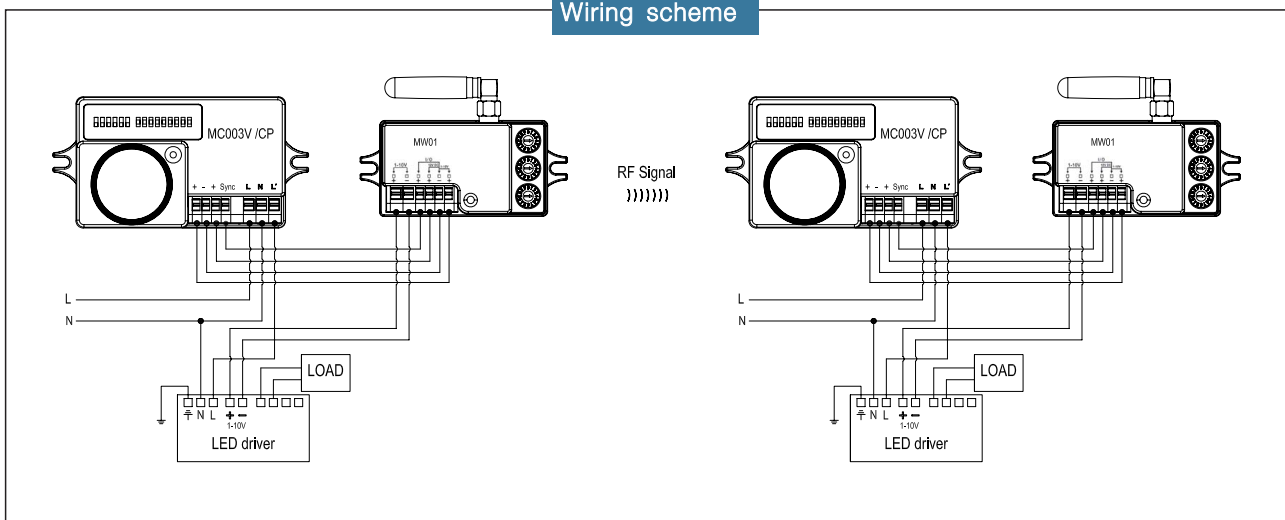


The person walks to the 3rd floor, the 3rd lamp lights up to 100%, and the 4th lamp switches on at a low light level. The 2nd lamp dims to a low light level after hold time.



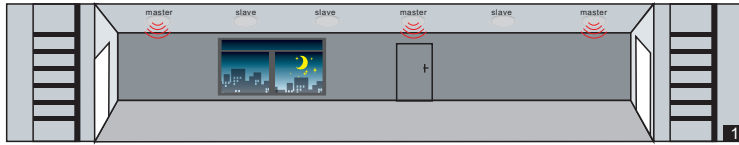
The person walks to the 4th floor, the 4th lamp lights up at 100%, and the 5th lamp switches on at a low light level. The 3rd lamp dims to a low light level after hold time. The 2nd lamp switches off after a standby period.

Wiring scheme

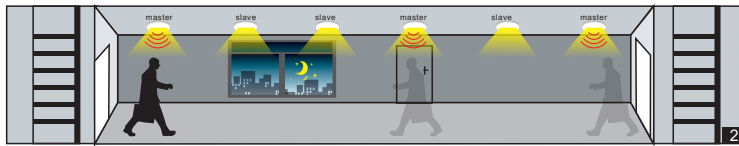


Point-to-multipoint communication

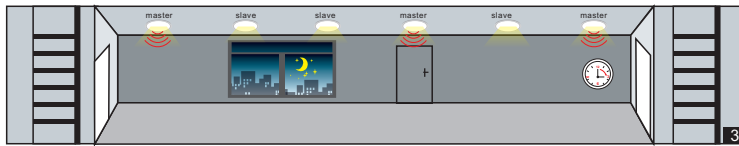
In addition, MC003V/CP and MW01 can be used in cluster-control. See below picture, there are several exits / entrances to the corridor. Any sensor (Master) in the exits / entrances is triggered, all lamps in the corridor light up.



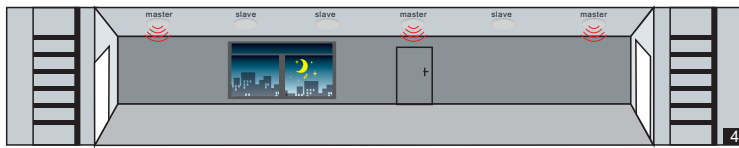
- 1 When no motion is detected, all lamps switch off.



- 2 With insufficient ambient light, if any motion is detected in exit or entrance, all lamps switch on at the same time.



- 3 After hold time, all lamps dim to a low light level if no new motion trigger.



- 4 After stand-by period, the lamps switch off if no movement detected in the detection zone.

Wiring scheme: same as the wiring scheme of any-to-any communication.

RF grouping (up to 16 different groups possible)

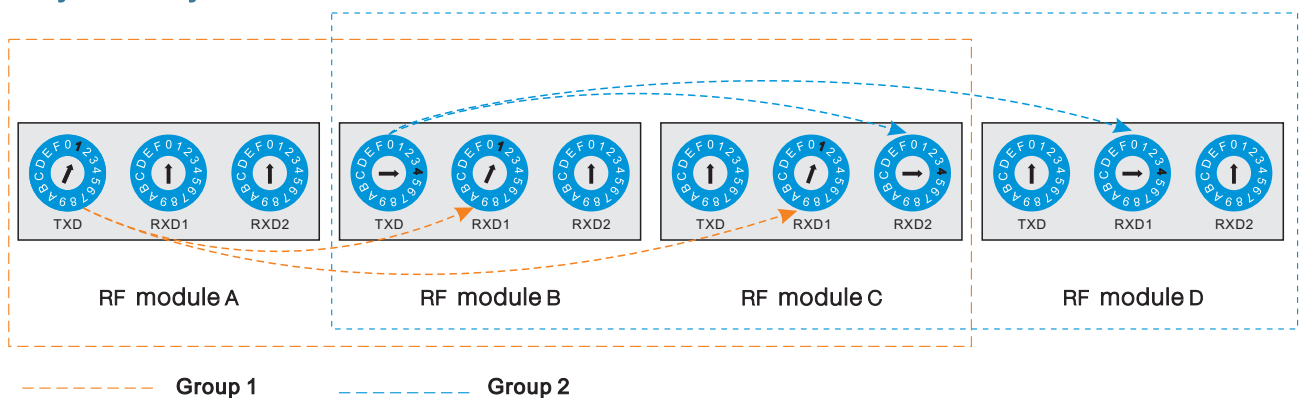
Thanks to digital communication method and fixed address code, the module has high anti-interference capability and no interference to any RF sensitive device, for example, electronic keys of cars.

The RF transceiver can meet following communication modes

- 1/ Any-to-any communication
- 2/ Directional communication
- 3/ Broadcast communication

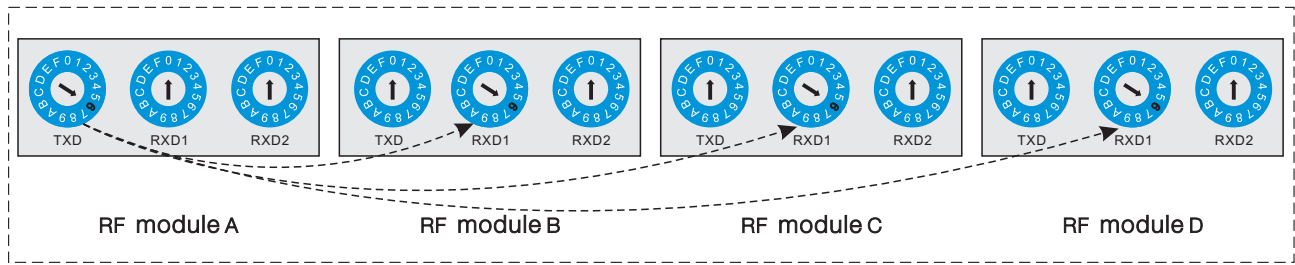
Each RF transceiver has 1 TXD and 2 RXD. TXD channel is used for transmitting RF signal and RXD channel is used for receiving the RF signal. Only need to set the same address code in TXD and RXD, the RF modules can automatically set up group. Address code can be easily set via rotary coding switch. See below examples.

Any-to-any communication



- Group 1: Set the same address code, for example '1', in RF module A(TXD), RF module B(RXD1) and RF module C(RXD1).
 Group 2: Set the same address code, for example '4', in RF module B(TXD), RF module C(RXD2) and RF module D(RXD1).

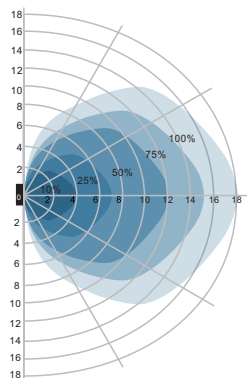
Point-to-multipoint communication



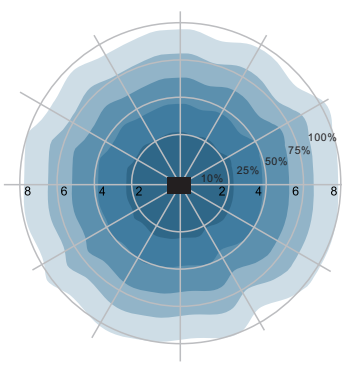
Group 3

Group 3: Set the same address code, for example '6', in RF module A(TXD), RF module B(RXD1) RF module C(RXD1) and RF module D(RXD1).

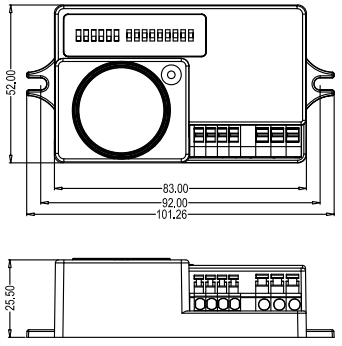
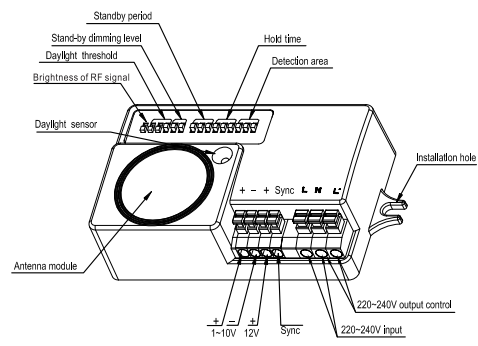
Detection Pattern



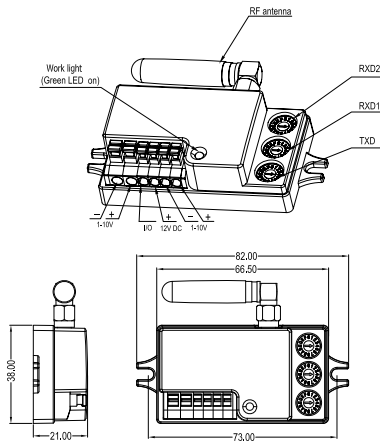
Wall mounting pattern (Unit: m)
Suggested installation height: 1-1.8m



Ceiling mounting pattern (Unit: m)
Suggested installation height: 2.5-10m



MC003V/CP	
Operating voltage	220-240Vac, 50Hz/60Hz
Rated load	800W(inductive), 1200W(resistive)
HF system	5.8GHz±75MHz, ISM wave band
Transmitting power	<0.5mW
Power consumption	≤0.5W(standby), <1.0W(operation)
Detection zone	Max. 16 x 10m (DxH)
Detection sensitivity	100% / 75% / 50% / 25% / 10%
Hold time	10s / 30s / 90s / 3min / 20min / 30min.
Daylight sensor	5lux / 10lux / 30lux / 50lux / Disable
Stand-by period	5s / 5min / 10min / 30min / 1h / Disable
Stand-by dimming level	10% / 20% / 30% / 50%
Mounting height	10m Max.
Motion detection	0.5~3m/s
Detection angle	150° (wall installation) 360° (ceiling installation)
Operating temperature	-35°C ~70°C
IP rating	IP20



MW01	
Operating voltage	12VDC
Transmitting power	≤20mW
Frequency range	433MHz
Standby-power	<0.3W
Operating principle	Radio transmission
Module groups	up to 16 different groups
Transmission distance	Max. 100m in the free field Max. 30m inside buildings
Operating temperature	-20°C ~70°C
IP rating	IP20

Setting

By selecting the combination on the DIP switches, sensor data can be precisely set for each specific application.

ON		1	2	3	
	I	●	●	●	100%
	II	○	●	●	75%
	III	●	○	●	50%
	IV	○	○	●	25%
OFF	V	○	○	○	10%

Detection area

Detection area can be reduced by selecting the combination on the DIP switches to fit precisely each application .

ON		1	2	3	
	I	●	●	●	10s
	II	○	●	●	30s
	III	●	○	●	90s
	IV	○	○	●	3min
	V	●	●	○	20min
OFF	VI	○	○	○	30min

Hold time

Refers to the time period the lamp remains at 100% illumination after no motion detected.

ON		1	2	3	
	I	●	●	●	Disable
	II	○	●	●	1h
	III	●	○	●	30min
	IV	○	○	●	10min
	V	●	●	○	5min
OFF	VI	○	○	○	5s

Stand-by period

Refers to the time period the lamp remains at a low light level before it completely switches off in the long absence of people. When set to Disable mode, the low light is maintained until motion is detected.

ON		1	2	
	I	○	○	10%
	II	●	○	20%
	III	○	●	30%
OFF	IV	●	●	50%

Stand-by dimming level

The low light level you would like to have after the hold time in the long absence of people.

ON		1	2	3	
	I	●	●	●	Disable
	II	●	●	○	50lux
	III	○	●	○	30lux
	IV	●	○	○	10lux
OFF	V	○	○	○	5lux

Daylight sensor

The sensor can be set to only allow the lamp to illuminate below a defined ambient brightness threshold.

When set to Disable mode, the daylight sensor will switch on the lamp when motion is detected regardless of ambient light level.

50lux, 30lux: twilight operation, 10lux, 5lux: darkness operation only.

Note that daylight sensor is active only when lamp totally switches off.

ON		1	
	I	●	100%
OFF	II	○	Preset

Brightness of RF Signal

Refers to lamp brightness when it receives RF signal. When set to preset, the lamp will switch on at a preset standby dimming level.