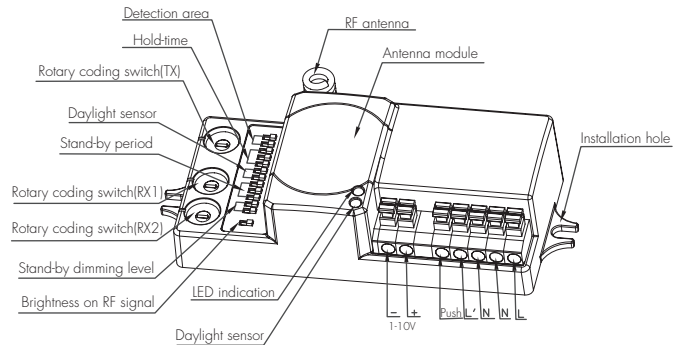


## INSTRUCTION MANUAL FOR RF COMMUNICATION MICROWAVE MOTION SENSOR MODEL NO.: HC028V/RF

### Technical Specifications

<b>Product type:</b>	RF microwave motion sensor
<b>Operation voltage:</b>	220-240VAC 50/60Hz
<b>Rated load:</b>	400W (capacitive load)
<b>HF detection range:</b>	Max. 12m in diameter, adjustable
<b>Time setting:</b>	5s ~ 30min.
<b>Stand-by period:</b>	0s, 10s ~ 1h, +∞
<b>Stand-by dimming level:</b>	10% ~ 50%
<b>Daylight threshold:</b>	2 ~ 50Lux, disable
<b>Installation height:</b>	Max. 6m
<b>Working temperature:</b>	-20℃ ~ +60℃
<b>HF system:</b>	5.8GHz CW radar
<b>Coding system:</b>	Fixed address coding with 16 channels
<b>RF frequency:</b>	FSK 868MHz (315MHz / 433MHz / 915Mhz upon request)
<b>RF transmission distance:</b>	30 meters indoor, 100 meters in open area



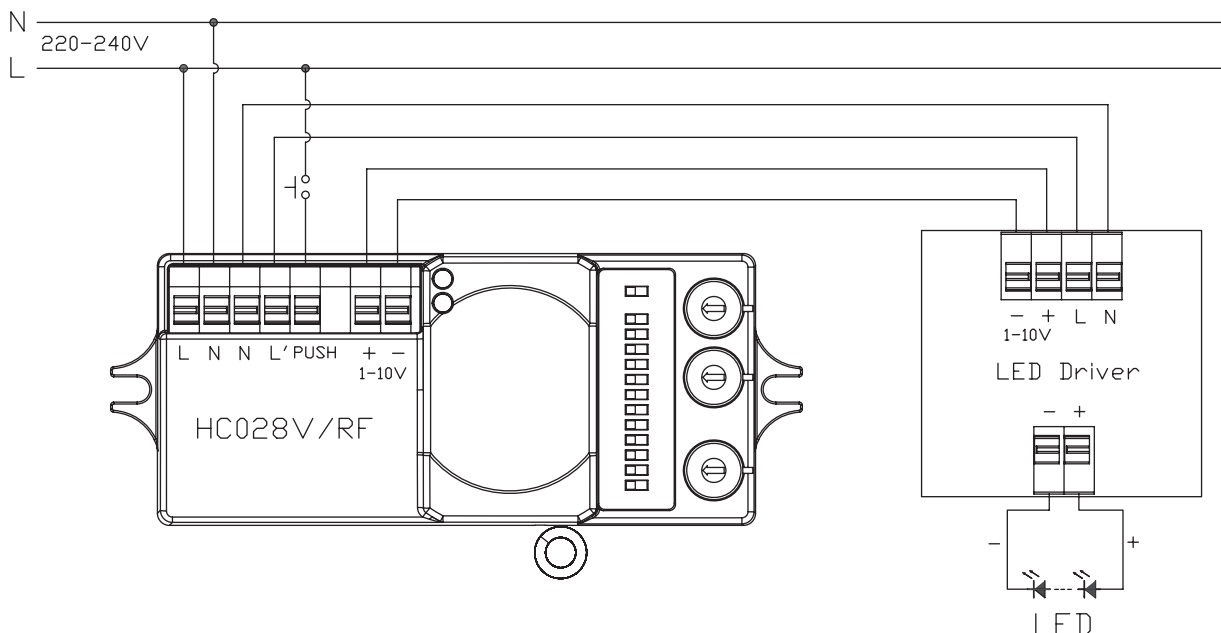
This is a combination of motion sensor and RF radio wave wireless transmission. The motion detected by 1 sensor (the master unit) can pass onto other pre-defined individuals (the slave units) through RF transmission. Thanks to fixed address code technology, it's easy to set up point-to-point or point-to multipoint transmission.

Note: the RF signal would be affected by big metal plate, frames, thick obstacle or special frequent electromagnetic waves radiation.

### Section 1 Installation and Wiring

1.1 Ensure that the electricity supply is switched off before installing or servicing this product.

1.2 Wiring diagram




## Section 2 Settings

### Detection Area

This determines the effective range of the motion detector and is set by DIP switches at the sensor itself, refer to figure. Note that reducing the sensitivity will also narrow the detection range. The following settings are available:

- I – 100%
- II – 75%
- III – 50%
- IV – 10%

	1	2	
I	●	●	100%
II	●	○	75%
III	○	●	50%
IV	○	○	10%




### Hold time

This determines the time that the fitting remains at 100% level on motion detection and is set with DIP switches at the sensor itself, refer to figure. The walk test setting is useful when installing the fitting to establish correct operation and range.

The following settings are available:

- I – 5s
- II – 30s
- III – 1min
- IV – 5min
- V – 10min
- VI – 20min
- VII – 30min

	1	2	3	
I	●	●	●	5s
II	●	●	○	30s
III	●	○	●	1min
IV	●	○	○	5min
V	○	●	●	10min
VI	○	●	○	20min
VII	○	○	○	30min




### Stand-by period (corridor function)

This is the time period you would like to keep at the low light output level before it is completely switched off in the long absence of people.

- I – 0s
- II – 10s
- III – 1min
- IV – 5min
- V – 10min
- VI – 30min
- VII – 1h
- VIII – +∞

	1	2	3	
I	●	●	●	0s
II	●	●	○	10s
III	●	○	●	1min
IV	●	○	○	5min
V	○	●	●	10min
VI	○	●	○	30min
VII	○	○	●	1h
VIII	○	○	○	+∞




Note: “0s” means on/off control; “+∞” means bi-level dimming control, fixture never switch off.

### Stand-by dimming level

This is the dimmed low light output level you would like to have after the hold-time in the absence of people.

- I – 10%
- II – 20%
- III – 30%
- IV – 50%

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




### Daylight sensor

This setting holds off the 100% light output should there sufficient daylight and is set using DIP switches at the sensor, refer to figure. The following settings are available:

- I – Disable
- II – 50Lux
- III – 10Lux
- IV – 2Lux

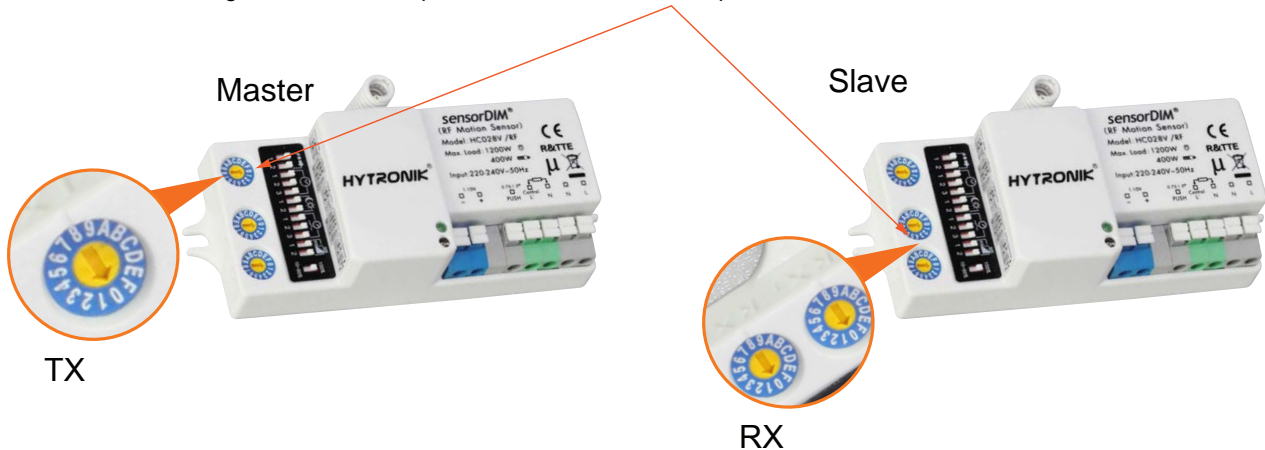
	1	2	
I	●	●	Disable
II	●	○	50Lux
III	○	●	10Lux
IV	○	○	2Lux



### **Section 3 RF Grouping (Max. 16 channels)**

Using a screwdriver to adjust the rotary switch on both the master & slave unit, to keep them pointing at the same channel, the grouping is then automatically completed. 16 channels (Max. 16 groups) are available for both the master & slave unit.

Using a screwdriver to point the arrow to the same position on the master unit and slave units



The sensor is not only a master but also a slave. It has three rotary switches, TX is for sending RF signal, RX1 and RX2 are for receiving RF signal from two different groups of masters. Here is an example as below form FYI:

Floor No.	TX	RX1	RX2
1	0	1	1
2	1	0	2
3	2	1	3
4	3	2	4
5	4	3	5
6	5	4	6
7	6	5	7
8	7	6	6

Note: the sensor installed on first floor and top floor receive one RF signal only, RX1 / RX2 point to the same channel.

### **Section 4 Functions**

#### **4.1 Zero-cross relay operation**

Designed in the software, the sensor switches on/off the load right on the zero-cross point, to ensure the min. current passing through the relay contact point, and enable the max. load and life-time of the relay.

#### **4.2 Loop-in and loop-out**

Double L N terminal makes it easy for wire loop-in and loop out, saves the cost of terminal block and assembly time.

#### **4.3 Manual override**

This sensor reserves the access of manual override function for end-users to switch on/off, or adjust the stand-by dimming level with the push-switch, which makes the product more user-friendly, and more options to fit for some extra-ordinary demands.

\* Short push (<1s): on/off;

ON → OFF: the light turns off immediately and cannot be lighten for a certain time (equals to hold time preset) even movement is detected. After this period, the sensor goes to auto sensor mode.

OFF → ON: the light turns on 100% and goes to sensor mode, even when ambient LUX level exceeds the daylight threshold.

\* Long push (>1s): dim up/down the stand-by dimming level between 10% and 50%. Both the settings on DIP switch and manual override can overwrite each other, the latest action stays in validity.

\*If customers do not want to have this manual override function, we can just leave this “push” terminal alone , not connected to any wire.

- Note: 1. Motion sensor overwrites daylight sensor, meaning the daylight sensor starts to check the ambient natural light only when the lamp is switched off (motion hold-time elapsed).
2. 1-10V output on the master unit HC028V /RF is isolated, SELV output.

### **Section 5 Trouble Shooting**

<b>MALFUNCTION CAUSE REMEDY</b>	<b>CAUSE</b>	<b>REMEDY</b>
The load will not work	Incorrect light-control setting selected	Adjust setting
	Load faulty	Replace load
	Mains switch OFF	Switch ON
The load is always on	Continuous movement in the detection zone	Check zone setting
The load is on without any identifiable movement	The sensor is not mounted for reliably detecting movement	Securely mount enclosure
	Movement occurred, but not identified by the sensor (Movement behind wall, movement of small object in immediate lamp vicinity etc.)	1. Reduce sensitivity. 2. Check the movement behind walls to avoid facilities such as water pipe, fan, which may mis-trigger the sensor.
The load will not work despite movement	Rapid movements are being suppressed to minimize malfunctioning or the detection radius is too small.	Check zone setting