SENSORS &
LIGHTING CONTROL

HYTRONIK®

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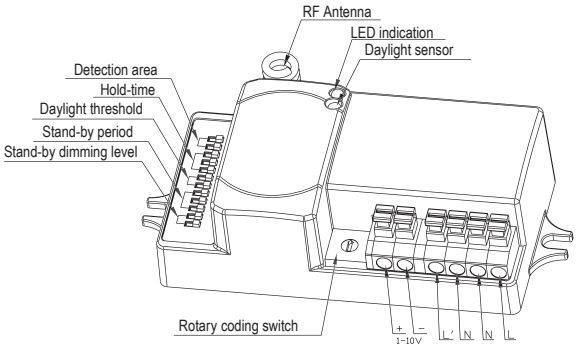
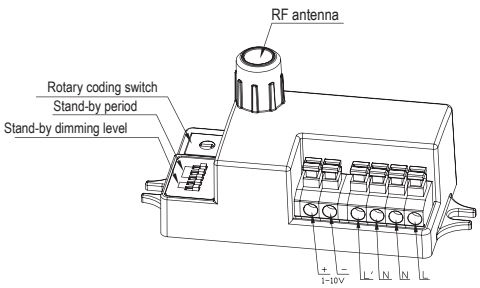
RF Communication Microwave Motion Sensor
(RF Transmitter & Dimming RF Receiver combination)

Technical Specifications

PRODUCT MODEL	HC418V/RF	HC424RF
PRODUCT TYPE:	RF Microwave Motion Sensor(Transmitter)	RF receiver, 1~10V dimming version
RATED OPERATING VOLTAGE	120~277VAC 60Hz	120~277VAC 60Hz
RATED LOAD	200W@120VAC; 500W@277VAC(capatitive Load)	
RF TRANSMISSION	Up to 30 meters indoor transmission and 100 meters in open area.	N/A
CODING SYSTEM	Fixed address coding with 10 channels (max. 10 groups)	
HF DETECTION RANGE	Diameter Max. 12m	N/A
TIME SETTING:	5s~30min	N/A
MOUNTING:	Indoor	Indoor
MOUNTING HEIGHT	Max. 6m	Max. 6m
LIGHT CONTROL	2 LUX ~ 50LUX, disable	N/A
WORKING TEMPERATURE	-20 ~ +60℃	-20 ~ +60℃
PROTECTION LEVEL	IP20	IP20
STANDBY PERIOD	0s, 10s~1h, +∞	0s, 10s~1h, +∞
STANDBY DIMMING LEVEL	10~50%	10~50%





RF Microwave Motion Sensor(Transmitter)
Model NO.:HC418V/RF

RF receiver, 1~10V dimming version
Model NO.:HC424RF

The transmission signal would be affected by some area with big metal plate, frames, thick obstacle or special frequent electromagnetic waves radiation.

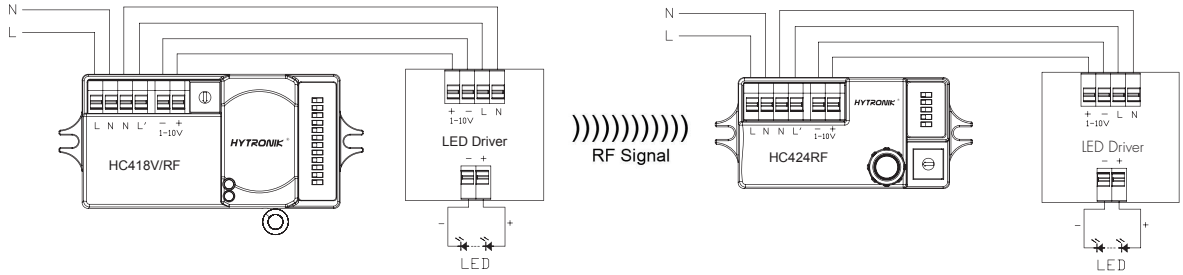
SECTION 1 GENERAL GUIDELINES

1.1 This sensor should be installed in accordance with wiring regulations by a qualified electrician.
1.2 This sensor should not be modified in any way. Hytronik will not accept any responsibility for modified products or for any damage caused as a result of any modifications. Any modifications made to this product will immediately invalidate any warranties issued with this product.
1.2 It is the responsibility of the installer to consider any fire risk and take the appropriate precautions.
1.4 This sensor should be connected to a stable and permanent mains supply of 120~277VAC 60Hz.

SECTION 2 INSTALLATION & WIRING

2.1 Ensure that the electricity supply is switched off completely before installing or servicing this product.
2.2 Keep the RF antenna at least 3cm away from the driver or ballast.

Wring with any 1~10V control gear to achieve dimming function.



RF wireless communication makes installation easier with no cables connection.The motion at 1 sensor (the master unit) can be passed onto other pre-defined individuals (the slave units) through RF transmission. This wireless radio wave transmission can reach 100 meters in open area with internal RF antenna, 30 meters blocked by one wall, 20 meters blocked by two walls.

SECTION 3 SETTINGS

Settings for HC418V/RF

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 – maximum range up to 100%
II – 75%
III – 50%
IV – 10%

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

Hold time:

This determines the time the fitting remains at 100% level on motion detection and is set sith DIP swiches at the sensor itself, refer to figure. The walk test seing is useful when installing the fitting to establish correct operation and range.
The following settings are available:

I – 5S
II – 30S
III – 1 minute
IV – 5 minutes
V – 10 minutes
VI – 20 minutes
VII – 30 minutes

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

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 – 50 lux
III – 10 lux
IV – 2 lux

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

*In disable mode the lamp(s) will always be on with motion detected and operate at 100% light output, even in bright daylight.

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 – 1 minute
IV – 5 minutes
V – 10 minutes
VI – 30 minutes
VII – 1 hour
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 2 steps of 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%

Settings for HC424RF

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 – 1 minute
IV – 5 minutes
V – 10 minutes
VI– 30 minutes
VII– 1 hour
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 2 steps of 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.

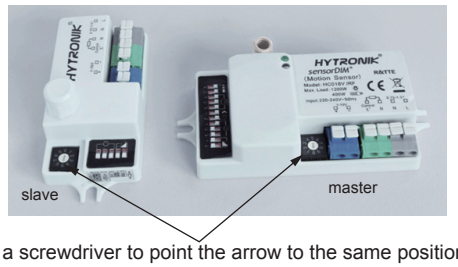
I – 10%
II – 20%
III – 30%
IV – 50%

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

SECTION 4 RF GROUPING

RF grouping (max. 10 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. 10 channels (max. 10 groups) 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.

SECTION 5 FUNCTIONS

5.1 100H burn-in mode for fluorescent lamp

With simple operation, rapidly turn off/on the fixture 3 cycles wihin 3 sec. (the green LED on the sensor flashes and the fixture blinks 3 times to indicate the success of setup), lamp will be 100% on for 100 hours, and then automatically goes to sensor mode after 100 hours. This is crucial to secure the lifetime of fluorescent lamp, when new fixture is installed,or old lamp is replaced.

This 100h burn-in feature can be cancelled by turn off/on the fixture 1 cycle within 1 sec.

5.2 Ambient daylight threshold

With simple operation, rapidly turn off/on the fixture 2 cycles within 2 sec:

a. the green LED on the sensor flashes slowly for 5 seconds, meanwhile the fixture blinks twice.
b. the daylight sensor measures and remembers the surrounding lux for 1 sec.
c. the fixture and green LED is on for 10s to indicate the success of learning.

* This feature enables the fixture to function well in any real application circumstance, where the daylight penetrated into fixture may vary a lot.
* The latest surrounding lux value overwrites previous lux value learned.
* Both the setting on DIP switch and the learned ambient lux threshold can overwrite each other.The latest action stays in validity.

5.3 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.

5.4 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.

* Motion sensor overwrites daylight sensor, meanning the daylight sensor starts to check the ambient natural light only when the lamp is switch off (motion hold-time ellapsed).
* 1-10v output on the master unit HC418V / RF is isolated, SELV output; while the 1-10v on the slave unit HC424RF is non-isolated.

SECTION 6 TROUBLE SHOOTING

MALFUNCTION CAUSE REMEDY	CAUSE	REMEDY
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.)	Check zone setting
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

FCC NOTE:
This device complies with Part 15 of the FCC Rules.
Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

THE MANUFACTURER IS NOT RESPONSIBLE FOR ANY RADIO OR TV INTERFERENCE CAUSED BY UNAUTHORIZED MODIFICATIONS OR CHANGE TO THIS EQUIPMENT. SUCH MODIFICATIONS OR CHANGE COULD VOID THE USER'S AUTHORITY TO OPERATE THE EQUIPMENT.