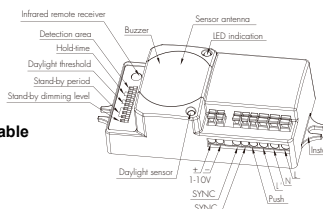


INSTRUCTION MANUAL FOR MICROWAVE MOTION SENSOR

Model No.:HC419VRC/R

Technical Specifications

PRODUCT TYPE:	Microwave Motion Sensor
OPERATING VOLTAGE:	120-277VAC 50Hz/60Hz
HF SYSTEM:	5.8GHz CW radar
RATED LOAD: (capacitive load)	120VAC / 3.4A / 400W 230VAC / 3.5A / 800W 277VAC / 3.7A / 1000W
DETECTION ANGLE:	30°~150°
POWER CONSUMPTION:	<1W
DETECTION RANGE:	Max. 16 meters in diameter, adjustable
TIME SETTING:	5s~30min.
DAYLIGHT SENSOR:	2~50Lux; disable
STAND-BY PERIOD:	0s, 10s~1h, + ∞
STAND-BY DIMMING LEVEL:	10%~30%
MOUNTING:	Indoors, ceiling & wall mounted
INSTALLATION HEIGHT:	≤15M
WORKING TEMP.:	-20 ~ +60°C



HC419VRC/R



HRC-05

The sensor is an active motion detector; it emits a high-frequency electro-magnetic wave 5.8GHz and receives its echo. The sensor detects the change in echo from movement in its detection zone. A microprocessor then triggers the switch light ON command. Detection is possible through doors, panels of glasses thin walls.

Note: the high-frequency output of this sensor is <0.2mW; approximately just 0.2% of the transmission power of a mobile telephone or the output of a microwave oven.

IMPORTANT

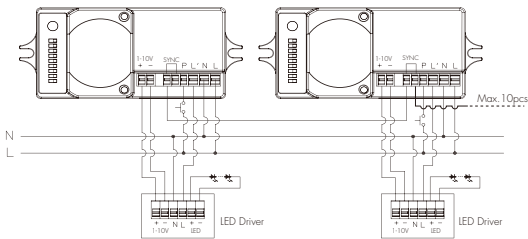
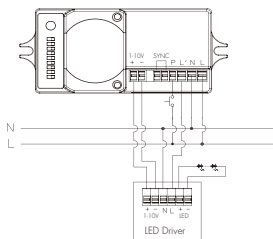
PLEASE READ THESE INSTRUCTIONS CAREFULLY PRIOR TO INSTALLATION AND RETAIN THIS LEAFLET IN A KNOWN AND SAFE PLACE FOR FUTURE REFERENCE.

SECTION 1 INSTALLATION AND WIRING

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

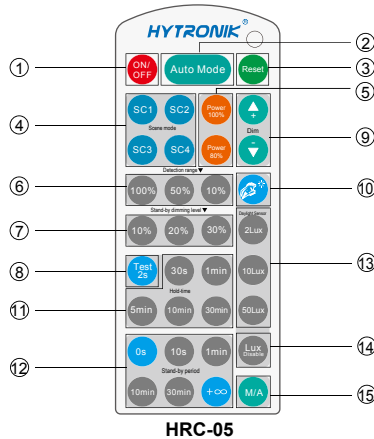
1.2 Wiring diagram

Wiring diagram for synchronization function



Note: this 1-10V output is isolated, SELV output. Do not connect the 1-10V terminals on driver X to Driver Y.

SECTION 2 REMOTE CONTROL



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

Permanent ON/OFF [button ①]

1. Press button ①, the light goes to permanent ON or permanent OFF mode.
2. Press button ② ③ ④ to quit from this mode. (Please refer to explanation accordingly)

Auto Mode [button ②]

Press button ② goes to auto mode, the sensor starts working and all settings remain the same as the latest status before the light was switched ON/OFF.

RESET [button ③]

Press button ③, all settings go back to the value of DIP settings.

Test 2s function [button ⑧]

1. Press button ⑧, the sensor goes to test mode (hold time 2s), stand-by period and daylight sensor are disabled.
2. Press button ③ ④ ⑩ to quit from this mode, and the sensor setting is changed accordingly.

Ambient daylight threshold [button ⑩]

Press button ⑩, the latest surrounding lux value overwrites previous lux value learend, and is set as the daylight threshold. This feature enables the fixture to function well in any real application circumstance.

Power output [button ⑤]

Press button ⑤, the output shifts between 80% (at initial 10,000 hours) and 100%, for energy saving purpose.

Dim +/- [button ⑨]

Press button ⑨ to adjust the light brightness during hold-time. "+" means dimming up, "-" means dimming down.

Lux disable [button ⑭]

Press button ⑭, the built-in daylight sensor stops working, and all motion detected could turn on the lighting fixture, no matter how bright the natural light is.

Manual override/ absence detection [button ⑬]

Press button ⑬, the sensor goes to manual override or absence detection function.

Note: The buzzer beeps twice if it's manual override function, and beeps once if shifts to absence detection function.

Detection range [zone ⑥]

Press buttons in zone ⑥ to set detection range at 100% / 50% / 10%.

Hold time [zone ⑪]

Press buttons in zone ⑪ to set hold time at 30s / 1min / 5min / 10min / 30min.

Stand-by period [zone ⑫]

Press buttons in zone ⑫ to set stand-by period at 0s / 10s / 1min / 10min / 30min / +∞.

Note: "0s" means on/off control; "+∞" means bi-level of dimming control, light never switches off.

Stand-by dimming level [zone ⑦]

Press buttons in zone ⑦ to set the stand-by dimming level at 10% / 20% / 30%.

Daylight sensor [zone ⑬]

Press buttons in zone ⑬ to set daylight sensor at 2lux / 10lux / 50lux.

Scene mode options [zone ④]

There are 4 scene modes built-in the remote control for different applications:

Scene options	Detection range	Hold time	Stand-by period	Stand-by dimming level	Daylight sensor
SC1	100%	1min	10min	10%	2Lux
SC2	100%	5min	10min	10%	2Lux
SC3	100%	10min	30min	10%	10Lux
SC4	100%	10min	+∞	10%	50Lux

Note: end-user can adjust the settings by pressing buttons of detection range ⑥ / hold time ⑬ / stand-by period ⑭ / stand-by dimming level ⑰ / daylight sensor ⑱, the last setting stays in validity.

SECTION 3 SETTINGS


Detection area

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

I – 100%

II – 50%

	1	
I	●	100%
II	○	50%



Hold-time

Hold-time means the time period to keep the lamp on 100%, after all motion has ceased (detection area vacated).


I – 5s

II – 3min

III – 10min

IV – 30min

	2	3	
I	●	●	5s
II	●	○	3min
III	○	●	10min
IV	○	○	30min



Daylight sensor

The daylight threshold can be set on DIP switches, to fit for particular application.


I – Disable

II – 50Lux

III – 10Lux

IV – 2Lux

	4	5	
I	●	●	Disable
II	●	○	50Lux
III	○	●	10Lux
IV	○	○	2Lux



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 – +∞

	6	7	8	
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 switches off when daylight sensor is disabled.


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 – 30%

	1	
I	●	10%
II	○	30%



SECTION 4 FUNCTIONS

4.1 Zero-cross Relay Operation

Designed in the software, sensor switches on/off the load right at the zero-cross point, to ensure the in-rush current is minimised, enabling the maximum lifetime of the relay.

4.2 Synchronization Function

By connecting the "SYNC" terminals in parallel (maximum 10pcs, see wiring diagram), no matter which sensor detects motion, all HC419VRC/R in the group will turn on the lights when surrounding natural light is below daylight threshold. The sensor antenna is shared and the detection area could be widely enlarged in this way. Other settings such as hold-time, stand-by period, stand-by dimming level and daylight threshold on each individual unit stay the same.

Note: if the surrounding natural light of the sensor which detects movement is sufficient, all lights in the group will not be triggered on.

4.3 Manual Override

This sensor reserves the access of manual override function for end-user to switch on/off, or adjust the brightness by push-switch, which makes the product more user-friendly and offers more options to fit for some extra-ordinary demands:

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

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

Off → on: the light turns on and goes to sensor mode, no matter if ambient Lux level exceeds the daylight threshold or not.

* Long push (>1s): dim up/down the hold-time brightness between 10% and 100%. Both the settings on DIP switch and manual override can overwrite each other, the latest action controls.

Note: if end-user do not want this manual override function, just leave the "push" terminal alone and don't connect it to any wire.

4.4 Absence Detection Function

Motion sensor is employed, but only activated on the manual press of the push switch, light keeps on in the presence, and dimmed down in the absence, and eventually switch off in the long absence.

4.5 Daylight Monitoring Function

Hytronik specially design this function in software for deep energy-saving purpose. A built-in daylight sensor is designed to provide "smart photocell" function. This function can only be activated when stand-by period is set to "+∞".

SECTION 5 TROUBLE SHOOTING

MALFUNCTION CAUSE REMEDY	CAUSE	REMEDY
The load does 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 does not work despite movement	Rapid movements are being suppressed to minimize malfunctioning or the detection radius is too small	Check zone setting