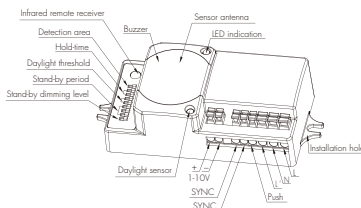


INSTRUCTION MANUAL FOR MICROWAVE MOTION SENSOR Model No.: HC419VRC

Technical Specifications

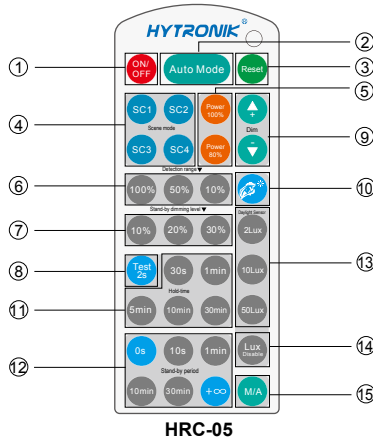
PRODUCT TYPE:	Microwave Motion Sensor
OPERATING VOLTAGE:	120-277VAC 50Hz/60Hz
HF SYSTEM:	5.8GHz CW radar
RATED LOAD: (capacitive load)	120VAC / 3.4A / 400W 230VAC / 3.5A / 800W 277VAC / 3.7A / 1000W
DETECTION ANGLE:	30°~150°
POWER CONSUMPTION:	<1W
DETECTION RANGE:	Max. 12 x 6m (DxH)
TIME SETTING:	5s~30min.
DAYLIGHT SENSOR:	2~50Lux; disable
STAND-BY PERIOD:	0s, 10s~1h, +∞
STAND-BY DIMMING LEVEL:	10%~30%
MOUNTING:	Indoors, ceiling & wall mounted
WORKING TEMP.:	-20 ~ +60°C



HC419VRC



SECTION 2 REMOTE CONTROL



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

Permanent ON/OFF [button ①]

1. Press button ①, to select permanent ON or permanent OFF mode.
2. Press button ② ③ ④ to resume automatic operation. (Please refer to explanation below)

Auto Mode [button ②]

Press button ② to initiate automatic mode. The sensor starts working and all settings remain as before the light was switched ON/OFF.

RESET [button ③]

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

Test 2s function [button ⑧]

1. Press button ⑧, the sensor goes into testmode (hold time 2s). N.B. the stand-by period and daylight sensor settings are disabled in test mode.
2. Press button ③ ④ ① to exit from this mode, and the sensor settings are changed accordingly.

Ambient daylight threshold [button ⑩]

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

Power output [button ⑤]

Press button ⑤, the output shifts between 80% and 100%, for energy saving purposes.

Dim +/- [button ⑨]

Press button ⑨ to adjust the light brightness between 10%~100% during hold-time. "+" increases the light level, "-" will decrease the light level.

Lux disable [button ⑩]

Press button ⑩, the built-in daylight sensor is disabled, the light will always operate upon detection regardless of ambient light level.

Manual override/ Semi-auto [button ⑤]

Press button ⑤, the sensor goes to manual override or semi-auto function.

Note: The buzzer beeps twice if it is in manual override mode, and beeps once if shifts to semi-auto mode.

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 the stand-by period at 0s / 10s / 1min / 10min / 30min / +∞.

Note: "0s" means on/off control; "+∞" means bi-level of dimming control, the light will never switch off. (i.e. the light remains at the stand-by dimming level until motion is detected.)

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 into 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: the end-user can fine tune the settings by pressing buttons of detection range ⑥ / hold time ③/ stand-by period ⑫ / stand-by dimming level ⑦ / daylight sensor ⑬, the last setting will over-write that feature of the pre-set scene.

SECTION 3 SETTINGS

Detection area

Detection area can be tuned 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

This setting determines the time period the lamp will remain at 100% upon detection.

Note: The timer is reset upon each motion detection.

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 the DIP switches, suit to the 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 setting 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 control, fixture never switches off when daylight sensor is disabled.

Stand-by dimming level

This is the dimmed low light output level setting after the hold-time has expired.

I – 10%

II – 30%

	1	
I	●	10%
II	○	30%



SECTION 4 FUNCTIONS

4.1 Zero-cross Relay Operation

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

4.3 Manual Override

This sensor may be over-ridden by the end-users to switch on/off the lights manually, or adjust the maximum brightness during motion hold-time with the push-switch. This makes the product more user-friendly and offers more options to fit for extra-ordinary demands.

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

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

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

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

* If no end-user adjustment is desired, simply leave this terminal disconnected.

4.4 Absence Detection Function

The motion sensor is employed, but only activated on the manual press of the push switch, light will remain on in presence, and dimmed down in the absence, and eventually switch off automatically in the long absence.

4.5 Daylight Monitoring Function

Hytronik specially designed this function in software for deep energy-saving purpose. A built-in daylight sensor is designed to provide a "smart photocell" function. This function can only be activated when stand-by period is set to "+∞". In this mode the lamp will automatically illuminate at the dim level setting when the natural light goes below the threshold setting. The fixture will also switch off as the natural light returns.

SECTION 5 TROUBLE SHOOTING

MALFUNCTION CAUSE REMEDY	CAUSE	REMEDY
The light will not come on	Incorrect light-control setting selected	Adjust daylight threshold setting
	Faulty lamp	Replace lamp
	No power supply	Check power to sensor
The lamp is always on	Continuous movement in the detection zone	Check detection area setting
The lamp 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 lamp will not work despite movement	Rapid movements are being suppressed to minimize malfunctioning or the detection radius is too small.	Check detection area setting