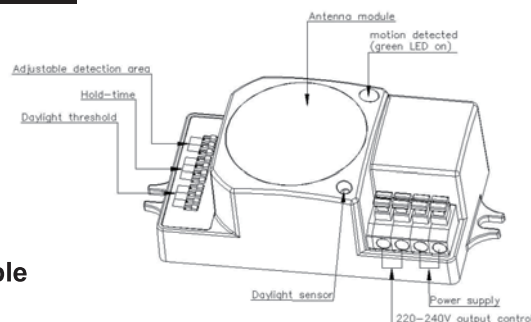


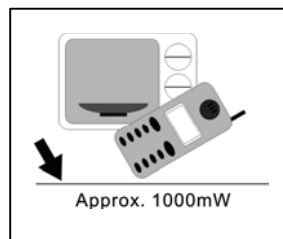
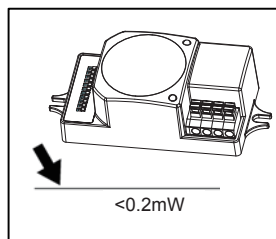
User Manual of Microwave Motion Sensor New Standard Version Model No.:HC009S

Technical Specifications

PRODUCT TYPE:	Microwave Motion Sensor
OPERATING VOLTAGE:	220/240V ~ 50Hz / 60Hz
HF SYSTEM:	5.8GHz CW radar
TRANSMISSION POWER:	<0.2mW
RATED LOAD:	1200w(resistive load), 400W(capacitive load)
DETECTION ANGLE:	30~150°
POWER CONSUMPTION:	Approx 0.5W
DETECTION RANGE:	Max. 12 meters in diameter, adjustable
TIME SETTING:	5s ~ 30 min.
MOUNTING:	Indoors, ceiling & walling mounted
LIGHT CONTROL:	2~50LUX, disable
Working temperature:	-35 ~70 °C



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.



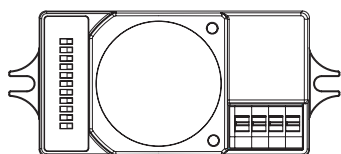
NOTE:the high-frequency output of this sensor is <0.2mW;approximately just 1‰ of the transmission power of a mobile telephone or the output of a microwave oven.

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 & WIRING

1.1 ENSURE THAT THE ELECTRICITY SUPPLY IS SWITCHED OFF COMPLETELY BEFORE INSTALLING OR SERVICING THIS PRODUCT



The sensor works with a main voltage of 220-240VAC 50/60 Hz. 100-120 VAC version is available on request.

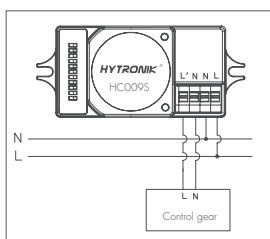
The sensor has a 4-wire electrical interface:

Nx2(neutral / 220-240VAC)

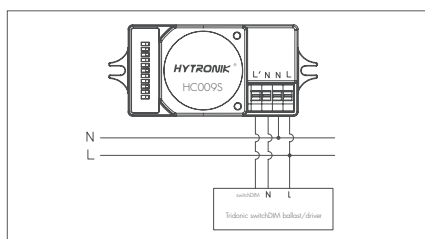
L (phase / 220-240VAC)

L' (switched phase / output)

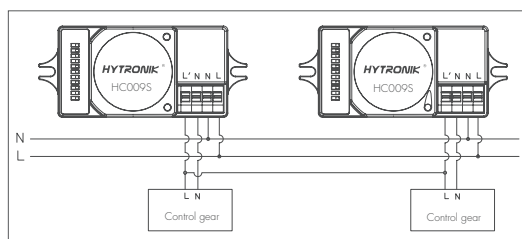
Wiring diagram
for on/off function:



Wiring diagram for 2-step dimming function
(with Tridonic switchDIM ballast/driver):



Wiring diagram for condominium function:



1.2 This sensor is suitable for indoor use, and is also designed for installation Max. 6m in height.

Hytronik Industrial Ltd.

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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 - Detection range 100%
- II - Detection range 75%
- III - Detection range 50%
- IV - Detection range 25%
- V - Detection range 10%

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

Hold time:

This determines the time 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 - 1 minutes
- IV - 5 minutes
- V - 15 minutes
- VI - 30 minutes

Hold Time					
	1	2	3	4	
I	●	●	●	●	5s
II	○	●	●	●	30s
III	○	○	●	●	1min
IV	○	○	○	●	5min
V	○	○	○	○	15min
VI	○	○	○	○	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 - 2Lux darkness operation only
- II - 5Lux twilight operation
- III - 10Lux twilight operation
- IV - 30Lux daylight operation
- V - 50Lux daylight operation
- VI - Photocell Disable

Daylight Sensor					
	1	2	3	4	
I	●	●	●	●	2Lux
II	○	●	●	●	5Lux
III	○	○	●	●	10Lux
IV	○	○	○	●	30Lux
V	○	○	○	○	50Lux
VI	○	○	○	○	Disable

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

SECTION 3 FUNCTIONS

3.1 100H burn-in mode for fluorescent lamp

With simple operation, rapidly turn off/on the fixture 3 cycles within 3 sec. (the green LED on the sensor as well as the fixture will blink 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 1sec.

3.2 Set daylight threshold freely

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

- a. the green LED on the sensor will flash slowly for 5 seconds, meanwhile the fixture blink twice.
- b. the daylight sensor measures and remembers the surrounding lux for 1 sec.
- c. the fixture and green LED will be 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 that penetrate 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.

3.3 Condominium function

By connecting L' terminal with L' on another sensor, if any of the master fixture (containing sensor) is triggered, all luminaries (including slaves and other master unit in group) will also light up.

3.4 Zero-cross relay operation

designed in the software, the sensor swithes 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.

3.5 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.

SECTION 4 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