

FLUSH MOUNT MICROWAVE MOTION SENSOR HMW20

Installation and Instruction Manual

1. Technical Specifications

Product type	On/off control microwave motion sensor
Operating voltage	220-240VAC 50/60Hz
Rated load	1200W (resistive); 400VA (capacitive)
Power consumption	< 1W
Detection angle	360°
Detection area (Max.)*	Installation Height : 6m Detection Range (Ø) : 12m
Detection range	10% / 50% / 75% / 100%
Hold time	2s / 30s / 1min / 5min / 10min / 15min / 20min / 30min
Daylight threshold	2 ~ 500Lux, Disable
Warming up time	20s
Operating temperature	-20°C ~ +50°C

3. Rotary Switch Settings

A rotary switch is built inside the sensor for scene selection / fast programming. Total 16 channels are available:



Rotary switch preset (Please see the location in 2. Installation)

Channel	Detection range	Hold time	Daylight threshold
0	100%	5s	Disable
1	100%	30S	2Lux
2	100%	1min	10Lux
3	100%	5min	2Lux
4	100%	5min	10Lux
5	100%	5min	30Lux
6	100%	5min	50Lux
7	100%	5min	Disable
8	100%	10min	10Lux
9	100%	10min	30Lux
A	100%	10min	50Lux
B	75%	10min	30Lux
C	50%	10min	10Lux
D	100%	30min	10Lux
E	100%	30min	50Lux
F	100%	5s	2Lux

Note: settings can also be changed by remote control HRC-11. The last action controls.

4. Functions

4.1 On/off Control

This sensor is a motion switch, which turns on the light on detection of people movement, and turns off after a pre-selected hold-time when there is no people around. A daylight sensor is also built-in to prevent the light switching on when there is sufficient natural light.

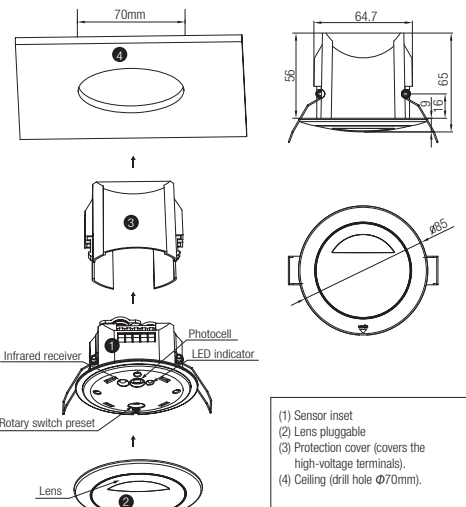
4.2 Zero-cross relay operation

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.

2. Installation

⚠ Warnings:

1. Installation of the sensor involves connecting it to the mains supply. This work must be carried out by a specialist in accordance with electrotechnical regulations.
2. Disconnect power supply before installing.



Note: We recommend the mounting distance between sensor to sensor should be more than 2m to prevent sensors from false-triggering.

4.3 Semi-auto Function (Absence Detection)

The motion sensor is employed, but only activated on the manual press of the push switch, light remains keeps on in the presence, switches off automatically in the long absence.

Note: this function can be chosen by remote controller only, please refer to detailed explanations in part 7.

4.4 Manual Override / Push Function (Default)

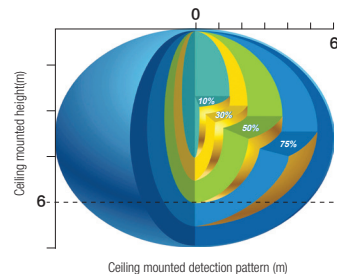
With the help of push-switch, this sensor maybe over-ridden by the end-users to switch on/off the lights manually. This makes the product more user-friendly and offers more options to fit for extra ordinary demands.

* Push: on/off function;

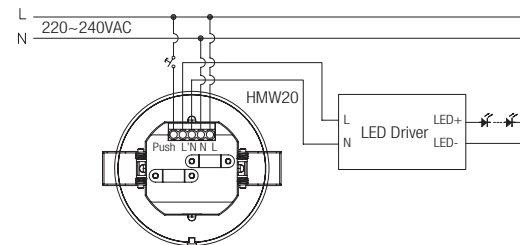
ON → OFF: the light turns off immediately and cannot be lightened for a certain time (equals to hold time preset) even movement is detected. After this period, the sensor goes back to auto sensor mode.

OFF → ON: the light turns on and goes to auto sensor mode.

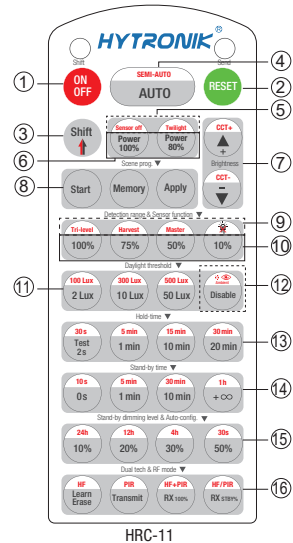
5. Detection Pattern



6. Wiring Diagram



7. Descriptions of the Button Functions (remote control HRC-11)



Permanent ON/OFF [button ①]

Press button ①, to select permanent ON or permanent OFF mode.
* Press button ② / ④ to resume automatic operation.
The mode will change to AUTO Mode after power failure.

RESET [button ②]

Press button ②, all settings go back to the rotary switch settings.

Shift [button ③]

Press button ③, the LED on the top left corner is on for indication.
All values / settings in RED are in valid for 20 seconds.

Auto Mode [button ④]

Press button ④ to initiate automatic mode. The sensor starts working and all settings remain as before the light was switched ON/OFF.
Note: the function of Semi-auto is disabled.

Sensor off [button ⑤] (Daylight harvest without occupancy)

1. Press button ⑤, the red LED is on for indication.
 2. Press button "Sensor off", the function of movement detection is disabled.
- Note: the function of "Twilight" is disabled.

Power output [button ⑥]

Press button ⑥, the light output shifts between 80% and 100%.

Brightness +/- [button ⑦]

Press button ⑦ to adjust the light brightness to reset the target lux level.

Scene prog. [zone ⑧] (One-key-commissioning)

1. Press button "Start" to program.
2. Select the buttons in ⑧ "Detection range", ⑨ "Daylight threshold", ⑩ "Hold time", ⑪ "Stand-by time", ⑫ "Stand-by dimming level" to set all parameters.
3. Press button "Memory" to save all the settings programmed in the remote control.
4. Press button "Apply" to set the settings to each sensor unit(s).
For example, to pre-set detection range 100%, daylight threshold Disable, hold time 5min, stand-by time +∞, stand-by dimming level 30%, the steps should be as follows:
Press button ⑧ Start, button ⑨ 100%, ⑩ Disable, ⑪ Shift, ⑫ 5min, ⑬ Shift, ⑭ +∞, ⑮ 30%, ⑯ Memory. By pointing to the sensor unit(s) and pressing ⑯ Apply, all settings are passed on the sensor(s).

Sensor function [button ⑯]

Note: the function of button ⑯ are all disabled.

Detection range [button ⑧]

Press buttons ⑧ to set detection range at 100% / 75% / 50% / 10%.

Daylight threshold [zone ⑨]

Press buttons in zone ⑨ to set the daylight sensor at 50Lux / 100Lux / 300Lux / 500Lux or Disable as threshold / target Lux level.
Note: 2Lux / 10Lux are disabled.
To set daylight sensor at 100Lux / 300 Lux / 500Lux, press button ⑩ Shift at first.

Ambient daylight threshold [button ⑪]

1. Press button ⑪ Shift, the red LED is on for indication.
2. Press button ⑪, the ambient lux level is sampled and set as daylight threshold / target Lux level.

Hold time [zone ⑫]

Press buttons in zone ⑫ to set the hold time at 2s / 30s / 1min / 5min / 10min / 15min / 20min / 30min.
Note: 1. To set hold-time at 30s / 5min / 15min / 30min, press button ⑬ Shift at first.
2. 2s is for testing purpose only, stand-by period and daylight sensor settings are disabled in this mode.
*To exit from Test mode, press button ⑯ or any button in zone ⑯.

Stand-by time [zone ⑬]

Press buttons in zone ⑬ to set the stand-by period at 0s / 10s / 1min / 5min / 10min / 30min / 1h / +∞.
Note: "0s" means on/off control; "+∞" means bi-level control, 100% on when motion detected, and remains at the stand-by dimming level when no presence is detected after hold-time.

Stand-by dimming level [zone ⑭]

Press buttons in zone ⑭ to set the stand-by dimming level at 10% / 20% / 30% / 50%.

Daylight harvest auto-configuration function

1. Press button "Shift", the red LED is on for indication.
 2. Select a time period and the sensor will do light level measurement and determine/save the lowest light level (commission line) with 100% light on, so as to set the target lux level automatically.
- Note: 1. Make sure the light level measurement covers the night time.
2. The fixture will go into sensor mode after the measurement, all sensor settings remain unchanged.

Dual tech & RF mode [zone ⑮]

All buttons in zone ⑮ are disabled.

8. Troubleshooting

MALFUNCTION CAUSE REMEDY	CAUSE	REMEDY
The fixture does not light up	Incorrect daylight threshold setting	Adjust daylight threshold setting
	Faulty fixture	Replace fixture
	No power supply	Check power to sensor
	Detection zone not targeted	Check detection area setting
The fixture is always on	Continuous movement in the detection zone	Check detection area setting
The fixture is on when it should not	Sudden change in temperature due to weather (wind, rain, snow) or air expelled from fans, open windows	Adjust zone, change installation site