

SURFACE MOUNT DUAL SENSE MOTION SENSOR HIM11



1. Technical Specifications

Product type	Dual sense motion sensor (HF and PIR, Tri-level control)
Operating voltage	120-277VAC 50/60Hz
Rated load	Capacitive: 400VA@120V; 800VA@220-277V Resistive: 700W@120V; 1600W@220-277V
Power consumption	< 1W
Detection angle	360°
Detection area (DxH)	12 x 6m (maximum)
Mounting height	6m (Maximum)
Detection range	10% / 50% / 75% / 100%
Hold time	2s / 30s / 1min / 5min / 10min / 15min / 20min / 30min
Stand-by time	0s / 10s / 1min / 5min / 10min / 30min / 1h / +∞
Stand-by dimming level	10% / 20% / 30% / 50%
Daylight threshold	2 - 500Lux, Disable
Warming up time	30s
Operating temperature	-20°C ~ +55°C
Sensor mode	PIR, HF, PIR+HF, PIR / HF

3. Rotary Switch Settings

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



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

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

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

5. Functions

5.1 Tri-level Control (Corridor Function)

Hytronik builds this function inside the motion sensor to achieve tri-level control, for some areas require a light change notice before switch-off.
It offers 3 levels of light: 100% -> dimmed light -> off, and 2 periods of selectable waiting time: motion hold-time and stand-by time; Selectable daylight threshold and detection area.

5.2 Lux Off Function

The built-in daylight sensor can measure ambient natural light and switch off the fixture automatically whenever artificial light is not required (natural light level exceeds daylight threshold).
Note: if the stand-by time is preset at "+∞", the fixture never switches off even when natural light is sufficient.

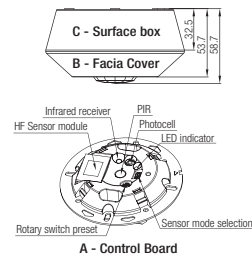
5.3 Ambient Daylight Threshold

Switch the power supply to the sensor two times within 2 seconds, the ambient lux level is sampled and set as the new daylight threshold. This feature enables the daylight sensor to be commissioned to the environment in which it is installed. Both the settings on rotary switch and the ambient lux level sampled can overwrite each other. The last adjustment remains in memory. This may also easily be carried out using the HRC-11 remote control handset, please see next page (button Ⓢ) for details.

2. Installation

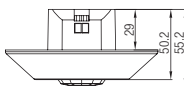
⚠ Warnings:

1. Installation must be carried out by a qualified engineer in accordance with local regulations.
2. Disconnect supply before installing.
3. Install to a solid surface - vibrations may cause mis-triggering.
4. Ensure environmental conditions are suitable for electronic equipment



Direct junction "J" box mounting

- a. Separate control board (A) from facia (B) & Surface box (C). C is not required.
- b. Make electrical connections to control board (A). See detailed wiring diagram on next page.
- c. Secure control board (A) to junction box.
- d. Set-up sensor modes as per sections 3 & 4 of this manual.
- e. Clip facia plate (B) to control board (A).



Surface mount assembly

- a. Separate control board (A) from facia (B) & Surface box (C).
- b. Securely mount surface box (C) to a flat and solid surface.
- c. Make electrical connections to control board (A). See detailed wiring diagram on next page.
- d. Set-up sensor modes as per sections 3 & 4 of this manual.
- e. Secure control board (A) to surface box (C).
- f. Clip facia plate (B) to control board (A).



4. Sensor Mode Selection

Sensor mode can be easily selected by choosing the correct combination of the DIP switches (see table below):



	1	2	
I	●	●	HF
II	○	○	PIR
III	●	○	HF+PIR
IV	○	○	HF/PIR

HF+PIR: Light is on when both HF and PIR sensors are activated.

HF/PIR: Light is on when HF or PIR sensors are activated.

5.4 Manual Override (Push Function)

With the help of push-switch, this sensor maybe over-ridden by the end-users to switch on/off the lights manually, or adjust the light brightness during motion hold-time. 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 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.

* Long push (>1s): adjust the light brightness during motion hold-time between 10% and 100%.
Both the adjustment by remote control and push switch can overwrite each other, the last adjustment remains in memory.

* If no end-user adjustment is desired, simply leave the "push" terminal disconnected.

5.5 Semi-auto Function (Absence Detection)

The motion sensor is employed, but only activated on the manual press of the push switch. The light remains on during presence and dims down in absence, eventually switching off automatically after the stand-by time has expired.

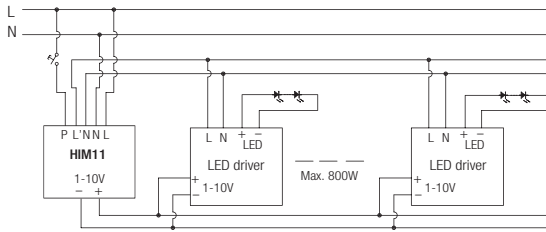
Note: in this mode, the push terminal used for the 'manual on' switch input. End-user can choose either function 5.4 or 5.5 for application. Default function is 5.4.

5.6 8H Manual ON Mode For LED Lamp

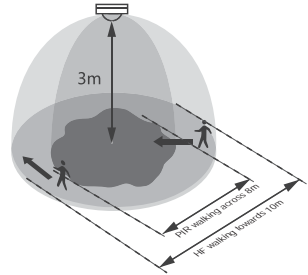
Turn off/on the power supply three times within 3 seconds, the light will be turned on for 8 hours, even there is no motion detected, then go back to sensor mode automatically.

Note: this 8H manual on mode can be cancelled by turning off/on the power supply one time within 1 second.

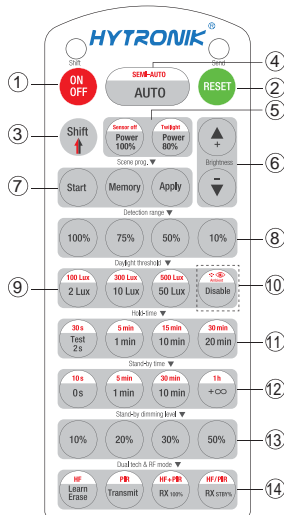
6. Wiring Diagram



7. Detection Pattern



8. Description of the Button Functions (remote control HRC-11)



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.

RESET [button ②]

Press button ②, all settings go back to the rotary switch settings.
Sensor mode return to DIP switch settings.

Shift [button ③]

Press button ③, the LED on the top left corner flashes 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.

Semi-auto Mode [button ③ & ④]

1. Press button ③/Shift the red LED flashes for indication,
2. press button ④ to initiate semi-auto mode. The fixture is manually on by push-switch and automatically off in this mode.

Power output [button ⑤]

Press button ⑤, the light output shifts between 80% and 100%.
Note: the function of "Sensor off" and "Twilight" are disabled.

Brightness +/- [button ⑥]

Press button ⑥ to adjust the light brightness between 10% – 100%.

Scene prog. [zone ⑦] (One-key-commissioning)

1. Press button "Start" to program.
2. Select the buttons in ⑧ "Detection range", ⑨/⑩ "Daylight threshold", ⑪ "Hold time", ⑫ "Stand-by time", ⑬ "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%, steps should be:
Press button ⑦ Start, button ⑧ 100%, ⑩ Disable, ③ Shift, ⑪ 5min, ③ Shift, ⑫ +∞, ⑬ 30%, ⑭ Memory. By pointing to the sensor unit(s) and pressing ⑦ Apply, all settings are passed on the sensor(s).

Detection range [zone ⑧]

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

Daylight threshold [zone ⑨]

Press buttons in zone ⑨ to set the daylight sensor at 2Lux / 10Lux / 50Lux / 100Lux / 300Lux / 500Lux or Disable.
Note: To set daylight sensor at 100Lux / 300Lux / 500Lux, press button ③/Shift at first.

Ambient daylight threshold [button ⑩]

1. Press button ⑩/Shift, the red LED flashes for indication.
2. Press button ⑩, the ambient lux level is sampled and set as the new daylight threshold.

Hold time [zone ⑪]

Press buttons in zone ⑪ 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 ③/Shift at first.
2. 2s is for test purpose only, stand-by time and daylight sensor settings are disabled in this mode.

* To exit from Test mode, press button ② or any button in zone ①.

Stand-by time [zone ⑫]

Press buttons in zone ⑫ to set the stand-by time 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 after hold-time.

Stand-by dimming level [zone ⑬]

Press buttons in zone ⑬ to set the stand-by dimming level at 10% / 20% / 30% / 50%.

Dual tech & RF mode [zone ⑭]

1. Press buttons in zone ⑭ to select sensor technology.
HF+PIR: Light is on when both HF and PIR sensors are activated.
HF/PIR: Light is on when HF or PIR sensors are activated.
2. Learn / Erase, Transmit, RX100% and RX STBY% are disabled.

9. Trouble Shooting

MALFUNCTION	CAUSE	REMEDY
The fixture does not light up	No power supply	Check power to sensor and fixture
	Detection zone not set correctly	Check detection area setting
	Incorrect daylight threshold setting	Disable the daylight sensor and re-check operation/settings.
	Faulty fixture	Replace fixture
The fixture is always on	Continued movement in the detection zone	Check detection area for movement & surface mounting rigidity Reduce detection range if necessary
The fixture is unexpectedly	Sudden change in temperature due to weather(wind, rain, snow) or air expelled from fans, open windows	Adjust zone, change installation site