

Flush Mount PIR Motion Sensor



HYTRONIK®

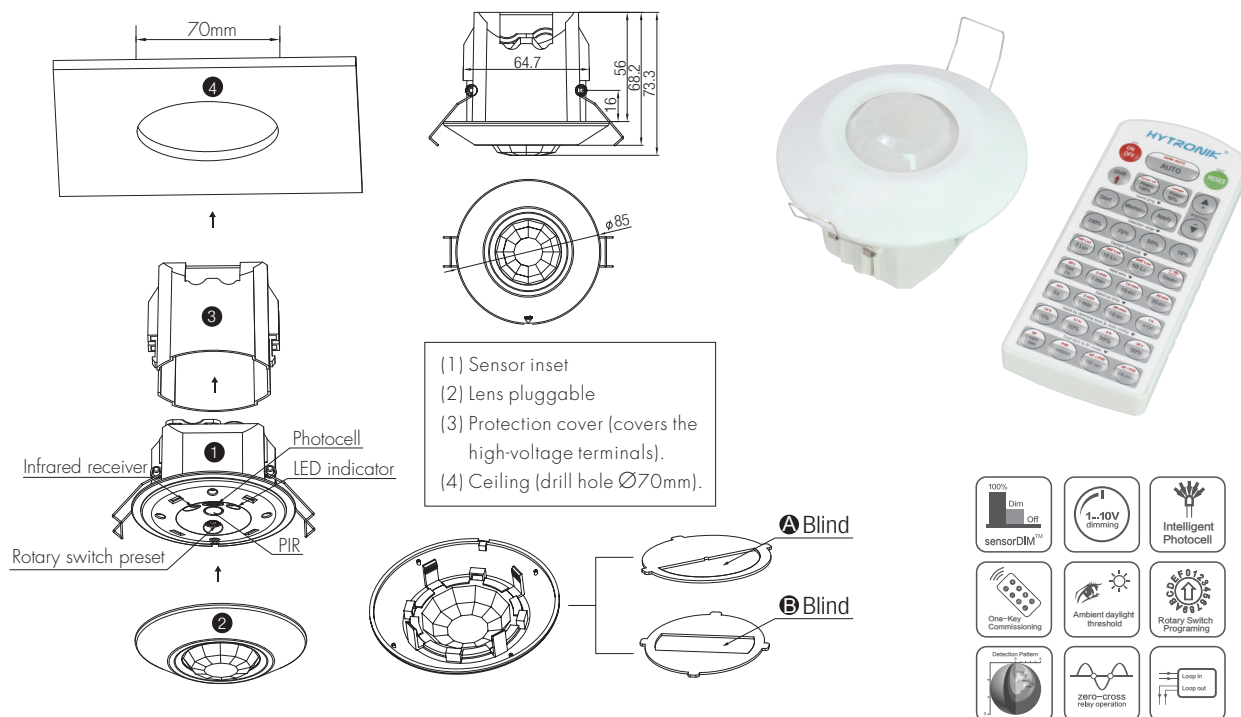


CB IP20

HIR21

1-10V Dimming with Remote Control

Mechanical Structure



Note1: the blinds are optional, they may be inserted behind the lens for focussing the detection range.

Note2: We recommend the mounting distance between sensor to sensor should be more than 2m to prevent sensors from false-triggering.

Technical Data

Input Characteristics

Mains voltage	220~240VAC 50/60Hz
Stand-by power	<0.5W
Load ratings:	
Capacitive	800VA
Resistive	1600W
Warming-up	30s

Safety and EMC

EMC standard (EMC)	EN55015, EN61000
Safety standard (LVD)	EN60669-1, EN60669-2-1
Certification	Semko, CB, CE, EMC, LVD, RCM

Sensor Data

Sensor principle	PIR detection
Detection range	(Ø x H) 10m x 3m
Detection angle	360°
Mounting height	5m (maximum)

Environment

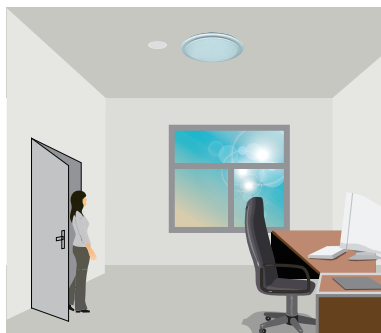
Operation temperature	Ta: -20°C ~ +50°C
IP rating	IP20

1 Tri-level Control (Corridor Function)

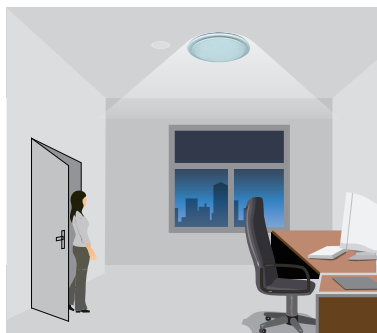
Hytronik builds this function inside the motion sensor to achieve tri-level control, for some areas which require a light change notice before switch-off. The sensor offers 3 levels of light: 100%→dimmed light (natural light is insufficient) →off; and 2 periods of selectable waiting time: motion hold-time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

2 Intelligent Photocell (daylight detection prior to motion detection)

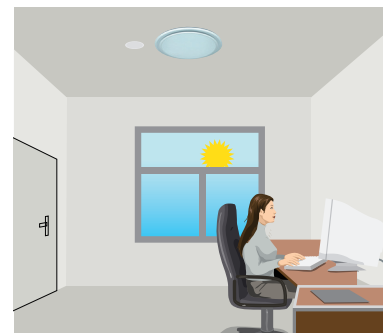
The built-in photocell will also automatically turn off the light when the ambient natural light exceeds the programmed lux level for more than 5min, regardless of whether motion is detected or not. This feature can be disabled if it is required that the fixture stays at dimmed level during absence.



With sufficient natural light, the light does not switch on when presence is detected.



With insufficient natural light, the sensor switches on the light automatically when presence is detected.



The sensor switches off the light when natural light is sufficient, even with presence.

Note: if the stand-by time is preset at "+∞", the fixture never switches off but stays at preset dimming level even when natural light is sufficient.

3 Manual Override

With the help of push-switch, this sensor can be over-riden by the end-user to manually switch on/off the light, or adjust the brightness by push-switch, which makes the product more user-friendly and offers more options to fit some extra-ordinary demands:

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

On → Off: the light turns off immediately and cannot be triggered ON by motion until the expiration of pre-set hold-time. After this period, the sensor goes back to normal 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): adjust the hold-time brightness level between 10% and 100%.

Note: if end-user do not want this manual override function, just leave the "push" terminal unconnected to any wire.

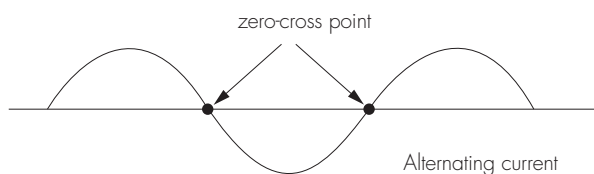
4 Semi-auto Mode (Absence Detection)

It is easy to forget to switch off the light, in office, corridor, even at home. And in many other cases, people do not want to have a sensor to switch on the light automatically, for example, when people just quickly pass-by, there is no need to have the light on. The solution is to apply this "absence detector": motion sensor is employed, but only activated on the manual press of the push-switch, the light keeps being ON in the presence, and dims down in the absence, then switches off in the long absence.

Note: end-user can choose either function 3 or function 4 for application. Default function is manual override.

5 Zero-cross Relay Operation

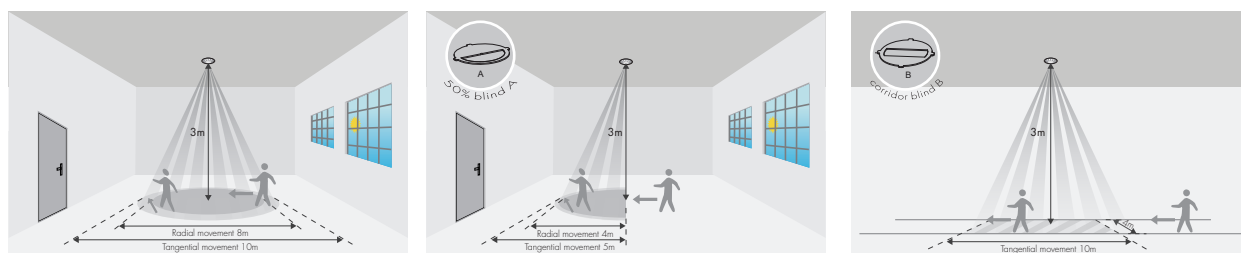
Designed in the software, sensor switches on/off the load right at the zero-cross point, to ensure that the in-rush current is minimised, enabling the maximum lifetime of the relay.



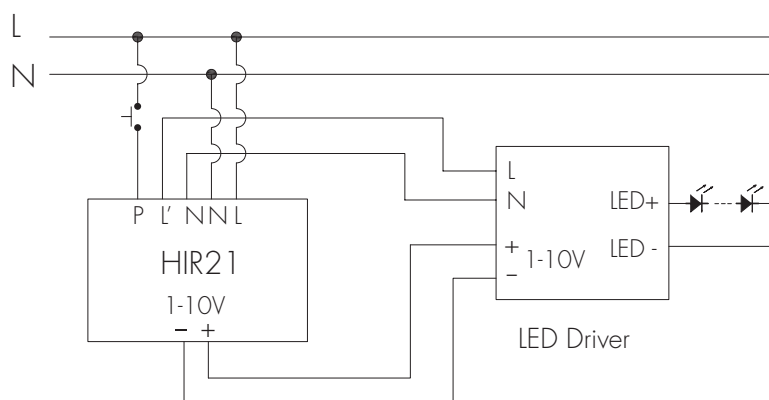
6 Loop-in and Loop-out Terminal

Double L N terminal makes it easy for wire loop-in and loop-out, and saves the cost of terminal block and assembly time.

Detection Pattern



Wiring Diagram



Rotary Switch Preset

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

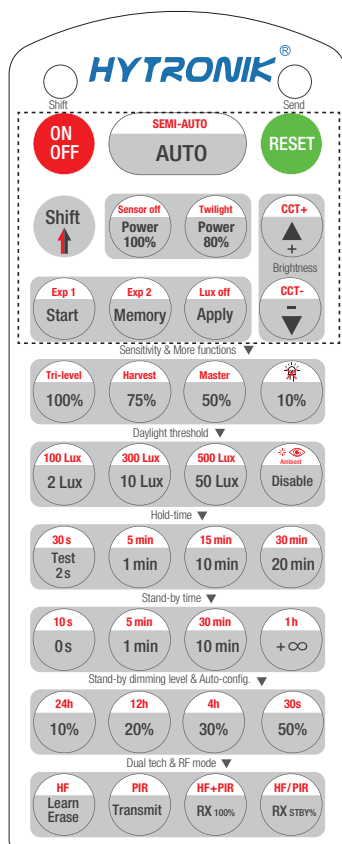


Rotary switch preset

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

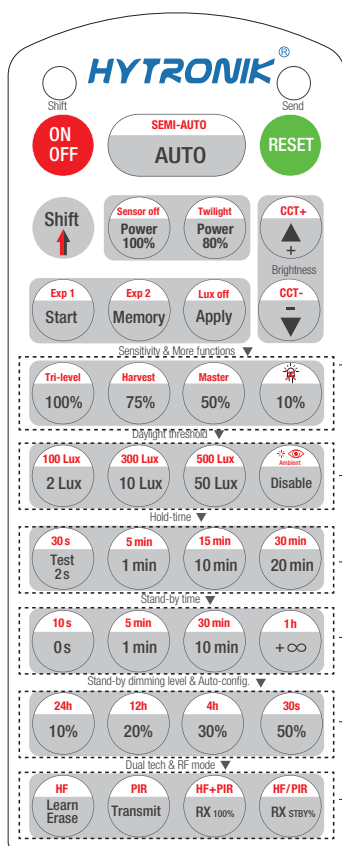
Channel	Detection range	Hold-time	Daylight sensor	Stand-by time	Stand-by dim level
0	100%	5s	Disable	10s	10%
1	100%	1min	2Lux	5min	10%
2	100%	5min	10Lux	10min	10%
3	100%	5min	30Lux	30min	10%
4	100%	5min	10Lux	0s	Disable
5	100%	5min	30Lux	+∞	10%
6	100%	5min	Disable	+∞	30%
7	100%	10min	2Lux	10min	10%
8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

Settings (Remote Control HRC-11)



HRC-11

ON OFF	Press button "ON/OFF" to select permanent ON or permanent OFF mode. * Press button "AUTO"/ "RESET" to exit this mode.
RESET	Press button "RESET", perform DIP Switch/Rotary Switch settings. *The default settings are: Detection range 100%; Hold-time 5min; Stand-by time +∞; Stand-by dimming level 30%; Daylight threshold disable;
Shift	Press button "Shift", the LED on the top left corner is on to indicate mode selection. All values / settings in RED are valid for 20 seconds.
AUTO	Press button "AUTO" to initiate automatic mode. The sensor starts working and all settings remain as before the light is switched ON/OFF;
SEMI-AUTO	1. Press button "Shift", the red LED on. 2. Press button "SEMI-AUTO" to initiate Semi-auto mode. The sensor is only activated with the manual press of push switch. To exit this mode, simply press button "AUTO". <i>For Sensor LED indicator references: Remains on 2s, initiate "Semi-auto" mode from "Auto" mode.</i>
Power 100% 80%	Press buttons in zone "Power out" to select the light output at 80% (at initial 10,000 hours) or 100%.
Sensor off Twilight	This key is not applicable on this product.
▲ ▼	Press these two buttons to adjust the light output brightness and set a new target lux level. The daylight sensor can measure ambient daylight level and ignore the LED light, so as to calculate how much artificial light is needed to maintain the target lux level.
CCT+ CCT-	This key is not applicable on this product.
Start Memory Apply	1. Press button "Start" to program. 2. Select the buttons in "Detection range", "Daylight threshold", "Hold-time", "Stand-by time", "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). <i>For example, to set detection range 100%, daylight threshold Disable, hold-time 5min, stand-by time +∞, stand-by dimming level 30%, the steps should be: Press button "Start", button "100%", "Disable", "Shift", "5min", "Shift", "+∞", "30%", "Memory". By pointing to the sensor unit(s) and pressing "Apply", all settings are passed on the sensor(s).</i>
Lux off	This key is not applicable on this product.
Exp 1 Exp 2	"Exp" refer to Expansion, these two buttons are reserved functions and pending future development.



HRC-11

Sensitivity & More functions	
100% 75% 50% 10%	In AUTO /SEMI-AUTO modes, press buttons in zone "Detection range" to set detection range at 100%/75%/50%/10%.
Tri-level Harvest	This key is not applicable on this product.
Master	This key is not applicable on this product.
Daylight threshold	
2 Lux 100 Lux 10 Lux 300 Lux 50 Lux 500 Lux Disable	Press buttons in zone "Daylight threshold" to set daylight sensor at 2Lux/ 10Lux / 50Lux / 100Lux / 300Lux/500Lux / Disable. <i>Note: To set daylight sensor at 100Lux / 300Lux/500Lux , press "Shift" button first.</i>
Ambient	1. Press button "Shift", the red LED on. 2. Press button "Ambient", the surrounding lux level is sampled and set as daylight threshold / target Lux level.
Hold-time mode	
Test 2s 30s 1 min 5 min 10 min 15 min 20 min 30 min	In AUTO /SEMI-AUTO modes, press buttons in zone "hold-time" to set the hold-time at 2s / 30s / 1min / 5min / 10min / 15min / 20min / 30min. <i>Note: 1. To set hold-time at 30s / 5min / 15min / 30min, press "Shift" button 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 "RESET" or any button in "Hold-time".</i>
Stand-by time mode	
0s 10s 1 min 5 min 10 min 30 min +∞ 1h	Press buttons in zone "stand-by time" to set the stand-by period at 0s / 10s / 1min / 5min / 10min / 30min / 1h / +∞. <i>Note: 1. To set stand-by-time at 10s/ 5min / 30min / 1h, press "Shift" button first. 2. "0s" means on/off control; 3. "+∞" means bi-level control, the fixture is 100% on when there is motion detected, and remains at the stand-by dimming level when no presence after motion hold-time. Only when the stand-by time is set in "+∞" and the ambient lux level is below the target lux level, the lux will auto-on.</i>
Stand-by dimming level & Auto-config.	
10% 20% 30% 50%	Press the button in zone "stand-by dimming level" to set the stand-by dimming level at 10% / 20% / 30% / 50%.
24h 12h 4h 30s	This key is not applicable on this product.
Dual tech & RF mode	
Learn Erase	This key is not applicable on this product.
Transmit	This key is not applicable on this product.
HF PIR HF+PIR HF/PIR	This key is not applicable on this product.

Additional Information / Documents

1. Regarding precautions for PIR sensor installation and operation, please kindly refer to
[www.hytronik.com/download ->knowledge ->PIR Sensors - Precautions for Product Installation and Operation](http://www.hytronik.com/download->knowledge->PIR+Sensors+-+Precautions+for+Product+Installation+and+Operation)
2. Regarding Hytronik standard guarantee policy, please refer to
[www.hytronik.com/download ->knowledge ->Hytronik Standard Guarantee Policy](http://www.hytronik.com/download->knowledge->Hytronik+Standard+Guarantee+Policy)