

# Installation and Instruction Manual

## Flush Mount PIR Motion Sensor

HIR20

**HYTRONIK**®

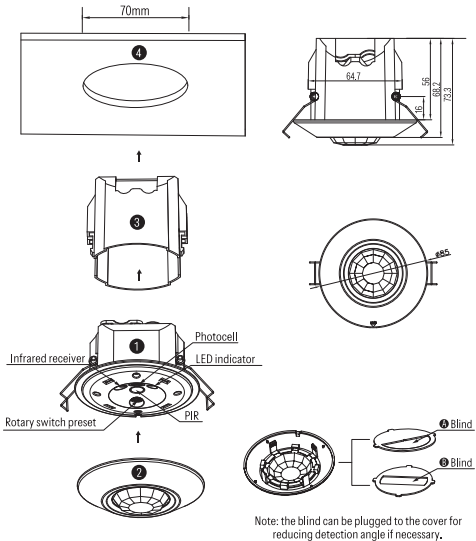
### 1. Technical Specifications

Product type	Daylight harvest PIR motion sensor
Operating voltage	220~240VAC 50/60Hz
Rated load	1200W (resistive); 400VA (capacitive)
Power consumption	< 1W
Warming up time	30s
Detection area (DxH)	8 x 3m (Minimum)
Mounting height	5m (Maximum)
Detection range	10% / 50% / 75% / 100%
Hold time	2s / 30s / 1min / 5min / 10min / 15min / 20min / 30min
Stand-by dimming level	10% / 20% / 30% / 50%
Daylight threshold	50 ~ 500Lux, Disable
Detection angle	360°
Operating temperature	-20°C ~ +50°C

### 2. Installation

#### ⚠ Warnings:

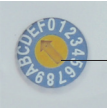
1. Installation of the sensor involves connecting it to the mains supply. This work must be carried out by a specialist in accordance with electrotechnical regulations.
2. Disconnect supply before installing.



- (1) Sensor inset  
(2) Lens pluggable  
(3) Protection cover (covers the high-voltage terminals).  
(4) Ceiling (drill hole Φ 70mm).

### 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	Daylight sensor
0	100%	5s	Disable
1	100%	5min	Disable
2	100%	5min	30lux
3	100%	5min	100lux
4	100%	5min	300lux
5	100%	10min	Disable
6	100%	10min	30lux
7	100%	10min	100lux
8	100%	10min	300lux
9	100%	15min	Disable
A	100%	15min	30lux
B	100%	15min	100lux
C	100%	15min	300lux
D	100%	20min	Disable
E	100%	1min	Disable
F	100%	5s	2lux

Note: settings can also be changed by remote control HRC-T1. The last action controls.

### 4. Functions

#### 4.1 On/ Off Control

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

#### 4.2 Intelligent Photocell

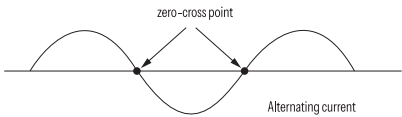
The built-in photocell will also automatically turn off the light when the ambient natural light exceeds the programmed lux level for more than 5min, regardless of whether motion is detected or not.

#### 4.3 Semi-auto Function (Absence Detection)

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

#### 4.4 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.



#### 4.5 Loop-in and Loop-out Terminal

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

#### 4.6 Manual Override

With the help of push-switch, this sensor may be 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 there is movement is detected. After this period, the sensor goes back to auto sensor mode.

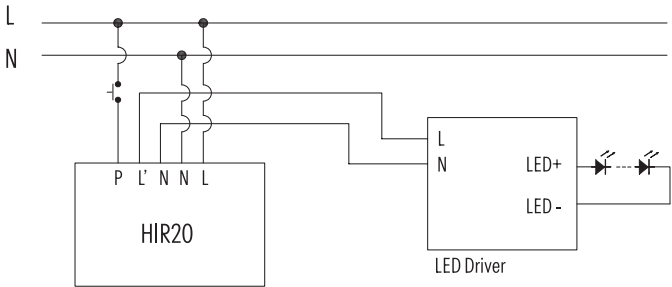
OFF -> ON: the light turns on 100% and goes to auto sensor mode, even when ambient

Lux level exceeds the daylight threshold.

\* Long push (>1s): adjust the target Lux level by turning the light up or down. Both the adjustment on remote control and push switch can overwrite each other, the last adjustment remains in memory.

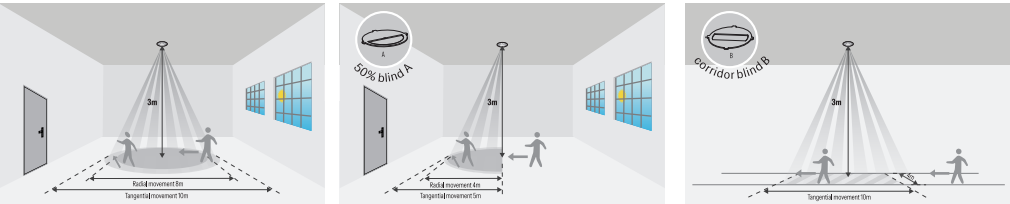
\* If no end-user adjustment is desired, simply leave this terminal disconnected.

### 5. Wiring Diagram

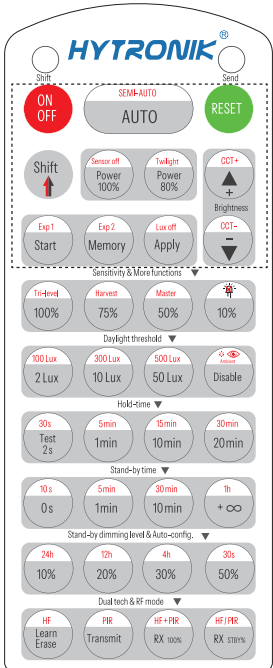


—This product should be installed by a qualified electrician.

### 6. Detection Pattern

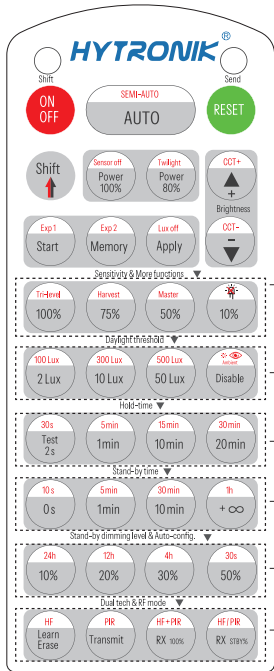


7. Description of the Button Functions (remote control HRC-11)



HRC-11

	Press button "ON/OFF" to select permanent ON or permanent OFF mode. * Press button "AUTO"/ "RESET" to exit this mode.
	Press button "RESET", perform Rotary Switch settings. The default settings are: Exit On/Off mode; Semi-Auto mode; Twilight mode; Detection range 100%; Hold-time 5s; Daylight sensor disable.
	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.
	Press button "AUTO" to initiate automatic mode. The sensor starts working and all settings remain as before the light is switched ON/OFF;
	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".  For Sensor LED indicator references: Remains on 2s, initiate "Semi-auto" mode from "Auto" mode.
	This key is not applicable on this product.
	This key is not applicable on this product.
	This key is not applicable on this product.
	This key is not applicable on this product.
	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).  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).
	This key is not applicable on this product.
	"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%.
	This key is not applicable on this product.
	This key is not applicable on this product.
Daylight threshold	
2 Lux 10 Lux 50 Lux Disable	Press buttons in zone "Daylight threshold" to set daylight sensor at 2Lux/ 10Lux / 50Lux / 100Lux / 300Lux/500Lux / Disable. Note: 1. 2Lux & 10Lux are disabled. 2. To set daylight sensor at 100Lux / 300Lux/500Lux, press "Shift" button first.
	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 1min 10min 20min	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. 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".
Stand-by time mode	
0s 1min 10min + ∞	This key is not applicable on this product.
Stand-by dimming level & Auto-config.	
10% 20% 30% 50%	This key is not applicable on this product.
	This key is not applicable on this product.
Dual tech & RF mode	
	This key is not applicable on this product.
	This key is not applicable on this product.
	This key is not applicable on this product.

Additional Information / Documents

1. To learn more about detailed product features/functions, please kindly refer to <https://hytronik.com/product/hbr29>
2. Regarding precautions for Bluetooth product installation and operation, please kindly refer to <https://hytronik.com/service/downloads> ( Bluetooth Products Precautions for Product Installation and Operation )
3. Regarding precautions for PIR Sensors installation and operation, please kindly refer to <https://hytronik.com/service/downloads> ( PIR Sensors Precautions for Product Installation and Operation )
4. Data sheet is subject to change without notice. Please always refer to the most recent release on <https://hytronik.com/products/motion-daylight-sensors>
5. Regarding Hytronik standard guarantee policy, please kindly refer to <https://hytronik.com/service/downloads> ( Guarantee Conditions document )