

# Installation and Instruction Manual

**HYTRONIK**  
SENSORS & LIGHTING CONTROL

## Flush Mount Pir Motion Sensor , Ultra High-bay

**HIR28/UH**

On/off relay control

### 1. Technical Specifications

Mains voltage	220~240VAC 50/60Hz
Stand-by power	<0.3W
Load ratings:	
Capacitive	400VA
Resistive	800W
Warming-up	20s
Sensor principle	PIR detection
Detection range (Max.)*	Installation Height : 21m
HIR28/UH	Detection Range(Ø) :28m
Detection angle	360°
Operation temperature	Ta: -20°C ~ +50°C
IP rating	IP20 / IP54

### 3. Functions

#### 3.1 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 and stand-by 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.

#### 3.2 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 lux level exceeds daylight threshold).

#### 3.3 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, 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.

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

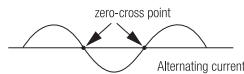
#### 3.4 Semi-auto Mode (Absence Detection)

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 switches off in the long absence.

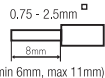
Note: end-user can choose either function 3.3 or function 3.4 for application.  
Default function is manual override.

#### 3.5 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.

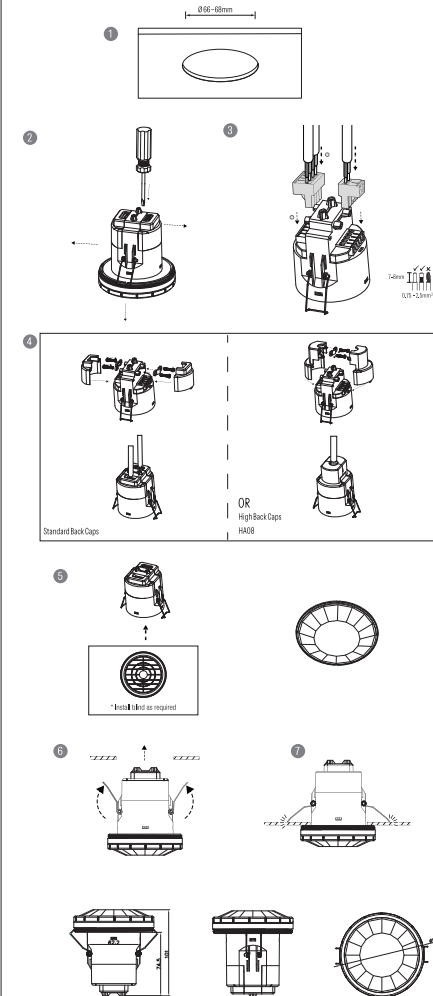


#### Wire Preparation



Pluggable screw terminal. It is recommended to make connections to the terminal before fitting to the sensor.

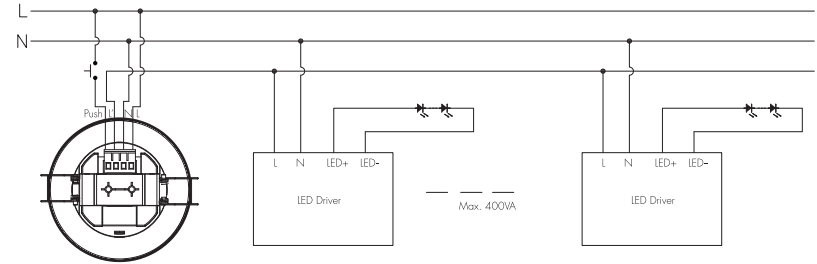
### 2. Installation



1. Ceiling (drill hole  $\phi 66-68\text{mm}$ )
2. Carefully prise off the cable clamps.
3. Make connections to the pluggable terminal blocks.
4. Secure the cables with screws for better stability (provide high back caps HA08 option).
5. Fit detection blind (if required) and desired lens.
6. Clip fascia to body.
7. Bend back springs and insert into ceiling.

**HYTRONIK**  
SENSORS & LIGHTING CONTROL

### 4. Wiring Diagram



— This product should be installed by a qualified electrician.

### 5. Detection Pattern & Optional Accessories

#### HIR28/UH (Ultra High-bay)

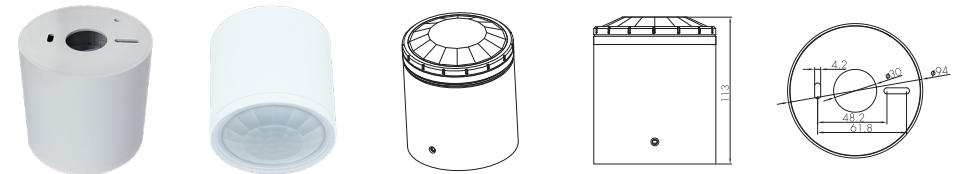


**HIR28/UH:** Ultra High-bay convex lens detection pattern for single person @ Ta = 20°C  
(Recommended ceiling mount installation height **3m-21m**)

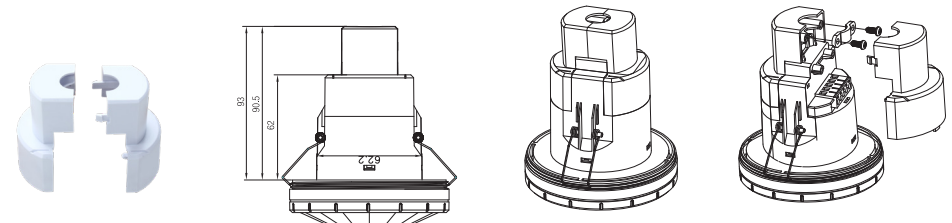
*Noted: The different humidity levels in the environment can affect the sensor detection range.*

A: Tangential movement	B: Radial movement	Mount height	Tangential (A)	Radial (B)
		3m	max 12.5m <sup>2</sup> (Ø = 4m)	max 12.5m <sup>2</sup> (Ø = 4m)
		6m	max 50m <sup>2</sup> (Ø = 8m)	max 28m <sup>2</sup> (Ø = 6m)
		9m	max 113m <sup>2</sup> (Ø = 12m)	max 50m <sup>2</sup> (Ø = 8m)
		12m	max 201m <sup>2</sup> (Ø = 16m)	max 79m <sup>2</sup> (Ø = 10m)
		15m	max 314m <sup>2</sup> (Ø = 20m)	max 113m <sup>2</sup> (Ø = 12m)
		18m	max 452m <sup>2</sup> (Ø = 24m)	max 113m <sup>2</sup> (Ø = 12m)
		21m	max 615m <sup>2</sup> (Ø = 28m)	max 113m <sup>2</sup> (Ø = 12m)

Optional Accessory --- Ceiling/Surface Metal Mount Box: HA09/W, HA09/B, HA09/G



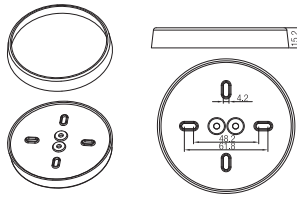
Optional Accessory --- HA08



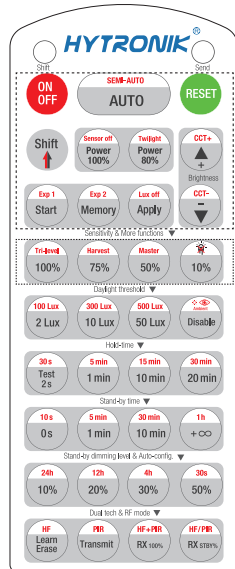
\*Note: Optional Accessory HA09 & HA08 can not be used together.

**HYTRONIK**  
SENSORS & LIGHTING CONTROL

Big silicon gasket used to make IP54 degree protection (mounted into HA09 housing for ceiling mount)

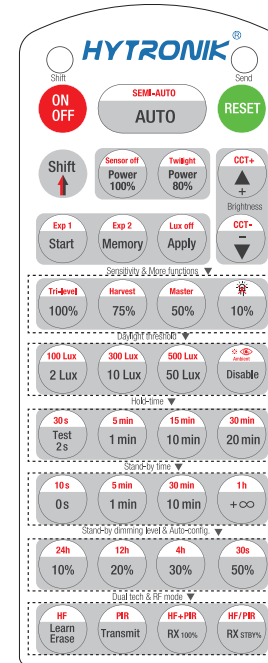


## 6. Description of the Button Functions (remote control HRC-11)



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", all settings go back to default. The default settings are: Auto mode; Detection range 100%; Hold-time 5min; Daylight threshold disable; Lux off activated;
	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". <i>For Sensor LED indicator references: Remains on 2s, initiate "Semi-auto" mode from "Auto" mode.</i>
	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", "Holdtime", "Standby time", 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 +∞, the steps should be:</i> <i>Press button "Start", button "100%", "Disable", "Shift", "5min", "Shift", "+∞", "Memory".</i> <i>By pointing to the sensor unit(s) and pressing "Apply", all settings are passed on the sensor(s).</i>
	The "Lux off" function is activated as default. When the ambient lux level exceeds the target level continuously for more than 5 minutes, the lights will be turned off. In AUTO /SEMI-AUTO/Twilight modes, to disable "Lux off": 1. Press "Shift" button first, the red LED on. 2. Press "Lux off" button, the "Lux Off" function will be deactivated. The lights will not turn off even when the ambient lux level exceeds the target lux level but will dim down the brightness to the stand-by time level. <i>For Sensor LED indicator references: 1.Fast flash 1s, "Lux off" function activated.</i> <i>2.Remains on 2s, "Lux off" function deactivated.</i>
	"Exp" refer to Expansion, these two buttons are reserved functions and pending future development.
	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.



HRC-11

Daylight threshold	
	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>
	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	
	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.</i> <i>2. 2s is for testing purpose only, stand-by period and daylight sensor settings are disabled in this mode.</i> <i>*To exit from Test mode, press button "RESET" or any button in "Hold-time".</i>
Standby time mode	
	Press buttons in zone "stand-by time", the stand-by period time can be extended by overlaying the time in the "hold-time" zone with the time in 'stand-by time' zone. For example, press button "5 min" in "hold-time" zone + button "30 min" in "stand-by time" zone, the stand-by period time is total of 35 minutes. <i>Note: 1. To set stand-by time at 10s/ 5min / 30min / 1h, press "Shift" button first.</i> <i>2. When "Lux off" is activated as default, press button "+∞", the product is a daylight sensor and will be turned off when the ambient lux level exceeds the target lux level, no longer motion detected.</i> <i>When "Lux off" function be deactivated, "+∞" means the fixture will remains on.</i>
Stand-by dimming level & Auto-config.	
	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.

## 7. Additional Information / Documents

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