Flush Mount PIR Motion Sensor PIR

HIR22
Daylight Harvest with Remote Control

HYTRONIK ®

Mechanical Structure

70mm

64.7
56
68.2
73.3
16

ø85

(1) Sensor inset
(2) Lens pluggable
(3) Protection cover (covers the high-voltage terminals).
(4) Ceiling (drill hole Ø70mm).

Infrared receiver
Photocell
LED indicator
Rotary switch preset
PIR

Ⓐ Blind
Ⓑ Blind

daylight harvest | 1~10V dimming | Intelligent Photocell
One-Key Commissioning | Ambient daylight threshold | Rotary Switch Programing
Detection Pattern | zero-cross relay operation | Loop In / Loop out

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

Model No.	HIR22
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

Model No.	HIR22
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

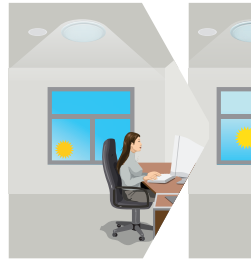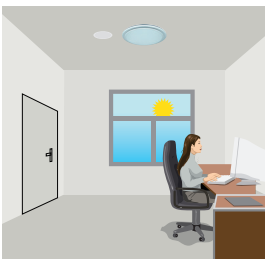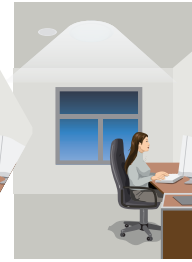CE emc Ⓢ Intertek ⚠ CB IP20

1 Daylight Harvest

Light will not switch on when natural light is sufficient, even there is motion detected.
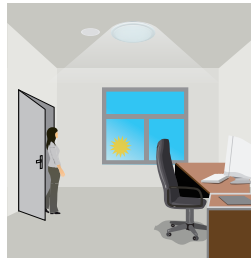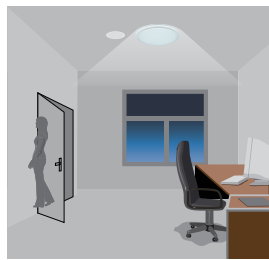
The light switches on automatically with presence when natural light is insufficient.

The light turns on at full or dims to maintain the lux level. The light output regulates accroding to the level of natural light available.

The light switches off when the ambient natural light is sufficient.

The light dims to stand-by period after hold-time and stays on selected minimum dimming level.

The light switches off completely after the stand-by period.

Note:
The Light automatically dims down and eventually turns off if the natural light lux level exceeds the daylight threshold. However, if the stand-by period is preset at "+∞", the fixture never switches off but dim to minimum level, even the natural light is sufficient.

2 Manual Override

With the help of push-switch, this sensor can be over-ridden by the end-user to manually switch on/off the light, or adjust the target lux level 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 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.

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

3 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 2 *or function* 3 *for application. Default function is manual override.*
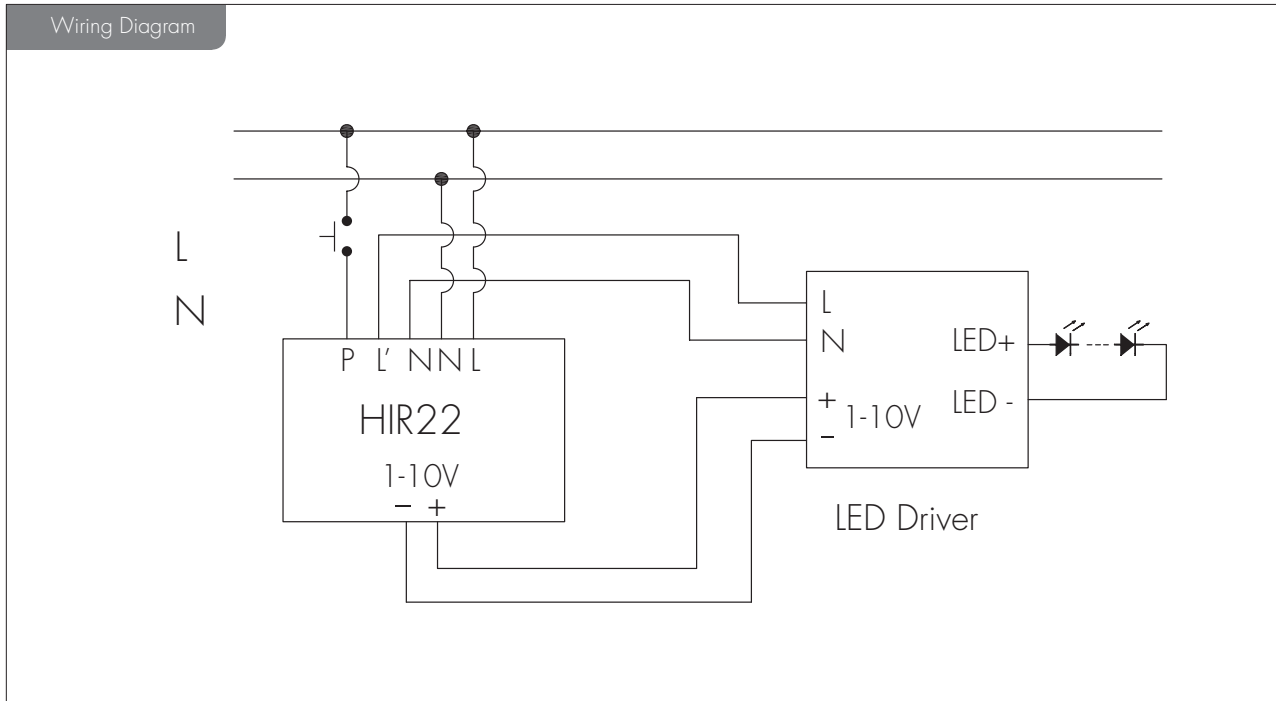
4　Zero-cross Relay Operation

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.

zero-cross point
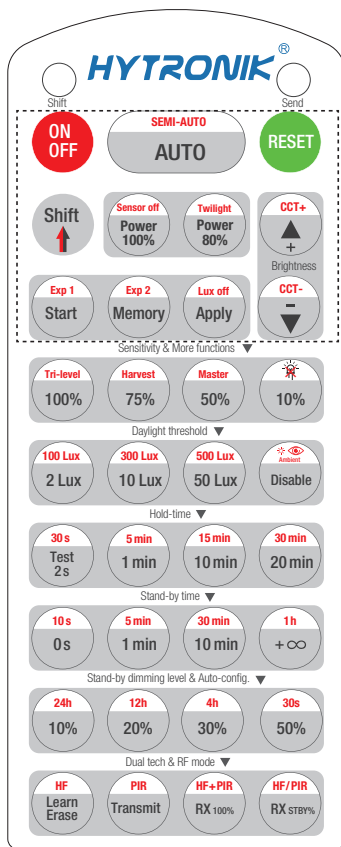
Alternating current
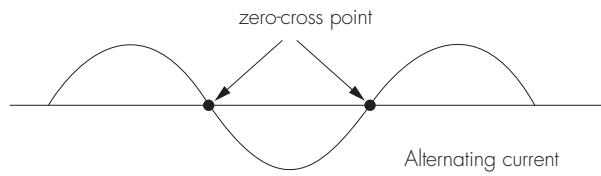
5　Loop-in and Loop-out Terminal

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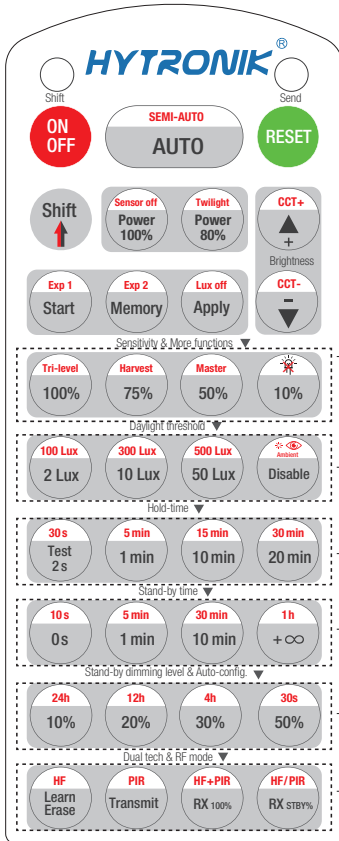
Wiring Diagram

L
N

P　L'　N N L

HIR22

1-10V
−　+

L
N

+ 1-10V
−

LED+

LED -

LED Driver

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: Auton mode; Detection range 100%; Hold-time 5min; Daylight sensor 100 lux; Stand-by time: +∞; Stand-by dimming level: 10%; Lux off activated;
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". *For Sensor LED indicator references: Remains on 2s, initiate "Semi-auto" mode from "Auto" mode.*
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 appliable 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 appliable 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). *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).*
Lux off	This key is not appliable on this product.
Exp 1 Exp 2	"Exp" refer to Expansion, these two buttons are reserved functions and pending future development.

HRC-11

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 appliable on this product.
Master	This key is not appliable 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. *Note: 1. 2lux & 10lux are disabled.* *2. To set daylight sensor at 100Lux / 300Lux/500Lux , press "Shift" button first.*
☀ ◉ **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 30 s **2s** **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. *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 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 / +∞. *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.*

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**	1.Press button "Shift" ,the red LED on. 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 setting remain unchanged.*

Dual tech & RF mode	
Learn **Erase**	This key is not appliable on this product.
Transmit	This key is not appliable on this product.
HF **PIR** **HF+PIR** **HF/PIR**	This key is not appliable on this product.

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	50Lux	5min	10%
2	100%	5min	50Lux	10min	10%
3	100%	5min	75Lux	+∞	10%
4	100%	5min	100Lux	+∞	10%
5	100%	5min	200Lux	+∞	30%
6	100%	10min	50Lux	30min	10%
7	100%	10min	75Lux	+∞	10%
8	100%	10min	100Lux	+∞	10%
9	100%	10min	200Lux	+∞	30%
A	100%	20min	100Lux	1h	10%
B	100%	20min	200Lux	+∞	30%
C	100%	30min	100Lux	+∞	10%
D	100%	30min	200Lux	+∞	30%
E	100%	30min	400Lux	+∞	50%
F	100%	5s	100Lux	10s	10%

Detection Pattern
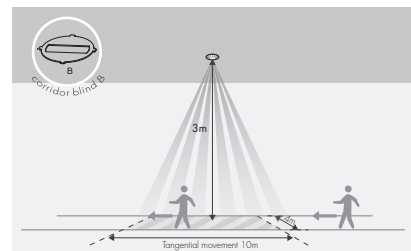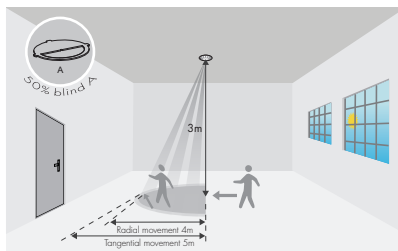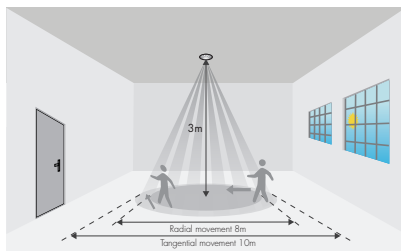
Additional Information / Documents

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

2. Regarding Hytronik standard guarantee policy, please refer to
   www.hytronik.com/download ->knowledge ->Hytronik Standard Guarantee Policy

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