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HYTRONIK HIR22 Flush Mount PIR Motion Sensor Installation Guide

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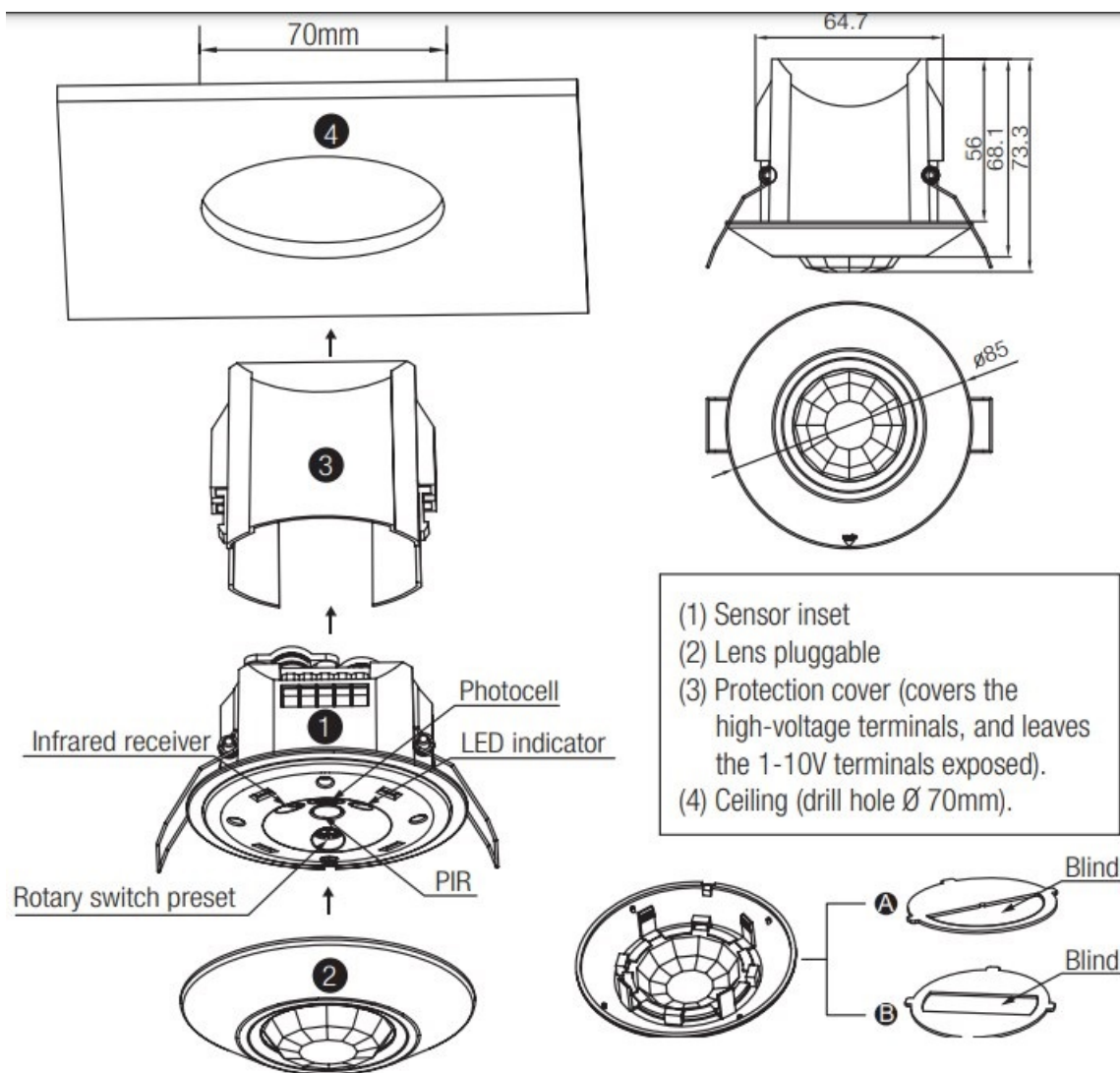

Contents

Technical Specifications

- **Product type** Daylight harvest PIR motion sensor
- **Operating voltage** 220~240VAC 50/60Hz
- **Rated load** 1600W (resistive); 800VA (capacitive)
- **Power consumption** $<$ 0.5W
- **Detection angle** 360o
- **Detection area (Max.)***
- **Detection range** 10% / 50% / 70% / 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** 50 ~ 500Lux, Disable
- **Warming up time** 30s
- **Operating temperature** -20o C ~ +50o C

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, and leaves the 1-10V terminals exposed).
(4) Ceiling (drill hole Ø 70mm).

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.

Rotary Switch Settings

A rotary switch is built inside the sensor for scene selection / fast programming. Total 16 channels available
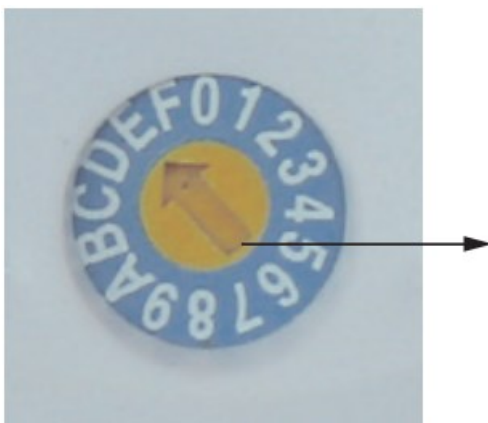
Rotary switch preset (Please see the location in 2. Installation)

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

Functions

Daylight Harvest (Daylight Regulating

Daylight sensor measures the available surrounding natural light, calculates how much electrical light is needed to reach the total lux expected. The demand is given to the LED driver by 1-10V signal, so as to deliver the needed amount of electric light
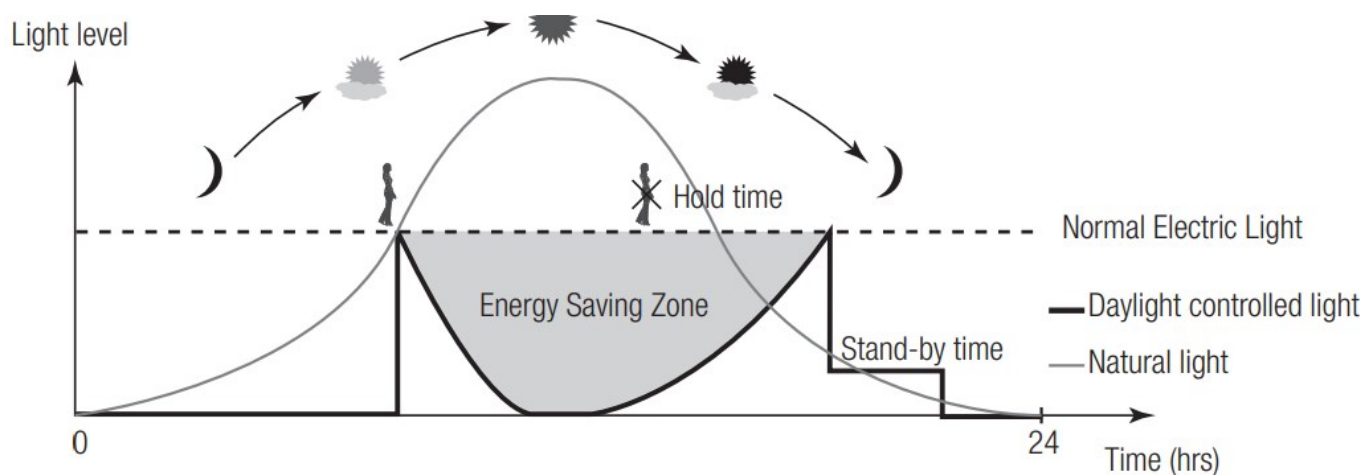
Lux Off Function

The built-in daylight sensor can read ambient natural light and switch off the fixture automatically whenever artificial light is unneeded (natural light lux level exceeds daylight threshold). **Note:** if the stand-by time is preset at "+∞", the fixture never switches off even when natural light is sufficient.

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.

Manual Override

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 lighten 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.
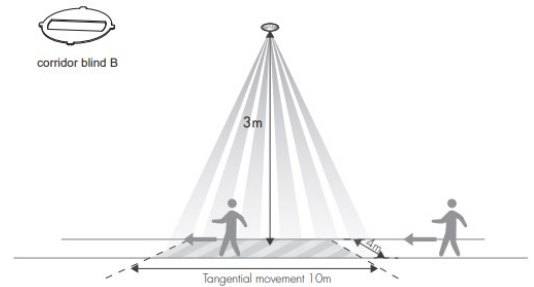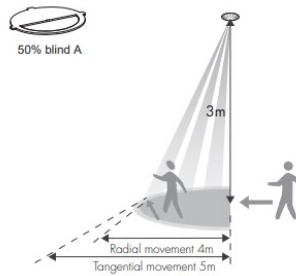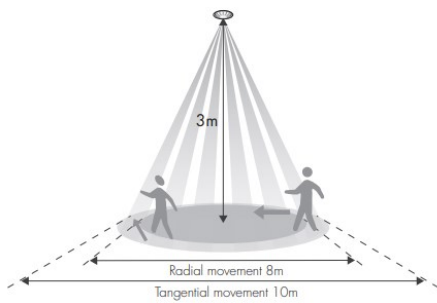 **Note:** end-user can choose either function 4.3 or 4.4 for application. Default function is 4.4.
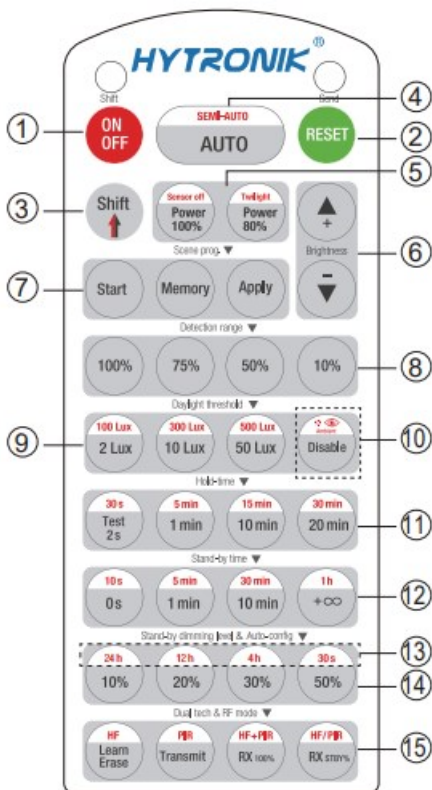
Wiring Diagram
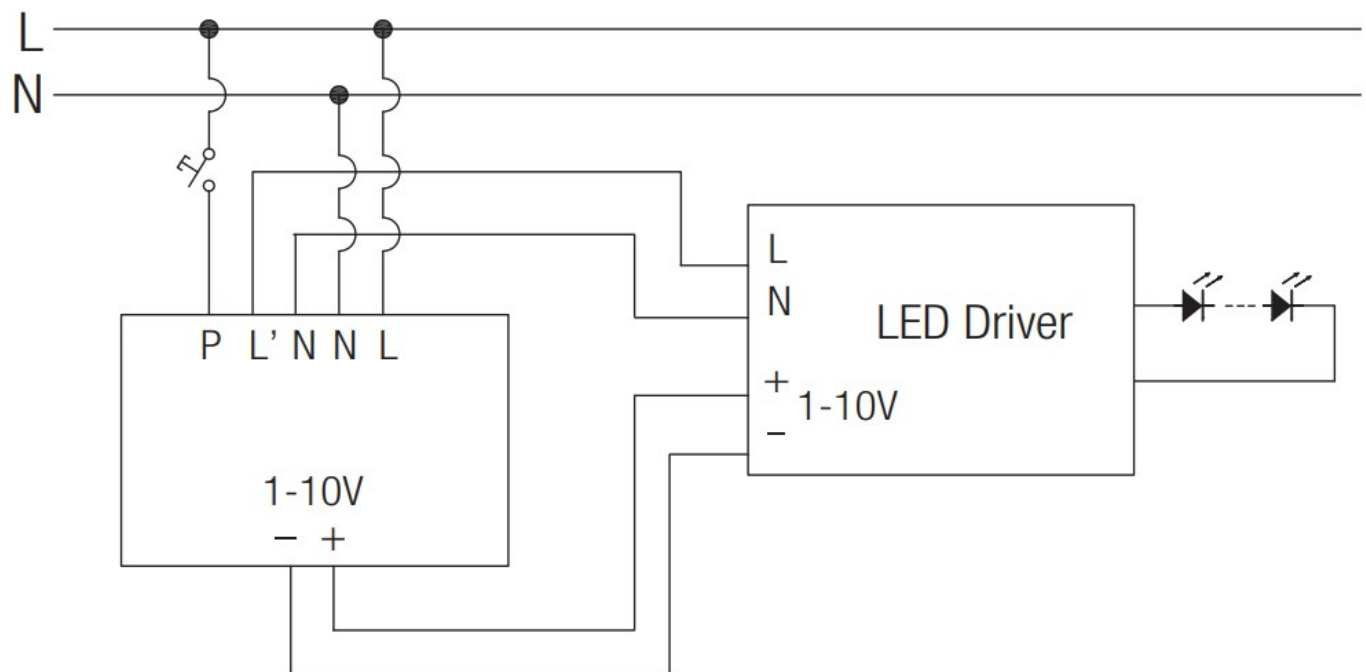
Note: if neither function 4.3 nor 4.4 is desired, simply leave the "push" terminal disconnected.

Detection Pattern

50% blind A

corridor blind B

Radial movement 8m
Tangential movement 10m

Radial movement 4m
Tangential movement 5m

Tangential movement 10m

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

Permanent ON/OFF

Press button , to select permanent ON or permanent OFF mode Press button to resume automatic operation. The mode will change to AUTO Mode after power failure.

RESET[button]

Press button , all settings go back to the rotary switch settings.

Shift [button]

Press button , the LED on the top left corner is on for indication. All values / settings in RED are in valid for 20 seconds.

Auto Mode [button]

Press button to initiate automatic mode. The sensor starts working and all settings remain as before the light was switched ON/OFF.

Semi-auto Mode [button &]

1. Press button Shift (the red LED is on for indication).
2. Press button to initiate semi-auto mode. The fixture is manually on by push-switch and automatically off in

semi-auto mode.

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

Brightness +/- [button]
Press button to adjust the light brightness to reset the target lux level.

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

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 pre-set detection range 100%, daylight threshold Disable, hold time 5min, stand-by time +∞, stand-by dimming level 30%, 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).

Detection range [zone]
Press buttons in zone to set detection range at 100% / 75% / 50% / 10%.

Daylight threshold [zone]
Press buttons in zone to set the daylight sensor at 50Lux / 100Lux / 300Lux / 500Lux or Disable as threshold / target Lux level. Note: 2lux / 10lux are disabled. To set daylight sensor at 100Lux / 300 Lux / 500Lux, press button Shift at first.

Ambient daylight threshold [button]

1. Press button Shift, the red LED is on for indication.
2. Press button , the ambient lux level is sampled and set as daylight threshold / target Lux level.

Hold time [zone]
Press buttons in zone 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 Shift at first.
2. 2s is for test purpose only, stand-by period and daylight sensor settings are disabled in this mode. *To exit from Test mode, press button or any button in zone .

Stand-by time [zone]
Press buttons in zone to set the stand-by period 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.

Daylight harvest auto-configuration function 13 [zone]

1. Press button "Shift", the red LED is on for indication.
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 settings remain unchanged.

Stand-by dimming level [zone]
Press buttons in zone to set the stand-by dimming level at 10% / 20% / 30% / 50%

Dual tech & RF mode [zone]
All buttons in zone are disabled.

Trouble Shooting

MALFUNCTION CAUSE REMEDY	CAUSE	REMEDY
The fixture does not light up	Incorrect daylight threshold setting	Adjust daylight threshold setting
	Faulty fixture	Replace fixture
	No power supply	Check power to sensor
	Detection zone not targeted	Check detection area setting
The fixture is always on	Continued movement in the detection zone	Check detection area setting
The fixture is on when it should not	Sudden change in temperature due to weather (wind, rain, snow) or air expelled from fans, open windows	Adjust zone, change installation site

SUPPORT

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Documents / Resources
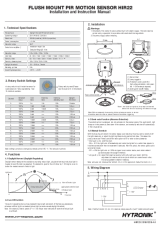
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HIR22 Flush Mount PIR Motion Sensor, HIR22, Flush Mount PIR Motion Sensor, PIR Motion Sensor, Motion Sensor, Sensor, Flush Mount Sensor

References

- **Microwave sensor_Microwave motion sensor_Hytronik Electronics Co., Ltd.**