

HIR28/2CH

Dual-Channel PIR Lowbay | Remote controller ON/OFF | Ceiling mounting

HYTRONIK[®]
SENSORS & LIGHTING CONTROL



Benefits

Reliable: Fail-safe NC design keeps lighting powered during sensor failure

Flexible: Dual-channel outputs support versatile on/off load control

User-Friendly: One-key commissioning with IR controller

Applications

Ceiling or surface mounting (with accessory)

Offices & Classrooms

Corridors & Staircases

Check Out the Complete System Solution on the Website:
<https://www.hytronik.com/product/HIR28-2CH>



Product Description

HIR28/2CH is a flush-mount PIR low-bay motion sensor with dual-channel on/off control, designed for a typical mounting height of 2.5 m. It features two ganged relay outputs, including one voltage-free contact with both NO and NC terminals and one normally closed relay. With a fail-safe NC logic design, the load remains powered in the event of sensor power loss or failure, ensuring continuous lighting in critical scenarios. All parameters can be configured via remote control, enabling fast setup and one-key commissioning for multiple devices.

Functions and Features

See additional details at the end of datasheet



Dual Relay Output



NC Contact



NC/NO Fail-safe Mode



ON/OFF Control



Push-Button Input



Zero-Cross Relay Operation

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Specifications

Main Capabilities

Dimming (Output) Interface	Volt-free Contact (VFC), Relay On/Off
Push Button Input	2

Sensor Data

Detection angle	360°
Max. Detection range (Diameter)	9.0 m
Maximum Mounting Height	6.0 m
Detection area	64 m²
Sensitivity	10% / 50% / 75% / 100%
Detection Methods	Passive Infrared (PIR)

Electrical Data

Operating voltage range	220-240 VAC 50/60 Hz
Stand-by power (Psb)	<1W
Warming-up	20 s
Max withstandable in-rush current	80A@160µs
VFC Output(Vote-free Contact / Dry Contact)	2A@24VDC , 2A@250VAC
Load capacitive	400.0 VA
Load resistive	800.0 W

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Specifications

Technical	
Product height	79.2 mm
Product length	78.0 mm
Product width	78.0 mm
Mounting hole	66.0 mm
Ambient temperature	-20 ~ +50 °C
Storage temperature	-40 ~ +70 °C
Humidity max	10 ~ 90%
IP Rate	IP20
IP Rate (facial part)	IP54

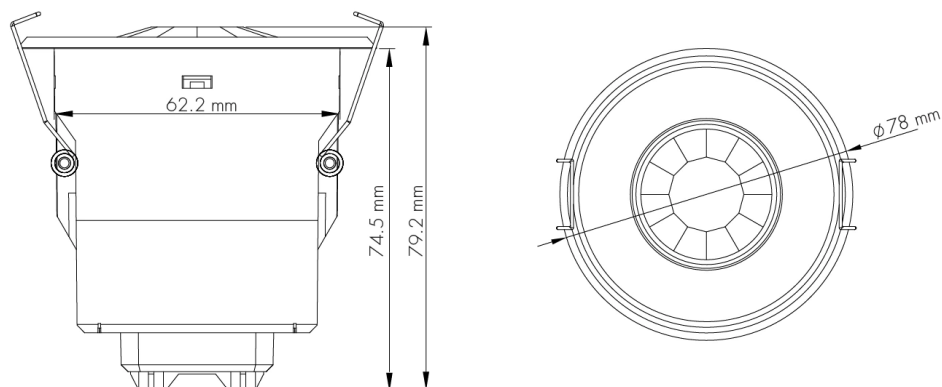
Standard	
EMC	EN 55015, EN 61000
LVD	EN 60669-1, EN 60669-2-1

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Technical Drawing



Application Example

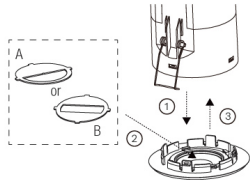


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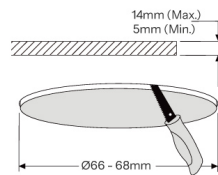
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Installation Process

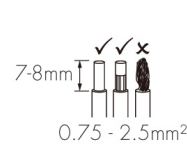
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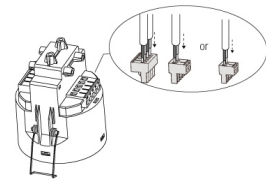
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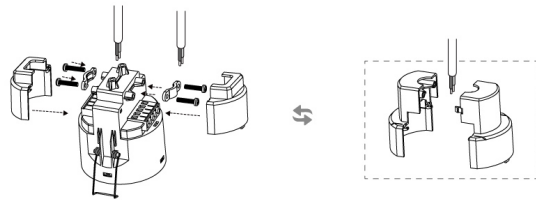
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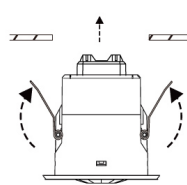
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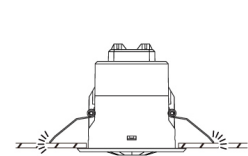
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6



7



Detailed Installation Instructions

1. Optional: If a detection blind is required, detach the lens cover, select the suitable detection blind and place it above the lens, then refit the lens cover onto the sensor body.
2. Ceiling cut-out (hole Ø 66~68mm).
3. Prepare the cables correctly.
4. Connect the cables to the pluggable terminal blocks according to the wiring diagram.
5. Secure the cables with screws and cable clips for better stability. Install the standard back caps (or replace with the high back cap HA08 for larger wire diameter if necessary).
6. Bend the spring clips upwards and fit the sensor into the ceiling cut-out.
7. Spring clips will release and secure the sensor in the ceiling.

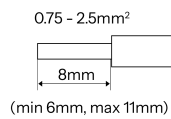
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⚠ Wiring Guidelines

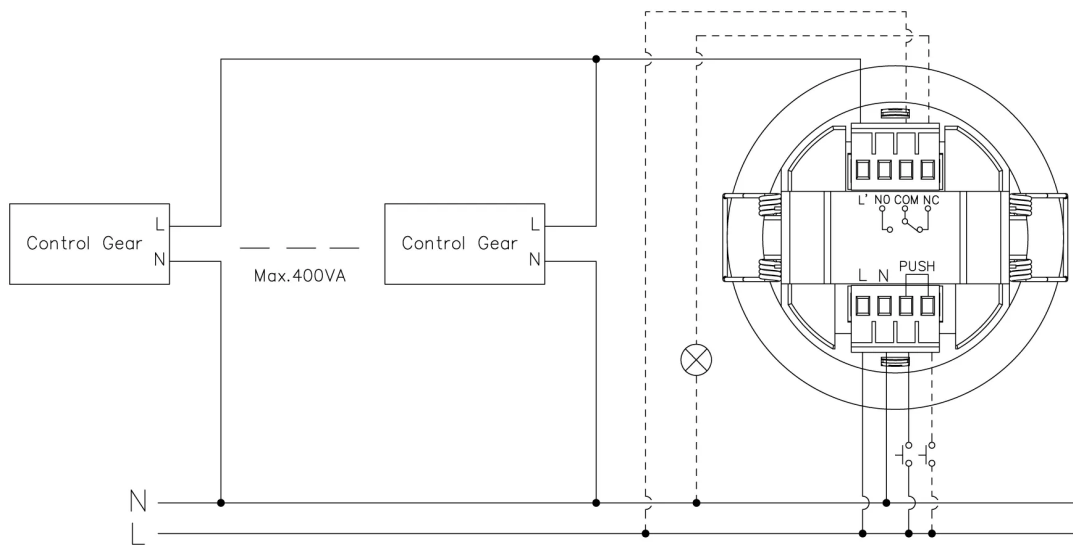
1. Installation by a qualified electrician only and in accordance with local electrical regulations.
2. Disconnect mains power before installation, wiring, maintenance or replacement.
3. Failure to follow the wiring diagram may result in product damage and malfunction.
4. Refer to the Wire Preparation section for recommended wire diameter and strip length.
5. Push inputs are mains-voltage inputs and must only be connected to mains-rated switches.

Wire Preparation



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

Wiring Diagram



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Commissioning Instructions and Precautions

A. Control Logic Notes

1. The two relay channels operate synchronously and switch ON/OFF together.
2. Both PUSH inputs share the same control logic, allowing either input to control both relay channels simultaneously. Independent control of individual relay channels is not supported.

Warning: For additional important documents, including installation precautions, product guidelines, and guarantee conditions, please refer to the official downloads.

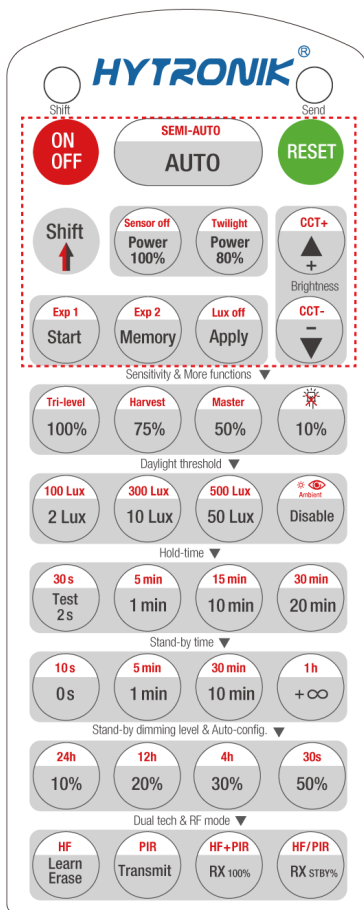
<https://hytronik.com/service/downloads>

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Commissioning via Remote Control - Page 1

Settings (Remote Control HRC-11)



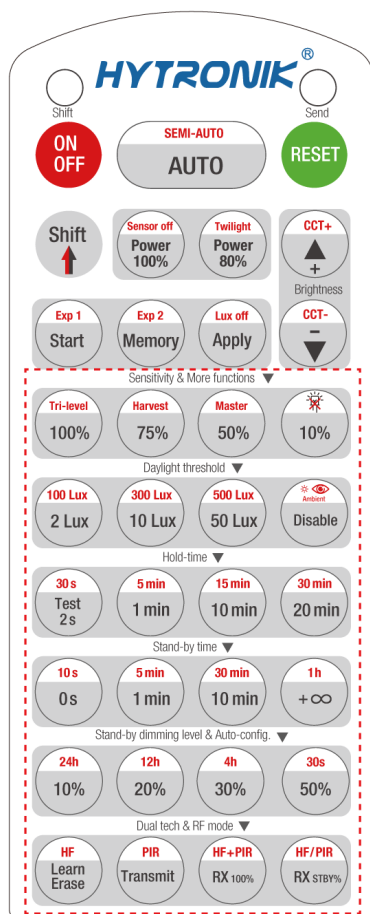
ON OFF	Press "ON/OFF" to set the luminaire to permanent ON or OFF mode. Press "AUTO" or "RESET" to exit this mode and resume normal sensor mode. * Note: After mains power is disconnected and restored, the sensor will automatically return to AUTO mode.
RESET	Press "RESET" in any state to resume the sensor to AUTO mode. For models with DIP or rotary switches, the parameters will follow the current DIP or rotary settings. For models without DIP or rotary switches, the parameters will restore the factory default settings. Resettable parameters: operating mode, brightness, sensitivity, hold-time, stand-by time and daylight threshold. *This product is set by default to: Auton mode; Detection range 100%; Hold-time 5min; Daylight threshold disable; Lux off activated
Shift	Press "Shift" to activate the auxiliary function layer. The top-left indicator will light up for 20sec, indicating the mode selection status. Each button will switch to the red-marked function shown on its upper half.
SEMI-AUTO	Press "Shift" first. After red indicator is on, press "SEMI-AUTO". In this mode, the load can only be switched ON manually via the PUSH switch. Each time the load is off, it must be activated again via the PUSH switch manually. Press "AUTO" or "RESET" to exit this mode and resume AUTO mode. * Note: 1. Lux ON function is disabled in SEMI-AUTO mode. 2. The sensor indicator will light up for 2sec, confirming the mode change from AUTO to SEMI-AUTO.
AUTO	Press "AUTO" to enter automatic sensing mode. The sensor will exit ON/OFF and SEMI-AUTO mode and resume automatic operation. All parameters will remain as previously set.
Sensor off	This key is not applicable on this product.
Twilight	This key is not applicable on this product.
Power 100% Power 80%	This key is not applicable on this product.
CCT+ CCT-	This key is not applicable on this product.
Start Memory Apply	Press "Start" to enter study mode. Select the required parameters in according area (Sensitivity, Daylight threshold, Hold time, Stand-by time and Stand-by dimming level). Press "Memory" to store the parameters, then press "Apply" to send the parameters to the sensor. The same parameter group can be applied to multiple sensors at the same time. "RESET" will not clear the parameters stored in "Memory".
Lux off	Press "Shift" first. After red indicator is on, press "Lux off" to enable or disable this function. Indicator flashes 1sec when enabled, 2sec when disabled. "Lux off" function is enabled by default. During hold time and stand-by time, if ambient light remains above the preset threshold for more than 5min, the luminaire will switch OFF. When "Lux off" function is disabled, the luminaire will not switch off automatically due to excessive ambient light and will operate only based on hold time and stand-by time settings. *Note: This product does not support an independent T2 function. Any configured T2 time is automatically added to the T1 time. No dimmed (micro-light) state will occur at the end of the T2 period.
Exp 1 Exp 2	"Exp" stands for "Expansion". These two buttons are reserved functions for future development.

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Commissioning via Remote Control - Page 2

Settings (Remote Control HRC-11)



Sensitivity & More Functions	
100% 75% 50% 10%	In AUTO or SEMI-AUTO mode, press the buttons in "Sensitivity" area to set detection range as required. The setting overrides the DIP switch and is saved in memory.
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 the buttons in "Daylight threshold" area to set starting Lux level as required. The setting will override the DIP switch settings and be stored in the sensor memory. Note: Red-marked options require pressing "Shift" first.
 Ambient	Press "Shift" first. After red indicator is on, press "Ambient". The load will switch off and the sensor will learn the current ambient Lux and set it as the starting / target threshold. During learning, the buzzer will beep 5 times and then 1 long beep when completed. The system will store the current brightness and enters "AUTO" mode - the luminaire turns on only when motion is detected. If the learned Lux exceeds the device's saturation, the buzzer will beep 10 times rapidly and the daylight threshold will be set to Disable. Note: if DIP switches equipped, its settings and remote settings override each other, and the latest setting takes priority.
Hold-time mode	
Test 2s 30s 1 min 5 min 10 min 15 min 20 min 30 min	In "AUTO" or "SEMI-AUTO" mode, press the buttons in "Hold-time" area to set hold time as required. The setting will override the DIP switch settings and be stored in the sensor memory. * Note: 1. Red-marked options require pressing "Shift" first. 2. The 2s button is for test mode only. In this mode, stand-by time and daylight control are disabled. Press "RESET" or any buttons in "Hold-time" area to exit this mode.
Stand-by time mode	
0s 10s 1 min 5 min 10 min 30 min +∞ 1h	Press the buttons in "Stand-by time" area to set stand-by time as required. *Note: This product does not support an independent T2 function. Any configured T2 time is automatically added to the T1 time. No dimmed (micro-light) state will occur at the end of the T2 period.
Stand-by dimming level & Auto-config.	
10% 20% 30% 50%	This key is not applicable on this product.
24h 12h 30s 4h	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 HF+PIR PIR HF/PIR	This key is not applicable on this product.

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Options

Included Accessories



Deep-reaching rear covers HA08 and HA08/S



Blind Insert Option 1 and Option 2

Accessories



Plastic Mount Box | Surface Mounting | white color

HA03

www.hytronik.com/product/HA03



Plastic Mount Box | Surface Mounting | IP54 Waterproof Gasket

HA03/IP54

www.hytronik.com/product/HA03-IP54



Metal Mount Box | Surface Mounting | Grey Color

HA09/G

www.hytronik.com/product/HA09-G



Metal Mount Box | Surface Mounting | Black Color

HA09/B

www.hytronik.com/product/HA09-B



Metal Mount Box | Surface Mounting | White Color

HA09/W

www.hytronik.com/product/HA09-W

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Options

Compatible products (for full functionality)



HRC-11

Sensor remote controller | Diverse function | White color

www.hytronik.com/product/HRC-11

Functions and Features



Dual Relay Output

The product incorporates two independent relays that allow separate control of multiple lighting circuits or load types. Each relay can be configured individually, providing flexible switching options and enabling more versatile control strategies within the lighting system.



NC Contact

This product provides a single switched live output (L'), corresponding to NC (Normally Closed) logic. When the product is not powered, the load remains energized.

In this mode, the logic is effectively inverted: NO: closed when idle, open when triggered; NC: open when idle, closed when triggered. The output behavior is therefore equivalent to the NO logic in standard mode.

This mode is suitable for applications requiring fail-safe operation.

When the sensor loses power or fails, the relay returns to its default state and the NC contact closes. If the load circuit is still powered externally, the load remains energized, ensuring continuous operation.

*Note: This function maintains output continuity only when an external power supply is present. It does not provide backup power in case of mains power failure.



NC/NO Fail-safe Mode

This product provides NO, NC and COM contacts, and is intended to be used via the NC (Normally Closed) terminal.

In this mode, the logic is effectively inverted: NO: closed when idle, open when triggered; NC: open when idle, closed when triggered. The output behavior of the NC terminal is therefore equivalent to the NO terminal in standard mode.

This mode is suitable for applications requiring fail-safe operation.

When the sensor loses power or fails, the relay returns to its default state and the NC contact closes. If the load circuit is still powered externally, the load remains energized, ensuring continuous operation.

*Note: This function maintains output continuity only when an external power supply is present. It does not provide backup power in case of mains power failure.



ON/OFF Control

The product supports basic ON/OFF control of the connected luminaire, allowing the light to be switched fully on or off through the sensor's detection logic or an external control input. This provides straightforward lighting control for applications that do not require dimming functionality.



Push Button Input

This product integrates push-button (momentary switch) inputs, allowing external potential-free switches to trigger basic lighting control functions. Each input can be configured for actions such as on/off switching, dimming or scene recall, providing flexible manual control and user interaction within the lighting system. The push-button inputs operate independently of the sensor's automatic functions, enabling seamless coexistence of manual and sensor-based lighting control.



Zero-Cross Relay Operation

The product operates its relay at the AC zero-cross point, reducing inrush current through the relay contacts when switching the load. By minimising electrical stress during each switching event, this method supports higher load capability and extends the operational lifetime of the relay in practical lighting applications.

Check out for further explanation of features

<https://hytronik.com/solutions/lighting-control-features>

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Additional Notes

Detection Blind Insert Options and Detection Range Reference

Two fixed blind inserts are supplied to reduce or limit the detection area. The blind insert can be fitted directly into the lens cover. Select the suitable blind insert according to the required detection area and installation application.

Option 1 provides a rectangular detection area. Option 2 provides a half-circle detection area, suitable for applications where detection from one side needs to be limited.

For reference, the next page includes detection pattern and dimensional drawings to support actual installation and application. The detection diagram is based on the following test conditions:

Detection Range Test Conditions:

Single person walking or forklift driving at 5 km/h

Sensor not connected to a driver with soft-on period

Ambient temperature (Ta): 20 °C

Test conducted in a large open indoor area without obstacles affecting PIR performance

Note: Detection range may vary depending on installation angle, temperature, and humidity conditions.

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Additional Diagram

