

HIR27/R

DALI-2 PIR Midbay | Integrated 64 mA PSU | Ceiling mounting

HYTRONIK®
SENSORS & LIGHTING CONTROL



Benefits

Adaptable: Options of blind inserts and metal surface mount boxes

Integrated: Built-in DALI power supply reduces external power

User-Friendly: One-key commissioning with IR controller

Applications

Ceiling or surface mounting (with accessory)

Offices, Classrooms

Stairwells, Corridors

Check Out the Complete System Solution on the Website:

<https://www.hytronik.com/product/HIR27-R>



Product Description

HIR27/R is a stand-alone DALI-2 broadcast PIR sensor with a built-in 64 mA DALI PSU. It is a reinforced Midbay motion sensor with a typical mounting height of 6 m. This design reduces the need for external power supplies, simplifies installation, and improves overall system stability. It supports Daylight Harvesting to enable efficient and energy-saving lighting management. All parameters can be configured via a handheld remote control, allowing fast setup and one-key commissioning of multiple devices.

Functions and Features

See additional details at the end of datasheet



DALI-2 Certified



DALI BUS Power
Supply



Daylight Harvest



Manual Override



One-key
Commissioning



Semi-Automatic
Mode (Absence
Detection)



Sensor
Synchronization

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Specifications

Main Capabilities

Dimming (Output) Interface	DALI/DALI-2
Push Button Input	1

Sensor Data

Detection angle	360°
Max. Detection range (Diameter)	10.0 m
Maximum Mounting Height	6.0 m
Detection area	78 m ²
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)	<0.5W
Warming-up	20 s
DALI bus maximum rated current (I _n max)	80 mA
DALI bus nominal DC voltage range (Un)	16 V
DALI bus nominal current (I guaranteed)	64 mA

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Specifications

Technical	
Product weight	130.0 g
Product height	81.6 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

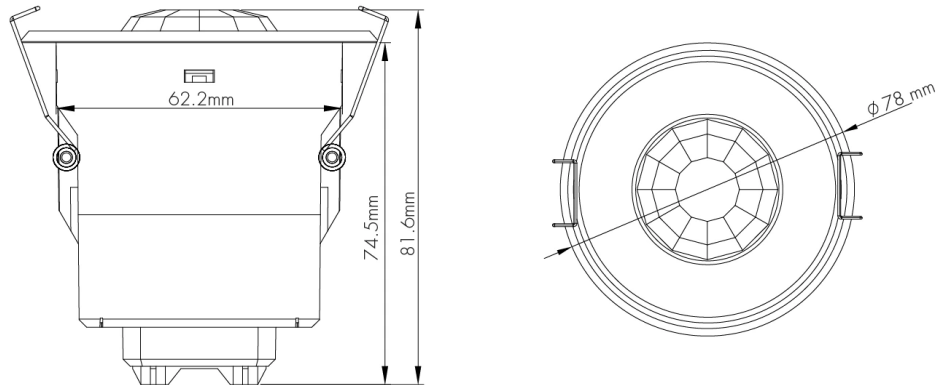
Standard	
EMC	EN 55015, EN 61000, EN 61547
LVD	AS/NZS 60669-1/-2-1, EN 60669-1, EN 60669-2-1
DALI-2 Standard	IEC62386-101, 103

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Technical Drawing



Application Example

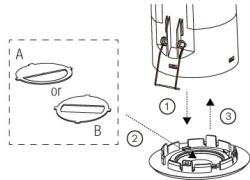


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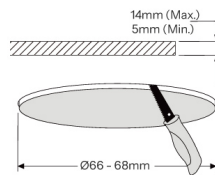
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Installation Process

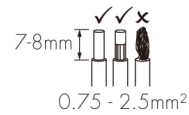
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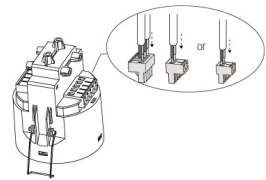
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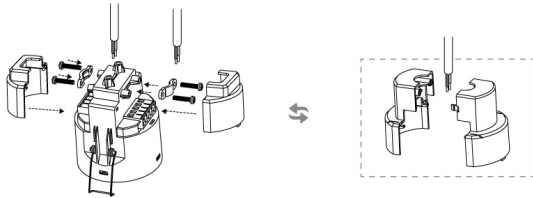
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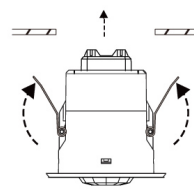
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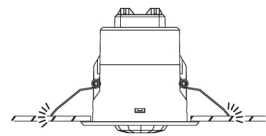
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6



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.

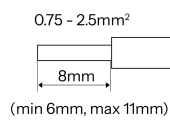
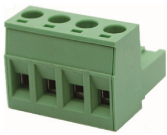
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⚠ Wiring Guidelines

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.
6. Do not connect mains voltage (L/N) to the DALI terminals.
7. For polarity-marked DALI terminals (DA+/DA-), observe correct DALI polarity.
8. For non-polarity-marked DALI terminals (DA/DA), DALI wiring is polarity-free.

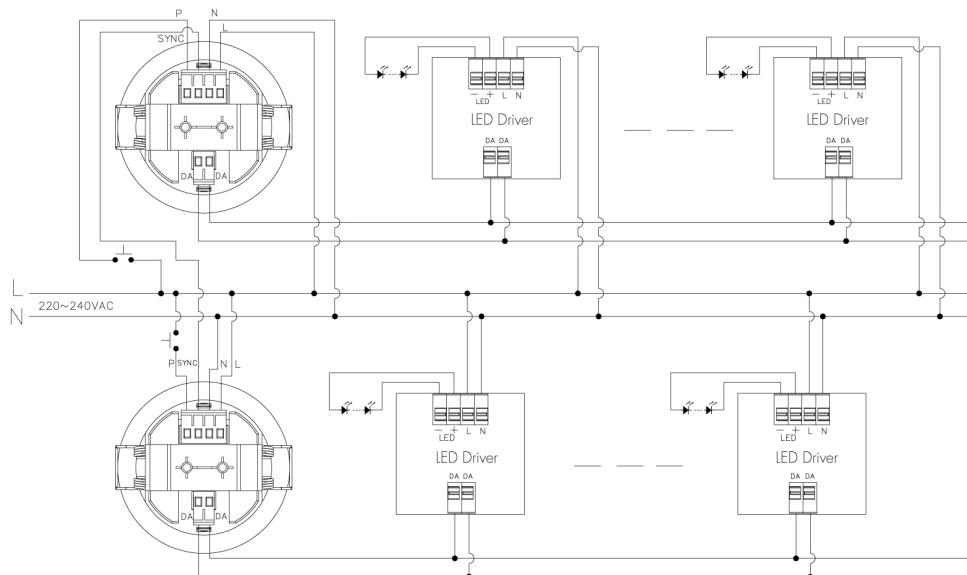
Wire Preparation



Pluggable screw terminal. It is recommended to make connections to the terminal before fitting to the sensor 1. 200 metres (total) max. for 1mm² CSA (Ta = 50°C) 2. 300 metres (total) max. for 1.5mm² CSA (Ta = 50°C)

Wiring Diagram

SYNC Connection

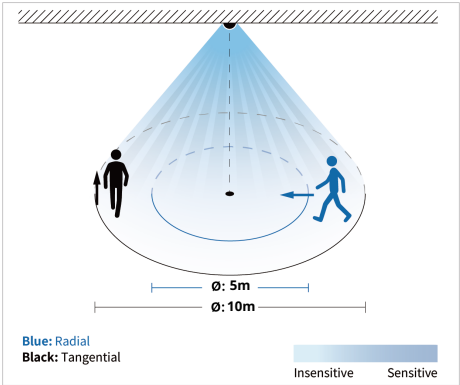


Detection Range

Single Person Walk (Ceiling mount)

- The data is tested under following conditions:
- Single person walking
 - Sensor not connected to any driver that may have soft-on period
 - Testing temperature Ta = 20°C
 - The testing is conducted in an open and spacious indoor field, without noticeable obstacles or influences that may affect PIR performances.

Detection example 2.5m mounting height:



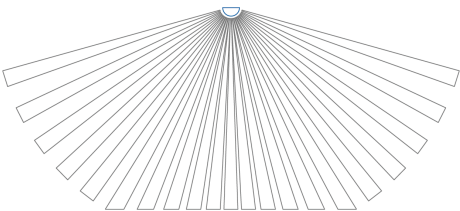
Tangential movement

H[m]	2.5	3	4	5	6
Ø[m]	10	10	9	8	8

Radial movement

H[m]	2.5	3	4	5	6
Ø[m]	5	5	5	5	5

Detection schematic diagram



Commissioning Instructions and Precautions

A. Functional Overview

1. The device retains its last operational state after a power interruption, ensuring that all settings remain unchanged when power is restored.
2. The device stores the last command applied, regardless of the input method, with the most recent setting overriding any previous ones and being saved in the MCU memory. For example, if the hold-time is set to 5s via dip-switch, then changed to 10s with the remote controller, the 10s setting will be stored in memory.

B. Sensor Synchronization

The SYNC terminal allows multiple sensors to share motion/presence detection signals, so connected luminaires trigger together when movement is detected. Only motion/presence signals are shared via SYNC. Lux data, push button commands, and dimming/control signals are not synchronized.

For optimal system stability, a maximum of 20 devices per SYNC group is recommended. Total SYNC cable length should not exceed 60m. Daisy-chain wiring is recommended, while star wiring should be avoided. For large installations, grouping by area or floor is recommended instead of connecting all devices within one SYNC group. Standard 0.75–1.5mm² copper cable is generally sufficient under normal installation conditions. Twisted pair or shielded cable is recommended in electrically noisy environments.

C. DALI Bus Current Notes

Typical DALI bus current consumption per driver is approximately 2 mA. Before installation, calculate the total bus current consumption of all devices connected to the same DALI bus. Ensure that the total current consumption does not exceed the guaranteed supply current of the DALI bus power supply, and allow sufficient system margin.

D. DALI-2 Compliance

This product has been tested in accordance with IEC 62386 and complies with the relevant DALI-2 application parts. DALI-2 testing was performed using the official DALI test sequence software (version 2.3.3.0), covering the applicable IEC 62386 parts (e.g. Part 101, Part 103). DALI-2 certification verifies compliance within the defined test scope.

However, certification does not eliminate the possibility of system-level compatibility issues arising from differences in device implementation or system design among manufacturers. Therefore, functional verification and on-site testing are required as part of the final system commissioning to ensure proper operation and compliance with project requirements.

E. Hold Time Configuration Notes

HIR27 series products are available with two Hold Time behaviors after Manual OFF mode is activated:

- Accumulated Hold Time: Motion detected during Hold Time will restart the countdown. Example: 30s Hold Time + motion after 20s = 50s total time period.
- Fixed Hold Time: Motion detected during Hold Time will not restart the countdown. Example: 30s Hold Time + motion after 20s = 10s remaining.

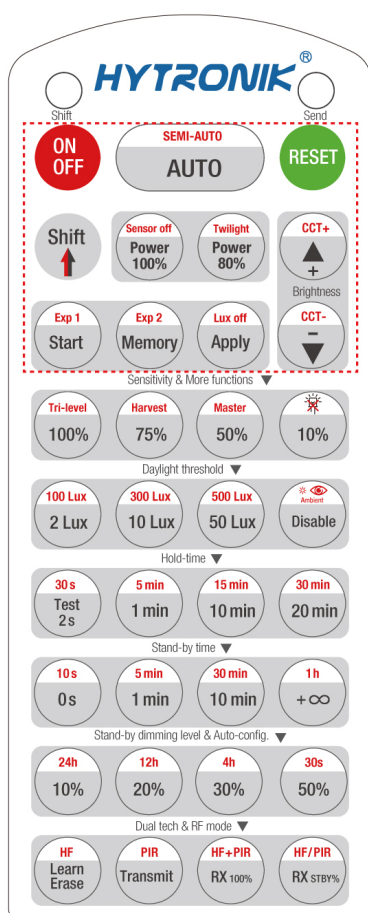
Unless otherwise specified, products may be supplied with either configuration. If a specific configuration is required, please confirm with your sales representative before ordering.

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

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

Commissioning via Remote Control - Page 1

Settings (Remote Control HRC-11)



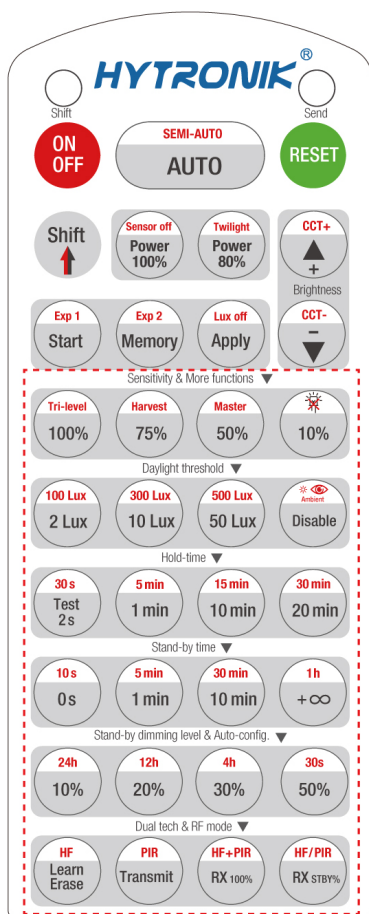
ON/OFF	Press "ON/OFF" to set the luminaire to permanent ON or OFF mode. Press "AUTO" or "RESET" to exit this mode and resume normal sensor mode. * Note: After mains power is disconnected and restored, the sensor will automatically return to AUTO mode.
RESET	Press "RESET" in any state to resume the sensor 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	Press "Shift" first. After red indicator is on, press "Twilight". In this mode, motion detection is disabled and only daylight control remains active. The device works as a daylight sensor only. Press "AUTO", "SEMI-AUTO" or "RESET" to exit this mode.
Power 100% Power 80%	Press "Power 100%" or "Power 80%" to set the maximum brightness accordingly. The selected brightness will be memorized by the sensor. In OFF mode, pressing this button will turn on the luminaire and set the maximum brightness at the same time.
▲ ▼	Press this button to adjust brightness. The transition from maximum to minimum brightness or vice versa takes 6-10sec. The dimming range is 100%-10% and limited by the Power 80% / 100% setting. For devices with daylight harvest function, this button is used to adjust the target Lux level.
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 stand-by time is set to ∞, the luminaire will turn on automatically after ambient light meets the preset Lux condition for 10sec, and meanwhile enter the stand-by dimming level (Lux on). 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.
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

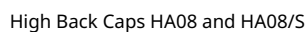
Settings (Remote Control HRC-11)



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 30 s 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 10 s 1 min 5 min 10 min 30 min +∞ 1h	Press the buttons in "Stand-by time" area to set stand-by time as required. The setting will override the DIP switch settings and be stored in the sensor memory. Note: +∞ indicates bi-level control. In this mode, the luminaire turns on at 100% brightness if motion is detected, and switches to stand-by dimming level after the stand-by time. Meanwhile, the "Lux off" function is disabled. The luminaire will turn on and enter the stand-by dimming level only when ambient Lux is below the preset threshold.
Stand-by dimming level & Auto-config.	
10% 20% 30% 50%	Press the buttons in "Stand-by dimming level" area to set stand-by dimming level as required. The setting will override the DIP switch settings and be stored in the sensor memory.
24h 12h 30s 4h	Press Shift first, then select the required self-testing time. During the testing period, the luminaire stays at 100% brightness and will not switch off, and the sensor continuously measures ambient light to set the lowest value as the target lux level. After completion, the sensor will enter "AUTO" mode with all other parameters unchanged. Note: the self-testing period must include nighttime. This function is only available for daylight harvesting products.
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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Included 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



DALI-2 Certified

The product is DALI-2 certified, ensuring compatibility with DALI-2 control devices and compliance with relevant international lighting control standards. Certified product details can be verified via the DALI Alliance product database.



DALI BUS Power Supply

The product is powered directly from the DALI bus, eliminating the need for an additional mains power supply. This simplifies installation and reduces wiring while ensuring stable operation and reliable communication with DALI control devices and luminaires, as it supplies standardized DALI voltage and current, supporting smooth commissioning and long-term system stability.



Daylight Harvest

Right time, right place and the right amount of light! Daylight harvest (Also known as daylight regulating or daylight interaction) is a must in the future lighting norms. It automatically measures available natural light and adjusts artificial lighting output to maintain the target illuminance level. Using daylight sensor feedback, control signals are transmitted to the LED drivers via DALI or 0-10V interfaces, ensuring the required light output is delivered only when needed, improving visual comfort and reducing energy consumption.



Manual Override

With the help of a push switch, the sensor can be manually overridden by the end user to switch the light on/off or adjust the target lux level, providing greater flexibility and improved user experience.

Short press (<1s): On/Off control

On Off: The light turns off immediately and cannot be re-triggered by motion until the preset hold-time expires, after which the sensor returns to normal operation.

Off On: The light turns on and enters sensor mode, regardless of the ambient light level.

Long press (>1s): Target lux adjustment

The target lux level can be adjusted by dimming the light up or down.

Adjustments via push switch and remote control can overwrite each other, with the last setting stored in memory.

Note: If manual override is not required, the "PUSH" terminal can be left unconnected.



One-key Commissioning

This feature allows commissioning to be completed with a single key operation on the remote controller. A predefined configuration sequence is executed automatically, enabling quick setup and reducing the time and effort required for on-site adjustments. One-key commissioning simplifies complex procedures and supports efficient, reliable deployment of lighting control systems.

Functions and Features



Semi-Automatic Mode (Absence Detection)

In semi-automatic mode, the sensor operates as an absence detector, where the lighting must be switched on manually via a wall push switch and remains on while occupancy is detected.

Once the area is vacated, the sensor automatically switches off the lighting after the preset hold-time, improving energy efficiency and ensuring controlled operation.

Manual ON: The light will not turn on automatically and must be switched on manually via the wall switch. The sensor remains inactive while the light is off.

Auto OFF: After the light is switched on, the sensor becomes active and monitors occupancy. When no presence is detected, the light will automatically switch off after the defined delay time.

Note: The wall switch can be configured either for Manual Override or Semi-automatic Mode (Absence Detection), but not both simultaneously. The default setting is Manual Override.



Sensor Synchronization

SYNC enables coordinated lighting control across multiple Hytronik sensors covering large or irregular areas, such as long corridors, open-plan offices, warehouses and retail spaces. By wiring the SYNC terminals in parallel, the units operate as a linked group in which one sensor acts as the primary trigger and the others follow: when any sensor detects motion, all luminaires across the group respond simultaneously, ensuring uniform lighting behaviour throughout the space.

Brightness and push-switch control remain independent per sensor, allowing zone-level daylight adjustment and local manual override. A robust, wired solution that needs no gateways, app or licensed software.

For more details please refer to: <https://hytronik.com/solutions/lighting-control/features/synchronization-control>

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

