

HIR15

PIR Highbay | DALI-2 Broadcast Output | Zhaga Book 18 Standard

HYTRONIK[®]
SENSORS & LIGHTING CONTROL



Benefits

Standardized: Zhaga Book 18 interface with IP65 for reliable integration

Power Supply: Integrated 30mA DALI-2 bus supply

Simple: Sensor settings are done via the IR remote control

Applications

For highbay luminaire up to 15m height

Warehouse/ Logistic

Outdoor/Street lights

Check Out the Complete System Solution on the Website:

<https://www.hytronik.com/product/HIR15>



RoHS



Product Description

HIR15 is a DALI-2 highbay PIR motion sensor with integrated 30 mA DALI bus power supply, designed to simplify system design by powering connected DALI devices without an external PSU. Supporting dimming, tunable white, and daylight-based control, it features dual-photocell technology to distinguish natural and artificial light for more stable daylight regulation. With an IP65 rating and up to 15 m installation height, it is well suited for industrial and outdoor applications. Optional shielding accessories allow flexible adjustment of the detection area to suit different installation requirements. All parameters can be configured via remote control, enabling fast and efficient commissioning.

Functions and Features

See additional details at the end of datasheet



Built-in DALI PSU



D4i Driver
Compatibility



DALI-2 Certified

IP65

IP65 Protection



One-key
Commissioning



Photocell
Advance



Zhaga Book 18
Standard

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Specifications

Main Capabilities

Dimming (Output) Interface	DALI/DALI-2
Connector Type	Zhaga book 18

Sensor Data

Detection angle	360°
Lux range	<1000 lux
Max. Detection range (Diameter)	24.0 m
Maximum Mounting Height	15.0 m
Detection area	452 m ²
Sensitivity	10% / 50% / 75% / 100%
Detection Methods	Passive Infrared (PIR)

Electrical Data

Operating voltage range	24VDC
Stand-by power (Psb)	<0.5W
DALI bus maximum rated current (I _n max)	50 mA
DALI bus nominal DC voltage range (Un)	16 V
DALI bus nominal current (I guaranteed)	30 mA

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Specifications

Technical	
Product weight	41.0 g
Product height	47.8 mm
Product length	50.4 mm
Product width	50.4 mm
Ambient temperature	-20 ~ +50 °C
Storage temperature	-25 ~ +70 °C
Humidity max	10 ~ 90%
IP Rate	IP65

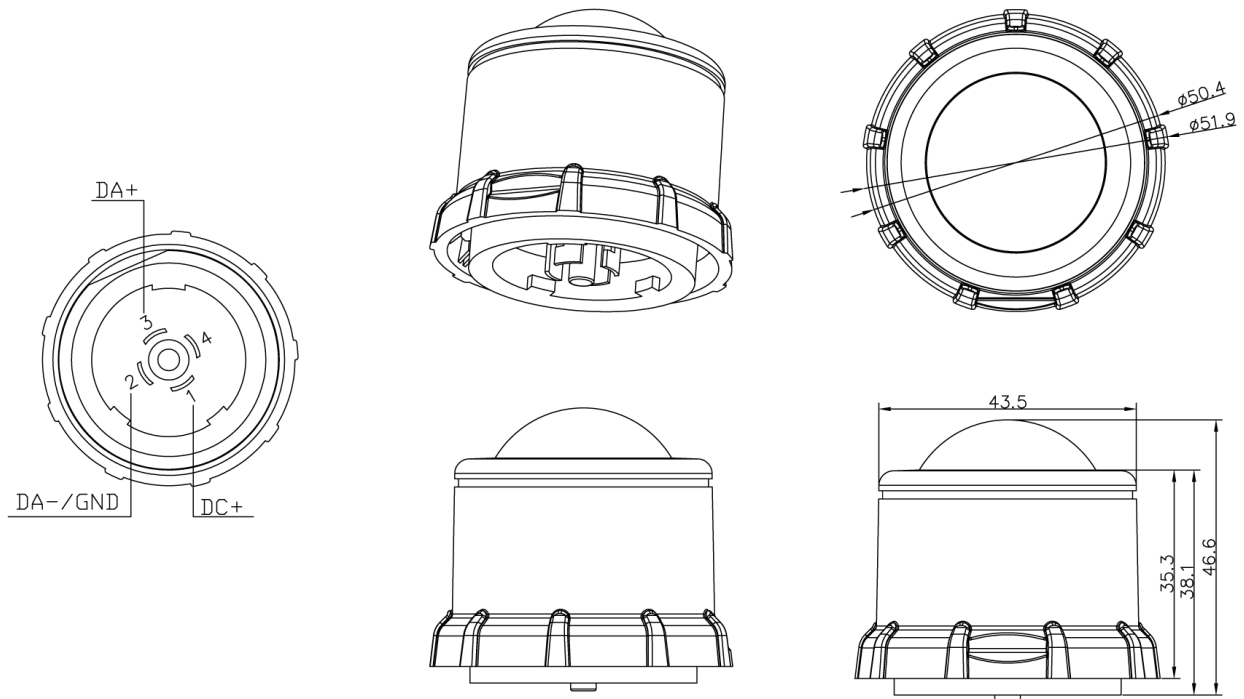
Standard	
EMC	EN 55015, EN 61547
LVD	EN 61347-1, EN 61347-2-11
DALI-2 Standard	IEC62386-101, 103, 351

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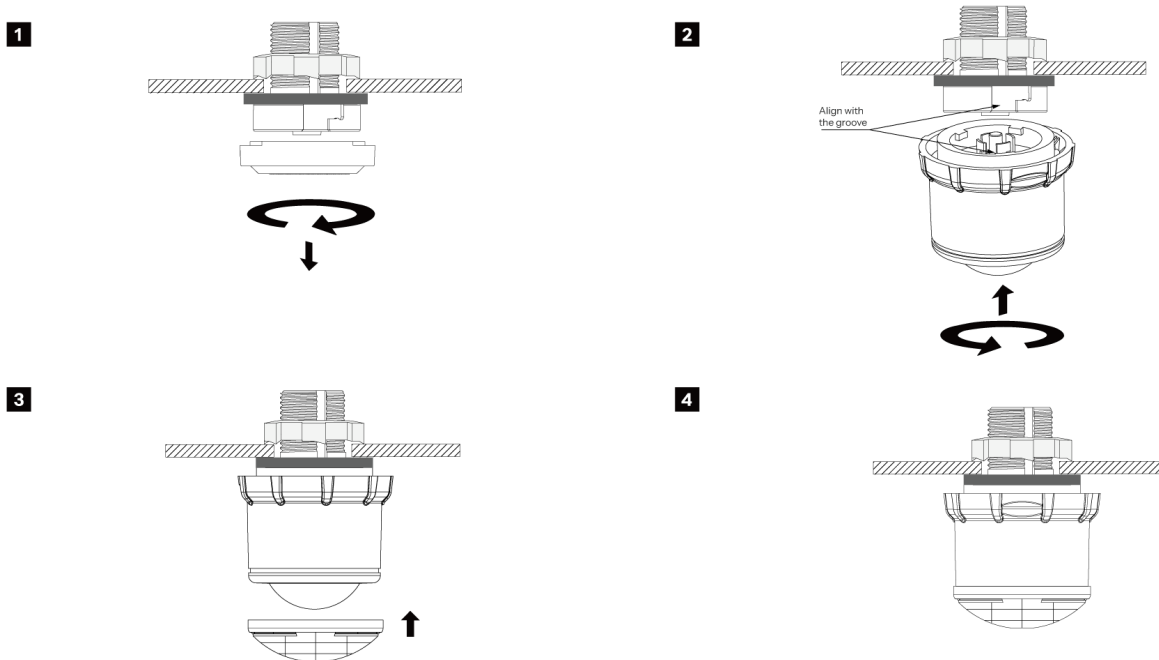
Technical Drawing



Application Example



Installation Process



Detailed Installation Instructions

1. Remove the receptacle cap

Unscrew and remove the protective cap from the receptacle before installation.

2. Install the sensor

Align the large groove on the receptacle with the corresponding large protrusion on the sensor. Push the sensor upward firmly until fully seated, then rotate counterclockwise until a clear click is heard. Ensure the sensor cannot be pulled out to confirm it is securely locked.

3. Install the HAS15 cover

Cut the cover to the required shape before installation. Refer to the last page for cutting examples.

Align the HAS15 cover with the HIR15 series sensor. Press down evenly until a clear sound is heard, indicating the cover is securely fitted.

*If you want to remove the cover, locate the release notch on the edge of the cover. Lift gently from the notch to detach the cover.

4. Installation complete

Note:

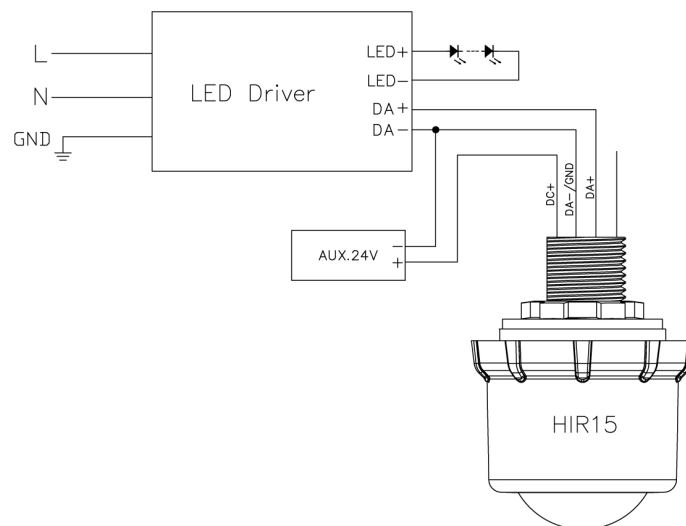
- Any luminaire that complies with the Zhaga Book 18 standard allows plug-and-play connection by simply mating the pins with the base.
- Socket not included, it must be supplied by the customer or purchased separately.

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. Do not connect mains voltage (L/N) to the DALI terminals.
5. For polarity-marked DALI terminals (DA+/DA-), observe correct DALI polarity.
6. For non-polarity-marked DALI terminals (DA/DA), DALI wiring is polarity-free.
7. Terminal block 4 is left unpopulated by default. No wiring required.
8. For reliable operation, ensure at least one DALI PSU is present on the bus. If multiple PSUs are connected in parallel, the total output must not exceed 250 mA. (For better compatibility, a single PSU is recommended.)

Wiring Diagram

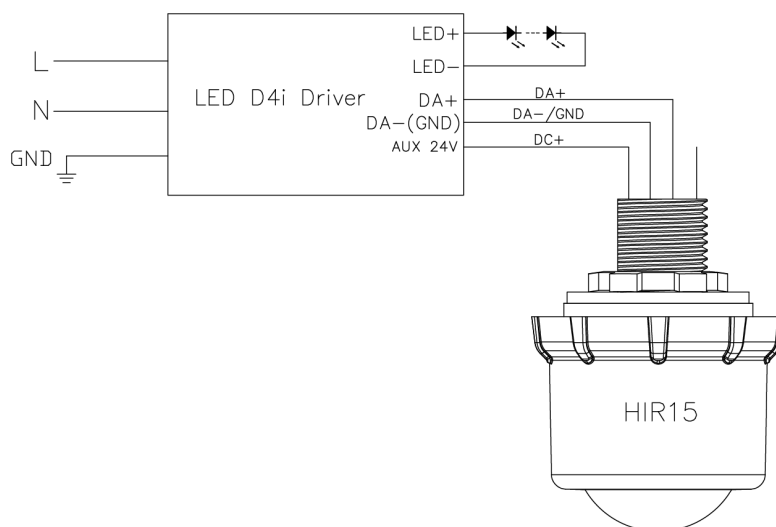
Standard Driver with External AUX Power



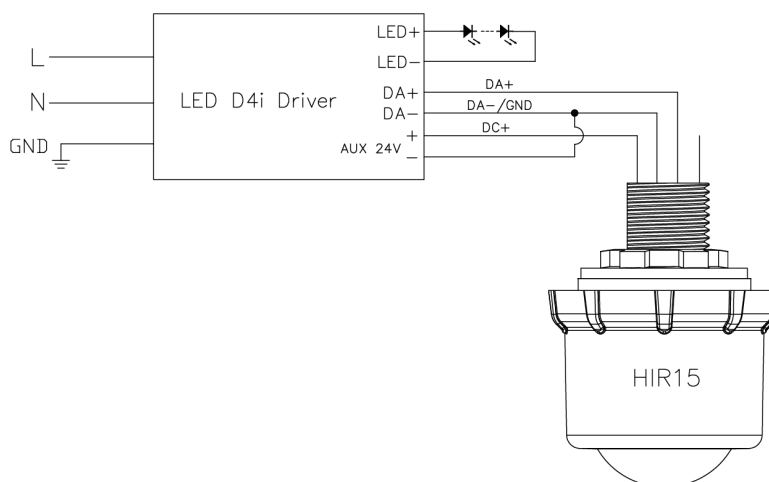
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D4i Driver with Common Negative



D4i Driver with Isolated Negative

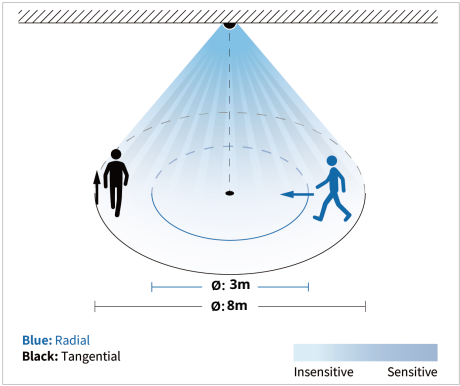


Detection Range

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.
- The sensor detection area shown in this table is based on an open space. In environments with hard surfaces such as metal racking or glass corridors, the detection range may be extended by up to 30% due to reections or signal penetration.

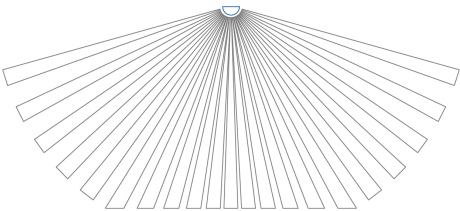
Detection example 3m mounting height:



Tangential Movement				
H[m]	3	5	8	12
Ø[m]	8	10	14	20

Radial Movement				
H[m]	3	5	8	12
Ø[m]	3	3	4	4

Detection schematic diagram

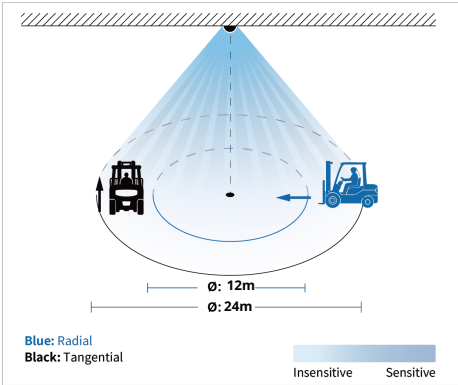


Detection Range

Forklift (Ceiling mount)

- The data is tested under following conditions:
- Forklift driving at a speed of 5km/h
 - 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 15m mounting height:



Tangential Movement						
H[m]	10	11	12	13	14	15
Ø[m]	22	24	24	24	24	24

Radial Movement						
H[m]	10	11	12	13	14	15
Ø[m]	16	16	16	15	13	12

Commissioning Instructions and Precautions

A. DALI Bus Current Notes

1. 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.

B. DALI-2 Compliance

1. 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 2.5.0.0), 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.

C. PIR Application Note

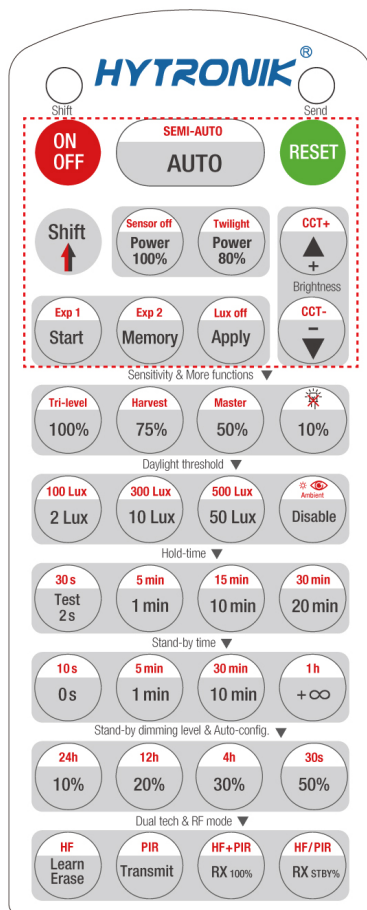
1. PIR sensors operate based on infrared detection and are sensitive to ambient temperature and surrounding heat sources. In outdoor or high-temperature environments (above 50°C), elevated ambient temperature and thermal interference may reduce detection sensitivity and accuracy. For applications exposed to strong sunlight or significant heat sources, it is recommended to evaluate the installation environment carefully and consider selecting a more suitable sensing technology, such as microwave sensors, to ensure stable and reliable operation.

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

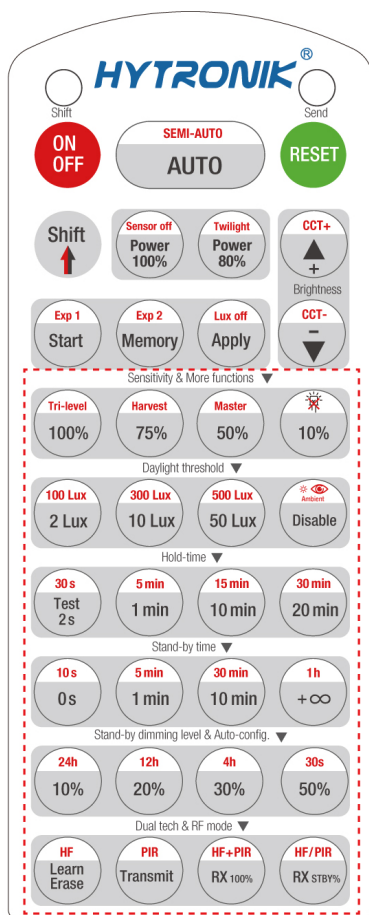
Settings (Remote Control HRC-11)



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: Detection range 100%; AUTO mode; Lux: Disable; Tri-level; T1=5min; T1_level = 100%; T2=10min; Stand-By dimming level=20%
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	This key is not applicable on this product.
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	Press "Shift" first. After red indicator is on, press "Sensor off". In this mode, motion detection and daylight control are disabled, and the device works as a dimmer only. The system will memorize the last brightness level, CCT (if applicable) and ON/OFF status, regardless of ambient light.
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-	Press "Shift" first. After red indicator is on, press "CCT+" or "CCT-" to adjust the colour temperature. The transition from lowest to highest CCT takes about 6sec.
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.

Commissioning via Remote Control - Page 2

Settings (Remote Control HRC-11)



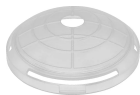
Sensitivity & More Functions	
100% 75% 50% 10%	In AUTO or SEMI-AUTO mode, press the buttons in "Sensitivity" area to set detection range as required. The setting overrides the DIP switch and is saved in memory.
Tri-level Harvest	Press "Shift" first. After red indicator is on: (a) press "Tri-level" to enter three-level sensing mode, or (b) press "Harvest" to enter daylight harvesting mode. The above two modes are interchangeable.
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: • Red-marked options require pressing "Shift" first. • 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. 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%	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



Shielding Accessory-HAS15

Compatible products (for full functionality)



HA18SKT

Receptacle | Zhaga Book 18 Standard | Black Color
www.hytronik.com/product/HA18SKT



HRC-11

Sensor remote controller | Diverse function | White color
www.hytronik.com/product/HRC-11

Functions and Features



Built-in DALI PSU

Built-in DALI PSU means the DALI bus power supply is integrated into the product, eliminating the need for an external DALI power unit.

This reduces wiring complexity, saves installation space, and simplifies commissioning, making the system more compact and efficient.



D4i Driver Compatibility

Designed to operate with D4i-certified drivers within D4i luminaires, supporting standard DT6 / DT8 control behaviour in D4i systems.



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.



IP65 Protection

This product features an IP65-rated enclosure, providing complete protection against dust ingress and low-pressure water jets to ensure reliable operation in demanding indoor and outdoor environments. The robust environmental sealing supports long-term stability and consistent performance in applications such as warehouses, parking areas and industrial facilities.



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.



Photocell Advance

This advanced daylight sensing function accurately measures ambient light levels while minimising interference from the luminaire itself, ensuring reliable dusk-to-dawn control and daylight priority over motion detection. It automatically switches lighting on and off and dynamically adjusts brightness in response to available natural light, delivering visual comfort and improved energy efficiency.



Zhaga Book 18 Standard

This product complies with the Zhaga Book 18 standard, providing a standardised mechanical, electrical and digital interface for indoor and outdoor luminaires, including high-bay and exterior applications. It enables plug-and-play interchangeability of sensor and connectivity modules, ensuring interoperability, future-ready upgrades and reliable operation in demanding installation environments.

Check out for further explanation of features

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

Additional Notes

Shielding accessory (HAS15) detail expiation

Achieve precise adjustment of the detection range, block interference sources (such as moving machines and elevators) to prevent triggering the sensor. the line pattern of the shielding accessory can be freely removed by cutting to achieve a different range of shielding induction, for example, rectangular detection and semi-sphere detection. The portable design also provides an easy installation, which only needs to buckle the shielding accessory onto the lens.

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

