

Installation and Instruction Manual

HYTRONIK®

IP65 DALI-2 PIR Zhaga Book 18 Standard Motion Sensor

D4i Input Device, High-Bay

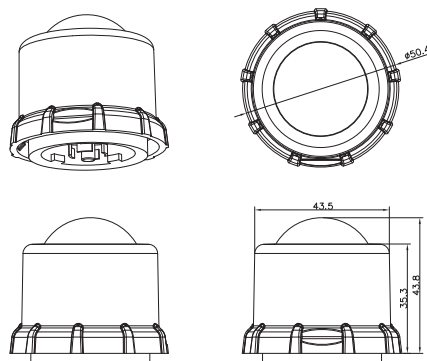
HIR15/D2

1. Technical Specifications

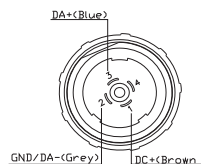
| | |
|-----------------------|--|
| Operating voltage | 12-36 VDC |
| Stand-by power | <0.5W |
| Quiescent current | 10mA |
| Output | DALI-2 |
| Sensor principle | PIR |
| Detection range* | Max installation height : 15m (forklift) 12m (person) Max diameter(Ø) : 24m (forklift) 20m (person) |
| Detection angle | 360° |
| Lux range | 0~1023 lux |
| Sensitivity | 10% / 50% / 75% / 100% |
| Operation temperature | Ta: -20°C ~ +50°C |
| Storage temperature | -25°C ~ +70°C |
| Relative humidity | 10 ~ 90% |
| IP rating | IP65 |
| Insulation | Class II |

2. Installation

Mechanical Structure & Dimensions



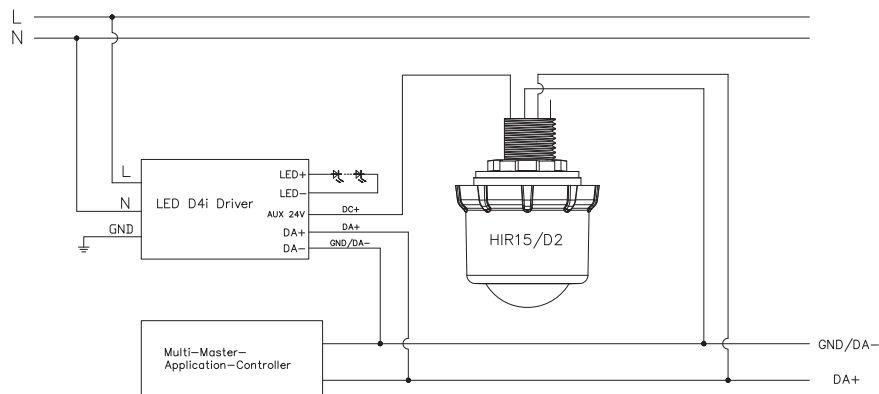
3. Wiring Diagram



- The total current on the DALI bus must not exceed 250mA.
- When using D4i drivers, if the total current exceeds this limit, a third-party DALI controller can shut down the DALI bus power supply via command.
- Multiple master devices should not be connected in parallel.
- Terminal block 4 is left unpopulated by default. No wiring required.

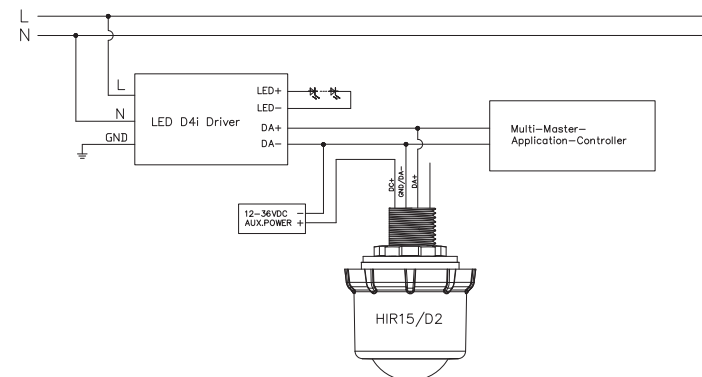
Wiring Diagram 1

D4i Driver with Built-in AUX



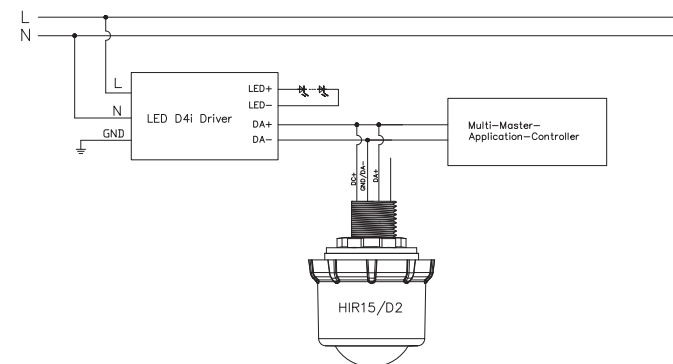
Wiring Diagram 2

D4i Driver with External AUX



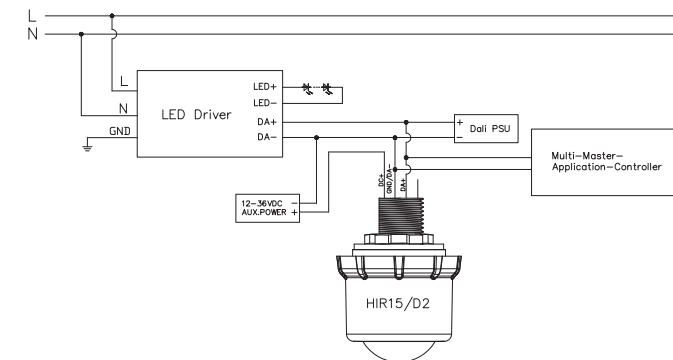
Wiring Diagram 3

Reference Only: D4i Driver Powering Bus & Device Separately



Wiring Diagram 4

Standard Driver with External AUX & PSU



-----This product should be installed by a qualified electrician.

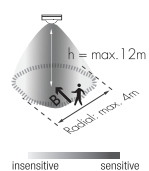
4. Detection Range

*The sensor detection area shown in this table is relevant for an empty space.

In areas with hard surfaces such as metal racking and/or glass corridors then the detection range can be extended from these internal reflections by up to 30%.

The data below is tested under following conditions:

- Single person walking;
- Sensor not connected to any driver that may have soft-on period;
- The testing is conducted in an open and spacious indoor field, without noticeable obstacles or influences that may affect PIR performances.

| A: Tangential movement | B: Radial movement | Mount height | Tangential Movement (A) | Radial Movement (B) |
|--|---|--------------|---------------------------------|-------------------------------|
|  |  | 3m | max 50m ² (Ø = 8m) | max 7m ² (Ø = 3m) |
| | | 5m | max 79m ² (Ø = 10m) | max 7m ² (Ø = 3m) |
| | | 8m | max 154m ² (Ø = 14m) | max 13m ² (Ø = 4m) |
| | | 12m | max 314m ² (Ø = 20m) | max 13m ² (Ø = 4m) |

The data above is tested under following conditions:

- Forklift driving at a speed of 15km/h;
- Sensor not connected to any driver that may have soft on period;
- Testing temperature Ta = 20°C;

| A: Tangential movement | B: Radial movement | Mount height | Tangential (A) | Radial (B) |
|--|---|--------------|---------------------------------|---------------------------------|
|  |  | 10m | max 380m ² (Ø = 22m) | max 201m ² (Ø = 16m) |
| | | 11m | max 452m ² (Ø = 24m) | max 201m ² (Ø = 16m) |
| | | 12m | max 452m ² (Ø = 24m) | max 201m ² (Ø = 16m) |
| | | 13m | max 452m ² (Ø = 24m) | max 177m ² (Ø = 15m) |
| | | 14m | max 452m ² (Ø = 24m) | max 133m ² (Ø = 13m) |
| | | 15m | max 452m ² (Ø = 24m) | max 113m ² (Ø = 12m) |

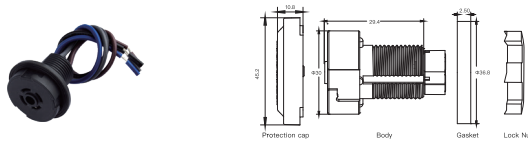
5. Optional Accessories

Zhaga Book 18 standard interface (HA18SKT)

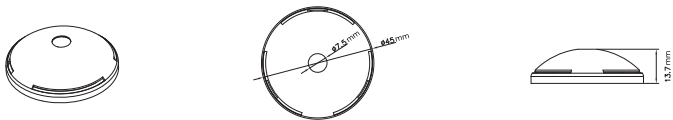
The HA18SKT receptacle is designed to be compatible with the SAM15 and HIR15 series products. It provides a Zhaga Book 18 standard interface, suitable for roadway lighting, area lighting, and occupancy lighting applications.

Note: HA18SKT not included in the package.

For more details, please refer to <https://hytronik.com/product/ha18skt>



Shielding Accessory (HAS15 included in the package.)



Installation Instruction



Step 1: Installation

Align the HAS15 cover with the HIR15 series sensor and press down evenly with two fingers. Once an audible sound is heard, the cover is securely installed.

Step 2: Removal

To detach the HAS15 cover, locate the release notch on the edge. Gently lift the cover upward from the notch to remove it.

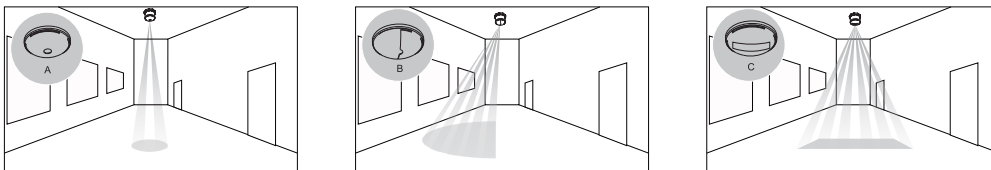
HYTRONIK®

WWW.HYTRONIK.COM

Subject to change without notice.

HIR15/D2-20250811-A0

Picture Application Example



6. Sensitivity Adjustment

The motion sensor only sends motion events. No further signals or commands will be sent. Sensor sensitivity ranges from 0 to 100%.

*Values of "detectionRange" and "detectionSensitivity" shall have the following meaning:

- [0;100]: 0-100%, 0 is the lowest detection range or detection sensitivity, 100 is the highest.
- 255: Adjustment not supported.

*Set sensitivity: 0x26

*Query sensitivity: 0x2B

| Command name | Address byte | Instance byte | Opcode byte | DTR0 | DTR1 | DTR2 | Answer | Send twice | See subclause | Command subclause |
|-----------------------------|--------------|---------------|-------------|------|------|------|--------|------------|---------------|-------------------|
| CATCH MOVEMENT | Device | Instance | 0x20 | | | | | | 9.4.6 | 11.7.2 |
| SET HOLD TIMER (DTR0) | Device | Instance | 0x21 | ✓ | | | | ✓ | 9.5.1 | 11.8.3 |
| SET REPORT TIMER (DTR0) | Device | Instance | 0x22 | ✓ | | | | ✓ | 9.5.2 | 11.8.4 |
| SET DEADTIME TIMER (DTR0) | Device | Instance | 0x23 | ✓ | | | | ✓ | 9.5.3 | 11.8.5 |
| CANCEL HOLD TIMER | Device | Instance | 0x24 | | | | | | 9.5.1 | 11.7.3 |
| SET DETECTION RANGE (DTR0) | Device | Instance | 0x25 | ✓ | | | | ✓ | 9.5.7 | 11.8.6 |
| SET SENSITIVITY (DTR0) | Device | Instance | 0x26 | ✓ | | | | ✓ | 9.5.7 | 11.8.7 |
| QUERY INSTANCE CAPABILITIES | Device | Instance | 0x29 | | | | ✓ | | 9.5.6 | 11.9.7 |
| QUERY DETECTION RANGE | Device | Instance | 0x2A | | | | ✓ | | 9.5.7 | 11.9.8 |
| QUERY SENSITIVITY | Device | Instance | 0x2B | | | | ✓ | | 9.5.7 | 11.9.9 |
| QUERY DEADTIME TIMER | Device | Instance | 0x2C | | | | ✓ | | 9.5.3 | 11.9.3 |
| QUERY HOLD TIMER | Device | Instance | 0x2D | | | | ✓ | | 9.5.1 | 11.9.4 |
| QUERY REPORT TIMER | Device | Instance | 0x2E | | | | ✓ | | 9.5.2 | 11.9.5 |
| QUERY CATCHING | Device | Instance | 0x2F | | | | ✓ | | 9.5.6 | 11.9.6 |

*The valid value range is 0-100, 0-24 is the lowest sensitivity of the first gear, 25-49 is the second gear, 50-74 is the third gear, and 75-100 is the highest sensitivity of the fourth gear.

7. Additional Information / Documents

1. To learn more about detailed product features/functions, please kindly refer to <https://hytronik.com/product/hir15-d2>
2. Regarding precautions for Bluetooth product installation and operation, please kindly refer to <https://hytronik.com/service/downloads> (Bluetooth Products Precautions for Product Installation and Operation)
3. Regarding precautions for PIR Sensors installation and operation, please kindly refer to <https://hytronik.com/service/downloads> (PIR Sensors Precautions for Product Installation and Operation)
4. Data sheet is subject to change without notice, Please always refer to the most recent release on <https://hytronik.com/products/motion-daylight-sensors>
5. Regarding Hytronik standard guarantee policy, please kindly refer to <https://hytronik.com/service/downloads> (Guarantee Conditions document)

WWW.HYTRONIK.COM

Subject to change without notice.

HYTRONIK®

HIR15/D2-20250811-A0