IP65 DALI-2 PIR Zhaga book 18 Standard Motion Sensor

HIR15/D2 (High-Bay)
DALI-2 output

HYTRONIK ®

DALI 2   Di   CE   ⚖   UKCA

Product Description

HIR15/D2 is an PIR motion sensor and compatible with the Zhaga book 18 standard. It is certified as DALI-2 input device with daylight sensor instance, to achieve dimming control and colour tuning. HIR15/D2 is also designed with a robust IP65 structure and suitable for high-bay applications as the capacity can be up to 12m installation height, which is ideal for the typical outdoor lamp (such as a streetlight).

TYPE B

Hardware Features

- **Di** Input device (Type B) compliant to standard IEC62386_101, 103, 303, 304, 351
- **IP** IP65 design
- Zhaga Book 18 standard
- High-bay (up to 12m height)
- 5-year warranty

Technical Specifications

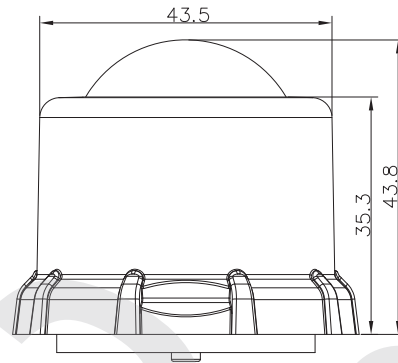| Input & Output Characteristics	
Operating voltage	12-36 VDC
Stand-by power	<0.5W
Quiescent current	10mA
Lux range	0~1023 lux
Output	DALI-2

Environment	
Operation temperature	Ta: -20°C ~ +50°C
Storage temperature	-40°C ~ +70°C
Relative humidity	10 ~ 90%
IP rating	IP65
Insulation	Class II

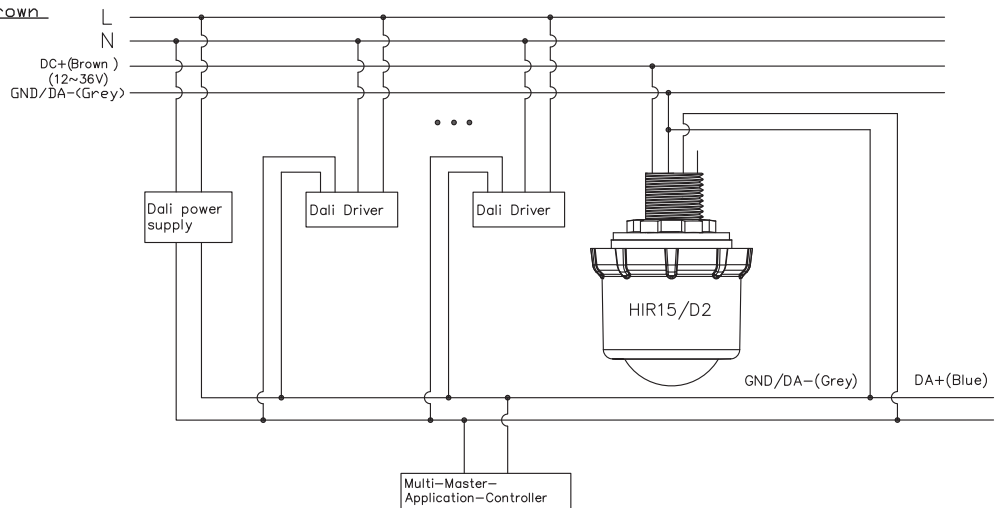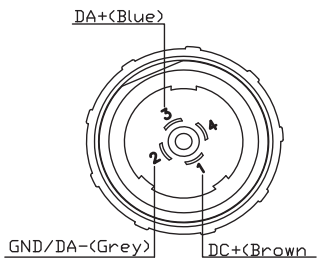| Sensor Data	
Sensor principle	PIR
Detection range*	Max installation height: 12m Max diameter: 20m
Detection angle	360°

* The detection range is heavily influenced by sensor placement (angle) and different walking paces. It may be reduced under certain conditions.

Safety & EMC	
EMC standard (EMC)	EN55015, EN61547
Safety standard (LVD)	EN61347-1, EN61347-2-11
Certification	CE , UKCA
Compliance	RoHS Reach
DALI-2	IEC62386-101,103,303,304 351

Mechanical Structure & Dimensions

ø50.4

43.5

35.3

43.8

Wiring Diagram

DA+(Blue)

GND/DA-(Grey)

DC+(Brown)

L
N
DC+(Brown)
(12~36V)
GND/DA-(Grey)

Dali power
supply

Dali Driver

Dali Driver

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HIR15/D2
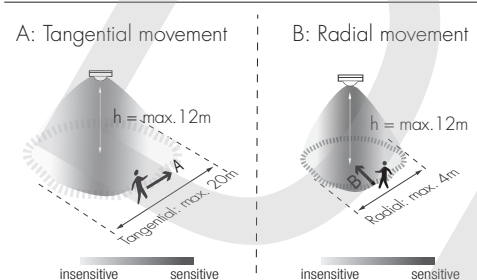
GND/DA-(Grey)

DA+(Blue)
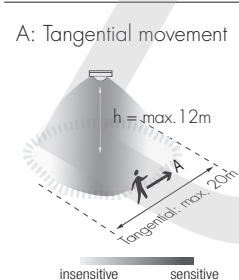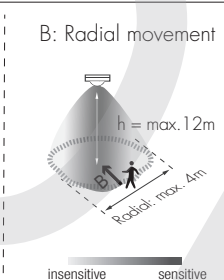
Multi-Master-
Application-Controller
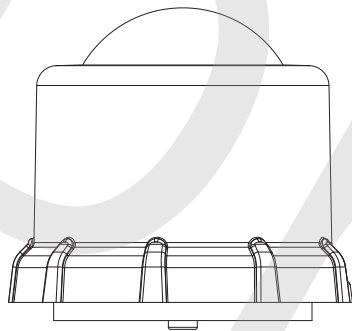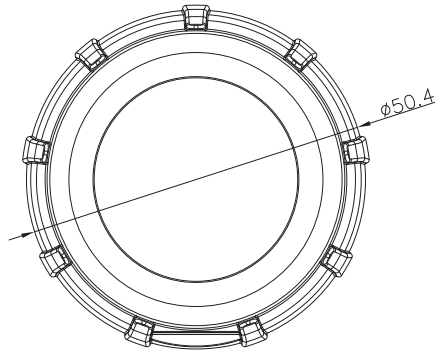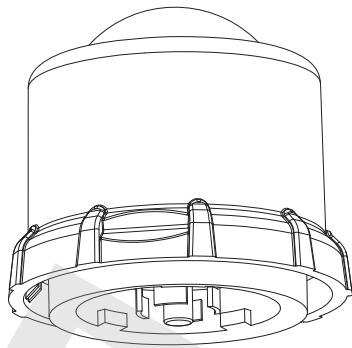
Detection Range

The data below is tested under following conditions:
- Single person walking;
- Sensor not connected to any driver that may have soft-on period;
- Testing temperature Ta = 30°C;
- The testing is conducted in an open and spacious indoor field, without noticeable obstacles or influences that may affect PIR performances.

		Mount height	Tangential Movement (A)	Radial Movement (B)
A: Tangential movement	B: Radial movement	3m	max 50m² (Ø = 8m)	max 13m² (Ø = 4m)
h = max.12m	h = max.12m	5m	max 79m² (Ø = 10m)	max 13m² (Ø = 4m)
Tangential: max. 20m	Radial: max. 4m	8m	max 154m² (Ø = 14m)	max 13m² (Ø = 4m)
insensitive — sensitive	insensitive — sensitive	12m	max 314m² (Ø = 20m)	max 13m² (Ø = 4m)

Sensitivity Adjustment

Setting the sensitivity can be achieved through the following command combination:

1. **"ENABLE WRITE MEMORY"**: Enable BANK write function.
2. **"DTR1:DRT0=0x1:0x2, WRITE MEMORY LOCATION =0x55"**: Set the Lock byte of BANK1 to 0x55. Here a total of 2 instructions are used. 0x1(binary) = 1(decimal), 0x2(binary) = 2(decimal), 0x55 (binary) = 85(decimal).
3. **"DTR1:DRT0=0x1:0x11, WRITE MEMORY LOCATION = sensing gear value"**: set the sensitivity of BANK1 to "sensing gear value". 0x11(binary) = 17(decimal). Sensing gear value can be selected from 0x1 to 0x4, 0x1 is the weakest, 0x4 is the strongest.

*Before writing to the bank, two locks need to be unlocked to write normally.
- The first lock is the big lock for all banks. Unlock it with the command **"ENABLE WRITE MEMORY"**.
- The second lock is that each bank has its own Lock byte. When the written value is 0x55, the small lock is unlocked.

*BANK is a memory space freely defined by the manufacturer. Writing a value after unlocking has two steps:
- Specify the write address, and pass in the address through DTR0 and DTR1.
- Pass in the written value with the write command **"WRITE MEMORY LOCATION"**. This command will return the written value after the write is successful. Write fails without return value.

The following is an example of an instruction to set the sensitivity to 100%.

Type	Addr	Command	Data	Delay	Answer
DALI24	BCast	ENABLE WRITE MEMORY		100...	
DALI24	BCast	ENABLE WRITE MEMORY		100...	
DALI24		DTR1:DTR0	1:2	100...	
DALI24		WRITE MEMORY LOCATION	85	100...	85
DALI24		DTR1:DTR0	1:17	100...	
DALI24		WRITE MEMORY LOCATION	4	100...	4

Additional Information / Documents

1. Regarding precautions for PIR sensor installation and operation, please kindly refer to
   www.hytronik.com/download ->knowledge ->PIR Sensors - Precautions for Product Installation and Operation

2. Regarding Hytronik standard guarantee policy, please refer to
   www.hytronik.com/download->knowledge ->Hytronik Standard Guarantee Policy