Installation and Instruction Manual

HYTRONIK ®

FLUSH MOUNT PIR DALI SENSOR
HIR23

1. Technical Specifications

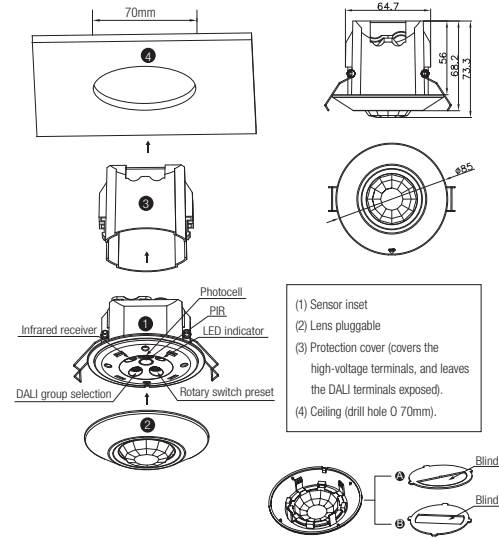|	
Product type	Tri-level control PIR DALI sensor
Operating voltage	9.5 ~ 22.5VDC (suitable DALI power supply)
Input current	< 8mA
Power consumption	< 0.5W
Detection angle	360°
Detection area (Max.)*	Installation Height : 5m
	Detection Range (Ø) :10m
Detection range	10% / 50% / 75% / 100%
Hold time	2s / 30s / 1min / 5min / 10min / 15min / 20min / 30min
Stand-by time	0s / 10s / 1min / 5min / 10min / 30min / 1h / +∞
Stand-by dimming level	10% / 20% / 30% / 50%
Daylight threshold	2Lux / 10Lux / 50Lux / Disable
Warmming-up time	30s
Operating temperature	-20°C ~ +50°C

2. Installation

⚠ **Warnings:**
1. Installation of the sensor involves connecting it to the mains supply. This work must be carried out by a specialist in accordance with electrotechnical regulations.
2. Disconnect supply before installing.

70mm

64.7

68.2
56
73.3

Ø85

Photocell
PIR
Infrared receiver
LED indicator
DALI group selection
Rotary switch preset

(1) Sensor inset
(2) Lens pluggable
(3) Protection cover (covers the high-voltage terminals, and leaves the DALI terminals exposed).
(4) Ceiling (drill hole Ø 70mm).

Ⓐ Blind
Ⓑ Blind

Note1: the blinds are optional, they may be inserted behind the lens for focussing the detection range.

Note2:We recommend the mounting distance between sensor to sensor should be more than 2m to prevent sensors from false-triggering.

3. Rotary Switch Settings

A rotary switch is built inside the sensor for scene selection / fast programming. Total 16 channels available:
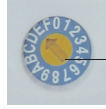
Rotary switch preset (Please see the location in 2. Installation)

Channel	Detection range	Hold time	Stand-by time	Stand-by dimming level	Daylight threshold
0	100%	5s	10s	10%	Disable
1	100%	1min	5min	10%	2Lux
2	100%	5min	10min	10%	10Lux
3	100%	5min	30min	10%	30Lux
4	100%	5min	0s	Disable	10Lux
5	100%	5min	+∞	10%	30Lux
6	100%	5min	+∞	30%	Disable
7	100%	10min	10min	10%	2Lux
8	100%	10min	30min	10%	10Lux
9	100%	10min	+∞	10%	30Lux
A	100%	10min	+∞	30%	Disable
B	75%	10min	+∞	10%	30Lux
C	50%	10min	+∞	10%	10Lux
D	100%	30min	+∞	10%	50Lux
E	100%	30min	+∞	30%	Disable
F	100%	5s	10s	10%	2Lux

Note: settings can also be changed by remote control HRC-11. The last action controls.

4. DALI group selection

DALI group configuration can be done on PC or on the rotary switch:

1. There are 16 channels available on the rotary switch. "0" is for DALI broadcast, the rest 15 channels is for end user to define the application unit.
2. PC grouping can overwrite rotary switch grouping, the last setting controls.
3. The rotary switch channel is corresponding to the groups listed below:

DALI group selection (Please see the location in 2. Installation)

Switch channel	DALI group	Switch channel	DALI group
0	broadcast	8	group 7
1	group 0	9	group 8
2	group 1	A	group 9
3	group 2	B	group 10
4	group 3	C	group 11
5	group 4	D	group 12
6	group 5	E	group 13
7	group 6	F	group 14

5. Functions

This DALI sensor is designed for incoporated in the DALI system, taking command from the DALI master, accepting and carrying out the grouping work with up to 64 lumanaires. It can switch on/off, or dim the assigned group members and feed back the status to the DALI master.
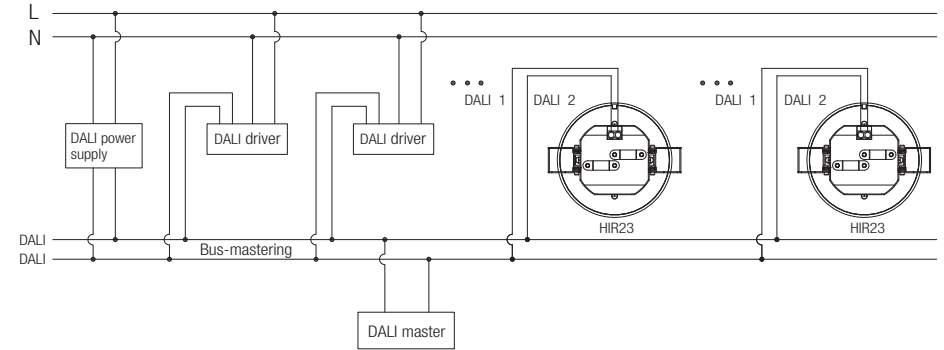
5.1 Tri-level Control (Corridor Function)

Hytronik builds this function inside the motion sensor to achieve tri-level control, for some areas require a light change notice before switch-off.
It offers 3 levels of light: 100%-->dimmed light-->off; and 2 periods of selectable waiting time: motion hold-time and stand-by period; Selectable daylight threshold and freedom of detection area.
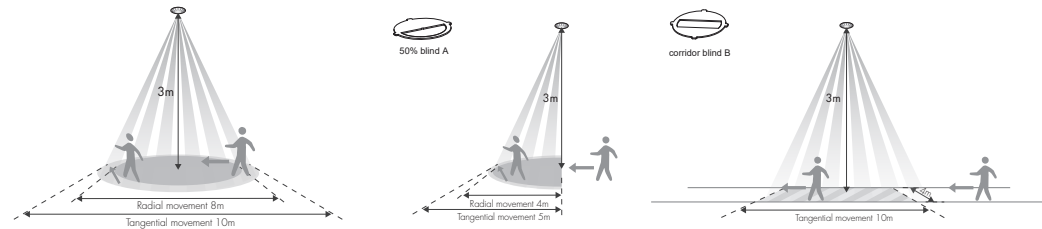
5.2 Synchronization Function

By connecting the DALI terminals in parallel (see wiring diagram), no matter which sensor detects motion, all HMW23 in the group will turn on the lights when surrounding natural light is below the daylight threshold. The sensor antenna is shared and the detection area could be widely enlarged in this way.
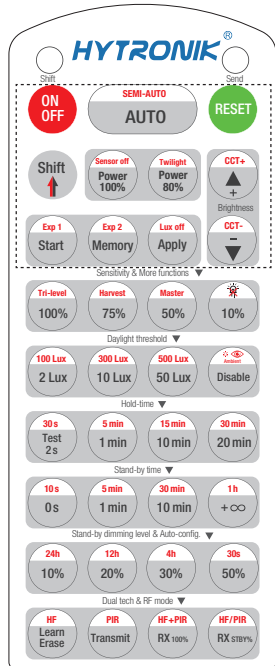
6. Wiring Diagram

L
N
DALI
DALI
DALI power supply
DALI driver
DALI driver
Bus-mastering
DALI master
DALI 1 | DALI 2
HIR23
DALI 1 | DALI 2
HIR23

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

7. Detection Pattern

50% blind A
corridor blind B
3m
3m
3m
Radial movement 8m
Tangential movement 10m
Radial movement 4m
Tangential movement 5m
Tangential movement 10m

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8. Description of the Button Functions (remote control HRC-11)

HRC-11

Button	Description
ON OFF	Press button "ON/OFF" to select permanent ON or permanent OFF mode. * Press button "AUTO"/ "RESET" to exit this mode.
RESET	Press button "RESET", perform DIP Switch/Rotary Switch settings. *The default settings are: Detection range 100%; Hold-time 5min; Stand-by time +∞; Stand-by dimming level 30%; Daylight threshold disable;
Shift	Press button "Shift", the LED on the top left corner is on to indicate mode selection. All values / settings in RED are valid for 20 seconds.
AUTO	Press button "AUTO" to initiate automatic mode. The sensor starts working and all settings remain as before the light is switched ON/OFF;
SEMI-AUTO	This key is not appliable on this product.
Power 100% 80%	This key is not appliable on this product.
Sensor off Twilight	This key is not appliable on this product.
▲ ▼	This key is not appliable on this product.
CCT+ CCT-	This key is not appliable on this product.
Start Memory Apply	1. Press button "Start" to program. 2. Select the buttons in "Detection range", "Daylight threshold", "Hold-time", "Stand-by time", "Stand-by dimming level" to set all parameters. 3. Press button "Memory" to save all the settings programmed in the remote control. 4. Press button "Apply" to set the settings to each sensor unit(s). *For example, to set detection range 100%, daylight threshold Disable, hold-time 5min, stand-by time +∞, stand-by dimming level 30%, the steps should be:* *Press button "Start", button "100%", "Disable", "Shift", "5min", "Shift", "+∞", "30%", "Memory". By pointing to the sensor unit(s) and pressing "Apply", all settings are passed on the sensor(s).*
Lux off	This key is not appliable on this product.
Exp 1 Exp 2	"Exp" refer to Expansion, these two buttons are reserved functions and pending future development.

HRC-11

Section	Description
Sensitivity & More functions	
100% 75% 50% 10%	In AUTO /SEMI-AUTO modes, press buttons in zone "Detection range" to set detection range at 100%/75%/50%/10%.
Tri-level Harvest	1.Press button "Shift", the red LED on. 2. Press buttons "Tri-level" or "Daylight harvest" to shift between Tri-level control mode and Daylight harvest mode.
Master	This key is not appliable on this product.
Daylight threshold	
2 Lux 100 Lux 10 Lux 300 Lux 50 Lux 500 Lux Disable	Press buttons in zone "Daylight threshold" to set daylight sensor at 2Lux/ 10Lux / 50Lux / 100Lux / 300Lux/500Lux / Disable. *Note: To set daylight sensor at 100Lux / 300Lux/500Lux , press "Shift" button first.*
☼ 👁 Ambient	1. Press button "Shift", the red LED on. 2. Press button "Ambient", the surrounding lux level is sampled and set as daylight threshold / target Lux level.
Hold-time mode	
Test 2s 30s 1 min 5 min 10 min 15 min 20 min 30 min	In AUTO /SEMI-AUTO modes, press buttons in zone "hold-time" to set the hold-time at 2s / 30s / 1min / 5min / 10min / 15min / 20min / 30min. *Note: 1. To set hold-time at 30s / 5min / 15min / 30min, press "Shift" button first.* *2. 2s is for testing purpose only, stand-by period and daylight sensor settings are disabled in this mode.* **To exit from Test mode, press button "RESET" or any button in "Hold-time".*
Stand-by time mode	
0s 10s 1 min 5 min 10 min 30 min +∞ 1h	Press buttons in zone "stand-by time" to set the stand-by period at 0s / 10s / 1min / 5min / 10min / 30min / 1h / +∞. *Note: 1. To set stand-by-time at 10s/ 5min / 30min / 1h, press "Shift" button first.* *2. "0s" means on/off control;* *3. "+∞" means bi-level control, the fixture is 100% on when there is motion detected, and remains at the stand-by dimming level when no presence after motion hold-time. Only when the stand-by time is set in "+∞" and the ambient lux level is below the target lux level, the lux will auto-on.*
Stand-by dimming level & Auto-config.	
10% 20% 30% 50%	Press the button in zone "stand-by dimming level" to set the stand-by dimming level at 10% / 20% / 30% / 50%.
24h 12h 4h 30s	This key is not appliable on this product.
Dual tech & RF mode	
Learn Erase	This key is not appliable on this product.
Transmit	This key is not appliable on this product.
HF PIR HF+PIR HF/PIR	This key is not appliable on this product.