FLUSH MOUNT MICROWAVE DALI SENSOR HMW23
Installation and Instruction Manual

1. Technical Specifications

Product type	Tri-level control microwave DALI sensor
Operating voltage	9.5 ~ 22.5VDC (suitable DALI power supply)
Input current	Approx.12mA
Power consumption	< 0.5W
Detection angle	360°
Detection area (Max.)*	Installation Height : 6m Detection Range (Ø) :12m
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	20s
Operating temperature	-20°C ~ +50°C

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.

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.
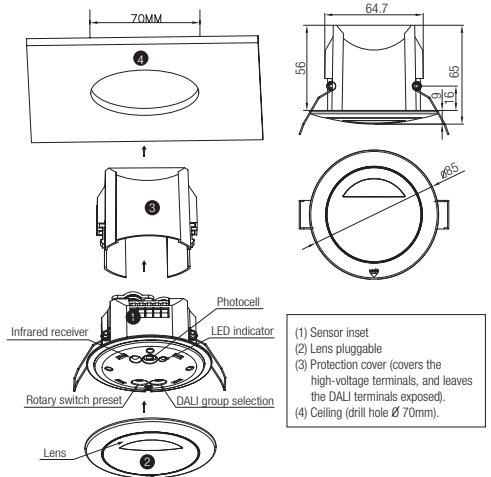
5.2 Synchronization Function

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.

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.

(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).

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

4. DALI group selection

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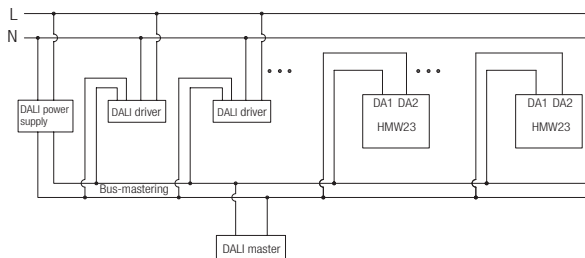

1. There are 16 channels available on the rotary switch. "0" is for DALI broadcast, the rest 15 channels is for end user to define the application unit.
2. PC grouping can overwrite rotary switch grouping, the last setting controls.
3. The rotary switch channel is corresponding to the groups listed below:

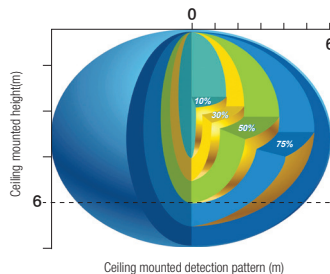DALI group selection (Please see the location in 2. Installation)

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

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6. Wiring Diagram
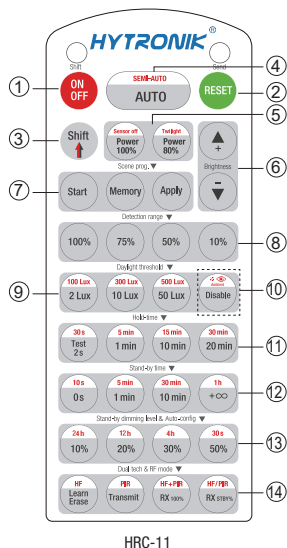

1. 200 metres (total) max. for 1mm² CSA (Ta = 50℃)
2. 300 metres (total) max. for 1.5mm² CSA (Ta = 50℃)

7. Detection Pattern

Ceiling mounted detection pattern (m)

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

HRC-11

Permanent ON/OFF [button ①]
Press button ①, to select permanent ON or permanent OFF mode.
* Press button ② / ④ to resume automatic operation.
The mode will change to AUTO Mode after power failure.

RESET[button ②]
Press button ②, all settings go back to the rotary switch settings.

Shift [button ③]
Press button ③, the LED on the top left corner is on for indication.
All values / settings in RED are in valid for 20 seconds.

Auto Mode [button ④]
Press button ④ to initiate automatic mode.The sensor starts working and all settings remain as before the light was switched ON/OFF.
Note: the function of Semi-auto is disabled.

Power output [button ⑤]
All buttons in zone ⑤ are disabled.

Brightness +/- [button ⑥]
All buttons in zone ⑥ are disabled.

Scene prog. [zone ⑦] (One-key-commissioning)
1. Press button "Start" to program.
2. Select the buttons in ⑧ "Detection range", ⑨ / ⑩ "Daylight threshold", ⑪ "Hold time", ⑫ "Stand-by time", ⑬ "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 pre-set detection range 100%, daylight threshold Disable, hold time 5min, stand-by time +∞, stand-by dimming level 30%, steps should be:
   Press button ⑦ Start, button ⑧100%, ⑩ Disable, ③ Shift, ⑪ 5min, ③ Shift, ⑫ +∞, ⑬ 30%, ⑦ Memory. By pointing to the sensor unit(s) and pressing ⑦ Apply, all settings are passed on the sensor(s).

Detection range [zone ⑧]
Press buttons in zone ⑧ to set detection range at 100% / 75% / 50% / 10%.

Daylight threshold [zone ⑨]
Press buttons in zone ⑨ to set the daylight sensor at 2Lux / 10Lux / 50Lux or Disable.

Ambient daylight threshold [button ⑩]
1. Press button ③Shift, the red LED is on for indication.
2. Press button ⑩, the ambient lux level is sampled and set as the new daylight threshold.

Hold time [zone ⑪]
Press buttons in zone ⑪ 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 button③ Shift at first.
   2. 2s is for test purpose only, stand-by period and daylight sensor settings are disabled in this mode.
*To exit from Test mode, press button② or any button in zone ⑪.

Stand-by time [zone ⑫]
Press buttons in zone ⑫ to set the stand-by period at 0s / 10s / 1min / 5min / 10min / 30min / 1h / +∞.
Note: "0s" means on/off control; "+∞" means bi-level control, 100% on when motion detected, and remains at the stand-by dimming level when no presence after hold-time.

Stand-by dimming level [zone ⑬]
Press buttons in zone ⑬ to set the stand-by dimming level at 10% / 20% / 30% / 50%.
Note: the function of 24h/12h/4h/30s are disabled.

Dual tech & RF mode [zone ⑭]
All buttons in zone ⑭ are disabled.

9. Trouble Shooting

MALFUNCTION CAUSE REMEDY	CAUSE	REMEDY
The fixture does not light up	Incorrect daylight threshold setting	Adjust daylight threshold setting
	Faulty fixture	Replace fixture
	No power supply	Check power to sensor
	Detection zone not targeted	Check detection area setting
The fixture is always on	Continued movement in the detection zone	Check detection area setting
The fixture is on when it should not	Sudden change in temperature due to weather (wind, rain, snow) or air expelled from fans, open windows	Adjust zone, change installation site

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