SENSORS &
LIGHTING CONTROL

HYTRONIK®

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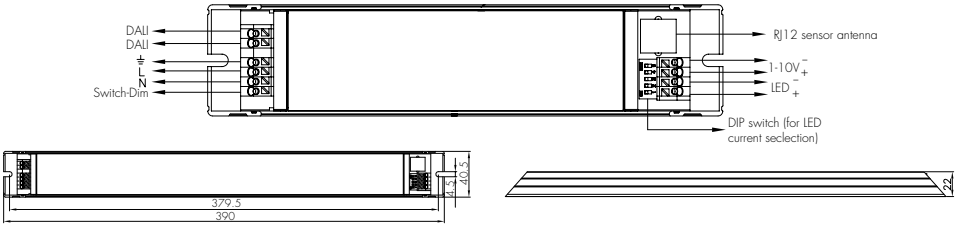
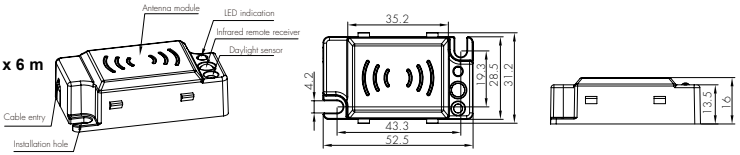
INSTRUCTION MANUAL FOR 50W HEX DRIVE
MODEL NO.: HED1050H + SAM7 / HIR02



HF sensor antenna

Model: SAM7

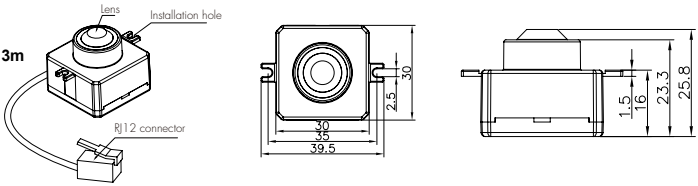
Detection range (DxH): 12 x 6 m



PIR Sensor Head

Model: HIR02

Detection range (DxH): 6 x 3m

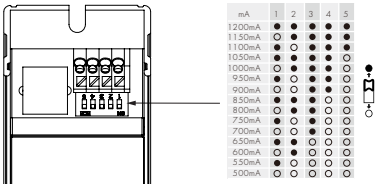


HIGHLIGHTS

- Standby power < 0.5W
- Automatic output reduction 80%--60%--40%--20% against overheat
- Failure DALI feedback
- Flicker-free dimming from 100%~30%
- In compliance with DALI 2 standard.
- DALI and switch-Dim can be used at the same time.

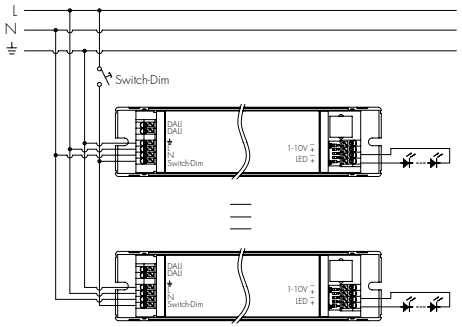
LED CURRENT SELECTION

The current can be easily configured by choosing the correct combination of the DIP switches (see table below):

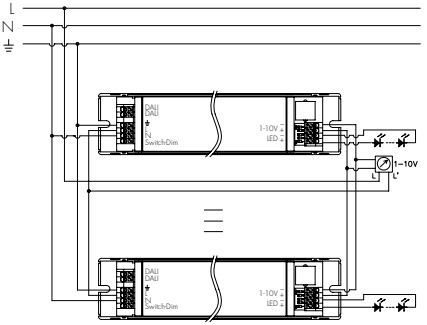


SECTION 1 INSTALLATION AND WIRING

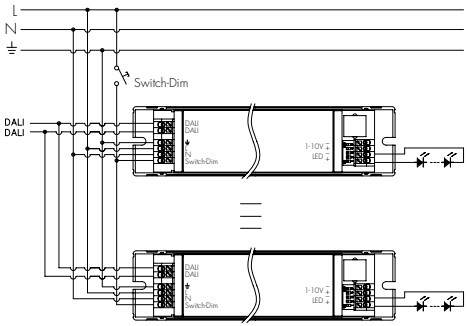
Switch-Dim Wiring Diagram



1-10V Wiring Diagram



DALI + Switch-Dim Wiring Diagram



⚠ Warning: Please make sure the correct current is selected before starting the driver!

Note:1. "DALI" is prior to both "Switch-Dim" and "1-10V".

2. "Switch-Dim" is prior to "1-10V". To shift dimming from "Switch-Dim" to "1-10V", the end-user should short-circuit "1-10V" first for at least 3S.

SECTION 2 FUNCTION

2.1 Functions for driver only (without sensor head)

Switch-dim

- On/off control: short push (<0.4s) on the switch.
  Note: Short push should be at least 0.12s, and the time interval between two pushes should be longer than 0.12s also.
- Stepless dimming: long push (>0.9s) on the switch.
- For fine tuning of light level: with every alternate long push, the light level goes to the opposite direction.
- Built-in permanent memory: light returns to the previous dimming level when switched off and on again, even after power failure.

Synchronization

Up to 64 drivers can be connected to the same switch, thanks to the programme. This means there is no need for any additional synchrony wire in large installation, where many drivers should be controlled by one switch.

Please follow the step below to achieve synchronization function if more than one driver is connected to the same push button:

- Do a long push for more than 15s, then the system is synchronized and all lights in the group dim down to 50%.

Permanent Memory
This driver has built-in permanent memory against power failure, which means the light always starts up at the previous level when it was switched off last time.

Manual Override
DALI and swtich-Dim. can be connected at the same time, to enable manual override function for end-users to switch on/off or adjust the dimming level by the push-switch. This feature makes the product more user-friendly, and could provide more options for some extra-ordinary demands.

- Short push (<0.4s): on/off control.
- Long push (>0.9s): dim up/down the dimming level.
- If customers do not want to have this manual override function, just leave the “switch” terminal alone, and not connected to any wire.
- This manual override is only valid before the next DALI command, meanning the latest action, either from DALI, switch-Dim, stays in control.

2.2 Functions for sensor only (with sensor head)

Daylight Monitoring Function

Hytronik specially designed this function in software for deep energy-saving purpose. A built-in daylight sensor is designed to provide “smart photocell” function. This function can only be activated when stand-by period is set to “+∞”. In this mode the lamp will automatically illuminate at the dim level setting when the natural light goes below the threshold setting. The fixture will also switch off as the natural light returns.

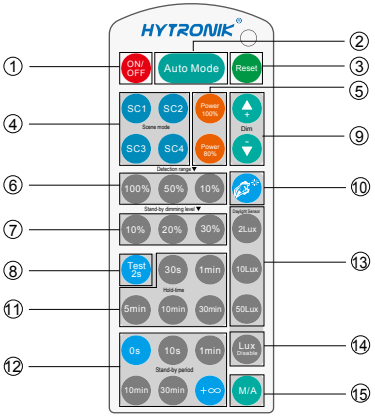
Manual Override

This sensor reserves the access of manual override function for end-user to switch on/off, or adjust the brightness by push-switch, which makes the product more user-friendly and offers more options to fit for some extra-ordinary demands:

* Short push (<1s): on/off function;
  On → off: the light turns off immediately and can not be lighten for a certain time (equals to hold-time preset) even movement is detected.
  After this period, the sensor goes to sensor mode.
  Off → on: the light turns on and goes to sensor mode, no matter if ambient Lux level exceeds the daylight threshold or not.
* Long push (>1s): dim up/down the hold-time brightness between 10% and 100%.

Note: if end-user do not want this manual override function, just leave the “push” terminal alone and don’t connect it to any wire.

SECTION 3 REMOTE CONTROL



HRC-05

Note: the buzzer beeps one time when RC receives signal successfully

Permanent ON/OFF [button①]
1. Press button①, to select permanent ON or permanent OFF mode.
2. Press button ② ③ ④ to resume automatic operation. (Please refer to explanation below)
3. The mode will change to AUTO Mode after power failure.

Auto Mode [button②]
Press button ② to in initiate automatic mode. The sensor starts working and all settings remain as before the light was switched ON/OFF.

RESET [button③]
Press button③, all settings go back to default settings:

Detection range	Hold time	Stand-by period	Stand-by dimming level	Daylight sensor
100%	5min	10min	10%	disable

Test 2s function [button⑧]
1.Press button⑧,the sensor goes into test mode (hold time2s). N.B. the stand-by period and daylight sensor settings are disabled in test mode.
2.Press button ③④⑪ to exit from this mode, and the sensor settings are changed accordingly.

Ambient daylight threshold [button ⑩]
Press button⑩, the latest surrounding lux value overwrites previous lux value learned, and is set as the daylight threshold. This feature enables the fixture to function well in any environment.

Power output [button ⑤]
Press button⑤, the output shifts between 80% and 100%, for energy saving purposes.

Dim +/- [button ⑨]
Press button⑨ to adjust the light brightness between 10%~100% during hold-time."+" increases the light level, "-" will decrease the light level.

Lux disable [button ⑭]
Press button⑭, the built-in daylight sensor is disabled, the light will always operate upon detection regardless of ambient light level.

Manual override/ Semi-auto [button ⑮]
Press button⑮,the sensor goes to manual override or semi-auto function.
Note: The buzzer beeps twice if it is in manual override mode, and beeps once if shifts to semi-auto mode.

Detection range [zone ⑥]
Press buttons in zone⑥ to set detection range at 100% / 50% / 10%.

Hold time [zone ⑪]
Press buttons in zone⑪ to set hold time at 30s / 1min / 5min / 10min / 30min.

Stand-by period [zone ⑫]
Press buttons in zone ⑫ to set the stand-by period at 0s / 10s / 1min / 10min / 30min / +∞.
Note: "0s" means on/off control; "+∞" means bi-leve of dimming control, the light will never switch off.
(i.e. the light remains at the stand-by dimming level until motion is detected.)

Stand-by dimming level [zone ⑦]
Press buttons in zone⑦ to set the stand-by dimming level at 10% / 20% / 30% .

Daylight sensor [zone ⑬]
Press buttons in zone⑬ to set daylight sensor at 2lux / 10lux / 50lux.

Scene mode options [zone ④]
There are 4 scene modes built into the remote control for different applications:

Scene options	Detection range	Hold time	Stand-by period	Stand-by dimming leve	Daylight sensor
SC1	100%	1min	10min	10%	2Lux
SC2	100%	5min	10min	10%	2Lux
SC3	100%	10min	30min	10%	10Lux
SC4	100%	10min	+∞	10%	50Lux

Note: the end-user can fine tune the settings by pressing buttons of detection range⑥ / hold time⑪/ stand-by period⑫ / stand-by dimming level⑦ /daylight sensor ⑬, the last setting will over-write that feature of the pre-set scene.

SECTION 4 SPECIFICATION

Mains voltage	220~240VAC 50/60Hz
Mains current	0.3 ~ 0.25A
Max. output power/current/voltage	40W / 500mA / 12 ~ 80V　44W / 550mA / 12 ~ 80V　49W / 600mA / 12 ~ 80V 49W / 650mA / 12 ~ 75V　49W / 700mA / 12 ~ 70V　50W / 750mA / 12 ~ 66V 50W / 800mA / 12 ~ 62V　50W / 850mA / 12 ~ 59V　49W / 900mA / 12 ~ 55V 49W / 950mA / 12 ~ 53V　50W / 1000mA / 12 ~ 50V　50W / 1050mA / 12 ~ 47V 50W / 1100mA / 12 ~ 45V　50W / 1150mA / 12 ~ 43V　50W / 1200mA / 12 ~ 42V
Output voltage (U-out max.)	110V
Power factor	≥0.95
Operation temperature	Ta: -20~+50℃　Tc:+80℃
Max. Efficiency	89%
Dimming interface	DALI, Switch-Dim., 1-10V
Dimming range	1~30% PWM dimming;　30~100% analogue dimming.
Stand-by power consumption	<0.5W
Abnormal protection	Output short-circuit protection with auto-reset
Over-heat protection	Over-heat protection with auto-reset
EMC standard	EN55015, EN61547, EN61000-3-2/3
Safety standard	EN61347-1, EN61347-2-13, EN60598-1
DALI standard	IEC62386-101,102,207
Dielectric strength	Input → output : 3750VAC
IP grade	IP20