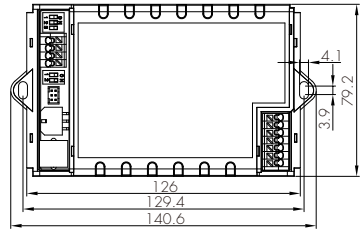
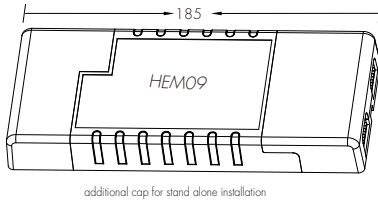
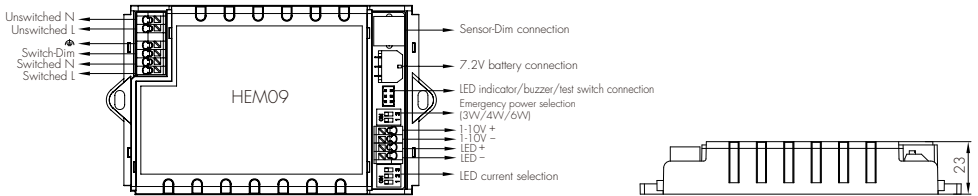


## INSTRUCTION MANUAL FOR EMERGENCY LIGHTING CONTROL GEAR COMBO VERSION MODEL NO. : HEM09

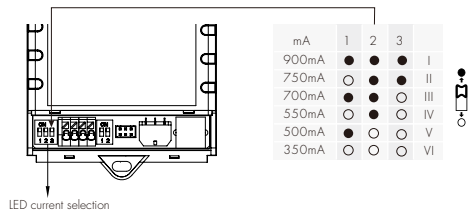


### LED Current Selection

The current can be easily configured by choosing the correct combination of the DIP switches (see table on the right).

Note:

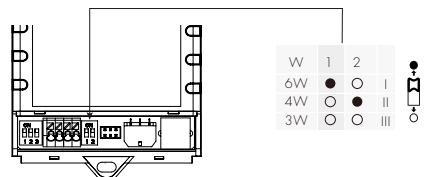
1. Must be connected to earth to achieve the correct function.
2. Please make sure the correct current is selected before starting the driver!



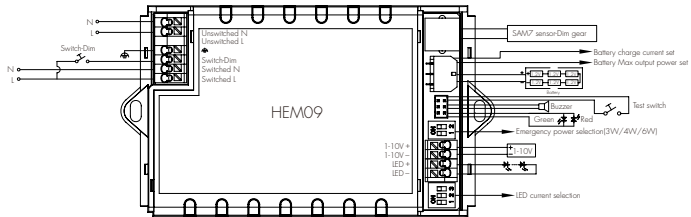
### Emergency Led Driver

#### Emergency Power Selection

The emergency power can be easily configured by choosing the correct combination of the DIP switches (see table on the right).



## Wiring Diagram



- Note: 1. Charge new battery 24h before use.  
 2. High temp. battery pack. 55 degrees for NiCd, and 44 degrees for NiMH.  
 3. In compliance with IEC61951-1 (Nid type), IEC61951-2 ( NiMH type).

## Self-testing Feature

Carrying out routine test on emergency lighting and holding records of the test result are required by law. (IEC62034, EN50172). Hytronik advanced LED emergency control model HEM09 has an internal clock, programmed at pre-determined intervals to perform the requested routine testing: 3min. functional test every month, and 3h functional test every 6 months.

- Self-test starts after the luminaires are connected to an un-interrupted mains supply for between 24 hours.
- Permanently monitors battery and charge condition
- Dual fault indication: faults are clearly identified on the luminaire by red LED and buzzer.
- Automatic random test to avoid adjacent luminaires being tested together, leaving the occupied space unprotected.

Status	Buzzer beep & LED flash mode
Battery voltage too low	Red LED slowly flashes once in 3 seconds; buzzer beeps 10 seconds every hour.
Battery open-circuit	Red LED flashes twice in 3 seconds; buzzer beeps 10 seconds every hour.
Battery short-circuit	Red LED flashes 3 times in 3 seconds; buzzer beeps 10 seconds every hour.
Battery reverse connection	Red LED flashes 3 times in 3 seconds; buzzer beeps 10 seconds every hour.
LED load open-circuit	Red LED flashes 4 times in 3 seconds; buzzer beeps 10 seconds every hour.
LED load short-circuit	Red LED rapidly flashes 5 times in 3 seconds; buzzer beeps 10 seconds every hour.
Battery voltage too high	Red LED rapidly flashes 6 times in 3 seconds; buzzer beeps 10 seconds every hour.
Healthy condition	Green LED is constantly on
Battery charge	Green LED slowly flashes once every second
Emergency mode	/
Monthly test	Green LED slowly flashes once in 3 seconds
6 months test	Green LED flashes twice in 3 seconds
12 months test	Green LED quickly flashes 3 times in 3 seconds

## Switch-Dim

The provided Switch-Dim interface allows a simple dimming method using commercially available non-latching (momentary) wall switches. Up to 50 LED drivers may be connected to one switch.

Switch Action	Response
Short press (<1 second)	Toggle light on / off
Long press (>1 second)	Toggle dim light / increase brightness
Synchronization	
Switch Action	Response
Long press (>15 seconds)	All lights will dim down to minimum then return to 50% brightness

## 1-10V

The 1-10V input is operable via commercially available simple rotary wall switches designed for 1-10V dimming equipment or from dedicated system central dimming controllers.

Note: In the unlikely event that the LED driver be used with the Switch-Dim or interface prior to using the 1-10V interface, the 1-10V interface may need to be re-set. This is achieved by placing a short circuit across the 1-10V terminals until the light returns to full brightness (approx. 3-5 seconds).

## Manual Testing

HEM09 is provided with a test switch which performs the following functions:

Monthly Test / Fault reset

\* Short push (<5s): Green LED flashes once, then goes to monthly 3 minute test mode. Providing the battery has sufficient charge, any fault indicators that have been rectified will be cleared.

6-month test initiation

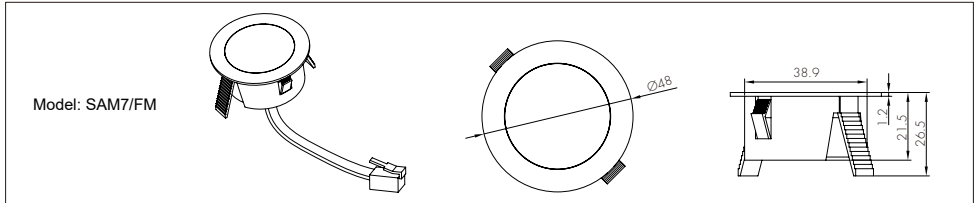
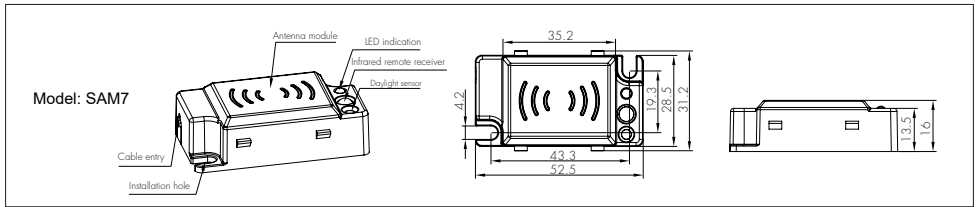
\* Long push (>5s <10s): The buzzer beeps twice and the battery will start charging for 24h. After the re-charge period a 6-month duration test will be performed. The green LED will flash 2 times every 3 seconds during this discharge period.

Full duration test initiation

\* Long push (>10s): The buzzer beeps three times and a full duration discharge is initiated. The green LED will flash 3 times every 3 seconds during this discharge period.

## Specification

Model No.	HEM09
Mains voltage	220~240VAC 50/60Hz
Mains current	0.2~0.15A
Mains power(Max.)	37W
Output LED current	18W/350mA/10~52V 26W/500mA/10~52V
	28W/550mA/10~52V 30W/700mA/10~43V
	30W/750mA/10~40V 23W/900mA/10~25V
U-out (Max.)	62V
Operation temperature	Ta: 0~+50 C Tc: 80 C
Power factor	0.95
Battery charge current	100-140mA / 160-200mA
Charge period	24 hours
Battery Type / Discharge current / Max. load for 180min	NiMH 7.2V , 4AH / 1.0A / 6W@10-52V
	NiMH 7.2V , 3AH / 0.7A / 4W@10-52V
	NiMH 7.2V , 1.8AH or 2.5AH / 0.5A / 3W@10-52V
Battery duration	3 hours
Mains Switch-over voltage range	150VAC~180VAC
Over-heat protection	Over-heat protection with auto-reset.
EMC standard	EN55015 , EN61547 , EN61000
Safety standard	EN50172, EN61347-2-7, EN61347-2-13, IEC62034,BS5266
Certification	Semko, CB, CE , EMC , SAA , LVD
Dielectric strength	Input→output: 3000VAC
IP grade	IP20



This sensor antenna is optional. The driver and emergency control function remain unaffected if the sensor antenna is not used.

## Microwave Motion Sensor

### 1. 24h Daylight Monitoring Function

Hytronik specially designed this function in software for deep energy-saving purpose:

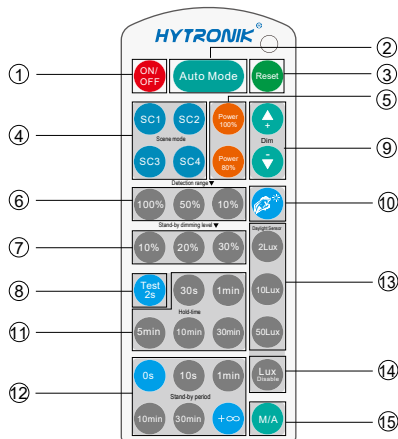
- 1.1 With sufficient natural light, the light won't turn on when motion detected.
- 1.2 After hold-time, the light turns off completely if surrounding natural light is sufficient.
- 1.3 When stand-by period is preset at "+∞", the light will turn off completely when surrounding natural light is sufficient during stand-by period, and turn on at dimming level automatically when natural light is below daylight threshold.

### 2. 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.

### Settings (Remote Control HRC-05)



### HRC-05

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

**Permanent ON/OFF [button ①]**

1. Press button ①, to select permanent ON or permanent OFF mode.
2. Press button ② ③ ④ to resume automatic operation. Sensor is disabled.
3. The mode will change to AUTO Mode after power failure.

**Auto Mode [button ②]**

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

**RESET [button ③]**

Press button ③, all settings go back to the value of DIP switch settings.

**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 level	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 range ⑥ / hold time ⑩ / stand-by period ⑫ / stand-by dimming level ⑭ / daylight sensor ⑬, the last setting will over-write that feature of the pre-set scene.

**Power output [button ⑤]**

Press button ⑤, the output shifts between 80% and 100%, for energy saving purpose.

**Detection range [zone ⑥]**

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

**Stand-by dimming level [zone ⑦]**

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

**Test 2s function [button ⑧]**

1. Press button ⑧, the sensor goes into test mode (hold time 2s). N.B. the stand-by period and daylight sensor settings are disabled in test mode.
2. Press button ③ ④ ① to exit from this mode, and the sensor settings are changed accordingly.

**Dim +/- [button ⑨]**

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

**Ambient daylight threshold [button ⑩]**

Press button ⑩, 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.

**Hold time [zone ⑪]**

Press buttons in zone ⑪ 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-level of dimming control, the light will never switches off. (i.e. the light remains at the stand-by dimming level until motion is detected.)

**Daylight sensor [zone ⑬]**

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

**Lux disable [button ⑭]**

Press button ⑭, 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 button ⑮, 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.