Emergency Lighting Control Gear
Combo Economy Version (2 in 1)

HYTRONIK ®

HEM09/E / HEM09H/E

SELV IP20 emc

Applications

Suitable for LED panels - insulated terminal cover with cord restraint:

- Office / Commercial Lighting
- Classrooms
- Utility / Back of house (Bulkhead)

Use for retrofit upgrades & new luminaire designs.

Features

- Combined LED Driver & Emergency
- Sensor-DIM
- Active PFC Design
- Multiple Constant current selection
- Over-heat Protection
- Short Circuit Protection
- Over-load Protection

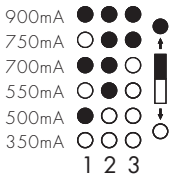
} All with Auto-restart

- 5 Year, 50,000hr Warranty (driver only)

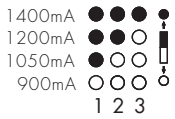
- External sensor input for simple on/off sensor
- Provides SensorDIM automatic dimming (corridor function) 'always on' or with timed off.
- Simple dip-switch set-up, no programming tools required
- 3W constant power, 3-hour emergency output
- Manual test with instantaneous fault diagnostics
- Flexible case design - can be optimised for building-in or used with supplied protective covers for external mounting.

Output Configuration

HEM09/E



HEM09H/E



DIP Switch Settings

Dimming time

1	2	
●	●	+∞
●	○	30min
○	●	10min
○	○	10S

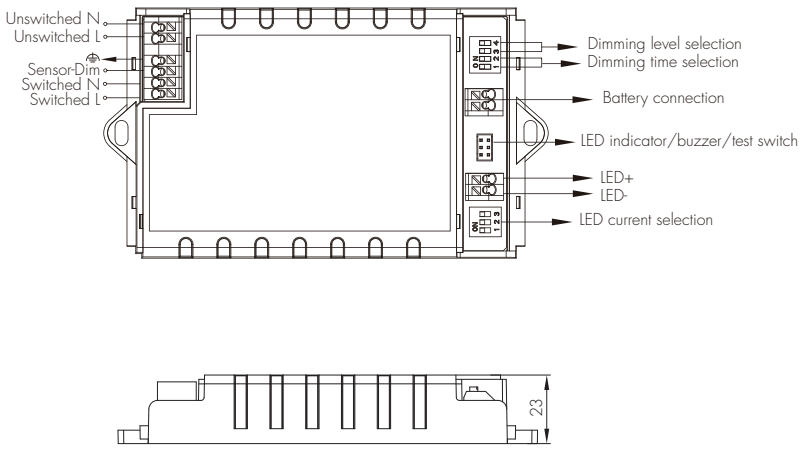
Dimming level

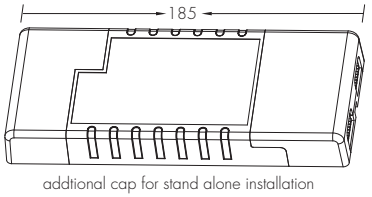
3	4	
●	●	100%
●	○	50%
○	●	30%
○	○	10%

Model No.	HEM09/E	HEM09H/E
Mains voltage	220~240VAC 50/60Hz	220~240VAC 50/60Hz
Mains current	0.2~0.15A	0.2A - 0.15A
Mains power	37W	40W
Output LED current	19W/350mA/10~54V 27W/500mA/10~54V 30W/550mA/10~54V 30W/700mA/10~43V 30W/750mA/10~40V 23W/900mA/10~25V	30W/900mA/10~33V 30W/1050mA/10~29V 25W/1200mA/10~21V 20W/1400mA/10~14V
Output voltage(U-out Max.)	54V	33V
Power factor	0.95	0.95
Operation temperature	0~+50℃	0~+50℃
Battery charge current	100 - 140mA	100 - 140mA
Battery pack	BPC01,BPC02, BPC10, BPC11	
Battery Type / Discharge current / Max. load for 180min	NiCd or NiMH 3.6V, 3AH / 1.0A / 3W@10-54V (HEM09/E); 3W@10-33V (HEM09H/E)	
Battery duration	3 hours	
Charge period	24 hours	
Max. case temp.	80℃	
Over-heat protection	Over-heat protection with auto-reset.	
EMC standard	EN55015, EN61547, EN61000-3-2, EN61000-3-3	
Safety standard	EN61347-1,EN61347-2-7	
Certifications	Semko, CB, RCM, CE , EMC	
Dielectric strength	Input→output: 3000VAC	
IP grade	IP20	

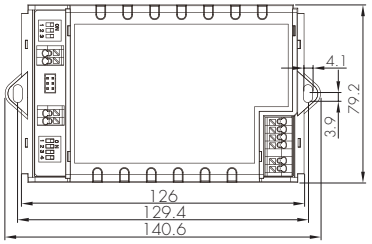
Dimensions and Terminals

Model: HEM09 / HEM09H

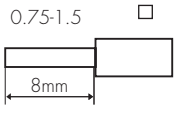




addtional cap for stand alone installation



Wire Preparation



Solid or Stranded wire type 0.75 - 1.5mm²
To make or release the wire from the terminal, use a screwdriver to push down the button.

Loading and In-rush Current

Model	HEM09/E	HEM09H/E
In-rush Current (Imax.)	17.2A	17.2A
Pulse Time	93.8μs	58μs

Number of Drivers Based upon 16A Circuit Breaker

Cct Breaker Type	HEM09/E	HEM09H/E
Type B	30	38

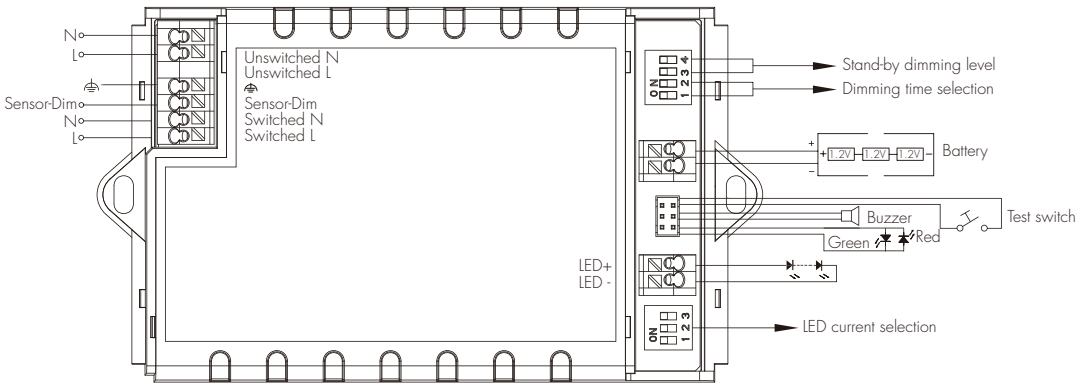
Conversion table for max. quantities of drivers on other types of Miniature Circuit Breaker

MCB Type	Rating	Relative number of drivers
B	16A	100% (see table above)
B	10A	63%
B	13A	81%
B	20A	125%
B	25A	156%

MCB Type	Rating	Relative number of drivers
C	10A	104%
C	13A	135%
C	16A	170%
C	20A	208%
C	25A	260%

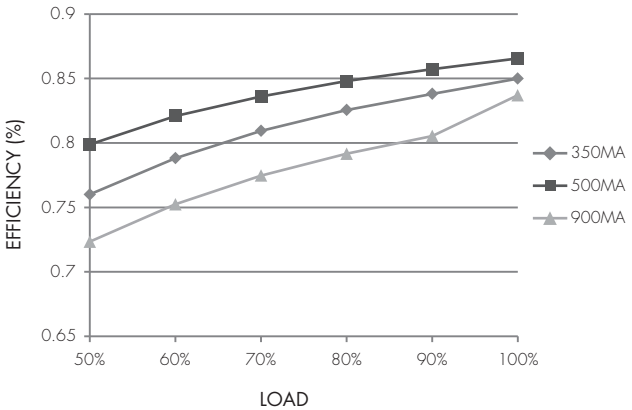
* Environmental factors (such as temperature) will also influence the maximum number of the drivers. Please refer to the MCB manufactures datasheet for loading and derating factors.

Wiring Diagram

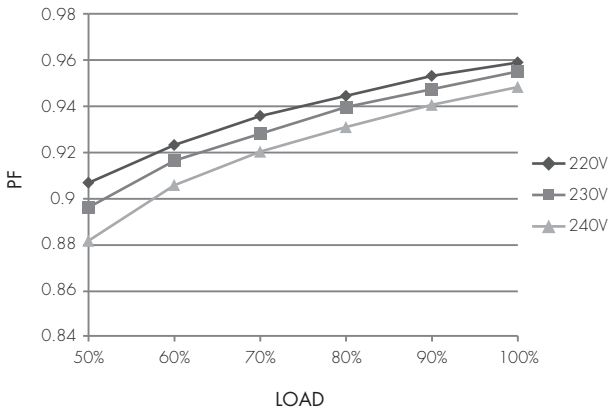


Performance Characteristics

HEM09/E

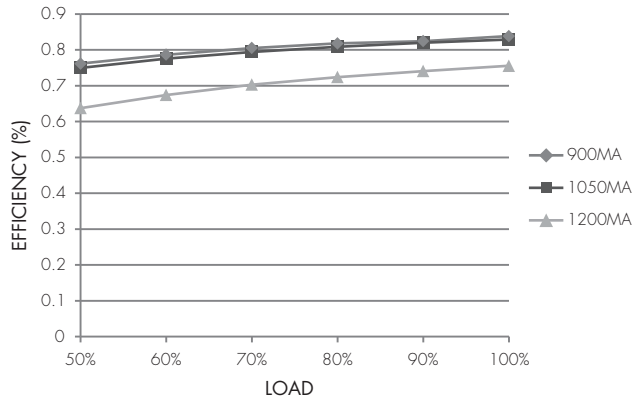


* Typical Efficiency vs Load

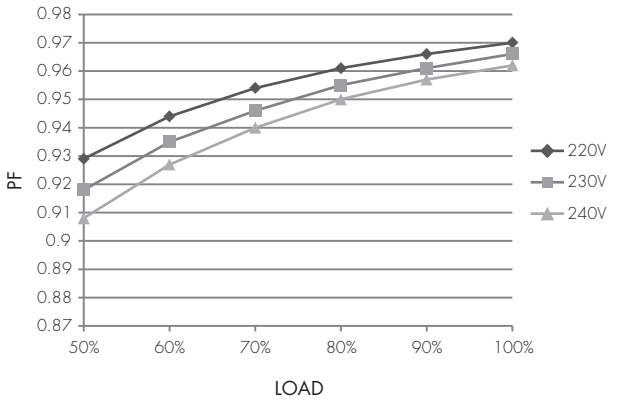


* Typical Power Factor vs Load

HEM09H/E



* Typical Efficiency vs Load



* Typical Power Factor vs Load

Manual Testing

There is a test switch on HEM09/E and HEM09H/E which is designed to simply perform a test on demand for as long as the button is pressed.

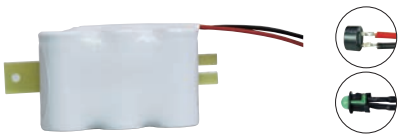
Routine testinig may also be carried out using a key-switch in the Un-switched supply.

Neither HEM09/E or HEM09H/E carries out automatic routine testing, however it does display instantaneous diagnostic faults and reports them via the supplied bi-colour LED. Details are given below:

Bi-Colour LED Diagnostics

Status	Buzzer beep & LED flash mode	Visual indication	Buzzer
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	◐ ◐ ◐ ◐ ◐	

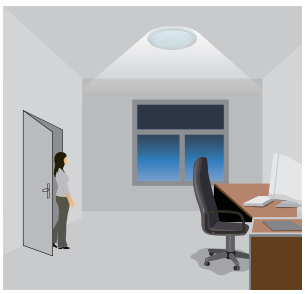
Battery Options

Package code	Picture	Spec.	Size(mm)	Duration	Accessories
BPC01		3 cells, C type,high temperature NiMH battery, 3.6V, 4.0AH	155x31x31	3 hours	battery bracket, green LED indicator, test switch (optional)
BPC02		3 cells, C type, high temperature NiMH battery, 3.6V, 4.0AH	77x50x28	3 hours	battery bracket, green LED indicator, test switch (optional)
BPC10		3 cells, D type, D4000,high temperature Nicd battery, 3.6V, 4.0AH	215x37x37.5	3 hours	battery bracket, green LED indicator, test switch (optional)
BPC11		3 cells, D type, D4000,high temperature Nicd battery, 3.6V, 4.0AH	100x65x36	3 hours	battery bracket, green LED indicator, test switch (optional)

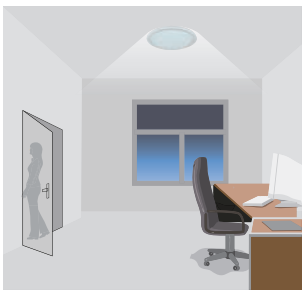
NiCd - Continuously rated 55 degrees for 4 years design life
NiMH - Continuously rated 40 degrees for 4 years design life
Charge new battery for 24hours before use.
In compliance with IEC61951-1 (Nicd type), IEC61951-2 (NiMH type).

Sensor-DIM Using External ON/OFF Sensor

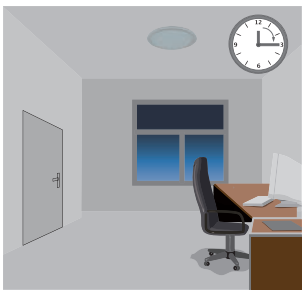
The Sensor-DIM built in to HEM09/E and HEM09H/E is designed to work with a simple on/off sensor to acheive tri-level contol. The on period during absence is controlled by the external sensor, such as Hytronik HC005S or HMW20. When the external sensor switches off, the Sensor-DIM circuit provides timed control of the dimming period and levels.



The sensor switches on the light automatically when presence is detected. The period of time the light is held on is controlled by the external sensor



After the external sensor switched off the light dims to stand-by level set by the dip switch on HEM09/E or HEM09H/E



The light switches off automatically after the stand-by period elapses. The standby period can aslo be programmed to remain in the dimmed mode until the next occupancy ('always on' mode)