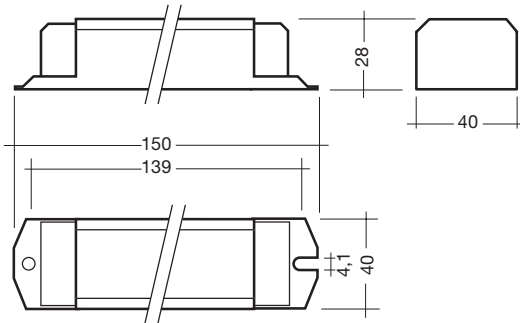


## EM MINI BASIC 220–240V 50/60 Hz

**Description:**

Emergency lighting modules with 3 hour duration. Five pole technology = 4 pole changeover and a delayed action relay for switching the mains supply to ensure compatibility with all electronic ballasts.

High temperature Nickel Cadmium batteries.

**Features:****Module**

- Delayed action relay for mains supply to ensure compatibility with all electronic ballasts
- 3 hour duration

- Small size (28 mm x 40 mm cross-section)
- Change-over relay with high current contacts
- Suitable for fixed output and dimmable electronic ballasts
- Can be used with conventional wirewound ballasts
- IDC terminations
- Deep discharge protection
- Reverse battery polarity protected
- Complies with EN 61347-2-7 and EN 60925
- Complies with relevant clauses of EN 60598-2-22 and EN 50172
- ENEC and BSI approved
- CE marked

**Batteries**

- High temperature NiCd cells
- Spade terminals for simple connection
- Connection can be made with end cap in place

**Packing quantities:**

**EM MINI BASIC**  
25 pieces/carton  
40 cartons/pallet  
1000 pieces/pallet

**LED green**  
25 pieces/bag  
200 pieces/carton

**Accu NiCd**  
25 pieces/carton

**EM MINI BASIC 3 h – NiCd 4.0Ah D cells**

type	article number	number of cells
EM 33A MINI BASIC 230-240V 50/60 Hz	89899951	3
EM 34A MINI BASIC 230-240V 50/60 Hz	89899950	4
EM 34C MINI BASIC 230-240V 50/60 Hz	89899952	4

**Accu NiCd 4.0Ah D cells**

type	article number	type	number of cells
Accu NiCd 3A	89895960	stick	1 x 3
Accu NiCd 3B	89895976	side by side	3 x 1
Accu NiCd 4A	89895961	stick	1 x 4
Accu NiCd 4B	89895977	side by side	4 x 1
Accu NiCd 4C	89895978	stick + stick	2 + 2

type	article number
LED EM green	89899605

**Note:**

The EM MINI BASIC is not intended to be used for high risk task area lighting

## Technical data

### Modules

Rated mains supply voltage	220–240V
• with tolerances for performance (-10 %/+6 %)	198–254V
• with tolerances for safety (±10 %)	198–264V
Mains frequency	50/60Hz
Mains supply current	0.03A
Mains supply power	3.9W
Overvoltage protection	320VAC for 1 hour
Recharge period	24 hours
Nominal charge current	210 mA
Nominal discharge current (max. lamp power):	
3h duration	1.1 A
Ambient temperature range	0 °C to +60 °C
Max. case temperature (measured on geometric centre of side)	+70 °C
Mains change-over voltage	Complies with EN 60598-2-22
Earth leakage current	< 0.5 mA
Safety class	1
Ingress Protection	IP20
Vibration test	IEC 60068-2-6 Fh
Bump test	IEC 60068-2-29 Eb
Humidity	IEC 60068-2-30

Insulation testing (no flashover or breakdown must occur):  
Up to 500 V DC between the phase and neutral conductors connected together and the earth.

High voltage insulation testing (1500 V AC) not recommended

Basic insulation between supply and battery circuit

### Batteries

Case temperature range (to ensure 4 years life)	0 °C to +55 °C
Storage life (in temperate conditions)	4 years
Battery voltage/cell	1.2V
Capacity	4Ah

### Mechanical details:

Channel manufactured from 0.5 mm Galvalite galvanised steel.  
Cover manufactured from 0.4 mm white precoated steel.

LED charge indicator

- Green
- Mounting hole 6.5 mm dia
- Length of LED lead 750 mm (Bezel supplied fitted to LED)

Battery leads

- Quantity: 1 red and 1 black
- Length: 1000 mm (Accu NiCd 3B, 4B, 4C), 1300 mm (all others)
- Wire type: 0.5 mm<sup>2</sup> solid conductor
- Insulation temperature rating: 90 °C

Termination 1

Push on 4.8 mm receptacle to suit battery spade fitted with insulating cover

Termination 2

9 mm stripped insulation

Two-piece batteries are supplied with a 200 mm lead with 4.8 mm receptacles at each end and insulating covers to connect the separate sticks together.

### Ballast Lumen Factor in emergency operation (BLF) in %

Duration	3 hours		
	3 cells	4 cells	4 cells
Battery	EM 33A MINI BASIC	EM 34A MINI BASIC	EM 34C MINI BASIC
Lamp			
TC-DD 28 W	9		
38 W			6.0
TC-F 36 W		10.9	
TC-DEL 18 W		16.5	
26 W		13	
TC-TEL 18 W		16.5	
26 W		13	
T5c 22 W		16	

### Lamp current in emergency operation in mA

Duration	3 hours		
	3 cells	4 cells	4 cells
Battery	EM 33A MINI BASIC	EM 34A MINI BASIC	EM 34C MINI BASIC
Lamp			
TC-DD 28 W	17		
38 W			12
TC-F 36 W		27	
TC-DEL 18 W		28	
26 W		28	
TC-TEL 18 W		28	
26 W		28	
T5c 22 W		27	

### Emergency Ballast Lumen Factor (EBLF) in % ①

Duration	3 hours		
	3 cells	4 cells	4 cells
Battery	EM 33A MINI BASIC	EM 34A MINI BASIC	EM 34C MINI BASIC
Lamp			
TC-DD 28 W	9.4		
38 W			5.3
TC-F 36 W		10.9	
TC-DEL 18 W		18.7	
26 W		14.1	
TC-TEL 18 W		18.7	
26 W		14.1	
T5c 22 W		15.3	

① According to EN 61347-2-7: 2006

### CE marking:

The modules are CE marked for compliance with the low voltage directive.

Certificates of compliance are available to allow luminaires to be CE marked for compliance with the EMC directive.

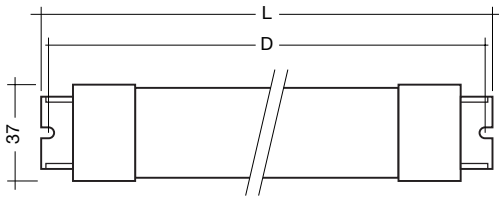
### Service life:

Average service life 50,000 hours under rated conditions with a failure rate less than 10 %. Average failure rate of 0.2 % per 1,000 operating hours.

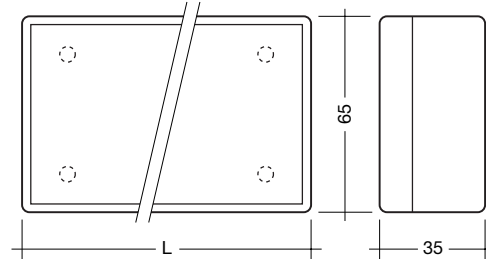
### Note:

Care should be taken to ensure batteries and emergency units don't exceed their maximum temperatures.

**Batteries (stick):**



**Batteries (side by side):**



type	length L (mm)	fixing centres D (mm)	weight (gms)
<b>Accu NiCd 3A</b>	218	201	400
<b>Accu NiCd 4A</b>	275	263	530
<b>Accu NiCd 4C</b>	151 + 151	139 + 139	530

type	length L (mm)	fixing centres D (mm)	weight (gms)
<b>Accu NiCd 3B</b>	98	40 x 33	400
<b>Accu NiCd 4B</b>	130	40 x 66	530

**Batteries:**

Connection method: 4.8 x 0.5 mm spade welded to end of cell

For the stick batteries this connection is accessible after the battery end caps have been fitted.

To inhibit inverter operation, only disconnect the batteries by removing the connector from the battery spade tags.

**Note:**

The battery charger of the EM MINI BASIC is short circuit protected. After a battery short circuit the protection device will be resetted after a short while.

Battery must not be connected to earth.

**Storage:**

It is recommended to disconnect the battery before store or delivery. A long term storage in open circuit leads to battery self discharge and deactivation of chemical components. It could be required to charge and discharge the batteries a few times to recover the initial performance.

**Electrical connections:**

An earthed starting aid is recommended. The module should be earthed by the fixings used to attach it to the luminaire.

Terminal block type:  
Push wire and insulation displacement

**Terminal block capacity**

- Push wire: 0.5 to 1.5 mm<sup>2</sup> solid conductor
- Insulation displacement: 0.5 mm<sup>2</sup> solid conductor

Wire strip length: 7.5 to 8.5 mm

EM MINI BASIC leads 5, 6 max. 0.5 m (< 50 pF)  
EM MINI BASIC leads 3, 4 max. 1.0 m (< 100 pF)

**Note:**

Care should be taken not to exceed the total maximum lamp lead capacitance for HF ballast. Leads should always be kept as short as possible.

**Wiring guidelines**

To ensure that a luminaire containing high frequency emergency units complies with EN 55015 for radio frequency conducted interference in both normal and emergency mode it is essential to follow good practice in the wiring layout.

Within the luminaire the switched and unswitched 50 Hz supply wiring must be routed as short as possible and be kept as far away as possible from the lamp leads.

This means, for example, in a linear T8 or T5 luminaire the mains wiring should be routed along one side of the luminaire body, while the wires to the emergency lamp from the emergency module are routed along the other side.

The high frequency emergency lamp wiring contains "hot" leads at pins 1 and 6, which have high voltage to earth. These should be kept as short as possible and separated from other wiring to minimize coupling. They also have a restriction on capacitance to other wiring and earth of 100 pF, which must be observed to ensure good lamp starting.

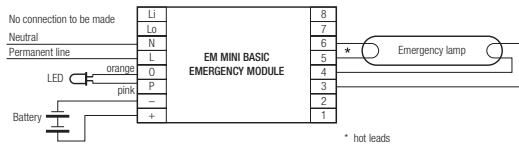
With an earth connection of the metal case of the emergency module the noise suppression can be further improved. The wiring of the earth should be kept as short as possible.

Through wiring may affect the emc performance of the luminaire.

With the use of the fifth pole possible compatibility problems between the products can be prevented. Depending on the luminaire wiring the radio suppression in the emergency mode of operation can be further improved.

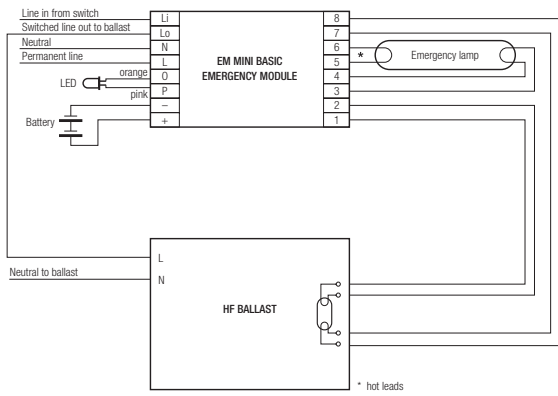
Capacitive loading limits of lamp leads must not be exceeded. Note the capacitance of the emergency lamp leads adds to the capacitance of the leads from the ballast to the EM BASIC module when considering ballast loading.

Wiring diagrams

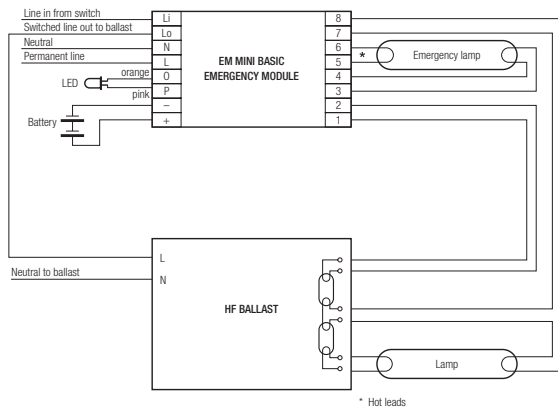


Non maintained

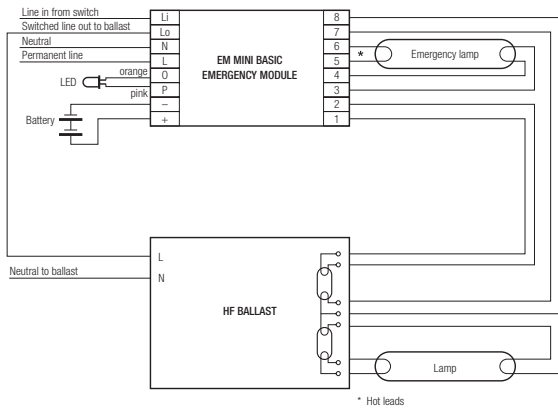
Wiring diagrams for high frequency electronic ballasts



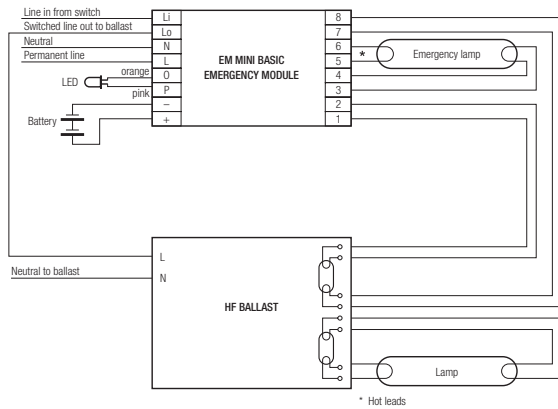
Single lamp high frequency electronic ballast



Twin lamp high frequency electronic ballast (6 lamp lead connections)

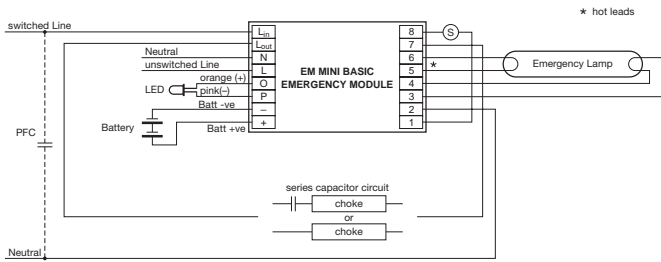


Twin lamp high frequency electronic ballast (7 lamp lead connections)

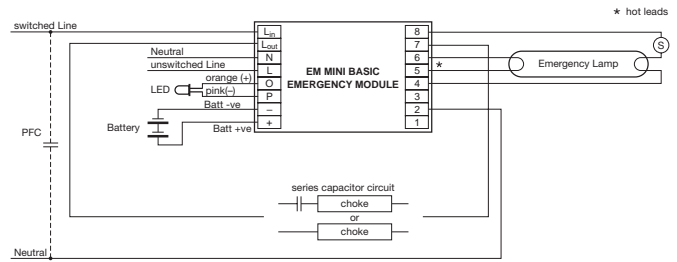


Twin lamp high frequency electronic ballast (8 lamp lead connections)

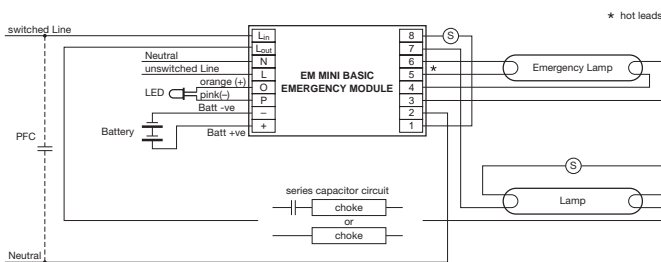
Wiring diagrams for switch start circuits with magnetic control gear



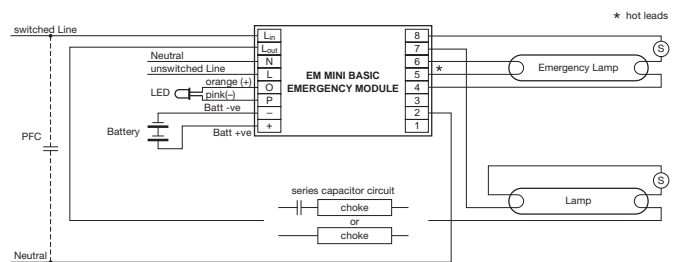
Single lamp switch start circuit with separate lamp holder and starter holder



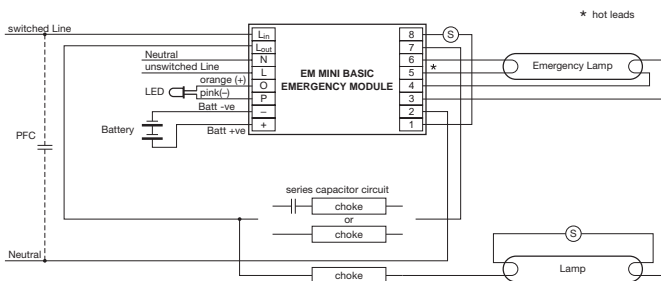
Single lamp switch start circuit with combined lamp holder and starter holder assembly



Twin series switch start circuit with separate lamp holder and starter holder



Twin series switch start circuit with combined lamp holder and starter holder assembly



Twin parallel switch start circuit with separate lamp holder and starter holder