



EM BASIC 110 V 50/60 Hz BASIC version

Product description

- Emergency lighting module for operation on 110 V 50/60 Hz
- For linear fluorescent lamps
- Small dimensions (28 x 39 mm cross-section)

Properties

- 3 h rated duration
- Compatible with all electronic ballasts (dimmable and non-dimmable)
- Can also be used in combination with conventional magnetic ballasts
- 5-pole technology: 4-pole lamp changeover and delayed power switching for the ballast
- Optimised DC output voltage for T8 lamps
- Cathode heating adapted for compact lamps
- Switchover relay with high-current contacts
- IDC (insulation displacement connection)
- Green charge status display LED
- Checking the emergency lighting function by interrupting the unswitched phase
- Optional test switch
- Deep discharge protection
- Battery connection, short-circuit protected (not reversible)
- Polarity reversal protection for battery (not reversible)

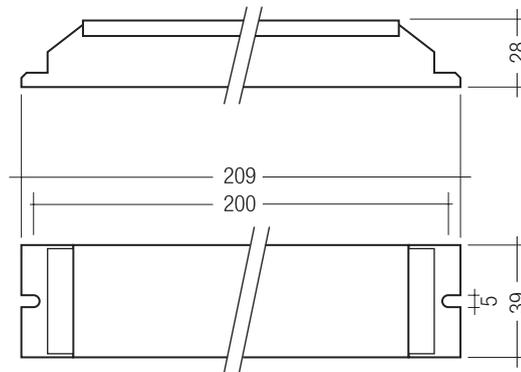
Batteries

- High-temperature cells
- NiCd batteries
- Blade terminals for simple connection



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Technical data

Rated supply voltage	110 V
Rated supply voltage with tolerances for performance ($\pm 6\%$)	103 – 117 V
Rated supply voltage with tolerances for safety ($\pm 10\%$)	99 – 121 V
Mains frequency	50 / 60 Hz
Mains current	0.06 A
Rated power	9 W
Battery charging time	24 h
Discharge current (max. lamp power), 3 h duration	1.1 A
Charge current	210 mA
Leakage current (PE)	< 0.5 mA
Ambient temperature t_a	0 ... +50 °C
Max. casing temperature t_c	75 °C
Mains voltage changeover threshold	according to EN 60598-2-22
Type of protection	IP20

Ordering data

Type	Article number	Number of cells	Packaging, carton	Packaging, pallet	Weight per pcs.
Rated operating time 3 h					
EM 34B BASIC 110 V 50/60 Hz	89899821	3	25 pieces	750 pieces	0.324 kg

Test switch EM2

Product description

- For connection to the emergency lighting unit
- For checking the device function



Ordering data

Type	Article number	Packaging, bag	Packaging, carton	Weight per pcs.
Test switch EM 2	89805277	25 pieces	200 pieces	0.013 kg

Status indication green LED

Product description

- A green LED indicates that charging current is flowing into the battery



Ordering data

Type	Article number	Packaging, bag	Packaging, carton	Weight per pcs.
LED EM green	89899605	25 pieces	200 pieces	0.017 kg
LED EM green, ultra high brightness	89899756	25 pieces	200 pieces	0.012 kg

Ballast Lumen Factor (BLF) in %

EM BASIC for linear lamps, 3 h

	3 h	4 cells
	Type	EM 34B BASIC 110V
	Article no.	89899821
Lamp type	Wattage	BLF in emergency lighting mode in % for rated operating time
T8	18 W	13
	30 W	13
	36 W	10
	58 W	7

Technology and capacity	Design	Number of cells	Type	Article no.	Assignable batteries
	Stick	4	Accu-NiCd 4A 55	89800089	•
	side by side	4	Accu-NiCd 4B	89895977	•
	Stick + Stick	2+2	Accu-NiCd 4C	89895978	•

Standards

- according to EN 50172
- according to EN 60598-2-22
- EN 61347-2-7
- EN 60925
- EN 55015
- EN 61000-3-2
- EN 61000-3-3
- EN 61547
- EN 60068-2-64
- EN 60068-2-29
- EN 60068-2-30

Isolation and electric strength testing of luminaires

Electronic devices can be damaged by high voltage. This has to be considered during the routine testing of the luminaires in production.

According to IEC 60598-1 Annex Q (informative only!) or ENEC 303-Annex A, each luminaire should be submitted to an isolation test with 500 VDC for 1 second. This test voltage should be connected between the interconnected phase and neutral terminals and the earth terminal. The isolation resistance must be at least 2 MΩ.

As an alternative, IEC 60598-1 Annex Q describes a test of the electrical strength with 1,500 VAC (or 1,414 x 1,500 VDC). To avoid damage to the electronic devices this test must not be conducted.

Batteries NiCd

Case temperature range to ensure 4 years design life	0 °C to +55 °C
Battery voltage/cell	1.2 V
Capacity	4.0 Ah
Max. short term temperature (reduced lifetime)	70 °C
Packing quantity	5 pcs. per carton

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.

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 mm² solid conductor
- Insulation displacement: 0.5 mm² solid conductor

Wire strip length: 9 to 10 mm

Lamp lead length: 2,500 mm max.

The longer pair of leads should always be connected to terminals 3 and 8.

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

Mechanical details

Channel manufactured from 0.4 mm Galvatite galvanised steel.

Cover manufactured from 0.4 mm white precoated steel.

LED status indicator

- Green
- Mounting hole 6.5 mm diameter
- Lead length 750 mm (Bezel supplied fitted to LED)
- Insulation rating: 90 °C

Test switch

- Mounting hole 7 mm diameter
- Length of test switch lead 550 mm

Battery leads

- Quantity: 1 red and 1 black
- Length: 1000 mm (Accu NiCd 4B, 4C), 1300 mm (all others)
- Wire type: 0.5 mm² 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 receptacle at each end and insulating covers to connect the separate sticks together.

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 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.

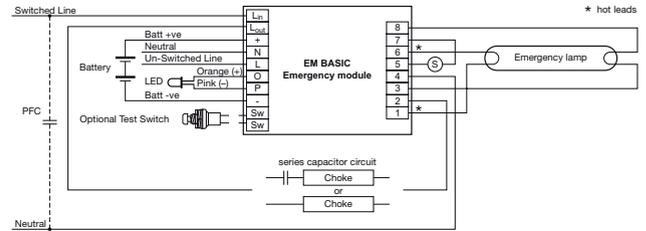
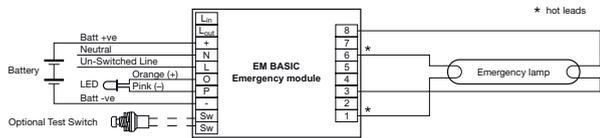
With an earth connection of the metal case of the emergency module the noise suppression can be further improved. The wiring of the earth should be kept as short as possible.

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.

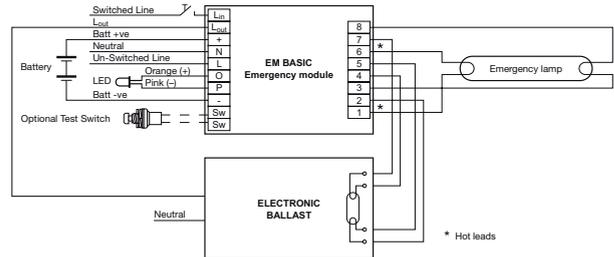
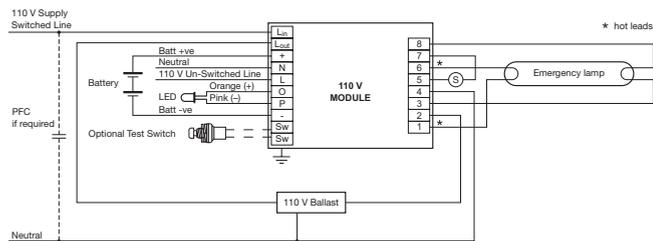
Capacitive loading limits of lamp leads must not be exceeded. Note the capacitance of the emergency lamp leads adds to the capacitance of the leads from the ballast to the EM BASIC module when considering ballast loading.

Circuit diagrams



Non maintained

18 W circuit with 110 V magnetic control gear



36 W / 58 W circuit with 110 V magnetic control gear

Single lamp high frequency electronic ballast