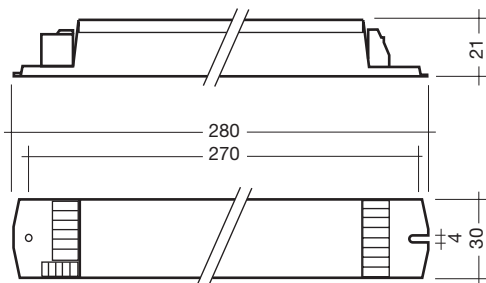


Low profile emergency lighting modules  
Linear T5 lamps

EM T5 BASIC 220–240 V 50/60 Hz



**Description:**

Low profile emergency lighting modules to cover 1 hour and 3 hour duration operating from NiCd and NiMh batteries. All modules incorporate five pole technology for use with HF ballasts and have permanent cathode heating during the emergency operation.

**Features:**

**Module**

- Low profile section (21 mm x 30 mm)
- 5 pole technology
- For use with HF ballasts
- NiCd and NiMh batteries

- 24 hour accu recharge time
- 3 hour and 1 hour operation
- AC operation of lamps
- Permanent cathode heating during emergency operation
- Deep discharge protection
- Regulated electronic charging circuit
- Rest mode facility

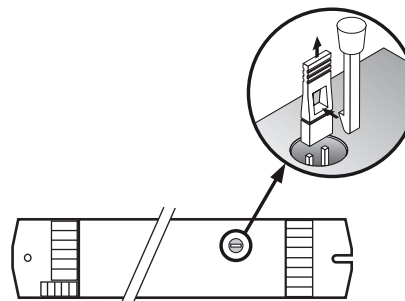
**Batteries**

- NiCd and NiMh
- D or Cs cells
- High temperature cells
- Spade terminals for easy connection

**Certified**

- EN 55015: 2006 + A1: 2007
- EN 601347-2-7
- EN 60925
- EN 61000-3-2
- Allows compliance with EN 60598-2-22
- EN 61547
- IEC 60068-2-6
- IEC 60068-2-29
- IEC 60068-2-30

Type	article number	duration (hours)	battery (cells)	battery type
<b>EM 14/24-4 T5 BASIC</b>	89899822	1 + 3	4	for 3 hours duration: 4 Ah D size NiCd
<b>EM21/28/49-5 T5 BASIC</b>	89899823	1 + 3	5	
<b>EM 39-5 T5 BASIC</b>	89899824	1 + 3	5	for 1 hour duration: 1.5 Ah Cs size NiCd or 2.0 Ah Cs size NiMh
<b>EM 35-6 T5 BASIC</b>	89899825	1 + 3	6	
<b>EM 54/80-6 T5 BASIC</b>	89899826	1 + 3	6	



**Jumper selection:**

3 hours operation as supplied for use with 4 Ah D cells. Remove the jumper for 1 hour operation and use with Cs 1.5 Ah NiCd or 2.0 Ah NiMh cells.

type	article number
LED EM green	89899605
LED EM Green UHB	89899756

type	article number
test switch EM 2	89805277

Battery packs	article number	type	cells
<b>NiCd 1.5 Ah Cs cells</b>			
Accu-NiCd C 4A	89899692	stick	4
Accu-NiCd C 4B	89899693	side by side	4
Accu-NiCd C 4C	89899694	stick+stick	2+2
Accu-NiCd C 5A	89899695	stick	5
Accu-NiCd C 5B	89899696	side by side	5
Accu-NiCd C 5C	89899697	stick+stick	3+2
Accu-NiCd C 6A	89899698	stick	6
Accu-NiCd C 6C	89899699	stick+stick	3+3

Battery packs	article number	type	cells
<b>NiCd 4.0 Ah D cells</b>			
Accu-NiCd 4A	89895961	stick	4
Accu-NiCd 4B	89895977	side by side	4
Accu-NiCd 4C	89895978	stick+stick	2+2
Accu-NiCd 5A	89895973	stick	5
Accu-NiCd 5B	89895962	stick+stick	3+2
Accu-NiCd 6A	89895963	stick+stick	3+3

Battery packs	article number	type	cells
<b>NiMh 2.0 Ah Cs cells</b>			
Accu-NiMh C 4A	89899700	stick	4
Accu-NiMh C 4B	89899701	side by side	4
Accu-NiMh C 4C	89899702	stick+stick	2+2
Accu-NiMh C 5A	89899703	stick	5
Accu-NiMh C 5B	89899704	side by side	5
Accu-NiMh C 5C	89899705	stick+stick	3+2
Accu-NiMh C 6A	89899706	stick	6
Accu-NiMh C 6C	89899707	stick+stick	3+3

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**Technical data:**

<b>EM T5 BASIC</b>	<b>3 hour</b>	<b>1 hour</b>
Rated mains supply voltage	220–240V	220–240V
Mains frequency	50/60 Hz	50/60 Hz
Mains supply current	35 mA max	25 mA max
Mains supply power	< 7 W	< 7 W
Overvoltage protection	320V for 1 hour	320V for 1 hour
Max. working voltage U-OUT of the used ballast	460 V	460 V
Recharge period	24 hours	24 hours
Discharge current	1.1 A	1.1 A
Charge current NiCd/NiMh	200 mA	100 mA
Earth leakage current	< 0.5 mA	< 0.5 mA
Ambient temperature range	+5 °C to +60 °C	+5 °C to +60 °C
Maximum case temperature tc	70 °C	70 °C
Mains change over voltage	in accordance with EN 60598-2-22	in accordance with EN 60598-2-22
Min. lamp starting temperature (emergency mode)	+5 °C	+5 °C
Ingress protection	IP20	IP20
Safety class	class I	class I

**Ballast compatibility**

The EM T5 BASIC emergency units use 5 pole technology and are compatible with most high frequency ballasts on the market, however it is important to check that the U-OUT rating of the ballast does not exceed the value specified under "Technical data".

**Emergency light output factors (BLF) in %**

Type	wattage W	BLF %
EM 14/24-4 T5 BASIC	14	21
EM 21/28/49-5 T5 BASIC	21	12
EM 21/28/49-5 T5 BASIC	28	12
EM 35-6 T5 BASIC	35	13
EM 14/24-4 T5 BASIC	24	14
EM 39-5 T5 BASIC	39	7
EM 21/28/49-5 T5 BASIC	49	7
EM 54/80-6 T5 BASIC	54	6.5
EM 54/80-6 T5 BASIC	80	4.5

**Accu-NiCd**

case temperature range	0 °C to +55 °C
to ensure 4 years design life	
storage life in temperate conditions	4 years
battery voltage/cell	1.2V
capacity D	4.0 Ah
capacity Cs	1.5 Ah

**Accu-NiMh**

case temperature range	0 °C to +55 °C
to ensure 4 years design life	
storage life in temperate conditions	4 years
battery voltage	1.2V
capacity Cs	2.0 Ah

**Test switch:**

An optional test switch can be wired to the EM T5 Basic. This can be used to check local operation of the luminaire.

**Status indication**

A green LED indicates charge current is flowing to the battery.

**Service life:**

Average service life 50,000 hours under rated conditions with a failure rate of less than 10%. Average failure rate of 0.2% per 1000 operating hours.

### Mechanical details:

Channel manufactured from galvanised steel.  
Cover manufactured from white pre-coated steel.

LED status indicator

- Green
- Mounting hole 6.5 mm dia
- Lead length 1000 mm

Test switch

- Mounting hole 7.0 mm dia
- Lead length 550 mm

Battery leads

- Quantity: 1 red and 1 black
- Length: 1300 mm
- Wire type: 0.5 mm<sup>2</sup> solid conductor
- Insulation rating: 90 °C

Battery end termination

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

Module end termination

8.0 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.

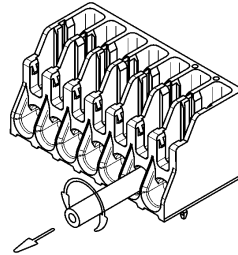
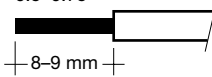
### Electrical connections:

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

### Wiring:

#### Lamp/ballast/supply

wire preparation:  
0.5–0.75 □



Loosen wire through twisting and pulling

### IDC interface

- solid wire with a cross section of 0.5 mm<sup>2</sup> according to the specification from WAGO
- alternatively a flexible lead with a cross section of 0.75 mm<sup>2</sup>

### Horizontal interface

- solid wire with a cross section of 0.5–0.75 mm<sup>2</sup> according to the specification from WAGO
- solid wire with a cross section of 1.0 mm<sup>2</sup> with an insulation diameter up to 2.5 mm
- strip 9 mm of insulation from the cables
- Loosen wire through twisting and pulling

### Batteries/LED/Test switch

push terminal with button release: 0.5 mm<sup>2</sup>  
6.5 mm strip

### Maximum lamp lead capacitance

terminals 5 and 6 (\* hot leads) 100 pF <sup>1)</sup>  
terminals 3 and 4 200 pF <sup>1)</sup>

<sup>1)</sup> 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.

### Batteries:

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

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

To inhibit inverter operation disconnect the batteries by removing the connector from the battery spade tag.

For battery data see separate data sheet.

### Packing quantities:

EM T5 BASIC: 25 units per carton  
LED: 25 pieces per box  
Accu-NiCd: 25 pieces per box  
Accu-NiMh: 25 pieces per box

### 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.

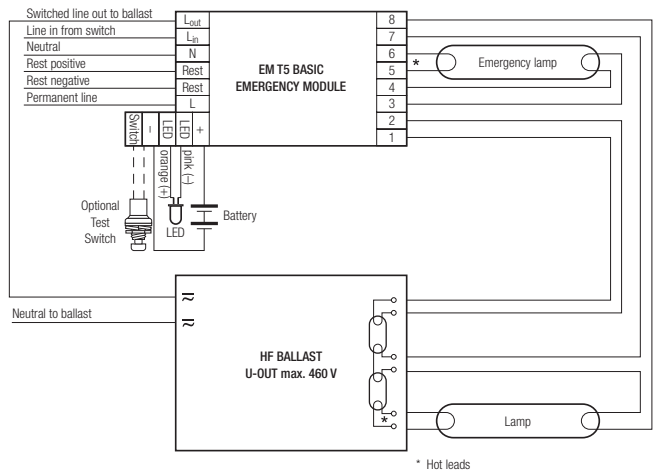
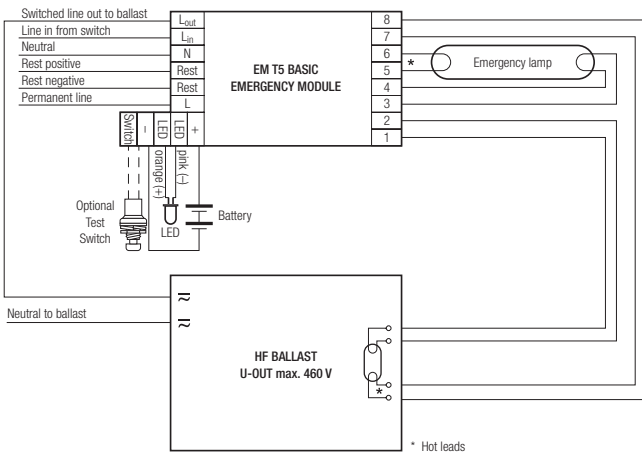
With the use of the fifth pole possible compatibility problems between the products can be prevented. Depending on the luminaire wiring the radio suppression in the emergency mode of operation can be further improved.

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.

**Low profile emergency lighting modules**  
**Linear T5 lamps**

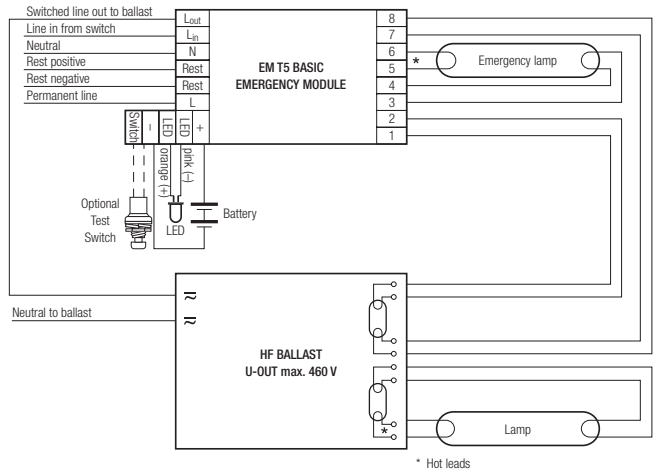
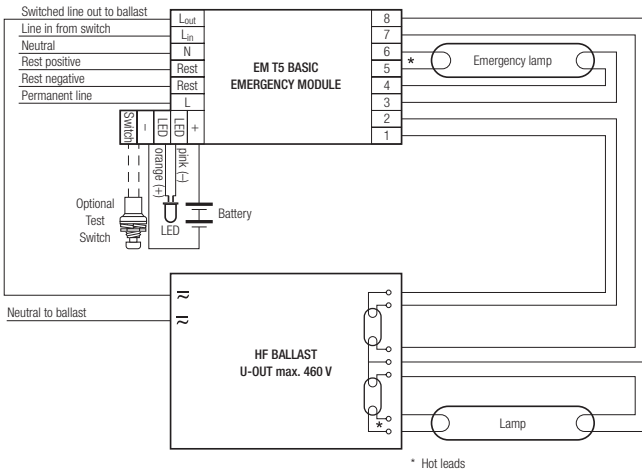
**EM T5 BASIC emergency module wiring diagrams**

Not for use with magnetic ballasts and switch start circuits



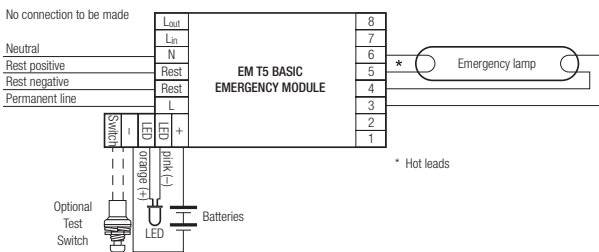
Wiring diagram for single lamp high frequency ballasts

Wiring diagram for twin lamp high frequency ballasts with 6 terminals



Wiring diagram for twin lamp high frequency ballasts with 7 terminals

Wiring diagram for twin lamp high frequency ballasts with 8 terminals



Wiring diagram for non-maintained operation

**Note:** All hot leads normally marked with an \* should be kept as short as possible. For comprehensive wiring diagrams and instructions consult the TridonicAtco website [www.tridonicatco.com](http://www.tridonicatco.com)