

## EM PRO EZ-3, 220 – 240 V 50/60 Hz PRO version

### Product description

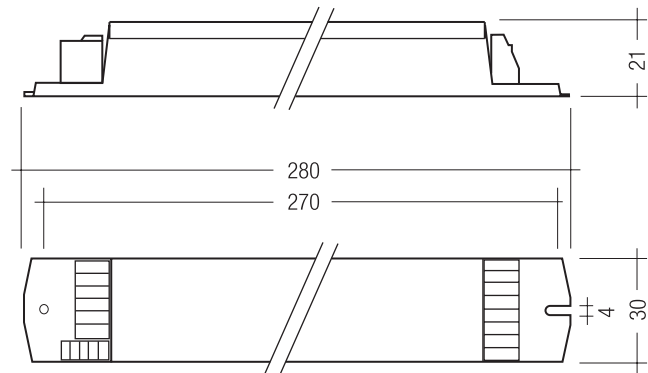
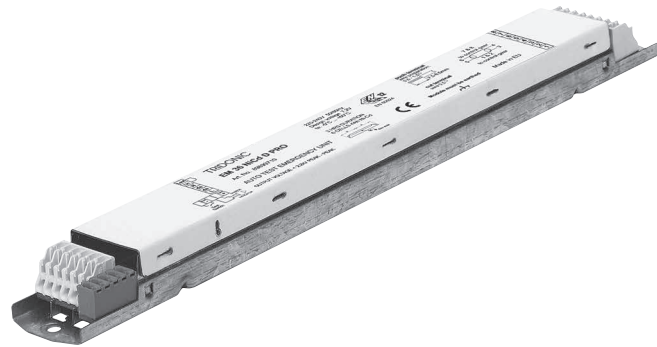
- Emergency lighting supply unit with DALI interface and automatic test function
- For linear and compact fluorescent lamps
- Low-profile casing (21 x 30 mm cross-section)

### Properties

- DALI interface for testing and feedback
- 1 or 3 h rated duration
- Compatible with all electronic ballasts (dimmable and non-dimmable)
- 5-pole technology: 4-pole lamp changeover and delayed power switching for the ballast
- High-frequency ac operation of the lamp
- Power control technology ensures maximum emergency ballast lumen factors for all lamps on a given module
- Gentle on the lamp thanks to permanent cathode heating in emergency mode
- 5.5 min. boost start for rapid heating of the lamp, more light in the startup phase and optimum lamp life
- Standard and high ballast lumen factor for 1 hour types
- Electronic multi-level charge system
- "Rest mode" function
- Addressing function, patented ("EZ easy addressing")
- EZ addressing tool can be supplied
- Deep discharge protection
- Short-circuit-proof battery connection
- Polarity reversal protection for battery
- Two-colour status display LED
- Maximum ballast lumen factors (BLF) for all lamps
- Tests:
  - Status of the battery
  - Status of the lamp
  - Charge condition
  - Function test
  - Service life test

### Batteries

- High-temperature cells
- NiCd or NiMH batteries
- D or Cs cells
- Blade terminals for simple connection



### Technical data

Rated supply voltage	220 – 240 V
Mains frequency	50 / 60 Hz
Mains current	60 mA
Rated power	< 10 W
Overvoltage protection	320 V (for 1 h)
Maximum operating voltage (U-OUT of the ECG)	460 V
Battery charging time 3 / 1 h	15 / 10 h
Discharge current, Standard BLF	1.1 A
Discharge current, High Output BLF	2.2 A
Leakage current (PE)	0.5 mA
Ambient temperature $t_a$	-5 ... +60 °C
Max. casing temperature $t_c$	70 °C
Mains voltage changeover threshold	according to EN 60598-2-22
Min. lamp starting temperature (emergency operation)	-5 °C
Type of protection	IP20

### Ordering data

Type	Article number	Number of cells	Packaging, carton	Packaging, pallet	Weight per pc.
<b>Rated operating time 3 h, Standard BLF</b>					
EM 34 PRO EZ-3	89800022	4	25 pc(s).	475 pc(s).	0.229 kg
EM 35 PRO EZ-3	89800023	5	25 pc(s).	475 pc(s).	0.229 kg
EM 36 PRO EZ-3	89800024	6	25 pc(s).	475 pc(s).	0.229 kg
<b>Rated operating time 1 h, Standard BLF</b>					
EM 14 PRO EZ-3	89800025	4	25 pc(s).	475 pc(s).	0.229 kg
EM 15 PRO EZ-3	89800026	5	25 pc(s).	475 pc(s).	0.229 kg
EM 16 PRO EZ-3	89800027	6	25 pc(s).	475 pc(s).	0.229 kg



Standards, page 10

For wiring diagrams and installation examples, page 10

## Ordering data

Type	Article number	Number of cells	Packaging, carton	Packaging, pallet	Weight per pc.
<b>Rated operating time 1 h, High Output BLF</b>					
EM 14 HO PRO EZ-3	89800019	4	25 pc(s).	475 pc(s).	0.228 kg
EM 15 HO PRO EZ-3	89800020	5	25 pc(s).	475 pc(s).	0.232 kg
EM 16 HO PRO EZ-3	89800021	6	25 pc(s).	475 pc(s).	0.229 kg

## Specific technical data

Type	Battery charge time	Charge current		
		Initial charge	Fast charge	Trickle charge
<b>Rated operating time 3 h, Standard BLF</b>				
EM 34 PRO EZ-3	15 h	330 mA	330 mA	130 mA
EM 35 PRO EZ-3	15 h	330 mA	330 mA	130 mA
EM 36 PRO EZ-3	15 h	330 mA	330 mA	130 mA
<b>Rated operating time 1 h, Standard BLF</b>				
EM 14 PRO EZ-3	10 h	130 mA	210 mA	50 mA
EM 15 PRO EZ-3	10 h	130 mA	210 mA	50 mA
EM 16 PRO EZ-3	10 h	130 mA	210 mA	50 mA
<b>Rated operating time 1 h, High Output BLF</b>				
EM 14 HO PRO EZ-3	15 h	330 mA	330 mA	130 mA
EM 15 HO PRO EZ-3	15 h	330 mA	330 mA	130 mA
EM 16 HO PRO EZ-3	15 h	330 mA	330 mA	130 mA

ACCESSORIES

## 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 pc.
Test switch EM 2	89805277	25 pc(s).	600 pc(s).	0.013 kg

ACCESSO-  
RIES

Status indication bi-colour LED

Product description

- Two-colour status display LED
- Green: system OK, red: fault



Ordering data

Type	Article number	Packaging, bag	Packaging, carton	Weight per pc.
LED EM bi-colour	89899720	25 pc(s).	200 pc(s).	0.017 kg
LED EM bi-colour, high brightness	89899753	25 pc(s).	800 pc(s).	0.013 kg

ACCESSO-  
RIES

Addressing tool

Product description

- Provides simple addressing for the EM PRO units
- Uses the bi-colour LED for device identification



Ordering data

Type	Article number	Packaging, carton	Weight per pc.
EM PRO addressing tool	89899836	1 pc(s).	0.08 kg

Ballast lumen factor (BLF) in %

EM PRO EZ-3 for linear lamps, 3 or 1 h

	Duration	3 h			Standard 1 h			High Output 1 h		
		Cells	4 cells	5 cells	6 cells	4 cells	5 cells	6 cells	4 cells	5 cells
Type		EM 34 PRO EZ-3	EM 35 PRO EZ-3	EM 36 PRO EZ-3	EM 14 PRO EZ-3	EM 15 PRO EZ-3	EM 16 PRO EZ-3	EM 14 HO PRO EZ-3	EM 15 HO PRO EZ-3	EM 16 HO PRO EZ-3
Article no.		89800022	89800023	89800024	89800025	89800026	89800027	89800019	89800020	89800021
Lamp type	Wattage	BLF in emergency lighting mode in % for rated operating time								
T5	6 W	39			39			70		
	8 W	40			40			68		
	13 W	24			24			55		
T5 FH	14 W	24			24			47		
	21 W		18			18			43	
	28 W			15			15			39
	35 W			11			11			30
T5 FQ	24 W	13.5			13.5			29		
	39 W			8.2			8.2			30
	49 W			6.7			6.7			20
	54 W			5.3			5.3			23
	80 W			4.6			4.6			17
T8	15 W	18			18			36		
	18 W	18			18			36		
	30 W	11			11			24		
	36 W	9.5			9.5			20		
	38 W		12			12				
	58 W		7.5			7.5			17	
	70 W			4.5			4.5			

Technology and capacity	Design	Number of cells	Type	Article number	Assignable batteries																
NiCd 4 Ah D-cells	Stick	4	Accu-NiCd 4A 55	89800089	•																
	Side by side	4	Accu-NiCd 4B	89895977	•																
	Stick + Stick	2 + 2	Accu-NiCd 4C	89895978	•																
	Stick	5	Accu-NiCd 5A	89895973																	
	Stick + Stick	3 + 2	Accu-NiCd 5C 55	89800090																	
	Stick + Stick	3 + 3	Accu-NiCd 6C	89895963																	
NiMH 2 Ah Cs-cells	Stick	4	Accu-NiMH C 4A	89899700																	
	Stick	5	Accu-NiMH C 5A	89899703																	
	Stick	6	Accu-NiMH C 6A	89899706																	
	Stick + Stick	3 + 3	Accu-NiMH C 6C	89899707																	
NiMH 4 Ah Cs-cells ①	Stick	4	Accu-NiMH 4 Ah C 4A	89899850	•																
	Stick	5	Accu-NiMH 4 Ah C 5A	89899851																	
	Stick	6	Accu-NiMH 4 Ah C 6A	89899852																	
	Stick + Stick	3 + 3	Accu-NiMH 4 Ah C 6C	89899853																	

Note: 50°C batteries also available (see separate datasheet at www.tridonic.com)

① Maximum battery housing temperature 50 °C.

### Ballast lumen factor (BLF) in %

EM PRO EZ-3 for compact lamps, 3 or 1 h

	Duration	3 h			Standard 1 h			High Output 1 h		
		4 cells	5 cells	6 cells	4 cells	5 cells	6 cells	4 cells	5 cells	6 cells
Type		EM 34 PRO EZ-3	EM 35 PRO EZ-3	EM 36 PRO EZ-3	EM 14 PRO EZ-3	EM 15 PRO EZ-3	EM 16 PRO EZ-3	EM 14 HO PRO EZ-3	EM 15 HO PRO EZ-3	EM 16 HO PRO EZ-3
Article no.		89800022	89800023	89800024	89800025	89800026	89800027	89800019	89800020	89800021
Lamp type	Wattage	BLF in emergency lighting mode in % for rated operating time								
TC-DD	10 W	33			33					
	16 W	24			24					
	21 W	17			17					
	28 W	14			14					
	38 W			7.5			7.5			
	55 W			5.2			5.2			
TC-SEL	7 W	24			24			54		
	9 W	28			28			45		
	11 W	31			31			57		
TC-DEL	10 W	30			30			44		
	13 W	26			26			46		
	18 W	17			17			36		
	26 W	14.4			14.4			28		
TC-TEL ②	13 W	26			26					
	18 W	17.5/16.0	/20.5 (GE)		17.5/16.0	/20.5 (GE)		32/30		
	26 W <sup>③</sup>	11.5/10.4	/15	/14.0	11.5/10.4	/15	/14.0	23/26		
	32 W <sup>③</sup>		14/5.6	/8.0		14/5.6	/8.0		21/21	
	42 W			7.4/7.3			7.4/7.3		18/19	
	57 W			5.1/5.2			5.1/5.2			17.5/16.5
T5c	22 W	13.5			13.5			28		
	40 W			6.5			6.5			26
	55 W			5.4			5.4			21
TC-F	18 W	18			18			33		
	24 W		21			21			34	
	36 W		13			13			25	
TC-L	18 W	18			18			30		
	24 W		17			17			34	
	36 W		12			12			24	
	40 W		8.8			8.8			23	
	55 W			4.5			4.5			19

Technology and capacity	Design	Number of cells	Type	Article number	Assignable batteries						
NiCd 4 Ah D-cells	Stick	4	Accu-NiCd 4A 55	89800089	•					•	
	Side by side	4	Accu-NiCd 4B	89895977	•					•	
	Stick + Stick	2+2	Accu-NiCd 4C	89895978	•					•	
	Stick	5	Accu-NiCd 5A	89895973		•					•
	Stick + Stick	3+2	Accu-NiCd 5C 55	89800090		•					•
	Stick + Stick	3+3	Accu-NiCd 6C	89895963			•				
NiMH 2 Ah Cs-cells	Stick	4	Accu-NiMH C 4A	89899700				•			
	Stick	5	Accu-NiMH C 5A	89899703				•			
	Stick	6	Accu-NiMH C 6A	89899706					•		
	Stick + Stick	3+3	Accu-NiMH C 6C	89899707					•		
NiMH 4 Ah Cs-cells ①	Stick	4	Accu-NiMH 4 Ah C 4A	89899850	•					•	
	Stick	5	Accu-NiMH 4 Ah C 5A	89899851		•					•
	Stick	6	Accu-NiMH 4 Ah C 6A	89899852			•				•
	Stick + Stick	3+3	Accu-NiMH 4 Ah C 6C	89899853			•				•

Note: 50°C batteries also available (see separate datasheet at [www.tridonic.com](http://www.tridonic.com))

① Maximum battery housing temperature 50 °C.

② The first figure is related to non-amalgam lamps, the second figure is related to amalgam lamps (e.g. 14/9,5).

③ For best performance of 26W and 32W TC lamps, and especially amalgam filled lamps, we recommend the use of EM 36 PRO EZ-3 resp. EM 16 PRO EZ-3.

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

## EM PRO EZ-3, 3 or 1 h

	Duration	3 h			Standard 1 h			High Output 1 h		
	Cells	4 cells	5 cells	6 cells	4 cells	5 cells	6 cells	4 cells	5 cells	6 cells
Type	EM 34 PRO EZ-3	EM 35 PRO EZ-3	EM 36 PRO EZ-3	EM 14 PRO EZ-3	EM 15 PRO EZ-3	EM 16 PRO EZ-3	EM 14 HO PRO EZ-3	EM 15 HO PRO EZ-3	EM 16 HO PRO EZ-3	
Article no.	89800022	89800023	89800024	89800025	89800026	89800027	89800019	89800020	89800021	
Lamp type	Wattage	EBLF in emergency lighting mode in % for rated operating time								
T5	6W	35			35			61		
	8W	36			36			62		
	13W	22			22			48,5		
T5 FH	14W	22			22			43		
	21W		17			17			38	
	28W			14			14			36
	35W			10.5			10.5			27
T5 FQ	24W	12.3			12.3			26		
	39W			8.3			8.3			27
	49W			6.4			6.4			18
	54W			5.7			5.7			17
	80W			4.7			4.7			15,5
T8	15W	16.5			16.5			32		
	18W	16.5			16.5			32		
	30W	9.5			9.5			23		
	36W	8			8			19		
	38W		10.5			10.5				
	58W		6.5			6.5			15,5	
	70W			3.7			3.7			
TC-DD	10W	29			29					
	16W	22.5			22.5					
	21W	15			15					
	28W	12.5			12.5					
	38W			6.5			6.5			
	55W			5.3			5.3			
TC-SEL	7W	22			22			44		
	9W	25.5			25.5			42		
	11W	28			28			54		
TC-DEL	10W	21.5			21.5			29		
	13W	23.0			23			34		
	18W	15.5			15.5			30		
	26W	13.0			13			23,5		
TC-TEL ②	13W	23			23					
	18W	16/10.7	/12.0		16/10.7	/12.0		26/11		
	26W③	10.4/8.9	/9.2	/11.2	10.4/8.9	/9.2	/11.2	21/15		
	32W③		12.8/4.8	/7.7		12.8/4.8	/7.7		18/11	
	42W			7.2/6.7			7.2/6.7		16/9	
	57W			5.0/3.2			5.0/3.2			16/5,7
T5c	22W	11.5			11.5			26		
	40W			6			6			23,5
	55W			5.5			5.5			19,5
TC-F	18W	16.5			16.5			31,5		
	24W		19.5			19.5			30,5	
	36W		12			12			23,5	
TC-L	18W	16			16			27		
	24W		15.5			15.5			28,5	
	36W		10.5			10.5			22	
	40W		8.4			8.4			21	
	55W			4.8			4.8			17,5

① According to EN 61347-2-7: 2006

② The first figure is related to non-amalgam lamps, the second figure is related to amalgam lamps (e.g. 14/9,5).

③ For best performance of 26W and 32W TC lamps, and especially amalgam filled lamps, we recommend the use of EM 36 PRO EZ-3 resp. EM 16 PRO EZ-3.

## Lamp current in emergency operation in mA

## EM PRO EZ-3, 3 or 1 h

	Duration	3 h			Standard 1 h			High Output 1 h		
	Cells	4 cells	5 cells	6 cells	4 cells	5 cells	6 cells	4 cells	5 cells	6 cells
Type	EM 34 PRO EZ-3	EM 35 PRO EZ-3	EM 36 PRO EZ-3	EM 14 PRO EZ-3	EM 15 PRO EZ-3	EM 16 PRO EZ-3	EM 14 HO PRO EZ-3	EM 15 HO PRO EZ-3	EM 16 HO PRO EZ-3	
Article no.	89800022	89800023	89800024	89800025	89800026	89800027	89800019	89800020	89800021	
Lamp type	Wattage	Lamp current in emergency operation in mA for rated operating time								
T5	6W	49			49			95		
	8W	40			40			85		
	13W	25			25			63		
T5 FH	14W	26			26			62		
	21W		22			22			55	
	28W			19			19			51
	35W			15			15			39
T5 FQ	24W	23			23			58		
	39W			14			14			62
	49W			14			14			33
	54W			12			12			48
	80W			13			13			35
T8	15W	42			42			84		
	18W	38			38			79		
	30W	24			24			53		
	36W	21			21			50		
	38W		27			27				
	58W		19			19			49	
	70W			13			13			
TC-DD	10W	29			29					
	16W	23			23					
	21W	28			28					
	28W	20			20					
	38W			14			14			
	55W			31			31			
TC-SEL	7W	47			47			95		
	9W	44			44			90		
	11W	32			32			74		
TC-DEL	10W	40			40			82		
	13W	27			27			67		
	18W	23			23			61		
	26W	20			20			53		
TC-TEL ①	13W	33/33			33/33			68/64		
	18W	23/22	/32		23/22	/32		61/63		
	26W	22/21	/27		22/21	/27		56/54		
	32W		21/19	/17		21/19	/17		55/55	
	42W			14/12			14/12			45/44
	57W			15/16			15/16			41/37
T5c	22W	23			23			57		
	40W			15			15			59
	55W			13			13			59
TC-F	18W	40			40			81		
	24W		42			42			87	
	36W		26			26			62	
TC-L	18W	39			39			83		
	24W		37			37			78	
	36W		25			25			57	
	40W		16			16			45	
	55W			12			12			57

① The first figure is related to non-amalgam lamps, the second figure is related to amalgam lamps (e.g. 15/16).

**Testing:****DALI Control**

A DALI command from a suitable control unit can be used to initiate function and duration tests at individually selected times. Status flags are set for report back and data logging of results.

When a DALI bus has not been connected or when a DALI bus is connected but the DALI default DELAY and INTERVAL times have not been re-set by sending appropriate DALI commands, then the EM PRO EZ-3 will conduct self-tests in accordance with the default times set within the EEPROM. These default times are factory pre-set, in accordance with the DALI standard EN 62386-202, to conduct an automatic function test every 7 days and a duration test every 52 weeks. Since the DELAY time is factory pre-set to Zero, all units are tested at the same time. Test times can be changed with a command over the DALI bus.

The DELAY and INTERVAL time values must be re-set when the emergency system test times are to be scheduled by a DALI control and monitoring system. Note that once the default values have been set to Zero, tests will only be conducted following a command from the control system. If the DALI bus is disconnected the EM PRO EZ-3 does not revert to self-testing mode.

**Addressing**

The EM PRO EZ-3 includes the new EZ easy addressing system which allows addressing and identification by using the bi-colour LED in conjunction with the EM PRO addressing tool. Binary address codes given by the LED can be simply converted to the DALI addresses 0 to 63. For single handed addressing using this method it is necessary to send a broadcast ident command every 3 to 9 seconds. During this command the main fluorescent lamp will be switched off and the LED will flash the 6 bit binary address preceded by a 3 second start indication period.

**Functional test**

The time of day and frequency of the 30 seconds function test can be set by the DALI controller. The default setting is a 30 seconds test on a weekly basis.

**Duration test**

The time of day and frequency of the duration test can be set by the DALI controller. The default setting is a duration test conducted every 52 weeks.

**Prolong time**

Prolong time can be set by the DALI controller. This is the delay time between return of the mains supply and the end of the emergency operation. The default prolong time is set as 0 minutes as specified within the DALI standard.

**Rest Mode**

Rest mode can be initiated by the DALI controller. The appropriate command should be sent after the mains supply has been disconnected and whilst the module is in emergency operation. A mains reset is required to exit the rest mode. EM PRO EZ-3 does not support the re-light command via the DALI bus.

**Test switch**

An optional test switch can be wired to each EM PRO EZ-3. This can be used to initiate a 30 seconds function test by a short press < 1 second.

**DALI Controller**

DALI controllers and hardware/software solutions are available from Tridonic. Please refer to the Lighting controls section.

**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 bi-colour status indicator**

- Green / red
- Mounting hole 6.5 mm dia
- Lead length 1000 mm
- Insulation rating: 90 °C

**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 receptacles at each end and insulating covers to connect the separate sticks together.

**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.

**Status indication**

System status is indicated by a bi-colour LED and by a DALI status flag.

LED	Status
Permanent green	System OK
Fast flashing green	Function test underway
Slow flashing green	Duration test underway
Permanent red	Lamp fault
Fast flashing red	Charging fault
Slow flashing red	Battery fault
Double pulsing green	Inhibit mode

**Accu-NiCd**

Case temperature range	0 °C to +55 °C
to ensure 4 years design life	
Battery voltage/cell	1.2 V
Capacity D	4.2 / 4.5 Ah
Max. short term temperature (reduced lifetime)	70 °C
Packing quantity	5 pcs. per carton

**Accu-NiMH**

Case temperature range	
(to ensure 4 years design life)	
2.0 Ah Cs	0 °C to +55 °C
4.0 Ah Cs	0 °C to +50 °C
Battery voltage	1.2 V
Capacity Cs	2.0 Ah
	4.0 Ah
Max. short term temperature (reduced lifetime)	70 °C
Packing quantity	5 pcs. per carton



### 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 V<sub>DC</sub> 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 V<sub>AC</sub> (or 1,414 x 1,500 V<sub>DC</sub>). To avoid damage to the electronic devices this test must not be conducted.

Note:  
Basic insulation between supply and battery circuit.

### 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.

### EM FLT1 filter

When the EM PRO EZ-3 is used in a remote application, where the lamp leads and LED indicator leads are routed together in close proximity, it is possible to have electrical interference picked up in the indicator leads.

Under certain conditions this interference can cause a lock-up of the EM PRO EZ-3 micro-controller.

To overcome this problem in such applications it is necessary to fit the filter EM FLT1 between the indicator LED and the EM PRO EZ-3 unit. To be effective the filter must be connected close to the EM PRO EZ-3 module.

For further information please contact Tridonic.

Technical data:

Push wire terminals 0.5–1.5 mm<sup>2</sup> solid conductor

### Ordering data

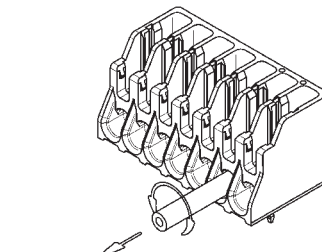
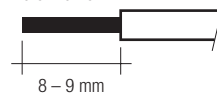
Type	Article number	Packaging, carton	Packaging, pallet	Weight per pcs.
EM FLT1	89899942	50 pieces	1,000 pieces	0.022 kg

### 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 mm<sup>2</sup>



Loosen wire through twisting and pulling

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.

### IDC interface

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

### 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>

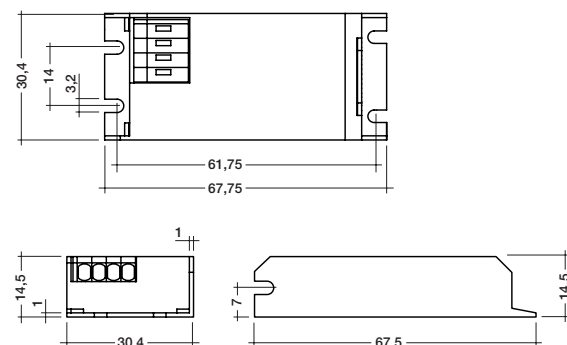
<sup>1)</sup> Note: care should be taken not to exceed the total maximum lamp lead capacitance for HF ballast. Leads should always be kept as short as possible.

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.

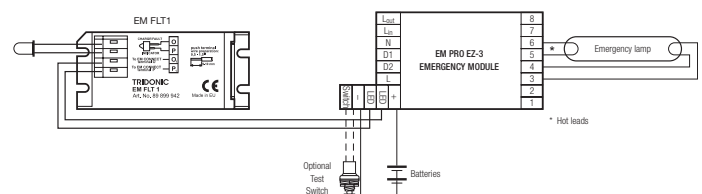
Capacitive loading limits of lamp leads must not be exceeded. Note the capacitance of the emergency lamp leads adds to the capacitance of the leads from the ballast to the EM PRO EZ-3 module when considering ballast loading.

The LED and test switch wiring should be routed separately and kept as far away as possible from the high frequency lamp leads to avoid coupling.

### EM FLT1 filter



### Circuit diagram with EM FLT1 filter

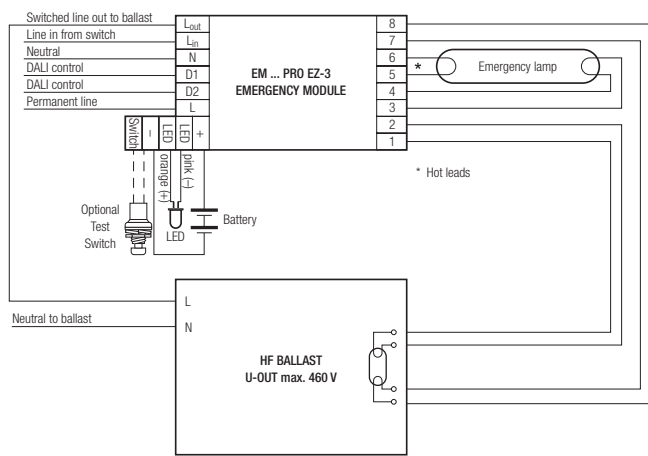


**Standards**

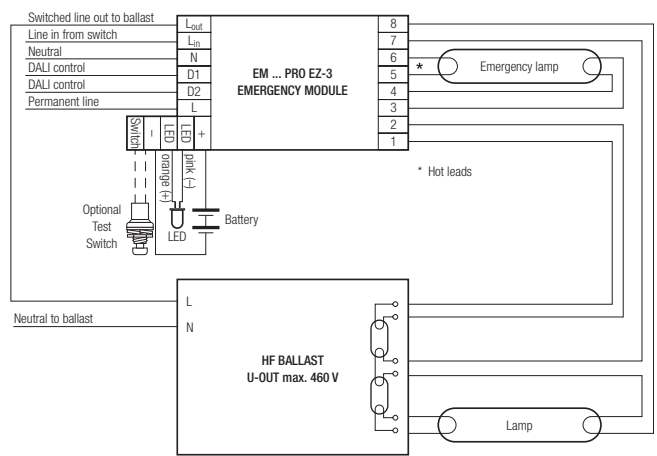
- acc. to EN 50172
- acc. to EN 60598-2-22
- EN 61347-2-7
- EN 62034
- EN 55015
- EN 61000-3-2
- EN 61000-3-3
- IEN 61547
- EN 60068-2-64
- EN 60068-2-29
- EN 60068-2-30
- IEC 62386 (according to DALI standard V1)

**EM PRO EZ-3 emergency module wiring diagrams**

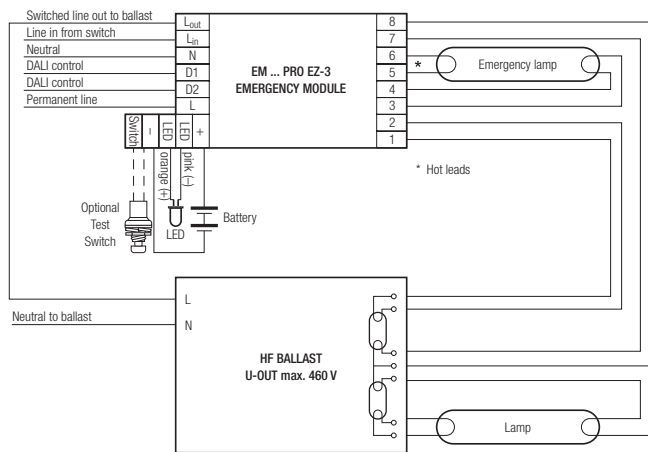
Not for use with magnetic ballasts and switch start circuits



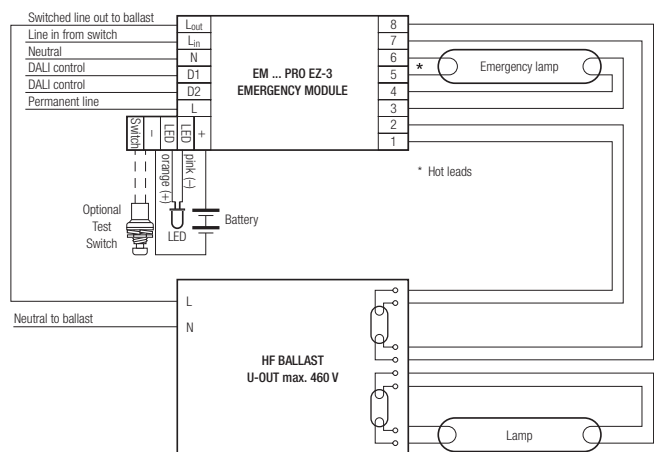
Wiring diagram for single lamp high frequency ballasts



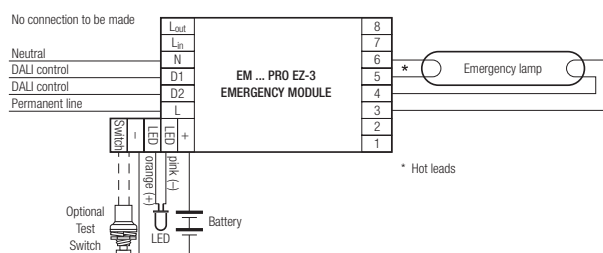
Wiring diagram for twin lamp high frequency ballasts with 6 terminals



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 Tridonic website [www.tridonic.com](http://www.tridonic.com)