

EM PRO EZ-3, 220 – 240 V

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 status

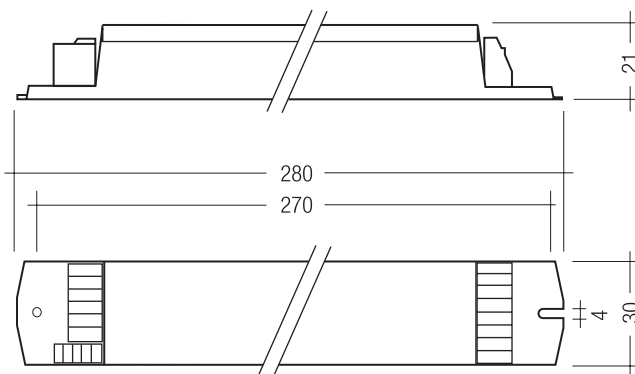
Batteries

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



Standards, page 9

For wiring diagrams and installation examples, page 9



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
Output frequency range	20 – 72 kHz
Battery charging time 3 / 1 h	15 / 10 h
Discharge current, Standard BLF / High Output BLF	1.1 / 2.2 A
Leakage current (PE)	0.5 mA
Ambient temperature ta	-5 ... +60 °C
Max. casing temperature tc	70 °C
Mains voltage changeover threshold	according to EN 60598-2-22
Min. lamp starting temperature (emergency operation)	-5 °C
Type of protection	IP20
Protection class	I

Ordering data

Number of cells	Type	Article number
Rated operating time 3 h, Standard BLF		
4	EM 34 PRO EZ-3	89800022
5	EM 35 PRO EZ-3	89800023
6	EM 36 PRO EZ-3	89800024
Rated operating time 1 h, Standard BLF		
4	EM 14 PRO EZ-3	89800025
5	EM 15 PRO EZ-3	89800026
6	EM 16 PRO EZ-3	89800027

Packaging: 25 pieces/carton, 475 pieces/pallet

Ordering data

Number of cells	Type	Article number
Rated operating time 1 h, High Output BLF		
4	EM 14 HO PRO EZ-3	89800019
5	EM 15 HO PRO EZ-3	89800020
6	EM 16 HO PRO EZ-3	89800021

Packaging: 25 pieces/carton, 475 pieces/pallet

Specific technical data

Type	Battery charge time	Charge current		
		Charge current NiMH 2.0 Ah, Ignition charge	Rapid charge	Charge current NiMH 2.0 Ah, Trickle charge
Rated operating time 3 h, Standard BLF				
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
Rated operating time 1 h, Standard BLF				
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
Rated operating time 1 h, High Output BLF				
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
Test switch EM 2	89805277

Packaging: 25 pieces/bag, 200 pieces/carton

ACCES-
ORIES

Status indication bi-colour LED

Product description

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



Ordering data

Type	Article number
LED EM bi-colour	89899720
LED EM bi-colour, high brightness	89899753

Packaging: 25 pieces/bag, 200 pieces/carton

ACCES-
ORIES

Addressing tool

Product description

- Provides simple addressing for the EM PRO units
- Uses the bi-colour LED for the EM PRO device identification
- Converts the LED binary identification signal to a DALI address of between 0 to 63
- The tool is powered from a 9 V battery (not supplied)



Ordering data

Type	Article number
EM PRO addressing tool	89899836

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	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								
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			14
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 1.5 Ah Cs-cells	Stick	4	Akku-NiCd C 4A	89899692				•			
	Side by side	4	Akku-NiCd C 4B	89899693				•			
	Stick + Stick	2 + 2	Akku-NiCd C 4C	89899694				•			
	Stick	5	Akku-NiCd C 5A	89899695					•		
	Side by side	5	Akku-NiCd C 5B	89899696					•		
	Stick + Stick	3 + 2	Akku-NiCd C 5C	89899697					•		
	Stick	6	Akku-NiCd C 6A	89899698						•	
	Stick + Stick	3 + 3	Akku-NiCd C 6C	89899699						•	
NiCd 4.0 Ah D-cells	Stick	4	Akku-NiCd 4A	89895961	•					•	
	Side by side	4	Akku-NiCd 4B	89895977	•					•	
	Stick + Stick	2 + 2	Akku-NiCd 4C	89895978	•					•	
	Stick	5	Akku-NiCd 5A	89895973		•					•
	Stick + Stick	3 + 2	Akku-NiCd 5B	89895962		•					•
	Stick + Stick	3 + 3	Akku-NiCd 6A	89895963			•				•
NiMH 2.0 Ah Cs-cells	Stick	4	Akku-NiMH C 4A	89899700				•			
	Stick	5	Akku-NiMH C 5A	89899703					•		
	Stick	6	Akku-NiMH C 6A	89899706						•	
	Stick + Stick	3 + 3	Akku-NiMH C 6C	89899707						•	
NiMH 4.0 Ah Cs-cells ①	Stick	4	Akku-NiMH 4 Ah C 4A	89899850	•					•	
	Stick	5	Akku-NiMH 4 Ah C 5A	89899851		•					•
	Stick	6	Akku-NiMH 4 Ah C 6A	89899852			•				•
	Stick + Stick	3 + 3	Akku-NiMH 4 Ah C 6C	89899853			•				•

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		
	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	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	11.5/10.4	/15	/14.0	11.5/10.4	/15	/14.0	23/26		
	32 W		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 1.5 Ah Cs-cells	Stick	4	Akku-NiCd C 4A	89899692				•		
	Side by side	4	Akku-NiCd C 4B	89899693				•		
	Stick + Stick	2 + 2	Akku-NiCd C 4C	89899694				•		
	Stick	5	Akku-NiCd C 5A	89899695				•		
	Side by side	5	Akku-NiCd C 5B	89899696				•		
	Stick + Stick	3 + 2	Akku-NiCd C 5C	89899697				•		
	Stick	6	Akku-NiCd C 6A	89899698					•	
	Stick + Stick	3 + 3	Akku-NiCd C 6C	89899699					•	
NiCd 4.0 Ah D-cells	Stick	4	Akku-NiCd 4A	89895961	•				•	
	Side by side	4	Akku-NiCd 4B	89895977	•				•	
	Stick + Stick	2 + 2	Akku-NiCd 4C	89895978	•				•	
	Stick	5	Akku-NiCd 5A	89895973		•				•
	Stick + Stick	3 + 2	Akku-NiCd 5B	89895962		•				•
	Stick + Stick	3 + 3	Akku-NiCd 6A	89895963			•			•
NiMH 2.0 Ah Cs-cells	Stick	4	Akku-NiMH C 4A	89899700			•			
	Stick	5	Akku-NiMH C 5A	89899703				•		
	Stick	6	Akku-NiMH C 6A	89899706					•	
	Stick + Stick	3 + 3	Akku-NiMH C 6C	89899707					•	
NiMH 4.0 Ah Cs-cells ①	Stick	4	Akku-NiMH 4 Ah C 4A	89899850	•				•	
	Stick	5	Akku-NiMH 4 Ah C 5A	89899851		•				•
	Stick	6	Akku-NiMH 4 Ah C 6A	89899852			•			•
	Stick + Stick	3 + 3	Akku-NiMH 4 Ah C 6C	89899853			•			•

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).

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	6 W	35			35			61		
	8 W	36			36			62		
	13 W	22			22			48.5		
T5 FH	14 W	22			22			43		
	21 W		17			17			38	
	28 W			14			14			36
	35 W			10.5			10.5			27
T5 FQ	24 W	12.3			12.3			26		
	39 W			8.3			8.3			28
	49 W			6.4			6.4			18
	54 W			5.7			5.7			17
	80 W			4.7			4.7			13
T8	15 W	16.5			16.5			32		
	18 W	16.5			16.5			32		
	30 W	9.5			9.5			23		
	36 W	8			8			19		
	38 W		10.5			10.5				
	58 W		6.5			6.5			15.5	
TC-DD	70 W			3.7			3.7			
	10 W	29			29					
	16 W	22.5			22.5					
	21 W	15			15					
	28 W	12.5			12.5					
	38 W			6.5			6.5			
TC-SEL	55 W			5.3			5.3			
	7 W	22			22			44		
	9 W	25.5			25.5			42		
TC-DEL	11 W	28			28			54		
	10 W	21.5			21.5			29		
	13 W	23.0			23			34		
	18 W	15.5			15.5			30		
TC-TEL ^②	26 W	13.0			13			23.5		
	13 W	23			23					
	18 W	16/10.7	/12.0		16/10.7	/12.0		26/11		
	26 W	10.4/8.9	/9.2	/11.2	10.4/8.9	/9.2	/11.2	21/15		
	32 W		12.8/4.8	/7.7		12.8/4.8	/7.7		18/11	
	42 W			7.2/6.7			7.2/6.7		16/9	
T5c	57 W			5.0/3.2			5.0/3.2			16/5.7
	22 W	11.5			11.5			26		
	40 W			6			6			23.5
TC-F	55 W			5.5			5.5			19.5
	18 W	16.5			16.5			31.5		
	24 W		19.5			19.5			30.5	
TC-L	36 W		12			12			23.5	
	18 W	16			16			27.0		
	24 W		15.5			15.5			28.5	
	36 W		10.5			10.5			22	
	40 W		8.4			8.4			21	
	55 W			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).

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	Lamp current in emergency operation in mA for rated operating time									
T5	6 W	49			49			95		
	8 W	40			40			85		
	13 W	25			25			63		
T5 FH	14 W	26			26			62		
	21 W		22			22			55	
	28 W			19			19			51
	35 W			15			15			39
T5 FQ	24 W	23			23			58		
	39 W			14			14			62
	49 W			14			14			33
	54 W			12			12			48
	80 W			13			13			35
T8	15 W	42			42			84		
	18 W	38			38			79		
	30 W	24			24			53		
	36 W	21			21			50		
	38 W		27			27				
	58 W		19			19			49	
TC-DD	70 W			13			13			
	10 W	29			29					
	16 W	23			23					
	21 W	28			28					
	28 W	20			20					
	38 W			14			14			
TC-SEL	55 W			31			31			
	7 W	47			47			95		
	9 W	44			44			90		
TC-DEL	11 W	32			32			74		
	10 W	40			40			82		
	13 W	27			27			67		
	18 W	23			23			61		
TC-TEL ①	26 W	20			20			53		
	13 W	33/33			33/33			68/64		
	18 W	23/22	/32		23/22	/32		61/63		
	26 W	22/21	/27		22/21	/27		56/54		
	32 W		21/19	/17		21/19	/17		55/55	
	42 W			14/12			14/12			45/44
	57 W			15/16			15/16			41/37
T5c	22 W	23			23			57		
	40 W			15			15			59
	55 W			13			13			59
TC-F	18 W	40			40			81		
	24 W		42			42			87	
	36 W		26			26			62	
TC-L	18 W	39			39			83		
	24 W		37			37			78	
	36 W		25			25			57	
	40 W		16			16			45	
	55 W			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 13 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 13 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 mm² 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

storage life in temperate conditions 4 years

battery voltage/cell 1.2 V

capacity D 4.0 Ah

capacity Cs 1.5 Ah

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

storage life in temperate conditions 4 years

battery voltage 1.2 V

capacity Cs 2.0 Ah

4.0 Ah

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_{DC} 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_{AC} (or 1,414 x 1,500 V_{DC}). To avoid damage to the electronic devices this test must not be conducted.

Note:

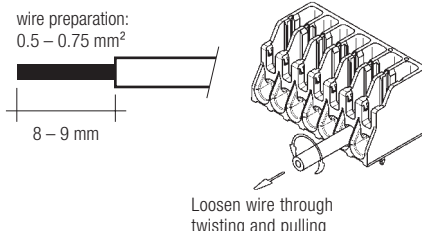
Basic insulation between supply and battery circuit.

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



IDC interface

- solid wire with a cross section of 0.5 mm² according to the specification from WAGO
- alternatively a flexible lead with a cross section of 0.75 mm²

Horizontal interface

- solid wire with a cross section of 0.5–0.75 mm² according to the specification from WAGO
- solid wire with a cross section of 1.0 mm² 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 mm²
6.5 mm strip

Maximum lamp lead capacitance

terminals 5 and 6 (* hot leads) 100 pF ¹⁾
terminals 3 and 4 200 pF ¹⁾

¹⁾ 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 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

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.

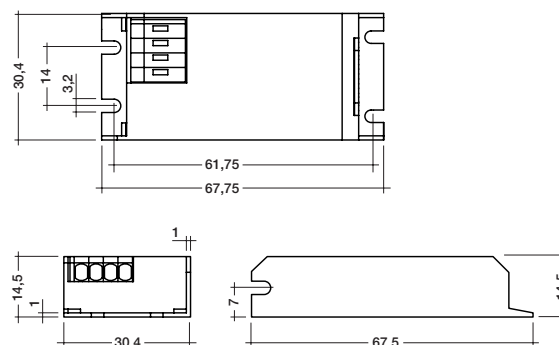
For further information please contact Tridonic.

Technical data:

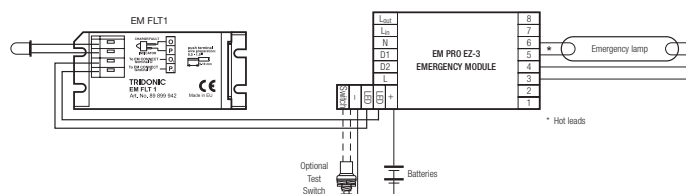
Push wire terminals 0.5–1.5 mm² solid conductor

Product	article number
EM FLT1	89899942

EM FLT1 filter



Circuit diagram with EM FLT1 filter



Standards

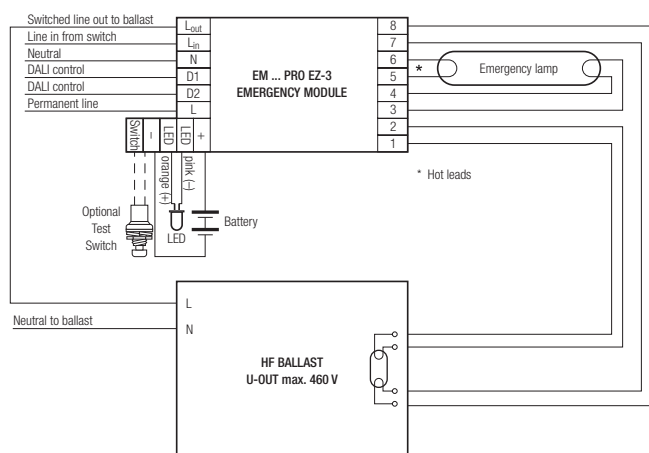
- acc. to EN 50172
- acc. to EN 60598-2-22
- EN 61347-2-7
- EN 60929
- EN 62034
- EN 55015
- EN 61000-3-2
- EN 61000-3-3
- IEN 61547
- EN 60068-2-64
- EN 60068-2-29
- EN 60068-2-30

Packing quantities

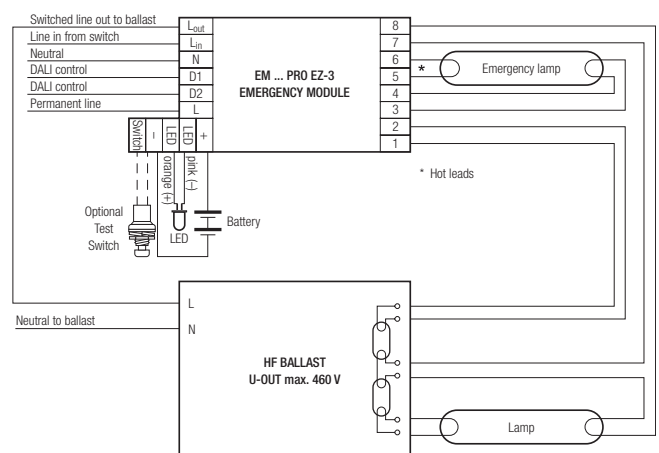
EM PRO EZ-3	25 pieces per carton	475 pieces per pallet
LED bi-colour	25 pieces per bag	200 pieces per box
Test switch EM2	25 pieces per bag	200 pieces per box
NiCd batteries	25 pieces per box	450 pieces per pallet
NiMh batteries	25 pieces per box	450 pieces per pallet
EM FLT1 filter	50 pieces per box	1.000 pieces per pallet

EM PRO EZ-3 emergency module wiring diagrams

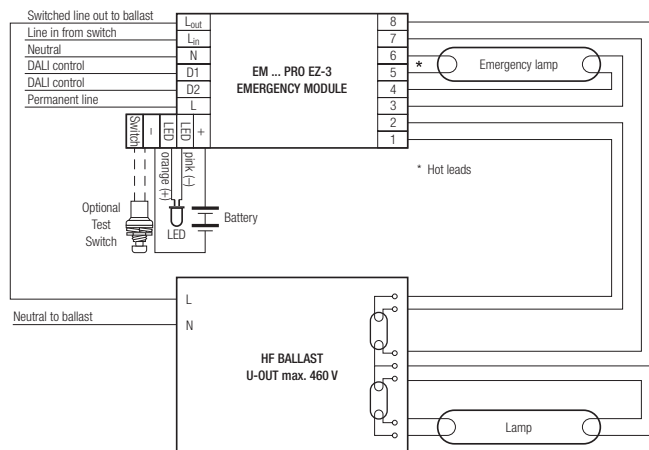
Not for use with magnetic ballasts and switch start circuits



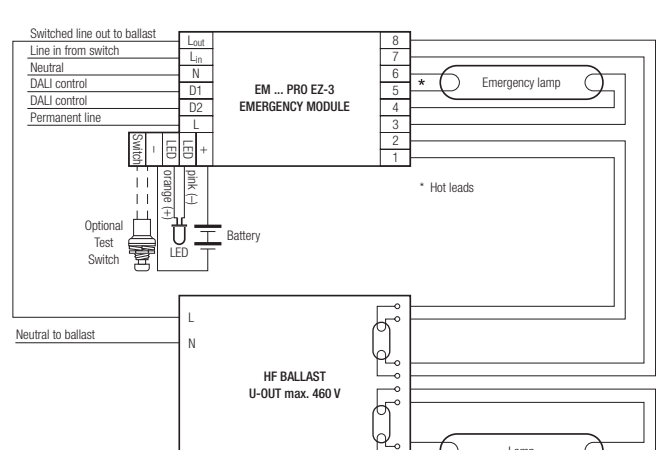
Wiring diagram for single lamp high frequency ballasts



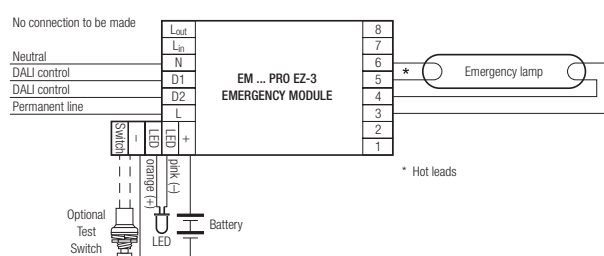
Wiring diagram for twin lamp high frequency ballasts with 6 terminals



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