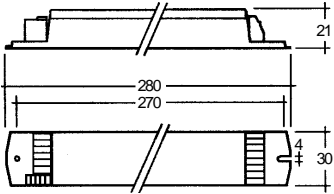


EM PRO EZ 220-240V 50/60Hz
2642059
4167126



Description:

Low profile emergency lighting modules with DALI interface and automatic testing facility 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 preheat starting and permanent cathode heating during the emergency operation. Boost starting for 55 seconds at higher power levels is provided for all lamps to ensure rapid warm up, optimised lamp life and improved initial visibility during an emergency operation. Power control technology ensures maximum emergency ballast lumen factors for all lamps on a given module.

DALI interface terminals are provided to allow control and monitoring via a separate controller.

With no DALI bus connected the unit operates in Selftest mode with testing being conducted on a weekly functional and 13 week duration basis with adaptive duration testing feature to minimise risk.

Fitted with the unique EZ easy addressing feature which uses the LED to indicate the DALI address during commissioning.

Features:

Module

- DALI interface for controlled monitoring and reporting
- Low profile section (21 mm x 30 mm)
- 5 pole technology
- For use with HF ballasts
- NiCd or NiMh battery options
- 10-15 hour accu recharge time
- 3 hour and 1 hour operation
- High and standard BLF for 1 hour versions
- Bi-colour LED to indicate status
- AC operation of lamps
- Pre-heating of cathodes during emergency operation
- Permanent cathode heating during emergency operation
- Boost starting facility for all lamps
- Deep discharge protection
- Regulated electronic charging circuit
- Testing
 - Battery condition
 - Lamp condition
 - Charge condition
- EZ easy addressing feature

Batteries

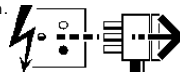
- NiCd or NiMh options
- D or Cs cells
- High temperature cells
- Spade terminals for easy connection

Certified

- EN 55015
- EN 55022
- EN 601347-2-7
- EN 60925
- pr IEC 62034
- Allows compliance with EN 60598-2-22
- DALI standard EN 60925 Ed 2/CDV v 1.12
- EN 61000-3-2
- EN 61547
- IEC 68-2-6
- IEC 68-2-29
- IEC 68-2-30

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

Disconnect from mains supply before replacing the fuse or the lamp.
Vor dem Einsetzen der Sicherung oder der Lampe Spannungsfreiheit herstellen.
Débrancher le secteur avant de remplacer le fusible ou l'ampoule.
Desconectar del suministro de la red, antes de realizar la sustitución del fusible o de la lámpara.
Voor het vervangen van lamp of zekering, eerst netspanning uitschakelen.
Koppla bort spänningen före byte av en säkring eller en lampa.



Switch Off
Abschalten
Débrancher
Desconectar
Uitschakelen
Stäng av



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 is not connected or when a command has not been received the EM ... PRO EZ will operate in the self testing mode and will conduct tests in accordance with the default times stored in the EEPROM. However it should be noted that in this case the delay time is set as default zero and all units could test at the same time. Test times can be changed with a command over the DALI bus.

Addressing

The EM PRO EZ includes the new EZ easy addressing system which allows addressing and identification by using the bi-colour LED in conjunction with the EZ PRO ADDRESS 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. If the EM ... PRO EZ unit is not connected to a DALI bus or has not received a DALI command the test will default to 30 seconds duration on a weekly basis.

Duration test

Test times can be set by the DALI controller. If the EM ... PRO EZ unit is not connected to a DALI bus or has not received a DALI command the test will be 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 2 minutes as specified within the DALI standard.

Test switch

An optional test switch can be wired to each EM ... PRO EZ. This can be used to to:

- initiate a 30 seconds function test < 1 second press
- adjust local timing when used in self test mode > 10 second press

For a full description of the test switch function refer to application notes.

DALI Controller

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

EM ... PRO EZ 3 hour

type	NiCd D cells			NiMh cells		
	article number	number of cells	type	article number	number of cells	type
EM 34 NiCd D PRO EZ	89899827	4	In preparation			
EM 35 NiCd D PRO EZ	89899828	5	In preparation			
EM 36 NiCd D PRO EZ	89899829	6	In preparation			

EM ... PRO EZ 1 hour standard BLF

type	NiCd Cs cells			NiMh Cs cells		
	article number	number of cells	type	article number	number of cells	type
EM 14 NiCd C PRO EZ	89899830	4		89899846	4	
EM 15 NiCd C PRO EZ	89899831	5		89899847	5	
EM 16 NiCd C PRO EZ	89899832	6		89899848	6	

EM ... PRO EZ 1 hour high BLF

type	NiCd D cells			NiMh cells		
	article number	number of cells	type	article number	number of cells	type
EM 14 NiCd D PRO EZ	89899833	4	In preparation			
EM 15 NiCd D PRO EZ	89899834	5	In preparation			
EM 16 NiCd D PRO EZ	89899835	6	In preparation			

Battery packs	type	cells	article number	Battery packs	type	cells	article number
NiCd 1.4 Ah Cs cells				NiMh 2.6 Ah Cs cells			
Accu-NiCd C 4A	stick	4	89899692	Accu-NiMh C 4A	stick	4	89899700
Accu-NiCd C 4B	slide by slide	4	89899693	Accu-NiMh C 4B	slide by slide	4	89899701
Accu-NiCd C 4C	stick+stick	2+2	89899694	Accu-NiMh C 4C	stick+stick	2+2	89899702
Accu-NiCd C 5A	stick	5	89899695	Accu-NiMh C 5A	stick	5	89899703
Accu-NiCd C 5B	slide by slide	5	89899696	Accu-NiMh C 5B	slide by slide	5	89899704
Accu-NiCd C 5C	stick+stick	3+2	89899697	Accu-NiMh C 5C	stick+stick	3+2	89899705
Accu-NiCd C 6A	stick	6	89899698	Accu-NiMh C 6A	stick	6	89899706
Accu-NiCd C 6C	stick+stick	3+3	89899699	Accu-NiMh C 6C	stick+stick	3+3	89899707

type	article number	type	article number
LED bi-colour	89899720	test switch EM 2	89805277
LED bi-colour high brightness	89899753		

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	1.2V per cell
	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 per cell
	capacity Cs	2.0 Ah

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
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: 4.8x0.5 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	Rest mode

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.

Technical data:

EM PRO EZ	3 hour	1 hour
Rated mains supply voltage	220-240V	220-240V
Mains frequency	50/60Hz	50/60Hz
Mains supply current	60mA max	60mA max
Mains supply power	<10.0W	<10.0W
Overvoltage protection	320V for 1 hour	320V for 1 hour
Max. working voltage U-OUT	460 V	460 V
Recharge period	15 hours	10 hours
Discharge current	1.1A	1.1A
Charge current NiCd: initial	330 mA	130 mA
Trickle	130 mA	50 mA
Charge current NiMh	pulsed charging	pulsed charging
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 charge over voltage	In accordance with EN 60598-2-22	In accordance with EN 60598-2-22
Min. lamp starting temp. (emergency mode)	-5 °C	-5 °C
Ingress protection	IP20	IP20
Safety class	class I	class I
Function test	30 seconds via DALI command	30 seconds via DALI command
Duration test	3 hr via DALI command	1 hr via DALI command
Timer	crystal controlled	crystal controlled
Boost starting time	55 seconds	55 seconds

Emergency light output factors (BLF) in %:

Type	3 hours			1 hour			1 hour high BLF		
	EM 34 ... D PRO EZ	EM 35 ... D PRO EZ	EM 36 ... D PRO EZ	EM 14 ... C PRO EZ	EM 15 ... C PRO EZ	EM 16 ... C PRO EZ	EM 14 ... D PRO EZ	EM 15 ... D PRO EZ	EM 16 ... D PRO EZ
TC-DD	10	37	37	37	25	19	37	25	19
TC-SEL	5	40	40	40	39	39	53	53	53
TC-DEL	10	31	31	31	26	21	51	47	34
TC-TEL	18	21	21	21	14	14	36	27	25
TC-F	18	18	18	18	12	11	32	33	36
TC-L	18	18	18	18	12	11	32	33	26
T5 FH	14	24	24	24	16	14	47	44	42
T5 FQ	24	13	13	13	8	6	30	22	23
T5 C	22	14	14	14	7	7	30	27	23
T5	4	39	39	39	43	40	70	75	68
T8	15	20	20	20	12	11	32	33	27
T8	18	16	16	16	10	8	23	23	23

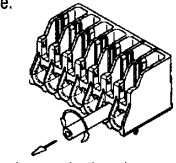
Electrical connections:

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: 0.5-0.75mm²

+8-9 mm



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

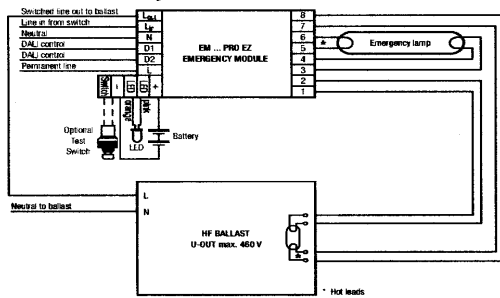
Maximum lamp lead capacitance

terminals 5 and 6 (* hot leads) 100 pF¹⁾
terminals 3 and 4 200 pF¹⁾

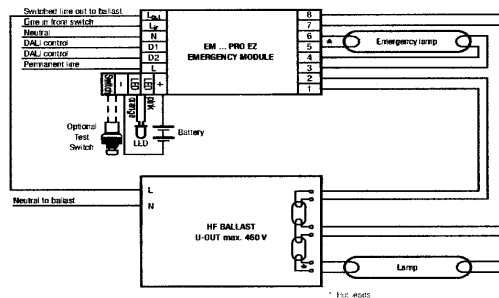
¹⁾ Note: care should be taken not to exceed the total maximum lamp lead capacitance for HF ballast. Leads should always be kept as short as possible.

EM ... PRO EZ emergency module wiring diagrams

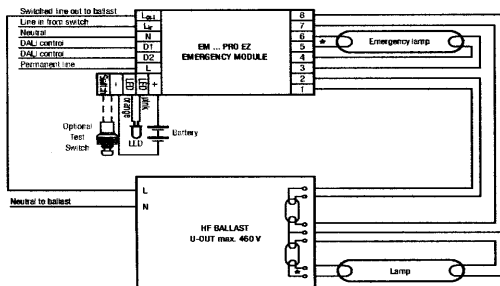
Not for use with magnetic ballasts and switch start circuits



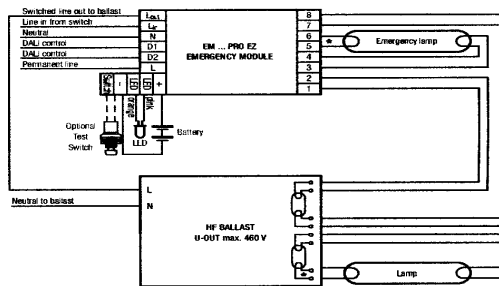
Wiring diagram for single lamp high frequency ballasts



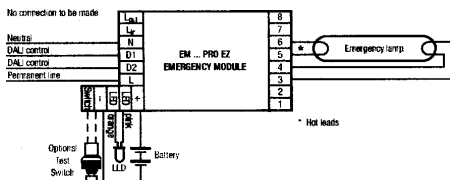
Wiring diagram for twin lamp high frequency ballasts with 6 terminals



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

Suitable for use indoors

Geeignet für Innenanwendung

Pour un usage interne

Adecuada para uso en interiores

Geschikt voor gebruik binnen

Lämpig för inomhusbruk



Replace any cracked protective shield.

Dieses symbol bedeutet, dass defekte Schutzgläser sofort ersetzt werden müssen.

Ce symbol indique que vous devez remplacer tout verre de protection fêlé.

Este símbolo indica que hay que reemplazar filtros en caso de rotura o desperfectos.

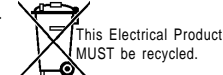
Dette symbol et indikerer at alle ødelagte (sprukne) sikkerhetsglass må skiftes.

Valaisinta el saa käyttää ilman suojalasia vioittunut suojalasi on vaihdettava uuteen ennen valaisimen käyttöön ottoa.



Based on Data sheet 05/06-575-0 by TRIDONIC.ATCO

< Millimetres >



02.09