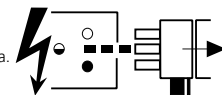


2647392

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

Description:

Low profile LED emergency lighting modules with DALI interface and automatic testing facility to cover 1 hour, 2 hours and 3 hours duration operating from NiMH Cs batteries. Duration can be selected by means of a removable 3 way link system (jumper). For normal mains and emergency operation of 1 W and 2 W Power LEDs. The 2 W module can either drive a single LED at 600 mA or two LEDs at 350 mA in series. Both modules are able to operate multiple LED (3–12) wired in parallel for example with exit signs. Power control technology ensures maximum emergency light output for a given duration time with a minimum battery cell count in consideration of LED tolerances. The case is available for both clip and screw fixings.

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

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

**Features:
Module**

- LED emergency lighting module
- Normal and emergency operation
- DALI interface for controlled monitoring and reporting
- DALI switchable in mains operation (on/off; the switched line SL has to be on)
- Low-profile cross-section (21 x 30 mm)
- Constant current mode
- 1 W or 2 W version
- 3-hour, 2-hour or 1-hour operation
- Operating time selected by means of removable short circuit plugs (jumper)
- NiMH batteries
- Electronic multilevel charging system
- 12 hours accu recharge time
- Power output restriction
- Automatic restart after LED change within 2 s
- Bi-colour LED to indicate status
- powerLED output, battery, indicator LED and test switch output are SELV equivalent
- Reverse battery protection
- Deep discharge protection
- Short-circuit-proof
- Testing
 - Battery condition
 - LED condition
 - Charge condition
- EZ easy addressing feature

Approvals

ENEC
CE
according to EN 60598-2-22
according to EN 50172

Test switch

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

Emergency-LED

Available – for further information please contact TridonicAtco.

The EM powerLED has a unique power regulation circuit; this is designed to limit the total power drawn from the battery in the event of using LED's with excessively high forward voltages (Vf).

In such cases the unit will reduce the LED current in order to maintain an acceptable drain current from the battery and hence meet the required duration time. This feature enables the EM powerLED to have minimum battery count for a given range of LED's.

At a low charge state of the battery (<1.5V at the 1 W driver and <3V at the 2 W driver) the LED will not be driven in maintained mode via the switched line until the rated battery voltage levels are exceeded.

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 DALI has never been used with the EM powerLED PRO or if the test interval and delay times were set by DALI in the internal memory of the module it will operate in the self testing mode and will conduct tests in accordance with the times stored in the EEPROM (factory default is a weekly function test and every 13 weeks a duration test). The EM powerLED PRO will still accept tests over the DALI bus but these will be in addition to those in self test mode. The test interval and delay times have to be set to zero so that the EM powerLED performs tests only on demand by the controller.

Addressing

The EM powerLED PRO 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 LED will be switched off and the status indication LED will flash the 6 bit binary address preceded by a 3 second start indication period.

Commissioning

After installation of the luminaire and initial connection of the mains supply and battery supply to the EM powerLED PRO the unit will commence charging the batteries for 20 hours (initial charge). Afterwards the module will conduct a commissioning test for the full duration. The 20 hours recharge occurs also if a new battery is connected or the module exits the rest mode condition. The following automatic commissioning duration test is only performed when a battery is replaced and fully charged (after 20 hrs) and the interval time is not set to zero, otherwise the system is expected to perform the testing.

Functional test

The time of day and frequency of the 5 seconds function test can be set by the DALI controller. If the EM powerLED PRO unit is not connected to a DALI bus or has not received a DALI command the test will default to 5 seconds duration on a weekly basis.

Duration test

Test times can be set by the DALI controller. If the EM powerLED PRO 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.

Test switch

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

- initiate a 5 seconds function test press 200 ms < T < 1 s
- execute function test for the time set as prolong time > 1 second press
- adjust local timing when used in self test mode > 10 second press

DALI Controller

DALI controllers and hardware/software solutions like the e-touchBOX are available from TridonicAtco. Please refer to the separate data sheet for the e-touchBOX at the Lighting controls section.

Technical data Accu-NiMH

case temperature range to ensure 4 years design life 0°C to +45°C
storage life in temperate conditions 4 years
battery voltage 1.2V per cell
capacity Cs 2.0Ah




Storage

- Batteries should be stored within the specified temperature range in low humidity conditions. Optimal storage conditions are
 - temperature: +5°C to +25°C
 - humidity: 65% ±20%
- Avoid atmosphere with corrosive gas
- It is recommended to disconnect the battery before store or delivery
- Avoid to store the batteries discharged
- A long term storage in open circuit leads to battery self discharge and deactivation of chemical components. It could be required to charge and discharge the batteries a few times to recover the initial performance.

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.

Link positions for duration and cell count

Duration	Link Position	1 W Power	2 W Power
1 hr	 without jumper	2 cell	3 cell
2 hr	 position A	3 cell	4 cell
3 hr	 position B	3 cell	5 cell

Jumper selection

Module supplied with jumper in 3 hours position (position B).

The position of the link will only be read on first power up. If it is changed afterwards both the battery and mains supply must be disconnected for 10 seconds to enable the EM powerLED to read the new link position on reconnection of the battery and mains. It will lead to a false battery failure indication if the link is changed after installation without this reset.

Status indication

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

LED Indication	Status	Commentary
Permanent green	System OK	AC mode
Fast flashing green (0.1 sec. on – 0.1 sec. off)	Function test underway	
Slow flashing green (1 sec. on – 1 sec. off)	Duration test underway	
Red LED on	Load failure	Open circuit / Short circuit / LED failure ⊕
Slow flashing red (1 sec. on – 1 sec. off)	Battery failure	Battery failed the duration test or function test / Battery is defect / Incorrect battery voltage
Fast flashing red (0.1 sec. on – 0.1 sec. off)	Charging failure	Incorrect charging current
Double pulsing green	Blocking mode	Switching into blocking mode via controller
Binary transmission of address via green/red LED	Address identification	During address identification mode
Green and red off	DC mode	Battery operation (Emergency mode)

⊕ If the EM powerLED is operated in non-maintained mode and an LED fault is detected, the red indicator LED will be illuminated and the output will be stopped. The unswitched mains supply must be switched off before the LED is changed in order that the new LED can be detected. A function or duration test will not reset the fault indication.

Addressing Tool

An addressing tool is available to convert the LED binary identification signal to a DALI address of between 0 to 63. This simple tool is powered from a 9V battery (not supplied).



EZ PRO ADDRESS: 89899836

This Instruction Sheet is based on TRIDONIC.ATCO Data sheet 03/08-672-0

This Electrical Product MUST be recycled.

Concord

Avis Way Newhaven East Sussex BN9 0ED
T 0870 606 2030 F 01273 512 688
email: information@concordmarlin.com
www.havells-sylvania.com