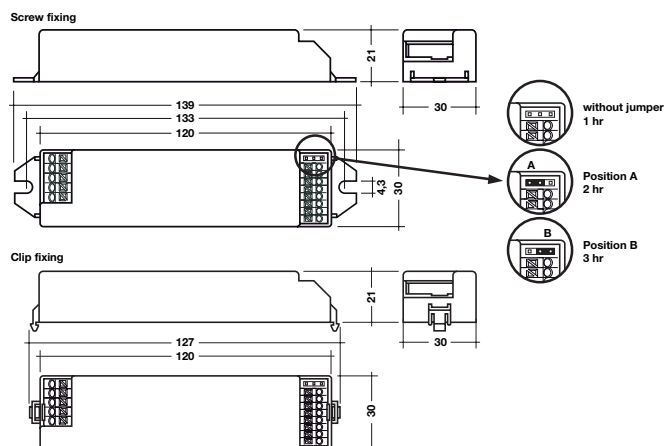


Emergency lighting modules with self test facility LED

EM powerLED SELFTEST 220–240 V 50/60 Hz



Description:

Low profile LED emergency lighting modules with self 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.

Self testing is conducted on a weekly functional and annual duration basis. An easy commissioning feature ensures synchronisation of tests and automatic initiation of commissioning tests.

Features:

Module

- LED emergency lighting module
- Normal and emergency operation
- Self testing in accordance with pr IEC 62034
- 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
- Rest mode facility
- Easy commissioning feature
- powerLED output, battery, indicator LED and test switch output are SELV equivalent
- Reverse battery protection
- Deep discharge protection
- Short-circuit-proof
- Self testing
 - Battery condition
 - LED condition
 - Charge condition
 - Weekly functional test
 - Annual duration test

wattage W	type	article number	number of LED	LED current in mA		number of cells / jumper		
				emergency operation	mains operation	1 h / removed	2 h / position A	3 h / position B
Screw fix version								
1.2	EM powerLED 1 W ST	89899860	1 x LED	350	350	2	3	3
2.0	EM powerLED 2 W ST	89899861	1 x LED	600	350	3	4	5
2.4	EM powerLED 2 W ST	89899861	2 x LED	350	350	3	4	5
Clip fix version								
1.2	EM powerLED 1 W ST	89899867	1 x LED	350	350	2	3	3
2.0	EM powerLED 2 W ST	89899868	1 x LED	600	350	3	4	5
2.4	EM powerLED 2 W ST	89899868	2 x LED	350	350	3	4	5

type	article number
LED bi-colour	89899720
LED bi-colour high brightness	89899753

Test switch

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

type	article number
test switch EM 2	89805277

Emergency-LED

Available – for further information please contact TridonicAtco.

NiMh 2.0 Ah, Cs cells	type	number of cells	article number
Accu-NiMh C 2A	stick	2	89899755
Accu-NiMh C 3A	stick	3	89899744
Accu-NiMh C 4A	stick	4	89899700
Accu-NiMh C 4B *	side by side	4	89899701
Accu-NiMh C 4C *	stick + stick	4	89899702
Accu-NiMh C 5A	stick	5	89899703
Accu-NiMh C 5B *	side by side	5	89899704
Accu-NiMh C 5C *	stick + stick	5	89899705

* on request

Batteries

- NiMh Cs cells
- High temperature cells
- Spade terminals for easy connection

Approvals

ENEC
CE
according to EN 60598-2-22
according to EN 50172
according to pr IEC 62034

Mechanical details

Case manufactured from polycarbonate.

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: 1 m
- 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

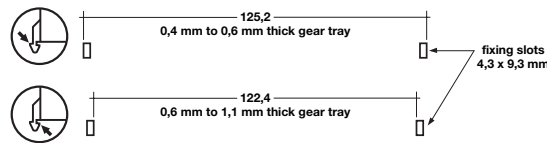
Connection method: 4.8 x 0.5 mm spade tag welded to end of cell

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.

Recommended fixing details for clip fixing



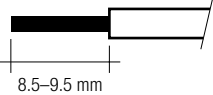
Wiring type and cross section

The wiring can be in flexible cable or solid. Strip 8.5–9.5 mm of insulation from the cables to ensure perfect operation of the push-wire terminals.

Wiring

mains (SL, N, L)
REST
LED (LED +, LED -)

wire preparation:
0.5–1.5 □



Maximum lead length

LED	3 m
status indication LED	1 m
batteries	1 m

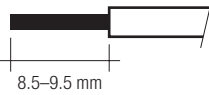
Max. lead insulation diameter

Battery	2.1 mm
Test switch	2.1 mm
Indicator LED	2.1 mm

Wiring

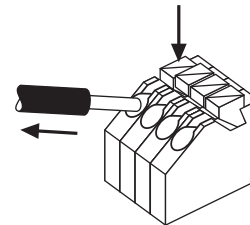
batteries (Bat +, Bat -)
test switch (switch)
status indication LED (status K, A)

wire preparation:
Ø 0.6–0.8






Release of the wiring

Press down the “push button” and remove the cable from front.



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

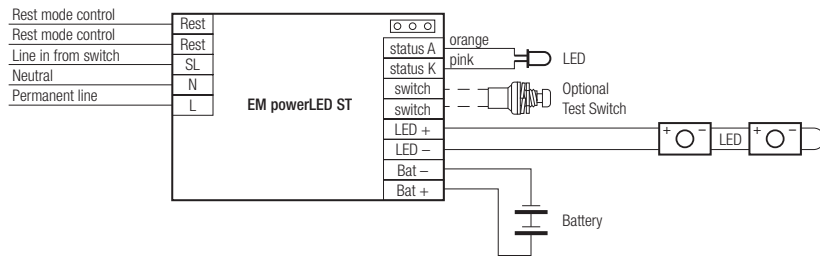
System status is indicated by a bi-colour LED and by a DALI status flag.

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 ①
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	Rest mode	Switching into blocking mode via controller
Green and red off	DC mode	Battery operation (Emergency mode)

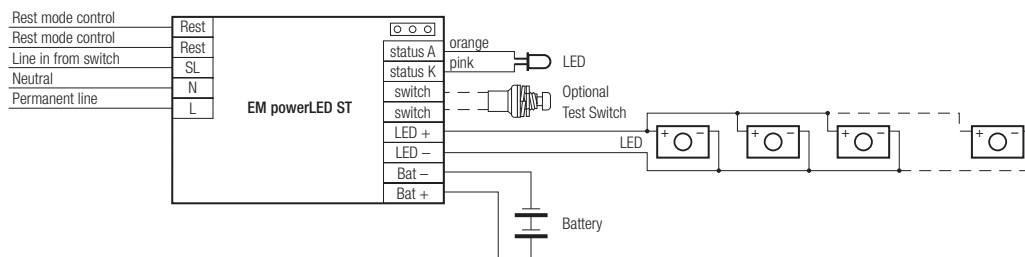
① If the EM powerLED is operated in non-maintained mode and an LED fault is detected, the red indicator LED will be illuminated and the output will be stopped. The unswitched mains supply must be switched off before the LED is changed in order that the new LED can be detected. A function or duration test will not reset the fault indication.

Wiring diagram

Wiring diagram for one LED or two LED in series



Wiring diagram for multiple LED (3–12) in parallel



Take care that the LED is connected with the right polarity. LED that are connected to the EM powerLED devices should have a reverse polarity protection device such as a schottky diodes fitted, otherwise irreversible damage could occur if the LED is connected in reverse polarity. Any protection device must be capable of handling in excess of 700 mA.

Note: The TridonicAtco Emergency-LED is therefore fitted with a protection diode across the powerLED.

Packaging

EM powerLED ST
box of 25

Status LED
box of 25

Accu NiMh
25 pieces per box

Wiring instructions

- The powerLED terminals, battery, indicator LED and test switch terminals are classified as SELV. Keep the wiring of the Rest- and the input terminals separated from the wiring of the SELV equivalent terminals or consider special wiring (double insulation, 6 mm creepage and clearance) when these connections should be kept SELV.
- The output to the LED is DC but has high frequency content at 125 kHz, which should be considered for good EMC compliance.
- powerLED leads should be separated from the mains and Rest connections and wiring for good EMC performance.
- Maximum lead length on the powerLED terminals is 3 m. For a good EMC performance keep the LED wiring as short as possible.
- Maximum lead length for the Test switch and Indicator LED connection is 1 m. The test switch and Indicator LED wiring should be separated from the powerLED leads to prevent noise coupling.
- Battery leads are specified with 0.8 mm cross section and a length of < 1 m
- Switched live and unswitched live supplies must be off the same phase.

📄 For comprehensive instructions consult the TridonicAtco website www.tridonicatco.com