LIGHTING CONTROL

Slim Selectable Constant Power

LED Emergency Converter Pack

LC100H-XXX

CE UKCA DALI 2 RoHS compliant LiFePO4 3Hours 24

High PF : 83%

High internal surge protection 2kV

20 ~ 300V DC

Full wide LED voltage

Extra side holes More flexibility

Power & Emergency Time Selects with flexibility

Extendable sockets with DALI 2.0

Product Information

The LC100H range of LED emergency module is designed as elegant,slim and compact size.This current-select series consists of highly effcient, linear, constant current LED emergency converters with LiFePo4 battery pack. These converters provide economic and flexible solutions for indoor lighting applications.

The slim type PC structures with extra side holes, to provide more flexibility in various fixtures.

LC100H can achieve three output emergency powers and times by shorting the designated current selection buttons on the driver,from 1 hours to 3 hours, and from 2W to 5W emergency power.

The output voltage to LED loads or arrays is a universal 20~300V DC, which it is able to convert stably almost all LED module or arrays to emergency operation.Its surge protection reach 2KV.

This converter is verified by TUV Labs, with ENEC certification, CE UKCA marks.

Its working ambient temperature covers from 0℃ to 55℃ degree, meanwhile its storage temperatures can accept upto 70℃ degree.

The Emtrons' Poweriod™ LiFePo4 battery pack can provide more than 3 plus hours emergency load.

The EM100H range is designed for three versions, which integrates as Manual Testing, Auto Testing and DALI 2.0 version.

5 YEARS WARRANTY

Main Features

>> Constant power output,max 5W.

>> Working loads of LED modules with a wide rated voltage 20-300VDC

>> High Power Factor, 83%

>> Extra high surge protection, 2KV

>> Integrated circuits (IC) with Manual Testing, Auto Testing(or Self Testing), DALI

>> Automatically starts to work during voltage fluctuation and flicker.

>> 3 types of emergency time to select, up to 3 hours

>> 3 types of emergency power consumption to select: 2W, 3W,5W;

>> Em+Smartch™ battery charge technologies : over-charge, over-current, short-circuit and deep discharge protection for battery

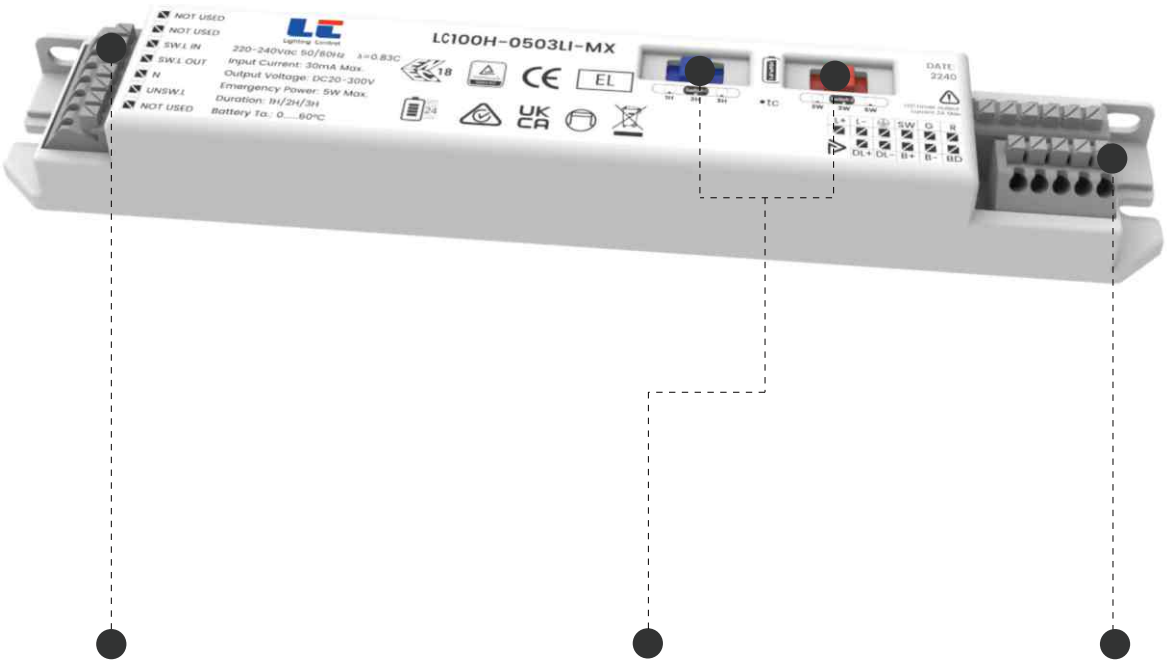
>> EC and UKCA verified

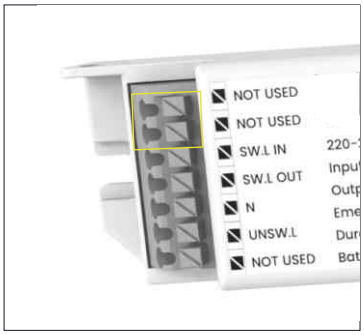
>> Poweriod™ LiFePO4 battery pack with standard 5 years warranty

>> DALI 2.0 version is available upon on request

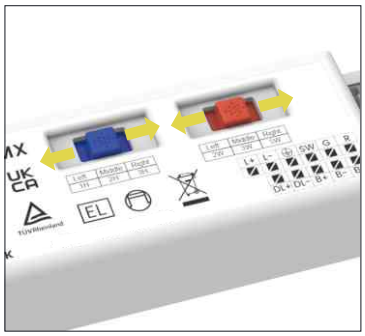
>> Conforms the following standards:

IEC/EN 61347-1	EN 61000-3-3: 2013
IEC/EN 61347-2-7	EN 62493
IEC/EN 61347-2-13	EN 62386 -101:2014
EN 62034: 2012	EN 62386 -102:2014
EN 55015: 2015	EN 62386 -202 Ed.2
EN 61547 Ed.2	AS/NZS EN 60598-2-22
EN 61000-3-2: 2014	AS2293.3

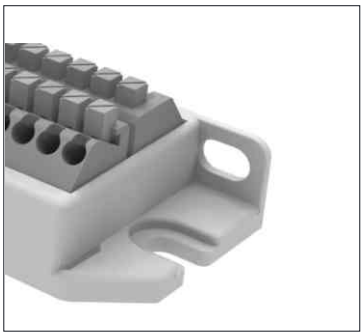




Extra side holes More flexibility



Power & Emergency Time Selects with flexibility



Extendable sockets with DALI 2.0

Specifications

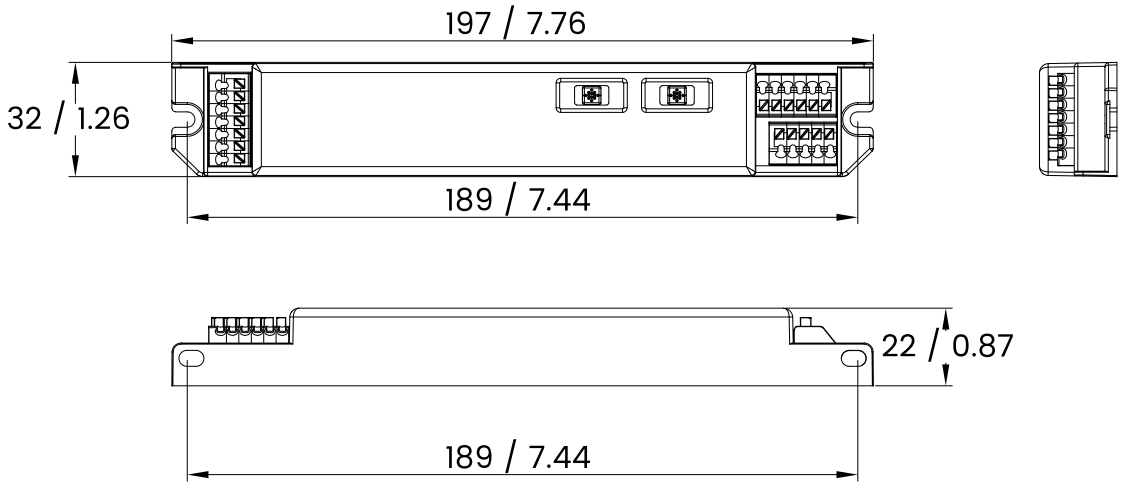
	LC100H-0201LI-DX	LC100H-0202LI-DX	LC100H-0203LI-DX
Output Power	2W	2W	2W
Discharge Duration	1H	2H	3H
Input Voltage	220-240VAC,50/60Hz	220-240VAC,50/60Hz	220-240VAC,50/60Hz
Input Current	30mA Max.	30mA Max.	30mA Max.
Power factor	0.83	0.83	0.83
Output Voltage	20-300V	20-300V	20-300V
Output Current	7-100mA	7-100mA	7-100mA
Battery	LiFePO4 6.4V 1.5Ah	LiFePO4 6.4V 1.5Ah	LiFePO4 6.4V 1.5Ah
Charge Time	24H	24H	24H
Test Mode	MT/AT/DALI	MT/AT/DALI	MT/AT/DALI
IP Rating	IP20	IP20	IP20
Ambient Temperature	0°C-55°C	0°C-55°C	0°C-55°C

	LC100H-0301LI-DX	LC100H-0302LI-DX	LC100H-0303LI-DX
Output Power	3W	3W	3W
Discharge Duration	1H	2H	3H
Input Voltage	220-240VAC,50/60Hz	220-240VAC,50/60Hz	220-240VAC,50/60Hz
Input Current	30mA Max.	30mA Max.	30mA Max.
Power factor	0.83	0.83	0.83
Output Voltage	20-300V	20-300V	20-300V
Output Current	10-150mA	10-150mA	10-150mA
Battery	LiFePO4 6.4V 1.5Ah	LiFePO4 6.4V 1.5Ah	LiFePO4 6.4V 3.0Ah
Charge Time	24H	24H	24H
Test Mode	MT/AT/DALI	MT/AT/DALI	MT/AT/DALI
IP Rating	IP20	IP20	IP20
Ambient Temperature	0°C-55°C	0°C-55°C	0°C-55°C

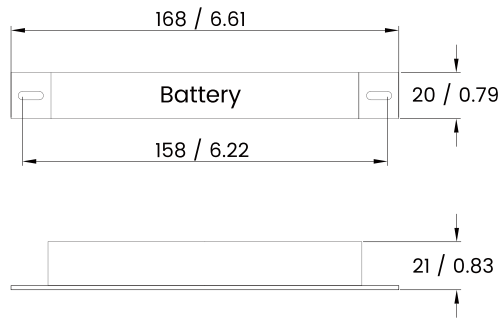
	LC100H-0501LI-DX	LC100H-0502LI-DX	LC100H-0503LI-DX
Output Power	5W	5W	5W
Discharge Duration	1H	2H	3H
Input Voltage	220-240VAC,50/60Hz	220-240VAC,50/60Hz	220-240VAC,50/60Hz
Input Current	30mA Max.	30mA Max.	30mA Max.
Power factor	0.83	0.83	0.83
Output Voltage	20-300V	20-300V	20-300V
Output Current	17-250mA	17-250mA	17-250mA
Battery	LiFePO4 6.4V 1.5Ah	LiFePO4 6.4V 4.0Ah	LiFePO4 6.4V 4.0Ah
Charge Time	24H	24H	24H
Test Mode	MT/AT/DALI	MT/AT/DALI	MT/AT/DALI
IP Rating	IP20	IP20	IP20
Ambient Temperature	0°C-55°C	0°C-55°C	0°C-55°C

Dimensions (Unit: mm / inch)

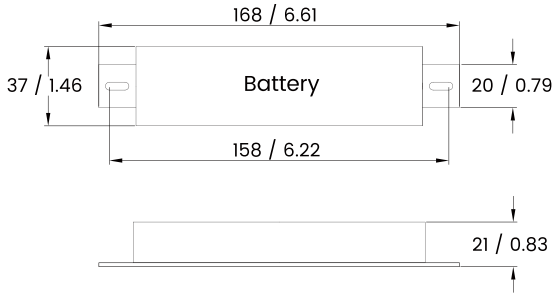
1. Converter:



2. Battery Pack



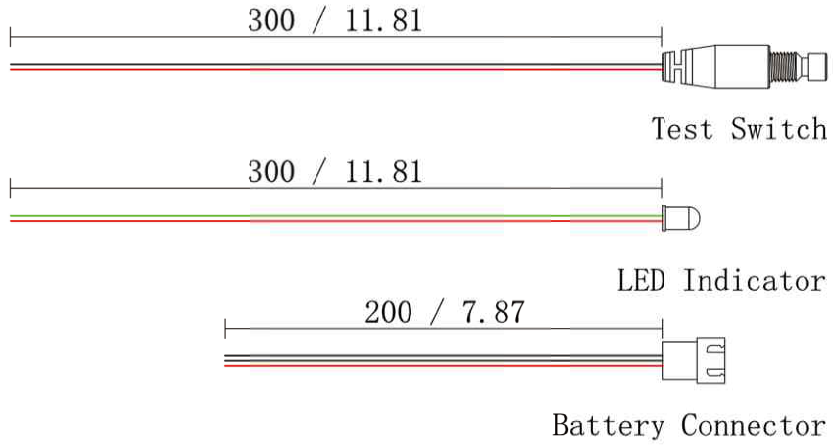
LiFePO4 6.4V 1.5Ah



LiFePO4 6.4V 3.0Ah / 4.0Ah

Battery

3. Accessories



Test switch

LED Indicator

Battery Connector

Order Information

1. Product Model List

Test Mode	Model No.	Input Voltage	Emergency Power	Charge Time	Rated Duration	Battery Pack
DALI	LC100H-0201LI-DX	220-240VAC	2W	24H	1Hrs	LiFePO4 6.4V 1.5Ah
	LC100H-0202LI-DX	220-240VAC	2W	24H	2Hrs	LiFePO4 6.4V 1.5Ah
	LC100H-0203LI-DX	220-240VAC	2W	24H	3Hrs	LiFePO4 6.4V 1.5Ah
	LC100H-0301LI-DX	220-240VAC	3W	24H	1Hrs	LiFePO4 6.4V 1.5Ah
	LC100H-0302LI-DX	220-240VAC	3W	24H	2Hrs	LiFePO4 6.4V 1.5Ah
	LC100H-0303LI-DX	220-240VAC	3W	24H	3Hrs	LiFePO4 6.4V 3.0Ah
	LC100H-0501LI-DX	220-240VAC	5W	24H	1Hrs	LiFePO4 6.4V 1.5Ah
	LC100H-0502LI-DX	220-240VAC	5W	24H	2Hrs	LiFePO4 6.4V 4.0Ah
	LC100H-0503LI-DX	220-240VAC	5W	24H	3Hrs	LiFePO4 6.4V 4.0Ah

2. Battery Pack

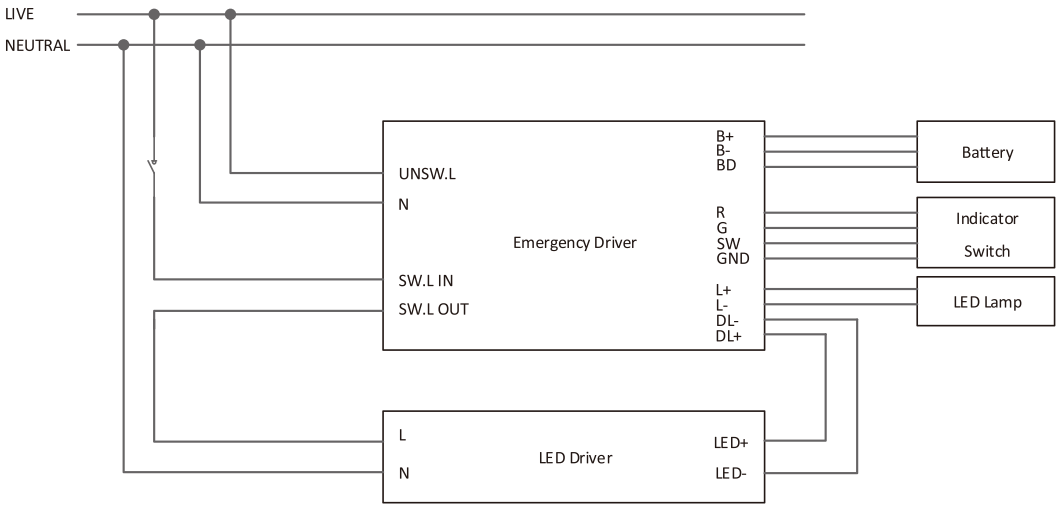
Article Number	Battery Pack	Battery Model
21010641520100	LiFePO4 6.4V 1.5Ah	BL2115A
21010643050100	LiFePO4 6.4V 3.0Ah	BL2230H
21010644050100	LiFePO4 6.4V 4.0Ah	BL2240H

3. Accessories

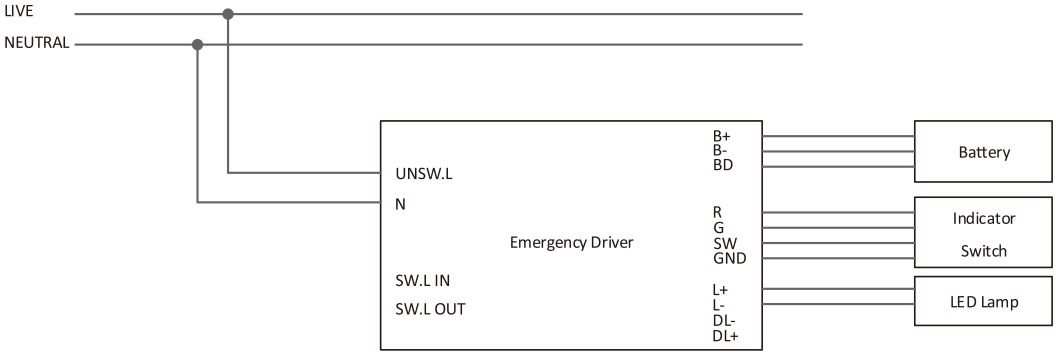
Article Number	Components & Parts	Battery Model
50414010292101	Test switch	BL2115A
40114990399001	LED indicator	BL2230H
60410320030200	Battery connector	BL2240H

Electrical Wiring Diagram

MT / AT

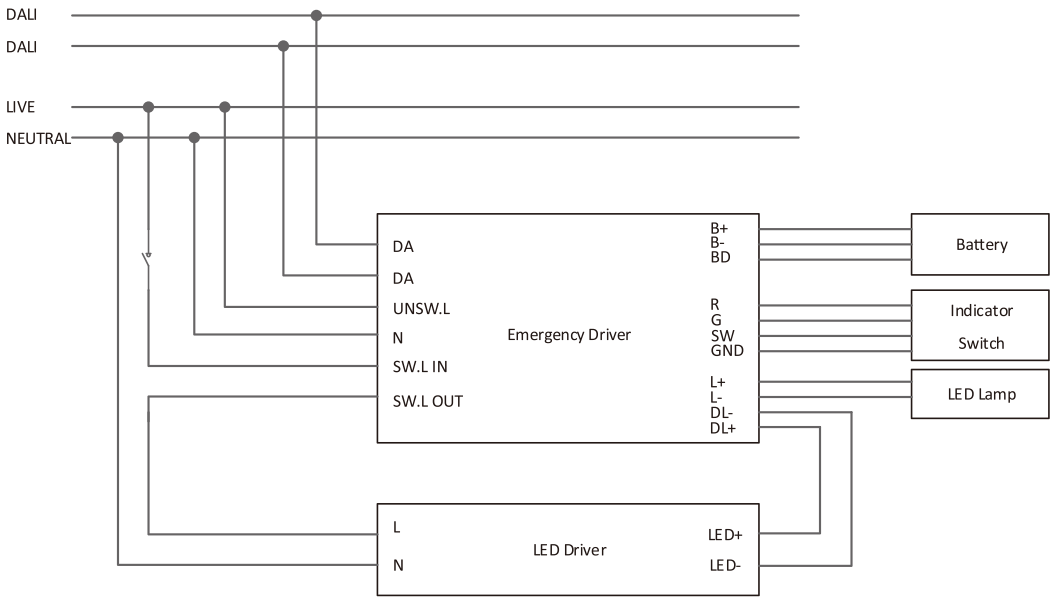


Maintained



Non-Maintained

DALI



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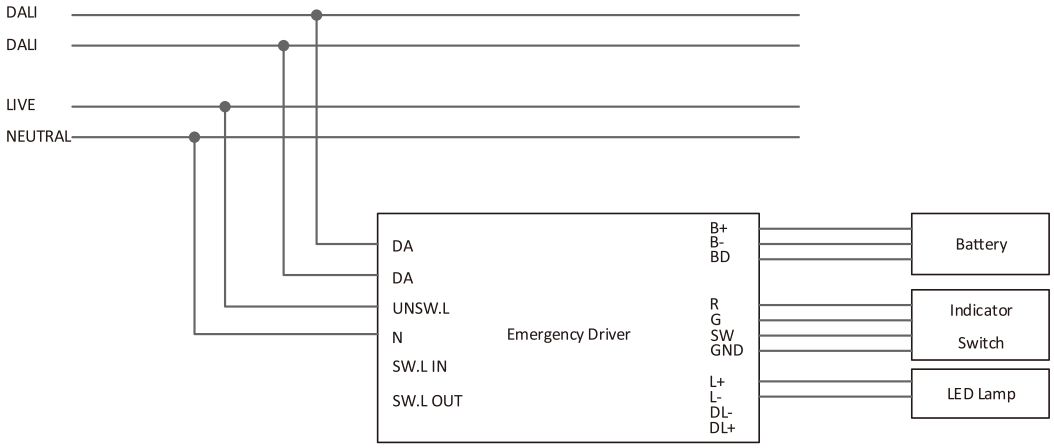
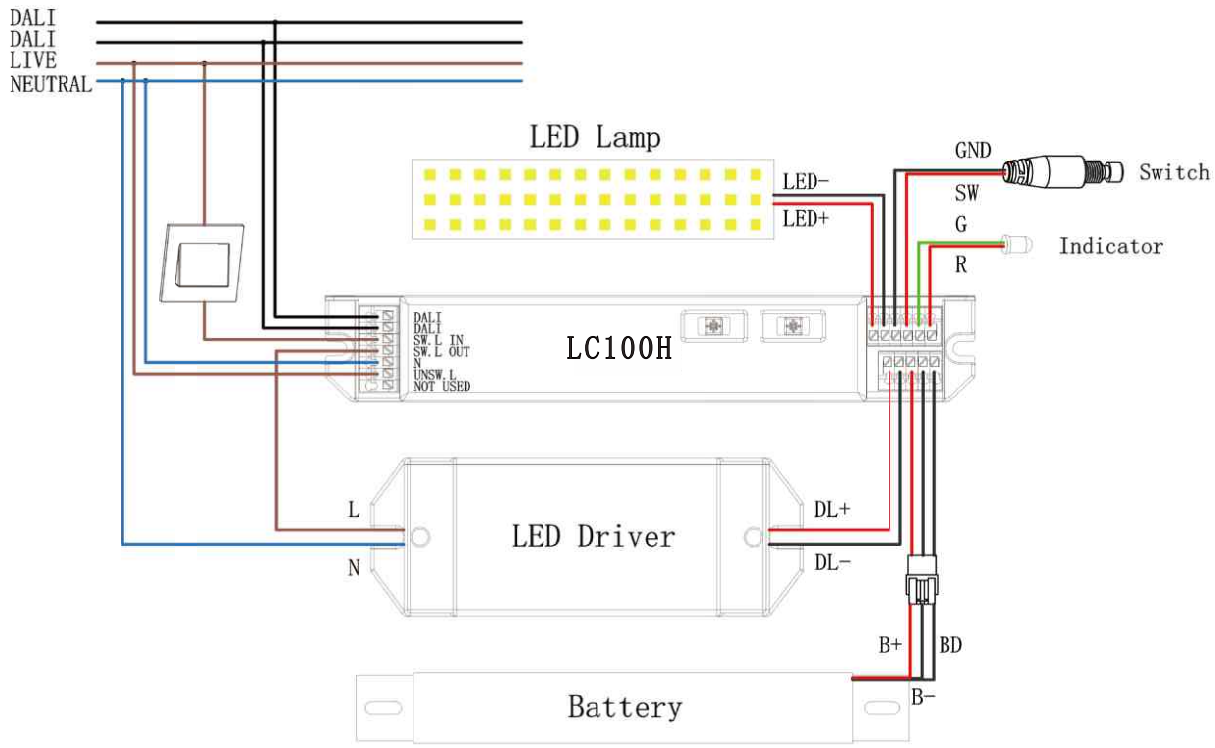
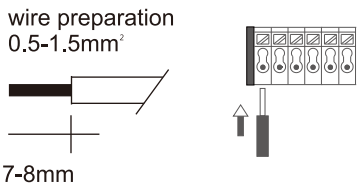


Non-Maintained

Cabling Diagram with LED Loads:





DALI 2.0 Testing & Commissioning

Brief Introduction

DALI Control （Digital Addressable Lighting Interface Control）

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

When a DALI bus has not been connected or when a DALI bus is connected and the DALI default Delay and Interval times have not been reset by sending appropriate DALI commands, then the Emtrons DALI converters will conduct self testing in accordance with the default times setting from factory preset.

These default times are factory preset, in accordance with the DALI standard EN 62386-202 edtion 2.0, to conduct an automatic Function test every 7 days and a Duration test every 52 weeks. Since the Delay time is factory preset 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 reset when the emergency system test times are to be scheduled by a DALI control and monitoring system.

Please 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 Emtrons DALI converter does not revert to self-testing mode.

Note: If the battery is connected the DALI communication is only possible after power reset.

Addressing

The Emtrons DALI converter generates the easy addressing system which allows addressing and identi□cation by using the multi-colour LED. Binary address codes given by the LED can be simply delivered to the DALI addresses 0 to 63. For single end addressing,this method is necessary to send a broadcast identification command every 3 to 9 seconds. During this command the LED loads will be switched off and the 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 and battery supply to the Emtrons DALI converter the device starts with a 24 hours initial charge for LiFePO4 batteries. Afterwards the device conducts a commissioning test for the full duration. The 24 hours recharge for LiFePO4 batteries occurs also with the connection of a new battery. The following automatic commissioning duration test only takes place when a battery is replaced and fully charged and the interval time is not set to zero. In case the interval time is set to zero the device expects the DALI system to request the testing.

Functional test

The time and frequency of the 5-seconds function test can be programmed by the Emtrons DALI controller. The default value of Function test is 5-seconds and once every 7 days.

Duration test

The time and frequency of the duration test can be also reset by the Emtroms DALI controller. The default setting is that every full time (e.g. 3hours duration) test applied every 52 weeks.

Prolong time

Prolong time can be set by the DALI controller in factory. 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. Indicator LED will stay off for the duration of the prolong time.

Rest Mode / Inhibit Mode

Emergency operation is automatically working when the mains supply is switched off. If the Rest Mode is activated, the discharging of the battery will be minimized by switching off the LED output. If the Inhibit Mode has been activated before the mains supply is switched off, Rest Mode will be automatically switched on if the mains supply is switched off within 15 minutes. Rest Mode and Inhibit Mode can be initiated by the DALI controller. The REST command has to be sent after the mains supply has been disconnected and whilst the DALI converter is in emergency operation. The INHIBIT command has to be sent while the DALI converter is supplied by mains.

After a mains reset the Emtrons DALI converter exits the Rest Mode. Rest Mode and Inhibit Mode can both be disabled by the RE-LIGHT/ RESET INHIBIT command.

Test switch

An optional test switch can be wired to each DALI converter.

This can be used to to:

- Initiate a 5-seconds function test: press 200 ms < Time < 1s
- Execute function test as long as switch pressed: press > 1s
- Reset self-test time (adjust local timing): press > 10 s

Time reset functionality

The timer for function and duration test can be set to a particular time of the day by either pressing the test switch for longer than 10 seconds or cycling the unswitched line supply 5 times within 1 minute. The timer adjustment will enable the test start time to be defined manually at time in day when the timer was reset. It will also disable the adaptive test algorithm thereby forcing the unit to perform the test at the same time rather than it being defined by the adaptive algorithm. This function will only work provided the interval time is greater than zero (automatic test mode enabled). The delay timer value set when the unit was commissioned will be reloaded in order to randomise the tests between adjacent units.

System status indication

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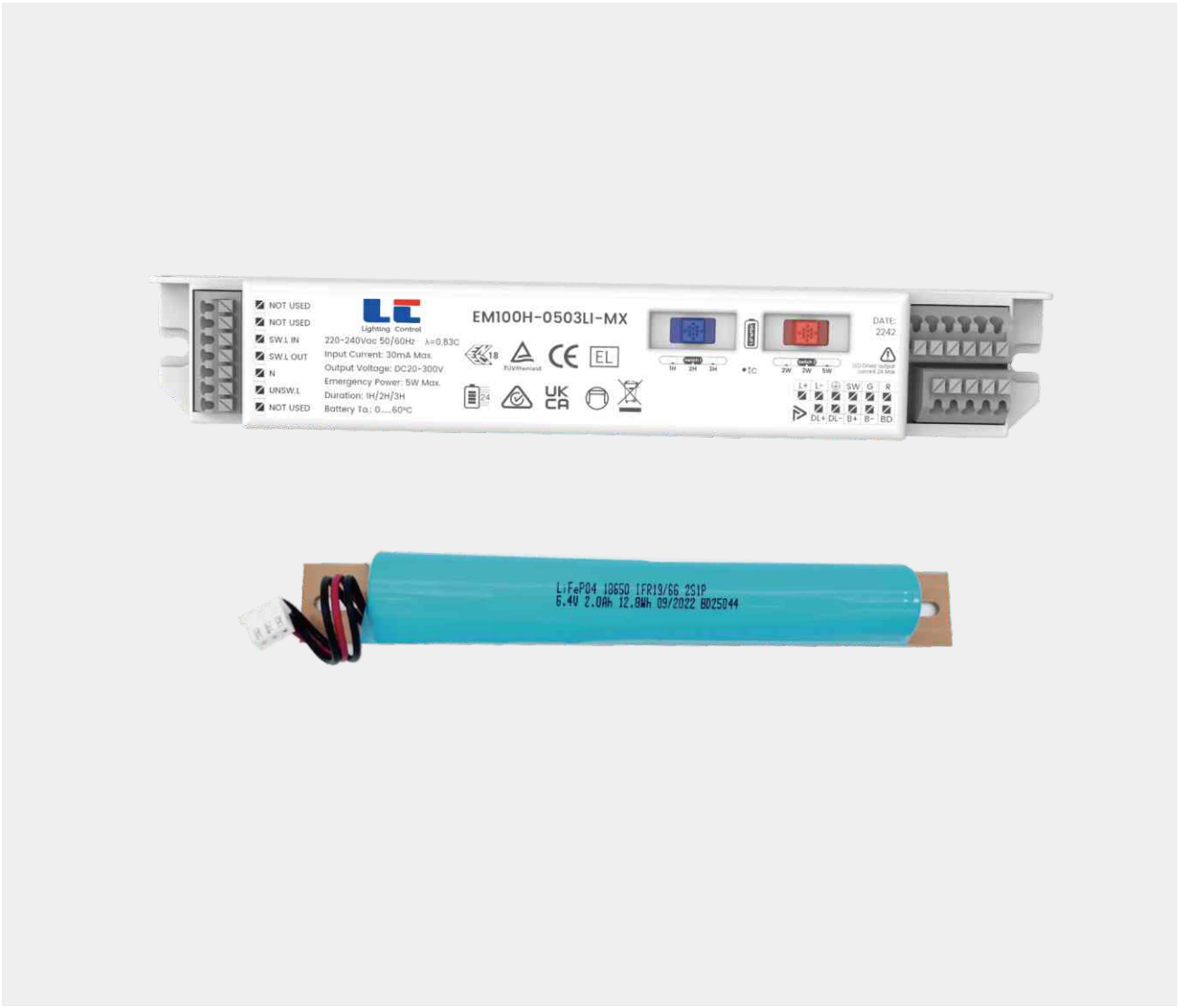
System status is indicated by a bi-color LED and by a DALI status flag.

LED indicator	LED indication	System Status
	Green permanent	Power on and System OK
	Green fast flash (0.1s on, 0.1s off)	Function test underway
	Green slow flash (1s on, 1s off)	Duration test underway
	Red LED on	Open circuit / Short circuit / LED failure
	Red Slow flash (1s on, 1s off)	Battery failure
	Red fast flash (0.1s on, 0.1s off)	Charging failure
	Green double flash	Inhibit mode
	Binary transmission of address via green/red LED	Address identification
	Green and red off	emergency mode



For more details please refer latest version of Emtrons DALI Guide Manual