

LiFePO4 Battery pack 1.5 – 6.0 Ah

Lithium Iron Phosphate cells (LiFePO4)

Product description

- High-temperature LiFePO4 battery pack for use with emergency lighting units
- 8-year design life (up to 25 °C ambient temperature)
- 6-year design life (up to 35 °C ambient temperature)
- 4-year design life (up to 45 °C ambient temperature)
- 3 years guarantee in use with a suitable Tridonic BASIC (manually tested) emergency LED driver (conditions at www.tridonic.com)
- 4 years guarantee in verifiable use with a suitable Tridonic SELFTEST or PRO (DALI) emergency LED driver (conditions at www.tridonic.com)

Properties

- Certified quality manufacturer
- Casing material made of polycarbonate
- Environmental friendly technology
- High energy density
- Electronic thermal battery management
- High energy maintenance of the charged battery
- Long shelf life
- Integrated electronics
- Safety features incorporated
- 1.0 mm² stranded wire
- Suitable for emergency lighting equipment as per IEC 60598-2-22



Standards, page 3



Fig. 1



Fig. 2



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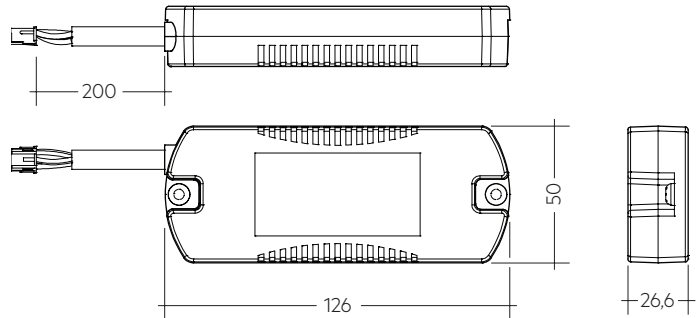


Fig. 1

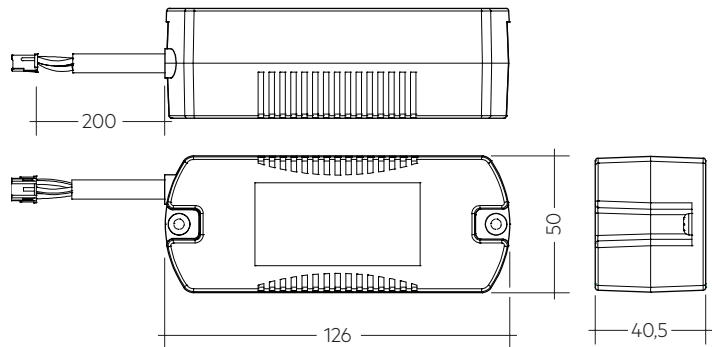


Fig. 2

Technical data

Battery voltage per cell	3.2 V
Battery capacity per cell	1.5 Ah
Max. battery casing temperature t_c	45 °C
Ambient temperature range (design life of 8 years)	+5 ... +25 °C

Ordering data

Type	Article number	Figure	Battery configuration	Packaging, carton	Packaging, outer box	Weight per pc.
PACK-LiFePO4 1.5Ah 1 CON	28003804	1	1S1P	5 pc(s).	25 pc(s).	0.055 kg
PACK-LiFePO4 3.0Ah 2 CON	28003805	1	1S2P	5 pc(s).	25 pc(s).	0.112 kg
PACK-LiFePO4 4.5Ah 3 CON	28003806	2	1S3P	5 pc(s).	25 pc(s).	0.150 kg
PACK-LiFePO4 6.0Ah 4 CON	28003807	2	1S4P	5 pc(s).	25 pc(s).	0.220 kg

Specific technical data

Type	Article number	Figure	Number of cells	Capacity	Dimensions L x W x H
PACK-LiFePO4 1.5Ah 1 CON	28003804	1	1	1.5 Ah	126 x 50 x 26.6 mm
PACK-LiFePO4 3.0Ah 2 CON	28003805	1	2	3.0 Ah	126 x 50 x 26.6 mm
PACK-LiFePO4 4.5Ah 3 CON	28003806	2	3	4.5 Ah	126 x 50 x 40.5 mm
PACK-LiFePO4 6.0Ah 4 CON	28003807	2	4	6.0 Ah	126 x 50 x 40.5 mm

1. Standards

The battery cells are designed to comply with the IEC international standard and tested according to the normative permanent charge endurance test described in the IEC 62133 standard. This performance is mandatory for use in Emergency Lighting Units to comply with the IEC 60598 2.22.

1.1 Glow-wire test

according to EN60598-1 with increased temperature of 850 °C passed (valid for housing).

2. Thermal data

2.1 Storage conditions

- Store batteries within the specified temperature range in low humidity conditions. Optimal storage conditions are:
 - Temperature: -20...+25 °C up to 12 months after printed date of manufacture
 - Temperature: -20...+35 °C up to 6 months after printed date of manufacture
 - Relative humidity: 60 ± 5 %
- Avoid atmosphere with corrosive gas
- Disconnect batteries before store or delivery
- Avoid storage of discharged batteries

3. Installation & commissioning

3.1 Activating LiFePO₄ batteries

When using rechargeable LiFePO₄ batteries for emergency lighting following point are essential in order to achieve the specified design life time of the batteries:

In order to activate new batteries, 2-3 full charging-discharging are needed to make sure batteries achieve their rated capacity. This activating process is defined by running 2-3 full charging (24 hrs) and discharging (1/2/3 hrs) cycles of the batteries. If the first duration test fails, please repeat the test once again after a 24 hour charging period.

3.2 Avoidance of excessive cycling

During building installations, in many cases, mains supply is not available on a permanent 24-hour basis which then leads to unwanted, uncontrolled excessive battery cycles. This has a very strong effect on the design life time of the battery. Make sure that in such situations, the battery remains disconnected in the luminaire till the mains power supply is stable on a 24-hour basis. It is strongly recommended to refer to the datasheets of Tridonic emergency control gears to avoid excessive cycling. At the same time, make sure that this information is handed over to the installation staff / electrician in order to ensure a proper way of installation and commissioning.

3.3 Avoidance of deep-discharge conditions

It is very important that LiFePO₄ batteries are not left connected for long periods in a discharged state. Following options may lead to a deep discharge situation and must be avoided:

- Storage periods of rechargeable batteries of over 12 month without recharging the battery packs.
- Shipment, storage of assembled emergency luminaires with battery pack connected to the emergency driver.
- Long periods of mains-interruptions of more than two weeks, once, the emergency system is installed and the battery pack is connected to the emergency driver.

4. Technical data

Capacity	
Rated minimum capacity	1.5 Ah
Typical weight per cell	45 g
Cell dimensions	
Diameter	18 mm
Height	65 mm

5. Safety

- Do not short-circuit the battery pack – when installing the luminaire make sure sharp edges do not come into contact with cables.
- Do not open or damage the battery pack or throw it into a fire.
- Protect the battery against moisture and keep away from water.
- Do not expose the battery to direct sunlight or excessive heat (see storage conditions).
- Transport and store the battery only in its original packaging.
- Comply with the transport conditions of the transport company.
- Follow the instructions on the safety data sheets.



Damage/improper use

If the battery is damaged or used incorrectly vapours and liquids may escape from it. If you come into contact with battery fluid wash immediate with water and seek medical assistance if necessary.

5.1 Deep discharge protection

When the battery remains connected without charging for a long period of time after the battery cut off of the driver the battery voltage can still drop. To make sure the cells are not damaged by this voltage drop, the battery protection prevents the battery from further discharge below 2.0 V.

5.2 Overcharge protection

If in case of an error or the use of a wrong driver the battery gets overcharged the battery protection will disconnect the battery from the driver at a voltage of 3.9 V. A discharge of the battery is still possible after the protection circuit was triggered to guarantee emergency operation.

5.3 Short-circuit protection

In case of a short circuit the battery protection opens the connection to the driver and the output is therefore free of voltage. The output will be reactivated again when the short circuit is removed.

5.4 Overtemperature protection

The battery is protected against temporary thermal overheating. If the temperature limit is exceeded the further charging of the battery is no longer possible. The temperature protection is activated below approx. 0 °C and above approx. +60 °C. The discharging of the battery is still possible to guarantee emergency operation.

6. Disposal

- Do not dispose of batteries with normal waste.
- Comply with local regulations when disposing of batteries.

7. Miscellaneous

7.1 Additional information

Additional technical information at www.tridonic.com → Technical Data

Lifetime declarations are informative and represent no warranty claim.
No warranty if battery pack was opened.