

### NiMH Battery pack 2.2 – 4.0 Ah Nickel-Metal Hydride cells (NiMH)

#### Product description

- High-temperature NiMH battery pack for use with emergency lighting units
- 4-year design life
- 1-year guarantee from delivery date (conditions at [www.tridonic.com](http://www.tridonic.com))

#### Properties

- Constant high-temperature operation
- Temperature depending on the used emergency lighting unit (refer to respective emergency control gear data sheet)
- Good charging properties at high temperature
- High energy maintenance of the charged battery
- Certified quality manufacturer
- Casing material made of polycarbonate
- 1.0 mm<sup>2</sup> stranded wire
- Suitable for emergency lighting equipment as per IEC 60598-2-22



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Fig. 1



Fig. 2



### NiMH Battery pack 2.2 – 4.0 Ah Nickel-Metal Hydride cells (NiMH)

#### Technical data

Battery voltage per cell	1.2 V
Max. battery casing temp. tc (design life of 4 years)	40 °C
Ambient temperature range	+5 ... +35 °C

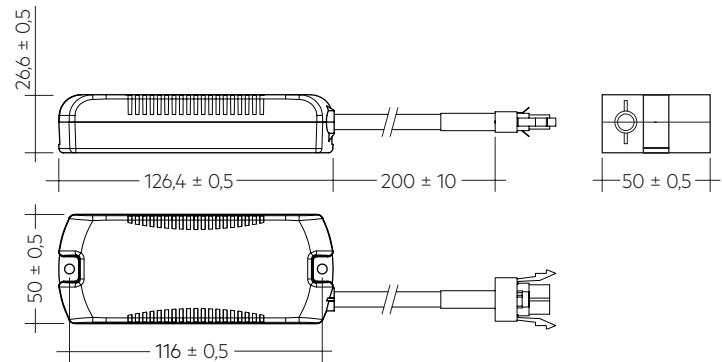


Fig. 1

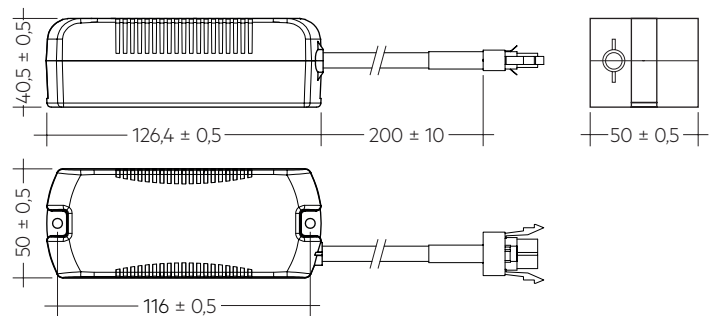
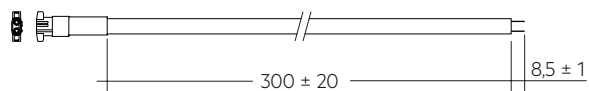


Fig. 2



Connector cable with plug

#### Ordering data

Type	Article number	Packaging, carton	Packaging, outer box	Weight per pc.
<b>Battery pack 2.2 Ah</b>				
Pack-NiMH 2.2Ah 3 CON	28001898	5 pc(s).	25 pc(s).	0.258 kg
Pack-NiMH 2.2Ah 4 CON	28001899	5 pc(s).	25 pc(s).	0.352 kg
<b>Battery pack 4.0 Ah</b>				
Pack-NiMH 4Ah 3 CON	28001896	5 pc(s).	25 pc(s).	0.300 kg
Pack-NiMH 4Ah 4 CON	28001897	5 pc(s).	25 pc(s).	0.440 kg

#### Specific technical data

Type	Article number	Figure	Number of cells	Capacity	Dimensions L x W x H
<b>Battery pack 2.2 Ah</b>					
Pack-NiMH 2.2Ah 3 CON	28001898	1	3	2.2 Ah	126.4 x 50 x 26.6 mm
Pack-NiMH 2.2Ah 4 CON	28001899	1	4	2.2 Ah	126.4 x 50 x 26.6 mm
<b>Battery pack 4.0 Ah</b>					
Pack-NiMH 4Ah 3 CON	28001896	2	3	4.0 Ah	126.4 x 50 x 40.5 mm
Pack-NiMH 4Ah 4 CON	28001897	2	4	4.0 Ah	126.4 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 61951-2 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 and connectors).

## 2. Thermal data

### 2.1 Storage conditions

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

## 3. Installation & commissioning

### 3.1 Activating NiMH batteries

When using rechargeable NiMH 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

If NiMH batteries or individual cells within a battery pack, are driven into deep discharge state they will not recover after charge / discharge cycles. Therefore it is very important that NiMH 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 6 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. Mechanical details

### 4.1 Battery leads

Pre-assembled length: 0.2 m double-insulated cable with plug connection  
0.8 m double-insulated cable with plug and pre-stripped ends for connection with the emergency unit

### 4.2 Module end termination

8.5 mm stripped insulation

## 5. Technical data Accu

Capacity		
Rated minimum capacity	2.2 Ah	4.0 Ah
Typical weight per cell	53 g	76 g
Cell dimensions		
Diameter	23 mm	18.3 mm
Height	43 mm	90 mm

### International designation

- 2.2 Ah HRMU 23/43
- 4.0 Ah HRMU 19/90

**Consult individual emergency control gear data sheet for maximum allowable temperatures and allowed number of discharge cycles.**

## 6. 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 user 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.

## 7. Disposal

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

## 8. Miscellaneous

### 8.1 Additional information

Additional technical information at [www.tridonic.com](http://www.tridonic.com) → Technical Data

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