Product description

• Combined emergency LED Driver for manual testing
• For self-contained emergency lighting
• Can be either used build-in or independent with clip-on strain-relief (see accessory)
• Max. output power 32 W
• Nominal lifetime up to 100,000 h
• 5 years guarantee (conditions at www.tridonic.com)

Functions

• Adjustable output current between 350 and 700 mA via I-SELECT 2 plugs
• Protective features (overtemperature, short-circuit, overload, no-load, input voltage range)
• Suitable for emergency escape lighting systems acc. to EN 50172
• 1 or 3 h rated duration depending on connected battery
• Constant power output in emergency mode

Battery management

• Intelligent charge system
• Deep discharge protection
• Polarity reversal protection for battery
• Short-circuit-proof battery connection

Batteries

• NiCd or NiMH batteries
• 4-year design life
• 1-year guarantee
• For battery compatibility refer to chapter „Battery selection”

Standards, page 6
### Technical data

- **Rated supply voltage**: 220 - 240 V
- **AC voltage range**: 198 - 264 V
- **Mains frequency**: 50 / 60 Hz
- **Overvoltage protection**: 320 V (for 48 h)
- **Typ. current (at 230 V, 50 Hz, full load, charging)**: 178 mA
- **Max. input power**: 38.8 W
- **Typ. efficiency (at 230 V, 50 Hz, full load, charging)**: 84 %
- **λ (at 230 V, 50 Hz, full load, charging)**: 0.95
- **Typ. Input current in no-load operation (not charging)**: 20 mA
- **Typ. input power in no-load operation (not charging)**: 11 W
- **Inrush current (peak / duration)**: 4 A, 260 μs
- **THD (at 230 V, 50 Hz, full load)**: 12.4 %
- **Starting time (at 230 V, 50 Hz, full load)**: < 500 ms
- **Turn-off time (at 230 V, 50 Hz, full load)**: < 50 ms
- **Switchover time (AC / EM)**: < 500 ms
- **Output current tolerance**: ± 5 %
- **Max. output current peak (non-repetitive)**: < 35 %
- **Output LF current ripple (<120 Hz)**: 5 %
- **U-OUT (including open - / short-circuit and double load)**: 60 V
- **Max. open circuit voltage**: 60 V
- **Mains voltage changeover threshold**: according to EN 60598-2-22
- **Max. casing temperature tc**: 80 °C
- **Ambient temperature ta (≤ 25 W)**: -25 – +50 / -25 – +40 °C
- **Ambient temperature ta (> 25 W)**: -25 – +25 / -35 °C
- **Mains surge capability (between L - N)**: 1.2 kV
- **Mains surge capability (between L / PE)**: 24 kV
- **Surge voltage at output side (against PE)**: 24 kV
- **Lifetime**: up to 100,000 h
- **Guarantee (conditions at www.tridonic.com)**: 5 years
- **Dimensions L x W x H**: 130 x 43 x 30 mm

### Specific technical data

#### EM powerLED BASIC FX SC MH/NiCd 32 W

<table>
<thead>
<tr>
<th>Number of battery cells</th>
<th>Output current&lt;sup&gt;1&lt;/sup&gt;</th>
<th>Min. forward voltage</th>
<th>Max. forward voltage</th>
<th>Max. output power</th>
<th>Typ. power consumption&lt;sup&gt;2&lt;/sup&gt; (at 230 V, 50 Hz)</th>
<th>Typ. current consumption&lt;sup&gt;2&lt;/sup&gt; (at 230 V, 50 Hz)</th>
<th>I-SELECT 2 resistor value&lt;sup&gt;3&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal operation</td>
<td></td>
<td>Min. load&lt;sup&gt;4&lt;/sup&gt;</td>
<td>Max. load&lt;sup&gt;4&lt;/sup&gt;</td>
<td></td>
<td>Min. load&lt;sup&gt;4&lt;/sup&gt;</td>
<td>Max. load&lt;sup&gt;4&lt;/sup&gt;</td>
<td></td>
</tr>
<tr>
<td>- 350 mA</td>
<td>75 V</td>
<td>50 V</td>
<td>175 V</td>
<td>105 / 100 W</td>
<td>23.5 / 23.0 W</td>
<td>60 / 57 mA</td>
<td>112 / 110 mA open</td>
</tr>
<tr>
<td>- 400 mA</td>
<td>75 V</td>
<td>50 V</td>
<td>200 V</td>
<td>115 / 110 W</td>
<td>26.0 / 25.5 W</td>
<td>65 / 62 mA</td>
<td>126 / 125 mA 12.40 kΩ</td>
</tr>
<tr>
<td>- 450 mA</td>
<td>75 V</td>
<td>50 V</td>
<td>225 V</td>
<td>12.5 / 12.0 W</td>
<td>29.0 / 28.5 W</td>
<td>68 / 65 mA</td>
<td>137 / 135 mA 11.00 kΩ</td>
</tr>
<tr>
<td>- 500 mA</td>
<td>75 V</td>
<td>50 V</td>
<td>250 V</td>
<td>15.5 / 15.0 W</td>
<td>31.0 / 30.5 W</td>
<td>72 / 70 mA</td>
<td>147 / 145 mA 10000 kΩ</td>
</tr>
<tr>
<td>- 550 mA</td>
<td>75 V</td>
<td>50 V</td>
<td>275 V</td>
<td>14.0 / 13.5 W</td>
<td>33.4 / 33.0 W</td>
<td>75 / 70 mA</td>
<td>160 / 165 mA 9090 kΩ</td>
</tr>
<tr>
<td>- 600 mA</td>
<td>75 V</td>
<td>50 V</td>
<td>300 V</td>
<td>15.0 / 14.5 W</td>
<td>36.3 / 36.0 W</td>
<td>80 / 75 mA</td>
<td>179 / 165 mA 8.25 kΩ</td>
</tr>
<tr>
<td>- 650 mA</td>
<td>75 V</td>
<td>50 V</td>
<td>325 V</td>
<td>15.5 / 15.0 W</td>
<td>38.8 / 38.5 W</td>
<td>83 / 80 mA</td>
<td>176 / 174 mA 7.6 kΩ</td>
</tr>
<tr>
<td>- 700 mA</td>
<td>75 V</td>
<td>46 V</td>
<td>325 V</td>
<td>16.5 / 16.0 W</td>
<td>38.8 / 38.5 W</td>
<td>85 / 83 mA</td>
<td>178 / 176 mA short-circuit (0 kΩ)</td>
</tr>
</tbody>
</table>

#### EM powerLED BASIC FX SC MH/NiCd 32W 50 V

<table>
<thead>
<tr>
<th>Number of battery cells</th>
<th>Output current&lt;sup&gt;1&lt;/sup&gt;</th>
<th>Min. forward voltage</th>
<th>Max. forward voltage</th>
<th>Max. output power</th>
<th>Typ. power consumption&lt;sup&gt;2&lt;/sup&gt; (at 230 V, 50 Hz)</th>
<th>Typ. current consumption&lt;sup&gt;2&lt;/sup&gt; (at 230 V, 50 Hz)</th>
<th>I-SELECT 2 resistor value&lt;sup&gt;3&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal operation</td>
<td></td>
<td>Min. load&lt;sup&gt;4&lt;/sup&gt;</td>
<td>Max. load&lt;sup&gt;4&lt;/sup&gt;</td>
<td></td>
<td>Min. load&lt;sup&gt;4&lt;/sup&gt;</td>
<td>Max. load&lt;sup&gt;4&lt;/sup&gt;</td>
<td></td>
</tr>
<tr>
<td>- 600 mA</td>
<td>75 V</td>
<td>50 V</td>
<td>225 V</td>
<td>12.5 / 12.0 W</td>
<td>29.0 / 28.5 W</td>
<td>68 / 65 mA</td>
<td>137 / 135 mA 11.00 kΩ</td>
</tr>
<tr>
<td>- 650 mA</td>
<td>75 V</td>
<td>50 V</td>
<td>250 V</td>
<td>15.5 / 15.0 W</td>
<td>31.0 / 30.5 W</td>
<td>72 / 70 mA</td>
<td>147 / 145 mA 10000 kΩ</td>
</tr>
<tr>
<td>- 700 mA</td>
<td>75 V</td>
<td>46 V</td>
<td>325 V</td>
<td>16.5 / 16.0 W</td>
<td>38.8 / 38.5 W</td>
<td>85 / 83 mA</td>
<td>178 / 176 mA short-circuit (0 kΩ)</td>
</tr>
</tbody>
</table>

1. EM = Emergency
2. Depending on the selected output current
3. Output current is mean value.
4. The table only lists a number of possible operating points but does not cover each single point. The output current can be set within the total value range in 1 mA steps.
5. Not compatible with I-SELECT (generation 1). Calculated resistor value.
6. Build-in / Independent with clip-on
7. Charging / Not charging
Strain-relief set 43x30mm

**Product description**
- Optional strain-relief set for independent applications
- Transforms the LED Driver into a fully class II compatible LED Driver (e.g. ceiling installation)
- Easy and tool-free mounting to the LED Driver, screwless cable-clamp channels for long strain-relief (30 x 43 x 30 mm)
- With screws for short strain-relief (15 x 34 x 30 mm)
- Overall length = length L (LED Driver) + 2 x 30 mm (long strain-relief set), 2 x 15 mm (short strain-relief) or long and short strain-relief any combination
- Standard SC (L = 30 mm) available as non-pre-assembled and pre-assembled
- Short SC (L = 15 mm) only pre-assembled available

**Ordering data**

<table>
<thead>
<tr>
<th>Type</th>
<th>Article number</th>
<th>Packaging carton</th>
<th>Packaging outer box</th>
<th>Weight per pc</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACU SC 43x30mm CLIP-ON SR SET</td>
<td>28001168</td>
<td>10 pc(s)</td>
<td>500 pc(s)</td>
<td>0.038 kg</td>
</tr>
<tr>
<td>ACU SC 43x30mm CLIP-ON SR SET 300</td>
<td>28001351</td>
<td>300 pc(s)</td>
<td>300 pc(s)</td>
<td>0.038 kg</td>
</tr>
<tr>
<td>ACU SC 30x43x30mm CLIP-ON SR PA</td>
<td>28001699</td>
<td>10 pc(s)</td>
<td>500 pc(s)</td>
<td>0.021 kg</td>
</tr>
<tr>
<td>ACU SC 15x43x30mm CLIP-ON SR PA</td>
<td>28001574</td>
<td>10 pc(s)</td>
<td>1200 pc(s)</td>
<td>0.010 kg</td>
</tr>
</tbody>
</table>

1 28001168: A carton of 10 pcs. is equal to 10 sets, each with 2 strain-reliefs parts.
2 28001351: A carton of 300 pcs. is equal to 300 sets, each with 2 strain-reliefs parts.
3 28001699 + 28001574: A carton contains exactly 10 pcs. strain-reliefs (no sets).
Product description

- Ready-for-use resistor to set output current value
- Compatible with LED Driver featuring I-SELECT 2 interface; not compatible with I-SELECT (generation 1)
- Resistor is base insulated
- Resistor power 0.25 W
- Current tolerance ± 2 % additional to output current tolerance
- Compatible with LED Driver series PRE and EXC

Example of calculation

- $R \ [\text{k}\Omega] = \frac{5 \text{ V}}{I_{\text{out}} \ [\text{mA}]} \times 1000$
- E96 resistor value used
- Resistor value tolerance ± 1 %; resistor power ± 0.1 W; base insulation necessary
- When using a resistor value beyond the specified range, the output current will automatically be set to the minimum value (resistor value too big), respectively to the maximum value (resistor value too small)

Ordering data

<table>
<thead>
<tr>
<th>Type</th>
<th>Article number</th>
<th>Colour</th>
<th>Marking</th>
<th>Current value</th>
<th>Resistor value</th>
<th>Packaging</th>
<th>Weight per pc</th>
</tr>
</thead>
<tbody>
<tr>
<td>I-SELECT 2 PLUG 350MA BL</td>
<td>28001110</td>
<td>Blue</td>
<td>0350 mA</td>
<td>350 mA</td>
<td>14.30 kΩ</td>
<td>10 pc(s)</td>
<td>0.001 kg</td>
</tr>
<tr>
<td>I-SELECT 2 PLUG 375MA BL</td>
<td>28001111</td>
<td>Blue</td>
<td>0375 mA</td>
<td>375 mA</td>
<td>13.30 kΩ</td>
<td>10 pc(s)</td>
<td>0.001 kg</td>
</tr>
<tr>
<td>I-SELECT 2 PLUG 400MA BL</td>
<td>28001112</td>
<td>Blue</td>
<td>0400 mA</td>
<td>400 mA</td>
<td>12.40 kΩ</td>
<td>10 pc(s)</td>
<td>0.001 kg</td>
</tr>
<tr>
<td>I-SELECT 2 PLUG 425MA BL</td>
<td>28001251</td>
<td>Blue</td>
<td>0425 mA</td>
<td>425 mA</td>
<td>11.80 kΩ</td>
<td>10 pc(s)</td>
<td>0.001 kg</td>
</tr>
<tr>
<td>I-SELECT 2 PLUG 450MA BL</td>
<td>28001252</td>
<td>Blue</td>
<td>0450 mA</td>
<td>450 mA</td>
<td>11.00 kΩ</td>
<td>10 pc(s)</td>
<td>0.001 kg</td>
</tr>
<tr>
<td>I-SELECT 2 PLUG 475MA BL</td>
<td>28001253</td>
<td>Blue</td>
<td>0475 mA</td>
<td>475 mA</td>
<td>10.50 kΩ</td>
<td>10 pc(s)</td>
<td>0.001 kg</td>
</tr>
<tr>
<td>I-SELECT 2 PLUG 500MA BL</td>
<td>28001114</td>
<td>Blue</td>
<td>0500 mA</td>
<td>500 mA</td>
<td>10.00 kΩ</td>
<td>10 pc(s)</td>
<td>0.001 kg</td>
</tr>
<tr>
<td>I-SELECT 2 PLUG 525MA BL</td>
<td>28001960</td>
<td>Blue</td>
<td>0525 mA</td>
<td>525 mA</td>
<td>9.53 kΩ</td>
<td>10 pc(s)</td>
<td>0.001 kg</td>
</tr>
<tr>
<td>I-SELECT 2 PLUG 550MA BL</td>
<td>28001115</td>
<td>Blue</td>
<td>0550 mA</td>
<td>550 mA</td>
<td>9.09 kΩ</td>
<td>10 pc(s)</td>
<td>0.001 kg</td>
</tr>
<tr>
<td>I-SELECT 2 PLUG 600MA BL</td>
<td>28001116</td>
<td>Blue</td>
<td>0600 mA</td>
<td>600 mA</td>
<td>8.25 kΩ</td>
<td>10 pc(s)</td>
<td>0.001 kg</td>
</tr>
<tr>
<td>I-SELECT 2 PLUG 650MA BL</td>
<td>28001117</td>
<td>Blue</td>
<td>0650 mA</td>
<td>650 mA</td>
<td>7.68 kΩ</td>
<td>10 pc(s)</td>
<td>0.001 kg</td>
</tr>
<tr>
<td>I-SELECT 2 PLUG 700MA BL</td>
<td>28001118</td>
<td>Blue</td>
<td>0700 mA</td>
<td>700 mA</td>
<td>7.15 kΩ</td>
<td>10 pc(s)</td>
<td>0.001 kg</td>
</tr>
<tr>
<td>I-SELECT 2 PLUG MAX BL</td>
<td>28001099</td>
<td>Blue</td>
<td>MAX</td>
<td>MAX</td>
<td>0.00 kΩ</td>
<td>10 pc(s)</td>
<td>0.001 kg</td>
</tr>
</tbody>
</table>

Product description

- For connection to the emergency lighting LED Driver
- For checking the device function

Ordering data

<table>
<thead>
<tr>
<th>Type</th>
<th>Article number</th>
<th>Packaging, bag</th>
<th>Packaging carton</th>
<th>Weight per pc</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test switch EM 2</td>
<td>89805277</td>
<td>25 pc(s)</td>
<td>600 pc(s)</td>
<td>0.009 kg</td>
</tr>
</tbody>
</table>

Data sheet 05/22-EM115-b
Subject to change without notice. Information provided without guarantee.

www.tridonic.com
Product description

- A green LED indicates that charging current is flowing into the battery

<table>
<thead>
<tr>
<th>Type</th>
<th>Article number</th>
<th>Packaging, bag</th>
<th>Packaging, carton</th>
<th>Weight per pc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>LED EM green</td>
<td>89899605</td>
<td>25 pc(s)</td>
<td>200 pc(s)</td>
<td>0.011 kg</td>
</tr>
<tr>
<td>LED EM green, ultra high brightness</td>
<td>89899756</td>
<td>25 pc(s)</td>
<td>900 pc(s)</td>
<td>0.012 kg</td>
</tr>
</tbody>
</table>
1. Standards
EN 55015
EN 60068-2-29
EN 60068-2-30
EN 60068-2-64
EN 61000-3-2
EN 61000-3-3
EN 61347-1
EN 61347-2-7
EN 61347-2-13
EN 62384
EN 61547
According to EN 50172
According to EN 60598-2-22

Housing fulfills requirements for reinforced insulation according EN 60598-1.

1.1 Glow wire test
according to EN 61347-1 with increased temperature of 850 °C passed.

2. Thermal details and lifetime

2.1 Expected lifetime

<table>
<thead>
<tr>
<th>Type</th>
<th>Output current</th>
<th>ta 35 °C</th>
<th>ta 40 °C</th>
<th>ta 45 °C</th>
<th>ta 50 °C</th>
<th>ta 55 °C</th>
</tr>
</thead>
<tbody>
<tr>
<td>EM pLED BASIC FX 102 SC MH/NiCd 32W 50V</td>
<td>350 mA</td>
<td>tc 60 °C</td>
<td>65 °C</td>
<td>70 °C</td>
<td>75 °C</td>
<td>80 °C</td>
</tr>
<tr>
<td></td>
<td>500 mA</td>
<td>tc 65 °C</td>
<td>70 °C</td>
<td>75 °C</td>
<td>80 °C</td>
<td>–</td>
</tr>
<tr>
<td></td>
<td>700 mA</td>
<td>tc 70 °C</td>
<td>75 °C</td>
<td>80 °C</td>
<td>–</td>
<td>–</td>
</tr>
</tbody>
</table>

For operating points > 25 W the max. allowed ta is 45 °C. Ambient temperature with strain relief ta max. (≤ 25 W) = 40 °C, ta max (> 25 W) = 35 °C.

The relation of tc to ta temperature depends also on the luminaire design.

If the measured tc temperature is approx. 5 K below tc max., ta temperature should be checked and eventually critical components (e.g. ELCAP) measured. Detailed information on request.

3. Installation / wiring

3.1 Wiring diagram

220–240 V
0/50/60 Hz
L N
R

3.2 Wiring type and cross section

The wiring can be in stranded wires with ferrules or solid with a cross section of 0.5–1.5 mm² or 0.2–0.5 mm². Strip 8.5 – 9.5 mm or 6 mm of insulation from the cables to ensure perfect operation of the push-wire terminals (depending on connection, see graphics below).

Use one wire for each terminal connector only.

LED module/supply
wire preparation: 0.5 – 1.5 mm²
8.5 – 9.5 mm

Test switch/Indicator LED
wire preparation: 0.2 – 0.5 mm²
6 mm

3.3 Loose wiring

Press down the “push button” and remove the cable from front.
3.4 Fixing conditions when using as independent Driver with Clip-On

Dry, acidfree, oilfree, fatfree. It is not allowed to exceed the maximum ambient temperature (ta) stated on the device. Minimum distances stated below are recommendations and depend on the actual luminaire. Is not suitable for fixing in corner.

3.5 Wiring guidelines

- The LED terminals, battery, indicator LED and test switch terminals are classified as SELV (output voltage < 60 V DC). Keep the wiring of the input terminals separated from the wiring of the SELV classified terminals or consider special wiring (double insulation, 5 mm creepage and clearance) when these connections should be kept SELV.
- The output to the LED is DC but has high frequency content, which should be considered for good EMC compliance.
- LED leads should be separated from the mains connections and wiring for good EMC performance.
- Maximum lead length on the LED terminals is 2 m. For a good EMC performance keep the LED wiring as short as possible.
- The secondary wires (LED module) should be routed in parallel to ensure good EMC performance.
- 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 LED leads to prevent noise coupling.
- Battery leads are specified with 0.5 mm cross section and a length of 0.8 m.
- To avoid the damage of the control gear, the wiring must be protected against short circuits to earth (sharp edged metal parts, metal cable clips, louver, etc.).

To ensure that a luminaire containing LED emergency units complies with EN 55015 for radio frequency conducted interference in both normal and emergency mode it is essential to follow good practice in the wiring layout.

Within the luminaire the switched and unswitched 50Hz supply wiring must be routed as short as possible and be kept as far away as possible from the LED leads. Through wiring may affect the EMC performance of the luminaire.

The length of LED leads must not be exceeded. Note that the length of the leads from the EM converterLED to the LED modules is added to the length of the leads from the LED Driver to the EM converterLED module when considering the max. permitted lead length of the LED Driver. Leads should always be kept short as possible.

3.6 Hot plug-in

Hot plug-in is not supported due to residual output voltage of > 0 V. If a LED load is connected the device has to be restarted before the output will be activated again. This can be done via mains reset.

3.7 I-SELECT 2 resistors connected via cable


4. Electrical values

4.1 Operating window

Operate the LED Driver only within the given window under all operating conditions. Coming below the specified minimum output voltage of the LED Driver may cause the device to shut-down.

4.2 Efficiency vs load

4.3 Power factor vs load
4.4 THD vs load

![Graph showing THD vs load]

100 % load corresponds to the max. output power (full load) according to the table on page 2.

4.5 Maximum loading of automatic circuit breakers

<table>
<thead>
<tr>
<th>Automatic circuit breaker type</th>
<th>C10</th>
<th>C13</th>
<th>C16</th>
<th>C20</th>
<th>Ø10</th>
<th>Ø13</th>
<th>Ø16</th>
<th>Ø20</th>
<th>Inrush current</th>
</tr>
</thead>
<tbody>
<tr>
<td>Installation Ø</td>
<td>1.5 mm²</td>
<td>2.5 mm²</td>
<td>2.5 mm²</td>
<td>1.5 mm²</td>
<td>15 mm²</td>
<td>2.5 mm²</td>
<td>2.5 mm²</td>
<td>4 A</td>
<td>260 µs</td>
</tr>
<tr>
<td>EM pLED BASIC FX 102 SC MH/NiCd 32W 50V</td>
<td>35</td>
<td>46</td>
<td>56</td>
<td>73</td>
<td>21</td>
<td>28</td>
<td>34</td>
<td>44</td>
<td></td>
</tr>
</tbody>
</table>

Calculation uses typical values from ABB series S200 as a reference. Actual values may differ due to used circuit breaker types and installation environment.

4.6 Harmonic distortion in the mains supply (at 230 V / 50 Hz and full load) in %

<table>
<thead>
<tr>
<th>THD</th>
<th>3</th>
<th>5</th>
<th>7</th>
<th>9</th>
<th>11</th>
</tr>
</thead>
<tbody>
<tr>
<td>EM pLED BASIC FX 102 SC MH/NiCd 32W 50V</td>
<td>&lt; 13</td>
<td>&lt; 11</td>
<td>&lt; 5</td>
<td>&lt; 3</td>
<td>&lt; 1</td>
</tr>
</tbody>
</table>

4.7 Insulation matrix

<table>
<thead>
<tr>
<th>Mains</th>
<th>Switched Live</th>
<th>Battery, LED, Test switch, Indicator LED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mains</td>
<td>–</td>
<td>•</td>
</tr>
<tr>
<td>Switched Live</td>
<td>•</td>
<td>–</td>
</tr>
<tr>
<td>Battery, LED, Test switch, Indicator LED</td>
<td>•</td>
<td>•</td>
</tr>
</tbody>
</table>

• Represents basic insulation
• • Represents double or reinforced insulation
4.8 Typ. LED current/voltage characteristics

The LED current in emergency mode is automatically adjusted by the EM converter LED module based on the total forward voltage of the LED modules connected and the associated battery. The start of the LED in emergency mode does not result in a current peak.

EM pLED BASIC FX 102 SC MH/NiCd 32W 50V – 3 cells
Article number: 89800688
3.6 V battery voltage
900 mA battery discharge current (tolerance)

5. Emergency output factor EOFi

6. Mechanical values

6.1 Housing properties
- Casing manufactured from polycarbonate
- Type of protection: IP20
- Max. torque at the mounting screws: 0.8 Nm

6.2 Mechanical data accessories

LED status indicator
- Green
- Mounting hole 6.5 mm diameter, 1 – 1.6 mm thickness
- Lead length 0.3 m / 1.0 m
- Insulation rating: 90 °C

Test switch
- Mounting hole 7.0 mm diameter
- Lead length 0.55 m

Battery connection
- Plug connection 0.3 m
- Extension 0.5 m

7. Functions

7.1 Function: adjustable current

By inserting a suitable resistor or third party resistor into the I-SELECT 2 interface, the current value can be adjusted. The relationship between output current and resistor value can be found in the chapter “Accessories I-SELECT 2 Plugs”.

Please note that the resistor values for I-SELECT 2 are not compatible with I-SELECT (generation 1). Installation of an incorrect resistor may cause irreparable damage to the LED module(s).

Resistors for the main output current values can be ordered from Tridonic (see accessories).

7.2 Short-circuit behaviour

In case of a short-circuit at the LED output the LED output is switched off. After restart of the LED Driver the output will be activated again.

7.3 No-load operation

The LED Driver will not be damaged in no-load operation. The output will be deactivated and is therefore free of voltage. If a LED load is connected the device has to be restarted before the output will be activated again.
8. Battery data

8.1 Battery selection

<table>
<thead>
<tr>
<th>Technology and capacity</th>
<th>Design</th>
<th>Number of cells</th>
<th>Article no.</th>
<th>Assignable batteries</th>
</tr>
</thead>
<tbody>
<tr>
<td>NiCd 4 Ah D cells</td>
<td>stick</td>
<td>1 x 3</td>
<td>28002773</td>
<td>•</td>
</tr>
<tr>
<td>NiCd 4 Ah D cells</td>
<td>side by side</td>
<td>3 x 1</td>
<td>89800384</td>
<td>•</td>
</tr>
<tr>
<td>NiCd 1.8 Ah Cs cells</td>
<td>remote box</td>
<td>1 x 3</td>
<td>28001221</td>
<td>•</td>
</tr>
<tr>
<td>NiCd 4.5 Ah D cells</td>
<td>remote box</td>
<td>1 x 3</td>
<td>89800389</td>
<td>•</td>
</tr>
<tr>
<td>NiCd 2.2 Ah Cs cells</td>
<td>stick</td>
<td>1 x 3</td>
<td>28002088</td>
<td>•</td>
</tr>
<tr>
<td>NiCd 4 Ah LA cells</td>
<td>stick</td>
<td>1 x 3</td>
<td>89800441</td>
<td>•</td>
</tr>
<tr>
<td>NiCd 2.2 Ah Cs cells</td>
<td>remote box</td>
<td>1 x 3</td>
<td>28001898</td>
<td>•</td>
</tr>
<tr>
<td>NiCd 4 Ah LA cells</td>
<td>remote box</td>
<td>1 x 3</td>
<td>28001896</td>
<td>•</td>
</tr>
</tbody>
</table>

8.2 Battery charge / discharge data

<table>
<thead>
<tr>
<th>Battery charge time</th>
<th>Type</th>
<th>EM pLED FX 102 SC MH/NiCd 32W 50V</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial charge</td>
<td>105 mA</td>
<td>195 mA</td>
</tr>
<tr>
<td>Fast charge</td>
<td>105 mA</td>
<td>195 mA</td>
</tr>
<tr>
<td>Trickle charge</td>
<td>70 mA</td>
<td>105 mA</td>
</tr>
<tr>
<td>Charging current</td>
<td>900 mA</td>
<td>900 mA</td>
</tr>
<tr>
<td>Charge voltage range</td>
<td>2.0 – 4.9 V</td>
<td></td>
</tr>
<tr>
<td>Discharge voltage range</td>
<td>3.2 – 4.5 V</td>
<td></td>
</tr>
</tbody>
</table>

Note: Battery protected against operation at excessive temperatures (charging stopped when battery cell temperature < -5 °C or > 60 °C).
The emergency lighting LED Driver will recharge the battery normally after running the test of 61347-2-7 CL 22.3 (abnormal operating conditions).

The battery will not be charged below 2.0 V.
### 8.3 Accu-NiCd

**4.2 / 4.5 Ah**
- **International designation**: KRMU 33/62
- **Battery voltage/cell**: 12 V
- **Cell type**: D
- **Case temperature range**
  - to ensure 4 years design life: +5 °C to +55 °C
  - Max. short term battery case temperature: 70 °C
- **Max. number discharge cycles**
  - 12 cycles per year plus 4 cycles during commissioning
- **Max. storage time**: 6 months

**4.5 Ah**
- **International designation**: KRMU 33/62
- **Battery voltage/cell**: 12 V
- **Cell type**: D
- **Ambient temperature range**
  - to ensure 4 years design life: +5 °C to +65 °C
- **Max. short term battery case temperature**
  - (shorter than 1 month over the battery lifetime): 70 °C
- **Max. number discharge cycles**
  - 4 cycles per year plus 4 cycles during commissioning
- **Max. storage time**: 6 months

### 8.4 Accu-NiMh

**2.2 Ah**
- **International designation**: HRMU 23/43
- **Battery voltage/cell**: 1.2 V
- **Cell type**: Cs
- **Case temperature range**
  - to ensure 4 years design life: +5 °C to +50 °C
  - Max. short term battery case temperature: 70 °C
- **Max. number discharge cycles**
  - 4 cycles per year plus 30 cycles during commissioning
- **Max. storage time**: 12 months

**4.0 Ah**
- **International designation**: HRMU 19/90
- **Battery voltage/cell**: 1.2 V
- **Cell type**: LA
- **Ambient temperature range**
  - to ensure 4 years design life: +5 °C to +40 °C tc point: +45 °C
  - Max. short term battery case temperature: 70 °C
  - Max. number discharge cycles
  - 4 cycles per year plus 30 cycles during commissioning
- **Max. storage time**: 12 months

### 8.5 Accupack-NiCd

**1.8 Ah**
- **International designation**: KRMU 23/43
- **Battery voltage/cell**: 1.2 V
- **Cell type**: Cs
- **Ambient temperature range**
  - to ensure 4 years design life: +5 °C to +40 °C tc point: +45 °C
  - Max. short term battery case temperature: 70 °C
  - Max. number discharge cycles
  - 4 cycles per year plus 4 cycles during commissioning
- **Max. storage time**: 6 months

### 8.6 Accupack-NiMH

**2.2 Ah**
- **International designation**: HRMU 23/43
- **Battery voltage/cell**: 1.2 V
- **Cell type**: Cs
- **Ambient temperature range**
  - to ensure 4 years design life: +5 °C to +35 °C tc point: +40 °C
  - Max. short term battery case temperature: 70 °C
  - Max. number discharge cycles
  - 4 cycles per year plus 4 cycles during commissioning
- **Max. storage time**: 12 months

**4.0 Ah**
- **International designation**: HRMU 19/90
- **Battery voltage/cell**: 1.2 V
- **Cell type**: LAL
- **Ambient temperature range**
  - to ensure 4 years design life: +5 °C to +35 °C tc point: +40 °C
  - Max. short term battery case temperature: 70 °C
  - Max. number discharge cycles
  - 4 cycles per year plus 4 cycles during commissioning
- **Max. storage time**: 12 months

### 8.7 Wiring batteries

To inhibit inverter operation disconnect the batteries by removing the connection at battery side.

For further informations refer to corresponding battery datasheet.

### 8.8 Storage, installation and commissioning

Relevant information about storage conditions, installation and commissioning are provided in the battery datasheets.
9. Miscellaneous

9.1 Insulation and electric strength testing of luminaires

Electronic devices can be damaged by high voltage. This has to be considered during the routine testing of the luminaires in production.

According to IEC 60598-1 Annex Q (informative only!) or ENEC 303-Annex A, each luminaire should be submitted to an insulation test with 500 V \( \text{DC} \) for 1 second. This test voltage should be connected between the interconnected phase and neutral terminals and the earth terminal.

The insulation resistance must be at least 2 MΩ.

As an alternative, IEC 60598-1 Annex Q describes a test of the electrical strength with 1500 V \( \text{AC} \) (or 1.414 x 1500 V \( \text{DC} \)). To avoid damage to the electronic devices this test must not be conducted.

9.2 Conditions of use and storage

- **Humidity:** 5% up to max. 85%, not condensed (max. 56 days/year at 85%)
- **Storage temperature:** -40 °C up to max. +80 °C

The devices have to be acclimatised to the specified temperature range \( (t_a) \) before they can be operated.

9.3 Maximum number of switching cycles

All Emergency LED Driver are tested with 50,000 switching cycles in maintained mode. The actually achieved number of switching cycles is significantly higher.

9.4 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 device was opened.