Product description

• LED Driver for mains operation with integrated Simple CORRIDOR FUNCTION (CF)
• For use in central battery systems
• For luminaire installation
• For the use with CLE 1500lm EM
• 5 years guarantee

Properties

• Constant current LED Driver with 350 or 470 mA output current
• Simple CORRIDOR FUNCTION (CF) with 10 % light level
• Constant current mode
• Light output in DC operation (EoF): 0.1 or 1
• SELV
• For emergency lighting systems as per EN 50172
• LED module and sensor available

Standards, page 4
Wiring diagrams and installation examples, page 5
Emergency lighting units
EM powerLED

Technical data
Rated supply voltage 220 – 240 V
Voltage range AC 198 – 244 V
Voltage range DC 176 – 280 V
Mains frequency 0 / 50 / 60 Hz
U-OUT 48 V
Overvoltage protection 320 V (for 1 h)
Max. permitted forward voltage LED 33 V
Turn on time (at 230 V, 50 Hz, full load) 100 ms
Changeover time between mains and emergency < 380 ms
Changeover time between emergency and mains < 100 ms
Ambient temperature ta -25 – 55 °C
Max. casing temperature tc 75 °C
Dimensions L x B x H 123 x 79 x 31 mm
Type of protection IP20
Lifetime up to 50,000 h
Guarantee 5 years

Ordering data
Type Article number Packaging, carton Packaging, pallet Weight per pc.
EM powerLED 12W CLE CPS 89800527 10 pc(s) 560 pc(s) 0.1 kg
EM powerLED 15W CLE CPS 89800177 10 pc(s) 560 pc(s) 0.1 kg

Specific technical data

<table>
<thead>
<tr>
<th>Type</th>
<th>Output current</th>
<th>Output current tolerance</th>
<th>Min. output voltage</th>
<th>Max. output voltage</th>
<th>Type output power</th>
<th>Input power (at 230 V, 50 Hz, full load)</th>
<th>Input current (at 230 V, 50 Hz, full load)</th>
<th>Efficiency (at 230 V, 50 Hz)</th>
<th>λ (at 230 V, 50 Hz, full load)</th>
<th>Ambient temperature ta</th>
<th>tc/ta for ≥ 50,000 h</th>
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</thead>
<tbody>
<tr>
<td>Normal operation</td>
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<tr>
<td>EM powerLED 12W CLE CPS</td>
<td>350 mA</td>
<td>5 %</td>
<td>22 V</td>
<td>33 V</td>
<td>10.61 W</td>
<td>13.6 W</td>
<td>75 mA</td>
<td>78 %</td>
<td>0.8c</td>
<td>-5 – 55 °C</td>
<td>85 / 55 °C</td>
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<td>5 %</td>
<td>22 V</td>
<td>33 V</td>
<td>14.25 W</td>
<td>17.0 W</td>
<td>100 mA</td>
<td>83 %</td>
<td>0.8c</td>
<td>-5 – 55 °C</td>
<td>85 / 55 °C</td>
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<tr>
<td>CF operation</td>
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<tr>
<td>EM powerLED 12W CLE CPS</td>
<td>29 mA</td>
<td>15 %</td>
<td>22 V</td>
<td>33 V</td>
<td>0.75 W</td>
<td>1.7 W</td>
<td>15 mA</td>
<td>44 %</td>
<td>0.5c</td>
<td>–</td>
<td>–</td>
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<tr>
<td>EM powerLED 15W CLE CPS</td>
<td>43 mA</td>
<td>15 %</td>
<td>22 V</td>
<td>33 V</td>
<td>1.12 W</td>
<td>2.0 W</td>
<td>18 mA</td>
<td>49 %</td>
<td>0.5c</td>
<td>–</td>
<td>–</td>
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<tr>
<td>Emergency operation 100 %</td>
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<td>33 V</td>
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<td>75 mA</td>
<td>78 %</td>
<td>–</td>
<td>–</td>
<td>–</td>
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<td>5 %</td>
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<td>33 V</td>
<td>14.25 W</td>
<td>17.0 W</td>
<td>100 mA</td>
<td>83 %</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Emergency operation 10 %</td>
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<td>33 V</td>
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<td>1.7 W</td>
<td>15 mA</td>
<td>44 %</td>
<td>–</td>
<td>–</td>
<td>–</td>
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<td>15 %</td>
<td>22 V</td>
<td>33 V</td>
<td>1.12 W</td>
<td>2.0 W</td>
<td>18 mA</td>
<td>49 %</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
</tbody>
</table>

1 Ambient temperature range ta defined in normal operation
2 Output voltage range defined in normal operation. LED forward voltage will decrease in CF operation
3 EM = Emergency

Data sheet 02/22-EM021-24
Subject to change without notice. Information provided without guarantee.

www.tridonic.com
Product description

- Motion detector for luminaire installation
- Motion detection through glass and thin materials (except metal)
- For automatic on/off switching of electronic ballasts
- Bright-out function: luminaire is not switched on if there is adequate brightness
- Delay time, detection range and light value for the bright-out function can be set via 9 dip switches
- Max. installation height 5 m
- Two housing options allowing flexible installation
- Variable detection area (100 – 10 %)
- Zero cross switching supported
- 5 years guarantee

Ordering data

<table>
<thead>
<tr>
<th>Type</th>
<th>Article number</th>
<th>Dimensions L x W x H</th>
<th>Packaging, carton</th>
<th>Weight per pc</th>
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<tbody>
<tr>
<td>smartSWITCH HF SDP f</td>
<td>28002214</td>
<td>70 x 36.5 x 24.5 mm</td>
<td>5 pcs</td>
<td>0.040 kg</td>
</tr>
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<td>smartSWITCH HF SDP Sf</td>
<td>28002235</td>
<td>58 x 48.5 x 24.5 mm</td>
<td>5 pcs</td>
<td>0.040 kg</td>
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Standards
- EN 55015
- EN 61000-3-2
- EN 61000-3-3
- EN 61347-1
- EN 61347-2-13
- EN 61547
- EN 62384
- EN 61347-2-7
- according to EN 60598-2-22
- according to EN 50172

Mechanical details
Case manufactured from polycarbonate.
Glow-wire test according to EN 61347-1 with increased temperature of 850 °C passed.

Short-circuit behaviour
In case of a short circuit on the secondary side (LED) the LED output is switched off. After elimination of the short circuit the nominal operation is restored automatically.

No-load operation
The LED Driver is not damaged in the no-load operation. The max. output voltage can be obtained during no-load operation.

Storage conditions
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 within the specified temperature range (ta) before they are operated.

Expected lifetime

<table>
<thead>
<tr>
<th>Type</th>
<th>tc 65 °C</th>
<th>ta 55 °C</th>
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<tbody>
<tr>
<td>EM powerLED 12W CLE CPS</td>
<td>100,000 h</td>
<td>50,000 h</td>
</tr>
<tr>
<td>EM powerLED 15W CLE CPS</td>
<td>100,000 h</td>
<td>50,000 h</td>
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</table>

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

<table>
<thead>
<tr>
<th>Type</th>
<th>THD</th>
<th>3</th>
<th>5</th>
<th>7</th>
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<td>43</td>
<td>32</td>
<td>9</td>
<td>12</td>
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<tr>
<td>EM powerLED 15W CLE CPS</td>
<td>38</td>
<td>33</td>
<td>20</td>
<td>8</td>
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</table>

Ballast lumen factor (BLF) in %

<table>
<thead>
<tr>
<th>Type</th>
<th>Corridor mode</th>
<th>DC operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>EM powerLED 12W CLE CPS</td>
<td>10 / 100</td>
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</tr>
<tr>
<td>EM powerLED 15W CLE CPS</td>
<td>10 / 100</td>
<td></td>
</tr>
</tbody>
</table>
Emergency lighting units

EM powerLED

Wiring diagram EM powerLED with sensor

220–240 V
0/50/60 Hz

L
N

EM powerLED
CLE CPS

LED
Maintained

Tridonic Sensor

PIR input ≙ 230 V

Switching behaviour:

<table>
<thead>
<tr>
<th>L</th>
<th>CF</th>
<th>Output LED</th>
</tr>
</thead>
<tbody>
<tr>
<td>off</td>
<td>off</td>
<td>off</td>
</tr>
<tr>
<td>off</td>
<td>on</td>
<td>off</td>
</tr>
<tr>
<td>on</td>
<td>off</td>
<td>10%</td>
</tr>
<tr>
<td>on</td>
<td>on</td>
<td>100%</td>
</tr>
</tbody>
</table>

DC operation behaviour:
Emergency level EoF: 01

The sensor is not active in DC operation.

Wiring diagram EM powerLED

220–240 V
0/50/60 Hz

L
N

EM powerLED
CLE CPS

LED
Maintained

Tridonic Sensor

PIR input ≙ 230 V

DC operation behaviour:
The emergency level EoF (01 or 1) depends on the polarity of the DC voltage.

<table>
<thead>
<tr>
<th>Polarity of the DC voltage</th>
<th>L</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>L</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>N</td>
<td>-</td>
<td>+</td>
</tr>
<tr>
<td>CF</td>
<td>+</td>
<td>-</td>
</tr>
</tbody>
</table>

Emergency level EoF: 1 01

The mains power must be removed before changing the LED load.

Secondary switching of LEDs is not allowed and may cause damage to the LEDs. The hot plug-in of LEDs during normal operation may result in current peaks of up to 50% above the typical output current.
Wiring instructions

- The LED terminals are classified as SELV. Keep the wiring of 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.
- LED leads should be separated from the mains connections and wiring for good EMC performance.
- Maximum lead length on the LED terminals is 3 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.
- 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.).

Wiring type and cross section

Solid wire with a cross section of 0.5 – 1.5 mm². Strip 8 – 9 mm of insulation from the cables to ensure perfect operation of terminals.

![Loose wiring diagram](image)

Loosen wire through twisting and pulling or using a Ø 1 mm release tool.

Installation instruction

Max. torque for the mounting screws: 0.5 Nm / M4.

You must make sure that the LED is connected with the correct polarity. LEDs that are connected to EM powerLED should have polarity reversal protection such as a Schottky diode. There may be irreversible damage if the LED is connected with the wrong polarity. The protection device must be capable of handling a load of more than 700 mA.

Maximum number of switching cycles

All LED Drivers are tested with 50,000 switching cycles. The actually achieved number of switching cycles is significantly higher.

Additional information

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

Guarantee conditions at [www.tridonic.com → Services](http://www.tridonic.com)

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