Product description

- Combination of electronic ballast and emergency lighting unit
- For T5 and T8 fluorescent lamps
- For manual testing of the emergency lighting function
- 5-year guarantee

Properties

- Lightweight one-part emergency lighting unit
- For 1, 2, 3 or 4-lamp luminaires
- Simple wiring
- No compatibility problems
- 1 or 3 h rated duration
- Lamp warm start in normal operation
- IDC (insulation displacement connection)
- Green charge status display LED
- Checking the emergency lighting function by interrupting the unswitched phase
- Optional test switch
- Electronically controlled battery charging
- Deep discharge protection
- Short-circuit-proof battery connection
- Polarity reversal protection for battery

Batteries

- High-temperature cells
- NiCd or NiMH batteries
- D or LA cells
- Blade terminals for simple connection
- 4-year design life
- 1-year guarantee
- For battery compatibility refer to chapter „Ballast-Lumen-Factor (BLF)“

Standards, page 5

Wiring diagrams and installation examples, page 7
### Technical data

- **Rated supply voltage**: 220 – 240 V
- **Mains frequency**: 50 / 60 Hz
- **Mains voltage changeover threshold**: according to EN 60598-2-22
- **tc point max.**: 70 °C
- **Operating point**: > 30 kHz
- **Battery charging time**: 24 h
- **Charge current**: 210 mA
- **Discharge current 1 h**: 2.4 A
- **Discharge current 3 h**: 1.1 A
- **Min. lamp starting temperature (normal operation)**: -15 °C
- **Min. lamp starting temperature (emergency mode)**: 0 °C
- **Type of protection**: IP20

### Specific technical data

<table>
<thead>
<tr>
<th>Lamp type</th>
<th>Lamp wattage</th>
<th>Type</th>
<th>Article number</th>
<th>Dimensions L x W x H</th>
<th>Hole spacing D</th>
<th>Lamp power</th>
<th>Circuit power</th>
<th>Mains current</th>
<th>λ</th>
<th>Normal operation BLF</th>
<th>Emergency operation BLF</th>
<th>Emergency operation EBLF</th>
<th>Rated operating time 3 h</th>
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<tbody>
<tr>
<td>T8 1 x 36 W</td>
<td>PC 1x36-33 COMBO</td>
<td>89805250</td>
<td>424 x 42 x 28 mm</td>
<td>415 mm</td>
<td>32.0 W</td>
<td>39 W</td>
<td>0.98 A</td>
<td>0.93</td>
<td>1</td>
<td>0.060</td>
<td>0.055</td>
<td>3 h</td>
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<td>PC 2x36-33 COMBO</td>
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<td>48.0 W</td>
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<td>0.170</td>
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<td>0.97</td>
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<td>0.140</td>
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### Ordering data

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<th>Number of cells</th>
<th>Packaging, carton</th>
<th>Packaging, pallet</th>
<th>Weight per pc.</th>
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<td>89805250</td>
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<td>700 pc(s)</td>
<td>0.440 kg</td>
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<td>89805268</td>
<td>3</td>
<td>25 pc(s)</td>
<td>700 pc(s)</td>
<td>0.440 kg</td>
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<tr>
<td>PC 1x58-34 COMBO</td>
<td>89805270</td>
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<td>25 pc(s)</td>
<td>700 pc(s)</td>
<td>0.440 kg</td>
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<tr>
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<td>25 pc(s)</td>
<td>700 pc(s)</td>
<td>0.440 kg</td>
</tr>
<tr>
<td>PC 3/4 x 14-33 T5 COMBO</td>
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<td>3</td>
<td>25 pc(s)</td>
<td>700 pc(s)</td>
<td>0.445 kg</td>
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<tr>
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<td>4</td>
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<td>475 pc(s)</td>
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<td>25 pc(s)</td>
<td>700 pc(s)</td>
<td>0.445 kg</td>
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</tbody>
</table>

### Rated operating time

- **Rated operating time 3 h**
- **Rated operating time 1 h**

### Data sheet

- **Subject to change without notice.**
- **www.tridonic.com**
Product description
- For connection to the emergency lighting unit
- For checking the device function

Test switch EM2

<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>400 pc(s)</td>
<td>0.011 kg</td>
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</table>

Status indication green LED

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>
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<td>LED EM green</td>
<td>89899605</td>
<td>25 pc(s)</td>
<td>200 pc(s)</td>
<td>0.011 kg</td>
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<tr>
<td>LED EM green, ultra high brightness</td>
<td>89899756</td>
<td>25 pc(s)</td>
<td>800 pc(s)</td>
<td>0.012 kg</td>
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</table>
Ballast lumen factor (BLF) in %

PC COMBO for T5 and T8 fluorescent lamps, 3 h or 1 h

<table>
<thead>
<tr>
<th>Lamp type</th>
<th>Wattage</th>
<th>Type</th>
<th>Article no.</th>
<th>Assignable batteries</th>
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<tbody>
<tr>
<td>T5</td>
<td>14 W</td>
<td>PC 1x36-33 COMBO</td>
<td>89805250</td>
<td>• • • • •</td>
</tr>
<tr>
<td></td>
<td>24 W</td>
<td>PC 2x36-33 COMBO</td>
<td>89805268</td>
<td>• • • • •</td>
</tr>
<tr>
<td>T8</td>
<td>18 W</td>
<td>PC 1x58-34 COMBO</td>
<td>89805270</td>
<td>• • • • •</td>
</tr>
<tr>
<td></td>
<td>36 W</td>
<td>PC 2x58-34 COMBO</td>
<td>89818236</td>
<td>• • • • •</td>
</tr>
<tr>
<td></td>
<td>58 W</td>
<td>PC 3/4x18-33 T5 COMBO</td>
<td>89800002</td>
<td>• • • • •</td>
</tr>
<tr>
<td></td>
<td>18 W</td>
<td>PC 3/4x24-34 T5 COMBO</td>
<td>89899878</td>
<td>• • • • •</td>
</tr>
</tbody>
</table>

Lamp current in emergency operation

<table>
<thead>
<tr>
<th>Type</th>
<th>Wattage</th>
<th>Type</th>
<th>Article number</th>
<th>Lamp current</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated operating time 3 h</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>T8 1 x 36 W</td>
<td>PC 1x36-33 COMBO</td>
<td>89805250</td>
<td>14 mA</td>
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<tr>
<td>T8 2 x 36 W</td>
<td>PC 2x36-33 COMBO</td>
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<td>14 mA</td>
<td></td>
</tr>
<tr>
<td>T8 1 x 58 W</td>
<td>PC 1x58-34 COMBO</td>
<td>89805270</td>
<td>18 mA</td>
<td></td>
</tr>
<tr>
<td>T8 2 x 58 W</td>
<td>PC 2x58-34 COMBO</td>
<td>89818236</td>
<td>18 mA</td>
<td></td>
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<tr>
<td>T5 3 x 14 W</td>
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<td>22 mA</td>
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<tr>
<td>T5 3 x 24 W</td>
<td>PC 3/4x24-34 T5 COMBO</td>
<td>89899878</td>
<td>34 mA</td>
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</table>

Rated operating time 1 h
| T5 3 x 14 W | PC 3/4x14-13 T5 COMBO | 89900003 | 44 mA |
Standards
• EN 61347-2-3
• EN 61347-2-7
• EN 60929
• EN 55015
• EN 61000-3-2
• EN 61000-3-3
• EN 61547
• IEC 60068-2-64
• IEC 60068-2-29
• IEC 60068-2-30
• according to EN 50172
• according to EN 60598-2-22

Isolation 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 isolation test with 500 VDC for 1 second. This test voltage should be connected between the interconnected phase and neutral terminals and the earth terminal. The isolation resistance must be at least 2 MΩ.

As an alternative, IEC 60598-1 Annex Q describes a test of the electrical strength with 1,500 VAC (or 1,414 x 1,500 VDC). To avoid damage to the electronic devices this test must not be conducted.

Restarting after lamp replacement
Note: Before servicing luminaires the mains supply should always be disconnected.

If faulty lamps are changed with the mains connected they can be made to restart automatically provided an interval of 2 seconds is left after removal.

• Single lamp combined units always restart automatically.
• Twin lamp combined units that do not restart automatically will do so if the first lamp that was inserted is removed and re-inserted.
• Triple/quad lamp combined units that do not restart automatically will do if the ‘emergency’ lamp is removed and re-inserted.

Lamp starting (normal operation)
Type of start: Pre-heat
Starting time: 2 seconds
Number of starts: circa 20,000

Mechanical details:
Channel manufactured from 0.4 mm Galvatite galvanised steel.
Cover manufactured from 0.4 mm white precoated steel.

LED charge indicator
• Green
• Mounting hole 6.5 mm diameter, 1 – 1.6 mm thickness
• Length of LED lead 750 mm
  (Bezel supplied fitted to LED)
• Insulation temperature rating: 90 °C

Test switch
• Mounting hole 7.0 mm diameter
• Length of test switch lead 550 mm

Battery leads
• Quantity: 1 red and 1 black
• Length: 1300 mm
• Wire type: 0.5 mm² solid conductor
• Insulation temperature rating: 90 °C

Termination 1
Push on 4.8 mm receptacle to suit battery spade fitted with insulating cover

Termination 2
9 mm stripped insulation

Service life
Service life at maximum case temperature: 50,000 hours

Technical data batteries

Accu-NiCd
4.2 / 4.5 Ah
Battery voltage/cell 12 V
Cell type D
Case temperature range +5 °C to +55 °C
Max. short term Temperature (reduced life-time) 70 °C
Max. number discharge cycles 4 cycles per year plus 4 cycles during commissioning
Max. storage time 6 months

Accu-NiMh
4.0 Ah
Battery voltage/cell 12 V
Cell type LA
Case temperature range +5 °C to +40 °C
Max. short term Temperature (reduced life-time) 70 °C
Max. number discharge cycles 4 cycles per year plus 30 cycles during commissioning
Max. storage time 12 months

For further information refer to corresponding battery datasheet.

Storage, installation and commissioning
Relevant information about storage conditions, installation and commissioning are provided in the battery datasheets.
CE marking
The combined units are CE marked for compliance with the low voltage directive.
Certificates of compliance are available to allow luminaires to be CE marked for compliance with the EMC directive.

Miniature circuit breakers (MCBs)
The maximum number of these electronic ballasts that may be used with miniature circuit breakers (MCBs).
These quantities are based on single pole MCBs. For multi-pole MCBs derate by 20 %.

<table>
<thead>
<tr>
<th>Type</th>
<th>Typ C MCB rating</th>
<th>Typ B MCB rating</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>10 A</td>
<td>16 A</td>
</tr>
<tr>
<td>PC 1x36/33 COMBO</td>
<td>24</td>
<td>36</td>
</tr>
<tr>
<td>PC 2x36/33 COMBO</td>
<td>10</td>
<td>16</td>
</tr>
<tr>
<td>PC 1x58/34 COMBO</td>
<td>24</td>
<td>36</td>
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<td>PC 2x58/34 COMBO</td>
<td>10</td>
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<tr>
<td>PC 3/4x18/33 COMBO</td>
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<td>26</td>
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<tr>
<td>PC 3/4x14/33 TS COMBO</td>
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<tr>
<td>PC 3/4x34/34 TS COMBO</td>
<td>18</td>
<td>26</td>
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</tbody>
</table>

Electrical connections
An earthed starting aid is required for the emergency lamp.
The neutrals of the two mains supplies are not connected together inside the combined unit. The combined unit is intended to be earthed by the fixings used to attach it to the luminaire. It may also be earthed by a wire attached to the holes positioned in the sides at each end of the case channel.

Terminal block type:
Push wire and insulation displacement

Terminal block capacity
• Push wire:
  0.5 to 1.5 mm² solid conductor
• Insulation displacement:
  0.5 mm² solid conductor

Wire strip length (push wire only):
7.5 to 8.5 mm

Keep all leads as short as possible

Master slave lamp operation not recommended.

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.).

<table>
<thead>
<tr>
<th>Maximum length of lamp leads (mm)</th>
<th>lamp terminals</th>
<th>1 &amp; 2</th>
<th>3 &amp; 4</th>
<th>5 &amp; 6</th>
<th>7 &amp; 8</th>
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<td>1000</td>
<td>1000</td>
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<td>1000</td>
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</tr>
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Batteries
Connection method: 4.8 x 0.5 mm spade welded to end of cell
For the stick batteries this connection is accessible after the battery end caps have been fitted.
To inhibit inverter operation, only disconnect the batteries by removing the connector from the battery spade tags.
**Wiring diagrams**

Here are the wiring diagrams for emergency lighting units:

**Single lamp combined units**

**Twin lamp combined units**

**Multi lamp combined units**

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**Additional information**

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

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

Life-time declarations are informative and represent no warranty claim. No warranty if device was opened.