CC COMPACT
SIMPLE FIX
DIMMABLE

EasyLine SIMPLE FIX C-PC
186415, 186416, 186447, 186448, 186449, 186450,
186451, 186505, 186710, 186711

Typical Applications
Built-in in compact luminaires for
- Retail lighting
- Downlights
- Residential lighting

EasyLine Simple Fix C-PC
- DIMMABLE: PHASE-CUT TRAILING-EDGE
- DIMMING METHOD: ANALOGUE
- SUITABLE FOR EMERGENCY ESCAPE LIGHTING SYSTEMS ACC. TO EN 50172
- WITH INTEGRATED CORD GRIP FOR INDEPENDENT OPERATION
- SELV
- SUITABLE FOR BUILT-IN INTO FURNITURE
- LONG SERVICE LIFE: UP TO 50,000 HRS.
- PRODUCT GUARANTEE: 5 YEARS
EasyLine
Simple Fix C-PC

Product features
- Compact casing shape

Electrical features
- Mains voltage: 220–240 V ± 10%
- Mains frequency: 50–60 Hz
- Push-in terminals primary: 0.75–1.5 mm², secondary: 0.5–1.5 mm² or 0.25–1.5 mm² (186505) or 1.5–2.5 mm² (186710, 186711)
- Power factor at full load:
  0.95 (186415, 186416, 186447, 186448, 186449, 186505) or
  0.9 (186447, 186448, 186449) or
  0.98 (186710, 186711)
- Open circuit voltage (Umax): 60 V or 30 V (186448) or 35 V (186450)
- Secondary side switching of LED modules is not allowed.

Dimming
- Dimmable with phase-cutting trailing-edge dimmer
- The compatibility of the driver and the dimmer has to be confirmed prior to installation to avoid flickering and/or noises.
- Dimming range: 5 to 100% or 10–100% (186447, 186448, 186449, 186710, 186711)
- If no dimming interface is connected, brightness will stay at 100%.

Safety features
- Protection against transient main peaks up to 1 kW (between L and N) or 0.5 kW (186447, 186448, 186449)
- Electronic short-circuit protection
- Overload protection
- Protection against “no load” operation
- Degree of protection: IP20
- Protection class II
- SELV

Packaging units

<table>
<thead>
<tr>
<th>Ref. No.</th>
<th>Pieces per box</th>
<th>Boxes per pallet</th>
<th>Weight per pallet</th>
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<td>186447, 186448, 186449</td>
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<td>70</td>
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<td>140</td>
</tr>
<tr>
<td>186511, 18651</td>
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<td>112</td>
<td>170</td>
</tr>
<tr>
<td>186505</td>
<td>20</td>
<td>112</td>
<td>100</td>
</tr>
<tr>
<td>186710, 186711</td>
<td>20</td>
<td>165</td>
<td>82</td>
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</table>

Applied standards
- EN 61347-1
- EN 61347-2-13
- EN 61547
- EN 61000-3-2
- EN 62384
- EN 55015

Dimming
Analogue

Product guarantee
- 5 years for operation at recommended operation temperature (see table for expected service life time on the next page)
- The conditions for the Product Guarantee of the Vossloh-Schwabe Group shall apply as published on our homepage (www.vossloh-schwabe.com). We will be happy to send you these conditions upon request.

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LED Drivers – EasyLine Simple Fix C-PC

**Electrical characteristics**

<table>
<thead>
<tr>
<th>Max. output W</th>
<th>Type</th>
<th>Ref. No.</th>
<th>Voltage 50–60 Hz V</th>
<th>Mains current mA</th>
<th>Inrush current A / µs</th>
<th>Current output DC mA (± 8%)</th>
<th>Voltage output DC [V]</th>
<th>THD at full load % (230 V)</th>
<th>Efficiency at full load % (230 V)</th>
<th>Ripple DC (V) %</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>E0id 150.151</td>
<td>186447 220–240</td>
<td>40–35</td>
<td>3 / 235</td>
<td>150</td>
<td>27–41</td>
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<td>&lt; 20</td>
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<td>E0id 250.270</td>
<td>186710 220–240</td>
<td>55–45</td>
<td>1.9 / 40</td>
<td>250</td>
<td>20–40</td>
<td>10</td>
<td>&gt; 85</td>
<td>&lt; 33</td>
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<tr>
<td>12</td>
<td>E0id 300.152</td>
<td>186448 220–240</td>
<td>60–50</td>
<td>5.5 / 120</td>
<td>500</td>
<td>13–20</td>
<td>27.8</td>
<td>&gt; 80</td>
<td>&lt; 20</td>
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<tr>
<td>18</td>
<td>E0id 250.153</td>
<td>186449 220–240</td>
<td>70–60</td>
<td>6 / 113</td>
<td>250</td>
<td>27–48</td>
<td>26</td>
<td>&gt; 80</td>
<td>&lt; 20</td>
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<tr>
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<td>186711 220–240</td>
<td>65–54</td>
<td>2.2 / 47</td>
<td>300</td>
<td>20–40</td>
<td>9</td>
<td>&gt; 85</td>
<td>&lt; 36</td>
<td></td>
</tr>
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<td>E0id 350.130</td>
<td>186415 220–240</td>
<td>100–90</td>
<td>13.2 / 257</td>
<td>350</td>
<td>32–52</td>
<td>8.6</td>
<td>&gt; 85</td>
<td>&lt; 5</td>
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<tr>
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<td>E0id 700.154</td>
<td>186450 220–240</td>
<td>95–85</td>
<td>13.3 / 249</td>
<td>700</td>
<td>16–26</td>
<td>8.2</td>
<td>&gt; 85</td>
<td>&lt; 5</td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>E0id 500.186</td>
<td>186505 220–240</td>
<td>110–100</td>
<td>1.2 / 50</td>
<td>500</td>
<td>28–42</td>
<td>17.1</td>
<td>&gt; 85</td>
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<td>25</td>
<td>E0id 700.131</td>
<td>186416 220–240</td>
<td>140–120</td>
<td>13.7 / 257</td>
<td>700</td>
<td>22–36</td>
<td>9.2</td>
<td>&gt; 85</td>
<td>&lt; 5</td>
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<td>36</td>
<td>E0id 700.155</td>
<td>186451 220–240</td>
<td>190–170</td>
<td>15.7 / 242</td>
<td>700</td>
<td>32–52</td>
<td>9.2</td>
<td>&gt; 83</td>
<td>&lt; 5</td>
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</tr>
</tbody>
</table>

**Maximum ratings**

Exceeding the maximum ratings can lead to reduction of service life or destruction of the drivers.

<table>
<thead>
<tr>
<th>Ref. No.</th>
<th>Ambient temperature range °C min.</th>
<th>°C max.</th>
<th>Operation humidity range % min.</th>
<th>% max.</th>
<th>Storage temperature range °C min.</th>
<th>°C max.</th>
<th>Storage humidity range % min.</th>
<th>% max.</th>
<th>Max. operation temperature at tc point °C</th>
<th>Degree of protection</th>
</tr>
</thead>
<tbody>
<tr>
<td>186447, 186448, 186449, 186450</td>
<td>-15</td>
<td>+45</td>
<td>20</td>
<td>60</td>
<td>-40</td>
<td>+85</td>
<td>5</td>
<td>95</td>
<td>+70</td>
<td>IP20</td>
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<tr>
<td>186505</td>
<td>+75</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>186415, 186416, 186451</td>
<td>-20</td>
<td>+50</td>
<td>10</td>
<td>90</td>
<td>+70</td>
<td></td>
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</table>

**Expected service life time**

at operation temperatures at tc point

<table>
<thead>
<tr>
<th>Operation current</th>
<th>Ref. No.</th>
<th>Ambient temperature °C</th>
<th>Storage temperature °C</th>
<th>Storage humidity %</th>
<th>Max. operation temperature at tc point °C</th>
<th>Degree of protection</th>
</tr>
</thead>
<tbody>
<tr>
<td>All</td>
<td>186447, 186448, 186449, 186450, 186451</td>
<td>70 °C*</td>
<td>65 °C*</td>
<td>60 °C*</td>
<td>70 °C</td>
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<tr>
<td>hrs</td>
<td>186447, 186448, 186449, 186450, 186451, 186505, 186710, 186711</td>
<td>70,000</td>
<td>50,000</td>
<td>50,000</td>
<td>50,000</td>
<td></td>
</tr>
</tbody>
</table>

* recommended operation temperature

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LED Drivers – EasyLine Simple Fix C-PC

Typ. performance graphs for 186710 / Type ECXd 250.270

![Graphs showing working area and efficiency for 186710 Type ECXd 250.270.]

Typ. performance graphs for 186711 / Type ECXd 300.271

![Graphs showing working area and efficiency for 186711 Type ECXd 300.271.]

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**LED Drivers – EasyLine Simple Fix C-PC**

**Typ. performance graphs for 186505 / Type ECXd 500.186**

### Working area

- **$U_{ad} [V]$**
- **$I_{ad} [mA]$**

### Efficiency

- **Eff [%]**
- **$P_{out} [W]$**

### Power factor

- **PF**
- **$P_{out} [W]$**

### Total harmonic factor (THD)

- **THD [%]**
- **$P_{out} [W]$**

**Safety functions**

- **Transient mains peaks protection:** Values are in compliance with EN 61547 (interference immunity).
- **Surges between L-N:** up to 1 kV
- **Short-circuit protection:** Control gears are protected against short-term short-circuit
- **Overload protection:** Control gears only work in range of rated output power and voltage problemfree (< 60 V DC).
  - Please check before switch-on mains power supply that the selected LED load is suitable (see Electrical Characteristics on data sheet).
- **No load operation:** Control gears are protected against no load operation (open load).
- **If any of the above mentioned safety functions will be triggered,** disconnect the control gear from the power supply then find and eliminate the cause of the problem.

**List of compatible dimmers**

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>Dimmer type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elko</td>
<td>316 GLED</td>
</tr>
<tr>
<td>Elko</td>
<td>315 GLE</td>
</tr>
<tr>
<td>Elko</td>
<td>315 GLE 2pol</td>
</tr>
<tr>
<td>Elko</td>
<td>630 GLE</td>
</tr>
<tr>
<td>Legrand</td>
<td>ASW3000H</td>
</tr>
<tr>
<td>Micromatic</td>
<td>UNILED+325</td>
</tr>
<tr>
<td>Moeller Eaton</td>
<td>x-comfort, type CDAE01/02</td>
</tr>
<tr>
<td>SG</td>
<td>LEDDIM 400</td>
</tr>
</tbody>
</table>

Minimum dimmer load has to be observed. Minimum dimming load incl. tolerances for LED drivers:

- 186415: min. 12 W
- 186416: min. 16 W
- 186447: min. 4 W
- 186448: min. 7 W
- 186449: min. 7 W
- 186450: min. 12 W
- 186451: min. 23 W
- 186505: min. 14 W
- 186710: min. 5 W
- 186711: min. 6 W

The compatibility of the dimmers of other manufacturers has to be tested prior to installation.

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Assembly and Safety Information

Installation must be carried out under observation of the relevant regulations and standards. Installation must be carried out in a voltage-free state (i.e. disconnection from the mains). The following advices must be observed; non-observance can result in the destruction of the LED drivers, fire and/or other hazards.

Mandatory regulations
- DIN VDE 0100
- EN 60598-1

Mechanical mounting
- Mounting position: Independent application. Drivers are allowed to use for independent applications
- Mounting location: Independent LED drivers do not need to be integrated into a casing.
  Installation in outdoor luminaires: degree of protection for luminaire with water protection rate ≥ 4 (e.g. IP54 required).
- Degree of protection: IP20
- Clearance: Min. 0.10 m from walls, ceilings and insulation
- Surface: Solid and plane surface for optimum heat dissipation required.
- Heat transfer: If the driver is destined for installation in a luminaire. sufficient heat transfer must be ensured between the driver and the luminaire casing.
- Stripped length: 8.5–10 mm
- Tightening torque: 0.2 Nm
- Fastening: Using M4 screws in the designated holes

Electrical installation
- Connection terminals: Push-in terminals for rigid or flexible conductors with a section of primary: 0.75–1.5 mm², secondary: 0.5–3.2 mm²
- Through-wiring: Is not allowed.

• Heat transfer: If the driver is destined for installation in a luminaire.
• Surface: Solid and plane surface for optimum heat dissipation required.
• Mounting location: Independent LED drivers do not need to be integrated into a casing.
• Clearance: Min. 0.10 m from walls, ceilings and insulation.
• Degree of protection: IP20

Selection of automatic cut-outs for VS LED drivers
- Dimensioning automatic cut-outs
  High transient currents occur when an LED driver is switched on because the capacitors have to load. Ignition of LED modules occurs almost simultaneously. This also causes a simultaneous high demand for power. These high currents when the system is switched on put a strain on the automatic conductor cut-outs, which must be selected and dimensioned to suit.
- Release reaction
  The release reaction of the automatic conductor cut-outs comply with VDE 0641, part 11. for B, C characteristics. The values shown in the following tables are for guidance purposes only and are subject to system-dependent change.
- No. of LED drivers
  The maximum number of VS LED drivers applies to cases where the devices are switched on simultaneously. Specifications apply to single-pole fuses. The number of permissible drivers must be reduced by 20% for multi-pole fuses. The considered circuit impedance equals 400 mΩ (approx. 20 m [2.5 mm²] of conductor from the power supply to the distributor and a further 15 m to the luminaire).

<table>
<thead>
<tr>
<th>Ref. No.</th>
<th>Type</th>
<th>B 10 A</th>
<th>B 13 A</th>
<th>B 16 A</th>
<th>C 10 A</th>
<th>C 13 A</th>
<th>C 16 A</th>
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<tr>
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<td>186711</td>
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<td>188</td>
<td>231</td>
<td>144</td>
<td>188</td>
<td>231</td>
</tr>
</tbody>
</table>

- To limit capacitive inrush currents the current carrying capacity of each circuit breaker (fuse) can be increased by a factor of 2.5 with the help of our ESB (Ref. No.: 149820, 149821, 149822) inrush current limiters.

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