Non-dimmable constant voltage electronic control gear for single-channel LED module applications

Performance characteristics

- Single output channels for high power solid state lighting applications
- Max. output voltage is limited to 60 VDC SELV equiv.
- Very high energy efficiency of up to 91%
- Soft start and low output voltage ripple for extended LED lifetime
- For use with IEC protection class I luminaires
- Total protected ECG against abnormal operations e.g. short circuit, open circuit, over load
- Suitable for direct current operation and application in emergency lighting installations referring to EN 61347-2-3/J
- High design flexibility thanks to flat housing for build in luminaires
- Easy installation due to push-in terminals with release button for wiring and standard M4 screws for fixing
- Certified as thermally protected device, e.g. for application in d-luminaires
- Conformance with international regulations regarding safety and operation, electromagnetic compatibility and immunity to interference

ECG model

<table>
<thead>
<tr>
<th>Version</th>
<th>Order no.</th>
<th>Type of LED modules</th>
</tr>
</thead>
<tbody>
<tr>
<td>CVS148-70LS-01/220-240</td>
<td>10087298</td>
<td>1 x 48 V, max. 1,46 A</td>
</tr>
</tbody>
</table>

Usable for

- Low, Mid and High Power LED modules with an operation voltage of constant 48 VDC
- Parallel connection of multiple constant voltage LED modules

Targeted lighting applications

- Office & education
- Public buildings
- Industry
- Hospitality

Markings
Non-dimmable constant voltage electronic control gear for single-channel LED module applications

Technical data

- **Mains voltage supply**
  - Rated voltage range: 220 V – 240 V
  - Max. admissible voltage range (continuous): 198 V – 264 V
  - Frequency: 50 / 50 Hz ... 60 Hz

- **Battery operation**
  - Voltage range for continuous operation: 198 VDC – 278 VDC
  - Lowest limiting value for temporary operation: 176 VDC

- **Behaviour at mains overvoltage**
  - Switch-off of the LEDs at approx. 320 VAC
  - Overvoltage protection: 350 VAC / 2 h
  - Leakage current: < 0.5 mA / ECG

- **Total harmonic distortion (THD)**: < 10 %
- **Output voltage tolerance**: ± 10 %
- **Degree of protection**: IP 20
- **Output voltage limitation**: 60 VDC, SELV equivalent

- **Behaviour in case of output open circuit operation**
  - Switch-off of the LEDs at approx. 320 VAC

- **Behaviour in case of underload operation**
  - Overvoltage protection: 350 VAC / 2 h

- **Behaviour in case of overload operation**
  - Overvoltage protection: 350 VAC / 2 h

- **Behaviour in case of output short circuit operation**
  - Overvoltage protection: 350 VAC / 2 h

- **Max. temperature at housing surface in case of failure**: + 110 °C (acc. EN 61 347-2-13 / C)

- **Terminals**
  - For solid or stranded wire
  - Type: 90°-connector with push button
  - Wire cross section: 0.5 mm² – 1.5 mm²
  - Wire stripping length: 7.5 mm – 8.5 mm

Admissible temperatures

<table>
<thead>
<tr>
<th>Version</th>
<th>Ambient (t_a)</th>
<th>Case (t_c)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CVS148</td>
<td>−25 °C / 50 °C</td>
<td>Max. + 75 °C</td>
</tr>
</tbody>
</table>

Service life

<table>
<thead>
<tr>
<th>Version</th>
<th>Nominal service life</th>
<th>Extended service life</th>
<th>Failure rate during service life</th>
</tr>
</thead>
<tbody>
<tr>
<td>CVS148</td>
<td>50,000 h (operation at t_c = 75 °C)</td>
<td>100,000 h (operation at t_c = 65 °C)</td>
<td>&lt; 10 %</td>
</tr>
</tbody>
</table>

Inrush current / Circuit breaker

<table>
<thead>
<tr>
<th>Version</th>
<th>typ. I_{peak} / Δt</th>
<th>No. of ECG at single-pole circuit breakers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>LS-Typ</td>
</tr>
<tr>
<td>CVS148</td>
<td>32 A / 140 μs</td>
<td></td>
</tr>
</tbody>
</table>

CSP: 8,000,000 h
Inrush current rated values:
- typ. I_{peak} = 32 A
- ½ x I_{peak} = 16 A

Admissible temperatures

- Version typ. I_{peak}
- No. of ECG at single-pole circuit breakers

Behaviour at mains overvoltage

- Switch-off of the LEDs at approx. 320 VAC
- Overvoltage protection: 350 VAC / 2 h
- Leakage current: < 0.5 mA / ECG

Total harmonic distortion (THD): < 10 %

Output voltage tolerance: ± 10 %

Degree of protection: IP 20

Output voltage limitation: 60 VDC, SELV equivalent

Behaviour in case of output open circuit operation:
- Switch-off of the LEDs at approx. 320 VAC

Behaviour in case of underload operation:
- Overvoltage protection: 350 VAC / 2 h

Behaviour in case of overload operation:
- Overvoltage protection: 350 VAC / 2 h

Behaviour in case of output short circuit operation:
- Overvoltage protection: 350 VAC / 2 h

Max. temperature at housing surface in case of failure:
- + 110 °C (acc. EN 61 347-2-13 / C)

Terminals:
- For solid or stranded wire
- Type: 90°-connector with push button
- Wire cross section: 0.5 mm² – 1.5 mm²
- Wire stripping length: 7.5 mm – 8.5 mm

Admissible temperatures

- Version Ambient (t_a) Case (t_c)
- CVS/one.tf/four.tf/eight.tf – /two.tf/five.tf °C ...
- /five.tf/zero.tf °Cmax. + /seven.tf/five.tf °C

Service life

- Version Nominal service life Extended service life Failure rate during service life
- CVS148 50,000 h (operation at t_c = 75 °C) 100,000 h (operation at t_c = 65 °C) < 10 %

Inrush current / Circuit breaker

- Version typ. I_{peak} / Δt No. of ECG at single-pole circuit breakers
- CVS148 32 A / 140 μs B 18 30 37 47

Errors excepted. We reserve the right to make alternations in the interest of improving our products.
Non-dimmable constant voltage electronic control gear
for single-channel LED module applications

Operating data

<table>
<thead>
<tr>
<th>Version</th>
<th>Input Current *</th>
<th>Power factor *</th>
<th>Max. system power *</th>
<th>ECG efficiency *</th>
<th>Constant output voltage</th>
<th>Min. output current</th>
<th>Max. output current</th>
<th>Min. total output power</th>
<th>Max. total output power</th>
<th>Approvals</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSV148</td>
<td>0.34</td>
<td>0.98</td>
<td>77</td>
<td>91</td>
<td>48</td>
<td>0.02</td>
<td>1.46</td>
<td>1</td>
<td>70</td>
<td>a, b</td>
</tr>
</tbody>
</table>

* Nominal operation: 230 VAC, 100% load

**Efficiency over load**

![Efficiency over load graph]

70 W type

Errors excepted. We reserve the right to make alterations in the interest of improving our products.

www.BAGelectronics.com
Non-dimmable constant voltage electronic control gear for single-channel LED module applications

### Dimensions

![Image of dimensions]

### Wiring diagrams

1 channel

![Wiring diagram]

### Conformance with regulations

<table>
<thead>
<tr>
<th>Standard</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>EN 61347-1</td>
<td>General and safety requirements</td>
</tr>
<tr>
<td>EN 61347-2-13</td>
<td>Particular requirements for d.c. or a.c. supplied electronic controlgear for LED modules</td>
</tr>
<tr>
<td>EN 62384</td>
<td>Performance characteristics: DC or AC supplied electronic control gear for LED modules</td>
</tr>
<tr>
<td>EN 61547</td>
<td>Equipment for general lighting purposes EMC immunity requirements</td>
</tr>
<tr>
<td>EN 55015</td>
<td>Limits and methods of measurement of radio disturbance characteristics of electrical lighting and similar equipment</td>
</tr>
</tbody>
</table>

Environmental tests for mechanical capacity:

- IEC 60068-2-6: Test Fc: vibrations (sinusoidal)
- IEC 60068-2-27: Test Ed: shock and bump
- IEC 60068-2-29: Test Ed: shock and bump

Quality management certified according to ISO 9001