EMC/EMI line filter for lighting applications

- Excellent EMC filter for lighting applications
- Choice between 3 different leakage ratings: C00/C11/C16
  - C00: no leakage current, medical applications
  - C11: low leakage current, safety applications
  - C16: standard version, best filter performance
- Voltage rating up to 300 VAC
- Choice between 4 current ratings: 1 A, 2 A, 5 A and 8 A
- Compact, space-saving design
- Cable outlets with enhanced length give freedom for flexible installation
- Versions without X-capacitor available - FN2564

Performance indicators

<table>
<thead>
<tr>
<th>Rated current [A]</th>
<th>standard</th>
<th>high</th>
<th>very high</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>20</td>
<td>40</td>
<td>80</td>
</tr>
<tr>
<td>60</td>
<td>80</td>
<td>80</td>
<td>80</td>
</tr>
<tr>
<td>80</td>
<td>80</td>
<td>80</td>
<td>80</td>
</tr>
</tbody>
</table>

Technical specifications

- Rated operating voltage: 300 VAC / 300 VDC
- Rated currents: 1 A, 2 A, 5 A and 8 A @ 60°C
- Operating frequency: DC to 60 Hz
- Temperature range (operation and storage): -40°C to 100°C (40/100/21)*
- Climatic class: 40/100/21
- Cooling: AN
- Flammability corresponding to Plastic material: UL-94V-0
  - Laces: UL94- VW1
- High potential test voltage:
  - P(DC+) -> PE 3000 VDC for 2 sec
  - P(DC+) -> N(DC-) 1500 VDC for 2 sec
- Altitude: 2000 m (above derating applies)*
- Certified to
  - UL 60939-3, IEC/EN 60939-3, GB/T 15287
- Design corresponding to
  - IEC 61347-1 - Lamp controlgear
  - IEC 61547 - Equipment for general lighting purposes
- Protection category: P20
- Pollution degree: 2 acc. IEC 60664-1
- MTBF: > 1,800,000 h
- Vibration and shock:
  - 3M4 (operation); 2M2 (transport) acc. to IEC 60721-3-3; IEC 60721-3-2
- Overvoltage category: II acc. IEC 60664-1
- Terminals: Single strand solid wires AWG16 / AWG18

* for dedicated requests exceeding this specification, please contact your local Schaffner sales office

Features and benefits

- Very high differential mode attenuation
- Suitable for AC and DC applications
- Offering a very high differential and common mode performance in low profile housing
- Easy installation with single strand wires
- Voltage rating according to high voltage LED lighting market

Typical applications

- Lighting equipment
- LED driver and displays
- Street lamps and signage
- Industrial and architectural lighting
- Fluorescent ballasts
- Other applications with high demand for differential mode performance

Approvals & Compliances

- UKCA
- CQC
- RoHS
- UL

Typical electrical schematic - FN2560

Typical electrical schematic - FN2564 (no X-cap)
## Filter selection table

<table>
<thead>
<tr>
<th>Filter</th>
<th>Rated current</th>
<th>Leakage current*</th>
<th>Inductance**</th>
<th>Capacitance**</th>
<th>Dis. Resistor**</th>
<th>Weight</th>
<th>Typ. Dissipation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>@ 60°C</td>
<td>@ 300 VAC/60 Hz</td>
<td>L1</td>
<td>L2</td>
<td>Cx</td>
<td>Cy</td>
<td>R</td>
</tr>
<tr>
<td>FN2560-1-04-C00</td>
<td>1</td>
<td>0.0</td>
<td>4.0</td>
<td>198</td>
<td>0.470</td>
<td>-</td>
<td>1000</td>
</tr>
<tr>
<td>FN2560-1-04-C11</td>
<td>1</td>
<td>0.4</td>
<td>4.0</td>
<td>198</td>
<td>0.470</td>
<td>2 x 4.7</td>
<td>1000</td>
</tr>
<tr>
<td>FN2560-1-04-C16</td>
<td>1</td>
<td>3.1</td>
<td>4.0</td>
<td>198</td>
<td>0.470</td>
<td>2 x 33</td>
<td>1000</td>
</tr>
<tr>
<td>FN2560-2-04-C00</td>
<td>2</td>
<td>0.0</td>
<td>2.0</td>
<td>98</td>
<td>0.470</td>
<td>-</td>
<td>1000</td>
</tr>
<tr>
<td>FN2560-2-04-C11</td>
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<td>3.1</td>
<td>2.0</td>
<td>98</td>
<td>0.470</td>
<td>2 x 33</td>
<td>1000</td>
</tr>
<tr>
<td>FN2560-5-04-C00</td>
<td>5</td>
<td>0.0</td>
<td>1.0</td>
<td>51</td>
<td>0.470</td>
<td>-</td>
<td>1000</td>
</tr>
<tr>
<td>FN2560-5-04-C11</td>
<td>5</td>
<td>0.4</td>
<td>1.0</td>
<td>51</td>
<td>0.470</td>
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<td>1.0</td>
<td>51</td>
<td>0.470</td>
<td>2 x 33</td>
<td>1000</td>
</tr>
<tr>
<td>FN2560-8-04-C00</td>
<td>8</td>
<td>0.0</td>
<td>0.5</td>
<td>26</td>
<td>0.470</td>
<td>-</td>
<td>1000</td>
</tr>
<tr>
<td>FN2560-8-04-C11</td>
<td>8</td>
<td>0.4</td>
<td>0.5</td>
<td>26</td>
<td>0.470</td>
<td>2 x 4.7</td>
<td>1000</td>
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<td>0.470</td>
<td>2 x 33</td>
<td>1000</td>
</tr>
</tbody>
</table>

* Maximum leakage under usual AC operating conditions (acc. IEC 60939-3), calculated at 50Hz. If the neutral line is interrupted, worst case leakage could reach twice this level.

** Tolerances apply: Inductance: -30%/+50%, Capacitance: ±20%, Resistance: ±10%

### Performance adaptations available

#### Series for reduced reactive currents: FN2564
All FN2560 designations can also be ordered without X-capacitor. For example: FN2564-1-04-C00
- Pro: Lower reactive currents P (DC+) and N (DC-)
- Con: Lower differential mode attenuation performance

#### Options with adapted leakage currents (on request)
Additionally to the existing C00, C11 and C16 options, 10 other Y-capacitor options (0.47 - 22 nF) are available. For FN2560 and FN2564 series
- Pro: Fine adaptation of leakage current between 0.00 mA and 3.11 mA
- Con: -

### Mechanical data

1 A - 5 A: Single strand solid wire 18 AWG
8 A: Single strand solid wire 16 AWG

All dimensions in mm; 1 inch = 25.4 mm Tolerances according ISO 2768-m/EN 22768-m
Typical filter attenuation

Per CISPR 17; DM=50 Ω/50 Ω sym, differential mode; CM=50 Ω/50 Ω asym, common mode

- FN2560-1-04-C00 - no Y-Capacitor
- FN2560-1-04-C11 - 2 x 4.7 nF Y-Capacitor
- FN2560-1-04-C16 - 2 x 33 nF Y-Capacitor

- FN2560-2-04-C00 - no Y-Capacitor
- FN2560-2-04-C11 - 2 x 4.7 nF Y-Capacitor
- FN2560-2-04-C16 - 2 x 33 nF Y-Capacitor

- FN2560-5-04-C00 - no Y-Capacitor
- FN2560-5-04-C11 - 2 x 4.7 nF Y-Capacitor
- FN2560-5-04-C16 - 2 x 33 nF Y-Capacitor

- FN2560-8-04-C00 - no Y-Capacitor
- FN2560-8-04-C11 - 2 x 4.7 nF Y-Capacitor
- FN2560-8-04-C16 - 2 x 33 nF Y-Capacitor
EMC/EMI Products
Schaffner Group
Datasheets
15 Apr 2021

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