Safe and ergonomic EMC/EMI filter with very low leakage current

- Light weight plastic enclosure design
- Very low filter leakage current
- Hinged safety covers
- Embedded filter terminals
- Different performance levels
- Environmental friendly design without potting compound

### Technical specifications

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum continuous operating voltage</td>
<td>250 VAC, 50/60 Hz</td>
</tr>
<tr>
<td>Rated currents</td>
<td>6 to 20 A @ 55°C</td>
</tr>
<tr>
<td>Operating frequency</td>
<td>DC to 400 Hz</td>
</tr>
<tr>
<td>High potential test voltage</td>
<td>P/N -&gt; E 2500 VAC, for 60 sec *</td>
</tr>
<tr>
<td></td>
<td>P -&gt; N 1100 VDC, for 2 sec</td>
</tr>
<tr>
<td>Temperature range (operation and storage)</td>
<td>-25°C to +100°C (25/100/21)</td>
</tr>
<tr>
<td>Flammability corresponding to UL 94 V-0</td>
<td>UL 94 V-0 (safety covers UL 94V-1)</td>
</tr>
<tr>
<td>Design corresponding to</td>
<td>UL 1283, CSA 22.2 No. B 1986,</td>
</tr>
<tr>
<td></td>
<td>IEC/EN 60939, EN 60601-1</td>
</tr>
<tr>
<td>MTBF @ 40°C/230 V (MIL-HB-217F)</td>
<td>&gt;180,000 hours</td>
</tr>
</tbody>
</table>

* Type testing only

### Features and benefits

- A plastic housing and a metal ground plate are cleverly combined to get the lowest possible product weight without compromising EMC behaviour.
- The embedded terminals from Schaffner guarantee user-friendly handling and reliable, long-lasting electrical connection.
- Captive hinged protective covers contribute to overall safety by offering protection against unintended contact with live conductors. They are included in the standard scope of delivery without any extra cost.
- Very low leakage current values make the filters suitable for grids with very tough requirements or sensitive GFCIs, and for applications which set value on safety and reliability.
- FN 2450 feature an ecologically conscious construction without the use of potting compound or banned substances (RoHS). Used raw materials can be easily separated at the end of the product life time for proper and environmentally safe disposal.

### Typical applications

- Electrical and electronic equipment
- Test and measurement devices
- Medical devices & Industrial automation
- Small machines
- Office automation equipment

### Typical electrical schematic
## Filter selection table

<table>
<thead>
<tr>
<th>Filter*</th>
<th>Rated current</th>
<th>Leakage current**</th>
<th>Inductance L</th>
<th>Capacitance Cx</th>
<th>Capacitance Cy</th>
<th>Resistance R</th>
<th>Input/Output connections</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>FN 2450 G-6-61</td>
<td>6 (6.8)</td>
<td>0.66 (0.38)</td>
<td>10.5</td>
<td>0.47</td>
<td>4.7</td>
<td>1</td>
<td>-61</td>
<td>210</td>
</tr>
<tr>
<td>FN 2450 G-10-61</td>
<td>10 (11.4)</td>
<td>0.66 (0.38)</td>
<td>4.9</td>
<td>0.47</td>
<td>4.7</td>
<td>1</td>
<td>-61</td>
<td>210</td>
</tr>
<tr>
<td>FN 2450 G-16-61</td>
<td>16 (18.2)</td>
<td>0.66 (0.38)</td>
<td>1.84</td>
<td>0.47</td>
<td>4.7</td>
<td>1</td>
<td>-61</td>
<td>210</td>
</tr>
<tr>
<td>FN 2450 G-20-61</td>
<td>20 (22.8)</td>
<td>0.66 (0.38)</td>
<td>0.94</td>
<td>0.47</td>
<td>4.7</td>
<td>1</td>
<td>-61</td>
<td>210</td>
</tr>
<tr>
<td>FN 2450 F-6-61</td>
<td>6 (6.8)</td>
<td>0.47 (0.27)</td>
<td>10.5</td>
<td>0.47</td>
<td>3.3</td>
<td>1</td>
<td>-61</td>
<td>210</td>
</tr>
<tr>
<td>FN 2450 F-10-61</td>
<td>10 (11.4)</td>
<td>0.47 (0.27)</td>
<td>4.9</td>
<td>0.47</td>
<td>3.3</td>
<td>1</td>
<td>-61</td>
<td>210</td>
</tr>
<tr>
<td>FN 2450 F-16-61</td>
<td>16 (18.2)</td>
<td>0.47 (0.27)</td>
<td>1.84</td>
<td>0.47</td>
<td>3.3</td>
<td>1</td>
<td>-61</td>
<td>210</td>
</tr>
<tr>
<td>FN 2450 F-20-61</td>
<td>20 (22.8)</td>
<td>0.47 (0.27)</td>
<td>0.94</td>
<td>0.47</td>
<td>3.3</td>
<td>1</td>
<td>-61</td>
<td>210</td>
</tr>
<tr>
<td>FN 2450 B-6-61</td>
<td>6 (6.8)</td>
<td>0.00</td>
<td>10.5</td>
<td>0.47</td>
<td>1</td>
<td>1</td>
<td>-61</td>
<td>210</td>
</tr>
<tr>
<td>FN 2450 B-10-61</td>
<td>10 (11.4)</td>
<td>0.00</td>
<td>4.9</td>
<td>0.47</td>
<td>1</td>
<td>1</td>
<td>-61</td>
<td>210</td>
</tr>
<tr>
<td>FN 2450 B-16-61</td>
<td>16 (18.2)</td>
<td>0.00</td>
<td>1.84</td>
<td>0.47</td>
<td>1</td>
<td>1</td>
<td>-61</td>
<td>210</td>
</tr>
<tr>
<td>FN 2450 B-20-61</td>
<td>20 (22.8)</td>
<td>0.00</td>
<td>0.94</td>
<td>0.47</td>
<td>1</td>
<td>1</td>
<td>-61</td>
<td>210</td>
</tr>
</tbody>
</table>

* The letter following FN2450 represents the value of the Y-capacitor and is directly related to the performance and leakage current of the filter. Other Y-capacitor values are available upon request.

** Maximum leakage current under normal operating conditions (acc. to IEC60939-3). Note: if the neutral line is interrupted, worst case leakage could reach twice this level.

## Typical filter attenuation

Per CISPR 17; A=50 Ω/50 Ω sym; B=50 Ω/50 Ω asym

### 6 A types

![Typical filter attenuation 6 A types](image)

### 10 A types

![Typical filter attenuation 10 A types](image)

### 16 A types

![Typical filter attenuation 16 A types](image)

### 20 A types

![Typical filter attenuation 20 A types](image)
Installation

FN 2450 are delivered with closed plastic covers and fastened terminals. To install the filter please proceed as follows:

- Mount the filter on a metal surface with two appropriate bolts.
- First connect the green/yellow wire to the earth stud of the filter.
- Gently lift the two hinged plastic covers.
- Untighten the terminals with an appropriately sized screwdriver.
- Connect phase and neutral wires with cable lugs by pushing down and tightening the bolts.
- Please note the torque recommendation on the next page.
- Push the safety covers back into their locked position to finish the filter installation.

Mechanical data

FN 2450

<table>
<thead>
<tr>
<th>Flex wire</th>
<th>1.3 - 2.5 mm²</th>
<th>1.3 - 2.5 mm²</th>
<th>4 - 6 mm²</th>
<th>4 - 6 mm²</th>
</tr>
</thead>
<tbody>
<tr>
<td>AWG type wire</td>
<td>AWG 13 - AWG 16</td>
<td>AWG 13 - AWG 16</td>
<td>AWG 12 - AWG 10</td>
<td>AWG 12 - AWG 10</td>
</tr>
<tr>
<td>Ring/fork lug (W/d)*</td>
<td>max. 11 mm/min. Ø 4.3 mm</td>
<td>max. 11 mm/min. Ø 4.3 mm</td>
<td>max. 11 mm/min. Ø 4.3 mm</td>
<td>max. 11 mm/min. Ø 4.3 mm</td>
</tr>
<tr>
<td>Recommended torque</td>
<td>0.8 - 1 Nm</td>
<td>0.8 - 1 Nm</td>
<td>0.8 - 1 Nm</td>
<td>0.8 - 1 Nm</td>
</tr>
</tbody>
</table>

* Schaffner recommends the use of insulated and UL-recognized ring lugs or fork lugs of the appropriate size.

Please visit www.schaffner.com to find more details on filter connectors.
Headquarters, global innovation and development

Switzerland
Schaffner Group
Nordstrasse 11
4542 Luterbach
T +41 32 681 66 26
info@schaffner.com
www.schaffner.com

To find your local partner within Schaffner’s global network: www.schaffner.com
© 2018 Schaffner Group

The content of this document has been carefully checked and understood. However, neither Schaffner nor its subsidiaries assume any liability whatsoever for any errors or inaccuracies of this document and the consequences thereof. Published specifications are subject to change without notice. Product suitability for any area of application must ultimately be determined by the customer. In all cases, products must never be operated outside their published specifications. Schaffner does not guarantee the availability of all published products. This disclaimer shall be governed by substantive Swiss law and resulting disputes shall be settled by the courts at the place of business of Schaffner Holding AG. Latest publications and a complete disclaimer can be downloaded from the Schaffner website. All trademarks recognized.

Sales and application centers

China
Schaffner EMC Ltd. Shanghai
T20-3 C, No 565 Chuangye Road, Pudong district
201201 Shanghai
T +86 21 3813 9500
cschina@schaffner.com
www.schaffner.com.cn

Finland
Schaffner Oy
Sauvonrinne 19 H
08500 Lohja
T +358 50 468 7284
finlandsales@schaffner.com

France
Schaffner EMC S.A.S.
16-20 Rue Louis Rameau
95875 Bezons
T +33 1 34 34 30 60
francesales@schaffner.com

Germany
Schaffner Deutschland GmbH
Schoemperlenstrasse 128
76185 Karlsruhe
T +49 721 56910
germany.sales@schaffner.com

India
Schaffner India Pvt. Ltd
REGUS WORLD TRADE CENTRE
WTC, 22nd Floor Unit No 2238, Brigade Gateway Campus, 26/1, Dr. Rajkumar Road
Malleshwaram (W)
560055 Bangalore
T +91 80 67935355
indiasales@schaffner.com

Italy
Schaffner EMC S.r.l.
Via Ticino, 30
20900 Monza (MI)
T +39 039 21 41 070
italysales@schaffner.com

Japan
Schaffner EMC K.K.
1-32-12, Kamiuma, Setagaya-ku
7F Mitsui-seimei Sangenjaya Bldg.
154-0011 Tokyo
T +81 3 5712 3650
F +81 3 5712 3651
japansales@schaffner.com
www.schaffner.jp

Singapore
Schaffner EMC Pte Ltd.
#05-09, Kg Ubi Ind. Estate
408705 Singapore
T +65 6377 3283
F +65 6377 3281
singaporesales@schaffner.com

Spain
Schaffner EMC España
Calle Calendula 93, Miniparc III, Edificio E
El Soto de Moraleja, Alcobendas
28109 Madrid
T +34 917 912 900
F +34 917 912 901
spainsales@schaffner.com

Sweden
Schaffner EMC AB
Tegeluddsvägen 76, 2tr
115 28 Stockholm
T +46 8 5050 2425
swedensales@schaffner.com
www.schaffner.com

Switzerland
Schaffner EMV AG
Nordstrasse 11
4542 Luterbach
T +41 32 681 66 26
switzerlandsales@schaffner.com

Taiwan R.O.C.
Schaffner EMV Ltd.
20 Floor-2, No 97, Section 1, Xintai 5th Road
22175 Xizhi District New Taipei City 22175
T +886 2 2697 5500
F +886 2 2697 5533
taiwansales@schaffner.com
www.schaffner.com.tw

Thailand
Schaffner EMC Co. Ltd.
67 Moo 4 Tambon Ban Klang
Amphur Muang P.O. Box 14
51000 Lampunh
T +66 53 58 11 04
F +66 53 58 10 19
thailandsales@schaffner.com

United Kingdom
Schaffner Ltd.
5 Ashville Way, Molly Millars Lane
Wokingham
RG41 2PL Berkshire
T +44 118 9770070
F +44 118 9792969
uksales@schaffner.com
www.schaffnerusa.com

U.S.A
Schaffner EMC Inc.
52 Mayfield Avenue
08837 Edison, New Jersey
T +1 732 225 9533
F +1 732 225 4789
usasales@schaffner.com
www.schaffnerusa.com

Schaffner North America
6722 Thirlane Road
24019 Roanoke, Virginia
T +1 276 228 7943
F +1 276 228 7953

Schaffner North America
823 Fairview Road
24382 Wytheville, Virginia
T +1 276 228 7943
F +1 276 228 7258