Versatile Medical Class II EMC/EMI Filter

- Medical filter suitable for compliance with Protection Class II (ME) according IEC 60601-1
- Fulfills the requirement for two MOPP (means of patient protection), compliant with IEC/EN 60601-1
- No leakage current to earth
- Rated currents up to 15 A
- Excellent performance/size ratio
- Front mount, rear mount and snap-in versions (B, MB and S1B type)
- Plastic enclosure for higher dielectric strength insulation
- Fast-on terminals or wire leads
- V-lock compatible

### Technical specifications

- **Maximum continuous operating voltage**: 250 VAC, 50/60 Hz
- **Rated currents**: 1 to 15 A @ 40°C max.
- **Operating frequency**: DC to 400 Hz
- **High potential test voltage**: P -> N: 760 VAC for 2 s, P/N -> Ext: insulation 4 kVAC for 60 s acc. IEC 60601-1
- **Temperature range (operation and storage)**: -40°C to +100°C (40/100/21)
- **Design corresponding to**:
  - up to 15A: UL 60939-3, CSA Std C22.1 No. 8-13
  - up to 10A: IEC/EN 60939-1, GB/T15287, GB/T15288
- **Protection category**: IP 40 according to IEC 60529 (front side, with inserted plug)
- **Overvoltage category**: II acc. IEC 60664-1
- **Pollution degree**: 2 acc. IEC 60664-1
- **Vibration and shock**: M4 acc. IEC 60721-3-3
- **MTBF @ Rated amb. Temp./Voltage (MIL-HB-217F)**: > 1,000,000 hours
- **Flammability corresponding to**:
  - Plastic Material: UL 94 V-0
  - Laces for -07 version: UL 94 VW-1

### Approvals & Compliances

The FN9274 IEC inlet filter is suitable for compliance with Class II ME equipment. It incorporates an EMC filter into a C18 IEC inlet that offers excellent filter attenuation in a compact housing.

The filter is available with two connection variants on the load side. The cable version is touch-safe by default. The pins of the fast-on-version are recessed in the plastic housing. In combination with insulated crimp connectors Class II compliance can be achieved for Fast-on-version.

The requirements for Two MOPP in IEC 60601-1:2005 + A1 regarding Leakage Currents, Insulation and Air Clearance and Creepage Distances and Ball Pressure test are fulfilled.

### Features and benefits

- Suitable for class II Medical Equipment (ME)
- Fulfills the requirements for Two MOPP in IEC 60601-1 - Medical electrical equipment
- Fulfills the requirements in IEC/EN 62368-1 - Audio/video, information and communication technology equipment
- Fulfills the requirements in IEC/EN 60950-1 - Information technology equipment
- Fulfills the requirements in IEC/EN 60335-1 - Household and similar electrical appliances
- Fulfills the requirements for Reinforced Insulation in IEC 61010-1 - Safety requirements
- All versions certified according UL/IEC 60939-3, C22.2 No. 8, CQC/CCC GB/T15287 and GB/T15288

### Typical applications

- General medical devices (MDD)
- In-vitro diagnostic medical devices (IVDD)
- Test and measurement equipment
- Portable electrical and electronic equipment
- Single-phase power supplies, switch-mode power supplies (SMPS)
- Audio / video / communication equipment (IEC/UL 62368-1)

### Electrical schematic

```
LOAD
N
2x L1
Rx
R
N
P
```

**Performance indicators**

<table>
<thead>
<tr>
<th>Attenuation performance</th>
<th>standard</th>
<th>high</th>
<th>very high</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated current [A]</td>
<td>0</td>
<td>4</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>12</td>
<td>16</td>
<td>20</td>
</tr>
</tbody>
</table>
## Filter selection table - classic

<table>
<thead>
<tr>
<th>Filter</th>
<th>Buy</th>
<th>Rated current @ 40°C</th>
<th>Leakage current</th>
<th>Inductance L1</th>
<th>Capacitance Cx</th>
<th>Resistor R</th>
<th>Input connections</th>
<th>Output connections</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>FN9274XXB-1-ZZ</td>
<td>1</td>
<td>0.0</td>
<td>41.1</td>
<td>0.22</td>
<td>1</td>
<td>C18</td>
<td>-05</td>
<td>-07</td>
<td>&lt;40</td>
</tr>
<tr>
<td>FN9274XXB-2-ZZ</td>
<td>2</td>
<td>0.0</td>
<td>20.1</td>
<td>0.22</td>
<td>1</td>
<td>C18</td>
<td>-05</td>
<td>-07</td>
<td>&lt;40</td>
</tr>
<tr>
<td>FN9274XXB-4-ZZ</td>
<td>4</td>
<td>0.0</td>
<td>7.2</td>
<td>0.22</td>
<td>1</td>
<td>C18</td>
<td>-05</td>
<td>-07</td>
<td>&lt;40</td>
</tr>
<tr>
<td>FN9274XXB-6-ZZ</td>
<td>6</td>
<td>0.0</td>
<td>3.2</td>
<td>0.22</td>
<td>1</td>
<td>C18</td>
<td>-05</td>
<td>-07</td>
<td>&lt;40</td>
</tr>
<tr>
<td>FN9274XXB-10-ZZ</td>
<td>10</td>
<td>0.0</td>
<td>1.3</td>
<td>0.22</td>
<td>1</td>
<td>C18</td>
<td>-05</td>
<td>-07</td>
<td>&lt;40</td>
</tr>
<tr>
<td>FN9274XXB-15-ZZ</td>
<td>15</td>
<td>0.0</td>
<td>0.4</td>
<td>0.22</td>
<td>1</td>
<td>C18</td>
<td>-05</td>
<td>-07</td>
<td>&lt;40</td>
</tr>
</tbody>
</table>

Test conditions: Temperature: 25°C±2°C, measuring frequency for inductance: 1 kHz, 50 mV

Tolerances: Inductance: ±50%, -30%; capacitance: ±20%; resistance: ±10%. For mechanical tolerances, please refer to the mechanical data section.

* Standard length is 160 mm

### Product selector

For example FN9274MB-15-05:
- FN9274 IEC inlet with
- rear mount flanges (M),
- 15A rated current (15) and
- fast-on terminals (05).

Design-in recommendation:
- EMC and functional test with FN9274B-XX-05 (safety stock all currents - front mount, fast-on types)
- Mechanical integration with FN9274XXB-15-ZZ (safety stock for all variants - 15A-types)

### Typical filter attenuation

Per CISPR 17 / symmetrical 50 Ω/50 Ω - Differential Mode (DM) / asymmetrical 50 Ω/50 Ω - Common Mode (CM)

<table>
<thead>
<tr>
<th>Current</th>
<th>1 A</th>
<th>2 A</th>
<th>4 A</th>
<th>6 A</th>
<th>10 A</th>
<th>15 A</th>
</tr>
</thead>
<tbody>
<tr>
<td>dB</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10k</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>100k</td>
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<td></td>
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</tr>
<tr>
<td>1M</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10M</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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### Notes

- [Image 479x715 to 499x730]
- [Image 514x715 to 526x730]
- [Image 119x701 to 128x710]
- [Image 119x689 to 128x698]
- [Image 119x676 to 128x686]
- [Image 119x664 to 128x673]
- [Image 119x651 to 128x661]
- [20x824]
Mechanical data - front mount

**FN9274B-XX-05**

- Recommended torque for M3 = 0.5 Nm

**FN9274B-XX-07**

- Recommended torque for M3 = 0.5 Nm

For dimensions [mm] without tolerances: ISO 2768-m / EN22768-m applies
**Mechanical data - rear mount**

**FN9274MB-XX-05**

* Recommended torque for M3 = 0.5 Nm

**FN9274MB-XX-07**

* Recommended torque for M3 = 0.5 Nm

For dimensions [mm] without tolerances: ISO 2768-m / EN22768-m applies
Mechanical data - snap-in

**FN9274S1B-XX-05**

- **Dimensions [mm]** without tolerances: ISO 2768-m / EN22768-m applies

**FN9274S1B-XX-07**

- **Dimensions [mm]** without tolerances: ISO 2768-m / EN22768-m applies

**Panel Cut-out**
- Panel thickness [mm]: 1.0 - 2.5

For dimensions [mm] without tolerances: ISO 2768-m / EN22768-m applies
Headquarters, global innovation and development

Schaffner Group
Industrie Nord
Nordstrasse 11e
4542 Luterbach
T +41 32 681 66 26
info@schaffner.com

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
ccess@schaffner.com
www.schaffner.com.cn

Finland
Schaffner Oy
Sauvonnimieh 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
F +33 1 39 47 02 28
francesales@schaffner.com

Germany
Schaffner Deutschland GmbH
Schoepmerlenstrasse 128
76185 Karlsruhe
T +49 721 572 580
F +49 721 572 3429
germanysales@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)
560005 Bangalore
T +91 80 67935355
indiasales@schaffner.com

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

Japan
Schaffner EMC K.K.
Tajy-Seimei Sangenjaya Bldg.
1-32-12, Kumsauma, Setagaya-ku
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
spanisales@schaffner.com

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

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

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