Multi-stage High Performance AC/DC EMI Filter

- Rated currents from 1 to 16 A
- High differential and common-mode attenuation
- Good low frequency attenuation
- Optional medical versions (B type)
- Optional safety versions (A type)

**Features and benefits**
- FN 2080 two-stage filters are designed for easy and fast chassis mounting
- FN 2080 filters are also available as B versions without Y-capacitors for medical applications as well as A version with low capacitance for safety critical applications with necessity for low leakage currents
- All filters provide a high conducted attenuation performance, based on chokes with high saturation resistance and excellent thermal behavior
- FN 2080 two-stage filters are designed with good low frequency attenuation
- FN 2080 filters are also available as single-stage filters
- FN 2080 filters are also available with two common mode choke configuration (FN 2070 series)
- Various terminal options allow you to select the desired connection style

**Technical specifications**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated voltage*</td>
<td>250 VAC, 50/60 Hz; 250 VDC</td>
</tr>
<tr>
<td>Operating frequency</td>
<td>DC to 400 Hz</td>
</tr>
<tr>
<td>Rated currents</td>
<td>1 to 16 A @ 40°C max</td>
</tr>
<tr>
<td>High potential test voltage</td>
<td>P → PE 2000 VAC for 2 sec</td>
</tr>
<tr>
<td></td>
<td>P → PE 2500 VAC for 2 sec (B types)</td>
</tr>
<tr>
<td></td>
<td>P → 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>Certified to</td>
<td>UL 1283, CSA 22.2 No. 8 1986, IEC/EN 60939 (applies to AC and DC applications)</td>
</tr>
<tr>
<td>Flammability corresponding to</td>
<td>UL 94 V-2 or better</td>
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<tr>
<td>Design corresponding to</td>
<td>UL 1283, CSA 22.2 No. 8 1986, IEC/EN 60939</td>
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<tr>
<td>MTBF @ 40°C/230 V (MIL-HB-217F)</td>
<td>1,650,000 hours (B types)</td>
</tr>
<tr>
<td></td>
<td>1,700,000 hours (B types)</td>
</tr>
</tbody>
</table>

*maximum RMS operating voltage at rated frequency or the maximum DC operating voltage

**Approvals**

- UL
- cUL
- EN/IEC/UL
- UL 60939
- UL 1283
- CSA 22.2
- UL 1100
- MIL-HB-217F
- CE
- ROHS

**Typical applications**

- Electrical and electronic equipment
- Consumer goods
- Household equipment
- Building automation
- Industrial applications
- Machinery
- Medical equipment
- Electronic data processing equipment
- Office automation and datacom equipment
- Various noisy applications requiring good filter performance

**Typical electrical schematic**

![Typical electrical schematic](image)
<table>
<thead>
<tr>
<th>Filter*</th>
<th>Rated current @ 40°C (25°C)</th>
<th>Leakage current**</th>
<th>Inductance L</th>
<th>Capacitance Cx</th>
<th>Resistance R</th>
<th>Input/Output connections</th>
<th>Weight [g]</th>
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<tbody>
<tr>
<td>FN 2080-1-..</td>
<td>1 (1.2)</td>
<td>0.66 (0.38)</td>
<td>22</td>
<td>0.33</td>
<td>0.33</td>
<td>1000</td>
<td>-06 -07</td>
</tr>
<tr>
<td>FN 2080-3-..</td>
<td>3 (3.5)</td>
<td>0.66 (0.38)</td>
<td>9.8</td>
<td>0.47</td>
<td>0.47</td>
<td>470</td>
<td>-06 -07</td>
</tr>
<tr>
<td>FN 2080-6-..</td>
<td>6 (6.9)</td>
<td>0.66 (0.38)</td>
<td>7.8</td>
<td>1</td>
<td>4.7</td>
<td>220</td>
<td>-06 -07</td>
</tr>
<tr>
<td>FN 2080-10-..</td>
<td>10 (11.5)</td>
<td>0.66 (0.38)</td>
<td>4.5</td>
<td>0.47</td>
<td>220</td>
<td>-06 -07 -08</td>
<td>750</td>
</tr>
<tr>
<td>FN 2080-12-..</td>
<td>12 (13.8)</td>
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<td>3.25</td>
<td>220</td>
<td>-06 -07 -08</td>
<td>750</td>
<td></td>
</tr>
<tr>
<td>FN 2080-16-..</td>
<td>16 (18.4)</td>
<td>0.66 (0.38)</td>
<td>2.8</td>
<td>220</td>
<td>-06 -07 -08</td>
<td>1020</td>
<td></td>
</tr>
<tr>
<td>FN 2080A-1-..</td>
<td>1 (1.2)</td>
<td>0.07 (0.04)</td>
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<td>0.33</td>
<td>1000</td>
<td>-06 -07</td>
</tr>
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* To compile a complete part number, please replace the -.. with the required I/O connection style (e.g. FN 2080-16-08, FN 2080B-10-06).

** Maximum leakage under usual AC operating conditions (acc. IEC 60939-3). Note: if the neutral line is interrupted, worst case leakage could reach twice this level. Leakage current for DC application is 0 mA.
Typical filter attenuation

Per CISPR 17; A=50 Ω/50 Ω sym; B=50 Ω/50 Ω asym; C=0.1 Ω/100 Ω sym; D=100 Ω/0.1 Ω sym

**1 A:** Standard type | A type | B type

**3 A:** Standard type | A type | B type

**6 A:** Standard type | A type | B type

**10 A:** Standard type | A type | B type

**12 A:** Standard type | A type | B type
Mechanical data

Connection style -06, 1 and 3 A types

Connection style -06, 6 to 12 A types

Connection style -06, 16 A types

Connection style -07, 1 and 3 A types (same dimensions as style -06)

Connection style -07, 6 to 12 A types (same dimensions as style -06)

Connection style -07, 16 A types (same dimensions as style -06)

Connection style -08, 10 to 16 A types (same dimensions as style -06)
### Dimensions

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<tr>
<th></th>
<th>1 A</th>
<th>3 A</th>
<th>6 A</th>
<th>10 A</th>
<th>12 A</th>
<th>16 A</th>
<th>Tolerances</th>
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<tr>
<td>A</td>
<td>85</td>
<td>85</td>
<td>113.5 ±1</td>
<td>156 ±1</td>
<td>156 ±1</td>
<td>119 ±1</td>
<td>±0.5</td>
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<tr>
<td>B</td>
<td>54</td>
<td>54</td>
<td>57.5 ±1</td>
<td>57.5 ±1</td>
<td>57.5 ±1</td>
<td>85.5 ±1</td>
<td>±0.5</td>
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<tr>
<td>C</td>
<td>30.3</td>
<td>40.3</td>
<td>45.4 ±1</td>
<td>45.4 ±1</td>
<td>45.4 ±1</td>
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<tr>
<td>D</td>
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<td>64.8</td>
<td>94 ±1</td>
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<td>130.5 ±1</td>
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<td>F</td>
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<td>103</td>
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<td>143</td>
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**Connection style -06**

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<th>6.3 x 0.8</th>
<th>6.3 x 0.8</th>
<th>6.3 x 0.8</th>
<th>6.3 x 0.8</th>
<th>6.3 x 0.8</th>
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**Connection style -07**

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<th>8.4</th>
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<th>8.4</th>
<th>8.6</th>
<th>±0.5</th>
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<td>P</td>
<td>14.9</td>
<td>14.9</td>
<td>18</td>
<td>18</td>
<td>18</td>
<td>42.25</td>
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**AWG type wire**

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<th>AWG 20</th>
<th>AWG 18</th>
<th>AWG 18</th>
<th>AWG 16</th>
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<td>Wire length</td>
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**Connection style -08**

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<tbody>
<tr>
<td>N</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q</td>
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</table>

**Recommended torque (Nm)**

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<th>1.2 - 1.3</th>
<th>1.2 - 1.3</th>
</tr>
</thead>
</table>

**Earth terminal**

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<th>1.5 - 1.7</th>
<th>1.5 - 1.7</th>
</tr>
</thead>
</table>

All dimensions in mm; 1 inch = 25.4 mm

Tolerances according: ISO 2768-m/EN 22768-m

Please visit [www.schaffner.com](http://www.schaffner.com) to find more details on filter connectors.
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