High Performance Two-stage PCB-mounting EMC Filter

Technical specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum continuous operating voltage</td>
<td>250 VAC, 50/60 Hz</td>
</tr>
<tr>
<td>Operating frequency</td>
<td>DC to 400 Hz</td>
</tr>
<tr>
<td>Rated currents</td>
<td>0.5 to 6 A @ 40°C max.</td>
</tr>
<tr>
<td>High potential test voltage</td>
<td>P -&gt; PE 2000 VAC for 2 sec</td>
</tr>
<tr>
<td></td>
<td>P -&gt; N 760 VAC 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>Design corresponding to</td>
<td>UL 1283, CSA 22.2 No. B 1986, IEC/EN 60939</td>
</tr>
<tr>
<td>Flammability corresponding to</td>
<td>UL 94 V-2 or better</td>
</tr>
<tr>
<td>MTBF @ 40°C/230 V (Mil-HB-217F)</td>
<td>675,000 hours</td>
</tr>
</tbody>
</table>

Features and benefits

- Very good conducted attenuation performance, based on chokes with high saturation resistance and excellent thermal behavior
- Two-stage single-phase design
- PCB through hole mounting
- Custom specific versions on request

Typical applications

- Electrical and electronic equipment
- Small to medium-sized machines and household equipment
- Single-phase power supplies, switch-mode power supplies
- Test and measurement equipment

Typical electrical schematic:

```
P   2xL1  CX   2xL2   P'
PE   2   2  2
N   Line   N'  Load
```
### Filter selection table

<table>
<thead>
<tr>
<th>Filter*</th>
<th>Rated current@ 40°C (25°C)</th>
<th>Leakage current* at 230 VAC/50 Hz</th>
<th>Inductance** L1</th>
<th>Inductance** L2</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 410-0.5-02</td>
<td>0.5 (0.6)</td>
<td>373</td>
<td>24</td>
<td>24</td>
<td>33</td>
<td>2.2</td>
<td>-02</td>
<td>85</td>
<td>0.5</td>
</tr>
<tr>
<td>FN 410-1-02</td>
<td>1 (1.2)</td>
<td>373</td>
<td>10</td>
<td>10</td>
<td>33</td>
<td>2.2</td>
<td>-02</td>
<td>85</td>
<td>0.5</td>
</tr>
<tr>
<td>FN 410-3-02</td>
<td>3 (3.6)</td>
<td>373</td>
<td>2</td>
<td>2</td>
<td>33</td>
<td>2.2</td>
<td>-02</td>
<td>85</td>
<td>0.5</td>
</tr>
<tr>
<td>FN 410-6-02</td>
<td>6 (6.9)</td>
<td>373</td>
<td>0.8</td>
<td>0.8</td>
<td>33</td>
<td>2.2</td>
<td>-02</td>
<td>85</td>
<td>0.5</td>
</tr>
</tbody>
</table>

* Maximum leakage under normal operating conditions. Note: if the neutral line is interrupted, worst case leakage could reach twice this level.

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

### Product selector

```
FN 410-yy...

02: PCB through hole mounting
0.5 to 6: Rated current
```

For example: FN 410-0.5-02, FN 410-6-02

### 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

0.5 and 1 A types

3 and 6 A types

### Mechanical data

![Mechanical diagram](image)

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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