

AC Feedthrough Filter

SCHAFFNER
energy efficiency and reliability



- IEC/EN 60939 approval
- Rated currents from 10 to 250A
- 5kV pulse test capability
- Class Y2 capacitor

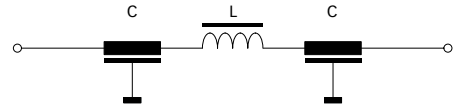
Approvals



Technical specifications

| | |
|----------------------------------------------|----------------------------------------------------------------|
| Maximum continuous operating voltage: | 300VAC, 50/60Hz (ENEC) 250VAC, 50/60Hz (UL) 1000VDC max. |
| Rated currents: | 10 to 250A @ 60°C max. |
| Capacitor class: | Y2 |
| High potential test voltage: | 3000VDC for 2 sec |
| Insulation resistance (100VDC after 60 sec): | < 0.33μF, R > 15,000MΩ > 0.33μF, τ > 5000s |
| Temperature range (operation and storage): | -40°C to +100°C (40/100/21) |
| Flammability corresponding to: | UL 94V-2 or better |
| MTBF @ 60°C/300V (Mil-HB-217F): | < 200A: > 675,000 hours ≥ 200A: > 494,000 hours |

Typical electrical schematic



Feedthrough filters offer a high insertion loss across a broad band of frequencies from a few tens of kHz up to the GHz region. In general, feedthrough filters offer a higher level of EMI suppression than feedthrough capacitors of the same current rating. This is particularly relevant to applications where source impedance is smaller than 50Ω.

Different versions are available offering a wide selection on operating currents and performance levels. AC feedthrough filters are designed and approved for up to 300VAC 50/60Hz operation.

Features and benefits

- Very low internal series inductance.
- Very high self-resonant frequency.
- Self-healing dielectric.
- High quality and reliability.
- Through-bulkhead mounting.
- Anti-twist protection.
- Custom-specific or dual-versions on request.

Typical applications

- Power line filter for 110/240VAC power lines
- Increasing system and information security
- Power supplies
- Switching and cellular equipment
- Computer servers
- UPS power supplies
- Medical equipment
- Shielded rooms

Feedthrough selector table

| Feedthrough | Rated current @ 60°C | Leakage current* @ 250VAC/50Hz | Capacitance** C | Inductance L @ 10kHz | DC resistance*** R @ 25°C | Weight [g] |
|-----------------|-------------------------|-----------------------------------|--------------------|-------------------------|------------------------------|---------------|
| | [A] | [mA] | [nF] | [nH] | [mΩ] | |
| FN 7611-10-M3 | 10 | 1.89 | 10 | 70 | 1.2 | 55 |
| FN 7612-10-M3 | 10 | 8.86 | 47 | 70 | 1.52 | 70 |
| FN 7611-16-M4 | 16 | 4.15 | 22 | 70 | 0.65 | 80 |
| FN 7612-16-M4 | 16 | 18.85 | 100 | 70 | 0.92 | 90 |
| FN 7611-32-M4 | 32 | 4.15 | 22 | 70 | 0.65 | 80 |
| FN 7612-32-M4 | 32 | 18.85 | 100 | 70 | 0.92 | 90 |
| FN 7611-63-M6 | 63 | 28.3 | 150 | 186 | 0.47 | 250 |
| FN 7612-63-M6 | 63 | 88.6 | 470 | 124 | 0.53 | 500 |
| FN 7612-100-M8 | 100 | 188 | 1000 | 124 | 0.23 | 750 |
| FN 7611-250-M12 | 250 | 88.6 | 470 | 169 | 0.23 | 1086 |

* Tolerance +20%

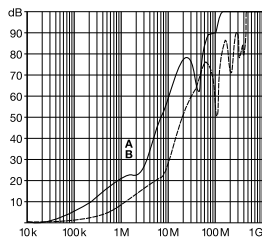
** Tolerance ±20%

*** Tolerance +15%

Typical filter attenuation

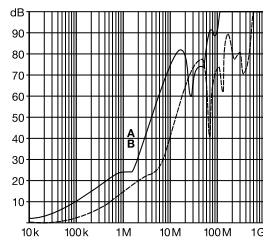
Full load, 50Ω system

10A types



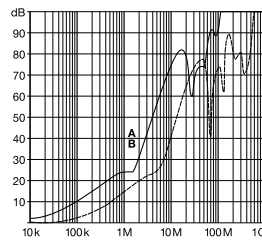
A = FN 7612-10-M3
B = FN 7611-10-M3

16A types



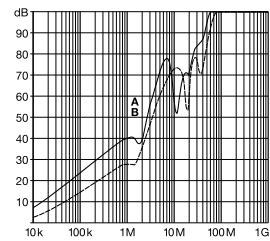
A = FN 7612-16-M4
B = FN 7611-16-M4

32A types



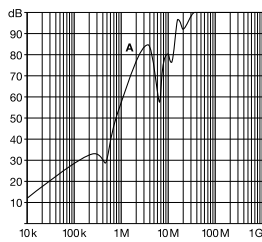
A = FN 7612-32-M4
B = FN 7611-32-M4

63A types



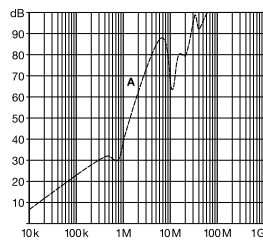
A = FN 7612-63-M6
B = FN 7611-63-M6

100A types



A = FN 7612-100-M8

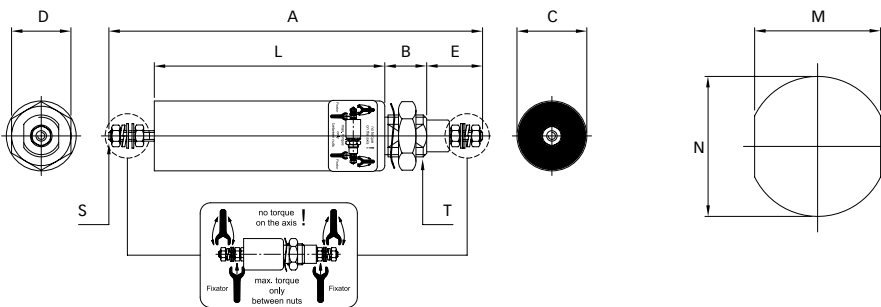
250A types



A = FN 7611-250-M12

Mechanical data

Panel cut out



Dimensions

| | A | B | C | D | E | L | M | N | S | T | |
|------------------------|-----|----|----|----|----|-----|------|-------|-----|---------|--|
| FN 7611-10-M3 | 107 | 12 | 20 | 17 | 16 | 66 | 10.3 | Ø12.3 | M3 | M12x1 | |
| FN 7612-10-M3 | 140 | 12 | 20 | 17 | 16 | 99 | 10.3 | Ø12.3 | M3 | M12x1 | |
| FN 7611-16-M4 | 116 | 14 | 25 | 22 | 18 | 69 | 14.3 | Ø16.3 | M4 | M16x1 | |
| FN 7612-16-M4 | 148 | 14 | 25 | 22 | 18 | 101 | 14.3 | Ø16.3 | M4 | M16x1 | |
| FN 7611-32-M4 | 116 | 14 | 25 | 22 | 18 | 69 | 14.3 | Ø16.3 | M4 | M16x1 | |
| FN 7612-32-M4 | 148 | 14 | 25 | 22 | 18 | 101 | 14.3 | Ø16.3 | M4 | M16x1 | |
| FN 7611-63-M6 | 173 | 16 | 32 | 27 | 26 | 105 | 18.3 | Ø20.3 | M6 | M20x1 | |
| FN 7612-63-M6 | 189 | 19 | 54 | 41 | 26 | 118 | 24.3 | Ø27.3 | M6 | M27x1.5 | |
| FN 7612-100-M8 | 227 | 19 | 54 | 41 | 32 | 144 | 24.3 | Ø27.3 | M8 | M27x1.5 | |
| FN 7611-250-M12 | 267 | 19 | 54 | 41 | 46 | 160 | 29.3 | Ø32.3 | M12 | M32x1.5 | |
| Tolerances | | | | | | ±2 | ±0.2 | | | | |

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

Recommended torque

| | M3 | M4 | M6 | M8 | M12 | M12x1 | M16x1 | M20x1 | M27x1.5 | M32x1.5 |
|------------------------|-------|-------|-------|-----|------|-------|-------|-------|---------|---------|
| Terminal thread | 0.5Nm | 1.2Nm | 2.5Nm | 5Nm | 11Nm | | | | | |
| Mounting thread | | | | | | 3Nm | 4Nm | 7Nm | 12Nm | 14Nm |

**Headquarters and
global innovation and
development center**

Schaffner Group
Nordstrasse 11
4542 Luterbach
Switzerland
T +41 32 681 66 26
F +41 32 681 66 30
info@schaffner.ch
www.schaffner.com

Sales and application centers

China
Schaffner EMC Ltd. Shanghai
Building 11, Lane 1365
East Kangqiao Road
Shanghai 201319
T +86 21 6813 9855
F +86 21 6813 9811
cschina@schaffner.com
www.schaffner.com

Germany
Schaffner Deutschland GmbH
Schoemperlenstrasse 12B
76185 Karlsruhe
T +49 721 56910
F +49 721 569110
germanysales@schaffner.com

Finland
Schaffner Oy
Tynninkuja 7
08700 Lohja
T +358 19 35 72 71
F +358 19 32 66 10
finlandsales@schaffner.com

France
Schaffner EMC S.A.S.
112, Quai de Bezons
95103 Argenteuil
T +33 1 34 34 30 60
F +33 1 39 47 02 28
francesales@schaffner.com

Italy
Schaffner EMC S.r.l.
Via Galileo Galilei, 47
20092 Cinisello Balsamo (MI)
T +39 02 66 04 30 45/47
F +39 02 61 23 943
italysales@schaffner.com

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

Sweden
Schaffner EMC AB
Turebergstorg 1, 6
19147 Sollentuna
T +46 8 5792 1121/22
F +46 8 92 96 90
swedensales@schaffner.com

Switzerland
Schaffner EMV AG
Nordstrasse 11
4542 Luterbach
T +41 32 681 66 26
F +41 32 681 66 41
sales@schaffner.ch

Singapore
Schaffner EMC Pte Ltd.
Blk 3015A Ubi Road 1
05-09 Kampong Ubi Industrial
Estate
T +65 6377 3283
F +65 6377 3281
singaporesales@schaffner.com

Spain
Schaffner EMC España
Calle Caléndula 93,
Miniparc III, Edificio E
El Soto de la Moraleja,
Alcobendas
28109 Madrid
T +34 618 176 133
spainsales@schaffner.com

Taiwan
Schaffner EMV Ltd.
6th Floor, No 413
Rui Guang Road
Neihu District
Taipei City 114
T +886 2 87525050
F +886 2 87518086
taiwansales@schaffner.com

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

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

USA
Schaffner EMC Inc.
52 Mayfield Avenue
Edison, New Jersey 08837
T +1 732 225 9533
F +1 732 225 4789
usasales@schaffner.com
www.schaffner.com/us

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