

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

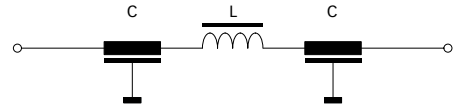
Approvals



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%

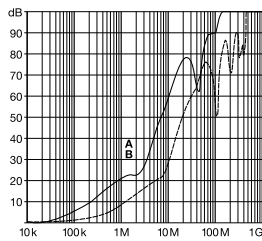
** Tolerance ±20%

*** Tolerance +15%

Typical filter attenuation

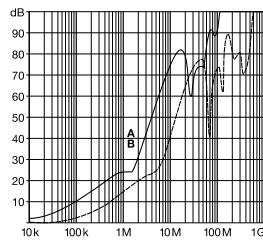
Full load, 50Ω system

10A types



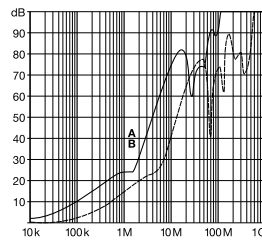
A = FN 7612-10-M3
B = FN 7611-10-M3

16A types



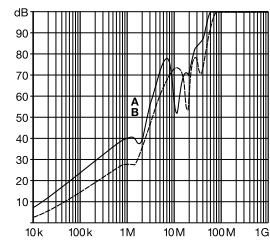
A = FN 7612-16-M4
B = FN 7611-16-M4

32A types



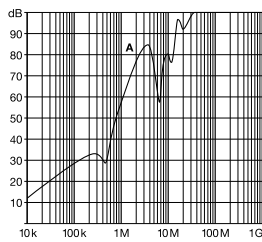
A = FN 7612-32-M4
B = FN 7611-32-M4

63A types



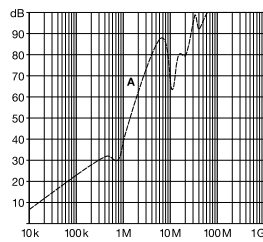
A = FN 7612-63-M6
B = FN 7611-63-M6

100A types



A = FN 7612-100-M8

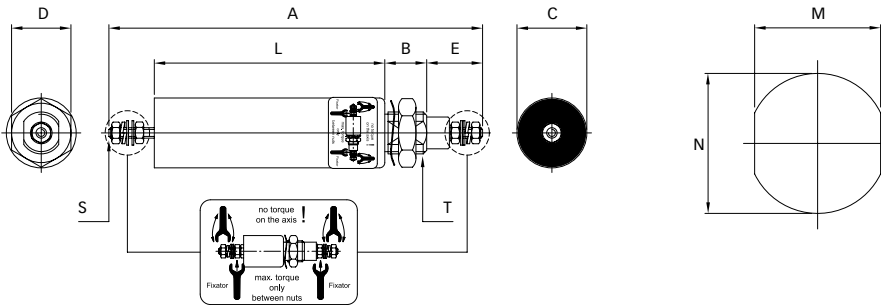
250A types



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 |

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