

AC Feedthrough Capacitor



- IEC/EN 60384-14 approval
- Rated currents from 10 to 200 A
- 5 kV pulse test capability
- Class Y2 capacitor



Approvals



Feedthrough capacitors offer a high insertion loss across a broad band of frequencies from a few tens of kHz up to the GHz region. The construction of feedthrough capacitors cause a better suppression performance over a much wider frequency range than a conventional two-wire capacitor of equivalent value. Different versions are available offering a wide selection on operating currents and performance levels. AC feedthrough capacitors are designed and approved for up to 300 VAC 50/60 Hz operation.

Technical specifications

| | |
|--|---|
| Maximum continuous operating voltage | 250 VAC, 50/60 Hz (UL) 300 VAC, 50/60 Hz (ENEC) 1000 VDC max. |
| Rated currents | 10 to 200 A @ 60°C max. |
| Capacitor class | Y2 |
| High potential test voltage | 3000 VDC for 2 sec |
| Insulation resistance (100VDC after 60 sec) | <0.33 µF, R >1500 MΩ >0.33 µF, τ >5000 s |
| Temperature range (operation and storage) | -40°C to +100°C (40/100/21) |
| Flammability corresponding to | UL 94 V-2 or better |
| MTBF @ 60°C/300 V (Mil-HB-217F) | ≥200 A: >850,000 hours <200 A: >1,600,000 hours |
| Operating frequency | DC to 60 Hz |

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

Typical electrical schematic



Feedthrough selector table

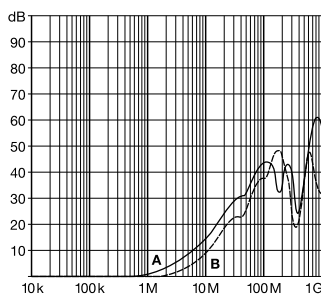
| Feedthrough | Rated current @ 60°C [A] | Leakage current* @ 250 VAC/50 Hz [mA] | Capacitance** C [nF] | DC resistance*** R @ 25°C [mΩ] | Weight [g] |
|-----------------|--------------------------------|---|----------------------------|--------------------------------------|---------------|
| FN 7510-10-M3 | 10 | 0.21 | 2.2 | 0.8 | 15 |
| FN 7511-10-M3 | 10 | 0.44 | 4.7 | 0.8 | 15 |
| FN 7510-16-M4 | 16 | 0.44 | 4.7 | 0.5 | 28 |
| FN 7511-16-M4 | 16 | 0.94 | 10 | 0.52 | 28 |
| FN 7512-16-M4 | 16 | 4.4 | 47 | 0.62 | 33 |
| FN 7513-16-M4 | 16 | 9.4 | 100 | 0.58 | 65 |
| FN 7510-32-M4 | 32 | 0.44 | 4.7 | 0.52 | 28 |
| FN 7511-32-M4 | 32 | 0.94 | 10 | 0.52 | 28 |
| FN 7512-32-M4 | 32 | 3.1 | 33 | 0.62 | 34 |
| FN 7514-32-M4 | 32 | 9.4 | 100 | 0.58 | 65 |
| FN 7512-63-M6 | 63 | 9.4 | 100 | 0.3 | 70 |
| FN 7510-100-M8 | 100 | 4.4 | 47 | 0.23 | 100 |
| FN 7511-100-M8 | 100 | 9.4 | 100 | 0.23 | 100 |
| FN 7511-200-M10 | 200 | 20.7 | 220 | 0.16 | 157 |

* Tolerance +20%
 ** Tolerance ±20%
 *** Tolerance +15%

Typical filter attenuation

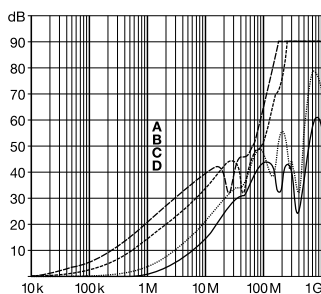
50 Ω system

10 A types



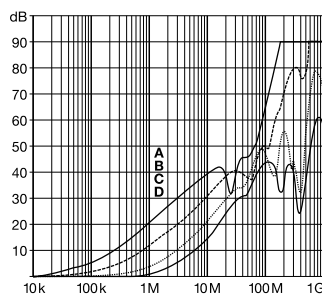
A = FN 7511-10-M3
 B = FN 7510-10-M3

16 and 20 A types



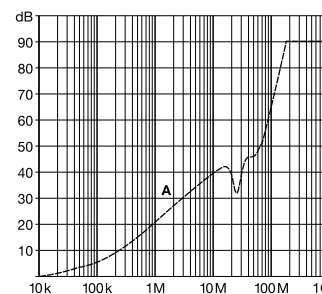
A = FN 7513-16-M4
 B = FN 7512-16-M4
 C = FN 7511-16-M4
 D = FN 7510-16-M4
 FN 7510-20-M4

32 A types



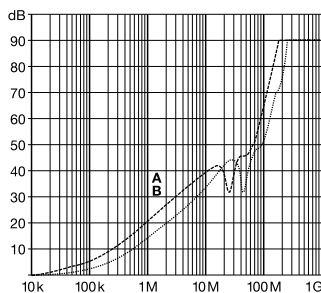
A = FN 7514-32-M4
 B = FN 7512-32-M4
 C = FN 7511-32-M4
 D = FN 7510-32-M4

63 A types



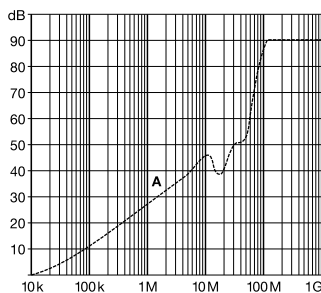
A = FN 7512-63-M6

100 A types



A = FN 7511-100-M8
 B = FN 7510-100-M8

200 A types



A = FN 7511-200-M10

Mechanical data



Dimensions

| | A | B | C | D | E | L | M | N | S | T |
|------------------------|-----|----|------------|----|---------|------------|------|-------|-----|-------|
| FN 7510-10-M3 | 57 | 10 | 16.85 ±0.3 | 13 | 16 ±2.0 | 19.85 ±0.5 | | Ø10.3 | M3 | M10x1 |
| FN 7511-10-M3 | 57 | 10 | 16.85 ±0.3 | 13 | 16 ±2.0 | 19.85 ±0.5 | | Ø10.3 | M3 | M10x1 |
| FN 7510-16-M4 | 63 | 12 | 21.95 ±0.3 | 17 | 18 ±2.0 | 18.85 ±0.5 | 10.3 | Ø12.3 | M4 | M12x1 |
| FN 7511-16-M4 | 63 | 12 | 21.95 ±0.3 | 17 | 18 ±2.0 | 18.85 ±0.5 | 10.3 | Ø12.3 | M4 | M12x1 |
| FN 7512-16-M4 | 75 | 12 | 21.95 ±0.3 | 17 | 18 ±2.0 | 30.85 ±0.5 | 10.3 | Ø12.3 | M4 | M12x1 |
| FN 7513-16-M4 | 77 | 14 | 26.95 ±0.3 | 22 | 18 ±2.0 | 30.85 ±0.5 | 14.3 | Ø16.3 | M4 | M16x1 |
| FN 7510-32-M4 | 63 | 12 | 21.95 ±0.3 | 17 | 18 ±2.0 | 18.85 ±0.5 | 10.3 | Ø12.3 | M4 | M12x1 |
| FN 7511-32-M4 | 63 | 12 | 21.95 ±0.3 | 17 | 18 ±2.0 | 18.85 ±0.5 | 10.3 | Ø12.3 | M4 | M12x1 |
| FN 7512-32-M4 | 75 | 12 | 21.95 ±0.3 | 17 | 18 ±2.0 | 30.85 ±0.5 | 10.3 | Ø12.3 | M4 | M12x1 |
| FN 7514-32-M4 | 77 | 14 | 26.95 ±0.3 | 22 | 18 ±2.0 | 30.85 ±0.5 | 14.3 | Ø16.3 | M4 | M16x1 |
| FN 7512-63-M6 | 96 | 14 | 25 | 22 | 26 ±2.0 | 30 | 14.3 | Ø16.3 | M6 | M16x1 |
| FN 7510-100-M8 | 113 | 16 | 32 | 27 | 32 ±2.0 | 33 | 18.3 | Ø20.3 | M8 | M20x1 |
| FN 7511-100-M8 | 113 | 16 | 32 | 27 | 32 ±2.0 | 33 | 18.3 | Ø20.3 | M8 | M20x1 |
| FN 7511-200-M10 | 130 | 19 | 38 | 27 | 40 ±2.0 | 33 | 22.3 | Ø24.3 | M10 | M24x1 |
| Tolerances | | | | | ±2 | | ±0.2 | | | |

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

Recommended torque

| | M3 | M4 | M6 | M8 | M10 | M10x1 | M12x1 | M16x1 | M20x1 | M24x1 |
|------------------------|--------|--------|--------|------|------|-------|-------|-------|-------|-------|
| Terminal thread | 0.5 Nm | 1.2 Nm | 2.5 Nm | 5 Nm | 8 Nm | | | | | |
| Mounting thread | | | | | | 2 Nm | 3 Nm | 4 Nm | 7 Nm | 8 Nm |



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