



## DC Feedthrough Capacitor

**SCHAFFNER**  
energy efficiency and reliability



- EN/IEC 60384-14 approval
- Rated currents from 10 to 200A
- 2.5kV pulse test capability
- Class Y4 capacitor

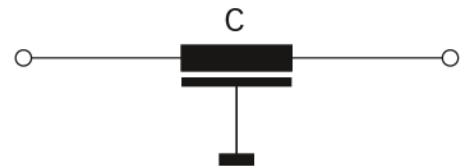
### Approvals



### Technical specifications

|  |   |
|--|---|
| Capacitor class:                             | Y4  |
| Flammability corresponding to:               | UL 94V-2 or better  |
| High potential test voltage:                 | 1700VDC for 2 sec   |
| Insulation resistance (100VDC after 60 sec): | < 0.33 $\mu$ F, R > 1500M $\Omega$                            |
|  | > 0.33 $\mu$ F, $\tau$ > 5000s                                |
| Maximum continuous operating voltage:        | 130DC (UL, ENEC)<br>130VAC, 50/60Hz (UL, ENEC)<br>650VDC max. |
| MTBF @ 60°C/130V (Mil-HB-217F):              | < 200A: > 1,400,000 hours<br>$\geq$ 200A: > 450,000 hours     |
| Rated currents:                              | 10 to 200 A @ 60°C max.                                       |
| Temperature range (operation and storage):   | -40°C to +100°C (40/100/21)                                   |

### 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 50 $\Omega$ . Different versions are available offering a wide selection on operating currents and performance levels. DC feedthrough filters are designed and approved for 130VDC/130VAC 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 48VDC battery power
- Increasing system and information security
- Telecom base stations
- Switching and cellular equipment
- Computer servers
- UPS power supplies
- Medical equipment

**Feedthrough selector table**

| Feedthrough     | Rated current | Leakage current* | Capacitance** | DC resistance*** | Weight |
|-----------------|---------------|------------------|---------------|------------------|--------|
|                 | @ 60°C        | @ 130VAC/50Hz    | C             | R @ 25°C         |        |
|                 | [A]           | [mA]             | [nF]          | [mΩ]             | [g]    |
| FN 7560-10-M3   | 10            | 0.49             | 10            | 0.8              | 15     |
| FN 7562-16-M4   | 16            | 4.9              | 100           | 0.62             | 34     |
| FN 7563-16-M4   | 16            | 23               | 470           | 0.63             | 78     |
| FN 7562-32-M4   | 32            | 4.9              | 100           | 0.62             | 34     |
| FN 7563-32-M4   | 32            | 23               | 470           | 0.63             | 79     |
| FN 7560-63-M6   | 63            | 0.49             | 10            | 0.3              | 70     |
| FN 7561-63-M6   | 63            | 2.3              | 47            | 0.3              | 70     |
| FN 7562-63-M6   | 63            | 4.9              | 100           | 0.3              | 70     |
| FN 7563-63-M6   | 63            | 23               | 470           | 0.43             | 103    |
| FN 7560-100-M8  | 100           | 2.3              | 47            | 0.23             | 145    |
| FN 7561-100-M8  | 100           | 4.9              | 100           | 0.23             | 145    |
| FN 7562-100-M8  | 100           | 23               | 470           | 0.23             | 145    |
| FN 7563-100-M8  | 100           | 49               | 1000          | 0.25             | 192    |
| FN 7560-200-M10 | 200           | 4.9              | 100           | 0.16             | 160    |
| FN 7561-200-M10 | 200           | 23               | 470           | 0.16             | 160    |
| FN 7562-200-M10 | 200           | 49               | 1000          | 0.18             | 268    |
| FN 7563-200-M10 | 200           | 230              | 4700          | 0.14             | 490    |

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

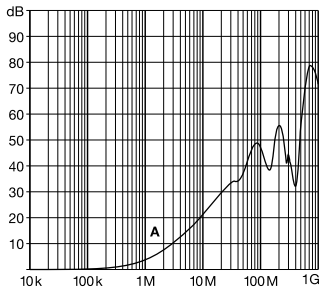
**Typical filter attenuation**

Full load, 50Ω system

**Typical filter attenuation**

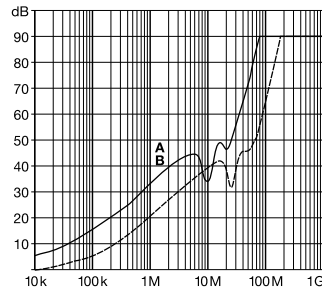
50Ω system

10A types



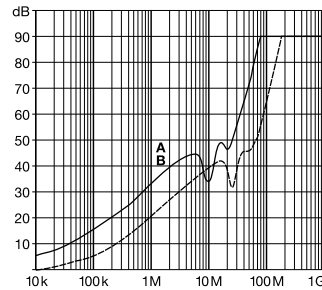
A = FN 7560-10-M3

16A types



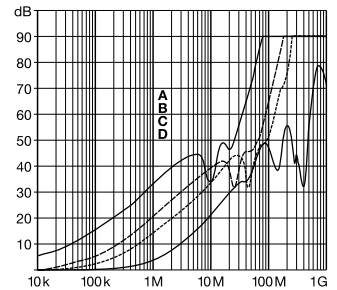
A = FN 7563-16-M4  
 B = FN 7562-16-M4

32A types



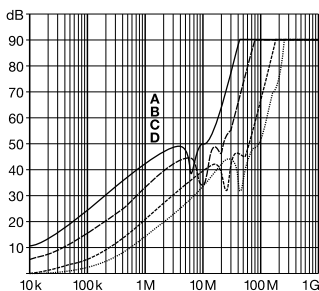
A = FN 7563-32-M4  
 B = FN 7562-32-M4

63A types



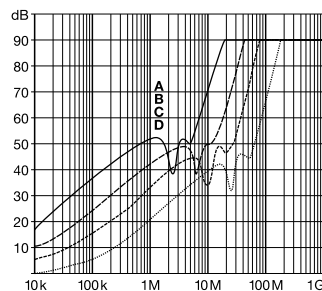
A = FN 7563-63-M6  
 B = FN 7562-63-M6  
 C = FN 7561-63-M6  
 D = FN 7560-63-M6

100A types



A = FN 7563-100-M8  
 B = FN 7562-100-M8  
 C = FN 7561-100-M8  
 D = FN 7560-100-M8

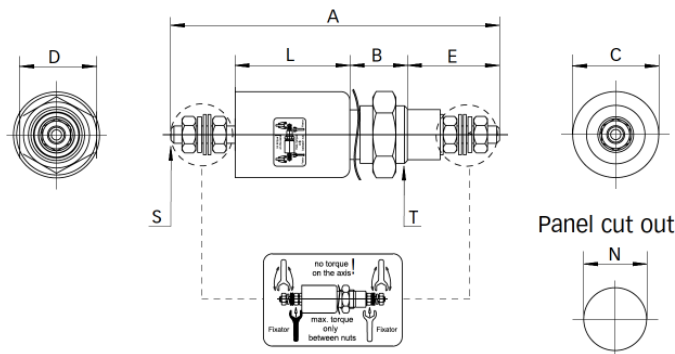
200A types



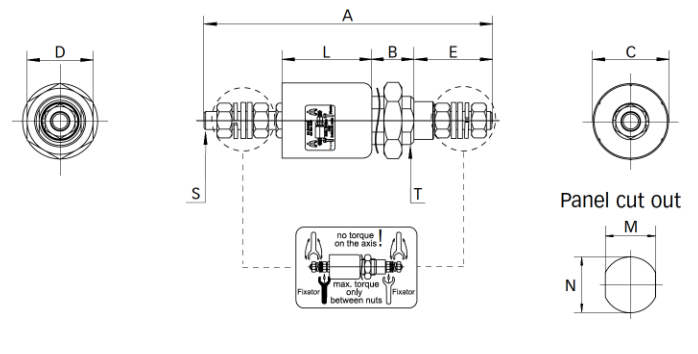
A = FN 7563-200-M10  
 B = FN 7562-200-M10  
 C = FN 7561-200-M10  
 D = FN 7560-200-M10

**Mechanical data**

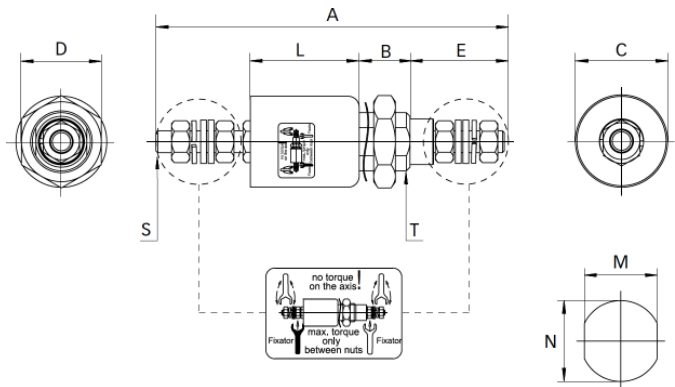
10A types 16



16 to 32A types



63 to 200A types



**Dimensions**

|                 | A   | B  | C  | D  | E  | L  | M    | N     | S   | T       |
|-----------------|-----|----|----|----|----|----|------|-------|-----|---------|
| FN 7560-10-M3   | 57  | 10 | 15 | 13 | 16 | 19 |      | Ø10.3 | M3  | M10x1   |
| FN 7562-16-M4   | 75  | 12 | 20 | 17 | 18 | 30 | 10.3 | Ø12.3 | M4  | M12x1   |
| FN 7563-16-M4   | 82  | 16 | 32 | 27 | 18 | 33 | 18.3 | Ø20.3 | M4  | M20x1   |
| FN 7562-32-M4   | 75  | 12 | 20 | 17 | 18 | 30 | 10.3 | Ø12.3 | M4  | M12x1   |
| FN 7563-32-M4   | 82  | 16 | 32 | 27 | 18 | 33 | 18.3 | Ø20.3 | M4  | M20x1   |
| FN 7560-63-M6   | 96  | 14 | 25 | 22 | 26 | 30 | 14.3 | Ø16.3 | M6  | M16x1   |
| FN 7561-63-M6   | 96  | 14 | 25 | 22 | 26 | 30 | 14.3 | Ø16.3 | M6  | M16x1   |
| FN 7562-63-M6   | 96  | 14 | 25 | 22 | 26 | 30 | 14.3 | Ø16.3 | M6  | M16x1   |
| FN 7563-63-M6   | 99  | 16 | 32 | 27 | 26 | 33 | 18.3 | Ø20.3 | M8  | M20x1   |
| FN 7560-100-M8  | 113 | 16 | 32 | 27 | 32 | 33 | 18.3 | Ø20.3 | M8  | M20x1   |
| FN 7561-100-M8  | 113 | 16 | 32 | 27 | 32 | 33 | 18.3 | Ø20.3 | M8  | M20x1   |
| FN 7562-100-M8  | 113 | 16 | 32 | 27 | 32 | 33 | 18.3 | Ø20.3 | M8  | M20x1   |
| FN 7563-100-M8  | 133 | 19 | 38 | 27 | 32 | 50 | 22.3 | Ø20.3 | M8  | M24x1   |
| FN 7560-200-M10 | 130 | 19 | 32 | 27 | 40 | 33 | 22.3 | Ø20.3 | M10 | M24x1   |
| FN 7561-200-M10 | 130 | 19 | 32 | 27 | 40 | 33 | 22.3 | Ø20.3 | M10 | M24x1   |
| FN 7562-200-M10 | 147 | 19 | 38 | 27 | 40 | 50 | 22.3 | Ø20.3 | M10 | M24x1   |
| FN 7563-200-M10 | 165 | 19 | 54 | 41 | 40 | 68 | 24.3 | Ø27.3 | M10 | M27x1.5 |
| 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  | M10 | M10x1 | M12x1 | M16x1 | M20x1 | M24x1 | M27x1.5 |
|-----------------|-------|-------|-------|-----|-----|-------|-------|-------|-------|-------|---------|
| Terminal thread | 0.5Nm | 1.2Nm | 2.5Nm | 5Nm | 8Nm |       |       |       |       |       |         |
| Mounting thread |       |       |       |     |     | 2Nm   | 3Nm   | 4Nm   | 7Nm   | 8Nm   | 12Nm    |

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