

# DC Feedthrough Filter



- | IEC/EN 60939 approval
- | Rated currents from 10 to 200 A
- | 2.5 kV pulse test capability
- | Class Y4 capacitor



## Approvals



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 Ω. Different versions are available offering a wide selection on operating currents and performance levels. DC feedthrough filters are designed and approved for 130 VDC/130 VAC 50/60 Hz operation.

## Technical specifications

<b>Maximum continuous operating voltage</b>	130 VDC (UL, ENEC) 130 VAC, 50/60 Hz (UL, ENEC) 650 VDC max.
<b>Rated currents</b>	10 to 200 A @ 60 °C max.
<b>Capacitor class</b>	Y4
<b>High potential test voltage</b>	1700 VDC for 2 sec
<b>Insulation resistance (100VDC after 60 sec)</b>	< 0.33 μF, R > 15,000 MΩ > 0.33 μF, τ > 5000 s
<b>Temperature range (operation and storage)</b>	-40 °C to +100 °C (40/100/21)
<b>Flammability corresponding to MTBF @ 60°C/130V (Mil-HB-217F)</b>	UL 94 V-2 or better < 200 A: 680,000 hours ≥ 200 A: 356,000 hours

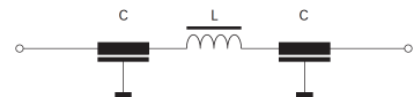
## Features and benefits

- | 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 48 VDC battery power
- | Increasing system and information security
- | Telecom base stations
- | Switching and cellular equipment
- | Computer servers
- | UPS power supplies
- | Medical equipment

## Typical electrical schematic



### Feedthrough selector table

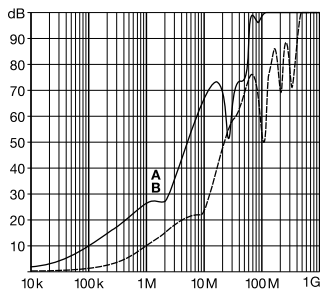
Feedthrough	Rated current @ 60 °C [A]	Leakage current* @ 130 VAC/50 Hz [mA]	Capacitance** C [nF]	Inductance L @ 10 kHz [nH]	DC resistance*** R @ 25 °C [mΩ]	Weight [g]
FN 7660-10-M3	10	0.98	10	58	1.06	48
FN 7661-10-M3	10	9.8	100	70	1.2	55
FN 7661-16-M4	16	9.8	100	70	0.7	58
FN 7660-32-M4	32	0.98	10	70	0.65	58
FN 7661-32-M4	32	9.8	100	70	0.7	58
FN 7660-63-M6	63	9.8	100	70	0.42	120
FN 7661-63-M6	63	46	470	186	0.47	250
FN 7660-100-M8	100	46	470	124	0.25	280
FN 7661-100-M8	100	98	1000	186	0.28	320
FN 7660-200-M10	200	46	470	124	0.24	410
FN 7661-200-M10	200	460.7	4700	124	0.24	655

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

### Typical filter attenuation

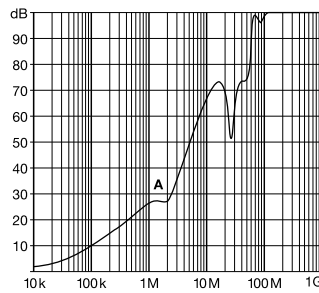
Full load, 50 Ω system

10 A types



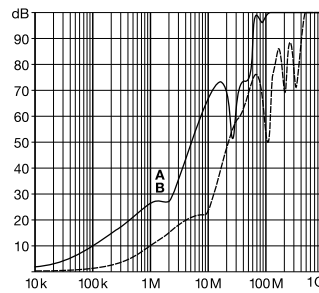
A = FN 7661-10-M3  
 B = FN 7660-10-M3

16 A types



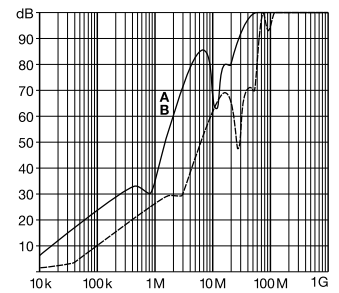
A = FN 7661-16-M4

32 A types



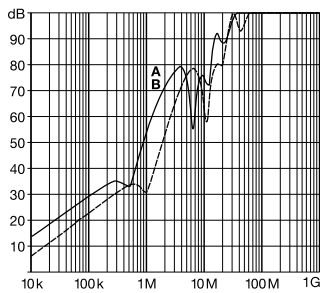
A = FN 7661-32-M4  
 B = FN 7660-32-M4

63 A types



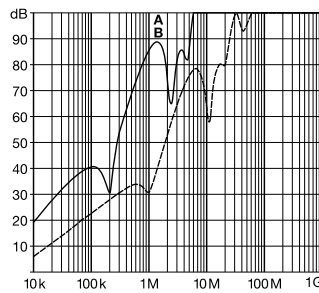
A = FN 7661-63-M6  
 B = FN 7660-63-M6

100 A types



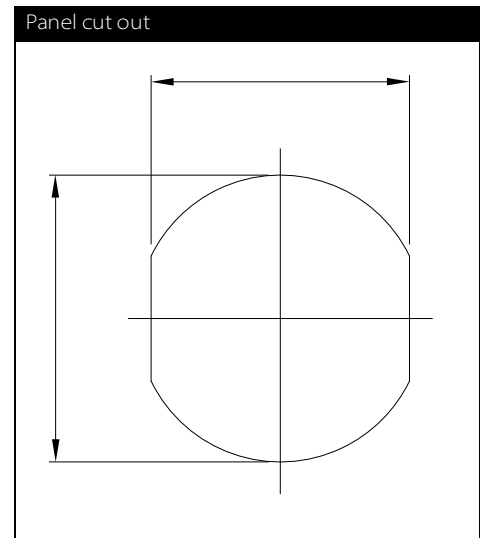
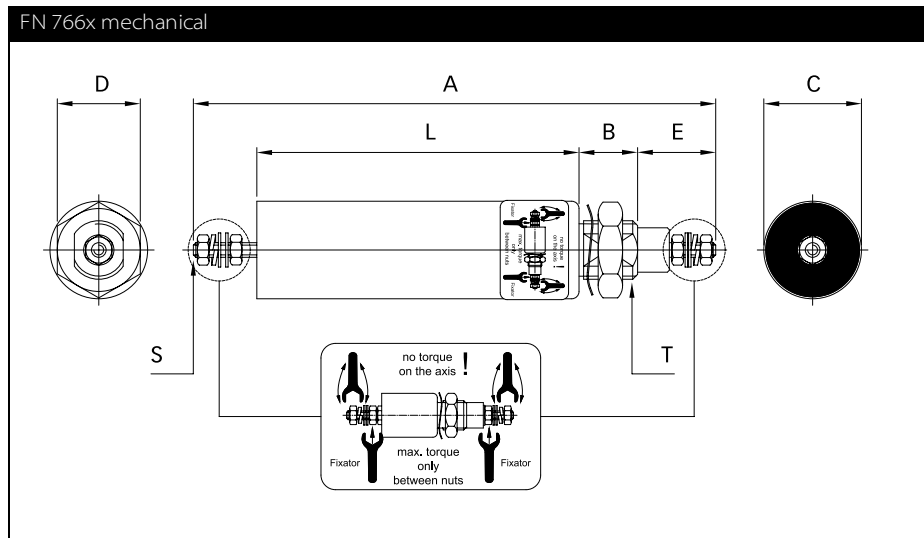
A = FN 7661-100-M8  
 B = FN 7660-100-M8

200 A types



A = FN 7661-200-M10  
 B = FN 7660-200-M10

## Mechanical data



## Dimensions

	A	B	C	D	E	L	M	N	S	T
FN 7660-10-M3	90	12	20	17	16	49	10.3	Ø12.3	M3	M12x1
FN 7661-10-M3	107	12	20	17	16	66	10.3	Ø12.3	M3	M12x1
FN 7661-16-M4	106	12	20	17	18	61	10.3	Ø12.3	M4	M12x1
FN 7660-32-M4	98	12	20	17	18	53	10.3	Ø12.3	M4	M12x1
FN 7661-32-M4	106	12	20	17	18	61	10.3	Ø12.3	M4	M12x1
FN 7660-63-M6	160	14	25	22	26	94	14.3	Ø16.3	M6	M16x1
FN 7661-63-M6	173	16	32	27	26	105	18.3	Ø20.3	M6	M20x1
FN 7660-100-M8	184	16	32	27	32	104	18.3	Ø20.3	M8	M20x1
FN 7661-100-M8	200	16	32	27	32	120	18.3	Ø20.3	M8	M20x1
FN 7660-200-M10	209	19	38	27	40	112	22.3	Ø24.3	M10	M24x1
FN 7661-200-M10	209	19	54	41	40	112	24.3	Ø27.3	M10	M27x1.5
<b>Tolerances</b>					±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	M12x1	M16x1	M20x1	M24x1	M27x1.5
<b>Terminal thread</b>	0.5 Nm	1.2 Nm	2.5 Nm	5 Nm	8 Nm					
<b>Mounting thread</b>						3 Nm	4 Nm	7 Nm	8 Nm	12 Nm



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