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Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

Email & Skype: info@chipsmall.com Web: www.chipsmall.com

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China



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

Maximum continuous operating voltage	130 VDC (UL, ENEC) 130 VAC, 50/60 Hz (UL, ENEC) 650 VDC max.
Rated currents	10 to 200 A @ 60°C max.
Capacitor class	Y4
High potential test voltage	1700 VDC for 2 sec
Insulation resistance (100VDC after 60 sec)	<0.33 μF, R >15,000 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/130 V (Mil-HB-217F)	<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

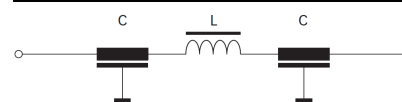
- Switching and cellular equipment

- Computer servers

- UPS power supplies

- Medical equipment

Typical electrical schematic



Feedthrough selector table

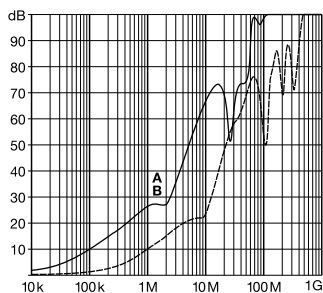
Feedthrough	Rated current @ 60°C [A]	Leakage current* @ 130 VAC/50 Hz [mA]	Capacitance** C [nF]	Inductance L @ 10 kHz [nH]	DC resistance*** R @ 25°C [mΩ]	Weight [g]
FN 7660-10-M3	10	0.98	10	58	1.06	48
FN 7661-10-M3	10	9.8	100	70	1.2	55
FN 7661-16-M4	16	9.8	100	70	0.7	58
FN 7660-32-M4	32	0.98	10	70	0.65	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

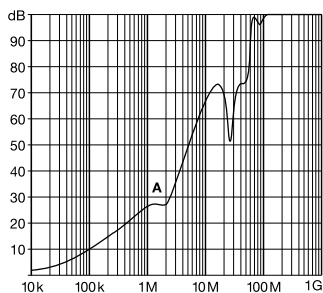
Full load, 50 Ω system

10 A types



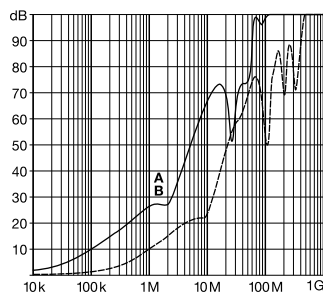
A = FN 7661-10-M3
 B = FN 7660-10-M3

16 A types



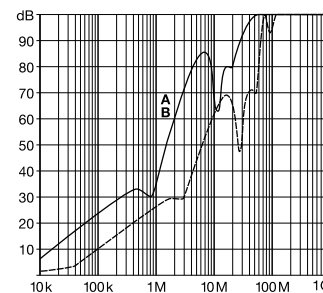
A = FN 7661-16-M4

32 A types



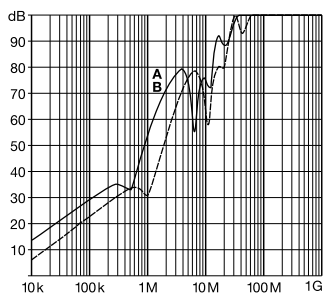
A = FN 7661-32-M4
 B = FN 7660-32-M4

63 A types



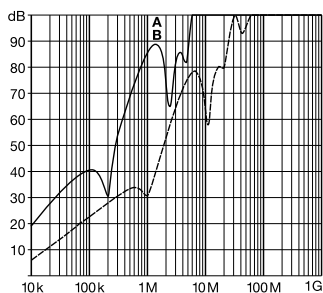
A = FN 7661-63-M6
 B = FN 7660-63-M6

100 A types



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

200 A types

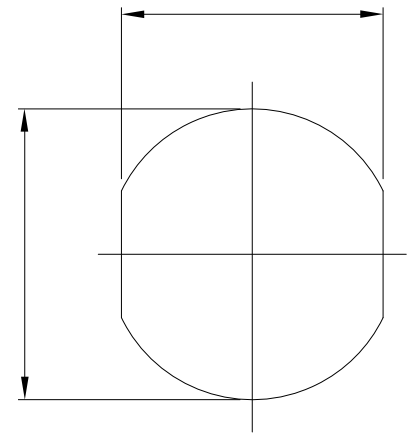
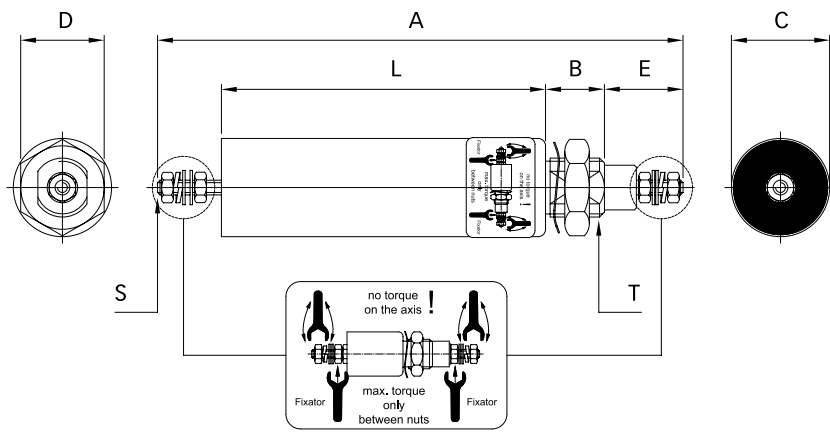


A = FN 7661-200-M10
 B = FN 7660-200-M10

Mechanical data

FN 766x mechanical

Panel cut out



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
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	M12x1	M16x1	M20x1	M24x1	M27x1.5
Terminal thread	0.5 Nm	1.2 Nm	2.5 Nm	5 Nm	8 Nm					
Mounting thread						3 Nm	4 Nm	7 Nm	8 Nm	12 Nm



Headquarters, global innovation and development

Switzerland

Schaffner Group

Nordstrasse 11
4542 Luterbach
T +41 32 681 66 26
info@schaffner.com
<http://www.schaffner.com>



Sales and application centers

China

Schaffner EMC Ltd. Shanghai

T20-3 C, No 565 Chuangye Road,
Pudong district
201201 Shanghai
T +86 21 3813 9500
cschina@schaffner.com
<http://www.schaffner.com.cn>

Finland

Schaffner Oy

Sauvonrinne 19 H
08500 Lohja
T +358 50 468 7284
finlandsales@schaffner.com

France

Schaffner EMC S.A.S.

16-20 Rue Louis Rameau
95875 Bezons
T +33 1 34 34 30 60
F +33 1 39 47 02 28
francesales@schaffner.com

Germany

Schaffner Deutschland GmbH

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

India

Schaffner India Pvt. Ltd

Unit 59, Level, Mfar Greenheart 7
Manyata Tech Park, Hebbal Outer Ring Road
560045 Bangalore
T +91 80 6781 9805
F +91 80 6781 9998
indiasales@schaffner.com

Italy

Schaffner EMC S.r.l.

Via Ticino, 30
20900 Monza (MB)
T +39 039 21 41 070
italysales@schaffner.com

Japan

Schaffner EMC K.K.

1-32-12, Kamiyama, Setagaya-ku
7F Mitsui-seimei Sengenjaya Bldg.
154-0011 Tokyo
T +81 3 5712 3650
F +81 3 5712 3651
japansales@schaffner.com
<http://www.schaffner.jp>

Singapore

Schaffner EMC Pte Ltd.

#05-09, Kg Ubi Ind. Estate
408705 Singapore
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 Moraleja, Alcobendas
28109 Madrid
T +34 917 912 900
F +34 917 912 901
spainsales@schaffner.com

Sweden

Schaffner EMC AB

Tegeluddsvägen 76, 2tr
115 28 Stockholm
T +46 8 5050 2425
swedensales@schaffner.com
<http://www.schaffner.com>

Switzerland

Schaffner EMV AG

Nordstrasse 11
4542 Luterbach
T +41 32 681 66 26
switzerlandsales@schaffner.com

Taiwan R.O.C.

Schaffner EMV Ltd.

20 Floor-2, No 97, Section 1, XinTai 5th Road
22175 XiZhi District New Taipei City 22175
T +886 2 2697 5500
F +886 2 2697 5533
taiwansales@schaffner.com
<http://www.schaffner.com.tw>

Thailand

Schaffner EMC Co. Ltd.

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

United Kingdom

Schaffner Ltd.

5 Ashville Way, Molly Millars Lane
Wokingham
RG41 2PL Berkshire
T +44 118 9770070
F +44 118 9792969
uksales@schaffner.com

USA

Schaffner EMC Inc.

52 Mayfield Avenue
08837 Edison, New Jersey
T +1 800 367 5566
T +1 732 225 9533
F +1 732 225 4789
usasales@schaffner.com
<http://www.schaffnerusa.com>

Schaffner North America

6722 Thirlane Road
24019 Roanoke, Virginia
T +1 276 228 7943
F +1 276 228 7953

Schaffner North America

823 Fairview Road
24382 Wytheville, Virginia
T +1 276 228 7943
F +1 276 228 7258

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