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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



Multi-stage Performance AC/DC EMI Filter



- Rated currents from 1 to 36 A

- High differential and common-mode attenuation

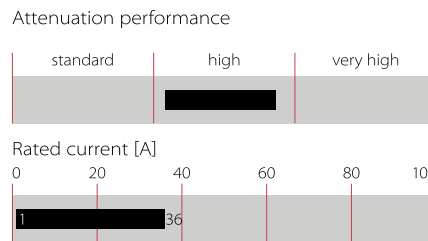
- High frequency attenuation

- Optional medical versions (B type)

- Optional safety versions (A type)



Performance indicators



Technical specifications

Rated voltage*	250 VAC, 50/60 Hz; 250 VDC
Operating frequency	DC to 400 Hz
Rated currents	1 to 36 A @ 40°C max.
High potential test voltage	P → PE 2000 VAC for 2 sec P → PE 2500 VAC for 2 sec (B types) P → N 1100 VDC for 2 sec
Temperature range (operation and storage)	-25°C to +100°C (25/100/21)
Certified to	UL 1283, CSA 22.2 No. 8 1986, IEC/EN 60939 (applies to AC and DC applications)
Flammability corresponding to	UL 94 V-2 or better
Design corresponding to	UL 1283, CSA 22.2 No. 8 1986, IEC/EN 60939
MTBF @ 40°C/230 V (Mil-HB-217F)	1,550,000 hours 1,600,000 hours (B types)

*maximum RMS operating voltage at rated frequency or the maximum DC operating voltage

Approvals



Features and benefits

- FN 2070 two-stage filters are designed for easy and fast chassis mounting

- FN 2070 filters are also available as B versions without Y-capacitors for medical applications as well as A version with low capacitance for safety critical applications with necessity for low leakage currents

- All filters provide a high conducted attenuation performance, based on chokes with high saturation resistance and excellent thermal behavior

- FN 2070 two-stage filters are designed for high frequency attenuation

- FN 2070 filters are also available as single-stage filters (FN 2030 series)

- FN 2070 filters are also available with differential mode choke (FN 2080 series)

- Various terminal options allow you to select the desired connection style

Typical applications

- Electrical and electronic equipment

- Consumer goods

- Household equipment

- Building automation

- Industrial applications

- Machinery

- Medical equipment

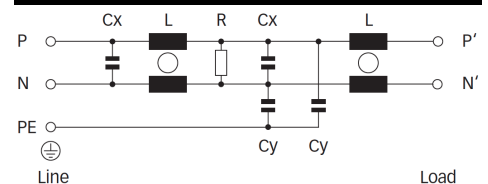
- Electronic data processing equipment

- Office automation and datacom equipment




- Various noisy applications requiring good filter performance

- Single Phase Motor Drives

Typical electrical schematic



Filter selection table

Filter*	Rated current @ 40°C (25°C)	Leakage current** @ 250 VAC/50 Hz (@ 120 VAC/60 Hz)	Inductance L	Capacitance		Resistance R	Input/Output connections			Weight [g]
				Cx [μF]	Cy [nF]					
	[A]	[mA]	[mH]	[μF]	[nF]	[kΩ]				
FN 2070-1-..	1 (1.2)	0.66 (0.38)	22	0.33	4.7	1000	-06	-07		190
FN 2070-3-..	3 (3.5)	0.66 (0.38)	9.8	0.47	4.7	470	-06	-07		250
FN 2070-6-..	6 (6.9)	0.66 (0.38)	7.8	1	4.7	220	-06	-07		450
FN 2070-10-..	10 (11.5)	0.66 (0.38)	4.5	1	4.7	220	-06	-07		670
FN 2070-12-..	12 (13.8)	0.66 (0.38)	3.25	1	4.7	220	-06	-07		670
FN 2070-16-..	16 (18.4)	0.66 (0.38)	2.8	1	4.7	220	-06	-07	-08	1000
FN 2070-25-08	25 (28.8)	0.66 (0.38)	2	2.2	4.7	220			-08	760
FN 2070-36-08	36 (41.4)	0.66 (0.38)	1.23	2.2	4.7	220			-08	790
FN 2070 A-1-..	1 (1.2)	0.07 (0.04)	22	0.33	0.47	1000	-06	-07		190
FN 2070 A-3-..	3 (3.5)	0.07 (0.04)	9.8	0.47	0.47	470	-06	-07		250
FN 2070 A-6-..	6 (6.9)	0.07 (0.04)	7.8	1	0.47	220	-06	-07		450
FN 2070 A-10-..	10 (11.5)	0.07 (0.04)	4.5	1	0.47	220	-06	-07		670
FN 2070 A-12-..	12 (13.8)	0.07 (0.04)	3.25	1	0.47	220	-06	-07		670
FN 2070 A-16-..	16 (18.4)	0.07 (0.04)	2.8	1	0.47	220	-06	-07	-08	1000
FN 2070 A-25-08	25 (28.8)	0.07 (0.04)	2	2.2	0.47	220			-08	760
FN 2070 A-36-08	36 (41.4)	0.07 (0.04)	1.23	2.2	0.47	220			-08	790
FN 2070 B-1-..	1 (1.2)	0.00	22	0.33		1000	-06	-07		190
FN 2070 B-3-..	3 (3.5)	0.00	9.8	0.47		470	-06	-07		250
FN 2070 B-6-..	6 (6.9)	0.00	7.8	1		220	-06	-07		450
FN 2070 B-10-..	10 (11.5)	0.00	4.5	1		220	-06	-07		670
FN 2070 B-12-..	12 (13.8)	0.00	3.25	1		220	-06	-07		670
FN 2070 B-16-..	16 (18.4)	0.00	2.8	1		220	-06	-07	-08	1000
FN 2070 B-25-08	25 (28.8)	0.00	2	2.2		220			-08	760
FN 2070 B-36-08	36 (41.4)	0.00	1.23	2.2		220			-08	790
Enhanced performance										
FN 2070 M-1-06	1 (1.2)	3.69 (2.13)	22	0.33	47	1000	-06			170
FN 2070 M-3-06	3 (3.5)	3.69 (2.13)	9.8	0.47	47	470	-06			250
FN 2070 M-6-06	6 (6.9)	3.69 (2.13)	7.8	1	47	220	-06			450
FN 2070 M-10-06	10 (11.5)	3.69 (2.13)	4.5	1	47	220	-06			670
FN 2070 M-12-06	12 (13.8)	3.69 (2.13)	3.25	1	47	220	-06			670
FN 2070 M-16-..	16 (18.4)	3.69 (2.13)	2.8	1	47	220	-06		-08	1000
FN 2070 M-25-08	25 (28.8)	3.69 (2.13)	2	2.2	47	220			-08	750
FN 2070 L-36-08	36 (41.4)	2.59 (1.49)	1.23	2.2	33	220			-08	790

* To compile a complete part number, please replace the .. with the required I/O connection style (e.g. FN 2070-25-08, FN 2070B-10-06).

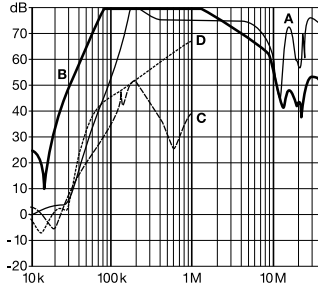
** Maximum leakage under usual AC operating conditions (acc. IEC 60939-3). Note: if the neutral line is interrupted, worst case leakage could reach twice this level. Leakage current for DC application is 0 mA;

Typical filter attenuation

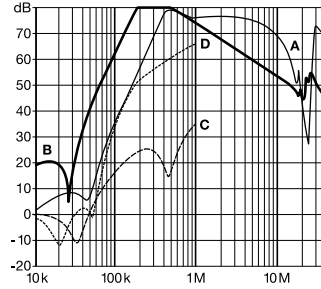
Per CISPR 17; A=50 Ω/50 Ω sym; B=50 Ω/50 Ω asym; C=0.1 Ω/100 Ω sym; D=100 Ω/0.1 Ω sym

Standard Types

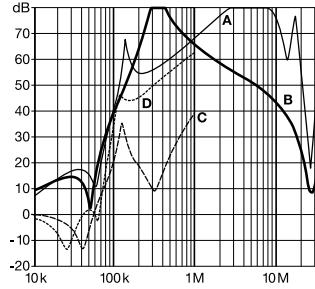
1 A types



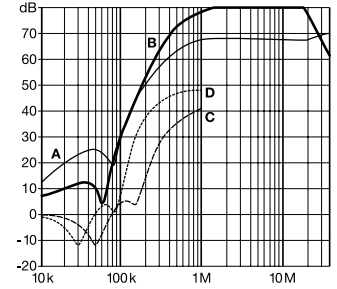
3 A to 12 A types



16 A types

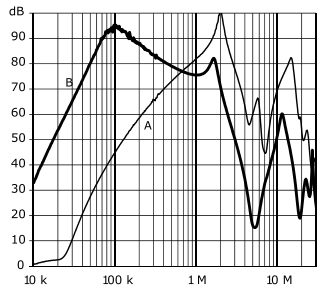


25 and 36 A types

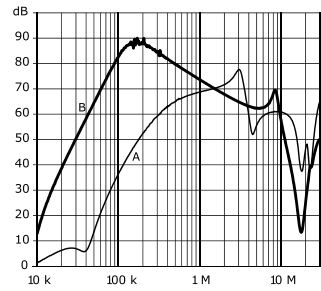


Enhanced Performance Types

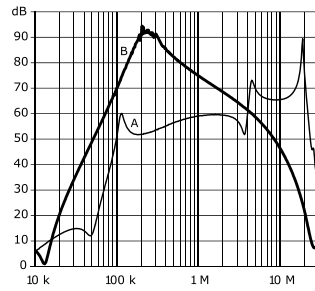
1 A types



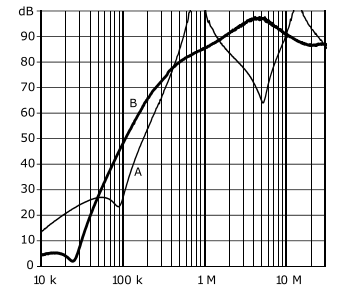
3 A to 12 A Types



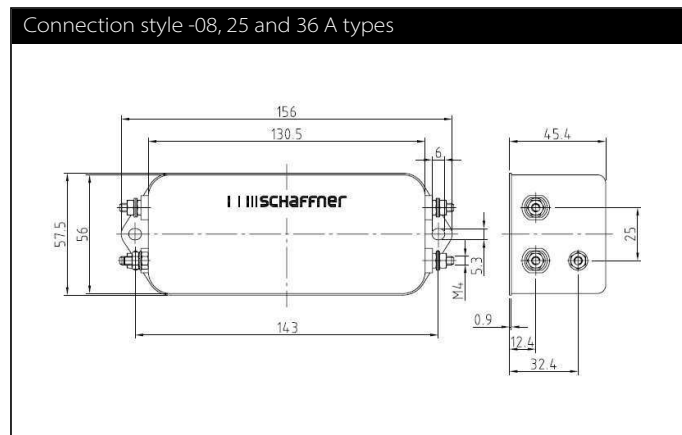
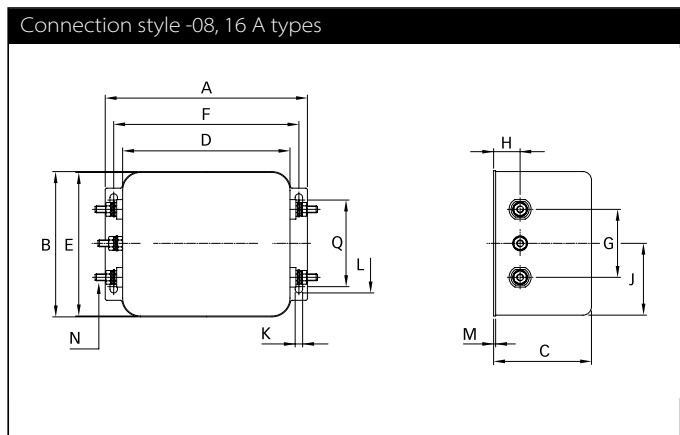
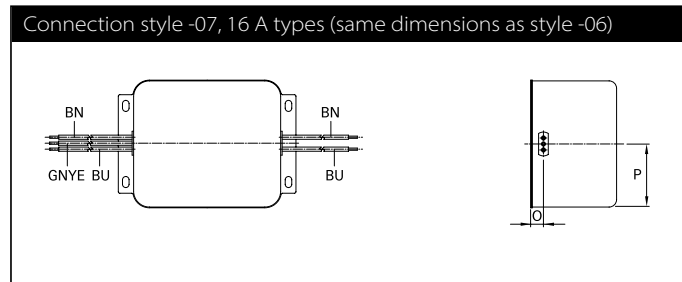
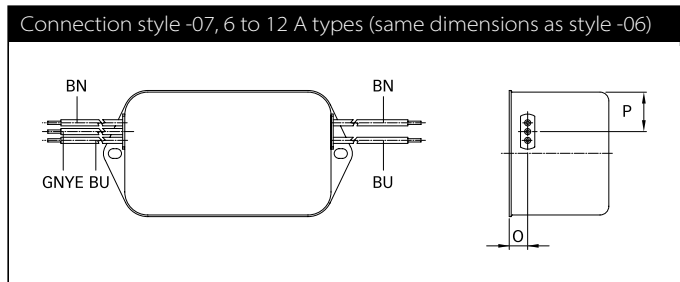
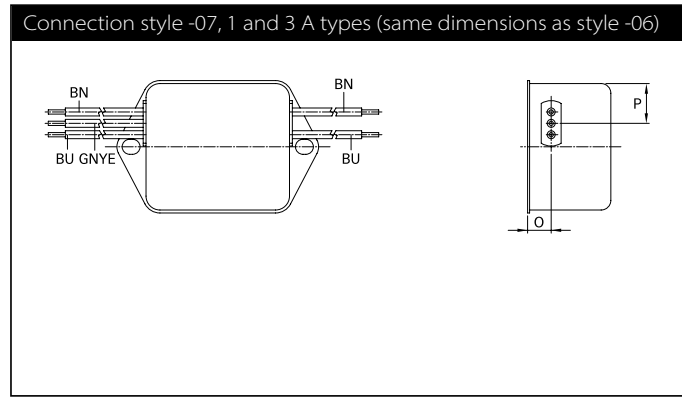
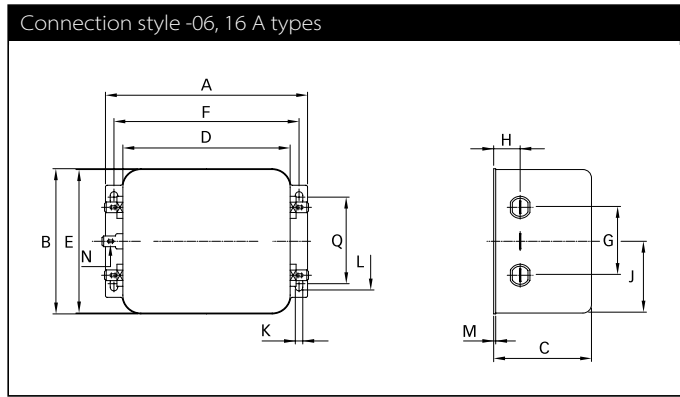
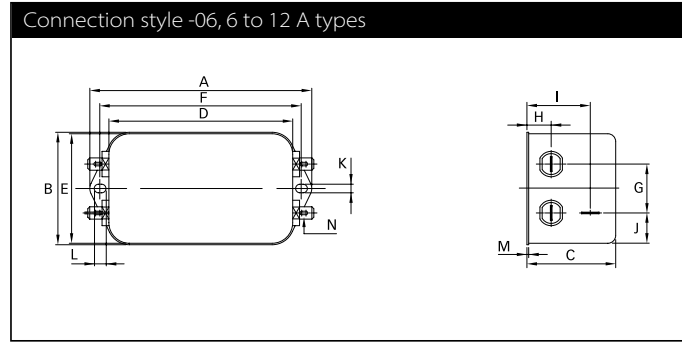
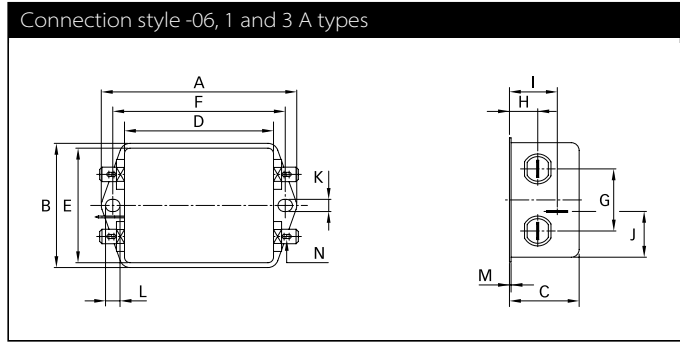
16 A Types



25 A and 36 A Types



Mechanical data



Dimensions

	1 A	3 A	6 A	10 A	12 A	16 A	25 A	36 A	Tolerances
A	85 ±0.5	85 ±0.5	113.5	156	156	119	156	156	±1
B	54 ±0.5	54 ±0.5	57.5	57.5	57.5	85.5	57.5	57.5	±1
C	30.3 ±0.5	40.3 ±0.5	45.4	45.4	45.4	57.6	45.4	45.4	±1
D	64.8 ±0.5	64.8 ±0.5	94	130.5	130.5	98.5	130.5	130.5	±1
E	49.8	49.8	56	56	56	84.5	56	56	±0.5
F	75	75	103	143	143	109	143	143	±0.3
G	27	27	25	25	25	40	25	25	±0.2
H	12.3	12.3	12.4	12.4	12.4	15.6	12.4	12.4	±0.5
I	20.8	29.8	32.4	32.5	32.5		32.5	32.5	±0.5
J	19.9	11.4	15.5	15.5	15.5	42.25	15.5	15.5	±0.5
K	5.3	5.3	4.4	5.3	5.3	4.4	5.3	5.3	
L	6.3	6.3	6	6	6	7.4	6	6	
M	0.7	0.7	0.9	1	1	1.2	1	1	
Connection style -06									
N	6.3 x 0.8	6.3 x 0.8	6.3 x 0.8	6.3 x 0.8	6.3 x 0.8	6.3 x 0.8			
Connection style -07									
O	8.3	8.3	8.4	8.4	8.4	8.6			±0.5
P	14.9	14.9	18	18	18	42.25			±0.5
AWG type wire	AWG 20	AWG 20	AWG 18	AWG 18	AWG 16	AWG 16			
Wire length	140	140	140	140	140	140			+5
Connection style -08									
N						M4	M4	M4	
Q						51			±0.2
Recommended torque (Nm)						1.2 - 1.3	1.2 - 1.3	1.2 - 1.3	

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

Please visit www.schaffner.com to find more details on filter connectors.



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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