

Multi-stage General Purpose AC/DC EMI Filter



Rated currents from 1 to 30 A

High differential and common-mode attenuation

Optional medical versions (B type)

Optional safety versions (A type)



Performance indicators

Attenuation performance



Technical specifications

Rated voltage*	250 VAC, 50/60 Hz; 250 VDC
Operating frequency	DC to 400 Hz
Rated currents	1 to 30 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)	1,650,000 hours (B types) 950,000 hours

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

Approvals



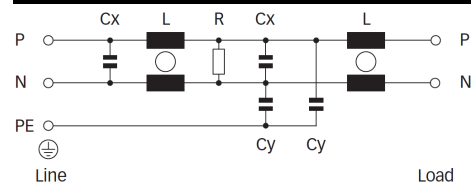
Features and benefits

- FN 2060 two-stage filters are designed for easy and fast chassis mounting
- FN 2060 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 2060 two-stage filters are designed for noisy applications requiring good differential and common-mode attenuation
- FN 2060 filters are also available as single-stage filters (FN 2010 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

Typical electrical schematic



Filter selection table

Filter*	Rated current	Leakage current** @ 250 VAC/50 Hz (@ 120 VAC/60 Hz)	Inductance L	Capacitance		Resistance R	Input/Output connections			Weight [g]
	@ 40°C (25°C)			Cx	Cy		-06	-07	-08	
	[A]	[mA]	[mH]	[µF]	[nF]	[kΩ]				
FN 2060-1-..	1 (1.2)	0.66 (0.38)	12	0.22	4.7	1000	-06	-07		120
FN 2060-3-..	3 (3.5)	0.66 (0.38)	2.5	0.22	4.7	1000	-06	-07		120
FN 2060-6-..	6 (6.9)	0.66 (0.38)	0.97	0.22	4.7	1000	-06	-07		120
FN 2060-10-..	10 (11.5)	0.66 (0.38)	0.8	0.47	4.7	470	-06	-07		190
FN 2060-12-..	12 (13.8)	0.66 (0.38)	0.58	0.47	4.7	470	-06	-07		190
FN 2060-16-..	16 (18.4)	0.66 (0.38)	0.65	0.33	4.7	1000	-06	-07	-08	260
FN 2060-20-..	20 (23)	0.66 (0.38)	0.6	1	4.7	220	-06		-08	480
FN 2060-30-08	30 (34.5)	0.79 (0.45)	0.6	1	10	220			-08	950
FN 2060A-1-..	1 (1.2)	0.07 (0.04)	12	0.22	0.47	1000	-06	-07		120
FN 2060A-3-..	3 (3.5)	0.07 (0.04)	2.5	0.22	0.47	1000	-06	-07		120
FN 2060A-6-..	6 (6.9)	0.07 (0.04)	0.97	0.22	0.47	1000	-06	-07		120
FN 2060A-10-..	10 (11.5)	0.07 (0.04)	0.8	0.47	0.47	470	-06	-07		190
FN 2060A-12-..	12 (13.8)	0.07 (0.04)	0.58	0.47	0.47	470	-06	-07		190
FN 2060A-16-..	16 (18.4)	0.07 (0.04)	0.65	0.33	0.47	1000	-06	-07	-08	260
FN 2060A-20-..	20 (23)	0.07 (0.04)	0.6	1	0.47	220	-06		-08	480
FN 2060A-30-08	30 (34.5)	0.07 (0.04)	0.6	1	0.47	220			-08	950
FN 2060B-1-..	1 (1.2)	0.00	12	0.22		1000	-06	-07		120
FN 2060B-3-..	3 (3.5)	0.00	2.5	0.22		1000	-06	-07		120
FN 2060B-6-..	6 (6.9)	0.00	0.97	0.22		1000	-06	-07		120
FN 2060B-10-..	10 (11.5)	0.00	0.8	0.47		470	-06	-07		190
FN 2060B-12-..	12 (13.8)	0.00	0.58	0.47		470	-06	-07		190
FN 2060B-16-..	16 (18.4)	0.00	0.65	0.33		1000	-06	-07	-08	260
FN 2060B-20-..	20 (23)	0.00	0.6	1		220	-06		-08	480
FN 2060B-30-08	30 (34.5)	0.00	0.6	1		220			-08	950

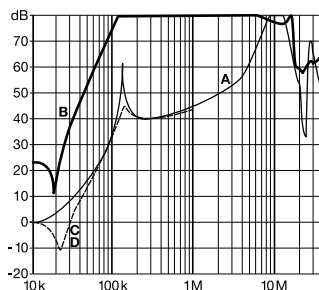
* To compile a complete part number, please replace the .. with the required I/O connection style (e.g. FN 2060-30-08, FN 2060B-10-06).

** 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;

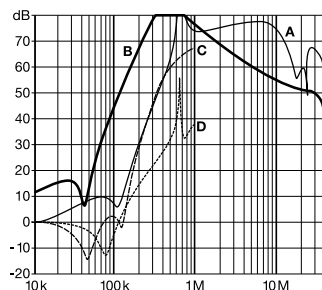
Typical filter attenuation

dPer 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

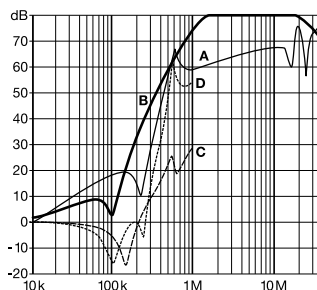
1 A types



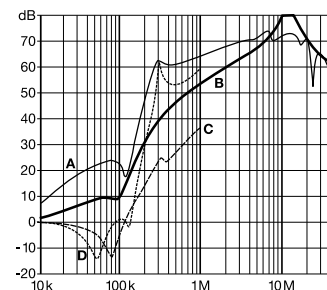
3 to 12 A types



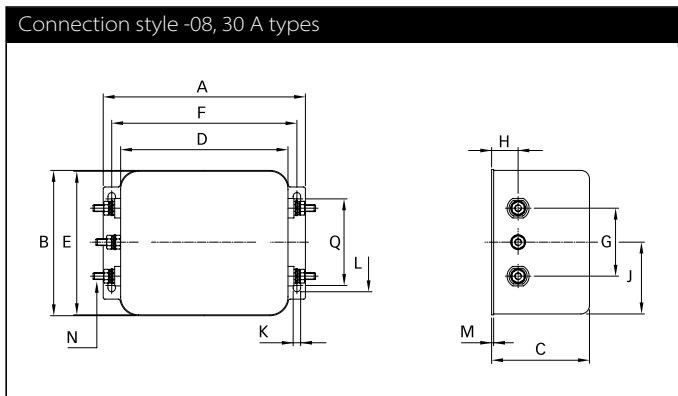
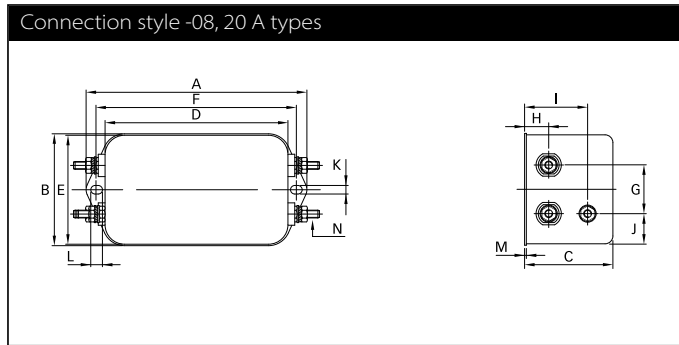
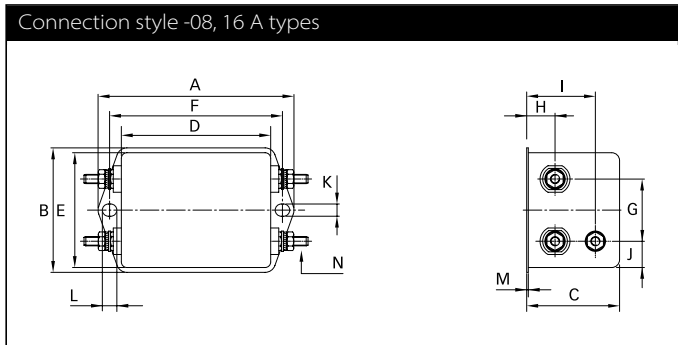
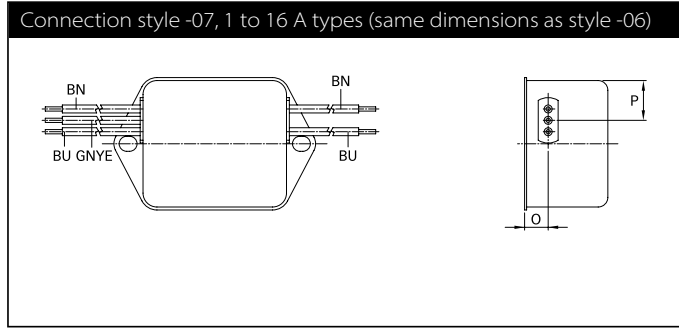
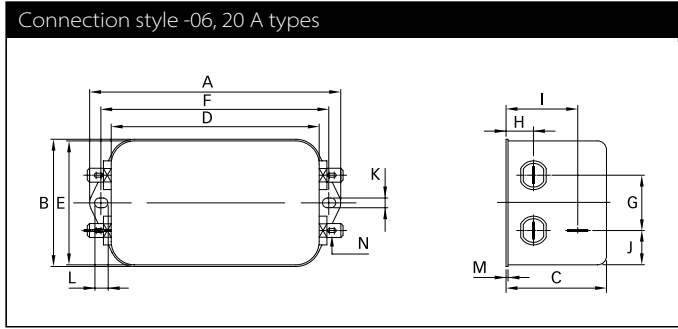
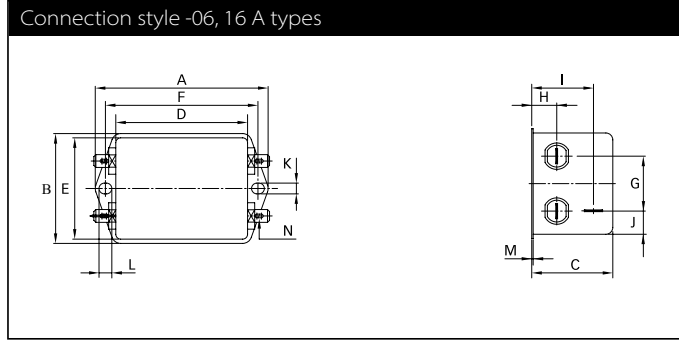
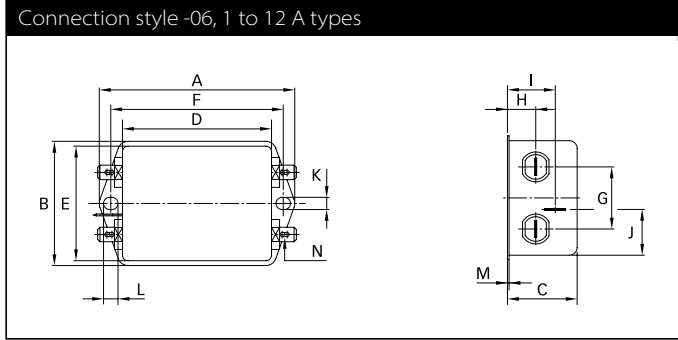
16 A types



20 and 30 A types



Mechanical data



	1 A	3 A	6 A	10 A	12 A	16 A	20 A	30 A	Tolerances
A	71	71	71	85	85	85	113.5 ±1	119 ±1	±0.5
B	46.6	46.6	46.6	54	54	54	57.5 ±1	85.5 ±1	±0.5
C	29.3	29.3	29.3	30.3	30.3	40.3	45.4 ±1	57.6 ±1	±0.5
D	50.5	50.5	50.5	64.8	64.8	64.8	94 ±1	98.5 ±1	±0.5
E	44.5	44.5	44.5	49.8	49.8	49.8	56	84.5	±0.5
F	61	61	61	75	75	75	103	109	±0.3
G	21	21	21	27	27	27	25	40	±0.2
H	10.8	10.8	10.8	12.3	12.3	12.3	12.4	15.6	±0.5
I	19.3	19.3	19.3	20.8	20.8	29.8	32.4		±0.5
J	20.1	20.1	20.1	19.9	19.9	11.4	15.5	42.25	±0.5
K	5.3	5.3	5.3	5.3	5.3	5.3	4.4	4.4	
L	6.3	6.3	6.3	6.3	6.3	6.3	6	7.4	
M	0.7	0.7	0.7	0.7	0.7	0.7	0.9	1.2	
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	6.3 x 0.8	6.3 x 0.8	
Connection style -07									
O	8.3	8.3	8.3	8.3	8.3	8.3			±0.5
P	14	14	14	14.9	14.9	14.9			
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 connections.



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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