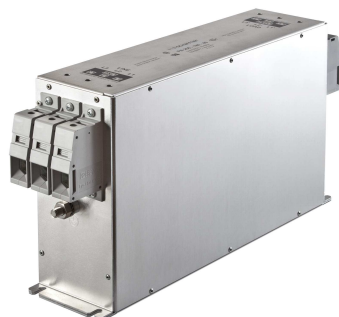


Book-style EMC/RFI Filter for Inverters and Power Drive Systems



- Industry standard EMC solution for three-phase PDS filtering
- Slim space-saving book-style housing
- Solid safety connector blocks or optional wire output connections
- Excellent attenuation performance
- HV versions for up to 690 VAC
- HVIT versions for IT distribution networks
- P/L versions with low leakage current



Performance indicators

Attenuation performance



Technical specifications

Maximum continuous operating voltage	3x 480/277 VAC (FN 258, FN 258 L, FN 258 P) 3x 690/400 VAC (FN 258 HV, FN 258 HVIT)
Rated currents	7 to 250 A @50°C (480 V filters) 1
High potential test voltage	P → E 2650 VDC for 2 sec (480 V filters) P → P 2100 VDC for 2 sec (480 V filters) P → E 3100 VDC for 2 sec (690 V filters) P → P 3000 VDC for 2 sec (690 V filters)
Protection category	IP 20
Overload capability	4x rated current at switch on, 1.5x rated current for 1 minute, once per hour
Temperature range (operation and storage)	-25°C to +100°C (25/100/21)
Flammability corresponding to	UL 94 V-2 or better
Design corresponding to	UL 1283, CSA 22.2 No. 8 1986, IEC/EN 60939
MTBF @ 50°C/400 V (Mil-HB-217F)	220,000 hours

Approvals



UL/CSA: FN 258 up to 180 A (ex. -180-07)

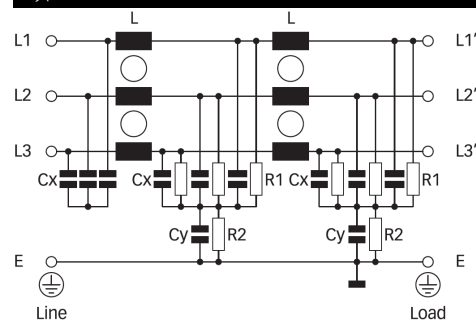
Features and benefits

- FN 258 range of filters provides state-of-the-art EMI attenuation based on an innovative multi-stage filter topology. They help to ensure compliance with Class A or even Class B limits
- The slim book-style shape allows a convenient and space-saving installation next to inverters and motor drives
- With 480 VAC rating and filter modules from 7 to 250 A, FN 258 are ready for the most diverse applications worldwide
- FN 258 HV filters up to 130 A are designed for 690 VAC distribution networks
- FN 258 HVIT filters up to 130 A meet the special requirements for the application in industrial 690 VAC IT distribution networks
- FN 258 L and FN 258 P filters help to fulfill tough requirements in respect of leakage current limitation and provide an excellent solution to overcome problems with nuisance tripping of sensitive earth leakage detectors

Typical applications

- Three-phase variable speed drives and power drive systems (PDS)
- IT power distribution networks (FN 258 HVIT)
- Applications comprising energy conversion devices (inverters, converters)
- Process automation equipment
- Three-phase power supplies and UPS
- Applications with low-leakage current requirements (FN 258 L and FN 258 P)

Typical electrical schematic



Note: HVIT versions without discharge resistor to ground.

Filter selection table

Filter*	Rated current @ 50°C (40°C) [A]	Typical drive power rating** [kW]	Leakage current*** @ 440 VAC/50 Hz [mA]	Power loss @ 25°C/50 Hz [W]	Input connections	Output connections	Weight [kg]
FN 258-7-..	7 (7.7)	4	16.5	9	-29	-07 -29	1.0
FN 258-16-..	16 (17.5)	7.5	18.3	20	-29	-07 -29	1.4
FN 258-30-..	30 (33)	15	24.2	21	-33	-07 -33	1.7
FN 258-42-..	42 (46)	22	25.8	30	-33	-07 -33	2.5
FN 258-55-..	55 (60)	30	25.8	30	-34	-07 -34	2.9
FN 258-75-34	75 (82)	37	25.8	24	-34	-34	3.9
FN 258-100-35	100 (110)	55	25.8	51	-35	-35	5.5
FN 258-130-35	130 (143)	75	30.0	50	-35	-35	6.9
FN 258-180-..	180 (197)	90	30.0	73	-40	-07 -40	11.0
FN 258-250-..	250 (275)	132	30.0	79	-40	-07 -40	12.0
FN 258 HV-7-29	7 (7.7)	5.5	13.0	9	-29	-29	1.0
FN 258 HV-16-29	16 (17.5)	11	19.0	20	-29	-29	1.5
FN 258 HV-30-33	30 (33)	22	19.0	21	-33	-33	1.8
FN 258 HV-42-33	42 (46)	30	21.6	30	-33	-33	2.6
FN 258 HV-55-34	55 (60)	45	21.6	30	-34	-34	3.0
FN 258 HV-75-34	75 (82)	55	21.6	24	-34	-34	4.3
FN 258 HV-100-35	100 (110)	90	21.6	51	-35	-35	5.6
FN 258 HV-130-35	130 (143)	110	25.0	50	-35	-35	7.1
FN 258 HVIT-7-29	7 (7.7)	5.5	13.0	9	-29	-29	1.0
FN 258 HVIT-16-29	16 (17.5)	11	19.0	20	-29	-29	1.5
FN 258 HVIT-30-33	30 (33)	22	19.0	21	-33	-33	1.8
FN 258 HVIT-42-33	42 (46)	30	21.6	30	-33	-33	2.6
FN 258 HVIT-55-34	55 (60)	45	21.6	30	-34	-34	3.0
FN 258 HVIT-75-34	75 (82)	55	21.6	24	-34	-34	4.3
FN 258 HVIT-100-35	100 (110)	90	21.6	51	-35	-35	5.6
FN 258 HVIT-130-35	130 (143)	110	25.0	50	-35	-35	7.1
FN 258 L-7-..	7 (7.7)	4	0.8	9	-29	-07 -29	1.0
FN 258 L-16-..	16 (17.5)	7.5	0.8	20	-29	-07 -29	1.4
FN 258 L-30-..	30 (33)	15	0.8	21	-33	-07 -33	1.7
FN 258 L-42-..	42 (46)	22	0.7	30	-33	-07 -33	2.5
FN 258 L-55-..	55 (60)	30	0.7	30	-34	-07 -34	2.9
FN 258 L-75-34	75 (82)	37	0.7	24	-34	-34	3.9
FN 258 L-100-35	100 (110)	55	0.7	51	-35	-35	5.5
FN 258 L-130-35	130 (143)	75	0.7	50	-35	-35	6.9
FN 258 L-180-..	180 (197)	90	0.7	73	-40	-07 -40	11.0
FN 258 L-250-07	250 (275)	132	0.7	79	-40	-07	12.0
FN 258 P-7-..	7 (7.7)	4	3.3	9	-29	-07 -29	1.0
FN 258 P-16-..	16 (17.5)	7.5	3.3	20	-29	-07 -29	1.4
FN 258 P-30-..	30 (33)	15	3.3	21	-33	-07 -33	1.7
FN 258 P-42-..	42 (46)	22	3.5	30	-33	-07 -33	2.5
FN 258 P-55-..	55 (60)	30	3.5	30	-34	-07 -34	2.9
FN 258 P-75-34	75 (82)	37	3.5	24	-34	-34	3.9
FN 258 P-100-35	100 (110)	55	3.5	51	-35	-35	5.5
FN 258 P-130-35	130 (143)	75	3.5	50	-35	-35	6.9
FN 258 P-180-..	180 (197)	90	3.5	73	-40	-07 -40	11.0
FN 258 P-250-07	250 (275)	132	3.6	79	-40	-07	12.0

* To compile a complete part number, please replace the -.. with the required output connection style.

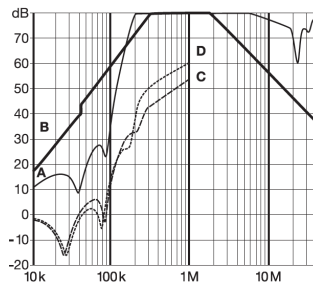
** Calculated at rated current, 440 VAC (FN 258)/690 VAC (FN 258 HV) and $\cos \phi = 0.8$. The exact value depends upon the efficiency of the drive, the motor and the entire application.

***Maximum leakage under normal operating conditions (FN 258 at 440 V, FN 258 HV at 690 V). Note: if two phases are interrupted, worst case leakage could reach 5.7 times higher levels.

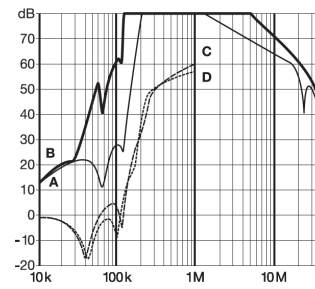
Typical filter attenuation

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

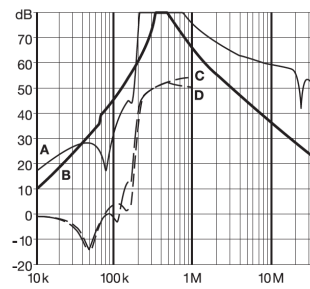
7 to 30 A types



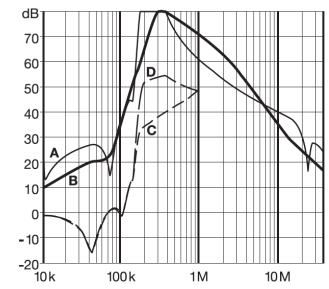
42 to 100 A types



130 A types



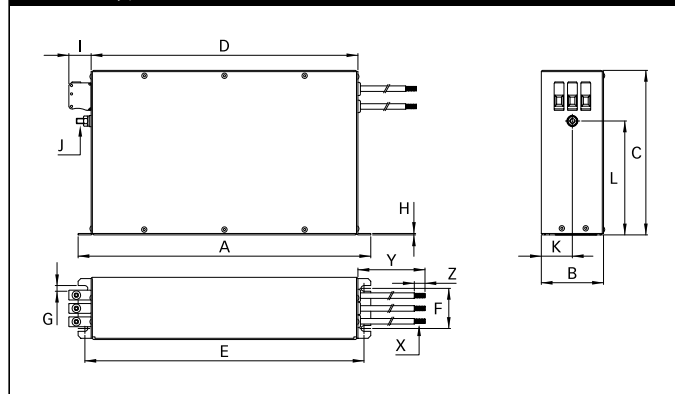
180 and 250 A types



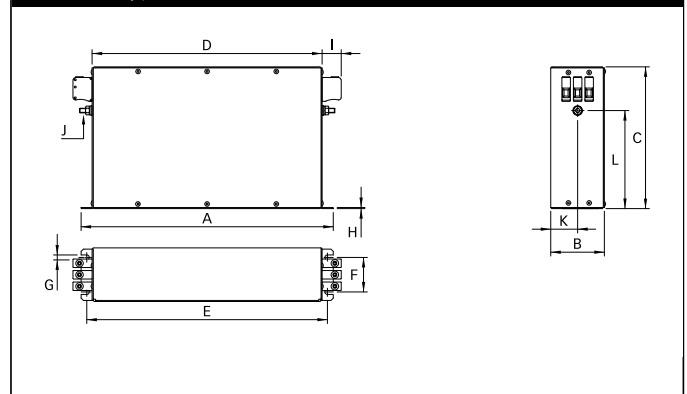
Note: typical attenuation performance of FN 258 standard filters. The behavior of FN 258 HV, FN 258 HVT, FN 258 P and FN 258 L may be slightly different.

Mechanical data

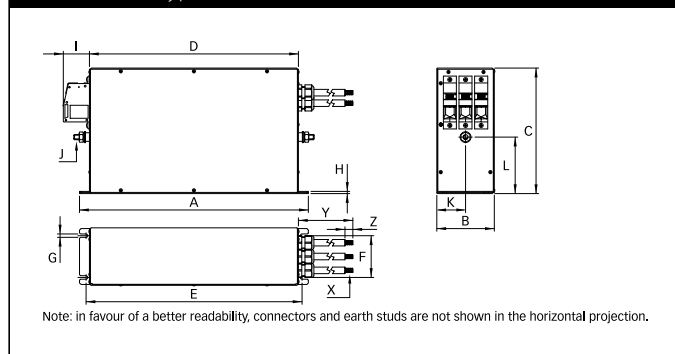
7 to 55 A types (-07)



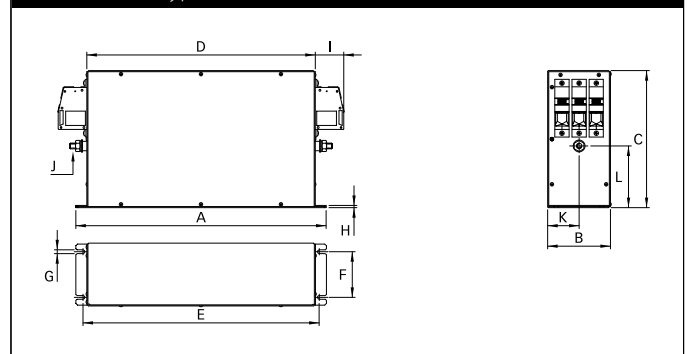
7 to 130 A types (-29, -33, -34, -35)



180 and 250 A types (-07)



180 and 250 A types (-40)



Note: in favour of a better readability, connectors and earth studs are not shown in the horizontal projection.

Dimensions

	7 A	16 A	30 A	42 A	55 A	75 A	100 A	130 A	180 A	250 A
A	255	305	335	329	329	329	379	439	438	478
B	50	55	60	70	80	80	90	110	110	110
C	126	142	150	185	185	220	220	240	240	240
D	225	275	305	300	300	300	350	400	400	440
E	240	290	320	314	314	314	364	414	413	453
F	25	30	35	45	55	55	65	80	80	80
G	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
H	1	1	1	1.5	1.5	1.5	1.5	3	4	4
I	10.9	10.9	25	25	39	39	45	45	51	51
J	M5	M5	M5	M6	M6	M6	M10	M10	M10	M10
K	25	27.5	30	35	40	40	45	55	55	55
L	85	100	110	130	105	140	130	140	110	110
X*	AWG 16	AWG 14	AWG 10	AWG 8	AWG 6				50 mm ²	70 mm ²
Y*	300 ±10	300 ±10	400 ±10	500 ±10	500 ±10				500 ±10	500 ±10
Z*	9	9	9	12	12				15	15

* Filters with output wire connections (-07) only.

All dimensions in mm; 1 inch = 25.4 mm

Tolerances according: ISO 2768-m/EN 22768-m

Filter input/output connector cross sections

	-29 	-33 	-34 	-35 	-40 
Solid wire	6 mm ²	16 mm ²	35 mm ²	50 mm ²	95 mm ²
Flex wire	4 mm ²	10 mm ²	25 mm ²	50 mm ²	95 mm ²
AWG type wire	AWG 10	AWG 6	AWG 2	AWG 1/0	AWG 4/0
Recommended torque	0.6-0.8 Nm	1.5-1.8 Nm	4.0-4.5 Nm	7-8 Nm	17-20 Nm

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
F +41 32 681 66 30
info@schaffner.com
www.schaffner.com



Sales and application centers

China

Schaffner EMC Ltd. Shanghai

T20-3, No 565 Chuangye Road
Pudong New Area
201201 Shanghai
T +86 21 3813 9500
F +86 21 3813 9501 / 02
cschina@schaffner.com
www.schaffner.com.cn

Finland

Schaffner Oy

Sauvonrinne 19 H
08500 Lohja
T +358 19 35 72 71
finlandsales@schaffner.com

France

Schaffner EMC S.A.S.

112 Quai de Bezons
Boîte postale 133
95100 Argenteuil
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 Galileo Galilei 47
20092 Cinisello Balsamo (MI)
T +39 02 66 04 30 45 / 47
F +39 02 61 23 943
italysales@schaffner.com

Japan

Schaffner EMC K.K.

1-32-12, Kamiuma, Setagaya-ku
7F Mitsui-seimei Sangenjaya Bldg.
154-0011 Tokyo
T +81 3 5712 3650
F +81 3 5712 3651
japansales@schaffner.com
www.schaffner.jp

Singapore

Schaffner EMC Pte Ltd.

Blk 3015A Ubi Road 1
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

Turebergstorg 1, 6
19147 Sollentuna
T +46 8 5792 1121 / 22
F +46 8 92 96 90
swedensales@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.

6 Floor, No. 413, Rui Guang Road
114 Neihs District Taipei City
T +886 2 87525050
F +886 2 87518086
taiwansales@schaffner.com
www.schaffner.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

UK

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
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

To find your local partner within Schaffner's global network: www.schaffner.com

© 2016 Schaffner Group

The content of this document has been carefully checked and understood. However, neither Schaffner nor its subsidiaries assume any liability whatsoever for any errors or inaccuracies of this document and the consequences thereof. Published specifications are subject to change without notice. Product suitability for any area of application must ultimately be determined by the customer. In all cases, products must never be operated outside their published specifications. Schaffner does not guarantee the availability of all published products. This disclaimer shall be governed by substantive Swiss law and resulting disputes shall be settled by the courts at the place of business of Schaffner Holding AG. Latest publications and a complete disclaimer can be downloaded from the Schaffner website. All trademarks recognized.