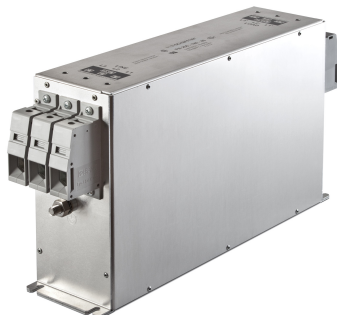


Book-style EMC/RFI Filter for Inverters and Power Drive Systems



- 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



Rated current [A]



Approvals & Compliances



UL/CSA: 600VAC for FN258 up to 180 A (ex. -180-07);
ENEC: 690VAC

Features and benefits

- FN258 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, FN258 are ready for the most diverse applications worldwide
- FN258HV filters up to 130 A are designed for 690 VAC distribution networks
- FN258HVIT filters up to 130 A meet the special requirements for the application in industrial 690 VAC IT distribution networks
- FN258L and FN258P 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

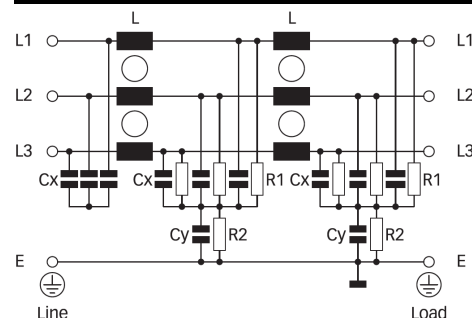
Technical specifications

Maximum continuous operating voltage	3x 520/300 VAC (FN258, FN258L, FN258P) 3x 760/440 VAC (FN258HV, FN258HVIT)
Rated currents	7 to 250 A @50°C (FN258, FN258L, FN258P) 7 to 130 A @50°C ((FN258HV, FN258HVIT))
Operating frequency	DC to 60 Hz
High potential test voltage	P → E 2650 VDC for 2 sec (FN258) P → P 2100 VDC for 2 sec (FN258) P → E 2000 VAC for 2 sec (FN258L) P → P 2100 VDC for 2 sec (FN258L) P → E 3000 VDC for 2 sec (FN258P) P → P 2100 VDC for 2 sec (FN258P) P → E 3200 VDC for 2 sec (FN258HV and FN258HVIT) P → P 3270 VDC for 2 sec (FN258HV and FN258HVIT)
Protection category	IP 20 acc. to IEC 60529, Nema 1
Temperature range (operation and storage)	-25°C to +100°C (derating applies above 50°C)
Climatic class	25/100/21 acc. to IEC 60068-1
Altitude	2000m above derating applies acc. to IEC60664-1
Overvoltage category	III acc. IEC 60664-1
Pollution degree	3 acc. IEC 60664-1
Overload capability	4x rated current for 1 sec, once per hour 1.5x rated current for 1 minute, once per hour
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 > 220,000 hours
Flammability according to	UL 94 V-2 or better

Typical applications

- Three-phase variable speed drives and power drive systems (PDS)
- IT power distribution networks (FN258HVIT)
- Applications comprising energy conversion devices (inverters, converters)
- Process automation equipment
- Three-phase power supplies and UPS
- Applications with low-leakage current requirements (FN258L and FN258P)

Typical electrical schematic



Note: HVIT versions without discharge resistor to ground.

Filter selection table

Filter*	Rated current	Typical drive	Leakage current***	Power loss	Input connections	Output connections		Weight [kg]
	@ 50°C (40°C)	power rating**	@ 520/760 VAC/50 Hz	@ 25°C/50 Hz				
	[A]	[kW]	[mA]	[W]				
FN258-7-..	7 (7.7)	4	2.0	9	-29	-07	-29	1.0
FN258-16-..	16 (17.5)	7.5	2.1	20	-29	-07	-29	1.4
FN258-30-..	30 (33)	15	2.9	21	-33	-07	-33	1.7
FN258-42-..	42 (46)	22	3.0	30	-33	-07	-33	2.5
FN258-55-..	55 (60)	30	3.0	30	-34	-07	-34	2.9
FN258-75-34	75 (82)	37	3.0	24	-34		-34	3.9
FN258-100-35	100 (110)	55	3.0	51	-35		-35	5.5
FN258-130-35	130 (143)	75	3.5	50	-35		-35	6.9
FN258-180-..	180 (197)	90	3.5	73	-40	-07	-40	11.0
FN258-250-..	250 (275)	132	3.4	79	-40	-07	-40	12.0
FN258HV-7-29	7 (7.7)	5.5	1.6	9	-29		-29	1.0
FN258HV-16-29	16 (17.5)	11	2.3	20	-29		-29	1.5
FN258HV-30-33	30 (33)	22	2.3	21	-33		-33	1.8
FN258HV-42-33	42 (46)	30	2.6	30	-33		-33	2.6
FN258HV-55-34	55 (60)	45	2.6	30	-34		-34	3.0
FN258HV-75-34	75 (82)	55	2.6	24	-34		-34	4.3
FN258HV-100-35	100 (110)	90	2.6	51	-35		-35	5.6
FN258HV-130-35	130 (143)	110	2.9	50	-35		-35	7.1
FN258HVIT-7-29	7 (7.7)	5.5	0.1	9	-29		-29	1.0
FN258HVIT-16-29	16 (17.5)	11	0.1	20	-29		-29	1.5
FN258HVIT-30-33	30 (33)	22	0.1	21	-33		-33	1.8
FN258HVIT-42-33	42 (46)	30	0.1	30	-33		-33	2.6
FN258HVIT-55-34	55 (60)	45	2.6	30	-34		-34	3.0
FN258HVIT-75-34	75 (82)	55	2.6	24	-34		-34	4.3
FN258HVIT-100-35	100 (110)	90	2.6	51	-35		-35	5.6
FN258HVIT-130-35	130 (143)	110	2.9	50	-35		-35	7.1
FN258L-7-..	7 (7.7)	4	0.1	9	-29	-07	-29	1.0
FN258L-16-..	16 (17.5)	7.5	0.1	20	-29	-07	-29	1.4
FN258L-30-..	30 (33)	15	0.1	21	-33	-07	-33	1.7
FN258L-42-..	42 (46)	22	0.1	30	-33	-07	-33	2.5
FN258L-55-..	55 (60)	30	0.1	30	-34	-07	-34	2.9
FN258L-75-34	75 (82)	37	0.1	24	-34		-34	3.9
FN258L-100-35	100 (110)	55	0.1	51	-35		-35	5.5
FN258L-130-35	130 (143)	75	0.1	50	-35		-35	6.9
FN258L-180-..	180 (197)	90	0.1	73	-40	-07	-40	11.0
FN258L-250-07	250 (275)	132	0.1	79	-40	-07		12.0
FN258P-7-..	7 (7.7)	4	0.4	9	-29	-07	-29	1.0
FN258P-16-..	16 (17.5)	7.5	0.4	20	-29	-07	-29	1.4
FN258P-30-..	30 (33)	15	0.4	21	-33	-07	-33	1.7
FN258P-42-..	42 (46)	22	0.4	30	-33	-07	-33	2.5
FN258P-55-..	55 (60)	30	0.4	30	-34	-07	-34	2.9
FN258P-75-34	75 (82)	37	0.4	24	-34		-34	3.9
FN258P-100-35	100 (110)	55	0.4	51	-35		-35	5.5
FN258P-130-35	130 (143)	75	0.4	50	-35		-35	6.9
FN258P-180-..	180 (197)	90	0.4	73	-40	-07	-40	11.0
FN258P-250-07	250 (275)	132	0.4	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 (FN258)/690 VAC (FN258HV) and $\cos \phi=0.8$. The exact value depends upon the efficiency of the drive, the motor and the entire application.

*** Standardized calculated leakage current acc. IEC60939 under normal operating conditions (FN258 at 520 VAC and FN258HV at 760 VAC).

Typical filter attenuation

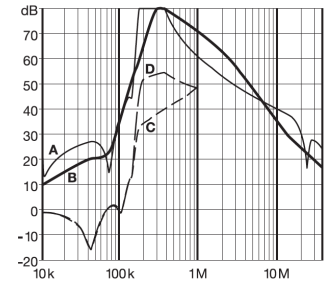
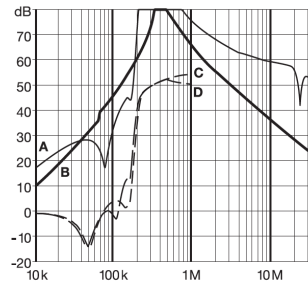
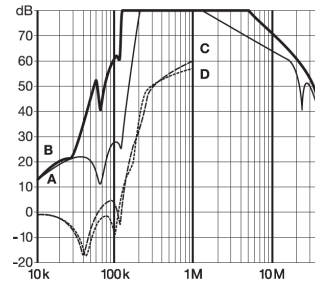
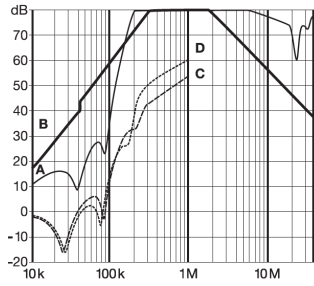
Per CISPR 17; A=50 Ω/50 Ω sym; B=50 Ω/50 Ω asym; C=0.1 Ω/100 Ω sym; D=100 Ω/0.1 Ω sym

7 to 30 A types

42 to 100 A types

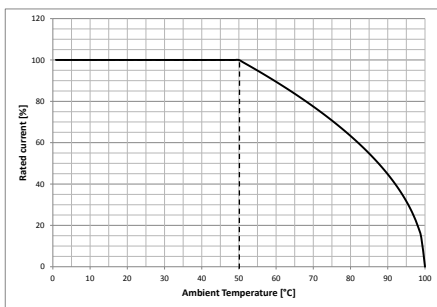
130 A types

180 and 250 A types



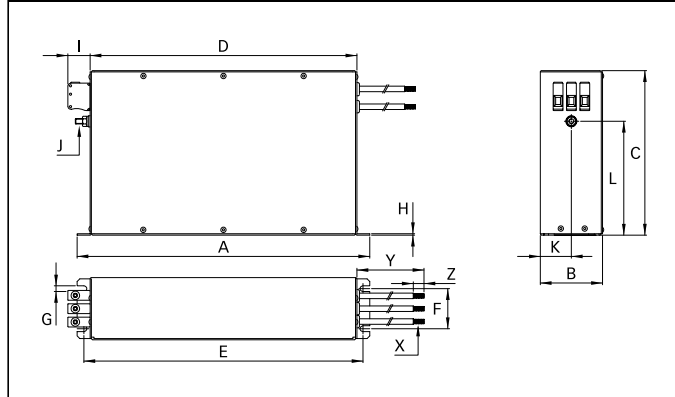
Note: typical attenuation performance of FN258 standard filters. The behavior of FN258HV, FN258HVT, FN258P and FN258L may be slightly different.

Current derating for higher ambient temperatures

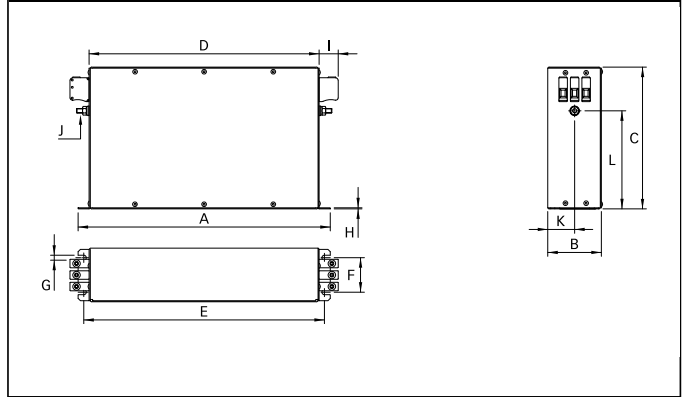


Mechanical data

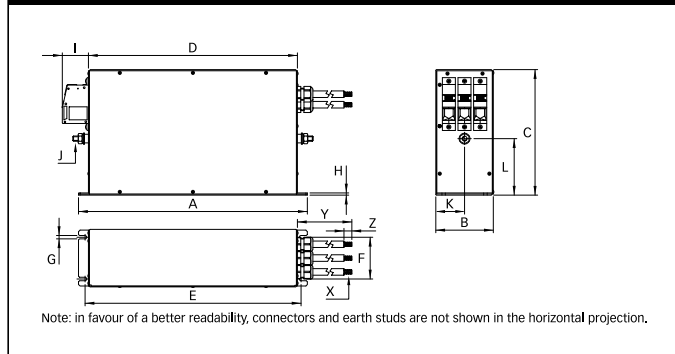
7 to 55 A types (-07)



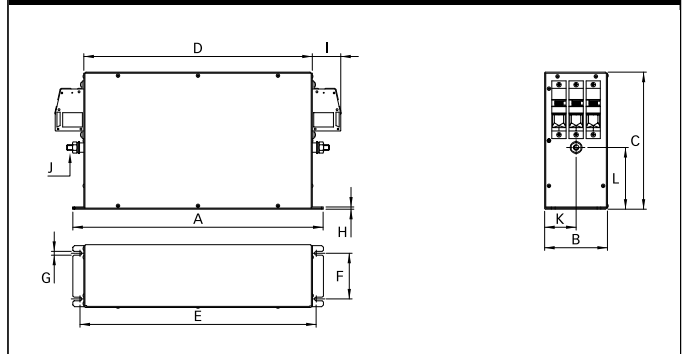
7 to 130 A types (-29, -33, -34, -35)



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.

** Earth screw torque: M5 2.0-2.2 Nm; M6 3.5-4.0 Nm; M8 8.0-9.0 Nm; M10 15-17 Nm

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	0.2-6 mm ²	0.5-16 mm ²	6-35 mm ²	10-50 mm ²	25-95 mm ²
Flex wire	0.2-4 mm ²	0.5-10 mm ²	6-25 mm ²	10-50 mm ²	25-95 mm ²
AWG type wire	AWG 24-10	AWG 22-6	AWG 6-2	AWG 6-1/0	AWG 0-4/0
Recommended torque	0.6-0.8 Nm	1.5-1.8 Nm	4.0-4.5 Nm	7-8 Nm	17-20 Nm

Terminal blocks certified acc. to UL1059 for factory wiring. Max. temperature 100°C

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



Headquarters, global innovation and development

Switzerland

Schaffner Group

Industrie Nord
Nordstrasse 11e
4542 Luterbach
T +41 32 681 66 26
info@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
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

REGUS WORLD TRADE CENTRE
WTC, 22nd Floor Unit No 2238, Brigade
Gateway Campus, 26/1, Dr. Rajkumar Road
Malleshwaram (W)
560055 Bangalore
T +91 80 67935355
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.

Taiju-Seimei Sangenjaya Bldg.
1-32-12, Kamiyama, Setagaya-ku
154-0011 Tokyo
T +81 3 5712 3650
F +81 3 5712 3651
japansales@schaffner.com
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

Östermalmstorg 1
114 42 Stockholm
T +46 8 5050 2425
swedensales@schaffner.com
www.schaffner.com

Switzerland

Schaffner EMV AG

Industrie Nord
Nordstrasse 11e
4542 Luterbach
T +41 32 681 66 88
T +41 32 681 66 26
switzerlandsales@schaffner.com

Taiwan

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
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.

1, Oakmede Place
Binfield
RG42 4JF Berkshire
T +44 118 9770070
F +44 118 9792969
uksales@schaffner.com

USA

Schaffner EMC Inc.

52 Mayfield Avenue
Edison, New Jersey
T +1 732 225 9533
F +1 732 225 4789
usasales@schaffner.com
www.schaffnerusa.com

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

© 2020 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.



Headquarters, global innovation and development

Switzerland

Schaffner Group

Industrie Nord
Nordstrasse 11e
4542 Luterbach
T +41 32 681 66 26
info@schaffner.com



PQ sales

Switzerland

Schaffner Power Quality Switzerland

Nordstrasse 11e
4542 Luterbach
T +41 32 681 66 80
pqsales@schaffner.com

China

Schaffner Power Quality China

T20-3 C, No 565 Chuangye Road
Pudong district
201201 Shanghai
T 021-38139500-2412
pqsales@schaffner.com

Singapore

Schaffner Power Quality APAC

#05-09, Kg Ubi Ind. Estate
Blk 3015A Ubi Road 1
408705 Singapore
T +65 6460 4166
pqsales@schaffner.com

www.schaffner.com

© 2021 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.