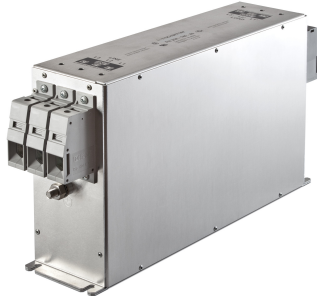


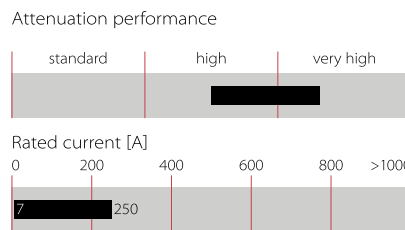
Book-style EMC/RFI Filter for Inverters and Power Drive Systems



- 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



Approvals & Compliances



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

Technical specifications

Maximum continuous operating voltage

3x 520/300 VAC (FN 258, FN 258 L, FN 258 P)
3x 760/440 VAC (FN 258 HV, FN 258 HVIT)

Rated currents

7 to 250 A @50°C (480 V filters)

Operating frequency

DC to 60 Hz

High potential test voltage

P -> E 2650 VDC for 2 sec (FN 258)
P -> P 2100 VDC for 2 sec (FN 258)
P -> E 2000 VAC for 2 sec (FN 258L)
P -> P 2100 VDC for 2 sec (FN 258L)
P -> E 3000 VDC for 2 sec (FN 258P)
P -> P 2100 VDC for 2 sec (FN 258P)
P -> E 3200 VDC for 2 sec (FN 258HV and FN 258HVIT)
P -> P 3270 VDC for 2 sec (FN 258HV and FN 258HVIT)

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

Typical applications

Three-phase variable speed drives and power drive systems (PDS)

IT power distribution networks (FN 258 HVIT)

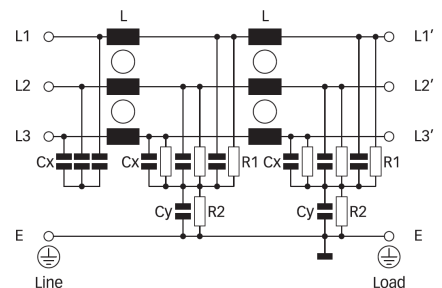
Applications comprising energy conversion devices (inverters, converters)

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*** @ 520/760 VAC/50 Hz [mA]	Power loss @ 25°C/50 Hz [W]	Input connections	Output connections	Weight [kg]
FN 258-7-..	7 (7.7)	4	2.0	9	-29	-07	1.0
FN 258-16-..	16 (17.5)	7.5	2.1	20	-29	-07	1.4
FN 258-30-..	30 (33)	15	2.9	21	-33	-07	1.7
FN 258-42-..	42 (46)	22	3.0	30	-33	-07	2.5
FN 258-55-..	55 (60)	30	3.0	30	-34	-07	2.9
FN 258-75-34	75 (82)	37	3.0	24	-34	-34	3.9
FN 258-100-35	100 (110)	55	3.0	51	-35	-35	5.5
FN 258-130-35	130 (143)	75	3.5	50	-35	-35	6.9
FN 258-180-..	180 (197)	90	3.5	73	-40	-07	11.0
FN 258-250-..	250 (275)	132	3.4	79	-40	-07	12.0
FN 258 HV-7-29	7 (7.7)	5.5	1.6	9	-29	-29	1.0
FN 258 HV-16-29	16 (17.5)	11	2.3	20	-29	-29	1.5
FN 258 HV-30-33	30 (33)	22	2.3	21	-33	-33	1.8
FN 258 HV-42-33	42 (46)	30	2.6	30	-33	-33	2.6
FN 258 HV-55-34	55 (60)	45	2.6	30	-34	-34	3.0
FN 258 HV-75-34	75 (82)	55	2.6	24	-34	-34	4.3
FN 258 HV-100-35	100 (110)	90	2.6	51	-35	-35	5.6
FN 258 HV-130-35	130 (143)	110	2.9	50	-35	-35	7.1
FN 258 HVIT-7-29	7 (7.7)	5.5	0.1	9	-29	-29	1.0
FN 258 HVIT-16-29	16 (17.5)	11	0.1	20	-29	-29	1.5
FN 258 HVIT-30-33	30 (33)	22	0.1	21	-33	-33	1.8
FN 258 HVIT-42-33	42 (46)	30	0.1	30	-33	-33	2.6
FN 258 HVIT-55-34	55 (60)	45	2.6	30	-34	-34	3.0
FN 258 HVIT-75-34	75 (82)	55	2.6	24	-34	-34	4.3
FN 258 HVIT-100-35	100 (110)	90	2.6	51	-35	-35	5.6
FN 258 HVIT-130-35	130 (143)	110	2.9	50	-35	-35	7.1
FN 258 L-7-..	7 (7.7)	4	0.1	9	-29	-07	1.0
FN 258 L-16-..	16 (17.5)	7.5	0.1	20	-29	-07	1.4
FN 258 L-30-..	30 (33)	15	0.1	21	-33	-07	1.7
FN 258 L-42-..	42 (46)	22	0.1	30	-33	-07	2.5
FN 258 L-55-..	55 (60)	30	0.1	30	-34	-07	2.9
FN 258 L-75-34	75 (82)	37	0.1	24	-34	-34	3.9
FN 258 L-100-35	100 (110)	55	0.1	51	-35	-35	5.5
FN 258 L-130-35	130 (143)	75	0.1	50	-35	-35	6.9
FN 258 L-180-..	180 (197)	90	0.1	73	-40	-07	11.0
FN 258 L-250-07	250 (275)	132	0.1	79	-40	-07	12.0
FN 258 P-7-..	7 (7.7)	4	0.4	9	-29	-07	1.0
FN 258 P-16-..	16 (17.5)	7.5	0.4	20	-29	-07	1.4
FN 258 P-30-..	30 (33)	15	0.4	21	-33	-07	1.7
FN 258 P-42-..	42 (46)	22	0.4	30	-33	-07	2.5
FN 258 P-55-..	55 (60)	30	0.4	30	-34	-07	2.9
FN 258 P-75-34	75 (82)	37	0.4	24	-34	-34	3.9
FN 258 P-100-35	100 (110)	55	0.4	51	-35	-35	5.5
FN 258 P-130-35	130 (143)	75	0.4	50	-35	-35	6.9
FN 258 P-180-..	180 (197)	90	0.4	73	-40	-07	11.0
FN 258 P-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.

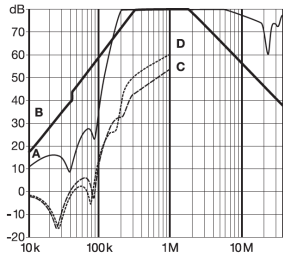
**Calculated at rated current, 440 VAC (FN 258)/690 VAC (FN 258 HV) and $\cos \phi=0.8$. The exact value depends upon the efficiency of the drive, the motor and the entire application.

*** Standardized calculated leakage current acc. IEC60939 under normal operating conditions (FN 258 at 520 VAC and FN 258 HV at 760 VAC).

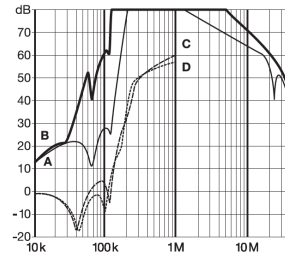
Typical filter attenuation

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

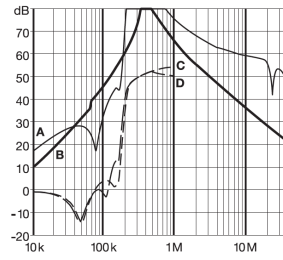
7 to 30 A types



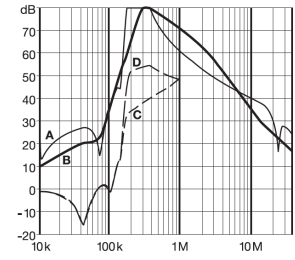
42 to 100 A types



130 A types



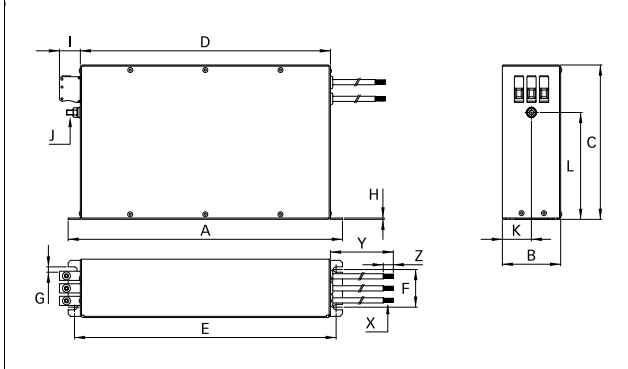
180 and 250 A types



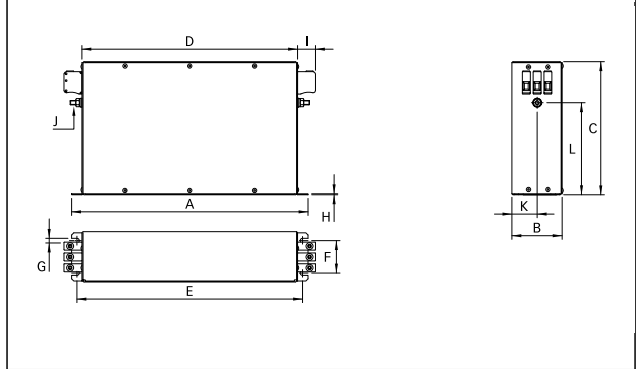
Note: typical attenuation performance of FN 258 standard filters. The behavior of FN 258 HV, FN 258 HVIT, FN 258 P and FN 258 L may be slightly different.

Mechanical data

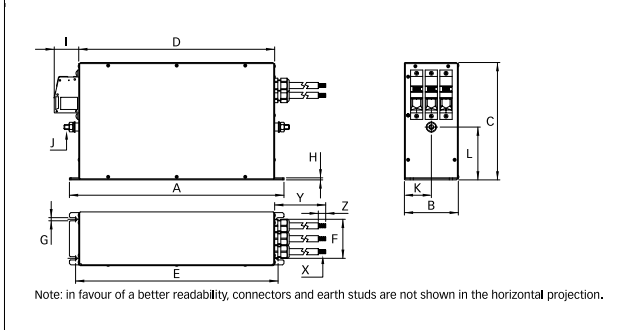
7 to 55 A types (-07)



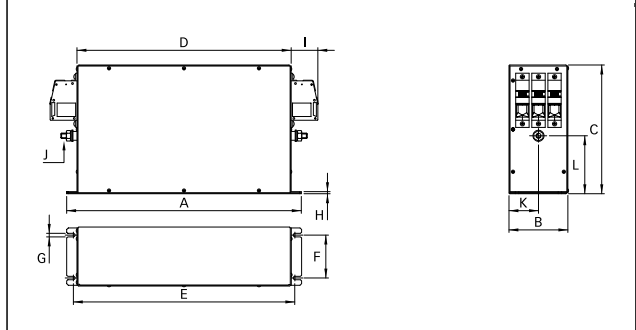
7 to 130 A types (-29, -33, -34, -35)



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.



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