

3-phase Filters FN 3258

Ultra-compact EMC/RFI Filter for Three-phase Systems and Motor Drives

SCHAFNER
energy efficiency and reliability



- New: solid safety connector blocks available for the whole range
- Exceptional attenuation performance from 150kHz to 30MHz
- Excellent saturation resistance up to 50m cable length
- Most compact and slim filter design in its class

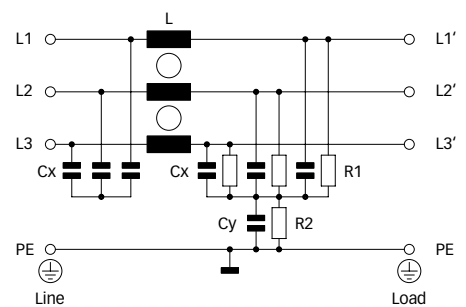
Approvals



Technical specifications

Maximum continuous operating voltage:	3x 480/277VAC (FN 3258) 3x 520/300VAC (FN 3258H)
Operating frequency:	dc to 60Hz
Rated currents:	7 to 180A @ 50°C
High potential test voltage:	P → E 2650VDC for 2 sec P → P 2100VDC for 2 sec
Protection category:	IP20
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 94V-2 or better
Design corresponding to:	UL 1283, CSA 22.2 No. 8 1986, IEC/EN 60939
MTBF @ 50°C/400V (Mil-HB-217F):	300,000 hours

Typical electrical schematic



Features and benefits

- The extremely compact and slim filter design allows a trouble-free installation even where the available mounting space is minimal.
- With new additional filter types providing safety terminal blocks, the most preferred connection style can be chosen fast and easy. This helps to stay in line with the electrical connection concept of a given application.
- FN 3258 filters ensure compliance with Class A limits according to EN 55011 up to 50m cable length and beyond. Further they can contribute significantly to meet conducted emission limits according to Class B.
- Filter operation on the mains input side of consumers increases their reliability and conducted immunity significant.
- Chokes with exceptional saturation resistance and excellent thermal behavior are a vital part of FN 3258 design. Thus, all filters retain the expected filter performance even in very noisy applications and under full load conditions.

Typical applications

- Three-phase variable speed motor drives, servo drives, inverters and converters
- Applications comprising energy conversion devices like machines or process automation equipment
- HVAC equipment, elevators, power supplies, UPS and further three-phase applications

Filter selection table

Filter	Rated current @ 50°C (40°C)	Typical drive power rating*	Leakage current** @ 400VAC/50Hz	Power loss @ 25°C/50Hz	Input/Output connections	Weight
	[A]	[kW]	[mA]	[W]		[kg]
FN 3258-7-44	7 (7.7)	4	33.0	3.8	-44	0.5
FN 3258-16-44	16 (17.5)	7.5	33.0	6.1	-44	0.8
FN 3258-30-33	30 (32.9)	15	33.0	11.8	-33	1.2
FN 3258-42-33	42 (46.0)	22	33.0	15.7	-33	1.4
FN 3258-55-34	55 (60.2)	30	33.0	25.9	-34	2.0
FN 3258-75-34	75 (82.2)	37	33.0	32.2	-34	2.7
FN 3258-100-35	100 (109.5)	55	33.0	34.5	-35	4.3
FN 3258-130-35	130 (142.4)	75	33.0	43.1	-35	4.5
FN 3258-180-40	180 (197.1)	90	33.0	58.3	-40	6.0
FN 3258H-7-44	7 (7.7)	4	33.0	3.8	-44	0.5
FN 3258H-16-44	16 (17.5)	7.5	33.0	6.1	-44	0.8
FN 3258H-30-33	30 (32.9)	18.5	33.0	11.8	-33	1.2
FN 3258H-42-33	42 (46.0)	22	33.0	15.7	-33	1.4
FN 3258H-55-34	55 (60.2)	37	33.0	25.9	-34	2.0
FN 3258H-75-34	75 (82.2)	45	33.0	32.2	-34	2.7
FN 3258H-100-35	100 (109.5)	55	33.0	34.5	-35	4.3
FN 3258H-130-35	130 (142.4)	75	33.0	43.1	-35	4.5
FN 3258H-180-40	180 (197.1)	110	33.0	58.3	-40	6.0

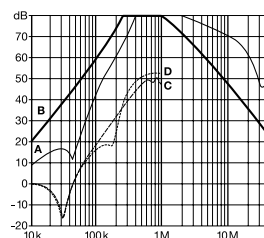
* Calculated at rated current, 440VAC (FN 3258)/480VAC (FN 3258H) and cos phi = 0.8. The exact value depends upon the efficiency of the drive, the motor and the entire application.

** Maximum leakage under normal operating conditions. Note: if two phases are interrupted, worst case leakage could reach 5.4 times higher levels.

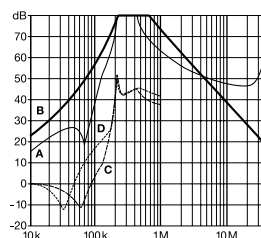
Typical filter attenuation

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

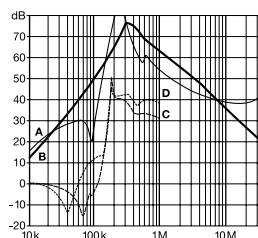
7 to 42A types



55 to 100A types

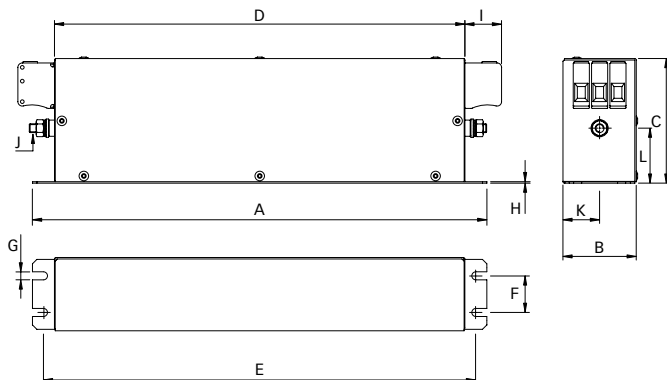


130 and 180A types



Mechanical data

Filters with safety connector blocks (7 to 180A types)



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

Dimensions

	7A	16A	30A	42A	55A	75A	100A	130A	180A
A	190	250	270	310	250	270	270	270	380
B	40	45	50	50	85	80	90	90	120
C	70	70	85	85	90	135	150	150	170
D	160	220	240	280	220	240	240	240	350
E	180	235	255	295	235	255	255	255	365
F	20	25	30	30	60	60	65	65	102
G	4.5	5.4	5.4	5.4	5.4	6.5	6.5	6.5	6.5
H	1	1	1	1	1	1.5	1.5	1.5	1.5
I	22	22	25	25	39	39	45	45	51
J	M5	M5	M5	M6	M6	M6	M10	M10	M10
K	20	22.5	25	25	42.5	40	45	45	60
L	29.5	29.5	39.5	37.5	26.5	70.5	64	64	47

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

Filter input/output connector cross sections

	-33	-34	-35	-40	-44
Solid wire	16mm ²	35mm ²	50mm ²	95mm ²	10mm ²
Flex wire	10mm ²	25mm ²	50mm ²	95mm ²	6mm ²
AWG type wire	AWG 6	AWG 2	AWG 1/0	AWG 4/0	AWG 8
Recommended torque	1.5 - 1.8Nm	4.0 - 4.5Nm	7 - 8Nm	17 - 20Nm	1.5 - 1.8Nm

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

**Headquarters and
global innovation and
development center**

Schaffner Group
Nordstrasse 11
4542 Luterbach
Switzerland
T +41 32 681 66 26
F +41 32 681 66 30
info@schaffner.ch
www.schaffner.com

Sales and application centers

China

Schaffner EMC Ltd. Shanghai
Building 11, Lane 1365
East Kangqiao Road
Shanghai 201319
T +86 21 6813 9855
F +86 21 6813 9811
cschina@schaffner.com
www.schaffner.com

Germany

Schaffner Deutschland GmbH
Schoemperlenstrasse 12B
76185 Karlsruhe
T +49 721 56910
F +49 721 569110
germanysales@schaffner.com

Finland

Schaffner Oy
Tynninkuja 7
08700 Lohja
T +358 19 35 72 71
F +358 19 32 66 10
finlandsales@schaffner.com

France

Schaffner EMC S.A.S.
112, Quai de Bezons
95103 Argenteuil
T +33 1 34 34 30 60
F +33 1 39 47 02 28
francesales@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.
Mitsui-Seimei Sangenjaya Bldg. 7F
1-32-12, Kamiyama, Setagaya-ku
Tokyo 154-0011
T +81 3 5712 3650
F +81 3 5712 3651
japansales@schaffner.com
www.schaffner.jp

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
F +41 32 681 66 41
sales@schaffner.ch

Singapore

Schaffner EMC Pte Ltd.
Blk 3015A Ubi Road 1
05-09 Kampong Ubi Industrial
Estate
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 la Moraleja,
Alcobendas
28109 Madrid
T +34 618 176 133
spainsales@schaffner.com

Taiwan

Schaffner EMV Ltd.
6th Floor, No 413
Rui Guang Road
Neihu District
Taipei City 114
T +886 2 87525050
F +886 2 87518086
taiwansales@schaffner.com

Thailand

Schaffner EMC Co. Ltd.
Northern Region Industrial Estate
67 Moo 4 Tambon Ban Klang
Amphur Muang P.O. Box 14
Lamphun 51000
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
Berkshire RG41 2PL
T +44 118 9770070
F +44 118 9792969
uksales@schaffner.com
www.schaffner.uk.com

USA

Schaffner EMC Inc.
52 Mayfield Avenue
Edison, New Jersey 08837
T +1 732 225 9533
F +1 732 225 4789
usasales@schaffner.com
www.schaffner.com/us

To find your local partner within
Schaffner's global network, please go to

www.schaffner.com

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