

Ultra-compact EMC/RFI Filter for Motor Drives Applications



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

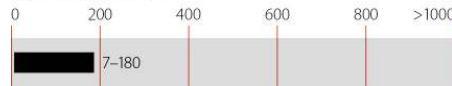


Performance indicators

Attenuation performance



Rated current [A]



Technical specifications

Design corresponding to	UL 1283, CSA 22.2 No. 8 1986, IEC/EN 60939
Flammability corresponding to	UL 94 V-2 or better
High potential test voltage	P → E 2650 VDC for 2 sec P → P 2100 VDC for 2 sec
Maximum continuous operating voltage	3x 480/277 VAC (FN 3258) 3x 520/300 VAC (FN 3258H)
MTBF @ 50°C/400V (Mil-HB-217F)	300,000 hours
Operating frequency	dc to 60 Hz
Overload capability	4x rated current at switch on, 1.5x rated current for 1 minute, once per hour
Protection category	IP20
Rated currents	7 to 180 A @ 50 °C
Temperature range (operation and storage)	-25 °C to +100 °C (25/100/21)

Approvals



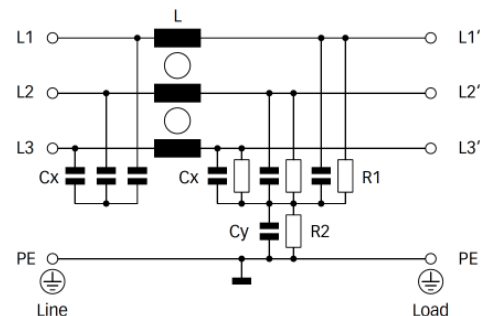
Features and benefits

- | 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 50 m 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

Typical electrical schematic



Filter selection table

Filter	Rated current @ 50 °C (40°C) [A]	Typical drive power rating* [kW]	Leakage current** @ 400 VAC/50 Hz [mA]	Power loss @ 25 °C / 50 Hz [W]	Input/Output connections 	Weight [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

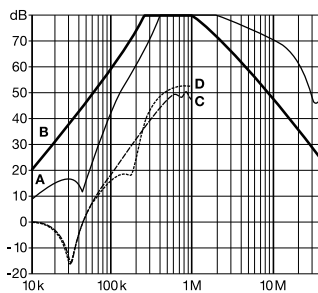
* Calculated at rated current, 440 VAC (FN 3258)/480 VAC (FN 3258H) and cos phi = 0.8. The exact value depends upon the efficiency of the drive, the motor and the entire application.

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

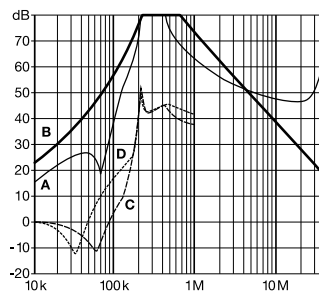
Typical filter attenuation

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

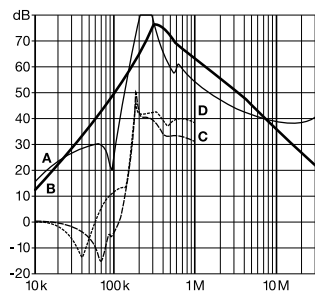
7 to 42 A types

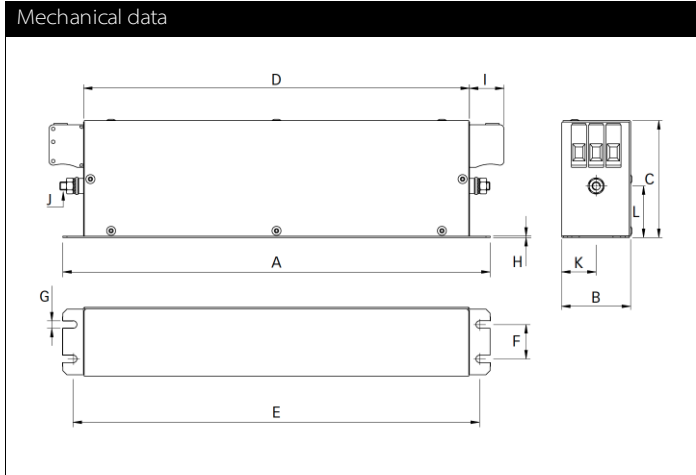


55 to 100 A types



130 and 180 A types





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
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
L2	29.5	29.5	39.5	37.5	26.5	70.5	64	64	47

All dimensions in mm; 1 inch = 25.4 mm

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

Filter input/output connector cross sections

	-33	-34	-35	-40	-44
Solid wire	16 mm ²	35 mm ²	50 mm ²	95 mm ²	10 mm ²
Flex wire	10 mm ²	25 mm ²	50 mm ²	95 mm ²	6 mm ²
AWG type wire	AWG 6	AWG 2	AWG 1/0	AWG 4/0	AWG 8
Recommended torque	1.5-1.8 Nm	4.0-4.5 Nm	7.8 Nm	17-20 Nm	1.5-1.8 Nm

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



Headquarters, global innovation and development center

Switzerland

Schaffner Group

Nordstrasse 11
4542 Luterbach
T +41 32 6816 626
F +41 32 6816 630
info@schaffner.com
<http://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
<http://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
95103 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

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, Kamiyama, Setagaya-ku
7F Mitsui-seimei Sangenjaya 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.

Blk 3015A Ubi Road 1
05-09 Kampong Ubi Industrial 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 la Moraleja
Alcobendas
28109 Madrid
T +34 618 176 133
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 6816 626
F +41 32 6816 641
sales@schaffner.ch

Taiwan R.O.C.

Schaffner EMV Ltd.

6 Floor, No. 413
Rui Guang Road
114 Neihu District Taipei City
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
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
<http://www.schaffner.uk.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.schaffner.com/us>

Schaffner MTC LLC

6722 Thirlane Road
24019 Roanoke, Virginia
T +1 276 228 7943
F +1 276 228 7953
<http://www.schaffner-mtc.com>

Schaffner Trencos LLC

2550 Brookpark Road
44134 Cleveland, Ohio
T +1 216 741 5282
F +1 216 741 4860
www.schaffner-trencos.com

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