



Three-Phase + Neutral Line Filters FN 3256

Compact Three-phase and Neutral Line Filter for Industrial Machinery/Equipment

SCHAFNER
energy efficiency and reliability



- Compact, space-saving design, optimized for industrial machinery
- Combines high attenuation performance with low leakage current
- Performance according to the machine tool standard EN 50370-1
- Increases also the immunity if operated directly on the mains input

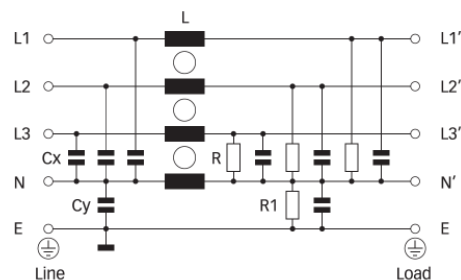
Approvals



Technical specifications

Design corresponding to :	UL 1283, CSA 22.2 No. 8 1986, IEC/EN 60939
Flammability corresponding to:	UL 94V-2 or better
High potential test voltage :	P → E 3000VDC for 2 sec P → P 2250VDC for 2 sec
Maximum continuous operating voltage :	3x 520/300VAC (480VAC +10% possible)
MTBF @ 50°C/400V (Mil-HB-217F) :	>410,000 hours
Operating frequency:	dc to 60Hz
Overload capability :	4x rated current at switch on, 1.5x rated current for 1 minute, once per hour
Protection category :	IP20
Rated currents :	8 to 160 A @ 50 °C
Temperature range (operation and storage) :	-25 °C to +100 °C (25/100/21)

Typical electrical schematic



Features and benefits

- An extremely compact and light weight filter design with a „cubic“ shape, requiring minimum mounting space and thus taking the constructional conditions on the mains input of machinery into account.
- Simple and time-saving installation with good accessibility for automatic and hand tools.
- Solid, touch-safe terminal blocks offering sufficient contacting cross section according to the EN 60204-1 installation standard, which is very common in industrial applications.
- As a mains input filter for three phases and neutral line, FN 3256 ensures the compliance with the new product family standard for machine tools in mainly industrial environments EN 50370-1. Further, its use will also increase the conducted immunity of the entire installation significantly.
- FN 3256 provides the attenuation performance to meet the requirements of various machine tools with up to 8 driving axes with ~10m of motor cable each.
- For easy selection and application, the filter current ratings are aligned with common fuse values.

Typical applications

Mainly industrial equipment, machinery, machine tools and diverse process automation systems with three-phase and neutral electricity supply. Further, these filters are suitable for power supplies, high-power office equipment and further applications, where efficient interference suppression on three phases and the neutral line is required and where space is critical. Because of the very low leakage current, FN 3256 can even be used for some medical devices.

Filter selection table

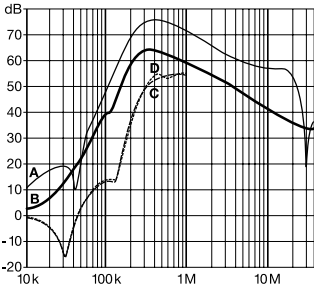
Filter	Rated current @ 50°C (40°C) [A]	Leakage current* @ 480VAC/50Hz [mA]	Power loss @ 25°C/50Hz [W]	Input/Output connections	Weight [kg]
FN 3256H-8-29	8 (8.8)	<1	2.7	-29	0.6
FN 3256H-16-29	16 (17.5)	<1	5.0	-29	0.7
FN 3256H-25-33	25 (27)	<1	9.8	-33	1.1
FN 3256H-36-33	36 (39)	<1	11.3	-33	1.2
FN 3256H-64-34	64 (70)	<1	17.2	-34	2.3
FN 3256H-80-35	80 (88)	<1	14.5	-35	3.5
FN 3256H-120-35	120 (131)	<1	25.0	-35	4.7
FN 3256H-160-40	160 (175)	<1	26.9	-40	5.7

* Maximum leakage under normal operating conditions, based on the assumption that all three phases and the neutral conductor are connected to the supply and the consumer. In this case, the current will mainly return through the neutral line, not as earth leakage.

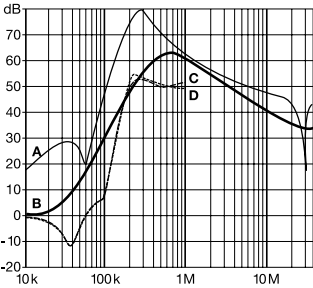
Typical filter attenuation

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

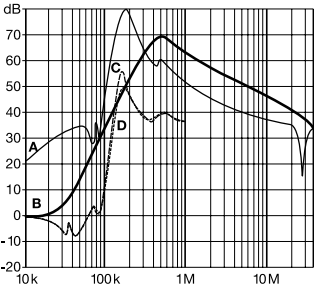
8 to 36A types



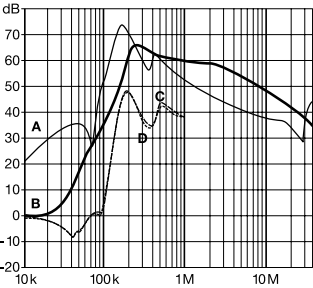
64 and 80A types



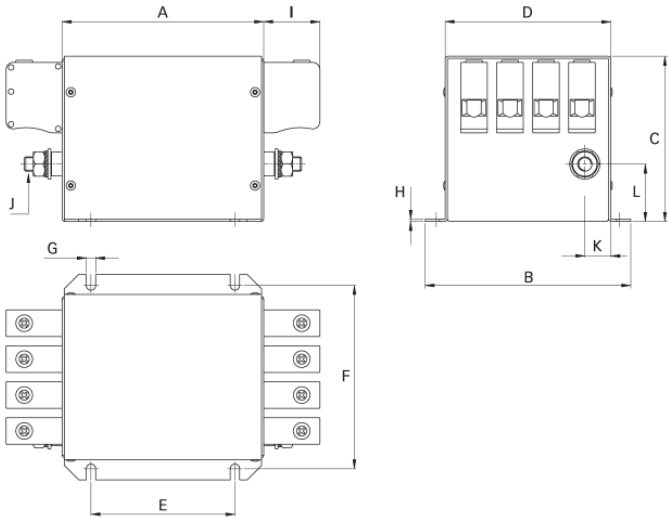
120A types



160A types



Mechanical data



Dimensions

	8A	16A	25A	36A	64A	80A	120A	160A
A	110	110	130	130	140	170	210	200
B	110	110	118	118	143	163	170	190
C	70	70	85	85	115	125	125	130
D	82	82	90	90	115	135	140	160
E	70	70	90	90	100	120	160	150
F	94.5	94.5	102.5	102.5	127.5	147.5	153.5	173.5
G	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
H	1	1	1	1	1.5	1.5	1.5	1.5
I	10.9	10.9	25	25	39	45	45	51
J	M6	M6	M6	M6	M10	M10	M10	M10
K	12	12	12	12	18	18	17.5	16.5
L	33	33	40	40	40	35	44	55

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

Filter input/output connector cross sections

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

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

**Headquarters, 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.com
www.schaffner.com

To find your local partner within
Schaffner's global network, please go
to www.schaffner.com

© 2012 Schaffner Group
Specifications are subject to change
without notice. The latest version of the
data sheets can be obtained from the
website. All trademarks recognized.

Schaffner is an ISO-registered
company.

Its products are designed and
manufactured under the strict quality
and environmental requirements of
the ISO 9001 and ISO 14001
standards.

This document has been carefully
checked. However, Schaffner does not
assume any liability for errors or
inaccuracies.

Sales and application centers

China

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

Finland

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

France

Schaffner EMC S.A.S.
112, Quai de Bezons, Boîte postale 133
Argenteuil 95103
T +33 1 34 34 30 60
F +33 1 39 47 02 28
francesales@schaffner.com

Germany

Schaffner Deutschland GmbH
Westring 18
Büren 33142
T +49 2951 60 01 0
F +49 2951 60 01 23
buerensales@schaffner.com

Italy

Schaffner EMC S.r.l.
Via Galileo Galilei 47
Cinisello Balsamo (MI) 20092
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
Mitsui-Seimei Sangenjaya Bldg. 7F
Tokyo 154-0011
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
Singapore 408705
T +65 6377 3283
F +65 6377 3281
singaporesales@schaffner.com

Spain

Schaffner EMC España
Miniparc III, Edificio E
Madrid 28109
T +34 618 176 133
spainsales@schaffner.com

Sweden

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

Switzerland

Schaffner EMV AG
Nordstrasse 11
Luterbach 4542
T +41 32 6816 626
F +41 32 6816 641
sales@schaffner.ch

Taiwan R.O.C.

Schaffner EMV Ltd.
6F. 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.
Amphur Muang P.O. Box 14
Northern Region Industrial Estate 67 Moo 4
Tambon Ban Klang
Lamphun 51000
T +66 53 58 11 04
F +66 53 58 10 19
thailandsales@schaffner.com

UK

Schaffner Ltd.
Molly Millars Lane Wokingham
Berkshire RG41 2PL
T +44 118 9770070
F +44 118 9792969
uksales@schaffner.com
<http://www.schaffner.uk.com>

USA

Schaffner EMC Inc.
52 Mayfield Avenue
Edison 08837
T 1-800-367-5566
T 732-225-9533
F 732-225-4789
usasales@schaffner.com
<http://www.schaffner.com/us>