Three-Phase + Neutral Line Filters
FN 3280

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

energy efficiency and reliability

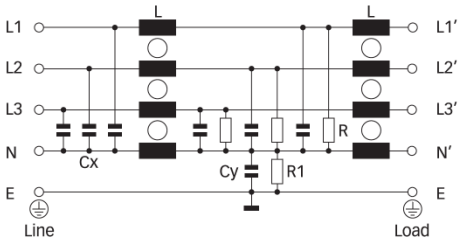
- **Now available up to 600A**
- **Compact, space-saving design, optimized for industrial machinery**
- **Combines exceptional attenuation with low leakage current**
- **Suitable for machines in mixed/domestic environments (Class A/B)**
- **Increases also the immunity if operated directly on the mains 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 2750VDC 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) :	>360,000 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 (8 to 200A types)
	IP00 (300 to 600A types)
Rated currents :	8 to 600 A @ 50 °C
Temperature range (operation and storage) :	-25 °C to +100 °C (25/100/21)

Typical electrical schematic



Features and benefits

- A compact and light weight filter design with a „cubic“ shape, requiring mini- mum 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 (8 to 200A types) offering sufficient contacting cross section according to the EN 60204-1 instal- lation standard, which is very common in industrial applications.
- As a mains input filter for three phases and neutral line, FN 3280 provides enough performance to ensure EMC compliance of machinery in mixed (Class A) or even domestic (Class B) environments. Further, its use will also increase the immunity of the entire installation significantly.
- FN 3280 provides the attenuation perform- ance needed to meet the requirements of various machine tools with up to 12 driving axes and ~10 to 20m 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 auto- mation systems with three-phase and neutral electricity supply. Due to the outstanding attenuation performance, FN 3280 is also the first choice for noisy power supplies, renewable energy applications, highpower office equipment and further three-phase and neutral devices. Because of the relatively low leakage current, FN 3280 may even be used for some medical devices.

Filter selection table

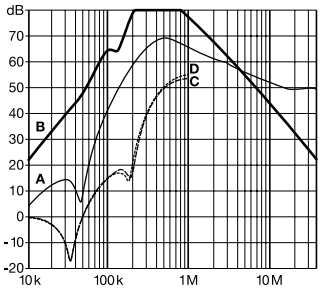
Filter	Rated current @ 50ºC (40ºC) [A]	Leakage current* @ 480VAC/50Hz [mA]	Power loss @ 25ºC/50Hz [W]	Input/Output connections		Weight [kg]
FN 3280H-8-29	8 (8.8)	<1	2.7	-29		0.8
FN 3280H-16-29	16 (17.5)	<1	6.0	-29		0.8
FN 3280H-25-33	25 (27)	<1	11.6	-33		1.3
FN 3280H-36-33	36 (39)	<1	14.8	-33		1.6
FN 3280H-64-34	64 (70)	<1	18.4	-34		2.7
FN 3280H-80-35	80 (88)	<1	18.9	-35		4.1
FN 3280H-120-35	120 (131)	<1	28.5	-35		5.9
FN 3280H-160-40	160 (175)	<1	30.7	-40		7.9
FN 3280H-200-40	200 (219)	<1	46.8	-40		8.5
FN 3280H-300-99	300 (328)	<1	20.3		-99	10.0
FN 3280H-400-99	400 (438)	<1	36.0		-99	10.0
FN 3280H-600-99	600 (657)	<1	64.8		-99	11.0

* 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.

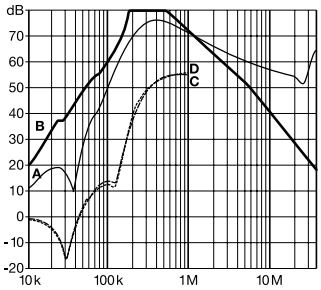
Typical filter attenuation

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

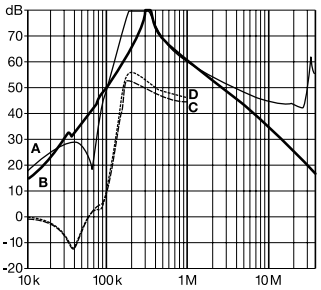
8 and 16A types



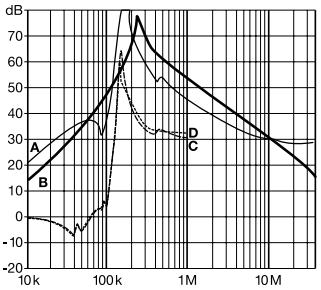
25 and 36A types



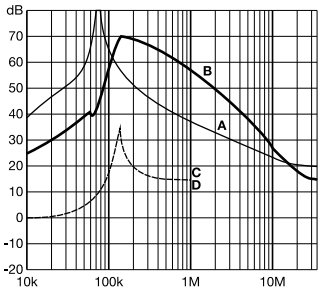
64 to 120A types



160 and 200A types

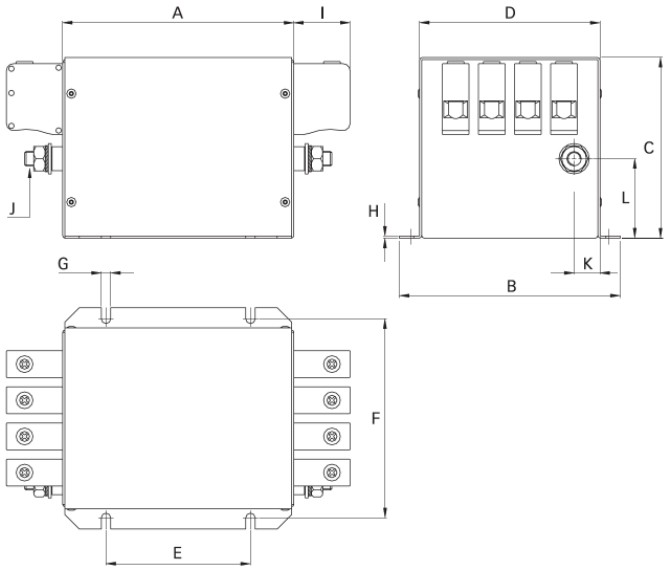


300 to 600A types

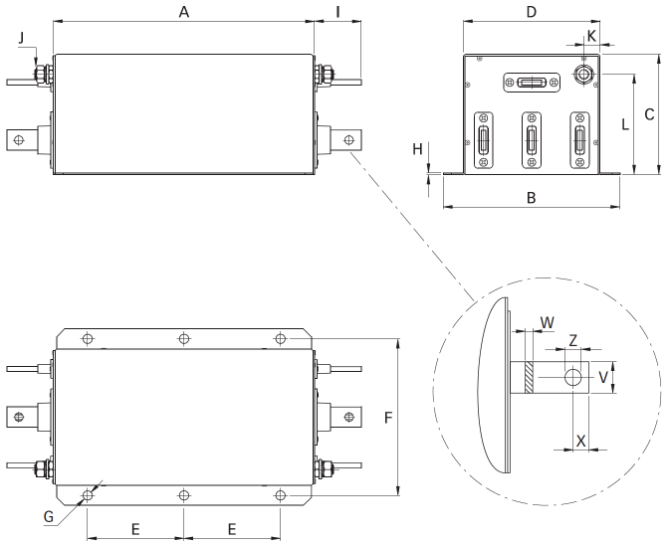


Mechanical data

8 to 200A types



300 to 600A types



Dimensions

	8A	16A	25A	36A	64A	80A	120A	160A	200A	300A	400A	600A
A	120	120	130	130	160	230	250	280	280	325	325	325
B	143	143	153	153	153	163	170	170	170	220	220	220
C	80	80	115	115	125	125	140	170	170	150	150	150
D	115	115	125	125	125	135	140	140	140	170	170	170
E	80	80	90	90	100	120	200	230	230	120	120	120
F	127.5	127.5	137.5	137.5	137.5	147.5	153.5	153.5	153.5	195	195	195
G	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	12	12	12
H	1	1	1	1	1.5	1.5	1.5	1.5	1.5 2	2	2	2
I	10.9	10.9	25	25	39	45	45	51	51	58	58	58
J	M6	M6	M6	M6	M10	M10	M10	M10	M10	M12	M12	M12
K	12	12	12	12	18	18	17.5	17.5	17.5	20	20	20
L	33	33	50	50	55	45	55	55	55	125	125	125
V										25	25	25
W										6	6	8
X										15	15	15
Z										Ø10.5	Ø10.5	Ø10.5

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

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.

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