

Compact EMC/RFI Filter for Industrial Motor Drive Applications

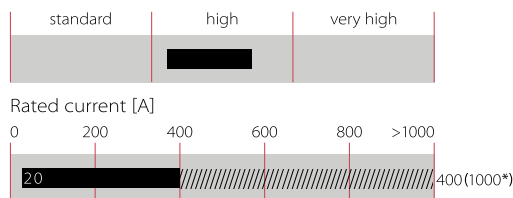


- Very compact and light weight design requiring minimum space
- Easy, time-saving installation and contacting
- Protective covers as optional accessory available
- Attenuation performance according to EN 61800-3/A11



Performance indicators

Attenuation performance



Technical specifications

Maximum continuous operating voltage	3x 520/300 VAC (480 VAC +10% possible)
Operating frequency	DC to 60 Hz
Rated currents	20 to 400 A @ 50°C
High potential test voltage	P → E 2750 VDC for 2 sec P → P 2250 VDC for 2 sec
Protection category	IP 20 (10 to 100 A) IP 00 (150 to 1000 A)
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)	>320,000 hours

Approvals



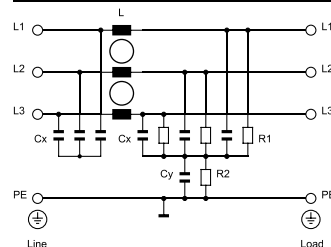
Features and benefits

- An extremely compact and light weight filter design requiring minimum mounting space in installations and cabinets
- Simple and time-saving installation with good accessibility for automatic and hand tools
- Solid, touch-safe terminal blocks, for all filters from 10 to 100 A, offering sufficient contacting cross section according to the EN 60204-1 installation standard
- Optionally available transparent protective covers for all filters with busbars from 150 to 1000 A, to protect the installer, operator or inspector from accidental touching of live conductors. They can easily be retrofitted even if the filter is already installed and connected
- These EMC filters provide the attenuation performance needed to fulfill EN 61800-3/A11
- Guaranteed filter performance under fullload operating conditions
- 15 different filter models allow the specific choice and deployment for most industrial applications

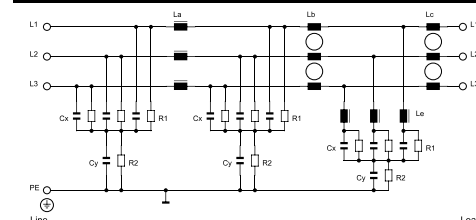
Typical applications

- Variable speed electrical power drive systems/motor drives for mainly industrial purpose
- Various industrial applications comprising frequency inverters, motor drives and servo drives

Typical electrical schematic (up to 100 A)



Typical electrical schematic (>100 A)



Filter selection table

Filter	Rated current @ 50°C (40°C)	Typical drive power rating*	Leakage current @ 520 VAC/50 Hz	Power loss @ 25°C/50 Hz	Input/Output connections		Weight	Protective covers***
	[A]	[kW]	[mA]**	[W]			[kg]	Order code
FN 3270 HQ1-20-44	20 (22)	11	0.4	4.1	-44		0.5	
FN 3270 HQ1-35-33	35 (38)	22	0.4	6.8	-33		0.7	
FN 3270 HQ1-50-34	50 (55)	30	0.4	12.8	-34		1.2	
FN 3270 HQ1-65-34	65 (71)	37	0.4	13.5	-34		1.3	
FN 3270 HQ1-80-35	80 (88)	45	0.4	13.5	-35		2.2	
FN 3270 HQ1-100-35	100 (110)	55	0.4	17.1	-35		2.6	
FN 3270 HQ1-150-99	150 (164)	75	0.9	7.5		-99	6.1	801916
FN 3270 HQ1-200-99	200 (219)	110	0.9	13.2		-99	6.1	801916
FN 3270 HQ1-250-99	250 (274)	132	0.9	20.6		-99	6.1	801916
FN 3270 HQ1-320-99	320 (350)	160	0.9	12.2		-99	7.2	801916
FN 3270 HQ1-400-99	400 (438)	220	0.9	19.2		-99	7.2	801916

* Calculated at rated current, 480 VAC and $\cos \phi = 0.8$. The exact value depends upon the efficiency of the drive, the motor and the entire application.

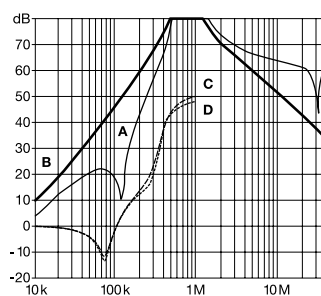
** Standardized calculated leakage current acc. IEC60939 under normal operating conditions.

*** Please contact your local Schaffner partner to order the optional protective covers with the order code in the table above.

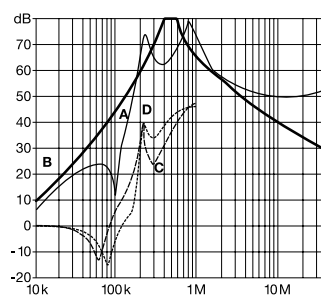
Typical filter attenuation

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

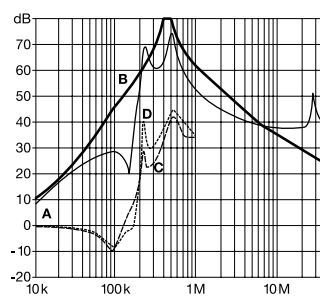
20 A types



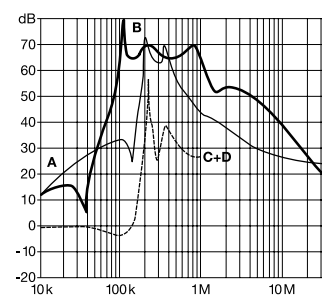
35 to 65 A types



80 and 100 A types

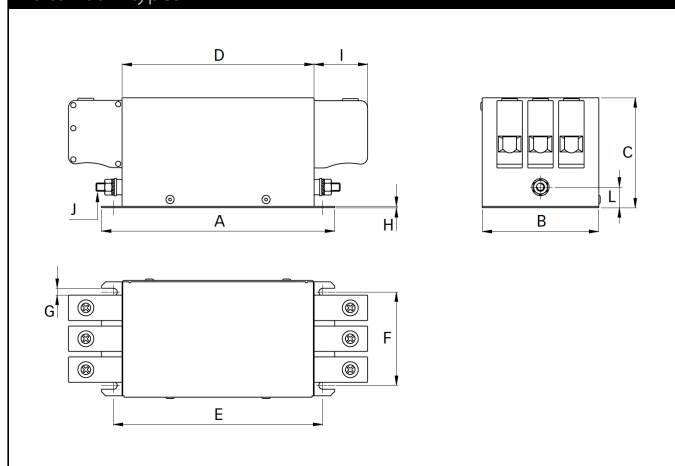


150 to 400 A types

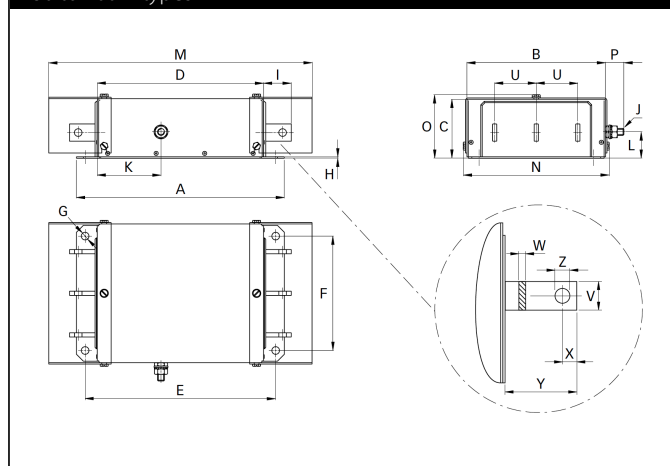


Mechanical data

20 to 100 A types



150 to 400 A types



Dimensions

	20 A	35 A	50 A	65 A	80 A	100 A	150 A	200 A	250 A	320 A	400 A
A	150	160	170	170	200	230	300	300	300	300	300
B	58	70	85	85	95	95	200	200	200	200	200
C	58	68	80	80	90	90	86	86	86	86	86
D	120	130	140	140	170	200	240	240	240	240	240
E	132.5	142.5	152.5	152.5	182.5	212.5	275	275	275	275	275
F	42	50	65	65	75	75	165	165	165	165	165
G	4.5	5.5	5.5	5.5	5.5	5.5	Ø11	Ø11	Ø11	Ø11	Ø11
H	1	1	1	1	1.5	1.5	2	2	2	2	2
I	22	25	39	39	45	45	40	40	40	40	40
J	M4	M5	M6	M6	M8	M8	M10	M10	M10	M10	M10
K							92	92	92	92	92
L	20.5	20	15	15	16	16	37	37	37	37	37
M							380	380	380	380	380
N							211	211	211	211	211
O							93	93	93	93	93
P							26.5	26.5	26.5	26.5	26.5
U							60	60	60	60	60
V							20	20	20	25	25
W							3	3	3	6	6
X							10	10	10	12.5	12.5
Y							37	37	37	37	37
Z							Ø9	Ø9	Ø9	Ø11	Ø11

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	-44
Solid wire	16 mm ²	35 mm ²	50 mm ²	10 mm ²
Flex wire	10 mm ²	25 mm ²	50 mm ²	6 mm ²
AWG type wire	AWG 6	AWG 2	AWG 1/0	AWG 8
Recommended torque	1.5-1.8 Nm	4.0-4.5 Nm	7-8 Nm	1.5-1.8 Nm

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



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