

Compact EMC/RFI Filter for Industrial Motor Drive Applications

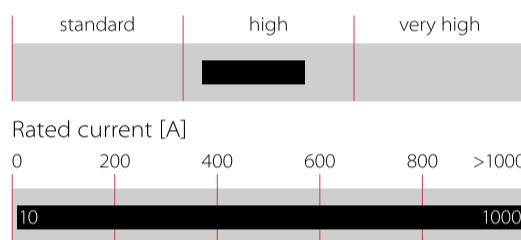


- Very compact and light weight design requiring minimum space
- Easy, time-saving installation and contacting
- Protective covers as optional accessory available
- Attenuation performance according to EN 61800-3/A11



Performance indicators

Attenuation performance



Technical Specifications

Maximum continuous operating voltage	3x520/300 VAC
Nominal operating voltage	480 VAC +10% possible
Rated currents	10 to 1000 A @ 50°C
Overload capability	4x rated current at switch on, 1.5x rated current for 1 minute, once per hour
Operating frequency	DC to 60 Hz
High potential test voltage	P → E 2750 VDC for 2 sec P → P 2250 VDC for 2 sec
Temperature range (operation and storage)	-25°C to +100°C (25/100/21)
Protection category	IP 20 (10 to 100 A) IP 00 (150 to 1000 A)
Flammability corresponding to	UL 94 V-0
Design corresponding to	UL 1283, CSA 22.2 No. 8 1986, IEC/EN 60939
MTBF (Mil-HB-217F)	>320,000 h @ 50°C/480 V

Approvals & Compliances



Features and Benefits

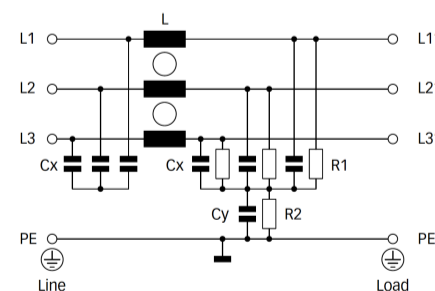
- An extremely compact and light weight filter design requiring minimum mounting space in installations and cabinets
- Simple and time-saving installation with good accessibility for automatic and hand tools
- Solid, touch-safe terminal blocks, for all filters from 10 to 100 A, offering sufficient contacting 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

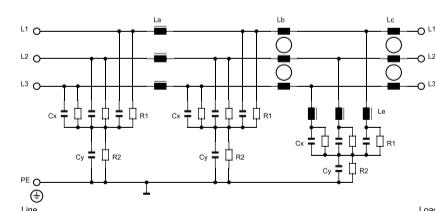
- Variable speed electrical power drive systems/ motor drives for mainly industrial purpose
- Various industrial applications comprising frequency inverters, motor drives and servo drives

Typical electrical schematic

FN3270H / FN3270HQ1 - Typical electrical schematic (up to 100 A)



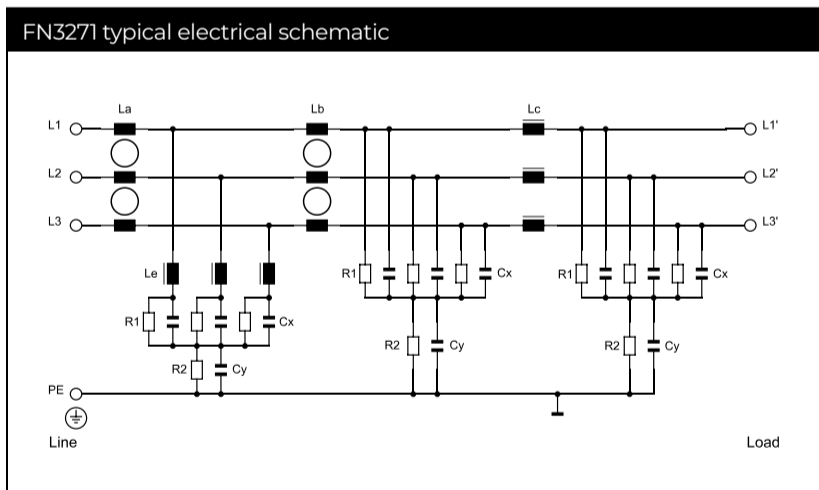
FN3270H / FN3270HQ1 - Typical electrical schematic (>100 A), for FN3271 refer to page 2



Filter Selection Table

Filter	Buy	Rated current @ 50°C (40°C)	Typical drive power rating*	Leakage current FN3270H / FN3271H		Power loss @ 25°C/50 Hz	Input/Output connections		Weight [kg]	Protective covers****
				@ 520 VAC/50 Hz	@ 520 VAC/50 Hz					
		[A]	[kW]	[mA]**	[mA]**	[W]				Order code
FN3270H-10-44		10 (11)	5.5	3.1		2.4	-44	0.4		
FN3270H-20-44		20 (22)	11	3.1	0.4	4.1	-44	0.5		
FN3270H-35-33		35 (38)	22	3.4	0.4	6.8	-33	0.7		
FN3270H-50-34		50 (55)	30	3.4	0.4	12.8	-34	1.2		
FN3270H-65-34		65 (71)	37	3.4	0.4	13.5	-34	1.3		
FN3270H-80-35		80 (88)	45	3.4	0.4	13.5	-35	2.2		
FN3270H-100-35		100 (110)	55	3.4	0.4	17.1	-35	2.6		
FN3270H-150-99		150 (164)	75	6.9	0.9	7.5	-99	6.1	801916	
FN3270H-200-99		200 (219)	110	6.9	0.9	13.2	-99	6.1	801916	
FN3270H-250-99		250 (274)	132	6.9	0.9	20.6	-99	6.1	801916	
FN3270H-320-99		320 (350)	160	6.9	0.9	12.2	-99	7.2	801916	
FN3270H-400-99		400 (438)	220	6.9	0.9	19.2	-99	7.2	801916	
FN3270H-600-99		600 (657)	315	6.9		35.6	-99	7.7	801916	
FN3270H-800-99		800 (876)	400	6.9		51.8	-99	15.8	806275	
FN3270H-1000-99		1000 (1095)	560	6.9		81.0	-99	15.8	806275	
FN3271H-150-99		150 (164)	75	6.9		7.5	-99	6.1	801916	
FN3271H-200-99		200 (219)	110	6.9		13.2	-99	6.1	801916	
FN3271H-250-99		250 (274)	132	6.9		20.6	-99	6.1	801916	
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FN3271H-800-99		800 (876)	400	6.9		51.8	-99	15.8	806275	
FN3271H-1000-99		1000 (1095)	560	6.9		81.0	-99	15.8	806275	

* 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.
 *** A low leakage version is available for limited versions. e.g. FN3270HQ1-20-44
 **** Please contact your local Schaffner partner to order the optional protective covers with the order code in the table above.



- #### Versions
- FN3270H - standard EMI environments / standard leakage currents
 - FN3271H - high impedance load EMI environment (> 100 Ohm), standard leakage currents
 - FN3270HQ1 - standard EMI environments, low leakage current version

Typical Filter Attenuation FN3270H / FN3271H

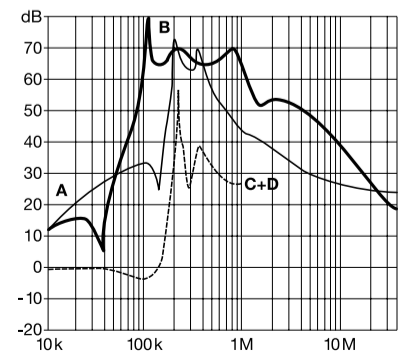
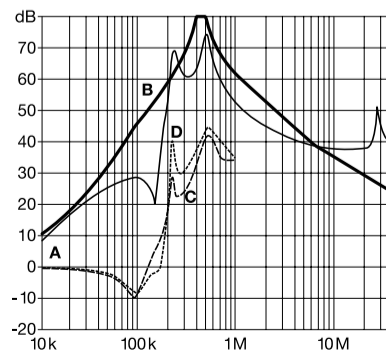
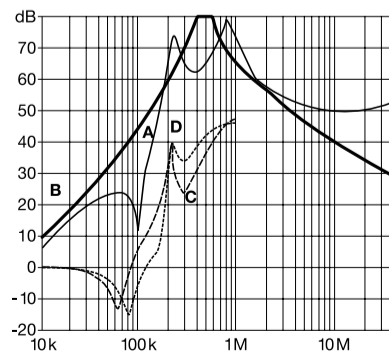
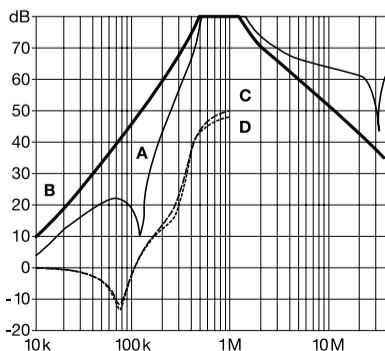
Per CISPR 17; A=50 Ω/50 Ω sym; B=50 Ω/50 Ω asym; C=0.1 Ω/100 Ω sym; D=100 Ω/0.1 Ω sym

10 and 20 A types

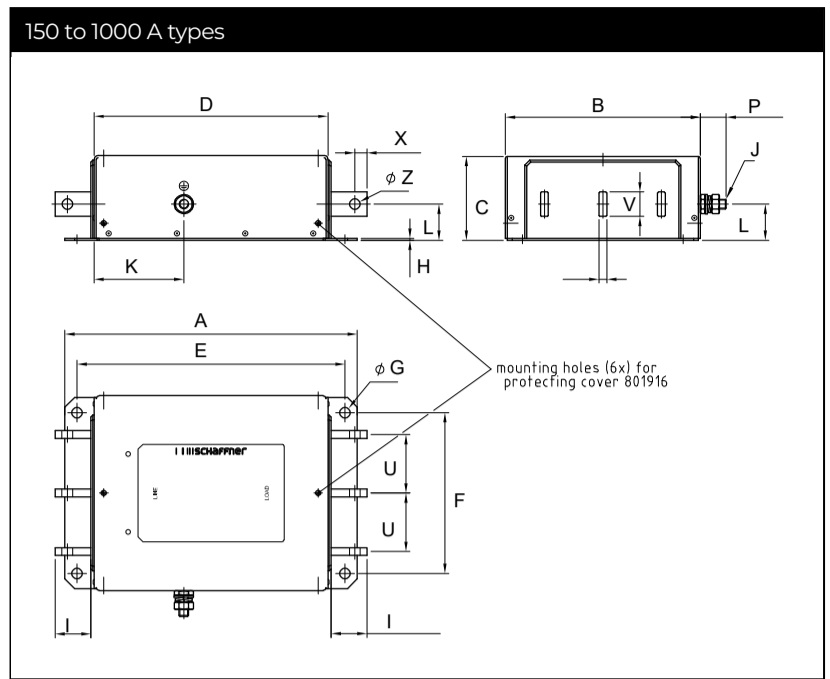
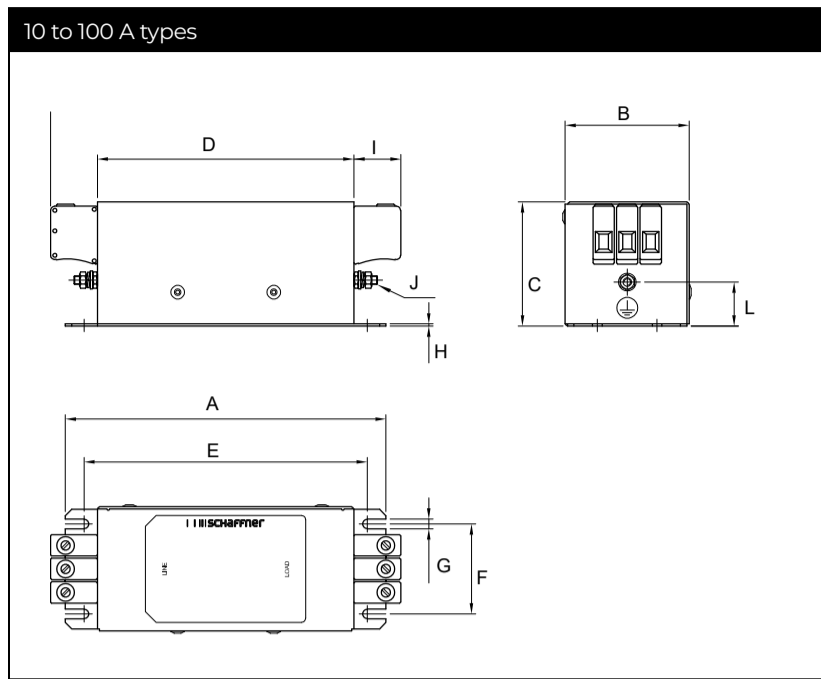
35 to 65 A types

80 and 100 A types

150 to 1000 A types



Mechanical Data



Dimensions

	10 A	20 A	35 A	50 A	65 A	80 A	100 A	150 A	200 A	250 A	320 A	400 A	600 A	800 A	1000 A
A	150	150	160	170	170	200	230	300	300	300	300	300	300	370	370
B	58	58	70	85	85	95	95	200	200	200	200	200	200	190	190
C	58	58	68	80	80	90	90	86	86	86	86	86	86	125	125
D	120	120	130	140	140	170	200	240	240	240	240	240	240	310	310
E	132.5	132.5	142.5	152.5	152.5	182.5	212.5	275	275	275	275	275	275	345	345
F	42	42	50	65	65	75	75	165	165	165	165	165	165	155	155
G	4.5	4.5	5.5	5.5	5.5	5.5	5.5	Ø11	Ø11	Ø11	Ø11	Ø11	Ø11	Ø11	Ø11
H	1	1	1	1	1	1.5	1.5	2	2	2	2	2	2	3	3
I	22	22	25	39	39	45	45	40	40	40	40	40	40	50	50
J	M4	M4	M5	M6	M6	M8	M8	M10	M10	M10	M10	M10	M10	M12	M12
K								92	92	92	92	92	92	138	138
L	20.5	20.5	20	15	15	16	16	37	37	37	37	37	37	67	67
M								380	380	380	380	380	380	610	610
N								211	211	211	211	211	211	201	201
O								93	93	93	93	93	93	132	132
P								26.5	26.5	26.5	26.5	26.5	26.5	29	29
U								60	60	60	60	60	60	60	60
V								20	20	20	25	25	25	40	40
W								3	3	3	6	6	8	8	8
X								10	10	10	12.5	12.5	12.5	20	20
Y								37	37	37	37	37	37	47	47
Z								Ø9	Ø9	Ø9	Ø11	Ø11	Ø11	Ø13.5	Ø13.5

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	1.0-1.2 Nm

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

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