

Compact EMC/RFI Filter for Motor Drives

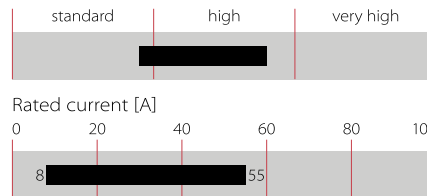


- Compact filter solution for single-phase motor drive applications
- Industrial grade safety terminal blocks
- Designed to meet EN 55011/14/22
- Compliant with IEC 60950



Performance indicators

Attenuation performance



Technical specifications

Maximum continuous operating voltage	1x 250 VAC
Operating frequency	DC to 400 Hz
Rated currents	8 to 55 A @ 40°C max.
High potential test voltage	P → E 2000 VAC for 2 sec P → N 1100 VDC for 2 sec
Protection category	IP 20
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 @ 40°C/230 V (Mil-HB-217F)	420,000 hours

Approvals



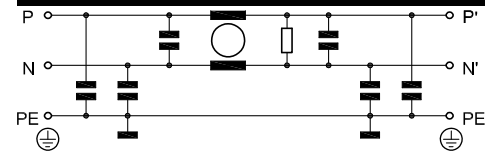
Features and benefits

- High component values optimized for common and differential-mode attenuation in the lower frequency range makes this filter ideal for a large variety of single-phase motor drive applications
- Supplied in a relatively small housing design with safety terminal blocks for fast and easy installation in primarily industrial environments
- FN 350 also meets IEC 60950 requirements, thus providing additional application flexibility



Typical applications

- Single-phase motor drives
- Automation equipment
- Power supplies, SMPS
- Office equipment
- Testing and measurements equipment

Typical electrical schematic



Filter selection table

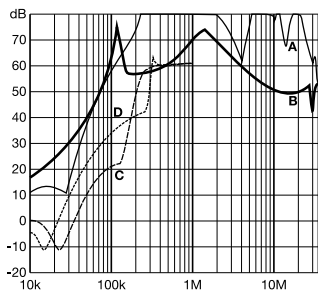
Filter	Rated current	Leakage current*	Power loss	Input/Output connections		Weight
	@ 40°C (25°C)	@ 230 VAC/50 Hz	@ 25°C/50 Hz			[kg]
	[A]	[mA]	[W]			
FN 350-8-29	8 (9.0)	4.9	5.2	-29		0.7
FN 350-12-29	12 (13.5)	4.9	5.7	-29		0.7
FN 350-20-29	20 (22.4)	4.9	6.1	-29		0.7
FN 350-30-33	30 (33.6)	5.4	6.1	-33		0.7
FN 350-55-..	55 (61.5)	11.0	9.9	-33	-24	1.2

* Maximum leakage under normal operating conditions. Note: if the neutral line is interrupted, worst case leakage could reach twice this level.

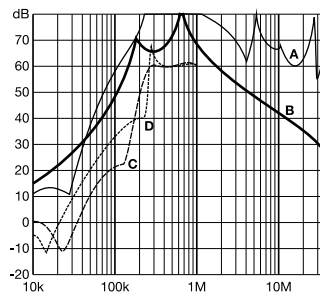
Typical filter attenuation

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

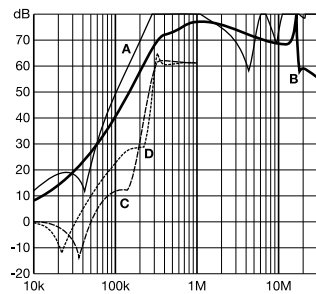
8 A types



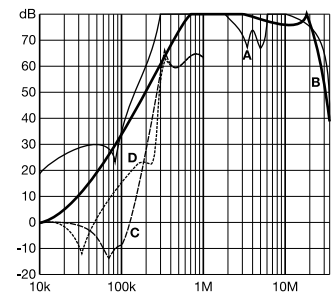
12 A types



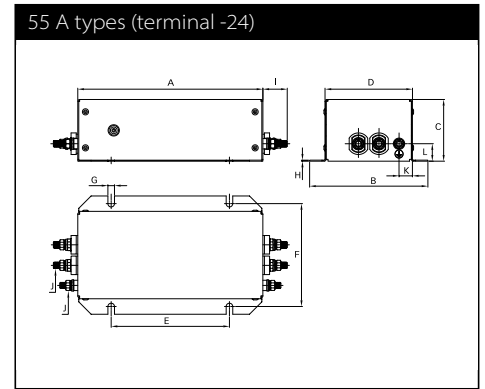
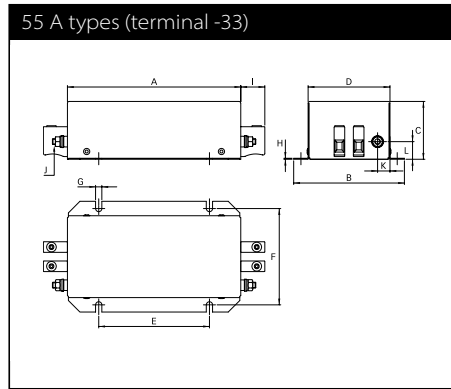
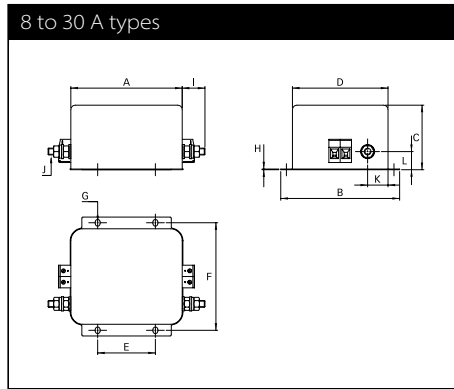
20 and 30 A types



55 A types



Mechanical data



Dimensions

	8 A	12 A	20 A	30 A	55 A (-33)	55 A (-24)
A	99.5	99.5	99.5	99.5	180	180
B	105	105	105	105	115	115
C	57	57	57	57.6	60	60
D	84.4	84.4	84.4	84.4	85	85
E	51	51	51	51	115	115
F	95	95	95	95	100	100
G	6 x 4.4	6 x 4.4	6 x 4.4	6 x 4.4	6.5	6.5
H	0.6	0.6	0.6	1.2	1	1
I	19.5	19.5	19.5	25	25	23.7
J	M6	M6	M6	M6	M6	M6
K	18	18	18	16	12.9	12.9
L	16	16	16	19	18.3	17

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

Filter input/output connector cross sections

	-29	-33	-24 (M6)
Solid wire	6 mm ²	16 mm ²	
Flex wire	4 mm ²	10 mm ²	
AWG type wire	AWG 10	AWG 6	
Recommended torque	0.6-0.8 Nm	1.5-1.8 Nm	3.5-4.0 Nm

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



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