

# General Purpose EMC Filter



- EMC solution for industrial inverters and motor drives
- Rated currents from 8 to 180 A
- Voltage level up to 520 V
- High differential and common-mode attenuation

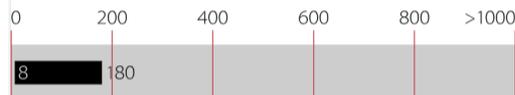


### Performance indicators

Attenuation performance



Rated current [A]



### Approvals & Compliances



Approvals up to 110 A

### Features and Benefits

- Broad range of power ratings for fast and convenient filter selection
- FN351H filters provide a broadband common and differential-mode attenuation performance, which remains available also when high interference levels are present
- Solid, touch-safe filter terminals contribute to overall equipment safety
- Introduced as one of the very first motor drive EMC filters in the market, FN351H and its predecessor FN351 have been widely imitated and has successfully proven its function over more than 10 years

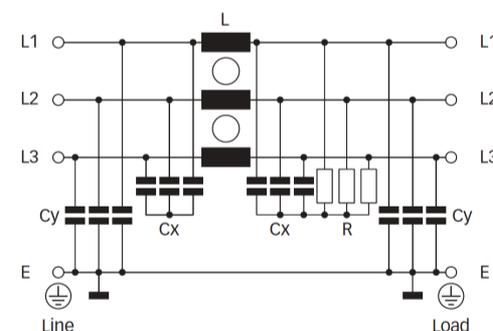
## Technical Specifications

<b>Maximum continuous operating voltage</b>	3x520/300 VAC
<b>Nominal operating voltage</b>	480 VAC
<b>Rated currents</b>	8 to 180 A @ 40°C
<b>Overload capability</b>	4x rated current at switch on, 1.5x rated current for 1 minute, once per hour
<b>Operating frequency</b>	DC to 60 Hz
<b>High potential test voltage</b>	P → P 2250 VDC for 2 sec P → E 2750 VDC for 2 sec
<b>Temperature range (operation and storage)</b>	-25°C to +100°C (25/100/21)
<b>Protection category</b>	IP 20
<b>Flammability corresponding to</b>	UL 94 V-0
<b>Design corresponding to</b>	UL 1283, CSA 22.2 No. 8 1986, IEC/EN 60939
<b>MTBF (Mil-HB-217F)</b>	>135,000 h @ 40°C/480 V

## Typical Applications

- Three-phase motor drives
- Inverters and converters
- Industrial automation equipment
- UPS
- SMPS
- General purpose three-phase filtering

### Typical electrical schematic



### Filter Selection Table

Filter*	Rated current @ 40°C (25°C)	Typical drive power rating**	Leakage current*** @ 440/520 VAC/50 Hz	Power loss @ 25°C/50 Hz	Input/Output connections 	Weight [kg]
	[A]	[kW]	[mA]	[W]		
FN351H-8-29	8 (9.2)	4	0.3	7	-29	1.1
FN351H-16-29	16 (18.5)	7.5	0.3	8	-29	1.3
FN351H-25-33	25 (28.9)	15	3.8	8	-33	1.4
FN351H-36-33	36 (41.6)	18.5	3.8	9	-33	1.5
FN351H-50-33	50 (57.7)	30	3.8	11	-33	1.6
FN351H-64-33	64 (73.9)	37	3.8	15	-33	1.7
FN351H-80-34	80 (92.3)	45	4.4	23	-34	5.6
FN351H-110-35	110 (127)	75	4.4	25	-35	5.8
FN351H-180-36	180 (208)	110	4.4	49	-36	13.0

\* To compile a complete part number, please replace the -. with the required I/O connection style.

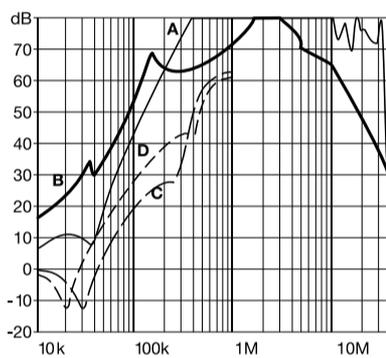
\*\* Calculated at rated current, 480 VAC and cos phi=0.8. The exact value depends upon the efficiency of the drive, the motor and the entire application.

\*\*\* Standardized calculated leakage current acc. IEC60939 under normal operating conditions at 520 VAC.

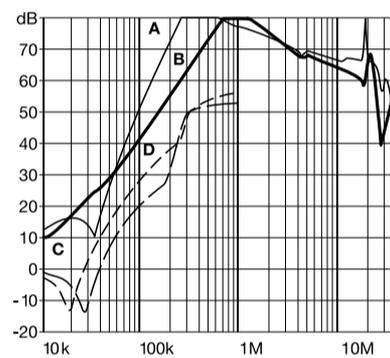
### Typical Filter Attenuation

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

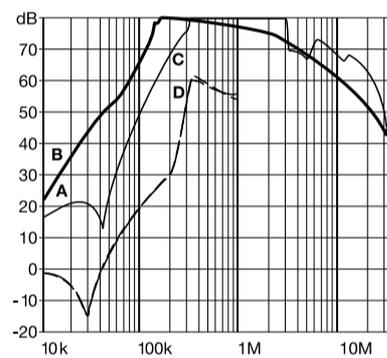
8 A types



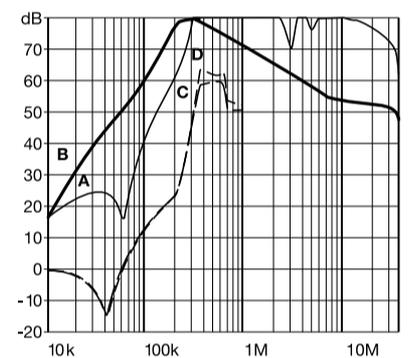
16 A types



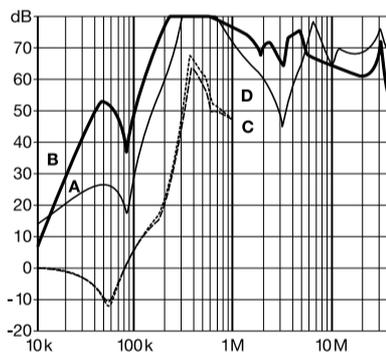
25 A types



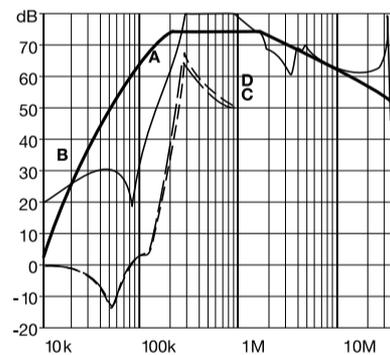
36 and 50 A types



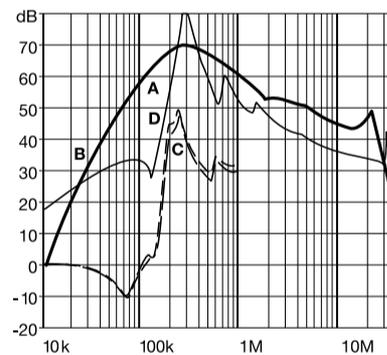
64 A types



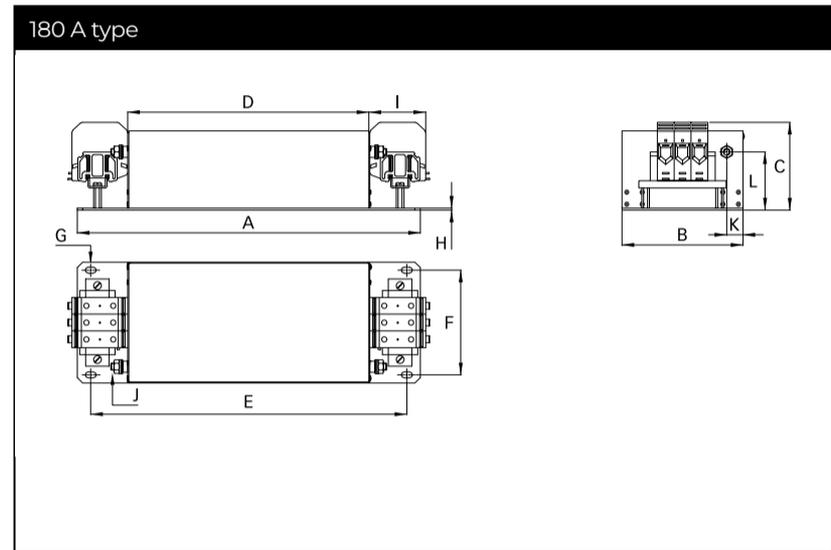
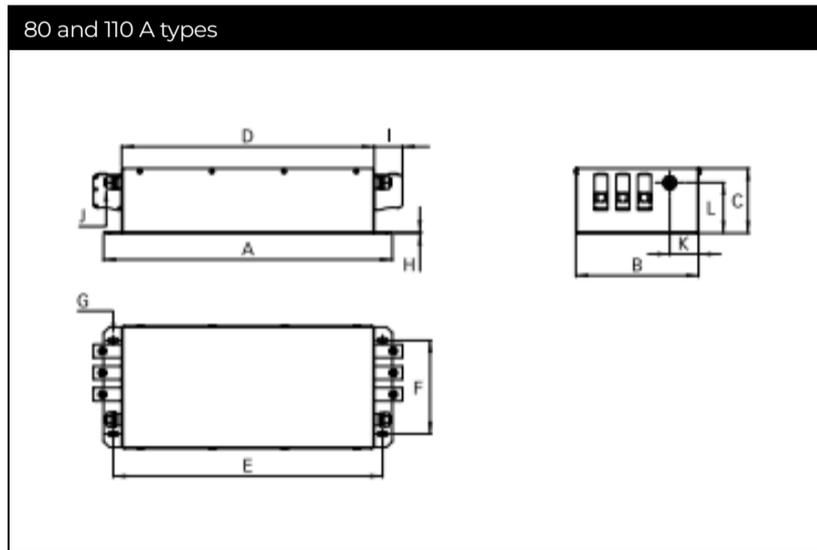
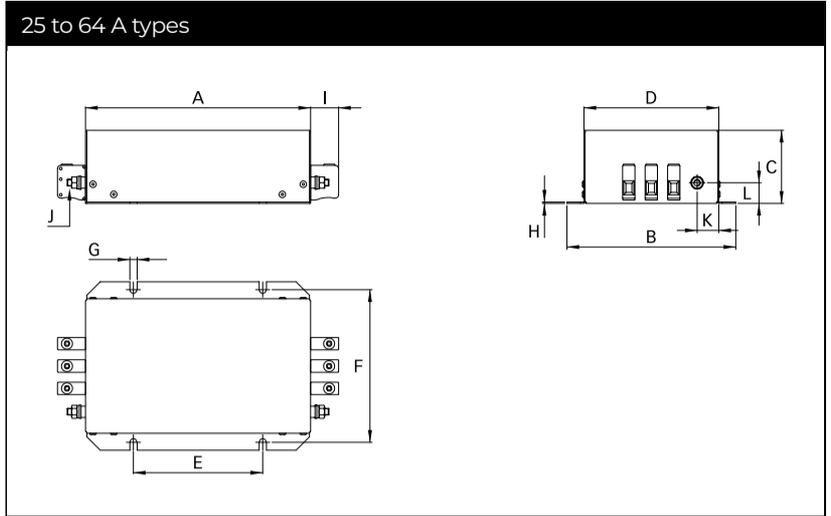
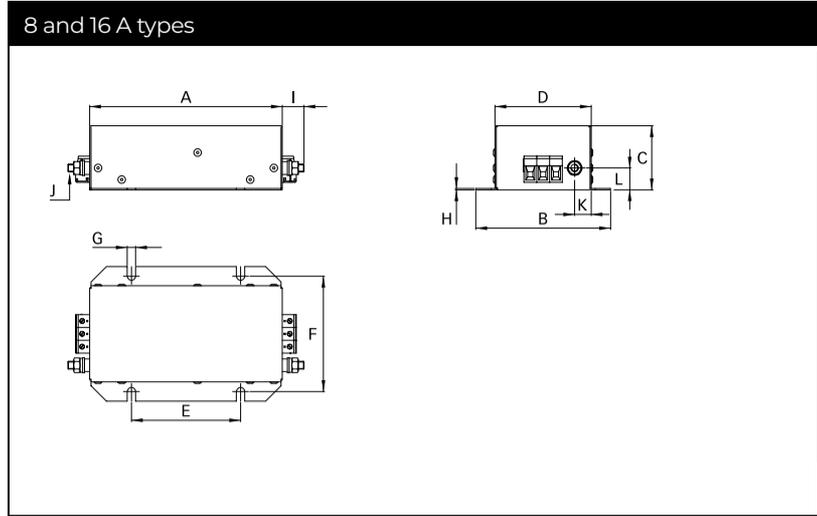
80 and 110 A types



180 A types



### Mechanical Data



## Dimensions

	8 A	16 A	25 A	36 A	50 A (-33)	50 A (-34)	64 A (-33)	64 A (-34)	80 A	110 A	180 A
<b>A</b>	200	200	200	200	200	200	200	200	400	400	510
<b>B</b>	150	150	150	150	150	150	150	150	170	170	180
<b>C</b>	65	65	65	65	65	65	65	80	90	90	133
<b>D</b>	120	120	120	120	120	120	120	120	350	350	360
<b>E</b>	115	115	115	115	115	115	115	115	373	373	470
<b>F</b>	136	136	136	136	136	136	136	136	130	130	156
<b>G</b>	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	15 x 6.5	15 x 6.5	16 x 9
<b>H</b>	1	1	1	1	1	1	1	1	1	1	4
<b>I</b>	17	17	25	25	25	39	25	39	39	45	83
<b>J</b>	M6	M6	M6	M6	M6	M6	M6	M6	M10	M10	M10
<b>K</b>	19.25	19.25	19.25	19.25	19.25	18.75	19.25	18.75	40	40	25
<b>L</b>	17	17	18.4	18.4	18.4	17	18.4	17	70	70	85

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	-34	-35	-36
					
<b>Solid wire</b>	6 mm <sup>2</sup>	16 mm <sup>2</sup>	35 mm <sup>2</sup>	50 mm <sup>2</sup>	95 mm <sup>2</sup>
<b>Flex wire</b>	4 mm <sup>2</sup>	10 mm <sup>2</sup>	25 mm <sup>2</sup>	50 mm <sup>2</sup>	95 mm <sup>2</sup>
<b>AWG type wire</b>	AWG 10	AWG 6	AWG 2	AWG 1/0	AWG 4/0
<b>Recommended torque</b>	0.6-0.8 Nm	1.5-1.8 Nm	4.0-4.5 Nm	7-8 Nm	17-20 Nm

Please visit [www.schaffner.com](http://www.schaffner.com) to find more details on filter connectors.

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