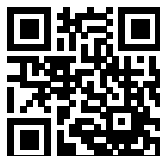


# General Purpose EMC/EMI Line Filter



- Three-phase and neutral line filter for general four-wire filtering tasks
- Choice of connection style
- Low operating leakage current
- Compliant with IEC 60950
- Suitable to meet EN 55011/14/22

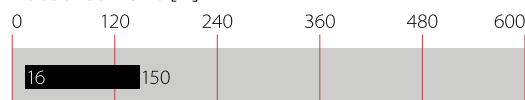


### Performance indicators

Attenuation performance



Rated current [A]



## Technical Specifications

<b>Maximum continuous operating voltage</b>	3x 440/250 VAC
<b>Rated currents</b>	16 to 150 A @ 40°C max
<b>High potential test voltage</b>	P/N → E 2000 VAC for 2 sec P → P 1900 VDC for 2 sec P → N 1100 VDC for 2 sec
<b>Protection category</b>	IP 20 (filters with connectors -29, -33, -34) IP 00 (filters with connectors -06, -24, -28)
<b>Overload capability</b>	4x rated current at switch on, 1.5x rated current for 1 minute, once per hour
<b>Temperature range (operation and storage)</b>	-25°C to +100°C (25/100/21)
<b>Flammability corresponding to</b>	UL 94 V-2 or better
<b>Design corresponding to</b>	UL 1283, CSA 22.2 No. 8 1986, IEC/EN 60939
<b>MTBF @ 45°C/480 V (Mil-HB-217F)</b>	220,000 hours

### Approvals & Compliances



(FN 356 up to 100 A)

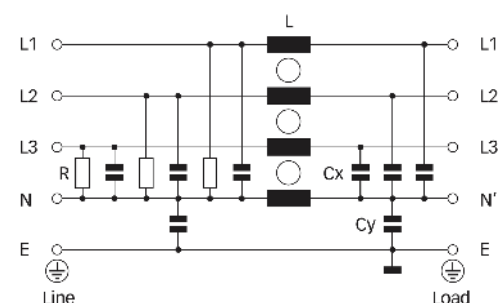
### Features and Benefits

- FN 356 represents the industry standard filter solutions for EMC compliance on three-phases and the neutral conductor, providing high attenuation of both symmetrical and asymmetrical interference
- Choice of connection style is offered for an application-specific filter selection
- Solid touch-safe terminal blocks (-29, -33, -34 versions) offer a generous contacting cross section and contribute to overall safety (IP 20)
- Used as a mains input filter, FN 356 filters increase the conducted immunity and thus contribute to system reliability
- Design compliance with IEC 60950 provides additional application flexibility







### Typical Applications

- General purpose four-wire filtering
- Mainframe computer systems
- High power office equipment
- UPS
- Installations comprising automation equipment

### Typical electrical schematic



### Filter Selection Table

Filter*	Buy	Rated current @ 40°C (25°C)	Leakage current** @ 440 VAC/50 Hz	Power loss @ 25 °C/ 50Hz	Input/Output connections			Weight [kg]
					[A]	[mA]	[W]	
FN356-16-..		16 (18.4)	0.1	7.0	-06		-29	1.2
FN356-25-..		25 (28.8)	0.1	10.1		-24	-33	1.5
FN356-36-..		36 (41.5)	0.1	10.9		-24	-33	1.6
FN356-50-..		50 (57.7)	0.1	15.8		-24	-33	2.3
FN356-100-..		100 (115.0)	0.3	24.0		-28	-34	5.9
FN356-150-28		150 (172.5)	1.7	45.9		-28		8.1

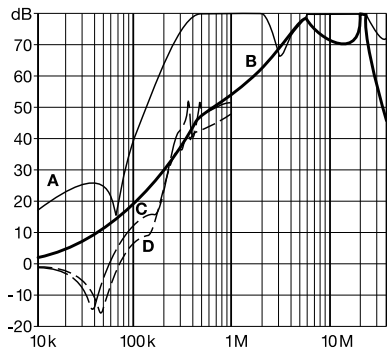
\* To compile a complete part number, please replace the .. with the required I/O connection style.

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

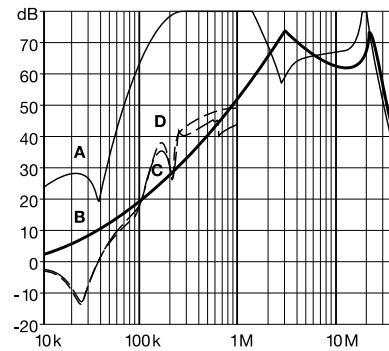
### Typical Filter Attenuation

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

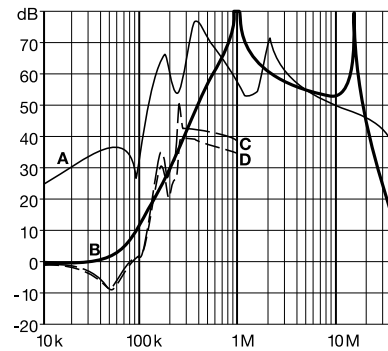
16 A types



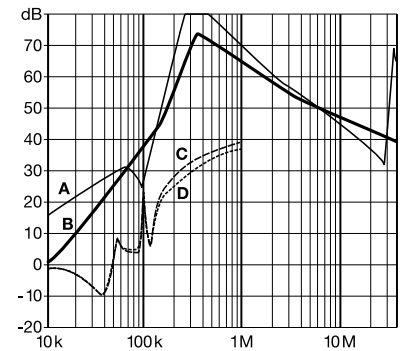
25 to 50 A types



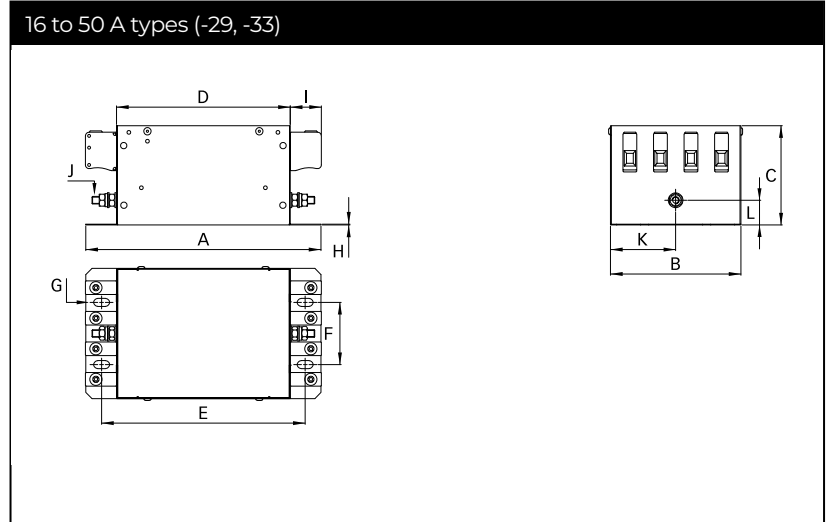
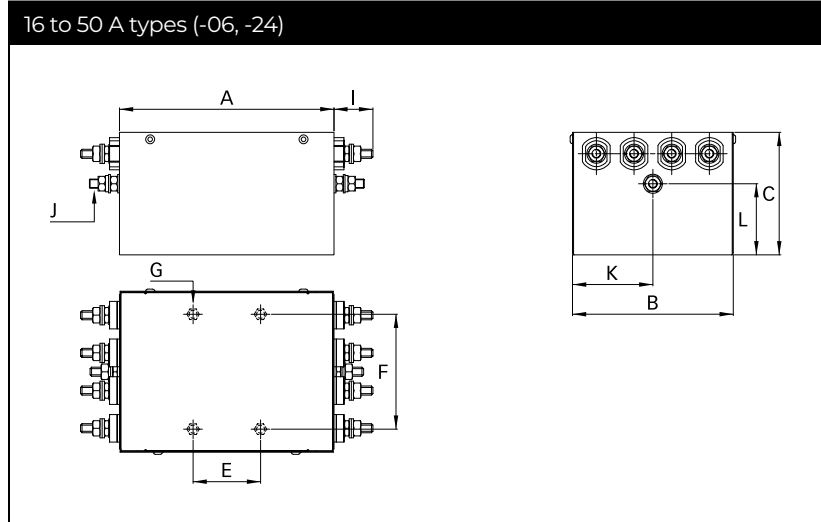
100 A types

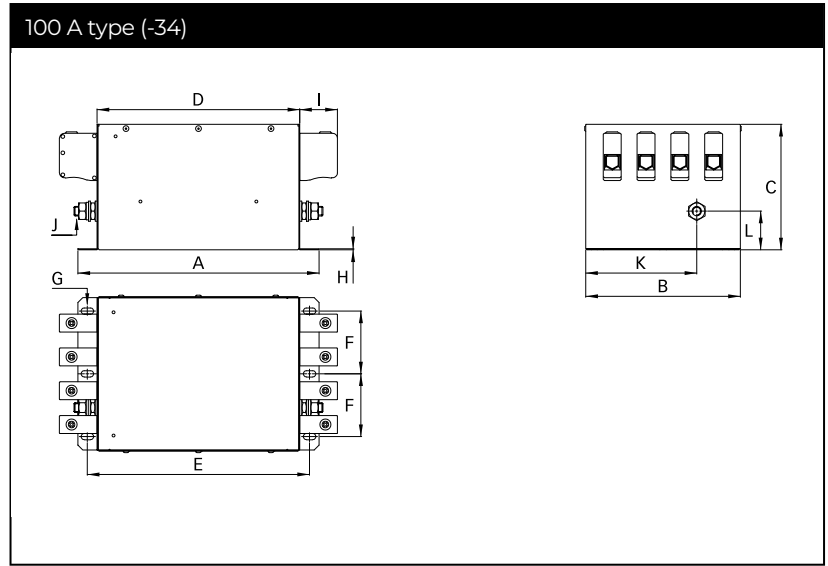
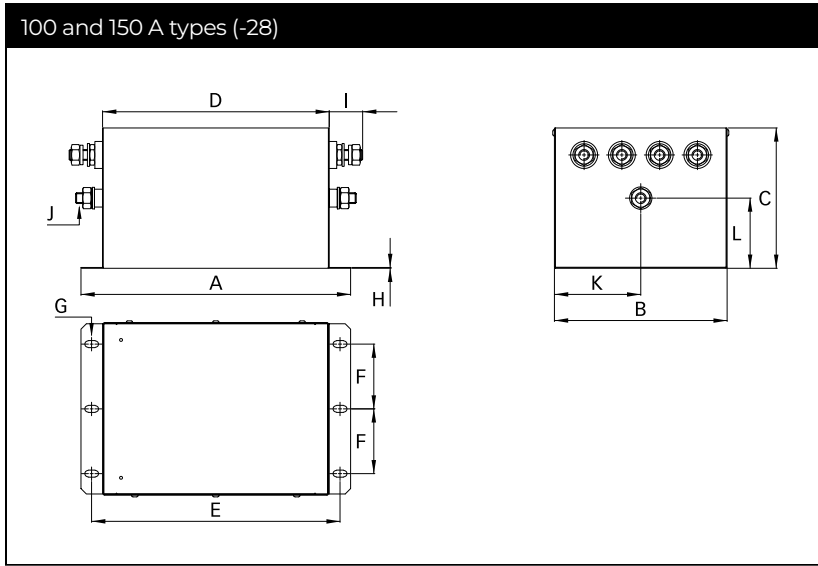


150 A types



### Mechanical Data











Note: in favour of a better readability, connectors and earth studs are not shown in the horizontal projection.

**Dimensions**

	16 A (-06)	16 A (-29)	25 A (-24)	25 A (-33)	36 A (-24)	36 A (-33)	50 A (-24)	50 A (-33)	100 A (-28)	100 A (-34)	150 A
<b>A</b>	149	189.5	140	189.5	140	189.5	143.25	192	250	250	340
<b>B*</b>	104	105	105	105	105	105	122	122	160	160	160
<b>C</b>	50	80	80	80	80	80	102	102	130	130	130
<b>D</b>		140		140		140		142.5	210	210	300
<b>E</b>	44 ±0.3	165.5	44 ±0.3	165.5	44 ±0.3	165.5	44 ±0.3	168	230	230	320
<b>F</b>	75 ±0.3	80	75 ±0.3	50	75 ±0.3	50	75 ±0.3	98	60	65	60
<b>G</b>	M5 x 7	13 x 6.5	M5 x 7	13 x 6.5	M5 x 7	13 x 6.5	M5 x 7	13 x 6.5	13 x 6.5	13 x 6.5	13 x 6.5
<b>H</b>		0.7		0.7		0.7		0.7	1	1	1
<b>I</b>	11	10.9	25.4	25	25.4	25	25.4	25	34	39	34
<b>J</b>	6.3 x 0.8	M6	M6	M6	M6	M6	M6	M6	M10	M10	M10
<b>K</b>	52	82	52.5	52.5	52.5	52.5	61	61	80	116	80
<b>L</b>	22.5	25	46.5	20	46.5	20	68.5	35	65	40	65

\* Rivets exceed this dimension by max. 1.3mm on each side.  
 All dimensions in mm; 1 inch = 25.4 mm  
 Tolerances according: ISO 2768-m/EN 22768-m

**Filter Input/Output Connector Cross Sections**

	-06 (6.3 x 0.8mm)	-24 (M6)	-28 (M10)	-29	-33	-34
<b>Solid wire</b>	 n/a	 n/a	 n/a	 6 mm <sup>2</sup>	 16 mm <sup>2</sup>	 35 mm <sup>2</sup>
<b>Flex wire</b>	n/a	n/a	n/a	4 mm <sup>2</sup>	10 mm <sup>2</sup>	25 mm <sup>2</sup>
<b>AWG type wire</b>	n/a	n/a	n/a	AWG 10	AWG 6	AWG 2
<b>Recommended torque</b>	n/a	3.5 4.0 Nm	15-17 Nm	0.6-0.8 Nm	1.5-1.8 Nm	4.0-4.5 Nm

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

## Headquarters, Global Innovation and Development

### Switzerland

#### Schaffner Holding AG

Industrie Nord  
Nordstrasse 11e  
4542  
Luterbach  
+41 32 681 66 26  
[info@schaffner.com](mailto:info@schaffner.com)

## Sales and Application Centers

### China

#### Schaffner EMC Ltd. Shanghai

T20-3 C, No 565 Chuangye Road, Pudong district  
201201  
Shanghai  
+86 2138139500  
[cschina@schaffner.com](mailto:cschina@schaffner.com)

### Finland

#### Schaffner Oy

Sauvonrinne 19 H  
8500  
Lohja  
+358 50 468 7284  
[finlandsales@schaffner.com](mailto:finlandsales@schaffner.com)

### France

#### Schaffner EMC S.A.S.

16-20 Rue Louis Rameau  
95875  
Bezons  
+33 1 34 34 30 60  
[francesales@schaffner.com](mailto:francesales@schaffner.com)

### Germany

#### Schaffner Deutschland GmbH

Schoemperlenstrasse 12B  
76185  
Karlsruhe  
+49 721 56910  
[germanysales@schaffner.com](mailto:germanysales@schaffner.com)

### India

#### Schaffner India Pvt. Ltd

Regus World Trade Centre  
WTC, 22nd Floor Unit No 2238, Brigade Gateway Campus, 26/1, Dr. Rajkumar Road Malleshwaram (W)  
560055  
Bangalore  
+91 8067935355  
[indiasales@schaffner.com](mailto:indiasales@schaffner.com)

### Italy

#### Schaffner EMC S.r.l.

Via Ticino, 30  
20900  
Monza (MB)  
+39 039 21 41 070  
[italysales@schaffner.com](mailto:italysales@schaffner.com)

### Japan

#### Schaffner EMC K.K.

ISM Sangenjaya 7F  
1-32-12 Kamiuma, Setagaya-ku  
154-0011  
Tokyo  
+81 3 5712 3650  
[japansales@schaffner.com](mailto:japansales@schaffner.com)

### Singapore

#### Schaffner EMC Pte Ltd.

Blk 3015A Ubi Road 1, #05-09, Kampong Ubi Industrial Estate  
408705  
Singapore  
+65 63773283  
[singaporesales@schaffner.com](mailto:singaporesales@schaffner.com)

### Spain

#### Schaffner EMC España

Calle Caléndula 93, Miniparc III, Edificio E El Soto de Moraleja, Alcobendas  
28109  
Madrid  
+34 917 912 900  
[spainsales@schaffner.com](mailto:spainsales@schaffner.com)

### Sweden

#### Schaffner EMC AB

Östermalmstrorg 1  
114 42  
Stockholm  
+46 8 5050 2425  
[swedensales@schaffner.com](mailto:swedensales@schaffner.com)

### Switzerland

#### Schaffner EMV AG

Industrie Nord  
Nordstrasse 11e  
4542  
Luterbach  
+41 32 681 66 26  
[switzerlandsales@schaffner.com](mailto:switzerlandsales@schaffner.com)

### Taiwan

#### Schaffner EMV Ltd.

U-Town  
20 Floor-2, No 97, Section 1, XinTai 5th Road, XiZhi District  
22175  
New Taipei City  
+886 226975500  
[taiwansales@schaffner.com](mailto:taiwansales@schaffner.com)

### Thailand

#### Schaffner EMC Co. Ltd.

Sathorn Square Tower  
Room 3780, 37FL, 98 North-Sathorn Rd, Silom, Bangrak  
10500  
Bangkok  
+66 621056397  
[thailandsales@schaffner.com](mailto:thailandsales@schaffner.com)

### United Kingdom

#### Schaffner Ltd.

1, Oakmede Place  
Terrace Road  
RG42 4JF  
Binfield  
+44 118 9770070  
[uksales@schaffner.com](mailto:uksales@schaffner.com)

### United States

#### Schaffner EMC Inc.

52 Mayfield Avenue  
Edison, New Jersey  
+1 732 225 9533  
[usasales@schaffner.com](mailto:usasales@schaffner.com)

To find your local partner within Schaffner's global network [schaffner.com](http://schaffner.com)

© 2022 Schaffner Group

The content of this document has been carefully checked and understood. However, neither Schaffner nor its subsidiaries assume any liability whatsoever for any errors or inaccuracies of this document and the consequences thereof. Published specifications are subject to change without notice. Product suitability for any area of application must ultimately be determined by the customer. In all cases, products must never be operated outside their published specifications. Schaffner does not guarantee the availability of all published products. This disclaimer shall be governed by substantive Swiss law and resulting disputes shall be settled by the courts at the place of business of Schaffner Holding AG. Latest publications and a complete disclaimer can be downloaded from the Schaffner website. All trademarks recognized.