

# Multi-stage EMI Filter



- Rated currents from 6 to 30 A
- Surge pulse protection up to 2 kV
- Solder or screw connection

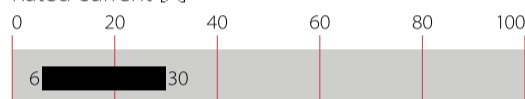


### Performance indicators

Attenuation performance



Rated current [A]



### Approvals & Compliances



### Features and Benefits

- FN352Z series is developed to meet high filter attenuation requirements by using multi-stage filter design
- Additional high surge pulse voltage protection up to 2 kV is integrated to protect sensitive equipment
- Choosing FN352Z product line brings you the rapid availability of a standard filter associated with the necessary safety acceptances
- Standard filters are a practical solution helping you to pass EMI system approval in a short time
- Exceptional conducted attenuation performance, based on multi-stage design and chokes with high saturation resistance and excellent thermal behavior
- Various connection options
- Custom-specific versions on request

## Technical Specifications

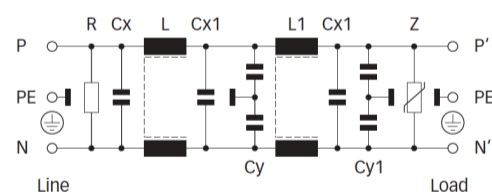
<b>Maximum continuous operating voltage</b>	250 VAC, 50/60 Hz
<b>Operating frequency</b>	DC to 400 Hz
<b>Rated currents</b>	6 to 30 A @ 40°C max.
<b>High potential test voltage</b>	P → PE 2000 VAC for 2 sec P → N 350 VDC for 2 sec
<b>Energy absorption</b>	40J
<b>Temperature range (operation and storage)</b>	-25°C to +85°C (25/85/21)
<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 @ 40°C/230 V (Mil-HB-217F)</b>	230,000 hours
<b>Surge pulse protection</b>	2 kV IEC 61000-4-5

### Typical Applications

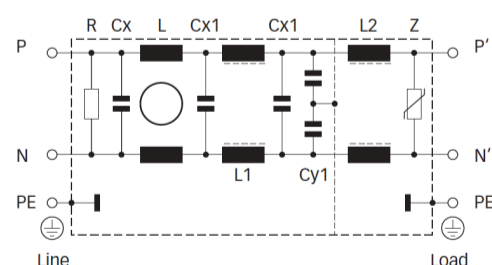
- Facility management
- Industrial
- Telecommunication
- Data processing
- Electrical and electronic equipment

### Typical electrical schematic

6A types



10 to 30A types



### Filter Selection Table

Filter	Rated current @ 40°C (25°C) [A]	Leakage current* @ 230 VAC/50 Hz [µA]	Inductance			Capacitance				Resistance R [MΩ]	Energy absorption [J]	Input/Output connections	Weight [g]
			L [mH]	L1 [mH]	L2 [mH]	Cx [nF]	Cx1 [nF]	Cy [nF]	Cy1 [nF]				
<b>FN352Z-6-06</b>	6 (7.2)	420	3	3		470	220	3.3	1.5	0.47	40	-06	575
<b>FN352Z-10-29</b>	10 (12)	1300	5	0.06	0.003	220	220	15	15	0.47	40	-29	1320
<b>FN352Z-20-29</b>	20	1300	3.5	0.06	0.0035	220	220	15	15	0.47	40	-29	2950
<b>FN353Z-30-33</b>	30	1300	2.3	0.025	0.0035	470	470	15	15	0.23	40	-33	2450

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

### Typical Filter Attenuation

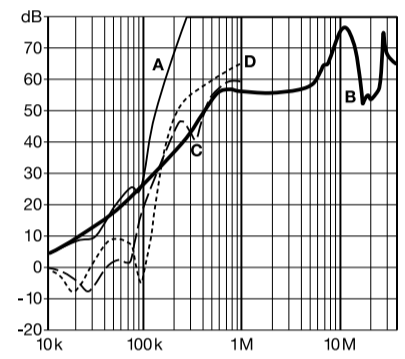
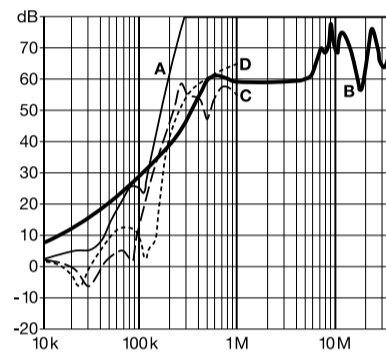
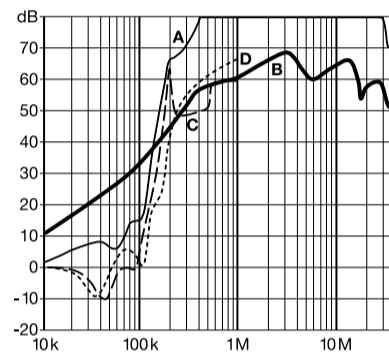
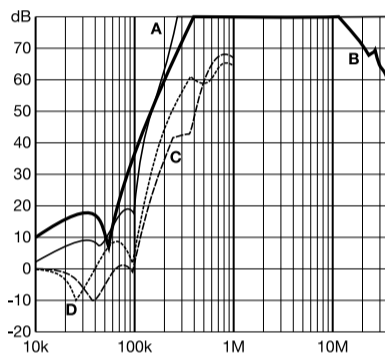
Per CISPR 17; A=50 Ω/50 Ω sym; B=50 Ω/50 Ω asym; C=0.1 Ω/100 Ω sym; D=100 Ω/0.1 Ω sym

6 A types

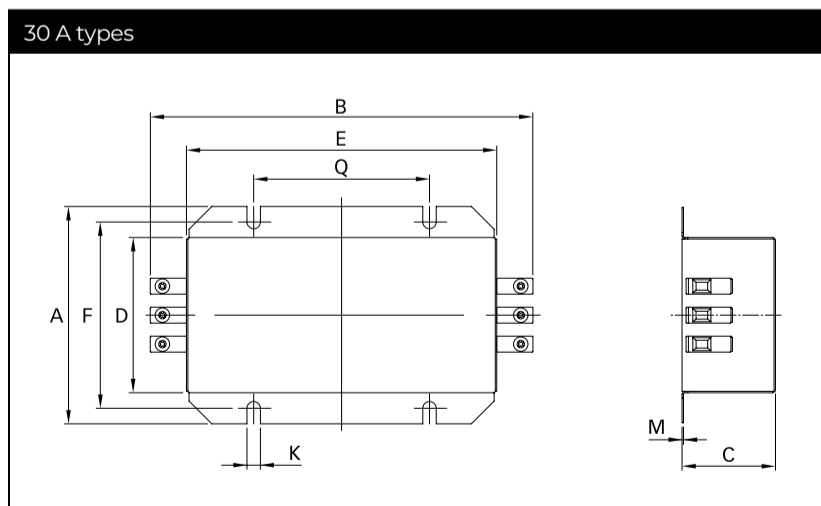
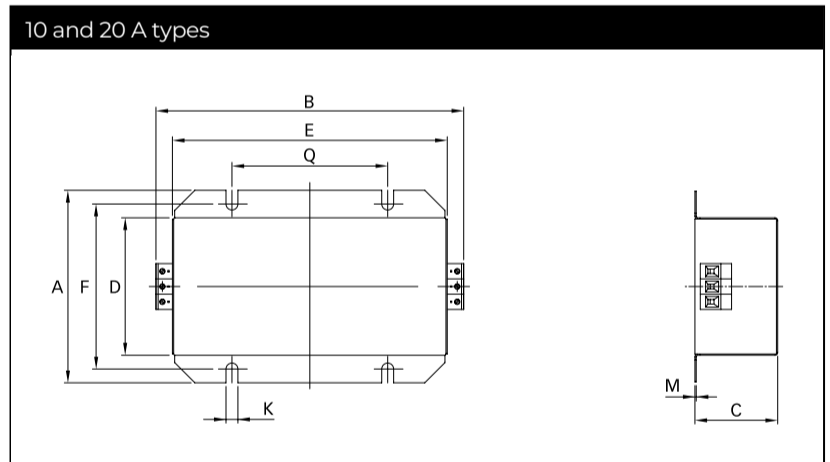
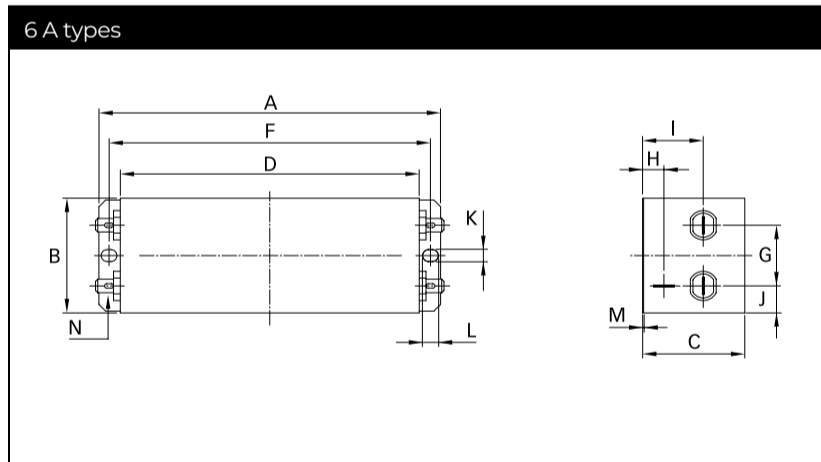
10 A types

20 A types

30 A types



### Mechanical Data






## Dimensions

	6 A	10 A	20 A	30 A	Tolerances
<b>A</b>	152	126	150	150	±0.5
<b>B</b>	51	172.3	221.8	250	±0.5
<b>C</b>	45	55.25	65	65	±0.5
<b>D</b>	133	100.5	119.5	119.5	±0.5
<b>E</b>		150.5	200	200	±0.5
<b>F</b>	143	112	135	135	±0.5
<b>G</b>	27				±0.5
<b>H</b>	9.5				±0.5
<b>I</b>	27				±0.5
<b>J</b>	12				±0.5
<b>K</b>	5.3	6.4	6.4	6.4	
<b>L</b>	7				
<b>M</b>	0.5				
<b>N</b>	6.3 x 0.8				
<b>Q</b>		85	115	115	±0.1

All dimensions in mm; 1 inch = 25.4 mm

Tolerances according: ISO 2768-m/EN 22768-m

## Filter Input/Output Connector Cross Sections

	-06	-29	-33
			
<b>Solid wire</b>	n/a	6 mm <sup>2</sup>	16 mm <sup>2</sup>
<b>Flex wire</b>	n/a	4 mm <sup>2</sup>	10 mm <sup>2</sup>
<b>AWG type wire</b>	n/a	AWG 10	AWG 6
<b>Recommended torque</b>	n/a	0.6-0.8 Nm	1.5-1.8 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.