

# High-power Performance EMI Filter



- Rated currents from 10 to 36 A
- Excellent differential and common-mode attenuation

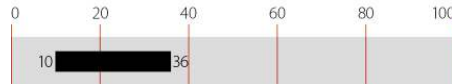


### Performance indicators

Attenuation performance



Rated current [A]



### 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>	10 to 36 A @ 40 °C max.
<b>High potential test voltage</b>	P → PE 2000 VAC for 2 sec P → N 760 VAC for 2 sec
<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 @ 40°C/230V (Mil-HB-217F)</b>	400,000 hours

### Approvals



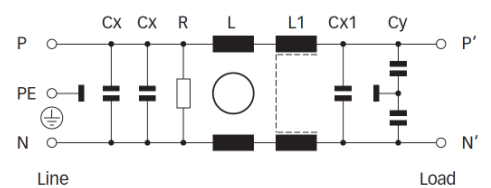
### Features and benefits

- FN 685 filters are designed for easy and fast chassis mounting
- FN 685 two-stage filters provide an excellent high differential and common-mode attenuation performance, based on chokes with high saturation resistance and very good thermal behavior
- FN 685 two-stage filters are designed for very high noise suppression over a broad frequency range
- Faston terminal connection with additional spade solder possibility or screw mounting connection
- Custom-specific versions on request




### Typical applications

- Electrical and electronic equipment
- Consumer goods
- Power supplies
- Building automation
- Elevators and cranes
- Office automation equipment
- Datacom equipment

### Typical electrical schematic



## Filter selection table

Filter*	Rated current @ 40 °C (25 °C) [A]	Leakage current** @ 230 VAC/50 Hz [μA]	Inductance		Capacitance			Resistance R [kΩ]	Input/Output connections			Weight [kg]
			L [mH]	L1 [mH]	Cx [nF]	Cx1 [nF]	Cy [nF]					
<b>FN 685-10-..</b>	10 (12)	410	4.2	0.04	470	220	4.7	330	-03	-06		1.2
<b>FN 685-16-..</b>	16 (19.2)	410	2.3	0.04	470	220	4.7	330	-03	-06		1.35
<b>FN 686-25-23</b>	25 (30)	1900	1.35	0.04	470	220	22	330			-23	2.35
<b>FN 686-36-23</b>	36 (43.2)	1900	0.8	0.03	470	220	22	330			-23	2.85

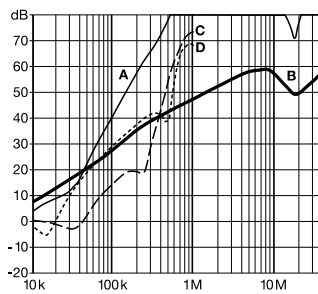
\* To compile a complete part number, please replace the .. with the required I/O connection style (e.g. FN 685-10-03, FN 685-16-06).

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

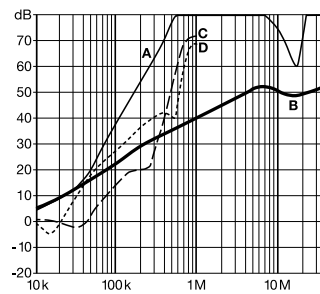
## Typical filter attenuation

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

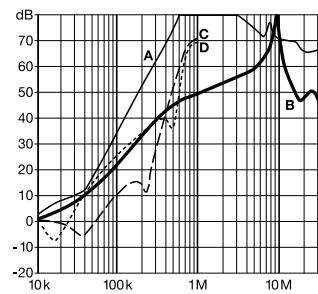
10 A types



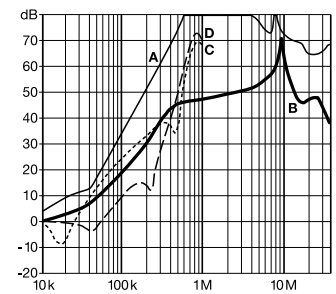
16 A types



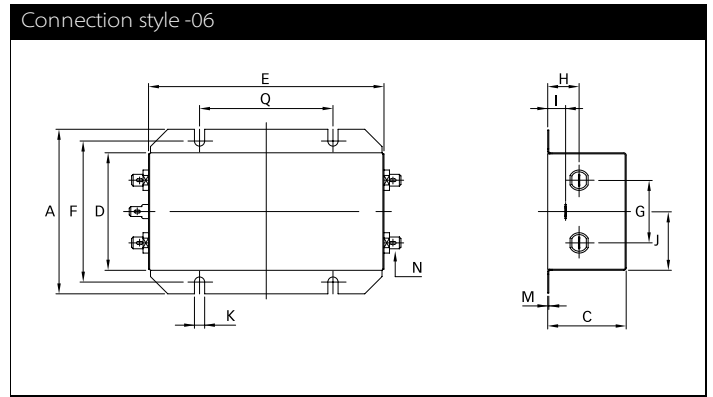
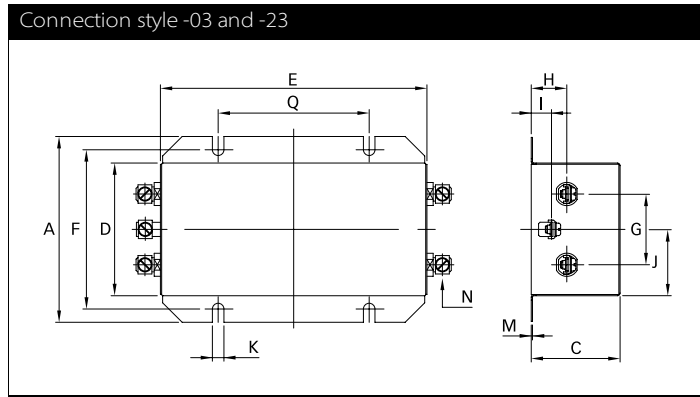
25 A types



36 A types



## Mechanical data



## Dimensions

	10 A	16 A	25 A	36 A	Tolerances
A	105	105	129 ±1	129 ±1	±0.5
C	50	50	60	60	±0.5
D	75	75	100	100	±0.5
E	150	150	170.6	170.6	±0.5
F	90	90	113 ±0.2	113 ±0.2	±0.5
G	40	40	50	50	±0.5
H	20	20	24	24	±0.5
I	11	11	15	15	±0.5
J	37.5	37.5	50	50	±0.5
K	6.5	6.5	6.5	6.5	
M	0.7	0.7	0.7	0.7	
N	6.3 x 0.8	6.3 x 0.8			
<b>Connection style -03</b>					
N	M4	M4			
Q	85	85			±0.1
<b>Connection style -23</b>					
N			M5	M5	
Q			115	115	±0.2

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



## Headquarters, global innovation and development center

### Switzerland

#### Schaffner Group

Nordstrasse 11  
4542 Luterbach  
T +41 32 6816 626  
F +41 32 6816 630  
[info@schaffner.com](mailto:info@schaffner.com)  
<http://www.schaffner.com>



## Sales and application centers

### China

#### Schaffner EMC Ltd. Shanghai

T20-3, No 565 Chuangye Road  
Pudong New Area  
201201 Shanghai  
T +86 21 3813 9500  
F +86 21 3813 9501 / 02  
[cschina@schaffner.com](mailto:cschina@schaffner.com)  
<http://www.schaffner.com.cn/>

### Finland

#### Schaffner Oy

Sauvonrinne 19 H  
08500 Lohja  
T +358 19 35 72 71  
[finlandsales@schaffner.com](mailto:finlandsales@schaffner.com)

### France

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

112, Quai de Bezons  
Boîte postale 133  
95103 Argenteuil  
T +33 1 34 34 30 60  
F +33 1 39 47 02 28  
[francesales@schaffner.com](mailto:francesales@schaffner.com)

### Germany

#### Schaffner Deutschland GmbH

Schoemperlenstrasse 12B  
76185 Karlsruhe  
T +49 721 56910  
F +49 721 569110  
[germanysales@schaffner.com](mailto:germanysales@schaffner.com)

### Italy

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

Via Galileo Galilei 47  
20092 Cinisello Balsamo (MI)  
T +39 02 66 04 30 45/47  
F +39 02 61 23 943  
[italysales@schaffner.com](mailto:italysales@schaffner.com)

### Japan

#### Schaffner EMC K.K.

1-32-12, Kamiyama, Setagaya-ku  
7F Mitsui-seimei Sangenjaya Bldg.  
154-0011 Tokyo  
T +81 3 5712 3650  
F +81 3 5712 3651  
[japansales@schaffner.com](mailto:japansales@schaffner.com)  
<http://www.schaffner.jp>

### Singapore

#### Schaffner EMC Pte Ltd.

Blk 3015A Ubi Road 1  
05-09 Kampong Ubi Industrial Estate  
408705 Singapore  
T +65 6377 3283  
F +65 6377 3281  
[singaporesales@schaffner.com](mailto:singaporesales@schaffner.com)

### Spain

#### Schaffner EMC España

Calle Caléndula 93  
Miniparc III, Edificio E  
El Soto de la Moraleja  
Alcobendas  
28109 Madrid  
T +34 618 176 133  
[spainsales@schaffner.com](mailto:spainsales@schaffner.com)

### Sweden

#### Schaffner EMC AB

Turebergstorg 1, 6  
19147 Sollentuna  
T +46 8 5792 1121 / 22  
F +46 8 92 96 90  
[swedensales@schaffner.com](mailto:swedensales@schaffner.com)

### Switzerland

#### Schaffner EMV AG

Nordstrasse 11  
4542 Luterbach  
T +41 32 6816 626  
F +41 32 6816 641  
[sales@schaffner.ch](mailto:sales@schaffner.ch)

### Taiwan R.O.C.

#### Schaffner EMV Ltd.

6 Floor, No. 413  
Rui Guang Road  
114 Neihu District Taipei City  
T +886 2 87525050  
F +886 2 87518086  
[taiwansales@schaffner.com](mailto:taiwansales@schaffner.com)

### Thailand

#### Schaffner EMC Co. Ltd.

Northern Region Industrial Estate  
67 Moo 4 Tambon Ban Klang  
Amphur Muang P.O. Box 14  
51000 Lamphun  
T +66 53 58 11 04  
F +66 53 58 10 19  
[thailandsales@schaffner.com](mailto:thailandsales@schaffner.com)

### UK

#### Schaffner Ltd.

5 Ashville Way  
Molly Millars Lane  
Wokingham  
RG41 2PL Berkshire  
T +44 118 9770070  
F +44 118 9792969  
[uksales@schaffner.com](mailto:uksales@schaffner.com)  
<http://www.schaffner.uk.com>

### USA

#### Schaffner EMC Inc.

52 Mayfield Avenue  
08837 Edison, New Jersey  
T +1 800 367 5566  
T +1 732 225 9533  
F +1 732 225 4789  
[usasales@schaffner.com](mailto:usasales@schaffner.com)  
<http://www.schaffner.com/us>

#### Schaffner MTC LLC

6722 Thirlane Road  
24019 Roanoke, Virginia  
T +1 276 228 7943  
F +1 276 228 7953  
<http://www.schaffner-mtc.com>

#### Schaffner Trencos LLC

2550 Brookpark Road  
44134 Cleveland, Ohio  
T +1 216 741 5282  
F +1 216 741 4860  
[www.schaffner-trencos.com](http://www.schaffner-trencos.com)

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