

## High-power Performance EMI Filter

**SCHAFFNER**  
energy efficiency and reliability



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

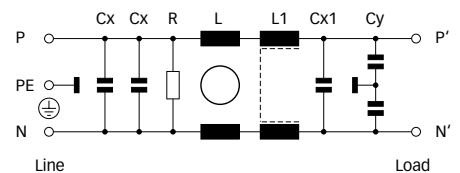
### Approvals



### Technical specifications

Maximum continuous operating voltage:	250VAC, 50/60Hz
Operating frequency:	dc to 400Hz
Rated currents:	10 to 36A @ 40°C max.
High potential test voltage:	P → PE 2000VAC for 2 sec P → N 760VAC for 2 sec
Temperature range (operation and storage):	-25°C to +100°C (25/100/21)
Flammability corresponding to:	UL 94V-2 or better
Design corresponding to:	UL 1283, CSA 22.2 No. 8 1986, IEC/EN 60939
MTBF @ 40°C/230V (Mil-HB-217F):	400,000 hours

### Typical electrical schematic






### 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

Filter selection table

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

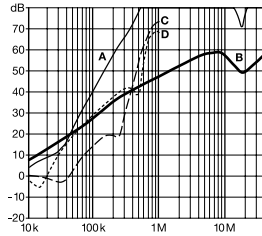
\* To compile a complete part number, please replace the -.. with the required I/O connection style (e.g. FN 685-10-03, FN 685-16-06).

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

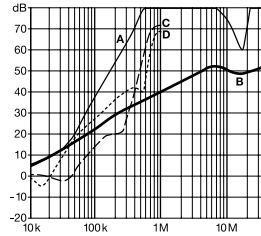
Typical filter attenuation

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

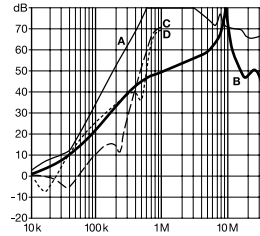
10A types



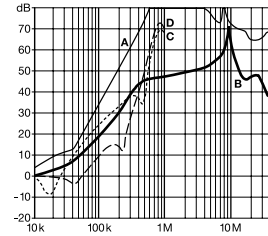
16A types



25A types

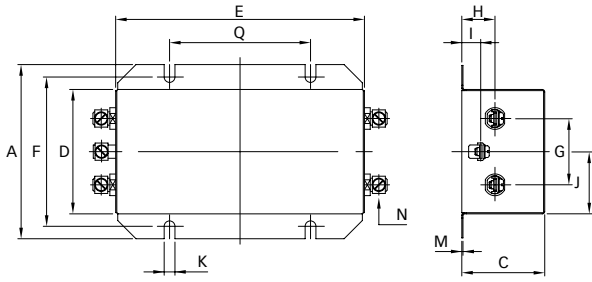


36A types

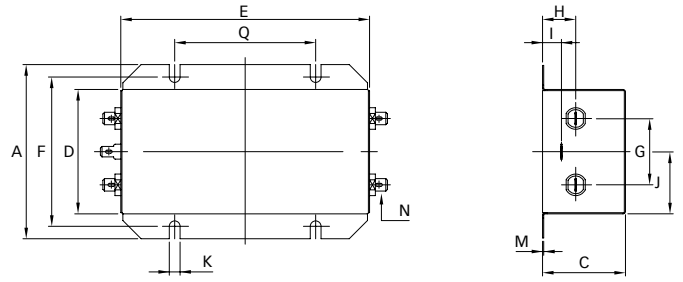


**Mechanical data**

Connection style -03 and -23



Connection style -06



**Dimensions**

	10A	16A	25A	36A	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	±0.2
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 = 25.4mm  
Tolerances according: ISO 2768-m / EN 22768-m

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May 2011

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