

High-power Performance EMI Filter

Single-Phase Filters FN 685

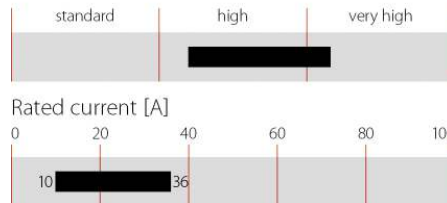


- Rated currents from 10 to 36 A
- Excellent differential and common-mode attenuation



Performance indicators

Attenuation performance



Technical specifications

Maximum continuous operating voltage	250 VAC, 50/60 Hz
Operating frequency	dc to 400 Hz
Rated currents	10 to 36 A @ 40 °C max.
High potential test voltage	P → PE 2000 VAC for 2 sec P → N 760 VAC for 2 sec
Temperature range (operation and storage)	-25 °C to +100 °C (25/100/21)
Flammability corresponding to	UL 94 V-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

Approvals



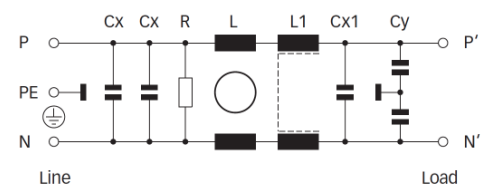
Features and benefits

- 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]					
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

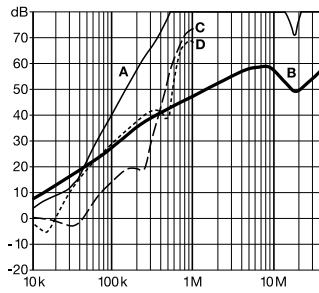
* To compile a complete part number, please replace the .. with the required I/O connection style (e.g. FN 685-10-03, FN 685-16-06).

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

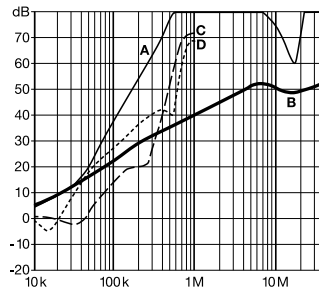
Typical filter attenuation

Per CISPR 17; A = 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

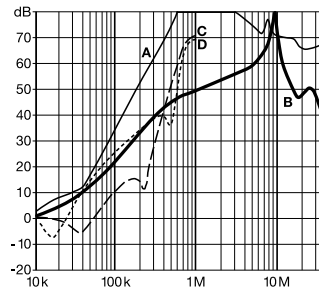
10 A types



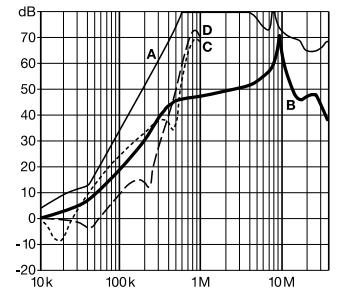
16 A types



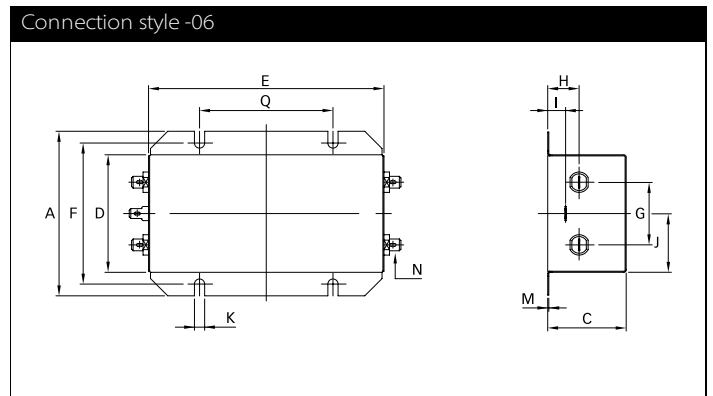
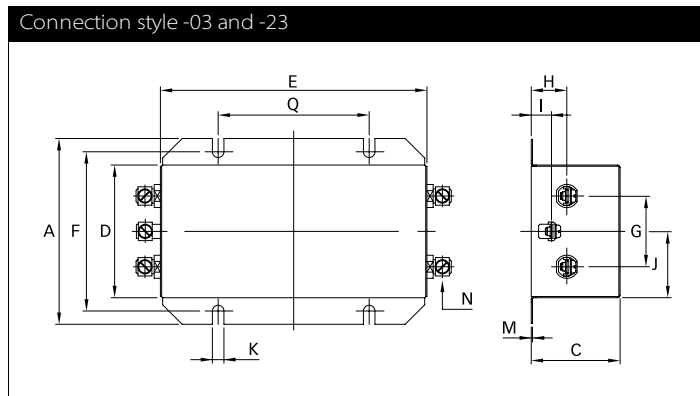
25 A types



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			
Connection style -03					
N	M4	M4			
Q	85	85			±0.1
Connection style -23					
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



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