

Compact Three-phase and Neutral Line Filter for High Frequency Attenuation

3-Phase + Neutral Line Filters FN 354



- Compact four-wire filter for applications with limited space
- High attenuation performance up to 300 MHz
- Equally suitable for star and delta power networks



Performance indicators



Technical specifications

Maximum continuous operating voltage	3x 440/250 VAC
Operating frequency	dc to 60 Hz
Rated currents	4 to 25 A @ 40 °C
High potential test voltage	P → E 2000 VAC for 2 sec P → P 1900 VDC for 2 sec
Protection category	IP20 (version with -47 connections)
Overload capability	4x rated current at switch on, 1.5x rated current for 1 minute, once per hour
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)	500,000 hours

Approvals



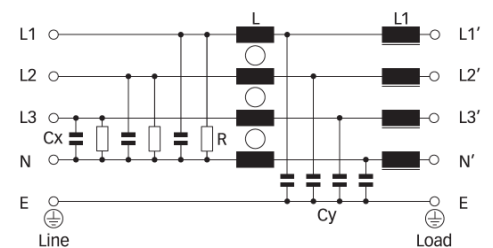
Features and benefits

- The FN 354 family of filters is intended primarily for applications that require extremely effective interference suppression across a broad frequency spectrum.
- Advanced two-stage filter circuits with highly saturating resistant toroidal inductors, in conjunction with feedthrough capacitors on each of the three phases and the neutral line, ensure that these filters provide very high attenuation in the upper frequency band.
- FN 354 are equally suitable for the operation on star and delta power networks.

Typical applications

- Applications requiring high-frequency attenuation
- Power supplies
- Medical equipment
- Office and data processing equipment

Typical electrical schematic



Filter selection table

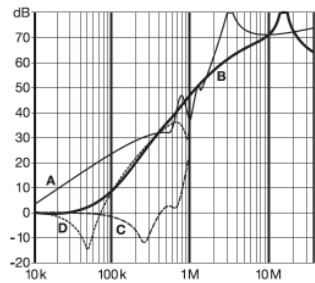
Filter	Rated current @ 40 °C (25 °C)	Leakage current* Power loss	Power loss @ 25 °C/50 Hz	Input/Output connections	Weight [kg]
	[A]	[mA]	[W]		
FN 354-4-05	4 (4.5)	0.175	2.0	-05	0.23
FN 354-6-05	6 (6.7)	0.175	3.9	-05	0.38
FN 354-12-05	12 (13.4)	0.175	7.8	-05	1.1
FN 354-15-47	15 (16.8)	0.5	10.8	-47	4.7
FN 354-25-47	25 (28)	0.5	16.9	-47	4.7

* Maximum leakage under normal operating conditions, based on the assumption that all three phases and the neutral conductor are connected to the supply and the consumer. In this case, the current will mainly return through the neutral line, not as earth leakage.

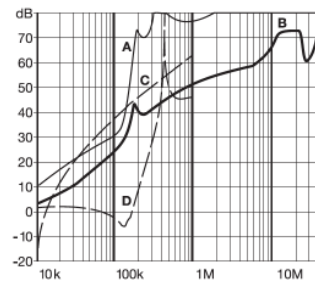
Typical filter attenuation

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

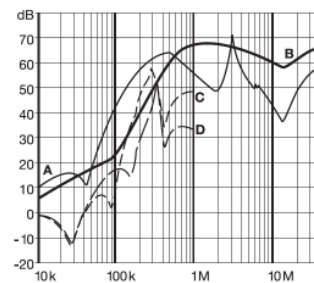
4 and 6 A types



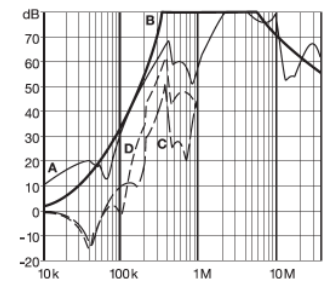
12 A types



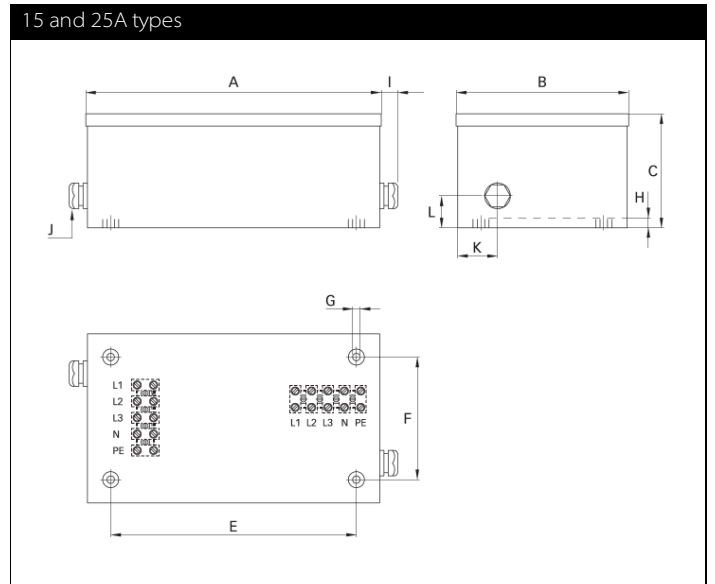
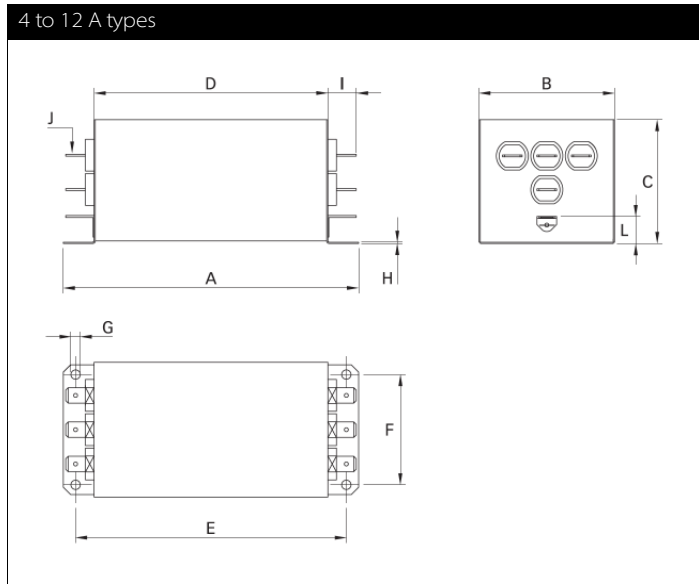
15 A types



25 A types



Mechanical data



Dimensions

	4 A	6 A	12 A	15 A	25 A
A	103	120	150	273.6	273.6
B	43	55	65	158.6	158.6
C	40.5	50.5	60	107	107
D	80	95	125		
E	95	110	140	230	230
F	35	45	55	115	115
G	Ø3.8	Ø3.8	7.5 x 4.4	M8	M8
H	0.5	0.5	0.75	9.5	9.5
I	11.1	11.1	11.1	~20	~20
J	Faston 6.3 x 0.8	Faston 6.3 x 0.8	Faston 6.3 x 0.8	PG13	PG13
K				35.5	35.5
L	7	11	11	30	30

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

Filter input/output connector cross sections

	-05	-47
Solid wire	n/a	16 mm ²
Flex wire	n/a	10 mm ²
AWG type wire	n/a	AWG 8
Recommended torque	n/a	1.9-2.2 Nm

Please visit www.schaffner.com to find more details on filter connectors.



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