

# 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

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

### Approvals



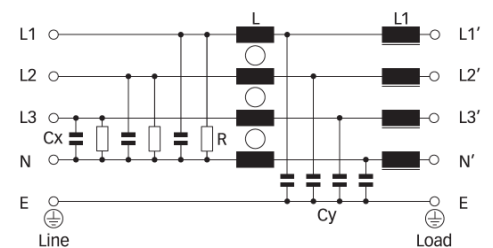
### Features and benefits

- 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

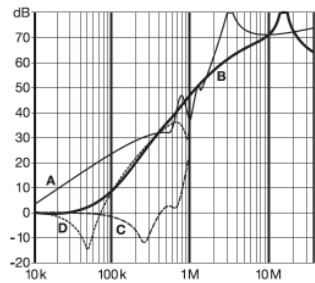
Filter	Rated current @ 40 °C (25 °C)	Leakage current* Power loss	Power loss @ 25 °C/50 Hz	Input/Output connections	Weight [kg]
	[A]	[mA]	[W]		
FN 354-4-05	4 (4.5)	0.175	2.0	-05	0.23
FN 354-6-05	6 (6.7)	0.175	3.9	-05	0.38
FN 354-12-05	12 (13.4)	0.175	7.8	-05	1.1
FN 354-15-47	15 (16.8)	0.5	10.8	-47	4.7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

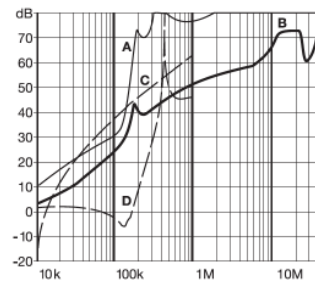
### Typical filter attenuation

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

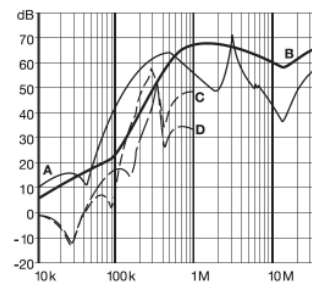
4 and 6 A types



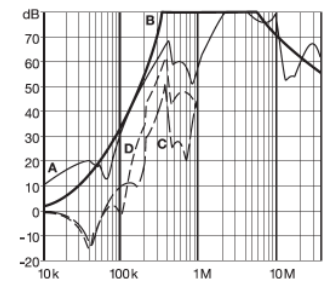
12 A types



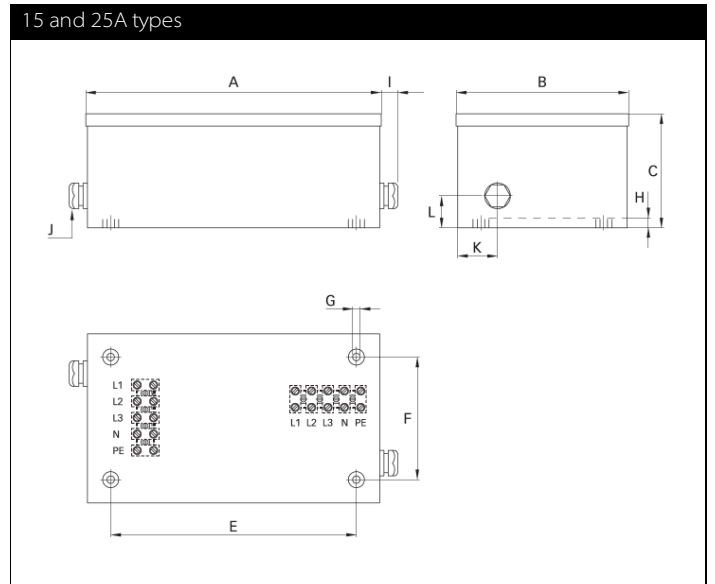
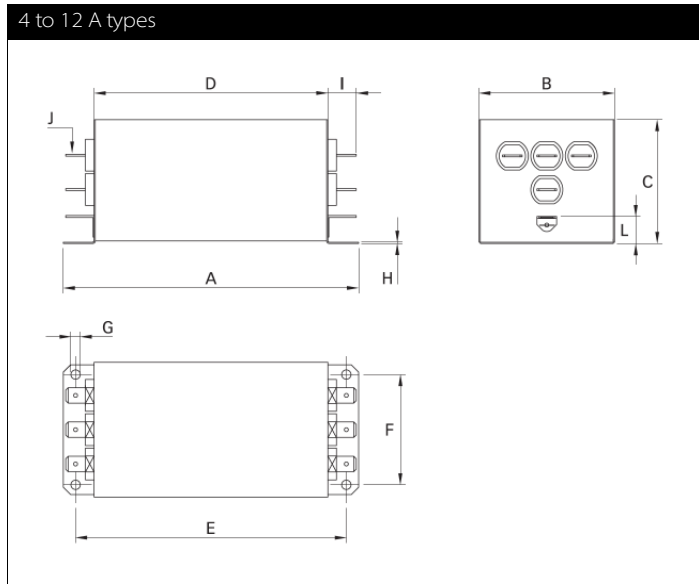
15 A types



25 A types



**Mechanical data**



**Dimensions**

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

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

Please visit [www.schaffner.com](http://www.schaffner.com) to find more details on filter connectors.



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