

# General Purpose EMC/EMI Line Filter



- Three-phase and neutral line filter for general four-wire filtering tasks
- Choice of connection style
- Low operating leakage current
- Compliant with IEC 60950
- Suitable to meet EN 55011/14/22

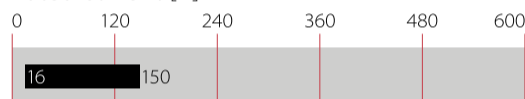


### Performance indicators

Attenuation performance



Rated current [A]



## Technical Specifications

<b>Maximum continuous operating voltage</b>	3x 440/250 VAC
<b>Rated currents</b>	16 to 150 A @ 40°C max
<b>High potential test voltage</b>	P/N → E 2000 VAC for 2 sec P → P 1900 VDC for 2 sec P → N 1100 VDC for 2 sec
<b>Protection category</b>	IP 20 (filters with connectors -29, -33, -34) IP 00 (filters with connectors -06, -24, -28)
<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 @ 45°C/480 V (Mil-HB-217F)</b>	220,000 hours

### Approvals & Compliances



(FN 356 up to 100 A)

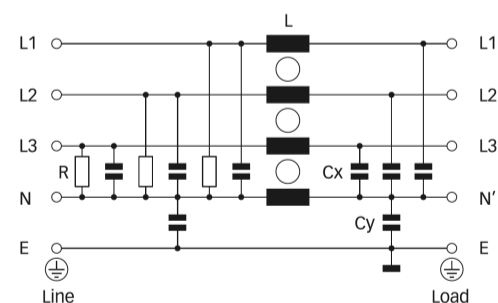
### Features and Benefits

- FN 356 represents the industry standard filter solutions for EMC compliance on three-phases and the neutral conductor, providing high attenuation of both symmetrical and asymmetrical interference
- Choice of connection style is offered for an application-specific filter selection
- Solid touch-safe terminal blocks (-29, -33, -34 versions) offer a generous contacting cross section and contribute to overall safety (IP 20)
- Used as a mains input filter, FN 356 filters increase the conducted immunity and thus contribute to system reliability
- Design compliance with IEC 60950 provides additional application flexibility







### Typical Applications

- General purpose four-wire filtering
- Mainframe computer systems
- High power office equipment
- UPS
- Installations comprising automation equipment

### Typical electrical schematic



### Filter Selection Table

Filter*	Buy	Rated current @ 40°C (25°C)	Leakage current** @ 440 VAC/50 Hz	Power loss @ 25 °C/ 50Hz	Input/Output connections			Weight [kg]
					[A]	[mA]	[W]	
FN356-16-..		16 (18.4)	0.1	7.0	-06	-24	-29	1.2
FN356-25-..		25 (28.8)	0.1	10.1	-24	-24	-33	1.5
FN356-36-..		36 (41.5)	0.1	10.9	-24	-24	-33	1.6
FN356-50-..		50 (57.7)	0.1	15.8	-24	-24	-33	2.3
FN356-100-..		100 (115.0)	0.3	24.0	-28	-28	-34	5.9
FN356-150-28		150 (172.5)	1.7	45.9	-28	-28	-34	8.1

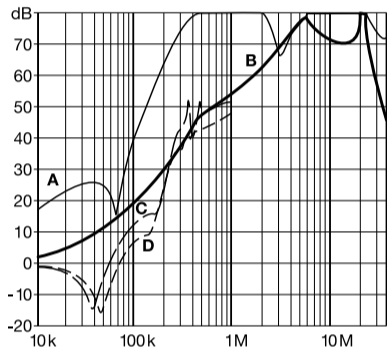
\* To compile a complete part number, please replace the -.. with the required I/O connection style.

\*\* Standardized calculated leakage current acc. IEC60939 under normal operating conditions.

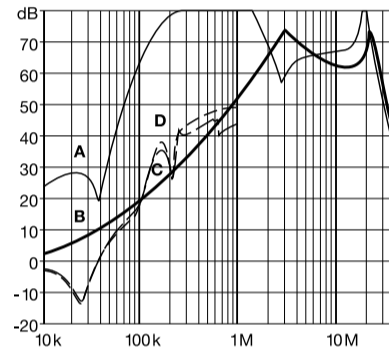
### Typical Filter Attenuation

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

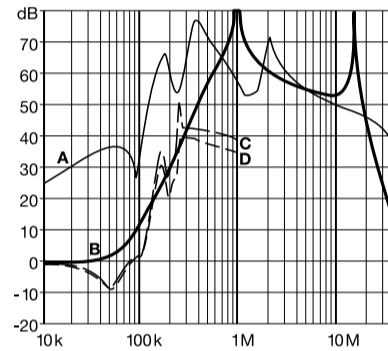
16 A types



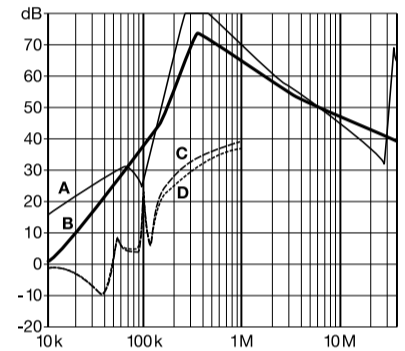
25 to 50 A types



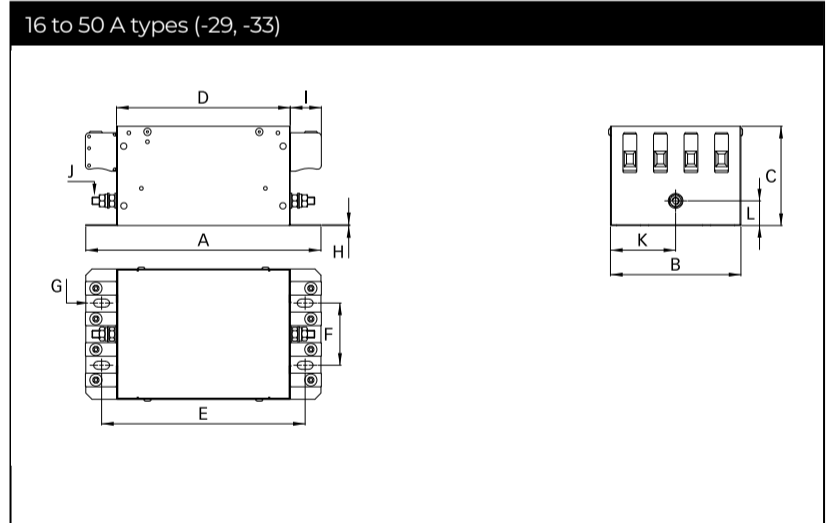
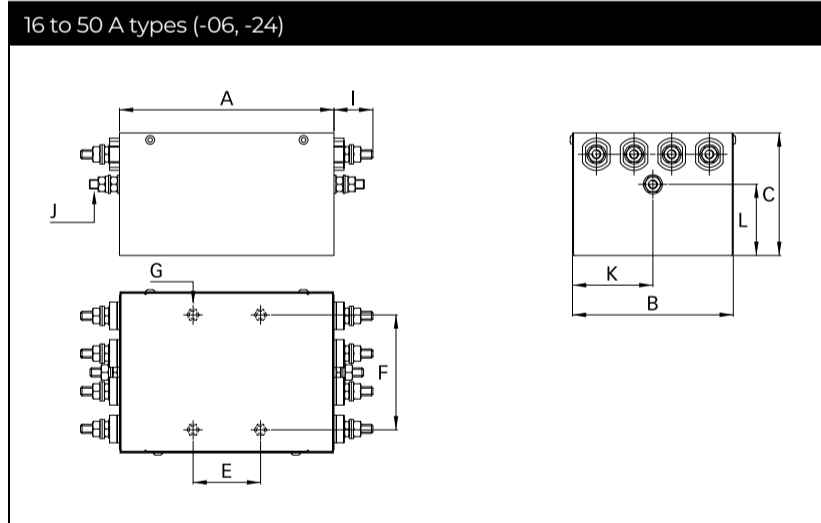
100 A types

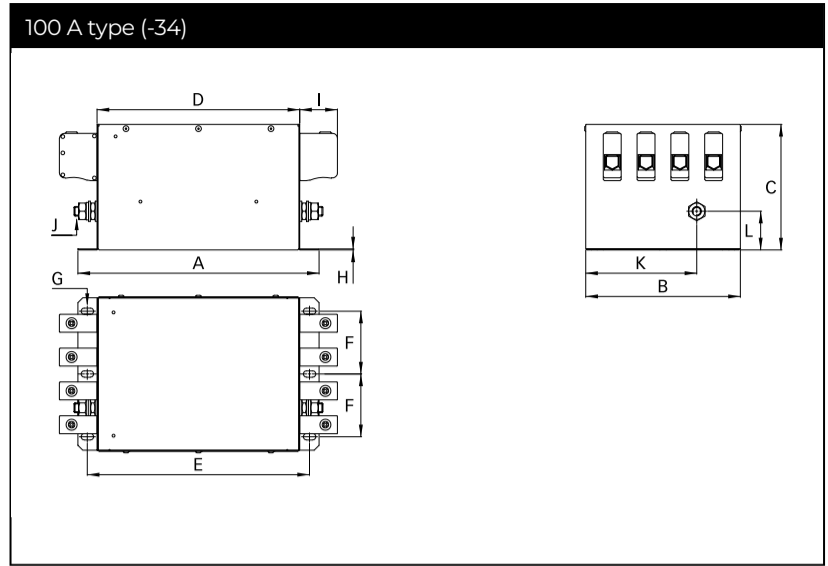
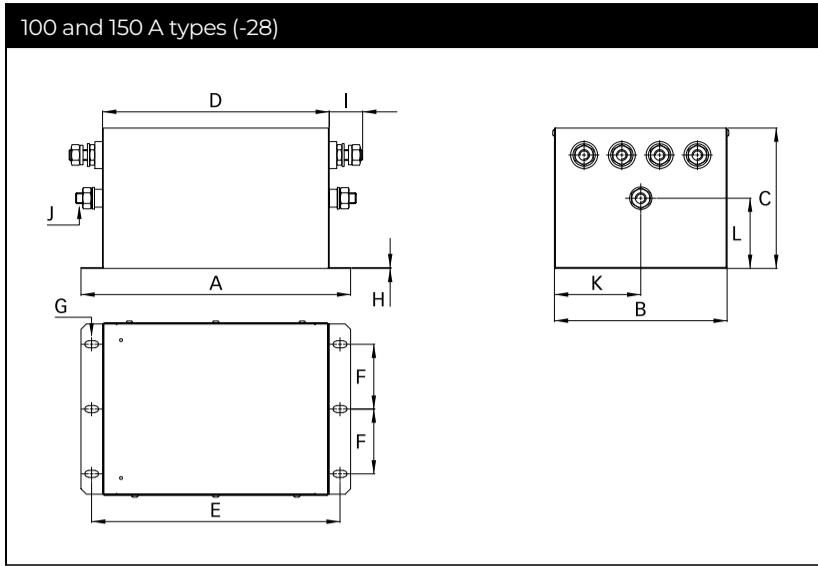


150 A types



### Mechanical Data





Note: in favour of a better readability, connectors and earth studs are not shown in the horizontal projection.

**Dimensions**

	16 A (-06)	16 A (-29)	25 A (-24)	25 A (-33)	36 A (-24)	36 A (-33)	50 A (-24)	50 A (-33)	100 A (-28)	100 A (-34)	150 A
<b>A</b>	149	189.5	140	189.5	140	189.5	143.25	192	250	250	340
<b>B*</b>	104	105	105	105	105	105	122	122	160	160	160
<b>C</b>	50	80	80	80	80	80	102	102	130	130	130
<b>D</b>		140		140		140		142.5	210	210	300
<b>E</b>	44 ±0.3	165.5	44 ±0.3	165.5	44 ±0.3	165.5	44 ±0.3	168	230	230	320
<b>F</b>	75 ±0.3	80	75 ±0.3	50	75 ±0.3	50	75 ±0.3	98	60	65	60
<b>G</b>	M5 x 7	13 x 6.5	M5 x 7	13 x 6.5	M5 x 7	13 x 6.5	M5 x 7	13 x 6.5	13 x 6.5	13 x 6.5	13 x 6.5
<b>H</b>		0.7		0.7		0.7		0.7	1	1	1
<b>I</b>	11	10.9	25.4	25	25.4	25	25.4	25	34	39	34
<b>J</b>	6.3 x 0.8	M6	M6	M6	M6	M6	M6	M6	M10	M10	M10
<b>K</b>	52	82	52.5	52.5	52.5	52.5	61	61	80	116	80
<b>L</b>	22.5	25	46.5	20	46.5	20	68.5	35	65	40	65

\* Rivets exceed this dimension by max. 1.3mm on each side.  
 All dimensions in mm; 1 inch = 25.4 mm  
 Tolerances according: ISO 2768-m/EN 22768-m

**Filter Input/Output Connector Cross Sections**

	-06 (6.3 x 0.8mm)	-24 (M6)	-28 (M10)	-29	-33	-34
<b>Solid wire</b>	n/a	n/a	n/a	6 mm <sup>2</sup>	16 mm <sup>2</sup>	35 mm <sup>2</sup>
<b>Flex wire</b>	n/a	n/a	n/a	4 mm <sup>2</sup>	10 mm <sup>2</sup>	25 mm <sup>2</sup>
<b>AWG type wire</b>	n/a	n/a	n/a	AWG 10	AWG 6	AWG 2
<b>Recommended torque</b>	n/a	3.5 4.0 Nm	15-17 Nm	0.6-0.8 Nm	1.5-1.8 Nm	4.0-4.5 Nm

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

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