

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



- 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

Attenuation performance



Rated current [A]



Technical specifications

| | |
|--|--|
| Maximum continuous operating voltage | 3x 440/250 VAC |
| Operating frequency | DC to 60 Hz |
| Rated currents | 4 to 25 A @ 40°C max. |
| High potential test voltage | P/N → E 2000 VAC for 2 sec P → P 1900 VDC for 2 sec P → N 1100 VDC for 2 sec |
| Protection category | IP 20 (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/230 V (Mil-HB-217F) | 500,000 hours |

Approvals



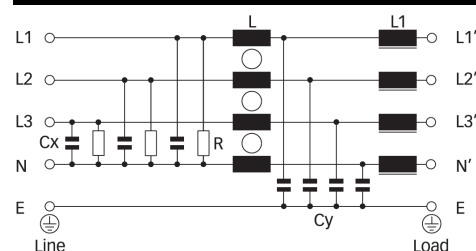
Features and benefits

- 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

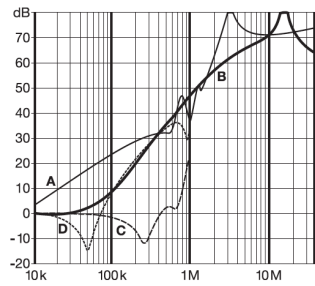
| Filter | Rated current @ 40°C (25°C) | Leakage current* @ 440 VAC/50 Hz | Power loss @ 25°C/50 Hz | Input/Output connections | Weight [kg] |
|--------------|--------------------------------|-------------------------------------|----------------------------|-----------------------------|----------------|
| | [A] | [mA] | [W] | | |
| FN 354-4-05 | 4 (4.5) | 0.1 | 2.0 | -05 | 0.23 |
| FN 354-6-05 | 6 (6.7) | 0.1 | 3.9 | -05 | 0.38 |
| FN 354-12-05 | 12 (13.4) | 0.1 | 7.8 | -05 | 1.1 |
| FN 354-15-47 | 15 (16.8) | 0.1 | 10.8 | -47 | 4.3 |
| FN 354-25-47 | 25 (28) | 0.2 | 16.9 | -47 | 4.4 |

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

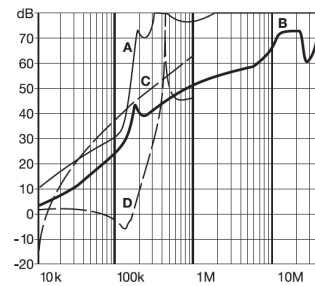
Typical filter attenuation

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

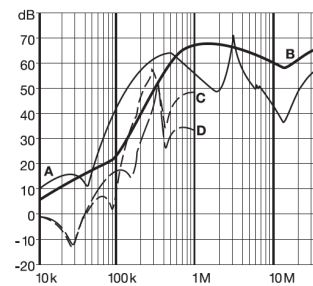
4 and 6 A types



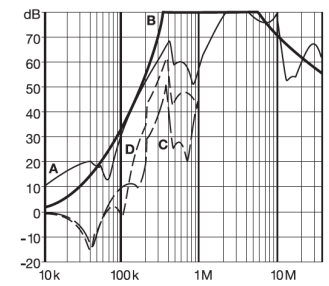
12 A types



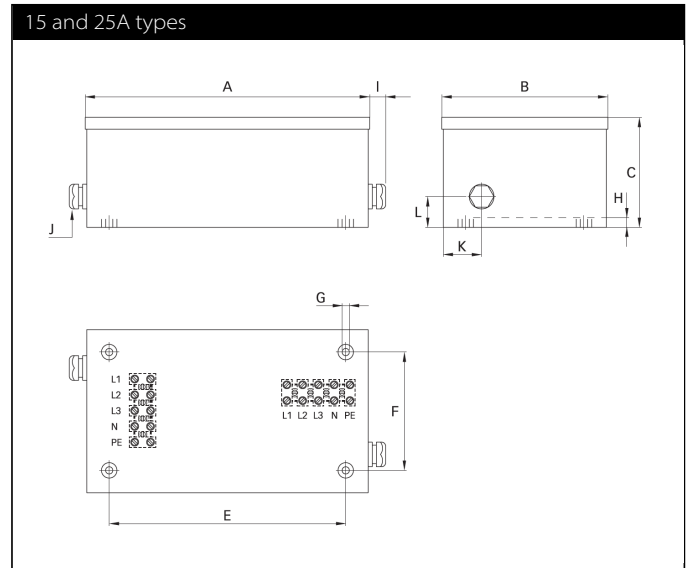
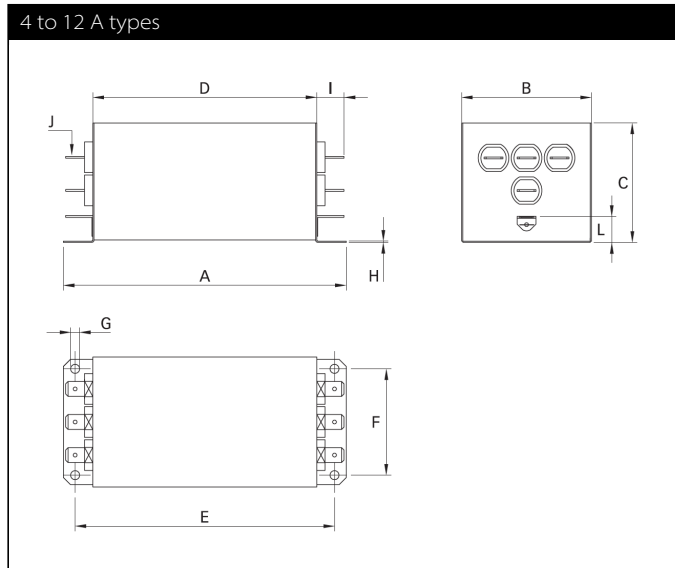
15 A types



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: 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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