

High-end Line Filter for Machinery/Equipment

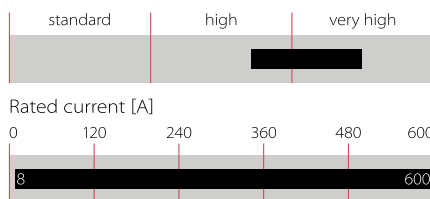


- Now available up to 600 A
- Compact, space-saving design, optimized for industrial machinery
- Combines exceptional attenuation with low leakage current
- Suitable for machines in mixed/domestic environments (Class A/B)
- Increases also the immunity if operated directly on the mains input



Performance indicators

Attenuation performance



Technical specifications

| | |
|--|--|
| Maximum continuous operating voltage | 3x 520/300 VAC (480 VAC + 10% possible) |
| Rated currents | 8 to 600 A @ 50°C |
| High potential test voltage | P → E 2750 VDC for 2 sec P → P 2250 VDC for 2 sec |
| Protection category | IP 20 (8 to 200 A types) IP 00 (300 to 600 A types) |
| 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 @ 50°C/400 V (Mil-HB-217F) | >360,000 hours |

Approvals



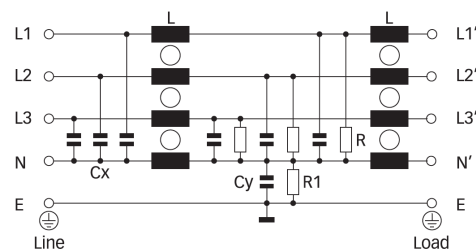
Features and benefits

- A compact and light weight filter design with a „cubic“ shape, requiring minimum mounting space and thus taking the constructional conditions on the mains input of machinery into account
- Simple and time-saving installation with good accessibility for automatic and hand tools
- Solid, touch-safe terminal blocks (8 to 200 A types) offering sufficient contacting cross section according to the EN 60204-1 installation standard, which is very common in industrial applications
- As a mains input filter for three phases and neutral line, FN 3280 provides enough performance to ensure EMC compliance of machinery in mixed (Class A) or even domestic (Class B) environments. Further, its use will also increase the immunity of the entire installation significantly
- FN 3280 provides the attenuation performance needed to meet the requirements of various machine tools with up to 12 driving axes and ~10 to 20 m of motor cable each
- For easy selection and application, the filter current ratings are aligned with common fuse values



Typical applications

Mainly industrial equipment, machinery, machine tools and diverse process automation systems with three-phase and neutral electricity supply. Due to the outstanding attenuation performance, FN 3280 is also the first choice for noisy power supplies, renewable energy applications, highpower office equipment and further three-phase and neutral devices. Because of the relatively low leakage current, FN 3280 may even be used for some medical devices.

Typical electrical schematic



Filter selection table

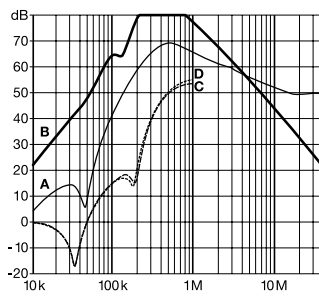
| Filter | Rated current @ 50°C (40°C) | Leakage current* @ 480 VAC/50 Hz | Power loss @ 25°C/50 Hz | Input/Output connections | | Weight |
|------------------|--------------------------------|-------------------------------------|----------------------------|---|---|--------|
| | [A] | [mA] | [W] |  |  | [kg] |
| FN 3280 H-8-29 | 8 (8.8) | <1 | 2.7 | -29 | | 0.8 |
| FN 3280 H-16-29 | 16 (17.5) | <1 | 6.0 | -29 | | 0.8 |
| FN 3280 H-25-33 | 25 (27) | <1 | 11.6 | -33 | | 1.3 |
| FN 3280 H-36-33 | 36 (39) | <1 | 14.8 | -33 | | 1.6 |
| FN 3280 H-64-34 | 64 (70) | <1 | 18.4 | -34 | | 2.7 |
| FN 3280 H-80-35 | 80 (88) | <1 | 18.9 | -35 | | 4.1 |
| FN 3280 H-120-35 | 120 (131) | <1 | 28.5 | -35 | | 5.9 |
| FN 3280 H-160-40 | 160 (175) | <1 | 30.7 | -40 | | 7.9 |
| FN 3280 H-200-40 | 200 (219) | <1 | 46.8 | -40 | | 8.5 |
| FN 3280 H-300-99 | 300 (328) | <1 | 20.3 | | -99 | 10.0 |
| FN 3280 H-400-99 | 400 (438) | <1 | 36.0 | | -99 | 10.0 |
| FN 3280 H-600-99 | 600 (657) | <1 | 64.8 | | -99 | 11.0 |

* 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.

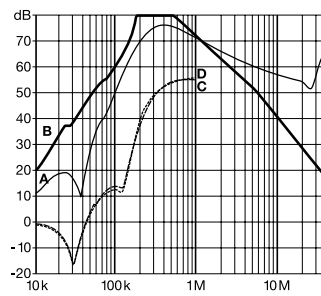
Typical filter attenuation

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

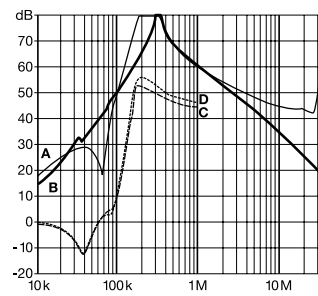
8 and 16 A types



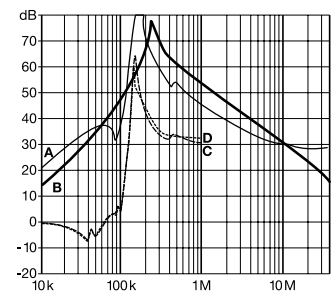
25 and 36 A types



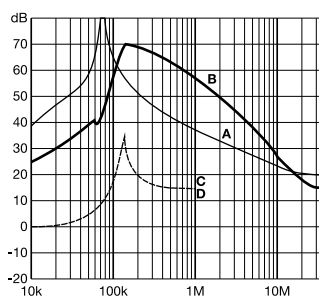
64 to 120 A types



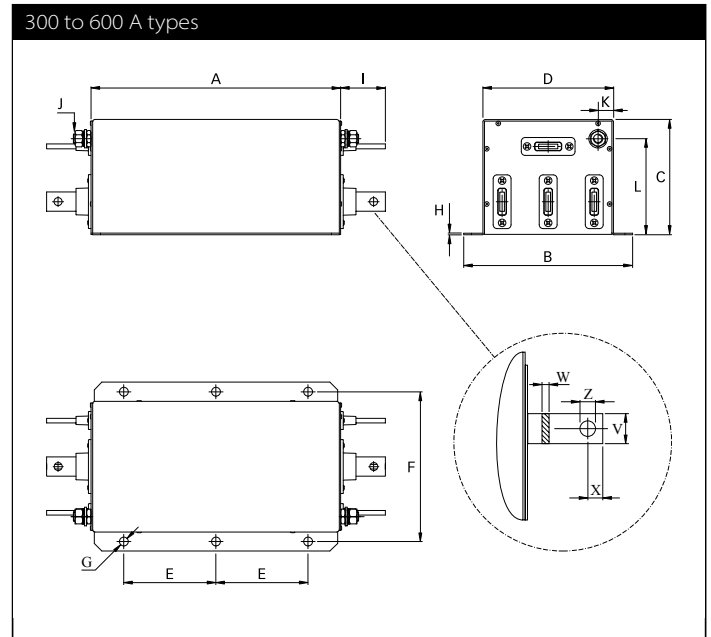
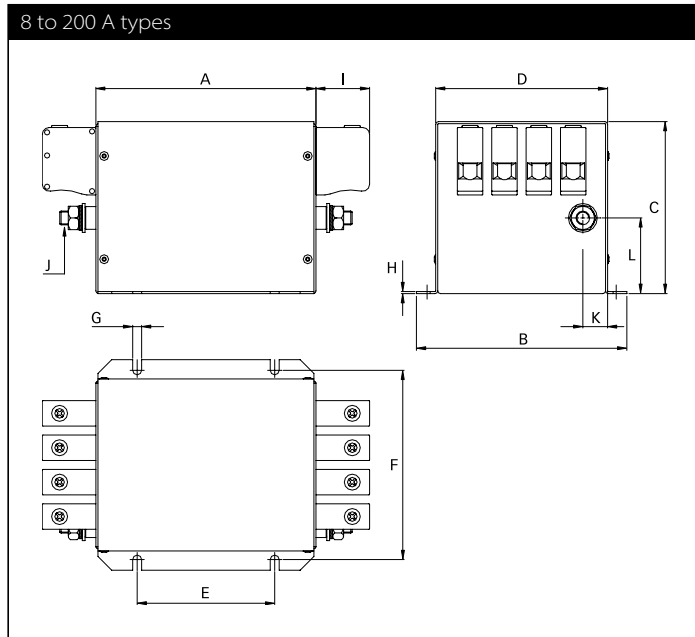
160 and 200 A types



300 to 600 A types



Mechanical data



Dimensions

| | 8 A | 16 A | 25 A | 36 A | 64 A | 80 A | 120 A | 160 A | 200 A | 300 A | 400 A | 600 A |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| A | 120 | 120 | 130 | 130 | 160 | 230 | 250 | 280 | 280 | 325 | 325 | 325 |
| B | 143 | 143 | 153 | 153 | 153 | 163 | 170 | 170 | 170 | 220 | 220 | 220 |
| C | 80 | 80 | 115 | 115 | 125 | 125 | 140 | 170 | 170 | 150 | 150 | 150 |
| D | 115 | 115 | 125 | 125 | 125 | 135 | 140 | 140 | 140 | 170 | 170 | 170 |
| E | 80 | 80 | 90 | 90 | 100 | 120 | 200 | 230 | 230 | 120 | 120 | 120 |
| F | 127.5 | 127.5 | 137.5 | 137.5 | 137.5 | 147.5 | 153.5 | 153.5 | 153.5 | 195 | 195 | 195 |
| G | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | 12 | 12 | 12 |
| H | 1 | 1 | 1 | 1 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 2 | 2 | 2 |
| I | 10.9 | 10.9 | 25 | 25 | 39 | 45 | 45 | 51 | 51 | 58 | 58 | 58 |
| J | M6 | M6 | M6 | M6 | M10 | M10 | M10 | M10 | M10 | M12 | M12 | M12 |
| K | 12 | 12 | 12 | 12 | 18 | 18 | 17.5 | 17.5 | 17.5 | 20 | 20 | 20 |
| L | 33 | 33 | 50 | 50 | 55 | 45 | 55 | 55 | 55 | 125 | 125 | 125 |
| V | | | | | | | | | | 25 | 25 | 25 |
| W | | | | | | | | | | 6 | 6 | 8 |
| X | | | | | | | | | | 15 | 15 | 15 |
| Z | | | | | | | | | | Ø10.5 | Ø10.5 | Ø10.5 |

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

Filter input/output connector cross sections

| | -29 | -33 | -34 | -35 | -40 |
|---------------------------|-------------------|--------------------|--------------------|--------------------|--------------------|
| | | | | | |
| Solid wire | 6 mm ² | 16 mm ² | 35 mm ² | 50 mm ² | 95 mm ² |
| Flex wire | 4 mm ² | 10 mm ² | 25 mm ² | 50 mm ² | 95 mm ² |
| AWG type wire | AWG 10 | AWG 6 | AWG 2 | AWG 1/0 | AWG 4/0 |
| Recommended torque | 0.6-0.8 Nm | 1.5-1.8 Nm | 4.0-4.5 Nm | 7-8 Nm | 17-20 Nm |

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



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