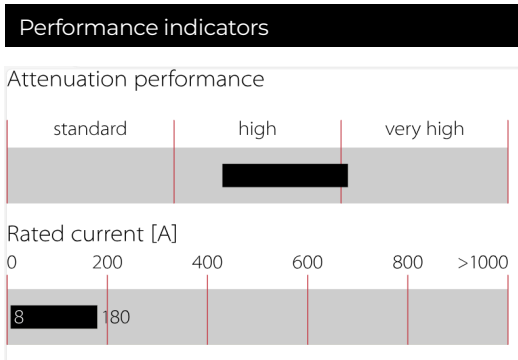
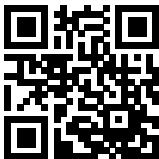


# General Purpose EMC Filter



- EMC solution for industrial inverters and motor drives
- Rated currents from 8 to 180 A
- Voltage level up to 520 V
- High differential and common-mode attenuation



## Technical Specifications

|                                           |                                                                                  |
|-------------------------------------------|----------------------------------------------------------------------------------|
| Maximum continuous operating voltage      | 3x520/300 VAC                                                                    |
| Nominal operating voltage                 | 480 VAC                                                                          |
| Rated currents                            | 8 to 180 A @ 40°C                                                                |
| Overload capability                       | 4x rated current at switch on,<br>1.5x rated current for 1 minute, once per hour |
| Operating frequency                       | DC to 60 Hz                                                                      |
| High potential test voltage               | P → P 2250 VDC for 2 sec<br>P → E 2750 VDC for 2 sec                             |
| Temperature range (operation and storage) | -25°C to +100°C (25/100/21)                                                      |
| Protection category                       | IP 20                                                                            |
| Flammability corresponding to             | UL 94 V-0                                                                        |
| Design corresponding to                   | UL 1283, CSA 22.2 No. 8 1986, IEC/EN 60939                                       |
| MTBF (Mil-HB-217F)                        | >135,000 h @ 40°C/480 V                                                          |

## Approvals & Compliances



Approvals up to 110 A

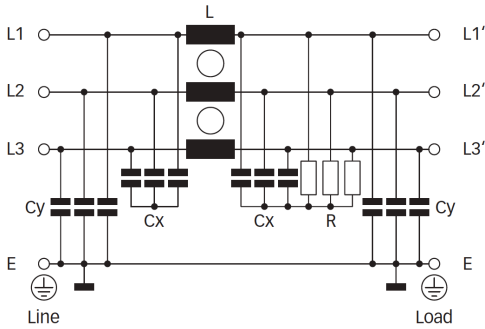
## Features and Benefits

- Broad range of power ratings for fast and convenient filter selection
- FN351H filters provide a broadband common and differential-mode attenuation performance, which remains available also when high interference levels are present
- Solid, touch-safe filter terminals contribute to overall equipment safety
- Introduced as one of the very first motor drive EMC filters in the market, FN351H and its predecessor FN351 have been widely imitated and has successfully proven its function over more than 10 years

## Typical Applications

- Three-phase motor drives
- Inverters and converters
- Industrial automation equipment
- UPS
- SMPS
- General purpose three-phase filtering

## Typical electrical schematic



Filter Selection Table

| Filter*       | Rated current<br>@ 40°C (25°C) | Typical drive<br>power rating** | Leakage current***<br>@ 440/520 VAC/50 Hz | Power loss<br>@ 25°C/50 Hz | Input/Output<br>connections                                                         | Weight |
|---------------|--------------------------------|---------------------------------|-------------------------------------------|----------------------------|-------------------------------------------------------------------------------------|--------|
|               | [A]                            | [kW]                            | [mA]                                      | [W]                        |  | [kg]   |
| FN351H-8-29   | 8 (9.2)                        | 4                               | 0.3                                       | 7                          | -29                                                                                 | 1.1    |
| FN351H-16-29  | 16 (18.5)                      | 7.5                             | 0.3                                       | 8                          | -29                                                                                 | 1.3    |
| FN351H-25-33  | 25 (28.9)                      | 15                              | 3.8                                       | 8                          | -33                                                                                 | 1.4    |
| FN351H-36-33  | 36 (41.6)                      | 18.5                            | 3.8                                       | 9                          | -33                                                                                 | 1.5    |
| FN351H-50-33  | 50 (57.7)                      | 30                              | 3.8                                       | 11                         | -33                                                                                 | 1.6    |
| FN351H-64-33  | 64 (73.9)                      | 37                              | 3.8                                       | 15                         | -33                                                                                 | 1.7    |
| FN351H-80-34  | 80 (92.3)                      | 45                              | 4.4                                       | 23                         | -34                                                                                 | 5.6    |
| FN351H-110-35 | 110 (127)                      | 75                              | 4.4                                       | 25                         | -35                                                                                 | 5.8    |
| FN351H-180-36 | 180 (208)                      | 110                             | 4.4                                       | 49                         | -36                                                                                 | 13.0   |

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

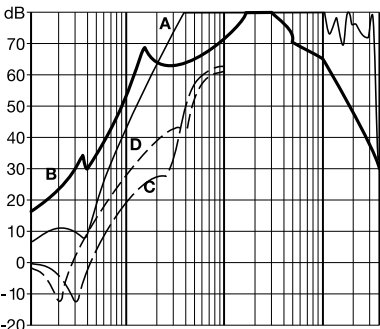
\*\* Calculated at rated current, 480 VAC and cos phi=0.8. The exact value depends upon the efficiency of the drive, the motor and the entire application.

\*\*\* Standardized calculated leakage current acc. IEC60939 under normal operating conditions at 520 VAC.

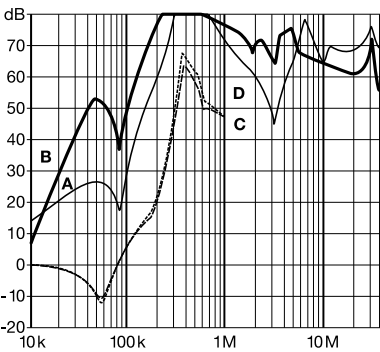
Typical Filter Attenuation

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

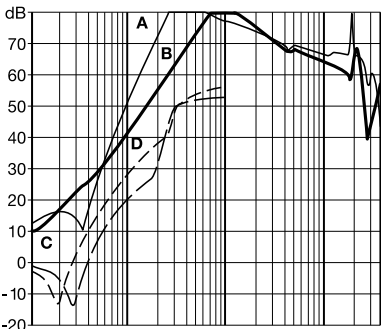
8 A types



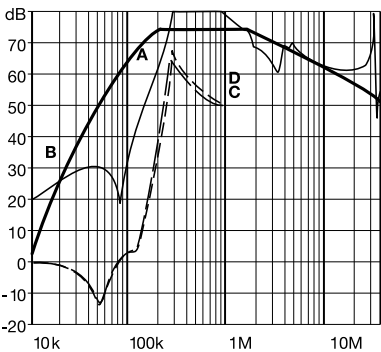
64 A types



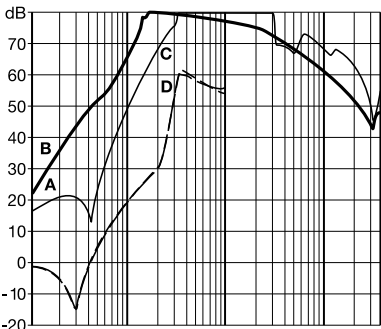
16 A types



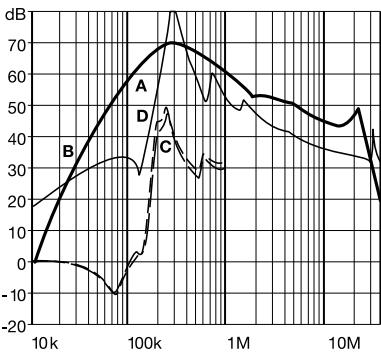
80 and 110 A types



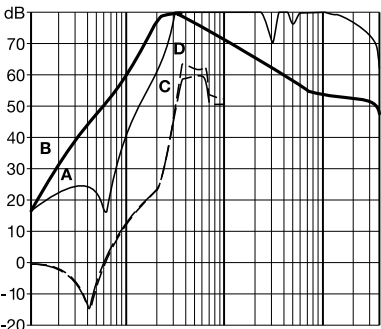
25 A types



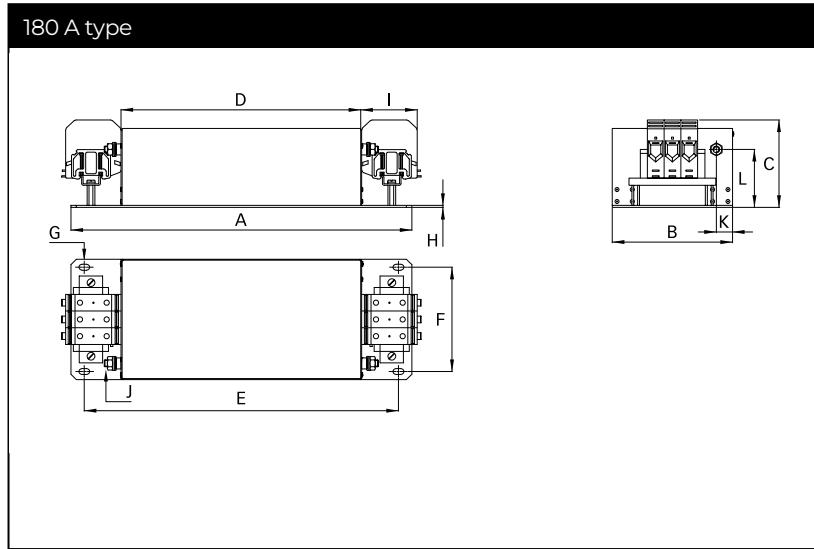
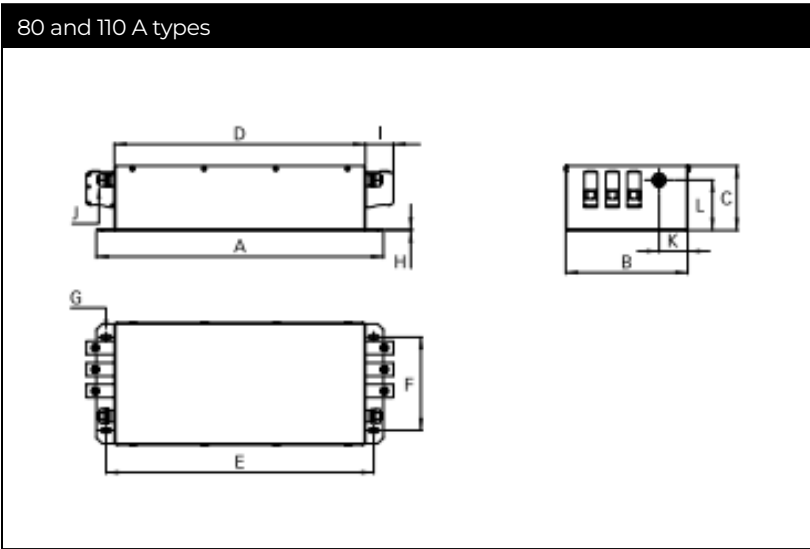
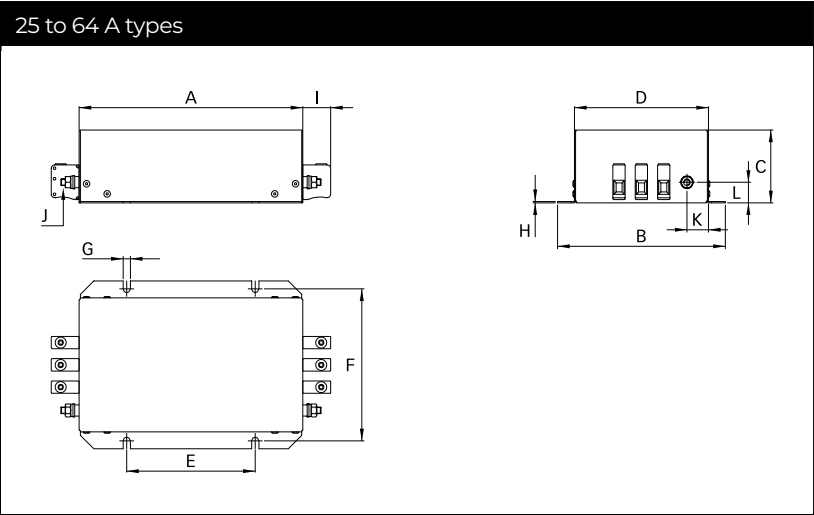
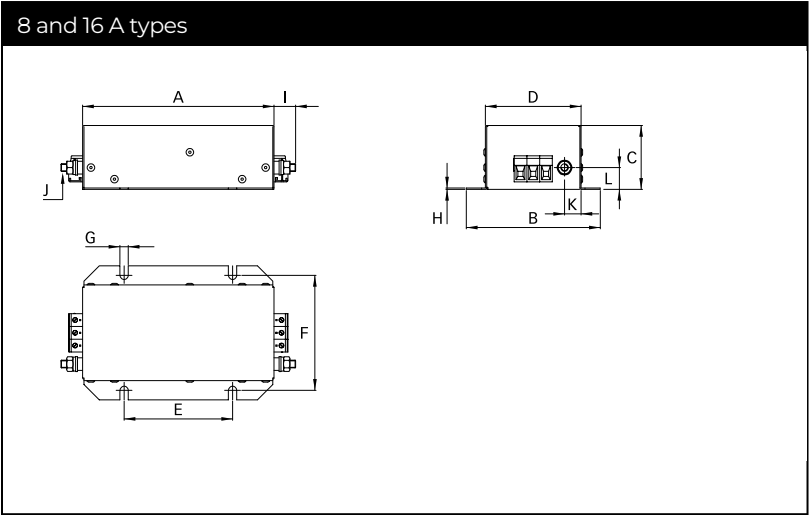
180 A types



36 and 50 A types



Mechanical Data



Dimensions

|   | 8 A   | 16 A  | 25 A  | 36 A  | 50 A<br>(-33) | 50 A<br>(-34) | 64 A<br>(-33) | 64 A<br>(-34) | 80 A     | 110 A    | 180 A  |
|---|-------|-------|-------|-------|---------------|---------------|---------------|---------------|----------|----------|--------|
| A | 200   | 200   | 200   | 200   | 200           | 200           | 200           | 200           | 400      | 400      | 510    |
| B | 150   | 150   | 150   | 150   | 150           | 150           | 150           | 150           | 170      | 170      | 180    |
| C | 65    | 65    | 65    | 65    | 65            | 65            | 65            | 80            | 90       | 90       | 133    |
| D | 120   | 120   | 120   | 120   | 120           | 120           | 120           | 120           | 350      | 350      | 360    |
| E | 115   | 115   | 115   | 115   | 115           | 115           | 115           | 115           | 373      | 373      | 470    |
| F | 136   | 136   | 136   | 136   | 136           | 136           | 136           | 136           | 130      | 130      | 156    |
| G | 6.5   | 6.5   | 6.5   | 6.5   | 6.5           | 6.5           | 6.5           | 6.5           | 15 x 6.5 | 15 x 6.5 | 16 x 9 |
| H | 1     | 1     | 1     | 1     | 1             | 1             | 1             | 1             | 1        | 1        | 4      |
| I | 17    | 17    | 25    | 25    | 25            | 39            | 25            | 39            | 39       | 45       | 83     |
| J | M6    | M6    | M6    | M6    | M6            | M6            | M6            | M6            | M10      | M10      | M10    |
| K | 19.25 | 19.25 | 19.25 | 19.25 | 19.25         | 18.75         | 19.25         | 18.75         | 40       | 40       | 25     |
| L | 17    | 17    | 18.4  | 18.4  | 18.4          | 17            | 18.4          | 17            | 70       | 70       | 85     |

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                                                                                   | -36                                                                                   |
|--------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|                    |  |  |  |  |  |
| Solid wire         | 6 mm <sup>2</sup>                                                                   | 16 mm <sup>2</sup>                                                                  | 35 mm <sup>2</sup>                                                                    | 50 mm <sup>2</sup>                                                                    | 95 mm <sup>2</sup>                                                                    |
| Flex wire          | 4 mm <sup>2</sup>                                                                   | 10 mm <sup>2</sup>                                                                  | 25 mm <sup>2</sup>                                                                    | 50 mm <sup>2</sup>                                                                    | 95 mm <sup>2</sup>                                                                    |
| 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](http://www.schaffner.com) to find more details on filter connectors.

Headquarters, Global  
Innovation and  
Development

**Switzerland**  
**Schaffner Group**  
Industrie Nord  
Nordstrasse 5  
4542  
Luterbach  
+41 32 681 66 26  
[info@schaffner.com](mailto:info@schaffner.com)

To find your local partner within  
Schaffner's global network [schaffner.com](https://www.schaffner.com)

© 2024 Schaffner Group

The content of this document has been carefully checked and understood. However, neither Schaffner nor its subsidiaries assume any liability whatsoever for any errors or inaccuracies of this document and the consequences thereof. Published specifications are subject to change without notice. Product suitability for any area of application must ultimately be determined by the customer. In all cases, products must never be operated outside their published specifications. Schaffner does not guarantee the availability of all published products. This disclaimer shall be governed by substantive Swiss law and resulting disputes shall be settled by the courts at the place of business of Schaffner Holding AG. Latest publications and a complete disclaimer can be downloaded from the Schaffner website. All trademarks recognized.

Sales and Application  
Centers

**Finland**  
**Schaffner Oy**  
Lohjanharjuntie 1109  
08500  
Lohja  
+ 358 50 468 72 84  
[finlandsales@schaffner.com](mailto:finlandsales@schaffner.com)

**France**  
**Schaffner EMC S.A.S.**  
16-20 Rue Louis Rameau  
95875  
Bezons  
+33 1 34 34 30 60  
[francesales@schaffner.com](mailto:francesales@schaffner.com)

**Germany**  
**Schaffner Deutschland GmbH**  
Ohiostr. 8  
76149  
Karlsruhe  
+49 721 56910  
[germanysales@schaffner.com](mailto:germanysales@schaffner.com)

**Italy**  
**Schaffner EMC S.r.l.**  
Via Ticino, 30  
20900  
Monza (MB)  
+39 039 21 41 070  
[italysales@schaffner.com](mailto:italysales@schaffner.com)

**Japan**  
**Schaffner EMC K.K.**  
ISM Sangenjaya 7F  
1-32-12 Kamiuma Setagaya-ku  
154-0011  
Tokyo  
+81 3 5712 3650  
[japansales@schaffner.com](mailto:japansales@schaffner.com)

**Singapore**  
**Schaffner EMC Pte Ltd.**  
Blk 3015A Ubi Road 1 #05-09 Kampong Ubi  
Industrial Estate  
408705  
Singapore  
+65 63773283  
[singaporesales@schaffner.com](mailto:singaporesales@schaffner.com)

**Sweden**  
**Schaffner EMC AB**  
Östermalmströg 1  
114 42  
Stockholm  
+46 8 5050 2425  
[swedensales@schaffner.com](mailto:swedensales@schaffner.com)

**Switzerland**  
**Schaffner EMV AG**  
Industrie Nord  
Nordstrasse 5  
4542  
Luterbach  
+41 32 681 66 26  
[switzerlandsales@schaffner.com](mailto:switzerlandsales@schaffner.com)

**India**  
**Schaffner India Pvt. Ltd**  
Regus World Trade Centre  
WTC 22nd Floor Unit No 2238 Brigade  
Gateway Campus 26/1 Dr. Rajkumar Road  
Malleshwaram (W)  
560055  
Bangalore  
+91 8067935355  
[indiasales@schaffner.com](mailto:indiasales@schaffner.com)

**United Kingdom**  
**Schaffner Ltd.**  
Suite 1 Oakmede Place  
Terrace Road  
RG42 4JF  
Binfield  
+44 118 9770070  
[uksales@schaffner.com](mailto:uksales@schaffner.com)

**United States**  
**Schaffner EMC Inc.**  
52 Mayfield Avenue  
Edison, New Jersey  
+1 732 225 9533  
[usasales@schaffner.com](mailto:usasales@schaffner.com)