

# Versatile Filtered Power Entry Module



- | Rated currents up to 10 A
- | For one or two fuses
- | Fuses Ø 6.3 x 32 mm or Ø 5 x 20 mm
- | 2-pole rocker switch
- | Voltage selector
- | Optional earth line choke (E type)



## Performance indicators

Attenuation performance



Rated current [A]



## Approvals



The FN 390 power entry module combines an IEC inlet, mains filter with single or dual-fuse holder, voltage selector and 2-pole rocker switch. Choosing FN 390 product line brings you the rapid availability of a standard filter associated with the necessary safety acceptances. Standard IEC connector filters are a practical solution helping you to pass EMI system approval in a short time. Multiple options designed to offer you the desired solution.

## Features and benefits

- | High conducted attenuation performance, based on chokes with high saturation resistance and excellent thermal behavior
- | Rear or front mounting
- | Single or dual-fuse holder
- | USA Ø 6.3 x 32 mm or EU Ø 5 x 20 mm fuses
- | 2-pole rocker switch
- | Voltage selector 110-120 V / 220-240 V
- | Custom-specific versions are available on request

## Technical specifications


<b>Maximum continuous operating voltage</b>	250 VAC, 50/60 Hz
<b>Operating frequency</b>	50 to 400 Hz
<b>Rated currents</b>	1 to 10 A @ 40 °C max.
<b>High potential test voltage</b>	P → PE 2000 VAC for 2 sec P → N 760 VAC for 2 sec
<b>Protection category</b>	IP40 according to IEC 60529
<b>Temperature range (operation and storage)</b>	-25 °C to +85 °C (25/85/21)
<b>Design corresponding to</b>	UL 1283, CSA 22.2 No. 8 1986, IEC/EN 60939
<b>Flammability corresponding to</b>	UL 94V-2 or better
<b>MTBF @ 40°C/230V (Mil-HB-217F)</b>	2,200,000 hours
<b>Voltage selector description</b>	
<b>Function</b>	Series/parallel
<b>Voltage marking</b>	
<b>Series</b>	110-120 V
<b>Parallel</b>	220-240 V
<b>Rocker switch description</b>	
<b>Function</b>	2-pole, dark not illuminated Marking I - 0
<b>Electrical specifications</b>	Inrush current 51 A 6,000 on-off operations according to UL 1054, TV 5 10,000 on-off operations according to ENEC
<b>Mechanical life</b>	50,000 cycles
<b>Switch ratings</b>	
<b>USA (UL) and Canada (C-UL)</b>	10 A, 125 VAC; 10 A, 250 VAC; 1/3 HP
<b>Europe (ENEC)</b>	10 A (4 A), 250 VAC*

\* Value in () relates to the inductive current charge:  $\cos \varphi = 0,65$

## Typical applications

- | Portable electrical and electronic equipment
- | Consumer goods
- | EDP and office equipment
- | Single-phase power supplies, switch-mode power supplies
- | Test and measurement equipment

### Filter selection table

Filter	Rated current @ 40 °C (25 °C) [A]	Leakage current* @ 230 VAC/50 Hz [µA]	Inductance		Capacitance			Resistance R [kΩ]	Output connections 	Fuses** [Qty]	Weight [g]
			L1 [mH]	L2 [mH]	Cx [nF]	Cx1 [nF]	Cy [nF]				
FN 393-1-05-11	1 (1.2)	560	7.5		220	3.3	1000	05-11	1	200	
FN 393-2.5-05-11	2.5 (3)	560	2		220	3.3	1000	05-11	1	200	
FN 393-6-05-11	6 (7.2)	560	0.45		220	3.3	1000	05-11	1	200	
FN 394-1-05-11	1 (1.2)	560	7.5		220	3.3	1000	05-11	2	200	
FN 394-2.5-05-11	2.5 (3)	560	2		220	3.3	1000	05-11	2	200	
FN 394-6-05-11	6 (7.2)	560	0.45		220	3.3	1000	05-11	2	200	
FN 393E-1-05-11	1 (1.2)	560	7.5	0.4	220	3.3	1000	05-11	1	205	
FN 393E-2.5-05-11	2.5 (3)	560	2	0.4	220	3.3	1000	05-11	1	205	
FN 393E-6-05-11	6 (7.2)	560	0.45	0.4	220	3.3	1000	05-11	1	205	
FN 394E-1-05-11	1 (1.2)	560	7.5	0.4	220	3.3	1000	05-11	2	205	
FN 394E-2.5-05-11	2.5 (3)	560	2	0.4	220	3.3	1000	05-11	2	205	
FN 394E-6-05-11	6 (7.2)	560	0.45	0.4	220	3.3	1000	05-11	2	205	
FN 1393-1-05-11	1 (1.2)	797	16		220	100	4.7	05-11	1	210	
FN 1393-2.5-05-11	2.5 (3)	797	8		220	100	4.7	05-11	1	210	
FN 1393-6-05-11	6 (7.2)	797	2.5		220	100	4.7	05-11	1	210	
FN 1393-10-05-11	10 (12)	797	0.6		220	100	4.7	05-11	1	210	
FN 1394-1-05-11	1 (1.2)	797	16		220	100	4.7	05-11	2	210	
FN 1394-2.5-05-11	2.5 (3)	797	8		220	100	4.7	05-11	2	210	
FN 1394-6-05-11	6 (7.2)	797	2.5		220	100	4.7	05-11	2	210	
FN 1394-10-05-11	10 (12)	797	0.6		220	100	4.7	05-11	2	210	

\* Maximum leakage under normal operating conditions. Note: if the neutral line is interrupted, worst case leakage could reach twice this level.

\*\* Filters are delivered without fuse.

Note: for medical versions please contact your local partner within Schaffner's global network.

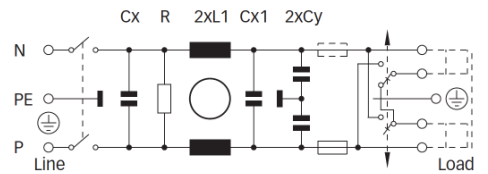
**Product selector**

FN (1)39xx-y-zz

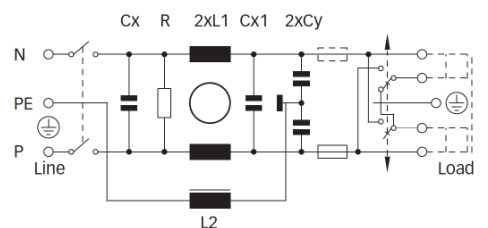
- 05-11: Faston 6.3 x 0.8mm
- 1 to 10: Rated current
- Blank: Standard version
- E: Optional earth line choke
- 3: 1 fuse (Ø5 x 20mm or Ø6.3 x 32mm)
- 4: 2 fuses (Ø5 x 20mm or Ø6.3 x 32mm)
- Blank: Standard version
- 1: Additional Cx1 capacitor and higher inductivity

**Typical electrical schematic**

**Standard types**



**E types**

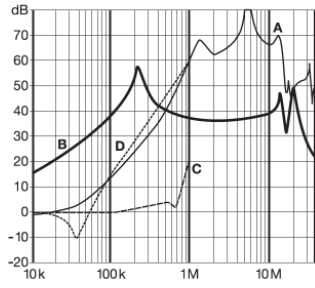


For example: FN 393-1-05-11, FN 394E-2.5-05-11, FN 1394-10-05-11

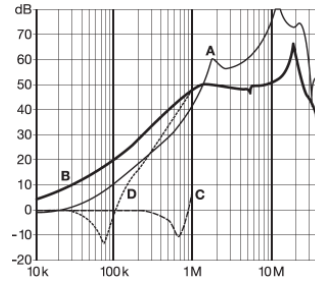
### Typical filter attenuation

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

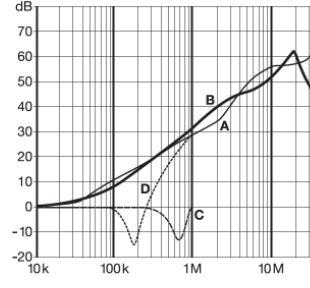
FN 39x: 1 A types



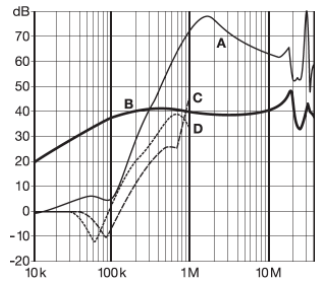
FN 39x: 2.5 A types



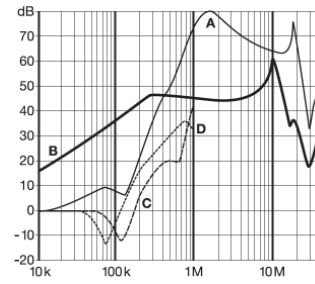
FN 39x: 6 A types



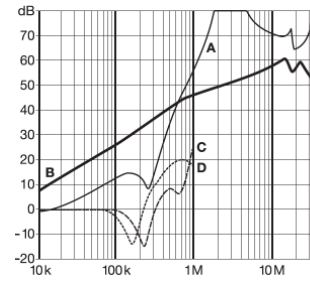
FN 139x: 1 A types



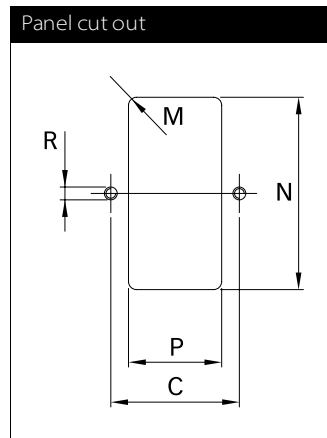
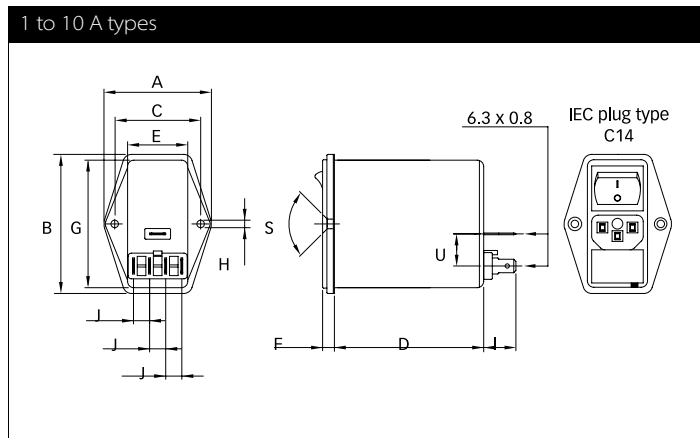
FN 139x: 2.5 A types



FN 139x: 6 and 10 A types



### Mechanical data



## Dimensions

	1 to 10A	Tolerances
<b>A</b>	50	±0.3
<b>B</b>	65	±0.3
<b>C</b>	40	±0.1
<b>D</b>	69.5	±0.3
<b>E</b>	28	
<b>F</b>	5.5	±0.3
<b>G</b>	59.6	
<b>H</b>	Ø 3.3	
<b>I</b>	15	
<b>J</b>	7.5	
<b>M</b>	R ≤ 2.5	
<b>N</b>	60.00	±0.5
<b>P</b>	29.00	±0.5
<b>R</b>	M3	
<b>S</b>	90°	
<b>U</b>	15	

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

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



## Headquarters, global innovation and development center

### Switzerland

#### Schaffner Group

Nordstrasse 11  
4542 Luterbach  
T +41 32 6816 626  
F +41 32 6816 630  
[info@schaffner.com](mailto:info@schaffner.com)  
<http://www.schaffner.com>



## Sales and application centers

### China

#### Schaffner EMC Ltd. Shanghai

T20-3, No 565 Chuangye Road  
Pudong New Area  
201201 Shanghai  
T +86 21 3813 9500  
F +86 21 3813 9501 / 02  
[cschina@schaffner.com](mailto:cschina@schaffner.com)  
<http://www.schaffner.com.cn/>

### Finland

#### Schaffner Oy

Sauvonrinne 19 H  
08500 Lohja  
T +358 19 35 72 71  
[finlandsales@schaffner.com](mailto:finlandsales@schaffner.com)

### France

#### Schaffner EMC S.A.S.

112, Quai de Bezons  
Boîte postale 133  
95103 Argenteuil  
T +33 1 34 34 30 60  
F +33 1 39 47 02 28  
[francesales@schaffner.com](mailto:francesales@schaffner.com)

### Germany

#### Schaffner Deutschland GmbH

Schoemperlenstrasse 12B  
76185 Karlsruhe  
T +49 721 56910  
F +49 721 569110  
[germanysales@schaffner.com](mailto:germanysales@schaffner.com)

### Italy

#### Schaffner EMC S.r.l.

Via Galileo Galilei 47  
20092 Cinisello Balsamo (MI)  
T +39 02 66 04 30 45/47  
F +39 02 61 23 943  
[italysales@schaffner.com](mailto:italysales@schaffner.com)

### Japan

#### Schaffner EMC K.K.

1-32-12, Kamiyama, Setagaya-ku  
7F Mitsui-seimei Sangenjaya Bldg.  
154-0011 Tokyo  
T +81 3 5712 3650  
F +81 3 5712 3651  
[japansales@schaffner.com](mailto:japansales@schaffner.com)  
<http://www.schaffner.jp>

### Singapore

#### Schaffner EMC Pte Ltd.

Blk 3015A Ubi Road 1  
05-09 Kampong Ubi Industrial Estate  
408705 Singapore  
T +65 6377 3283  
F +65 6377 3281  
[singaporesales@schaffner.com](mailto:singaporesales@schaffner.com)

### Spain

#### Schaffner EMC España

Calle Caléndula 93  
Miniparc III, Edificio E  
El Soto de la Moraleja  
Alcobendas  
28109 Madrid  
T +34 618 176 133  
[spainsales@schaffner.com](mailto:spainsales@schaffner.com)

### Sweden

#### Schaffner EMC AB

Turebergstorg 1, 6  
19147 Sollentuna  
T +46 8 5792 1121 / 22  
F +46 8 92 96 90  
[swedensales@schaffner.com](mailto:swedensales@schaffner.com)

### Switzerland

#### Schaffner EMV AG

Nordstrasse 11  
4542 Luterbach  
T +41 32 6816 626  
F +41 32 6816 641  
[sales@schaffner.ch](mailto:sales@schaffner.ch)

### Taiwan R.O.C.

#### Schaffner EMV Ltd.

6 Floor, No. 413  
Rui Guang Road  
114 Neihu District Taipei City  
T +886 2 87525050  
F +886 2 87518086  
[taiwansales@schaffner.com](mailto:taiwansales@schaffner.com)

### Thailand

#### Schaffner EMC Co. Ltd.

Northern Region Industrial Estate  
67 Moo 4 Tambon Ban Klang  
Amphur Muang P.O. Box 14  
51000 Lamphun  
T +66 53 58 11 04  
F +66 53 58 10 19  
[thailandsales@schaffner.com](mailto:thailandsales@schaffner.com)

### UK

#### Schaffner Ltd.

5 Ashville Way  
Molly Millars Lane  
Wokingham  
RG41 2PL Berkshire  
T +44 118 9770070  
F +44 118 9792969  
[uksales@schaffner.com](mailto:uksales@schaffner.com)  
<http://www.schaffner.uk.com>

### USA

#### Schaffner EMC Inc.

52 Mayfield Avenue  
08837 Edison, New Jersey  
T +1 800 367 5566  
T +1 732 225 9533  
F +1 732 225 4789  
[usasales@schaffner.com](mailto:usasales@schaffner.com)  
<http://www.schaffner.com/us>

#### Schaffner MTC LLC

6722 Thirlane Road  
24019 Roanoke, Virginia  
T +1 276 228 7943  
F +1 276 228 7953  
<http://www.schaffner-mtc.com>

#### Schaffner Trencos LLC

2550 Brookpark Road  
44134 Cleveland, Ohio  
T +1 216 741 5282  
F +1 216 741 4860  
[www.schaffner-trencos.com](http://www.schaffner-trencos.com)

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

© 2014 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.