schaffner
energy efficiency and reliability

High-current EMC/RFI Filter

- Off-the-shelf high power filter for rated currents up to 2500 A
- HV versions designed for 690 VAC IT power networks
- Busbars for convenient and universal electrical connection
- Protective plastic covers optionally available for unsurpassed safety

Performance indicators

Attenuation performance

Approvals

RoHS c UL us EAC 14

(600 VAC)

Features and benefits

- High-power filter for Class A compliance. With approval measurement also Class B compliance possible for some applications
- Extremely compact high-current filter solution with minimum space requirement
- FN 3359HV versions for 690 VAC are also designed for use in IT power networks
- All filters 320 A and above are suitable for regenerative motor drive system (with a suitable line reactor)
- Optionally available transparent protective covers for all filters up to 1000 A, to protect the installer, operator or inspector from undeliberate touching of life conductors. They can easily be retrofitted even if the filter is already installed and connected
- FN 3359 also improves conducted immunity of installations

Technical specifications

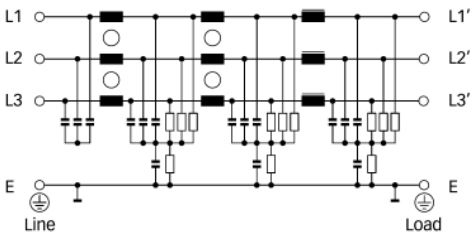
Design corresponding to	UL 1283, CSA 22.2 No. 8 1986, IEC/EN 60939
Flammability corresponding to	UL 94 V-2 or better
High potential test voltage	P –> E 2700 VDC for 2 sec (FN 3359) P –> P 3000 VDC for 2 sec (FN 3359 HV) P –> E 3100 VDC for 2 sec (FN 3359 HV) P –> E 2150 VDC for 2 sec (FN 3359)
Maximum continuous operating voltage	3x 520/300 VAC (FN 3359) 3x 690/400 VAC (FN 3359 HV)
MTBF @ 45°C/480V (Mil-HB-217F)	130,000 hours
Operating frequency	dc to 60 Hz
Overload capability	4x rated current at switch on, 1.5x rated current for 1 minute, once per hour
Protection category	IP00
Rated currents	150 to 2500 A @ 50 °C max
Temperature range (operation and storage)	-25 °C to +100 °C (25/100/21)

Typical applications

- High-power motor drives, inverters and converters
- Industrial three-phase systems
- Entire factories, plants and installations
- Large UPS
- Machinery
- Mining equipment
- Photovoltaic systems with galvanic isolation*
- Wind turbines

* For EMI solutions for PV system without galvanic isolation, please contact your local Schaffner partner.

Typical electrical schematic



Note: HV versions without discharge resistor to ground.

Filter selection table

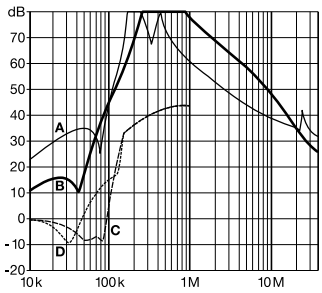
Filter	Rated current @ 50 °C (40 °C) [A]	Typical drive power rating* [kW]	Leakage current** @ 480 VAC/50 Hz [mA]	Power loss @ 25 °C/50 Hz [W]	Input/Output connections		Weight [kg]	Protective covers*** Order code
FN 3359-150-28	150 (164)	75	<6	24	–28		6.5	801917
FN 3359-180-28	180 (197)	90	<6	34	–28		6.5	801917
FN 3359-250-28	250 (250)	132	<6	49	–28		7.0	801918
FN 3359-320-99	320 (350)	160	<6	19		–99	10.5	801919
FN 3359-400-99	400 (438)	220	<6	29		–99	10.5	801919
FN 3359-600-99	600 (657)	315	<6	44		–99	11.0	801920
FN 3359-800-99	800 (876)	400	<6	39		–99	18.0	806276
FN 3359-1000-99	1000 (1095)	560	<6	60		–99	18.0	806276
FN 3359-1600-99	1600 (1600)	900	<6	131		–99	27.0	n.a.
FN 3359-2500-99	2500 (2500)	1320	<6	300		–99	55.0	n.a.
FN 3359HV-150-28	150 (164)	110	<6	24	–28		6.5	801917
FN 3359HV-180-28	180 (197)	132	<6	34	–28		6.5	801917
FN 3359HV-250-28	250 (250)	200	<6	49	–28		7.0	801918
FN 3359HV-320-99	320 (350)	250	<6	19		–99	10.5	801919
FN 3359HV-400-99	400 (438)	315	<6	29		–99	10.5	801919
FN 3359HV-600-99	600 (657)	500	<6	44		–99	11.0	801920
FN 3359HV-800-99	800 (876)	630	<6	39		–99	18.0	806276
FN 3359HV-1000-99	1000 (1095)	710	<6	60		–99	18.0	806276
FN 3359HV-1600-99	1600 (1600)	1320	<6	131		–99	27.0	n.a.
FN 3359HV-2500-99	2500 (2500)	2000	<6	300		–99	67.0	n.a.

* Calculated at rated current, 480 VAC (FN 3359) / 690 VAC (FN 3359 HV) and cos phi = 0.8. The exact value depends upon the efficiency of the drive, the motor and the entire application.
** Maximum leakage under normal operating conditions. Note: if two phases are interrupted, worst case leakage could be much higher than the value shown.
*** Please contact your local Schaffner partner to order the optional protective covers with the order code in the table above (n.a.: not available)

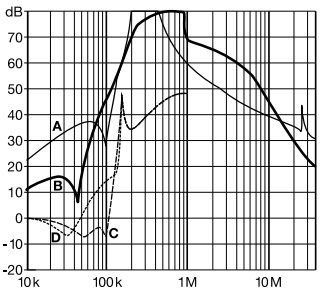
Typical filter attenuation

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

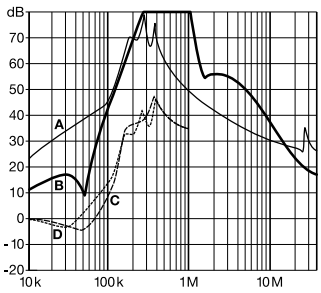
150 to 180 A types



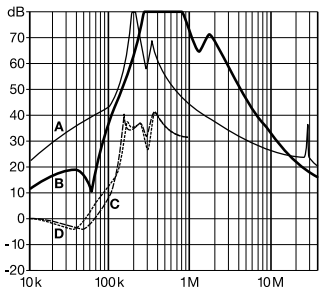
250 to 600 A types



800 and 100 0A types

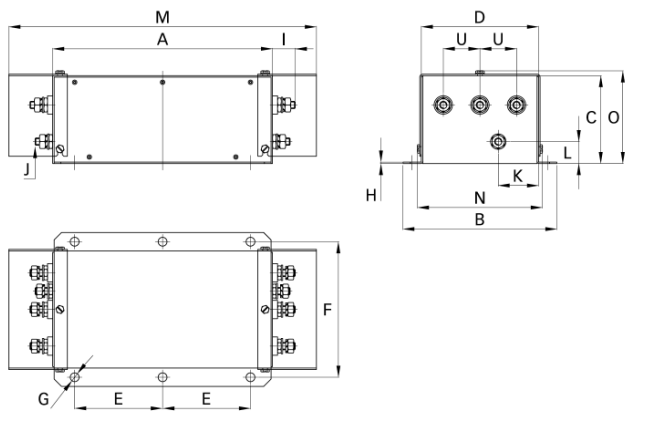


1600 and 2500 A types

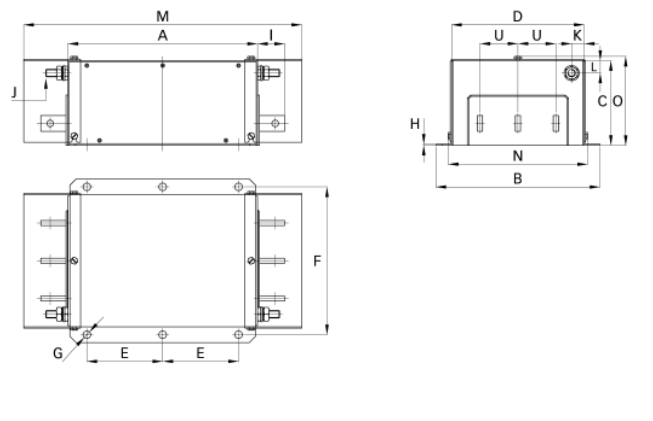


Mechanical data

150 to 250 A types

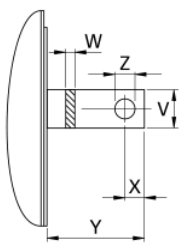


320 to 2500 A types

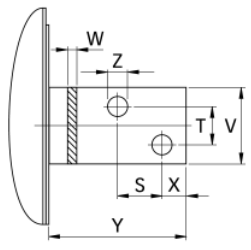


Busbar connections

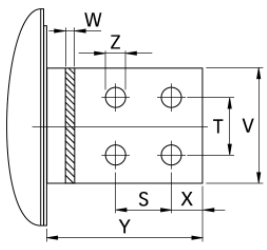
320 to 1000 A types



1600 A types



2500 A types



Dimensions

	150 A	180 A	250 A	320 A	400 A	600 A	800 A	1000 A	1600 A	2500 A
A	300	300	300	300	300	300	350	350	400	450
B	210	210	230	260	260	260	280	280	300	370
C	120	120	125	115	115	135	170	170	160	220
D	160	160	180	210	210	210	230	230	250	300
E	120	120	120	120	120	120	145	145	170	200
F	185	185	205	235	235	235	255	255	275	330
G	Ø12	Ø12	Ø12	Ø12	Ø12	Ø12	Ø12	Ø12	Ø12	Ø14
H	2	2	2	2	2	2	3	3	3	3
I	33	33	33	43	43	43	53	53	93	110
J	M10	M10	M10	M12	M12	M12	M12	M12	M12	M12
K	55	55	62.5	20	20	20	25	25	25	25
L	30	30	35	20	20	20	25	25	25	25
M	420	420	420	440	440	440	510	510	n.a.	n.a.
N	171	171	191	221	221	221	241	241	n.a.	n.a.
O	127	127	132	122	122	142	177	177	n.a.	n.a.
S									26	35
T									26	35
U	50	50	55	60	60	60	60	60	60	100
V				25	25	25	40	40	60	80
W				6	6	8	8	8	10	15
X				15	15	15	20	20	17	20
Y				40	40	40	50	50	93	110
Z				Ø10.5	Ø10.5	Ø10.5	Ø14	Ø14	Ø14	Ø14

All dimensions in mm; 1 inch = 25.4mm
Tolerances according: ISO 2768-m / EN 22768-m
(n.a.: not applicable)
Please visit www.schaffner.com to find more details on filter connectors.

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
http://www.schaffner.com

To find your local partner within Schaffner's global network: 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.

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
http://www.schaffner.com.cn/

Finland
Schaffner Oy
Sauvonrinne 19 H
08500 Lohja
T +358 19 35 72 71
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

Germany
Schaffner Deutschland GmbH
Schoemperlenstrasse 12B
76185 Karlsruhe
T +49 721 56910
F +49 721 569110
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

Japan
Schaffner EMC K.K.
1-32-12, Kamiuma, Setagaya-ku
7F Mitsui-seimei Sangenjaya Bldg.
154-0011 Tokyo
T +81 3 5712 3650
F +81 3 5712 3651
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

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

Sweden
Schaffner EMC AB
Turebergstorg 1, 6
19147 Sollentuna
T +46 8 5792 1121 / 22
F +46 8 92 96 90
swedensales@schaffner.com

Switzerland
Schaffner EMV AG
Nordstrasse 11
4542 Luterbach
T +41 32 6816 626
F +41 32 6816 641
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

Thailand
Schaffner EMC Co. Ltd.
Northern Region Industrial Estate
67 Moo 4 Tambon Ban Klang
Amphur Muangg P.O. Box 14
51000 Lamphun
T +66 53 58 11 04
F +66 53 58 10 19
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
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
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 Trenco LLC
2550 Brookpark Road
44134 Cleveland, Ohio
T +1 216 741 5282
F +1 216 741 4860
www.schaffner-trenco.com