

3-phase Filters FN 3359

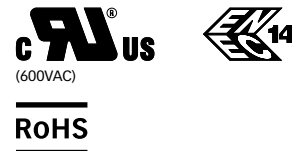
High-current Three-phase EMC/RFI Filter

SCHAFNER
energy efficiency and reliability



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

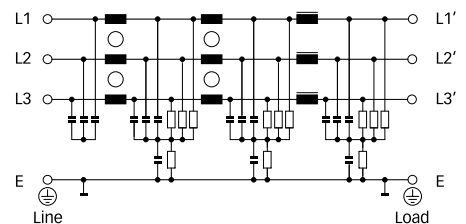
Approvals (filters up to 1000A)



Technical specifications

Maximum continuous operating voltage:	3x 520/300VAC (FN 3359) 3x 690/400VAC (FN 3359HV)
Operating frequency:	dc to 60Hz
Rated currents:	150 to 2500A @ 50°C
High potential test voltage:	P → E 2700VDC for 2 sec (FN 3359) P → P 2150VDC for 2 sec (FN 3359) P → E 3100VDC for 2 sec (FN 3359HV) P → P 3000VDC for 2 sec (FN 3359HV)
Protection category:	IP00
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 94V-2 or better
Design corresponding to:	UL 1283, CSA 22.2 No. 8 1986, IEC/EN 60939
MTBF @ 45°C/480V (Mil-HB-217F):	130,000 hours

Typical electrical schematic



Note: HV versions without discharge resistor to ground.

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 690VAC are also designed for use in IT power networks.
- All filters 320A and above are suitable for regenerative motor drive system (with a suitable line reactor).
- Optionally available transparent protective covers for all filters up to 1000A, to protect the installer, operator or inspector from undeliberate touching of live conductors. They can easily be retrofitted even if the filter is already installed and connected.
- FN 3359 also improves conducted immunity of installations.

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.

Filter selection table

Filter	Rated current @ 50°C (40°C)	Typical drive power rating*	Leakage current** @ 480VAC/50Hz	Power loss @ 25°C/50Hz	Input/Output connections	Weight	Protective covers***
	[A]	[kW]	[mA]	[W]	 	[kg]	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	
FN 3359-2500-99	2500 (-2500)	1320	<6	300	-99	55.0	
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	
FN 3359HV-2500-99	2500 (-2500)	2000	<6	300	-99	55.0	

* Calculated at rated current, 480VAC (FN 3359) / 690VAC (FN 3359HV) and cos phi = 0.8. The exact value depends upon the efficiency of the drive, the motor and the entire application.

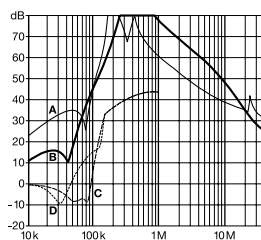
** Maximum leakage under normal operating conditions. Note: if two phases are interrupted, worst case leakage could be much higher than the value shown.

*** Please contact your local Schaffner partner to order the optional protective covers with the order code in the table above

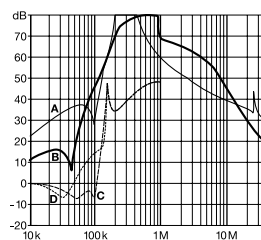
Typical filter attenuation

Per CISPR 17; A = 50Ω/50Ω sym; B = 50Ω/50Ω asym; C = 0.1Ω/100Ω sym; D = 100Ω/0.1Ω sym

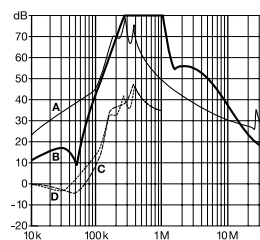
150 to 180A types



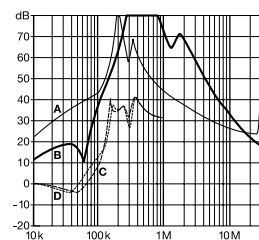
250 to 600A types



800 and 1000A types

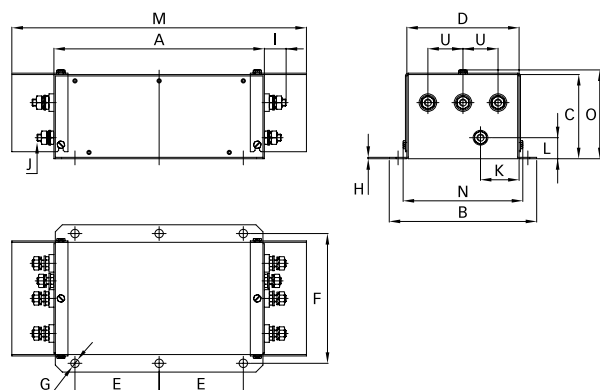


1600 and 2500A types

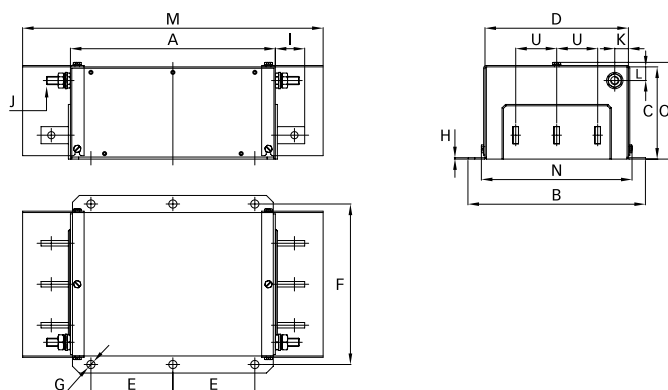


Mechanical data

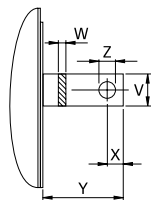
150 to 250A types



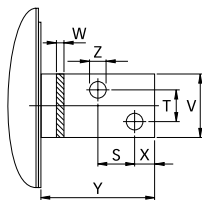
320 to 2500A types

**Busbar connections**

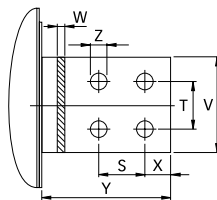
320 to 1000A types



1600A types



2500A types

**Dimensions**

	150A	180A	250A	320A	400A	600A	800A	1000A	1600A	2500A
A	300	300	300	300	300	300	350	350	400	600
B	210	210	230	260	260	260	280	280	300	370
C	120	120	125	115	115	135	170	170	160	200
D	160	160	180	210	210	210	230	230	250	300
E	120	120	120	120	120	120	145	145	170	250
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	98
J	M10	M10	M10	M12	M12	M12	M12	M12	M12	M16
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	171	171	191	221	221	221	241	241		
O	127	127	132	122	122	142	177	177		
S									26	35
T									26	35
U	50	50	55	60	60	60	60	60	60	100
V				25	25	25	40	40	60	70
W				6	6	8	8	8	10	15
X				15	15	15	20	20	17	20
Y				40	40	40	50	50	90	95
Z				Ø10.5	Ø10.5	Ø10.5	Ø14	Ø14	Ø14	Ø14

All dimensions in mm; 1 inch = 25.4mm

Tolerances according to ISO 2768-m / EN 22768-m

**Headquarters, global innovation
and development center**

Schaffner Group
Nordstrasse 11
4542 Luterbach
Switzerland
T +41 32 681 66 26
F +41 32 681 66 30
info@schaffner.com
www.schaffner.com

Sales and application centers

China
Schaffner EMC Ltd. Shanghai
T20-3, No 565 Chuangye Road
Pudong New Area
Shanghai 201201
T +86 21 3813 9500
F +86 21 3813 9501 / 02
cschina@schaffner.com
www.schaffner.com

Finland
Schaffner Oy
Sauvonrinne 19 H
08500 Lohja
T +358 19 35 72 71
F +358 19 32 66 10
finlandsales@schaffner.com

France
Schaffner EMC S.A.S.
112, Quai de Bezons
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.
Mitsui-Seimei Sangenjaya Bldg. 7F
1-32-12, Kamiuma, Setagaya-ku
Tokyo 154-0011
T +81 3 5712 3650
F +81 3 5712 3651
japansales@schaffner.com
www.schaffner.jp

Singapore
Schaffner EMC Pte Ltd.
Blk 3015A Ubi Road 1
05-09 Kampong Ubi Industrial Estate
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 32 681 66 26
F +41 32 681 66 41
sales@schaffner.ch

Taiwan
Schaffner EMV Ltd.
6th Floor, No 413
Rui Guang Road
Neihu District
Taipei City 114
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 Muang P.O. Box 14
Lamphun 51000
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
Berkshire RG41 2PL
T +44 118 9770070
F +44 118 9792969
uksales@schaffner.com
www.schaffner.uk.com

USA
Schaffner EMC Inc.
52 Mayfield Avenue
Edison, New Jersey 08837
T +1 732 225 9533
F +1 732 225 4789
usasales@schaffner.com
www.schaffner.com/us

To find your local partner within
Schaffner's global network, please go to
www.schaffner.com

© 2013 Schaffner Group
Specifications are subject to change
within notice. The latest version of the
data sheets can be obtained from the
website. All trademarks recognized.

Schaffner is an ISO-registered company.
Its products are designed and
manufactured under the strict quality
and environmental requirements of
the ISO 9001 and ISO 14001 standards.

This document has been carefully
checked. However, Schaffner does not
assume any liability for errors or
inaccuracies.