

Sinusoidal output filter for frequency inverters

- 2.5 to 610A current ratings
- Reduction of parasitic motor noise
- Improvement of system efficiency
- Reduction of eddy current losses
- Nennströme von 2.5 bis 610A
- Reduzierung der Motorgeräusche
- Verbesserung des System-Wirkungsgrads
- Reduktion der Wirbelstromverluste
- Courants de service de 2.5 à 610A
- Pour la réduction des bruits de moteur
- Amélioration du rendement du système
- Pour la réduction des pertes par courant de circulation

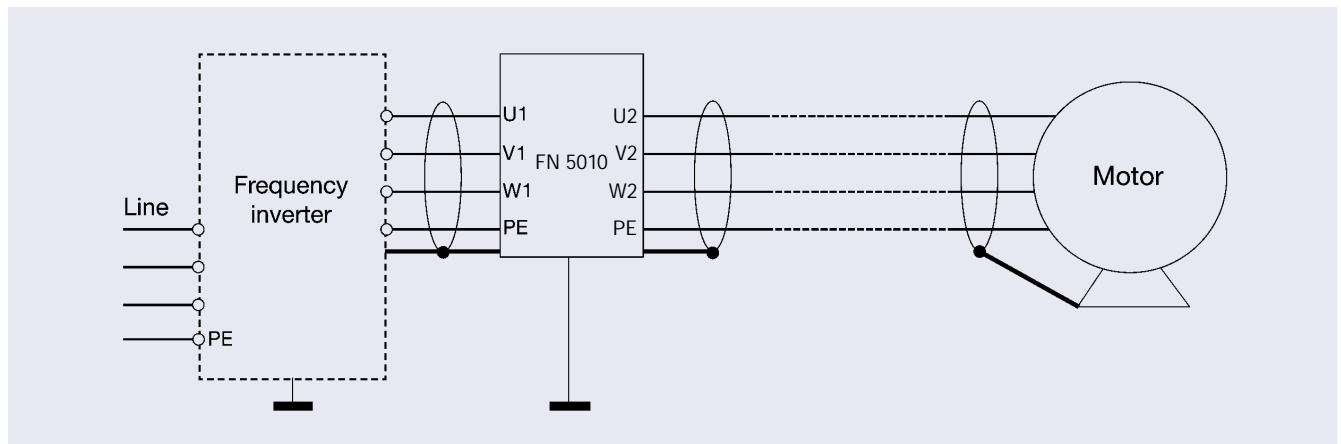


Technical specifications

Maximum operating voltage:	400VAC @ 40°C / 690VAC @ 40°C
Current ratings:	2.5 to 610A @ 40°C
Motor frequency:	up to ~70Hz
Switching frequency:	f_{min} 4kHz to f_{max} 16kHz
High potential test voltage:	P → E 3000VAC for ~3 sec (factory test) P → P 3000VAC for ~3 sec (factory test)
Protection category:	IP00
Insulation class:	T40/F (155°C)
Temperature range:	-25°C to +85°C (derating necessary above 40°C!)
Max. cable lengths:	400m shielded 300m unshielded

Electrical schematic

The filter converts pulse width modulated output voltages to sinusoidal voltages at the motor. Therefore, the service life of the motor will be increased significant.



Specifications and dimensions

FN 5010-Series (400VAC)

Filter	Current rating [A]	Induct. Cap.		Weight			Dimensions							Connections	Drawing	
		L [mH]	C [μ F]	Total	Copper [kg]	Alu.	A	B	B1	C	D	E	F			G*
FN 5010-2.5-99	2.5	22.4	1.5	2.6	0.68	-	125	65	110	180	100	45	5x8	2.5	Terminal block	D1
FN 5010-3.5-99	3.5	16	1.5	2.6	1.05	-	125	65	110	180	100	45	5x8	2.5	Terminal block	D1
FN 5010-4.5-99	4.5	11	1.5	3.0	1.1	-	125	75	110	180	100	55	5x8	2.5	Terminal block	D1
FN 5010-6.5-99	6.5	8.4	1.5	5.4	2.1	-	155	80	118	205	130	55	8x12	4	Terminal block	D1
FN 5010-8-99	8	7.2	1.5	6.6	2.2	-	155	95	118	205	130	70	8x12	4	Terminal block	D1
FN 5010-10-99	10	4.2	1.5	6.6	2.6	-	155	95	118	205	130	70	8x12	4	Terminal block	D1
FN 5010-13-99	13	4.2	1.5	7.3	3.2	-	190	100	125	230	170	58	8x12	4	Terminal block	D1
FN 5010-18-99	18	3.5	1.5	11.5	3.6	-	190	120	125	230	170	78	8x12	10	Terminal block	D1
FN 5010-24-99	24	2.4	1.5	14	5	-	210	125	135	260	175	85	8x12	10	Terminal block	D1
FN 5010-32-99	32	2	2	16	6.8	-	210	135	135	260	175	95	8x12	10	Terminal block	D1
FN 5010-42-99	42	1.58	7	22	7.4	-	230	140	150	285	180	122	8x12	10	Terminal block	D1
FN 5010-48-99	48	1.5	4	28	8.8	-	240	210	< B	290	190	125	8x12	10	Terminal block	D2
FN 5010-60-99	60	1.1	4	35	10.9	-	240	220	< B	290	190	135	8x12	16	Terminal block	D2
FN 5010-75-99	75	0.9	4	42	11.5	-	300	210	< B	345	240	134	11x15	35	Terminal block	D2
FN 5010-90-99	90	0.8	5	46	12.8	-	300	215	< B	345	240	139	11x15	35	Terminal block	D2
FN 5010-110-99	110	0.7	5	58	13	-	300	237	< B	345	240	161	11x15	50	Terminal block	D2
FN 5010-150-99	150	0.5	7	75	14.8	-	420	217	< B	470	370	142	11x15	50	Terminal block	D2
FN 5010-180-99	180	0.4	10	88	1.4	10.9	420	235	< B	470	370	157	11x15	11	Copper bar	D3
FN 5010-210-99	210	0.4	10	115	2.1	11.2	420	260	< B	470	370	182	11x15	11	Copper bar	D3
FN 5010-270-99	270	0.3	12	150	2.1	14	420	295	< B	470	370	217	11x15	11	Copper bar	D3
FN 5010-325-99	325	0.3	12	194	5.2	21	480	310	< B	580	430	234	13x18	11	Copper bar	D3
FN 5010-410-99	410	0.2	18	206	5.2	23.8	480	310	< B	580	430	234	13x18	11	Copper bar	D3
FN 5010-480-99	480	0.185	20	255	6.5	28	500	340	< B	670	430	238	13x18	11	Copper bar	D3
FN 5010-510-99	510	0.17	20	290	6.5	32	500	370	< B	670	430	248	13x18	11	Copper bar	D3
FN 5010-610-99	610	0.14	25	330	7.7	37.5	500	370	< B	670	430	268	13x18	11	Copper bar	D3

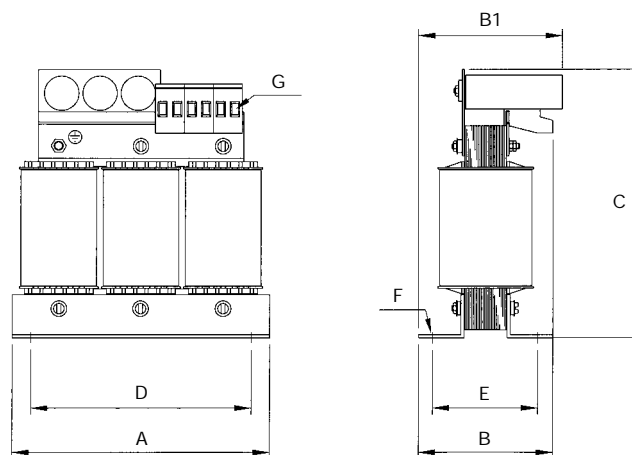
FN 5010HV-Series (690VAC)

Filter	Current rating [A]	Induct. Cap.		Weight			Dimensions							Connections	Drawing	
		L [mH]	C [μ F]	Total	Copper [kg]	Alu.	A	B	B1	C	D	E	F			G*
FN 5010HV-2.5-99	2.5	61	1.5	5.8	0.86	-	155	95	118	205	130	70	8x12	2.5	Terminal block	D1
FN 5010HV-3.5-99	3.5	43.5	1.5	6.6	1.55	-	155	95	118	205	130	70	8x12	2.5	Terminal block	D1
FN 5010HV-4.5-99	4.5	33.5	1.5	7.5	2.4	-	155	95	118	205	130	70	8x12	2.5	Terminal block	D1
FN 5010HV-6.5-99	6.5	23.5	1.5	11.2	3.95	-	190	110	125	230	170	68	8x12	4	Terminal block	D1
FN 5010HV-8-99	8	19	1.5	13.3	4.35	-	190	120	125	230	170	78	8x12	4	Terminal block	D1
FN 5010HV-10-99	10	15.2	1.5	15.8	5.7	-	210	125	135	260	175	85	8x12	4	Terminal block	D1
FN 5010HV-13-99	13	11.7	1.5	18.9	6	-	210	135	135	260	175	95	8x12	4	Terminal block	D1
FN 5010HV-18-99	18	8.4	1.5	27.2	9.5	-	230	160	< B	290	180	122	8x12	10	Terminal block	D1
FN 5010HV-24-99	24	6.3	2.2	29.7	11	-	230	160	< B	290	180	122	8x12	10	Terminal block	D1
FN 5010HV-32-99	32	4.7	2.2	46.5	15.7	-	300	215	< B	345	240	135	11x15	10	Terminal block	D1
FN 5010HV-42-99	42	3.6	4.7	53.6	16.4	-	300	232	< B	345	240	152	11x15	10	Terminal block	D1
FN 5010HV-48-99	48	3.1	4.7	66	16.9	-	360	235	< B	420	310	136	11x15	10	Terminal block	D2
FN 5010HV-60-99	60	2.5	4.7	70.7	17.4	-	360	241	< B	420	310	142	11x15	16	Terminal block	D2
FN 5010HV-75-99	75	2	5.6	78	19.6	-	360	261	< B	420	310	157	11x15	35	Terminal block	D2
FN 5010HV-90-99	90	1.75	5.6	94.7	25.2	-	420	228	< B	470	370	153	11x15	35	Terminal block	D2
FN 5010HV-110-99	110	1.38	10	112	27.8	-	420	248	< B	470	370	173	11x15	50	Terminal block	D2
FN 5010HV-150-99	150	1	10	152	29.6	-	420	288	< B	470	370	213	11x15	50	Terminal block	D2
FN 5010HV-180-99	180	0.85	12	181	2.3	17.8	480	350	< B	470	430	258	13x18	11	Copper bar	D3
FN 5010HV-210-99	210	0.73	18	200	3.4	19.6	480	340	< B	580	430	248	13x18	11	Copper bar	D3
FN 5010HV-270-99	270	0.56	18	210	3.4	26.6	480	340	< B	580	430	248	13x18	11	Copper bar	D3
FN 5010HV-325-99	325	0.47	22	232	4.9	35	480	350	< B	580	430	258	13x18	11	Copper bar	D3
FN 5010HV-410-99	410	0.37	28	277	6.3	47.6	480	350	< B	690	430	258	13x18	11	Copper bar	D3
FN 5010HV-480-99	480	0.32	36	289	8.4	49.7	480	360	< B	690	430	268	13x18	11	Copper bar	D3
FN 5010HV-510-99	510	0.3	36	303	8.4	51.4	480	370	< B	690	430	278	13x18	11	Copper bar	D3
FN 5010HV-610-99	610	0.25	44	335	13	53.9	480	360	< B	790	430	268	13x18	11	Copper bar	D3

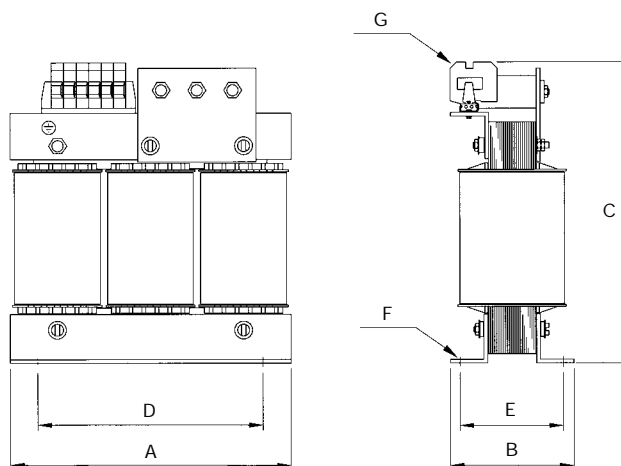
Sinusoidal output filters with customized specifications available on request.

*All versions with terminal blocks: dimension G in [mm²]
All versions with copper bars: dimension G in [mm]

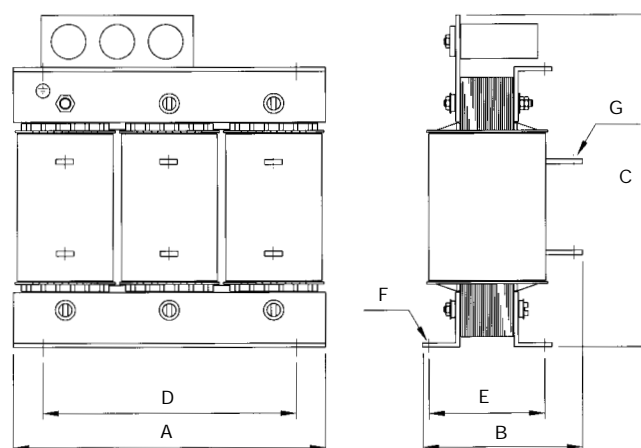
Drawing D1



Drawing D2



Drawing D3



All dimensions are approximate in mm; 1 inch = 25.4 mm

Schaffner's worldwide sales and distribution network

HEADQUARTERS

Schaffner EMV AG
Nordstrasse 11
CH-4542 Luterbach
Switzerland
Tel: (032) 6816 626
Fax: (032) 6816 641
Sales
Tel: (032) 6816 802

SALES SUBSIDIARIES

Schaffner Beijing Liaison Office
Room 911, Bright China Chang An Building
No. 7 Jianguomennei Dajie
Beijing 100005
China
Tel: (10) 6510 1761
Fax: (10) 6510 1763

Schaffner Electro Ferrum Oy
Tynninkuja 7
08700 Virkkala
Finland

Tel: (019) 326 616
Fax: (019) 326 610

Schaffner EMC S. A. S.
43 rue Michel Carré
F-95103 Argenteuil
France

Tel: (01) 34 34 30 60
Fax: (01) 39 47 02 28

Schaffner EMC S. A. S.
F-38560 Champ sur Drac
Tel: (04) 76 68 64 00
Fax: (04) 76 68 63 70

Schaffner EMC S. A. S.
F-35510 Cesson-Sévigné
Tel: (02) 99 22 70 00
Fax: (02) 99 22 70 07

Schaffner EMV GmbH
Schoemperlenstrasse 12B
D-76185 Karlsruhe
Germany
Tel: (0721) 56 910
Fax: (0721) 56 9110

Northern Germany
D-59581 Warstein
Tel: (02902) 97 56 10
Fax: (02902) 97 56 80

Schaffner EMC Srl
Via Galileo Galilei, 47
I-20092 Cinisello Balsamo (MI)
Italy
Tel: (02) 66 04 30 45
Fax: (02) 61 23 943

Schaffner EMC KK
2-31-6 Kamiuma
Setagaya-Ku
Tokyo 154-0011
Japan

Tel: (03) 3418 5822
Fax: (03) 3418 3013

Schaffner EMC Pte Ltd
1200 Depot Road 06-01
Singapore 109675
Singapore
Tel: 377 3283
Fax: 377 3281

Schaffner EMC AB
Turebergstorg 1,6
S-19147 Sollentuna
Sweden
Tel: (08) 57921121
Fax: (08) 929690

Schaffner EMC Ltd
Ashville Way
Molly Millar's Lane
Wokingham
Berks RG41 2PL
UK

Tel: (0118) 9770070
Fax: (0118) 9792969

Schaffner EMC Inc
52 Mayfield Avenue
Edison, NJ 08837
USA
Toll free: 800 367 5566
Tel: (732) 225 9533
Fax: (732) 225 4789

GROUP DISTRIBUTORS

Arrow (Spoerle Electronic)
Austria Tel: 01 360 460
Belgium Tel: 02 725 4660
Czech Republic Tel: 02 7174 2000
Germany Tel: 6103 3048
Netherlands Tel: 030 6391 234
Poland Tel: 022 856 9090
South Africa Tel: 11 923 9600
Switzerland Tel: 01 874 6262
UK Tel: 01234 360777
USA Tel: 800-558-1903

Avnet
Belgium Tel: 2 709 9000
Denmark Tel: 44 88 08 00
Finland Tel: 9 613 181
Israel Tel: 9 796 6999
Netherlands Tel: 76 57 22 500
Norway Tel: 66 77 36 00
Spain Tel: 91 372 7200
Sweden Tel: 8 587 460 00
Switzerland Tel: 056 437 5111
UK Tel: 1438 788 500

Eurodis (Microdis Electronics)
Austria Tel: 1 610 620
Czech Republic Tel: 506 411494
France Tel: 1 4180 3580
Hungary Tel: 1 349 0406
Italy Tel: 2 489 471
Lithuania and Baltic countries Tel: 2 652 683
Poland Tel: 71 301 0400
Romania Tel: 56 292 774
Russia Tel: 095 535 6398
Slovak Republic Tel: 88 412 3573
UK Tel: 1737 242 464
Ukraine Tel: 322 593 014
Yugoslavia Tel: 11 329 1063

Farnell
Worldwide <http://www.farnell.com>

RS Components
Worldwide <http://rswww.com>

LOCAL DISTRIBUTORS

Australia
Westek Electronics Pty Ltd Tel: 3 9369 8802

Brasil
Spectrum Comercio Imp. e Exp. Ltda. Tel: 11 3889 0052

Canada
Sandbeck Electronics Tel: 519-746-5801

Croatia
Tectra d. o. o. Tel: 21 87 45 93

Greece
Micrelec S.A. Tel: 1 569 5043

Hong Kong
Denetron International Ltd. Tel: 2 707 9132

India
Vishal Agencies Tel: 40 711 2079

Japan
Densei-Lambda K.K. Tel: 3 3447 4411
SSR Engineering Co. Ltd. Tel: 45 730 5580
Unidux Inc Tel: 422 32 4500

Korea
Power EMC TEK Tel: 2 501 5852

New Zealand
Inline Components Ltd. Tel: 6 308 6411

Poland
Astat Sp. Tel: 61 8488 871

Switzerland
Distrelec AG Tel: 01 944 99 11

Taiwan
Bandtek International Co. Ltd. Tel: 2 2657 2615
Richtec Instruments Co. Ltd. Tel: 2 2675 0482

Turkey
Artest Elektronik Tel: 216 478 1757

USA National
Arrow Electronics Tel: 800-558-1903
Kent Electronics Tel: 800-735-5426
Newark Electronics Tel: 800-463-9275
Pioneer Electronics Tel: 800-289-4350
Sager Electronics Tel: 800-724-3780

North East
Coughlin Electronics Tel: 800-643-1499
Glynn Electronics Tel: 800-225-8684
Marlac Electronics Tel: 856-234-4200

South East
Hammond Electronics Tel: 800-929-3672

West Coast
Prime Electronics Tel: 800-347-1001

West and Mid West
Walker IEC Tel: 877-274-3442

South West
Wofford Electronics Tel: 800-275-1666

North West
Halco Tel: 206-382-1300
Walker IEC Tel: 877-274-3442



Schaffner EMV AG CH-4542 Luterbach, Switzerland
Tel: +41 32 6816 626 Fax: +41 32 6816 641 www.schaffner.com

690-686B Urs Uebelhart/September 2001

© 2001 Schaffner EMV. Specifications subject to change without notice. All trademarks recognised.

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

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