

# 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

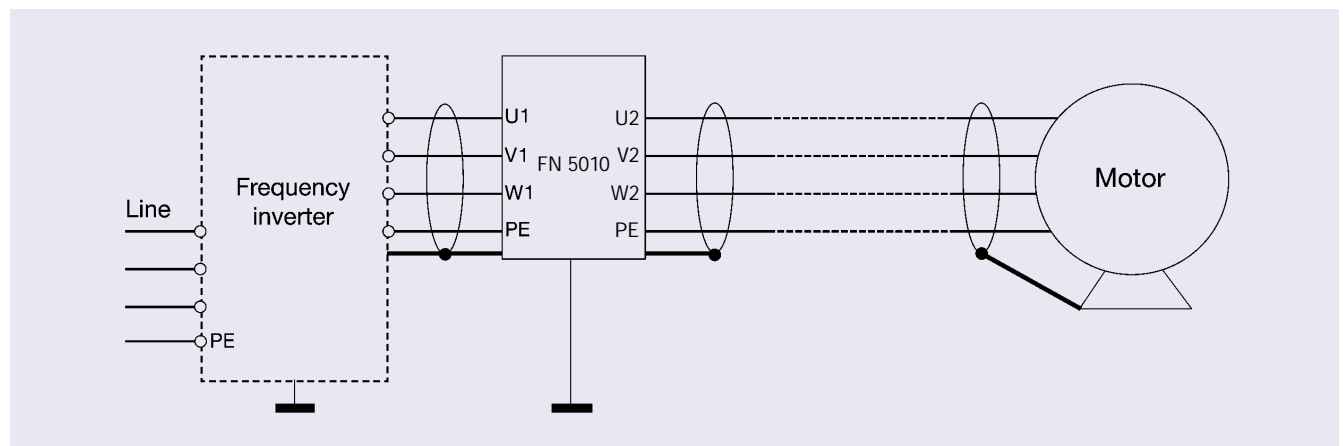


## Technical specifications

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 [ $\mu$ F ]	Total	Copper [ kg ]	Alu.	A	B	B1	C [ mm ]	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

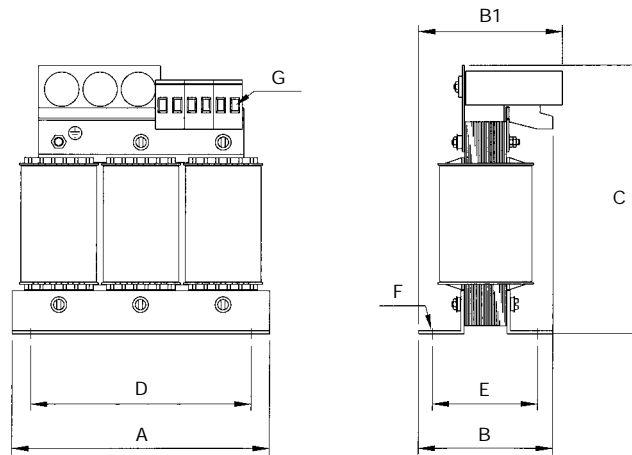
### FN 5010HV-Series (690VAC)

Filter	Current rating [ A ]	Induct. Cap.		Weight			Dimensions							Connections	Drawing	
		L [ mH ]	C [ $\mu$ F ]	Total	Copper [ kg ]	Alu.	A	B	B1	C [ mm ]	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

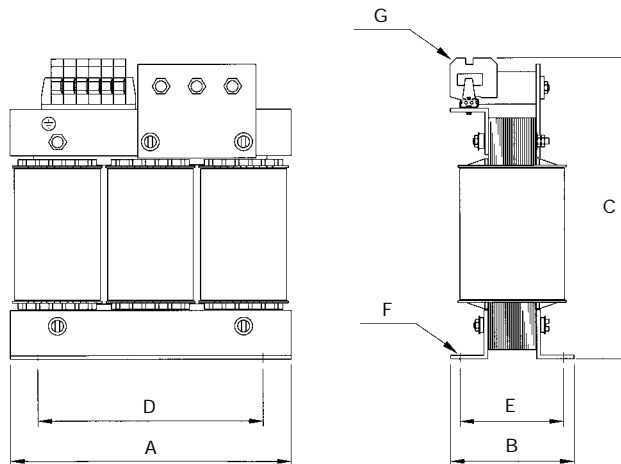
Sinusoidal output filters with customized specifications available on request.

\*All versions with terminal blocks: dimension G in [mm<sup>2</sup>]  
All versions with copper bars: dimension G in [mm]

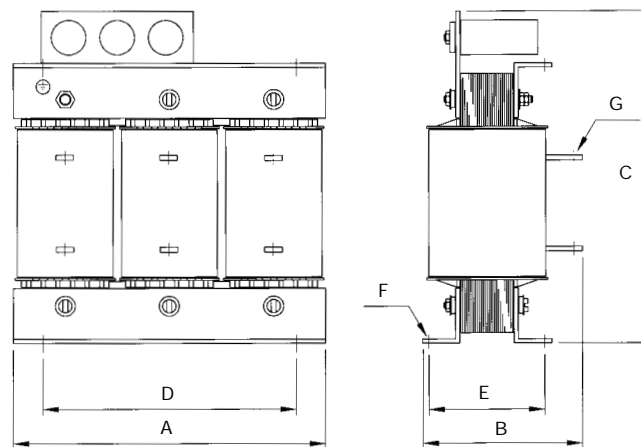
Drawing D1



Drawing D2



Drawing D3



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

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Tel: +41 32 6816 626 Fax: +41 32 6816 641 [www.schaffner.com](http://www.schaffner.com)

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