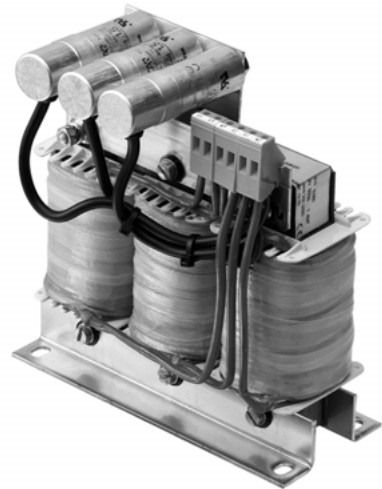


Sinusoidal output filter for frequency inverters

FN 5010

- 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



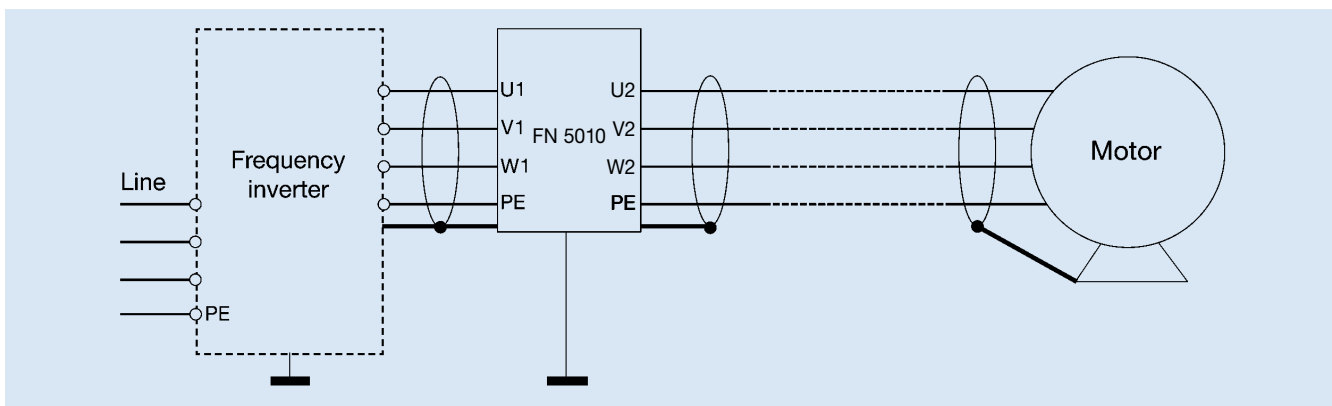
Technical specifications

Nominal 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 (modifications for lower switching frequencies upon request)
High potential test voltage:	P → E 3000VAC for ~3 sec (factory test) P → P 2000VAC for ~3 sec (factory test)
Protection category:	IP00 (Types from 2.5 to 150A according to VBG4)
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
Voltage drop at rated current:	~10% uk
Residual ripple voltage:	~5%
Overload:	2 times rated current at switch on for 30 seconds, 1.5 times rated current for 1 minute, once per hour

* Higher operating voltages may reduce the service life of the capacitors.

Electrical schematic

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



Specifications and dimensions

FN 5010-Series (400VAC)

Filter	Current rating [A]	Induct. Cap.		Power loss [W]	Weight			Dimensions							Connections	Drawing	
		L [mH]	C [μ F]		Total	Copper	Alu.	A	B	B1	C	D	E	F			G*
FN 5010-2.5-99	2.5	22.4	1.5	50	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	54	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	66	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	70	5.4	2.1		155	80	118	205	130	55	8x12	4	Terminal block	D1
FN 5010-8-99	8	7.2	1.5	73	6.6	2.2		155	95	118	205	130	70	8x12	4	Terminal block	D1
FN 5010-10-99	10	4.2	1.5	91	6.6	2.6		155	95	118	205	130	70	8x12	4	Terminal block	D1
FN 5010-13-99	13	4.2	1.5	124	7.3	3.2		190	100	125	230	170	58	8x12	4	Terminal block	D1
FN 5010-18-99	18	3.5	1.5	144	11.5	3.6		190	120	125	230	170	78	8x12	10	Terminal block	D1
FN 5010-24-99	24	2.4	1.5	191	14	5		210	125	135	260	175	85	8x12	10	Terminal block	D1
FN 5010-32-99	32	2	2	273	16	6.8		210	135	135	260	175	95	8x12	10	Terminal block	D1
FN 5010-42-99	42	1.58	7	252	22	7.4		230	140	150	285	180	122	8x12	10	Terminal block	D1
FN 5010-48-99	48	1.5	4	340	28	8.8		240	210	< B	290	190	125	8x12	10	Terminal block	D2
FN 5010-60-99	60	1.1	4	290	35	10.9		240	220	< B	290	190	135	8x12	16	Terminal block	D2
FN 5010-75-99	75	0.9	4	340	42	11.5		300	210	< B	345	240	134	11x15	35	Terminal block	D2
FN 5010-90-99	90	0.8	5	360	46	12.8		300	215	< B	345	240	139	11x15	35	Terminal block	D2
FN 5010-110-99	110	0.7	5	400	58	13		300	237	< B	345	240	161	11x15	50	Terminal block	D2
FN 5010-150-99	150	0.5	7	716	75	14.8		420	217	< B	470	370	142	11x15	50	Terminal block	D2
FN 5010-180-99	180	0.4	10	820	88	1.4	10.9	420	235	< B	470	370	157	11x15	11	Copper bar	D3
FN 5010-210-99	210	0.4	10	1065	115	2.1	11.2	420	260	< B	470	370	182	11x15	11	Copper bar	D3
FN 5010-270-99	270	0.3	12	1230	150	2.1	14	420	295	< B	470	370	217	11x15	11	Copper bar	D3
FN 5010-325-99	325	0.3	12	1820	194	5.2	21	480	310	< B	580	430	234	13x18	11	Copper bar	D3
FN 5010-410-99	410	0.2	18	1830	206	5.2	23.8	480	310	< B	580	430	234	13x18	11	Copper bar	D3
FN 5010-480-99	480	0.185	20	2100	255	6.5	28	500	340	< B	670	430	238	13x18	11	Copper bar	D3
FN 5010-510-99	510	0.17	20	2255	290	6.5	32	500	370	< B	670	430	248	13x18	11	Copper bar	D3
FN 5010-610-99	610	0.14	25	2520	330	7.7	37.5	500	370	< B	670	430	268	13x18	11	Copper bar	D3

FN 5010HV-Series (690VAC)

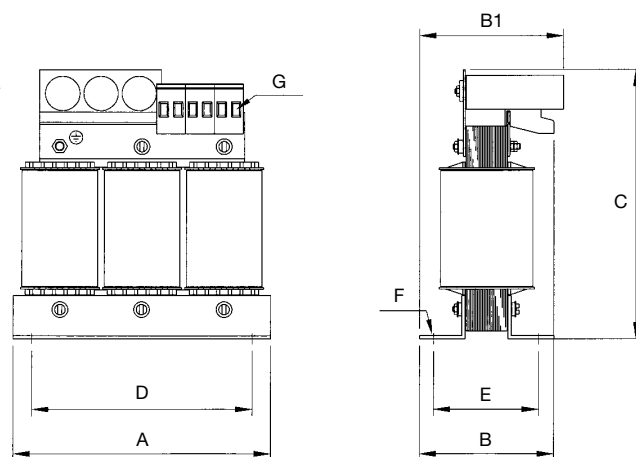
Filter	Current rating [A]	Induct. Cap.		Power loss [W]	Weight			Dimensions							Connections	Drawing	
		L [mH]	C [μ F]		Total	Copper	Alu.	A	B	B1	C	D	E	F			G*
FN 5010HV-2.5-99	2.5	61	1.5	60	5.8	0.86		155	95	118	205	130	70	8x12	2.5	Terminal block	D1
FN 5010HV-3.5-99	3.5	43.5	1.5	64	6.6	1.55		155	95	118	205	130	70	8x12	2.5	Terminal block	D1
FN 5010HV-4.5-99	4.5	33.5	1.5	63	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	73	11.2	3.95		190	110	125	230	170	68	8x12	4	Terminal block	D1
FN 5010HV-8-99	8	19	1.5	83	13.3	4.35		190	120	125	230	170	78	8x12	4	Terminal block	D1
FN 5010HV-10-99	10	15.2	1.5	102	15.8	5.7		210	125	135	260	175	85	8x12	4	Terminal block	D1
FN 5010HV-13-99	13	11.7	1.5	124	18.9	6		210	135	135	260	175	95	8x12	4	Terminal block	D1
FN 5010HV-18-99	18	8.4	1.5	136	27.2	9.5		230	160	< B	290	180	122	8x12	10	Terminal block	D1
FN 5010HV-24-99	24	6.3	2.2	189	29.7	11		230	160	< B	290	180	122	8x12	10	Terminal block	D1
FN 5010HV-32-99	32	4.7	2.2	264	46.5	15.7		300	215	< B	345	240	135	11x15	10	Terminal block	D1
FN 5010HV-42-99	42	3.6	4.7	254	53.6	16.4		300	232	< B	345	240	152	11x15	10	Terminal block	D1
FN 5010HV-48-99	48	3.1	4.7	380	66	16.9		360	235	< B	420	310	136	11x15	10	Terminal block	D2
FN 5010HV-60-99	60	2.5	4.7	528	70.7	17.4		360	241	< B	420	310	142	11x15	16	Terminal block	D2
FN 5010HV-75-99	75	2	5.6	631	78	19.6		360	261	< B	420	310	157	11x15	35	Terminal block	D2
FN 5010HV-90-99	90	1.75	5.6	793	94.7	25.2		420	228	< B	470	370	153	11x15	35	Terminal block	D2
FN 5010HV-110-99	110	1.38	10	898	112	27.8		420	248	< B	470	370	173	11x15	50	Terminal block	D2
FN 5010HV-150-99	150	1	10	1121	152	29.6		420	288	< B	470	370	213	11x15	50	Terminal block	D2
FN 5010HV-180-99	180	0.85	12	1140	181	2.3	17.8	480	350	< B	470	430	258	13x18	11	Copper bar	D3
FN 5010HV-210-99	210	0.73	18	1392	200	3.4	19.6	480	340	< B	580	430	248	13x18	11	Copper bar	D3
FN 5010HV-270-99	270	0.56	18	1495	210	3.4	26.6	480	340	< B	580	430	248	13x18	11	Copper bar	D3
FN 5010HV-325-99	325	0.47	22	1612	232	4.9	35	480	350	< B	580	430	258	13x18	11	Copper bar	D3
FN 5010HV-410-99	410	0.37	28	1876	277	6.3	47.6	480	350	< B	690	430	258	13x18	11	Copper bar	D3
FN 5010HV-480-99	480	0.32	36	2225	289	8.4	49.7	480	360	< B	690	430	268	13x18	11	Copper bar	D3
FN 5010HV-510-99	510	0.3	36	2400	303	8.4	51.4	480	370	< B	690	430	278	13x18	11	Copper bar	D3
FN 5010HV-610-99	610	0.25	44	2740	335	13	53.9	480	360	< B	790	430	268	13x18	11	Copper bar	D3

Sinusoidal output filters with customised specifications available on request.

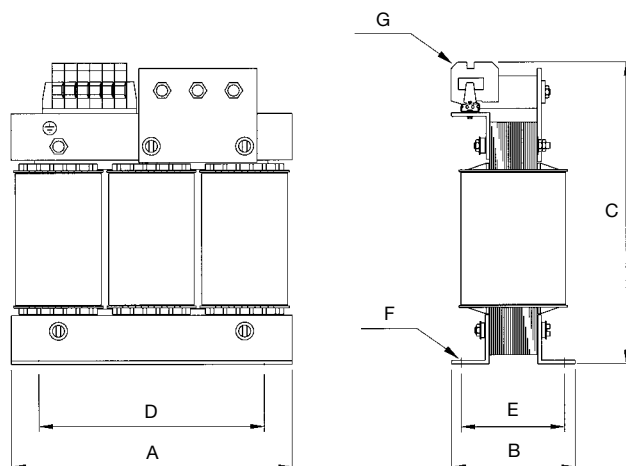
*All versions with terminal blocks: dimension G in [mm]²
All versions with copper bars: dimension G in [mm]

Mechanical data

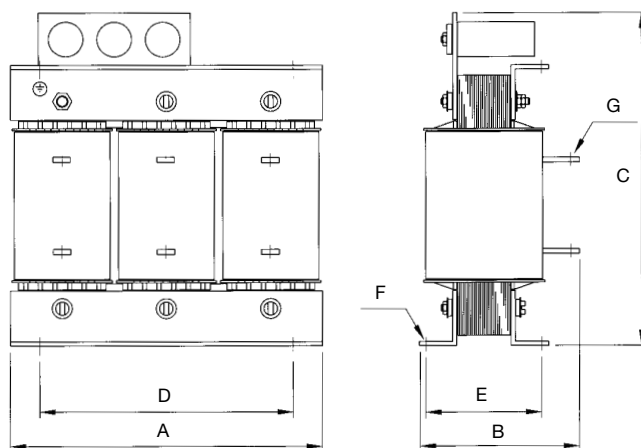
Drawing D1



Drawing D2



Drawing D3



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