

コンパクトな大電流用DCノイズフィルタ



- ソーラーパネルへの伝導ノイズエミッションを低減
- ソーラーパネルからのノイズ放射を低減
- パネルの早期劣化を防止
- 国際EMC規格への適合をサポート
- 業界で最もコンパクトな標準ノイズフィルタ
- FN 2210 HV シリーズは大地へのCyキャパシタなし



パフォーマンスインジケータ

Attenuation performance



Rated current [A]



技術仕様

最大連続動作電圧	1'500 VDC
動作周波数	DC
定格電流	250 to 2300 A @ 50°C
耐電圧試験電圧	P -> E 6'800 VDC for 2 sec P -> P 3'850 VDC for 2 sec
保護等級	IP 00
過負荷容量	4x rated current at switch on, max. 8 sec 1.5x rated current for 1 minute, once per hour -40°C
温度範囲 (動作及び保管)	to +100°C
環境カテゴリー	40/100/21 acc. to IEC 60068-1
端子/筐体	Ni plated cu bars/Metal
難燃性	UL 94V-0
安全規格	UL 1283, CSA 22.2 No. 8 1986, IEC/EN 60939, EN 60721-3, EN 62109

安全規格



FN 2211HV/2210HVシリーズは、太陽光発電インバータ用に開発された、さらなる小型化を実現した大電流用DCフィルタで、最新鋭のスマートな太陽光発電用インバータにもスムーズに収容可能です。また、様々な形でシステムに組み込まれることが可能で、ユーザーの特殊な要求にも柔軟に対応します。

FN 2211HV/2210HVシリーズの筐体は左右非対称設計となっており、フィルタを逆向きに取り付けたり、電氣的配線を誤ったりといったミスが起こらぬよう配慮がなされています。送電網側のAC用EMCフィルタ、FN 3311HV/FN 3310HVシリーズと、DC側のFN 2211HV/FN 2210HVシリーズとにより、厳しい国際規格要求への適合や、システムの安定的で信頼性の高い運転が保証されます。

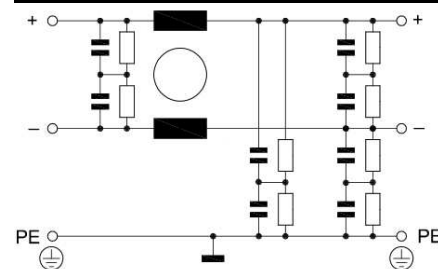
優れた特長

FN 2211HV / FN 2210HVシリーズDCフィルタを太陽光インバータとソーラーパネルとの間に取り付けることにより、システムのパネル側の伝導ノイズエミッションが効果的に抑制されます。これを受けて、DCフィルタによりパネルの高周波 (HF)ノイズ放射が大幅に抑制されます。FN 2211HV/FN 2210HVフィルタはさらに、浮遊容量及び漏れ電流による太陽光パネルの早期劣化を防止します。

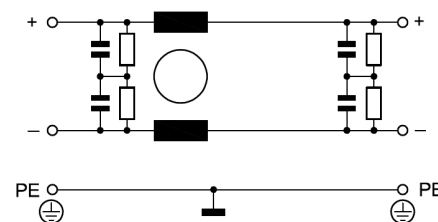
一般的な用途

FN 2211HV / FN 2210HV シリーズは、基本的には250A~2,300Aの太陽光インバータ向けに開発されていますが、データシート上の仕様範囲内において、UPS、DCモータードライブ、エネルギー/バッテリーストレージシステム、DC充電器などの直流電源装置にも使用可能です。

FN 2211 HVの代表的な回路図



FN 2210 HVの代表的な回路図



Filter selection table

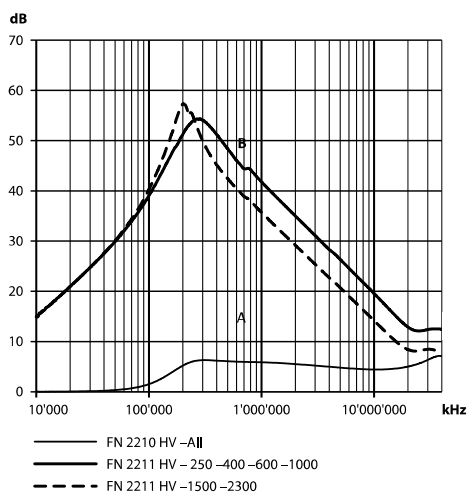
Filters *	Rated current @ 50°C [A]	Power loss @ 25°C/DC [W]	Weight [kg]
FN 2211 HV with Cy caps			
FN 2211HV-250-99-C27-R99	250	9	3.3
FN 2211 HV-400-99-C27-R99	400	14	4.2
FN 2211 HV-600-99-C27-R99	600	15	4.8
FN 2211 HV-1000-99-C27-R99	1000	31	7.1
FN 2211 HV-1500-99-C27-R99	1500	41	12.4
FN 2211 HV-2300-99-C27-R99	2300	64	18.3
FN 2210 HVwithout Cy caps			
FN 2210 HV-250-99-R9	250	9	2.
FN 2210 HV-400-99-R9	400	14	3.3
FN 2210 HV-600-99-R9	600	15	4.0
FN 2210 HV-1000-99-R9	1000	31	6.4
FN 2210 HV-1500-99-R9	1500	41	11.2
FN 2210 HV-2300-99-R9	2300	64	17.6

* Filters with reduced Cy capacitance to ground for high asymmetrical currents and higher voltages available upon request.

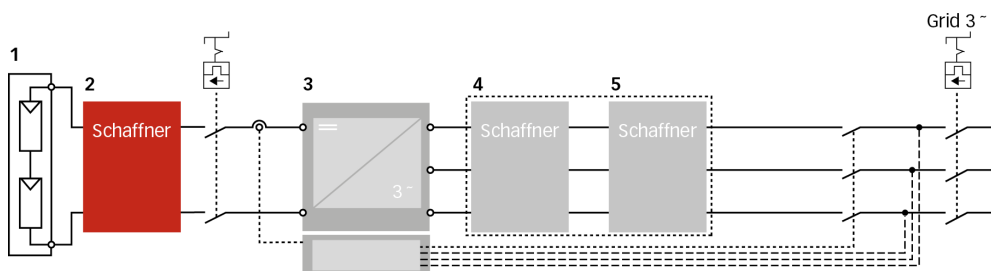
Typical filter attenuation FN 2211 HV-xxx-99-C27-R99

Per CISPR 17; A=50 Ω/50 Ω sym; B=50 Ω/50 Ω asym

250 / 400 / 600 / 1000 / 1500 / 2300 A types



Typical block schematic



1 PV modules

2 Schaffner DC filter FN 22xx

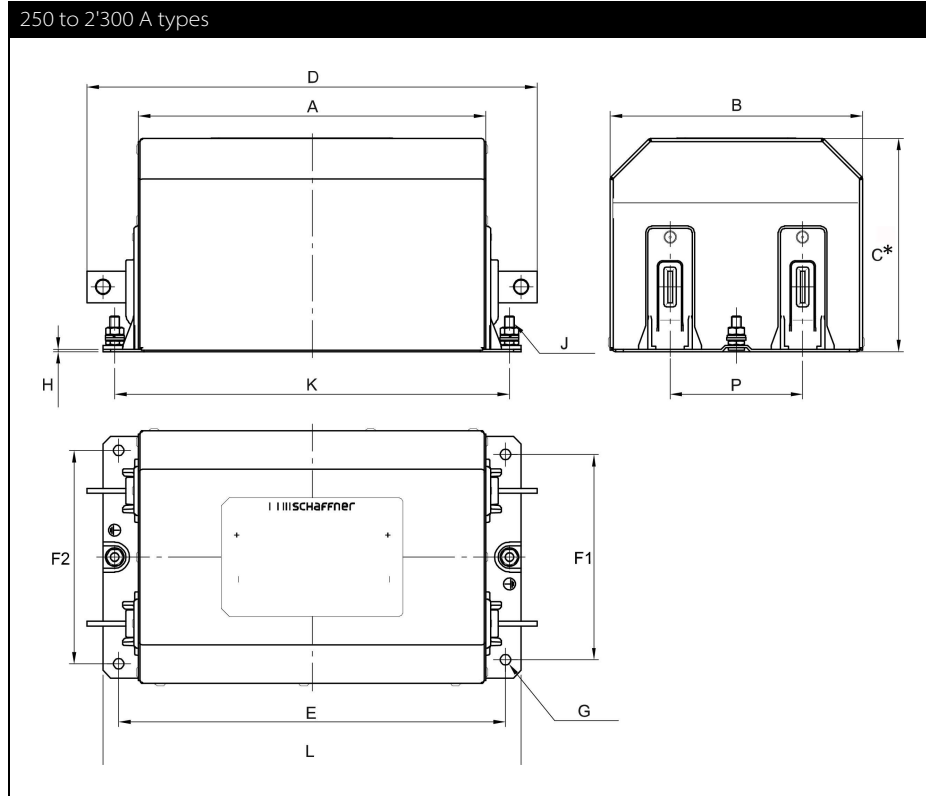
3 Central Inverter

4 Schaffner magnetic components

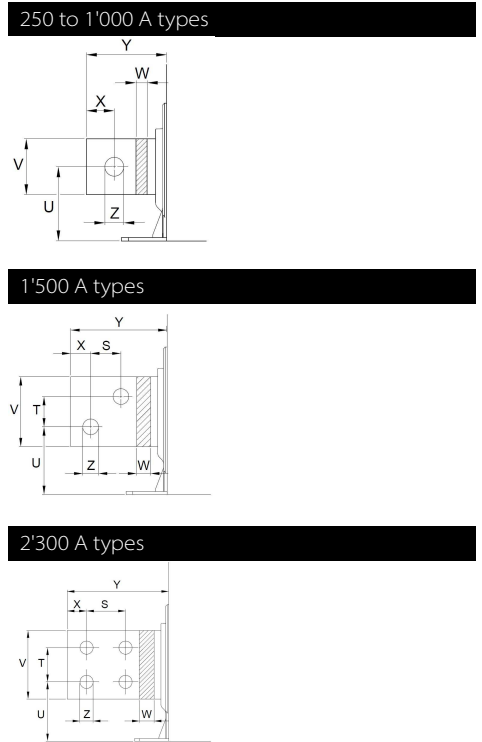
5 Schaffner AC EMC/EMI filter FN 3xxx

Important note: depending on the grounding scheme of the solar power system, including the solar panel and the grid side transformer, the appropriate DC- and AC EMC/EMI filter version need to be selected. For support, please contact your local Schaffner sales office or partner.

Mechanical data



Busbar connections



Note: all FN 2211 and FN 2210 provide unsymmetrical mounting hole patterns to prevent inverse filter installation in the field.

Dimensions

	FN 2211 HV 250 A	FN 2210 HV* 250 A	FN 2211 HV 400 A	FN 2210 HV* 400 A	FN 2211 HV 600 A	FN 2210 HV* 600 A	FN 2211 HV 1'000 A	FN 2210 HV* 1'000 A	FN 2211 HV 1'500 A	FN 2210 HV* 1'500 A	FN 2211 HV 2'300 A	FN 2210 HV* 2'300 A
A	220	205	235	215	240	225	265	265	275	275	305	305
B	160	145	175	160	175	170	180	180	215	215	230	230
C*	140	105	150	110	150	110	165	110	200	150	210	165
D	285	270	310	290	315	300	380	380	440	440	495	495
E	245	277	260	240	265	250	300	300	315	315	345	345
F1	130	120	140	125	140	135	140	140	175	175	190	190
F2	135	125	145	130	145	140	145	145	180	180	195	195
G	Ø 7	Ø 7	Ø 9	Ø 9	Ø 9	Ø 9	Ø 11	Ø 11	Ø 11	Ø 11	Ø 11	Ø 11
H	1.5	1.5	2	2	2	2	2.5	2.5	2.5	2.5	2.5	2.5
J	M6	M6	M8	M8	M8	M8	M8	M8	M10	M10	M10	M10
K	250 (+/- 1)	230 (+/- 1)	265 (+/- 1)	245 (+/- 1)	270 (+/- 1)	255 (+/- 1)	310 (+/- 1)	310 (+/- 1)	321 (+/- 1)	321 (+/- 1)	351 (+/- 1)	351 (+/- 1)
L	265	245	285	265	290	275	330	330	345	345	375	375
P	84 (+/- 0.5)	74 (+/- 0.5)	86 (+/- 0.5)	71 (+/- 0.5)	84 (+/- 0.5)	79 (+/- 0.5)	86 (+/- 0.5)	86 (+/- 0.5)	86 (+/- 0.5)	86 (+/- 0.5)	93 (+/- 0.5)	93 (+/- 0.5)
S									26	26	40	40
T									26	26	35	35
U	41	41	46	46	49.5	49.5	53	53	58	58	60.5	60.5
V	20	20	25	25	25	25	40	40	60	60	70	70
W	3	3	4	4	8	8	8	8	10	10	15	15
X	10	10	12.5	12.5	12.5	12.5	20	20	17	17	20	20
Y	32.5	32.5	37.5	37.5	37.5	37.5	57.5	57.5	82.5	82.5	82.5	95
Z	Ø 9	Ø 9	Ø 11	Ø 11	Ø 11	Ø 11	Ø 13.5	Ø 13.5	Ø 13.5	Ø 13.5	Ø 13.5	Ø 13.5

* Filters with flat top (Dimension C)

All dimensions in mm; 1 inch=25.4mm

Tolerances according: ISO 2768-m / EN 22768-m, if not stated otherwise

Please see the brochure "Basics in EMC and Power Quality" on our website www.schaffner.com/downloads to find more details on filter connectors.



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