2F1000-xxx.230 / 2F1000-xxx.230 IT

2 x 1000V, 160 to 1080A

Application and performance characteristics

- Typically used to comply with EMC emission standards
- Reduce conducted emissions over the frequency range 150 kHz to 30 MHz
- Suitable for Industrial, Railway, and Solar Applications
- Special Railway versions are available on request*
- Reliable and mechanical robust design

RoHS

The filter design and the used materials comply with the requirements of UL61800-5-1 and IEC 60939.

Typische Anwendungen

Die Wechselrichter zur Einspeisung regenerativ erzeugter Elektroenergie haben ein hohes Störpotenzial. Die immer effizientere Energiewandlung durch schnelles Schalten moderner Leistungshalbleiter bringt in steigendem Maße hochfrequente Energie in die Systeme ein.

Die Versionen 2F1000-xxx.230IT, zur Anwendung in IT Netzen besitzen keine Y-Kondensatoren und keine galvanische Verbindung der aktiven Leiter gegen Erde.

Um einerseits einen störungsfreien Betrieb aller Geräte zu gewährleisten und andererseits die gesetzlichen Forderungen der EMV zu erfüllen, gewähren die DC-EMV-Filter 2F1000-xxx.230 von FUSS-EMV die Einhaltung der in Europa verbindlichen EMV-Norm EN 61000 bezüglich der von der DC-Seite abgestrahlten Störungen. Die Filter sind geeignet für den Einsatz in Industrie, Bahn-, und Solarbereichen.

*) ▪ Vibrationsfest für Bahnanwendung mit Aufpreis verfügbar
▪ Gehäusematerial Edelstahl für aggressive Umgebung mit Aufpreis verfügbar

Typical Applications

DC to AC inverters supplying regenerative electrical energy has a high potential in emitting electro-magnetic interference. More and more efficient energy conversion by means of fast switching power semi-conductors leads to an increasing level of radio frequency interference.

The filter versions 2F1000-xxx.230IT, for the application in IT networks, have no Y capacitors and no galvanic connection of the active conductors to earth.

To ensure on the one hand a failure-free operation of all equipment and on the other hand to comply with the legal requirements of the EMC, FUSS-EMV's DC-EMI-filter 2F1000-xxx.230 ensure compliance with the obligatory EMC-standards EN 61000 regarding radiated interference from the DC-side. The filters are suitable for use in industrial, railway and solar application.

*) ▪ Vibration resistance for railway application available with extra charge
▪ Housing material Stainless steel for aggressive environment available with extra charge

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Technische Daten / Technical Data

Bemessungsspannung / Rated voltage	1000 V_{DC} +10 %
IEC Klimakategorie / IEC climatic category	40/110/56
Umgebungstemperatur / Ambient temperature	+ 40 °C > 40 °C mit 1% Stromderating pro Grad / > 40°C with 1% current derating per degree
Aufstellhöhe / Mounting height	1000 m bis 2000 m 1% Leistungsreduz. pro 100 m / up to 2000 m 1% derating per 100 m
Prüfspannung / Test Voltage	3000 V_{DC}, 2s (Phase – Phase) 3000 V_{DC}, 2s (Phase – PE)
Entspricht der Normen / Meets Standards	IEC60939, UL61800-5-1 (not certified)
Schutzart / Protection class	IP00
Überlast / Overload	1.5 x I_R for 60 s every 30 min, 2 x I_R for 30 s every 60 min
Gehäusematerial / Housing material	verzinktes Stahlblech / galvanised steel
Anschlüsse / Terminals	Stromschienen / Copper Bus bars
Verguss für Bahnanwendung / Potting for railway applications	Brandverhalten / Flammability UL94 V-0 erfüllt / complies to EN45545, R23, HL3 geringe Rauchgastoxizität / low smoke toxicity vibrationsfest / vibration resistant

Transport- und Lagerung / Storage and Transportation

Lagertemperatur / Storage temperature	-25 °C / + 45 °C
Relative Luftfeuchte / Relative humidity	≤ 75 % im Jahresmittel / throughout the year ≤ 95 % für max. 30 Tage / for max. 30 days

Aggressive Atmosphäre oder Betauung sind unzulässig / Aggressive atmosphere or condensation are not allowed

Spezifische Technische Daten / Specific Technical Data

Typ / Type	I_R	Überlast [1] / Overload [1]	Verluste / Loss		Anschlüsse / Terminals Stromschienen / Bus Bars		Anzugs-moment / Torque	Gewicht / Weight
			25°C	100°C				
	A	A	W		mm	ø	Nm	kg
2F1000-160.230 / IT	160	240	9	12	15 x 2	M8	15	4.7
2F1000-220.230 / IT	220	330	11.5	15	15 x 3	M8	15	4.8
2F1000-280.230 / IT	280	420	17	22	20 x 3	M8	15	5.9*
2F1000-340.230 / IT	340	510	17	22	20 x 4	M8	15	6.1
2F1000-390.230 / IT	390	585	18	23.5	20 x 5	M8	15	6.3
2F1000-470.230 / IT	470	705	21.5	28	25 x 5	M10	30	8.25
2F1000-520.230 / IT	520	780	22	28.5	25 x 6	M10	30	8.0
2F1000-640.230 / IT	640	960	25	32.5	25 x 8	M10	30	8.2
2F1000-740.230 / IT	740	1110	28.5	37	30 x 8	M12	60	10.7*
2F1000-860.230 / IT	860	1290	38	50	30 x 10	M12	60	11.9
2F1000-920.230 / IT	920	1380	34	44	40 x 8	M16	120	13.5*
2F1000-1080.230 / IT	1080	1620	37.5	48.5	40 x 10	M16	120	14.5

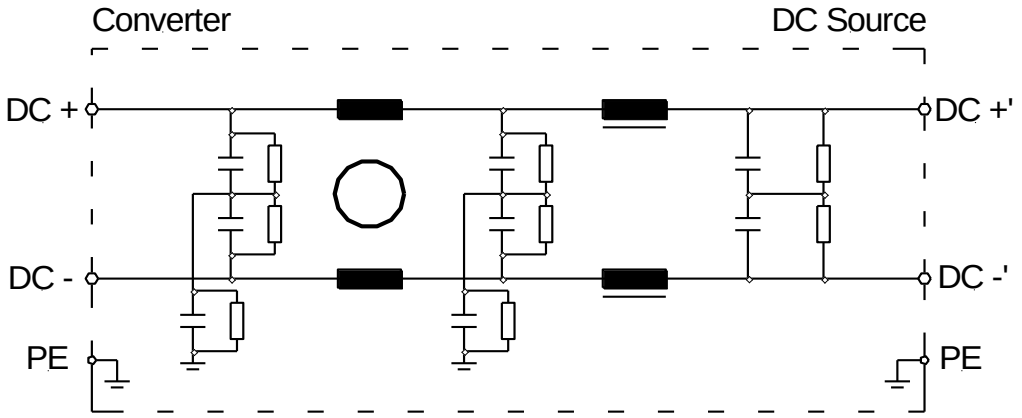
* vorläufig / preliminary

1) Für eine Dauer von 60 Sekunden alle 30 Minuten.
Voraussetzung: Montage der Netzfilter senkrecht auf metallisch blanker Grundplatte

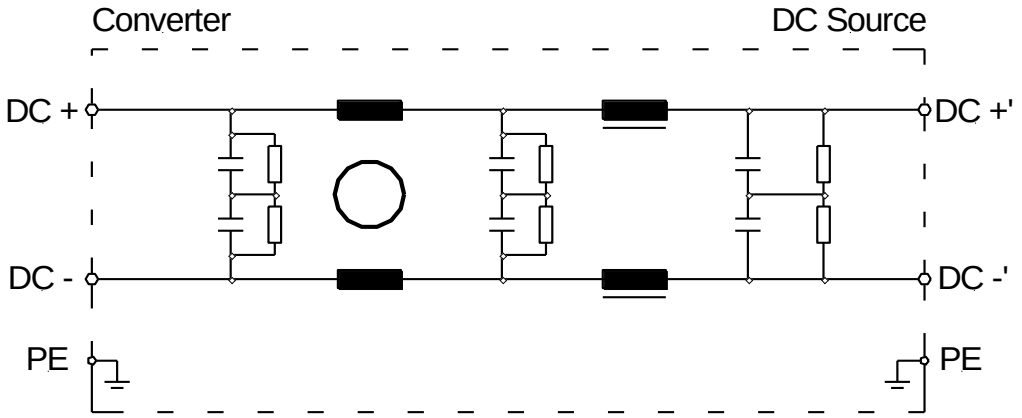
1) For 60 seconds, every 30 minutes.
Condition: Vertical mounting on a metal base plate.

Prinzip Schaltbild / Simplified Circuit Diagram

Standardversionen 2F1000-xxx.230 / Standard Versions 2F1000-xxx.230



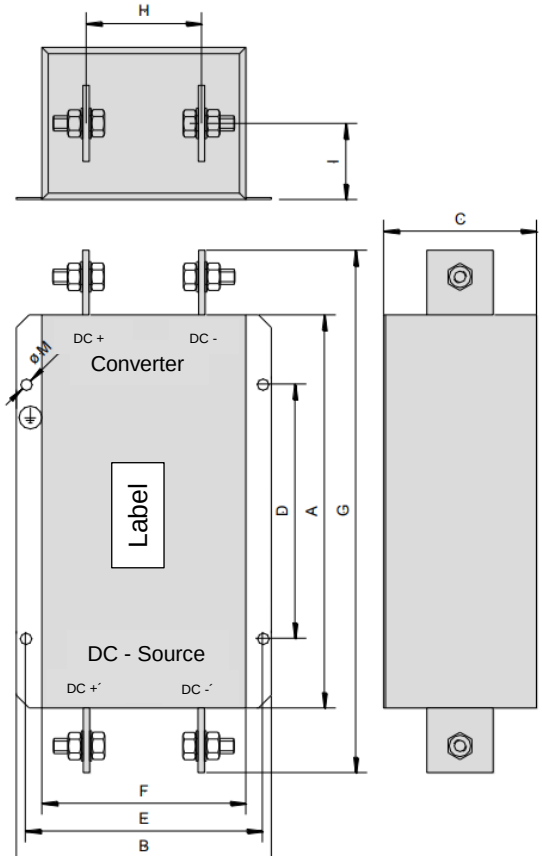
IT-Verteilungsnetze Version 2F1000-xxx.230IT / IT Distribution Networks Versions 2F1000-xxx.230IT



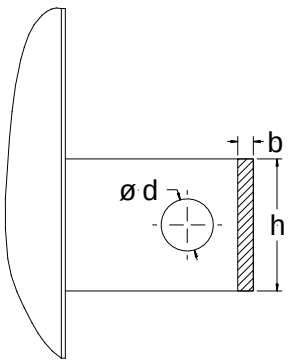
Abmessungen / Dimensions

Angaben in mm, Darstellung in bevorzugter Einbaulage, Toleranz < 2 mm
/ Values in mm, Schematic shows preferred mounting position, Tolerance < 2 mm

Filtertyp Filtertype	Länge Length	Breite Width	Höhe Height	Befestigungsmaße Mounting								Anschlüsse Terminals		
	A	B	C	D	E	Mø	F	G	H	I	PE	b	h	d
2F1000-160.230 / IT	200	175	110	175	155	9	125	260	45	40	M8	2	15	9
2F1000-220.230 / IT	200	175	110	175	155	9	125	260	45	40	M8	3	15	9
2F1000-280.230 / IT	240	175	115	200	155	9	125	330	40	40	M8	3	20	9
2F1000-340.230 / IT	240	175	115	200	155	9	125	330	40	40	M8	4	20	9
2F1000-390.230 / IT	240	175	115	200	155	9	125	330	40	40	M8	5	20	9
2F1000-470.230 / IT	250	180	125	200	160	11	130	360	50	40	M10	5	25	11
2F1000-520.230 / IT	250	180	125	200	160	11	130	360	50	40	M10	6	25	11
2F1000-640.230 / IT	250	180	125	200	160	11	130	360	50	40	M10	8	25	11
2F1000-740.230 / IT	250	200	140	200	175	11	150	380	60	45	M12	8	30	13
2F1000-860.230 / IT	250	200	140	200	175	11	150	380	60	45	M12	10	30	13
2F1000-920.230 / IT	260	tbd	140	tbd	tbd	tbd	160	390	60	50	M16	8	40	18
2F1000-1080.230 / IT	270	220	140	200	195	11	170	400	80	50	M16	10	40	18



Stromschiene / Busbar

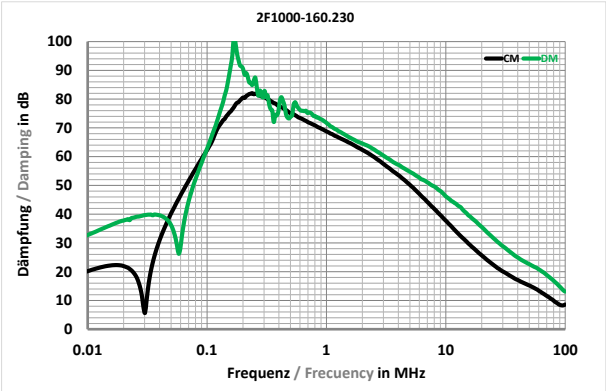


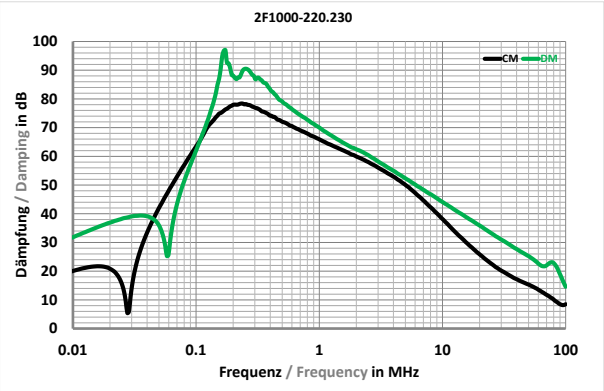
Einfügungsdämpfung / Insertion Loss

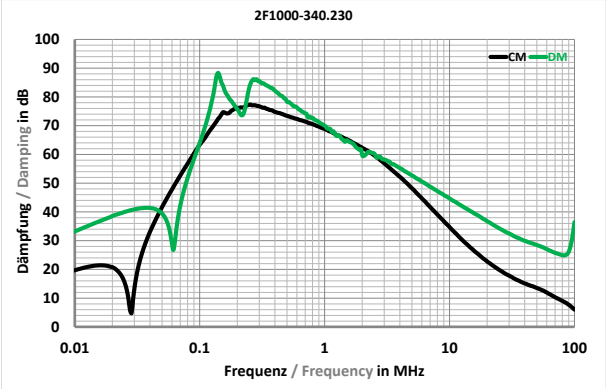
Typische Einfügedämpfung bei 50 Ω / Typical insertion loss at 50 Ω

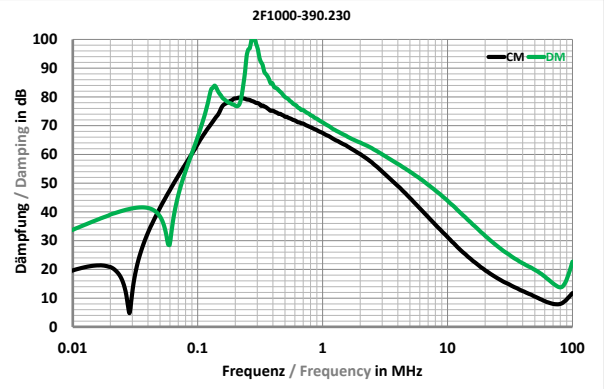
DM – Differential Mode, Gegentakt, Symmetrisch *CM – Common Mode, Gleichtakt, Asymmetrisch*

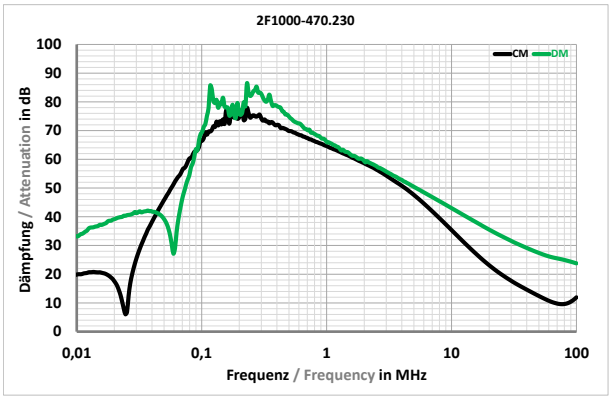
Standardversionen 2F1000-xxx.230 / Standard Versions 2F1000-xxx.230

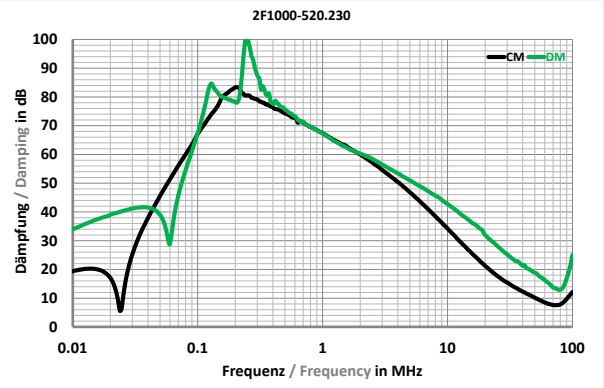


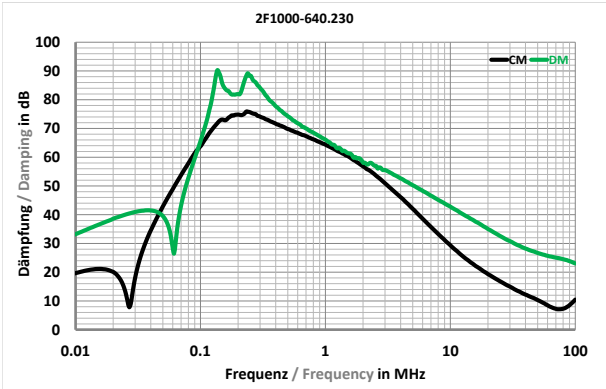


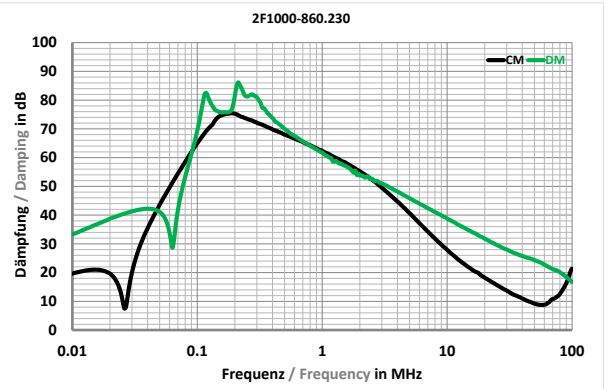






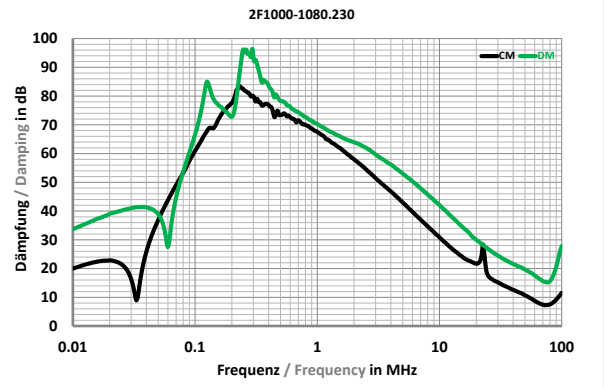






2F1000-xxx.230 / 2F1000-xxx.230 IT

2 x 1000V, 160 to 1080A



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