SHORT FORM CATALOG
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EMC/EMI Components and Quality Filters

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shaping electrical power




Typical applications	EDP & office	Drives & controls	Process automation	Elevators & cranes
	– PCs – Printers – PC periphery – Fax machines – Copy machines – Monitors – Plotters – Mainframe computers	– AC & DC motor drives – SCR drives – Servo drives – Regenerative drives – Rectifiers AC-DC) – Converters (AC-AC, DC-DC) – Inverters (DC-AC) – Battery chargers	– Robotics – Conveyors – Assembly lines – Control units – Mining industry – Chemical industry – Oil production – Metal processing	– Elevators for people and goods – Escalators – Cranes – Lifts – Hoists – Dumbwaiters
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Pulse transformers 	IT series (page 17)	IT series (page 17)		IT series (page 17)

This illustration only contains a few typical products and applications. Schaffner is also a tive in numerous other industry segments.






Consumer goods	Medical	Building automation	Power & energy	Telecom & datacom	Machinery
– Amplifier , audio, video, TV, screens – Receivers, decoders – Laundry machines – Tumblers – Cooking equipment – Induction heaters – Exercise machines – Coffee machines	– X-ray equipment – CAT scanners – Defilib ators – Laboratory equipment – Analyzers – Measurement devices – MRI, MSI, EEG, ECG – Test equipment – Hospitals	– HVAC – Security systems – Control units – Pumps – Self-ballasted lighting equipment – Autom. window shades – Water treatment – Office buildings	– SMPS, UPS – DC/DC converters – Gen-sets – Wind turbines – Fuel cells – Gas turbines – UPS – PV systems	– Base stations for GSM, UMTS, GPRS – Power line communications – Network technology – Servers – Telephone installations – Broadcast installations – Data centers	– Machine tools – Printing machines – Packaging machines – Extruders – Wood working mach. – Milling/drilling mach. – Laser cutting machines – Welding machines – Grinding machines
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	IT series (page 17)	IT series (page 17)	IT series (page 17)	IT series (page 17)	

Most standard components can be customized to meet special requirements.

Product selection chart

EMC filter & components

Number of phases

1-phase

IEC inlet filter/ Power entry modules PEM

PCB filter

≤ 10 A

FN 402
FN 405
FN 406
FN 409
FN 410

page 7

Feedthrough components

≤ 250 A

Capacitors
FN 751X
FN 756X

Filter
FN 761X
FN 766X

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Chassis mount filter

≤ 100 A

1-stage fil ers

FN 332
FN 350
FN 2010
FN 2020
FN 2030
FN 2410
FN 2450

page 10

≤ 36 A

2-stage fil ers

FN 343
FN 685
FN 2060
FN 2070
FN 2080
FN 2090

page 11

≤ 30 A

3-stage fil ers

FN 352Z
FN 700Z
FN 2060
FN 2070
FN 2090

page 11

DC

DC filter

≤ 2500 A

FN 2200
FN 2210
FN 2210 HV
FN 2211
FN 2211 HV

page 10

3-phase

3-phase filter

≤ 300 A

FN 351
FN 3025/3026
FN 3100
FN 3120
FN 3258
FN 3268
FN 3287
FN 3288

page 12

≤ 2500 A

FN 3270
FN 3359
FN 3310
FN 3310 HV
FN 3311
FN 3311 HV

page 12

3-phase + neutral filter

≤ 600 A

FN 354
FN 355
FN 356
FN 3256
FN 3280

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Chokes

Commonmode

No

IEC inlet filter

≤ 20 A

FN 9222(E)
FN 9226
FN 9233(E)
FN 9244(E)
FN 9246
FN 9255(E)

page 9

PEM with fuses or switch

≤ 10 A

FN 9260
FN 9264
FN 9262
FN 9266

page 9

PEM with fuses and switch or volt. selector

≤ 10 A

FN 280
FN 370
FN 380
FN 390
FN 1390
FN 9280(E)
FN 9290

page 9

IEC power cords

≤ 16 A

IL 13
IL 13+
IL 19
IF 13

page 8

Differential mode chokes

≤ 4 A

RS series

page 16

Saturating chokes

≤ 25 A

RI series

page 16

Yes

1-phase

≤ 80 A

EV/EH series
RD series
RB series
RN series
RT series
RC series

page 16

3-phase

≤ 80 A

RD series
RB series
RT series

page 16

3-phase + neutral

≤ 64 A

RD series

page 16

Harmonic filter

Mitigation requirement

Passive

FN 3440/41
FN 3450/51
FN 3452/53
FN 3410/11
FN 3410 HV
FN 3416
FN 3418
FN3470/71
FN3472/73
FN3480/81
FN3482/83

page 5/6

Active

FN 3530/31
FN 3540/41
FN 3532
FN 3542
FN 3545

page 6

3-phase reactor

Line and load side

Load

0.8%

≤ 1100 A

RWK 305

page 14

Line

4%

≤ 1000 A

RWK 3044
RWK 3062

page 12

Output filter

Voltage shape

dv/dt

dv/dt filter

≤ 1200 A

FN 510
FN 5060
FN 5060 HV

page 14

Sinewave

Sinusoidal filter

≤ 1320 A

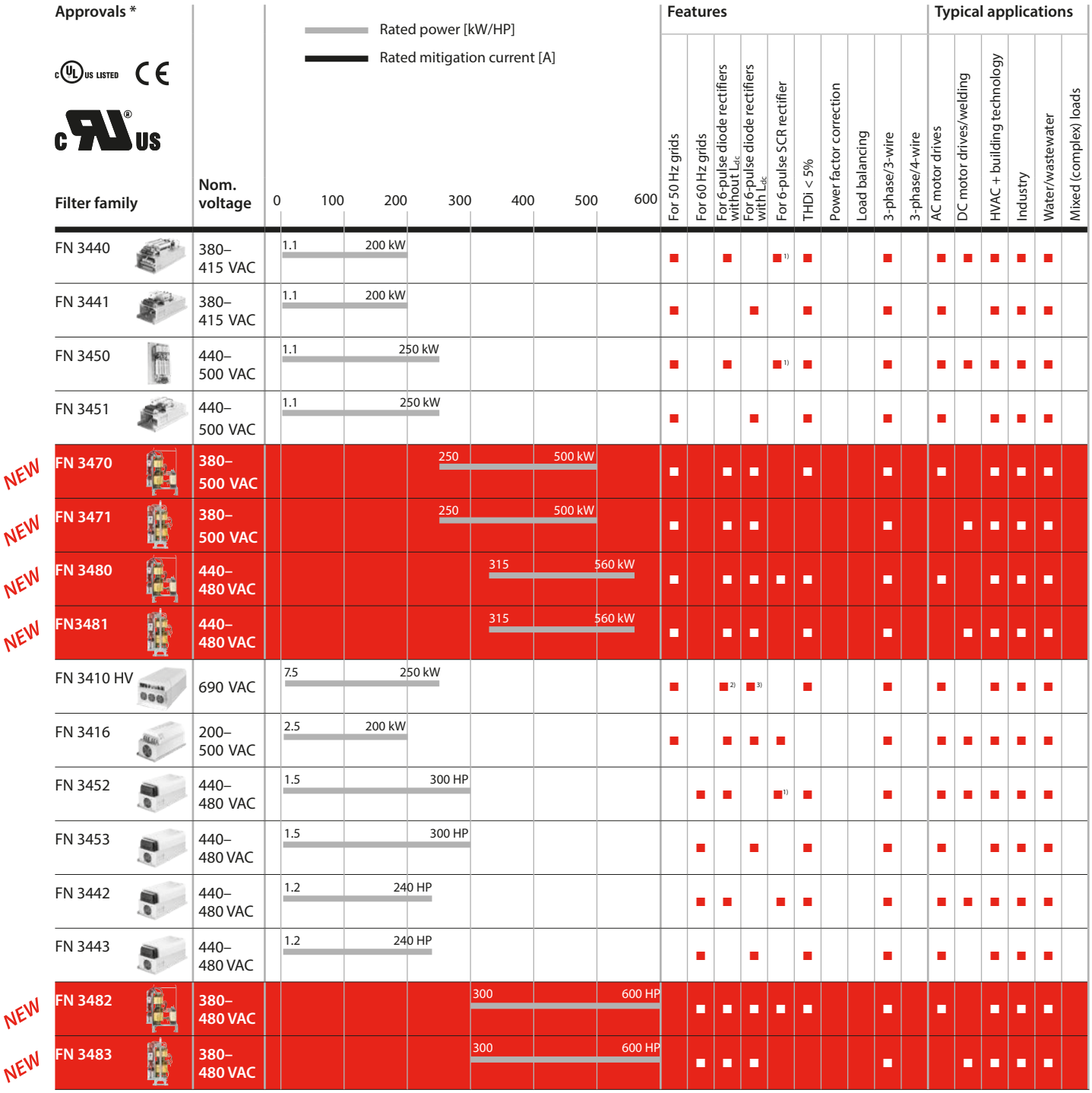
FN 530
FN 5020
FN 5030
FN 5040
FN 5040 HV
FN 5045

page 14

To define our proper solution competent assistance and more detailed product specific tions can be obtained by your local partner within Schaffne 's global network.

Active and passive harmonic filters.

Harmonic filters help to obtain compliance with international standards like e.g. IEEE 519-1992 or EN 61000-3-12, and with local utility codes. They reduce electrical and thermal stress upon the electrical infrastructure, eliminate the risk of harmonics-related reliability problems, and support long-term energy efficiency and cost savings. Ecosine passive filters are the industry standard for 6-pulse rectifiers and non-regenerative motor drives to achieve the often specified level of THDi < 5%.



* Products evaluated by one or more of the above certific tion agencies. For details please consult the detailed data sheet.

1) 5% THDi is not guaranteed when FN 3440, FN 3450 and FN 3452 fil ers are applied to SCRs

2) With and up to 45 A fil ers

3) 60 A–320 A fil ers

Active harmonic filters are suitable for mixed load installations and applications with dynamic and are commonly used as a central solution at Point of Common Coupling (PCC). Ecosine active harmonic filters provide a reliable solution for harmonic mitigation, power factor correction and load balancing in real time. The modular concept offers highest flexibility for customization, retrofitting and combination with passive harmonic mitigation components.

Approvals *	Filter family	Nom. voltage	Rated power [kW/HP] / Rated mitigation current [A] (0 100 200 300 400 500 600)	Features: For 50 Hz grids	For 60 Hz grids	For 6-pulse diode rectifiers without L_{dc}	For 6-pulse diode rectifiers with L_{dc}	For 6-pulse SCR rectifier	THDi < 5%	Power factor correction	Load balancing	3-phase/3-wire	3-phase/4-wire	Typical applications: AC motor drives	DC motor drives/welding	HVAC + building technology	Industry	Water/wastewater	Mixed (complex) loads
NEW	FN 3472	380–415 VAC	280 – 480 HP		■	■	■	■	■			■		■		■	■	■	
NEW	FN 3473	380–414 VAC	280 – 480 HP		■	■	■					■			■	■	■	■	
	FN 3418	200–480 VAC	2.5 – 250 HP		■	■	■	■				■		■	■	■	■	■	
	FN 3530/31	200–480 VAC	60 A	■	■	■	■	■	■	■	■	■		■	■	■	■	■	■
	FN 3540/41	200–415 VAC	60 A	■	■	■	■	■	■	■	■		■	■	■	■	■	■	■
	FN 3532	200–480 VAC	60 – 120 A	■	■	■	■	■	■	■	■	■		■	■	■	■	■	■
	FN 3542	200–415 VAC	60 – 120 A	■	■	■	■	■	■	■	■		■	■	■	■	■	■	■
	FN 3545	200–480/415 VAC	60 – 300 A[4]	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■

[4] up to 1200 A mitigation current with sync module SYNC300A

PCB filters.

Very compact EMI suppression components can directly be mounted on printed circuit boards of low-power office, medical, telecom and IT equipment, DC/DC converters and power supplies etc. Ideal low cost solution for manufacturers who have planned for EMC compliance throughout the equipment design process already.

Filter family	Approvals *	Max. voltage	Attenuation performance / Rated current [A] (standard / high / very high; 0 3 6 9 12 15)	Features: 1-stage fil er circuit	2-stage fil er circuit	For DC applications only	PCB mounting	With metal case	Low profil	Small footprint	Typical applications: Automotive	DC/DC converters	IT and telecom applications	Building automation	Power supplies	Medical devices	Office automation equipment	General applications	Consumer electronics
FN 402 		250 VAC	0.5 – 6.5	■			■		■			■			■	■	■	■	■
FN 405 		250 VAC	0.5 – 10	■			■		■			■			■		■	■	■
FN 406 		250 VAC	0.5 – 8.4	■			■	■		■			■	■	■	■	■		■
FN 409 		75 VDC	3 – 13		■	■	■		■			■	■		■		■	■	■
FN 410 		250 VAC	0.5 – 6		■		■	■	■			■	■	■	■		■		■

Power cords with locking systems for IEC inlet filters.

Guarding against accidental disconnection of all electrical appliances with an IEC inlet, no exchange or modification of the IEC inlet or IEC inlet filter is needed. An easy retrofit for all electronic equipment and devices is possible.

● standard length
✕ on request

Approvals *									Available line connectors								Typical applications				
Power cord family	Max. voltage	6 ft	2 m	3 m	9 ft	12 ft	5 m	10 m	C14 line side plug IEC C14 male, straight	C20 line side plug IEC C20, male, straight	EU1 line side plug CEE7/VII, right angled	US1 line side plug NEMA5-15, straight	US2 line side plug NEMA5-15, straight hospital grade	UK1 line side plug BS1363, right angled, fused 5A	CH1 line side plug SEV1011, straight	JP1 line side plug JIS8303, straight	Data centers	Industrial equipment	Medical, in-vitro diagnostic devices	Broadcasting stations	Mobile applications
IL 13 	250 VAC	●	●	✕	●	●	✕	✕	■		■	■	■	■	■	■	■	■	■	■	■
IL 13+** 	250 VAC																■	■	■	■	■
IL 19 	250 VAC		●							■	■	■		■							
IF 13 	250 VAC								■		■	■					■	■	■	■	■

* Products evaluated by one or more of the above certific tion agencies. For details please consult the detailed data sheet.

** Rewireable – offering total fl xibility when assembling cables.

IEC inlet filters / Power entry modules.

All the advantages of IEC connector, EMC/EMI filter, fuses, switch and voltage selector combined in a powerful compact all-in-one solution. Ideal for computers, monitors and office equipment like printers and copy machines.

Approvals *

Attenuation performance

Rated current [A]

standard | high | very high

0 4 8 12 16 20

Filter family	Max. voltage	With earth line choke	For fuse(s)	With switch (1-pole)	With switch (2-pole)	With voltage selector	For PCB mounting	Snap-in version	Extra wide mounting	IT equipment	Medical equipment	Switch-mode power supplies	Office equipment	Prof. audio, TV, VCR	Telecommunication	Light industrial equipment	General purpose
FN 9222 FN 9222E	250 VAC	■						■	■	■	■	■	■	■	■	■	■
FN 9226	250 VAC						■			■	■		■	■	■		■
FN 9233 FN 9233E	250 VAC	■						■	■	■	■	■	■	■	■	■	■
FN 9244 FN 9244E	250 VAC	■						■	■	■	■	■	■	■	■	■	
FN 9246	250 VAC										■	■	■	■	■	■	
FN 9255	250 VAC	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
FN 9255E	250 VAC	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
FN 9260	250 VAC		■					■			■		■	■	■		■
NEW **FN 9262 FN 9266**	**250 VAC**		■		■			■			■		■	■	■		■
FN 9264	250 VAC				■			■		■	■	■	■	■	■	■	■
FN 9280 FN 9280E	250 VAC	■	■		■			■		■	■		■	■	■	■	■
FN 9290	250 VAC		■		■			■		■	■	■	■	■	■	■	
FN 280	250 VAC		■		■			■		■	■		■	■	■	■	■
FN 370	250 VAC		■			■		■		■	■		■	■	■		■
FN 380	250 VAC		■		■			■		■	■		■	■	■		■
FN 390 FN 1390	250 VAC	■	■		■	■				■	■		■	■	■	■	■

* Products evaluated by one or more of the above certific tion agencies. For details please consult the detailed data sheet.

Single-phase and DC filters.

Single-phase filters for chassis or DIN-rail mounting are key for EMC compliance of higher power office equipment and low to medium power industrial applications. A broad selection of electrical and mechanical features allows a specific choice and deployment for countless applications. DC filters are specifically optimized for applications with DC supply like e.g. PV inverters.

Approvals *

Attenuation performance

Rated current [A]

standard | high | very high

0 20 40 60 80 100

Filter family	Max. voltage	1-stage fil er circuit	2-stage fil er circuit	3-stage fil er circuit	For DC applications	With overvoltage protection	Low frequency attenuation	High frequency attenuation	Choice of connection style	DIN-rail mounting	Power supplies, SMPS	Medical equipment	Single-phase motor drives	Control unit in machine tools	PV inverters	Office, test & measure. equip.	General purpose
FN 332	250 VAC	■				■											■
FN 350	250 VAC	■									■		■			■	
FN 2010	250 VAC	■							■			■					■
FN 2020	250 VAC	■							■			■				■	■
FN 2030	250 VAC	■				■	■	■	■			■				■	■
FN 2200	1200 VDC	■			■		■	■			■				■		■
FN 2210 FN 2211	1000 VDC	■			■		■	■			■				■		■
FN 2210 HV FN 2211 HV	1500 VDC	■			■		■	■			■				■		■
FN 2410	250 VAC 520 VAC (H)	■					■				■		■				
FN 2412	250 VAC 520 VAC (H)	■					■			■	■		■	■			
FN 2450	250 VAC	■					■	■			■	■				■	■

* Products evaluated by one or more of the above certific tion agencies. For details please consult the detailed data sheet.

Filter family	Approvals *	Max. voltage	Attenuation performance / Rated current [A] (standard, high, very high; 0 20 40 60 80 100)	Features: 1-stage fil er circuit	2-stage fil er circuit	3-stage fil er circuit	With earth line choke	With overvoltage protection	Low frequency attenuation	High frequency attenuation	Choice of connection style	TEMPEST protection	Typical applications: Power supplies, SMPS	Medical equipment	Single-phase motor drives	Control unit in machine tools	Interception protection	Office, test & measure. equip.	General purpose
FN 343 		250 VAC	1–10		■		■											■	■
FN 2060 		250 VAC	1 30		■						■		■	■				■	■
FN 2070 		250 VAC	1 36		■					■	■		■	■	■			■	
FN 2080 		250 VAC	1 16		■				■		■		■	■	■				
FN 2090 		250 VAC	1 30		■			■	■	■	■		■	■	■				
FN 700Z 		250 VAC	6 20			■		■	■	■		■	■	■			■	■	

* Products evaluated by one or more of the above certific tion agencies. For details please consult the detailed data sheet.

Three-phase filters and line reactors.

EMC/EMI filter solutions for industrial applications like motor drives and machine tools. Furthermore, these types of filters are also suitable for mainframe computer systems, large uninterruptible power supplies, medical equipment, wind turbine power stations and a vast array of other three-phase power electronics. Line reactors, also operated on the line side of power drive systems, efficiently protect inverter electronics and DC link capacitors from inrush, peak and short-circuit currents. Additionally, low-frequency interference and harmonics are reduced significantly.

Approvals *		Attenuation performance / Rated current [A]	Features											Typical applications					
Filter family	Max. voltage	standard / high / very high 0 200 400 600 800 >1000	Multi-stage fil er circuit	Safety connector blocks	Busbar connection	Optional protective covers	Standard protective covers	Offering EMC compliance	Low leakage current	Less commutation notches	Inrush current limitation	Harmonics reduction	4% impedance	Inverters, servo drives	Energy regeneration drives	Machinery, machine tools	Industrial automation	General purpose	Power and energy
FN 351	440 VAC 520 VAC (H)	8 – 280		■				■						■			■	■	
FN 3025	520 VAC	10–50		■			■	■	■					■			■	■	
FN 3026	520 VAC	10–50		■			■	■	■					■			■	■	
FN 3100	520 VAC	35 – 300		■				■						■	■	■	■		■
FN 3120	520 VAC (H)	25 – 230		■				■						■	■	■	■		■
FN 3258	480 VAC 520 VAC (H)	7 – 180		■				■						■		■	■	■	
FN 3268	520 VAC	7 – 180		■				■	■					■		■	■	■	
FN 3270	520 VAC	10 – 1000		■	■	■		■						■		■	■	■	■
NEW FN 3287 FN 3288	530 VAC	10 – 160	■	■				■	■					■		■	■	■	
NEW FN 3288 HV	690 VAC	10 – 160	■	■				■	■					■		■	■	■	
FN 3310 FN 3311	520 VAC	250 – 2300			■			■						■		■	■	■	■
FN 3310 HV FN 3311 HV	690 VAC	250 – 2300			■			■						■		■	■	■	■
FN 3359	520 VAC 690 VAC (HV)	150 – 2500	■		■	■		■						■	■	■	■		■
NEW RWK 3044	530 VAC	2 – 1000		■	■					■	■	■	■	■		■	■	■	
NEW RWK 3062	760 VAC	1.5 – 870		■	■					■	■	■	■	■		■	■	■	

* Products evaluated by one or more of the above certific tion agencies. For details please consult the detailed data sheet.

Three-phase and neutral line filters.

Three-phase and neutral line filters are a compact solution for the interference suppression on the mains input of cabinets and control units of equipment, ranging from industrial applications like machine tools to sensitive medical installations. These typically involve separate and often insufficiently filtered frequency inverters and SMPS, causing current imbalance and significant interference problems. As individual elements they may be interference-suppressed already. The conjunction of several switching components in the same cabinet and a non-EMC conscious cabling will rise the demand for an additional EMC/EMI filter on the mains input of the whole installation. Many times this is the only way to get the CE mark for the cabinet in accordance with the EMC directive.

Approvals *		Max. voltage	Attenuation performance / Rated current [A] (standard / high / very high; 0 120 240 360 480 600)	Features: 1-stage fil er circuit	2-stage fil er circuit	Safety connector blocks	Faston connectors	Offering EMC compliance	For asymmetrical loads	Broadband attenuation	Very low leakage current	Typical applications: For entire systems, install.	Machinery, machine tools	Industrial automation	Power supplies	Medical equipment	For high frequency appl.	High power office equipment	General purpose
FN 354		440 VAC	4–25		■		■	■		■					■	■	■	■	■
FN 355		440 VAC	3–20	■			■	■			■					■		■	■
FN 356		440 VAC	16–150	■		■		■	■			■		■	■				
FN 3256		520 VAC (H)	8–160	■		■		■	■			■	■	■	■			■	■
FN 3280		520 VAC (H)	8–600		■	■		■	■	■		■	■	■	■				

* Products evaluated by one or more of the above certific tion agencies. For details please consult the detailed data sheet.

Output filters and load reactors.

Output components for motor protection and the improvement of system reliability, availability and functionality. Deployed at the output side of frequency inverters, these filters ensure reliable operation by avoiding expensive downtimes of installations, manufacturing plants, machinery and a vast array of other industrial and domestic motor drive applications due to premature motor damage. An appropriate output solution will even allow the deployment of unshielded motor cables, the use of multiple motors in parallel on the same drive or the retrofit of modern drives in existing installations with old motors and unshielded cabling.

Approvals *			Features												Typ. applications				
Filter family	Max. voltage	Typical motor power [kW] / Rated current [A] 0 60 120 180 240 300 0 200 400 600 800 >1000	dv/dt restriction	Overvoltage restriction	Motor temperature reduction	Red. acoustic motor noise	Sym. sinusoidal output signal	Asym. sinusoidal output signal	Eliminat. of bearing damage	Replaces cable shields	Connection to DC link required	Improves overall EMC	Reduces equipment downtime	Motor drives	Servo drives, torque motors	High-speed motor applications	Appl. with long unshield. cabl.	Retrofit of mo or drives
FN 510	520 VAC	1.5–30 4–66	■	■	■							■	■	■	■			
FN 530	520 VAC	1.5–7.5 4–16	■	■	■	■	■	■	■	■	■	■	■	■			■	■
FN 5020	500 VAC	11 55 25–120	■	■	■	■	■					■	■	■		■		
FN 5030**	500 VAC	11 55 25–120			■	■		■	■	■	■	■	■	■		■	■	■
FN 5040	500 VAC	1.1 630 4.5 1200	■	■	■	■	■					■	■	■				■
FN 5040 HV	690 VAC	7.5 1200 13 1320	■	■	■	■	■					■	■	■				■
FN 5045	500 VAC	1.1 630 4.5 1200	■	■	■	■	■					■	■	■				■
FN 5060	500 VAC	5 630 12 1100	■	■	■							■	■	■	■			
FN 5060 HV	690 VAC	7.5 1000 16 1200	■	■	■							■	■	■	■			
RWK 305	500 VAC	1.5 630 4 1100	■		■							■	■	■	■			

* Products evaluated by one or more of the above certific tion agencies. For details please consult the detailed data sheet.

** Additional output fil er module to be operated in conjunction with FN 5040/45 or FN 5020.

Feedthrough components. Interference suppression up into the GHz range for high-tech applications such as IT, telecom, server and networking equipment.

Approvals *			Capacitance [nF] / Rated current [A] / Attenuation performance	Features							Typical applications							
Feedthrough capacitors		**Max. voltage**	0 1000 2000 3000 4000 5000 0 50 100 150 200 250	AC capacitors	DC capacitors	AC fil ers	DC fil ers	Very high performance	Y2 capacitor class	Y4 capacitor class	Medical equipment	Professional power supplies	Power electronic equipment	Telecommunication	Scientific equipme t	Test and measurement equip.	Security systems	IT, server and network
FN 7510		300 VAC	2.2–47 / 10 100	■					■		■	■	■	■	■	■		
FN 7511		300 VAC	4.7–220 / 10 200	■					■		■	■	■	■	■	■		■
FN 7512		300 VAC	47–100 / 16 63	■					■		■	■	■	■	■	■	■	■
FN 7513		300 VAC	100 / 16	■					■		■	■	■	■	■	■	■	■
FN 7560		130 VDC	10–100 / 10 200		■					■	■	■	■	■	■	■		
FN 7561		130 VDC	47–470 / 63 200		■					■	■	■	■	■	■	■		■
FN 7562		130 VDC	100–1000 / 16 200		■					■	■	■	■	■	■	■	■	■
FN 7563		130 VDC	470 4700 / 16 200		■			■		■	■	■	■	■	■	■	■	■
Feedthrough filters			standard / high / very high															
FN 7611		300 VAC	10 250			■			■		■	■	■	■	■	■		■
FN 7612		300 VAC	10 100			■		■	■		■	■	■	■	■	■	■	■
FN 7660		130 VDC	10 200				■			■	■	■	■	■	■	■		■
FN 7661		130 VDC	10 200				■	■		■	■	■	■	■	■	■	■	■

* Products evaluated by one or more of the above certific tion agencies. For details please consult the detailed data sheet.

EMC/EMI chokes.

An extensive selection of discrete EMC/EMI chokes with various inductance and current ratings allows optimized circuitry for EMC compliance to be designed easily and economically.

Choke family	Approvals *	Max. voltage	Inductance value [mH] / Rated current [A]	Features: For common-mode noise	Saturating chokes	Single-choke	Dual-choke	Triple-choke	Quad-choke	PCB mounting	With flying lead	Typical applications: Frequency converters, UPS	Medical equipment	Traction systems	DC/DC or AC/DC converters	Switch-mode power supplies	Home electronics, TV, balasts	Battery chargers	Heaters, air conditioners
EV/EH series		250 VAC	0.5–90 / 0.3–5	■			■			■		■	■			■	■	■	■
RN series		300 VAC 300 VDC	0.4–100 / 0.3–10	■			■			■		■	■			■	■	■	■
RD 5000 series		600 VAC 850 VDC	1–10 / 6–16	■			■	■		■		■		■					
RD 6000 series		600 VAC 850 VDC	1.5–15 / 6–16	■			■	■			■	■		■					
RD 7000 series		600 VAC 850 VDC	0.2–25 / 6–36	■			■	■	■		■	■		■					
RD 8000 series		600 VAC 850 VDC	0.2–12 / 16–64	■			■	■	■		■	■		■					
RT series		600 VAC 425 VDC	2.5–10 / 6–20 (32)	■			■	■		■		■	■	■	■	■		■	■
RB series		600 VAC 1000 VDC	0.2–3 / 16–50 (80)**	■			■	■		■		■	■	■	■	■		■	■
RI series		500 VAC	1.5–25		■	■	■			■	■	■		■	■	■			
RS series		250 VAC	0.003–3.6 / 0.5–4			■	■			■	■	■	■	■	■	■	■	■	■
NEW RC series		250 VAC	4.7–47 / 0.25–0.7	■		■	■			■		■	■		■	■	■	■	■

* Products evaluated by one or more of the above certific tion agencies. For details please consult the detailed data sheet.

** forced cooling

Pulse transformers. They provide a proper galvanic separation between gate drive circuitry and high voltage path in IGBT, thyristor, triac, power MOSFET and DC/DC converter circuits.

Pulse transformer	Nominal voltage	Voltage-time area [Vµs] / Ignition current [A] (0 1000 2000 3000 4000 5000 / 0 0.6 1.2 1.8 2.4 3)	Features: 1:1	1:1:1	2:1	2:1:1	3:1	3:1:1	PCB	Faston	Galvanic separation	Typical applications: Thyristors, triac and IGBTs	Driving power MOSFETs	Line coupling transformers	DC/DC converters	Power supplies	Home automation systems	Monitoring systems
IT 155/237 	500 VAC	500–1100 / 0.1–0.25	■						■		■	■	■		■	■	■	■
IT 245/255/258 	750 VAC	250–500 / 0.1–1	■						■		■	■	■		■	■	■	■
IT 239 	1000 VAC	350 / 0.25	■						■		■	■	■			■		
IT 370 	1000 VAC	4000 / 0.1–1	■						■		■	■	■			■		
IT 364 	3000 VAC	5000 / 0.1–3	■							■	■	■	■					
IT 213 	380 VAC	450 / 0.25		■					■		■	■	■	■	■	■	■	■
IT 312/313 	380 VAC	450–1200 / 0.25–1		■					■		■		■	■	■	■	■	■
IT 143/233/242 IT 243/253 	500 VAC	180–800 / 0.025–0.25		■					■		■	■	■	■	■	■		■
IT 246/248 	750 VAC	200–350 / 0.1–0.25			■				■		■	■	■		■	■		■
IT 249 	500 VAC	350 / 0.25				■			■		■	■	■	■	■	■	■	■
IT 260 	500 VAC	200 / 0.1					■		■		■		■	■	■	■	■	■
IT 314 	380 VAC	500 / 0.25–1						■	■		■		■	■	■	■	■	■
IT 234/244 IT 154 	500 VAC	200–600 / 0.1–0.25						■	■		■		■	■	■	■	■	■

EMC Support

EMI measurement and EMC engineering services.

In addition to offering one of the world's most comprehensive ranges of standard filter products, Schaffner offers the full complement of measurement and engineering services, along with customized product development, to support equipment manufacturers and users.

EMC/EMI testing. Schaffner operates the most sophisticated EMC test facilities available anywhere today with extensive investment in specialized test equipment and application engineering teams. As a global provider these services are distributed at several locations throughout the world.

Service available at these locations include:

- open field testing
- harmonics instrumentation for current and voltage up to the 50th harmonic
- emission and immunity tests according to European and international standards (EN, IEC, FCC, CISPR)

Additional services available at the accredited testing facility in Switzerland:

- 500 kW full load test set-up for motor drives
- safety testing and environmental simulation for passive components for electromagnetic interference suppression according to European, international and North American standards

Engineering services. Schaffner has the world's most engineering experience in solving EMC problems. In addition to testing and measuring services, Schaffner can provide the expert engineering support to help you bring your equipment to market quickly and efficiently.

Services available include:

- custom filter design – to optimize filter performance and solve space, layout, mounting or connection problems
- circuit and equipment design – advising on circuit and equipment or enclosure design to overcome EMC problems
- turnkey component design and build

Schaffner Group

The Schaffner Group is the international leader in the development and production of solutions which ensure the efficient and reliable operation of electronic systems. The Group's broad range of products and services includes EMC/EMI components, harmonic filters and magnetic components as well as the development and implementation of customized solutions. Schaffner components are deployed in energy-efficient drive systems and electronic motor controls, in wind power and photovoltaic systems, rail technology, machine tools and robotics as well as power supplies for numerous electronic devices in sectors such as medical technology or telecommunications. Schaffner provides on-site service to customers around the world through an efficient, global organization and makes ongoing investments in research, development, production and sales to systematically expand its position as leader on the international market.

A global one-stop shop

EMC/EMI filters

- PCB filters
- IEC inlet filters / Power entry modules
- DC filters
- Single-phase filters
- Three-phase filters
- Three-phase + neutral line filters
- Open frame filters

EMC/EMI chokes

Feedthrough filters and capacitors

Automotive components

Customized solutions

Power Quality products

- Line reactors
- dv/dt reactors and filters
- Sine wave filters
- Harmonic filters
- Regen reactors and filters
- Transformers

Customized solutions

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Product Types
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