

SHORT FORM CATALOG

**EMC/EMI & Power Quality
Filters and Components.**



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Industries



Machinery & Robotics
Motor Drive, Machinery, Factory Automation, Robotics



Building Technology
HVAC, Elevators, Lighting



Energy Management
Renewable Energy, EV-Charging, Energy Storage, Smart Infrastructure, Power Supply, UPS, Oil & Gas



Medical
Medical Equipment, Laboratory and Analyser Equipment



Data & Communication
Datacenter, Networks

DC Filters



FN2200	■		■		
FN2210, FN2211	■		■		
FN2210HV, FN2211HV	■		■		
FN2220, FN2230, FN2240 NEW			■		

Single-Phase Filters



FN2010			■	■	
FN2020			■	■	
FN2030			■	■	
FN2060		■	■	■	
FN2070, FN2071	■	■	■	■	
FN2080	■	■	■	■	
FN2090, FN2091	■	■	■	■	
FN2410, FN2412	■	■	■		
FN2415	■				
FN2450	■		■	■	
FN2500, FN2520 NEW	■	■	■		
FN2560 NEW		■			
FN2580 NEW		■			
FN332			■	■	
FN343			■		
FN350	■				
FN352Z, FN353Z		■	■		■
FN700Z			■	■	■
LIS140C-1E NEW		■	■		

3-Phase Filters



FN3025, FN3026	■		■	■	
FN3100	■		■	■	
FN3120H	■		■	■	
FN3258	■	■	■		
FN3268	■	■	■	■	
FN3270, FN3271	■	■	■		
FN3287, FN3288	■	■	■	■	
FN3310, FN3311	■	■	■		
FN3310HV, FN3311HV	■	■	■		
FN3359	■		■		
FN3840 NEW	■	■			
FN351	■	■			



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3-Phase Filters with Neutral



FN3256H	■	■	■	■	
FN3280H	■	■	■		
FN354			■	■	
FN355			■	■	

IEC Inlet Filters and Power Entry Modules



FN2640, FN2660 NEW			■		■
FN9222			■	■	
FN9222E			■	■	
FN9226			■	■	
FN9233			■	■	
FN9233E			■	■	
FN9244			■	■	
FN9244E			■	■	
FN9246			■	■	
FN9255			■	■	
FN9255E			■	■	
FN9260			■	■	
FN9262			■	■	
FN9264			■	■	
FN9266			■	■	
FN9274 NEW				■	
FN9280			■	■	
FN9280E			■	■	
FN9290, FN9299			■	■	
FN261			■	■	
FN280			■	■	
FN370, FN372, FN378, FN379			■	■	
FN380			■	■	
FN390, FN1390			■	■	
Power Cords with EMC-Filter IF13		■	■		■

EMC/EMI Chokes



ED Common Mode Chokes NEW		■			
EV/EH Common Mode Chokes		■	■	■	■
RB Common Mode Chokes	■	■	■	■	■
RC Common Mode Chokes	■	■	■	■	■
RD Common Mode Chokes	■	■	■	■	■
RI Saturation Chokes	■	■			
RN Common Mode Chokes	■	■	■	■	■
RS Differential Mode Chokes		■	■	■	■
RT Common Mode Chokes NEW	■	■	■	■	■
RV Common Mode Chokes NEW		■	■		

Industries



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Motor Drive, Machinery, Factory Automation, Robotics



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HVAC, Elevators, Lighting



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Datacenter, Networks

PCB Filters



FN402				■	■	■
FN405				■	■	■
FN406		■		■	■	■
FN409		■		■		■
FN410		■		■		■

Feedthrough Capacitors & Filters



FN7510, FN7511, FN7512, FN7513, FN7514					■	■
FN7560, FN7561, FN7562, FN7563						■
FN7611, FN7612					■	■
FN7660, FN7661						■

Pulse Transformers



IT series, single secondary winding		■	■	■		
IT series, double secondary winding		■	■	■		

Accessories



IL13, 13 P, 19 Power Cords with Locking System			■	■	■	■
IL13P Angled IEC Lock C13			■	■	■	■
IL13P Rewireable IEC Locking Connector			■	■	■	■
IL13P Rewireable Angled Locking Connector			■	■	■	■



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Active Harmonic Filters



FN3530, FN3531, FN3540, FN3541	■	■	■	■	■
FN3532, FN3542	■	■	■	■	■
FN3545	■	■	■	■	■
SYNC300A, SYNC300X	■	■	■	■	■

Passive Harmonic Filters



FN3440, FN3442, FN3450, FN3452	■	■			
FN3441, FN3443, FN3451, FN3453	■	■			
FN3470, FN3472, FN3480, FN3482	■	■			
FN3471, FN3473, FN3481, FN3483	■	■			
FN3416, FN3418	■	■			
FN3416LV, FN3418LV	■	■			

Output Filters



FN5060, FN5060HV	■	■			
FN5420, FN5040HV, FN5020	■				
FN5030, FN530	■				

Reactors



RWK3044, RWK3062	■	■	■		
RWK305, RWK5420	■	■	■		

LCL Filters



FN6840	■		■		
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Product Selection EMC/EMI

EMC/EMI Filters & Components									
Single-Phase Filters					DC-Filters	3-Phase Filters			
PCB Filters	Feedthrough Components	Chassis Mount Filters			DC-Filters	3-Phase Filters		3-Phase Filters with Neutral	
≤10 A FN402 FN405 FN406 FN409 FN410	≤250 A Capacitors FN7510 FN7511 FN7512 FN7513 FN7514 FN7560 FN7561 FN7562 FN7563 Filters FN7611 FN7612 FN7660 FN7661	≤100 A Standard Performance FN2010 FN2020 FN2410 FN2412 FN2450 FN332 FN350	≤36 A High Performance FN2030 FN2060 FN2070 FN2071 FN2080 FN2415 FN2500 FN343	≤32 A Very High Performance FN2090 FN2091 FN2520 FN2560 FN2580 FN352Z FN353Z FN700Z	25 A–2300 A FN2200 FN2211 FN2210 FN2211HV FN2210HV EV-Charging Application FN2230 FN2220 FN2221 FN2240 FN2241	≤300 A FN3025 FN3026 FN3100 FN3120H FN3258 FN3287 FN3288 FN3268 FN3840 FN351	25 A–2300 A FN3270 FN3271 FN3310 FN3311 FN3310HV FN3311HV FN3359	3 A–30 A FN354 FN355	8 A–600 A FN3256H FN3280H FN356
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IEC Inlet Filters/Power Entry Modules PEM			
IEC Inlet Filters	PEM with Fuse or Switch	PEM with Fuse and Switch or Voltage Selector	Power Cords with Filters
≤20 A FN2640 FN2660 FN9222 FN9222E FN9226 FN9233 FN9233E FN9244 FN9244E FN9246 FN9255 FN9255E FN9274	≤10 A FN9260 FN9262 FN9264 FN9266 FN261	≤10 A FN1390 FN9280 FN9280E FN9290 FN9299 FN280 FN370 FN372 FN378 FN379 FN380 FN390	≤10 A IF13
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EMC/EMI Chokes				
Saturation Chokes	Differential Mode Chokes	Common Mode Chokes		
≤25 A RI Series	≤4 A RS Series	Single-Phase 0.2 A–10 A ED Series EV/EH Series RC Series RD Series RN Series RS Series 6 A–63 A RT Series RV Series	3-Phase 6 A–64 A RD Series RT Series	3-Phase with Neutral 6 A–64 A RD Series RV Series
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Product Selection PQ







Harmonic Filters		
Mitigation Requirement		
Active FN3530 FN3531 FN3540 FN3541 FN3532 FN3542 FN3545	Passive ≤250kW FN3440 FN3441 FN3442 FN3443 FN3450 FN3451 FN3452 FN3453 FN3416 FN3418 FN3416LV FN3418LV	Passive ≥250kW FN3470 FN3471 FN3472 FN3473 FN3480 FN3481 FN3482 FN3483
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3-Phase Reactors and LCL Filters		Output Filters		
Line Side	Load Side	Voltage Shape		
Line Reactors 4% ≤1000 A RWK3044 RWK3062	LCL Filters 25 A FN6840	Load Reactors 0.8% ≤1000 A RWK305 6% ≤1000 A RWK5420	dv/dt Filters ≤1200 A FN5060 FN5060HV	Sine Wave Filters ≤1320 A FN5420 FN5040HV FN530 FN5030
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DC Filters
























DC filters are specifically optimized for applications with DC supply like EV charging, DC grids, energy storage and PV installations.

Features

Family	Max. Voltage	Rated current [A]		Attenuation Performance							
		25	150	250	600	1000	2300	1-stage filter circuit	2-stage filter circuit	Low frequency attenuation	High frequency attenuation
				standard	high	very high					
 FN2200	1200 VDC	25	2300					■		■	■
 FN2210 FN2211	1000 VDC		250	2300				■		■	■
 FN2210HV FN2211HV	1500 VDC		250	2300				■		■	■
 NEW FN2220 FN2221	1000 VDC	150	600						■	■	■
 NEW FN2230 FN2231	500 VDC	150	600						■	■	■
 NEW FN2240 FN2241	1000 VDC	150	600						■	■	■

Single-Phase Filters




















Single-Phase filters for chassis or DIN-rail mounting are key for EMC compliance of low to medium power industrial applications. A broad selection of electrical and mechanical features allows a specific choice and deployment for countless applications.

Family	Max. Voltage	Rated current [A]			Features										
		1	10	20	40	60	100	Choice of connectors	Low frequency attenuation	High frequency attenuation	Earth line choke	Overvoltage protection	TEMPEST protection	DIN Rail Mounting	Multiple terminal choice
		Attenuation Performance													
		standard	high	very high											
 FN2010	250 VAC/VDC	1	60												
 FN2020	250 VAC/VDC	1	60												
 FN2030	250 VAC/VDC	1	30												
 FN2060	250 VAC/VDC	1	30												
 FN2070	250 VAC/VDC	1	36												
 FN2071	250 VAC/VDC	1	36												
 FN2080	250 VAC/VDC	1	16												
 FN2090	250 VAC/VDC	1	30												
 FN2091	250 VAC/VDC	1	30												
 FN2410	250 VAC	8	100												
 FN2410H	520 VAC	8	100												
 FN2412	250 VAC	8	45												
 FN2412H	520 VAC	8	45												
 FN2415	250 VAC	6	20												
 FN2450	250 VAC	6	20												
 NEW FN2500	277 VAC 400 VDC	10	32												
 NEW FN2520	277 VAC 400 VDC	10	32												
 NEW FN2560	300 VAC 300 VDC	1	8												
 NEW FN2580	350 VAC	1	8												
 FN332	250 VAC	1	10												
 FN343	250 VAC	1	10												
 FN350	250 VAC	8	55												
 FN352Z	250 VAC	6	10												
FN353Z	250 VAC	6	10												
FN700Z	250 VAC	6	20												
NEW LIS140C-1E	230 VAC	1	40												

IEC Inlet Filters and Power Entry Modules

A powerful and compact combination of IEC connector, EMC/EMI filter, fuses, switch and voltage selector in one package.




Features

Family	Max. Voltage	Rated current [A]			Fuse(s)	Switch (2-pole)	Voltage selector	Snap-in version	Extra wide mounting	Earth line choke	PCB mounting	Multiple terminal choice
		standard	high	very high								
 FN9222	250 VAC	1	20									
FN9222E	250 VAC	1	15									
 FN9226	250 VAC	1	10									
 FN9233	250 VAC	1	15									
FN9233E	250 VAC	1	15									
 FN9244	250 VAC	1	15									
FN9244E	250 VAC	1	15									
 FN9246	250 VAC	1	20									
 FN9255	250 VAC	2	20									
FN9255E	250 VAC	2	15									
 FN9260	250 VAC	1	10									
FN9261	250 VAC	1	10									
 FN9262	250 VAC	1	10									
FN9266	250 VAC	1	10									
 FN9264	250 VAC	1	10									
 NEW FN9274	250 VAC	1	15									
 FN9280	250 VAC	1	10									
FN9280E	250 VAC	1	10									
 FN9290	250 VAC	1	10									
FN9299	250 VAC	1	20									
 NEW FN2640	250 VAC	1	10	20								
 NEW FN2660	250 VAC	1	10	20								
 FN280, FN281, FN282, FN283 FN284, FN285, FN286	250 VAC	1	10									
 FN370, FN372, FN378, FN379	250 VAC	2	6									
 FN380, FN382, FN385B FN388, FN389	250 VAC	2	6									
 FN390 (6 A) FN1390 (10 A)	250 VAC	1	10									
 IF13	250 VAC	1	10									

Power Cords with Locking Systems
























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.



Family	Max. Voltage	■ standard length × on request								Features						
		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 5 A	CH1 line side plug SEV1011 straight	JPT line side plug JIS8303 straight
 IL13	250 VAC	■	■	×	■	■	×	×	■		■	■	■	■	■	■
 IL19	250 VAC		■							■	■	■		■		
 IL13P	250 VAC	Rewireable Connectors with Locking System														






3-Phase Filters

EMC/EMI filter solutions for industrial applications like motor drives and machine tools. Furthermore, these types of filters are also suitable for large uninterruptible power supplies, medical equipment, wind turbine power stations and a vast array of other 3-phase power electronics.

Family	Max. Voltage	Rated current [A]			Features						
		standard	high	very high	Multi-stage filter circuit	Safety connector blocks	Low leakage current	Versions for IT networks	Busbar connection	Optional protective covers	DIN-rail mounting option
 FN3025	520 VAC	10	50			■	■				
 FN3026	520 VAC	10	50			■	■				■
 FN3100	520 VAC		35	300		■					
 FN3120	520 VAC		25	230		■					
 FN3258	480 VAC	7	180			■					
 FN3258H	520 VAC										
 FN3268	520 VAC	7	180			■	■				
 FN3270	520 VAC	10		1000		■			■	■	
 FN3271	520 VAC										
 FN3287	530 VAC	10	230			■	■				
 FN3288	530 VAC	10	230			■	■	■	■		
 FN3288IT	530 VAC										
 FN3288HV	760 VAC	10	230			■	■	■			
 FN3288HVIT	760 VAC										
 FN3310	520 VAC			250	2300				■	■	■
 FN3311	520 VAC										
 FN3310HV	760 VAC			250	2300				■	■	■
 FN3311HV	760 VAC										
 FN3359	520 VAC		150	2500		■			■	■	■
 FN3359HV	760 VAC										
 NEW FN3840	530 VAC		25	380			■			■	
 FN351	440 VAC	8	280			■					
 FN351H	520 VAC										














3-Phase with Neutral Line Filters

3-phase with neutral line filters are a compact solution for 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 installations typically involve several 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 increase 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.

			Rated current [A]						Attenuation Performance						Features					
Family	Max. Voltage		3	20	25	150	160	600	standard	high	very high	1-stage filter circuit	2-stage filter circuit	Safety connector blocks	Optional screw bolt terminals	Faston connection	Very low leakage current			
	FN3256	3× 520/300 VAC	8				160					■		■						
	FN3280	3× 520/300 VAC	8				600						■	■						
	FN354	3× 440/250 VAC	4			25								■		■				
	FN355	3× 440/250 VAC	3	20												■	■			
	FN356	3× 440/250 VAC	16				150							■	■	■				






Feedthrough Components

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

		Rated current [A]							Features					
		0	10	50	63	100	200	AC capacitors	DC capacitors	AC filters	DC filters	Y2 capacitor class	Y4 capacitor class	
		Capacitance [nF]												
		2.2	100	220	470	1000	4700							
		Attenuation Performance												
		standard			high		very high							
		Capacitance [nF]												
		2.2	10	220	470	1000	4700							
	Feedthrough Capacitors FN7510 Max. Voltage: 300 VAC, 250 VAC (UL)	2.2	10	100	470	1000	4700	■				■		
	FN7511 Max. Voltage: 300 VAC, 250 VAC (UL)	4.7	10	220	470	1000	200	■				■		
	FN7512 Max. Voltage: 300 VAC, 250 VAC (UL)	33	16	100	63	1000	4700	■				■		
	FN7513 Max. Voltage: 300 VAC, 250 VAC (UL)	100	16	100	470	1000	4700	■				■		
	FN7514 Max. Voltage: 300 VAC, 250 VAC (UL)	100	32	100	470	1000	4700	■				■		
	FN7560 Max. Voltage: 130 VDC, 130 VAC	10	10	100	470	1000	200	■	■				■	
	FN7561 Max. Voltage: 130 VDC, 130 VAC	47	16	100	63	1000	200	■	■				■	
	FN7562 Max. Voltage: 130 VDC, 130 VAC	100	16	100	63	1000	200	■	■				■	
	FN7563 Max. Voltage: 130 VDC, 130 VAC	100	16	100	63	1000	200	■	■				■	
	Feedthrough Filters FN7611 Max. Voltage: 300 VAC, 250 VAC (UL)	10	10	100	63	1000	200			■		■		
	FN7612 Max. Voltage: 300 VAC, 250 VAC (UL)	10	10	100	63	1000	200			■		■		
	FN7660 Max. Voltage: 130 VDC, 130 VAC	10	10	100	63	1000	200		■	■			■	
	FN7661 Max. Voltage: 130 VDC, 130 VAC	10	10	100	63	1000	200		■	■			■	

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 already planned for EMC compliance throughout the equipment design process.

Family	Max. Voltage	Rated current [A]		Attenuation Performance	Features			
		0.5	3		For DC applications	With metal case	Low profile	Small footprint
		standard	high	very high				
 FN402	250 VAC	0.5	6.5				■	
 FN405	250 VAC	0.5	10				■	
 FN406	250 VAC	0.5	8.4			■		■
 FN409	75 VDC		3	13	■		■	
 FN410	250 VAC	0.5	6			■	■	

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.

Features

Family	Max. Voltage	Rated current [A]							Common mode choke	DC application	Single phase	3-phase	3-phase with neutral	Differential mode choke	Saturation choke	High differential mode inductance
		0.2	0.7	3	6	16	50	64								
		Inductance value [mH] up to:														
		0	20	40	60	80	100									
 ED series	300 VAC	0.2	2	40					■		■					■
 EV/EH series	250 VAC	0.3	5	90					■		■					
 RB series	600 VAC 1000 VDC	3	16	50					■	■	■	■				
 RC series	250 VAC 1000 VDC	0.25	0.7	47					■	■	■					
 RD 5000 series	600 VAC 850 VDC	10	6	16					■	■	■	■				
 RD 6000 series	600 VAC 850 VDC	15	6	16					■	■	■	■				
 RD 7000 series	600 VAC 850 VDC	25	6	36					■	■	■	■				
 RD 8000 series	600 VAC 850 VDC	12	16	64					■	■	■	■				
 RI series	250 VAC	1.5	25							■					■	
 RN series	300 VAC 300 VDC	0.3	10	100					■	■	■					
 RS series	250 VAC	0.3	4	3.6							■			■		
 RT series	600 VAC 425 VDC	10	6	63					■	■	■	■				
 RV series	530 VAC 1000 VDC	16	16	50					■	■	■		■			

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.

			Features														
Family	Nom. Voltage	Ignition current [A] up to:		Voltage-time area [Vµs] up to:					1:1	1:1:1	2:1	2:1:1	3:1	3:1:1	PCB	Faston	Galvanic isolation
		0	0.6	0	1000	2000	3000	4000									
 IT155 IT237	500 VAC	0.25	1100														
 IT245, IT255, IT258	750 VAC	1	500														
 IT239	1000 VAC	0.25	350														
 IT370	1000 VAC	1	4000														
 IT364	3000 VAC	3	5000														
 IT213	380 VAC	0.25	450														
 IT312 IT313	380 VAC	1	1200														
 IT143, IT233, IT242, IT243, IT 253	500 VAC	0.25	800														
 IT245 IT248	750 VAC	0.25	350														
 IT249	500 VAC	0.25	350														
 IT260	500 VAC	0.1	200														
 IT314	380 VAC	1	500														
 IT234, IT244, IT154	500 VAC	0.25	600														

Active Harmonic Filters

Active harmonic filters are suitable for mixed load installations and applications with dynamic load. Commonly used as a central solution at Point of Common Coupling (PCC). Ecosine Active Sync 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, redundancy, retrofitting and combination with passive harmonic mitigation components.






Family	Nom. Voltage	Rated mitigation current [A]										Features										
		60	120	180	240	300	600	900	1200	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 rectifiers	THDI <5%	Power factor correction	Load balancing	3-phase/3-wire	3-phase/4-wire			
 FN3530 FN3531	380–480 VAC	60 A										■	■	■	■	■	■	■	■	■	■	
 FN3540 FN3541	380–415 VAC	60 A										■	■	■	■	■	■	■	■		■	
 FN3532 High speed Bus	380–480 VAC	120 A										■	■	■	■	■	■	■	■			
 FN3542 High speed Bus	380–415 VAC	120 A										■	■	■	■	■	■	■	■		■	
 FN3545	380–480/415 VAC	60	1200 A*								■	■	■	■	■	■	■	■	■	■		

* up to 1200 A by combining multiple cabinets

3-Phase Line Reactors and LCL Filters

Line side harmonic mitigation solutions for industrial applications like motor drives and Active Front End/Active Infeed Converters. 3-Phase Line Reactors offer a first stage of mitigation with possibility to combine with other filtering solutions like an Active Harmonic Filter. LCL Filters protect the grid from disturbances induced during energy regeneration from the Active Front End.

Family	Nom. Voltage	Rated mitigation current [A]							Features										
		0	200	400	600	800	1000	<1000	For 50 Hz grids	For 60 Hz grids	For 6-pulse diode rectifiers	For 6-pulse SCR rectifiers	For Active Front End	Less commutation notches	Inrush current limitation	Harmonics reduction	Reduces the current and voltage ripples	4% impedance	2% impedance
 RWK3044	380–480 VAC	2					1000		■	■	■	■		■	■	■		■	
 RWK3062	500–690 VAC	1.5					870		■	■	■	■		■	■	■			■
 FN6840	380–480 VAC	25							■	■			■	■	■	■	■		

Passive Harmonic Filters

Passive 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 harmonic filters are the industry standard for 6-pulse rectifiers and non-regenerative motor drives to achieve the often specified level of THDi <5%.










Features



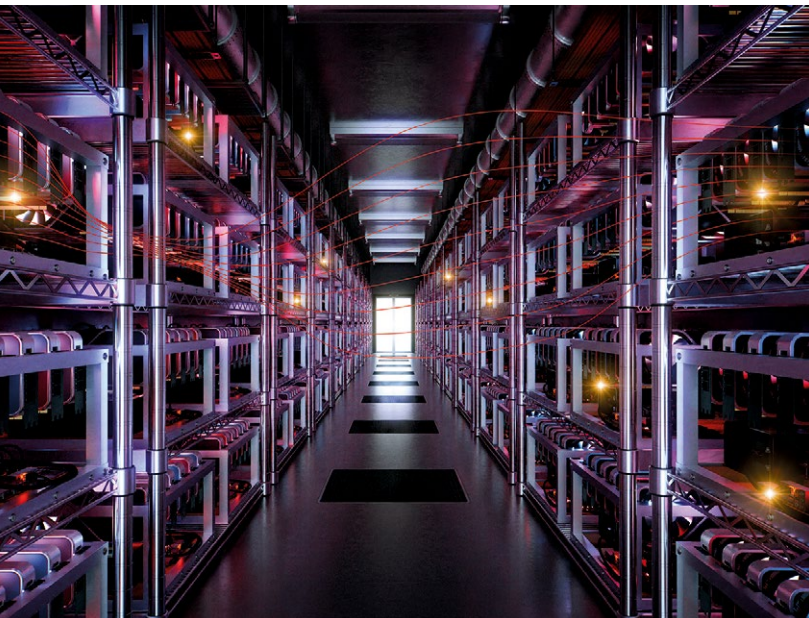
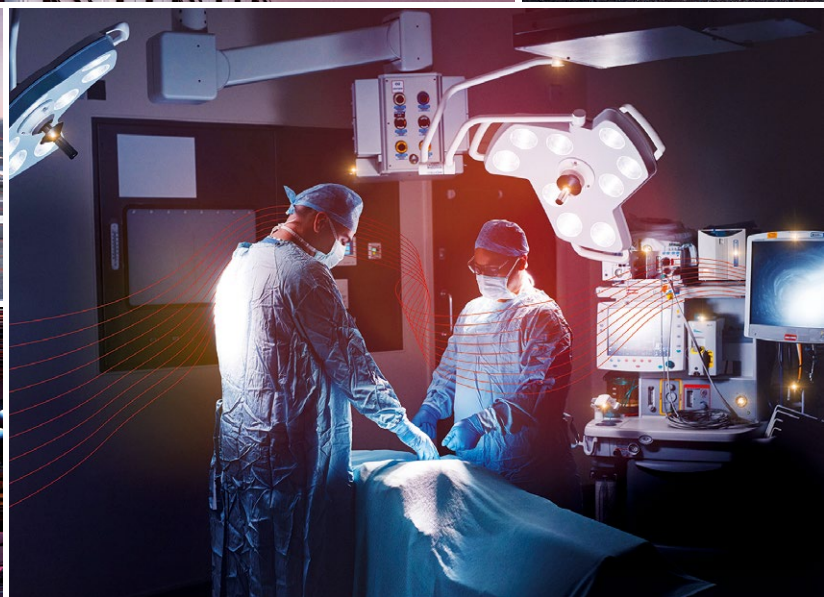
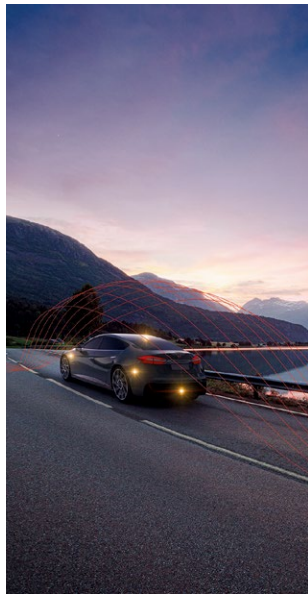
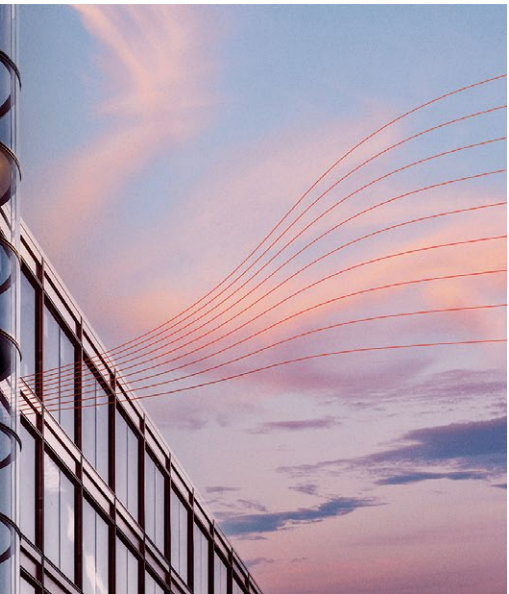
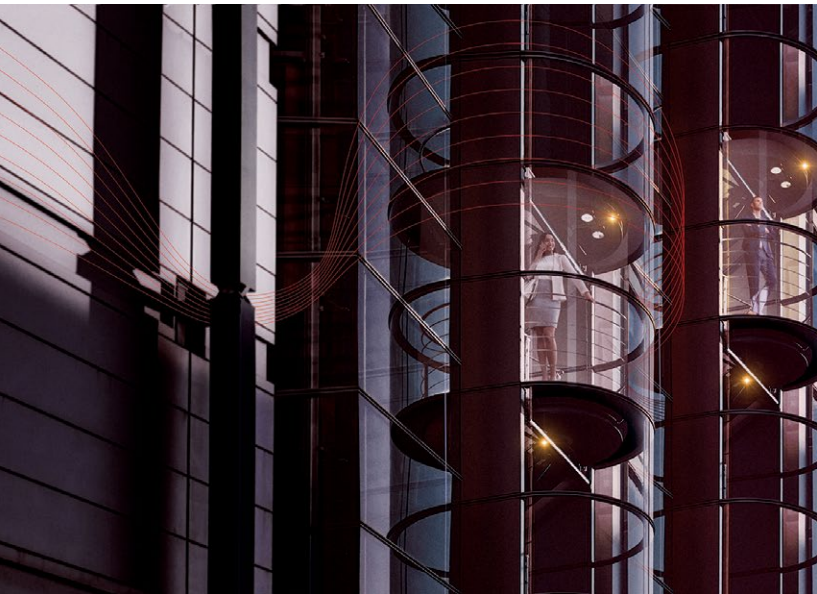
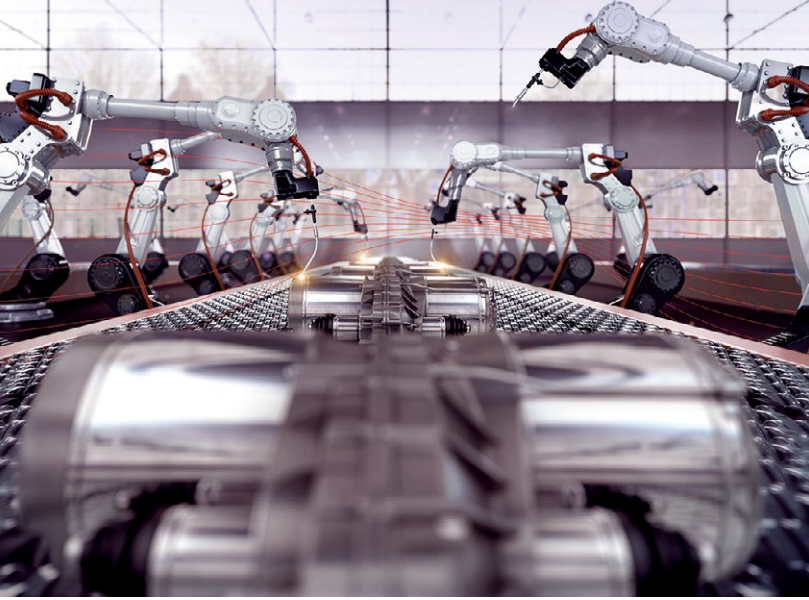
Family	Nom. Voltage	Rated power [kW/HP]						For 50 Hz grids	For 60 Hz grids	For 6 pulse diode rectifiers without L _{dC}	For 6 pulse diode rectifiers with L _{dC}	For 6-pulse SCR rectifiers	Full performance THDi <5%	Economy THDi 5-15%	3-phase/3-wire
		0	100	200	300	400	500								
FN3440	380-415 VAC	1.1		250 kW				■		■	■	■	■	■	■
FN3441	380-415 VAC	1.1		250 kW				■			■		■		■
FN3442	380-415 VAC	1.2		240 HP					■	■	■	■	■		■
FN3443	380-415 VAC	1.2		240 HP					■		■		■		■
FN3450	440-500 VAC	1.1		315 kW				■		■	■	■	■		■
FN3451	440-500 VAC	1.1		315 kW				■			■		■		■
FN3452	440-480 VAC	1.5		300 HP					■	■	■	■	■		■
FN3453	440-480 VAC	1.5		300 HP					■		■		■		■
FN3470	380-415 VAC			250	500 kW			■		■	■	■	■		■
FN3471	380-415 VAC			250	500 kW			■		■	■	■		■	■
FN3472	380-415 VAC			280	480 HP				■	■	■	■	■		■
FN3473	380-415 VAC			280	480 HP				■	■	■	■		■	■
FN3480	440-480 VAC			315	560 kW			■		■	■	■	■		■
FN3481	440-480 VAC			315	560 kW			■		■	■	■		■	■
FN3482	440-480 VAC			350	600 HP				■	■	■	■	■		■
FN3483	440-480 VAC			350	600 HP				■	■	■	■		■	■
FN3416	380-500 VAC	4	160 kW					■		■	■	■		■	■
FN3418	380-480 VAC	5	250 HP						■	■	■	■		■	■
FN3416LV	200-240 VAC	2.5	90kW					■		■	■	■		■	■
FN3418LV	200-240 VAC	2.5	125HP						■	■	■	■		■	■

Output Filters and 3-Phase Load Reactors

Schaffner offers a wide range of Power Quality motor protection devices. Improving the system reliability, availability and functionality to avoid expensive downtimes of installations, manufacturing plants, machinery and other applications caused by premature motor damage. dv/dt Reactors reduce the voltage rise induced by the pulse wide modulation generated by the variable frequency drive, dv/dt Filters reduce the voltage rise even further and the voltage peaks at the motor terminals. Sine Wave Filters are differential mode low-pass filters providing a sinusoidal phase-to-phase output voltage and allow the use of cables up to 2'000 m long, eliminate the bearing currents and reduce acoustic noises. Sine Wave Plus Filters add a common mode filtering to smooth out the voltage and current phase-to-phase and phase-to-earth allowing the usage of long unshielded motor cables.

		Rated current [A]						Maximum cable length [m]	Features											
Family	Nom. Voltage	0	200	400	600	800	1000		1200	dv/dt reduction	Overvoltage reduction	Motor temperature reduction	Acoustic motor noise reduction	Sym. sinusoidal output signal	Asym. sinusoidal output signal	Elimination of bearing damage	Replaces cable shields	Connection to DC link required	Improves overall EMC	Reduces equipment downtime
 FN5420	480 VAC	2.3						1000 A	2000	■	■	■	■	■					■	■
 FN5040HV	690 VAC	13						1320 A	2000	■	■	■	■	■					■	■
 FN5020	500 VAC	0						120 A	1000	■	■	■	■	■					■	■
 FN5030**	500 VAC	0						120 A	1000			■	■	■	■	■	■	■	■	■
 FN530	500 VAC	0	16 A						1000	■	■	■	■	■	■	■	■	■	■	■
 FN5060	500 VAC	12						1100 A	500	■	■	■							■	■
 FN5060HV	690 VAC	30						1100 A	500	■	■	■							■	■
 RWK5420	480 VAC	2.3						1000 A	100	■		■							■	■
 RWK305	500 VAC	0						1100 A	30	■		■							■	■

* motor frequencies above 60 Hz require a derating except for FN5020 (see user manual).
** Additional output filter module to be operated in conjunction with FN5420 or FN5020.



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