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SHORT FORM CATALOG

EMC/EMI & Power Quality
Filters and Components.

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FN351	■	■			

	Machinery & Robotics Motor Drive, Machinery, Factory Automation, Robotics	**Building Technology** HVAC, Elevators, Lighting	**Energy Management** Renewable Energy, EV-Charging, Energy Storage, Smart Infra-structure, Power Supply, UPS, Oil & Gas	**Medical** Medical Equipment, Laboratory and Analyser Equipment	**Data & Communication** Datacenter, Networks
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FN3280H	■	■	■		
FN354			■	■	
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FN9244			■	■	
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FN9260			■	■	
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FN9264			■	■	
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FN9280			■	■	
FN9280E			■	■	
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FN280			■	■	
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FN380			■	■	
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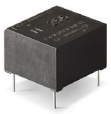
Power Cords with EMC-Filter IF13		■	■		■
EMC/EMI Chokes					
					
ED Common Mode Chokes **NEW**		■			
EV/EH Common Mode Chokes		■	■	■	■
RB Common Mode Chokes	■	■	■	■	■
RC Common Mode Chokes	■	■	■	■	■
RD Common Mode Chokes	■	■	■	■	■
RI Saturation Chokes	■	■			
RN Common Mode Chokes	■	■	■	■	■
RS Differential Mode Chokes		■	■	■	■
RT Common Mode Chokes **NEW**	■	■	■	■	■
RV Common Mode Chokes **NEW**		■	■		

Industries

	 **Machinery & Robotics** Motor Drive, Machinery, Factory Automation, Robotics	 **Building Technology** HVAC, Elevators, Lighting	 **Energy Management** Renewable Energy, EV-Charging, Energy Storage, Smart Infra-structure, Power Supply, UPS, Oil & Gas	 **Medical** Medical Equipment, Laboratory and Analyser Equipment	 **Data & Communication** 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		■	■	■	■

	 **Machinery & Robotics** Motor Drive, Machinery, Factory Automation, Robotics	 **Building Technology** HVAC, Elevators, Lighting	 **Energy Management** Renewable Energy, EV-Charging, Energy Storage, Smart Infra-structure, Power Supply, UPS, Oil & Gas	 **Medical** Medical Equipment, Laboratory and Analyser Equipment	 **Data & Communication** Datacenter, Networks
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	■	■			
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Output Filters 					
FN5060, FN5060HV	■	■			
FN5420, FN5040HV, FN5020	■				
FN5030, FN530	■				
Reactors 					
RWK3044, RWK3062	■	■	■		
RWK305, RWK5420	■	■	■		
LCL Filters 					
FN6840	■		■		

Product Selection EMC/EMI

EMC/EMI Filters & Components

Single-Phase Filters

PCB Filters

≤10 A
FN402
FN405
FN406
FN409
FN410

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Feedthrough Components

≤250 A Capacitors
FN7510
FN7511
FN7512
FN7513
FN7514
FN7560
FN7561
FN7562
FN7563

Filters
FN7611
FN7612
FN7660
FN7661

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Chassis Mount Filters

≤100 A Standard Performance
FN2010
FN2020
FN2410
FN2412
FN2450
FN332
FN350

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≤36 A High Performance
FN2030
FN2060
FN2070
FN2071
FN2080
FN2415
FN2500
FN343

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≤32 A Very High Performance
FN2090
FN2091
FN2520
FN2560
FN2580
FN352Z
FN353Z
FN700Z

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DC-Filters

DC-Filters

25 A–2300 A
FN2200
FN2211
FN2210
FN2211HV
FN2210HV

EV-Charging Application
FN2230
FN2231
FN2220
FN2221
FN2240
FN2241

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3-Phase Filters

3-Phase Filters

≤300 A
FN3025
FN3026
FN3100
FN3120H
FN3258
FN3287
FN3288
FN3268
FN3840
FN351

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25 A–2300 A
FN3270
FN3271
FN3310
FN3311
FN3310HV
FN3311HV
FN3359

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3-Phase Filters with Neutral

3 A–30 A
FN354
FN355

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8 A–600 A
FN3256H
FN3280H
FN356

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IEC Inlet Filters/Power Entry Modules PEM

IEC Inlet Filters

≤20 A
FN2640
FN2660
FN9222
FN9222E
FN9226
FN9233
FN9233E
FN9244
FN9244E
FN9246
FN9255
FN9255E
FN9274

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PEM with Fuse or Switch

≤10 A
FN9260
FN9262
FN9264
FN9266
FN261

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PEM with Fuse and Switch or Voltage Selector

≤10 A
FN1390
FN9280
FN9280E
FN9290
FN9299
FN280
FN370
FN372
FN378
FN379
FN380
FN390

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Power Cords with Filters

≤10 A
IF13

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EMC/EMI Chokes

Saturation Chokes

≤25 A
RI Series

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Differential Mode Chokes

≤4 A
RS Series

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Common Mode Chokes

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

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3-Phase
6 A–64 A
RD Series
RT Series

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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

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Passive
≤250kW
FN3440
FN3441
FN3442
FN3443
FN3450
FN3451
FN3452
FN3453
FN3416
FN3418
FN3416LV
FN3418LV

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Passive
≥250kW
FN3470
FN3471
FN3472
FN3473
FN3480
FN3481
FN3482
FN3483

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3-Phase Reactors and LCL Filters

Line Side

Line Reactors
4%
≤1000 A
RWK3044
RWK3062

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LCL Filters
25 A
FN6840

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Load Side

Load Reactors
0.8%
≤1000 A
RWK305

6%
≤1000 A
RWK5420

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Output Filters

Voltage Shape

dv/dt Filters
≤1200 A
FN5060
FN5060HV

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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.

Rated current [A]
25 150 250 600 1000 2300

Attenuation Performance
standard high very high

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

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.

Rated current [A]

1 10 20 40 60 100

Attenuation Performance

standard high very high

	Family	Max. Voltage	Choice of connectors	Low frequency attenuation	High frequency attenuation	Earth line choke	Overvoltage protection	TEMPEST protection	DIN Rail Mounting	Multiple terminal choice
			Features							
	FN2010	250 VAC/VDC	■							
	FN2020	250 VAC/VDC	■							
	FN2030	250 VAC/VDC	■	■	■		■			
	FN2060	250 VAC/VDC	■							
	FN2070 FN2071	250 VAC/VDC	■		■					
	FN2080	250 VAC/VDC	■	■						
	FN2090 FN2091	250 VAC/VDC	■	■	■		■			■
	FN2410 FN2410H	250 VAC 520 VAC		■						
	FN2412 FN2412H	250 VAC 520 VAC		■					■	
	FN2415	250 VAC		■	■					
	FN2450	250 VAC		■	■					■
NEW 	FN2500	277 VAC 400 VDC		■	■					■
NEW 	FN2520	277 VAC 400 VDC		■	■					■
NEW 	FN2560	300 VAC 300 VDC		■	■					■
NEW 	FN2580	350 VAC		■	■					■
	FN332	250 VAC					■			
	FN343	250 VAC				■				
	FN350	250 VAC		■						
	FN352Z FN353Z	250 VAC		■	■		■	■		
	FN700Z	250 VAC		■	■		■	■		
NEW 	LIS140C-1E	230 VAC		■					■	

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.

Rated current [A]

1 2 6 10 15 20

Attenuation Performance

standard high very high

	Family	Max. Voltage	Features: Fuse(s)	Switch (2-pole)	Voltage selector	Snap-in version	Extra wide mounting	Earth line choke	PCB mounting	Multiple terminal choice
	FN9222	250 VAC				■	■			
	FN9222E	250 VAC				■	■	■		
	FN9226	250 VAC							■	■
	FN9233	250 VAC				■	■			
	FN9233E	250 VAC				■	■	■		
	FN9244	250 VAC				■	■			
	FN9244E	250 VAC				■	■	■		
	FN9246	250 VAC		■		■				
	FN9255	250 VAC				■	■			
	FN9255E	250 VAC				■	■	■		
	FN9260 FN261	250 VAC	■			■				
	FN9262 FN9266	250 VAC	■	■		■				
	FN9264	250 VAC		■		■				
NEW 	FN9274	250 VAC		■		■				
	FN9280	250 VAC	■	■		■				
	FN9280E	250 VAC	■	■		■		■		
	FN9290 FN9299	250 VAC	■	■		■				
NEW 	FN2640	250 VAC								■
NEW 	FN2660	250 VAC								■
	FN280, FN281, FN282, FN283 FN284, FN285, FN286	250 VAC	■	■		■				
	FN370, FN372, FN378, FN379	250 VAC	■		■	■				
	FN380, FN382, FN385B FN388, FN389	250 VAC	■	■		■				
	FN390 (6 A) FN1390 (10 A)	250 VAC	■	■	■			■		
	IF13	250 VAC								

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.

■ **standard length**
× **on request**

	Family	Max. Voltage	6 ft	2 m	3 m	9 ft	12 ft	5 m	10 m	**Features** 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	JP1 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] / Attenuation Performance (7 · 50 · 180 · 250 · 380 · 2500; standard · high · very high)	Features: 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 FN3258H	480 VAC 520 VAC	7 180		■					
	FN3268	520 VAC	7 180		■	■				
	FN3270 FN3271	520 VAC	10 1000		■			■	■	
	FN3287	530 VAC	10 230		■	■				
	FN3288 FN3288IT	530 VAC	10 230	■	■	■	■			
	FN3288HV FN3288HVIT	760 VAC	10 230	■	■		■			
	FN3310 FN3311	520 VAC	250 2300				■	■	■	
	FN3310HV FN3311HV	760 VAC	250 2300				■	■	■	
	FN3359 FN3359HV	520 VAC 760 VAC	150 2500	■			■	■	■	
NEW 	FN3840	530 VAC	25 380		■			■		
	FN351 FN351H	440 VAC 520 VAC	8 280		■					

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.

IEC/EN 60939

Rated current [A]

3 20 25 150 160 600

Attenuation Performance

standard high very high

	Family	Max. Voltage	1-stage filter circuit	2-stage filter circuit	Safety connector blocks	Optional screw bolt terminals	Faston connection	Very low leakage current
			Features					
	FN3256	3× 520/300 VAC	■		■			
	FN3280	3× 520/300 VAC		■	■			
	FN354	3× 440/250 VAC		■			■	
	FN355	3× 440/250 VAC	■				■	■
	FN356	3× 440/250 VAC	■		■	■		

Feedthrough Components

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

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

	Feedthrough Filters	Max. Voltage	Rated current [A] 0 / 10 / 50 / 63 / 100 / 200 — Attenuation Performance: standard / high / very high						
	FN7611	300 VAC 250 VAC (UL)	10 – 63 high			■		■	
	FN7612	300 VAC 250 VAC (UL)	10 – 63 high			■		■	
	FN7660	130 VDC 130 VAC	10 – 200 high			■	■		■
	FN7661	130 VDC 130 VAC	10 – 200 high			■	■		■

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] 0.5 – 3 – 6.5 – 8.4 – 10 – 13 / Attenuation Performance: standard – high – very high	Features: For DC applications	With metal case	Low profile	Small footprint
	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		■	■	

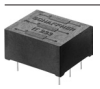
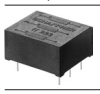
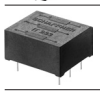
EMC/EMI Chokes

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.

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

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.

	Family	Nom. Voltage	Ignition current [A] up to: 0 0.6 1.2 1.8 2.4 3.0 Voltage-time area [Vµs] up to: 0 1000 2000 3000 4000 5000	Features: 1:1	1:1:1	2:1	2:1:1	3:1	3:1:1	PCB	Faston	Galvanic isolation
	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	■	■	■	■	■	■	■	■		■
 High speed Bus	FN3532	380–480 VAC	120 A	■	■	■	■	■	■	■	■	■	
 High speed Bus	FN3542	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 possiblity 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] 0 200 400 600 800 1000 <1000	Features: 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%.

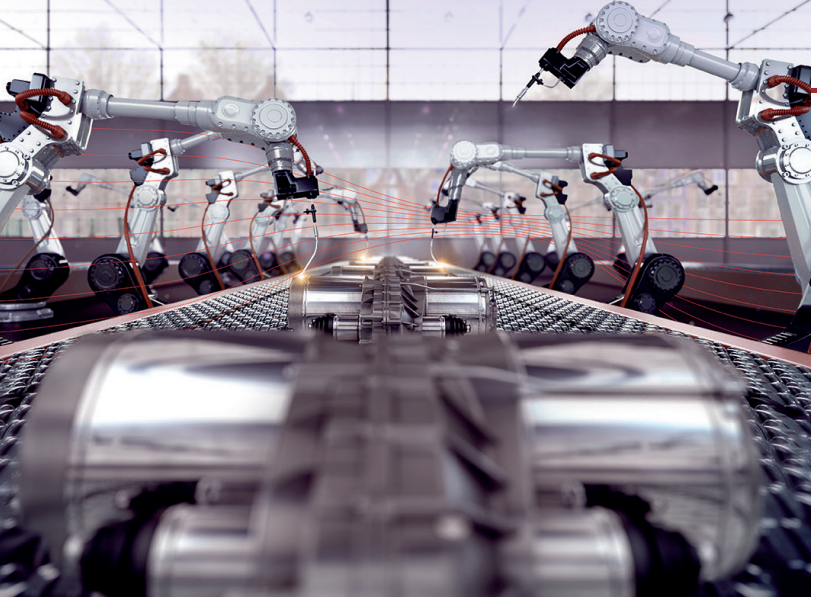
	Family	Nom. Voltage	Rated power [kW/HP] 0 100 200 300 400 500 600	Features: For 50 Hz grids	For 60 Hz grids	For 6 pulse diode rectifiers without L_{dc}	For 6 pulse diode rectifiers with L_{dc}	For 6-pulse SCR rectifiers	Full performance THDi <5%	Economy THDi 5–15%	3-phase/3-wire
	FN3440	380–415 VAC	1.1 250 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 90 kW	■		■	■	■		■	■
	FN3418LV	200–240 VAC	2.5 125 HP		■	■	■	■		■	■

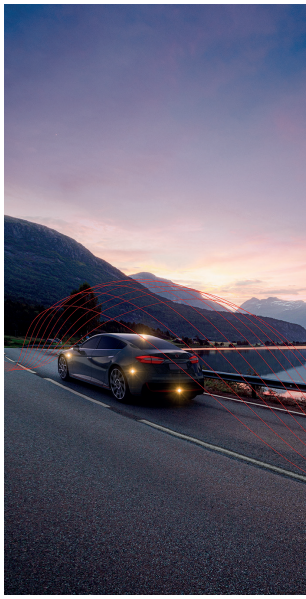
Output Filters and 3-Phase Load Reactors

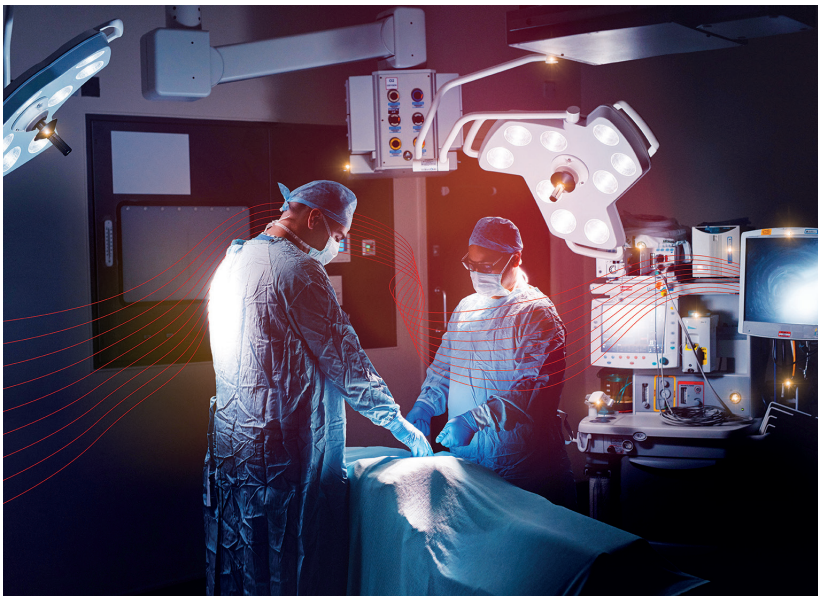
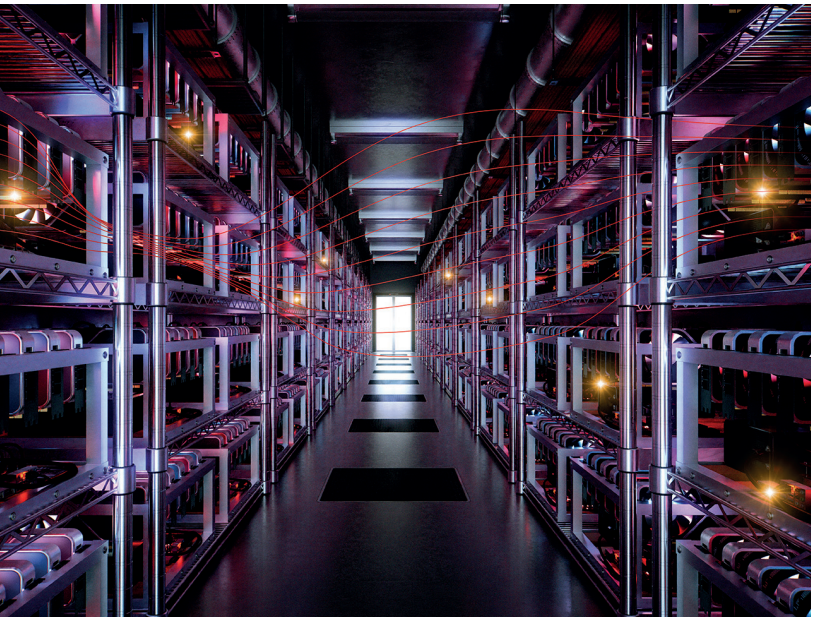
Schaffner offers a wide range of Power Quality motor protection devices. Improving the system reliability, availability and functionality to avoid expensive downtimes of installations, manufacturing plants, machinery and other applications caused by premature motor damage. Dv/dt Reactors reduce the voltage 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.

	Family	Nom. Voltage	Rated current [A] / Motor frequency* [Hz]	Maximum cable length [m]	Features: 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 / 0 – 50 – 60 – 100 – 120 – 200 – 600	2000	■	■	■	■	■					■	■
	FN5040HV	690 VAC	13 – 1320 A / 0 – 50 – 60 – 100 – 120 – 200 – 600	2000	■	■	■	■	■					■	■
	FN5020	500 VAC	0 – 120 A / 0 – 50 – 60 – 100 – 120 – 200 – 600	1000	■	■	■	■	■					■	■
	FN5030**	500 VAC	0 – 120 A / 0 – 50 – 60 – 100 – 120 – 200 – 600	1000			■	■		■	■	■	■	■	■
	FN530	500 VAC	0 – 16 A / 0 – 50 – 60 – 100 – 120 – 200 – 600	1000	■	■	■	■		■	■	■	■	■	■
	FN5060	500 VAC	12 – 1100 A / 0 – 50 – 60 – 100 – 120 – 200 – 600	500	■	■	■							■	■
	FN5060HV	690 VAC	30 – 1100 A / 0 – 50 – 60 – 100 – 120 – 200 – 600	500	■	■	■							■	■
	RWK5420	480 VAC	2.3 – 1000 A / 0 – 50 – 60 – 100 – 120 – 200 – 600	100	■		■							■	■
	RWK305	500 VAC	0 – 1100 A / 0 – 50 – 60 – 100 – 120 – 200 – 600	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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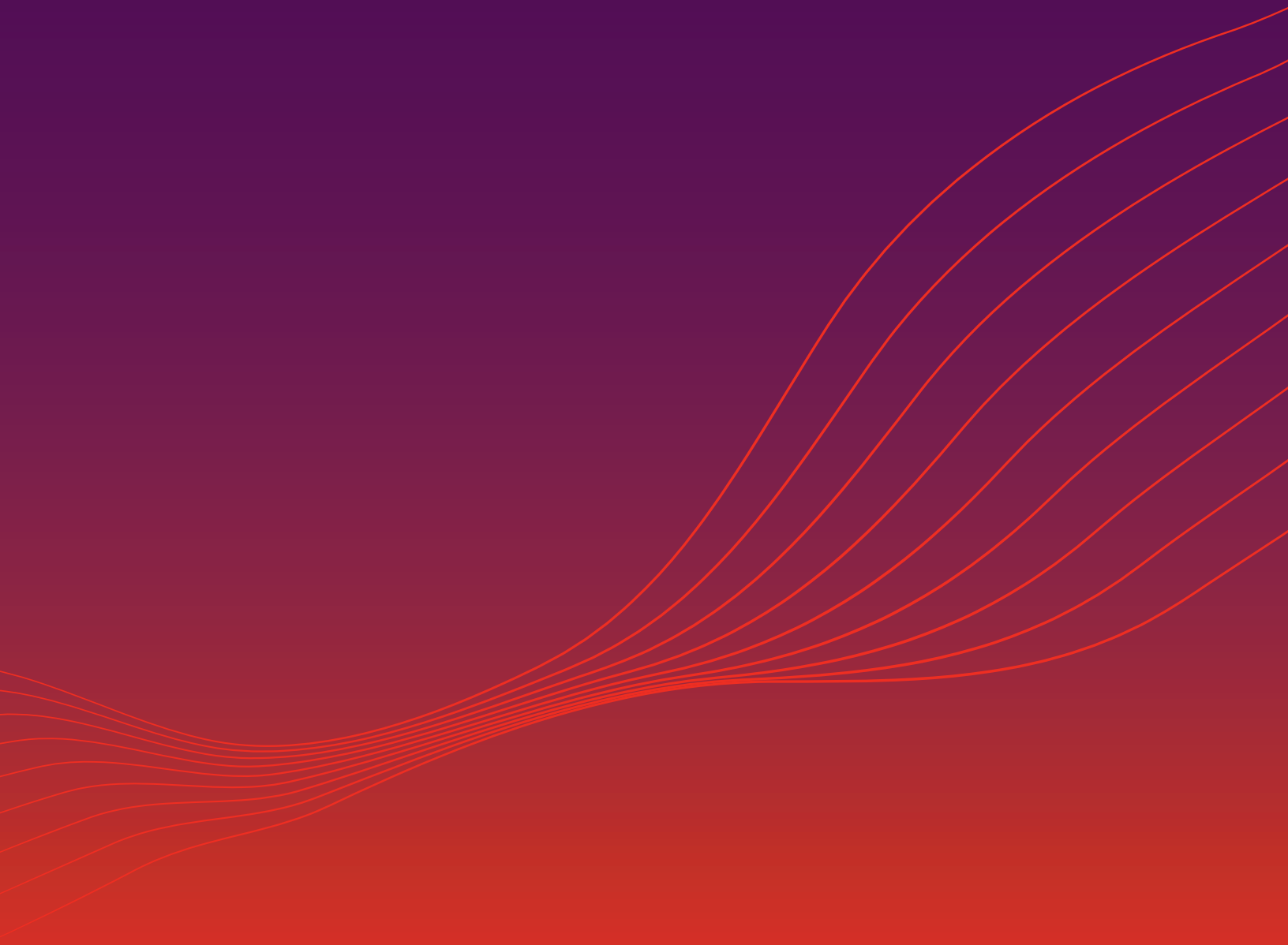

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