

Harmonic filter **HFM-FB**



General Data

Rated voltage 3 x 400 - 3 x 480 Vac
Rated current 3 x 10.00 - 3 x 433.00 A
7 % typ. at nominal load
Load rated capacity 5 - 250 kW
Insulation class F
Ambient temperature -10 °C to +40 °C
Degree of protection IP 00
SCCR 100 kA (without preliminary fuse)

Advantages

Sinusoidal current consumption from the mains in devices with uncontrolled B6J diode rectifiers or controlled B6C thyristor bridges
Compliance with EN 61000-3-2, EN 61000-3-12
Support in the compliance with IEEE 519, D-A-CH-CZ
Cos(phi)>0.95 at rated current
Hardly any intermediate circuit voltage dip by comparison with a 4 % uK line reactor
Use of the HFM as a central sum filter for multiple converters possible

Applications

Harmonic filter module to ensure sinusoidal mains currents, reduction of mains harmonic currents, increase in system service life and system reliability and compliance with power quality standards such as IEEE 519, TEC 61000-3-2, IEC 61000-3-12.

Standards

Harmonic filter in accordance with
EN 61558 Part 1, EN 61558 Part 20, UL 508 17th Ed., CSA 22.2 No. 14-10

Approvals



UL 506, CSA 22.2



Harmonic filter HFM-FB



Typ	HFM-FB 7-400	HFM-FB 13-400	HFM-FB 18-400	HFM-FB 24-400	HFM-FB 30-400	HFM-FB 50-400
Electrical data						
Operating data						
Rated voltage	3 x 400 Vac	3 x 400 Vac	3 x 400 Vac	3 x 400 Vac	3 x 400 Vac	3 x 400 Vac
Rated current	3 x 10.00 A	3 x 19.00 A	3 x 26.00 A	3 x 35.00 A	3 x 43.00 A	3 x 72.00 A
Voltage range	380 - 440 Vac	380 - 440 Vac	380 - 440 Vac	380 - 440 Vac	380 - 440 Vac	380 - 440 Vac
Rated frequency	50 Hz	50 Hz	50 Hz	50 Hz	50 Hz	50 Hz
THD-I	7 % typ at nominal load	7 % typ at nominal load	7 % typ at nominal load	7 % typ at nominal load	7 % typ at nominal load	7 % typ at nominal load
Rated load power*	5.0 kW	7.5 kW	11.0 kW	15.0 and 18.5 kW	22.0 kW	30.0 and 37.0 kW
Description of the load	Balanced load by inverter	Balanced load by inverter	Balanced load by inverter	Balanced load by inverter	Balanced load by inverter	Balanced load by inverter
Overtopping Capacity	150 % for 60 sec. every 10 min.	150 % for 60 sec. every 10 min.	150 % for 60 sec. every 10 min.	150 % for 60 sec. every 10 min.	150 % for 60 sec. every 10 min.	150 % for 60 sec. every 10 min.
Efficiency	99 %	99 %	99 %	99 %	99 %	99 %
Approvals						
Approvals	cURus	cURus	cURus	cURus	cURus	cURus
Environment						
Ambient temperature	-10 °C to +40 °C, without condensation	-10 °C to +40 °C, without condensation	-10 °C to +40 °C, without condensation	-10 °C to +40 °C, without condensation	-10 °C to +40 °C, without condensation	-10 °C to +40 °C, without condensation
MTBF @ 50°C/500 V (Mil-HB-217F)	>200.000 h	>200.000 h	>200.000 h	>200.000 h	>200.000 h	>200.000 h
Safety and protection						
Type	Metal enclosure	Metal enclosure	Metal enclosure	Metal enclosure	Metal enclosure	Metal enclosure
Class of Insulation System	IEC=F, UL=class 155	IEC=F, UL=class 155	IEC=F, UL=class 155	IEC=F, UL=class 155	IEC=F, UL=class 155	IEC=F, UL=class 155
Protection index	IP 00	IP 00	IP 00	IP 00	IP 00	IP 00
Safety class	I	I	I	I	I	I
SCCR	100 kA	100 kA	100 kA	100 kA	100 kA	100 kA
Notes						
*	IE2 efficiencies of the motors and an efficiency >96 % assumed	IE2 efficiencies of the motors and an efficiency >96 % assumed	IE2 efficiencies of the motors and an efficiency >96 % assumed	IE2 efficiencies of the motors and an efficiency >96 % assumed	IE2 efficiencies of the motors and an efficiency >96 % assumed	IE2 efficiencies of the motors and an efficiency >96 % assumed
Order numbers						
Order Number	HFM-FB 7-400	HFM-FB 13-400	HFM-FB 18-400	HFM-FB 24-400	HFM-FB 30-400	HFM-FB 50-400

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Harmonic filter HFM-FB



Typ	HFM-FB 70-400	HFM-FB 100-400	HFM-FB 125-400	HFM-FB 150-400	HFM-FB 200-400	HFM-FB 225-400
Electrical data						
Operating data						
Rated voltage	3 x 400 Vac	3 x 400 Vac	3 x 400 Vac	3 x 400 Vac	3 x 400 Vac	3 x 400 Vac
Rated current	3 x 101.00 A	3 x 144.00 A	3 x 180.00 A	3 x 217.00 A	3 x 289.00 A	3 x 325.00 A
Voltage range	380 - 440 Vac	380 - 440 Vac	380 - 440 Vac	380 - 440 Vac	380 - 440 Vac	380 - 440 Vac
Rated frequency	50 Hz	50 Hz	50 Hz	50 Hz	50 Hz	50 Hz
THD-I	7 % typ at nominal load	7 % typ at nominal load	7 % typ at nominal load	7 % typ at nominal load	7 % typ at nominal load	7 % typ at nominal load
Rated load power*	55.0 kW	75.0 kW	90.0 kW	110.0 kW	160.0 kW	180.0 kW
Description of the load	Balanced load by inverter	Balanced load by inverter	Balanced load by inverter	Balanced load by inverter	Balanced load by inverter	Balanced load by inverter
Overtopping Capacity	150 % for 60 sec. every 10 min.	150 % for 60 sec. every 10 min.	150 % for 60 sec. every 10 min.	150 % for 60 sec. every 10 min.	150 % for 60 sec. every 10 min.	150 % for 60 sec. every 10 min.
Efficiency	99 %	99 %	99 %	99 %	99 %	99 %
Approvals						
Approvals	cURus	cURus	cURus	cURus	cURus	cURus
Environment						
Ambient temperature	-10 °C to +40 °C, without condensation	-10 °C to +40 °C, without condensation	-10 °C to +40 °C, without condensation	-10 °C to +40 °C, without condensation	-10 °C to +40 °C, without condensation	-10 °C to +40 °C, without condensation
MTBF @ 50°C/500 V (MIL-HB-217F)	>200.000 h	>200.000 h	>200.000 h	>200.000 h	>200.000 h	>200.000 h
Safety and protection						
Type	Metal enclosure	Metal enclosure	Metal enclosure	Metal enclosure	Metal enclosure	Metal enclosure
Class of Insulation System	IEC=F, UL=class 155	IEC=F, UL=class 155	IEC=F, UL=class 155	IEC=F, UL=class 155	IEC=F, UL=class 155	IEC=F, UL=class 155
Protection index	IP 00	IP 00	IP 00	IP 00	IP 00	IP 00
Safety class	I	I	I	I	I	I
SCCR	100 kA	100 kA	100 kA	100 kA	100 kA	100 kA
Notes						
*	IE2 efficiencies of the motors and an efficiency >96 % assumed	IE2 efficiencies of the motors and an efficiency >96 % assumed	IE2 efficiencies of the motors and an efficiency >96 % assumed	IE2 efficiencies of the motors and an efficiency >96 % assumed	IE2 efficiencies of the motors and an efficiency >96 % assumed	IE2 efficiencies of the motors and an efficiency >96 % assumed
Order numbers						
Order Number	HFM-FB 70-400	HFM-FB 100-400	HFM-FB 125-400	HFM-FB 150-400	HFM-FB 200-400	HFM-FB 225-400



Harmonic filter **HFM-FB**



		HFM-FB 255-400	HFM-FB 300-400	
Electrical data	Typ			
	Operating data			
	Rated voltage	3 x 400 Vac	3 x 400 Vac	
	Rated current	3 x 370,00 A	3 x 433,00 A	
	Voltage range	380 - 420 Vac	380 - 420 Vac	
	Rated frequency	50 Hz	50 Hz	
	THD-I	7 % typ at nominal load	7 % typ at nominal load	
	Rated load power*	200.0 kW	250.0 kW	
	Description of the load	Balanced load by inverter	Balanced load by inverter	
	Oversrating Capacity	150 % for 60 sec. every 10 min.	150 % for 60 sec. every 10 min.	
	Efficiency	99 %	99 %	
	Approvals			
	Approvals	cURus	cURus	
	Environment			
	Ambient temperature	-10 °C to +40 °C, without condensation	-10 °C to +40 °C, without condensation	
MTBF @ 50°C/500 V (MIL-HB-217F)	>200.000 h	>200.000 h		
Safety and protection				
Type	Metal enclosure	Metal enclosure		
Class of Insulation System	IEC=F, UL=class 155	IEC=F, UL=class 155		
Protection index	IP 00	IP 00		
Safety class	I	I		
SCCR	100 kA	100 kA		
Notes				
*	IE2 efficiencies of the motors and an efficiency >96 % assumed	IE2 efficiencies of the motors and an efficiency >96 % assumed		
Order numbers				
Order Number	HFM-FB 255-400	HFM-FB 300-400		

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Harmonic filter HFM-FB



Mechanical data	Typ	Connections phase	Connections PE	Connection cross section [mm ²]	Fixing method	Weight	Dimension picture (in mm)										
							A	B	C	D	E	F1	F2	F3	G	H	
	HFM-FB 7-400	Screw clamp, 16 mm ²	Bolt, M8		Mounting lugs	27.00 kg	1	455	165	242	440	-	416	-	-	135	6.5
	HFM-FB 13-400	Screw clamp, 16 mm ²	Bolt, M8		Mounting lugs	28.00 kg	1	455	165	242	440	-	416	-	-	135	6.5
	HFM-FB 18-400	Screw clamp, 50 mm ²	for M8	PRI 50, SEC 16	Mounting lugs	40.00 kg	2	645	302	225	600	365.5	532.5	-	-	333.5	11
	HFM-FB 24-400	Screw clamp, 50 mm ²	for M8	PRI 50, SEC 16	Mounting lugs	49.00 kg	2	645	302	225	600	356.5	532.5	-	-	333.5	11
	HFM-FB 30-400	Screw clamp, 50 mm ²	for M8	PRI 50, SEC 16	Mounting lugs	52.00 kg	2	885	302	225	840	356.5	772.5	-	-	333.5	11
	HFM-FB 50-400	Screw clamp, 50 mm ²	for M8	PRI 50, SEC 16	Mounting lugs	88.00 kg	2	885	302	225	840	356.5	772.5	-	-	333.5	11
	HFM-FB 70-400	Bolt terminal, M10, 150 mm ²	for M8	min. 50	Mounting lugs	150.00 kg	3	1060	345	400	830	393	377	395	-	370	11
	HFM-FB 100-400	Bolt terminal, M10, 150 mm ²	for M8	min. 35	Mounting lugs	152.00 kg	3	1060	345	400	830	393	377	395	-	370	11
	HFM-FB 125-400	Bolt terminal, M16, 240 mm ²	for M8	min. 95	Mounting lugs	178.00 kg	3	1160	406	420	900	454	430	412	-	430	11
	HFM-FB 150-400	Bolt terminal, M16, 240 mm ²	for M8	min. 95	Mounting lugs	224.00 kg	3	1160	406	420	900	454	430	412	-	430	11
	HFM-FB 200-400	Bolt terminal, M16, 240 mm ²	for M8	min. 95	Mounting lugs	271.00 kg	3	1330	406	420	1070	454	515	497	-	430	11
	HFM-FB 225-400	Bolt terminal, M16, 240 mm ²	for M8	min. 95	Mounting lugs	284.00 kg	3	1330	406	420	1070	454	515	497	-	430	11
	HFM-FB 255-400	Bolt terminal, M16, 240 mm ²	for M8	6-300	Mounting lugs	310.00 kg	4	1350	470	420	1100	530	355	355	355	505	11
	HFM-FB 300-400	Bolt terminal, M16, 300 mm ²	for M8	6-300	Mounting lugs	387.00 kg	4	1450	470	420	1200	530	380	380	380	505	11

Dimension pictures

