

正弦波滤波器(SFR) Sine Wave Filter

■ 产品概述(Product Introduction)

正弦波滤波器可以有效降低谐波，得到较好的正弦电流波形，从而改善电机的性能和寿命，延长变频器与电机间的工作距离。在风电领域，风力发电机后面安装正弦滤波器可以减少谐波，避免大量谐波通过升压变压器传输到电网中。也就是说，滤波器后面直接安装普通的工频变压器即可。

Sine wave filters can effectively reduce harmonics and obtain better sinusoidal current waveforms, thereby improving the performance and service life of the motor and extending the working distance between the inverter and the motor. In the field of wind power, installing a sine wave filter behind the wind generator can reduce harmonics and prevent a large amount of harmonics from being transmitted to the power grid through the step-up transformer. In other words, an ordinary power frequency transformer can be installed directly behind the filter.



■ 产品应用(Product Application)

- 1.将变频器输出的PWM波转换为正弦波
- 2.降低电机的涡流损耗以及电机噪声
- 3.减少输出电缆上和电机中的脉冲电流，延长电机寿命
- 4.可在变频器与电机间使用更长的电缆线
- 5.减小对外的辐射,在一定场合可以使用非屏蔽电缆，降低了对现场布线的要求
- 6.有效防止高dv/dt、过电压、电机过热和涡流损耗造成的电机提前损坏

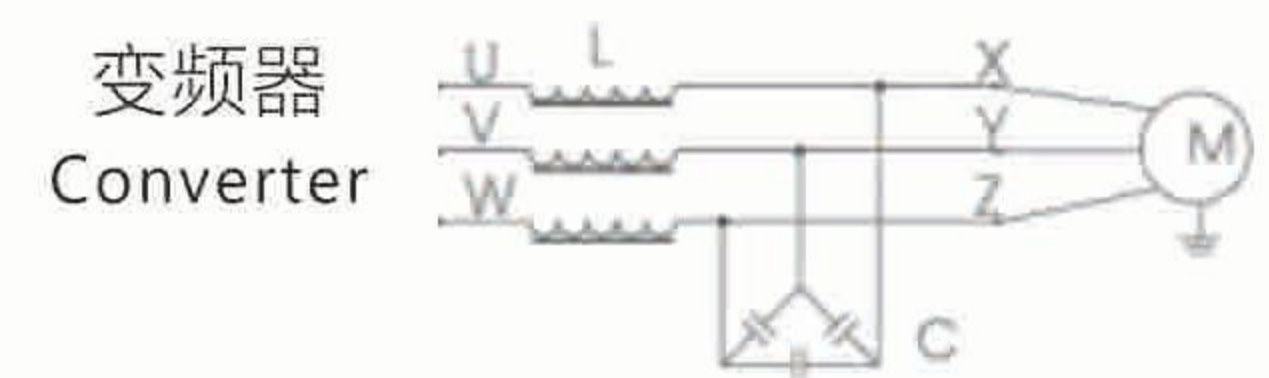
- 1.Convert the PWM wave output from the converter into a sine wave
- 2.Reduce eddy current loss and noise of the motor
- 3.Reduce pulse current on the output cable and in the motor to extend the life of the motor
- 4.Longer cables between the converter and the motor
- 5.Reduce external radiation. Unshielded cables can be used in certain situations, which reduces the requirements for on-site wiring
- 6.Effectively prevent premature motor damage caused by high dv/dt, overvoltage, motor overheating and eddy current loss

■ 技术规格 (Technical Specification)

- 1.额定电压：220 ~ 690VAC
- 2.额定电流：15 ~ 1500A
- 3.额定频率：50/60Hz
- 4.载波频率：2 ~ 8kHz
- 5.绝缘等级：F、H
- 6.压降：8 ~ 12%
- 7.电压谐波畸变失真THD ≤ 5%
- 8.空载电流：≤ 8%
- 9.使用环境：-10 ~ +45℃，额定值不会降低。最高可达+55℃。在45℃以上，每升高1℃,额定电流降低2%
- 10.防护等级：IP00-IP22
- 11.过载能力：1.5额定电流，持续60s
- 12.噪音：≤ 65dB
- 13.温升：≤ 70K
- 14.抗电强度：铁芯-绕组 绕组-绕组 3000VAC/50Hz/60s 无飞弧击穿
- 15.绝缘电阻：1000VDC，≥ 100MΩ
- 16.海拔高度不超过2000米
- 17.运行环境温度-25 ~ +45℃,相对湿度不超过90%
- 18.周围无有害气体，无易燃易爆物品
- 19.周围环境应有良好的通风条件，如装在柜内，应加装通风设备

- 1.Rated Voltage: 200 ~ 690VAC
- 2.Rated Current: 15 ~ 1500A
- 3.Rated Frequency: 50/60Hz
- 4.Switching Frequency: 2 ~ 8kHz
- 5.Insulation Class: F, H
- 6.Rated Voltage Drop: 8 ~ 12%

典型电路图
Typical Circuit Diagram

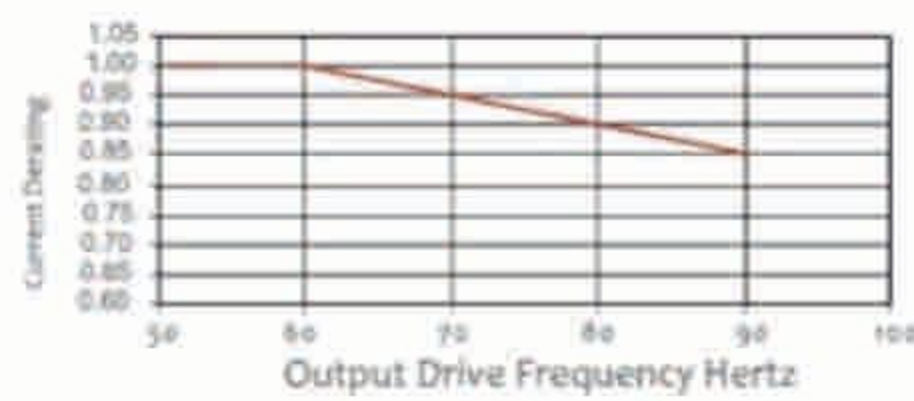


- 7.Voltage Harmonic Distortion: THD \leq 5%
- 8.No-load Current: \leq 8%
- 9.Operation Environment: -10 ~ +45°C, the rated value doesn't decrease. The tolerance temperature is up to +55°C. Above +45°C, the rated current decreases by 2% for every 1°C increase
- 10.Protection Class: IP00-IP22
- 11.Overload Capacity: 1.5 x rated current, 60s
- 12.Noise: \leq 65dB
- 13.Temperature Rise: \leq 70K
- 14.Dielectric Strength: core-winding, winding-winding 3000VAC/50Hz/60s, no electric arc or electric breakdown
- 15.Insulation Resistance: 1000VDC, \geq 100M Ω
- 16.Work under 2000m
- 17.Ambient Temperature -25 ~ +45°C, and the relative humidity is not over 90%
- 18.No hazardous gas, flammable and explosive
- 19.With well-ventilated condition. Ventilation devices shall be mounted if reactors are installed in cabinets

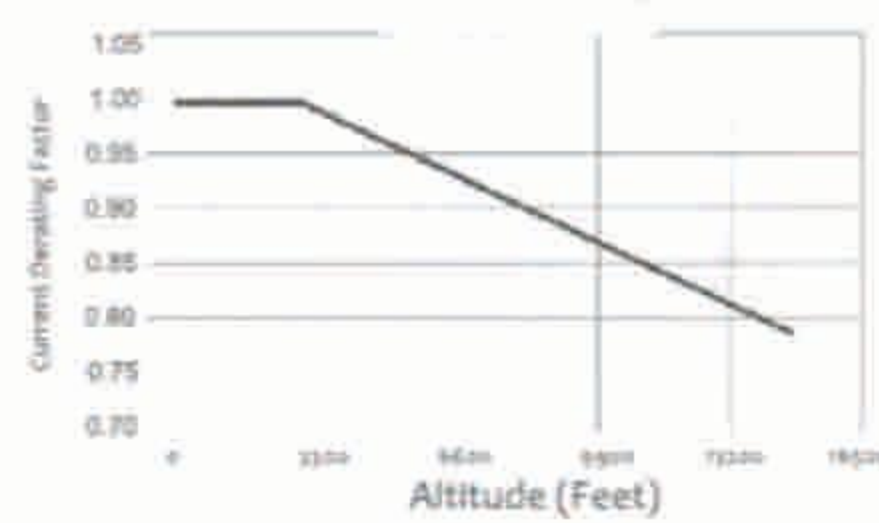
■ 执行标准 (Applicable Standard)

- IEC 60076-6 Reactors
- GB/T1094.6 Reactors
- JB9644 Reactors or semiconductor electric drive

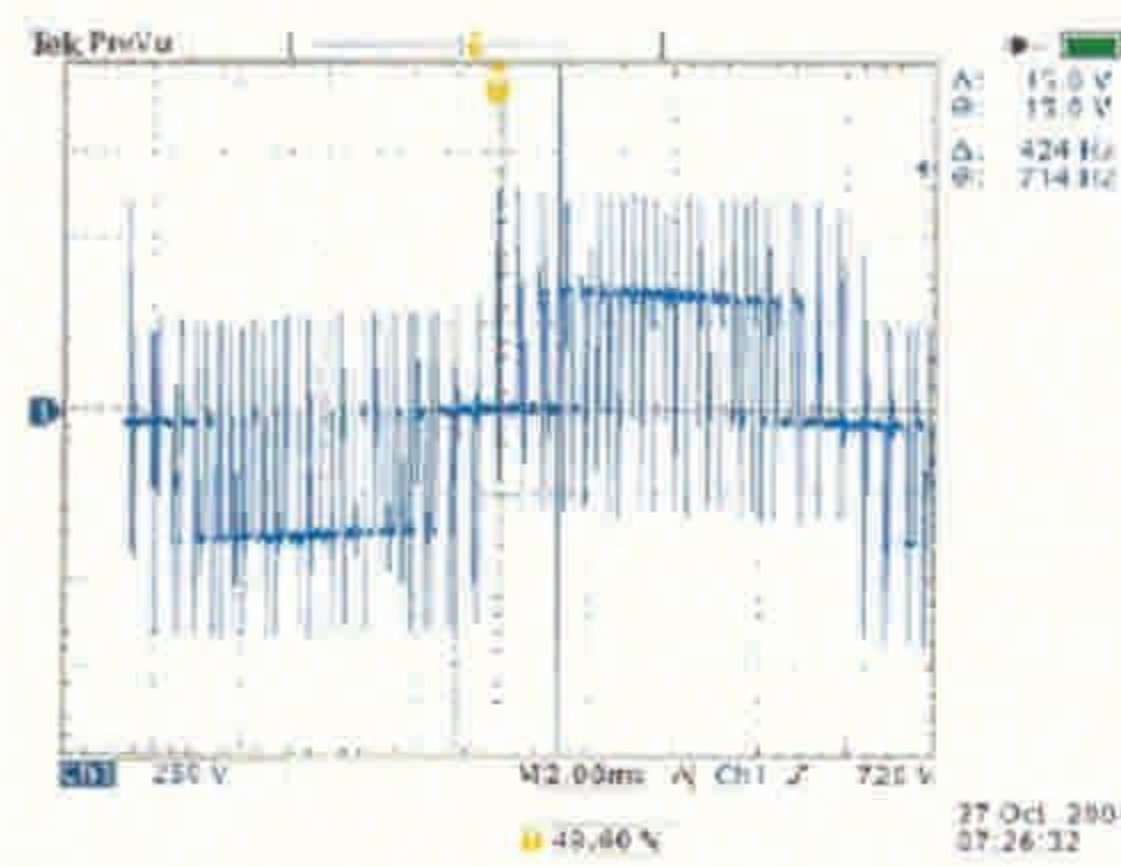
Sine Wave Filter Current Derating for Drive Output Frequency



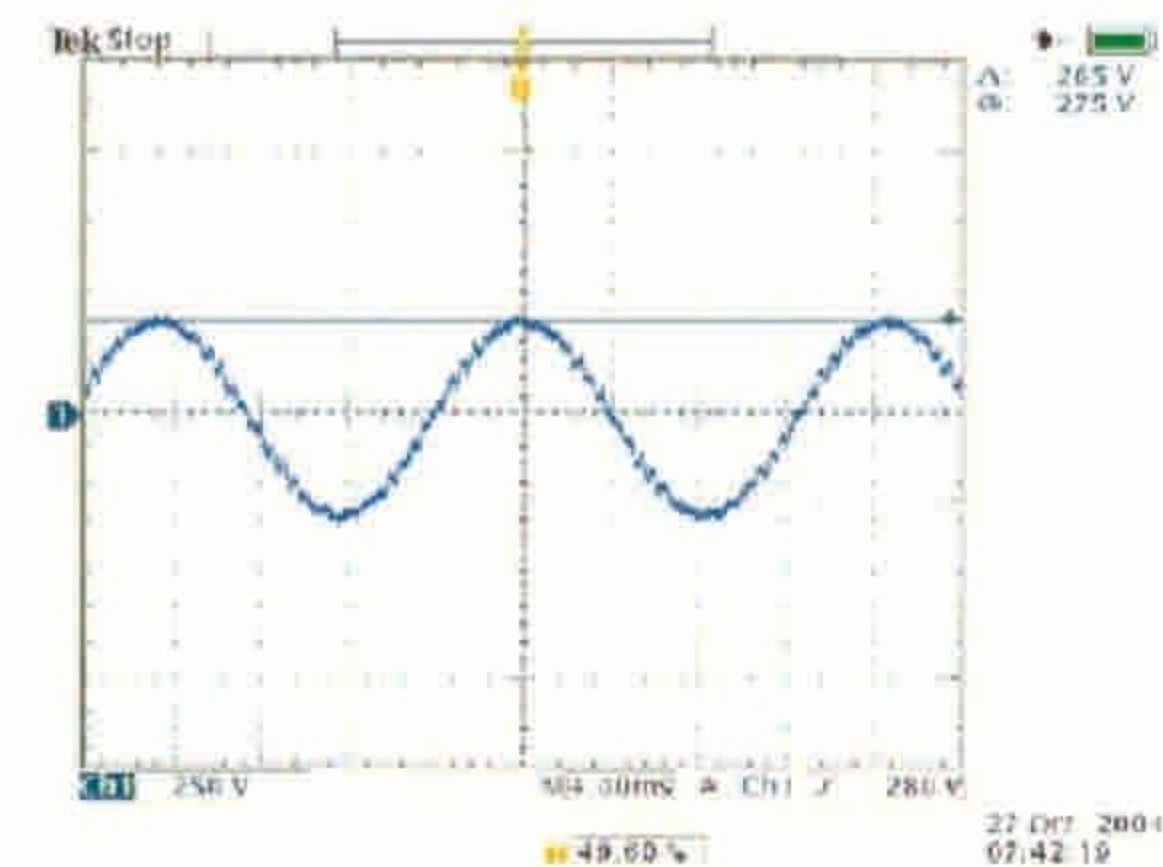
Altitude Derating Curve



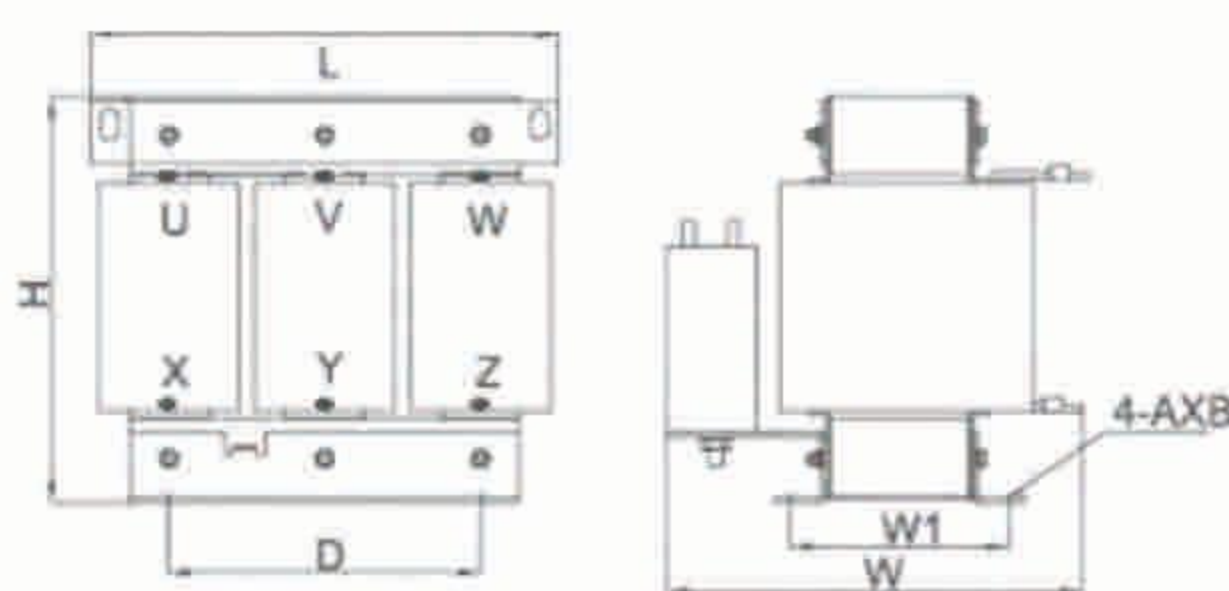
Raw output voltage waveform



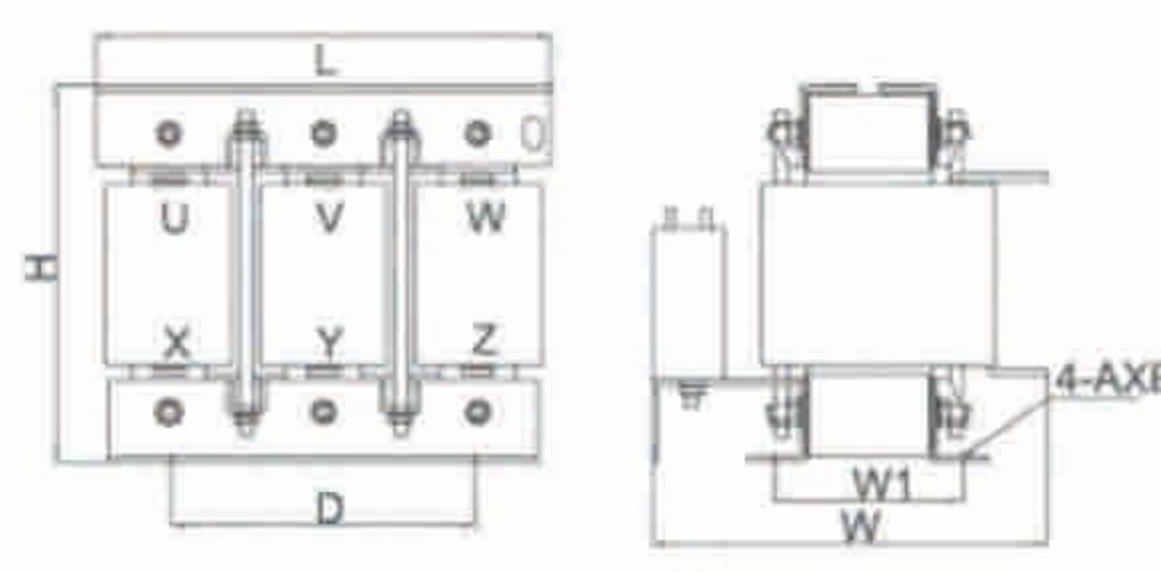
Output Voltage after Sine Wave Filter



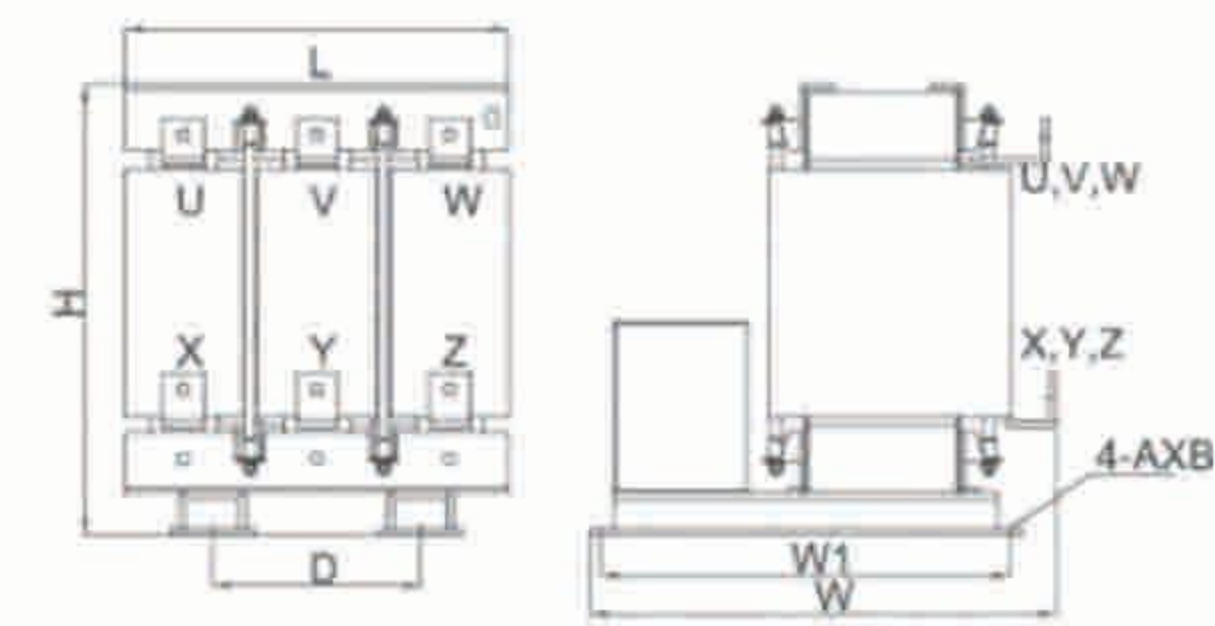
■ 产品尺寸图(Product Size)



Picture A



Picture B



Picture C

型号 Type	图号 Picture No.	适配功率 Power (kW)	额定电流 Rated Current(A)	绝缘等级 Insulation Class	尺寸 Dimension(± 5mm)					
					L(max)	W(max)	H(max)	W1± 2	D± 2	A*B
SFR-0015-0.4SA	A	5.5	15	H	245	245	220	96	182	11*18
SFR-0020-0.4SA		7.5	20	H	245	250	220	106	182	11*18
SFR-0030-0.4SA		11	30	H	245	260	220	116	182	11*18
SFR-0040-0.4SA		15	40	H	290	270	230	127	214	11*18
SFR-0050-0.4SA		18.5	50	H	290	270	260	127	214	11*18
SFR-0060-0.4SA		22	60	H	320	270	280	139	243	12*20
SFR-0080-0.4SA		30	80	H	320	270	280	139	243	12*20
SFR-0090-0.4SA		37	90	H	320	280	280	149	243	12*20
SFR-0120-0.4SA	B	45	120	H	375	330	315	164	260	15*25
SFR-0150-0.4SA		55	150	H	375	345	350	174	260	15*25
SFR-0200-0.4SA		75	200	H	405	375	350	194	260	15*25
SFR-0250-0.4SA		110	250	H	405	450	355	214	260	15*25
SFR-0290-0.4SA		132	300	H	435	450	385	205	350	15*25
SFR-0330-0.4SA		160	360	H	435	450	435	205	350	15*25
SFR-0390-0.4SA	185	450	H	435	450	430	215	350	15*25	
SFR-0490-0.4SA	C	220	500	H	480	580	560	460	300	15*25
SFR-0600-0.4SA		280	600	H	480	600	560	480	300	15*25
SFR-0660-0.4SA		315	660	H	480	620	560	500	300	15*25
SFR-0800-0.4SA		380	800	H	680	510	585	315	360	15*25
SFR-1000-0.4SA		450	900	H	680	490	640	295	360	15*25
SFR-1200-0.4SA		500	1200	H	680	510	610	315	360	15*25
SFR-1500-0.4SA		630	1500	H	680	490	660	295	360	15*25

备注：其他规格尺寸，可根据用户要求制造。Remark: Customized if necessary.

■ 成品识别码(Product Identification Code)



对应CE认证的型号Corresponding CE code:

