VLT® Power Options Sine-wave filter

Sine-wave Filters provide a sinusoidal phase-to-phase motor voltage.

Sine-wave Filters reduce motor insulation stress and switching acoustic noise from the motor. Bearing currents are also reduced, especially in larger motors. This filter does not operate in common mode and the leakage currents are not reduced, therefore it does not enable the use of unlimited motor cables lengths.

Prevent disturbing pulses
Sine-wave reactors prevent disturbing pulses to be transmitted to down-stream motors. Capacitances in screened motor supply cables e.g. can otherwise cause high oscillating circuit currents through motor bearings, vaporising lubricant and causing damage to the bearings
The eddy current losses in the motor can also be minimised in this manner.

Protects the drive
In addition to protecting the motor, the sine-wave filter also provides protection for the inverter, because the lower pulse load is reflected in lower semiconductor losses.

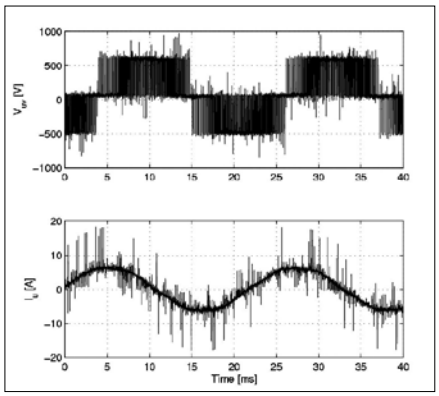
Advantages:
- Protects the motor against dU/dt stress which prolongs the lifetime
- Lower the frequency depending losses in the motor, eddy current losses and stray flux losses
- Diminishing acoustic switching noise on the motor
- Reduces semi conduct losses in the drive with long motor cables
- Decrease electromagnetic radiated emissions on unshielded motor cables
- Reduce voltage peaks
- Reduce electrical discharges in the motor construction thus prolonged bearing life time

The perfect solution for:
- Applications with older motors
- Aggressive environments
- Applications with frequent braking

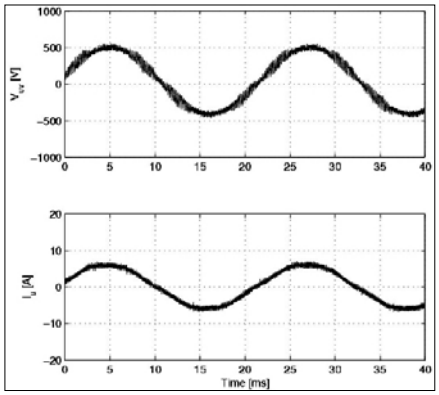
Range
3 x 200 – 500 V
3 x 525 – 690 V

Features	Benefits
• Reduce voltage peaks in motor	• Prevent flashover in motor windings
• Diminish over voltages and voltage spikes caused by cable reflections	• Protects the motor insulation against premature aging
• Reduces dU/dt stresses	• Increases motor service interval
• Lower the magnetic interference propagation on surrounding cables and equipment	• Troublefree operation
• Eliminates accustic noise in motor	• Boiseless operation
• Reduces high frequent losses in motor	• Prolongs service interval of motor

VLT® THE REAL DRIVE



Voltage and current without filter

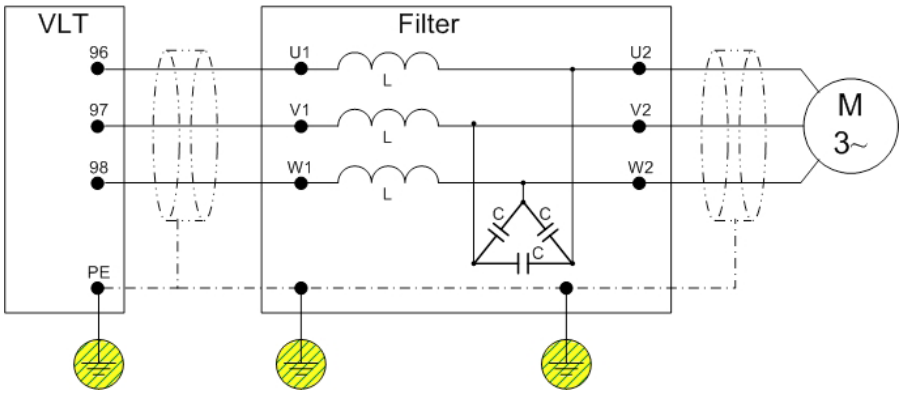


Voltage and current with filter

Specifications

Voltage rating	3 x 200 - 500 V and 3 x 525 - 690 V
Nominal current I_N @ 50 Hz	2.5 – 1200 Amp for higher power modules can be paralleled
Motor frequency	6-60 Hz without derating 120 Hz with derating
Ambient temperature	-25° to 40°C without derating
Min. switching frequency	f_{min} 1,5 kHz – 5 kHz depending on filter type
Max. switching frequency	f_{max} 8 kHz
Overload capacity	150 % for 60 sec every 10 min.
Enclosure degree	IP00 and IP20
Approvals	CE, UL508

Connection diagram



	Currents 500V [A]	Currents 690V [A]	Cabinet	Dimensions Hight [mm]	Dimensions Width [mm]	Dimensions Depth [mm]
Wall Mount [IP20]	2,5-4,5		A1	181	75	205
	8-10		A2	246	90	205
			A3	246	120	205
	17		A4	246	130	205
	24		B1	260	150	260
	38	13	B2	380	150	260
			B3	285	170	260
	48		B4	460	170	260
	62-75		B5	540	170	260
Floor Mount [IP21]			F1	463	610	440
	115-180	28-115	F2	522	640	500
			F3	522	670	500
			F4	602	740	550
			F5	602	770	550
	260-480	165-260	F6	782	910	650
			F7	856	1150	860
	660-1200	303-940	F8	1152	1260	800
		1320	F9	1302	1304	860