

# MOTORGUARD SINE WAVE FILTER



TCI's KMG MotorGuard sine wave filter converts the PWM wave form to a near sinusoidal wave form by eliminating the carrier frequency, allowing sensitive applications to take advantage of the efficiencies and savings that PWM output power supplies and VFDs can offer.

Without the protection of a sine wave filter, premature equipment failure is caused by the VFD PWM carrier frequency and/or the dV/dt high voltage spikes at the motor terminals.

The KMG with PQconnect provides connectivity into your sine wave filter. This ensures all the high value electrical pumping assets are being protected from failure. KMG with PQconnect enables pumping and VFD process control adjustments to optimize uptime and prevent power quality issues. Real-time power quality data can be used to monitor and trend for early detection of abnormal conditions.

## Features of the KMG with PQconnect

- Less than 5% THVD performance
- Eliminates high dV/dt voltage spikes ensuring optimal motor and cable protection.
- Reduces motor noise, vibration and heat
- Universal acceptance - can be used with virtually all AC induction motors, lead lengths and lead types and used with a wide range of carrier frequencies from 2 kHz to 16 kHz
- Reach long lead lengths up to 15,000 ft. for specific applications
- Modbus RTU communications
- Provides real-time access to waveforms and equipment performance for SCADA systems
- Monitors status of filter components and performance
- Ideal for constant torque applications

## Typical Applications for Sine wave Filters

- Multiple motor applications such as conveyors, blowers, pumps and fans
- Oil and gas pumping systems
- Shore-to-ship power for non-60 Hz systems
- HVAC systems to reduce audible noise
- Low voltage PWM power supply to medium voltage power



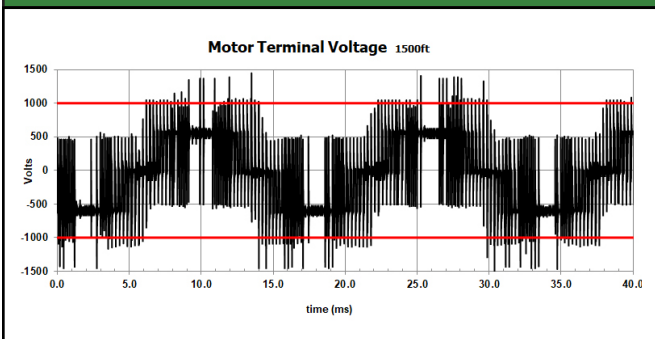
## Technical Specifications

Current Ratings	480 V, 600 V
	Continuous current: 8 to 750 amps; Intermittent current: 150% for 1 min/60 min
VFD Output Voltage	460/480 and 575/600 V, 3ph, at fundamental base frequency
VFD Output Frequency	Up to 80 Hz
VFD Carrier Frequency	2 kHz to 16 kHz
Filter Performance	Maximum peak voltage of output waveform: 480 V: 815 V; 600 V: 1,018 V
	Maximum dV/dt of output waveform: 480 V: 5 V/μs; 600 V: 6 V/μs
Environmental Conditions	
Maximum Elevation	Up to 2,000 m (6,600 ft.) without derating
Storage Temperature	-40C (-40F) to 50C (122F)
Ambient Temperature	-30C (-22F) to 50C (122F) open panel -30C (-22F) to 40C (104F) enclosed
Maximum humidity	95%, non-condensing
Enclosure Options	UL Open, UL Type 1
Reference Technical Standards	
Agency Approvals	cULus Listed
Voltage Drop	3% at nominal voltage, frequency and rated current
Fusing and Protection	Unit has internal fusing protection and a performance monitoring circuit.
Capacitors	Oil filled high endurance design (no PCBs)

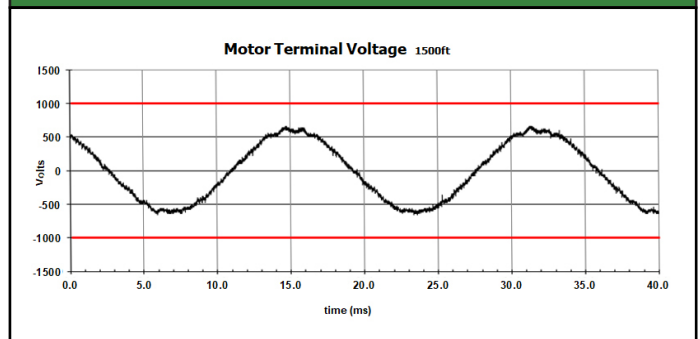
## Part Numbering

	<b>KMG</b>	<b>130</b>	<b>A</b>	<b>01</b>	<b>A</b>
Series:					
Current Rating:					
Voltage Rating:					
	A - 480 V C - 600 V				
Enclosure:					
	00 - Open Panel 01 - Type 1				
Options:					
	A - Standard P - PQconnect w/ Modbus RTU over RS485				

### Voltage without KMG MotorGuard



### Voltage with KMG MotorGuard



**Performance Guarantee** - Properly sized and applied, the addition of a MotorGuard Output Filter is guaranteed to bring the application into compliance with NEMA Standards Publication No. MG-1 Part 31. If the system fails to meet MG-1 Part 31 standards with the addition of a MotorGuard filter, TCI will take back the output filter and pay shipping both ways. This offer is valid for 60 days from the installation date.



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