

# High Frequency SineWave Guardian®

Optimized for  
High Frequency  
Motors

New best-in-class SineWave Filter  
optimized for high frequency  
motors out to 15,000 ft



- **Increases motor life**
- **Easy to integrate, install and service**
- **Operates in high ambient temperatures**
- **High performance and reliability**
- **Three-year warranty**

## If you're not leading, you're following. Innovation is here.

At MTE, we have found a way to make our best-in-class motor protection solution, the SineWave Guardian® Filter, even better. Featuring the same unequaled performance, the market leading High Frequency SineWave Guardian® uses innovative technology to optimize protection for high frequency motors. Our new filter features reduced voltage drop and virtually eliminates voltage distortion (THVD) generated by Variable Frequency Drives (VFDs). This results in reduced losses, protection against overheating motors, and ultimately providing less downtime. It can protect motors in some of the harshest conditions, with unmatched reliability and durability. The High Frequency SineWave Guardian Filter is the optimized motor protection solution for high frequency motors, exclusively by MTE.

Specially designed for high frequency motors to reduce voltage distortion, improve efficiency, and extend motor life.



High Frequency SineWave Guardian® Filters transform the output of Variable Frequency Drives (VFDs) to a near perfect sinusoidal waveform for the best level of protection for high frequency motors. MTE's unique, patent-pending design comes in a smaller size than traditional LC Filters, and offers higher performance and better efficiency.

**Increase motor life:** Reduce motor heating through reduction of high frequencies associated with VFD output and also reduce motor insulation stress through reduction of motor peak voltages.

**Reduce motor audible noise:** Reduce audible noise through reducing high frequencies associated with VFD output.

**Reduce radiated emissions:** Reduce emissions through reducing high frequencies associated with VFD output.

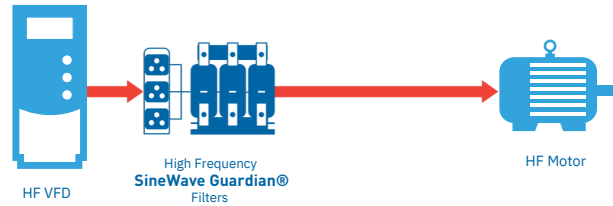
Performance Specifications	
Service Load Condition	Conventional 3 phase motors operating in volts per hertz mode Standard step-up transformer or design for use of filter in sensor less vector mode.
Input Voltage	380V - 480V +/- 10%
Current Range	80A-1200A
Harmonic Voltage Distortion	8% maximum @ 2kHz 8% maximum @ 3.5kHz 8% maximum @ 6-8 kHz 5% maximum @ 5kHz
Inverter Switching Frequency	2kHz 3.5kHz 4.8kHz - 8kHz
Inverter Operating Frequency	0Hz - 200Hz @ 2kHz 0Hz - 240Hz @ 3.5kHz 0Hz - 300Hz @ 5kHz
Maximum Ambient Temperature	- 40C to +60C modular filter; - 40C to +90C storage
Insertion Loss (480 system voltage)	2kHz Filters 6% maximum @ 100Hz 12% maximum @ 200Hz
	3.5kHz Filters 6% maximum @ 150Hz 12% maximum @ 240Hz
	5kHz Filters 6% maximum @ 150Hz 12% maximum @ 300Hz
Efficiency	>99%
Altitude Without Derating	3,300 feet above sea level
Maximum Motor Lead Length	15,000 feet
Relative Humidity	0% to 95% non-condensing
Current Rating	100% RMS continuous; 150% for 1 minute intermittent

\* Additional ratings available upon request.  
Final product specifications subject to change at anytime.

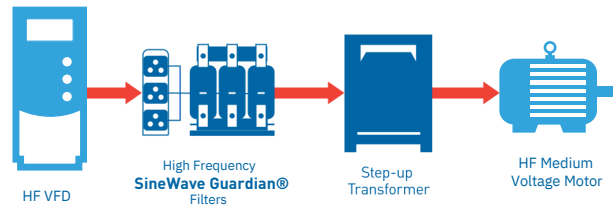
## High Frequency SineWave Guardian®



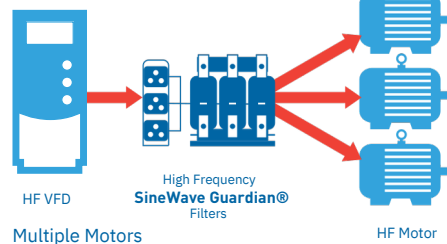
### Application Configurations:



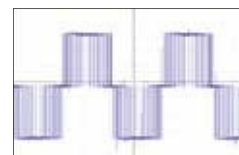
Extreme Long Lead to Motor



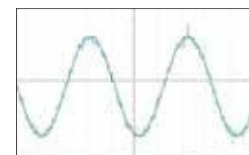
Long Lead with Step-up Transformer



### High Frequency SineWave Guardian Performance:



Without High Frequency SineWave Guardian



With High Frequency SineWave Guardian

The High Frequency SineWave Guardian is a sinewave filter which protects high frequency motors from damage by "cleaning" the sinewave waveform that is generated by the Variable Frequency Drive.



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