

# EGRIDHAWK®

**A Harmonic Filter Engineered to  
Survive “Permian” High Grid Voltage Distortion**



magnetics

***REMOVING HARM FROM HARMONICS™***





## UL Listed Package Options



### MagStand™ Cabinet

- NEMA 3R Cabinet
- External Junction Box: 3 In / 3 Out
- Hinged Door for Field Service



### MagPallet™ Cabinet

- NEMA 3R Cabinet
- External Junction Box: 3 In / 3 Out
- Access Panel for Electrical Connections

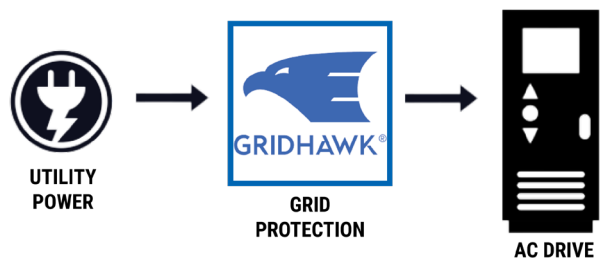


### MagPac™ VFD Integrated

- Drive Mounted NEMA 3R Cabinet
- Internal Power Connection
- External Junction Box: 3 In / 3 Out
- Hinged Door for Field Service

## GRIDHAWK® Harmonic Filter

Non-linear loads such as motor drives introduce substantial harmonic current distortion (THID) and voltage distortion (THVD). In certain areas, such as the Permian Basin, the voltage distortion can reach dangerously high levels. In high voltage distortion environments, standard passive harmonic filters, AFEs (Active Front End), and 18 pulse drives fail. GRIDHAWK® Series filters are rated to handle 5%, 15% and 22.5% THVD, respectively, without failure or derate.



\*Package options are artists' conceptions and are subject to change without notice.

# PROBLEM: GRID VOLTAGE DISTORTION

# SOLUTION: GRIDHAWK®



GRIDHAWK®: ≤5% THVD | GRIDHAWK® HD: 5% < THVD ≤15% | GRIDHAWK® XD: >15% THVD

- Air or Liquid Cooled
- Up to 15% Grid Voltage Distortion with NO Derate
- Critical Grid Protection
- Sealed Contactor Enclosures
- Performance Guarantee



MADE  
★ IN THE ★  
USA

## GRIDHAWK® Harmonic Filters Meet IEEE-519 Requirements Under Full Load Conditions (5% THID).

### PERFORMANCE SPECIFICATIONS

Typical Applications	Six-Pulse Rectifier (Generator compatible)	
Input Voltage/Frequency	480 V ±10% / 60 Hz	
Input Voltage Distortion	≤5% (GridHawk)	≤15% (GridHawk HD) <i>(For THVD above 15%, contact CTM for GridHawk XD solutions)</i>
Voltage Insertion Loss	<3.3%	
Relative Humidity	95% without condensation	
Audible Noise	~40 dB (Air)	~0 dB (Liquid)
Current Range	Air Cooled: 80 - 525 A	Liquid Cooled: 80 - 950 A
GridHawk® HD	80 - 525 A	80 - 740 A
Max Output Current Distortion (THID)	<5% @ Full Load <i>Meets IEEE-519</i>	
Overload Capability	150% rated current for 1 minute (Air) 200% rated current for 1 minute (Liquid)	
Ambient Temperature Limits	Maximum: 50 °C (122 °F)-Air <sup>A</sup> 65 °C (149 °F)-Liquid	Minimum: -50 °C (-58 °F)-Air -40 °C (-40 °F)-Liquid <sup>B</sup>
Enclosure Options	Modular Panel (Air & liquid cooled) NEMA 3R Cabinet (Air cooled only)	
Maximum Altitude	3,300 ft (Air) <i>Higher with derate</i>	No Limit (Liquid)
Capacitor Warranty	5 Years (Capacitors) See GridHawk Warranty	
Agency Recognitions	UL508A, E94241 in compliance with UL1446	

#### Liquid Cooled Options:

Maximum Coolant Temperature	50 °C (122 °F) <i>(Higher with de-rating)</i>
Approved Coolants	Drinking water Water-glycol mixture <i>For R134A, contact CTM</i>
Plumbing Material Options	Aluminum (Standard) Copper
Heat Removal	97% to Liquid Coolant, 3% to Ambient Air

<sup>A</sup>For UL 508A listing the maximum ambient air temperature is 40 °C (104 °F).

<sup>B</sup>Preventative measures should be taken to ensure the coolant does not freeze in the system.

## CTM vs The Competition



- ☒ Cooling System  
Air or Liquid Cooled
- ☒ High-reliability Poly Film Capacitors
- ☒ Holds up to High Voltage Distortion
- ☒ Sealed Contactors
- ☒ 5 Year Capacitor Warranty\*

### The Competition

- ☒ Cooling System  
**NOT** Air or Liquid Cooled
- ☒ High-reliability Poly Film Capacitors
- ☒ Holds up to High Voltage Distortion
- ☒ Sealed Contactors
- ☒ 5 Year Capacitor Warranty\*

## Liquid-Cooled Technology

- **Highest Power Density**  
Superior heat removal enables smaller magnetics.
- **Thermal Isolation**  
Up to 97% of heat removed. No climate control required.
- **Rugged Design**  
Military-grade sealed inductors provide reliability for harsh environments.
- **Low Audible Noise**  
Our superior materials & geometric shapes, noise is significantly lower.

## 5 Year Capacitor Warranty\*

CTM GRIDHAWK® filters utilize high-reliability poly-film capacitors. Most competitor filters use electrolytic capacitors which fail when exposed to high voltage distortion.

\*5 year capacitor warranty only applies to CTM 3R enclosures assembled at CTM factory. CTM does not offer capacitor warranty on modular capacitor assemblies installed into a customers enclosure.

# "We Fixed it" - Grid Voltage Distortion



MILITARY



HIGH  
SPEED  
MOTORS

WE  
FIXED  
IT



HARMONIC  
DISTORTION



HVAC  
CHILLERS



***THIS IS WHAT PERSISTENCE LOOKS LIKE!***