



**NOVA ELECTRIC**



#### POPULAR OPTIONS

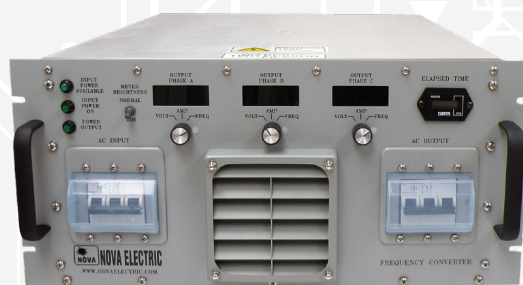
- Ruggedization Against High Shock, Vibration & Humidity
- MS Connector Mates
- Multiple Output Outlets
- Chassis Slide Guides
- Rugged Transit Cases & Custom Enclosures
- 400 Hz Input and / or Output
- CAD Free Connectors
- Non-PVC Wiring
- High IP Protection for Front / Rear Panels (Typically IP32,) Including Louvers on all Intake & Exhaust, as well as Fully Gasketed Breakers, Switches, & Indicators
- AUX DC Outputs
- Digital Input and / or Output Volt and Amp Meter Set (Available on Select Models)
- Elapsed Time Meter (Available on Select Models)
- Power Distribution Units (PDUs)
- Environmental Stress Screening Services

#### CONTACT

100 School Street,  
Bergenfield, NJ 07621 USA  
(201) 385-0500  
novaelectric.com  
info@novaelectric.com



# NGFCPFCRK Series 375 VA – 10.5 KVA 1-5U Rack Mount Solid-State Three Phase Frequency Converters



*Typical 5U Chassis with Optional Features Shown*

**The Leader In Rugged Power Conversion Technology Since 1966**

Specifications subject to change without notice. Some optional equipment shown.

Rev B-May-19-2022



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## GENERAL OVERVIEW

Nova frequency converters are high-reliability power sources specifically designed for demanding applications in high shock, vibration, humidity, and EMI environments. They can be built to meet MIL-STD-1399, MIL-STD-810, MIL-STD-167, MIL-S-901, MIL-STD-461, and other standards optionally. The NGFCPFCRK Series utilize an advanced high frequency topology for light weight, compact form factor. These models are especially suitable for severe environment and high reliability applications such as:

- Military Applications: HMMWV, UAV, Shipboard, Submarine, Aircraft & Mobile Power Units, Shelters
- Aircraft Power
- Communications Systems
- Cellular Sites
- European Power / Export Testing
- Power Conditioning & Frequency Stabilization
- U.S. Power Abroad
- Railroad Signaling Power

## SPECIFICATIONS

### Electrical

<b>POWER RATINGS</b>	375 W – 10.5 KVA
<b>INPUT VOLTAGE</b>	Most Standard AC Voltages Including 115, 120, 200, 208, 220, 240, 277, 380, and 480 VAC Single Phase or 120/208, 115/200, 220/380, and 277/480 VAC Three-Phase DELTA or WYE
<b>OUTPUT VOLTAGE</b>	Most Standard Three-Phase AC Voltages Including 120/208, 115/200, 220/380, and 277/480
<b>INPUT FREQUENCY</b>	50 Hz, 60 Hz, or 400 Hz – Custom Frequencies Available Optionally
<b>OUTPUT FREQUENCY</b>	50 Hz, 60 Hz, or 400 Hz ( $\pm 0.5\%$ ) – Custom Frequencies Available Optionally
<b>FREQUENCY REGULATION</b>	$\pm 0.5\%$ N.L. to F.L.
<b>FREQUENCY TRANSIENTS</b>	None
<b>VOLTAGE REGULATION</b>	$\pm 1.5\%$ N.L. to F.L.
<b>EFFICIENCY</b>	Approximately 80-88% (Depending on Model)
<b>OUTPUT TOTAL HARMONIC DISTORTION</b>	<3% Typical
<b>OVERLOAD</b>	125% for 5 Minutes
<b>TYPICAL POWER FACTOR</b>	0.7 Lead to 0.7 Lag
<b>INPUT CIRCUIT PROTECTION</b>	Circuit Breaker / Fuses, Transient Suppressors
<b>CIRCUIT PROTECTION</b>	Current Limit, Short Circuit Protection, Thermal Protection, and Semi-Conductor Protection

### Environmental

<b>OPERATING TEMP</b>	-20°C to +50°C Standard – Extended Range Available Optionally
<b>STORAGE TEMP</b>	-40°C to +71°C
<b>COOLING</b>	Forced Air By Internal Fan
<b>VIBRATION</b>	Normal Shipping and Handling – Designed to Meet MIL-STD-167 Optionally
<b>SHOCK</b>	20g, 11 mS half Sinewave – Designed to Meet MIL-STD-810 Optionally
<b>ELEVATION</b>	10,000 ft. Typical
<b>HUMIDITY</b>	to 95% RH Non-condensing – Designed to Meet MIL-STD-810. All boards Conformal Coated with Acrylic MIL-I-46058 Type R
<b>EMI</b>	Designed to Meet MIL-STD-461 with Optional Additional Filtering
<b>MTBF</b>	30,000+ Hours Typical per MIL-HDBK-217
<b>MTTR</b>	Less Than 30 Minutes

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## POPULAR OPTIONS

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- 400 Hz Input and / or Output
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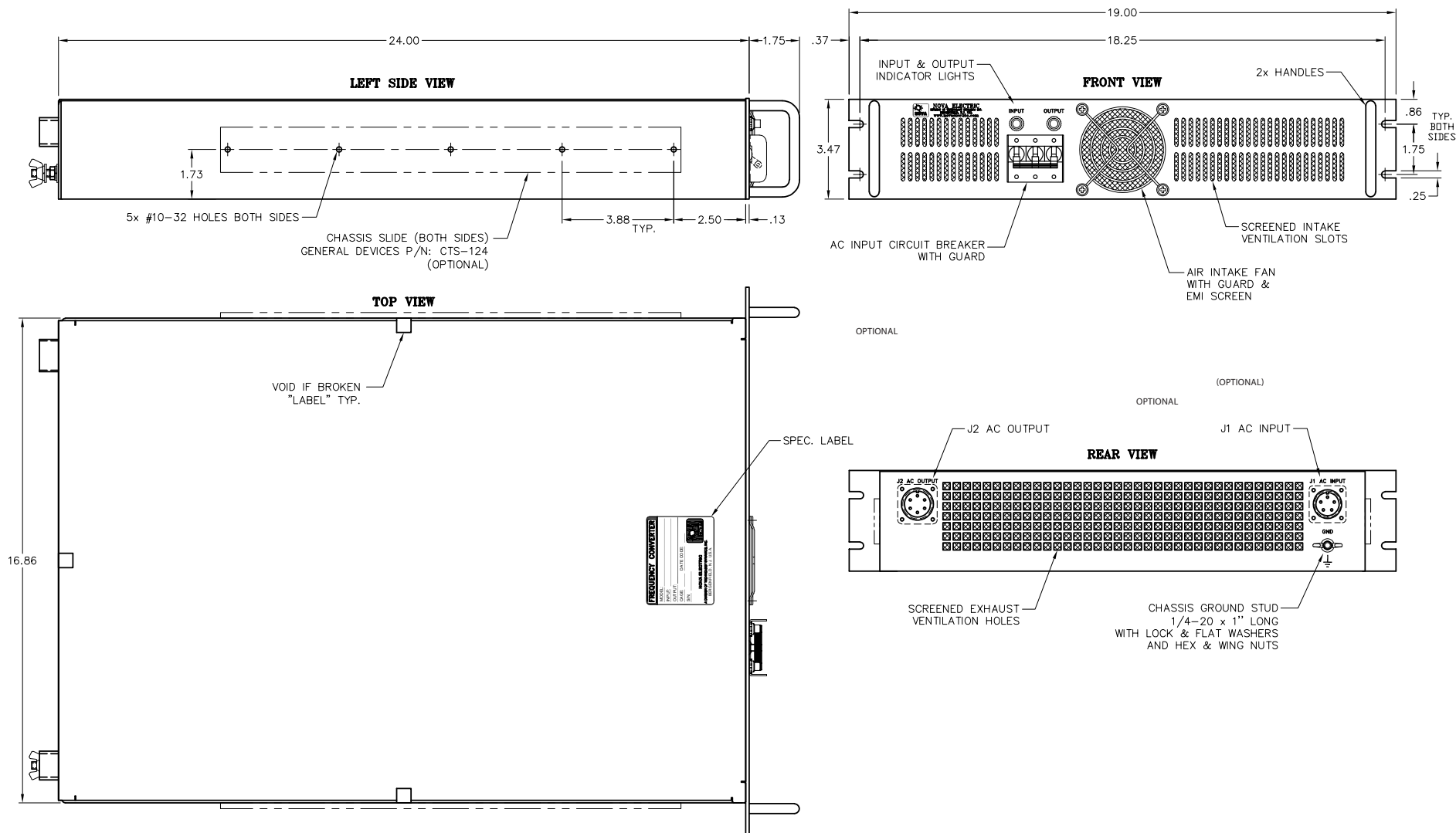
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PARTIAL MODEL SELECTION	KVA	KW	OUTPUT VOLTAGE (VAC)	OUTPUT FREQUENCY (Hz)	WEIGHT (LBS.)	SIZE IN. (H x W x L)
NGFCPFCRK0.3K3/5	0.375	0.3	220/380	50	26	1.75 x 19 x 24
NGFCPFCRK0.3K3/6	0.375	0.3	120/208	60	26	1.75 x 19 x 24
NGFCPFCRK0.3K3/4	0.375	0.3	115/200	400	26	1.75 x 19 x 24
NGFCPFCRK3K3/5	3	2.4	220/380	50	35	3.5 x 19 x 24
NGFCPFCRK3K3/6	3	2.4	120/208	60	35	3.5 x 19 x 24
NGFCPFCRK3K3/4	3	2.4	115/200	400	35	3.5 x 19 x 24
NGFCPFCRK4.5K3/5	4.5	3.6	220/380	50	46	8.75 x 19 x 24
NGFCPFCRK4.5K3/6	4.5	3.6	120/208	60	46	8.75 x 19 x 24
NGFCPFCRK4.5K3/4	4.5	3.6	115/200	400	46	8.75 x 19 x 24
NGFCPFCRK6K3/5	6	4.8	220/380	50	60	8.75 x 19 x 24
NGFCPFCRK6K3/6	6	4.8	120/208	60	60	8.75 x 19 x 24
NGFCPFCRK6K3/4	6	4.8	115/200	400	60	8.75 x 19 x 24
NGFCPFCRK10.5K3/5	10.5	8.4	220/380	50	65	8.75 x 19 x 24
NGFCPFCRK10.5K3/6	10.5	8.4	120/208	60	65	8.75 x 19 x 24
NGFCPFCRK10.5K3/4	10.5	8.4	115/200	400	65	8.75 x 19 x 24

The Leader In Rugged Power Conversion Technology Since 1966

TYPICAL 3U CHASSIS OUTLINE DRAWING



- NOTES:
1. ALL DIMENSIONS ARE IN INCHES, UNLESS OTHERWISE SPECIFIED.
  2. ALL UNDIMENSIONED PICTORIAL CONFIGURATIONS ARE FOR REFERENCE ONLY.
  3. FRONT AND REAR MARKINGS FOR REFERENCE ONLY.
  4. FRONT PANEL PAINTED - ANSI #61 GRAY SEMI-GLOSS.
  5. FRONT PANEL SILK-SCREEN IN BLACK EPOXY INK.

CONNECTOR PIN DESIGNATIONS

J1 AC INPUT		J2 AC OUTPUT	
MS3102R16S-8P		MS3102R18-10S	
MATE: MS3106F16S-8S		MATE: MS3106E18-12P	
PIN	DESCRIPTION	PIN	DESCRIPTION
A	PHASE A	B	PHASE B
B	PHASE B	C	PHASE C
C	PHASE C	D	NEUTRAL
D	NEUTRAL	E	GROUND
E	GROUND	F	NOT USED

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TOLERANCES UNLESS OTHERWISE SPECIFIED

X = ± .1  
Y = ± .02  
ANGLE = ± 1/2°

DIMENSIONS IN INCHES UNLESS OTHERWISE NOTED

WWW.NOVAELECTRIC.COM

THIRD ANGLE PROJECTION

NOVA ELECTRIC  
A DIV. OF TECHNOLOGY DYNAMICS, INC.  
100 SCHOOL STREET  
BERGENFIELD, NJ 07621  
TEL: 201-385-0500  
FAX: 201-385-0501

TYPICAL NGFCPCRK 5U CHASSIS

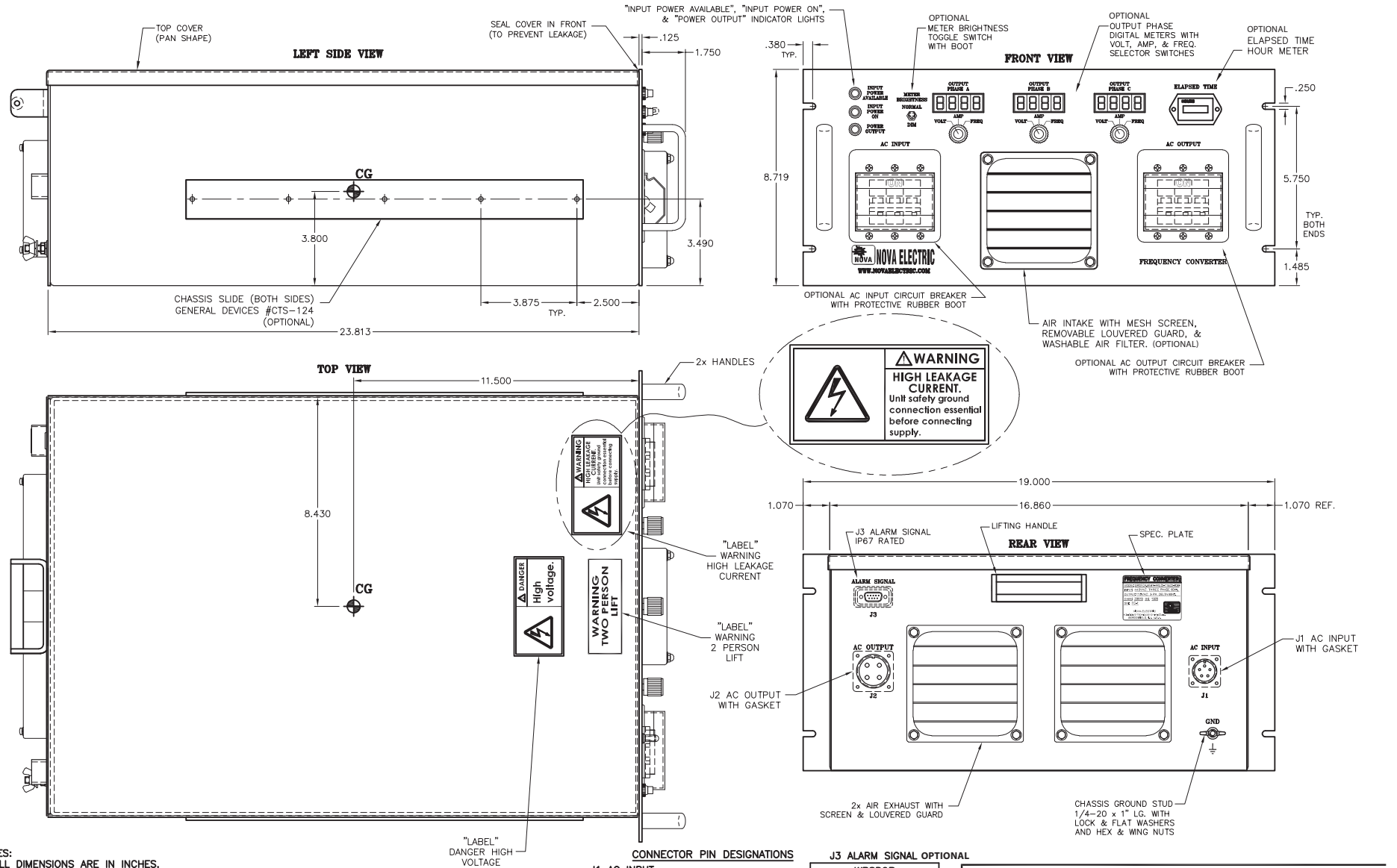
APPROVED DATE  
ML 5/19/22

CAGE: 29019 SHEET: 1 of 1 REV





# TYPICAL 5U CHASSIS OUTLINE DRAWING



- NOTES:
1. ALL DIMENSIONS ARE IN INCHES.
  2. ALL UN-DIMENSIONED PICTORIAL CONFIGURATIONS ARE FOR REFERENCE ONLY.
  3. FRONT AND REAR MARKING FOR REFERENCE ONLY.
  4. FRONT PANEL FINISH: CLEAR IRRIDITE, THEN PRIME & PAINT FRONT SURFACE AND ALL EDGES - ANSI #61 GRAY SEMI-GLOSS. ALL OTHER SURFACES ARE IRRIDITED (ALUMINUM).
  5. FRONT PANEL SILKSCREEN IN BLACK EPOXY INK.
  6. UNIT THOROUGHLY RUGGEDIZED.

## CONNECTOR PIN DESIGNATIONS

### J1 AC INPUT

AIT2-16S-8PS-724	MATE
AIT6E16S-8SS-724	MATE
PIN	DESCRIPTION
A	PHASE A
B	PHASE B
C	PHASE C
D	GROUND
E	NOT USED

### J2 AC OUTPUT

AIT2-22-22SS-724	MATE
AIT6E22-22PS-724	MATE
PIN	DESCRIPTION
A	PHASE A
B	PHASE B
C	PHASE C
D	GROUND

## J3 ALARM SIGNAL OPTIONAL

PIN	DESCRIPTION
1	N/C OVER TEMP
2	ARM OVER TEMP
3	N/O OVER TEMP
4	N/C INV. ON/OFF
5	ARM INV. ON/OFF
6	N/O INV. ON/OFF
7-9	SPARE

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	<p>NOVA ELECTRIC</p> <p>A DIV. OF TECHNOLOGY DYNAMICS INC.</p> <p>100 SCHOOL STREET</p> <p>BERGENFIELD, N.J. 07621-2915</p>
	<p>OUTLINE DRAWING,</p> <p>TYPICAL NGFCPCRK 5U CHASSIS</p>
	<p>CAGE: 29019   SHEET: 1 of 1   REV.</p>





# RUGGED AC POWER SYSTEMS



**SELECT UNITS QUALIFIED TO MIL-STD-810, MIL-S-901, MIL-STD-1399, MIL-STD-461, MIL-STD-167, MIL-STD-740, RTCA/DO-160, AND MORE**

## RUGGED TRUE ONLINE UPS



500 W – 500+ KW

*Rack Mount, Bulkhead Mount, and Freestanding*

*Single and Three Phase*

*50, 60, and 400 Hz.*

## PURE SINEWAVE DC-AC INVERTERS



100 W – 500+ KW

*Rack Mount, Bulkhead Mount, and Freestanding*

*Single and Three Phase*

*50, 60, and 400 Hz.*

## SOLID-STATE FREQUENCY CONVERTERS



100 W – 500+ KW

*Rack Mount, Bulkhead Mount, and Freestanding*

*Single and Three Phase*

*50, 60, and 400 Hz.*

## POWER DISTRIBUTION UNITS (PDUs)



*Basic, Switched, Auto-Transfer Switching, and Metered Configurations*

*Rack Mount, Bulkhead Mount, and Freestanding*

*Single and Three Phase*

## CUSTOM EMI FILTERS



*For MIL-STD-461 Compliance*

*Rack Mount, Bulkhead Mount, and Freestanding*

*Single and Three Phase*

## RUGGED PORTABLE TRANSFORMERS



100 W – 500+ KW

*Rack Mount, Bulkhead Mount, and Freestanding*

*Single and Three Phase*

## EXTERNAL MAINTENANCE BYPASS SWITCHES (MBSSs)



*Rack Mount, Bulkhead Mount, and Freestanding*

*Single and Three Phase*

## CUSTOM DESIGNS



*Designed & Built to Spec*

*Integrated AC & DC Capabilities*

*Multiple Outputs*

## RELIABLE AC POWER WHEN AND WHERE YOU NEED IT SEVERE ENVIRONMENT PRODUCTS



- AIRBORNE
- SHIPBOARD
- MOBILE
- RACK MOUNT & FREESTANDING

- 50, 60, AND 400 Hz
- AIR & WATER COOLED
- SINGLE AND THREE PHASE
- LIGHTWEIGHT DESIGNS

