

ULTRA-LIGHTWEIGHT RUGGED GALAXY™ SERIES

MIL-SPEC COMPLIANT

1 - 5 KVA

UPS

AS 9100

BUREAU VERITAS
Certification
Certificate No. US2006267-1



*UNIVERSAL 120/240VAC PFC INPUT
SNMP COMMUNICATIONS
WHEN EVERY POUND COUNTS!*

APPLICATIONS

Shelters
Tactical Systems
Shipboard Power
Aircraft
HMMWVs
Mobile Systems
Ground Support
Transit Cases

COMPLIANCE

MIL-STD-810
MIL-S-901
MIL-STD-167
MIL-STD-461
MIL-STD-1399
MIL-STD-740
DOD-STD-1399



NOVA ELECTRIC
www.novaelectric.com

A Leader in UPS Technology Since 1966
500VA to 500+KVA

ADDRESS: 100 School St., Bergenfield NJ 07621
EMAIL: novasales@theallpower.com
PHONE: (201) 385-0500 FAX: (201) 385-0702

MADE IN USA

Uninterruptible Power Supply for Naval • Ground • Airborne Applications

COMPACT BULKHEAD MOUNT-CHASSIS
ULTRA LIGHTWEIGHT DESIGN
POWER FACTOR CORRECTED UNIVERSAL INPUT
SNMP COMMUNICATIONS
LITHIUM IRON PHOSPHATE BATTERIES AVAILABLE

WHEN EVERY POUND COUNTS!

Nova's Ultra Lightweight Galaxy-Series UPS Systems are high-reliability power sources specifically designed for demanding applications in high shock, vibration, humidity, and EMI environments in compliance to MIL-STD-1399, MIL-STD-461, MIL-S-901, MIL-STD-167, MIL-STD-810, MIL-STD-740, and DOD-STD-1399.

These models utilize True On-Line technology, offering maximum field-proven reliability for severe environment and high reliability applications such as:

- *Military Applications:
Including HMMWV, UAV, Shipboard, Submarine, Aircraft,
Mobile Power Units, Shelters, Transportable Systems,
Tactical Systems, Ground Support, and more.*
- *Heavy-Duty Industrial Applications*
- *Demanding Commercial Applications*
- *Communications Systems*



NOVA ELECTRIC
www.novaelectric.com

A Leader in UPS Technology Since 1966
500VA to 500+KVA

ADDRESS: 100 School St., Bergenfield NJ 07621
EMAIL: novasales@theallpower.com
PHONE: (201) 385-0500 FAX: (201) 385-0702

MADE IN USA

Uninterruptible Power Supply for Naval • Ground • Airborne Applications

PROTECTIVE FEATURES

AC & DC Input Circuit Breakers, Low Battery, Overload Protection Range: Automatic overload & short circuit protection, Low Battery Shut Off with Circuit Breaker Trip-off, Thermal Protected, Input Under/Overvoltage Protected, Audible Alarm with Silence Switch

ENVIRONMENTAL

UPS Operating Temp.: -20° to +55°C
(Extended ranges optional)
UPS Storage temperature range: -40° to +71°C
(Electronics Only - Extended ranges optional)
Humidity: to 95% RH non-condensing
All boards conformal coated with Acrylic MIL-I-46058 Type R.
Elevation: 15,000 Ft. (4,572 m) operating;
40,000 ft. (12,192 m) non-operating (Higher Optional)
Shock: MIL-S-901 for Grade A, Class I, Type A Equipment
Audible Noise: Less than 55 dbA at 5 ft.

MTBF: 100,000+ hours per field data @ +25C Ambient
Ground-Fixed
MTTR: 30 minutes by qualified personnel

COMMUNICATIONS

SNMP V1.0 standard via CAT-5 Connector (V3.0 Optional)
RS 232 (Available-Optional) Via DB 9 Connector
Alarm Contacts (Available-Optional)
Major Alarm: Logic Fault, Low Battery, OT, UPS Overloaded.
Minor Alarm: Utility Off, Load on Utility (with optional transfer switch)

INDICATORS

Status (Red / Green)
UPS Off (Red)
Logic Fault (Red)
Low Battery (Red)
Over Temperature (Red)
Load on Utility (Red) with optional transfer switch

AUDIBLE

Audible alarm with silence switch



Uninterruptible Power Supply for Naval • Ground • Airborne Applications

AVAILABLE OPTIONS INCLUDE

- Ruggedization against high shock, vibration and humidity
- MS connector mates and multiple output outlets
- Internal transfer switch (static or electromechanical)
- Custom Enclosures
- 3Ø Power Input
- Premium Wide-Temp Range VRLA batteries with up to 12 year life
- “LiFe” models feature internal Lithium Iron Phosphate batteries with embedded Battery Management System for substantial weight savings and longer run time. Additional run time via external batteries
- 400 Hz input and / or output
- CAD Free Connectors
- Non-PVC wiring
- 28 VDC Input
- High IP Protection up to IP56
- AUX DC Outputs
- RTCA/DO-160G Compliant Aircraft Grade Package
- Power distribution units

SPECIFICATIONS

ELECTRICAL

Input Voltage: 120/240 VAC (110 - 250 VAC)
PFC (3Ø input optional)
Output Voltage: 120, 208, or 230 VAC (specify)
Frequency: 50 / 60 / 400 Hz. Available
Voltage Regulation: $\pm 2\%$ NL to FL
Frequency Regulation: $\pm 0.5\%$ NL to FL
Harmonic Distortion: 5% THD, 3% typical
Input Power Factor: 0.95 or Better @ half-full load
Efficiency at full load: 80-85% @ full load typical (batteries charged)
Connections: MS Connector (mates optional)
Overload:
110% load for 10 minutes
115% load for 5 minutes
120% load for 2 minutes

NOMINAL DIMENSIONS:

(See Partial Model Selection Chart Below)

Note: External batteries available on all models if increased run time is required – up to 24 hours.

BATTERIES:

Internal

- Standard sealed, maintenance free lead acid batteries have -20 to +50C storage range.
- Optional Premium sealed, maintenance free lead acid batteries have -40 to +80C operating range and useful life of 8-12 years @ +25C ambient.
- Optional Lithium Iron Phosphate batteries (as shown in units with “LiFe” model suffix) have -20 to +60C operating range and useful life of 8-10 years @ +25C ambient, but are much lighter than lead acid batteries and offer about twice the battery run time in the same volume battery pack.

Uninterruptible Power Supply for Naval • Ground • Airborne Applications

120 VAC OUTPUT MODELS (400 Hz Input and/or Output optional on all models)

MODEL	KVA	KW	NOMINAL INPUT	INPUT AMPS	UPS LBS.	UPS KG.	RUNTIME	SIZE (in) H x W x D	SIZE (mm) H x W x D
GHSLPFC11-5K60-120/240A-120-5M	5	4	120-240VAC	52/26A	250	113.6	5 min.	30 x 24 x 16	762 x 609.6 x 406.4
GHSLPFC11-5K60-120/240A-120-10M-LIFE	5	4	120-240VAC	52/26A	230	104.5	10 min.	30 x 24 x 16	762 x 609.6 x 406.4
GHSLPFC11-3K60-120/240A-120-5M	3	3	120-240VAC	30/15A	230	104.5	5 min.	30 x 24 x 16	762 x 609.6 x 406.4
GHSLPFC11-3K60-120/240A-120-5M-LIFE	3	3	120-240VAC	30/15A	210	95.5	10 min.	30 x 24 x 16	762 x 609.6 x 406.4
GHSLPFC11-3K60-120/240A-120-7M	3	2.4	120-240VAC	24/12A	225	102.3	7 min.	30 x 24 x 16	762 x 609.6 x 406.4
GHSLPFC11-3K60-120/240A-120-10M-LIFE	3	2.4	120-240VAC	24/12A	200	90.9	10 min.	30 x 24 x 16	762 x 609.6 x 406.4
GHSLPFC11-2K60-120/240-120-5M	2	1.6	120-240VAC	16/8A	195	88.6	5 min.	24 x 24 x 12	609.6 x 609.6 x 304.8
GHSLPFC11-2K60-120/240-120-10M-LIFE	2	1.6	120-240VAC	16/8A	170	77.3	10 min.	24 x 24 x 12	609.6 x 609.6 x 304.8
GHSLPFC11-1.5K60-120/240A -120-5M	1.5	1.2	120-240VAC	12/6A	180	81.8	5 min.	24 x 24 x 12	609.6 x 609.6 x 304.8
GHSLPFC11-1.5K60-120/240A -120-10M-LIFE	1.5	1.2	120-240VAC	12/6A	160	72.7	10 min.	24 x 24 x 12	609.6 x 609.6 x 304.8
GHSLPFC11-1K60-120/240A-120	0.9	0.7	120-240VAC	8/4A	165	75.0	5 min.	24 x 24 x 12	609.6 x 609.6 x 304.8
GHSLPFC11-1K60-120/240A-120-LIFE	0.9	0.7	120-240VAC	8/4A	145	65.9	10 min.	24 x 24 x 12	609.6 x 609.6 x 304.8

230 VAC OUTPUT MODELS (400 Hz Input and/or Output optional on all models)

MODEL	KVA	KW	NOMINAL INPUT	INPUT AMPS	UPS LBS.	UPS KG.	RUNTIME	SIZE (in) H x W x D	SIZE (mm) H x W x D
GHSLPFC11-5K50-120/240A-230-5M	5	4	120-240VAC	52/26A	250	113.6	5 min.	30 x 24 x 16	762 x 609.6 x 406.4
GHSLPFC11-5K50-120/240A-230-10M-LIFE	5	4	120-240VAC	52/26A	230	104.5	10 min.	30 x 24 x 16	762 x 609.6 x 406.4
GHSLPFC11-3K50-120/240A-230-5M	3	3	120-240VAC	30/15A	230	104.5	5 min.	30 x 24 x 16	762 x 609.6 x 406.4
GHSLPFC11-3K50-120/240A-230-5M-LIFE	3	3	120-240VAC	30/15A	210	95.5	5 min.	30 x 24 x 16	762 x 609.6 x 406.4
GHSLPFC11-3K50-120/240A-230-7M	3	2.4	120-240VAC	24/12A	225	102.3	7 min.	30 x 24 x 16	762 x 609.6 x 406.4
GHSLPFC11-3K50-120/240A-230-10M-LIFE	3	2.4	120-240VAC	24/12A	200	90.9	10 min.	30 x 24 x 16	762 x 609.6 x 406.4
GHSLPFC11-2K50-120/240-230-5M	2	1.6	120-240VAC	16/8A	195	88.6	5 min.	24 x 24 x 12	609.6 x 609.6 x 304.8
GRHSLPFC11-2K50-120/240-230-10M-LIFE	2	1.6	120-240VAC	16/8A	170	77.3	10 min.	24 x 24 x 12	609.6 x 609.6 x 304.8
GHSLPFC11-1.5K50-120/240A -230-5M	1.5	1.2	120-240VAC	12/6A	180	81.8	5 min.	24 x 24 x 12	609.6 x 609.6 x 304.8
GHSLPFC11-1.5K50-120/240A -230-10M-LIFE	1.5	1.2	120-240VAC	12/6A	160	72.7	10 min.	24 x 24 x 12	609.6 x 609.6 x 304.8
GHSLPFC11-1K50-120/240A-230	0.9	0.7	120-240VAC	8/4A	165	75.0	5 min.	24 x 24 x 12	609.6 x 609.6 x 304.8
GHSLPFC11-1K50-120/240A-230-LIFE	0.9	0.7	120-240VAC	8/4A	145	65.9	10 min.	24 x 24 x 12	609.6 x 609.6 x 304.8

THREE-PHASE INPUT MODELS (400 Hz Input and/or Output optional on all models)

MODEL	KVA	KW	NOMINAL INPUT	INPUT AMPS	UPS LBS.	UPS KG.	RUN TIME	SIZE (in) H x W x D	SIZE (mm) H x W x D
GHSLPFC11-5K60-120/208-120-5M-5U	5	4	120-240VAC	15A	250	113.6	5 min.	30 x 24 x 16	762 x 609.6 x 406.4
GHSLPFC11-5K60-120/208-120-10M-LIFE	5	4	120-240VAC	15A	230	104.5	10 min.	30 x 24 x 16	762 x 609.6 x 406.4
GHSLPFC11-3K60-120/208-120-5M	3	3	120-240VAC	11A	230	104.5	5 min.	30 x 24 x 16	762 x 609.6 x 406.4
GHSLPFC11-3K60-120/208-120-10M-LIFE	3	3	120-240VAC	11A	210	95.5	10 min.	30 x 24 x 16	762 x 609.6 x 406.4
GHSLPFC11-3K60-120/208-120-5M	3	2.4	120-240VAC	9A	225	102.3	5 min.	30 x 24 x 16	762 x 609.6 x 406.4
GHSLPFC11-3K60-120/208-120-7M-LIFE	3	2.4	120-240VAC	9A	200	90.9	7 min.	30 x 24 x 16	762 x 609.6 x 406.4
GHSLPFC11-2K60-120/208-120-5M	2	1.6	120-240VAC	6A	195	88.6	5 min.	24 x 24 x 12	609.6 x 609.6 x 304.8
GHSLPFC11-2K60-120/208-120-10M-LIFE	2	1.6	120-240VAC	6A	170	77.3	10 min.	24 x 24 x 12	609.6 x 609.6 x 304.8
GHSLPFC11-1.5K60-120/208 -120-5M	1.5	1.2	120-240VAC	5A	180	81.8	5 min.	24 x 24 x 12	609.6 x 609.6 x 304.8
GHSLPFC11-1.5K60-120/208 -120-10M-LIFE	1.5	1.2	120-240VAC	5A	160	72.7	10 min.	24 x 24 x 12	609.6 x 609.6 x 304.8
GHSLPFC11-1K60-120/208-120	0.9	0.7	120-240VAC	2A	165	75.0	5 min.	24 x 24 x 12	609.6 x 609.6 x 304.8
GHSLPFC11-1K60-120/208-120-LIFE	0.9	0.7	120-240VAC	2A	145	65.9	10 min.	24 x 24 x 12	609.6 x 609.6 x 304.8

Uninterruptible Power Supply for Naval • Ground • Airborne Applications

SYSTEM COMPLIANCE

MIL-STD-1399 Section 300B: For Type I apparatus
MIL-STD-740-1: Airborne Sound Measurements for Shipboard Equipment
MIL-STD-740-2: Structureborne Vibratory Acceleration Measurements

Additional Ruggedization to meet MIL-S-901, MIL-STD-167, MIL-STD-810, and DOD-STD-1399: The UPS System's construction is extremely robust, and ruggedized throughout. All components and modules within the unit are mounted using additional steel brackets and heavy-duty stainless-steel hardware, which is then further secured using Loctite and RTV where required. All boards are conformal-coated (Acrylic MIL-I-46058 Type R) for maximum resistance to potential condensation and fungus growth. The unit was tested and qualified as follows:

MIL-S-901 for Grade A, Class I, Type A Equipment (with optional shock mounts)
MIL-STD-167-1 for Type I Equipment

MIL-STD-810

- Air Temperature per MIL-STD-810F Method 502.4, Procedure II
- Steady State Temperature per MIL-STD-810F, Method 501.4, Procedure I (Constant Temperature) and Method 502.4, Procedure I
- Temperature Shock per MIL-STD-810F, Method 503.4, Procedure II, Cyclic.
- Thermal Shock testing per MIL-STD-810G, Method 503.5, Procedure I-D
- Operating Temperature Shock per MIL-STD-810B Method 503 0 to 71°C
- High Temperature Storage per MIL-STD-810G, Method 501.5, Procedure I
- Low Temperature Storage testing per MIL-STD-810G, Method 502.5, Procedure I
- High Temperature Operating per MIL-STD-810G, Method 501.5, Procedure II
- Low Temperature Operating per MIL-STD-810G, Method 502.5, Procedure II
- Operational Humidity per MIL-STD-810F Method 507.4.
- Humidity per MIL-STD-801G, Method 507.5, Procedure I
- Storage and Transportation Humidity per MIL-STD-810F, Method 507.4
- Salt Fog Atmosphere per MIL-STD-810F Method 509.4
- Altitude per MIL-STD-810F, Method 500.4, Procedure I, Storage/Air Transport.
- Operating and Non-Operating Altitude Testing per MIL-STD-810G, Method 500.5, Procedure II
- Rapid Decompression per MIL-STD-810F, Method 500.4, Procedure III
- Transit Shock per MIL-STD-810F, Method 516, Procedures IV, V and VI
- Transportation Vibration per MIL-STD-810F, Method 514.5, Procedure II for loose cargo transportation
- Transportation Vibration per MIL-STD-810G, Method 514-6, Procedure I, Category 20
- Vibration per MIL-STD-810B Method 514.6, Category 12, Procedure I
- Transit Drop per MIL-STD-810F, Method 516.5, Procedure IV
- Transit Drop per MIL-STD-810G, Method 516.6, Procedure IV
- Bench Handling per MIL-STD-810F, Method 516.5, Procedure VI
- Bench Handling per MIL-STD-810G, Method 516.6, Procedure VI

DOD-STD-1399 Section 301A Table V – Design Limits for Ship Motion

Internal EMI Reduction Package to meet MIL-STD-461: The design of this unit is specifically focused on reducing EMI emissions. The UPS contains substantial internal filtering to minimize EMI emissions. Inputs which may be susceptible to transients are protected by several methods. The compact chassis is specifically treated with low surface resistivity finishes on the interior. All aluminum parts are treated with clear irridite. The steel parts are treated with zinc plate, followed by a clear chromate. Paint method via ANSI-61 gray is designed to assure excellent bonding of mating sheet metal parts. All input and output ventilation filters include metal honeycomb-style or mesh filters. The unit was tested and qualified as follows:

MIL-STD-461E: CE101, CE102, CS101, CS114, CS116, RE102, RS101, and RS103

OPTIONAL COMPLIANCE WITH RTCA/DO-160G AIRCRAFT GRADE PACKAGE

Qualifications to RTCA/DO-160G include:

- * Rapid Decompression: Section 4 Cabin Pressure (8K) to Max Oper Alt (35K) in 15 sec; Hold for 10 min
- * Crash Safety Sustained: Section 7, Cat B - Up = 3.0g - Down = 6.0g - Fwd = 9.0g - Aft = 1.5g - Side = 4.0g
- * Explosive Atmosphere: Non-Ignition Test Sec. 9.6.2, Cat E

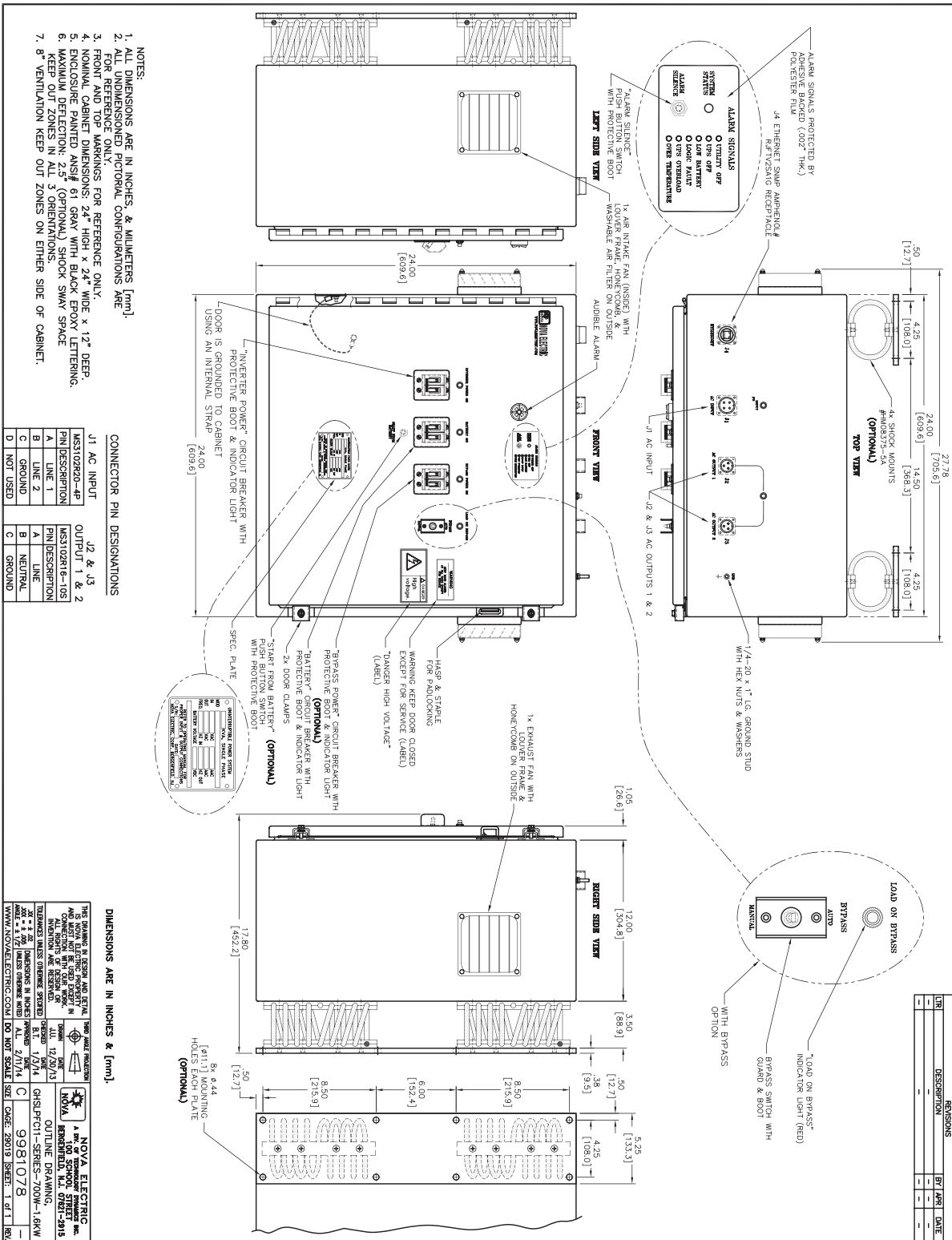
Qualifications to MIL-STD-810B include:

- * Operating Temperature Shock per MIL-STD-810B Method 503 0 to 71°C
- * Vibration per MIL-STD-810B Method 514.6, Category 12, Procedure I

Note: Qualification testing was performed with optional premium batteries required to meet temperature testing requirements.

Uninterruptible Power Supply for Naval • Ground • Airborne Applications

Typical 700W - 1.6KW Cabinet



RUGGED AC POWER SYSTEMS UPS , INVERTERS & CONVERTERS

DESIGNED TO MEET MIL-STD-810, MIL-STD-461, MIL-STD-1399 & MIL-S-901 OPTIONALLY
COMPATIBLE WITH GENERATOR INPUT



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

- AIRBORNE
- SHIPBOARD
- MOBILE & HMMWV
- RACK MOUNT & FREESTANDING
- 50, 60, AND 400 Hz
- AIR & WATER COOLED
- SINGLE AND THREE PHASE
- LIGHTWEIGHT DESIGNS

NOVA ELECTRIC
www.novaelectric.com

ADDRESS: 100 School St., Bergenfield NJ 07621
EMAIL: novasales@theallpower.com
PHONE: (201) 385-0500 FAX: (201) 385-0702

MADE IN USA