



## NOVA ELECTRIC

### POPULAR OPTIONS

- Ruggedization Against High Shock, Vibration and Humidity
- MS Connector Mates
- 19" Rack Mounting Kit
- Wall Mount Plate
- Custom Enclosures
- Power Distribution Units (PDUs)
- Environmental Stress Screening Services

### FEATURES

- Crystal Controlled Frequency
- Compact and Light Weight, Yet Rugged and Vehicle Rated
- 86-88% Efficient
- Able To Supply Inrush Current
- Factory Set To 50 Hz, 60 Hz Or 400Hz Output
- Capable Of Driving Highly Reactive Loads Such As Motors
- Capable Of Driving Highly Capacitive Loads Such As Non PFC Switching Power Supplies
- Very Low Harmonic Distortion, THD<3%.
- Suitable For Vehicle Mounting
- Fan Cooled With Air Filter
- Can Be Wired To Form 3Ø Output

### CONTACT

100 School Street,  
Bergenfield, NJ 07621 USA

(201) 385-0500

[novaelectric.com](http://novaelectric.com)

[info@novaelectric.com](mailto:info@novaelectric.com)



# NGFCPFC Series 800VA – 4500VA Modular Frequency Converters



NGFCPFC 4.5 KVA



NGFCPFC 2.5-3.5 KVA



NGFCPFC 1-2 KVA



NGFCPFC 800 VA

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

*Specifications subject to change without notice.*

Rev A-June-16-2021



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### GENERAL OVERVIEW

The NGFCPFC Series Solid State Modular Frequency Converters are intended for industrial or military applications wherever standard generator or utility-like power is needed at 50 Hz, 60 Hz, or 400 Hz. These frequency converters are intended for running electronic loads such as computers, monitors, printers, communications systems, radios, and more from 115V or 230V.

These units can be ruggedized against shock, vibration and humidity to meet demanding military environmental standards such as MIL-STD-810 and MIL-STD-167. Additional filtering is available optionally to meet MIL-STD-461. Utilizing field proven technology, this family of rugged pure sinewave AC-AC frequency converters is suitable for harsh environments such as:

- Military Shelters
- Ground Support
- Mobile Systems
- Tactical Systems
- Ship Applications
- Submarines
- Aircraft
- UAVs
- Military Vehicles
- Communications

### SPECIFICATIONS

#### Electrical

<b>INPUT VOLTAGE (SELECT)</b>	See Model Table
<b>OUTPUT VOLTAGE (SELECT)</b>	See Model Table
<b>OUTPUT FREQUENCY</b>	50 Hz, 60 Hz or 400 Hz
<b>OVERLOAD</b>	125% For 5 Minutes
<b>OUTPUT WAVEFORM SINEWAVE</b>	<3% THD
<b>OUTPUT REGULATION</b>	± 2.5%
<b>MTBF</b>	Over 100,000 Hours Per Field Data
<b>MTTR</b>	30 Minutes

#### Protective Features

<b>OVERLOAD</b>
<b>OVERVOLTAGE</b>
<b>OVERTEMPERATURE</b>

#### Environmental

<b>OPERATING TEMP.</b>	-20°C to +50°C
<b>STORAGE TEMP.</b>	-40°C to + 71°C
<b>VIBRATION</b>	Per MIL-STD-810 Surface Vehicle or MIL-STD-167 Shipboard
<b>SHOCK</b>	20g / 11ms Per MIL-STD-810
<b>HUMIDITY</b>	Per MIL-STD-810 to 95% Non-Condensing
<b>EMI</b>	MIL-STD-461 (May Require Additional External EMI Filter)

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### PARTIAL 60 Hz OUTPUT MODEL SELECTION - (400 HZ INPUT OPTIONAL)

MODEL	KW / KVA	INPUT VAC	INPUT FREQ. (Hz)	OUTPUT VAC	OUTPUT FREQ. (Hz)	WEIGHT (Lb / Kg)	DIMENSIONS (in / cm)
NGFCPFC0.8K60-120/240A-120	640 W / 800 VA	120-240 VAC	50/60 Hz	120 VAC	60 Hz	2.4 lb / 1.10 kg	2.60" x 5.00" x 10.00" [ 66 x 127 x 254 ]
NGFCPFC1K60-120/240A-120	800 W / 1 KVA	120-240 VAC	50/60 Hz	120 VAC	60 Hz	5 lb / 2.27 kg	3.00" x 6.30" x 12.25" [ 127 x 203 x 318 ]
NGFCPFC2K60-120/240A-120	1.6 KW / 2 KVA	120-240 VAC	50/60 Hz	120 VAC	60 Hz	7.5 lb / 3.40 kg	3.00" x 6.30" x 12.25" [ 127 x 203 x 318 ]
NGFCPFC2.5K60-120/240A-120	2 KW / 2.5 KVA	120-240 VAC	50/60 Hz	120 VAC	60 Hz	14 lb / 6.40 kg	5.00" x 8.00" x 12.50" [ 127 x 203 x 318 ]
NGFCPFC3.5K60-120/240A-120	2.8 KW / 3.5 KVA	120-240 VAC	50/60 Hz	120 VAC	60 Hz	16.3 lb / 7.40 kg	5.00" x 8.00" x 12.50" [ 127 x 203 x 318 ]
NGFCPFC4.5K60-120/240A-120	3.6 KW / 4.5 KVA	120-240 VAC	50/60 Hz	120 VAC	60 Hz	17.5 lb / 7.95 kg	5.00" x 8.00" x 12.50" [ 127 x 203 x 318 ]

### PARTIAL 50 Hz OUTPUT MODEL SELECTION - (400 HZ INPUT OPTIONAL)

MODEL	KW / KVA	INPUT VAC	INPUT FREQ. (Hz)	OUTPUT VAC	OUTPUT FREQ. (Hz)	WEIGHT (Lb / Kg)	DIMENSIONS (In / Cm)
NGFCPFC0.8K50-120/240A-230	640 W / 800 VA	120-240 VAC	50/60 Hz	230 VAC	50 Hz	2.4 lb / 1.10 kg	2.60" x 5.00" x 10.00" [ 66 x 127 x 254 ]
NGFCPFC1K50-120/240A-230	800 W / 1 KVA	120-240 VAC	50/60 Hz	230 VAC	50 Hz	5 lb / 2.27 kg	3.00" x 6.30" x 12.25" [ 127 x 203 x 318 ]
NGFCPFC2K50-120/240A-230	1.6 KW / 2 KVA	120-240 VAC	50/60 Hz	230 VAC	50 Hz	7.5 lb / 3.40 kg	3.00" x 6.30" x 12.25" [ 127 x 203 x 318 ]
NGFCPFC2.5K50-120/240A-230	2 KW / 2.5 KVA	120-240 VAC	50/60 Hz	230 VAC	50 Hz	14 lb / 6.40 kg	5.00" x 8.00" x 12.50" [ 127 x 203 x 318 ]
NGFCPFC3.5K50-120/240A-230	2.8 KW / 3.5 KVA	120-240 VAC	50/60 Hz	230 VAC	50 Hz	16.3 lb / 7.40 kg	5.00" x 8.00" x 12.50" [ 127 x 203 x 318 ]
NGFCPFC4.5K50-120/240A-230	3.6 KW / 4.5 KVA	120-240 VAC	50/60 Hz	230 VAC	50 Hz	17.5 lb / 7.95 kg	5.00" x 8.00" x 12.50" [ 127 x 203 x 318 ]

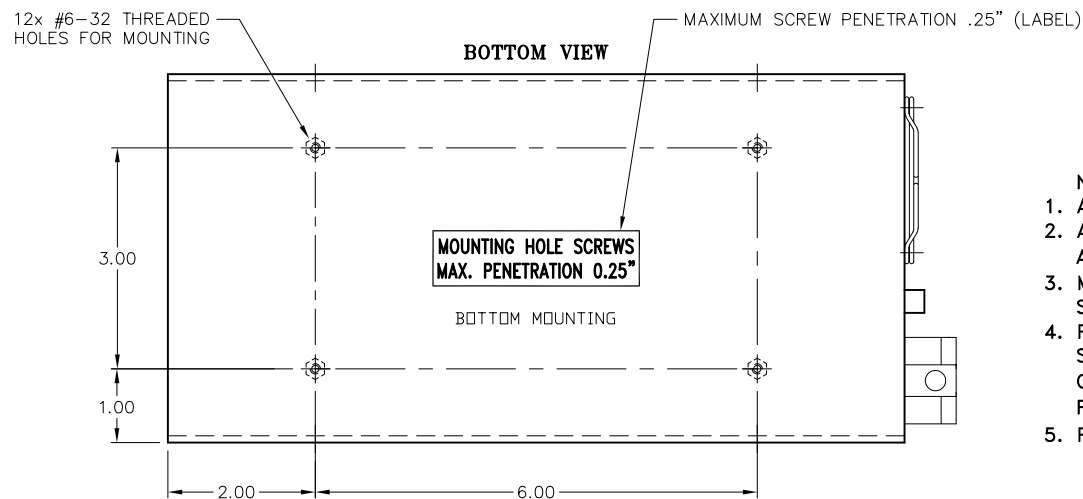
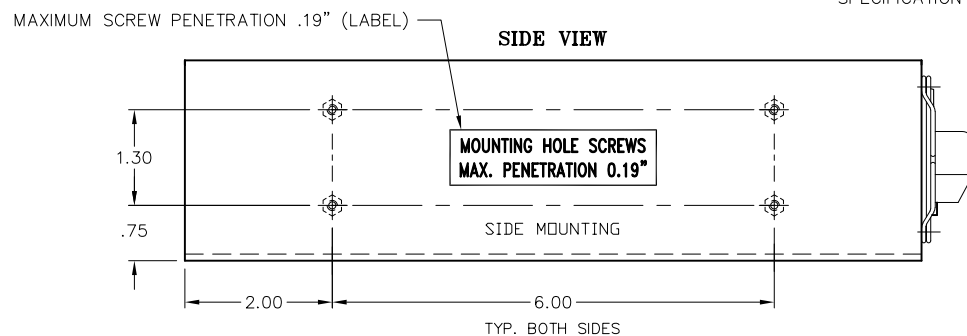
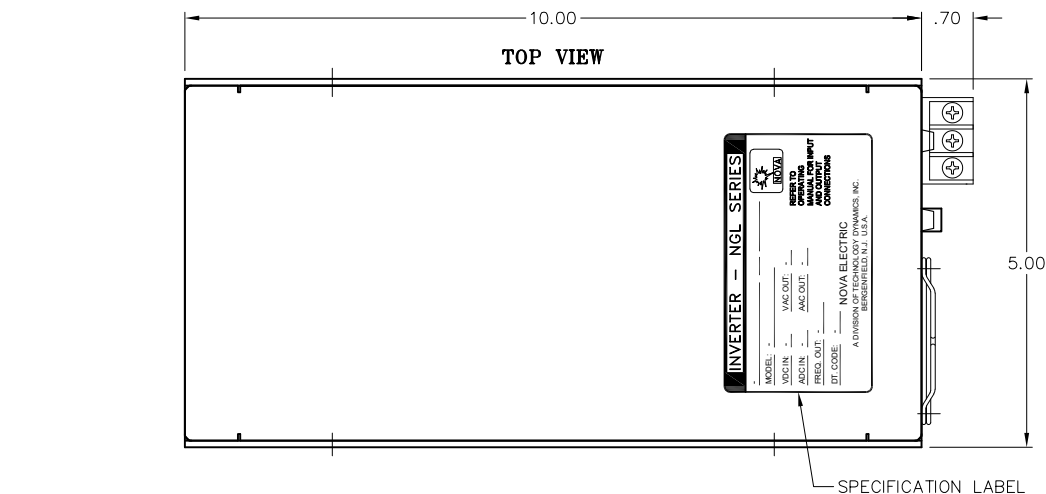
### PARTIAL 400 Hz OUTPUT MODEL SELECTION

MODEL	KW / KVA	INPUT VAC	INPUT FREQ. (Hz)	OUTPUT VAC	OUTPUT FREQ. (Hz)	WEIGHT (Lb / Kg)	DIMENSIONS (In / Cm)
NGFCPFC0.8K400-120/240A-115	640 W / 800 VA	120-240 VAC	50/60 Hz	115 VAC	400 Hz	2.4 lb / 1.10 kg	2.60" x 5.00" x 10.00" [ 66 x 127 x 254 ]
NGFCPFC1K400-120/240A-115	800 W / 1 KVA	120-240 VAC	50/60 Hz	115 VAC	400 Hz	5 lb / 2.27 kg	3.00" x 6.30" x 12.25" [ 127 x 203 x 318 ]
NGFCPFC2K400-120/240A-115	1.6 KW / 2 KVA	120-240 VAC	50/60 Hz	115 VAC	400 Hz	7.5 lb / 3.40 kg	3.00" x 6.30" x 12.25" [ 127 x 203 x 318 ]
NGFCPFC2.5K400-120/240A-115	2 KW / 2.5 KVA	120-240 VAC	50/60 Hz	115 VAC	400 Hz	14 lb / 6.40 kg	5.00" x 8.00" x 12.50" [ 127 x 203 x 318 ]
NGFCPFC3.5K400-120/240A-115	2.8 KW / 3.5 KVA	120-240 VAC	50/60 Hz	115 VAC	400 Hz	16.3 lb / 7.40 kg	5.00" x 8.00" x 12.50" [ 127 x 203 x 318 ]
NGFCPFC4.5K400-120/240A-115	3.6 KW / 4.5 KVA	120-240 VAC	50/60 Hz	115 VAC	400 Hz	17.5 lb / 7.95 kg	5.00" x 8.00" x 12.50" [ 127 x 203 x 318 ]

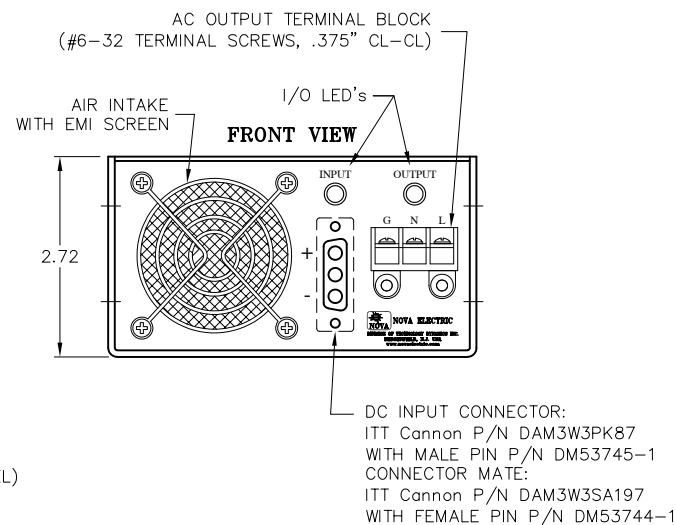
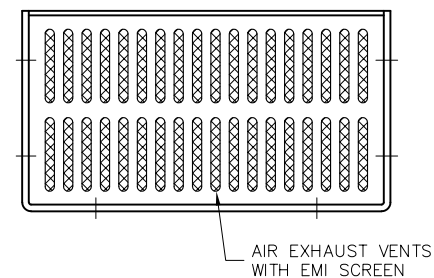
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# TYPICAL NGFCPFC SERIES 800VA OUTLINE DRAWING



REAR VIEW

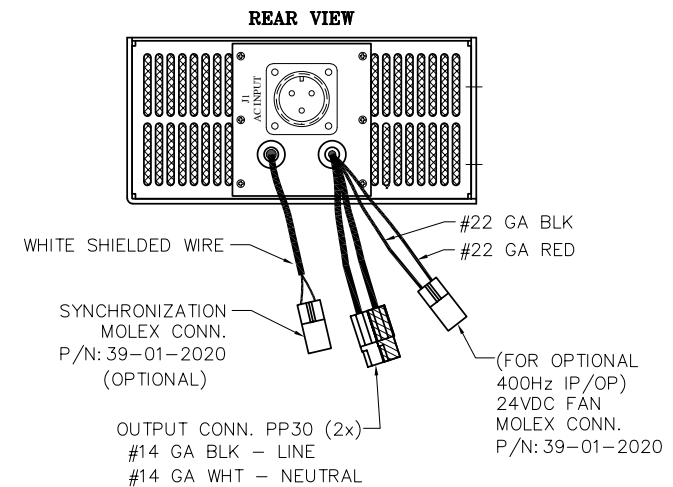
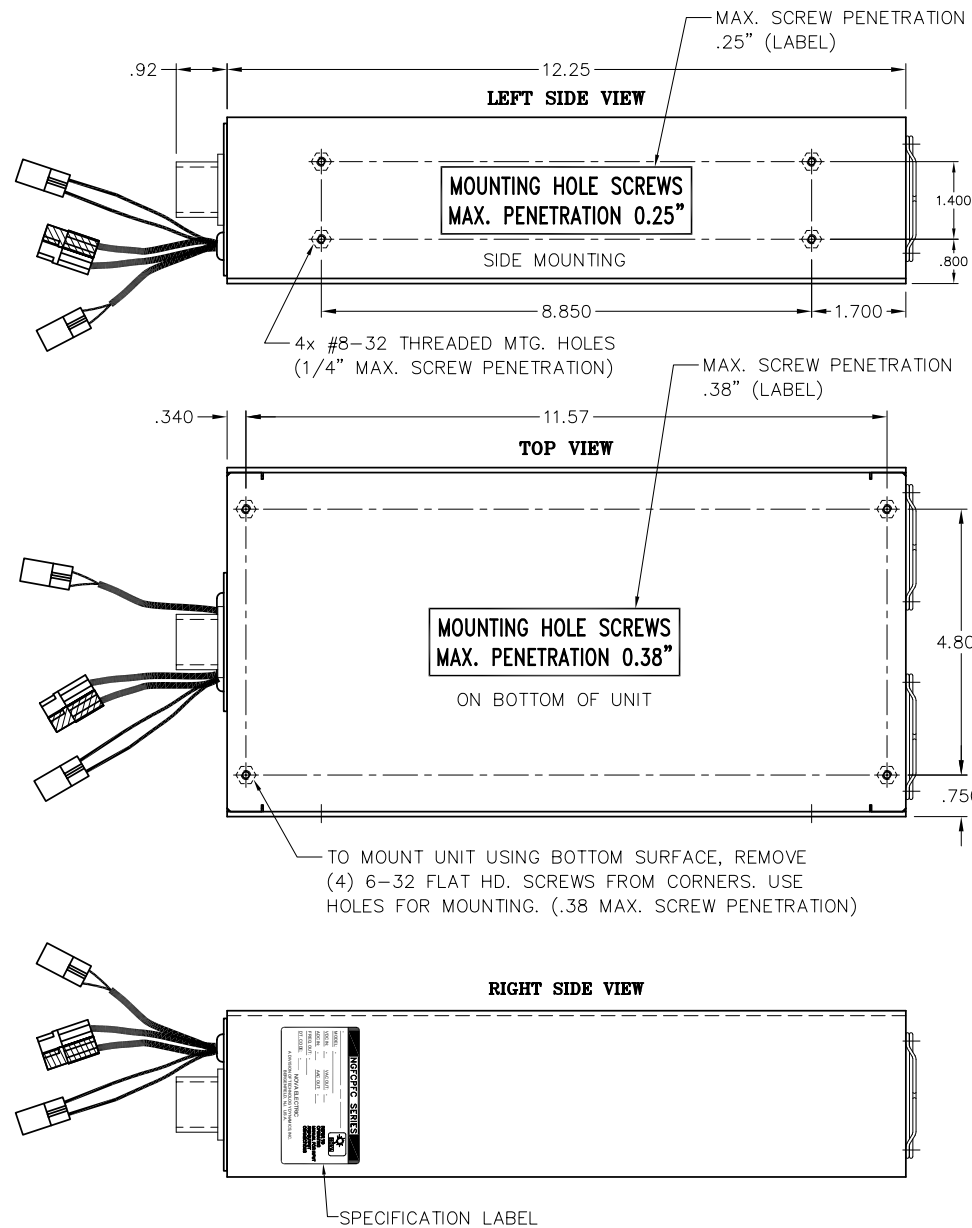


## NOTES:

1. ALL DIMENSIONS ARE IN INCHES.
2. ALL UNDIMENSIONED PICTORIAL CONFIGURATIONS ARE FOR REFERENCE ONLY.
3. MAXIMUM MOUNTING SCREWS PENETRATION:  
SIDES: .187 BOTTOM: .250
4. FRONT PANEL FINISH: CLEAR IRRIDITE, THEN PRIME & PAINT SURFACE AND ALL EDGES.  
OTHER SURFACES ARE CLEAR IRRIDITED. (ALUMINUM)  
PAINT COLOR: BLACK SEMI-GLOSS FED-STD-595 #27038.
5. FRONT PANEL SILK-SCREEN IN WHITE EPOXY INK.



TYPICAL NGFCPFC SERIES 1000VA & 2000VA OUTLINE DRAWING



CONNECTORS PIN DESIGNATION

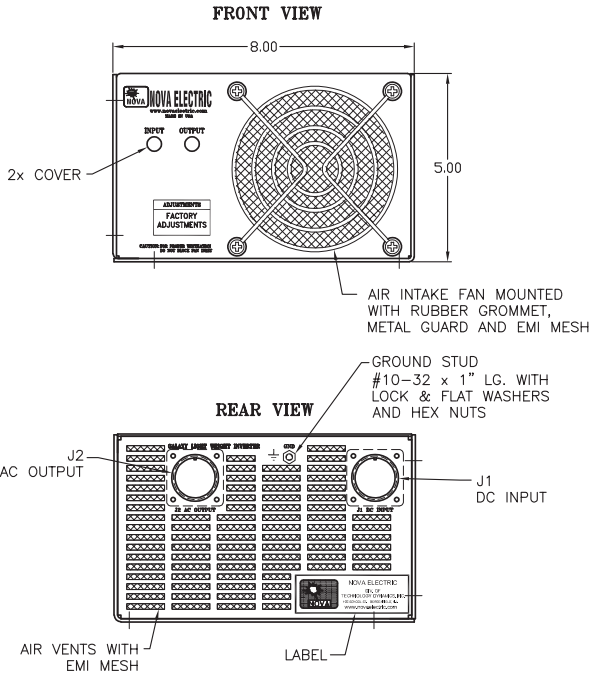
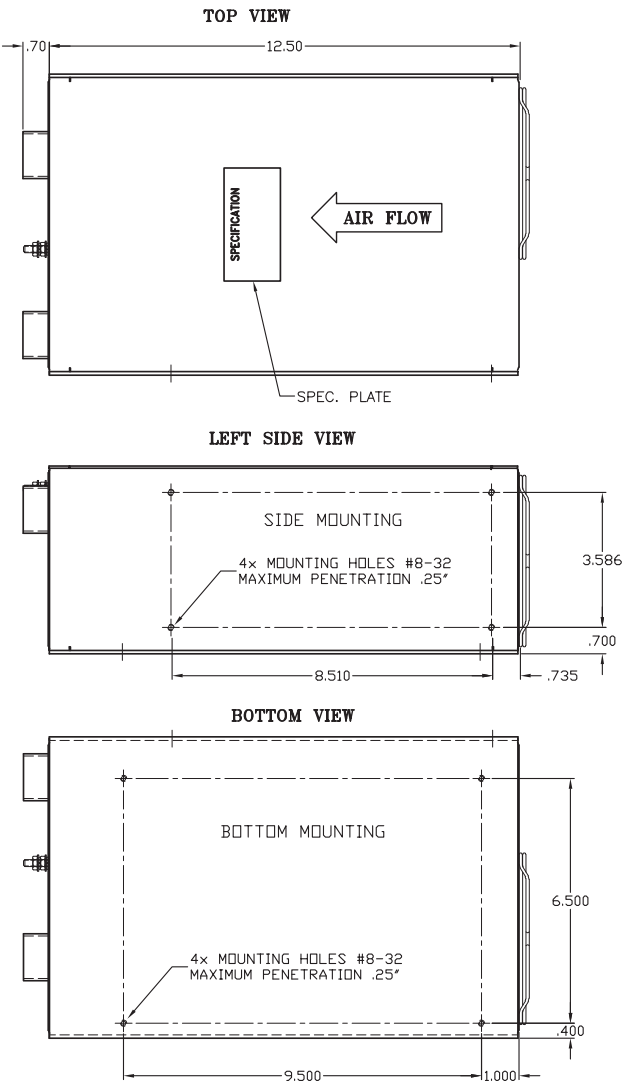
J1 AC INPUT	
MS3102R16-10P	
PIN	DESCRIPTION
A	LINE
B	NEUTRAL
C	GROUND

NOTES:

1. ALL DIMENSIONS ARE IN INCHES.
2. ALL UNDIMENSIONED PICTORIAL CONFIGURATIONS ARE FOR REFERENCE ONLY.
3. FRONT AND REAR MARKING FOR REFERENCE ONLY.
4. FRONT PANEL FINISH: YELLOW IRRIDITE THEN PRIME & PAINT SURFACE AND ALL EDGES. OTHER SURFACES ARE YELLOW IRRIDITED. (ALUMINUM) PAINT COLOR: BLACK SEMI-GLOSS #27038 AS PER FED-STD-595B.
5. FRONT PANEL SILK-SCREEN IN WHITE EPOXY INK.



TYPICAL NGFCPFC SERIES 2500VA & 3500VA OUTLINE DRAWING



- NOTES:
- 1. ALL DIMENSIONS ARE IN INCHES.
  - 2. ALL UNDIMENSIONED PICTORIAL CONFIGURATIONS ARE FOR REFERENCE ONLY.
  - 3. FRONT AND REAR MARKING FOR REFERENCE ONLY.
  - 4. FRONT PANEL FINISH: YELLOW IRRIDITE THEN PRIME & PAINT SURFACE AND ALL EDGES. OTHER SURFACES YELLOW IRRIDITE ONLY.  
PAINT COLOR: BLACK SEMI-GLOSS #27038 AS PER FED-STD-595B.
  - 5. SILKSCREEN: FRONT PANEL IN WHITE & REAR PANEL IN BLACK EPOXY INK.

PIN CONNECTORS

J1 DC INPUT		J2 AC OUTPUT	
MS3102R20-19P		MS3102R20-19S	
PIN	DESCRIPTION	PIN	DESCRIPTION
A	L1	A	L
B	L2	B	N
C	G	C	G





# 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

