



VANAIR[®]
MOBILE POWER SOLUTIONS[®]

EPEQ INVERTER3000
Electrified Power Equipment[®]

EPEQ[™] Electrified Power Equipment[®]
3kW 48V DC - 120V AC Power Inverter
Part Number: 6240001



USER GUIDE

OPERATION MANUAL AND SERVICE PARTS LIST KEEP THE MANUAL WITH THE VEHICLE

NOTE: Read this manual before installing, operating or servicing this equipment. Failure to comply with the operation and maintenance instructions in this manual will VOID THE EQUIPMENT WARRANTY.

This publication contains the latest information available at the time of preparation. Every effort has been made to ensure accuracy. Vanair[™] Manufacturing, Inc. reserves the right to make design change modifications or improvements without prior notification.

Making unauthorized modification to the system components WILL VOID THE WARRANTY! Always contact Vanair[™] before beginning any changes to the EPEQ[™] INVERTER3000 Series system.



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GENERAL INFORMATION

For parts, service or technical assistance, make sure you have the Serial Number and Model Number of the unit. Please record the information in the spaces below for future reference.

Serial Number:	
Model Number	

INVERTER3000

The EPEQ™ INVERTER3000 is a pure sine wave, high frequency DC to AC power inverter designed to provide single phase, 120V AC power output from a 48V DC source input.

NOTICE:

- All wiring must conform to National Safety Code, provincial or other codes in effect at the time of installation. This inverter should be connected to a grounded wiring system. If the system ground is floating - be sure to follow the codes in effect.
- The INVERTER3000 ships with DC power cables and connectors pre-installed.
- When hard-wiring the unit, please confirm polarity before making final wiring connections.

SAFETY:

- Please read all instructions and safety information for this inverter and any equipment or tools that will be attached to the INVERTER3000.
- As with all electrical equipment and sources of electrical power – use common sense and practice common electrical safety.
- Banks of batteries are capable of delivering very high levels of current which can melt metals, cause combustion of combustible liquids and gases, and start fires.

- This unit is designed for indoor use or within a clean, dry compartment, protected from rain, dust and the elements.
- Do not expose the inverter to rain, snow, spray/mist, dust or the elements.
- Inverter requires adequate clearance for air circulation and cooling. Do not block ventilation openings or cooling fans.



- Make certain all connecting wiring or cables are in good condition and of adequate size to avoid risk of fire and electric shock. Do not use damaged or undersized wiring.



- Components in this unit can produce electrical arcing or sparks. To avoid risk of fire, do not install this equipment in areas in or around combustible liquids, solids, or gas. This includes any space containing combustion engine powered vehicles or machinery, fuel tanks, fuel lines or fittings that are a part of a fuel system.

- The use of a fuse between the Inverter positive (+) input and the positive (+) terminal of the battery can protect batteries from DC cable shorts which can cause damage to ELiMENT™ batteries, and may cause other battery types to explode.



- Do not disassemble the inverter. It contains no serviceable parts and there is a risk of electrical shock or fire. Capacitors inside the case remain charged after all power is disconnected. Contact Vanair customer support for any service issues.

- Before any cleaning or maintenance, disconnect both the AC and DC power to reduce risk of electric shock. Turning off the controls only will not reduce the risk.



- **Caution - Equipment Damage:** The AC output side of the inverter should NEVER be connected to an AC utility power source or generator. This situation could cause permanent damage to the equipment. If the unit

survives such a condition, it will shut down until the situation is corrected.



WARNING: EPEQ™ AC Inverters are not intended for use with medical devices **and lifesaving systems. Any such use is at your own risk.**

FEATURES:

- Produces pure sine wave output.
- Maximum <3% THD at nominal battery voltage.
- Surge capability up to 200% peak load
- Low standby current while in Power Saver Mode to conserve energy.
- Variable speed fan is temperature controlled for efficient cooling.

PROTECTIONS

The INVERTER3000 uses several built-in protections against faults and harsh conditions:

- Low input voltage protection
- High input voltage protection
- Low battery alarm
- Over temperature protection
- Over load protection

INSTALLATION

UNPACKING AND INSPECTION.

The package should arrive intact with nothing broken or missing. Contents should include the following:

- EPEQ™ INVERTER3000 (1)
- User manual (1)
- Communication cable (1)
- DC Power input cable/connector (1) (pre-installed)

MOUNTING THE UNIT

1. Before mounting, make sure the unit is

turned OFF.

2. For best operation, mount in an area with an ambient temperature between 23°F and 104°F (-5°C to 40°C)
3. It is recommended that the inverter is mounted horizontally against a non combustible surface or wall, such as metal or concrete using four (4) corrosion resistant #10 fasteners.
4. Allow proper clearance around unit to permit adequate heat dissipation. 4" (~10cm) on each side.
5. Allow a minimum airflow of 145 CFM for proper ventilation and cooling.

BATTERY WIRING

1. The orange colored DC power input cable and Anderson-type connector will come pre-installed. (If hardwiring the unit, please refer to the following.)
2. For best results, keep the battery bank as close as possible to the inverter. Try to keep length of the DC power cable between 3'-16' (~1 to 5 meters).
3. Wire Size: 4AWG
4. Install a circuit breaker or high-current fuse and fuse holder in the positive line as close to the battery as possible. (Not required for ELiMENT™ batteries)

CONNECTING THE INVERTER

- (Refer to illustration on page 6)
- Connect an AWG 8 gauge copper wire, or greater, between the grounding terminal of the inverter and the Earth ground or vehicle chassis.
 - **Make certain the polarity is connected accurately before powering on the equipment. Positive connected to positive, and negative connected to negative.**



When hard wiring the unit to the battery please follow the following steps to complete battery connection:

1. Prepare all cable ends with cable lugs, (Crimped or crimped and soldered.)
2. Assemble DC input cables based on recommended battery cable and terminal size.
3. Connect the battery as required by the inverter.
4. Make sure polarity is correct at both the battery and inverter input terminals! Positive (+) to positive, Negative (-) to negative (-).
5. Wires and connections should be verified to be properly routed, connected and tightened before use. Terminal connections should be snug. Be careful NOT to over tighten as this could damage the terminal and inverter.

OPERATION

1. With the inverter power switch in the OFF position, visually check the inverter, battery, cables, and connected equipment for any damage or obstructions.
2. Verify the battery has an adequate charge level. (Starting with a fully charged battery allows for the best performance and longest working time.)
3. Once the battery level has been verified, check the connection between the inverter and battery. Connect one of the orange DC output cable connectors from the ELiMENT battery to the orange DC power input connector of the inverter by sliding one into the other. Push together firmly to ensure a good connection has been made.
4. Make sure any connected AC powered tools, equipment or appliances are turned off. Once all connections are secure, turn on the inverter using the power switch ON

- the bottom-right of the inverter case.
5. The inverter will take a moment to run a self-diagnosis. During these few seconds, do not power on any connected devices. This may cause a surge that may result in a fault condition.
6. Once the self test is complete, turn on any connected devices **one at a time** when it is needed and is safe to do so.
7. If multiple devices are turned on simultaneously - this combined surge could trigger a fault.
8. When finished using the inverter, simply power down the connected devices and switch the inverter unit OFF.

TROUBLESHOOTING

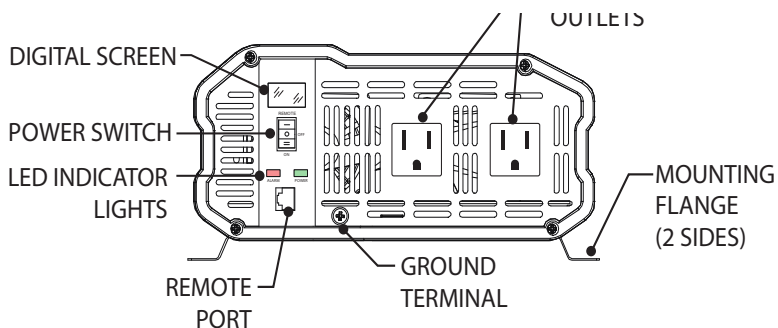
STATUS LIGHTS:

The inverter comes with 2 indicator lights. Green for Power. Red for Alarm.

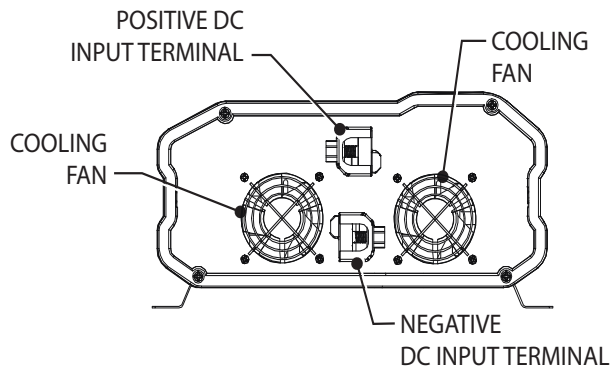
- Normal -- GREEN -- No alarm
- Low battery – GREEN – with Alarm
- Low battery voltage shutdown – RED – with Alarm
- Over Temperature – RED – with Alarm
- Output short circuit – RED – with Alarm
- Overload shutdown – RED – with Alarm
- High battery voltage shutdown – RED – with Alarm

HOW TO RESTART AFTER AC OUTPUT AUTO-SHUTDOWN:

1. Turn OFF unit's power switch
2. Remove all AC loads (tools, appliances)
3. Allow unit to cool down for 15 minutes.
4. Press power switch to turn it back ON.



INVERTER3000 AC SIDE



INVERTER3000 DC SIDE

TROUBLESHOOTING TABLE

Symptom	Possible Cause(s)	Recommended Solution(s)
Inverter will not turn on during initial power up.	Battery not connected, or loose battery connection. Low battery voltage. Power switch set to OFF or REMOTE	Check the battery and cable connections. Check any DC fuse and breaker in use. Check battery charge . Set Power Switch to ON position.
AC output cut off. (Red LED with Alarm)	Low battery voltage and low capacity level. Inverter is over temperature or overload. Battery voltage too high	Check battery condition and recharge if possible. Turn off inverter and allow inverter to cool. Reduce load to match inverter. Check battery voltage & ensure connection to DC power input.
Attached appliance or tool power is less than rated power. (Red LED with Alarm)	Low battery capacity cause short DC input power although the battery voltage is higher than rated voltage.	Use amp meter to check DC input amps. Recharge the battery, or contact Vanair for assistance.
Motorized appliances not operating properly.	Motorized tools and appliances require high start power that exceed inverter's rated voltage.	Choose a higher power inverter.

SPECIFICATIONS

Model: EPEQ INVERTER3000

Continuous Output AC Power: 3000W

Output AC voltage: 120V AC +/- 5%

Output Frequency: 60Hz +/-0.05%

No Load Power Draw: 1100mA

Peak Efficiency: 93.5%

Output Waveform: Pure Sine Wave (THD <3%)

Input Power: 48V DC

Input Current: 60A maximum DC (120A surge)

Input DC Range: 42-60V DC (using 48V Battery source)

Low Input Power Alarm: 42V DC (for 48V DC)

Low Input Power Auto Shutdown: 40V DC

Thermal Shutdown: 149°F (65°C)

Surge Peak Output Power: 6000W

Cooling Fans: Auto temperature controlled

Inverter Dimensions: 9.3"x18.25"x4.37" (236mm x 463mm x 111mm)

Unit Weight: 12.13 lbs. (5.5KG)

Operating Temperatures: 23°F to 104°F (-5°C to 40°C)

Storage Temperatures: -22°F to 158°F (-30°C to 70°C)

Working Humidity: 20-90% Relative Humidity (RH) (Non-condensing)

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**EPEQ™ ELECTRIFIED POWER
EQUIPMENT™****EXCLUDES
ELiMENT™ BATTERY****VANAIR® VANTAGE
WARRANTY****ALL WARRANTY OR
RETURNS MUST BE
PRE-AUTHORIZED PRIOR
TO PERFORMING
ANY WARRANTY WORK.****(844) VAN - SERV****SERVICE@VANAIR.COM****PARTS@VANAIR.COM****10896 W. 300 N.
MICHIGAN CITY, IN 46360****(800) 526-8817****EPEQ.COM****EFFECTIVE: MAY 20, 2022**

This limited warranty supersedes all previous Vanair® warranties and is exclusive with no other guarantees or warranties expressed or implied.

LIMITED WARRANTY—Subject to the expressed terms and conditions set forth below, Vanair® Mfg., Inc. ("Vanair"), of Michigan City, Indiana (USA), warrants to the original retail purchaser of new Vanair® equipment that such equipment is free from defects in materials and workmanship when shipped by Vanair®.

For warranty claims received by Vanair® within the applicable warranty periods described below, Vanair® will repair or replace any warranted equipment, parts or components that fail due to defects in material or workmanship or refund the purchase price for the equipment, at Vanair's discretion. Vanair® is not responsible for time or labor to gain access to the machine to perform work. WARRANTY WILL BE VOID IF GENUINE VANAIR PARTS AND FLUIDS ARE NOT USED.

Vanair® must be notified in writing within thirty (30) days of any such defect or failure. All warranty or returns must be pre-authorized in writing prior to performing warranty work. Call Vanair® for process and forms. Vanair® will provide instructions on the warranty claim procedures to be followed.

Warranty will commence upon receipt of the Warranty Registration Card. If the Warranty Registration Card is not received within six (6) months of shipment from Vanair®, the warranty commencement date shall be thirty (30) days from the date of shipment from Vanair®. Records of warranty adherence are the responsibility of the end user.

1. Inverters: 1 Year Parts / 1 Year Labor
2. Converters: 1 Year Parts / 1 Year Labor
3. Chargers: 1 Year Parts / 1 Year Labor
4. Electric Motors: 1 Year Parts / 1 Year Labor
5. EPEQ™ Lithium Welder: 1 Year Parts / 1 Year Labor
6. Alternators: 1 Year Parts / 1 Year Labor
7. Compressor Air End:
 - Rotary Screw: Lifetime with Vanair® Authorized Service Kits and Lubricants : 3 Years Labor
 - Reciprocating: 3 Years Parts / 1 Year Labor
 - Scroll: 1 Year Parts / 1 Year Labor
8. Hydraulic Pumps/Motors: 2 Years Parts / 1 Year Labor
9. 1 Year Parts/Labor on the following:
 - All electronics and controls including, but not limited to:
 - (i) I/O Boards
 - (ii) Modules
 - (iii) Panel Boxes
 - (iv) Instrumentation
 - (v) Clutches
 - (vi) Solenoids
 - (vii) Running Gear/Trailers
 - (viii) Cooler Cores and Fans
 - (ix) Battery Management Systems and Controllers

This Limited Warranty shall not apply to:

1. Consumable components, such as: shaft seals, valves, belts, filters, capacitors, contactors, relays, brushes, wire or parts that fail due to normal wear and use.
2. Items furnished by Vanair®, but manufactured by others, such as engines and trade accessories (these items are covered by the manufacturer's warranty, if any).
3. Equipment that has been modified by any party other than Vanair® or equipment which has not been used and maintained in accordance with Vanair's specifications.

4. Equipment which has been improperly installed and/or improperly operated, based upon Vanair's specifications for the equipment or industry standards.

5. Equipment installed by non-authorized or third party personnel. Vanair® products are intended for purchase and use by commercial/industrial users and persons trained and experienced in the use and maintenance of industrial equipment.

In the event of a warranty claim covered by this Limited Warranty, the exclusive remedies shall be, at Vanair's sole discretion: (i) repair; or (ii) replacement; (iii) where authorized in writing by Vanair® in appropriate cases, the reasonable cost of repair or replacement at an authorized Vanair® service facility; or (iv) payment of (or credit for) the purchase price (less reasonable depreciation based upon actual use) upon return of the equipment at the warranty claimant's risk and expense. Vanair® will pay standard ground freight for any warranty item shipped to and from Vanair® or (Vanair® designated facility) within the first year of the applicable warranty period. Any additional expedited freight cost is the responsibility of the purchaser.

TO THE GREAT EXTENT PERMITTED BY APPLICABLE LAW, THE REMEDIES PROVIDED HEREIN ARE THE SOLE AND EXCLUSIVE REMEDIES APPLICABLE TO THE VANAIR® EQUIPMENT. IN NO EVENT SHALL VANAIR® BECOME LIABLE FOR DIRECT, INDIRECT, SPECIAL, PUNITIVE, INCIDENTAL OR CONSEQUENTIAL DAMAGES (INCLUDING LOSS OF PROFIT OR LOST BUSINESS OPPORTUNITY), WHETHER BASED ON CONTRACT, TORT OR ANY OTHER LEGAL THEORY. IN NO EVENT SHALL VANAIR® BECOME OBLIGATED TO PAY MORE ON ANY WARRANTY CLAIM THAN THE PURCHASE PRICE ACTUALLY PAID BY THE ORIGINAL RETAIL PURCHASER.

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Some states in the United States of America do not allow limitations of how long an implied warranty lasts, or the exclusion of incidental, indirect, special or consequential damages, and as such, the above limitations and exclusions may not apply to you. This warranty provides specific legal rights. Other rights may be available to you, but may vary from state to state.

In Canada, legislation in some provinces provides for certain additional warranties or remedies other than as stated herein, and to the extent that they may not be saved, the limitations and exclusions set out forth above may not apply. This Limited Warranty provides specific legal rights, and other rights may be available, but may vary from province to province.

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