



Manufacturer of Dimensions™ Inverters
4467 White Bear Parkway
St. Paul, MN 55110
Phone: 651-653-7000 Fax: 651-653-7600
E-mail: inverterinfo@sensata.com
Web: www.dimensions.sensata.com

120015D

OWNERS MANUAL

May 2009

ISO 9001:2000 Certified Company

DIMENSIONS™

DC to AC Power Inverters

Models

24/3000H-3PH

24/4500H-3PH

24/6000H-3PH

Including Options:

R6: Remote switch 24Vdc

**OWNERS MANUAL
FOR SENSATA TECHNOLOGIES
INVERTER MODELS**

24/3000H-3PH
24/4500H-3PH
24/6000H-3PH

Table of Contents

	<u>Page</u>
1. General	2
2. Description	2
3. Installation	2
4. Start Up/Operation.	4
5. Troubleshooting.	4
6. Installation Figure 1.	5
7. Limited Warranty	6

1. GENERAL

1.01 Dimensions™ inverters have been designed and manufactured for many user applications and long life. They utilize patented construction methods and high technology electronic parts and circuitry.

1.02 The inverter is powered by a 24 volt auxiliary battery. The remote On/Off control circuitry requires + 12 volts to operate.

1.03 CAUTION: Inverters produce hazardous voltages, to avoid risk of harm or fire the unit must be properly installed.

There are no user serviceable parts inside, do not remove the cover.

CAUTION: The inverter should not be mounted in a location that may be exposed to rain or spray.

CAUTION: The inverter should not be installed in a zero clearance enclosure.

CAUTION: Damage to the inverter will occur if correct polarity is not observed when installing the DC input cables.

CAUTION: Damage to the inverter will occur if an external AC power source is applied to the inverter's AC output or it's hardwire output.

CAUTION: The inverter contains a circuit breaker and capacitor that may produce a spark. Do not mount in a confined battery or gas compartment.

CAUTION: Working in the vicinity of lead-acid batteries is dangerous. Batteries generate explosive gases during operation. There is a risk of acid exposure. There is also a risk of high current discharge from shorting the battery that can cause fire and explosion.

CAUTION: Be sure the inverter is turned "OFF" during installation.

2. DESCRIPTION

2.01 The inverters converts 24VDC to 220 VAC, 3 phase; or 220 VAC single phase; or 120 VAC, single phase; all at 60 HZ, having a quasi-sine wave form.

2.02 The inverters have internal protection against output short circuit, output overload and high temperature conditions. Also, there are thermally controlled cooling fans.

2.03 The inverters are designed to operate almost any 60 HZ appliance, equipment or tool within their voltage, phase and power ratings that does not require a pure sine waveform.

3. INSTALLATION

3.01 The following instructions should be thoroughly read and understood before installation.

3.02 CAUTION: Inverters produce hazardous voltage, and to avoid risk of harm or fire the unit must be properly installed.

CAUTION: The inverter should not be mounted in a location that may be exposed to rain or spray.

CAUTION: The inverter should not be installed in a zero clearance enclosure.

CAUTION: When working near batteries, safety goggles should be worn.

CAUTION: Be sure the inverter is turned "OFF" during installation.

NOTE: All wiring must follow the National Electric Code, provincial or other codes in effect at the time of installation, regardless of suggestions in this manual. All wires should be copper conductors.

3.03 Mounting

3.03.1 Locate a suitable, secure flat mounting surface as close to the 24 volt auxiliary batteries as possible without being in the same air tight compartment. The maximum recommended distance between the mounting location and the battery is 10 feet.

3.03.2 The location should provide adequate ventilation and clearance to maintain room temperature while the unit is operating. At least 1/2 inch of clearance is required on all sides.

3.03.3 Secure the unit with 1/4" screws or bolts in the mounting holes on the legs of the unit.

3.04 Chassis Bonding Lug - FIG. 1

3.04.1 Connect a #8 gauge or greater wire between the bonding lug on the inverter and the system ground or vehicle chassis.

3.05 DC Wiring - FIG. 1

3.05.1 CAUTION: Assure that hydrogen gas does not accumulate near the battery by keeping the area well ventilated. A spark may result when connecting the final battery wiring due to initial charging of the internal input capacitor.

3.05.2 Use stranded copper cable between the battery and the inverter as indicated. Keep the distance to less than 10 feet. A line fuse must be installed between the battery and the inverter. UL requires that the fuse be within 18 inches of the battery.

3.05.3 Use only an approved fuse holder with a U.L. listed fuse as indicated above.

3.05.4 Using smaller input cable or longer length will greatly degrade the inverter peak performance.

IMPORTANT NOTE FOR VEHICLE

INSTALLATION: Do not use the vehicle chassis as the negative return in place of a return cable. Use the same size cable as the positive connection and run directly to the battery.

3.05.5 Install the cables at the battery, inverter and then fuse holder. Make sure that clean, tight connections are made. Use care not to touch the positive and negative cables together. A violent spark will result and could result in exploding batteries and fire.

3.05.6 The battery input terminals are located in the wiring compartment. A mounting spark may result when connecting the battery wire, due to an initial charging of the internal input capacitor.

3.05.7 CAUTION: Connecting the inverter to the wrong polarity of the battery will cause damage that is not covered under warranty.

3.06 Remote ON/OFF Switch - FIG. 1

NOTE: The inverter will not switch on unless the violet wire has +12 VDC applied to it.

3.06.1 All material used for the remote switch should be U.L. listed and installed per low voltage, Class 2, wiring code. The remote switch hookup can not provide additional current to operate a indicating lamp.

3.06.2 The remote switch should be single pole and have at least a 5 amp rating, such as Leviton No. 1330-2. The wire used should be at least 18 gauge.

<u>Cable gauge</u>	<u>Line fuse</u>	
24/3000H-3PH	2/0	400 amp
24/4500H-3PH	3/0	500 amp
24/6000H-3PH	4/0	600 amp

3.06.3 The switch should be mounted at a convenient location in a listed outlet box with approved strain relief.

3.06.4 The remote switch should be connected to the violet wire marked "Remote Switch Hookup" in the wiring compartment. Positive (+)12 battery voltage must be connected to the other side of the switch. Cable clamp strain relief should be used to secure the field wires.

3.06.5 Units with a model designation ending in "R6" have the remote On/Off switch circuit modified to accept +24 VDC instead of +12 VDC. The remote switch must be connected to the violet wire marked "Remote Switch Hookup".

3.07 220Y/120 VAC Output

3.07.1 CAUTION: Do not connect another source of AC power directly to the output of the inverter. This will result in damage to the inverter that is not covered under warranty!

3.07.2 The A.C. output is presented at the A.C. wiring compartment. The 3 phase outputs are labeled "L1", "L2", "L3". There is also an A.C. neutral labeled "N" and a chassis ground labeled "G".

3.07.3 To obtain 220 VAC, 3 phase output, a connection must be made to L1,L2, and L3.

3.07.4 To obtain 220 VAC, single phase output, a connection should be made to any two of the hot leads, as L1 and L2, or L1 and L3, or L2 and L3.

3.07.5 To obtain 120 VAC, single phase output a connection. should be made to any one hot lead and to AC neutral "N"; as L1 and N, or L2 and N, or L3 and N.

3.07.6 Remote AC outlets should be mounted at a convenient location in a listed outlet box with approved strain relief, if used.

4. OPERATION

4.01 To operate the inverter, switch the output circuit breaker switch to "ON". Also switch "ON" the inverter on/off switch and the remote on/off switch (if used).

5. TROUBLESHOOTING

5.01 Sensata offers free phone consultation concerning installation or troubleshooting. Call the Customer Service Department at 800-553-6418 or 651-653-7000; fax: 651-653-7600.

e-mail: inverterinfo@sensata.com

NOTE: Since the inverter has a quasi-sine waveform, a TRUE RMS volt meter is required for an accurate reading. Other volt meters that use averaging circuitry will give incorrect readings.

5.02 If the inverter fails to operate, use the following trouble-shooting procedure.

5.02.1 Connect a 100 watt light bulb to each 120 VAC phase and disconnect all other output wiring.

5.02.2 Make sure the inverter is "ON" and the output circuit breaker is also "ON".

5.03.3 Observe the fault indicating lights on the front of the inverter.

a) If the low input voltage light is lit, turn inverter "Off" for 5 seconds, then turn "On" again. If the light again turns on, check wiring, DC source voltage, battery condition and line fuse.

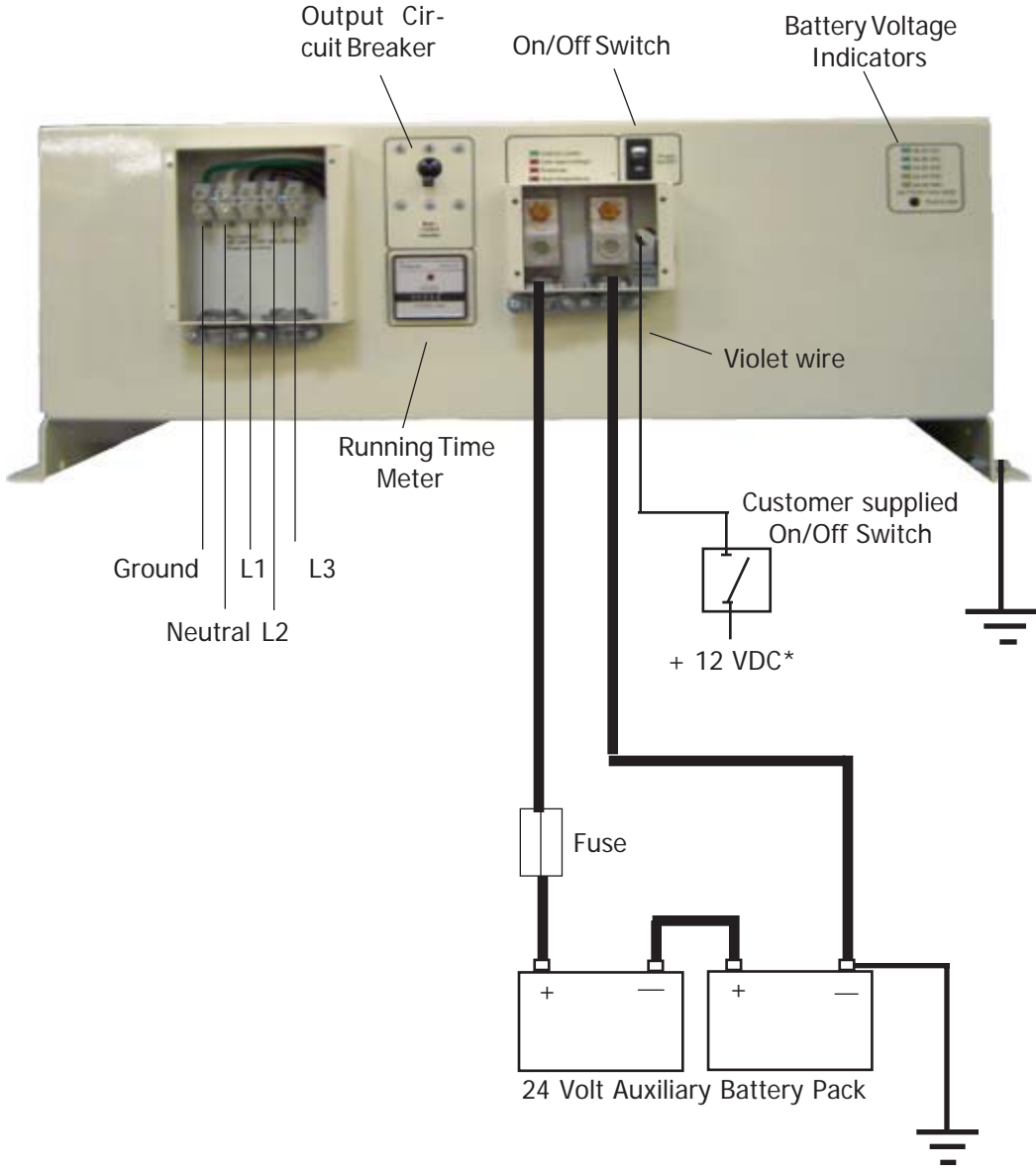
b) If the overload light is lit, check output wiring for short circuit. Otherwise, the load is too large for the power rating of the inverter.

c) If the high temperature light is lit, the inverter must be left cool to 40° C (104° F). Check to see that the inverter is not in a closed compartment and that the fans are not blocked.

5.03.4 If the above steps are completed and the inverter still will not operate satisfactorily call Sensata for a return authorization number.

FIGURE 1

3 PHASE INVERTER



* +24 V for units with a model designation ending in "R24".

Limited Warranty Terms & Conditions

SHIPPING TERMS: F.O.B. St. Paul Minnesota. Freight prepaid and billed, subject to prior credit approval.

MINIMUM ORDER: \$50.00 Net Price

LOSS OR DAMAGE: Loss or damage in transit are the responsibility of the carrier. Any claim should be filed with the delivering transport company. Invoice, Bill of Lading and Delivery receipt with damage noted therein must accompany any claims for freight damage. Claims for shortage and lost shipments must be made in writing to Sensata Technologies, Power Controls White Bear, St. Paul, MN within 10 days of date of shipment. Claims not reported within this time frame will not be honored.

PRICES: Prices are subject to change without notice. All orders are subject to acceptance at the factory. We reserve the right to invoice prices in effect at time of shipment.

TERMS: Net 30 days with approved credit, credit card or C.O.D.

RETURN GOODS POLICY:

- No returned materials will be accepted without an accompanying Returned Materials Authorization Number (RMA) from the factory. The RMA number must be clearly printed outside the inverter box.
- Credit will be issued for returned goods to the original purchaser within 60 days of purchase, provided the inverter is returned to Sensata unused and not mounted. The amount of credit will be issued at Sensata's discretion based on the condition of the product.
- Customer must be in good standing with Sensata Technologies.
- Inverters that are discontinued, high-voltage (over 24vdc), special-order or used are excluded and will not be eligible for credit. Non-inverter items such as cable assemblies, fuses and fuse holders, will not be eligible for credit.
- Support components supplied by Sensata vendors will be covered under that manufacturer's credit return policy.
- Customer pays return freight.

PLEASE SHIP AUTHORIZED RETURNS TO:

Sensata Technologies / Power Controls White Bear / 4467 White Bear Parkway / St. Paul, MN 55110
Return Freight Prepaid

LIMITED WARRANTY:

Sensata Technologies extends the following warranty to the original purchaser of those goods subject to the qualifications indicated. Sensata warrants to the original purchaser for use that the goods or any component thereof manufactured by Sensata will be free from defects in workmanship from the date of purchase for the period listed on the product label, provided such goods are installed, maintained and used in accordance with Sensata and the original manufacturer's written instructions. Damages caused by the misuse, undue care or obvious wear through use will not be covered by this warranty.

Components not manufactured by Sensata, but used within the assembly provided by Sensata, are subject to the warranty period as specified by the individual manufacturer of said component, provided such goods are installed, maintained and used in accordance with Sensata and the manufacturer's written instructions.

Sensata's sole liability and the Purchaser's sole remedy for a failure of goods under this limited warranty and for any and all claims arising out of the purchase and use of the goods, shall be limited to the repair or replacement of the goods that do not conform to this warranty.

To obtain repair or replacement service under the limited warranty, the purchaser must contact the factory for a Return Material Authorization (RMA). Once obtained, send the Return Material Authorization Number along with the defective part or goods to: Sensata Technologies, Power Controls White Bear, 4467 White Bear Parkway, St. Paul, MN 55110, Return Freight Prepaid.

THERE ARE NO EXPRESS WARRANTIES COVERING THESE GOODS OTHER THAN AS SET FORTH ABOVE. THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE LIMITED IN DURATION TO ONE YEAR FROM DATE OF PURCHASE.

SENSATA TECHNOLOGIES ASSUMES NO LIABILITY IN CONNECTION WITH THE INSTALLATION OR USE OF THE PRODUCT, EXCEPT AS STATED IN THIS LIMITED WARRANTY. SENSATA TECHNOLOGIES WILL IN NO EVENT BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES.

WARNING: LIMITATIONS ON USE: DIMENSIONS[®] brand products are not intended for use in connection with Life Support Systems and for Avionic use. Sensata Technologies makes no warranty or representation in connection with their products for such uses.