



Sensata
Technologies

122225B

Manufacturer of Dimensions™ Inverters

Web: www.magnum-dimensions.com

OWNERS MANUAL

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ISO 9001:2015 Certified Company

DIMENSIONS™
DC to AC Power Inverters

OWNERS MANUAL for Model:

24Z8NV

Form 122225

OWNERS MANUAL FOR SENSATA TECHNOLOGIES DIMENSIONS INVERTERS

Model 24Z8NV

Table of Contents

| | Page |
|----------------------------------|------|
| 1. General | 2 |
| 2. Description | 2 |
| 3. Installation | 3 |
| 4. Start Up/Operation. | 4 |
| 5. Troubleshooting. | 4 |
| 6. Installation Figure | 5 |

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 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 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 its hardwire output.

CAUTION: The inverter contains a circuit breaker and a 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 explo-

sive 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's circuit breaker or fuse are turned "OFF" during installation.

2. DESCRIPTION

2.01 The inverter converts 24 VDC to a 120 VAC, 60 HZ, having a pure sine wave form signal output.

2.02 The inverter has a controlled frequency at 60 HZ \pm 0.6Hz.

2.03 The inverter has internal protection against output short circuit, output overload and high temperature conditions.

2.04 The inverter is designed to operate any 120 VAC, 60 HZ, single phase appliance, equipment or tool within its power ratings.

2.05 The inverter has a ventless cover to protect the inside electronics from the elements and is designed to be used on scissor lift applica-tions.

2.06 The inverter is GFCI protected but does not have standard GFCI outlets. The 120 VAC, 60 Hz output is supplied by a female receptacle cord attached to the unit.

2.07 The inverter does not have a "On"/"Off" switch. The unit must be controlled by a remote switch, a violet wire is attached to the unit for this purpose.

Inverter Ratings

| Inverter | Input | | Output | |
|--------------|-------|----------|--------|---------|
| <u>Model</u> | (VDC) | (ADC) | (VAC) | (Watts) |
| 24Z8NV | 25.2 | Up to 40 | 120 | 800 |

3. INSTALLATION

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

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

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 receptacle cord.

CAUTION: Be sure that the inverter's circuit breaker or fuse (if needed) are 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 battery as possible without being in the same air tight compartment. The maximum recommended distance between the mounting location and the battery is 20 feet. See DC Input Cable Lengths chart.

3.03.2 The location should have 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 #8 or larger screws or bolts in the mounting slots on the flanges of the chassis.

3.04 Chassis Bonding Lug - FIG. 1

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

3.05 Battery Wiring - FIG. 1

3.05.1 CAUTION: Make sure that hydrogen gas does not accumulate near the battery by keeping the area well ventilated. A spark may

result when connecting the battery wiring due to an initial charging of the internal input capacitor.

3.05.2 Use stranded copper wire between the battery and inverter as indicated. A fuse must be installed between the battery and the inverter. U.L. requires that the fuse be within 18 inches of the battery.

DC Input Cable Lengths (maximum) and Fusing Guide

| | <u>Distance(feet)</u> | |
|--------------|-----------------------|-------------|
| <u>Model</u> | <u>1 to 20</u> | <u>Fuse</u> |
| 24Z8NV | 8 AWG | 100 A |

3.05.3 NOTE: 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 wire as the positive cable and run directly to the battery.

3.05.4 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 wires together. This will result in a violent spark and could result in exploding batteries and fire.

3.05.5 The battery input terminals are attached to the unit : Red (+) and Black (-) cable, having 5/16" ring terminals. A spark may result when connecting the battery wire, due to an initial charging of the internal input capacitor.

3.05.6 CAUTION: Damage to the inverter will occur if correct polarity is not observed. This damage is *NOT* covered by warranty.

3.06 Remote Switch for Inverter Operation - Fig. 1

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 On/Off switch and in-line fuse to be purchased locally at an electrical supply outlet.

3.06.2 A 3 Amp rated remote switch must be connected to the violet wire marked "Remote On/Off" coming out at front of the inverter. Connect the violet wire to the load side of the remote switch. The line side of the switch must be connected to the DC power source with a 3 Amp fuse within 18" of the source. The cable clamp strain relief should be used to secure the field wires.

3.06.3 The switch should be mounted in a convenient location in a listed outlet box with approved strain relief. The in-line fuse to be mounted on appropriate fuse holder.

3.06.4 NOTE: A remote switch must be installed to operate the inverter. You may use several switches or relays in parallel in lieu of one remote switch.

3.07 120 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 120 VAC output is provided at the GFCI protected female receptacle cord attached to the inverter.

4. START UP / OPERATION

4.01 To operate the inverter, turn the remote switch to "On." Make sure that the output breaker is reset.

4.02 Turn the switch to "Off" when the inverter is not in use.

5. TROUBLESHOOTING

5.01 Sensata offers free phone consultation concerning installation or troubleshooting. Call the Customer Service Department at:

1-800-553-6418 or 1-651-653-7000

Fax: 651-653-7600;

e-mail: inverterinfo@sensata.com

5.02 If the inverter fails to operate correctly, use the following troubleshooting procedure.

5.02.1 Connect a 100 watt light bulb to the inverter output.

5.02.2 Make sure the inverter is turned "On", the output circuit breaker is reset and that the voltage is at least 24 VDC at the DC input terminals. If not, check DC wiring connections and the line fuse.

5.02.3 Check the connection to the remote switch, +24 VDC **must** be present at the violet wire for the unit to operate. If not, check any in-line fuses in the remote switch circuit.

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

a) The Low battery light indicates a low battery condition. Switch the inverter "Off" for 5 seconds, then "On" again. The light coming on again indicates a fault in the battery wiring, battery capacity and voltage, or the fuse.

b) The Overload light indicates an output wiring short circuit or a load that is too large for the power rating of the inverter. Switch the inverter "Off," remove the short circuit or excessive load from the output, and then switch the inverter back "On".

c) The High temp. light indicates the inverter has overheated. The unit will automatically turn back on when it has cooled to 40°C (104°F).

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

FRONT VIEW

WIRING DIAGRAM FOR MODEL 24Z8NV

Note 1: Remote switch to be connected to +24 VDC.

