



Owner's Manual

Series 2000
Inverter / Power Backup Systems

Upswung.com

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Use this manual with the following models only.

Model 2000-080, 2000-081, 2000-082 with circuit board 2352-010.

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INTRODUCTION

What is the Model 2000 Inverter?

The DKS Series of Inverter / Power Backup systems are a unique style of battery backup devices. They are designed to provide an access control system with 120 volt AC power when the primary AC supply voltage source has failed. The Model 2000 will allow the access control system to maintain normal operation for an extended period of time.

Most vehicular gate operator battery backup systems are designed to provide a one time open function for the gate operator. These systems employ a controller, DC motor and batteries. They monitor the supply voltage and simply run the gate to the open position using the DC motor upon loss of AC power – a convenience device really. In addition, all access system components (telephone entry system, card readers, RF controls, loop detectors, entrapment prevention devices, etc.) do not function during this open cycle. These type battery backup systems are incapable of maintaining normal gate and access system operation during power outages.

The DKS Series 2000 is dramatically different than most gate operator battery backup systems. This is a true backup system designed to maintain power for all components of the access control system. During a loss of primary supply voltage, the Series 2000 converts DC battery power and provides 120 VAC operating power to multiple (up to six) gate operators and all other access system components such as the loop detectors, telephone entry system, card access system, RF controls, etc. This capability provides normal access control system operation during a power outage. All access system devices remain operational and all gate operator safety related and entrapment prevention devices continue to function normally.

How does the system work?

The DKS Model 2000 monitors the AC supply voltage and acts as a battery charger when AC power is present. This allows the system to maintain proper battery voltage without over-charging the batteries through its three-stage battery charging system. Upon a loss of AC power, the Model 2000 switches to inverter mode (32 milliseconds) converting the DC battery power to AC power to maintain operating voltage to the entire access control system. The Model 2000 will continue to provide AC operating power for an extended period of time. The length of time that the system can provide power is dependent on many factors including the number of devices connected to the system, access system usage, battery size, wire size, wire run distance, temperature, etc., but it is not unusual to receive 1-2 hours of continuous operation for a typical vehicular access control system.

While the system is in inverter mode, battery power is continuously monitored. When the Model 2000 determines that battery power is reaching critical levels, the system will sequentially open up to six gate operators in 30-second intervals, and will hold the gates open until primary power is restored. This prevents the vehicular access gates from blocking the roadway when battery power is depleted. Upon return of AC power, the model 2000 will initialize the gate operators to return the gate access system to normal operation.

Primary AC supply voltage is routed directly into the Model 2000. The system provides six 20-amp circuit breakers for high voltage power distribution and in fact acts as a power distribution sub-panel. There are three different models available to meet the access control system requirements:

- 1500 Watt, 12.5 amp maximum output
- 2400 Watt, 20 amp maximum output
- 2600 Watt, 30 amp maximum output

GENERAL PRECAUTIONS

This manual contains important safety and operating instructions and specifications for all models of the DKS Inverter / Backup Power Systems. This manual is the property of the owner of the equipment and must be left in their possession after the installation of the product is complete.

- Before installing, connecting any wiring, or using the backup power supply, read all instructions and cautionary markings on (1) the inverter/charger, (2) the batteries and (3) all appropriate sections of this instruction manual.
- **CAUTION** - Do not install or connect batteries to this unit until instructed to do so. Failure to comply with this instruction can cause damage or complete failure of the inverter unit.
- **CAUTION** - To reduce risk of injury, use only deep-cycle lead acid batteries.
- Do not expose the inverter/charger to rain, snow or liquids of any type. Do not disassemble the inverter/charger; take it to a qualified service center when service or repair is required. Incorrect re-assembly may result in a risk of electric shock or fire.
- To reduce risk of electric shock, disconnect all wiring from the inverter/charger before attempting any maintenance or cleaning. Turning off the inverter will not reduce this risk.
- **WARNING - WORKING IN VICINITY OF A LEAD ACID BATTERY IS DANGEROUS. BATTERIES GENERATE EXPLOSIVE GASES DURING NORMAL OPERATION.**
- Never charge a frozen battery.
- Be extra cautious when working with metal tools on, or around batteries. The potential exist to drop a tool and short-circuit the batteries or other electrical parts resulting in sparks that could cause an explosion.
- This backup power system is to be used with batteries that supply a nominal voltage of 24 VDC. This is provided by connecting two 12-volt batteries in series.
- **GROUNDING INSTRUCTIONS** - This backup power supply must be connected to a grounded, permanent wiring system. All installations should comply with all national and local codes and ordinances.

PERSONAL PRECAUTIONS

- Someone should be within range of your voice to come to your aid when you work near batteries.
- Have plenty of fresh water and soap nearby in case battery acid contacts skin, clothing, or eyes.
- Wear complete eye protection and clothing protection. Avoid touching eyes while working near batteries. Wash hands when done.
- If battery acid contacts skin or clothing, wash immediately with soap and water. If acid enters eyes, immediately flood eyes with running cool water for at least 15 minutes and get medical attention immediately.
- Baking soda neutralizes lead acid battery electrolyte. Keep a supply on hand in the area near the batteries.
- NEVER smoke or allow a spark or flame in vicinity of the batteries.
- Be extra cautious when working with metal tools on and around batteries. The potential exists to short-circuit the batteries or other electrical parts that may result in a spark that could cause an explosion.
- Remove personal metal items such as rings, bracelets, necklaces, and watches when working with electrical circuits. These items can cause a short-circuit current high enough to weld a ring, or the like, to metal causing severe burns.
- If a remote or automatic start system is used, disable the automatic starting circuit and/or disconnect the system from the backup power supply while servicing to prevent accidental starting during servicing.

