AC/DC Din Rail UPS System
Single Phase Input, Single Phase Output

Uninterruptible

Power

Supply

600VA UPS System – AC/DC Din Rail Mount

Line Interactive (PWM): 600VA

User Manual

SAVE THESE INSTRUCTIONS

- This manual contains important instructions for the DR UPS systems and should be followed during installation and maintenance of the UPS and batteries.
- The UPS contains voltages that are potentially hazardous. Please contact our dealers or qualified personnel for service.
- Servicing of the batteries should be performed or supervised by personnel knowledgeable with batteries and the required precautions. Keep unauthorized personnel away from batteries.
- When replacing batteries, replace with the same model number, type and rating.
- **CAUTION:** Do not dispose of battery or batteries in a fire. The batteries may explode.
- **CAUTION:** Do not open or mutilate the battery or batteries. Released electrolyte is harmful to the skin and eyes. It may be toxic.
- **CAUTION:** A battery can present a risk of electrical shock and high short circuit current. The following precautions should be observed when working on or with the batteries.
  - Remove watches, rings, or other metal objects.
  - Use tools with insulated handles.
  - Wear rubber gloves and boots.
  - Do not lay tools or metal parts on top of batteries.
  - Disconnect charging source prior to connecting or disconnecting battery terminals.
  - Determine if the battery is inadvertently grounded. If inadvertently grounded, remove source of ground. Contact with any part of a grounded battery can result in electric shock. The likelihood of a shock will be reduced if grounds are removed during installation and maintenance (applicable to a UPS and a remote battery supply not having a grounded supply circuit).
- **CAUTION:** To ensure the safety and performance of the UPS, never load the UPS with a hair dryer, heater, laser printer or other types of inductive loads.

INTRODUCTION

The AC/DC UPS DR is a Line Interactive UPS system that includes the newest and latest technology enhancements. The Line Interactive technology with AVR function (on-line voltage boost-up & buck-down) allows for a wide input voltage range of 90 to 150VAC. The AC/DC UPS DR is ideal protection for modern point of sale equipment. With the utility power connected, the charger begins to operate immediately, charging the battery. After the UPS has been turned "On" it will protect the load from transients, spikes and other power aberrations. In the event of a blackout (or sever brownout) the UPS will automatically switch to back-up mode and maintain power to the load until the utility is restored or the battery reaches a low voltage state. The Low Battery indicator will turn "On" if and when the battery needs replacement. Also included, with our UPS systems, is a cyclic self-testing function to verify both the operation of the UPS and the condition of the battery.

The integrated DC power supply and terminal block configuration allows for complete versatility for today's Din Rail equipment.

Note: Interference to radio/TV might occur in a particular installation. If this UPS causes interference to radio or television reception, which can be determined by turning the UPS off and on, the user is encouraged to try to correct the interference by one or more of following measures:

1. ***Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.***
2. ***Increase the separation between the equipment and the receiver.***
3. ***Re-orientate the receiving antenna.***

SAFETY INSTRUCTIONS

1. The UPS has its own internal energy source (battery), therefore the output receptacles may have electricity present even though the UPS is disconnected from the utility power.
2. The DC voltage provided from the internal battery is 12VDC.
3. Isolated Ground Wire refers to the bare wire connecting electrical equipment to ground. The isolated ground wire (green or green with yellow stripe) must meet national wire requirements.
4. The power plug to connect with the UPS has to be equipped with a ground plug.
5. Battery must be replaced or serviced by qualified, knowledgeable, personnel.
6. Replacement battery must be the type, quantity and configured the same as the original(s).
7. To avoid explosions, keep open flame and other heat emitting sources away from battery.
8. Do not disassemble or damage the battery. The electrolyte is toxic and especially harmful to the eyes and skin.
9. The battery contains high voltages and currents that are dangerous. To maintain secure operation and performance of the UPS, the user must exercise basic and regular maintenance. Please follow the precautions below:
   - Do not remove the UPS cover unless authorized by factory. Removing the cover will void the warranty.
   - The UPS can only be connected to a 2-pole/3 wire plug.
   - Do not install the UPS in an environment with excessive humidity.
   - Do not allow liquids or foreign objects to get inside the UPS.
   - Allow for air circulation through the UPS. A minimum clearance of 10cm is required on all sides.
   - Do not load the UPS with appliances such as a hair dryer, heater, vacuum, kettle, etc.
   - Keep the UPS away from direct sunlight and heat-emitting sources.
   - Install the UPS as close as possible to the load for maximum protection.
10. Storage Requirements
    - Recharge the UPS batteries every 6 months for no less than 8 hours at a time.
    - Under a high ambient temperature environment, recharge the UPS batteries every 3 months for no less than 8 hours at a time
11. High Voltage Risk:
    - High voltages might exist between the battery terminal and the grounding system, if the battery circuit has not been disconnected from the UPS circuit. Please check this voltage before connecting.
    - Disconnect the battery wires before proceeding with maintenance. High voltages may be present between the UPS internal components and battery even after the input power is disconnected.

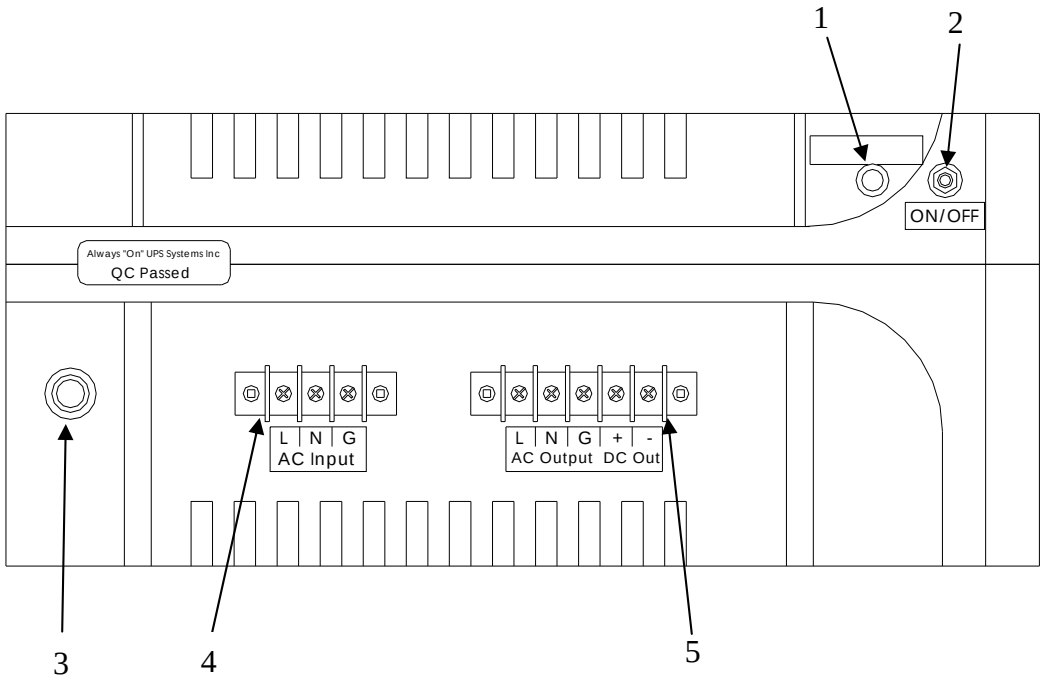
PRESENTATION

Side Panel

1. “ON-LINE / BACKUP / OVERLOAD" indicator (GREEN LED)
2. "ON/OFF/TEST/SILENCE" button

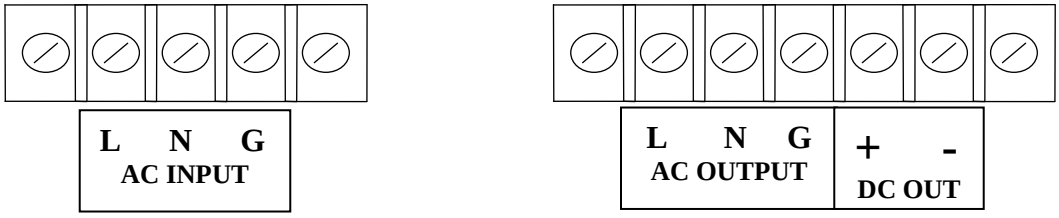
Press and hold the button for more than 3 seconds to turn the UPS “ON” or “OFF”, press and hold the button less than 1 second to activate a self-test, or silence the back up alarm.

3. Breaker
4. AC Input Terminal Block
5. AC/DC Output Terminal Block



Side Panel of Din Rail Mount UPS

Input and Output Terminal Block Connections



Side Mount Input and Output Terminal Blocks

INSTALLATION

Unpacking and Inspection

Examine the packaging for damage. Inform the carrier immediately if and/or when damage is noticed. Retain the packaging for future use.

Placement

Install the UPS in a protected area with adequate air flow and free of excessive dust. Do not operate the UPS where the temperature and humidity is outside the specified limits.

Connect to Utility

Connect the AC input power connector (Included) to utility power.

Charging the Battery

The UPS charges its battery whenever the UPS is in LINE mode. For best results, charge the battery for 4 hours initially before connecting the load.

Connecting the Loads

Plug the loads into the output connectors on the rear of the UPS. To use the UPS as a master on/off switch, make sure all of the loads plugged into the UPS are switched on.

OPERATION

Switching “On” the UPS

With the UPS plugged in, and utility power present, press and hold the On/Off/Test/Silence Button more than 3 seconds or until the "LINE NORMAL" LED is lit, this will switch the UPS “On”. The UPS will perform a self-test every time it is turned “On”.

Note: ***When switched off, and still plugged into utility, the UPS maintains the battery charge and will respond to commands received through the computer interface port.***

Switching “Off” the UPS

Press and hold the On/Off/Test/Silence Button for more than 3 seconds, or until the Line Normal or Back-Up LED turns off.

Self-Test

Use the self-test to verify both the operation of the UPS and the condition of the battery. When normal utility power is present, push the On/Off/Test/Silence Button for less than 1 second and the UPS will perform a self-test function. During the self-test, the UPS operates in back-up mode.

Note: ***During the self-test, the UPS briefly operates the loads with battery power (the Status LED flashes). If the UPS passes the self-test, it returns to on-line operation. The Status LED stops flashing and remains illuminated. If the UPS fails the self-test it immediately returns to on-line operation and turns the Replace Battery LED on. The loads are unaffected when performing a self-test. Recharge the battery overnight and perform the self-test again. If the Replace Battery LED is still on, ask our nearest dealer to replace the battery.***

Silence the Alarm

In Back Up mode, push On/Off/Test/Silence Button for less than 1 second to silence the audible alarm. (The function is void when under condition of "LOW BATTERY" or "OVERLOAD")

Cold Start

When the UPS is off and there is no utility power, use the cold start feature to apply power to the loads from the UPS's battery. Press the ON/TEST button (see Front Panel section for location of the indicator) until the UPS beeps.

Shutdown Mode

In shutdown mode the UPS stops supplying power to the load, and waits for the return of utility power. If there is no utility power present, external devices (e.g., servers) connected to the computer interface can command the UPS to shutdown. This is normally done to preserve battery capacity after the graceful shutdown of protected servers. The UPS will scroll the front panel indicators sequentially when shutting down.

Green Function

In order to conserve battery power the UPS will automatically shutdown when in back-up mode, after 5 minutes, if the connected loads are operating at less than 20 watts.

- **To disable "GREEN FUNCTION" press and hold the "On" button during initial start-up for at least 3 seconds, until a beep-beep sound is heard.**

AUDIBLE ALARM

Back-Up (Slow Alarm)

When in back-up mode, the LED blinks and the UPS sounds an audible alarm. The alarm stops when the UPS returns to line normal operation. Press the On/Off/Test/Silence Button during back-up mode to silence the beeping.

Low Battery (Rapid Alarm)

In back-up mode, when the battery energy runs low, the UPS beeps rapidly until the UPS shuts down from battery exhaustion or returns to line normal operation.

Overload (Continuous Alarm)

When the UPS is overloaded (the connected load exceeds the maximum rated capacity of the UPS) the UPS sounds a continuous alarm to warn of an overload condition. Disconnect non-essential loads until the UPS stop the alarm, this will eliminate the overload.

BATTERY REPLACEMENT

Your battery should run anywhere from 3-5 years before it needs to be replaced.

Please follow the instructions below for easy, trouble free, battery replacement.

1. Turn the UPS off (follow procedure previously mentioned)
2. Unplug the UPS from utility power source and disconnect all connected loads.
3. Disconnect AC power cord from unit.
4. Turn unit upside down and using a phillips screw driver, unscrew the four (4) screws holding the top of the unit to the bottom. Put screws in a safe place for reassembly.
5. Holding the top together firmly with the bottom, turn the entire unit right side up.
6. Carefully lift top cover off and place it to the side. The connecting wires and electronics will be exposed. **Be careful not to touch any inner components when changing the battery**.
7. Remove the two (2) connecting wires from the battery.
8. You can now easily remove the battery from the unit

Caution: ***Do not dispose of battery in a fire.***
Caution: ***Do not attempt to open the battery.***
Caution: ***The following precautions should be taken when replacing the battery***

a) Remove watches, rings, etc…
b) Use tools with insulated handles

9. Place your new battery in the same position, direction and reconnect the wires. The red wire to the positive (+) pole and black wire to the negative (-) pole.
10. Please reverse steps 5, 4 and 3 (in that order) to reassemble the unit.
11. Please follow start-up instructions in order to properly reconnect your equipment.

TROUBLESHOOTING

Please follow the guidelines below for common problems:

- ✓ Check UPS input plug and wiring.
- ✓ Check UPS input voltage.

Please prepare the information as follows for service personnel:

- ✓ UPS model number and serial number
- ✓ Description of problem(s) in detail.

General Problems

Problems	Possible causes	Solution
UPS has no reaction while AC power is connected	Breaker on side panel open No AC input UPS fault Battery failure	Reset breaker Check AC power Call for service Call service center to replace batteries
UPS no reaction while AC power is connected, yet starts after pushing power on/off switch	Breaker on side panel open No AC input UPS AC detecting circuit fail	Switch breaker Check AC power Call for service
UPS goes into back-up mode while connected to AC power	Utility voltage or frequency abnormal UPS AC detecting circuit failure	Check AC power Call for service
Battery can not provide normal back-up power in the event of a blackout	Battery deteriorated Batteries not fully charged Battery charger damaged	Charge batteries and reset If that doesn't work call for service
After AC connected to UPS, alarm sounds short and fast beeps and UPS shuts down	Abnormal utility power	Check input power

STORAGE

Storage Conditions

Store the UPS covered and upright in a cool, dry location, with its battery fully charged. Before storing, charge the UPS for at least eight (8) hours. Remove any accessories in the accessory slot and disconnect any cables connected to the computer interface port to avoid the unnecessary draining of the battery.

Extended Storage

During extended storage periods in environments where the ambient temperature is -15 to +30°C (+5 to +86°F), charge the UPS‘s battery every 6 months.
During extended storage in environments where the ambient temperature is +30 to +45°C (+86 to +113°F), charge the UPS‘s battery every 3 months.

SPECIFICATIONS

UPC Order Code		825433 00861
INPUT	Capacity	600VA
	Voltage	120VAC nominal, +/-20%
	Frequency	50 or 60Hz +/- 10% (auto sensing)
	Input	Hard wire - Terminal Block
OUTPUT	Voltage (on battery)	120VAC +/-5%, Modified Sine Wave
	Frequency (on battery)	50 or 60Hz +/- 1Hz
	Auto Voltage Regulation (AVR Function)	Automatically regulates the output voltage to within +/-10% of nominal
	Terminal Block	Hard wire
	Transfer Time	4-6ms, including detection
PROTECTION and FILTERING	Spike/Noise Protection	YES
	Overload Protection	YES
	Short Circuit	Breaker protection or immediate shutdown
BATTERY	Type	Sealed, maintenance-free lead acid
	Typical Recharge Time	6 hours (to 90% of full capacity)
	Back up Time	10-15 minutes
PHYSICAL DATA	Net weight kg(lbs)	6.5(14.3)
	Shipping weight kg(lbs)	7.2(15.9)
	Dimension(mm)WxDxH	315x97x137
INTERFACE	LED Display	Normal / Backup / Overload
	Audible Alarm	YES
ENVIRONMENT	Elevation	3,500 meters max.
	Temperature range	0-40^{o}C
	Humidity	0-95% non-condensing
	Audible Noise	<40dBA (1 meter from surface)
SAFETY APPROVAL	Safety	cUL/UL 1778, CSA C22.2, CE
	EMI/RFI	FCC Class B
	Surge/Transient	IEEE C62.41 Category A

Specifications are subject to change without prior notice to reflect upgrades and improvements in technology.

DC Power Supply Specifications:

Output Voltage:	24VDC
Regulation:	+/- 1%
Ripple and Noise:	<150mV
Rated Current:	1.5A Continuous, 2 A Surge
Capacity:	58 Watts
Protection:	Overload, Over Voltage, Short Circuit

CONTACT INFORMATION

Additional Purchases or Upgrades

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QA / Warranty Questions

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Software Questions

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