

Data Sheet

UPStealth® 2 UPS 1000W & PIM



ZincFive

Introduction

We now live in an Always-On ITS world and Departments of Transportation throughout the U.S. and Canada have made a commitment to smarter, safer, greener Intelligent Transportation System (ITS) operation with the Nickel-Zinc battery-based UPStealth Uninterruptible Power Supply (UPS). UPStealth is an intelligent UPS designed by transportation experts for ITS requirements and utilizes transformational Nickel-Zinc (NiZn) battery chemistry to energize intersections and ITS equipment when utility power is lost.

As the fastest growing UPS for ITS, UPStealth offers transportation departments the opportunity to upgrade to an easy-to-install, self-maintained solution with superior performance, environmental and safety advantages over traditional battery backup solutions.

UPStealth 2 Benefits

Cabinet Optimization

- Cabinet space and thermal optimization

Transformational NiZn Batteries

- Superior performance, safety and environmental advantages over lead-acid

Simple Installation & Self Maintaining

- Innovative form factors
- No periodic maintenance

Active Power Supervision

- Intelligent two stage operation
- Modern power analysis

Lower Total Cost of Ownership

UPStealth 2 New Features

- Longer run-times
- Extensive event logging
- Simplified user interface
 - Innovative navigation dial
 - Large, bright display
 - Email messaging
- Remote firmware updates
- Browser-based software



UPStealth® 2 Power Interface Module (PIM)



UPStealth® 2 UPS 1000W

UPS Specifications

Input Power	
Input Voltage Range	120Vac Nominal 85-140Vac User Programmable
Input Current	15A max
Input Frequency	60Hz nominal ±10% (54-66Hz)
UPS Output	
Output Voltage	120Vac ±3%
Output Current	8.3A Typical
Output Power	1,000VA Typical
Output Frequency	60Hz ±0.5Hz
Output Waveform	Pure Sinewave
UPS Efficiency	97%
Environmental	
Operating Temperature Range	(-37°C to 74°C) (-34°F to 165°F)
Inverter Performance	
THD	<2%
Overload	2,000W Surge
System Switchover	
Operating Modes	Intelligent Two-Stage Operation Stage One: Line Conditioner, Waveform Monitoring and Switchover to Battery Backup Stage Two: Waveform Monitoring, Return to AC Power
Switchover Thresholds	AC Voltage: Programmable from 85-140Vac in 1V steps AC Waveform Analysis AC Frequency: 60Hz ± 6Hz
Transfer Time from AC Power to Battery Backup	Typical <8ms
Mechanical	
Size	3.6"H X 17"W X 11.6"D
Weight	12 lbs.
UPS Connection System	AC cable from PIM IEC 320 C20 (male) AC cable to PIM IEC 320 C19 (female) Battery connection system - 7 pin DSUB for up to 6 battery systems
Communications	
Display	64 x 128 Pixels LCD Display with White LED Backlight
Ports	Ethernet RJ45 - 10/100Mbps, TCP/IP
Dry Relay Contacts	8 Independent Programmable Form C Relays (default state: NO) Class 2 only
Indicators & Alarms	
Alarm Functions	AC Power Failure Daily Time Trigger Delay After Power Failure Battery Capacity UPS Fault
Audible Indicators	System Startup Cold Start Inverter On/Off Inverter Output over Current AC Miswire Rotating Dial, pushing Enter or Back button on front panel UPS Fault
Certifications	
UL/CSA	Battery cells: Recognized UL-2054, CSA 22.2 No. 60950-1
Features	
Cold Start	Simple push-button activation of cold start on battery power
Battery Management System	Digital Battery Bus Compartmentalized Battery Strings Redundant Isolated Battery Strings Managed in Parallel Upon Discharge Integrated Temperature Compensated Charging Redundant Performance
Multiple Mounting Configurations	Rack, Shelf or Hanging
Notifications	All alarm functions available on (SNMP, SMTP, Relay)
Local and Remote Control	Front Panel navigation dial and button Embedded webserver software for remote connectivity and control
Internal Battery Backed-Up Real-Time Clock	Operates for Life of System
AC Power Event Log	Stores Previous 1000 Events with waveforms
Firmware updates	Remote over TCP/IP

*All Specifications Valid at 25°C *All Specifications Subject to Change

PIM Specifications

Input Power	
Input Voltage Range	120Vac nominal
Input Current	15A max
Input Frequency	60Hz nominal
Output Power	
Output Voltage	120Vac nominal
Output Current	15A max
Frequency	60Hz nominal
Environmental	
Operating Temperature Range	(-37°C to 74°C) (-34°F to 165°F)
Mechanical	
Size	6.0"H X 10.0"W X 4.0"D
Weight	3.7lbs
Mounting	Single Rail Rack Mount, Shelf Mount, Panel Mount
Electrical & Connections	
AC Power Interface	Utility and Cabinet Load: - Terminal Block for 10AWG (#8 Screw)
AC Power Connections	To UPS IEC320 C19 (female) From UPS IEC320 C20 (male) To Battery Panel/Module IEC 320 C19 (female)
Breakers	Combined UPS Test Switch and 15A input breaker UPS output 20A breaker
Test Outlet	NEMA receptacle 5-15
Switch	
Automatic Bypass Switch	Double Pole Double Throw (DPDT) Contact Rating: 120/240 Vac @ 30A continuous
Indicator	
Visual	Red indicator: PIM is in Bypass mode

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UPStealth® 2 Nickel-Zinc Batteries



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UPStealth 2 Benefits

Nickel-Zinc Battery Chemistry

- Superior electrical performance compared to lead-acid batteries
- Half the size and weight of lead-acid batteries
- Self-maintaining; No periodic maintenance
- Faster recharge time than lead-acid batteries
- Longer storage and operational life than lead-acid batteries
- No hazardous materials; No sulfation
- No trickle charging required
- Physically safe operation
- Recyclable and environmentally friendly

Compact Form Factors

- Ingenious flexible battery design inserts in dead space between rack and cabinet wall
- Shelf mount & rack mount
- Quick connect/disconnect battery string and AC cables

Innovative Electronics Design

- Built-in chargers and controllers
- Integrated temperature compensated charging
- Digital battery bus
- Parallel battery strings; Redundant performance



UPStealth® 2 Battery Panel 500W



UPStealth® 2 Battery Module 500W

Battery Specifications

Output	
Power Output	500W Battery Panel: 500 Watts 500W Battery Module: 500 Watts
Voltage Output	48VDC Nominal with Redundancy
Battery Type & Panel Design	
Chemistry	Nickel-Zinc, Sealed
Electrolyte	Starved, KOH, Aqueous (no acid)
Configuration	Digital Battery Bus Compartmentalized Battery Strings Redundant Isolated Battery Strings Managed in Parallel Upon Discharge Integrated Temperature Compensated Charging Redundant Performance
Battery Communications	Digital Battery Bus via Single Connector
Maximum Battery Configuration	6 Panels or Modules
Cold Start	Simple push-button activation of cold start on battery power
Mechanical	
Size	500W Battery Panel: 1.1"H X 19.0"W X 24.4"D 500W Battery Module : 2.3"H X 17.0"W X 12.1"D
Weight	500W Battery Panel: 27.5lbs 500W Battery Module: 25.0lbs
Battery Connection System	Single Quick Connect/Disconnect 7W2 Dsub Connector IEC320 C20 Connector for AC Power
Form Factors and Mounting	Battery Panels - Flexible Battery Panel Inserted in Dead Space Between Rack and Cabinet Wall Battery Module - Shelf Mount, Rack Mount
Maintenance	
Maintenance	Self-Maintaining, No Periodic Maintenance
Environmental	
Operating Temperature Range	Discharge: (-37°C ¹ to 74°C) (-34.6°F ¹ to 165°F) Charge: (-37°C ¹ to 50°C ²) (-34.6°F ¹ to 122°F ²)
Charge/Discharge	
Battery Charging	Built-In Chargers and Controllers Integrated Temperature Compensated Charging Typical 4.5 Hour Charge Time from 0% to 100% State of Charge
Self-Discharge	Shelf Self-Discharge Time (From 100% to 0% State of Charge): 1. At 25C or below, >1,000 days; 2. At 60C, >240 days Capacity can be fully recovered to 100% after self-discharging
Battery Storage	Batteries Do Not Sulfate When Stored No Trickle Charging Required
Certifications	
UL/CSA	Battery cells: Recognized UL-2054, CSA 22.2 No. 60950-1
Indicators & Alarms	
Visual	Multi-Color LED Providing Battery Panel Status and Alarms Green - Battery Discharging / UPS Battery Backup Mode Blue - Battery Charging Blinking White - Battery Fully Charged and Available
Warranty	
Warranty	2 Years on Battery Panel/Module, 5 Years on Battery Cells

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¹ Charge and discharge operations below a -5°C (23°F) ambient temperature require a heating element

² Charge operations discontinued above a 50°C (122°F) ambient temperature to protect system