



## Series 700: Uninterruptible Power Supply (UPS) Systems

### Features

#### General

- Universal Application
- Data Processing
- Telecommunications
- Medical/Health Care
- Manufacturing/ Process Control
- Quality Design and Construction
- One Year Warranty
- UL 1778 Listed

#### Electrical

- 4-18 kVA
- On-line Operation
- Active Power Factor Correction
- High Speed Inverter
- Solid State Static Switch
- High Output Isolation Transformer
- Microprocessor Control
- Local Monitoring and Controls
- Global Bypass Module
- Additional Battery Cabinets Available
- Power Distribution Units

#### Physical

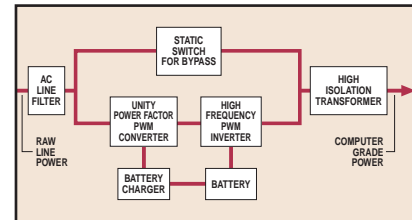
- Small Footprint
- High-tech Aesthetics
- Quiet Operation

The Phase One Series 700 product line is among the most complete in the UPS industry. Phase One systems are designed to protect critical loads as seen throughout data processing, medical, industrial, and communications industries.

Series 700 systems provide true on-line double conversion protection to the most common electrical problems such as reflected harmonics, sags, surges, transients, and black-outs. The Series 700 inverter always supports the load, meaning there is zero transfer time in the event of a power outage.

Phase One Series 700 systems are designed to handle the reflected harmonics associated with today's demanding computer loads. Phase One systems provide fast switching for low output voltage THD (<1%), tight voltage regulation (1%) with 100% non-linear loads. In addition, the power factor correction technology of Series 700 isolates load-generated harmonics from being reflected back to the electrical source.

The integration of "Intelligent" IGBTs provide each Phase One Series 700



Series 700 topology

system both internal diagnostics and the appropriate protection circuitry to significantly extend the MTBF rating. Phase One systems have advanced the on-line UPS technology another step forward by integrating protection into each high frequency IGBT device to protect against threatening events such as high operating current, short circuit current, over temperature, and low control voltage.

Series 700 UPS systems feature a standard uninterrupted bypass even if the input and output voltages of the system are not equivalent. Series 700 systems eliminate common mode noise even while on bypass due to a high resolution transformer contained in each system.

Phase One systems are available from 4 to 18 kVA with several different battery configurations.



Intelligent Transistor Modules and a 16 bit micro-controller are the foundation of the Series 700 UPS system. By combining true on-line and

high frequency conversion UPS technology, these systems provide superior reliability and protection against virtually all power problems.

## Expandability

Many UPS manufacturers will recommend the purchase of a large system to meet both current and future critical load requirements. Series 700 UPS systems are designed so a properly sized system can be purchased for immediate needs while allowing expansion to accommodate future critical power requirements. The micro-controller technology of Series 700 systems provides the ability to upgrade systems to meet future load requirements.

Series 700 systems are expandable from 144% to 160% depending on the Phase One Model being applied. The chart (at right) indicates the expansion capabilities of each Phase One system.

## Small Footprint

The Series 700 line of UPS systems are among the smallest in the industry. Small equipment size combined with limited space requirements for routine service purposes equate to a small overall system "footprint" required to accommodate the Phase One UPS system.



### Phase One: Series 700 UPS Upgrade

Model Number	Minimum Rating	Intermediate Rating	Maximum Rating	Expansion Range
UPG700-4-6	4.0 kVA	5.0 kVA	6.0 kVA	150%
UPG700-7-12	7.5 kVA	10.5 kVA	12.0 kVA	160%
UPG700-12-18	12.5 kVA	15.0 kVA	18.0 kVA	144%

### Physical Specifications: Series 700 UPS

Rating	Width		Depth		Height		Weight	
	In	Cm	In	Cm	In	Cm	Lb	Kg
4.0, 5.0, 6.0 kVA <sup>1</sup>	10.25	26	24.00	61	28.00	71	342	155
7.5, 9.0, 10.5, 12.0 kVA	10.25	26	24.00	61	28.00	71	310	141
12.5, 15.0, 18.0 kVA	14.25	36	24.00	61	28.00	71	421	191

<sup>1</sup> Physical specifications for 4.0-6.0 kVA systems include standard internal battery; therefore, no additional battery cabinet required.

### Physical Specifications: Battery Cabinets

Rating	Width		Depth		Height		Weight	
	In	Cm	In	Cm	In	Cm	Lb	Kg
7.5, 9.0, 10.5, 12.0 kVA <sup>2</sup>	10.25	26	24.00	61	28.00	71	236	107
12.5, 15.0, 18.0 kVA <sup>3</sup>	10.25	26	24.00	61	28.00	71	400	181

<sup>2</sup> 4.0-12.0 kVA rated systems include one string of batteries as standard equipment.

<sup>3</sup> 12.5-18.0 kVA rated systems include two strings of batteries as standard equipment.

Series 700 systems are small and aesthetically pleasing. This 6 kVA system measures only 10.25"W x 24"D X 28"H.

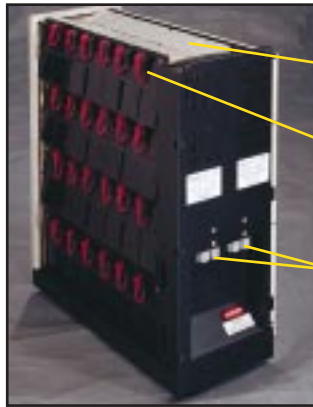
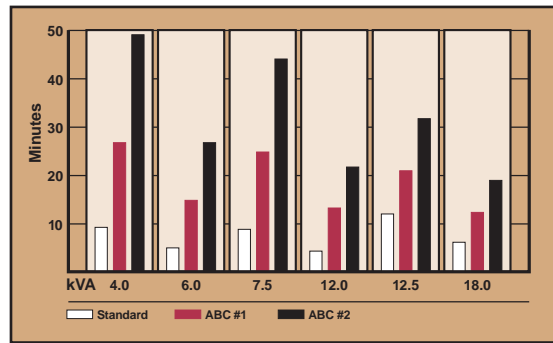


Phase One Series 700 equipment is designed to allow the user to expand the initial requirements of the UPS system to a larger kVA capacity in

the event of critical load growth. Frequently, system upgrades can be performed in the field to meet expanded system requirements.

# Battery Expansion

Every Series 700 UPS system offers internal battery storage capacity to provide conditioned power, even during a complete power failure. However, due to site location and criticality of the data being processed, longer battery times may be required to supplement the standard battery capacity of the UPS. Additional Battery Cabinets (ABCs) are often added during a field upgrade to maintain or even extend the system's battery capacity. Each free-standing cabinet has four casters and measures only 10.25" W x 24" D x 28" H.



Unique battery seating maximizes accessibility and serviceability.

All battery jars are connected with quick disconnect cables for ease of replacement. Color coding makes battery replacement safe.

Every ABC is equipped with dual Anderson-type connectors making battery expansion easy.

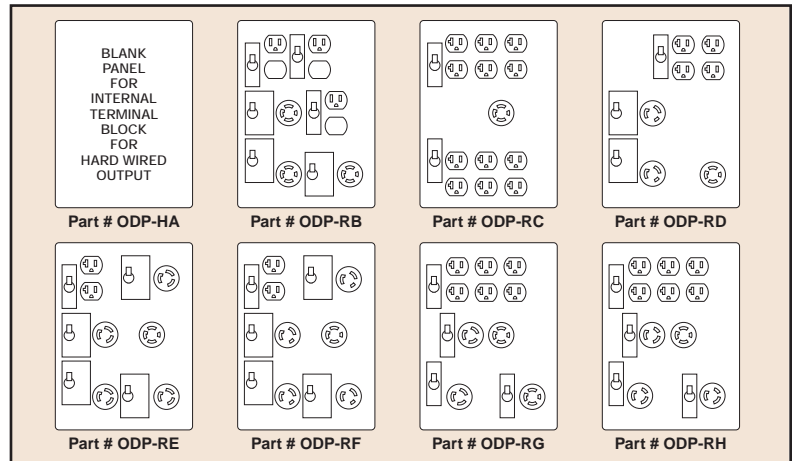
Left: Additional Battery Cabinets (ABCs) are available in several models to meet your specific battery requirements.

# Flexible Distribution

Series 700 UPS systems offer several distribution alternatives. Output Distribution Panels and Remote Distribution Boxes provide convenient and flexible distribution capacity. Power Distribution Units are ideal on projects where extensive output distribution capacity is required.

## Output Distribution Panels (ODP)

Each Series 700 UPS system is equipped with an Output Distribution Panel (ODP). You may choose from eight popular receptacle configurations for output distribution requirements. All receptacle panels are rear mounted with lift-off hinges making them easy to install or change in the field. Each receptacle is protected with a quality, color-coded circuit breaker which may be reset, rather than an inexpensive fuse as used by other UPS manufacturers.



Eight different output distribution panels are provided for flexible distribution capacity.

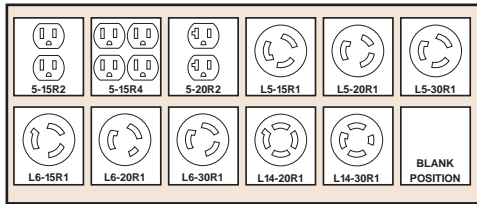


Phase One makes it easy to expand the total system—UPS and battery. A full range of Additional Battery Cabinets are available to increase

the battery reserve time of a system. Please consult Phase One for applications assistance if longer battery time is required.

## Remote Distribution Boxes (RDB)

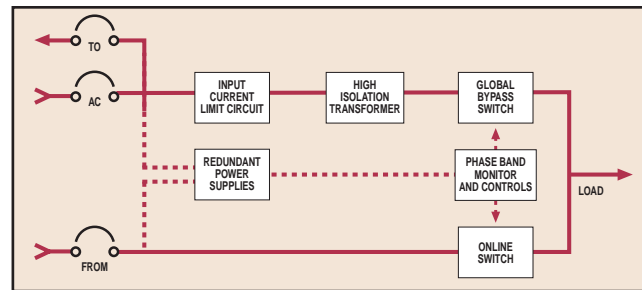
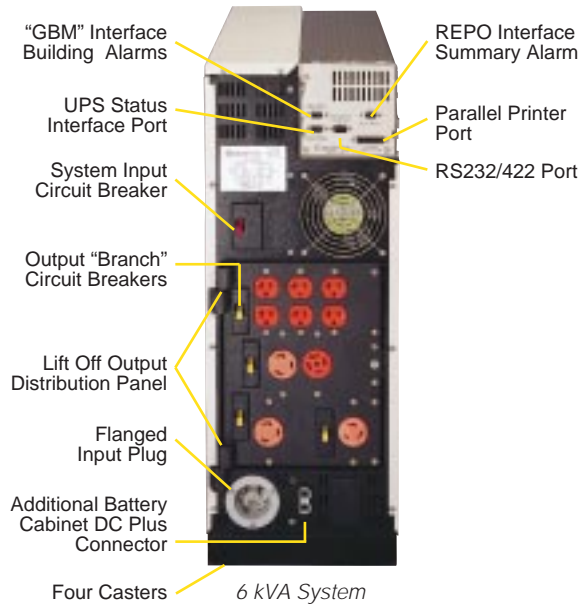
The Series 700 UPS system offers an expansion receptacle for custom configurations that require a receptacle not available on the output distribution panel. This expansion receptacle feeds a Remote Distribution Box (RDB). RDBs are custom configured with up to three receptacles of any combination to complete your distribution requirements. RDBs complement the receptacles located on the rear of the Series 700 system and are individually protected by a circuit breaker.



Phase One offers any combination of three receptacle types. Other NEMA and international receptacles are available upon request.

## Global Bypass Modules (GBM)

The ability to globally bypass the UPS in the event of a fault condition is important in today's critical load environments. A Global Bypass Module (GBM) can complete your UPS application and ensure a means of uninterrupted bypass to your critical load.



Global Bypass Module "GBM" one-line diagram.

## Power Distribution Units (PDU)

Advancement in computer technology over the past ten years has been remarkable. Loads now being served by single phase UPS once required three phase power in a classic "data center" environment. To complement the data center environment, we offer a full line of single phase Power Distribution Units (PDUs) for ease of supporting the ever-changing configurations of a modern computer system. Our PDU features 24 single pole circuit breaker positions in a cabinet enclosure that complements the Series 700 UPS system.



Left: PDUs feature a cable landing tray below the distribution panel to support output cables in a classic raised floor environment. A rear mounted cable landing tray is also provided for sites without raised floor access. Right: GBM complements other Series 700 components.

For specialized distribution requirements, Series 700 offers Remote Distribution Boxes which are fed from the NEMA L14-30R



expansion receptacle on the Output Distribution Panel. RDBs are ideal when UPS protection is needed for remote loads.

# Power Monitoring

INSIGHT micro-controller based monitoring system is featured in every Series 700 UPS system. This monitoring package provides the user the ability to understand the entire electrical environment, as well as the overall operation of the UPS. INSIGHT provides the user with a 32-character LCD display to review important data within the UPS. INSIGHT monitors true input and output RMS. Additionally, the LCD counts down actual battery time remaining so the user may maximize productivity, rather than prematurely shutting down the load in the event of a complete, long-term power outage.



Local INSIGHT monitoring panel features a 32-character LCD display to assist the user in understanding the status of the Series 700 UPS system.

## INSIGHT Monitoring Features

### System Monitoring

- AC Input Voltage
- AC Output Voltage
- Output Frequency
- Percent Load
- kVA Load
- DC Voltage, Battery Voltage
- Time of Day/Date

### Alarms

- High AC Input Voltage
- Low AC Input Voltage
- High AC Output Voltage
- Low AC Output Voltage
- High AC Current
- High DC Voltage
- Low DC Voltage
- System Overload
- Low Battery Time Remaining
- High Operating Temperature
- Battery Charger Failure
- Event Log (last 200 events)

### Communications

- UPS Status Interface Ports
- RS232 or RS422 Port
- Parallel Printer Port

### Battery Monitoring

- Battery Run Time Remaining
- Total Number of Discharges
- Battery Life Remaining (%)
- Battery Log (last 100 events)
  - Discharge Number
  - Discharge Date and Time
  - Duration of Discharge
  - Battery Discharge (%)

### Control

- Remote Emergency Power Off Interface
- Global Bypass Module (GBM) Interface
- On-line/Bypass Control Pushbutton
- Alarm Acknowledge

### Annunciators

- 32-Character LCD Display
- Audible Alarm (Horn)
- Color Coded Percent Load Indicator
- Color Coded Battery Level Indicator
- Discharge/Recharge LED Indicators

Phase One INSIGHT compatible software programs interface your computer network to a Series 700 UPS system. INSIGHT is



transparent to the user, requiring no keystrokes or custom training to appreciate its many advantages.

# Phase One: Series 700

## Performance Specifications

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### Physical

#### UPS Capacity

4.0 kVA, 5.0 kVA, 6.0 kVA, 7.5 kVA,  
9.0 kVA, 10.5 kVA, 12.0 kVA, 12.5 kVA,  
15.0 kVA, 18.0 kVA

#### Weight

4.0-6.0 kVA = 296 lbs.  
7.5-12.0 kVA = 520 lbs.  
12.5-18.0 kVA = 728 lbs.

#### Dimensions

4.0-6.0 kVA = 10.25" W x 24" D x 28" H  
7.5-12.0 kVA = 20.5" W x 24" D x 28" H  
12.5-18.0 kVA = 24.5" W x 24" D x 28" H

### Environmental

**Ambient Operating Temperature — System**  
0°C to 39°C

**Recommended Operating Temperature**  
0°C to 28°C

**Relative Humidity**  
0 to 95% non-condensing

**Audible Noise**  
Less than 60 dbA @ 3 ft. (1 meter)

**Altitude**  
Unlimited

**Source Voltage Harmonic Content**  
9000 ft. (3000 meters) without derating

**Electrostatic Discharge**  
25 kV withstand capability

### Input

**Input Voltage Configuration**  
208; 240 VAC @ 60 Hz  
220 VAC @ 50 Hz

**Input Voltage Range**  
+10% to -20%

**Input Frequency Range**  
63-57 @ 60 Hz or 53-47 @ 50 Hz

**Reflected Harmonics**  
Less than 5% THD Current

**Input Power Factor**  
.99 Typical

### Output

**Output Voltage Configuration**  
240/120; 208/120 VAC @ 60 Hz  
220 VAC @ 50 Hz

**Voltage Regulation**  
±1% of nominal

**Waveform**  
Pure Sinewave

**Voltage THD**  
Less than 1% with non-linear loads

**Voltage Response**  
±5% for 100% step load,  
Less than 1 Hz recovery time

**Frequency**  
60 Hz or 50 Hz

**Frequency Regulation**  
±0.01 Hz of nominal

**Frequency Slew Rate**  
Less than 1 Hz/second

**Overload Ratings**  
105% indefinite  
125% 10 minutes  
150% 30 seconds

**Static Switch Overload Rating**  
200% steady state

**High Isolation Transformer — On Line**  
100% rated at 120 VAC (balanced)

**High Isolation Transformer — Bypass**  
100% rated at 120 VAC (balanced)

**Termination Methods**  
Hardwired Terminal Block  
Output Distribution Panels  
Remote Distribution Boxes  
Power Distribution Unit

### Battery

**Type-Sealed**  
Valve Regulated Lead Acid

**Battery Life**  
200 complete full load discharges

**Battery Monitor**  
Micro-controlled

**Protection**  
DC disconnect, fused

**Charger Type**  
Transistorized, three stage

**Battery Time**  
See "Battery Expansion" for details

### Communication/Control

**Monitoring**  
INSIGHT 700 Display

**UPS Status Port**  
One DB 9 connector

**Communication Port**  
RS 232 or RS 422 compatible

**Software**  
INSIGHT I, II, III

**SNMP Agent**  
Yes

**REPO Compatible**  
Yes


**Summary Alarm Compatible**  
Yes



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**DELTA**

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