AMPS24 HP
Modular Inverter System

› Innovative, modular inverter system for critical applications
› Single, dual and three phase configurations with up to 24kVA/19.2kW capacity
› 93% system efficiency for operational savings and reduced carbon footprint
› ‘HP’ technology engineered to deliver high efficiency, high system reliability and low total cost of ownership
› Intelligent system controller with integrated SNMP and ½ VGA color touchscreen LCD panel for full system management, locally and remotely
› High power density yields space for revenue generating equipment
› Optional 1.8kW rectifier modules convert the AMPS into a modular, standalone, high reliability UPS

Introducing the Alpha Modular Power System 24HP (AMPS24 HP), Alpha’s new high performance AC power system offering Telecom grade reliability, 93% efficiency and high power density.

Incorporating Alpha’s revolutionary ‘HP’ technology, the AMPS24 HP combines the high reliability of a Telecom grade inverter system with the high efficiency of an AC UPS. Hot swappable 1500VA/1200W inverter modules are the building blocks of a highly flexible inverter system. Each inverter module can utilize either AC or DC sources or both, eliminating the need for a static transfer switch. Transfer between sources is 100% seamless.

Alpha’s system controller with integrated Ethernet/SNMP interface monitors and manages both AC power modules and rectifier modules through a web based GUI and local ½ VGA color touch screen LCD panel. Alternately the LCD can be remote mounted.

The AMPS24 HP meets current and future power needs of Telecom, Cable and Datacenter operators by allowing you to purchase only the power modules needed for current loads while having ultimate flexibility to scale up or down, depending on future power needs. User friendly connections make the system easy to install into a 19” or 23” box bay or open relay rack. Furthermore, Alpha’s hassle-free warranty and comprehensive support network make AMPS24 HP a smart investment decision.
# AMPS 24HP Modular AC Power System

Consult your Alpha representative for P/N configurations

## AMPS24 HP Systems using 3i+1R Shelves (UPS)***

<table>
<thead>
<tr>
<th>Model*</th>
<th>AMPS24-3-13.5-H3</th>
<th>AMPS24-2-18-H4</th>
<th>AMPS24-2-9-H2</th>
<th>AMPS24-1-9-H2</th>
<th>AMPS24-1-4.5-H1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input &amp; output phase</td>
<td>120/208V 3-ph</td>
<td>120/240V or 120/208V 2-ph</td>
<td>120V single ph</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nominal output power (max)</td>
<td>4500 to 13500VA</td>
<td>3000 to 18000VA</td>
<td>3000 to 9000VA</td>
<td>1500 to 9000VA</td>
<td>1500 to 4500VA</td>
</tr>
<tr>
<td>Output power (resistive load)</td>
<td>3600 to 10800W</td>
<td>2400 to 14400W</td>
<td>2400 to 7200W</td>
<td>1200 to 7200W</td>
<td>1200 to 3600W</td>
</tr>
<tr>
<td>Maximum output current</td>
<td>37.5A rms per phase</td>
<td>75A rms per phase</td>
<td>37.5A rms per phase</td>
<td>75A rms per phase</td>
<td>37.5A rms</td>
</tr>
<tr>
<td>Max. no. of 1500VA/1200W inverter modules per system</td>
<td>9</td>
<td>12</td>
<td>6</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>Min. no. of 1500VA/1200W inverter modules per system</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Max. no. of 1800W rectifier modules per system</td>
<td>3</td>
<td>4</td>
<td>2</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

## AMPS24 HP Systems using 4i Shelves (Inverter)****

<table>
<thead>
<tr>
<th>Model**</th>
<th>AMPS24-3-18-3i</th>
<th>AMPS24-2-24-4i</th>
<th>AMPS24-2-12-2i</th>
<th>AMPS24-1-12-2i</th>
<th>AMPS24-1-6-1i</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input &amp; output phase</td>
<td>120/208V 3-ph</td>
<td>120/240V or 120/208V 2-ph</td>
<td>120V single ph</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nominal output power (max)</td>
<td>4500 to 18000VA</td>
<td>3000 to 24000VA</td>
<td>3000 to 12000VA</td>
<td>1500 to 12000VA</td>
<td>1500 to 6000VA</td>
</tr>
<tr>
<td>Output power (resistive load)</td>
<td>3600 to 14400W</td>
<td>2400 to 19200W</td>
<td>2400 to 9600W</td>
<td>3600 to 9600W</td>
<td>2400 to 4800W</td>
</tr>
<tr>
<td>Maximum output current</td>
<td>50A rms per phase</td>
<td>100A rms per phase</td>
<td>50A rms per phase</td>
<td>100A rms per phase</td>
<td>50A rms per phase</td>
</tr>
<tr>
<td>Max. no. of 1500VA/1200W inverter modules per system</td>
<td>12</td>
<td>16</td>
<td>8</td>
<td>8</td>
<td>4</td>
</tr>
<tr>
<td>Min. no. of 1500VA/1200W inverter modules per system</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

Technology
- Proprietary HP technology
- Static switch: Not required; each module DSP controlled static switch functionality
- Efficiency: 93% AC-to-AC; 90% DC-to-AC (from 50 to 100% full resistive load)
- Waveform: Pure sine wave
- Output power factor: 0.8 (can run capacitive & inductive loads)
- Transfer time: Zero transfer time
- Warranty: 2 years (1 and 3 year optional extensions)

*Model Descriptor: AMPS24 - [Phase] - [Maximum kVA] - [Number of 3i + 1R Shelves]
**Model Descriptor: AMPS24 - [Phase] - [Maximum kVA] - [Number of 4i Shelves]
***3i+1R = 3 inverters + 1 rectifier per shelf
****4 inverters per shelf
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**Inverter Module AC Output Specifications**

Power rating: 1500VA/1200W
Nominal voltage: 120Vac
Voltage accuracy: ±2%
Frequency: 60Hz (same as input frequency)
Inverter frequency accuracy: 0.03%
THD (resistive load): <1.5%
Transient load recovery time: 0.4 ms
Soft start time: 20s

Maximum crest factor at nominal power: 3.5
Short circuit overload capacity: 10 x I<sub>n</sub> for 20msec (AC-to-AC mode)
Short term overload capacity: 150% for 5 seconds
Permanet overload capacity: 110%
Synchronization range: 57 - 63Hz
Heat dissipation: 286 BTU per hour in AC-to-AC mode
410 BTU per hour in DC-to-DC mode

**Inverter Module Input Specifications**

Nominal AC voltage: 120Vac
Input power factor: >99%
Nominal DC voltage: 48Vdc
Maximum DC voltage range: 40 - 60Vdc (user adjustable)
Voltage ripple: <2mV/38 dbrmc

**System Controller with integrated SNMP**

Control and Monitoring:
Configure, control and monitor inverter and rectifier modules remotely via Internet Explorer 7 onwards and Firefox 3.6 onwards

Display:
• 5.7” VGA (640 x 480) color touch screen LCD display
• OK/Major/Minor 3-Color LED display
• Web based GUI via Ethernet

Communication Ports: RJ45 Ethernet Port

Controller I/Os:
• Voltage inputs: 1
• Temperature inputs: 2
• Current inputs: 1
• Digital inputs: 6
• Relay outputs: 6

**Environmental**

Operating Temperature (full load): -20 to 50°C (-4 to 122°F)
Storage Temperature: -40 to +70°C (-40 to 158°F)
Relative Humidity: Up to 95%, non-condensing
Operating Altitude: Up to 1500m (4,900ft) above sea level

**Mechanical**

System dimensions:
mm: 622H x 443W x 432D
inches: 24.5H x 17.44W x 17D

Weight (without modules): 52.16kg (115lbs)*

Module dimensions:
m: 88.9H x 102W x 300D (inverter)/235D (rectifier)
inches: 3.5H x 4W x 12.5D (inverter)/9.25D (rectifier)

Module weight:
• Inverter: 2.4kg (5.3lbs)
• Rectifier: 2.8kg (6.2lbs)

Mounting: 19” or 23” rack flush/mid mount

**Agency Compliance**

Safety: UL1778 (4th Ed); CSA C22.2 No. 107.3-05 UPS General Safety
EMC: FCC CFR47 Part 15 Class A; ICES-003

**Features**

• 3i + 1R system: Up to 3 x 1500VA/1200W inverter modules and 1 x 1800W rectifier module per shelf (1150W for single phase)
• 4i system: Up to 4 x 1500VA/1200W inverter modules per shelf
• System controller with integrated SNMP communications
• 5.7” VGA (640 x 480) color touch screen LCD panel
• Removable covers for ease of installation
• Industrial grade surge suppression
• Inverter AC input and AC output breakers
• Inverter DC breakers (1 breaker per shelf)
• Internal make-before-break rotary maintenance bypass switch

**Options**

• Open relay racks and box bay racks for mounting
• Front terminal UPS or Telecom batteries
• LCD remote mount kit
• Network switch (rack mountable)

*Height and weight for 4-shelf system; other models vary in height and weight

**Mounting ears for 19” or 23” racks**