Built To Order 3 Phase UPS Systems

BATTERY BACKUP POWER
WWW.BATTERYBACKUPPOWER.COM
Features Of Built To Order 3 Phase Systems

- **True Galvanic Isolation**
  Solves all major power problems including electrical noise, surges, brown outs, and leakage current.

- **N+1 Parallel Operation (Optional)**
  - Full Redundancy

- **Neutral Protection**
  Ensures the safety and stability of the UPS power output.

- **User Friendly Design**
  Easy to setup and easy to operate design.

- **Advanced Technology**
  DSP, IGBT, and advanced switching components increase reliability and efficiency.

- **Plug & Play Modular Design**
  Allows for easy replacement, maintenance, and operation.

- **Multiple CPUs**
  Ensures high reliability.

- **Dedicated Inverter For Each Phase**
  Resolves potential issues with phase imbalances.

- **Smart Charger**
  Maximizes battery life by monitoring battery health, temperature, and statistics while adjusting charge levels in real-time accordingly.

- **Diagnostics/Testing Built In (Optional)**
  Tests the batteries to ensure that the system is in good operating health. Routine testing uncovers potential problems before they become serious.

- **Intelligent Fan Speed Control**
  Increases the fan life expectancy and reduces audible noise.

- **Efficient Heat Dissipation**
  Control circuitry and power circuitry are physically separated allowing the UPS system to operate in harsh environments.

- **Cold Start Functionality (Optional)**
  Can be started without AC mains connected (battery power only).

- **Multiple Optional Accessories**
  - Remote control panel
  - 3 phase PC monitoring software
  - Auto dialing module
  - Battery monitoring module
  - 3 phase SNMP card
  - Emergency stop switch

- **12-Pulse Fully Controlled Rectifier (Optional)**
  Reduces harmonic current.

- **Input Harmonic Filter (Optional)**
  Reduces T.H.D. (Total Harmonic Distortion) of the input current.

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**240-320 KVA**

**10-60 KVA**

**80-160 KVA**

**Note:**
If you have installation space restrictions, cabinet dimensions can be modified to fit. Please contact us with special requirements.
Optional External Battery Cabinets

- **Battery Cabinet Design:**
  The battery cabinet is designed to be the same size as the controlling UPS.
  It can accommodate the following configurations:
  - 29x 12 Volt 26 Amp Hour Batteries (1 Set)
  - 58x 12 Volt 26 Amp Hour Batteries (2 Sets)

- **Dimension (H x W x D mm):**
  1600 x 550 x 800 : 12V 26AH x 29 pcs, or 12V 26AH x 58 pcs (2 strings)
  1600 x 1100 x 800 : 12V 75AH x 29 pcs, or 12V 88AH x 29 pcs, or 12V 100AH x 29 pcs

- **Weight:**
  26Ah / 12V x 29 pcs x 1 set is about 360 Kgs
  12V 75AH x 29 pcs x 1 set is about 1,075 Kgs
  26Ah / 12V x 29 pcs x 2 sets is about 620 Kgs
  12V 88AH x 20 pcs x 1 set is about 1,185 Kgs
  12V 100AH x 29 pcs x 1 set is about 1,325 Kgs

<table>
<thead>
<tr>
<th>Backup Time</th>
<th>10</th>
<th>20</th>
<th>30</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>80</th>
<th>100</th>
<th>120</th>
<th>160</th>
<th>240</th>
<th>320</th>
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<tbody>
<tr>
<td>10 Minutes</td>
<td>10.2</td>
<td>20.4</td>
<td>31.2</td>
<td>40.8</td>
<td>51</td>
<td>62</td>
<td>82</td>
<td>100</td>
<td>125</td>
<td>163</td>
<td>250</td>
<td>326</td>
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<tr>
<td>15 Minutes</td>
<td>12.6</td>
<td>25.2</td>
<td>37.8</td>
<td>50.4</td>
<td>63</td>
<td>76</td>
<td>101</td>
<td>126</td>
<td>151</td>
<td>202</td>
<td>302</td>
<td>403</td>
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<tr>
<td>30 Minutes</td>
<td>23.4</td>
<td>46.8</td>
<td>70.2</td>
<td>93.6</td>
<td>117</td>
<td>140</td>
<td>187</td>
<td>234</td>
<td>281</td>
<td>374</td>
<td>562</td>
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<td>1 Hour</td>
<td>40.2</td>
<td>80.4</td>
<td>120.6</td>
<td>160.8</td>
<td>201</td>
<td>241</td>
<td>322</td>
<td>402</td>
<td>482</td>
<td>643</td>
<td>965</td>
<td>1071</td>
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<tr>
<td>2 Hours</td>
<td>67.8</td>
<td>135.6</td>
<td>203.4</td>
<td>271.2</td>
<td>339</td>
<td>407</td>
<td>542</td>
<td>678</td>
<td>814</td>
<td>1085</td>
<td>1627</td>
<td>2169</td>
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<tr>
<td>4 Hours</td>
<td>119.4</td>
<td>238.8</td>
<td>358.8</td>
<td>477.6</td>
<td>597.6</td>
<td>718</td>
<td>955</td>
<td>1195</td>
<td>1435</td>
<td>1910</td>
<td>2870</td>
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<td>8 Hours</td>
<td>213</td>
<td>426</td>
<td>638.4</td>
<td>852</td>
<td>1065.6</td>
<td>1277</td>
<td>1704</td>
<td>2131</td>
<td>2554</td>
<td>3408</td>
<td>5107</td>
<td>6816</td>
</tr>
</tbody>
</table>

Peripheral Options

- **Remote Control Panel**
  A hand held LCD display module that can monitor 1-99 UPS' with RS-485. Up to 1,000 meters distance.

- **Auto Dialing Module**
  This system will automatically dial a specified phone number or phone numbers if a power event is detected.

- **3 Phase Monitoring Software**
  Provides real-time information on all 3 phases of the UPS.

- **Battery Monitoring Module**
  Monitors each battery in the UPS. Allows for any bad battery to be located and replaced before it fails.

- **SNMP Card For IP Networks**
  Allows for communication with the UPS via a standard network cable.

- **Emergency Stop Switch**
  Allows immediate emergency stopping of the UPS output with a single button.
# Technical Specifications

## International Power Systems

<table>
<thead>
<tr>
<th>PHASE</th>
<th>3 Phase or 1 phase Input, 3 Phase or 1 phase Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>KVA</td>
<td>10 20 30 40 50 60 80 100 120 160 240 320 400</td>
</tr>
</tbody>
</table>

### INPUT (RECTIFIER)

- **Input Voltage (Either one of these Voltages):** 380V / 400V / 415V, 3P4W OR 3P3W (Other Voltage systems also available)
- **Input Voltage Range:** +/- 20% (Wider than +/- 20% is available upon request)
- **Input Frequency:** 50/60 Hz +/- 0.5Hz
- **Power Walk In:** 0% ~ 100% : 20 sec
- **Efficiency, Approximate:** ~ 98%

### BATTERY (OPTIONAL)

- **Battery Type / Pcs:** Maintenance free lead acid batteries / 12V x 99pcs per String
- **Maximum Charge Current Ade (Selectable):** 5 10 15 20 25 30 40 50 60 80 120 160 200
- **Battery Start:** If equipped with Optional Battery Bank. SFC can be started without Input AC Source.

### INVERTER

- **Output Voltage (Either one of these Voltages):** 190V / 208V / 220V / 380V / 400V / 415V / 440V / 460V / 480V / 600V, 3P4W OR 3P3W (Other Voltage systems also available)
- **Output Voltage Regulation:** +/-1%
- **Wave Form:** Sine Wave
- **Output Power Factor:** 0.8
- **Frequency Lock Range:** 50 / 60 Hz +/- 0.1 Hz
- **Output Frequency (Free Running):** 50 / 60 Hz +/- -3 Hz
- **Phase Shift Under 100% Unbalance Load:** < 0.5°
- **THD (Linear Load) Approximate:** ~ 2.5% ~ 3.0%
- **Overload:**
  - <110%
  - 110% ~ 124%
  - 125% ~ 149%
  - >=150%
- **Efficiency (100% Load), Approximate:** 91% 91.5% 92% 92.5% 93%

### OVERALL CHARACTERISTICS

- **Over Efficiency, Approximate:** 89% 89.5% 90% 90.5% 91%
- **Width x Height x Depth (mm):**
  - 550 x 1600 x 800
  - 1100 x 1600 x 800
  - 2240 x 1600 x 800 (400K)
  - 3380 x 1600 x 800
- **Weight (Kg, without battery):** 270 300 400 480 550 680 820 950 1180 1450 2900 3100 3500
- **Audible Noise:**
  - < 65 dBA (At 1M)
  - < 67 dBA (At 1M)
  - < 70 dBA (At 1M)
- **Temperature / Humidity:** 0~40 Degree C, 32~104 Degree F; 0% ~ 90% (Non-Condensing)
- **Altitude:** <1500 M Above Sea Level
- **FCC CLASS A, EN50091-1,2:** YES
- **Short Circuit Protection:** Rectifier, Reserve, and Bypass
- **Lightning / EMC Filter:** MOV / Input & Output
- **Galvanic Isolation:** Input & Output True Galvanic Isolation
- **Indicator & Alarm:** LCD, LED, Mimic Display, Buzzer
- **Remote Control / Communication Interface:** Monitoring 1-99 UPS simultaneously / Dry contact, RS232, RS485

*Custom specifications are available and can easily be modified to your application requirements.

*Please contact us for details on systems from 400 kVA to 2,000 kVA.

*The above specifications are based on 6 pulse rectifier.

*Specifications are subject to change without prior notice.
## Technical Specifications

### North America Power Systems

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<td><strong>3 Phase or 1 phase Input, 3 Phase or 1 phase Output</strong></td>
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</table>

#### INPUT (RECTIFIER)

- **Input Voltage (Either one of these Voltages):** 190V / 208V / 220V / 440V / 480V / 600V, 3P4W OR 3P3W (Other Voltages also available)
- **Input Voltage Range:** +/- 15% (Wider than +/-15% is available upon request)
- **Input Frequency:** 50/60 Hz +/- 5Hz
- **Power Walk In:** 0% ~ 100% : 20 sec
- **Efficiency, Approximate:** ~ 98%

#### BATTERY (OPTIONAL)

- **Battery Type / Pcs:** Maintenance free lead acid batteries / 12V x 29pcs per String
- **Maximum Charge Current Adc (Selectable):** 5 10 15 20 25 30 40 50 60 80 120 160 200
- **Battery Start:** If equipped with Optional Battery Bank. SFC can be started without Input AC Source.

#### INVERTER

- **Output Voltage (Either one of these Voltages):** 190V / 208V / 220V / 380V / 400V / 415V / 440V / 460V / 480V / 600V, 3P4W OR 3P3W (Other Voltage systems also available)
- **Output Voltage Regulation:** +/-1%
- **Wave Form:** Sine Wave
- **Output Power Factor:** 0.8
- **Frequency Lock Range:** 50 / 60 Hz + / - 3 Hz
- **Output Frequency ( Free Running):** 50 / 60 Hz + / - 0.1 Hz
- **Phase Shift Under 100% Unbalance Load:** < 0.5°
- **THD (Linear Load), Approximate:** ~ 2.5 % ~ 3.0 %

#### OVERLOAD

- **Overload:**
  - <110%: Continuous
  - 110% ~ 124%: 15 Minutes
  - 125% ~ 149%: 10 Minutes
  - >/=150%: 60 Seconds
- **Efficiency (100% Load), Approximate:**
  - 90% 90.5% 91% 91.5% 92%

#### OVERALL CHARACTERISTICS

- **Over Efficiency, Approximate:** 88% 88.5% 89% 89.5% 90%
- **Width x Height x Depth (mm):** 550 x 1600 x 800 1100 x 1600 x 800 2240 x 1600 x 800 3380 x 1600 x 800 (400K)
- **Weight (Kg, without battery):** 270 300 400 480 550 680 820 950 1180 1450 2900 3100 3500
- **Audible Noise:** < 65 dBA (At 1M) < 67 dBA (At 1M) < 70 dBA (At 1M)
- **Temperature / Humidity:** 0–40 Degree C; 32–104 Degree F; 0% ~ 90% (Non-Condensing)
- **Altitude:** < 1500 M Above Sea Level
- **FCC CLASS A, EN50091-1,2:** YES
- **Short Circuit Protection:** Rectifier, Reserve, and Bypass
- **Lightning / EMC Filter:** MOVE/ Input & Output
- **Galvanic Isolation:** Input & Output true Galvanic isolation
- **Indicator & Alarm:** LCD, LED, Mimic Display, Buzzer
- **Remote Control / Communication Interface:** Monitoring 1-99 UPS simultaneously / Dry contact, RS232, RS485

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# 400Hz Frequency Converter Technical Specifications

## International Power Systems

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</thead>
<tbody>
<tr>
<td>Input Voltage (Either one of these Voltages)</td>
<td>380V / 400V / 415V / 440V, 3P4W OR 3P3W (Other Voltage systems also available)</td>
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<tr>
<td>Input Voltage Range</td>
<td>+/- 15% (Wider than +/- 20% is available upon request)</td>
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<tr>
<td>Input Frequency</td>
<td>50/60 Hz +/-5Hz</td>
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<tr>
<td>Power Walk In</td>
<td>0% -100% : 20 sec</td>
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<tr>
<td>Rectifier Efficiency</td>
<td>&gt;98%</td>
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</tbody>
</table>

### BATTERY (OPTIONAL)

<table>
<thead>
<tr>
<th>Battery Type / Pcs</th>
<th>Maintenance free lead acid batteries / 12V x 29pcs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum Charge Current Acdc (Selectable)</td>
<td>5 10 15 20 25 30 40 50 60 80 120 160 200</td>
</tr>
<tr>
<td>Battery Start</td>
<td>If equipped with Optional Battery Bank. SFC can be started without Input AC Source</td>
</tr>
</tbody>
</table>

### INVERTER

| Output Voltage (Either one of these Voltages) | 3P 200/115V, 3P 208/120V, 3P 575/332V (Other Voltage systems also available Upon Request) |
| Output Voltage Regulation | +/-1% |
| Wave Form | Sine Wave |
| Output Power Factor | 0.8 |
| Output Frequency (Free Running) | 400Hz +/- 0.1 Hz |
| Phase Shift Under 100% Unbalance Load | <0.5° |
| THD (Linear Load) | <0.5% |

<table>
<thead>
<tr>
<th>Overload</th>
<th>Continuous</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;110%</td>
<td>15 Minutes</td>
</tr>
<tr>
<td>&gt;110% ~ &lt;125%</td>
<td>10 Minutes</td>
</tr>
<tr>
<td>&gt;125% ~ &lt;150%</td>
<td>60 Seconds</td>
</tr>
<tr>
<td>&gt;150%</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Efficiency (100% Load)</th>
<th>91%</th>
<th>91.5%</th>
<th>92%</th>
<th>92.5%</th>
<th>93%</th>
</tr>
</thead>
</table>

### OVERALL CHARACTERISTICS

<table>
<thead>
<tr>
<th>Overall Efficiency</th>
<th>89%</th>
<th>89.5%</th>
<th>90%</th>
<th>90.5%</th>
<th>91%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Width x Height x Depth (mm)</td>
<td>550 x 1600 x 800</td>
<td>1100 x 1600 x 800</td>
<td>2240 x 1600 x 800</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight (Kg, without battery)</td>
<td>270</td>
<td>300</td>
<td>400</td>
<td>480</td>
<td>550</td>
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<tr>
<td>Audible Noise</td>
<td>&lt;65 dBA (At 1M)</td>
<td>&lt;67 dBA (At 1M)</td>
<td>&lt;70 dBA (At 1M)</td>
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<tr>
<td>Temperature / Humidity</td>
<td>0-40 degree C : 32-104 degree F: 0% ~90% (Non-Condensing)</td>
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<tr>
<td>Altitude</td>
<td>&lt;1500 M Above Sea Level</td>
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<tr>
<td>FCC CLASS A, EN50091-1,2</td>
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<tr>
<td>Short Circuit Protection</td>
<td>Rectifier, Reserve, and Bypass</td>
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<tr>
<td>Lightning / EMC Filter</td>
<td>MOV / Input &amp; Output</td>
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<tr>
<td>Galvanic Isolation</td>
<td>Input &amp; Output True Galvanic Isolation</td>
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<tr>
<td>Indicator &amp; Alarm</td>
<td>LCD, LED, Mimic Display, Buzzer</td>
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<tr>
<td>Remote Control / Communication Interface</td>
<td>Monitoring 1-99 UPS simultaneously / Dry contact, RS232, RS485</td>
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### INPUT (RECTIFIER)

- **Input Voltage (Either one of these Voltages)**: 190V / 208V / 480V / 600V, 3P4W OR 3P3W (Other Voltage systems also available)
- **Input Voltage Range**: +/- 15% (Wider than +/-15% is available upon request)
- **Input Frequency**: 50/60 Hz + / -5Hz
- **Power Walk In**: 0% -100% : 20 sec
- **Rectifier Efficiency**: >96%

### BATTERY (OPTIONAL)

- **Battery Type / Pcs**: Maintenance free lead acid batteries / 12V x 29pcs
- **Maximum Charge Current Adc (Selectable)**: 5 10 15 20 25 30 40 50 60 80 120 160 200
- **Battery Start**: If equipped with Optional Battery Bank. SFC can be started without Input AC Source,

### INVERTER

- **Output Voltage (Either one of these Voltages)**: 3P 200/115V, 3P 208/120V, 3P 575/332V (Other Voltage systems also available Upon Request)
- **Output Voltage Regulation**: +/-1%
- **Wave Form**: Sine Wave
- **Output Power Factor**: 0.8
- **Output Frequency ( Free Running)**: 400Hz + / - 0.1 Hz
- **Phase Shift Under 100% Unbalance Load**: < 0.5°
- **THD (Linear Load)**: ~ 3.0%
- **Overload**
  - Continuous
  - 10 Minutes
  - 60 Seconds
- **Efficiency (100% Load)**: 90% 90.5% 91% 91.5% 92%

### OVERALL CHARACTERISTICS

- **Overall Efficiency**: 88% 88.5% 89% 89.5% 90%
- **Width x Height x Depth (mm)**: 550 x 1600 x 800
- **Weight (Kg, without battery)**: 270 300 400 480 550 680 820 950 1180 1450 2900 3100 3500
- **Audible Noise**: < 65 dBA ( At 1M) < 67 dBA (At 1M) < 70 dBA (At 1M)
- **Temperature / Humidity**: 0-40 degree C : 32-104 degree F: 0% -90% (Non- Condensing)
- **Altitude**: <1500 M Above Sea Level
- **FCC CLASS A, EN50091-1,2**: YES
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