Outdoor UPS with voltage regulation

The TSi Outdoor XUPs-1000AHV/BHV are constructed with extreme/wide temperature batteries, and are housed in a weather protected IP44 (NEMA-3R) enclosure. These units offer line-interactive automatic voltage regulation, over/under-voltage protection, surge protection with heavy-duty noise filtering, communications capability and optional extended battery backup.

Key Outdoor XUPs benefits

This rugged UPS design, with microprocessor-controlled 20 kHz sine wave inverter and optional conformal coated boards, reduces the number of solid-state devices required for power conversion and is suitable for use in severe outdoor environments.

Outdoor XUPs extreme/wide temperature batteries allow operation of the UPS system over an ambient temperature range of -20° to +60°C (-4° to +140°F); -40° to +60°C (-40° to +140°F) with optional battery heater. Built-in automatic voltage regulation enables a wide input voltage window within which power is delivered without having to drain or exercise the batteries, thereby ensuring long battery life. A fan exhausts hot air to protect batteries and electronics.

Battery run-times for: OutdoorXUPs-1000AHV are 25 minutes at 700 watts load, and 1 hour with a 350 watts load; battery run-times for the OutdoorXUPs-1000BHV are 50 minutes at 700 watts load, and 2 hours with a 350 watts load.

How the Outdoor XUPs works

The Outdoor XUPs Series UPS provides automatic voltage regulation with surge protection and noise filtering, as well as overvoltage protection with a threshold of 280 vac, and undervoltage protection with a threshold of 190 vac. Upon a brownout, overvoltage, or loss of power, the XUPs will transfer to battery power in less than 4 milliseconds, enabling uninterrupted operation of computer, telecom, surveillance, signaling or other systems.

LEDs provide visual assessment of UPS status. By unlatching, the front door swings open; inside the cabinet is an array of LED status indicators and a power on/off control switch.

Typical applications

This heavy duty outdoor UPS system is ideal for protection of WiFi/GSM/CDMA/satellite base stations, wireless communications/perimeter surveillance and security/gate control systems, LED traffic light/roadway display systems and industrial remote terminal units (RTUs).

Key Outdoor XUPs features

- Cabinet can be pedestal (ground), pole, or wall mounted
- Full weather outdoor protection IP44 (NEMA-3R) metal cabinet
- Pure sine wave output
- Over/under-voltage protection
- Remote power on/off (optional)
- Wide temperature batteries
- Heavy-duty surge protection and noise filtering
- Automatic voltage regulation
- Comprehensive array of status bargraphs for voltage, load and battery levels
- Two year warranty on electronics
- One year warranty on batteries
### Specifications

**OutdoorXUPs-1000AHV/BHV**

<table>
<thead>
<tr>
<th>Specification</th>
<th>OutdoorXUPs-1000AHV</th>
<th>OutdoorXUPs-1000BHV</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Electrical</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Capacity in VA (watts)</td>
<td>1000VA (700W)</td>
<td></td>
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<tr>
<td>UPS topology</td>
<td>High efficiency line-interactive with 20 kHz PWM sine wave inverter.</td>
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<tr>
<td><strong>Input</strong></td>
<td></td>
<td></td>
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<tr>
<td>Nominal voltage</td>
<td>230 volts ac</td>
<td></td>
</tr>
<tr>
<td>Input current</td>
<td>4.2 amperes maximum @ 230 vac</td>
<td></td>
</tr>
<tr>
<td>Operating voltage</td>
<td>190 – 280 vac without using batteries</td>
<td></td>
</tr>
<tr>
<td>Operating frequency</td>
<td>47 – 63Hz</td>
<td></td>
</tr>
<tr>
<td><strong>Output</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nominal voltage</td>
<td>230 volts ac</td>
<td></td>
</tr>
<tr>
<td>Voltage regulation</td>
<td>230 vac +/-8% upon changes in line or load.</td>
<td></td>
</tr>
<tr>
<td>Crest ratio</td>
<td>3:1</td>
<td></td>
</tr>
<tr>
<td>Output waveform</td>
<td>Pure sine wave, less than 3% THD with linear load.</td>
<td></td>
</tr>
<tr>
<td>Power efficiency</td>
<td>97%, under full load conditions.</td>
<td>On/off rocker style power switch.</td>
</tr>
<tr>
<td>Power on/off switch</td>
<td>&lt;4 milliseconds</td>
<td></td>
</tr>
<tr>
<td><strong>Batteries</strong></td>
<td>32 amperes hours, 24 vdc</td>
<td>64 amperes hours, 24 vdc</td>
</tr>
<tr>
<td></td>
<td>Wide temperature sealed gel-cells -20° to +60°C (-4° to +140°F); -40° to +60°C (-40° to +140°F) with optional battery heater.</td>
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</tr>
<tr>
<td><strong>Battery backup time</strong></td>
<td>25 minutes @ 700 watts load.</td>
<td>50 minutes @ 700 watts load.</td>
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<tr>
<td></td>
<td>1 hour @ 350 watts load.</td>
<td>2 hours @ 350 watts load.</td>
</tr>
<tr>
<td><strong>Recharge time</strong></td>
<td>8 hours to 90% capacity after full discharge.</td>
<td>16 hours to 90% capacity after full discharge.</td>
</tr>
<tr>
<td><strong>SNMP interface for UPS monitoring and automatic shutdown configuration (optional)</strong></td>
<td>Using an external SNMP adapter, the RS-232 signals (from the DB-9 female connector) from the UPS can be converted to 10M/100M fast Ethernet signals (and RJ-45 connection) for external UPS monitoring/configuration capability using Telnet, web browsers, or NMS (most such external devices support TCP/IP, UDP, SNMP, Telnet, SNT, PPP, HTTP &amp; SMTP protocols).</td>
<td></td>
</tr>
<tr>
<td><strong>Status indicators</strong></td>
<td>5 LED load level indicator: 0 to 100% of rated load.</td>
<td>5 LED battery charge level indicator from 0 to 100% of rated charge.</td>
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<tr>
<td></td>
<td>5 LED indicators for: in boost, buck or normal mode.</td>
<td>3 LED indicators for: inverter on/off, battery fault, and overload.</td>
</tr>
<tr>
<td><strong>Input/output connections</strong></td>
<td>3 position terminal blocks provided for 3 x 1.5mm² (16AWG) connections via 25 mm (1”) liquid-tight cable glands.</td>
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<tr>
<td><strong>Physical</strong></td>
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<tr>
<td>Dimensions</td>
<td>610mm(24&quot;)wide x 305mm(12&quot;)deep x 762mm(30&quot;)high</td>
<td></td>
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<tr>
<td>Weights</td>
<td>50kg(110 lbs)</td>
<td>73kg(160 lbs)</td>
</tr>
<tr>
<td>Steel cabinet</td>
<td>Full weather IP44 (NEMA-3R) outdoor design.</td>
<td></td>
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<tr>
<td>Mounting options</td>
<td>Bolting or banding mountable to monopole via optional 'H' style bracket (steel mounting bands not included), pedestal (ground) or wall mountable. Four wall mounting 'feet' are included.</td>
<td></td>
</tr>
<tr>
<td><strong>Environmental</strong></td>
<td>-20° to +60°C (-4° to +140°F) ambient air temperature.</td>
<td>-40° to +60°C (-40° to +140°F) with optional battery heater.</td>
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<tr>
<td></td>
<td>Thermostat controlled exhaust fan.</td>
<td></td>
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<tr>
<td><strong>Moisture protection (optional)</strong></td>
<td>Optional conformal coating of electronic boards is available for moisture resistance to protect against high humidity environments.</td>
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<tr>
<td><strong>Warranty</strong></td>
<td>Two year limited warranty, parts and labor. One year battery warranty.</td>
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</table>
OutdoorXUPs Series

Outdoor uninterruptible power system

OutdoorXUPs-1000AHV/BHV at a glance

Heavy-duty outdoor UPS with line-interactive automatic
voltage regulation and extreme/wide temperature batteries

- Wide ambient temperature range
  sealed gel-cell batteries:
  -20° to +60°C (-4° to +140°F); or
  -40° to +60°C (-40° to +140°F)
  with optional thermostat
  controlled battery heater
- 24 vdc battery bus
- **25 minutes @ 700 watts**, or
  1 hour @ 350 watts with
  The OutdoorXUPs-1000AHV
- **50 minutes @ 700 watts**, or
  2 hours @ 350 watts with
  the OutdoorXUPs-1000BHV
- 230 vac +/-8% output
  from 190 – 280 vac input
  without going to batteries
- Weather protected
  IP44 (NEMA-3R)
  painted metal cabinet
- SNMP compatible (optional)
- Less than 4ms transfer time
- Microprocessor-controlled
  20 kHz PWM sine wave inverter
- Thermostat controlled
  fan is included

OutdoorXUPs-1000AHV/BHV system architecture

- utility ac input
- ac circuit breaker
- earth ground
- chassis
- neutral
- hot

- heavy-duty
  ac surge
  protection,
  noise filter
  and
  overvoltage,
  undervoltage
disconnect
circuits

- external battery
  (optional)
- regulated XUPs
  output 230 vac +/-8%

- relay 1
- relay 2

- logic

- battery
  and
  charger

- ac inverter

- regulated XUPs
  output 230 vac +/-8%

- neutral
- hot
- chassis
- ground

Optional bandable or
boltable monopole
mounting brackets
Mounting on a concrete pad with U-channel

Following is a drawing of a recommended pedestal/concrete pad mounted installation using the TSi Power aluminum U-channel mounting brackets. When ordered with these, the units will come with them already bolted to the bottom of the cabinet. There are four pre-drilled bolt holes that will then allow bolting of the unit to a concrete pad or other mounting surface, such as a Quazite® pad or Unistrut®.

Outdoor XUPs pad mounted