Gutor PxW
AC UPS

Designed for North American Market

PEW 5 – 200 kVA single phase
PDW 10 – 220 kVA three phase
Higher ratings upon request
## Gutor™ PxW Technical Data: PEW Single Phase/PDW Three Phase

### UPS Input

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rectifier input voltage</td>
<td>3 x 208/480/600 V (other voltage upon request)</td>
</tr>
<tr>
<td>Voltage tolerance</td>
<td>+/- 10%</td>
</tr>
<tr>
<td>DC in tolerance</td>
<td>+/- 10%</td>
</tr>
<tr>
<td>Bypass input voltage</td>
<td>1 x 120/208/240/480/600 V (other voltage upon request)</td>
</tr>
<tr>
<td>Frequency</td>
<td>60 Hz +/- 8% (50 Hz available upon request)</td>
</tr>
<tr>
<td>Inrush current</td>
<td>&lt;10x I_n (input current)</td>
</tr>
</tbody>
</table>

### Intermediate DC Circuit

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voltage</td>
<td>110/125/220/400 VDC</td>
</tr>
<tr>
<td>Rectifier voltage tolerance</td>
<td>+/- 1% I-V characteristic</td>
</tr>
<tr>
<td>DC ripple voltage</td>
<td>with battery capacity of 3x nominal current: ± 1% rms</td>
</tr>
<tr>
<td>Float voltage at -10% line power</td>
<td>100 – 115% programmable</td>
</tr>
<tr>
<td>Boost voltage range at nominal line power</td>
<td>100 – 125% programmable</td>
</tr>
<tr>
<td>Boost charge time</td>
<td>1 – 24 hour programmable</td>
</tr>
<tr>
<td>Charging current limitation</td>
<td>programmable</td>
</tr>
<tr>
<td>Inverter input range (output tolerance +/- 1%)</td>
<td>+20/15%</td>
</tr>
<tr>
<td>Inverter maximum input range (output tolerance +/- 10%)</td>
<td>+/- 25%</td>
</tr>
</tbody>
</table>

### UPS Output

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal UPS Inverter rating</td>
<td>kVA at PF 1.0</td>
</tr>
<tr>
<td>Voltage</td>
<td>1 x 120/240 V (other voltage upon request)</td>
</tr>
<tr>
<td>Voltage tolerance</td>
<td>+/- 1%</td>
</tr>
<tr>
<td>Static within 0 – 100% load</td>
<td>125%</td>
</tr>
<tr>
<td>Dynamic at 100% load surge</td>
<td>1,000%</td>
</tr>
<tr>
<td>Inverter 1 min</td>
<td>150%</td>
</tr>
<tr>
<td>Inverter 10 min</td>
<td>125%</td>
</tr>
<tr>
<td>Bypass 100 ms</td>
<td>1,000%</td>
</tr>
<tr>
<td>Overload</td>
<td>105% continuous</td>
</tr>
<tr>
<td>Frequency</td>
<td>60 Hz +/- 8% (50 Hz available upon request)</td>
</tr>
<tr>
<td>Frequency stability, free running</td>
<td>&lt;0.01%</td>
</tr>
<tr>
<td>Synchronization range</td>
<td>0.5/1/2/4/6/8/12%</td>
</tr>
<tr>
<td>Slew rate single units</td>
<td>0.25/0.5/1/2/4 Hz/s programmable</td>
</tr>
<tr>
<td>Slew rate redundant system</td>
<td>4.0 Hz/s</td>
</tr>
<tr>
<td>Wave form</td>
<td>sinusoidal</td>
</tr>
<tr>
<td>Admissible output crest factor</td>
<td>unlimited</td>
</tr>
<tr>
<td>Distortion factor</td>
<td>± 3%</td>
</tr>
<tr>
<td>Linear load</td>
<td>± 5%</td>
</tr>
<tr>
<td>Allowable power factor</td>
<td>0.4 lag – 0.9 lead</td>
</tr>
<tr>
<td>Fault clearing capability</td>
<td>200% for 100 ms via inverter, 1,000% for 100 ms via bypass</td>
</tr>
</tbody>
</table>

### General Data

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ambient temperature range for storage</td>
<td>from -20 to +70 °C</td>
</tr>
<tr>
<td>Ambient temperature range for operation</td>
<td>from -4 to +158 °F</td>
</tr>
<tr>
<td>Altitude above sea level</td>
<td>1,000 m without load de-rating</td>
</tr>
<tr>
<td>Allowable air humidity</td>
<td>&lt;95% (non-condensing)</td>
</tr>
<tr>
<td>Noise level standard n+1 fan system</td>
<td>60 – 75 dBA depending on type</td>
</tr>
<tr>
<td>Degree of protection</td>
<td>NEMA 1 (IP20)</td>
</tr>
<tr>
<td>Paint</td>
<td>pearl light gray, RAL 9022 cabinet</td>
</tr>
<tr>
<td>Efficiency</td>
<td>up to 91% depending on type</td>
</tr>
<tr>
<td>Cooling</td>
<td>forced ventilation (two speed) with n+1 redundant, monitored fans</td>
</tr>
<tr>
<td>Standards Safety</td>
<td>UL 1778 / CSA 22.2.107.3</td>
</tr>
<tr>
<td>EMC Performance</td>
<td>FCC Part 15 Subpart B, Class A</td>
</tr>
<tr>
<td>Conformity</td>
<td>CE-Label</td>
</tr>
<tr>
<td>Seismic</td>
<td>up to 1.0 g</td>
</tr>
</tbody>
</table>
Gutor PxW specifications:
PEW single phase/ PDW three phase

Typical single-line drawing

Standard configuration

- Single UPS
- UPS output voltage
  - Single phase: 1 x 120 V
  - Three phase: 3 x 480 V
- Rectifier input voltage: 3 x 480 V +10/-10%
- Bypass input voltage
  - Single phase: 1 x 120 V +10/-10%
  - Three phase: 3 x 480 V +10/-10%
- Frequency: 60 Hz +/- 8%
- 6-pulse rectifier with isolation transformer
- Rectifier sized for output PF = 0.8
- Rectifier input breaker
- Fixed charging voltage IU characteristic
- Static switch EN (line power side)
- Static switch EA (inverter side)
- LC display unit with additional alarm LEDs
- Alarm relays for battery operation and common alarm
- Bottom cable entry
- Ground terminal
- N+1 monitored two-speed fans
- Ambient temperature range from +14 to +104 °F
- NEMA 1 (IP20)
- Painting pearl light gray, RAL 9022 structure
- Battery MCCB in UPS
- Three position manual bypass switch
- Bypass backfeed protection

Battery voltage and UPS ratings

<table>
<thead>
<tr>
<th>Voltage (VDC)</th>
<th>110</th>
<th>125</th>
<th>220</th>
<th>400</th>
</tr>
</thead>
<tbody>
<tr>
<td>UPS ratings (kVA)</td>
<td>5</td>
<td>10</td>
<td>15</td>
<td>20</td>
</tr>
<tr>
<td>Single phase</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Three phase</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Higher ratings and other voltages on request
Options

System
- Redundant/Parallel Load Sharing Configuration
- Redundant/Parallel Dual Configuration
- AC distribution
- AC and DC earth-fault monitoring
- Input harmonic filter

Rectifier
- Rectifier input MCCB
- 12-pulse rectifier with isolation transformer
- Oversized rectifier
- Rectifier fuse
- Diode for reverse polarity protection
- Rectifier output isolator/circuit breaker

Battery
- Battery circuit protection box (MCCB/fuse)
- Battery circuit protection in rectifier (MCCB/fuse)
- Low-voltage disconnect
- Battery management system (single cell type)
- Temperature sensor for temperature compensated battery charging
- Battery monitor (programmable battery data)
- Battery asymmetry supervision

Inverter
- Inverter input isolator/circuit breaker
- Black start facility
- Oversized inverter
Bypass

- Bypass switch blocking coil
- Remote manual bypass switch
- Bypass input isolator/circuit breaker
- Bypass isolation transformer
- Bypass voltage regulating transformer
- Independent static bypass switch

Indication and alarms

- Input power failure
- DC earth fault
- Inverter fuse blown
- DC out of tolerance
- 5x customizable options
- Bypass input power failure
- Rectifier fuse blown
- Fan failure
- Internal PSU fault
- Battery discharged
- System overtemperature
- EA inhibited (UPS output static switch)
- Battery disconnected
- Inverter ON
- EN inhibited (Bypass static switch)
- Battery operation
- Boost (Equalize) charge ON
- Manual bypass ON
- Rectifier failure
- Rectifier ON
- Asynchronous
- EA ON (UPS output static switch)
- External horn
- Inverter failure
- EN ON (Bypass static switch)
- Overload inverter/bypass

Communication interfaces

- Front-panel analog meter
- Power meter
- Transducer
- Relay board, 16 fail-safe NO/NC contacts
- RS-232/485 interface (downloadable event log)
- RJ-45 Ethernet port for Web browser-based monitoring
- Modbus protocol on RS-485 or TCP/IP
- IEC 61850 protocol on RJ-45 and/or fiber optic connector
- Profibus® on RS-485
- External time synchronization

Mechanical

- Top/bottom cable entry
- NEMA 12 per NEMA 250-1991 (IP52)
- Air filters at air inlet
- 100% redundant ventilation
- Seismic design
- Space heaters
- Panel lighting
- Cabinet color as required
- Ambient temperature maximum +131 °F
- Allowable altitude up to 13,123 ft (4,000 m) above sea level

Additional options are available upon request.
Human-machine interface

The front panel includes a comprehensive and flexible human-machine interface. It is divided into four sections:

1. The system panel shows the current state of operation and how power is being routed through the system to the load.
2. The operations panel is used to turn the system on and off. The Lamp Test button indicates whether all LED indication lights on the front panel are functioning properly.
3. The keypad is used to view system measurements and interact with the system.
4. The alarm & indication panel displays possible faults and alarms.

Operational parameters

- Selectable second display language
- Bypass operation
- Boost charge
- Auto boost (equalize) charge
- Battery-capacity test
- Battery-monitor test (optional)
- Set date/time

Measurements

- Load in percentage of nominal kVA rating
- AC rectifier input voltage and current
- AC bypass input voltage
- Total DC current, battery voltage, and battery current
- Battery temperature (with optional sensor)
- AC Inverter current
- AC output voltage, current, and frequency
- AC output peak current
- Battery backup time remaining (optional with string type battery monitor)
- Event log with date and time (operating mode changes and alarms)