AlphaCell HR
VRLA Battery for High Rate UPS Standby Power Applications

- Front Access threaded copper alloy inserts for reduced maintenance and increased safety
- Front terminal design maximizing energy density with direct connect extrusion fusion weld technology
- Reduced headspace driving higher energy density in cabinet or rack applications
- Removable handles for ease of installation
- Thermally welded case-to-cover bond to ensure a leak-proof seal

The AlphaCell HR valve regulated lead acid battery is designed for UPS standby power applications. This model features Absorbent Glass Mat (AGM) technology for efficient gas recombination of up to 99% as well as flame-arresting one-way pressure-relief vent for safety and long life.
AlphaCell HR

Specifications

Operating Temperature Range with temperature compensation:
Discharge: -40°F (-40°C) to +160°F (71°C)
Charge: -10°F (-23°C) to +140°F (60°C)

Nominal Operating Temperature Range:
+74°F (23°C) to +80°F (27°C)

Recommended Maximum Charging Current Limit:
C/5 amperes @ 20 HR rate

Float Charging Voltage:
13.5 to 13.8 Vdc average per 12V unit @ 77°F (25°C)

Maximum AC Ripple (Charger):
0.5% RMS or 1.5% P-P of float charge voltage recommended for best results.
Max voltage allowed = 1.4% RMS (4% P-P) Max current allowed = C/20

Self Discharge:
Battery can be stored up to 6 months at 77°F (25°C) before a freshening charge is required.
Batteries stored at temperatures greater than 77°F (25°C) will require recharge sooner than batteries stored at lower temperatures.

Equalize charge and cycle service voltage:
14.40 to 14.80 Vdc average per 12V unit @ 77°F (25°C)

Terminal: Inserted - Inter-unit connector provided:
Threaded copper alloy insert terminal to accept 1/4-20 UNC bolt

Terminal Hardware Initial Torque:
110 in.-lbs. (12.4 N-m)

Dimensions H x D x W (in/mm):
12.60 x 22.01 x 4.95 / 320.04 x 559.05 x 125.73

<table>
<thead>
<tr>
<th>Model</th>
<th>Cells per Unit</th>
<th>Battery Weight</th>
<th>Maximum Terminal Discharge Current Rating (AMPS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AlphaCell 700 HR</td>
<td>6</td>
<td>131 lbs</td>
<td>60 kg</td>
</tr>
</tbody>
</table>

Typical Impedance Measurement Values*

<table>
<thead>
<tr>
<th>Model</th>
<th>HP: milli-Ohms @ 60Hz</th>
<th>Alber: micro-Ohms</th>
<th>Midtronics: Mhos</th>
<th>AVO Biddle: milli-Ohms</th>
</tr>
</thead>
<tbody>
<tr>
<td>AlphaCell 700 HR</td>
<td>2.59</td>
<td>3480</td>
<td>1836</td>
<td>2.45</td>
</tr>
</tbody>
</table>

* Per IEEE 1188-2005, Internal ohmic values are useful as a trending tool. To use these readings effectively, accurate baseline readings should be taken after about six months of battery operation. Internal ohmic readings taken without the benefit of baseline data may be difficult to interpret and of limited value. Values provided are for reference only.

Constant Power Discharge Ratings - Watts Per Cell @ 77°F (25°F)

<table>
<thead>
<tr>
<th>Model</th>
<th>Voltage</th>
<th>AH 20 hr*</th>
<th>Operating Time (in minutes) to 1.67 Volts per Cell</th>
</tr>
</thead>
<tbody>
<tr>
<td>AlphaCell 700 HR</td>
<td>12</td>
<td>206</td>
<td>5 10 15 20 30 40 45 50 60 90</td>
</tr>
</tbody>
</table>

*Nominal 20 hr rate to 1.75 VPC in Ampere-Hours

Constant Power Discharge Ratings - Watts Per Cell @ 77°F (25°F)

<table>
<thead>
<tr>
<th>End Point Volts/Cell</th>
<th>1 2 3 5 8 10 12 20 24 72</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.75</td>
<td>821.1 700.8 596.0 512.5 398.3 326.9 300.6 278.5 243.2 177.7</td>
</tr>
<tr>
<td>1.70</td>
<td>961.5 804.0 665.6 559.0 422.4 341.9 312.9 288.7 250.8 181.5</td>
</tr>
<tr>
<td>1.67</td>
<td>1058.8 853.6 700.0 575.3 432.5 349.0 319.0 294.0 254.6 182.9</td>
</tr>
<tr>
<td>1.65</td>
<td>1075.6 866.0 699.2 581.1 436.1 351.8 321.5 296.3 256.7 184.5</td>
</tr>
<tr>
<td>1.60</td>
<td>1097.4 881.5 712.2 592.2 444.1 375.7 326.4 300.5 259.8 186.0</td>
</tr>
</tbody>
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Constant Current Discharge Ratings - Ampere per Cell @ 77°F (25°F)

<table>
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<tr>
<th>End Point Volts/Cell</th>
<th>1 2 3 5 8 10 12 20 24 72</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.85</td>
<td>105 66.1 48.8 32.5 21.9 18.1 15.4 9.67 8.16 2.60</td>
</tr>
<tr>
<td>1.80</td>
<td>116 70.4 51.7 34.4 23.1 19.0 16.2 10.1 8.54 2.70</td>
</tr>
<tr>
<td>1.75</td>
<td>124 74.0 53.8 35.5 23.7 19.5 16.5 10.3 8.70 2.80</td>
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