Uninterruptible Power Supply (UPS) Selection

What is a UPS?

An Uninterruptible Power Supply or UPS (see Figure 1) is a battery device that can supply electricity to equipment that is connected to it should an outage in the incoming supply occur.

Steps to Selecting a UPS

Selecting which UPS to use for a particular job can be a rather tricky task as there are many factors to consider. The form over the page helps make it a little easier. Complete the form by following these steps:

1. First check with the customer on what they require from a UPS and list this in the ‘Customer UPS Requirements’ section of the form. Many customers will only have a basic idea of what they want. Personal judgement will be required on what features are needed from a UPS.

2. Check with the customer on how long they expect the UPS to back up. There maybe some compromise as the backup time will affect the size and cost. The price will be the determining factor for many customers.

3. Then do a stock take of what equipment the customer expects to be backed up by the UPS. This information should be listed in the table on the form.

4. Each piece of equipment must then be checked to see what load it uses and results included on the sheet in the table section of the form. Checking the manufacturer’s label will provide this information or the current may be tonged using a clamp meter.

The current measured will then need to be multiplied by the voltage (use 250 volts) to give a reading in VA. The load of devices maybe dependent on the function it is performing at the time the load is measured. Try to tong the load when the equipment is performing at its peak load.

5. The Customer UPS Requirements, Total UPS Load and Backup Time Required are then checked against UPS manufacturer’s specifications to select the UPS. Most UPS manufacturer’s have tables for backup or run time for their models to help select the size. Discussions may be needed with the UPS supplier to ensure the customer’s needs are met.

6. It maybe necessary to justify the expense of the UPS. This is best done by comparing the purchase price against the losses should an outage occur. A detailed Cost Benefit Analysis may be required.

Battery life may be as short as 2-3 years and the customer needs to know that ongoing maintenance will be required. Generally a cool location will help the battery last longer.

Disclaimer

This information sheet provides general advice and is not a definitive guide for this topic. PowerLogic provides this information in good faith and accepts no responsibility for any defects in or misuse of the information.

For Advice

Contact PowerLogic for further advice on this topic:
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Selecting a UPS

Customer: _______________________________________ Date: ___________________

Address: ___________________________________________________________________

Specific Site: ___________________________________________________________________

Customer UPS Requirements:

☐ Surge Protection
☐ Voltage regulation
☐ Pure Sine Wave
☐ Standby UPS
☐ Online UPS
☐ Noise Filtering
☐ Power management software:
  ☐ Orderly shutdown of protected equipment.
  ☐ Voltage logging
  ☐ Notification of power failure via email, paging or remote alarm
  ☐ Remote access/control
☐ Early battery fail alarm
☐ Hot swap batteries
☐ Advanced features: ______________________________________________________

Backup Time Required: _______________________

<table>
<thead>
<tr>
<th>Item to be Protected</th>
<th>No. of Items</th>
<th>Nameplate Rating (V x I)</th>
<th>Measured Load (I)</th>
<th>Calculated Load (Imeasured x V)</th>
<th>Total VA</th>
</tr>
</thead>
<tbody>
<tr>
<td>e.g. Desktop computer</td>
<td>2</td>
<td>220VA</td>
<td>0.88A</td>
<td>0.88x250=220W</td>
<td>440 VA</td>
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</table>

Items to be added in future:


Total UPS Load

Notes:
1. If nameplate rating is in Watts then divide by a power factor of 0.7 for VA
2. A figure of 1.2 can be used to multiply the Total UPS Load to allow for future expansion.
3. Battery life maybe as short as 2-3 years - the customer should be advised.
4. The Customer UPS Requirements, Total UPS Load and Backup Time Required are checked against UPS manufacturer’s specifications to select the UPS. Most UPS manufacturer’s have tables for backup or run time for their models to help select the size.

UPS Brand Selected: ____________________ UPS Model Selected: ____________________

Size: _________________________________ Cost: ________________________________