

# Battery Backup Calculation

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## Calculating battery backup:

**Step 1:** Determine the power drawn from the batteries in watt.

$$\text{Battery Power} = \frac{\text{kVA} \times \text{Power factor}}{\text{UPS Inverter efficiency}}$$

**Step 2 A:** Determine the watt per block *(If this is the information used by the supplier)*

$$\text{Watt per block} = \frac{\text{Battery Power}}{(\text{Number of 12v Blocks used in UPS} / \text{Battery strings})}$$

Compare this figure to the watt tables supplied by the supplier. If the watt per block value is too high then increase the number of battery strings until a suitable figure obtained. The use of more than 4 parallel battery strings is not advisable.

**Step 2 B:** Determine the watt per cell *(If this is the information used by the supplier)*

$$\text{Watt per cell} = \frac{\text{Battery Power}}{(\text{Number of cells used in UPS} / \text{Battery strings})}$$

Compare this figure to the watt tables supplied by the supplier. If the watt per cell value is too high then increase the number of battery strings until a suitable figure obtained. The use of more than 4 parallel battery strings is not advisable.