

NiCd/NiMH Batteries

Power-Sonic offers a wide range of Nickel Cadmium and Nickel-Metal Hydride batteries, both as individual cells and as cell assemblies. They feature:

- A broad range of cell sizes and types with capacities ranging from 60-8000mAh.
- Exceptional performance achieved through state of the art design and a meticulously controlled manufacturing process.
- The cells are rugged durable and safe. The cylindrical steel case and special construction methods result in extremely impact and vibration resistant batteries.
- A long service life of 500-1,000 charge/discharge cycles can be achieved depending on the average depth of discharge, and five years or more of trouble-free operation when used in stand-by (trickle charge) service at room temperature.
- The batteries have a wide operating temperature range from -20C to +60C for regular cells and -20C to +70C for Hi-Temp cells. For charging the allowable temperature range is 0C to +50C.
- Uniformity of cells is achieved through a quality control process which electronically screens cells as to capacity and impedance.
- **Power-Sonic** nickel-cadmium batteries are also available as cell assemblies and packs. Both cylindrical and button cells may be packaged in any configuration to meet electrical and dimensional requirements.



Details of our standard range are listed below, together with charging instructions.

Nickel Cadmium Batteries (Specifications)

| STANDARD CELLS (NiCd) | | | | | | | |
|-----------------------|-------------------|-----------------------|-------------------------|----------------------|------------------------|----------------------|---------------------|
| Model No. | Nominal Voltage V | Capacity 5hr.rate mAh | Standard Charge mA/hrs. | Quick Charge mA/hrs. | Diameter (Max.) in./mm | Height (Max.) in./mm | Weight (Max.) oz./g |
| PS-AAA | 1.2 | 300 | 22/15 | 66/4.5 | 0.41/10.5 | 1.75/44.5 | 0.35/10 |
| PS-2/3AA | 1.2 | 300 | 30/15 | 85/4.5 | 0.57/14.5 | 1.18/30.0 | 0.46/13 |
| PS-AA | 1.2 | 600 | 60/15 | 180/4.5 | 0.57/14.5 | 1.89/48.0 | 0.74/21 |
| PS-AAL | 1.2 | 600 | 60/15 | 180/4.5 | 0.57/14.5 | 1.97/50.0 | 0.74/21 |
| PS-AAX | 1.2 | 700 | 70/15 | 230/4.5 | 0.57/14.5 | 1.89/48.0 | 0.78/22 |
| PS-850AA | 1.2 | 850 | 85/15 | 255/4.5 | 0.57/14.5 | 1.89/48.0 | 0.81/23 |
| PS-850AAL | 1.2 | 850 | 85/15 | 255/4.5 | 0.57/14.5 | 1.97/50.0 | 0.81/23 |
| PS-2/3 A | 1.2 | 600 | 60/15 | 180/4.5 | 0.67/17.0 | 1.11/28.1 | 0.67/19 |
| PS-4/5 A | 1.2 | 1000 | 100/15 | 300/4.5 | 0.67/17.0 | 1.67/42.4 | 1.06/30 |
| PS-A | 1.2 | 1400 | 140/15 | 420/4.5 | 0.67/17.0 | 1.97/50 | 1.16/33 |
| PS-SC | 1.2 | 1500 | 150/15 | 450/4.5 | 0.911/23.0 | 1.69/43.0 | 1.59/45 |
| PS-C | 1.2 | 2000 | 200/15 | 600/4.5 | 1.02/26.0 | 1.97/50.0 | 2.40/68 |
| PS-CX | 1.2 | 2500 | 250/15 | 750/4.5 | 1.02/26.0 | 1.97/50.0 | 2.65/75 |
| PS-1/2 D | 1.2 | 2400 | 240/15 | -/- | 1.28/32.4 | 1.45/36.8 | 2.82/80 |
| PS-D | 1.2 | 4000 | 400/15 | -/- | 1.30/33.0 | 2.30/58.5 | 4.41/125 |
| PS-DL | 1.2 | 4000 | 400/15 | -/- | 1.30/33.0 | 2.40/61.0 | 4.41/125 |
| PS-DF | 1.2 | 4500 | 450/15 | -/- | 1.30/33.0 | 2.30/58.4 | 4.57/130 |

| | | | | | | | |
|-------|-----|------|--------|-----|-----------|-----------|----------|
| PS-DX | 1.2 | 5000 | 500/15 | -/- | 1.30/33.0 | 2.30/58.4 | 5.47/155 |
| PS-F | 1.2 | 7000 | 700/15 | -/- | 1.30/33.0 | 3.59/91.2 | 8.15/231 |

| HIGH TEMPERATURE CELLS (H-TYPE, NiCd) | | | | | | | |
|---------------------------------------|-------------------|-----------------------|-------------------------|----------------------|------------------------|----------------------|---------------------|
| Model No. | Nominal Voltage V | Capacity 5hr.rate mAh | Standard Charge mA/hrs. | Quick Charge mA/hrs. | Diameter (Max.) in./mm | Height (Max.) in./mm | Weight (Max.) oz./g |
| PS-1/3 AAH | 1.2 | 110 | 11/15 | -/- | 0.57/14.5 | 0.67/17.0 | 0.25/7.0 |
| PS-AAH | 1.2 | 700 | 70/15 | -/- | 0.57/14.5 | 1.89/48.0 | 0.74/21 |
| PS-SCH | 1.2 | 1500 | 150/15 | -/- | 0.91/23.0 | 1.69/43.0 | 1.57/45 |
| PS-CH | 1.2 | 2200 | 200/15 | -/- | 1.02/26.0 | 1.97/50.0 | 2.57/66 |
| PS-DH | 1.2 | 4000 | 400/15 | -/- | 1.30/33.0 | 2.30/58.5 | 4.41/125 |

| HIGH CAPACITY-RAPID CHARGE CELLS (XF Type, NiCd) | | | | | | | |
|--|-------------------|-----------------------|-------------------------|----------------------|------------------------|----------------------|---------------------|
| Model No. | Nominal Voltage V | Capacity 5hr.rate mAh | Standard Charge mA/hrs. | Quick Charge mA/hrs. | Diameter (Max.) in./mm | Height (Max.) in./mm | Weight (Max.) oz./g |
| PS-AAXF | 1.2 | 700 | 70/15 | 700/1.5* | 0.57/14.5 | 1.89/48.0 | 0.78/22 |
| PS-SCXF | 1.2 | 1800 | 180/15 | 1800/1.5* | 0.91/23.0 | 1.69/43.0 | 2.11/60 |
| PS-CXF | 1.2 | 2500 | 250/15 | 2500/1.5* | 1.02/26 | 1.97/50.0 | 2.54/72 |
| PS-DXF | 1.2 | 5000 | 500/15 | 5000/1.5* | 1.30/33 | 2.30/58.5 | 4.52/128 |
| <i>*Rapid charge requires control of charge current by way of temperature or - ΔV detection.</i> | | | | | | | |

| PCBM (Printed Circuit Board Mount) MEMORY SAVE CELLS (NiCd) | | | | | | | |
|---|-------------------|-----------------------|-------------------------|----------------------|------------------------|----------------------|---------------------|
| Model No. | Nominal Voltage V | Capacity 5hr.rate mAh | Standard Charge mA/hrs. | Quick Charge mA/hrs. | Diameter (Max.) in./mm | Height (Max.) in./mm | Weight (Max.) oz./g |
| PCBM-2.4 | 2.4 | 110 | 4.0/48 | -/- | 0.57/14.5 | 1.35/34.5 | 0.53/15 |
| PCBM-3.6 | 3.6 | 110 | 4.0/48 | -/- | 0.57/14.5 | 2.02/52.0 | 0.80/23.0 |

Nickel-Metal Hydride Batteries (Specifications)

| Cylindrical Cells (NiMH) | | | | | | | |
|--------------------------|-------------------|-----------------------|-------------------------|----------------------|------------------------|----------------------|---------------------|
| Model No. | Nominal Voltage V | Capacity 5hr.rate mAh | Standard Charge mA/hrs. | Quick Charge mA/hrs. | Diameter (Max.) in./mm | Height (Max.) in./mm | Weight (Max.) oz./g |
| NH-600AAA | 1.2 | 600 | 60/15 | 185/4.0 | 0.41/10.5 | 1.75/44.5 | 0.35/10 |
| NH-1250AA | 1.2 | 1250 | 125/15 | 370/4.0 | 0.57/14.5 | 1.89/48.0 | 0.88/25 |
| NH-1250AAL | 1.2 | 1250 | 125/15 | 370/4.0 | 0.57/14.5 | 1.97/50.0 | 0.88/25 |
| NH-1500AA | 1.2 | 1500 | 150/15 | 450/4.0 | 0.57/14.5 | 1.89/48.0 | 0.92/26 |
| NH-1500AAL | 1.2 | 1500 | 150/15 | 450/4.0 | 0.57/14.5 | 1.97/50.0 | 0.92/26 |
| NH-1600A | 1.2 | 1600 | 160/15 | 530/4.0 | 0.67/17.0 | 1.67/42.4 | 1.16/33 |
| NH-2100A | 1.2 | 2100 | 210/15 | 630/4.0 | 0.67/17.0 | 1.97/50.0 | 1.30/37 |
| NH-3000SC | 1.2 | 3000 | 300/15 | -/- | 0.91/23.0 | 1.69/43.0 | 2.08/59 |
| NH-3700A | 1.2 | 3700 | 370/15 | -/- | 0.67/17.0 | 2.64/67.0 | 1.86/53 |
| NH-7000D | 1.2 | 7000 | 700/15 | -/- | 1.30/33.0 | 2.30/58.5 | 5.62/160 |
| NH-7000DL | 1.2 | 7000 | 700/15 | -/- | 1.30/33.0 | 2.40/61.0 | 5.62/160 |
| NH-8000D | 1.2 | 8000 | 800/15 | -/- | 1.30/33.0 | 2.30/58.5 | 5.62/160 |

| Button Cells (NiMH) | | | | | | | |
|---------------------|-------------------|-----------------------|-------------------------|----------------------|------------------------|----------------------|---------------------|
| Model No. | Nominal Voltage V | Capacity 5hr.rate mAh | Standard Charge mA/hrs. | Quick Charge mA/hrs. | Diameter (Max.) in./mm | Height (Max.) in./mm | Weight (Max.) oz./g |
| NH-B80 | 1.2 | 80 | 8/15 | -/- | 0.81/15.4 | 0.25/6.30 | 0.12/3.5 |
| NH-B320 | 1.2 | 80 | 8/15 | -/- | 0.98/25.0 | 0.34/8.70 | 0.51/14.5 |
| NH-TR7 | 8.4 | 150 | 15/15 | -/- | 48.5 x 26.5 x 17.5 mm | | 1.49/42 |

Charging Instructions

Cyclic Use:

Semi-constant or constant current charging at the 0.1C (C/10) rate for 15 hours is recommended. Overcharging at C/10 for long periods of time can be done at room temperature without causing damage.

Cell sizes ranging from 1/3AA to SC can also be quick charged for 4.5 to 6 hours at the 0.25C (C/3-C/4) rate. Quick charging larger cells (C-cell and up) requires a controlled charge circuit because of the heat and gas generated during overcharge.

Stand-by Use:

A trickle charge between of between 0.02C and 0.05C (C/50-C/20) is sufficient to keep a battery fully charged. At 0 °C to 45 °C (32 °F to 113 °F) this charge rate will minimize heating effects during overcharge and prolong battery life.

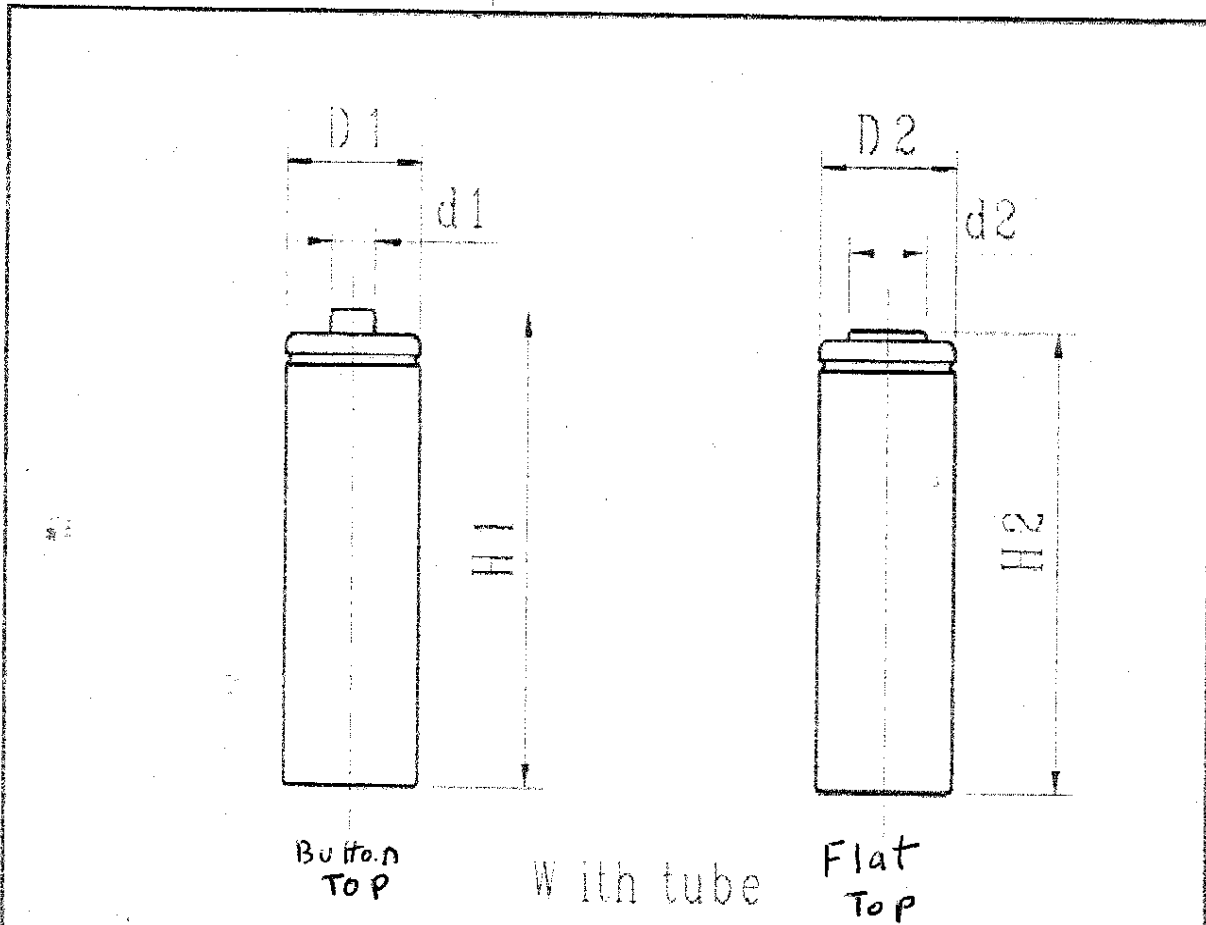
Storage of Nickel Cadmium Batteries

Power-Sonic nickel cadmium batteries may be stored for up to four years in either a charged or discharged state. They must be recharged prior to being returned to service. We recommend that each battery be charged and discharged two or three times as the conditioning of the battery allows the battery to regain its capacity.

We would strongly recommend that the batteries should be stored in a discharged state. This allows full capacity to be restored quickly and with minimum reconditioning.

Due to the differences in self-discharge rates, sealed cells in a ***Power-Sonic*** battery may have varying degrees of available capacity after being in stored for extended periods of time. The battery must be re-charged in accordance with the above protocol prior to being returned to service. If this is not done polarity reversals may occur, this will have a detrimental effect on the available capacity of the battery.

NH-1250



| Dimension of the cell | | | |
|-----------------------|----------------------|----|---------------------|
| D1 | $\phi 14.3 \pm 0.2$ | D2 | $\phi 14.3 \pm 0.2$ |
| d1 | $\phi 4.75 \pm 0.05$ | d2 | $\phi 8.1 \pm 0.05$ |
| H1 | 49.5 ± 0.5 | H2 | 47.5 ± 0.5 |