

Amstron Power Solutions

28420 Witherspoon Parkway
Valencia, CA 91355

SPEC. NO.	VSH-H11U	ISSUE DATE	2007-10-26		
DESCRIPTION	Nickel-Metal Hydride Battery (model No. VSH-H11U)	EDITION	0	PAGE	1/5

1. Applicability

The specification is applicable to Amstron Nickel-Metal Hydride Rechargeable batteries (Amstron model no. : VSH-H11U).

2. Ratings

2.1 Cell

- 2.1.1 Type of Cell : Sealed Nickel-Metal Hydride cylindrical Rechargeable battery
- 2.1.2 Cell Model : Sanyo HR-4/3AU
- 2.1.3 Cell Size : 4/3AU
- 2.1.4 Cell Nominal capacity : 4000 mAh
- 2.2.5 Minimum capacity : 3500 mAh
- 2.1.6 Number of cell used : 3PCS

2.2 Pack

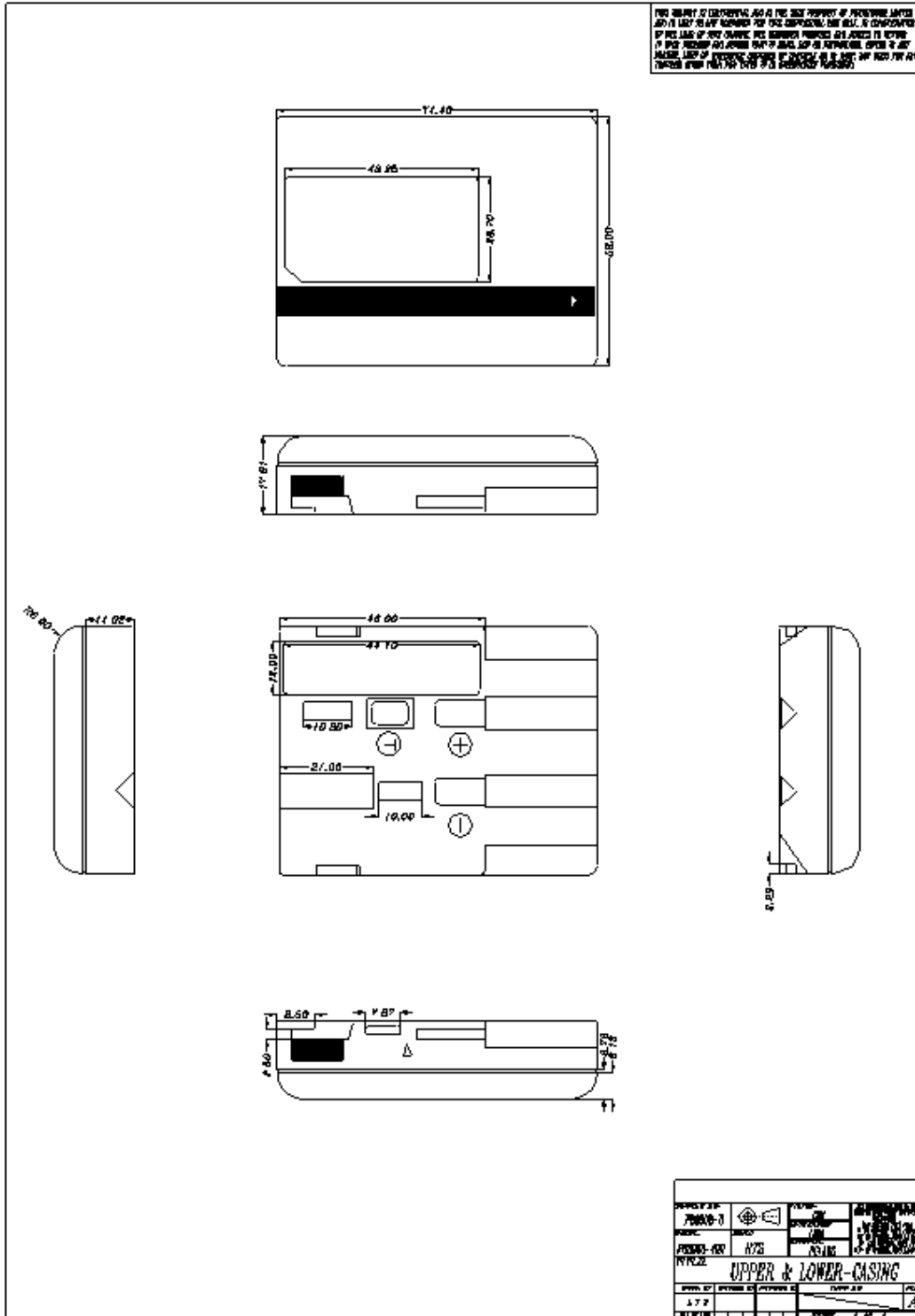
- 2.2.1 Nominal voltage : 3.6V
- 2.2.2 Nominal capacity : 4000 mAh
- 2.2.3 Minimum capacity : 3500 mAh
- 2.2.4 charge method : 2000mA×130min
- 2.2.5 Discharge end voltage : 3V
- 2.2.6 Replack No. : Sharp: BT-H11
- 2.2.7 Battery Pack Color : Black
- 2.2.8 Operating temperature : 0 - 45°C (charge)
-20 - 50°C (discharge)
- 2.2.9 Storage temperature : -20 - 50°C (1 months)
-20 - 40°C (3 momths)
-20 - 30°C (1 year)

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3. Configuration and dimensions



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4. Test conditions

Unless otherwise specified, all tests should be conducted within one month of delivery under the following conditions :

Ambient temperature : 25 +/- 2°C.

Relative humidity : 65 +/- 20%.

5. Performance

Item	Criteria	Test conditions
Capacity	Above 3500mAh	Standard charge and standard discharge
Internal impedance	Less than 150mohm	Measure AC impedance at 1kHz
Cycle life **	Above 1900mAh	300 cycles charging/discharging is repeated in the below condition. <ul style="list-style-type: none"> ● Charging: 2000mA ● Rest time: 1hrs ● Discharging: 2000mA to 3V ● Temperature: 20±2°C
Leakage resistance	No leakage	Visually inspect battery pack after standard charge and storage at 25°C for 14 days.
Drop test	No fire, no explosion, no leakage (max. weight loss 0.1%)	Drop battery pack after standard charged onto a bakelife floor from a height of 75 cm for 6 times.
Vibration test	No fire, no explosion, no leakage (max. weight loss 0.1%)	The battery pack is vibrated in triaxial direction with 4 mm amplitude of frequency 30 Hz (1 Hz per minute) for 1 minute in triaxial direction.
Short circuit test	No fire, no explosion, cell temperature shall not exceed 150 °C	External short circuit
Dimensions	Refer to drawing of PB300	Measured by calipers
Battery weight	Approx. 175g	Measured by balance
Appearance	No crack, no leakage, no deformation	Visual inspection

Note: ** Data provided under "Cycle Life" in this document is our best estimate based on the technical data supplied by battery cell manufacturer in the Product Specification Form.

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6. Material of Case

A non-inflammable material from GE injects the plastic casing, model CYCOLOY C2950-111. It is listed UL94 V-0VA.

7. Warranty

One year limited warranty against workmanship and material defects. Manufacturer reserves the right to alter, amend the design, model and specification without prior notice.

8. Charge state of cell before shipment

Charge from 10% to 50% according to delivery condition.

9. Safety precaution

Please follow the safety precaution carefully as improper handling of Nickel-Metal Hydride batteries may result in injury or damage from electrolyte leakage, heating ignition or explosion. To ensure safety, consult with Amstron Power Solutions regarding the charge and discharge specifications, equipment structure, warning labels and other important details when

designing equipment to use Amstron Power Solutions rechargeable Nickel-Metal Hydride batteries.

Never charge the battery above 4.8V.

Never reverse charge the battery.

Never heat or incinerate the battery.

Never pierce, crush or cause mechanical damage to the battery.

Never charge a battery at high temperature condition, such as at or near a fire.

Never short circuit the battery.

Never discharge a battery to below 1.0V per cell.

Never allow the battery to get wet or be immersed in water.

For long period of storage, temperature should be below 45°C.

After long period of storage, battery may required some cycling

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to recover capacity.

10. SAFETY DEVICE AND ABUSE REQUIREMENT

Circuitry protection as described below has been presented inside the battery pack to insure safety in case of misuse.

Over Temperature

When battery internal temperature exceeds 70 ± 5 the thermal interrupter shall trip creating an open circuit that prevents further charging or discharging of the battery.