

**Product Specification**

Model <b>BS17A-H24/2.0L</b>	Date August 6, 2010
	Created by Engineering Headquarters

**Scope**

This specification applies to backup battery package, BS17A-H24/2.0L, for fanless power supply.  
 This unit is backup battery package for power supply, PCF\*-180P-\*\*\*\*, used at blackout.  
 All items in this specification shall be provided at normal temperature (20±5°C) and humidity unless otherwise specified.

**General Specification**

Item	Specification and Standard	Measurement conditions, etc.	Note
General Specification	Battery	1.2V 1800mA × 8 cells in series connection ▲	Sealed Ni-MH battery
	Nominal battery voltage	DC 9.6V	
	Efficiency (at backup operation)	75%	Battery voltage: +9.6V
	Rated output power	Battery package output power 97.2W (18V 5.4A)	(Equivalent to 90W of fanless power supply output) <sup>Note 2</sup>
	Equipped booster circuit output voltage	18V typical	Voltage is measured at output terminal.
	Charging current	0.2A typical (15 hours typical)	Timer charging method
	Discharge cut-off voltage	6.4V to 7.2V	With voltage monitoring circuit, battery discharge is forcibly shut down in order to prevent over discharge.
	Equipped fuse rating	30A, DC 32V	
	Cooling system	Natural air cooling	
	Environment	Operating temp. / Humidity	0°C (Note 1) to 45°C / 10% to 90% RH
Storage temp. / Humidity		-20 to less than 30°C / 10 to 95% RH: within one year -20 to less than 40°C / 10 to 95% RH: within 90 days -20 to less than 50°C / 10 to 95% RH: within 30 days	There shall be no condensation (Note 3)
Vibration		To endure the condition of displacement amplitude of 0.075mm with vibration frequency of 10 to 55Hz for 10 sweep cycles in each X-Y-Z direction.	JIS C 60068-2-6 compliant At no operation.
Impact (surface dropping)		Lifting one bottom edge of the unit up to 50mm high with the opposite edge placed on the test bench, let it fall. Repeat 3 times for each of four bottom edges, and no malfunction should occur.	JIS C 60068-2-31 compliant At no operation.
Others	Insulation resistance	50M Ω or more between Input/Output and FG	With DC 500V at normal temperature and humidity
	Dielectric withstand	AC500V for one minute between Input/Output and FG	For one second in production line. Cut-off current of 20mA or less at normal temperature and humidity.
	Dimension	101.5 (W) × 25.4 (H) × 180.5 (D) (mm)	Excluding projections.
	Weight	900g typical	
	Reliability Grade	FA	To follow our standard.
	MTBF	100,000H min.	Excluding battery.
	Warranty	One year after delivery. If any faults belong to us, the defective unit shall be repaired or replaced at our cost, except faults caused by over-discharge.	Except errors caused by operation not specified in this specification.
Materials attached	Any technology-related documents other than this specification (General Specification and Dimension Drawing) are not provided in general.		

**Note**

Note 1: Rated output needs derating in accordance with the ambient temperature as specified below assuming that the battery characteristics is initial characteristics before deterioration.

0°C: 80% of rated output

5°C: 100% of rated output



(The derating curve changes in a linear fashion between 0°C and 5°C.)

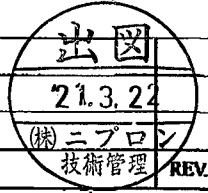
Note 2: Please cut 5w down from output power (of power supply) during charging the battery. BS17A

Note 3: If the battery is not used for more than 6 months, please recharge the battery at least once a year. (Once 6 months is preferable.)

If the battery is unelectrified for more than a year, it might not be recharged enough for its capacity.

▲ The internal battery is compliant with the safety standard IEC62133-1.

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**Signal Input/Output Specification**

	Item	Specification	Note
Input	SHUT DOWN_R	To shut down battery connection upon receipt of 'Positive voltage' input (60µS Max.) $\Delta$ (Valid during backup operation only.)  'Positive voltage' input voltage range: +3V~+25V	
	BATT OPERATE_R (AC FAIL)	To deliver a 'Negative voltage' signal during backup operation (Detection delay time : 50µS minimum after battery backup operation. Valid during backup operation only.) 'Negative voltage' output voltage range: -5V~-15V	(RS232C standard)
Output	BATT LOW_R	When the battery terminal voltage falls to 7.2V to 8.0V, 'Negative voltage' signal is delivered. (Valid during AC input and backup operation.)  'Negative voltage' output voltage range: -5V~-15V	

**Notes for Charging/ Discharging**

**Charging method**

This battery package measures discharging time and charges with 0.2A constantly for a period of time resulting from the following formula:  
Discharging time  $\times$  150

**Backup**

This battery package is for preliminary use. Therefore, do not use this as a primary power supply because it will shorten the battery package's life span.

**LED Display (Green)**

Charging: LED ON

Discharging: LED blinking (ON/OFF every 0.25 second)

Auxiliary charging: LED flashing (ON for 0.1sec every 10 seconds)

(Auxiliary charging : charging to compensate battery self-charging)

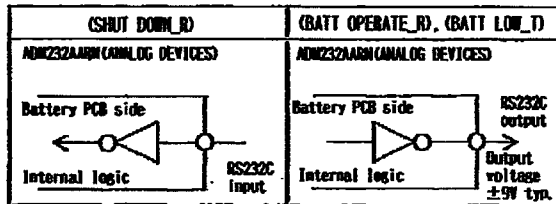
How to recharge the battery (If the battery which is unelectrified for more than 6 months.)

1. Recharging will be processed with one external power supply which has +24V 0.5A, +5V 0.1A output for its capacity. (Fan less power supply is also acceptable).
2. Connect +24V output to +terminal of CN7 battery, +5V output to 5V input of CN101, and GND (common) of +24V output to -terminal of CN7 battery.  
While recharging, LED indicator lights up.
3. Then, turn off +24V output and allow it to stand for more than 6 mins.  
LED indicator change lighting to blinking. (Discharging with no load)
4. After that, turn on the +24V output and allow it to stand for more than 15 hours.  
LED indicator change blinking to lighting.  
When the recharging finished, LED indicator changes lighting to flushing.

How to connect the battery to fan less power supply.

1. To connect fan less power supply and battery BS17A, use the harness "WH-02VH02VH-250".

**Signal circuit**

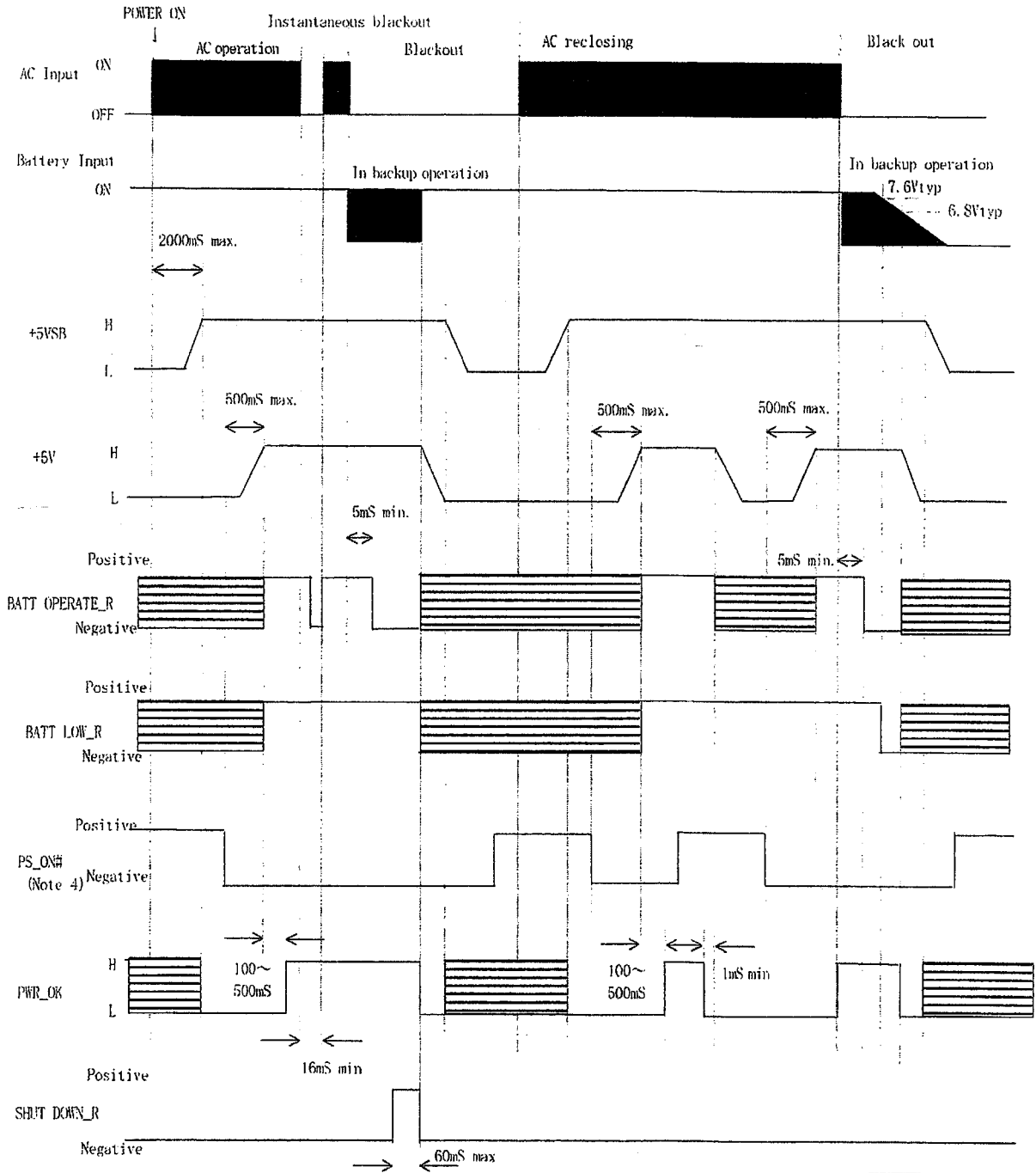


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Product Specification

Model <b>BS17A-1124/2.0L</b>	Date August 6, 2010
	Produced by Engineering Headquarters

**Sequence Specification** (with PCFL-180P-X\*\*\*connected)



(Note 4) If PS\_ON# signal with positive voltage is received during backup operation, all the output power shuts down.

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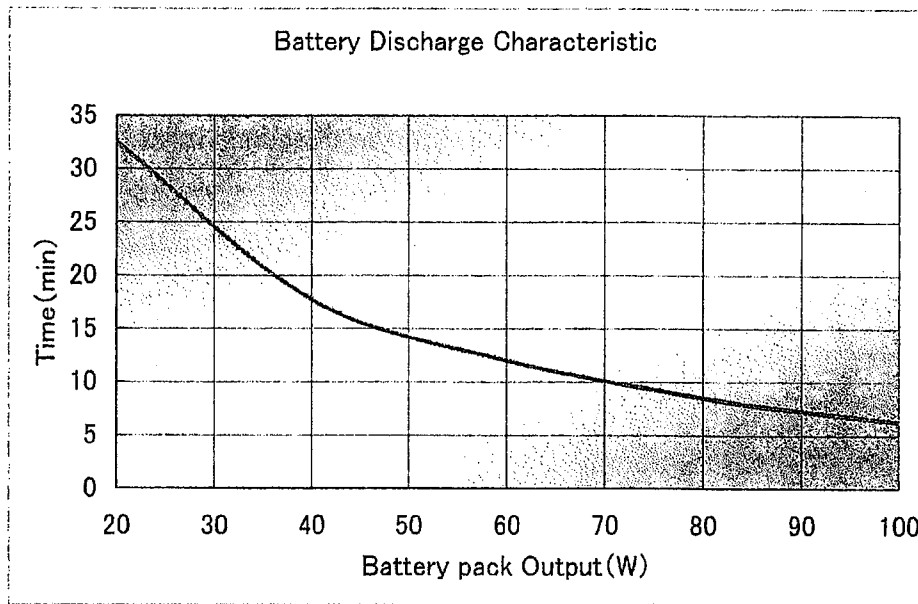
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Product Specification

Model BS17A-1124/2.0L	Date June 18, 2007
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Discharge Characteristic

■ with PCFL-180P-X\*\*\* connected



※Be aware that it is a reference value at initial use of the battery package; it is not a guaranteed.



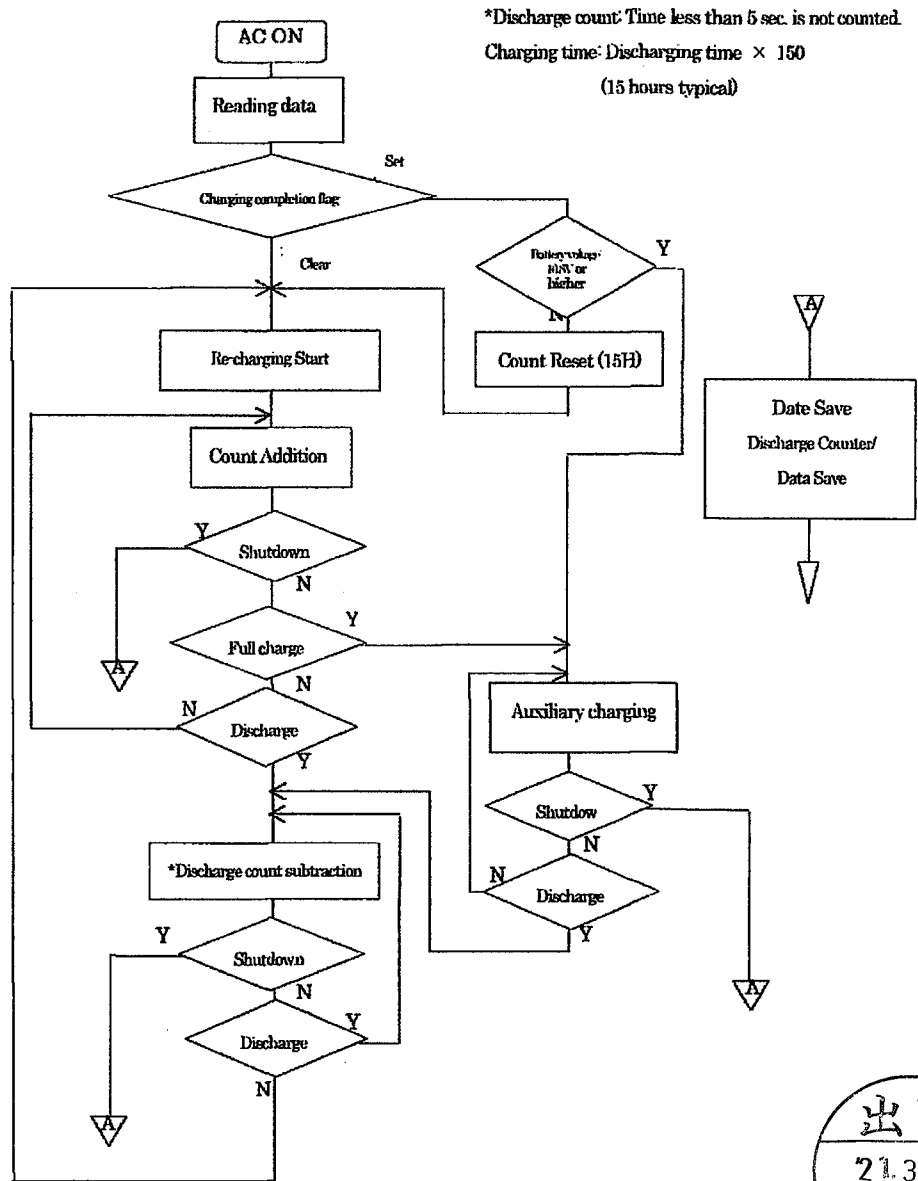
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Charging/Discharging Flow Chart

Charging/ Discharging Flow Chart



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**Precautions before use**

1. Disassembling ※ Danger  
Do not disassemble the battery package. The electrolyte inside is strong alkaline and it may damage your skin and clothes. Particularly, if the electrolyte is caught in your eyes, you may lose your sight. Should the electrolyte come into contact with your eyes accidentally while disassembling, wash immediately with clean water and go to your doctor. Do not rub your eyes. Also, if disassembled, its electrodes inside may catch fire reacting to oxygen in the atmosphere. **NEVER DISASSEMBLE THE BATTERY PACKAGE.**
2. Short circuit ※Danger  
Do not touch the terminal area of the battery package or PCB portion with metal pieces or metal bars. It may damage the equipment or generate heat from the battery, resulting in burn injury.
3. Exposure to flame and heat ※Dangerous  
Do not expose battery package to extreme heat or flame. The battery may explode as a result.
4. Charging in the reversed position ※Danger  
When re-charging the battery using a different charger than the designated one, do not charge with the battery in the reversed position. It may generate gas rapidly inside to increase gas pressure, resulting in electrolyte leakage, swell, or explosion
5. Installation in equipment ※Danger  
When installing the battery into equipment, do not seal it. In some cases, hydrogen and oxygen gas may be produced, which can cause ruptures and explosions ignited by sparks from the switch and motor. Even if the installation space is an open structure, remaining gas and positioning of an ignition spot may lead to the same danger. Therefore, provide degassing holes or block off the ignition sources, such as motors and switches, in a proper way.
6. Other uses for the battery ※Danger  
Do not use the battery package in other devices. Using equipment not optimized to the battery's specification can cause damage to the battery or devices.
7. Soaking in water and water leakage ※Warning  
Do not soak the battery in water/seawater as it may generate heat and rust, resulting in malfunction.
8. Others ※Caution  
For items that are not specified in this specification, follow the 'precautions before use' for sealed Ni-MH battery and use it properly on your own charge. Be aware that a wrongful use of the battery causes leaking, heating, and exploding, which will lead to a serious accident to personnel.




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