



## ARCTIC SERIES



### Model KS-ARC120 Ultra Low Temperature (-20°C) Lithium-ion Phosphate Battery with High Current BMS featuring temperature controlled internal cell heating technology



#### Guidance

Only use within manufacturers specifications set out below. Fitting M8 thread (14mm hex bolt head) It is vital to minimise charge/discharge resistance and avoid terminal pole overheating by using correctly rated ring terminations only. Positive should always be correctly fused.

#### Overview

The KS-ARC120 Arctic LiFePO4 12V 120AH battery features a superior internal mechanical construction with 4 banks of 20 32700 premium cells which use a patented bolt/cradle fixing system. Each bank is encased in an electrically self-heating silicon rubber blanket which is controlled by the intelligent battery management system. Among several tasks, this automatically monitors the central temperature for each bank and maintains a safe operational temperature, regardless of the real time charge or discharge demand of the battery. The system is fully automated and there are no user adjustable parameters. When charging, additional power is taken from the charger to provide heat. In situ, the battery may be externally lagged to improve the efficiency making additional power available for charging.

#### Continuous current rating

Customers are reminded to pay attention to the maximum current rating of their selected battery and parallel accordingly for very high current inverters. (160A max continuous discharge per battery).

#### Parallel

Where batteries are installed as a parallel pair. Ensure both batteries are fully charged before attempting to making a parallel electrical connection between batteries.

#### Overload

In case of overload or accidental short circuit. Ensure all loads are removed before resetting the battery. A reset is accomplished by applying a normal charge voltage to the terminals (12.8-14.6V).

#### Low Temperature Protection

To prevent fatal internal cell damage during use, this battery features integral temperature monitors that detect if the cells fall below freezing, the safe temperature charging parameters, inherent in all lithium batteries (<0°C). When such an event is triggered the battery switches on its internal heating jackets. Normal charging is resumed when the battery cell temperature rises to zero celsius. This feature is purely automatic and will not affect the normal battery discharge operation which continues to operate safely (to -20°C).

Constant Current Discharge Table (Amperes @ 25°C)

	1hr	2hr	3hr	5hr	10hr
Cut of voltage 10.8V	120A	60A	40A	24A	12A

**Model KS-ARC120** 12V 120Ah Lithium-Ion Phosphate battery: -

**Specifications**

Battery Type: Lithium-ion Phosphate (LiFePo<sup>4</sup>) 3270 cylindrical type 3.2V 6000mAh  
 Cell combination: 4S \*20P  
 Cell management (BMS): High power internal controlled intelligent multi cell balanced system  
 BMS integral protection: Low temperature charge protection: (charge current cuts to zero <0C); Short Circuit electronic trip: (>320A 250μS); Over voltage: detect 15V <2S, release 14.2V; Over discharge voltage: 8.8V <2S, release 10.8V; Over temperature shut down: 70°C  
 Battery voltage nominal: 12.8V, At rest: 13.3V  
 Capacity: 120AH nominal, 1.54KWh @ 20°C  
 Size: (mm ±2) L\*W\*H 330\*170\*215, Weight: 14.8KG (32.5 lbs)  
 Depth Discharge: 100% Efficiency: 98%  
 Internal resistance ( ±3% ) : 28.5mΩ, Self-discharge: 2.5% per month  
 Maximum recommended dry storage duration: (@55% capacity): 12 months  
 Max continuous discharge current: 160A Peak surge discharge current: 250A for 30 seconds  
 Max continuous charge current: 120A, Charge voltage: 14.4 to 14.6V, Charge type: CC/CV  
 Operating temperature range: -20°C to +60°C  
 Terminals: F12 (M8), Case material: ABS, Ingress Rating: 64  
 Parallel configuration: 4 (ensure suitable fuse protection), Series: 4 batteries maximum  
 Life Span: >5000 cycles @80% - 30% DOD @ 0.5C, >2500 cycles DOD 95% @ 1C  
 Designed by KS Energy Holdings (UK) Limited, manufactured in China.

