

# 48V100 K Customizable Battery Kit

The 48V100 K Battery Kit allows OEMs and integrators to configure customized 48V 100Ah battery solutions leveraging the superior performance of Nanophosphate® lithium ion modules and NEC Energy Solutions' advanced battery management features.

The 48V100 K kit is a higher-power, longer-lasting, and lighter-weight alternative to lead acid battery systems aimed at telecommunications backup power, behind-the-meter energy storage, solar PV integration, or other demanding applications. With the 48V100 K kit, system designers have the freedom to integrate breakthrough battery technology and robust management with their enclosures and power management equipment, delivering faster charging, greater reliability, longer cycle life, and higher overall performance.

The 48V100 K kits consists of two 24 VDC 100Ah battery modules using the field-proven 20Ah prismatic cells from A123 Systems, a Battery Control Module (BCM) for advanced battery management, a Current Sense Module (CSM), and design documentation. Now OEMs and system integrators can leverage NEC Energy Solution's proven energy storage technologies in their own integrated power systems.



## 48V100K Applications

### TELECOM BACKUP POWER

- High-energy density enables more usable capacity in less space
- Maintenance-free long calendar and float life lower overall cost of ownership

### WEAK-GRID WIRELESS INFRASTRUCTURE

- Long cycle life, even with deep DoD cycles, and partial state of charge
- Fast charging during periods of grid power availability

### OFF-GRID WIRELESS BASE STATIONS

- High performance over full depth-of-discharge range optimizes renewable generation integration
- Integrated intelligence allows real-time monitoring of storage systems at remote sites

### OUTSIDE PLANT INFRASTRUCTURE

- Reliable performance over wide operating temperature range
- High-energy density for space-constrained environments

### BEHIND-THE-METER ENERGY STORAGE

- Flexibility across full range of available power and energy enables many use cases
- Ideal building block for PV integration, demand charge avoidance, backup power

### Technical Characteristics

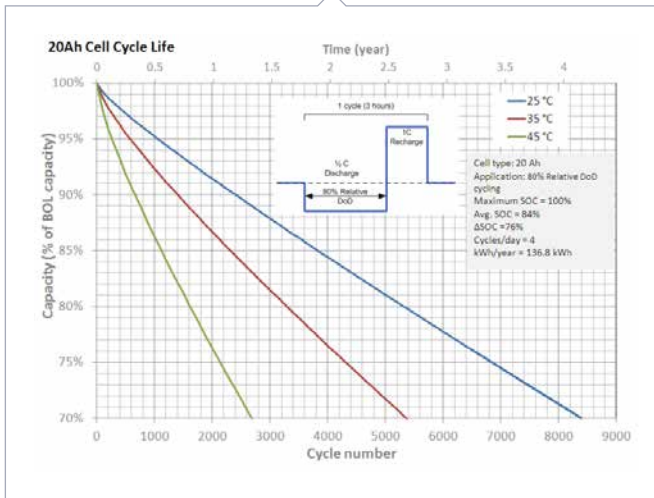
Nominal Voltage	52.8 V
Nominal Capacity*	100Ah
Nominal Available Energy (BOL) @25°C	5,280 Wh
Maximum Output Power at 25°C	5,280 W
Maximum Continuous Discharge Current	100 A at 25°C
Maximum Pulse Current	650 A at 25°C
Maximum Continuous Charge Current	100 A max
Recharge Voltage	57.6 V
Recommended Float Voltage	55.2 – 57.6 V
Operating Temperature**	-30°C to 55°C
Storage Temperature	-40°C to 60°C
Cycle life** at 80% DOD and 25°C 1C/0.5C, 70% remaining capacity	>8000
Cycle life** at 80% DOD and 45°C 1C/0.5C, 70% remaining capacity	>2600
Certifications: (for 24VDC modules)	UL 1973, UN 38.3
Communication Interface	CANbus
Weight of each 24V 100A module	53 lb/24 kg
Dimensions of each 24V 100A module H x W x L in mm (inches)	242.5 x 166.5 x 370.9 (9.55 x 6.56 x 14.6)

\* Battery systems may be configured in parallel

\*\* AMP20m1HD-A cell, complete system may vary based on design

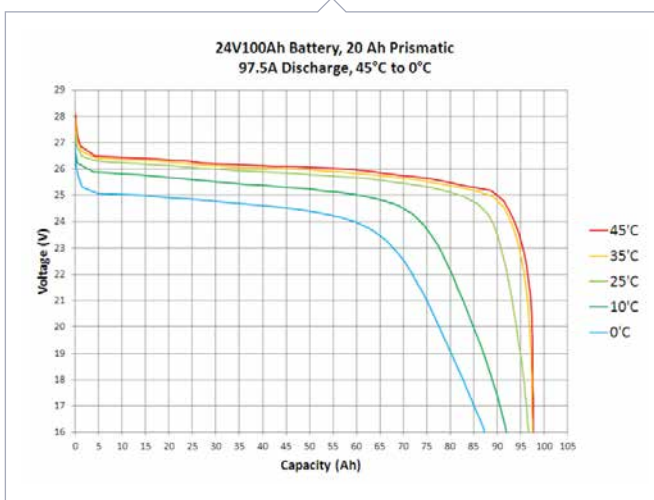
## Long Life Cycle

NEC Energy Solution's 48V100 K Kit enables up to 10X the cycle life and 5X better float/calendar life of comparable lead acid battery solutions, even at elevated temperatures. Cycle life is double that of other lithium-ion solutions.



## High Power

The 48V100 K kit enables systems with twice the power of comparable lead acid batteries, and even other lithium-ion solutions. Full energy capacity is supported even at high discharge rates and deep cycling, allowing system power requirements to be met with fewer batteries.



Example of a single stand alone 48V100 battery system configured using the 48V100 Kit components

## Fast Charge Acceptance

Designs based on the 48V100 K are capable of charging up to five times faster than competing lead acid batteries, increasing battery system availability for improved backup system reliability. For remote telecom applications with limited grid connectivity, this simplifies renewable generation (such as PV solar) integration and/or reduces reliance on diesel generator support, lowering overall TCO.

## Reliability and Safety

The integrated BMS improves overall system reliability, safety, and longevity through cell balancing, temperature and state-of-charge reporting, and protecting against short-circuit, over-charge, and over-discharge conditions.

## Light Weight

The 48V100 K components are only one third the weight of comparable lead acid battery configurations, and consume less space.