

SmartPower48100

High energy, 5U rack-mount lithium-ion battery system

SmartPower 48100 has been designed to provide power backup for remote or outside telecom plants like Access Terminals, Base Transceiver Stations, Base Station Controllers. They are also suitable to provide bulk power in Central Offices. This "all included" stand-alone battery system now provides the benefits of Lithium-Ion technology in a qualified industrial design: SmartPower provides maintenance-free energy storage in a reduced volume, combining high operational reliability with outstanding life time under the most difficult environmental conditions.



Features

- Integrated 48 V system containing 4.8 kWh of energy
- Parallel operation, for scalability
- Energy density of 123 Wh/dm³, surpassing most advanced VRLA designs
- State of charge and state of health indication
- Built-in battery control for efficient operation
- Redundant safety
- Comprehensive communication
- Compatible with standard telecom rectifiers

Benefits

- Increased energy in given space
- Easy installation and upscaling
- High operational reliability
- Optimized supervision strategy through remote control/diagnostic
- Very long life time
- Preventive but not premature replacement at end of life

SmartPower 48100	
Nominal Characteristics	
Nominal Voltage (V)	48
Typical Capacity (Ah)	100
Typical Energy (Wh)	4800
Volumetric energy density (Wh/dm ³)	123
Gravimetric energy density (Wh/kg)	87
Mechanical Characteristics	
Width (mm)	442(19")
Height (mm)	220(5U)
Depth (mm)	400
Weight (Kg)	55
Electrical Characteristics	
Voltage Window	40.5 to 54.0
Charge voltage range (V)	53.25 to 54.0
Max. permanent discharge current (A)	50
Recharge time (h)	11
Faradic charge efficiency (+20°C)	99%
Operation Conditions	
Cycle life (80% dod; +25°C)	3500 cycles
Operating temperature	- 20°C~+60°C
Storage temperature	- 20°C~+40°C
Transportation regulation compliance	UN 38.3
EMC standard compliance	EN 61 000 chapter 6-2 and 6-3
Safety standard compliance at battery level	designed to meet IEC 60 950
Certification designed to meet	CE/UL1640
Protection class	IP20

Functional characteristics

LiFePO₄ Li-ion technology

SmartPower 48100 contains cells with advanced LiFePO₄ lithium-ion technology:

- Outstanding calendar and cycle life and reliability at high temperature
- Industrial production for high tech-applications such as space & defense, electric vehicles, robots, etc.
- Stable internal resistance over entire life
- High reliability by using high capacity cells: avoids massive cell paralleling within a 48V module

Control for efficient operation

- On/Off switch
- Active/Sleep (storage, prolonged outage) /Alarm modes
- Charge/Discharge management
- Cell balancing

Mechanical & electrical interface

- 19 inches, 5U rack-mount design
- Industrial standard terminals on front panel

Communication

The battery system informs the user and the application, via visual communication by LEDs on front panel. In the same time, the supervision can be done through RS232. The data available are:

- State of charge, state of health
- Alarm level (minor, major); alarm reason
- Operating conditions (voltage, temperature, identification number)

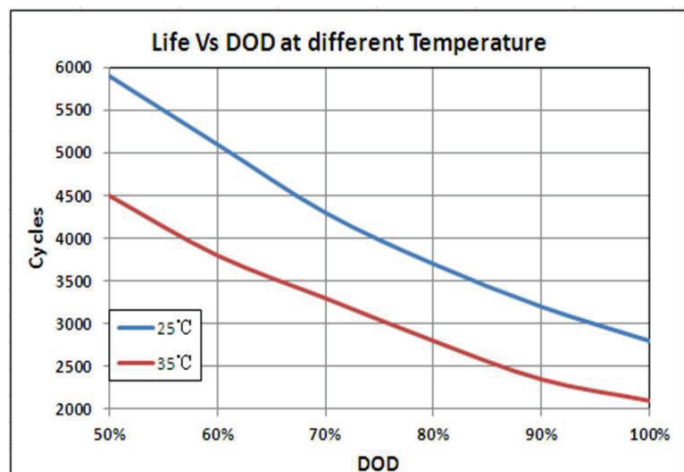
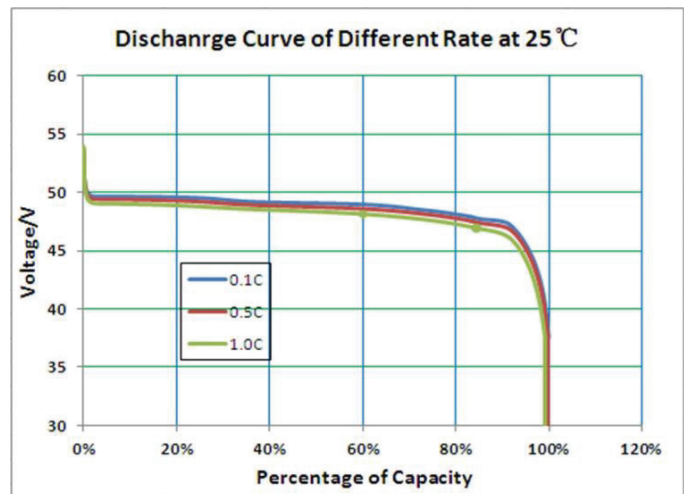
Safety

Redundant safety design to cope with component failure or abusive conditions:

- At battery system level: electronic board, reversible protection, separate power switches in charge and discharge circuit
- At cell pack level: electronic board, individual cell voltage monitoring
- At cell level: shutdown-effect separator, mechanical vent & current breaker

Sustainable design

The whole life cycle of SmartPower 48100 is considered closely during all phases of development, from manufacturing to industrial operations and recycling. For its advanced design, SmartPower is friendly to environment and consumes less energy compared with the VRLA Batteries which have same capacity.



Industrial vision

SmartPower has been developed and qualified to suit the demanding requirements of performance and operational reliability telecom OEM's and operators, who are manufacturing or operating high-value, industrial equipment. SmartPower is made of proven components (cells, electronics) which are also employed in demanding space, automotive and other civil applications. Cell manufacturing is carried out on established industrial production lines. Manufacturing plants comply with the legislation in force in each country and with international quality standards (ISO 9001 and 14001).