EPEVER
EPSOLAR TECHNOLOGY

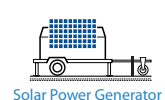# ViewStar BN series
solar charge controller

Overview

The controller could charge battery and discharge automatically for off-grid photovoltaic (PV) systems. The charging process has been optimized for long battery life and improved system performance. The comprehensive self-diagnostics and extensive electronic protection can prevent damage against incorrect wiring or system faults.

Features

- 32 bit MCU with high speed and high performance
- 12 bit A/D high-precision sampling to ensure accuracy
- Excellent EMC design
- Nominal system voltage automatic recognition or user-defined working voltage
- High efficient Series mode PWM charging, increase the battery lifetime and improve the solar system performance
- Use MOSFET as electronic switch, without any mechanical switch
- Wide feasibility and, recognize day or night automatically
- Graphical dot-matrix LCD and 4 buttons combinations as HMI (human-machine interface) for full menu and easy operation
- Humanized design of browser interface to facilitate the operations
- All of control parameters could be set and modified
- Several load control methods are supported to convenient for different demand
- Support 4 charging preprogram options: Sealed, Gel, Flooded and User-defined
- Adopt temperature compensation and update charging and discharging parameters automatically to improve the battery lifetime
- With the feature of input filter, the voltage spike could be restrained effectively
- Actual Power Display and record function make convenience to check the datum every day, every month and every year
- RS-485 ports via the open standard Modbus protocol are supported for long-distance communication and communication compatibility
- Standard RJ45 interface is used to connect to remote display unit (MT50) or PC software to monitor the actual data or modify parameters
- New SOC method could calculate the battery capacity accurately
- Electronic protection: Overheating, over discharging, overload, and short circuit
- Reverse protection: any combination of solar module and battery

Solar Car   Solar Home   Solar Backpack   Solar Boat   Solar Street Light   Solar Power Generator

Technical specifications

Model	VS1024BN	VS2024BN	VS3024BN	VS4524BN	VS6024BN
Electrical Parameters					
Nominal System Voltage	12／24VDC Auto				
Maximum Battery Voltage	32V				
Maximum PV Voltage	48V				
Rated Charge Current	10A	20A	30A	45A	60A
Rated Discharge Current	10A	20A	30A	45A	60A
Charge Circuit Voltage Drop	≤0.69V				
Discharge Circuit Voltage Drop	≤0.17V				
Max. PV open circuit voltage	12V/24V 50V; 12/24/36/48V 96V				
Equalize Charging Voltage ※	Sealed: 14.6V, Flooded: 14.8V, User-defined: 9~17V				
Boost Charging Voltage ※	Gel: 14.2V, Sealed: 14.4V, Flooded: 14.6V, User-defined: 9~17V				
Float Charging Voltage ※	Gel /Sealed /Flooded: 13.8V, User-defined: 9~17V				
Low Voltage Reconnect Voltage ※	Gel /Sealed /Flooded: 12.6V, User-defined: 9~17V				
Low Voltage Disconnect Voltage ※	Gel /Sealed /Flooded: 11.1V, User-defined: 9~17V				
Self-consumption	≤15mA@12v; ≤13mA@24v				
Communication	RS485 / RJ45 interface				
Remote temperature sensor interface	2ERJ—3.81				
Ground	Negative to the ground				
Environmental parameters					
LCD temperature	-20℃~ +70℃				
Working temperature	-25℃~ +55℃				
Humidity range	≤95%(N.C.)				
Enclosure	IP30				
Mechanical parameters					
Terminal	$4mm^2$	$10mm^2$	$16mm^2$	$35mm^2$	$35mm^2$
Net weight	0.3kg	0.4kg	0.7kg	0.8kg	1.3kg

Let the sun provide you with energy

Model	VS2048BN	VS3048BN	VS4548BN	VS6048BN
Electrical Parameters				
Nominal System Voltage	12/24/36/48VDC Auto			
Maximum Battery Voltage	64V			
Maximum PV Voltage	96V			
Rated Charge Current	20A	30A	45A	60A
Rated Discharge Current	20A	30A	45A	60A
Charge Circuit Voltage Drop	≤0.53V			
Discharge Circuit Voltage Drop	≤0.16V			
Max. PV open circuit voltage	12V/24V 50V; 12/24/36/48V 96V			
Equalize Charging Voltage※	Sealed: 14.6V, Flooded: 14.8V, User-defined: 9~17V			
Boost Charging Voltage※	Gel: 14.2V, Sealed: 14.4V, Flooded: 14.6V, User-defined: 9~17V			
Float Charging Voltage※	Gel /Sealed /Flooded: 13.8V, User-defined: 9~17V			
Low Voltage Reconnect Voltage※	Gel /Sealed /Flooded: 12.6V, User-defined: 9~17V			
Low Voltage Disconnect Voltage※	Gel /Sealed /Flooded: 11.1V, User-defined: 9~17V			
Self-consumption	≤15mA@12v; ≤10mA@24v; ≤9mA@36v; ≤8mA@48v;			
Communication	RS485 / RJ45 interface			
Remote temperature sensor interface	2ERJ—3.81			
Ground	Negative to the ground			
Environmental parameters				
LCD temperature	-20℃~ +70℃			
Working temperature	-25℃~ +55℃			
Humidity range	≤95%(N.C.)			
Enclosure	IP30			
Mechanical parameters				
Terminal	16mm^2	35mm^2	35mm^2	35mm^2
Net weight	0.7kg	0.8kg	1.2kg	1.6kg

※Above the parameters are in 12V system at 25℃, twice in 24Vsystem, triple in 36V system and quadruple in 48V system.