Advanced Solar Charge Controller

CC-MPPT-6

Detailed Technical specifications

<table>
<tr><th>S No</th><th>Item</th><th>Description</th></tr>
<tr><td>1.</td><td>Maximum open circuit solar panel voltage</td><td>95V for 100V model
190V for 200V model</td></tr>
<tr><td>2.</td><td>Cell chemistries supported</td><td>• Lead-Acid (SMF / FLA / Tubular / Gel)
• Li-ion
• LiFePO4
• Ni-Cd</td></tr>
<tr><td>3.</td><td>Battery voltage range</td><td>A. 100V model: 12/24/36/48V (nominal) Field programmable
B. 200V model: 24/36/48V (nominal) Field selectable

(For Lead-acid batteries, number of 12V batteries in the battery bank can be specified. For other chemistries number of cells in the battery bank may be specified)

Maximum end-of-charge voltage for the battery bank: 60V.
Minimum Low cut voltage for the battery bank:
A. For Lead Acid (SMF / FLA / Tubular / Gel) and LiFePO4: 10.0V
B. For Li-ion and Ni-Cd cell chemistries: 9.0V</td></tr>
<tr><td>4.</td><td>Maximum allowed solar panel capacity</td><td><table><tr><td>Nominal Battery bank voltage</td><td>Max. Solar panel capacity</td></tr><tr><td>12V</td><td>1200 Wp</td></tr><tr><td>24V</td><td>2400 Wp</td></tr><tr><td>36 V</td><td>3600 Wp</td></tr><tr><td>48V</td><td>4800 Wp</td></tr></table></td></tr>
<tr><td>3</td><td>Load output</td><td>DC output is equal to the battery voltage. Maximum current: 20A</td></tr>
<tr><td>4</td><td>Display:</td><td>128x64 pixel backlit graphic display which can display 8 rows of about 22 characters each for display of running parameters during operation and for programming various programmable parameters</td></tr>
<tr><td>5</td><td>Keyboard</td><td>5 Keys (INCR, DECR, NEXT, ESC & SEL) keyboard is provided on the front panel to view / program various parameters</td></tr>
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6	LED indicators	Green – for indicating the following conditions: • Low charging (< 5A): ➢ Single 100ms Blink after every 2sec • High charging (> 5A): ➢ Double 100ms Blink after every 2sec • Battery fully charged: ➢ Solid ON Red – The following faults are displayed: • Battery discharged (Load is disconnected): ➢ Single 100ms Blink after every 2sec • Overload (Load is disconnected) : ➢ Two 100ms Blink after every 2sec • Battery voltage too high. (charging stops and the load is disconnected): ○ Improper battery bank configuration ○ Battery bank connections broken ○ An external charger is connected to the battery bank ➢ Three 100ms Blink after every 2sec • PV input too high (Charging is stopped): ➢ Four 100ms blink after every 2sec • Charger fault (Not implemented yet): ➢ Solid ON
7	User-programmable charging parameters	Using the above LCD display & keyboard, the following charging and other operational parameters can be programmed by the user. • Battery end of charge voltage: (End of Bulk charge stage, start of absorption charge stage). • Battery absorption charge stage period • Battery trickle charge voltage: (The voltage at which the battery voltage should be maintained after the end of the absorption charge stage) • Battery rebulk voltage: (If the battery voltage goes below this voltage, the charge controller will again go to the Bulk charging stage). • Battery Low cut enter voltage: (If the battery voltage goes below this voltage, the charge controller will display a battery discharged fault)

		• Battery Equalize charge voltage: (If the battery voltage goes above this voltage, the charge controller will go to the equalized charging Stage. Only for LA battery) • Equalizing charge interval (Only for LA battery) • Temp Coefficient for selected Battery type: (This is useful to calculate Battery bank EOC voltage as per the temperature variation) • Power saver turn-on threshold: (Power saver will turn on if the battery voltage is above this value) • Power saver turn-off threshold: (The power saver will turn off if the battery voltage is above this) • Maximum charging current: a. Users can modify the maximum charge current as per the chosen model. b. For the 50Amp Model, It can be set in between 5 to 50 Amps. c. For the 75Amp Model, it can be set in between 5 to 75 Amps. • Load Ctrl code: User can turn on/off load as per their requirements
8	5-stage charging for maximum battery care:	Deep discharge mode charging (For Li-ion battery only)
		Bulk mode charging,
		Absorption mode charging,
		Trickle mode charging,
		Equalizing Charging (For lead-acid batteries only) Programmable Equalizing charging mode interval to periodically equalize charge in all batteries in the battery bank
9	Temperature compensation of charging thresholds	With optional battery temperature sensor (For lead-acid batteries only)
10	Heat sink temperature sense	Built-in heat sink temperature sense and stopping charging in case of overheating
11	Power saver relay	Built-in power saver relay. Common and N/C contacts are available for the connection of the input AC mains to the inverter. Relay capacity 250V AC 20A
12	Fault indication relay drive output	12V 100 mA output is available to drive an external Fault Not relay (Normally on)
13	Idle current from the battery	Max: 60 mA
14	Technology	Triple Interleaved Synchronous Buck Converters
15	Microcontroller controller	ARM-based 32-bit advanced microcontroller

16	Optional accessories:	
	1	Battery temperature sensor with 2 M cable
	2	RS-485 adapter card for transferring data over MODBUS (RTU protocol). (Requires special MODBUS firmware).

* For continuous product improvement, product specifications can change without notice.

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