SOLAR CONTROLLERS MSCC

Characteristics

CM series controller is a kind of intelligent, multi-purpose solar charge and discharge controller.

The family use the fixed LCD display, with a very friendly interface; various control parameters can be flexibly set, fully meet your various application requirements.

CM series controller has following features:

- Image of LCD graphic symbol
- Simple button operation
- Automatic Temperature Compensation
- Adjustable charge-discharge control parameters
- Accumulated function of charge and discharge Ampere hours
- Automatic Identification System Voltage level
- Intelligent PWM charge mode
- Settable Operating mode of Load
- Overload, Short Circuit Protection
- Remote monitoring and control function (custom)
- Battery reverse-discharge protection
- Battery Low Voltage Disconnection (LVD)
- Battery reverse connection protection
- Accumulated function of charge and discharge Ampere hours

CE

1. Technical Specifications 12V / 24V AND 48V

Model	MSCC 12V20A MSCC 48V20A	MSCC 12V30A MSCC 48V30A	MSCC 12V40A MSCC 48V40A	MSCC 12V50A MSCC 48V50A	MSCC 12V60A MSCC 48V60A
Rated Current	20A	30A	40A	50A	60ª
Rated Voltage	12V/24V 48V				
Max. Voltage of Solar Panels	≤ 50V ≤ 100V				
Float Voltage	13,8V / 27,6 V 55,2 V			13,7V / 27,4 V 54,8 V	
Low Voltage Disconnection	10,7V / 21,4 V 42,8 V			10,7V / 21,4 V 42,8 V	
Low Voltage Reconnection	12,5V / 25,0 V 50,0 V			12,6V / 25,2 V 50,4 V	
No Loss Load	≤ 30 mA			≤ 30 mA	
Loop voltage Drop	≤ 170 mV			<≤ 200 mV	
Charging Mode	PWM Mode				
Temperature Compensation	-4 mV/Cell/ºC				
Installation cable area	≤ 7# AWG (<16 mm²)			> 3# AWG (<25 mm²)	
Working Temperature	-20ºC ~ +60ºC				
Storage Temperature	-30ºC ~ +70ºC				
Humidity Requirement	< 90%, none condensing				
Dimension (mm)	90*188*48		130*188*62		
Mounting Hole spacing	(60*178)mm - θ5mm		(90*178)mm - θ5mm		
Weight (g)	360		590		

2. Installation

1. Ready tools and cables. Encourage you to matching the right cables. Ensure that the current density 4mm that is conductive to reducing the line voltage drop.
Recommended: 50A with 16mm cable.
Check weather the installation sites compliance with the relevant safety requirements. Please avoid the damp, dusty, there is a place flammable, explosive and corrosive gases use the controller to install.

2. Install the controller into a fixed vertical plane. See section 5 of the pore size and pore spacing. In order to ensure a good thermal control conditions, please set aside each 10cm below the controller space.

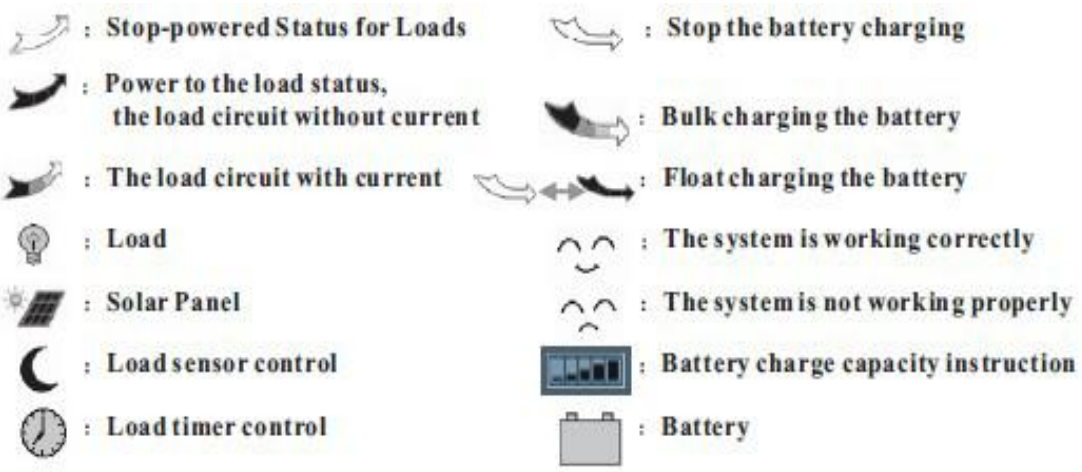
3. Put into the external temperature sensor on the left of the controller (probe port). The temperature sensor should be similar space with battery. (Otherwise, the controller will control the parameters of all wrong temperature compensation.)

4. If you have remote monitoring and control function, please insert one end of the included communication wire on the right of the controller (communication port), the other end to connect to The host computer.

Demolition: To prevent accidents, please order the demolition of solar panels, battery and load disconnect with controller.
Note Battery polarity will not damage the controller, but you will have a load equipment security risks.

3. Operation

3.1. Description of LCD graphic symbol



3.2. Description of Button Function

: Interface loop switch button, use the button to cycle between pages in each switch cycle sequence

: Adjustment of parameters plus buttons. In addition, at the state in the parameter view, long press the button more than 5 seconds, all parameter to restore factory setting.

: Adjustment of parameters minus button. In addition, in the main interface, click this button to switch the load.

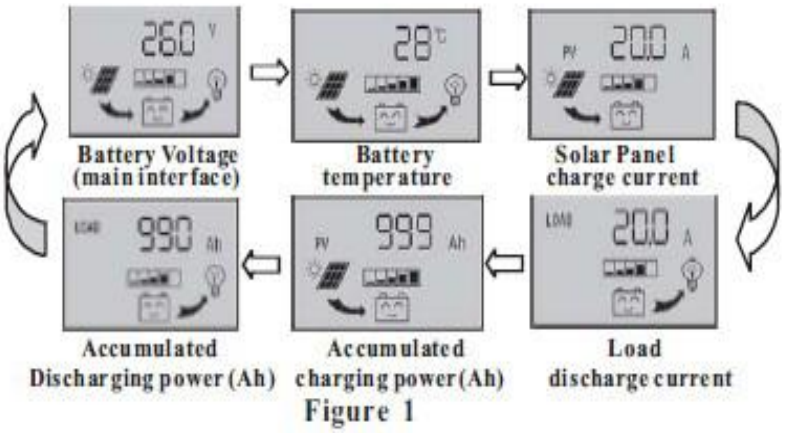


Figure 1

3. Operation

3.3. View the parameters

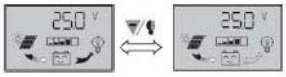
The controller will default entry battery voltage interface after correct power-on. This is the Main interface. Use the button could in turn visit the following parameters interface.

3.3.1. Battery Voltage of View

As shown on the right, displays the value for current battery voltage. This interface (based interface) displays charge status, discharge status, battery capacity and battery voltage.

3.3.2. The load on/off control

View the interface in the battery voltage could be used key On, off the load. In other interface, The key there is no such feature.



3.3.3. Environment Temperature of View

As shown on the right, displays the ambient temperature of the controller, the value used for temperature compensation on LVD function. The sensor must be plug in before using the controller.

3.3.4. Solar Panel charging current of View

As shown on the right, display the value of charging current from solar panel.

3.3.5. Load discharging current of View

As shown on the right, display the value of discharging current for Loads.

3.3.6. View the Accumulated charging power (Ah) by solar panel And back to zero

As shown on the right, display the accumulated charging power from solar panel (Total ampere hour), long press the button more than 5seconds, The value will back to zero.

3.3.7. View the Accumulated discharging power (Ah) by Load and Back to zero

As shown on the right, display the accumulated discharging power for loads (Total ampere hour), long press the button more than 5seconds, the value will back to zero.

3. Operation

3.4. Set the parameters

At the main interface press for long (5 seconds, and the number starts flickering) to enter into parameter Setting interface. Press for short (1 second) to reset the parameter, and pres to adjust this parameter.

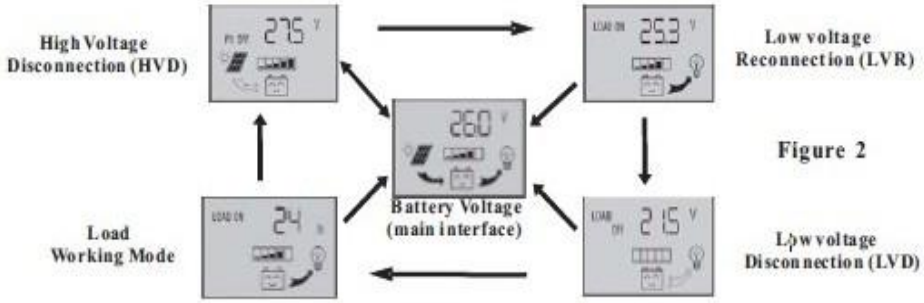


Figure 2

3.4.1. Set the High Voltage Disconnection

As shown on the right, shows the values for the HVD voltage. When the battery Voltage is reach to HVD voltage, the controller will cut off the charging circuit to prevent over-charging battery. Battery voltage drops under the value the charging circuit will be re-connected.

3.4.2. Set the Low Voltage Reconnection

As shown on the right, shows the values for the LVR voltage. Under the LVR protection in the controller, when the battery voltage is restored to the higher Voltage than LVR voltage, the controller will re-connect the load circuit.

3.4.3. View and set the Low Voltage Disconnection Protection

As shown on the right, shows the values for the LVD protection voltage. When the battery voltage is lower than protection voltage, the controller will disconnect the load circuit to prevent battery over discharge.

3.4.4. View and set Load Working Mode

As shown on the right is Load working mode interface, different values represent different load working patterns.

24h said Normal Mode, in case of no fault state of the load is always in power.

1h 23h said Light Control with Time Control Mode, Load power after dark, and close the load according to the timer setting.

0h said Light Control Mode, Load power after dark, turn off after drawn.

4. Common Fault and Handling

4.1. LVD Protection and Treatment:

Screen display as shown in the figure that the battery drops below the LVD protection voltage. The controller has entered the LCD protection state, load circuit has been disconnected. Use the solar panels recharge the battery or charger when the battery voltage reaches LVR voltage, the controller will resume on the load power supply, into the normal working state.

4.2. Overload Protection and Treatment:

Screen display (see the figure) and flashing express load loop circuit current sustained 60seconds than 1,5 times rated current, the current, the controller has entered into overload protection state. After reduce the load, pre[illegible]e button to restore power to the load.

4.3. Short Circuit Protection and Treatment:

Screen display (see the figure on the right) and flashing expressed there is short circuit on the load loop circuit. The controller has enter into Short Circuit Protection state Check the load if there is damage or not, if there is cable short circuit or not, after trouble shooting short p[illegible] the button for restoration.

4.4. Solar Panel Fault and Treatment:

Symbol flashing represent the controller was not detected solar panels within 24hours. Check if there is a connection from solar panels, check if there is an open circuit between solar panels with controller.

4.5. Load Shock Fault

Open load if the flashing, that indicate the load impulse current is more than twice rated current of the controller. The controller is restarting the load in action many timers do.