User Manual

RM-6
LCD Display Unit

1. Product Features

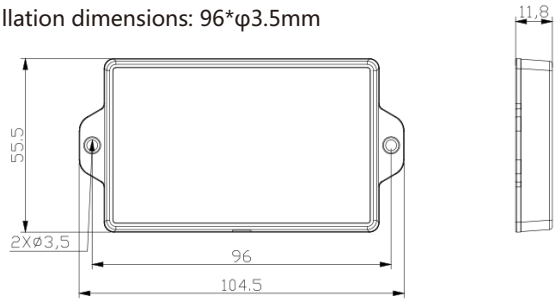
- LCD graphical main menu enables easy view of complete operating data of the system in real time.
- Simple double button design combine aesthetic appearance and easy operation.
- Directly powered by controller, external power supply is not needed.
- Industrial-grade design makes it fit for various outdoor environments, and provides safe service for a long time.

2. Appearance

3. Installation Dimensions

Product dimensions: 104.5*55.5*11.8mm

Installation dimensions: 96*φ3.5mm



4. Technical Parameters

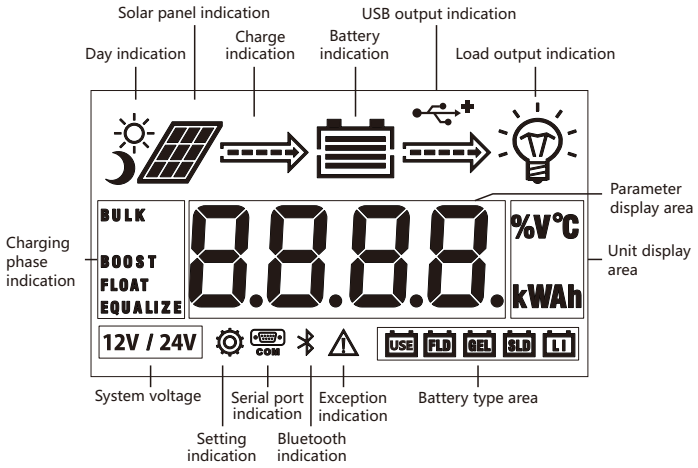
Items	Parameter values
Model	RM-6
Applicable models of controller	MC2420N10/MC2430N10/MC2440N10 /MC2450N10/MC2430N10_LC100/etc.
Input voltage	5V-12V
Standby power consumption	< 0.03W
Operating power consumption	< 0.04W
Fixed baud rate	9600bps
Communication mode	TTL
Interface type	PH2.0
Connection cable length	1.5M
Operating temperature	-35℃ ~ +65℃
IP rating	IP32
Weight	90g
Altitude	≤ 3000M
Dimensions	104.5*55.5*11.8mm

5. Button Operations

Buttons	Functions
SELECT	Menu/parameter switching
ENTER	Parameters setting/adjusting

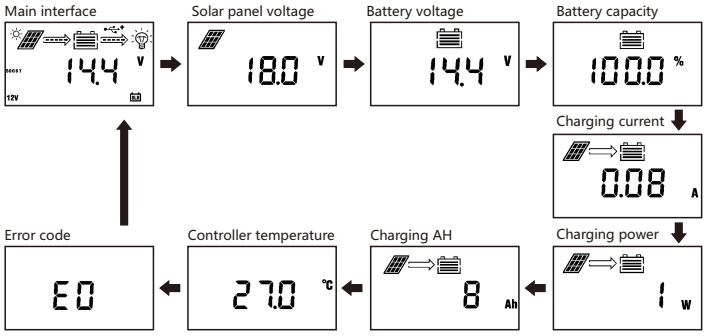
6. LCD Menu

1)Menu Diagram

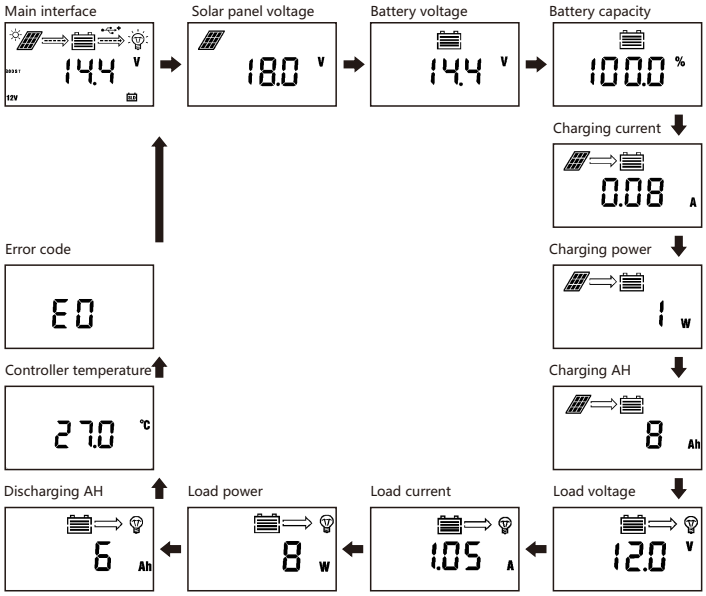


2) Menu Viewing

2.1 Unloaded controller menu



2.2 Loaded controller menu



7. System Parameter Settings

1) Methods

In any menu, press and hold "ENTER" to enter the "Parameter Settings" menu:

①Press the "ENTER" button to adjust parameter value;

②Press the "SELECT" button to switch between different setting items;

③Press and hold the "ENTER" button for 2 seconds to save what has been set and exit setting mode;

④Select the "FLD/GEL/SLD/LI" battery type and press the "SELECT" button to switch between "System voltage" and "Battery type";

⑤After selecting "USE" to customize the battery type, press "SELECT" button to switch between "system voltage", "Equalizing charge voltage", "Boost charge voltage", "Floating charge voltage", "Over-discharge return voltage" and "Over-discharge voltage" to change some common parameters.

2)Method of controlling load on/off (for controller with load)

Under any menu, press the "ENTER" button to control the load on/off.

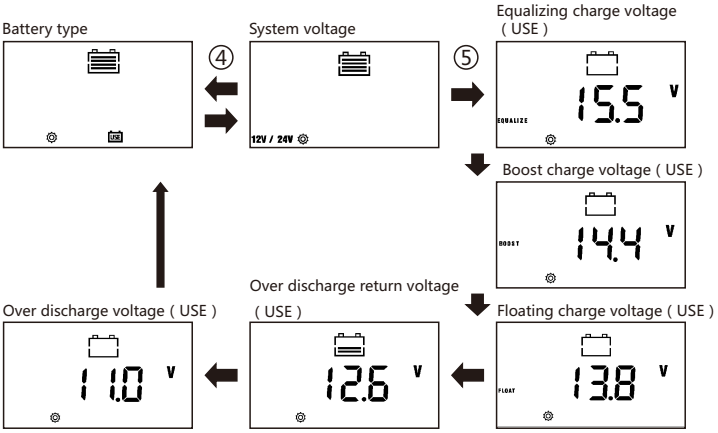
Notes:

①. After changing "System Voltage", it is required to power up again to take effect!

②. Care should be taken when the user defines parameters to their needs, and incorrect parameters may make the system fail to work properly!

2) User-defined USE Menu

No.	LCD Display	Setting items	Parameter range	Notes
1	USE	Battery type		Custom battery type
2	12V/24V	System voltage	12V/24V	"12V/24V" light up at the same time, indicating automatic I dentification
3	EQUALIZE	Equalizing charge voltage (USE)	9.0 ~ 17.0V	
4	BOOST	Boost charge voltage (USE)	9.0 ~ 17.0V	
5	FLOAT	Floating charge voltage (USE)	9.0 ~ 17.0V	
6		Low voltage disconnection recovery voltage (USE)	9.0 ~ 17.0V	
7		Low voltage disconnection voltage (USE)	9.0 ~ 17.0V	



9. Error Code Display

No.	Error codes displayed on LCD	Descriptions	Results of execution
1	EO	No exception	System normal
2	E1	Battery over discharge	Disable load output
3	E2	Battery over voltage	Do not charge
4	E3	Battery under-voltage warning	If battery voltage is lower than the under-voltage warning threshold, only give a reminder, and the system is normal
5	E4	Load short circuit	The load is turned off and the maximum recovery is 5 times a day.
6	E5	Load over-current	The load power is too large. So, reduce the load, and the output power will return to normal.
7	E6	Controller internal over temperature	MPPT controller starts intelligent linear power charging; PWM controller turns off charging
8	E7	Battery over temperature	Turn off charging and discharging, and automatically recover as the voltage is below a certain value
9	E8	Solar panel input power too large	The MPPT controller charges at a rated current;PWM controller turns off charging
10	E10	Solar panel over voltage	Solar panel over-voltage; turn off charging, and automatic recover as the voltage is lower than the set value.
11	E13	Solar panel reverse polarity	Do not charge
12	E15	Battery not connected or lithium battery feed	As long as the solar panel voltage meets the charging condition, the lithium battery will have a voltage pulse, while the lead-acid battery does not have a voltage output.
13	E16	Battery over temperature	Do not charge and disable load output
14	E17	Battery low temperature 1	Disable load output
15	E18	BMS overcharge protection	Do not charge
16	E19	Battery low temperature 2	Do not charge
17	E20	Battery reverse polarity	Do not charge and disable load output
18	E21	Output capacitor over-voltage	Do not charge

Note: Not every controller has the above error code. For details, please refer to the corresponding controller manual.

10. Common Problems and Handling Methods

Phenomena	Handling methods
LCD screen is not lit	Please check if the battery and solar panel are properly connected.
Solar panel has voltage, battery terminal has no voltage output, and the code E1 is displayed	If it is not lithium battery set in the system, when the battery is not connected, there is no voltage output at both ends of the battery, and this will return to normal as the battery is connected.
Battery of 12V or 24V normal voltage is connected, battery Icon on the LCD flashes slowly, and the code E1 is displayed.	Check if it is set to the corresponding system voltage, or set to automatic identification and restart the controller After the system voltage is changed, it needs to be restarted to take effect.
Battery icon indicator flashes quickly and the battery is not being charged. The code E2 is displayed.	System overvoltage, check why battery voltage is too high
Load indicator icon flashes	System over-voltage, load short circuit, overload and failure be turned on or load state switching
E4 code is displayed	1. Check if the load is short-circuited. After short-circuit is removed, the load will automatically recover. 2. It always shows E4. But, battery voltage is normal, and automatic recovery fails. It may reach the limit number of recoverable times per day
No data on the screen	Poor communication, check the communication line