Solar Charge Controller

—EPIP603 Series

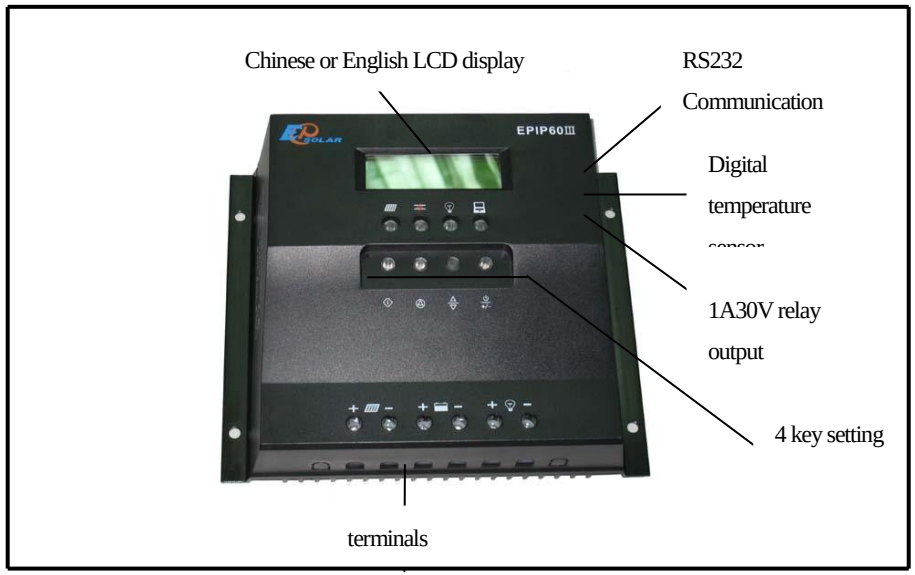
—for Solar PV System

Instruction Manual

1 Characteristic:

■PWM charging ■Boost, equalizing and float charging modes
■State of charging ■LED indication of system working status
■Temperature compensation, high precision digital temperature sensor
■Over-load and short circuit protection
■Precise indication of battery capacity ■Real time clock and display
■Digital LCD display of parameters(Option: English or Chinese)
■Setting system working parameters by user
■RS232 computer communication interface ■History data tracking record and download

2 Controller panel instructions



3 Operation & indication instructions

① key press instruction: the instruction for 4 key press(from left to right)

1)（SET）: confirm the selection or modify;
2)（CANCEL）: confirm the selection or modify, and back to the superior menu;
3)(SELECT): select the info which need modify or select menu item
4)(POWER/MODIFY)：control the load output by hand; the key press can reposit the fault while over-load, short-circuit protection; modify the ata while on modify status;

② The operation process of menu as following:

1) Connection, as Pic.1 display;

WELCOME!

Pic.1

2) Working normally, LCD display the first two parts of operation data(the following example is taken as 12V system), as Pic.2. Nine operation data totally: battery voltage, battery capacity, charging current, load current, PV voltage, PV power, box temperature, battery temperature and system time, you can check through SELECT key, the LCD will display Pic.2, Pic.3, Pic.4, Pic.5, Pic.6, Pic.2 in sequence once you press the SELECT key.

Bat Volt:12.0V Bat Power: 20%	Pv Cur:0.0A Load Cur:0.0A	Pv Volt:12.0V Pv Power:0.0WH
Pic.2	Pic.3	Pic.4

Box Temp:22℃ Bat Temp: 22℃	2000-00-00 00:01:20
Pic.5	Pic.6

3) While in display “operation data”, press CANCEL key, it will display “main menu” as Pic7, and select the first one. (Pls note the display only shows the first two options). Through the SELECT key, you can make selections from the menu. The cursor will be down once you press, when you press the last one, the SELECT key will select first one.

1.Run Data View
2.Set Data View
3.Set Data
4.System State
5.Language

Pic.7

4) While in display “main menu”, press SET key, it will be in the selected one.

➢ While in select “Run Data View”, the system will show “operation data”; see the above description 2)

➢ While in select “2. Set Data View”, the system will show the data which can be set, users can consult Pic.8, Pic.9, Pic.10 through SELECT key.

ULow:11.4V UlowRet:12.4V	UBoost:14.4V BoostRet:12.8V	Ufloat:13.4V Cap of Bat:1000AH
Pic.8	Pic.9	Pic.10

➢ While in select “3.SetData”, system will ask for password, showed as Pic.11, the default

password is 1234; input right password (as shown in 5), then be in menu setting, users can set 8 parameters as Pic.12 shows (see the 6) description), finish all the setting, press CANCEL key and back to main menu, or wait for 10 seconds, system will be out of setting menu automatically, and display “RunData”

Enter password
0|000

Pic.11

1.ULow
2.ULowRet
3.UBoost
4.UBoostRet
5.UFloat
6.Cap of Bat
7.System Time
8.Password

Pic.12

➢ While select “4.system state”, the system will display the working status, while short circuit, over load, over discharging occurs, the users will get the information about the system. Once everything ok, it will shows as Pic.13.

System ok!

Pic.13

5) Enter password. You can use SELECT key to adjust the password bit, and the number will be added one once you press POWER/MODIFY key; adjust password, press CONFIRM key, it will in the first item of menu “setting menu” as Pic.12 showed if the password is right; if the password is wrong, the system will be back to the main menu automatically.

6) Setdata. Showed as Pic.12, totally 9 parts

➢ The setting way is similar from item 1 to 6, take the float charging as example: use SELECT key and select item 5; press SET key and will be in Float charging mode, which is showed as Pic.14. Press POWER/MODIFY key and adjust the float charging voltage, then press SET key to confirm after modify, the display will be back to “setting menu” automatically, you can press Cancel key for giving up modify.

➢ Set “7. System Time”. Select the item 7, press SET key and will be in system time setting mode, showed as Pic 15. Press SELECT key and select the item which need modify, the default modified number is the last two of the year; select the right one, press POWER/MODIFY key and modify all the time, press SET key and save the system time; or press CANCEL key, give up the setting. Be back to “setting menu”

Set UFloat 13.4V	200|0-00-00 00:01:20
Pic.14	Pic.15

➢ Setting password is the same as entering password。

➢ Language selection: Chinese or English display. Entering “Language” item, press SELECT key to select language and then press SET key.

1.	简体中文
2.	English

Pic.16

4 Installation

The simple installation drawing Pi.c.17

Installation step

1. Select the right wire, every square meters diameters can be passed 5A at maximum
2. Connect the positive pole of battery with fuse seat in series, the current of fuse will be 1.5 to 2 times of rated current.

3 First connect charge controller with battery, and then connect solar panel and load.

4 After connection, the display will be the chapter 3 description. If necessary, the users can adjust accordingly. The solar module indication will be green if there is sunlight.

5. connect the digital temperature transducer with the controller COM plug

6. If there is some other control, such as backup power system or inverter, you can connect the RELAY interface.

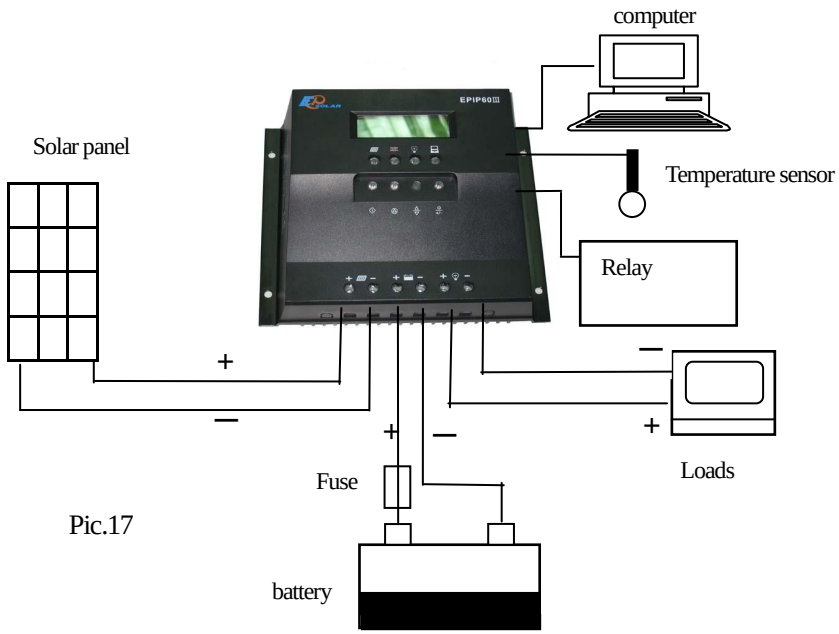
7. **Communication and download history track record: this controller has function of saving history track record. The saving time is one month. The record is saved every 30 minutes. Record including: time, battery voltage, load current, PV current, battery temperature and working state parameters(over load, over charging, over discharging)**

5 Security and protection

The controller has the over voltage, over current, short circuit and reverse polarity protection, also TVS lightning proof.

6 Guarantee and service after sales

Guarantee: 1 year



Pic.17

7 specifications

Type	EPIP603 20A-60A		
Rated charging current	20A, 30A, 40A, 50A, 60A accuracy: ±50MA		
Rated load current	20A, 30A, 40A, 50A, 60A, accuracy: ±50MA		
Over load, short circuit protection	1.25 times rated current, 60 seconds, 1.5 times rated current, 5 seconds, over-load protection ≥2 times rated current, short circuit protection.		
Empty load consumption	Control circuit: ≤15 Ma; LED & LCD display（MAX）≤25mA，total（MAX）≤40mA		
System voltage	□24/48V auto switch，□40V	Working temperature	-35℃ to +50℃
Capacity of parallel battery	1000AH default	Can set 100AH to 5000AH,, length 100AH	
Equalization voltage	14.8V；×2/24V；×4/48V accuracy: ±0.1V Adjustable		
Boost charging voltage	14.4V；×2/24V；×4/48V accuracy: ±0.1V Adjustable		
Float charging voltage	13.6V；×2/24V；×4/48V accuracy: ±0.1V Adjustable		
* temperature compensation	-5mv/℃/2V, -35℃ to +75℃, accuracy: ±0.5℃, not adjustable		
Over heat protection	-5mv/℃/2V, -35℃ to +75℃, accuracy: ±0.5℃, not adjustable		
Over discharge return voltage	12.6V; ×2/24V；×4/48V accuracy: ±0.1V Adjustable		
Over discharge voltage	11.4V; ×2/24V；×4/48V, accuracy: ±0.1V Adjustable		
Control way	PWM charging：control point voltage is the intelligent compensation modify specifications ；		
Real clock	Display: -year-month-date, H-M-S	Adjustable	

* load start & stop	_H _ M _S start load, _ H _ M _ S stop load	Adjust after upgrade

The specification of software

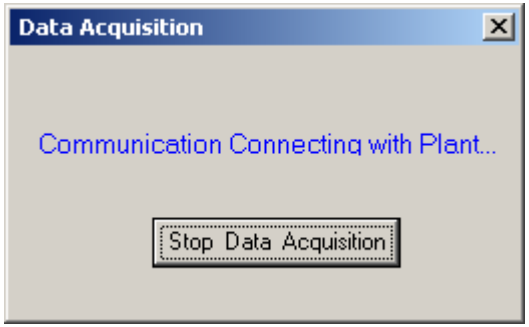
This software includes 3 files: main procedure, software disposed file, data saving file. Paste the disposed software in CD in disk of computer. You can select the button on main window as following Pic.

1. Serial Port Setting

First press "serial port setting" button to check and select the serial port number. Users can select the serial port connected with solar controller. Other parameters is default.

2. Data Acquisition

You can click "Data Acquisition" Button to enter data acquisition function window. The window will present the information about communication and records. Press confirm button to close the window after acquisition.



3. Record Query

Click "Record Query" button to enter record query function window. If you check the data from 1st January 2008 to 15th February, 2008, click the date and press "query" button .