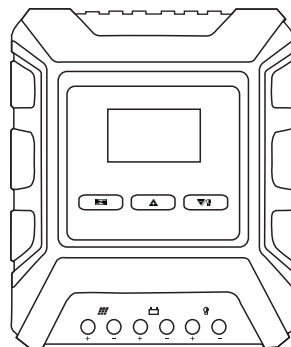


# MPPT太阳能控制器操作手册

## MPPT SOLAR CONTROLLER Operation manual



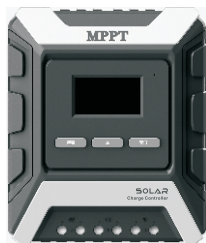
# 使用说明书

MPPT控制器是具有最大功率点跟踪功能的太阳能充电控制器.它们适用于电池或电池组的太阳能充电和负载充电控制,适用于宽电压离网的太阳能系统.

MPPT充电控制器将最先进的充电技术与高效,专业的电池保养相结合,具有众多编程选项,完善的保护功能以及直观的LCD显示屏。

## 产品特点&优势

- 12V/24V/48V电压自动切换
- 系统电压适用范围12V~80V
- 10A/20A/30A/40A/50A/60A/80A负载输出
- 高功率和高效率（最大额定功率3840W）
- LCD彩色液晶屏(操作界面，参数设置，故障消息等内容均有显示)
- 多级充电技术
- 三种电池可用：铅酸电池，三元锂电池，磷酸铁锂电池
- 符合CE,RoHS标准，ISO9001质量体系要求



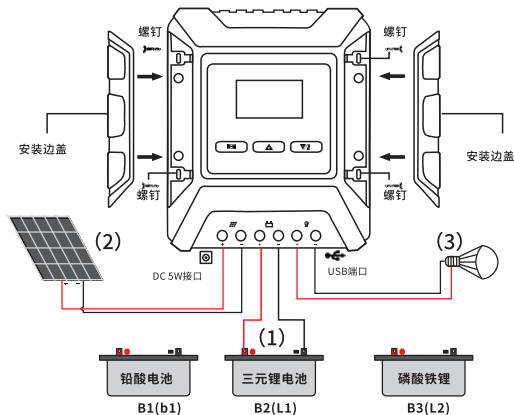
(产品图)

## 电子保护功能

- 过充电保护
- 深度放电保护
- 短路保护
- 电池开路保护
- 过热温度保护
- 电池过压过流保护

## 控制器完整系统连接显示图及安装

- 控制器四个孔固定螺丝，再安装边盖，可以让螺丝隐藏。



警告：\*请按上图（1）先接电池（2）接上太阳能板（3）接负载顺序连接,否则会损坏控制器!

\*感性负载电器不可连接到控制器

\*PV电池板最高电压不可超过80V，否则会损坏控制器。

\*12V系统：只适用于3串三元锂电池，即电池标称电压11.1V；只适用于4串磷酸铁锂电池，即电池标称电压12.8V

\*24V系统：只适用于6串三元锂电池，即电池标称电压22.2V；只适用于8串磷酸铁锂电池，即电池标称电压25.6V

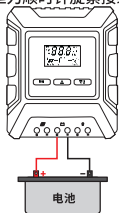
\*48V系统：只适用于12串三元锂电池，即电池标称电压44.4V；只适用于16串磷酸铁锂电池，即电池标称电压51.2V

\*警告：如果不按上述操作，不按规格匹配使用电池，损坏控制器或任何问题均与本产品无关，如对电池有疑问，请自行与电池厂家联系。

## 如何连接产品

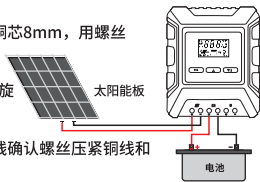
### 第一步：电池接线

- 1) 用直径6方以上的铜线，电池正极用红色线，负极用黑色线，
- 2) 连接控制器端子的铜线端拔去胶皮，露出铜芯8mm，用螺丝刀逆时针方向旋起控制器的连接端子螺丝，把导线的铜芯插入到端子内，用螺丝刀顺时针旋紧接线螺丝，
- 3) 另一端连接电池扣，电池扣固定电池上，上紧螺丝。
- 4) 最后拉一下导线，确认螺丝压紧铜线。
- 5) 电池连接完成后，控制器通电，屏幕亮起，显示电池参数，表示连接成功。



### 第二步：太阳能板连接

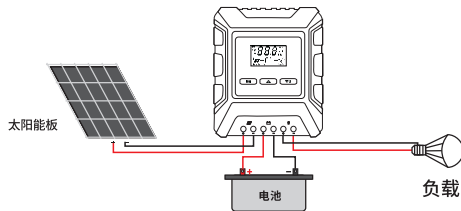
- 1) 用直径6方以上的铜线连接PV太阳能硅胶板，“+”正极接红色线，“-”负极接黑色线。
- 2) 连接控制器端子的铜线端拔去胶皮，露出铜芯8mm，用螺丝刀逆时针方向旋起控制器的连接端子螺丝，把导线的铜芯插入到端子内，用螺丝刀顺时针旋紧接线螺丝。
- 3) 另外一端接到太阳能硅胶板上，拔一下导线确认螺丝压紧铜线和太阳能板已连接好。
- 4) 太阳能板连接完成后，阳光充足情况下屏幕上会显示太阳能板和太阳的图标，阴天或者晚上屏幕上会显示太阳能板和月亮的图标。



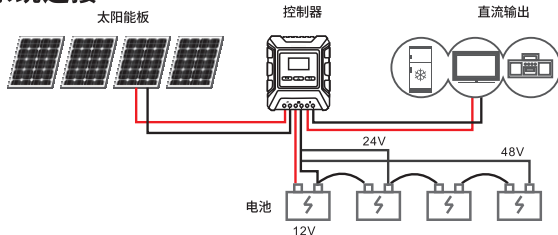
### 第三步：负载连接

- 1) 首先把控制器上的下键按一下关闭负载输出（屏幕上的箭头和灯泡上光没有了），即表示成功关闭负载输出功能，如果没有关闭后面接线会出现短路危险。
- 2) 用直径6方以上的铜线连接负载，“+”正极接红色线，“-”负极接黑色线。
- 3) 连接控制器端子的铜线端拔去胶皮，露出铜芯8mm，用螺丝刀逆时针方向旋起控制

- 器的连接端子螺丝，把导线的铜芯插入到端子内，用螺丝刀顺时针旋紧接线螺丝。
- 4) 拔一下导线确认螺丝压紧铜线。再次确认负载输出关闭。
- 5) 把导线另一端接到负载上（红线“+”黑线“-”），负载连接完成，检查无误后，按一下控制器上的下键，打开负载，负载通电。



## 系统连接



(产品连接示意图)

### 拆卸步骤：

第一步：先拆太阳能板；第二步：接着拆电池；第三步：拆负载。

充放电参数是系统默认的。不可调节。

警告：如果不按上述操作，不按规格匹配使用电池，损坏控制器或任何问题均与本产品无关。

## 铅酸电池系统参数

型号(MPPT)	10A20A	30A40A	50A60A	80A
参数特性				
系统电压	12V/24V/48V	12V/24V/48V	12V/24V/48V	12V/24V/48V
功率	240W/480W/960W	480W/960W/1600W	720W/1440W/2880W	960W/1920W-3840W
直流输入				
工作电压	12V<工作电压<80V	12V<工作电压<80V	12V<工作电压<80V	12V<工作电压<80V
开路电压太阳能模块	15V~80V	15V~80V	15V~80V	15V~80V
模块电流	20A	最大40A	最大60A	最大80A
直流输出				
负载电流	0-10A/0-20A	0-30A/0-40A	0-50A/0-60A	0-80A
重新连接电压(LVR)	12.5V/28.2V/56.4V	12.5V/28.2V/56.4V	12.5V/28.2V/56.4V	12.6V/25.2V/50.4V
深度放电保护(LVD)	11.5V/23V/46V	11.5V/23V/46V	11.5V/23V/46V	10.7V/21.4V/42.8V
电池				
充电电流	10A(20A)	30A(40A)	50A(60A)	80A
充电结束电压	14.2V/28.4V/56.6V	14.2V/28.4V/56.6V	14.2V/28.4V/56.6V	14.4V/28.8V/57.6V
浮充充电电压	14.4V/28.8V/57.6V	14.4V/28.8V/57.6V	14.4V/28.8V/57.6V	13.7V/27.4V/54.8V
恒充	-	15V/30V/60V	15V/30V/60V	15V/30V/60V
设置电池类型	铅酸电池	铅酸电池	铅酸电池	铅酸电池
运行条件				
环境温度	-20℃~+40℃	-20℃~+40℃	-20℃~+40℃	-10℃~+45℃
产品尺寸	130x156x50mm	153x190x53mm	193x227x58mm	193x227x58mm
净重/毛重	0.55kg/0.68kg	0.8kg/0.85kg	1.11kg/1.32kg	1.11kg/1.32kg

## 三元锂电池系统参数

型号(MPPT)	10A20A	30A40A	50A60A	80A
参数特性				
系统电压	12.6V/25.2V/50.4V	12.6V/25.2V/50.4V	12.6V/25.2V/50.4V	12.6V/25.2V/50.4V
功率	126W/252W/504W 252W/504W/1008W	378W/756W/1512W 504W/1008W/2016W	630W/1260W/2520W 756W/1512W/3024W	1008W/2016W/3840W
直流输入				
工作电压	12.6v<工作电压<80v	12.6v<工作电压<80v	12.6v<工作电压<80v	12.6v<工作电压<80v
开路电压太阳能模块	15V-80V	15V-80V	15V-80V	15V-80V
模块电流	10A-20A	30A-40A	50A-60A	80A
直流输出				
负载电流	0-10A/0-20A	0-30A/0-40A	0-50A/0-60A	0-80A
重新连接电压(LVR)	11.6V(调节范围: 11V-11.7V) 25.2V系统: 22V-23.4V 50.4V系统: 44V-46.8V	11.6V(调节范围: 11V-11.7V) 25.2V系统: 22V-23.4V 50.4V系统: 44V-46.8V	11.6V(调节范围: 11V-11.7V) 25.2V系统: 22V-23.4V 50.4V系统: 44V-46.8V	11.6V/11.5V 25.2V系统: 22V-23.4V 50.4V系统: 46V
深度放电保护(LVD)	10V(调节范围: 9V-11V) 25.2V系统: 18V-22V 50.4V系统: 36V-44V	10V(调节范围: 9V-11V) 25.2V系统: 18V-22V 50.4V系统: 36V-44V	10V(调节范围: 9V-11V) 25.2V系统: 18V-22V 50.4V系统: 36V-44V	10V-9V 25.2V系统: 18V-22V 50.4V系统: 36V
电池				

	10A /20A	30A /40A	50A/60A	80A
充电电流				
充电结束电压	12.6V/25.2V/50.4V 不可调	12.6V/25.2V/50.4V 不可调	12.6V/25.2V/50.4V 不可调	12.6V/25.2V/50.4V 不可调
浮充充电电压	12V(调节范围: 11V-13.5V) 25.2V系统: 22V-27V 50.4V系统: 44V-54V	12V(调节范围: 11V-13.5V) 25.2V系统: 22V-27V 50.4V系统: 44V-54V	12V(调节范围: 11V-13.5V) 25.2V系统: 22V-27V 50.4V系统: 44V-54V	12V/12V 25.2V系统: 24V 50.4V系统: 48V
恒充	12.6V 25.2V 50.4V	12.6V 25.2V 50.4V	12.6V 25.2V 50.4V	12.6V 25.2V 50.4V
设置电池类型	三元锂电池	三元锂电池	三元锂电池	三元锂电池
运行条件				
环境温度	-20℃~+40℃	-20℃~+40℃	20℃~+40℃	-10℃~+45℃
尺寸及重量				
产品尺寸	130x156x50mm	153x190x53mm	193x227x58mm	193x227x58mm
净重/毛重	0.55kg/0.68kg	0.8kg/0.85kg	1.11kg/1.32kg	1.11kg/1.32kg

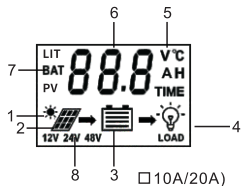
## 磷酸铁锂电池系统参数

型号(MPPT)	10A20A	30A40A	50A60A	80A
参数特性				
系统电压	14.5V/29V/58V	14.5V/29V/58V	14.5V/29V/58V	14.5V/29V/58V
功率	145w/290w/580w 290w/580w/1160w	435w/870w/1740w 580w/1160w/2320w	725w/1450w/2880w 870w/1740w/2880w	1160w/2320w/3840W
直流输入				
工作电压	14.5v<工作电压<80v	14.5v<工作电压<80v	14.5v<工作电压<80v	14.5v<工作电压<80v
开路电压太阳能模块	15V-80V	15V-80V	15V-80V	15V-80V
模块电流	10A-20A	30A-40A	50A-60A	80A
直流输出				
负载电流	0-10A/0-20A	0-30A/0-40A	0-50A/0-60A	0-80A
重新连接电压(LVR)	13.5V(调节范围: 12.8V-13.8V) 29V系统: 25.6V-25.7V 58V系统: 51.2V-55.2V	13.5V(调节范围: 12.8V-13.8V) 29V系统: 25.6V-25.7V 58V系统: 51.2V-55.2V	13.5V(调节范围: 12.8V-13.8V) 29V系统: 25.6V-25.7V 58V系统: 51.2V-55.2V	13.5V/12V 29V系统: 24V 58V系统: 48V
深度放电保护(LVD)	12V(调节范围: 10.3V-12.8V) 29V系统: 20.6V-27.6V 58V系统: 51.2V-55.2V	12V(调节范围: 10.3V-12.8V) 29V系统: 20.6V-27.6V 58V系统: 51.2V-55.2V	12V(调节范围: 10.3V-12.8V) 29V系统: 20.6V-27.6V 58V系统: 51.2V-55.2V	12V/10V 29V系统: 20V 58V系统: 40V
充电电流	10A/20A	30A/40A	50A/60A	80A
充电结束电压	14.5V/29V/58V 不可调	14.5V/29V/58V 不可调	14.5V/29V/58V 不可调	14.6V/29.2V/58.4V 不可调
浮充充电电压	13.8V(调节范围: 12.5V-15.5V) 29V系统: 29V-31V 58V系统: 50V-26V	13.8V(调节范围: 12.5V-15.5V) 29V系统: 29V-31V 58V系统: 50V-26V	13.8V(调节范围: 12.5V-15.5V) 29V系统: 29V-31V 58V系统: 50V-26V	13.8V/13.8V 29V系统: 27.6V 58V系统: 55.2V
恒充	14.5V 29V 58V	14.5V 29V 58V	14.5V 29V 58V	14.5V 29V 58V
设置电池类型	磷酸铁锂电池	磷酸铁锂电池	磷酸铁锂电池	磷酸铁锂电池
运行条件				
环境温度	-20℃~+40℃	-20℃~+40℃	-20℃~+40℃	-10℃~+45℃
尺寸及重量				
产品尺寸	130x156x50mm	153x190x53mm	193x227x58mm	193x227x58mm
净重/毛重	0.55kg/0.68kg	0.8kg/0.85kg	1.11kg/1.32kg	1.11kg/1.32kg

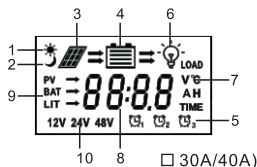
## 设置方法

- 1) 按一下菜单键，可在 (1) ~ (9) 各个参数显示界面切换
- 2) 在操作提示后面有备注(调)的，代表参数可以调整
- 3) 10A-60A参数设置方法：长按菜单键5秒，屏幕闪烁，进入设置状态，再按“上”“下”键调整参数，最后按菜单键确认。
- 4) 80A参数设置方法：长按菜单键约3秒，屏幕闪烁，进入设置状态，再按“上”“下”键调整参数，确定参数后(无需按菜单键确认)，停留约3秒，自动返回主界面。
- 5) 10A-60A的控制器界面是常亮的，80A的控制器界面是亮屏40秒后会黑屏，重按菜单键即可亮屏。

## 液晶显示

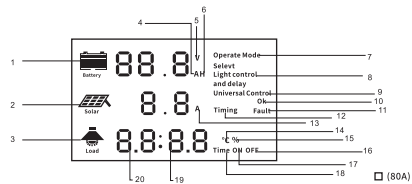


- 1) 日间模式
- 2) 太阳能板
- 3) 电池电量显示
- 4) 负载
- 5) 单位
- 6) 数码显示
- 7) 电池符号
- 8) 电池系统电压



- 1) 日间模式
- 2) 晚间模式
- 3) 太阳能板
- 4) 电池电量显示
- 5) 时间设置
- 6) 负载
- 7) 单位
- 8) 数码显示
- 9) 电池符号
- 10) 电池系统电压

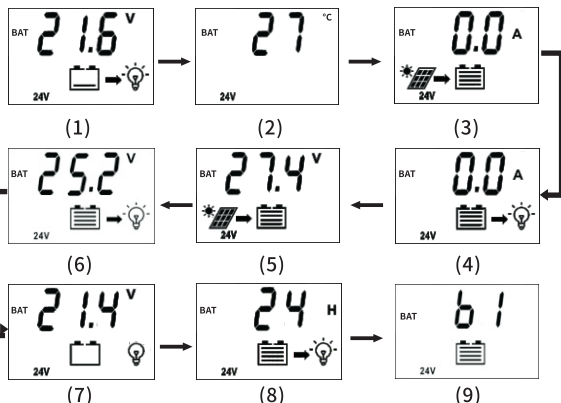
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- 1) 电池
- 2) 太阳能板
- 3) 负载
- 4) 负载电流
- 5) 电压
- 6) 光控时间
- 7) 操作模式选择
- 8) 光控延时
- 9) 通用控制
- 10) 正常操作
- 11) 违规操作
- 12) 设置时间
- 13) 电流
- 14) 外界温度
- 15) 电池电量
- 16) 关
- 17) 开
- 18) 使用时间
- 19) 分钟
- 20) 小时

## 控制器界面指示

### 10A-20A控制器界面菜单



8

## 10A-20A显示界面/参数设置

- |           |             |             |
|-----------|-------------|-------------|
| 1、主页面     | 2、机外温度      | 3、充电电流      |
| 4、放电电流    | 5、浮充电压设置(调) | 6、恢复电压设置(调) |
| 6、负载开关(调) | 8、光控延时设置(调) | 9、电池类型设置(调) |

### 参数设置方法



菜单键



上键



下键

1.浮充电压设置:按菜单键进行模式选择,屏幕出现图(5)界面,长按5秒屏幕闪烁,按上下按键来进行浮充电压设定。按菜单键确定。

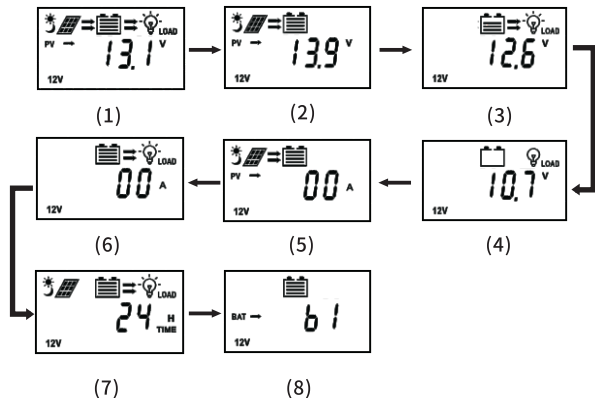
2.恢复电压设置:指根据客户想要充电的电压来进行充电。按菜单键进行模式选择,屏幕出现图(6)界面,长按5秒屏幕闪烁,按上下按键来进行恢复电压设定。按菜单键确定。

3.负载开关:1)屏幕是显示主页面时如图(1),直接按下键进行负载输出关闭或开启。2)按菜单键进行模式选择,屏幕出现图(7)界面,长按5秒屏幕闪烁,按下键进行负载输出关闭或开启。显示屏出现图(7),证明负载输出关闭成功。如需重新开启,再按一下下键即可。

4.光控延时模式设置:按菜单键进行模式选择,屏幕出现图(8)界面,长按5秒屏幕闪烁,进入光控延时模式,00代表有太阳无输出,01等数字代表没有太阳的时候的工作时间。按上下按键来进行时间设定。按菜单键确定。

5.电池类型模式设置:按菜单键进行模式选择,屏幕出现图(9)界面,长按5秒屏幕闪烁,进入电池类型选择模式,按上下按键来进行不同电池类型的选择, b1:铅酸电池, b2:三元锂电池, b3:磷酸铁锂电池。按菜单键确定。

## 30A-40A控制器界面菜单



## 30A-40A显示界面/参数设置

- |             |             |             |
|-------------|-------------|-------------|
| 1、主页面       | 2、浮充电压设置(调) | 3、恢复电压设置(调) |
| 4、负载开关(调)   | 5、充电电流      | 6、放电电流      |
| 7、光控延时设置(调) | 8、电池类型设置(调) |             |

### 参数设置方法



菜单键



上键



下键

1.浮充电压设置:按菜单键进行模式选择,屏幕出现图(2)界面,长按5秒屏幕闪烁,按上下按键来进行浮充电压设定。按菜单键确定。

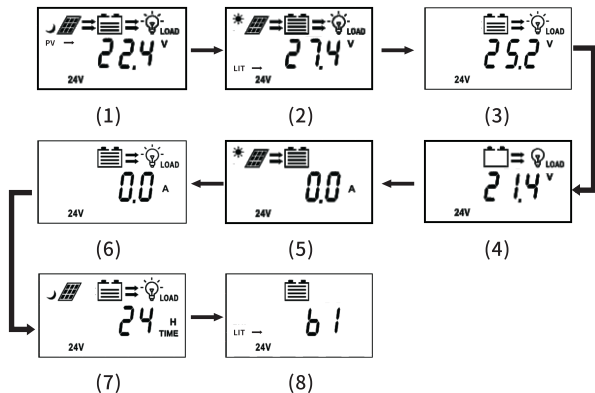
2.恢复电压设置：指根据客户想要充电的电压来进行充电。按菜单键进行模式选择，屏幕出现图(3)界面，长按5秒屏幕闪烁，按上下按键来进行恢复电压设定。按菜单键确定。

3.负载开关：1) 屏幕是显示主页面时如图(1)，直接按下键进行负载输出关闭或开启。2) 按菜单键进行模式选择，屏幕出现图(4)界面，长按5秒屏幕闪烁，按下键进行负载输出关闭或开启。显示屏出现图(4)，证明负载输出关闭成功。如需重新开启，再按一下下键即可。

4.光控延时模式设置：按菜单键进行模式选择，屏幕出现图(7)界面，长按5秒屏幕闪烁，进入光控延时模式，00代表有太阳无输出，01等数字代表没有太阳的时候的工作时间。按上下按键来进行时间设定。按菜单键确定。

5.电池类型模式设置：按菜单键进行模式选择，屏幕出现图(8)界面，长按5秒屏幕闪烁，进入电池类型选择模式，按上下按键来进行不同电池类型的选择，b1:铅酸电池，b2:三元锂电池，b3:磷酸铁锂电池。按菜单键确定。

## 50A-60A控制器界面菜单



## 50A-60A显示界面/参数设置

- |             |             |             |
|-------------|-------------|-------------|
| 1、主页面       | 2、浮充电压设置(调) | 3、恢复电压设置(调) |
| 4、负载开关(调)   | 5、充电电流      | 6、放电电流      |
| 7、光控延时设置(调) | 8、电池类型设置(调) |             |

## 参数设置方法



菜单键



上键



下键

1.浮充电压设置：按菜单键进行模式选择，屏幕出现图(2)界面，长按5秒屏幕闪烁，按上下按键来进行浮充电压设定。按菜单键确定。

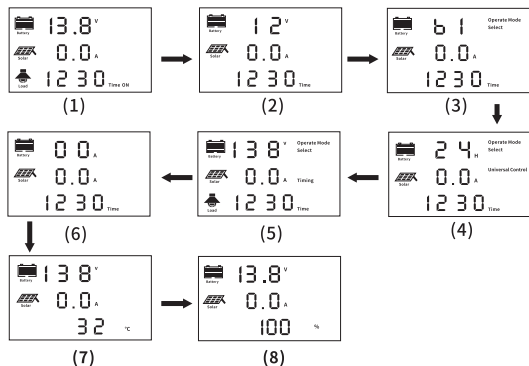
2.恢复电压设置：指根据客户想要充电的电压来进行充电。按菜单键进行模式选择，屏幕出现图(3)界面，长按5秒屏幕闪烁，按上下按键来进行恢复电压设定。按菜单键确定。

3.负载开关：1) 屏幕是显示主页面时如图(1)，直接按下键进行负载输出关闭或开启。2) 按菜单键进行模式选择，屏幕出现图(4)界面，长按5秒屏幕闪烁，按下键进行负载输出关闭或开启。显示屏出现图(4)，证明负载输出关闭成功。如需重新开启，再按一下下键即可。

4.光控延时模式设置：按菜单键进行模式选择，屏幕出现图(7)界面，长按5秒屏幕闪烁，进入光控延时模式，00代表有太阳无输出，01等数字代表没有太阳的时候的工作时间。按上下按键来进行时间设定。按菜单键确定。

5.电池类型模式设置：按菜单键进行模式选择，屏幕出现图(8)界面，长按5秒屏幕闪烁，进入电池类型选择模式，按上下按键来进行不同电池类型的选择，b1:铅酸电池，b2:三元锂电池，b3:磷酸铁锂电池。按菜单键确定。

## 80A显示界面/参数设置



## 80A控制器操作界面

1. 主界面
2. 系统电压显示
3. 电池类型设置 (调)
4. 光控模式设置 (调)
5. 光控时间设置 (调)
6. 负载放电电流
7. 外界温度
8. 电池电量显示

## 设置步骤



菜单键



上键



下键

1. 电池类型设置：长按菜单键约3秒屏幕闪烁出现图(3)界面，按上键选择电池类型（b1:铅酸电池，L1:三元锂电池，L2:磷酸铁锂电池），选定电池类型停留约3秒自动确定返回主界面。

2. 光控模式设置：系统默认24H的模式，长按菜单键约3秒屏幕闪烁出现图(4)界面，按上键选择（24H/00H/01H）。根据需求选择模式，停留约3秒自动确定返回主界面。

- 24H：不限时间，手动打开或手动关闭负载输出；
- 00H：有太阳能，自动关闭负载，无太阳能，自动打开负载；
- 01H：根据设定的时间来关闭或打开负载，

3. 光控时间设置：长按菜单键约3秒屏幕闪烁出现图(5)，按上键设置小时，按下键设置分钟。停留约3秒自动确定返回主界面。



# instructions

MPPT Solar charge controller, which has the Max Power Point Target Function, is suitable to be used in the battery or batteries pack solar energy charging and load charging control. It is suitable for off-grid solar energy system with wide voltage.

MPPT Solar Charge Controller, combine the most advance charging technology with high-efficiency and professional battery maintenance technology, has numerous programming options, perfect protection function and Intuitive LCD display.

## Functions

Product features & advantages:

- 12V / 24V / 48V voltage automatic switching
- Applicable range of system voltage: 12V ~ 80V
- 10A/20A/30A/40A/50A/60A/80A load output
- High power and high efficiency (maximum rated power 3840w)
- LCD screen (operation interface, parameter setting, fault message and other contents are displayed)
- Multistage charging technology
- Three kinds of batteries are available: lead acid battery, ternary lithium battery, lithium iron phosphate battery
- CE,ROHS certification, ISO9001 quality system requirements



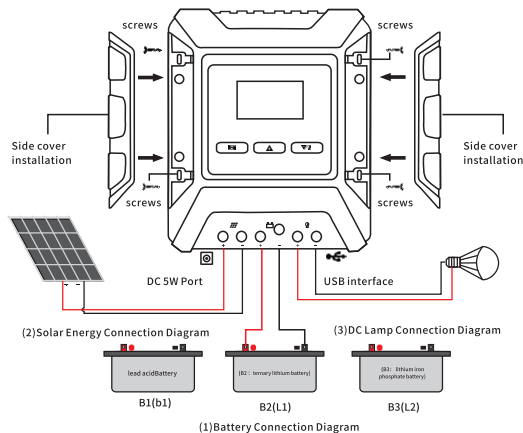
(Product picture)

## Protection

- Over charge protection
- Deep discharge protection
- Short-circuit protection
- Battery Open circuit protection
- Overheat temperature protection
- Battery overpressure over current protection

## Controller and Solar System Connection Diagram and Installation

- Fix the screws in the four holes of controller before install the side covers to hidden screws



**\*Warning: Please follow the (1) (2) (3) connection arrow to avoid damages.**

\*Inductive load devices cannot be connected to the controller

\*The maximum voltage of PV panel shall not exceed 80V, otherwise the controller will be damaged.

\*12V system: Only suitable for 3 series of ternary lithium batteries, i.e. nominal battery voltage 11.1v; Only suitable for 4 series of lithium iron phosphate batteries, i.e. nominal battery voltage 12.8v

\*24V system: Only suitable for 6 series of ternary lithium batteries, i.e. nominal voltage of the battery 22.2v; Only suitable for 8 series of lithium iron phosphate batteries, i.e. nominal voltage of the battery 25.6v

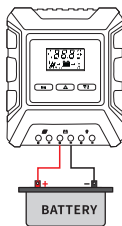
\*48V system: Only suitable for 12 series of ternary lithium batteries, i.e. nominal voltage of the battery 44.4v; Only suitable for 16 series of lithium iron phosphate batteries, i.e. nominal voltage of the battery 51.2v

\*Warning: if you do not follow the above operation, do not use the battery according to the specification, damage the controller or any problem has nothing to do with this product. If you have any questions about the battery, please contact the battery manufacturer by yourself.

## How to connect products

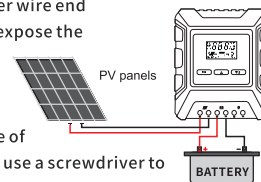
### Step 1: battery connection

- 1) Use copper wire with a diameter of more than 6mm<sup>2</sup>, red wire for the positive pole and black wire for the negative pole,
- 2) Remove the rubber from the copper wire end connecting the controller terminal, expose the copper core for 8mm, screw up the connecting terminal screw of the controller anticlockwise, insert the copper core of the conductor into the terminal, and screw down the connecting screw clockwise with a screwdriver,
- 3) The other end is connected to the battery buckle, which is fixed on the battery and tightened with screws.
- 4) Finally, pull the wire, and make sure that the screw compresses the copper wire.
- 5) After the battery connection is completed, the controller is powered on, and the screen lights up to display the battery parameters, indicating that the connection is successful.



### Step 2: solar panel connection

- 1) Connect the PV solar silicon rubber plate with copper wire with a diameter of more than 6mm<sup>2</sup>, connect the "+" positive pole with the red wire, and connect the "-" negative pole with the black wire.
- 2) Remove the rubber from the copper wire end connecting the controller terminal, expose the copper core for 8mm, use a screwdriver to screw up the connecting terminal screw of the controller anticlockwise, insert the copper core of the conductor into the terminal, and use a screwdriver to screw down the connecting screw clockwise.
- 3) The other end is connected to the solar silica gel plate. Pull out the wire to make sure that the screw pressing copper wire is connected to the solar panel.
- 4) After the solar panel connection is completed, the icon of solar panel and sun will be displayed on the screen when there is sufficient sunlight, and the icon of solar panel and moon will be displayed on the screen when it is cloudy or at night.



### Step 3: load connection

- 1) First, press the down key on the controller to turn off the load output (the arrow on the screen and the light on the bulb are gone), which means that the load output function is turned off successfully. If the rear wiring is not turned off, there will be a short circuit danger.
- 2) Connect the load with copper wire with a diameter of more than 6mm<sup>2</sup>, connect the "+" positive pole with the red wire, and connect the "-" negative pole with the black wire.
- 3) Remove the rubber from the copper wire end connecting the controller terminal, expose the copper core for 8mm, use a screwdriver to screw up the connecting terminal screw of the controller anticlockwise, insert the copper

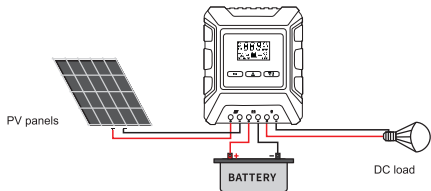
core of the conductor into the terminal, and use a screwdriver to screw down the connecting screw clockwise.

4) Pull out the lead wire to confirm that the screw presses the copper wire.

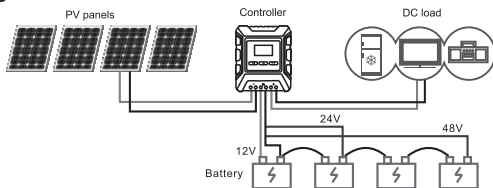
Verify again that the load output is off.

5) Connect the other end of the wire to the load (red line "+" black line").

After the load connection is completed, and the check is correct, press the down key on the controller to turn on the load and the load is powered on.



## System connect



(Product connection diagram)

Disassembly steps:

Step 1: remove the solar panel; Step 2: remove the battery; Step 3: remove the load

The charge and discharge parameters are the system default. Not adjustable.

Warning: If the battery is not matched according to the above operation and specification, the damage or any problem is irrelevant to the product.

## Lead acid battery system Specifications

Model (MPPT)	10A20A	30A40A	50A60A	80A
<b>Parameter Characteristics</b>				
System Voltage	12V/24V/48V	12V/24V/48V	12V/24V/48V	12V/24V/48V
Max. Solar Power Input	240W/480W/960W	480W/960W/1600W	720W/1440W/2880W	960W/1920W-3840W
<b>DC Input</b>				
MPPT Voltage	12V<working voltage<80V	12V<working voltage<80V	12V<working voltage<80V	12V<working voltage<80V
Open-circuit Voltage	15V~80V	15V~80V	15V~80V	15V~80V
Module Current	20A	Max. 40A	Max. 60A	Max. 80A
<b>DC Output</b>				
Load Current	0~20A	0~40A	0~60A	0~80A
LVR	12.5V/28.2V/56.4V	12.5V/28.2V/56.4V	12.5V/28.2V/56.4V	12.6V/25.2V/50.4V
LVD	11.5V/23V/46V	11.5V/23V/46V	11.5V/23V/46V	10.7V/21.4V/42.8V
<b>Battery</b>				
Charging Current	10A(20A)	30A(40A)	50A(60A)	80A
Charging Completed Voltage	14.2V/28.4V/56.6V	14.2V/28.4V/56.6V	14.2V/28.4V/56.6V	14.4V/28.8V/57.6V
Floating Charging Voltage	14.4V/28.8V/57.6V	14.4V/28.8V/57.6V	14.4V/28.8V/57.6V	13.7V/27.4V/54.8V
Constant Charging	15V/30V/60V	15V/30V/60V	15V/30V/60V	15V/30V/60V
Set Battery Type	liquid	liquid	liquid	liquid
<b>Operating Condition</b>				
Environment Temperature	-20℃~+40℃	-20℃~+40℃	-20℃~+40℃	-10℃~+45℃
<b>Accessories &amp; Installation</b>				
Product Size	130x156x50mm	153x190x53mm	193x227x58mm	193x227x58mm
N.W/G.W	0.55kg/0.68kg	0.8kg/0.85kg	1.11kg/1.32kg	1.11kg/1.32kg

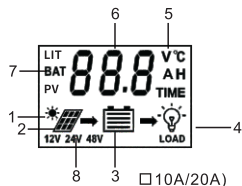
## Ternary lithium battery system parameters

Model (MPPT)	10A20A	30A40A	50A60A	80A
<b>Parameter Characteristics</b>				
System Voltage	12.6V/25.2V/50.4V	12.6V/25.2V/50.4V	12.6V/25.2V/50.4V	12.6V/25.2V/50.4V
Max. Solar Power Input	126w/252w/504w 252w/504w/1008w	378w/756w/1512w 504w/1008w/2016w	630w/1260w/2520w 756w/1512w/3024w	1008w/2016w/3840w
<b>DC Input</b>				
MPPT Voltage	12.6v=working voltage<80v.4v	12.6v=working voltage<80v.4v	12.6v=working voltage<80v.4v	12.6v=working voltage<80v.4v
Open-circuit Voltage	15V-80V	15V-80V	15V-80V	15V-80V
Module Current	10A-20A	30A-40A	50A-60A	80A
<b>DC Output</b>				
Load Current	0-10A/0-20A	0-30A/0-40A	0-50A/0-60A	0-80A
LVR	11.6V(adjustable range: 11V-11.7V) 25.2V system: 22V-23.4V 50.4V system: 44v-46.8V	11.6V(adjustable range: 11V-11.7V) 25.2V system: 22V-23.4V 50.4V system: 44v-46.8V	11.6V(adjustable range: 11V-11.7V) 25.2V system: 22V-23.4V 50.4V system: 44v-46.8V	11.6V-11.5V 25.2V system: 23V 50.4V system: 46V
LVD	10V(adjustable range: 9V-11V) 25.2V system: 18V-22V 50.4V system: 36V-44V	10V(adjustable range: 9V-11V) 25.2V system: 18V-22V 50.4V system: 36V-44V	10V(adjustable range: 9V-11V) 25.2V system: 18V-22V 50.4V system: 36V-44V	10V-9V 25.2V system: 18V 50.4V system: 36V
<b>Battery</b>				
Charging Current	10A /20A	30A/ 40A	50A/ 60A	80A
Charging Completed Volt	12.6v/25.2v/50.4v non-ajus	12.6v/25.2v/50.4v non-ajus	12.6v/25.2v/50.4v non-ajus	12.6v/25.2v/50.4v non-ajus
Floating Charging Volt	12V(adjustable range: 11V-13.5V) 25.2V system: 22V-27V 50.4V system: 44V-54V	12V(adjustable range: 11V-13.5V) 25.2V system: 22V-27V 50.4V system: 44V-54V	12V(adjustable range: 11V-13.5V) 25.2V system: 22V-27V 50.4V system: 44V-54V	12V-12V 25.2V system: 24V 50.4V system: 48V
Constant Charging	12.6v/ 25.2v/ 50.4v	12.6v/ 25.2v/ 50.4v	12.6v/ 25.2v/ 50.4v	12.6v/ 25.2v/ 50.4v
Set Battery Type	Ternary lithium battery	Ternary lithium battery	Ternary lithium battery	Ternary lithium battery
<b>Operating Condition</b>				
Environment Temperature	-20℃~+40℃	-20℃~+40℃	20℃~+40℃	-10℃~+5℃
<b>Accessories &amp; Installation</b>				
Product Size	130x156x50mm	153x190x53mm	193x227x58mm	193x227x58mm
N.W/G.W	0.55kg/0.68kg	0.8kg/0.85kg	1.11kg/1.32kg	1.11kg/1.32kg

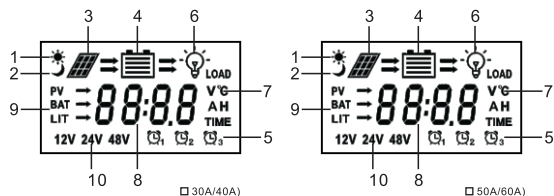
## LiFePo4 battery system parameters

Model (MPPT)	10A20A	30A40A	50A60A	80A
<b>Parameter Characteristics</b>				
System Voltage	14.5V/29V/58V	14.5V/29V/58V	14.5V/29V/58V	14.5V/29V/58V
Max. Solar Power input	145w/290w/580w 290w/580w/1160w	435w/870w/1740w 580w/1160w/2320w	725w/1450w/2880w 870w/1740w/2880w	1160w/2320w/3840w
<b>DC Input</b>				
MPPT Voltage	14.5v=working voltage<80v	14.5v=working voltage<80v	14.5v=working voltage<80v	14.5v=working voltage<80v
Open-circuit Voltage	15V-80V	15V-80V	15V-80V	15V-80V
Module Current	10A-20A	30A-40A	50A-60A	80A
<b>DC Output</b>				
Load Current	0-10A/0-20A	0-30A/0-40A	0-50A/0-60A	0-80A
LVR	13.0V(adjustable range: 12.8V-13.8V) 29V system: 25.6V-25.7V 58V system: 51.2V-55.2V	13.0V(adjustable range: 12.8V-13.8V) 29V system: 25.6V-25.7V 58V system: 51.2V-55.2V	13.0V(adjustable range: 12.8V-13.8V) 29V system: 25.6V-25.7V 58V system: 51.2V-55.2V	13.5V-12V 29V system: 24V 58V system: 48V
LVD	12V(adjustable range: 10.3V-12.8V) 29V system: 20.6V-27.6V 58V system: 51.2V-55.2V	12V(adjustable range: 10.3V-12.8V) 29V system: 20.6V-27.6V 58V system: 51.2V-55.2V	12V(adjustable range: 10.3V-12.8V) 29V system: 20.6V-27.6V 58V system: 51.2V-55.2V	12V-10V 29V system: 20V 58V system: 40V
<b>Battery</b>				
Charging Current	10A/ 20A	30A/ 40A	50A /60A	80A
Charging Completed Volt	14.5v/29v/58v non-ajus	14.5v/29v/58v non-ajus	14.5v/29v/58v non-ajus	14.5v/29v/58v non-ajus
Floating Charging Volt	13.8V(adjustable range: 12.5V-15.5V) 29V system: 25V-31V 58V system: 50V-26V	13.8V(adjustable range: 12.5V-15.5V) 29V system: 25V-31V 58V system: 50V-26V	13.8V(adjustable range: 12.5V-15.5V) 29V system: 25V-31V 58V system: 50V-26V	13.8V-13.8V 29V system: 29.6V 58V system: 55.2V
Constant Charging	14.5v/ 29v/ 58v	14.5v/ 29v/ 58v	14.5v/ 29v/ 58v	14.5v/ 29v/ 58v
Set Battery Type	LiFePo4 battery	LiFePo4 battery	LiFePo4 battery	LiFePo4 battery
<b>Operating Condition</b>				
Environment Temperature	-20℃~+40℃	-20℃~+40℃	-20℃~+40℃	-10℃~+5℃
<b>Accessories &amp; Installation</b>				
Product Size	130x156x50mm	153x190x53mm	193x227x58mm	193x227x58mm
N.W/G.W	0.55kg/0.68kg	0.8kg/0.85kg	1.11kg/1.32kg	1.11kg/1.32kg

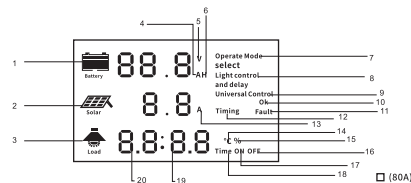
# LCD Display



- 1) Daytime Mode      2) Solar Panel      3) Battery Power Display
- 4) Load              5) Unit              6) Digital Display
- 7) Battery Symbol    8) Battery System Voltage



- 1) Daytime mode      2) Night Mode      3) Solar Panel
- 4) Battery power display    5) Time Setting      6) Load
- 7) Unit                  8) Digital display    9) Battery Symbol
- 10) Battery System Voltage



- 1) Battery              2) Solar panel      3) Load
- 4) Load current      5) Voltage          6) Light control
- 7) Operation mode selection    8) Light control delay
- 9) Universal control    10) Operation mode selection
- 11) Illegal operation    12) Time setting    13) Current
- 14) External temperature    15) Battery capacity    16) Off
- 17) On                  18) Use time        19) Minutes        20) Hours

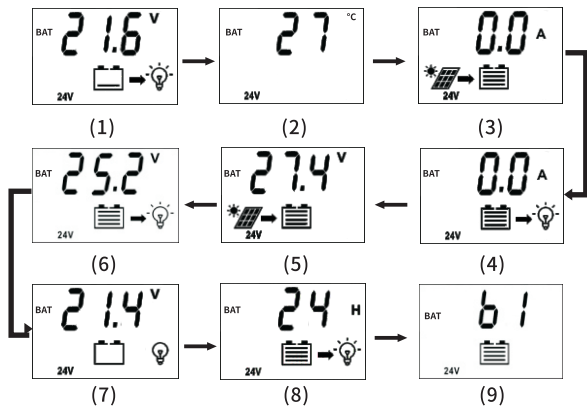
## Controller Parameter Interface

### Setting method:

- 1) Press the menu key once to switch between (1) - (9) parameter display interfaces
- 2) If there is a remark (adjustment) after the operation prompt, it means that the parameter can be adjusted
- 3) 10a-60a parameter setting method: long press the menu key for 5 seconds, the screen will flash, enter the setting state, then press the "up" and "down" keys to adjust the parameters, and finally press the menu key to confirm.
- 4) 80A parameter setting method: long press the menu key for about 3 seconds, the screen will flash, enter the setting state, then press the "up" and "down" keys to adjust the parameters, after confirming the parameters (without pressing the menu key for confirmation), stay for about 3 seconds, and automatically return to the main interface.
- 5) The controller interface of 10a-60a is always on, and the controller interface of 80A is on for 40 seconds, then it will be black, Press the menu key again to light up the screen.

# Controller Interface Indicate

## 10A-20A Setting Menu Interface



## 10A-20A Interface/ Parameter Setting

1. Home page
2. Environment temperature
3. Charging current
4. Discharge current
5. Floating charge voltage setting(adjustment)
6. Recovery voltage setting(adjustment)
7. Load switch(adjustment)
8. Light control delay setting(adjustment)
9. Battery type setting(adjustment)

## Parameter setting method



MENU



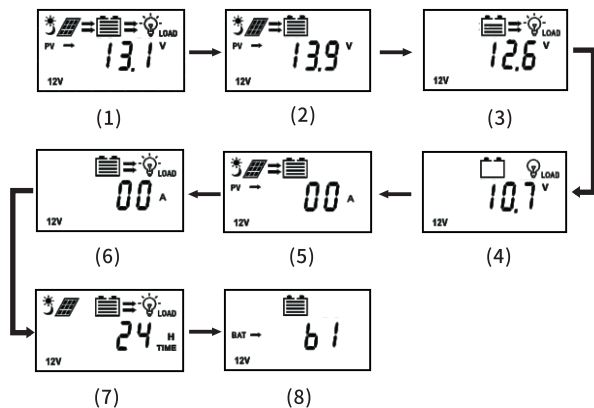
UP



DOWN

1. Floating charge voltage setting: press the menu key to select the mode, and the screen will display the interface shown in Figure (5). Long press for 5 seconds, the screen will flash, and press the up and down buttons to set the floating charge voltage. Press the menu key to confirm.
2. Recovery voltage setting: refers to charging according to the voltage the customer wants to charge. Press the menu key to select the mode. The screen will display the interface shown in Figure (6). Long press for 5 seconds and the screen will flash. Press the up and down keys to set the recovery voltage. Press the menu key to confirm.
3. Load switch: 1) when the main page is displayed on the screen, as shown in Figure (1), directly press the key to close or open the load output. 2) Press the menu key to select the mode. The screen will display the interface shown in Figure (7). Long press for 5 seconds and the screen will flash. Press the key to turn off or on the load output. Figure (7), appears on the display to prove that the load output is turned off successfully. To turn it on again, press the next key again.
4. Setting of light control delay mode: press the menu key to select the mode, and the screen will display the interface shown in Figure (8). Long press the screen for 5 seconds to flash, and enter the light control delay mode. 00 represents whether there is sun output, 01 and other figures represent the working time when there is no sun. Press the up and down buttons to set the time. Press the menu key to confirm.
5. Battery type mode setting: press the menu key to select the mode, and the screen will display the interface shown in Figure (9). Long press for 5 seconds, the screen will flash, enter the battery type selection mode, press the up and down buttons to select different battery types, b1: lead acid battery, b2: ternary lithium battery, b3: lithium iron phosphate battery. Press the menu key to confirm.

## 30A-40A Setting Menu Interface



## 30A-40A Interface/ Parameter Setting

1. Home page
2. Floating charge voltage setting(adjustment)
3. Recovery voltage setting(adjustment)
4. Load switch(adjustment)
5. Charging current
6. Discharge current
7. Light control delay setting(adjustment)
8. Battery type setting(adjustment)

## Parameter setting method



MENU



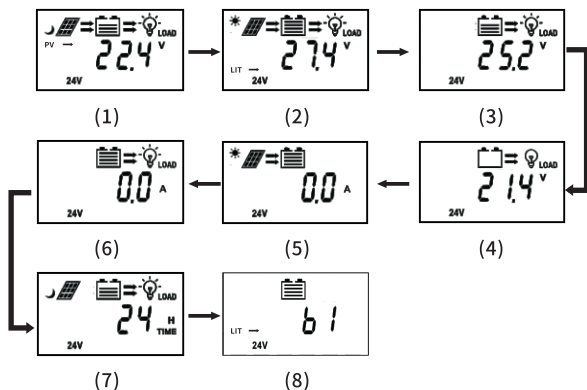
UP



DOWN

1. Floating charge voltage setting: press the menu key to select the mode, and the screen will display the interface shown in Figure (2). Long press for 5 seconds, the screen will flash, and press the up and down buttons to set the floating charge voltage. Press the menu key to confirm.
2. Recovery voltage setting: refers to charging according to the voltage the customer wants to charge. Press the menu key to select the mode. The screen will display the interface shown in Figure (3). Long press for 5 seconds and the screen will flash. Press the up and down keys to set the recovery voltage. Press the menu key to confirm.
3. Load switch: 1) when the main page is displayed on the screen, as shown in Figure (1), directly press the key to close or open the load output. 2) Press the menu key to select the mode. The screen will display the interface shown in Figure (4). Long press for 5 seconds and the screen will flash. Press the key to turn off or on the load output. Figure (4) appears on the display to prove that the load output is turned off successfully. To turn it on again, press the next key again.
4. Setting of light control delay mode: press the menu key to select the mode, and the screen will display the interface shown in Figure (7). Long press the screen for 5 seconds to flash, and enter the light control delay mode. 00 represents whether there is sun output, 01 and other figures represent the working time when there is no sun. Press the up and down buttons to set the time. Press the menu key to confirm.
5. Battery type mode setting: press the menu key to select the mode, and the screen will display the interface shown in Figure (8). Long press for 5 seconds, the screen will flash, enter the battery type selection mode, press the up and down buttons to select different battery types, b1: lead acid battery, b2: ternary lithium battery, b3: lithium iron phosphate battery. Press the menu key to confirm.

## 50A-60A Setting Menu Interface



## 50A-60A Interface/ Parameter Setting

1. Home page
2. Floating charge voltage setting(adjustment)
3. Recovery voltage setting(adjustment)
4. Load switch(adjustment)
5. Charging current
6. Discharge current
7. Light control delay setting(adjustment)
8. Battery type setting(adjustment)

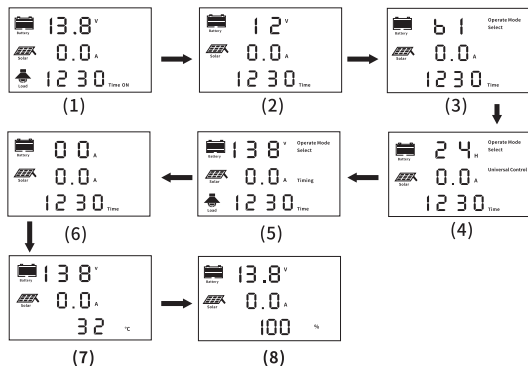
## Parameter setting method



1. Floating charge voltage setting: press the menu key to select the mode, and the screen will display the interface shown in Figure(2). Long press for 5 seconds, the screen will flash, and press the up and down buttons to set the floating charge voltage. Press the menu key to confirm.
2. Recovery voltage setting: refers to charging according to the voltage the customer wants to charge. Press the menu key to select the mode. The screen will display the interface shown in Figure(3). Long press for 5 seconds and the screen will flash. Press the up and down keys to set the recovery voltage. Press the menu key to confirm.
3. Load switch: 1) when the main page is displayed on the screen, as shown in Figure (1), directly press the key to close or open the load output. 2) Press the menu key to select the mode. The screen will display the interface shown in Figure (4). Long press for 5 seconds and the screen will flash. Press the key to turn off or on the load output. Figure (4) appears on the display to prove that the load output is turned off successfully. To turn it on again, press the next key again.
4. Setting of light control delay mode: press the menu key to select the mode, and the screen will display the interface shown in Figure (7). Long press the screen for 5 seconds to flash, and enter the light control delay mode. 00 represents whether there is sun output, 01 and other figures represent the working time when there is no sun. Press the up and down buttons to set the time. Press the menu key to confirm.
5. Battery type mode setting: press the menu key to select the mode, and the screen will display the interface shown in Figure (8). Long press for 5 seconds, the screen will flash, enter the battery type selection mode, press the up and down buttons to select different battery types, b1: lead acid battery, b2: ternary lithium battery, b3: lithium iron phosphate battery. Press the menu key to confirm.



## 80A Setting Menu Interface



## Controller operation interface

1. Home page
2. System voltage display
3. Battery type setting (adjustment)
4. Light control mode setting (adjustment)
5. Light control time setting (adjustment)
6. Load discharge current
7. Environment temperature
8. Battery capacity display

## Parameter setting method



MENU



UP



DOWN

1. Battery type setting: long press the menu key for about 3 seconds, and the screen flickers to the figure (3) interface. Press the up key to select the battery type (B1: lead acid battery, L1: lithium ternary battery, L2: lithium iron phosphate battery), and the battery type will stay for about 3 seconds to automatically determine and return to the main interface.

2. Setting of light control mode: the system defaults to 24h mode; 24h: unlimited time, open or close load output manually; 00h: with solar energy, automatically turn off the load, without solar energy, automatically turn on the load; 01h: turn off or on the load according to the set time.

Long press the menu key for about 3 seconds and the screen will flash to the figure (4) interface. Press the up key to select (24h / 00h / 01h). Select the mode according to the demand, stay for about 3 seconds and return to the main interface automatically.

3. Setting of light control time: long press the menu key for about 3 seconds and the screen flashes (5). Press the up key to set the hour and press the key to set the minute. Stay for about 3 seconds and return to the main interface automatically.