

使用说明书

安全使用建议

- 1.本控制器为 12V/24V 自动适应，首次安装时，请确保电池有足够的电压，以便控制器能够识别为正确的电池类型。
- 2.将控制器尽量靠近电池安装，以避免电线过长造成压降，影响正常电压判断。
- 3.本控制器适用于各种铅酸电池（包括开口，密封，胶体等），锂离子电池，磷酸铁锂电池。
- 4.本控制器只能使用光伏板作为充电电源，请勿使用直流或其他电源作为充电电源。
- 6.本控制器运行的时候会发热，请注意将控制器安装在平整，通风良好的表面。

产品特点

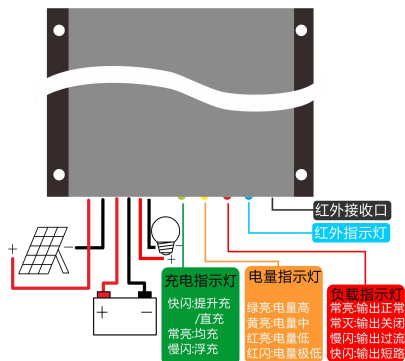
- 1.采用工业级主控芯片。
- 2.红外遥控设置，LED 显示，断电记忆功能，IP68 防护等级。
- 3.完整的四阶段 PWM 充电管理。
- 4.内置过流/短路保护，开路保护，反接保护，均为自恢复型，不损伤控制器。
- 5.双 MOS 防倒灌电路，超低发热量。

系统连接

- 1.将蓄电池正负极按图示接入控制器，控制器将会自动检测蓄电池电压，并依据检测到的电池电压进行系统类型识别。
- 2.将负载正负极按图示接入控制器，注意不要反接。
- 3.将太阳能板按图示接入控制器。

注意：请严格按照以上顺序进行接入，否则可能会损坏控制器。

拆卸顺序与接线顺序相反。



设置方法/运行模式



1. 控制器通电后，控制器首先对电池电压类型进行识别，如果电池电压低于 18V，则识别为 12V 系统，如果高于 18V，则识别为 24V 系统。
2. 识别完系统电压后，用户可将遥控器对准红外接收口，按下想要的电池类型，此时蓝灯闪烁，设置即完成，无需重启。
3. 本控制器支持 3 种电池类型，分别是：
12V 铅酸电池（包括免维护型，开口型，胶体型等）
11.1V 锂离子电池（3 串，即 3*3.7V，包括容量型和动力型）
12.8V 磷酸铁锂电池（4 串，即 4*3.2V）
如果是 24V 系统，则分别对应：
24V 铅酸电池（包括免维护型，开口型，胶体型等）
22.2V 锂离子电池（6 串，即 6*3.7V，包括容量型和动力型）
25.6V 磷酸铁锂电池（8 串，即 8*3.2V）
4. 设置完电池类型后，再选择负载的工作模式，其中系统（24H）为负载常开模式，即负载输出一直通电（除非低电保护），光控（D2D）表示负载为白天关闭，晚上打开，1-13 则表示负载为晚上打开后，延时 1-13 小时后关闭，其中后 2 种模式一种用于太阳能照明系统，能够实现无人自动值守和控制。
5. 当需要临时打开或者关闭负载时，按下手动（H），进入手动模式后，再按下 ON/OFF 可以手动开关负载，一般用于测试负载的连接是否正确。

故障指南

异常现象	可能原因	解决办法
阳光充足，充电指示灯不亮	光伏板开路或反接	重新连接好光伏板
负载指示灯不亮	模式设置错误	重新设置
	电池电压太低	重新充电
负载指示灯慢闪	负载过流	减小负载功率
负载指示灯快闪	短路保护	移除短路，自动恢复
控制器不亮	电池电压太低/反接	更换电池/检查反接

技术参数

型号	IR-A	IR-B	IR-C
尺寸	82*45*21mm	82*58*21mm	82*58*21mm
安装孔位	74.5mm	74.5*44.4mm	74.5*44.4mm
重量	120g	135g	150g
遥控功能	无	有	有
USB 功能	无	无	5V/2A
系统电压	12V/24V 自适应		
额定电流	5-20A		
最高光伏电压	50V		
电池类型	铅酸	锂电	铁锂
提升充电电压	14.4V	-	-
恒压充电电压	14.2V	-	-
浮充电压	13.8V	12.6V	14.4V
放电截止电压	11.2V	9V	10V
放电恢复电压	12.6V	10.5V	12V
待机电流	<10mA		
光控开灯阈值	光伏板 8V（光控开灯延时 10s）		
光控关灯阈值	光伏板 8V（光控关灯延时 60s）		
工作温度	-20~+60℃		

*红色字体标记电压仅对应 12V 系统，如使用 24V 系统，请 X2.

*产品规格如有更改，恕不另行通知。

User's Manual

SAFETY INSTRUCTIONS

1. Make sure your battery has enough voltage for the controller to recognize the battery type before first installation.
2. The battery cable should be as short as possible to minimize loss.
3. This controller is suitable for all kinds of lead-acid batteries (including Sealed, Flooded, AGM, GEL), lithium ion batteries, and lithium iron phosphate batteries.
4. The charge regulator is only suitable for regulating solar modules. **Never connect another charging source to the charge regulator.**

PRODUCT FEATURES

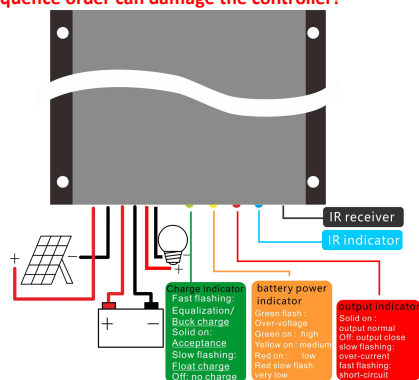
1. Build-in industrial micro controller.
2. IR remote control, LED display, auto memory function, IP68 protection.
3. Fully 4-stage PWM charge management.
4. Build-in short-circuit protection, open-circuit protection, reverse protection, over-load protection.
5. Dual mosfet Reverse current protection, low heat production.

SYSTEM CONNECTION

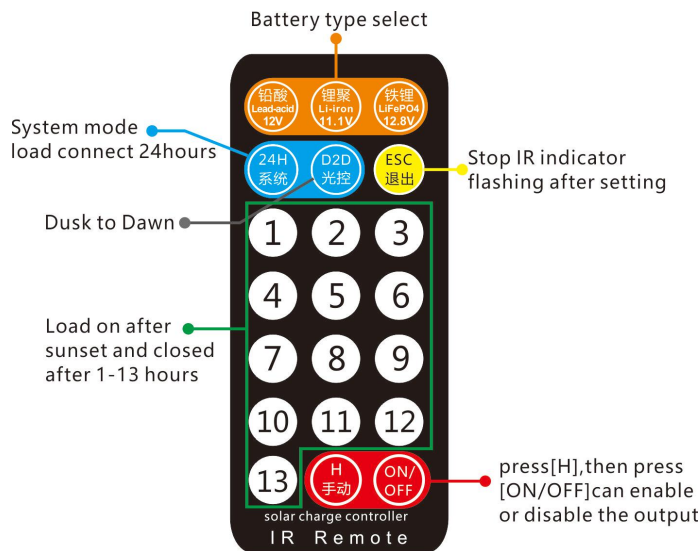
1. Connect the battery to the charge regulator - plus and minus. it will auto adapt the battery type.
2. Connect the photovoltaic module to the regulator - plus and minus.
3. Connect the consumer to the charge regulator - plus and minus.

The reverse order applies when uninstalling!

An improper sequence order can damage the controller!



SETTING/SYSTEM MODE



1. When the controller is energized, the controller recognizes the battery voltage type. If the battery voltage is lower than 18V, it is identified as the 12V system, and if it is higher than 18V, it is identified as the 24V system.
2. After identifying the system voltage, the user can press the infrared remote controller to choose a battery type. After receiving the signal, the controller's blue light flashes and the setting is completed without restarting.
3. the controller supports 3 types of batteries, which is:
 - 12V lead-acid batteries (including Sealed, Flooded, AGM, GEL)
 - 11.1V lithium ion battery (3 series, 3*3.7V, including capacity and power type).
 - 12.8V phosphoric acid iron lithium battery (4 series, 4*3.2V)
 If it is a 24V system, it corresponds to:
 - 24V lead-acid batteries (including Sealed, Flooded, AGM, GEL)
 - 22.2V lithium ion battery (6 series, 6*3.7V, including capacity and power type).
 - 25.6V phosphoric acid iron lithium battery (8 series, 8*3.2V)
4. after the battery type is set, then user can set the work mode of the load, the system (24H) mode is normally open mode for the load, which means, the load output has been always connected (unless low power protection). Dusk to Dawn mode (D2D) means system load is disconnected in the daytime and connected at the night time. 1-13H means system load is connected when night falls and disconnected after 1-13 hours timer. The D2D mode and the timer mode are used for solar energy lighting system, which is fully automatic control.
5. when it is necessary to temporarily connect or disconnect the load, press the manual (H), enter the manual mode, and then press ON/OFF to manually switch the load, this function is generally used to test the connection of the load.

TROUBLE SHOOTING

Situation	Probable cause	Solution
Charge LED not on when sunny	Solar panel opened or reversed	Reconnect
Load LED off	Mode setting wrong	Set again
	Battery low	recharge
Load LED slow flashing	Over load	Reduce load watt
Load LED slow flashing	Short circuit protection	Auto reconnect
Power off	Battery too low/reverse	Check battery/connection

TECHNICAL PARAMETER

MODEL	IR-A	IR-B	IR-C
Size	82*45*21mm	82*58*21mm	82*58*21mm
Installing hole size	74.5mm	74.5*44.4mm	74.5*44.4mm
weight	120g	135g	150g
Remote function	NO	YES	YES
USB	NO	NO	5V/2A
Battery voltage	12V/24V auto adapt		
Rated current	5-20A		
Max Solar input	50V		
Battery type	Lead-acid	Lithium ion	LiFePO4
Equalization	14.4V	-	-
ABS	14.2V	-	-
Float	13.8V	12.6V	14.4V
Discharge stop	11.2V	9V	10V
Discharge reconnect	12.6V	10.5V	12V
Self-consume	<10mA		
Voltage of open light	Solar panel 8V (delay 10s)		
Voltage of close light	Solar panel 8V (delay 60s)		
Operating temperature	-20~+60 °C		

*all red color voltage X2 while using 24V system

*Product specifications are subject to change without prior notice