

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. The regulator is only suitable for lead acid batteries: **OPEN, AGM, GEL**. **It is not suited for nickel metal hydride, lithium ions or other batteries.**
4. The charge regulator is only suitable for regulating solar modules. **Never connect another charging source to the charge regulator.**

PRODUCT FEATURES

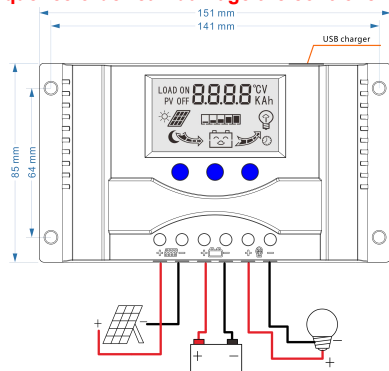
1. Build-in industrial micro controller.
2. Big LCD display, with 5V USB charger
3. PWM charge management.
4. Build-in short-circuit protection, open-circuit protection, reverse protection, over-load protection.
5. Dual mosfet Reverse current protection ,low heat production.

SYSTEM CONNECTION

1. Connect the battery to the charge regulator - plus and minus.
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 deinstalling!

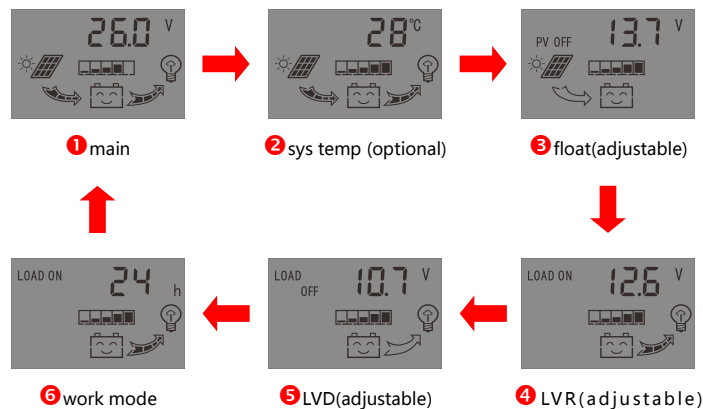
An improper sequence order can damage the controller!



DISPLAY

| | | |
|--|--|------|
| | | MENU |
| | | UP |
| | | DOWN |
| | Charging iron. | |
| | Discharging iron. | |
| | Day iron. | |
| | Night iron. | |
| | Timer iron | |
| | Load iron. | |
| | Battery capacity iron. | |
| | System is working good. | |
| | Battery voltage is too low, output is close, when battery get recharge to LVR voltage, the output will open again. | |

MENU AND SETTING



Menu and setting:

1. press[MENU] to switch between display 1-6.
2. press [DOWN] to ON/OFF output at main display (when work mode is 24h).
3. unplug the temp sensor if you don't need temperature compensation.
4. on display 4-6, press [MENU] 5s to enter setting, while the numbers are

flashing, press [UP]/[DOWN] to choose what you need, then press [MENU] again to save and exit, or long press [DOWN] to reset.

5. work mode : [0h] -Dusk to dawn [24h] always on [1h] - [23h] light open+timer

TROUBLE SHOOTING

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

TECHNICAL PARAMETER

| MODEL | 1210 | 1220 | 1230 | 4810 | 4820 | 4830 |
|--------------------------|------------------------|------|------|------|------|------|
| Batt voltage | 12V/24V auto | | | 48V | | |
| Charge current | 10A | 20A | 30A | 10A | 20A | 30A |
| Discharge current | 10A | 20A | 30A | 10A | 20A | 30A |
| Max Solar input | <50V | | | <80V | | |
| Buck charge | 14.2V | | | | | |
| Float charge | 13.7V(factory setting) | | | | | |
| Discharge stop | 10.7V(factory setting) | | | | | |
| Discharge reconnect | 12.6V(factory setting) | | | | | |
| USB output | 5V/2A | | | | | |
| Self-consume | <10mA | | | | | |
| Temperature compensation | -4mV/Cell/℃ | | | | | |
| Control mode | PWM | | | | | |
| Operating range | -35~+60 ℃ | | | | | |
| Size/Weight | 150*86*35mm /200g | | | | | |

***all red color voltage X2 ,X4 while using 24V /48V system.**

***Product specifications are subject to change without prior notice.**