Solarshop Control Charger

Series solar charge controller

Features for LED indicator controllers:

1. Intuitionistic LED indicators show the current system battery capacity, charging and discharging state of the battery.

2. Protection functions as overcharging, over discharging, overload and reversed connection.

3. PWM charging method makes the charging efficiency increase by 3% to 6%, compared with non-PWM charging.

4. The parameters of charging and discharging have been set during the production (special parameters need to be told

Features for LCD display controllers:

1. Vivid LCD graphic symbols

2. Protection as battery reverse-discharge protection, battery low voltage disconnection(LVD), battery reverse connection protection, over-current protection

3. Simple button operation make it easy to set the operation mode of load

4. PWM charging mode with 4 stages(bulk, absorption, float and equalized).

5. Adaptable to Sealed, GEL, Flooded and other customized battery type.

6. Automatic identification of system voltage level

7. Adjustable charge-discharge parameters

8. Automatic temperature compensation

STORE ENERGY TODAY, KEEP BILLS AWAY!

Solarshop Control Charger

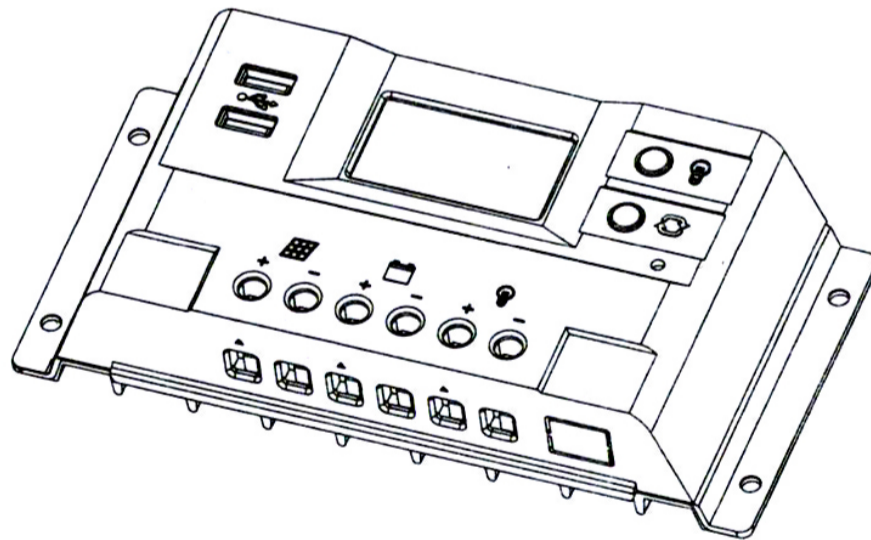## Series solar charge controller

	AUTO 10 Ah	คอนโทลล์ชาร์จออโต้ ขนาด 10 แอมป์ 12/24 โวลต์
	AUTO 20 Ah	คอนโทลล์ชาร์จออโต้ ขนาด 20 แอมป์ 12/24 โวลต์
	SLC-GP2410E	คอนโทลล์ชาร์จออโต้ ขนาด 10 แอมป์ 12/24 โวลต์ + USB
	SLC-GP2420E	คอนโทลล์ชาร์จออโต้ ขนาด 20 แอมป์ 12/24 โวลต์ + USB
	SLC-GP2430E	คอนโทลล์ชาร์จออโต้ ขนาด 30 แอมป์ 12/24 โวลต์ + USB
	SLC-GP4830C	คอนโทลล์ชาร์จออโต้ ขนาด 30 แอมป์ 48 โวลต์ + USB
	SLC-GP2450E	คอนโทลล์ชาร์จออโต้ ขนาด 50 แอมป์ 12/24 โวลต์ + USB
	SLC-GP2460E	คอนโทลล์ชาร์จออโต้ ขนาด 60 แอมป์ 12/24 โวลต์ + USB
	SLC-GP4860C	คอนโทลล์ชาร์จออโต้ ขนาด 60 แอมป์ 48 โวลต์ + USB
	SLC-GP1220	คอนโทลล์ชาร์จออโต้ ขนาด 20 แอมป์ 12 โวลต์ พร้อมหลอดไฟ 2 วัตต์ + USB

Solar Charge Controller User Manual

Please read this manual carefully before use. This manual is subject to change without notice, and the company's interpretation of it shall prevail!

Solar Charge Controller User Manual
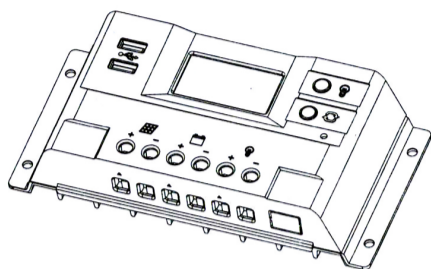
Please read this manual carefully before use. This manual is subject to change without notice and the company's interpretation of it shall prevail!

explicitly displayed. Most parameter values can be set to meet various applications.

2.2 Function

(1) Multi-stage PWM charging mode.

(2) Preset charging parameters for three battery types.

(3) Detecting mode for battery voltage level is adjustable.

(4) Charging and discharging parameters are adjustable.

(5) Temperature compensation is applied.

(6) Various controlling mode for load.

(7) Optional communication function.

(8) Protection against reverse connected solar panel and input over-current.

(9) Protection against under-voltage, over-voltage, reverses connection and reverse discharge of battery.

(10) Protection against over-current of load.

(11) Protection against internal over-heat.

3

3.2 Installation Procedure

Please make sure battery and solar panel are disconnected to controller, and do not contact the positive and negative terminals of solar panel and battery at the same time in case of electric shock.

A free space of 15cm on all sides must be provided for better heat dissipation. Current density control system wiring cables within the 4A / mm².

(1) Make sure installation site meets safety requirements first.

(2) Make sure voltage of solar panel and battery are compatible with controller.

(3) Connect battery to controller and check whether the LCD display is on, if not, please solve the problem as mentioned in chapter 5.2.

(4) Connect solar panel to controller accordingly. If there's sunlight, controller starts charging battery immediately and charging indicator arrow on LCD is on.

(5) Connect load to controller.

5

4.2 LCD Interfaces

4.2. 1 Startup Interface

Startup Interface	System Voltage	Rated Current	Software Version
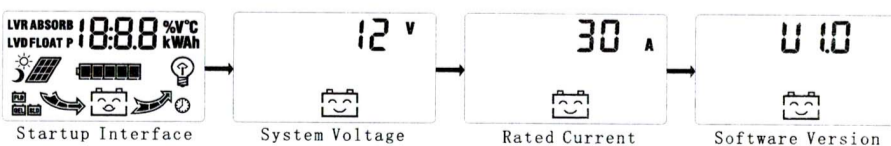
(1) Startup interface: the interface when system is powered on by which you check whether the LCD is in good condition

(2) System voltage: battery voltage detected by controller

(3) Rated current: Rated charging and discharging current of controller

7

1. Safety Instruction

(1) Please keep installation site clear of flammable or explosive, or corrosive gases and dust etc.

(2) Please protect the controller from direct sunlight or rain.

(3) Please prevent foreign object or liquid approaching controller.

(4) Please contact technical personnel to dismantle or repair the controller.

(5) Please don't put metal object beside battery.

(6) Please do not touch terminals or back plate of controller in case of electric shock or scald.

2. Product Introduction

2.1 Profile

This series is a new series of intelligent multi-purpose solar charge controllers. Its innovative design makes it easy to install and quite user-friendly. Optimized charging and discharging management extend the service life of batteries considerably. Meanwhile, parameters are
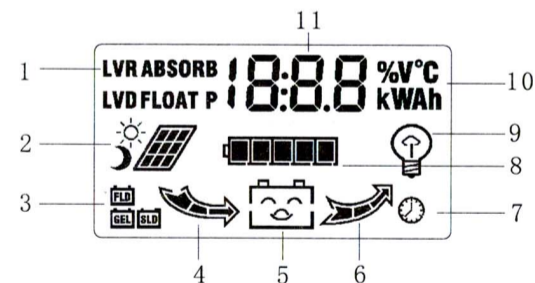
3. Installation

3.1 Dimension and Circuit Layout

solar panel   fuse   dc load
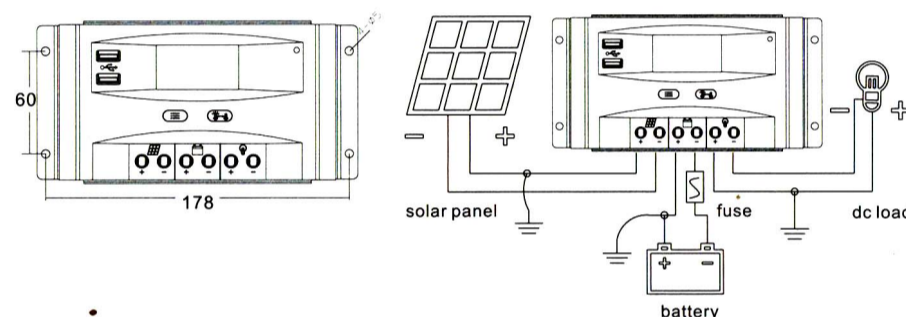
battery

4

4. Operating Instruction

4.1 Symbols

1. LVR   ABSORB   LVD   FLOAT   P(PM)

2. Day and night   3. Battery type: FLD   GEL   SLD   Null means Usr

4. Charging 5.Error 6. Discharging 7. Time 8.   Capacity 9. Load state

10. Unit   11. Data display area

6

(3) In interface "Ah-Battery Charge Meter" or "Ah-Battery Discharge Meter" by long pressing(>3S) ↻ , data is cleared.

(4) In "Battery voltage" interface,by long pressing 💡 and ↻ simultaneously until the screen is fully bright controller is restored to factory defaults.

4.2.3 Battery, Communication

Battery Voltage	Battery Type	Battery Type Recognition	Communication Code
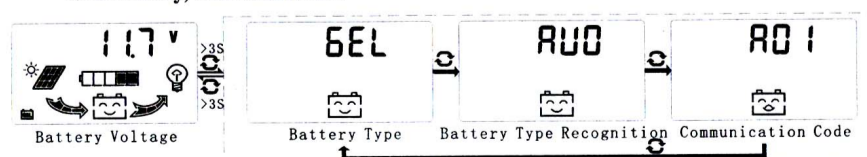
In main loop "Battery voltage" interface, by long pressing (>3S) ↻ you can access secondary one-way loop. In secondary loop, by short pressing ↻ you can circulate interfaces, and by short pressing 💡 you can change values, while a long-pressing (>3S) ↻ enables data saving
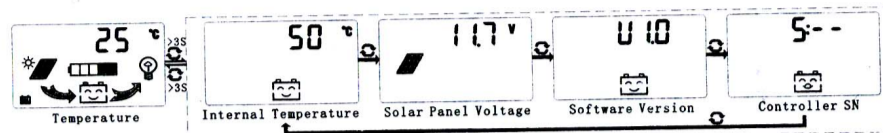
and exit, and a 20s absence of operation bring you to main loop interface with data unsaved.

(1) Battery type: Four battery types are preset which are GEL, SLD, FLD and USr. Only parameters of USr type are adjustable.

(2) Battery voltage level identification: automatic identification (AUO), fixed 12V, fixed 24V, fixed 36V and fixed 48V.Different types of controllers automatically recognize different voltage ranges, and please refer to real controller.

(3) Controller Communication SN: the number can be set in the range of 1 to 99, the default value is 1.(For controller with communication function only.)

Controller restarts automatically to update data after battery type and voltage level are set.

10

4.2.5 Charging Settings

Input Current | Float Charge Voltage | Absorption Charge Voltage | Equalized Charge Voltage

In main loop "input current" interface, by long pressing(>3S) ↻ you can access secondary one-way loop. In secondary loop, by short pressing ↻ you can circulate interfaces, and by short pressing 💡 you can change values, while a long-pressing (>3S) ↻ enables data saving and exit, and a 20s absence of operation bring you to main loop interface with data unsaved.

Note: Only parameters of USr type are adjustable.

12

and exit, and a 20s absence of operation bring you to main loop interface with data unsaved.

3 working mode for load as below:

Code	Working mode for load
L00	Regular controller mode(Mode 0)
L01	Light control with switch-off point at night and switch-on point before dawn (Mode 1)
L02	Light control mode(Mode 2)

Different load controlling modes defines parameters adjustable and interface displayed.

14

4.2.4 Controller SN

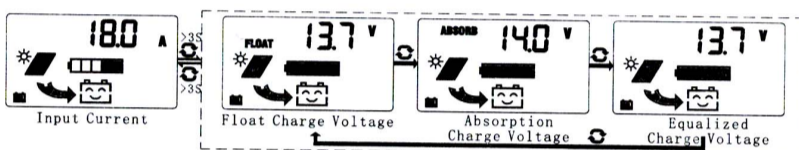Temperature | Internal Temperature | Solar Panel Voltage | Software Version | Controller SN

In main loop "Temperature" interface, by long pressing (>3S) ↻ you can access secondary one-way loop. In secondary loop, by short pressing ↻ you can circulate interfaces and a long-pressing (>3S) or a 20s absence of operation, you can exit.

Controller communication SN: composed of 8 digits, every 2 digits displayed sequentially,eg:--88 56 73 24 .

11

4.2.6 Load Working Mode

Output Current | Voltage of LVD | Voltage of LVR | Load working mode

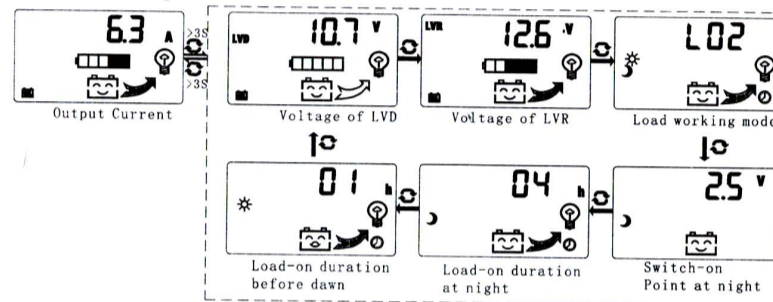Load-on duration before dawn | Load-on duration at night | Switch-on Point at night

In main loop "Output current" interface, by long pressing(>3S) ↻ you can access secondary one-way loop. In secondary loop, by short pressing ↻ you can circulate interfaces, and by short pressing 💡 you can change values, while a long-pressing (>3S) ↻ enables data saving

13

5   Fault Management
5.1   Error Code and Correction

Error code	Cause	Correction
E01	LVD	Manually recharge the battery
E02	Excessive load current and load switched off	Reduce load current at load output, and switch on load manually or wait for 10 mins for auto switch-on by controller.
E03		
E04	HVD	Make sure connection between battery and controller is good. Make sure battery capacity is not too low.

15

5.2   Failure and Correction

Failure	Correction
No sign on LCD initialization	Make sure no reverse connected battery. Make sure connection between battery and controller is good. Make sure circuit of battery switched on. Make sure fuse protector connected.
No charging current	Make sure no reverse connected solar panel. Make sure connection between solar panel and controller is good with no open circuit.
Load not work	Make sure there's no reverse connected load. Make sure controller is not in protection against overload, short circuit, under-voltage or overvoltage.
Load not switched on at preset point	Make sure load controlling mode is correctly set. Make sure battery voltage not too low.

17

		Make sure battery capacity is not too low. Make sure voltage of other battery charger connected to battery is not too high When battery voltage is 0.5V lower than defined overvoltage protection point, load switched on automatically by controller
E05	Battery charging switched off due to over-temperature of controller	Allow the controller to cool down and restart charging automatically
E06	Over-voltage of solar panel	Make sure voltage of open circuit is not too high and reduce panel in series connection
E07	Charging switched off by controller due to excessive solar panel current	Check power of solar panel and reduce solar panel quantity in parallel connection and wait for 2 mins for restart charging

16

Solarshop Control Charger

SLC-GP2410E / SLC-GP2420E / SLC-GP2430E

Load unable to be switched on at night in Light control mode	Make sure load controlling mode is correctly set. Check solar panel not illuminated by other light sources at night.

6 After Sales Service

6.1 Warranty

Manufacturer provides

(1) One-month warranty of free replacement is provided for this product commencing from the date of purchase.

(2) One-year warranty of free repair is provided for this product commencing from the date of purchase.

(3) Lifetime warranty of payable repair is provided for this product commencing from the date of purchase.

Free guarantee service will not be provided to the said equipment if

(1) It has been damaged through transportation or storage or

(2) It has been operated otherwise than in accordance with the instructions or

(3) Any unauthorized repair or modification has been carried out on the unit or

(4) It has been damaged through natural calamities

6.2 Return & Repair

Please contact customer service before return controller for repair and send controller together with original invoice and associated information like controller model, SN, cause. After receiving return controller, customer service will contact you to confirm cost and time etc. Please note any cost of transportation is on the account of purchaser.

7 Technical data

Model	20DU	30DU	2048D	3048D
Input				
PV voltage	≤50V	≤50V	≤100V	≤100V
Rated Current	20A	30A	20A	30A
Output				
System Voltage	12V/24V Auto	12V/24V Auto	48V	48V
HVD	16.00V×1/×2/×3/×4			
Rated discharge current	20A	30A	20A	30A
No-load loss	≤13mA		≤25mA	
Charge loop voltage drop	≤0.21V	≤0.24V	≤0.25V	≤0.25V
Discharge loop voltage drop	≤0.12V	≤0.1V	≤0.12V	≤0.10V
Charging mode	PWM Multi-stage（bulk, absorption, float, equalized）			

Voltage of float charging	13.8V(13V~15V)×1/×2/×3/×4
Voltage of absorption charging	14.4V(13V~15V)×1/×2/×3/×4
Duration of absorption charging	2hs
Voltage of equalized charging *	14.6V(13V~15.5V)×1/×2/×3/×4
Duration of equalized charging	2hs
LVD	10.8V(10V~14V)×1/×2/×3/×4
LVR	12.6V(10V~14V)×1/×2/×3/×4
Load working mode	Regular control mode Light control with switch-off point at night and switch-on point before dawn Light control mode
Light control voltage	5V(1V~10V)×1/×2/×3/×4
Battery type	GEL, SLD, FLD and USr(default)
USB	5V 1A	None

Other				
Man-machine interface	LCD, 2 buttons			
Wiring	PCB terminal, ≤6mm²	PCB terminal, ≤16mm²	PCB terminal, ≤6mm²	PCB terminal, ≤16mm²
Working temperature	-20 ~ +50℃			
Storage temperature	-30 ~ +60℃			
Working humidity	10% ~ 90%, no condensation			
Dimension	188 x 95 x 40mm			
Net Weight	355g	360g	355g	360g
IP Code	IP30			
Optional function	Remote communication , TTL, standard ModBus protocol			

Battery type:

Battery type	Voltage of float charging (V)	Voltage of absorption charging(V)	Time of absorption charging(h)	Voltage of equalized charging(V)	Time of equalized charging(h)	Interval of equalized charging(day)
GEL	13.8	14.2	2	--.-	-	--
Sealed	13.8	14.4	2	14.6	2	28
Flooded	13.8	14.6	2	14.8	2	28
User	13.8	14.4	2	14.6	2	28