

Smart-Unit Remote Controller



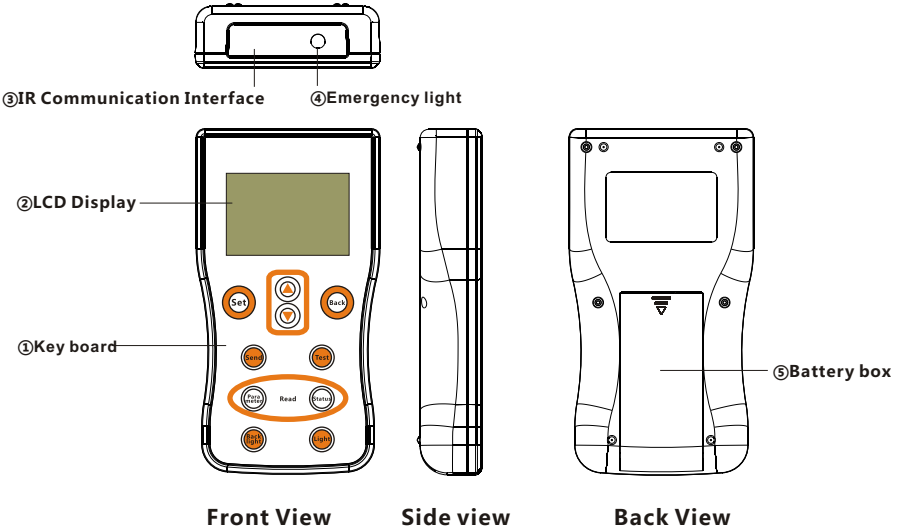
User Manual

Smart Remote Controller Smart-Unit User Manual

Dear Clients,

Thanks for choosing the S-Unit series Smart Remote Controller. With the S-Unit you own a state-of the art device which was developed according to the latest available technical standards. This manual gives important recommendations for installing, programming, using and so on. Read it carefully in your own interest please.

1. Panel graphics



2. Description of Function

It comes with a number of outstanding features, such as:

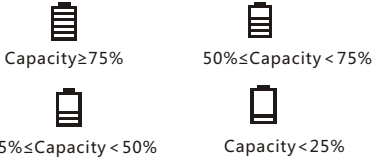
- Professional design of intelligent remote controller settings for a variety of products
- Large LCD display with parameters and running status
- Simple and clear configuration interface
- Automatic sleeping without operation, press some keys to wake up
- Power supply: (AA) x 2pcs batteries, Battery capacity indicator
- Emergency light and SOS lights


3. Key operate instruction

Key Name	Function	Long press key function
Set	Parameter setting/ confirmation	Press "Set" and "Light" key to lock or unlock the parameters
▲	1.Menu Page Up 2.Increase the setting data	Continuous increase the setting data
▼	1.Menu Page Down 2.Decrease the setting data	Continuous decrease the setting data
Back	Return to the menu / exit	_____
Send	Send Parameters	_____
Test	Test the setting	_____
Read	Parameter	Read Parameters
	Status	Read running status
Backlight	Turn on the LCD backlight	_____
Light	1.Open the emergency lighting 2.SOS lights switch	Press "Light" and "Set" key to lock or unlock the parameters

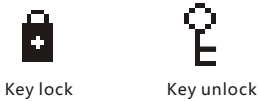
4. Icon Description

4.1 Battery capacity indication



 If the battery capacity < 25% then the battery icon flashes to remind the user to replace the battery.

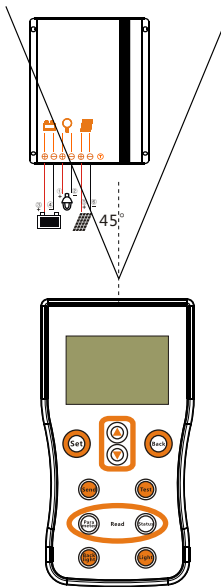
4.2 Key lock and unlock



4.3 Communication success and failure



5. Operating



5.1 Precautions

- Install two AA batteries, positive and negative poles can not be reversed;
- The remote controller will automatically enter sleep mode after 1min without any key operation;
- The remote controller sets the solar controller one by one, could not set several controllers at the same time;
- Turn on the backlight and lights will shorten battery life;
- When the low battery symbol is displayed, please replace the battery;
- If long time no operation, the battery should be taken out.

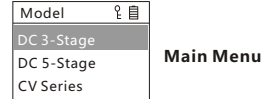
5.2 Wake Up

1. Press "**Set**" or "**▲▼**" or "**Back**" will wake up the remote controller.
2. Press the "**Backlight**" key to wake up the remote controller will also turn on the LCD backlight.
3. Press the "**Light**" key to wake up the remote controller will also turn on the lights.

5.3 Parameter Setting

Before setting the parameters, please refer to the controller type, we offer three modes:

DC 3-Stage, DC 5-Stage, CV Series



After you select a controller model, press the "**Set**" key to enter the setting page, Press "**▲▼**" can browse the setting parameters, when you want to modify the shading parameter, you can press the "**Set**" key, then the cursor starts blinking, press the "**▲▼**" key, the current parameter can be adjusted, after adjustment is complete, press the "**Set**" key to change to the next parameter or press the "**Back**" key to exit the current parameter setting.

——For details, please refer to **Chapter 6, "Parameters Setting."**

5.4 Send

When the parameters are set up, aim at the solar charge controller and press the "**Send**" key. If send successfully, remote controller displays "**Send Successful**" and will beep a long sound; if failed, remote controller displays "**Send Failure**" and beep three short sounds; if the parameters such as battery type, load current or voltage settings are wrong, remote controller displays "**Data Error**" and beep three short sounds.

NOTE: If you press the "**Send**" key, do not immediately remove the remote controller, otherwise it will cause setup failed.

5.5 Test

Aim at the solar charge controller and press "Test" key, the load will be on, press the "Test" key again the output power of the load will switch to 50%. Test mode will last for 1 min, then enter the normal work mode.

Note: This feature varies by controller, please refer to the controller's user manual.

5.6 Read

5.6.1 Read the parameters

Aim at the solar charge controller and press the "Parameter" key, the remote controller will read the setting value of the controller. If reading successfully, the remote controller will beep a long sound and display the setting values, you can press "▲▼" key to navigate through the parameters, press the "Back" key to return to the previous page. If failed, the remote controller will display "Read Failure" and beep three short sounds, after 4s the remote controller automatically returns to the previous page.

5.6.2 Read the running status

Aim at the solar charge controller and press the "Status" key, the remote controller will read the running status of the controller. If reading successfully, the remote controller will beep a long sound and display the running status, you can press "▲▼" key to navigate through the data, press the "Back" key to return to the previous page. If failed, the remote controller will display "Read Failure" and beep three short sounds, after 4s the remote controller automatically returns to the previous page.

—For details, refer to Chapter 7, "Running status"

When display parameters or status successfully, the "Send" key does not work, only after press the "Back" key to exit, the "Send" key will be available.

5.7 Backlight

Press the "Backlight" key, the backlight of the LCD will turn on, suitable to use in dark situation.

5.8 Light

Press the "Light" key, the emergency light will be on, press again will switch to the SOS light, press the key the third times, the light will be off.

If you did not shut down light, it will automatically turn off after 30s.

5.9 Lock

Press the "Set" and "Light" key at the same time more than 3s, the remote controller beeps two short sounds, then the "Set" key will be lock to prevent carelessness operation.

If you want to unlock, press the "Set" and "Light" key again at the same time more than 3s, the remote controller beeps one short sound and the unlocked symbol comes out.

5.10 Buzzer

Beep length	Instruction
— (A short sound)	Unlock
— — (Two short sounds)	Key lock
— — — (Three short sounds)	Communication failure
—— (A long sound)	Communication successful

6.Parameters setting

6.1 DC 3-Stage and CV Series controller

Num	Name	Range	Step	Length	Default
1	Time1	0~14.0H+D2D	*1	1H	6H
2	Dim1	0~100%	10%		100%
3	Time2	0~14.0H+T0T	1H		0H
4	Dim2	0~100%	10%		100%
5	Time3	0~15H	1H		0H
6	Dim3	0~100%	10%		100%
7	D/N Thr	3.0~20.0V	0.5V		5.0V
8	Battery	GEL/LIQ	---		GEL
9	LVD	10.8~11.8V	0.1V		11.2V
		Soc1~Soc5	*2		
10	Load I	0.3~4.0A	0.1A		0.3A
11	Dim Auto	Yes/No	---		No

Note:

1." CV Series" controller:

A. "Time1" setting range including "0~14H +D2D+24H", if set to "24H", the controller is set to use in the system.

B. CV Series controller does not have "Dim1/2/3", "Load I" and "Dim Auto" setting contents.

2.Soc range:

Soc1 : 11.0~11.6V

Soc2 : 11.1~11.7V

Soc3 : 11.2~11.8V

Soc4 : 11.4~11.9V

Soc5 : 11.6~12.0V

3.Voltage parameters set by remote controller only for 12V system, for 24V system, the actual operating parameters are doubled.

For lithium battery, please refer to the controller's user manual.

6.2 DC 5-Stage

Num	Name	Range	Name describe	Step Length	Factory Default
1	Time1	0~6.5H+24H+D2D *1	The first working time	0.5H	6H
2	Dim1	0~100%	Dimming of the first working time	10%	100%
3	Time2	0~7.5H	The second working time	0.5H	0H
4	Dim2	0~100%	Dimming of the second working time	10%	100%
5	Time3	0~7.5H	The third working time	0.5H	0H
6	Dim3	0~100%	Dimming of the third working time	10%	100%
7	Time4	0~7.0H+T0T	The fourth working time	0.5H	0H
8	Dim4	0~100%	Dimming of the fourth working time	10%	100%
9	Time5	0~7.5H	The fifth working time	0.5H	0H
10	Dim5	0~100%	Dimming of the fifth working time	10%	100%
11	D/N Thr	3.0~20.0V	Day/Night Threshold voltage	0.5V	5V
12	D/N Dly	0~30min	Day/Night open load delay time	5min	0min
13	Load I	0.15~6.0A	Load current	0.05A	0.3A
14	Dim Auto	Yes/No *2	Automatic dimming	—	No
15	Dim V	8.0~32.0V *3	The voltage of start dimming	0.1V	12.5V
16	Dim %	1~20%	Automatic dimming percentage	1%	10%
17	Battery	LIQ/GEL/LI *4	Battery type	—	GEL
18	CVT	8.0~32.0V	Charging voltage target	0.1V	14.6V
19	CVR	7.5~31.0V *5	Charging voltage recovery	0.1V	14.0V
20	LVD	10.8~11.8V, Soc1~Soc5 *6	Low voltage disconnect	0.1V	11.2V
21	LVR	11.4~12.8V *7	Low voltage reconnect	0.1V	12.5V

Note:

*1.If "Time1" is set to "24H", the load will work for 24hours.

*2.If you select "Yes" in the "Dim Auto" item, then the "Dim V" and "Dim %" will display.

*3.For the lithium battery, "Dim V" should not be greater than the "CVT"; for the Gel or Liquid battery, "Dim V" should not be greater than 12.5V.

*4.If you select "LI" in the "Battery" item, then the "CVT" and "CVR" will display.

*5."CVR" should be less than "CVT" 0.2~1.5V, if you want to reduce "CVT", you should first reduce "CVR".

*6.The data in the table is only for Gel or Liquid cell. If you select "LI" in the "Battery" item, the range of "LVD" is 6.0~30.0V, the range of "LVR" is 6.6~31.0V.

Soc range :

Soc1 : 11.0~11.6V

Soc2 : 11.1~11.7V

Soc3 : 11.2~11.8V

Soc4 : 11.4~11.9V

Soc5 : 11.6~12.0V

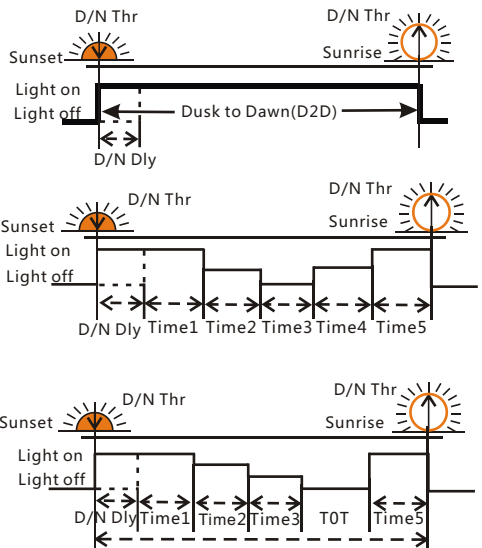
*7."LVR" should be higher than "LVD" at least 0.6V, if you want to improve "LVD", you should first improve "LVR".

*8.If "Dim V", "CVR", "LVD" or "LVR" setting unreasonable, the remote controller will automatically adjust the parameters according to the "CVT" and send the recommended data to the controller, you can press the "Parameter" key to view the actual settings.

*9.Voltage parameters set by remote controller only for 12V system, for 24V system, the actual operating parameters are doubled.

For lithium battery, please refer to the controller' s user manual.

6.3 Work mode



Smart Remote Controller Smart-Unit User Manual

7. Running Status

When you press "Status" key, the first line of the LCD displays the system status, including "Charge", "Discharge" or "Convert" and so on.

If the controller is being protected for some reason, the remote controller will display failure information in priority, include "Over CD", "Short CD", "Low VD", "Over VP", "Over TD", "Open CP" and "HardwareP".

Please refer to the controller's user manual to troubleshoot the system.

Name	Name Describe
Charge	charging
Discharge	discharging
Convert	in charge and discharge conversion
Over CD	Over current disconnect
Short CD	Short circuit disconnect
Low VD	Low voltage disconnect
Over VP	Over voltage protection
Over TD	Over temperature disconnect
Open CP	Open circuit protection
HardwareP	Hardware protection

Note:


1. DC 3-Stage and CV Series: When the controller is working properly, the first line of LCD only displays "OK".
2. Only DC 5-Stage series controller has "Open CP" and "HardwareP" function.
3. When read status information successfully, press the "▲▼" key to navigate the page, press the "Back" key to return to the previous page.

7.1 DC 3-Stage and CV Series

Num	Name	Name describe	Unit
	Status :	OK	
1	Batt V	Battery voltage	V
2	Load I	Load current	A
3	Temp	Ambient temperature	°C

7.2 DC 5-Stage

Num	Name	Name describe	Unit
	Status :	Charge	
1	Batt V	Battery voltage	V
2	Load I	Load current	A
3	Load V	Load voltage	V
4	PV V	PV voltage	V
5	PV I	PV current *	A
6	Energy	Total generating capacity	AH
7	OD Times	Over discharge times	Times
8	FC Times	Fully charge times	Times
9	Day1-HV	A day ago highest voltage	V
10	Day1-LV	A day ago lowest voltage	V
11	Day2-HV	Two days ago highest voltage	V
12	Day2-LV	Two days ago lowest voltage	V
13	Day3-HV	Three days ago highest voltage	V
14	Day3-LV	Three days ago lowest voltage	V

 Some types of controller are temporarily unable to detect PV current, the remote control displays "----."

8. Technical parameters

Battery model	(AA) x 2Pcs
Power supply voltage	3.0V
Power consumed of sleep mode	<6uA
Normal power consumption	<6mA
Sending power consumption	<20mA
Light consumption	<15mA
Backlight consumption	<7mA
Effective distance	<8m
Size	120mm x 65mm x 20mm (L x W x H)
Weight	92g(Not including the battery)
Automatic sleep	1min
Lighting time	30s
Backlight time	30s
2000mAH battery setting quantity	50000↑ (Backlight and light both are closed)
Working temperature	-25°C~50°C
Protection degree	IP22