

Thanks for choosing 30Wp solar home lighting system
Please refer to the manual before using

Chief Minister's UJAALA PROGRAM



ZTE中兴

MODEL: 30W SOLAR HOME LIGHTING SYSTEM

Model No: SHS-30

Standards: Q/ZX 01024-2010

Q/ZX 00966-2012

Q/ZX 01069-2011

IEC60896-21/22

GB/T 9535-2006

GB 19064-2003

GB/T 2828.1

GB/T 2829



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Brief Description:

SHS-30 is designed and produced for home users. It is a solar power system which has advantages of portability, safety, long life and low maintenance cost. SHS-30 is made up of solar module, bracket and support, battery, controller box, cables, 3pcs of 3W LED lamp and other accessories. The solar module converts sunlight directly into electricity. It charges the battery by the charge controller and then the electricity is stored in the battery. The DC loads get the electricity power from the controller box.

LIST OF MAIN EQUIPMENT

ITEM	PARTS DISCRIPTION	UNIT	QTY	REMARK
1	30Wp solar panel	pcs	1	polycrystalline solar modules
2	supporting frame for solar panel	kit	1	25° -35° adjustable, 5° per step, with screw & mounting bolt
3	Controller box (12V 10A)	kit	1	12V/28AHbattery & main control board built in
4	3W LED lamp	pcs	3	
5	cable(for connecting solar panel to controller box)	kit	1	length 9.2m per kit
6	cable(for connecting control box to load)	kit	3	length 9.2m per kit
7	spare package	box	1	expansion bolt m6 6kit hexagonal bolt m6 4 kit fuse 4 kit stepping 4 pcs
8	Compass	pcs	1	solar panel mounting direction locating
9	user manual	pcs	1	version of Urdu, English, Chinese

CHAPT 1 SYSTEM COMPONENTS

The system consists of five parts: controller box, cable connecting controller box to the load, the load, 30Wp solar panel and cable connecting solar panel to controller box (see principle chart).

1、CONTROLLER BOX

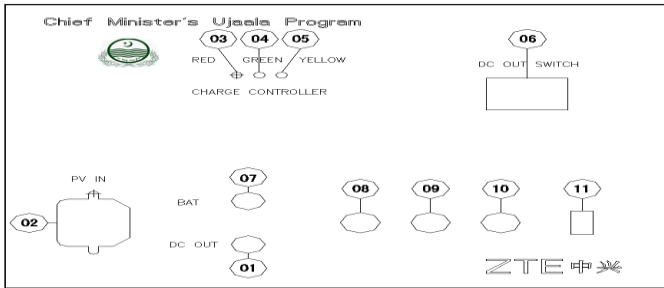


Figure 1

- | | |
|---|-----------------------------|
| 01— FUSE FOR LED BULB | 07—FUSE FOR STORAGE BATTERY |
| 02—CABLE CONNECTING SOCKET | 08—SOCKET FOR LED BULB |
| 03—RED LED INDICATOR | 09—SOCKET FOR LED BULB |
| 04—GREEN LED INDICATOR | 10—SOCKET FOR LED BULB |
| 05—YELLOW LED INDICATOR | 11—USB CONNECTING SOCKET |
| 06—POWER SUPPLY SWITCH FOR THE CONTROLLER | |

2、CABLE CONNECTING CONTROLLER BOX TO THE LOAD

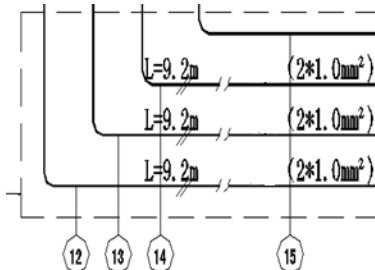


Figure 2

- 12—CABLE CONNECTING CONTROLLER BOX TO LED LAMP
- 13—CABLE CONNECTING CONTROLLER BOX TO LED LAMP
- 14—CABLE CONNECTING CONTROLLER BOX TO LED LAMP
- 15—USB CONNECTING CABLES(PREPARED BY CUSTOMER)

3、THE LOAD

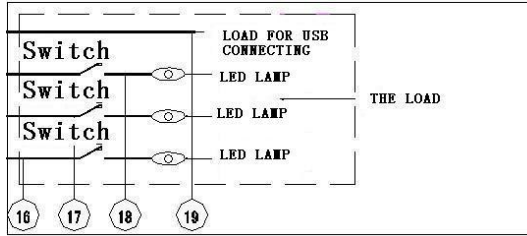


Figure 3

- 16—LED LAMP 18—LED LAMP
- 17—LED LAMP 19—LOAD FOR USB CONNECTING

4、30WP SOLAR PANEL

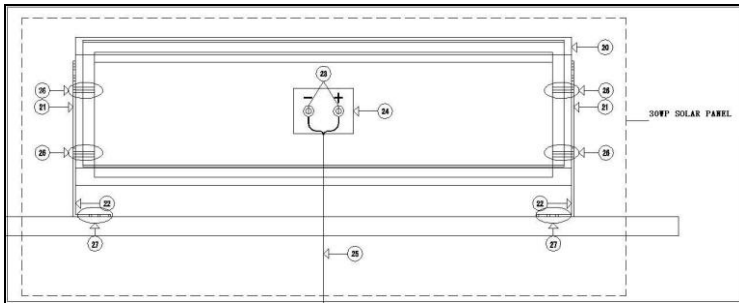


Figure 4

- 20—30WP SOLAR PANEL 24—BOX OF WIRING TERMINAL
- 21—SUPPORTING FRAME B 25—CABLE CONNECTING SOLAR PANEL TO CONTROLLER BOX
- 22—SUPPORTING FRAME A 26—MOUNTING BOLT FOR SOLAR PANEL TO FRAME A & B
- 23—WIRING TERMINAL “ + ” , “ - ” 27—EXPASION BOLT FOR FRAME A&B TO GROUND

5、CABLE CONNECTING SOLAR PANEL TO CONTROLLER BOX

2*1.5mm², for connecting solar panel to controller box, length 9.2m;

CHAPT 2 FUNCTION DESCRIPTIONS

SYSTEM COMPONENTS	FUNCTION
30Wp solar panel	collect solar energy
cable connecting solar to controller box	deliver solar energy
controller box	store & distribute energy
cable connecting controller to the load	connecting controller box to the load(customers prepare USB cables themselves)
the load	3 LED lamps and 1 USB interface

CHAPT 3 TECHNICAL PARAMETERS

DEVICE	TECHNICAL PARAMETERS
PV	model: 30W Qty: 1 pcs peak power value:30W the best working curret:1.83A; the best working voltage:16.4V short circuit current:1.98A open circuit voltage:21.6V
cable connecting solar PV module to controller box	specifications: 2*1.5mm ² ; length=9200mm; Qty:1 kit(socket, wiring terminal)
storage battery	capacity:28Ah Qty: 1 pcs

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<p>controller box</p>	<p>Qty:1 Interface: PV input interface:1; lamp interface:3; USB interface:1 indicator lamp:3 working status indicator lamps switch: switch for control supply with indicator fuse:2 (battery fuse and LED power supply fuse)</p>
<p>cable connecting controller box to the load</p>	<p>specification: 2*1.0mm² length=9200mm Qty:3kit(including lamp holder , plug and push button switch)</p>
<p>LED lamp</p>	<p>Qty:3 pcs shape: conic color: neutral white</p>

CHAPT 4 ELECTRICAL PRINCIPLE CHART

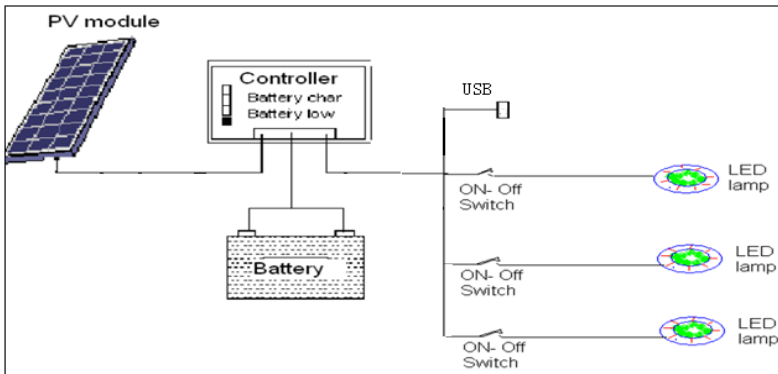


Figure 5

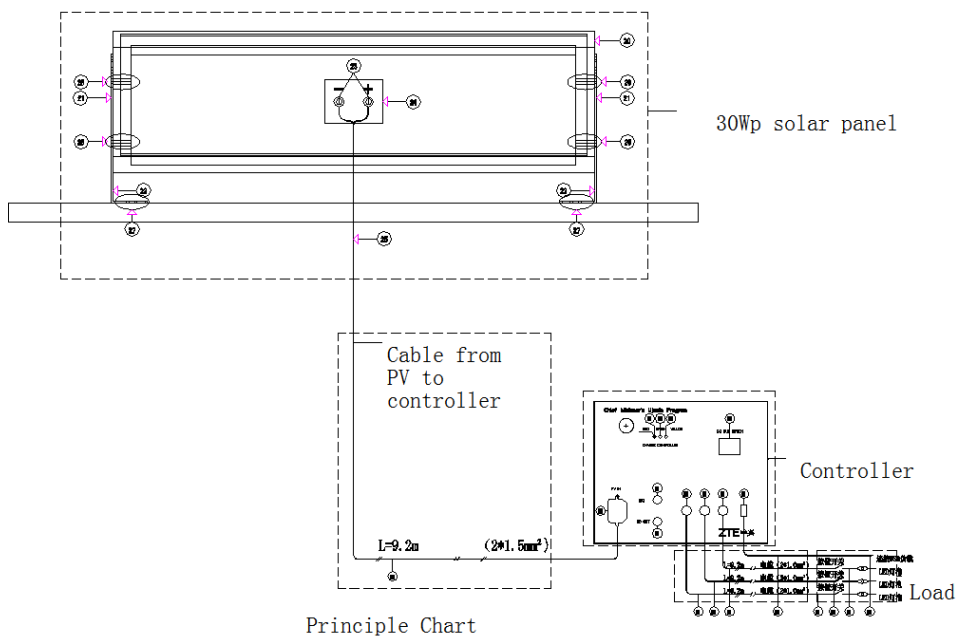


Figure 6

INSTALLATION INTRODUCTION

Installing tools:

1 M4 flat head screwdriver, 1 M4 cross screwdriver, 1 M6 socket wrench, 1 electric drill (with 8mm bit), and 1 mark pen (tools prepared by user).

Installation equipment, materials and accessories:

Support frame A, 2pcs, specification: 90mm*50mm*3mm

Support frame B, 2pcs, specification: 205mm*50mm*3mm(the angle is adjustable to 25° , 30° , 35°)

Hexagonal screws, 4 kits, specification: M6*15 mm (with nut, plain washer and spring washer)

Expansion bolt, 6 kits, specification: M6*50mm

Cable connecting solar panel to controller box, 1 kit, specification:

2*1.5mm², L=9200mm

30Wp solar panel

Step 1: Confirm the installation location with compass.

Step 2: The installation angle of solar panel to ground is based on the local sunshine parameters (25° /30° /35° optional). Choose the best angle.

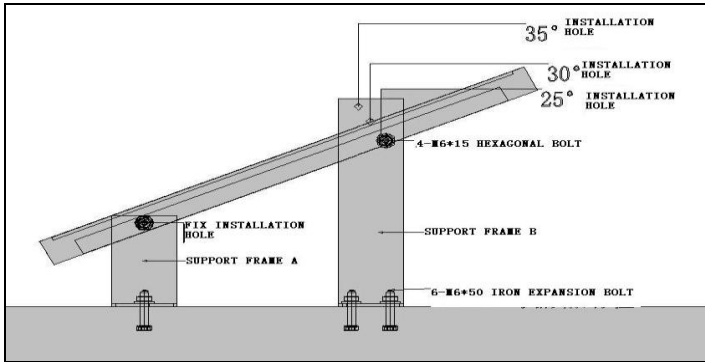


Figure 7

Step 3: Fix the support frame A & B to the solar panel with hexagonal bolt.

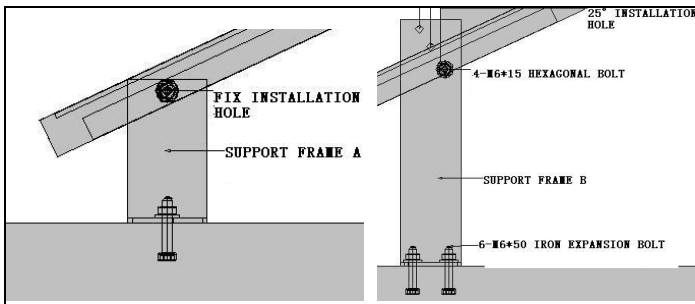


Figure 8

Step 4: Put the support frame A & B to the installation location, mark the installation hole with a pen.

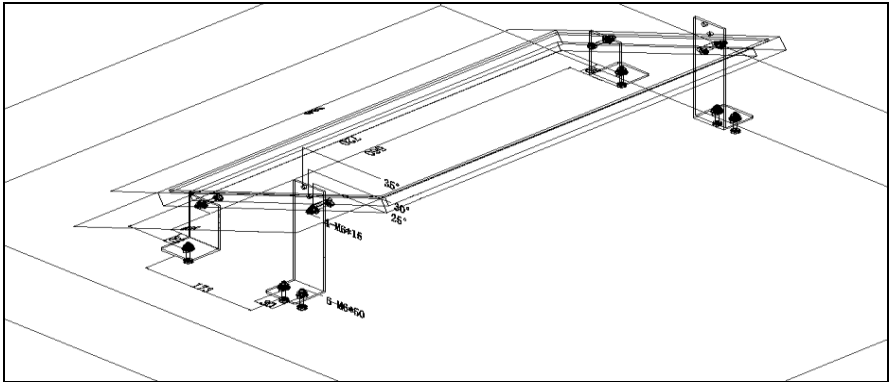


Figure 9

Step 5: Check the holes position and size given by installation guide map. After confirmation, dig 6 holes at the identified location with an electric drill, clean dust in the hole, install 6 expansion bolts, fix the bolts in place with a M6 socket wrench, and then remove the nut, plain washer and spring washer off the bolts.

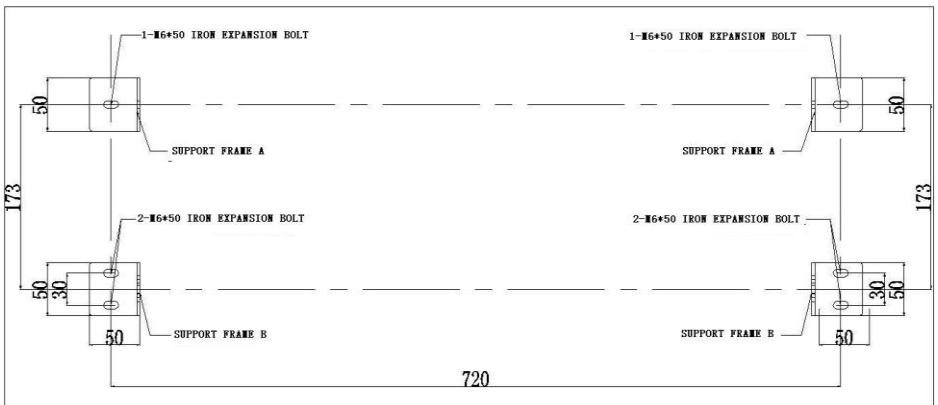


Figure 10

Step 6: Fix the support frame A&B to the expansion bolts on the ground with a socket wrench, install the solar panel.

Step 7: Install the cable connecting solar panel to the controller box. Open the cover of the terminal box, connect the anode(red wire) of cable to (" + ") and cathode(black wire) to (" - "), then cover the terminal box tightly.

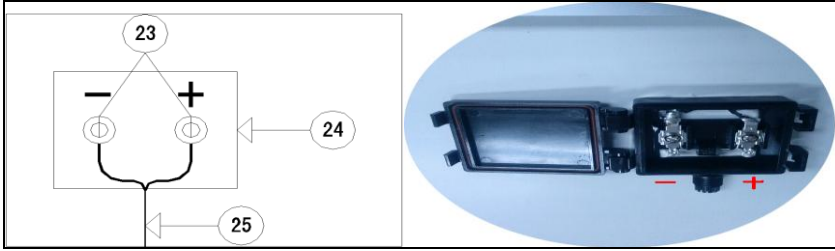


Figure 11

Step 8: Controller box should be put in the room where is well drafty and dry. Please don't put anything on controller box. Connect cables according to the installation diagram. At first, the battery fuse and DC out fuse should be installed. After confirmation of correct connection, turn on the power supply switch for the controller 06, the green indicator 04 lights on means the system is in normal condition, and the illuminating function can be used normally. While the system is running do not turn off the power supply switch for the controller to control the lamps or the solar system will not supply power normally. In case of thunderstorm weather, please remove the cable connecting solar panel from the controller box in order to avoid safety risk.

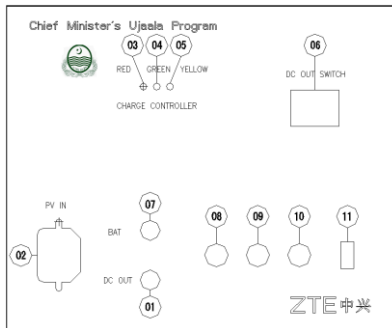


Figure 12

04 Green indicator lamp

06 Power supply switch for the controller (used as RESET when abnormal)

DISPLAY STATUS

Indicator lamp(red, green and yellow) board		Indication	Status
Single lamp	1-Red	Lighting	Low battery charge
		Flash	Power down
	2-Green	Lighting	Normal
		Flash	Waiting for recovery
	3-Yellow	Lighting	Full charge
		Flash	Ovoltage protection
Combination lamps	Red+Green	Double Flash	Over discharge/Power down
	Green+Yellow	Double Flash	Overcharge
	Red+Green+Yellow	Three slow Flash	Over temperature
	Red+Green+Yellow	Three slow Flash	Short circuit/Overload

Normal Faults Recovery

Item	Faults	Solution	Remark
1	No illumination	1, Wait 1 hour late auto-recover 2, Operating the main switcher (6) off/on 3, Check the fuse(10) 4, Watch the indicator and judge the station 5, Check the fuse (11) if necessary.	
2	No power	1,Check the main switcher whether it is on or turn it off/on 2, Check all of the connection cables 3 Check the output (DC12V) of solar panel with multimeter 4 Check life time of the battery	Please contact the vendor if the faults is from the parts

If abnormal condition happened (such as short circuit, the LED bulbs of load part are not luminous), the system will recover again 1hour later. If immediate recovery is necessary, please press RESET twice.

MAINTENANCE

Maintenance is unnecessary during guarantee period. If accessories need

to be replaced, please consider the parameters listed as following:

Item	Parts	Parameter	Remark
1	30Wp solar panel	30WP	
2	Lead-acid battery	28Ah, Size 223mm*81mm*175mm	
3	LED bulb	3W, DC12V, E27	
4	Fuse	10A (4 fuses in spare package)	

The circuit of this product is DC12V, thus the cable should be correctly connected during running or maintenance. (anode “+” connects to red wire, , cathode “-” connects to black wire (refer to following figure)).

Electrodes of the LED bulbs

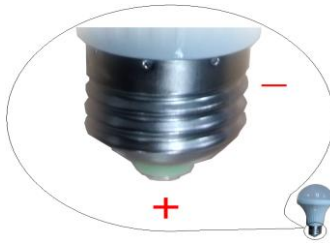


Figure 13

Notes: “+” anode; “-” cathode

Warranty notes:

ZTE is not responsible for the warranty in the following cases. Users should buy spare parts from ZTE to replace damaged ones.

1. Physical damages due to improper use after the delivery of the product.
2. Product damages due to controller water inlet.
3. Damages by using the controller and storage battery installed outdoor.
4. Damages by natural disasters and force majeure (such as earthquake, floods and lightning strike, etc.).