



# User manual of mini solar power system LFS-MSP100

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## User manual of mini solar power system LFS-MSP100

LFS-MSP100 mini solar power system (namely M100 system for short) is one kind of AC/DC output home solar power system that developed by our company. It can provide illumination for families or camping and also can be used as power source for other AC/DC appliances. Systems integration is shown as picture 1: One is a piece of 20W solar panel and the front one is multi-function main unit.



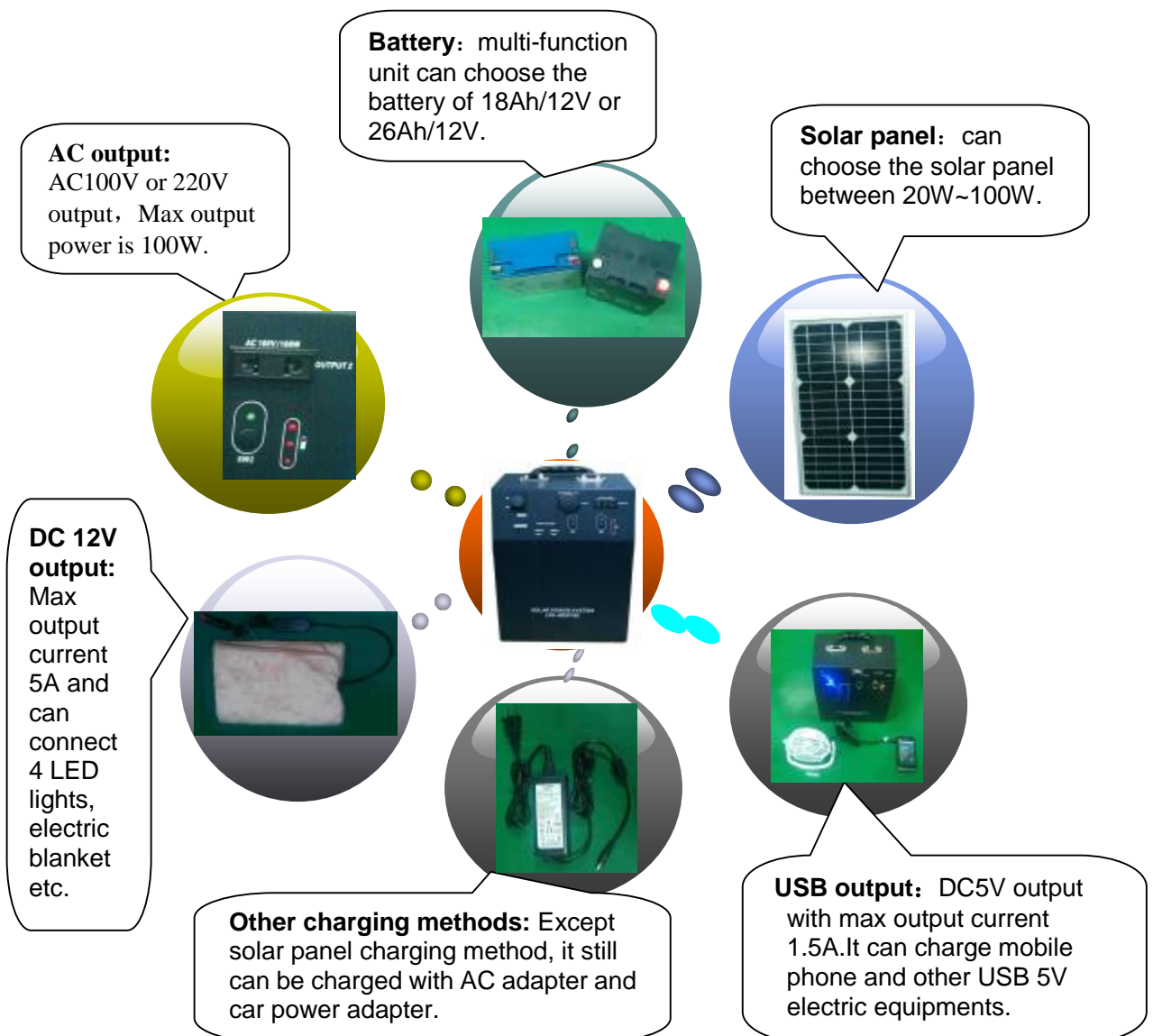
Picture 1: The combination of M100 solar power system

## 1. System structure

This system was constituted by three parts: multifunction controlling box, solar panel and other input and output parts.

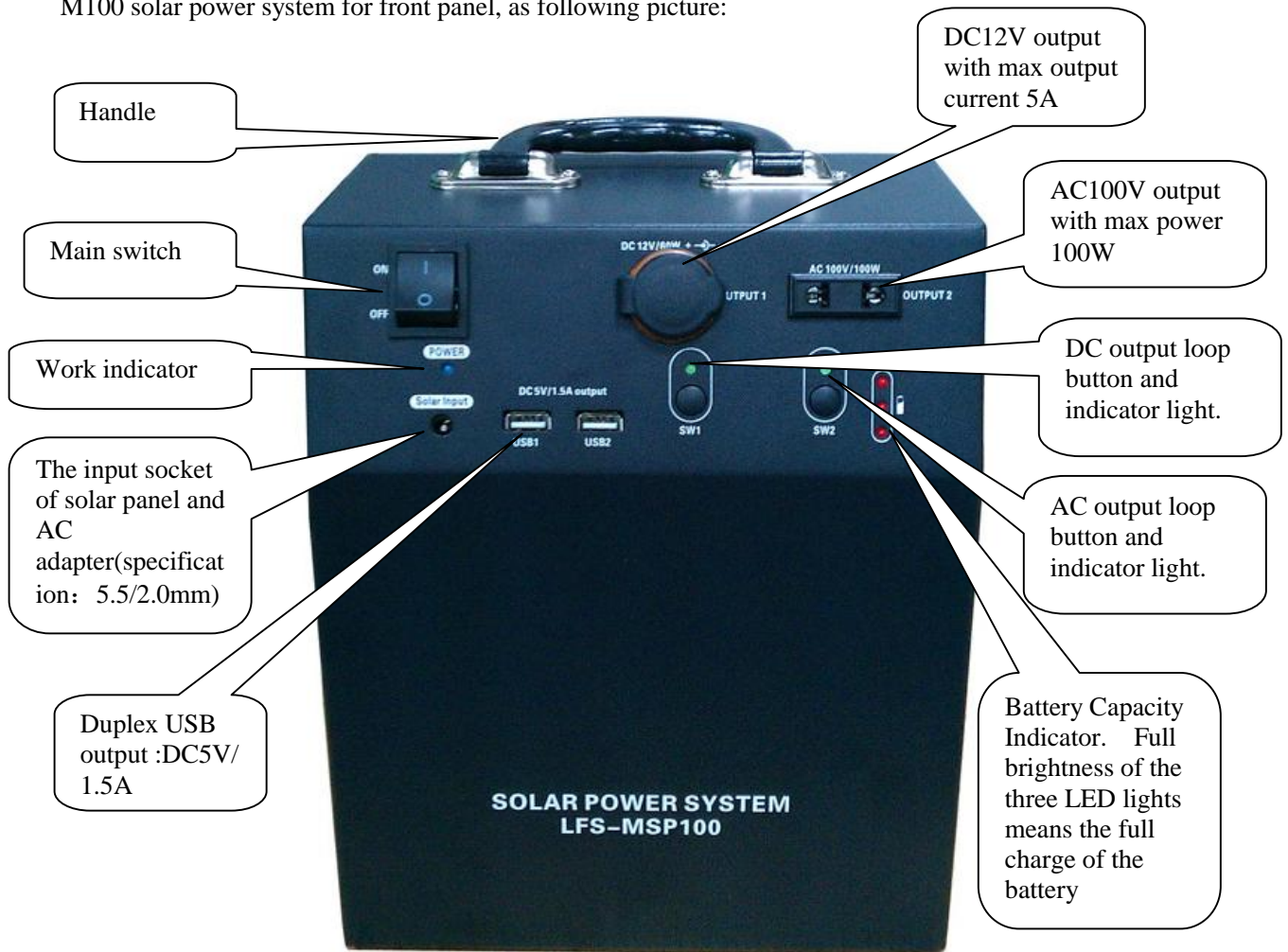
The output parts including extension 1 in 4 cable, LED output wires, LED bulb, 1x10 mobile charging cable, DC electric blanket etc. The configuration can be chose as customers required.

Systems components is shown as following picture:



Picture 2: Systems components of M100

M100 solar power system for front panel, as following picture:



Picture 3: M100 solar power system for the front panel

This system has one channel DC12V output. The output socket is cigarette lighter socket (namely cigar head) with max current output 5A. The output loop circuit can be shut down automatically once overload current or short circuit happen.

This system has one channel AC100V or AC220V output.(The output voltage and frequency can be adjusted as customer required).The output socket is second core socket (or choose as customer required).The rated power of AC output is 100W,and moment of maximum power is 120W. The output loop circuit can be shut down automatically once overload current or short circuit happen.

This system has two channel USB output sockets and the output voltage is DC5V. The max output current of this two channel is 1.5A. It can be used as power source for mobile phone charging or other 5V appliances such as USB DC fan.



The solar panel can be chose as customer required. We suggest that the range of solar panel should be chose between 20Wp~100Wp.

## 2 System Configuration

LFS-PSD100 solar power system configuration sheet:

System components	Performance		Remark
Solar panel	Mode	Monocrystalline/ Polycrystalline	
	Component voltage, power	20Wp/18V	Max load 100Wp/12V solar power
Solar power controller	Customization	5A	
Battery	Mode	Deep cycle lead-acid batteries.	Deep cycle lead-acid batteries, (26Ah/12V,18Ah/12V battery for choice)
	Voltage capacity	18Ah /26Ah	
Input/Output	The input of solar panel	DC plug	Specification :5.5mm/2.0mm
	The output of adaptor charging	3A/15VDC	
	DC 12V output	1 line	Cigarette lighter output socket with max output current 5A.
	AC output	1 line	Rated output power 100W, (100V&220V)
	USB output	2 line	Total current is 1.5A

## 3 Technical parameters

Technical parameters of P100 are as follow:

Item	Parameter
<b>AC/DC inverter and charging</b>	
DC input voltage	10.5V~15.0VDC
AC adapter input voltage	90-240VAC
Max AC output continued power	100W
AC output voltage	100VAC or 220VAC±5%



the waveform of AC output	corrected sine wave
AC output frequency	50Hz or 60Hz $\pm$ 1Hz
Shutoff valve value of battery low voltage	10.0VDC (shut off and restore automatically)
shut off by overloaded output	shut off and restore automatically
AC output short circuit protection	shut off and restore automatically
cooling method	cooling by wind
AC output line	1 line
AC output rated current	1A
<b>DC part</b>	
Build-in battery	AGM free maintenance valve control lead-acid battery
Rated voltage of battery	12VDC
Capacity of battery	26Ah or 18Ah
DC output voltage	12VDC
Max DC output current	5A
USB 5V output current	1.5A
<b>Charge</b>	
the charge method of AC	External AC adapter charging
AC adapter charging current	3A
Max DC charging voltage	15VDC
Max Solar Panel charging current (20W)	1.1A
Max AC charging time	10~12 hours (battery: 26Ah)
Solar panel charging time (20Wp)	24~30 hours (battery: 26Ah)
<b>The usage of the complete machine</b>	
Operation ambient temperature	0-40°C
storage ambient temperature	-15°C-50°C
Operation altitude	$\leq$ 3000M
Operation ambient humidity	0-90%
The dimension of the 20Wp solar (Length*Width*Height)	535*345*25mm
The weight of 20Wp solar panel (Net weight)	2.8 (kg)
mainframe box dimension (Length*Width*Height)	215*135*280mm
The net weight of the main	11.5kg



unit(including 26Ah battery) The net weight of the main unit(including 18Ah battery)	9.5kg
The weight of adapter	0.3kg
The packing dimension of the mainframe	290 (Length) *210 (Width) *355mm (Height)
The gross weight of the main unit(including 26Ah battery)	12.5kg
The gross weight of the main unit(including 18Ah battery)	10.5 kg

## 4. The usage and maintenance

1. The installation of the solar panel: Solar panel can be equipped with matched brackets and fixed on the wall or rooftop by expansion bolt.(usually, the bracket is customized as detail situation and not included in our standard configuration) The figure of 20Wp solar panel with installed bracket, as follow picture:



Picture 4: The figure of 20Wp solar panel with installed bracket

2 The connecting of input/output cable:

- 1) The solar panel was equipped with 10M cable, standard plug of specification:5.5/2.1mm. Join the plug of cable into the input socket of solar panel of the main unit directly when use it.
- 2) The connecting of adapter: the DC of plug of adapter is standard of specification:5.5/2.1mm. Join the DC plug of adapter into the input socket of solar panel of the main unit directly when use it.

- 3) DC output: DC output can connect the DC12V electric equipments with max power 60W. The socket of DC output is cigarette lighter socket. The extension cable 4x1 is shown in picture 5. The user can connect 4 LED lights or other DC fluorescent lights to the equipment through this extension cable.



Picture 5: Extension cable 4x1 for DC output

- 4) AC output: second core socket. (Can choose different socket depends on the different country ). Rated output power is 100W.
3. Our warranty period for this unit is 1 year (battery is not included).Storage battery's life time depends on different using habit and different using frequency. Usually the service life is around 2 to 3 years. The system will remain in good operation after replace the damaged battery. In order to avoid any damages of the unit, please make sure that only the local distributors or professional person can replace the battery since the replacement work needs to open the metal shell of the unit.
4. Ensure battery power capacity is above 50% and turn off system power switch when leaving it for a long time without using it. Meanwhile, please make sure to charge the battery every month appropriately.
5. Fix and place the solar panel at the site where there is abundant sunshine, clean the surface of the solar panel timely, otherwise the leaves and shields would seriously decrease the output power efficiency.

### **Warning:**

**This output AC voltage may endanger the life of human beings, please use it cautiously!**

**In order to avoid any accidents, the main unit box should be put to the place far way from children and the people who need to be protected.**





**DON'T touch the output port when the system is working. Please don't open the shell of the unit if you are not professional person. Be careful of electric shock!**