使用说明书

OPERATING MANUAL

DPX800S DC-DC
NC Booster Module
CNC Boost Module

March 2020

Zhengzhou Blue Electronic Technology

Open-box inspection

when you get a new cnc boost DPX800S module, it is recommended that you follow the following steps to check the instrument.

1. Check for damage caused by transportation.

If the packing carton or bubble bag protection pad is found to be seriously damaged, please keep it until the whole machine and accessories pass the test.

2. Check that the items in the packing box are complete.

The contents of the packing box are described below. If the content does not match or the instrument is damaged, please contact the dealer or our company.

Host: DPX800S CNC boost module 1

Annex: User Manual (pdf Edition)1

3. Check the whole machine.

If the appearance of the instrument is found to be damaged, the instrument is not working properly, or fails to pass the performance test, please contact the dealer or our company.

4. contact information

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Chapter I Overview

First，Instrument Profile

DPX800S numerical control boost module is a full digital display boost module, small volume, large power, high efficiency, stable work, can be constant voltage and constant current output, and the module has its own fixed voltage algorithm MPPT function, can grab the maximum output power of solar panels.With advanced microprocessor control, the parameters can be adjusted by key and encoder, which is fast and convenient.And the LCD1602 liquid crystal display can display the information of output voltage, current, power, output capacity and input voltage in real time.

Second，Instrument characteristics

1. use LCD1602 display information, key and encoder to adjust parameters, human-computer interaction is more convenient;

2. uses high-quality power devices and the CV and CC loop composed of peripheral precision operational amplifier, which greatly improves the module performance;

3. with its own fan heat dissipation, small temperature rise;

4. full digital display, easy to use;

5. can be constant voltage, constant current output;

6. the use of advanced microprocessors, keys can accurately adjust the output voltage, current;

7. can set the automatic output after power on.

8. with input undervoltage protection (LVP), output overvoltage protection (OVP), output overcurrent protection (OCP).

9. with communication function, easy to secondary development.

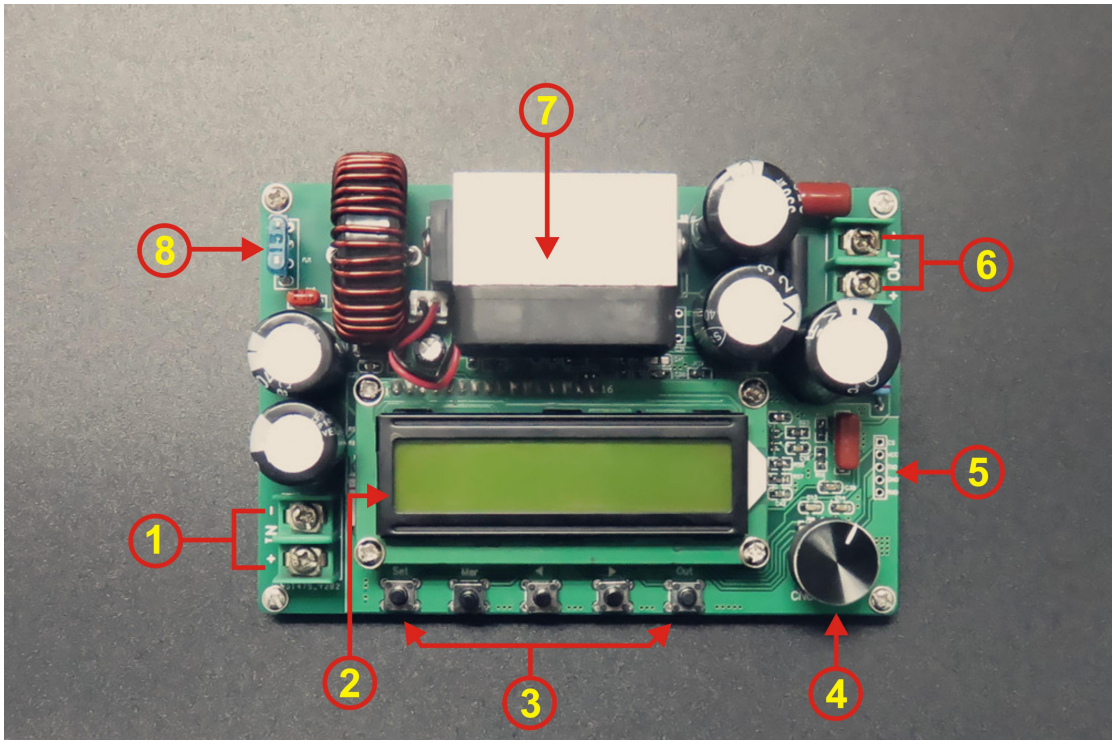
10. With the function of boost MPPT, it is suitable for the solar panel boost charge to grab the maximum output power of the solar panel.

11. The output can be turned off, which is safer and more convenient than Boost traditional booster

Third， Technical indicators

Project	Parameters
Parameter Display Mode	LCD1602 display
Input voltage	10V~65 V (800W)
Input current	15A (Max)
Output voltage	12V~12 0 V (800W)
Output current	0~12.0 A
Output power	800W (Max)
Input Protection Mode	undervoltage protection (LVP)
Output Protection Mode	Over-voltage protection (OVP), over-current protection (OCP)
Voltage regulation resolution	0.1 V
Current regulation resolution	0.1 A
Voltage display resolution	0.1 V
Current display resolution	0.01 A
Fan start-up condition	Output current greater than 1.5 A or power greater than 40 W
Short circuit protection	15A car fuse
Wiring Mode	Terminal 8500
Product size (length × width × height)	130×86×60(mm)(excluding packaging)
Weight	295g

Chapter II Module Description



Label	Note	Label	Note
1	Input port	5	Communications port
2	LCD display	6	Output port
3	Operation key	7	Radiator and cooling fan
4	Coding knob	8	Enter 15 A fuse

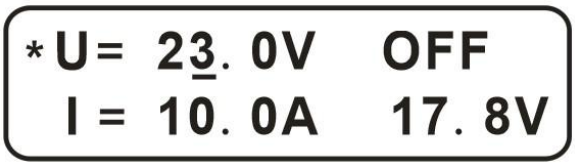
Chapter III Description of use

I. Wiring

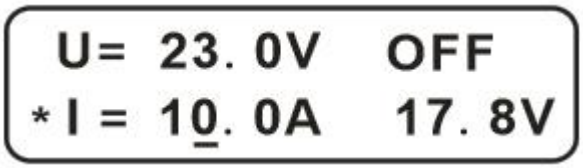
The input (IN) and output (OUT) are connected correctly to ensure that the input voltage is within the required range.

II. Set voltage and current values

（1）Set the voltage value, click the "Set" button, switch the "*" number to the above position, click the key ◀ or click the key ▶ to move the cursor, rotate the coding knob to adjust the parameter size.



（2）Set the current value, click the "Set" button, switch the "*" number to the above position, click the key ◀ or click the key ▶ to move the cursor, rotate the coding knob to adjust the parameter size.



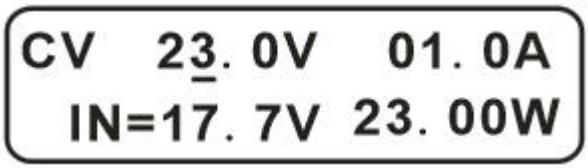
（3）As shown in figure 17.8 V the input voltage is displayed.

(4) Set parameters, click "Out" button output, if set parameters. Change, the system will set the parameters saved, power-off restart will default to output the last saved parameters.

III. Start output

After setting the output voltage and current value, you can press the "Out" key to open or close the output directly. After opening the output, the display interface is

shown in the following figure.

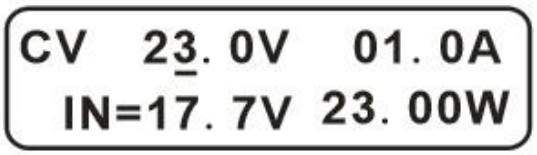


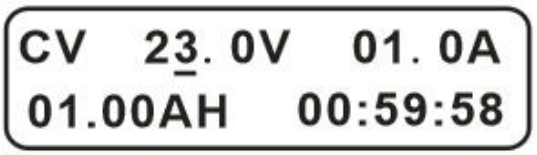
IV. Adjust voltage and current value in output state

At output, click "Set" switch to set voltage or current, click key ◀ or click key ▶ to move cursor, rotate coding knob to adjust parameter size.

V. Display capacity and time function

As shown below, in the output state, click the Mer" button to switch the display function.





VI. System parameter setting function

The instrument has four sets of parameters:

The input undervoltage value (LVP), after turning on the LVP function, when the input voltage value is less than the set LVP voltage value, the instrument will automatically turn off the output:

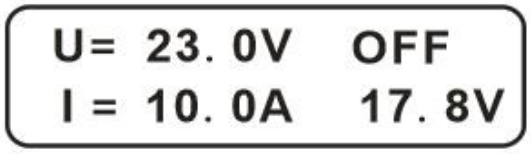
Output overvoltage value (OVP), after turning on the OVP function, when the output voltage is higher than the set OVP voltage value, the instrument will automatically turn off the output:

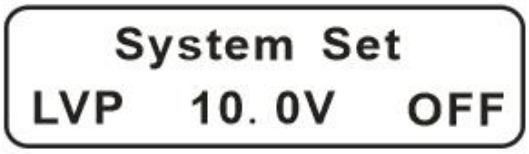
Output overcurrent value (OCP), after turning on the OCP function, when the output current value is higher than the set OCP current value, the instrument will automatically turn off the output:

Restore the output value (STR), turn on the STR function, under the undervoltage protection (LVP) output off state, when the input voltage value is higher than the set STR voltage value, the instrument will automatically open the output:

Power on automatic output function (ATO), after turning on the automatic output function, the module will automatically output, no need to click on the "Out" button to open the output.

1、LVP、OVP、OCP、STR setting method is similar, take setting LVP as an example, in the off output state, click the "Set" button, when "*" disappears, as shown in the figure below, clockwise rotate the encoder into the parameter setting page.





2、Click "Out" button to turn on or off the protection function, click" Set" button cursor display, click click key◀ or click key ▶ to move cursor, rotate coding knob to adjust parameter size.

3、Click "Set" the cursor disappear clockwise rotation encoder switch parameter category, counterclockwise adjustment exit parameter setting function.

4、Click ”Mer" Save Settings.

5、To enter the power-up automatic output ATO function, click on the Out button to open or close the power-up automatic output function, and then click on "Mer" save settings;

6、To enter the MOD working mode settings page, click the Out button to switch the working mode "MPPT" or" NOR", and then click "Mer" save the set working mode;

VII. MPPT functional settings

Note: the DPX800S is based on the MPPT function of the fixed voltage algorithm, that is, by adjusting the output voltage to change the charging current, to ensure that the output voltage of the solar panel is always near the voltage point corresponding to the maximum power. The maximum power point of solar panel is 0.78 times of open circuit voltage. When using the MPPT function of the product, in order to ensure that the product can better capture the maximum power of solar energy and ensure the safety of battery charging, we should first set some parameters MOD、LVP、OVP、OCP、STR, pay attention to STR>LVP.

1： set the MOD value, adjust the DPX800S working mode to the MPPT working mode, if you do not use the MPPT function, set the MOD value to the NOM state. After each boot automatically into the set working mode, do not reset.

2： set the LVP value and set the LVP value to the maximum power point voltage of the solar panel. Generally, the solar panel will be marked, and if not, it will be set to 0.78 times of the open circuit voltage.

3： set the OVP value and set the OVP value to the maximum voltage charged by the rechargeable battery to prevent the battery from Mppt higher than this voltage when adjusting the voltage.

4： set the OCP value, set the OCP value to the maximum voltage charged by the rechargeable battery, prevent the Mppt from adjusting the current higher than this current value, causing damage to the battery

5： set the STR value, this will stop working when the solar output power is too low, when the solar panel energy is sufficient and the output voltage is higher than the STR value, the DPX800S will turn on the output again, otherwise the output will not be turned on, the default is V.13.0

VIII. Communications agreement

baud rate :9600 Bps ;3.3V TTL level

Write data instructions:

Instruction format:(English colon)+w+(command character)++w+(data string)++w+s(end character)

(1) Set the output voltage value instruction

：wu1134s set output voltage V 113.4

：wu0134s set output voltage V 13.4

(2) Set the output current value instruction

：wi0100s set output current value A 10.0

：wi0050s set output current value A 5.0

(3) setting the state on or off

: wO0001s on output

: wO0000s off output

(4) Pull out the save parameter instruction

wm0s call save address 0 position parameter

wm5s call save address 5 location parameter

(5) Saving parameters

: ws0s save the set voltage and current values to the 0 address bit

: ws5s save the set voltage and current values to the 5 address bit

Read data instruction:

Instruction format :(English colon)+r+(command character)+r+s(end character)

(1) Read the output voltage value instruction

：rus return data :# ru0000800s actual output voltage V 80.0

(2) Read the output current value instruction

：ris return data :# ri0000050s actual output voltage A 0.50

(3) Read the output current value instruction

：rcs return data :# rc0000050s actual capacity AH 0.50

(4) Read the set voltage instruction

：rvs return data :# rv0000800s actual set voltage V 80.0

(5) Read the set voltage instruction

：rOs Return Data :# rv0000001s Output ON ;# rv0000000s Output OFF

Notes

1. this module is boost module, VOUT≥VINIf the output voltage is lower than the input voltage and the output voltage is equal to the input voltage after the module is electrified, it is normal that the input voltage must be lower than the output voltage or the rated voltage of the electronic and electrical equipment when used.

2. constant current function shows that the minimum voltage output of the BOOST boost circuit is equal to the input voltage due to the limitation of the structure of the boost circuit. Assume that the output set current value is I, output load impedance is R, input voltage is Uin, when I*R>Uin, can achieve constant current function, otherwise can not achieve constant current function.

3. the module has input undervoltage protection function (LVP) and recovery output value (STR), if the input undervoltage protection value (LVP) is set and the LVP function is turned on. When the input voltage is lower than LVP, the module reopens the output. This function is especially suitable for battery boost power supply function, which can not only protect the input battery from undervoltage damage, but also automatically turn on the boost function when the charge reaches the appropriate voltage, which is very intelligent.

4. the maximum power and input maximum current, the pressure difference between the input voltage and the actual output voltage of the instrument will affect the input current. The maximum input current and maximum input power identified by the index are typical values. Does not represent any input voltage and output voltage can reach a maximum of 12 A output current. Please confirm this feature carefully before purchasing, if you can not meet the requirements, please purchase carefully.

5. effective power P = the input voltage V *10A, the nominal 800 W refers to the maximum power of the module under specific working conditions. under different input voltages, the maximum output power is reduced by the input maximum current limit. Like,

The input voltage is 12 V： the maximum output power is 12 V*10AP=120 W the actual loss will be based on the actual value
The input voltage is 24 V： the maximum output power P=24 V*10AP=240, the actual loss will be based on the actual value
The input voltage is 40 V： the maximum output power P=40 V*10AP=400, the actual loss will be based on the actual value

Warranty and after-sales service

Thank you for buying the products of Zhengzhou Qinglan Electronic Technology Co., Ltd. To maximize the functionality of your new product, we recommend the following simple steps:

1. Read safe and effective use guidelines.
2. Read warranty terms and conditions.

Warranty conditions:

The warranty period is one year from the date of delivery of the instrument. During the warranty period, the company chooses to repair or replace the faulty instruments according to the situation. For maintenance, please mail this product to our company.

The following are not covered by warranty:

Improper operation or maintenance of the user; use the software or interface provided by the user himself; modify the instrument without permission.