Digital Buck and Boost Digital Power Module DPH3205 RuiDeng

Digital Buck-Boost Supply Power Module

RUI DENG

Product model: DPH3205

General Information

The constant voltage and constant current Digital control power supply module put the collection of analog integration and digital control functions in one. This module has power-down stored function and can store 10 groups preset value. And it also has the function of extracting quickly two groups stored value. Compared with the traditional analog power supply, it is more convenient to quickly extract the voltage or current required. LCD display on the module has the function of digital voltmeter and ammeter. You can view the preset voltage, input voltage, output voltage, the preset current, output current, output power. On the output state remind area, you can see that output opens or not, the state of constant voltage and constant current, output is normal or not, the key is locked or not, and the current data groups that is being used. On the setting data interface, you can adjust over-voltage value, over-current value, over-power value, data set and LCD brightness. This module adopts buck-boost structure; when input voltage is lower than, equal to or higher than output voltage, output voltage is still stable and changeless. This feature has wide range of application.

Technical parameters

Input voltage range: DC6-40V
Output voltage range: 0V-32.00V
Output current: 0-5.000A
Output power range: 0-160W
Max allowable input current: 10A

Note: 1. If you want to ensure output at full load, you must make sure that input is higher than 18V and 180W; pay attention to heat elimination at full load. 2. Connection between display part and power part should be according to the corresponding words. Otherwise it will not work by wrong connection.

Product Weight:227g
Output ripple: about 100mVpp
Length of connecting line:200mm
Display module size: 79mmX43mmX41mm
Open size: 76mmX39mm
Power module size:93mmX71mmX42mm
Fixed hole center distance:86mm、64mm
Temperature of the application environment: -10℃~45℃
Output voltage program and read back resolution: 0.01V
Output current program and read back resolution: 0.001A
Output voltage program and read back accuracy: ± (0.5% + 1 digit)
Output current program and read back accuracy: ± (0.5% + 3 digits)

Connection description

IN+: Input positive   **IN-**: Input negative
OUT+: Output positive   **OUT-**: Output negative

Note: Input voltage range is DC6-40V, and 40V is the limit voltage. please leave a room to use, or else it will be burnt. The input must be DC power supply, not AC 220V, or else it will be burnt too. Though this module has reverse connection protection and output short circuit protection, you must be in strict accordance with connection description to connect. If you connect the supply power with output, the module will be burnt.

IN+
OUT+
IN-
OUT-

Panel description

Voltage setting/Page up to choose/Shortcut extract M1 data group

Data setting/ Extract value of the specified data group/ Store value into the specified data group

Current setting/Page down to choose/Shortcut extract M2 data group

1.44 inch color LCD screen

Coding potentiometer/ Data adjustment/ Lock all buttons

Open or close output

SET:12.00 5.100
12.00V
4.894A
58.71W
U-IN: 35.56U

ON/OFF

Display interface description

The preset value of output voltage

The actual value of output voltage

The actual value of output current

The actual value of output power

The actual value of input voltage

The preset value of output current

Key lock or unlock prompt

Output normal or not prompt

Constant voltage and constant current status prompt

Data set prompt

Open or close output prompt

The main interface

SET: 12.00 5.100
12.00V
4.894A
58.71W
U-IN: 35.56U
CV
M2

Preset output voltage
Preset output current
Preset over-voltage
Preset over-current
Preset over-power
Preset screen brightness
Preset data set

OUT 18.99 0.000
U-SET:19.00U
I-SET:5.100A
S-OVP:33.00U
S-OCP:5.100A
S-OPP:150.0W
B-LED:■■■■ 4
M-PRE:M0 OFF
CV
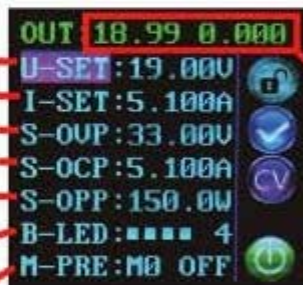
The actual value of output voltage and output current

Data setting interface

When connect the power supply, the screen shows welcome window firstly and then comes into main interface. On the main interface, the output set voltage value and the output set current value is on the top of the screen. The big font value on the left are the actual output voltage, the actual output

Welcome window   **Main interface**

current and the actual output power. Input voltage is on the bottom of the screen. There are some running status icons on the right of the screen, key lock icon, abnormal output status icon, constant voltage and constant current icon, data set tip icon and opening or closing output icon.

Set the output voltage and output current on the main interface.

Press V/↑ key shortly, you can enter into voltage setting status. Then press the coding potentiometer, and then enter to adjust the numerical value. Press coding potentiometer to enter into the status of adjusting the numerical value you want to adjust. Turn coding potentiometer to adjust the numerical value. Turn by clockwise rotation to increase the numerical value; Turn by counterclockwise to decrease the numerical value. If you want to exit adjusting the numerical value, press shortly V/↑ . In the same time the preset value will be stored. Or you can do nothing in one minute, the status will be automatically existed and the preset will be stored too. You can press A/↓ to set the output current by the same way.

Set the data on the data setting interface

On the main interface, you can press SET shortly to enter into data setting interface. On the data setting interface, press shortly V/↑ or A/↓ to page up or page down to U-SET or I-SET, and then set the output voltage and output current by same way used in the main interface .

Set the protection value.

Page up or page down to S-OVP, S-OCP or S-OPP place to set over-voltage value , over-current value and over-power value correspondingly; when the value is up to the setting value, output will be closed ; and there is a prompt on right of screen . And then press shortly the coding potentiometer to enter into the status of adjusting the numerical value you

Data setting interface

want to adjust. Turn coding potentiometer to adjust the numerical value. If you want to exit adjusting the numerical value, press shortly SET key.

Adjust the brightness of screen.

Page up or page down to B-LED, and then press shortly the coding potentiometer to enter into the status of adjusting the brightness of screen. Turn coding potentiometer to adjust the numerical value you need. If you want to exit adjusting the numerical value, press SET shortly. There are six brightness levels of LCD screen, 0-5 level. Rank 0 is the darkest; rank 5 is the brightest. You can choose what you like.

Data setting and store the specified data group.

Page up or page down to M-PRE, and then press shortly the coding potentiometer to enter into the status of choosing the data groups. Turn

coding potentiometer to choose the data group you need to view. Then the data group you need will be displayed. And then press the coding potentiometer to enter into status of changing output state. Turn coding potentiometer to choose ON or OFF. When choose ON, the data group is extracted and the output status remain the same. When choose OFF, the data group is extracted and the output is closed. If you want to exit choosing the data group, press SET shortly. Then press shortly V/↑ or A/↓ to page up or page down to other place to adjust the data you need. After data setting done, keep pressing SET more than 2s, all the data you set are automatically stored into the specified data group. In the same time, you can see the group number on the right of screen. Now you can press SET shortly back to the main interface.

Set default boot open or close output
Page up or page down to S-INI, and then press shortly the coding potentiometer to enter into the setting status. Set ON, default boot open; set off, default boot close.

Function description

Open or close the output:
You can press ⓞ to open or close the output on any interface.
Lock the button to avoid wrong operation:
On the any interface, you can keep pressing coding potentiometer more than 2s, all buttons are locked. You can see the key lock icon on the right of screen. If you want to unlock all buttons, keep pressing coding potentiometer more than 2s, all buttons are unlocked. The key unlock icon will be displayed on the right of screen.
M0-M9 ten data groups:
M0 group is the boot default data group. When you extract the data group you need, this data group will cover M0 data group and be automatically stored on M0 data group.
Extract Shortcut storage data group M1 or M2:
On the main interface, keep pressing V/↑ or A/↓ more than 2s, you can extract Shortcut storage data group M1 or M2 quickly. In the same time the corresponding data group number will displayed on the right of the screen.
Extract the specified data group:
On the main interface, keep pressing SET more than 2s, the sequence number of data group will be displayed on the right of the screen, you can turn coding potentiometer to choose data group you need. And then press SET shortly, you can extract the specified data group you need.

Technical parameters:

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Output voltage range: 0V-32.00V
Output current: 0-5.000A
Output power range: 0-160W
Product Weight: about 227g
Display module size: 79*43*41(mm) (L*W*H)
Open size: 71mm*39mm
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Length of connecting line: 200mm
Fixed hole center distance: 86mm, 64mm
Max allowable input current: 10A
Output ripple: about 100mVpp
Output voltage program and read back resolution: 0.01V
Output current program and read back resolution: 0.001A
Output Voltage program and read back accuracy: ± (0.5% + 1 digit)

Output Current program and read backaccuracy: ± (0.5% + 3 digits)
Temperature of the application environment: -10°c ~45°c