DC-DC 15W Adjustable USB Step Up Down Power Supply Module



Brief Intro:

This is a DC adjustable constant voltage current step up/down power supply module with LED digital tube display, which could display output voltage, output current and output power and adjust the output voltage and current. It can be used as ordinary buck power supply module, charger and LED constant current driver. Simple, efficient and practical.

Product Highlights:

- ✓ Support short circuit protection
- ✓ Support anti-backflow protection
- ✓ Support constant voltage constant current adjustment
- ✓ 4-Bit digital tube display
- Three input power modes
- ✓ Support over-current protection

- ✓ Support over-voltage protection
- \checkmark Support over power protection
- ✓ Support over temperature protection
- ✓ Support charging mode
- ✓ High resolution
- \checkmark Multiple parameters can be displayed in turn
- \checkmark Comfortable outer shell.

Parameters:

| 1 | Input Voltage For Pads | DC 4.0V-13.0V |
|----|----------------------------------|---------------|
| 2 | Input Voltage For Usb | DC 5.0V |
| 3 | Output Voltage | DC 0.5V-30.0V |
| 4 | Output Current | 2A |
| 5 | Output Power | 15W(Max) |
| 6 | Voltage Display Precision | +/-0.1V |
| 7 | Voltage Display Resolution | 0.1V |
| 8 | Current Display Range | 0~2.2A |
| 9 | Current Display Precision | +/-0.05A |
| 10 | Current Display Resolution | 0.001A |
| 11 | Capacity Precision | 0.00W~15.0W |
| 12 | Protection Temperature Threshold | 100 ℃ |
| 13 | Conversion Efficiency | 95% |
| 14 | Working Current | 30mA |
| 15 | Short Circuit Protection | \checkmark |
| 16 | Anti-Backflow Protection | \checkmark |
| 17 | Over-Current Protection | \checkmark |

| 18 | Over-Voltage Protection | \checkmark |
|----|---------------------------|--------------|
| 19 | Over-Power Protection | \checkmark |
| 20 | Working Temperature Range | -20℃~85℃ |
| 21 | Working Humidity Range | 0%-95%RH |
| 22 | Size | 84*35*24mm |

Button/Potentiometer/LED Indicator Intro:



*Long press means pressing and holding for more than 3 seconds.

Left Button: Long press is used to set default ON or OFF for next re-power at display mode. Short press is to select output voltage at display mode or as 'Minus -' in calibration mode.

- Right Button: Long press is used to enter or exit calibration setup mode at display mode or as 'Plus +' in calibration mode. Short press is to switch display output voltage, output current, output power or display these parameters in turn.
- CV Potentiometer: Adjusting output voltage. Increase the output voltage when rotating clockwise. Please rotate the CV potentiometer 10 turns in counterclockwise if the output voltage cannot be adjusted.
- CC Potentiometer: Adjusting output current. Increase the output current when rotating clockwise. Note: It is not keeping at a fixed output current. When the load current reaches the setting current value, the module starts to output fixed current value.
- ON LED: Green Output indicator. It will turn ON when there is a output at output terminal. Otherwise it is OFF.
- CC LED: Red Constant current output indicator. It enters the constant current state when the load current reaches the setting current and CC constant current indicator turns ON.

Input and output:

• Input terminal: There are three input methods:

Method 1: Standard Type A USB Male .It just can input DC 5V.

Method 2: Micro USB Female. It just can input DC 5V.

Method 3: IN+ and IN- pads.It can input DC 4.0V-13.0V.

*It can only choose one input method.

• Output terminal: KF-301-2P 5.08mm blue terminal. It can output DC 0.5V-30.0V.

Calibration:

■ Calibrating output voltage:

Press and hold the right button when displaying output voltage into output voltage calibration. Then the screen will flash. Press the left button to decrease the value and the right button to increase the value. Press and hold the right button again to save parameters and exit setup mode.

■ Calibrating output current:

Press and hold right button when displaying output current into output current calibration. Then the screen will flash. Press the left button to decrease the value and the right button to increase the value. Press and hold the right button again to save parameters and exit setup mode.

Protective Function:

① Over-Voltage Protection: Module will turn OFF output voltage automatically if output voltage is more then 30.5V.

② Over-Current Protection: Module will turn OFF output automatically if output current is more then 2A.

③ Over-Power Protection: Module will turn OFF output automatically if output power is more then 15W. It will display

'-OP-' . User need reduce load power and then press 'ON/OFF' button.

④ Current error: Large error displays when output current is less than 0.05A. It can not display output current if current is 10~40mA.

5 Over Temperature Protection: Module will turn OFF output automatically if temperature is more then 100°C. It will display

'-OT-' . User need reduce load power and then press 'ON/OFF' button.

Using Steps: (Please pay attention to !!!)



7

1. As a ordinary step down power module:

1.1>.Connect 4.0V-13.0V voltage at input terminal;

1.2>.Adjust CV constant voltage potentiometer to set output voltage according to require. Rotate CV potentiometer counterclockwise more than 10 turns if the output voltage can not be adjusted.

1.3>.Rotate CC potentiometer counterclockwise more than 10 turns at first.

1.4>.Test Output short circuit current by multimeter at 10A or
20A (Connect two Test Probes to output terminal on module)
1.5>.Rotate CC constant current potentiometer clockwise to set
output current according to required over-current protection
value.

1.6>.Test and using (E.g: Module's maximum output current is 1A if display 1A on multimeter. Red LED indicator will turn on if output reach to 1A, Otherwise LED is OFF.)

1.7>.The output voltage will decrease due to the current sampling resistor at the output. The higher the current, the more

the voltage is reduced.

1.8>.Output current can not keep a fixed value output. It changes with load. But It can not exceed the setting output current value.

2. As a charger:

2.1>.Tops: Power supply module can not be used as charger module if it does not support constant current function. The voltage difference between the battery with insufficient voltage and the charger is very large, which will cause excessive charging current even damage the battery. So firstly it need to keep charging in constant current mode to reach a certain level, Then automatically switch back to constant voltage charging.

2.2>.Make sure the floating charge voltage and charge current for battery.

If the lithium battery's parameter is 3.7V/2200mAh, then the floating charge voltage is 4.2V, and the maximum charging current is 1C, which is 2200mA.

2.3>.Connect DC 4.0V-13.0V voltage at input terminal.

(Note:Please don't connect load during set parameter).

2.4>.Test output voltage by multimeter and adjust CV potentiometer to make sure output voltage reaching to required floating charge voltage. (If charge a 3.7V lithium battery, adjust the output voltage to 4.2V)

2.5>.Rotate CC potentiometer counterclockwise more than 10 turns at first.

2.6>.Test Output short circuit current by multimeter at 10A or
20A (Connect two Test Probes to output terminal on module)
2.7>.Rotate CC constant current potentiometer clockwise to set
output current according to required charge current value.
2.8>.Connect battery at output terminal and start to charging.

3. As a high power LED constant current driver:

3.1>.Make sure LED working current and maximum working voltage.

3.2>.Connect 4.0V-13.0V at input terminal. (Note: Please don't connect load during setting parameter).

3.3>.Test output voltage by multimeter at output terminal and adjust CV potentiometer to set output voltage to LED's maximum working voltage.

3.4>.Rotate CC potentiometer counterclockwise more than 10 turns.

3.5>.Test Output short circuit current by multimeter at 10A or

20A (Connect two Test Probes to output terminal on module)

3.6>.Rotate CC constant current potentiometer clockwise to set

output current according to required LED working current.

3.7>.Connect LED and test.

Caution:

- It is a DC power module, So it can not be connected to AC power.
- Please don't short output.
- ◆ 'IN-' and 'OUT-' can not be connected together, otherwise

module can not support constant current output.

- Please make sure input power is more than load power.
- Please step down output power if module is hot.
- Rotate CV potentiometer counterclockwise more than 10 turns if the output voltage can not be adjusted.
- Output current can not keep a fixed value output. It changes with load, But It can not exceed the setting output current value.
- There is a protective film on the surface of the shell. It is recommended to tear it off for a clearer effect.
- <u>Please read user manual and description before use.</u>

Package:

1. 1pcs ZK-DP2 USB 2A Step Up/Down Power Supply Module with shell

After-Sales:

*We have always been keen to provide customers with the best

quality service at the most competitive price.

*Looking forward to get progress and growth with all of you.

*For more product questions and inquiries, please send your advice

to sameiyi@163.com

*Thank you for your purchase!

www.amazon.com/shops/PEMENOL