

XY-SK80 User Manual

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TLA's used in this manual:

LVP - under (Low) Voltage Protection - Input

OVP - Over Voltage Protection – Input

OCP - Over Current Protection – Output

OPP - Over Power Protection

OAH - Over Amp-Hour Protection

OPH - Over Power Hour (Wh)

OHP – Over Hour (time) Protection

OTP – Over Temperature Protection

ICP – Input Current Protection*

*Found during testing.

Description:

XY-SK80 is a DC adjustable constant, voltage constant current, automatic buck-boost power supply module with LCD display. It can display input voltage and output voltage, current, power, display status, capacity, energy and time. Adjustable stable output voltage and current. Output voltage and/or current can be set to meet the need. It can be used as an ordinary buck/boost power supply module, charger, and LED constant current driver.

Features:

- a. High quality heat sink.
- b. Multiple parameters can be displayed simultaneously.
- c. Enabled/disabled output.
- d. Automatic buck/boost voltage.
- e. Constant voltage constant current output.
- f. Solar charging.
- g. Lock output current.
- h. Support reverse voltage protection.
- i. Support current backflow protection.
- j. Support output short circuit protection.
- k. Support over-voltage protection.
- l. Support over-current protection.
- m. Support over power protection.
- n. Support over temperature protection.
- o. Support display input voltage.
- p. Support display output voltage, current, power.
- q. Support working status indicator

1. Parameters:

- a. Product Name: XY-SK80 Step UP Down Power Supply Module.

- b. Product Number: XY-SK80.
- c. Working Voltage DC 6.0V~36V.
- d. Output Voltage: DC 0.6V~36V.
- e. Output Current: 0.0A~5.1A.
- f. Output Power: 80W.
- g. Voltage Display Precision: 0.5%.
- h. Voltage Display Resolution: 0.01V.
- i. Current Display Precision: 0.5%.
- j. Current Display Resolution: 0.001A.
- k. Conversion efficiency: About 88%.
- l. Short Circuit Protection: Yes.
- m. Work frequency: 180 KHz.
- n. Over-temperature Protection: 100°C.
- o. Working Temperature range: -20°C~100°C .
- p. Working Humidity range: 0%-95% RH.
- q. Size:79*43*53mm.

2. Normal Display Mode:

- a. Default normal display.
- b. Short press button 'ON/OFF' to enabled/disabled output.
- c. Long press(keep press 2second) button 'ON/OFF' to switch display input voltage and output voltage.
- d. Long press(keep press 3second) button 'ON/OFF' to clear value when display capacity, energy and time on the corresponding display interface.
- e. Rotary potentiometer: Adjust output voltage at default display mode. LCD display CV and SET symbol and flashing.
- f. Short press potentiometer: Switch display output current A, output power W, capacity Ah, energy Wh, work time h.
- g. Long press potentiometer: Keep pressed 1 second to adjust output constant current value. Then rotary potentiometer to set value. LCD display CC and SET symbol and flashing.
- h. Long press potentiometer: Keep pressed 3 second enter into parameter set mode. This is used to set LVP/OVP/OCP/OPP/OAH/OPH/Default Power-ON State.
- i. Long press potentiometer: Keep pressed 5 second to lock and unlock output voltage and output constant current values.

3. Parameter Set Mode:

- a. Long press(keep press 3second) potentiometer enter into parameter set mode at normal display mode.
- b. Short press potentiometer to switch select parameters: LVP, OVP, OCP, OPP, OAH, OPH, OHP at Parameter Set Mode.
- c. Rotary potentiometer to set value directly for LVP/OVP/OCP/OPP parameters.
- d. User need press ON/OFF button to enabled/disabled OAH/OPH/OHP three parameters and then rotary potentiometer to set value. LCD will display '----'

if disabled OAH/OPH/OHP function.

- e. Long press button 'ON/OFF' to set statistical range value when select OAH or OPH. The range of OAH is 9.999Ah/99.99Ah/999.9Ah/9999Ah. The range of OPH is 9.999Wh/99.99Wh/999.9Wh/9999Wh.
- f. Long press (keep press 3second) potentiometer to save and quit parameter set mode to normal display mode.

4. Auxiliary Function:

- a. Statistics Capacity, Energy and work time: The statistics are started when the output is turned ON, and the statistics are stopped when the output is turned ON the next time.
- b. Set Maximum Output Capacity OAH:XY-SK80 disabled output and LCD flashing display OAH when Statistics Capacity Value is more than set maximum value OAH if enabled OAH function. Automatically clear capacity statistics after the alarm is cleared.XY-SK80 will automatically count whether or not OAH is enabled. But output will not disabled output if disabled OAH function.
- c. Set Maximum Output Energy OPH:XY-SK80 disabled output and LCD flashing display OPH when Statistics Energy Value is more than set maximum value OPH if enabled OPH function. Automatically clear energy statistics after the alarm is cleared.XY-SK80 will automatically count whether or not OPH is enabled. But output will not disabled output if disabled OPH function.
- d. Set Maximum Running Time OHP: XY-SK80 disabled output and LCD flashing display OHP when Statistics Work Time is more than set maximum value OHP if enabled OHP function. Automatically clear work time statistics after the alarm is cleared.XY-SK80 will automatically count whether or not OHP is enabled. But output will not disabled output if disabled OHP function. It is countdown mode if enabled OHP.
- e. CC and CV display: LCD will display CC in the upper right corner if output current reaches the set current value .Otherwise display CV.

5. Protection mechanism:

- a. XY-SK80 supports reverse protection at input terminal.
- b. XY-SK80 supports short circuit protection at output terminal.
- c. OVP over voltage protection. The default protection value is 31 V. But user can modify the values as required. Screen will display OVP and flashing after start over voltage protection.
- d. OCP over current protection. The default protection value is 4.10A. But user can modify the values as required. Screen will display OCP and flashing after start over current protection.
- e. OPP over power protection. The default protection value is 35W. But user can modify the values as required. Screen will display OPP and flashing after start over power protection.
- f. OTP over temperature protection. The default protection value is 100°C.It can not be modified! Screen will display OTP and flashing after start over

temperature protection.

- g. LVP under voltage protection. The default protection value is 4.7V. But user can modify the values as required. Screen will display LVP and flashing after start under voltage protection. In the battery discharge test, setting the appropriate LVP can effectively prevent the battery from being over-discharged, so as not to damage the battery.

6. Using Steps:

- a. As an ordinary step up/down power module:
 - 1. Connect right input voltage at input terminal;
 - 2. Rotary potentiometer to set output voltage according to require. LCD display CV symbol.
 - 3. Keep press potentiometer 1second to adjust output constant current value. Then rotary potentiometer to set value. LCD display CC and SET symbol.
 - 4. Test and using (e.g.: Module's maximum output current is 2A if display 2A on multimeter. LCD will display symbol CC if output reach to 2A. Otherwise display CV.
 - 5. The output voltage will decrease due to the current sampling resistor at the output. The higher the current, the more the voltage will be reduced.
- b. As a charger:
 - 1. Tops: Power module can't be used as a 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. Causes excessive charging current even damage the battery. So it need keep charging in constant current mode to reaching a certain level. Then automatically switch back to constant voltage charging.
 - 2. Make sure floating charge voltage and charge current for battery. If the lithium battery's parameter is 3.7V/2200mAh, then the float charge voltage is 4.2V, and the maximum charging current is 1C, which is 2200mA.
 - 3. Connect right input voltage at input terminal. (Note: Please don't connect load during set parameter).
 - 4. Rotary potentiometer to set output voltage according to require. LCD display CV symbol.
 - 5. Keep press potentiometer 1second to adjust output constant current value. Then rotary potentiometer to set value. LCD display CC and SET symbol.
 - 6. Connect battery at output terminal and start to charging.
- c. As a high power LED constant current driver:
 - 1. Make sure LED working current and maximum working voltage.
 - 2. Connect right input voltage at input terminal. (Note: Please don't connect load during set parameter).
 - 3. Rotary potentiometer to set output voltage according to require. LCD display CV symbol.
 - 4. Keep press potentiometer 1second to adjust output constant current

value. Then rotary potentiometer to set value. LCD display CC and SET symbol.

5. Connect LED and test.

7. Notes:

- a. Input under voltage protection voltage is 4.7V. Module need re-power if input less than 4.7V.
- b. It is a DC power module, It cannot be connected connect to AC power.
- c. Please connect input before connect battery when use as charge and make sure output voltage is higher than battery voltage.
- d. 'VIN-' and 'OUT-' cannot be connect together .Otherwise module cannot support constant current output.
- e. Keep input more than 15V if need XY-SK80 output in maximum power.
- f. Please make sure input power is more than load power.
- g. Please step down output power if module is hot.
- h. Please read user manual and description before use.

7. Applications:

- a. Ordinary power supply,
- b. Battery charger.
- c. LED drive power.
- d. Instrument voltage display.
- e. Test meter.
- f. Circuit test.
- g. Power conversion

8. Package:

1pc XY-SK80 Step UP Down Power Supply Module