

**Product Name:** 20W Adjustable DC-DC Boost Converter With Digital Display

**SKU:** DFR0123

## Introduction

This 20W adjustable DC-DC boost converter with digital display is based on the professional XL6009E1 chip and supports 3~32V power input, 5~35V output and accuracy of  $\pm 0.05V$ .

On a regular boost converter there is no display and you have to measure the output manually with a multimeter, which could be slow and inefficient. This boost converter has a display with the output voltage readout integrated right into the board. So you can just simply look at the screen and adjust the voltage by the onboard potentiometer, then all done!

This module can be used DC applications such as batteries, power transformers, DIY adjustable regulated power supplies, 24V vehicle-mounted laptop power supplies, and industrial equipment boosting, 5V to 9V, 5V to 12V, 9V to 12V, 9V to 24V, 12V to 18V, 12v to 24v, 24v to 36v, etc.

The on-board voltmeter supports self-calibration mode. You can get accurate voltage values on the entire voltage range with only one calibration. The specific methods are as follows:

1. When the on-board voltmeter displays the output voltage, press and hold the button on the right side for 4 seconds and then release it. The voltmeter and the output voltage indicator "OUT" will flash simultaneously, and the output voltage adjustment mode will be entered. In the same way, when the voltmeter displays the input voltage, press and hold the button on the right side for 4 seconds and then release it. The voltmeter and the input voltage indicator "IN" will flash simultaneously, and the input voltage adjustment mode will be entered at this time;
2. Tap the button on the right to increase or decrease the voltage by one unit, the adjustment range is -5 to 5. Since the voltage value of a unit is less than 0.1V, you need to press 1-5 times to see that the voltmeter has changed by 0.1V. The specific number of consecutive presses depends on the voltage value currently displayed. The higher the current display voltage, the fewer the number of presses;
3. After the voltage adjustment is completed, press and hold the right button for 4 seconds and then release it. At this time, you can exit the voltage calibration mode, and all parameter settings will be automatically saved after power-off.

## Feature

- Wide input voltage 3V~32V (boost works normally when below 5V, but the digital tube does not work), the best working voltage range is 5~32V;
- Wide boost output voltage 5V~35V;
- Built-in 4A high-efficiency MOSFET switch tube, making the efficiency up to 94%; (LM2577 current is only 3A)
- With a high switching frequency of 400KHz, a small-capacity filter capacitor can be used to achieve very good results, with small ripple and small size. (LM2577 frequency is only 50KHz)
- With power indicator
- With voltmeter display and the voltmeter can be self-calibrated. Using a more advanced voltage microprocessor, with a range of 0~35V and a deviation of 0.05V. (Note: To ensure the accuracy of the voltmeter, please ensure that the input voltage is above 4.5V)
- Tap the button to switch between measuring input or output voltage, and there is an indicator light to show which voltage is being measured, and the setting is saved, even if the power is restarted after turned off.
- The voltmeter can be turned off by tapping the button on the left when it is not needed to display.
- With terminal blocks, easy to use without soldering, and the welding wire connection points are reserved.
- Overheat protection and short circuit protection functions.
- The output current is 4A, and it is recommended to use within 2A. It is necessary to strengthen heat dissipation when using a high current.
- The output power is 20W, please strengthen the heat dissipation if it exceeds 15W

## Specification

- Input Voltage: 3V-32V (under 5V, the digital display does not work), the best working voltage is 5V-32V
- Output Voltage: 5V-35V
- Switching Frequency: 400khz
- Rectification Method: non-synchronous rectification
- Input Current: 4A (peak), no-load 18mA (5V input, 8V output, no-load less than 18mA.) The higher the voltage, the greater the no-load current
- Conversion Efficiency: 94% (the greater the voltage difference, the lower the efficiency)
- Output Ripple: 50mv (the higher the voltage, the greater the current, the

greater the ripple)

- Load Regulation Rate:  $\pm 0.5\%$
- Voltage Adjustment Rate:  $\pm 0.5\%$
- Working Temperature:  $-40^{\circ}\text{C} \sim +85^{\circ}\text{C}$

## Shipping List

20W Adjustable DC-DC Boost Converter With Digital Display      x1

## Documents

### [Internal Information]

**Brand:** Others

**Categories:** All products, HOME>Modules>Power Modules>20W Adjustable DC-DC Boost Converter With Digital Display

**Topic:** Robotics

**Tag:** DFR0123, DC, 20W, DC-DC, Digital Display, Boost Converter, Adjustable, Power, Adjustable boost module with digital display

### [SEO Information]

**Meta Title:** 20W Adjustable DC-DC Boost Converter With Digital Display - DFRobot

**Meta Description:** This 20W adjustable DC-DC boost converter with digital display is based on the professional XL6009E1 and supports 3~32V power input, 5~35V output and accuracy of  $\pm 0.05\text{V}$ .

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