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› Senzooe ZK-JVA-12K DC 12A Buck Constant Voltage Constant Current Module User Manual

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Model: ZK-JVA-12K

1. INTRODUCTION

The Senzooe ZK-JVA-12K is a high-efficiency DC-DC buck converter module designed to provide both constant voltage (CV) and constant current (CC) output. This module is suitable for various applications, including solar panel charging, LED driving, and general power supply regulation where a stable, lower output voltage and current are required from a higher input voltage source.

This manual provides essential information for the safe and effective setup, operation, and maintenance of your ZK-JVA-12K module.

2. PRODUCT OVERVIEW

The ZK-JVA-12K module features a compact design with robust terminals for input and output connections. It includes potentiometers for precise adjustment of output voltage and current. The module is equipped with a metal casing for protection and heat dissipation.



Figure 2.1: Top view of the ZK-JVA-12K module with its protective metal casing. This image highlights the screw terminals for input (IN+, IN-) and output (OUT+, OUT-), as well as the main components such as the inductor and capacitors. The adjustment potentiometers are also visible.



Figure 2.2: Side view of the ZK-JVA-12K module, illustrating the perforated metal casing designed for ventilation and heat dissipation. This view shows the compact form factor of the module.

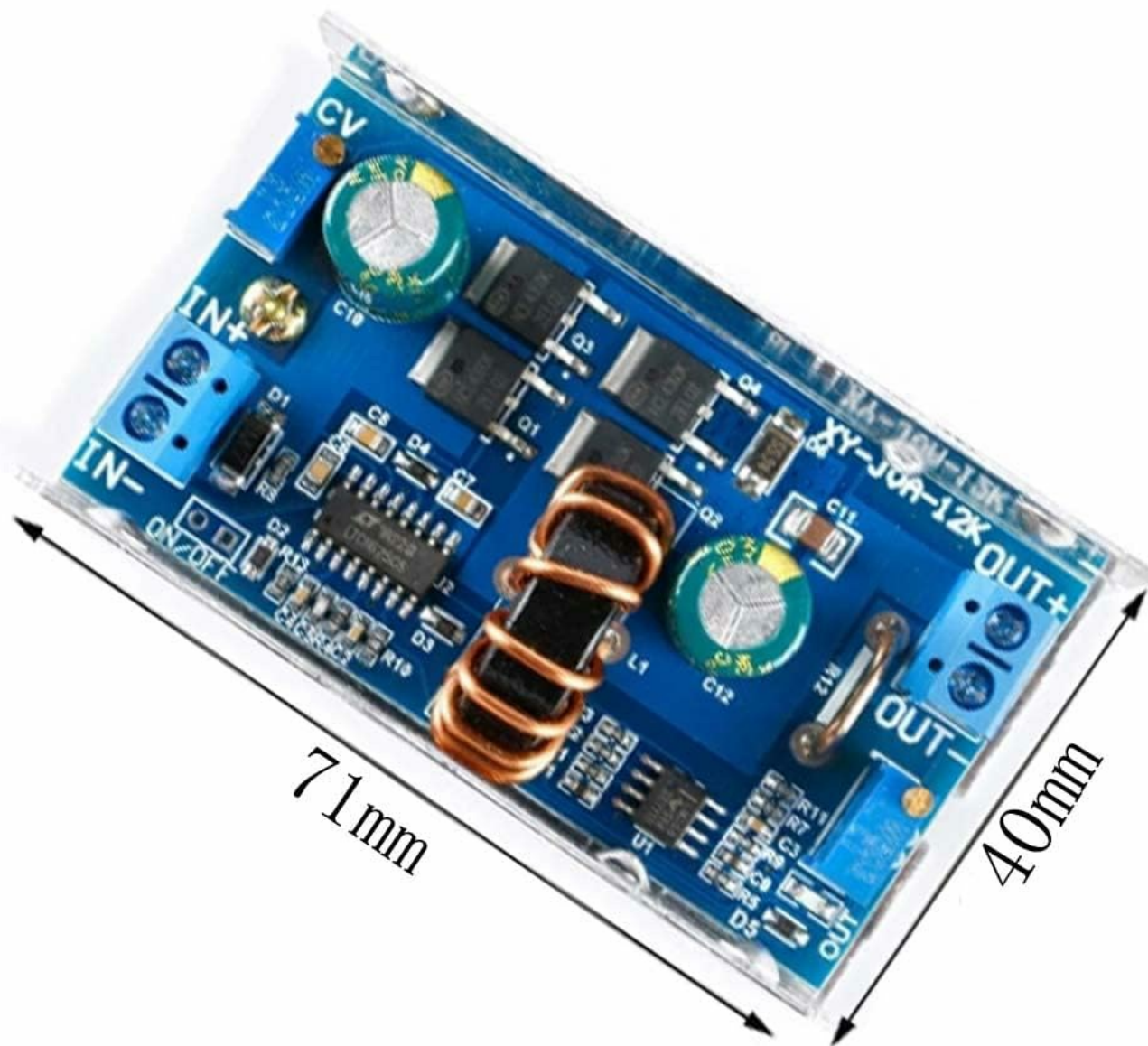


Figure 2.3: Bare PCB of the ZK-JVA-12K module, clearly showing its dimensions of approximately 71mm in length and 40mm in width. This image provides a detailed look at the circuit board layout and individual electronic components.

Note: No official product videos from the seller were available for embedding based on the provided data.

3. SETUP

1. **Input Connection:** Connect your DC power source to the **IN+** and **IN-** terminals. Ensure correct polarity. The input voltage must be higher than the desired output voltage for proper buck conversion.
2. **Output Connection:** Connect your load (e.g., LED array, battery for charging) to the **OUT+** and **OUT-** terminals. Observe correct polarity.
3. **Initial Adjustment:** Before connecting a sensitive load, it is recommended to set the output voltage and current. Connect a voltmeter and ammeter to the output terminals.
4. **Mounting:** Secure the module in a well-ventilated area to ensure adequate heat dissipation, especially when operating at higher currents.

Safety Precaution: Always ensure the power source is disconnected before making or changing any connections to prevent short circuits or damage to the module and connected devices.

4. OPERATING INSTRUCTIONS

4.1. Setting Output Voltage (Constant Voltage Mode)

1. Connect the input power source to the **IN+** and **IN-** terminals.
2. Connect a voltmeter to the **OUT+** and **OUT-** terminals. Do not connect your final load yet.
3. Carefully turn the potentiometer labeled for voltage adjustment (often marked 'CV' or with a voltage symbol) clockwise to increase the voltage or counter-clockwise to decrease it, until the desired output voltage is displayed on the voltmeter.
4. Once the voltage is set, disconnect the voltmeter and connect your load.

4.2. Setting Output Current (Constant Current Mode)

This mode is crucial for applications like LED driving or battery charging, where a specific current limit is required.

1. First, set the output voltage as described in Section 4.1 to a value slightly higher than the maximum voltage required by your load (e.g., the forward voltage of your LED string or the charging voltage of your battery).
2. Disconnect the input power.
3. Connect an ammeter in series with the output, or connect a suitable dummy load (e.g., a power resistor) that can handle the desired current.
4. Reconnect the input power.
5. Carefully turn the potentiometer labeled for current adjustment (often marked 'CC' or with a current symbol) clockwise to increase the current or counter-clockwise to decrease it, until the desired output current is displayed on the ammeter.
6. Once the current is set, disconnect the ammeter/dummy load and connect your actual load. The module will now limit the current to the set value when the load attempts to draw more.

Important: When operating in constant current mode, the output voltage will automatically adjust to maintain the set current, provided the input voltage is sufficient and the load resistance allows.

5. MAINTENANCE

- **Cleaning:** Keep the module free from dust and debris. Use a soft, dry brush or compressed air to clean the components. Do not use liquids.
- **Ventilation:** Ensure the module is always operated in a well-ventilated environment. Do not obstruct the ventilation holes on the casing.
- **Environmental Conditions:** Avoid exposing the module to extreme temperatures, high humidity, or corrosive environments.
- **Connections:** Periodically check all input and output connections to ensure they are secure and free from corrosion.

6. TROUBLESHOOTING

Problem	Possible Cause	Solution
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Problem	Possible Cause	Solution
No output voltage/current	<ul style="list-style-type: none">No input powerIncorrect input polarityOutput voltage set too low (or to 0V)Module damaged	<ul style="list-style-type: none">Check input power supplyVerify input polarity (IN+ to positive, IN- to negative)Adjust output voltage potentiometerContact seller for support
Output voltage/current unstable	<ul style="list-style-type: none">Input power fluctuationsOverload conditionPoor connections	<ul style="list-style-type: none">Use a stable input power supplyReduce load or check current limit settingSecure all connections
Module overheating	<ul style="list-style-type: none">Insufficient ventilationOperating at maximum capacity for extended periodsShort circuit on output	<ul style="list-style-type: none">Improve airflow around the moduleConsider a module with higher power rating if continuous high load is neededCheck output for short circuits

If the problem persists after attempting these solutions, please contact the seller for further assistance.

7. SPECIFICATIONS

Feature	Specification
Model	ZK-JVA-12K
Type	DC-DC Buck Converter (Constant Voltage, Constant Current)
Max Output Current	12A
Input Voltage Range	Typically 6V to 36V (Output voltage must be lower than input)
Output Voltage Range	Adjustable (Typically 1.25V to 32V, depending on input)
Dimensions (Approx.)	71 mm x 40 mm
Weight (Approx.)	54 g

8. WARRANTY AND SUPPORT

Warranty information for the Senzooe ZK-JVA-12K module is typically provided by the retailer or manufacturer at the time of purchase. Please refer to your purchase documentation or contact the seller directly for details regarding warranty coverage and terms.

For technical support, troubleshooting assistance beyond this manual, or inquiries about product defects, please contact the seller from whom you purchased this module. They will be able to provide the most accurate and timely support.

ASK A QUESTION ABOUT THIS MANUAL

Ask about setup, troubleshooting, compatibility, parts, safety, or missing instructions. Manuals+ will review the question and use this page's manual context to help answer it.

Name

Anonymous

Email

you@example.com

After a successful submission, we securely hash the supplied account or form email before sending it to Microsoft Advertising for conversion attribution. [Privacy details](#).

Question

Example: How do I reset this device or fix this error?

Details

Model number, symptoms, what you tried, or the section of the manual you are using.

Submit question