

ZDAVSFR ZK-10022

ZDAVSFR ZK-10022 CNC Step-Down Adjustable Stabilized Voltage Power Supply User Manual

Model: ZK-10022 | Brand: ZDAVSFR

INTRODUCTION

This manual provides detailed instructions for the ZDAVSFR ZK-10022 CNC Step-Down Adjustable Stabilized Voltage Power Supply. This module is designed to provide a stable and adjustable voltage and current output, suitable for various applications requiring precise power control. Please read this manual thoroughly before operation to ensure correct usage and optimal performance.

PRODUCT FEATURES

- **Display Board:** Features a gold sinking process to prevent oxidation and ensure a complete display over time.
- **Independent Silicone Keys:** Allows for easy voltage or current adjustment with a simple one-key entry and exit system.
- **Versatile Display Options:** Supports header, color screen header, or custom serial screen integration.
- **Separate Motherboard Design:** Offers flexible use and supports stepless current and voltage adjustments.
- **Soft Silicone Button Material:** Provides a comfortable touch and enhanced durability.
- **Storage Space:** 11 groups for saving settings.
- **1.8-inch Large Screen:** Upgraded display with a visible range of 36 x 29mm.
- **Buzzer:** Included for operational feedback.
- **Cooling Fan:** Activates under specific conditions (Temperature > 45 °C, Current > 2A, or Power > 30W).

CNC DC Buck Power Supply

ZK-10022

Storage space
11 group

Input voltage
12-140V

Output voltage
0-125V

Output current
0-22A

Output power
1500W

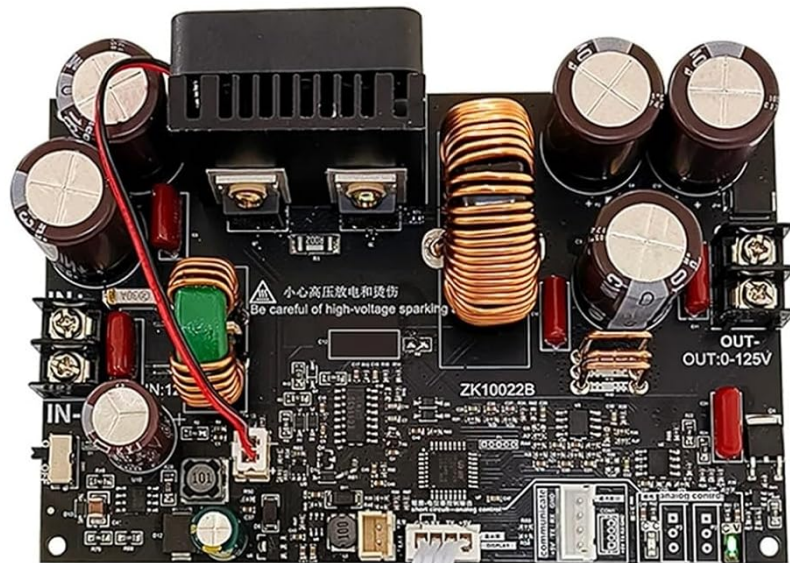


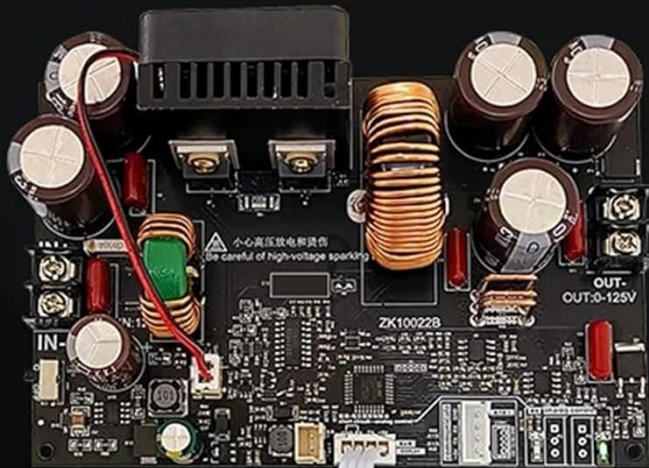
Image 1: Overview of the ZK-10022 CNC Step-Down Power Supply module and its display unit. This image highlights key specifications like input/output voltage, current, and power.

Third generation upgrade

Buck
ZK-10022

CNC DC stabilized power supply LCD style

125V 22A high voltage and high power upgrade



- Silicon Rubber Keypads
- 1.8-inch large screen display
- Supports serial communication standard MODBUS protocol

12-140V

0-125V

Input voltage Output voltage

0-22A

1500W

Output current Output power

11 groups

Storage space



Image 2: Illustrates the third-generation upgrade of the ZK-10022, emphasizing features such as silicon rubber keypads, 1.8-inch large screen display, and support for serial communication with MODBUS protocol.

SPECIFICATIONS

Parameter	Value
Product Name	CNC Power Supply
Input Voltage	12-140V
Output Voltage	0-125V
Output Voltage Accuracy	± 0.3% + 3 words (Calibratable)
Output Current Accuracy	± 0.5% + 3 words (Calibratable)
Current Resolution	0.01A

Parameter	Value
Output Current	0-22A
Output Power	0-1500W
Voltage Resolution	0.1V
Data Group Storage	11 groups
Screen Size	Upgraded 1.8-inch (36 x 29mm visible range)
Buzzer	Yes
Cooling Fan Activation	Temperature > 45 °C OR Current > 2A OR Power > 30W
Product Shell Dimensions	83 x 48 x 29.4mm (Height excludes rotary encoder)
Motherboard Dimensions	130 x 84 x 42mm
Motherboard Net Weight	227g

PROTECTION MECHANISMS

- **Input Undervoltage Protection (LUP):** Adjustable from 11-125V, default value 11V.
- **Output Overvoltage Protection (OUP):** Adjustable from 1-130V, default value 130V.
- **Output Overcurrent Protection (OCP):** Adjustable from 0.01-23A, default value 23A.
- **Output Overpower Protection (OPP):** Adjustable from 1-1500W, default value 1500W.

SETUP

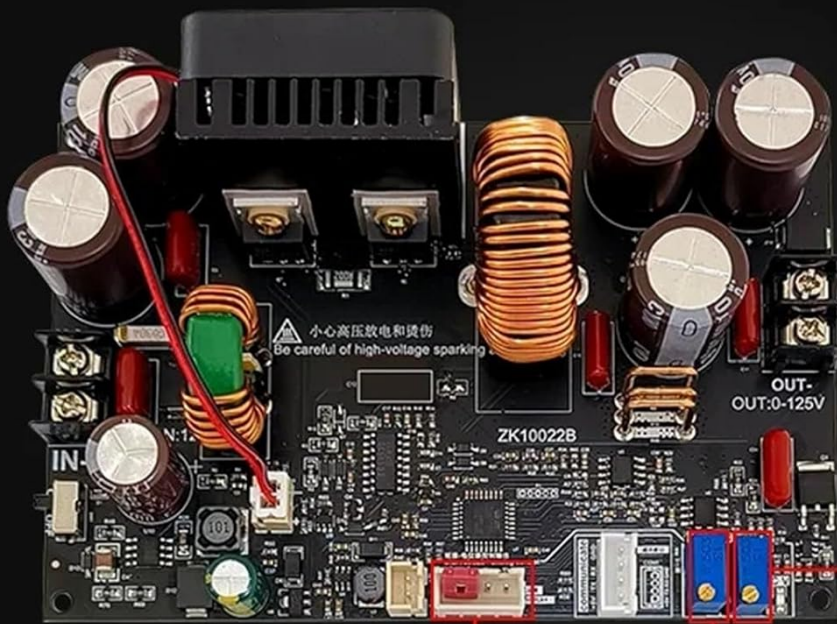
Before connecting the power supply, ensure all components are present and undamaged. The module consists of a main motherboard and a separate display unit. Connections are typically made via ribbon cables and screw terminals.

1. **Motherboard Connection:** Connect the input power source (12-140V DC) to the "IN" terminals on the motherboard, observing polarity. Connect your load to the "OUT" terminals.
2. **Display Unit Connection:** Connect the display unit to the motherboard using the provided ribbon cable. Ensure the connection is secure and correctly oriented.
3. **Analog Potentiometer Control (Optional):** If using analog potentiometers for voltage and current adjustment (e.g., with ZK10022B motherboard), it may be necessary to solder the potentiometers and plug them into the jumper cap. For serial screen or APP/Upper computer control, the jumper cap should be unplugged and the unit powered on again.
4. **Serial Communication:** For digital communication control, ensure RX and GND are short-circuited for analog potentiometer control, otherwise digital communication is required. The default baud rate is 115200.

Independent use of motherboard

Output current 0-22A adjustable, output voltage 0-125V adjustable

Tip: When selling the ZK10022B motherboard separately, it is necessary to solder the voltage and current adjustment potentiometers and plug in the jumper cap. If it is a serial screen or APP/Upper computer control, the jumper cap must be unplugged and powered on again.



Voltage regulation potentiometer

Current regulation potentiometer

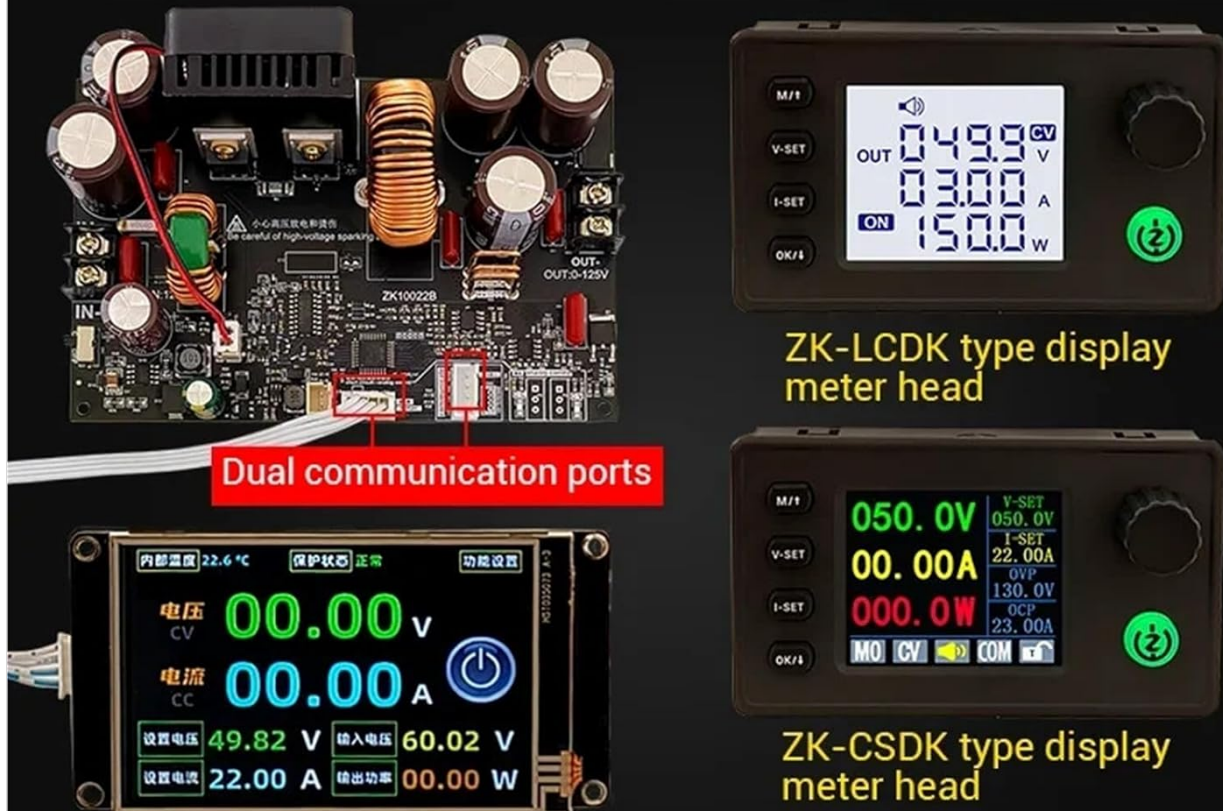
Short circuit RX GND is required for analog potentiometer control, otherwise digital communication control is required



Image 3: Detailed view of the ZK-10022 motherboard, showing input/output terminals, connections for the display, and locations for voltage and current regulation potentiometers. It also illustrates the jumper cap for analog vs. digital control.

Extended serial port screen

Main board+serial port screen/LCD meter head/color screen meter head



- The serial screen can be plugged into any port.
- LCD meter head ZK-LCDK, color screen meter head ZK-CSDK, and serial port screen can be replaced at will.
- Note that the baud rate of the serial port screen needs to be consistent with the power board. The default baud rate of the power board at the factory is 115200 (adjustable), and the RX TX cable sequence needs to be connected correctly.

Image 4: Shows the extended serial port screen options (LCD and color screen meter heads) and the dual communication ports on the motherboard. It emphasizes the flexibility in display and control.

OPERATING INSTRUCTIONS

The ZK-10022 features an intuitive interface for setting output voltage and current. The independent silicone keys and rotary encoder facilitate precise adjustments.

1. **Power On:** After connecting the input power and load, power on the module. The display unit will illuminate.
2. **Adjusting Voltage:** Press the "V-SET" button to enter voltage adjustment mode. Use the rotary encoder to increase or decrease the desired output voltage. Press "OK/M" to confirm or exit.
3. **Adjusting Current:** Press the "I-SET" button to enter current adjustment mode. Use the rotary encoder to set the desired output current limit. Press "OK/M" to confirm or exit.
4. **Enabling/Disabling Output:** Use the designated output control button (often labeled "ON/OFF" or similar on the display) to enable or disable the power output to the load.
5. **Saving Settings:** The module supports 11 groups of data storage. Refer to the on-screen prompts or specific button labels (e.g., "M/T" for memory functions) to save and recall frequently used voltage/current settings.

6. **Monitoring:** The 1.8-inch display provides real-time readings of output voltage, current, and power, along with active protection statuses.

Third generation upgraded BUCK

Color screen

CNC DC stabilized power supply

125V 22A high voltage and high power

ZK-10022C

- Silicon Rubber Keypads
- 1.8-inch large screen display
- Supports serial communication standard MODBUS protocol

Input voltage	12-140V
Output voltage	0-125V
Output current	0-22A
Output power	1500W
Storage space	11 groups



Image 5: Shows the ZK-10022 with its color screen display, highlighting the user interface for setting voltage, current, and monitoring output. It also reiterates key specifications.

MAINTENANCE

Proper maintenance ensures the longevity and reliable operation of your ZK-10022 power supply.

- **Cleaning:** Regularly clean the exterior of the module with a soft, dry cloth. Avoid using liquid cleaners or solvents that could damage the components.
- **Ventilation:** Ensure the cooling fan and ventilation openings are free from dust and obstructions to prevent overheating. Operate the module in a well-ventilated area.
- **Connections:** Periodically check all electrical connections for tightness and signs of wear or corrosion.
- **Storage:** When not in use for extended periods, store the module in a dry, dust-free environment.

TROUBLESHOOTING

If you encounter issues with your ZK-10022 power supply, refer to the following common troubleshooting steps:

- **No Power/Display:**

- Check the input power supply connection and ensure it is within the 12-140V range.
- Verify that the ribbon cable connecting the display to the motherboard is securely attached.

- **Output Not Working:**

- Ensure the output is enabled via the display unit's control button.
- Check for active protection mechanisms (LUP, OUP, OCP, OPP) indicated on the display. Adjust settings or reduce load if a protection is triggered.
- Verify load connections are correct and not short-circuited.

- **Inaccurate Readings:**

- The module supports calibration. Refer to advanced settings on the display or contact support for calibration procedures if readings are consistently inaccurate.

- **Fan Not Running:**

- The fan activates only when temperature exceeds 45°C, current exceeds 2A, or power exceeds 30W. This is normal operation.
- If conditions are met and the fan still doesn't run, check for obstructions or contact support.

WARRANTY AND SUPPORT

For warranty information, technical support, or service inquiries, please contact the seller or manufacturer directly. Keep your purchase receipt as proof of purchase.