ELEGOO EL-CK-002

ELEGOO Electronic Fun Kit User Manual

Model: EL-CK-002
Brand: ELEGOO

Introduction

The ELEGOO Electronic Fun Kit is designed to provide all the necessary components for beginners to start their projects with Arduino and other microcontrollers. This comprehensive kit includes a wide variety of electronic components, enabling users to explore fundamental concepts of electronics and circuit building.

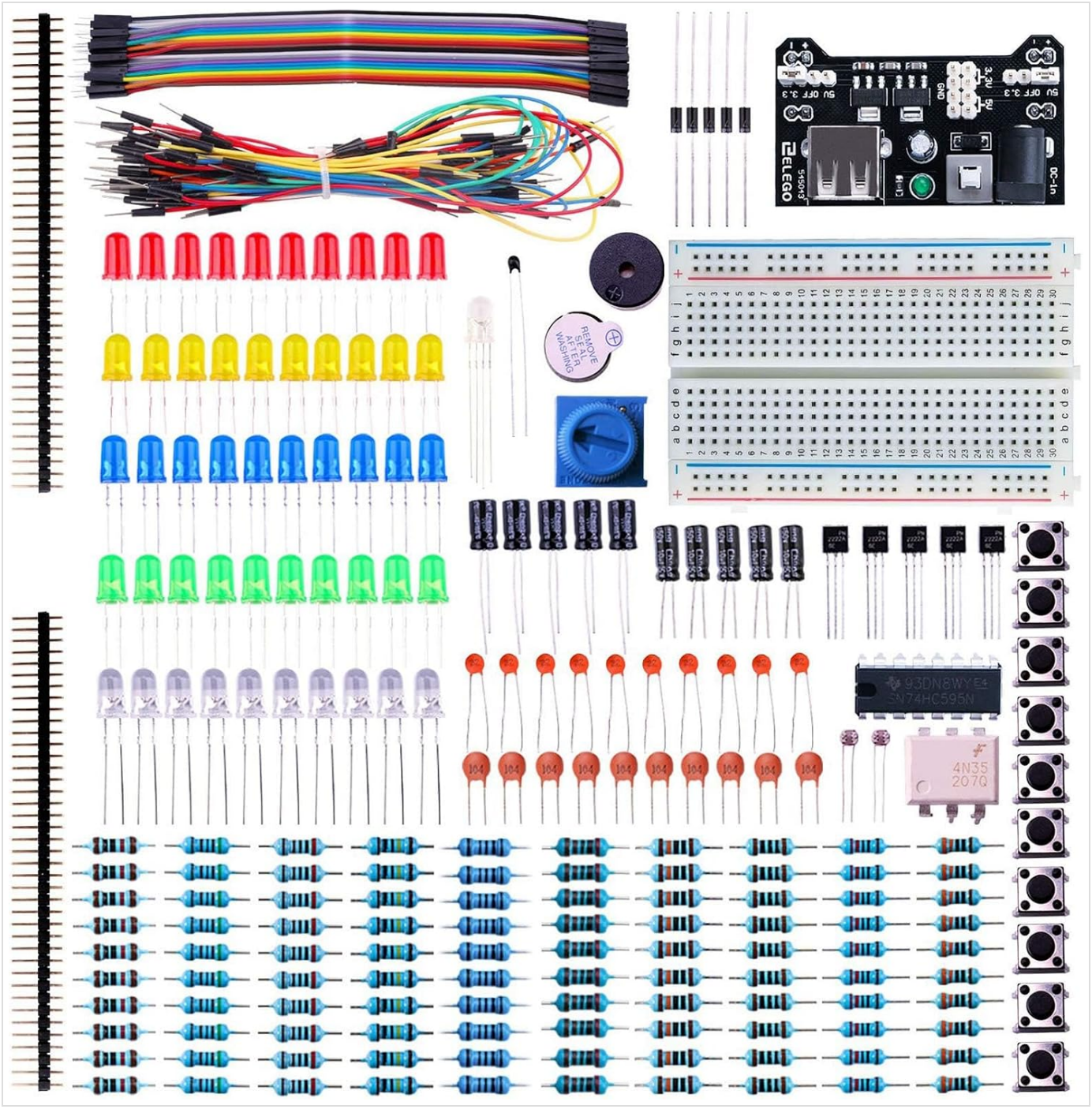


Image: An overhead view of the ELEGOO Electronic Fun Kit, displaying various components such as a breadboard, jumper wires, resistors, capacitors, LEDs, and a power supply module, neatly organized.

What's Included

This kit contains over 200 pieces of electronic components. Below is a detailed list of the items you will find in your ELEGOO Electronic Fun Kit:



Image: A visual guide to the components included in the kit, with labels and quantities for each item, such as power supply module, breadboard, various ICs, buzzers, buttons, wires, LEDs, capacitors, resistors, and more.

- 1x Power Supply Module (WARNING: Do not use voltage higher than 9V)
- 1x 400 tie-points Breadboard
- 1x 65 Jumper Wire
- 20x Female-to-male DuPont Wire
- 1x Active Buzzer
- 1x Passive Buzzer
- 1x Precision Potentiometer
- 1x IC 4N35
- 1x IC 74HC595
- 5x Diode Rectifier (1N4007)
- 5x NPN Transistor (PN2222)

- 2x Photoresistor or 1x Thermistor (Note: Kit may contain either 2 photoresistors or 1 thermistor)
- 10x Button (small)
- 10x White LED
- 10x Yellow LED
- 10x Blue LED
- 10x Green LED
- 10x Red LED
- 1x RGB LED
- 2x Pin header (40pin)
- 10x 22pf Ceramic Capacitor
- 10x 104 Ceramic Capacitor
- 5x Electrolytic Capacitor (10UF 50V)
- 5x Electrolytic Capacitor (100UF 50V)
- 10x Resistor (10R)
- 10x Resistor (100R)
- 30x Resistor (220R)
- 10x Resistor (330R)
- 10x Resistor (1K)
- 10x Resistor (2K)
- 10x Resistor (5K1)
- 10x Resistor (10K)
- 10x Resistor (100K)
- 10x Resistor (1M)

Component Details

Power Supply Module

The power supply module is designed to provide stable 3.3V and 5V power rails for your breadboard projects. It features a locking on/off switch, an LED power indicator, and a USB interface for powering external devices.

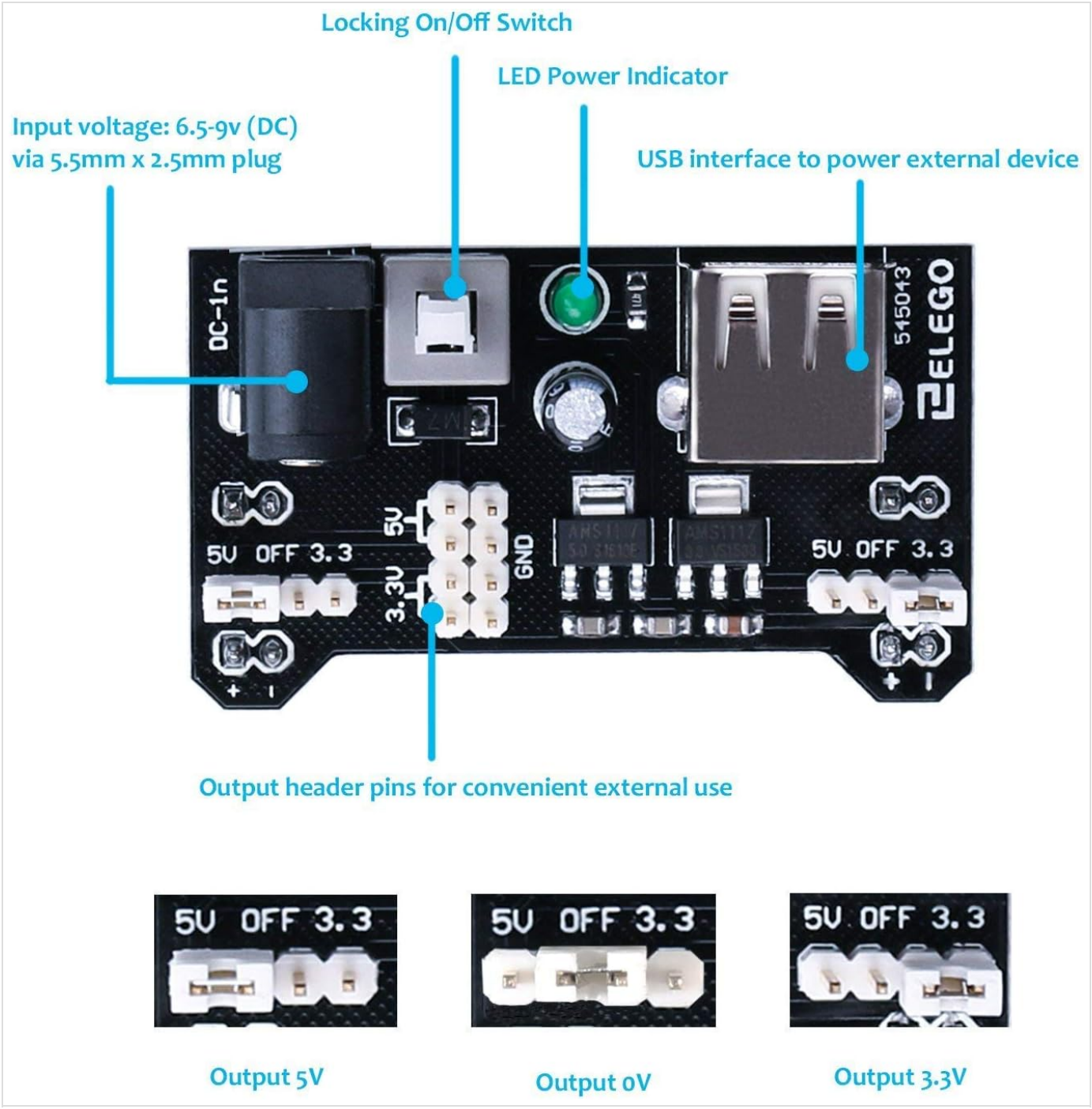


Image: A detailed view of the power supply module, highlighting its DC input, locking on/off switch, LED power indicator, USB interface, and output header pins for 5V, 0V (GND), and 3.3V.

Input Voltage: 6.5-9V (DC) via 5.5mm x 2.5mm plug

Output: 5V and 3.3V

Features: Locking On/Off Switch, LED Power Indicator, USB interface to power external device, Output header pins for convenient external use.

Important Note: A power adapter is required to use the power supply module, and this adapter is**not included** in this kit. The recommended adapter specifications are:

Output: DC 9V 1A / 1000mA

Plug Size: Outer Diameter 5.5mm, Inner Diameter 2.5mm

Connector: Inside positive (+), outside negative (-)



Image: An illustration demonstrating the type of power adapter required for the power supply module, detailing the output voltage, current, plug dimensions, and polarity.

Breadboard

The 400 tie-points breadboard provides a solderless platform for prototyping electronic circuits. Components can be easily inserted and removed, making it ideal for experimentation and learning.

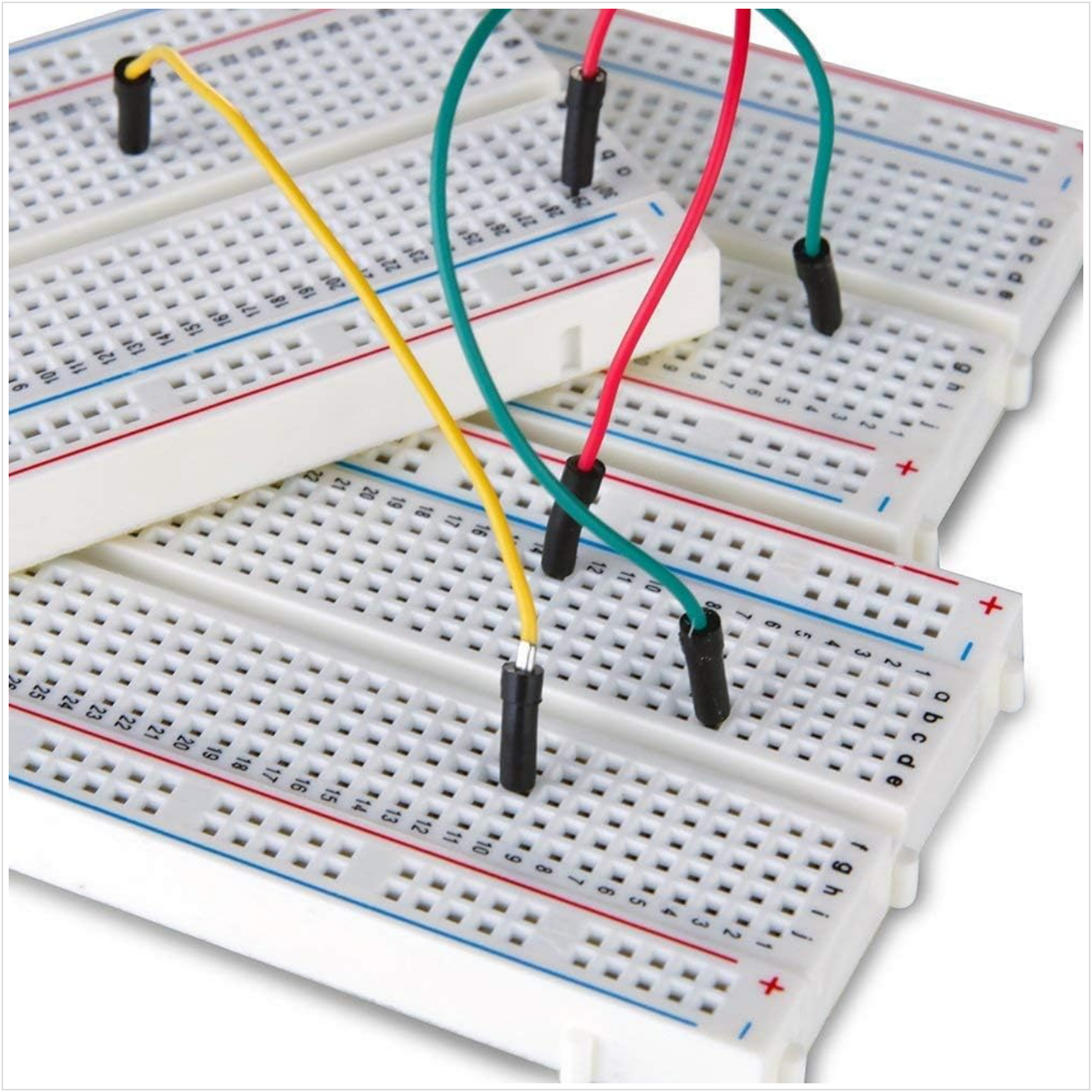


Image: A close-up view of a white breadboard with several colored jumper wires inserted, demonstrating how components are connected for circuit building.

Tie-points: 400

Features: Self-adhesive backing for secure mounting, standard spacing for easy component insertion.

Setup and Basic Usage

This kit is designed for use with microcontrollers like Arduino (not included). To begin, you will typically need:

1. An Arduino or compatible microcontroller board.
2. A computer with the Arduino IDE (Integrated Development Environment) installed.
3. A suitable power adapter for the power supply module (if using it).

Connecting the Power Supply Module

Insert the power supply module into the power rails of your breadboard. Ensure the pins align correctly. Connect a compatible 9V DC power adapter to the DC-in jack. You can then use jumper wires to connect the 5V or 3.3V output pins to your circuit on the breadboard.

Building Circuits on the Breadboard

The breadboard has rows and columns of holes. The holes in the middle section are typically connected horizontally in groups of five, while the power rails (along the sides) are connected vertically. This allows you to easily connect components without soldering. Refer to circuit diagrams for your projects to correctly place components and connect them with jumper wires.

Operating Principles

The ELEGOO Electronic Fun Kit provides fundamental components for learning about basic electronic principles and digital logic. Each component serves a specific function:

- **Resistors:** Limit current flow in a circuit.
- **Capacitors:** Store and release electrical energy.
- **LEDs (Light Emitting Diodes):** Emit light when current flows through them in the correct direction.
- **Potentiometer:** A variable resistor used to control voltage or current.
- **Transistors (PN2222):** Act as electronic switches or amplifiers.
- **Diodes (1N4007):** Allow current to flow in one direction only.
- **IC 74HC595 (Shift Register):** Used to expand the number of output pins from a microcontroller.
- **IC 4N35 (Optocoupler):** Provides electrical isolation between two circuits.

Detailed tutorials and project examples for using these components with Arduino can be found on the official ELEGOO website or various online resources.

Troubleshooting

If you encounter issues while working with your kit, consider the following common troubleshooting steps:

- **No Power to Breadboard:**
  - Ensure the power supply module is correctly inserted into the breadboard's power rails.
  - Verify that the power adapter is connected and providing the correct voltage (6.5-9V DC).
  - Check if the power supply module's on/off switch is in the 'on' position and the LED indicator is lit.
- **Components Not Functioning:**
  - Double-check all wire connections on the breadboard for proper placement and secure contact.
  - Ensure components are inserted in the correct orientation (e.g., LEDs and diodes are polarized).
  - Verify resistor values are correct for your circuit.
  - Confirm that your microcontroller code is correct and uploaded successfully.
- **Intermittent Connections:**

- Some breadboard holes or jumper wires may become loose over time. Try wiggling connections or replacing wires.
- Ensure component leads are straight and fully inserted into the breadboard.

Specifications

Product Dimensions	5.7 x 3.54 x 1.57 inches
Item Weight	7.4 ounces
Model Number	EL-CK-002
ASIN	B01ERP6WL4
Manufacturer	ELEGOO
Country of Origin	China
Date First Available	April 25, 2016

Safety Information

WARNING:

- Keep away from children under 3 years old due to small parts which may pose a choking hazard.
- Do not use the power supply module with voltages higher than 9V. Exceeding this voltage may damage the module or connected components.
- Always double-check circuit connections before applying power to prevent short circuits or component damage.

Warranty and Support

ELEGOO is committed to providing quality products and customer satisfaction. For any questions, technical support, or assistance with your Electronic Fun Kit, please contact ELEGOO customer service.
You can find contact information and additional resources, including tutorials and datasheets, on the official ELEGOO website:
www.elegoo.com
The product is typically covered by a standard return policy, allowing for refund or replacement within 30 days of purchase, subject to retailer terms.

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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.

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