Whadda WSI102

Whadda WSI102 Flashing LED Soldering Kit Instruction Manual

Model: WSI102

INTRODUCTION

This manual provides comprehensive instructions for the assembly, operation, and maintenance of your Whadda WSI102 Flashing LED Soldering Kit. This educational kit is designed for various applications, including model construction, and allows users to build a circuit with adjustable flashing LEDs.

SAFETY INFORMATION

Please read and understand all safety warnings before beginning assembly or operation. Improper use can result in injury or damage to the product.

- **Soldering Safety:** Always work in a well-ventilated area. Use appropriate eye protection. Avoid touching hot soldering iron tips or recently soldered components. Keep solder away from skin and eyes. Wash hands thoroughly after handling solder.
- **Electrical Safety:** Ensure the power source (9V battery) is connected correctly. Do not short-circuit the battery terminals. Disconnect power before making any adjustments or repairs.
- **Component Handling:** Some electronic components can be sensitive to static electricity. Handle components carefully.
- **Adult Supervision:** This kit is recommended for users with basic soldering experience or under adult supervision.

PACKAGE CONTENTS

The Whadda WSI102 kit includes all necessary electronic components and a printed circuit board (PCB) for assembly. A 9V battery and soldering tools are required and sold separately.

- Printed Circuit Board (PCB)
- LEDs (Light Emitting Diodes)
- Resistors
- Capacitors

- Transistors
- Potentiometers (for speed adjustment)
- 9V Battery Clip
- Assembly Instructions (this manual)

SETUP AND ASSEMBLY INSTRUCTIONS

Follow these steps carefully to assemble your Whadda WSI102 Flashing LED Soldering Kit. Refer to the component overlay on the PCB for placement.

1. **Prepare Your Workspace:** Ensure a clean, well-lit, and well-ventilated area. Gather your soldering iron, solder, desoldering braid (optional), wire cutters, and safety glasses.

2. **Identify Components:** Sort and identify all components provided in the kit. Pay attention to resistor color codes and capacitor values.

3. **Solder Resistors:** Begin by soldering the resistors onto the PCB. Insert each resistor into its designated holes, bend the leads slightly to hold it in place, and solder the connections. Trim excess leads.

4. **Solder Capacitors:** Next, solder the capacitors. Note that electrolytic capacitors (cylindrical with a stripe) are polarized; ensure the negative lead (marked with a stripe) matches the negative marking on the PCB.

5. **Solder Transistors:** Carefully insert the transistors, matching their flat side or pinout to the PCB silkscreen. Solder and trim leads.

6. **Solder Potentiometers:** Solder the two potentiometers (variable resistors) into their respective positions. These will be used to adjust the flashing speed.

7. **Solder LEDs:** LEDs are polarized. The longer lead is typically the anode (+) and the shorter lead is the cathode (-). Match the LED polarity to the markings on the PCB (often a flat edge on the LED corresponds to a flat edge on the PCB silkscreen). Solder and trim leads.

8. **Attach Battery Clip:** Solder the red wire of the 9V battery clip to the positive (+) terminal on the PCB and the black wire to the negative (-) terminal. Ensure a secure connection.
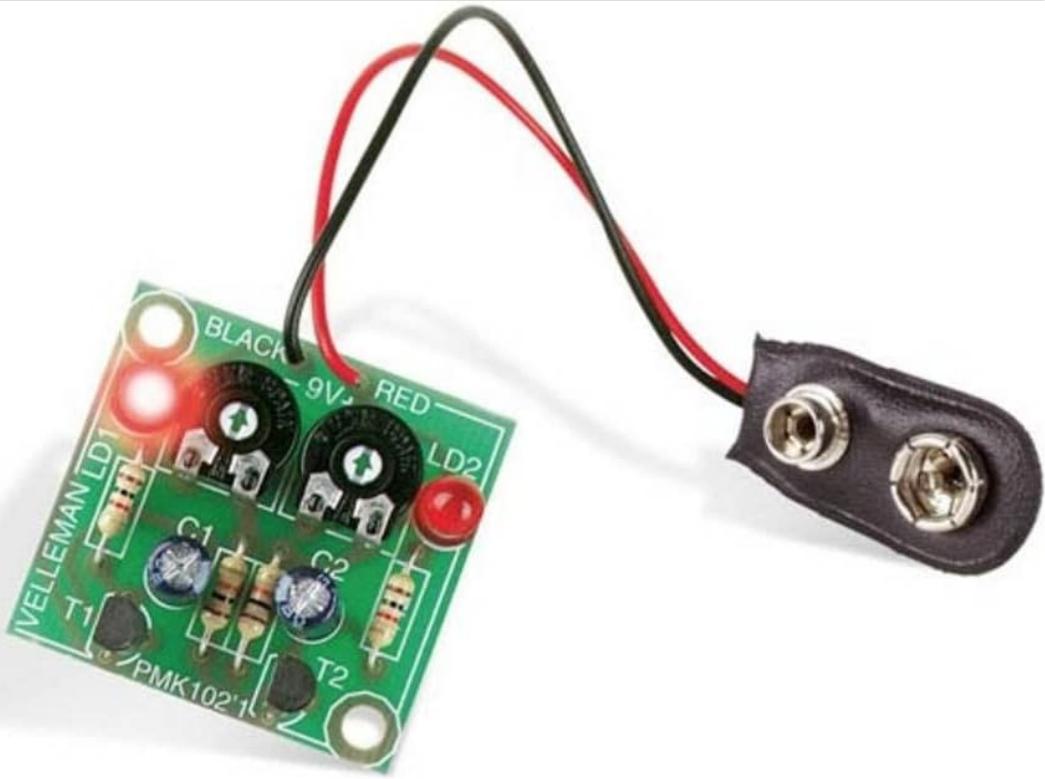
Image: The fully assembled Whadda WSI102 circuit board with a 9V battery clip attached. The board features two red LEDs, two potentiometers for adjustment, and various other electronic components.

OPERATING INSTRUCTIONS

1. **Connect Power:** Once assembly is complete and all solder joints have cooled, connect a 9V battery to the attached battery clip.

2. **Observe LEDs:** The two LEDs on the board should begin flashing.

3. **Adjust Flashing Speed:** Use a small screwdriver to carefully turn the two potentiometers (variable resistors) on the circuit board. Turning these potentiometers will adjust the flashing speed of the LEDs. Each potentiometer may control a different aspect or range of the flashing sequence.

4. **Disconnect Power:** To turn off the circuit, simply disconnect the 9V battery from the clip.

MAINTENANCE

- **Cleaning:** Keep the circuit board clean and free of dust and debris. Use a soft, dry brush if necessary.
- **Storage:** Store the assembled kit in a dry, cool place away from direct sunlight and moisture.
- **Battery:** Remove the 9V battery if the kit will not be used for an extended period to prevent battery leakage.
- **Inspections:** Periodically inspect solder joints for any signs of corrosion or damage. Re-solder if necessary.

TROUBLESHOOTING

Problem	Possible Cause	Solution

Problem	Possible Cause	Solution
LEDs do not flash	- No power or dead battery - Incorrect battery connection - Poor solder joint - Incorrect component placement (e.g., polarized components like LEDs or electrolytic capacitors) - Faulty component	- Check battery charge and connection. - Verify red wire to positive, black to negative. - Inspect all solder joints for cold joints or bridges. Re-solder as needed. - Double-check component orientation against PCB markings. - Test individual components if possible.
Flashing speed is not adjustable	- Potentiometers incorrectly soldered - Faulty potentiometers	- Inspect solder joints for potentiometers. - Ensure potentiometers are correctly inserted.
Only one LED flashes	- Faulty LED - Incorrect LED polarity - Poor solder joint for the non-flashing LED	- Check LED polarity and solder joints. - Replace LED if necessary.

SPECIFICATIONS

- **Model:** WSI102
- **Brand:** Whadda
- **Manufacturer:** Velleman
- **Power Supply:** 9V DC (battery not included)
- **Current Consumption:** Approximately 8mA
- **Product Dimensions (Assembled):** 2.95 x 1.38 x 6.1 inches (7.5 x 3.5 x 15.5 cm)
- **Item Weight:** 1.76 ounces (50 grams)
- **Adjustments:** Two potentiometers for flashing speed control
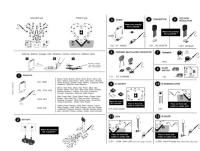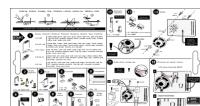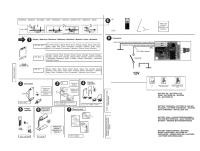
WARRANTY INFORMATION

Specific warranty details for the Whadda WSI102 kit are not provided in the product information. Please refer to the retailer or manufacturer's website for any applicable warranty terms and conditions.

SUPPORT

For technical assistance or further inquiries regarding your Whadda WSI102 Flashing LED Soldering Kit, please contact your point of purchase or visit the official Whadda/Velleman website for support resources.

Related Documents - WSI102

	Whadda WSL213 Blinking Heart DIY Electronics Kit Assembly Guide Step-by-step guide for assembling the Whadda WSL213 Blinking Heart DIY electronics kit, detailing component identification, placement, and soldering.
	Whadda WSAH194 Digitally Controlled FM Radio Soldering Kit Instructions Step-by-step assembly instructions for the Whadda WSAH194 digitally controlled FM radio soldering kit, detailing components and soldering procedures.
	Whadda WPI300 3x4 Matrix Membrane Keypad User Manual User manual for the Whadda WPI300, a 3x4 matrix membrane keypad designed for Arduino projects. Includes product overview, specifications, installation guide, and example code.
	Whadda WPM464 4-Channel Solid State Relay Module - Manual & Specifications Comprehensive guide to the Whadda WPM464 4-channel Solid State Relay module, covering its introduction, safety instructions, specifications, wiring details, and an example Arduino program. Learn how to safely switch AC loads up to 240V AC / 2A.
	Whadda WPM447 Mini Peristaltic Pump 6V User Manual User manual for the Whadda WPM447 mini peristaltic pump (6V). This document details product specifications, safety instructions, general guidelines, and step-by-step procedures for replacing the silicon tube. It also provides context on Arduino compatibility.
	Whadda HWSAA189 Battery Level Indicator Module Guide User guide for the Whadda HWSAA189 Battery Level Indicator module, detailing components, connection, and battery status indicators for optimal power management.