MUXWELL HU-073

MUXWELL DIY Humidifier Soldering Practice Kit

Model: HU-073 User Manual

1. Introduction

This manual provides comprehensive instructions for assembling, operating, and maintaining your MUXWELL DIY Humidifier Soldering Practice Kit, Model HU-073. This kit is designed for electronics enthusiasts and beginners to develop essential soldering skills while constructing a functional humidifier. Please read all instructions carefully before beginning assembly.

Image 1: The MUXWELL DIY Humidifier in operation, demonstrating mist output.

2. Safety Guidelines

Soldering involves high temperatures and can produce fumes. Always adhere to the following safety precautions:

- Work in a well-ventilated area to avoid inhaling solder fumes.
- Wear appropriate eye protection (safety glasses) to protect against splashes or flying debris.
- Use a soldering iron stand to prevent accidental burns.
- Ensure the soldering iron is unplugged and cooled down when not in use.
- Handle electronic components carefully to avoid damage from static electricity.
- Keep a fire extinguisher or fire blanket nearby.

3. Kit Contents

Before starting assembly, verify that all components listed below are present in your kit. Refer to Image 2 for a visual representation of the kit contents.

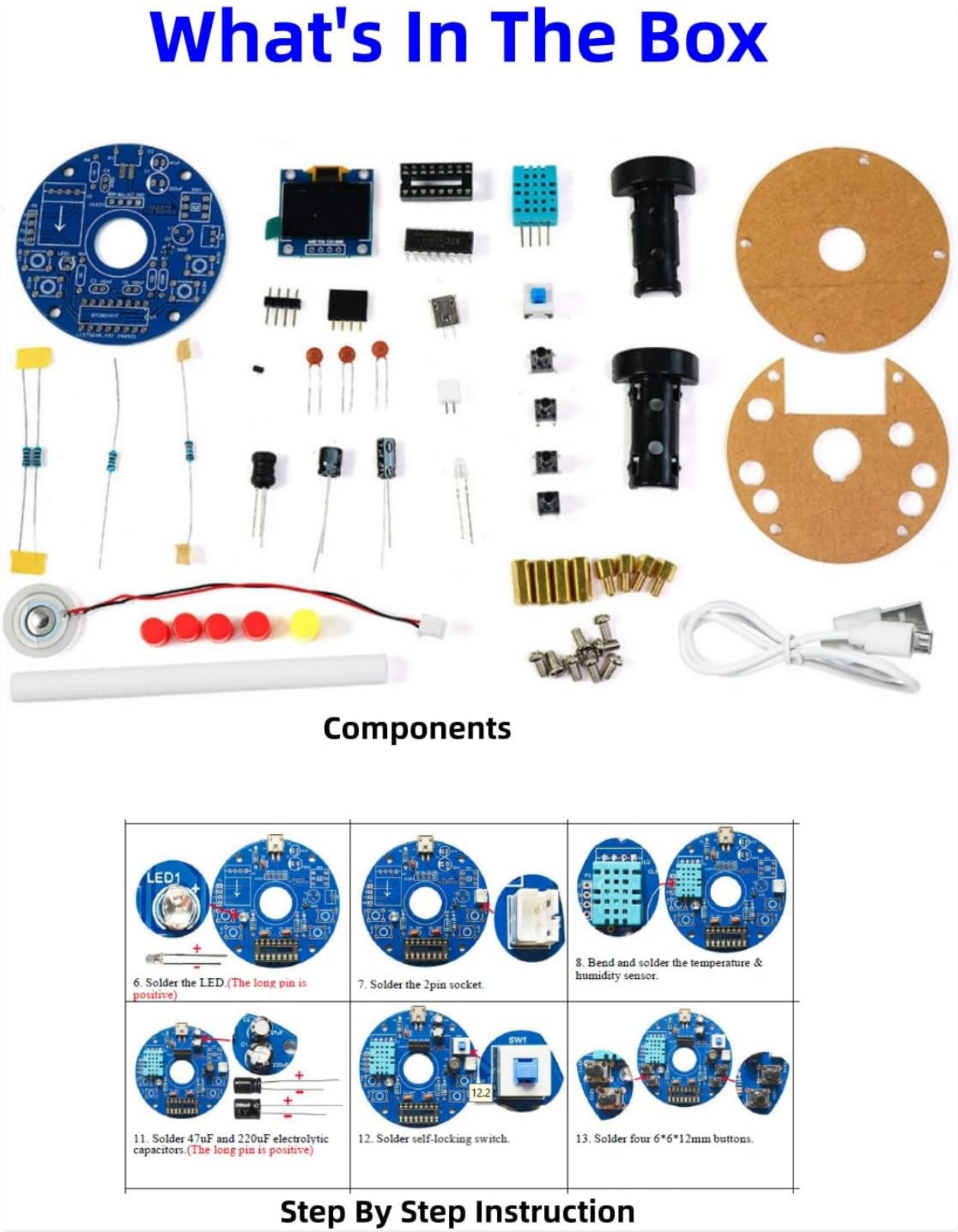

Image 2: Overview of all components included in the MUXWELL DIY Humidifier Kit.

Included Components:

- Printed Circuit Board (PCB)
- Acrylic Enclosure Parts
- OLED Display Module
- Humidifier Module (Piezoelectric element with housing)
- USB Power Cable
- Various Resistors and Capacitors

- Diodes and Transistors (including SOT-23 MOSFET)
- Push Buttons
- Humidity and Temperature Sensor (DHT11)
- Microcontroller (STC8G1K17)
- LED Indicator
- Hardware (screws, standoffs)
- Humidifier Cotton Stick

4. Assembly Instructions (Setup)

Follow these steps carefully to assemble your humidifier kit. Refer to the 'Step By Step Instruction' section within Image 2 for visual guidance on component placement and soldering.

1. **Prepare the PCB:** Identify all component locations on the PCB.
2. **Solder Surface Mount Components (SOT-23 MOSFET):** This is the smallest component. It is recommended to solder one pad first, align the component with tweezers, then solder the remaining pads. The kit includes extra MOSFETs in case of error.
3. **Solder Resistors:** Match resistor values to their designated spots on the PCB. Resistors are not polarized.
4. **Solder Diodes:** Pay attention to the polarity (band on the diode matches the marking on the PCB).
5. **Solder Capacitors:** Electrolytic capacitors (larger, cylindrical) are polarized; ensure the longer lead (positive) matches the '+' marking on the PCB. Ceramic capacitors (smaller, disc-shaped) are not polarized.
6. **Solder LED:** The longer lead of the LED is positive and should match the '+' marking on the PCB.
7. **Solder 2-pin Sockets:** Solder the small 2-pin headers into their designated spots.
8. **Solder Temperature & Humidity Sensor (DHT11):** Bend the pins as needed and solder the sensor into place.
9. **Solder Push Buttons:** Solder the four small push buttons and the larger power button into their respective positions.
10. **Solder Micro USB Port:** Carefully solder the Micro USB port to the PCB.
11. **Assemble Humidifier Module:** Insert the piezoelectric element into its black plastic housing. The larger of the two openings on the housing should face upwards. Route the piezo wires through the square hole where the two halves meet.
12. **Mount OLED Display:** Solder the OLED display module to its designated header pins on the PCB.
13. **Assemble Enclosure:** Use the provided screws and standoffs to secure the PCB between the acrylic plates. Ensure the humidifier module is correctly positioned with the cotton stick extending downwards.

Image 3: Assembled humidifier unit, ready for use.

5. Operating Instructions

Once assembled, your MUXWELL DIY Humidifier is ready for operation. Refer to Image 4 for a detailed layout of the display and control buttons.

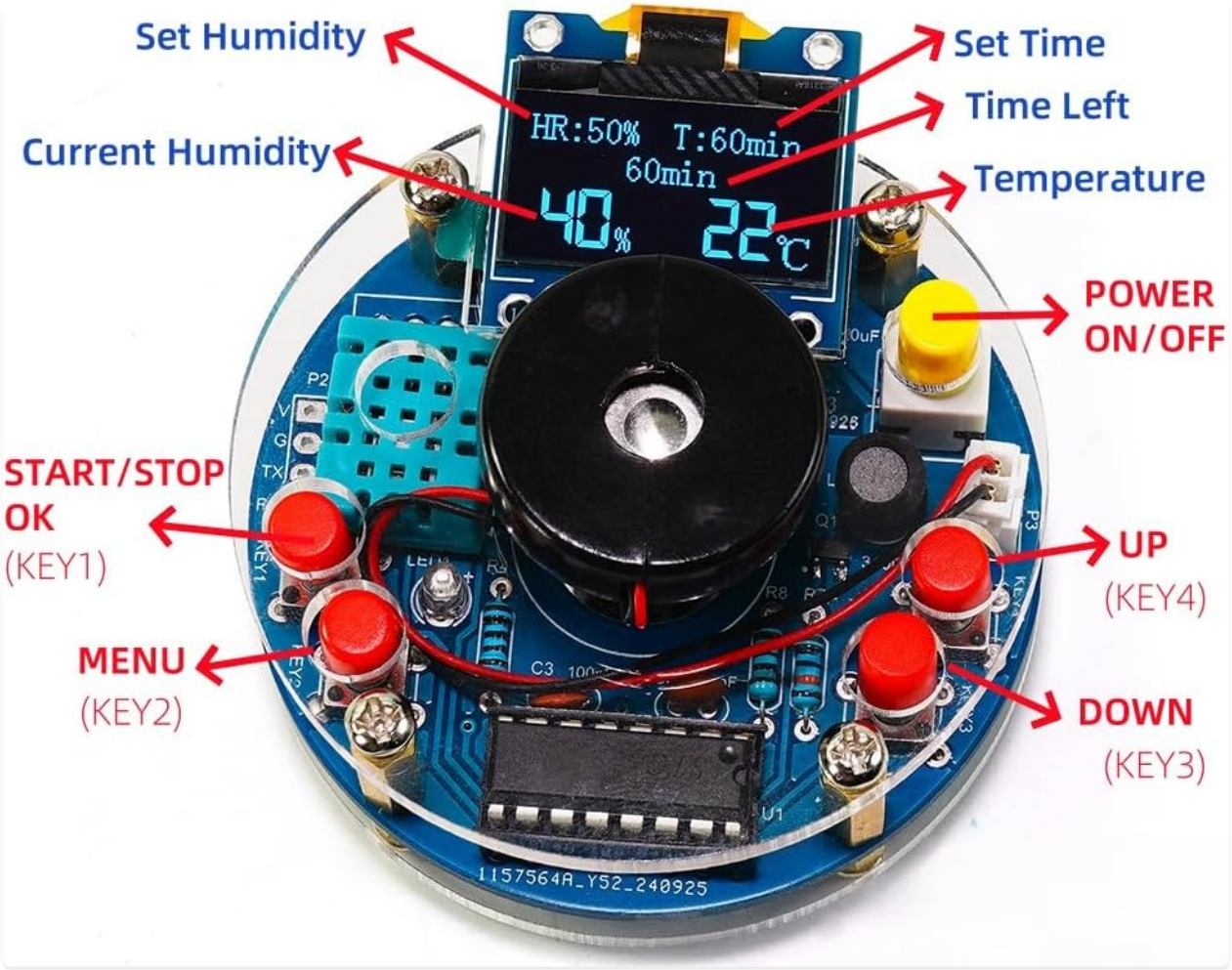

Image 4: Control panel with display and button functions.

Button Functions:

- **POWER ON/OFF (Yellow Button):** Press to turn the device on or off.
- **START/STOP / OK (KEY1 - Red Button):** Initiates or pauses humidification. Also used to confirm selections in menu.
- **MENU (KEY2 - Red Button):** Accesses settings such as humidity target and timer.
- **DOWN (KEY3 - Red Button):** Navigates down through menu options or decreases values.
- **UP (KEY4 - Red Button):** Navigates up through menu options or increases values.

Display Information:

- **HR:** Set Humidity Rate (Target Humidity).
- **T:** Set Time (Timer setting).
- **Current Humidity:** Real-time humidity percentage.
- **Temperature:** Real-time temperature in Celsius.
- **Time Left:** Remaining time on the timer.

First Use:

1. Insert the humidifier into a glass or container filled with water, ensuring the cotton stick is fully submerged and the electronic components are above the water level.
2. Connect the USB power cable to the device and a 5V DC power source.
3. Press the yellow POWER ON/OFF button to turn on the device. The display will illuminate.
4. Use the MENU button to navigate to settings. Use UP/DOWN buttons to adjust the target humidity or

timer. Press OK to confirm.

5. Press the START/STOP button to begin humidification. Mist should start to appear.

6. Maintenance

To ensure optimal performance and longevity of your MUXWELL DIY Humidifier, follow these maintenance guidelines:

- **Water Quality:** Use clean, distilled, or filtered water to prevent mineral buildup on the humidifier module.
- **Cotton Stick Replacement:** Replace the cotton stick regularly (e.g., every 1-3 months, depending on usage and water quality) to maintain mist output.
- **Cleaning:** Periodically clean the humidifier module and its housing to remove any residue. Use a soft cloth and avoid harsh chemicals. Ensure the device is powered off and disconnected from power before cleaning.
- **Storage:** When not in use for extended periods, ensure the device is clean and dry. Store it in a cool, dry place.

7. Troubleshooting

If you encounter issues with your humidifier, refer to the following common problems and solutions:

- **No Mist Output:**
  - Ensure the cotton stick is fully saturated with water.
  - Check if the humidifier module (piezoelectric element) is correctly installed and connected.
  - Verify the device is powered on and the START/STOP button has been pressed.
  - Ensure the water level in the container is sufficient and the cotton stick is submerged.
- **Incorrect Humidity/Temperature Readings:**
  - Check the connection of the DHT11 sensor to the PCB.
  - Ensure the sensor is not obstructed or exposed to extreme conditions.
- **Device Not Powering On:**
  - Verify the USB power cable is securely connected to both the device and a working 5V power source.
  - Check the soldering of the Micro USB port and power button.
- **Buttons Not Responding:**
  - Inspect the soldering connections for the unresponsive buttons.

8. Specifications

Technical specifications for the MUXWELL DIY Humidifier Kit (Model HU-073):

- **Model Number:** HU-073
- **Brand:** MUXWELL
- **Power Source:** DC 5V (via Micro USB)
- **Voltage:** 5 Volts
- **Power Consumption:** 0 watts (operational power not specified, likely low)

- **Product Dimensions (Assembled):** Approximately 2.3"D x 2.3"W x 4"H (58.4mm D x 58.4mm W x 101.6mm H)
- **Item Weight:** Approximately 1.94 ounces (55 Grams)
- **Upper Temperature Rating:** 40 Degrees Celsius
- **Display Type:** Digital OLED
- **Included Components:** PCB, Components, Enclosure

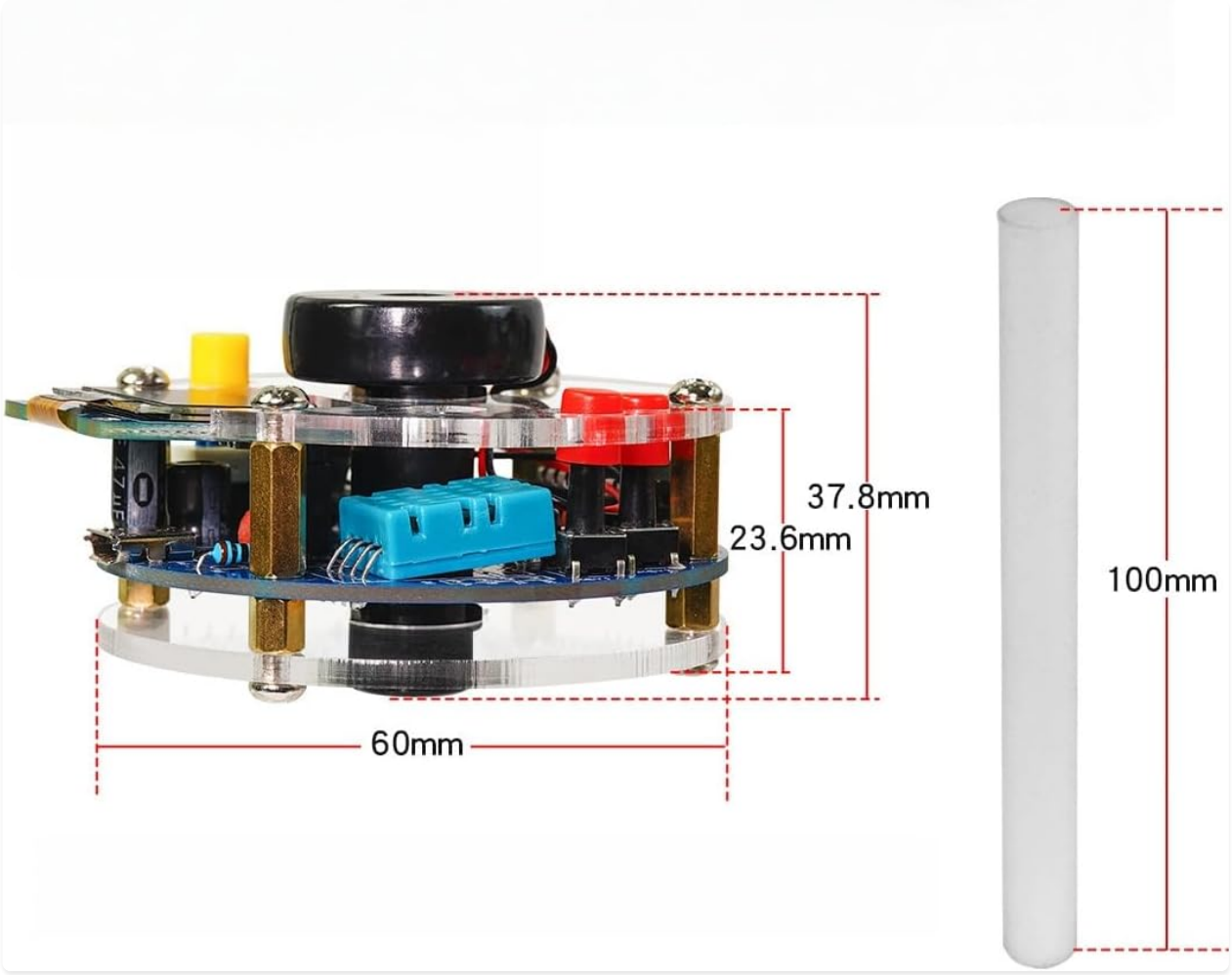

Image 5: Dimensional specifications of the MUXWELL DIY Humidifier and its cotton stick.

Circuit Diagram:

For advanced users or troubleshooting, the circuit diagram is provided below for reference.

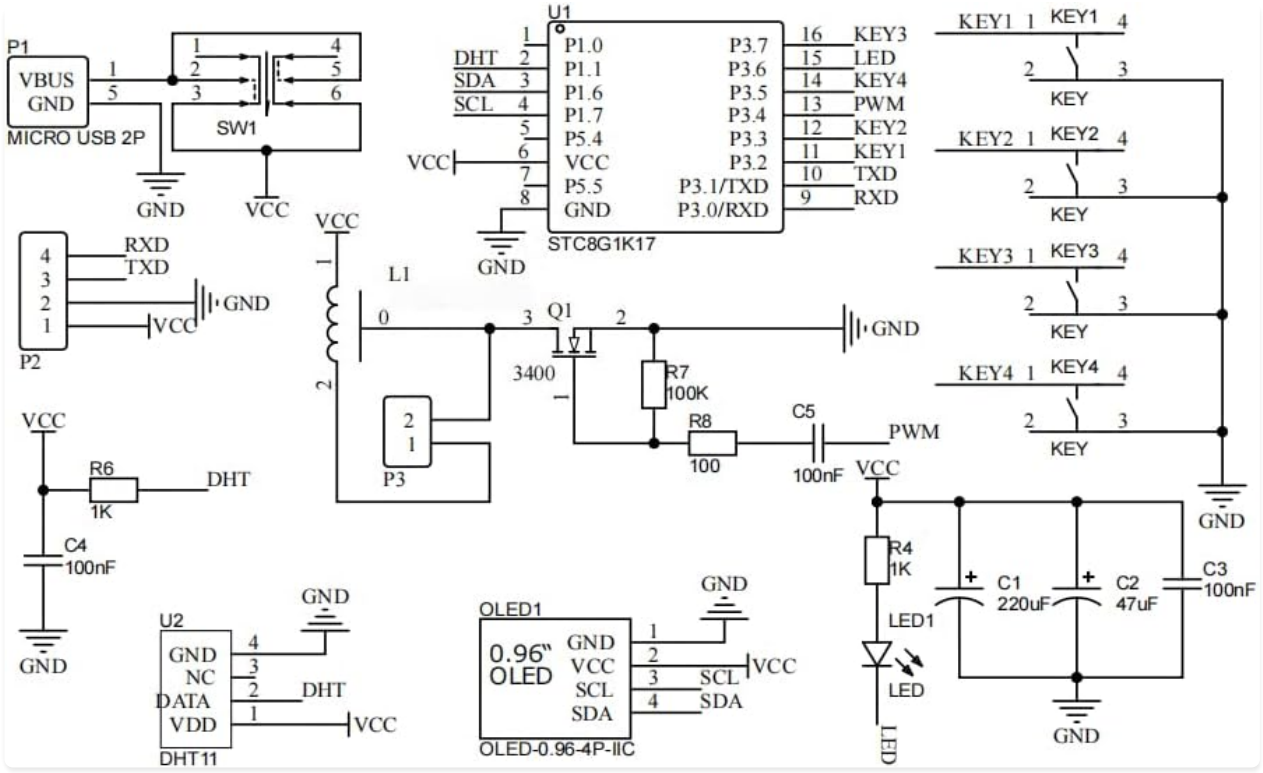

Image 6: Circuit diagram of the MUXWELL DIY Humidifier.

9. Warranty and Support

Information regarding product warranty and customer support is not provided in the available product details. For any issues or inquiries, please refer to the seller or manufacturer directly through your purchase platform.

Related Documents - HU-073

	HU-054A Multi-Functional Calculator DIY Kit: Assembly and Usage Guide Comprehensive guide for assembling and operating the HU-054A Multi-Functional Calculator DIY Kit. Features include basic arithmetic, color ring resistance calculation, and a clear 6-digit display. This document details component listing, applications, and step-by-step installation instructions.
	HU-064 High Voltage Electromagnetic Transmitter DIY Kit | Educational Science Project Learn about electromagnetism and electronics with the HU-064 High Voltage Electromagnetic Transmitter DIY Kit. This educational kit allows users to build a functional device, practice soldering, and understand high-voltage principles.

	Growatt MOD 3-15KTL3-HU Hybrid Inverter User Manual Comprehensive user manual for the Growatt MOD 3-15KTL3-HU series hybrid solar inverters, covering installation, operation, maintenance, safety, and troubleshooting for optimal PV and energy storage system performance.
	HU-017ASW RDA5807 87-108MHz FM Radio DIY Kit Assembly Guide A comprehensive guide for assembling the HU-017ASW RDA5807 87-108MHz FM Radio DIY Kit, including component identification, installation steps, and usage instructions.
	Growatt MOD 3-15KTL3-HU Series Hybrid Solar Inverter User Manual Comprehensive user manual for the Growatt MOD 3-15KTL3-HU series of hybrid solar inverters. Covers installation, electrical connection, operation, maintenance, troubleshooting, and specifications for efficient solar energy management.
	HU-058 RGB Colorful LED Digital Electronic Clock DIY Kit - Assembly and User Guide Comprehensive guide for the HU-058 RGB Colorful LED Digital Electronic Clock DIY Kit, detailing features, parameters, setup methods, component listing, and step-by-step installation instructions for hobbyists and beginners.