GENTERUN XL4015

GENTERUN XL4015 5A 75W Buck Converter with Heatsink & Voltmeter User Manual

Model: XL4015

1. Introduction

This manual provides detailed instructions for the safe and effective use of the GENTERUN XL4015 5A 75W Buck Converter. This DC-DC step-down module is designed to convert a higher input voltage to a lower, adjustable output voltage, featuring a built-in voltmeter for real-time monitoring and a heatsink for efficient thermal management.

2. Product Features

- **High-Efficiency DC-DC Step-Down Conversion:** Achieves conversion efficiency up to 96%, ensuring low power consumption and stable power output for connected electronic devices.
- **Wide Range of Application Scenarios:** Suitable for various applications including car power transformation, solar power regulation, general power supply, drone and robot projects, battery charging, and diverse electronic DIY projects.
- **Excellent Heat Dissipation Design:** Equipped with heat dissipation components and an optimized circuit layout for rapid heat emission, ensuring stable operation even under high load conditions.
- **Multiple Comprehensive Safety Protections:** Integrates built-in over-voltage, over-current, over-temperature, and short-circuit protection mechanisms to safeguard both the power module and connected devices, ensuring safe and reliable use.
- **Adjustable & Precise Output Voltage:** Allows for easy adjustment of the output voltage via a rotating potentiometer, providing accurate voltage regulation to meet different DIY and electronic project requirements.

3. Safety Information

- Always ensure correct polarity when connecting input and output power. Incorrect connections can damage the module and connected devices.
- Do not exceed the maximum input voltage (36V) or output current (5A) specifications.
- Ensure adequate ventilation, especially when operating at higher power levels, to prevent overheating.
- Avoid touching the module components while powered, as some parts may become hot.
- Keep the module away from moisture and conductive materials.
- If you are unsure about any connection or operation, consult a qualified professional.

4. Components Included

The package typically includes the following items:

- XL4015 DC-DC Buck Converter Module with Voltmeter and Heatsink
- Mounting hardware (screws and nuts)

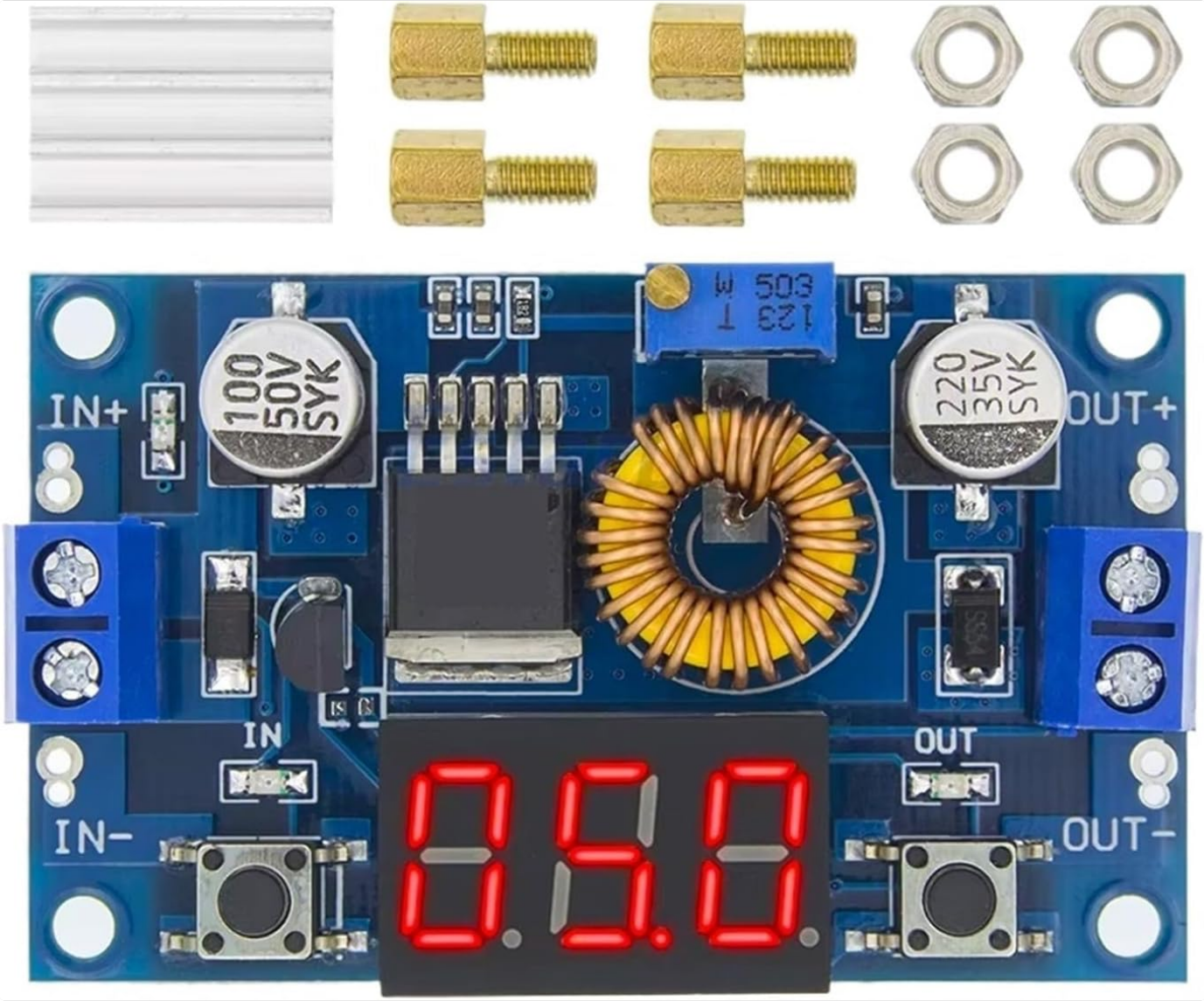


Image: The XL4015 Buck Converter module shown with its included mounting hardware, consisting of brass standoffs and nuts.

5. Specifications

Input Voltage Range	4V - 36V DC
Output Voltage Range	1.25V - 32V DC (Adjustable)
Output Current	5A (Max, with heatsink)
Output Power	75W (Max, with heatsink)
Conversion Efficiency	Up to 96%
Voltmeter Display Color	Red
Dimensions	Approximately 0.39 x 0.39 x 0.39 inches (Package Dimensions)

Weight	10.6 ounces

6. Setup

6.1 Identifying Terminals

The module has clearly labeled input and output terminals:

- **IN+** / **IN-:** Input voltage terminals. Connect your DC power source here.
- **OUT+** / **OUT-:** Output voltage terminals. Connect your load device here.

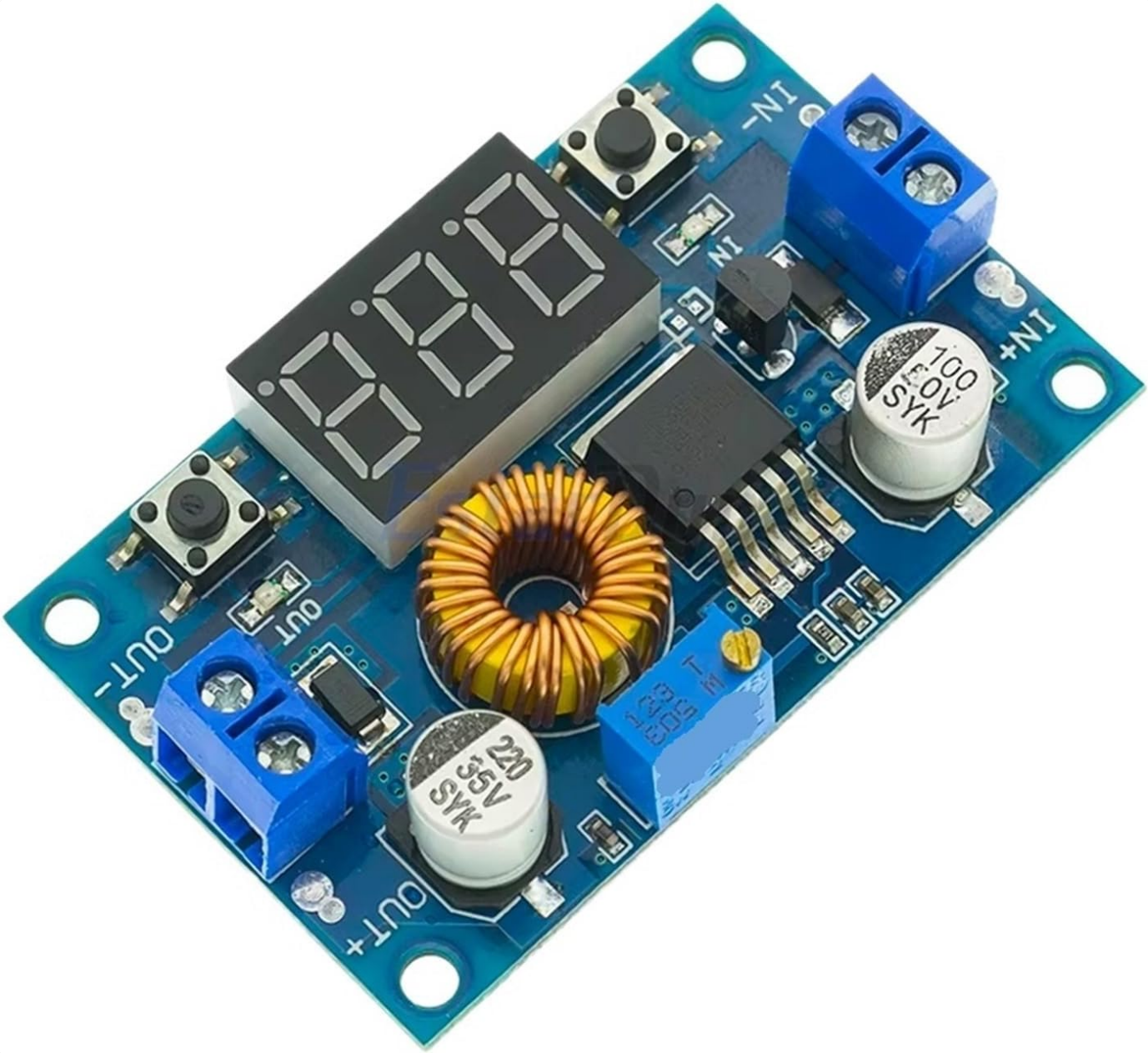


Image: A top-down view of the XL4015 module, highlighting the 'IN+' and 'IN-' terminals on the right, and 'OUT+' and 'OUT-' terminals on the left, along with the digital voltmeter display.

6.2 Connecting Power

1. Ensure your input power source is within the specified range (4V-36V DC).
2. Connect the positive (+) terminal of your DC power source to the **IN+** terminal on the module.
3. Connect the negative (-) terminal of your DC power source to the **IN-** terminal on the module.

4. Connect your load device to the **OUT+** and **OUT-** terminals, ensuring correct polarity for your device.

6.3 Adjusting Output Voltage

The output voltage is adjusted using the multi-turn potentiometer (blue square component with a screw slot) located on the module. Use a small screwdriver to turn the potentiometer:

- Turn clockwise to increase the output voltage.
- Turn counter-clockwise to decrease the output voltage.

Monitor the output voltage on the integrated digital voltmeter while adjusting. It is recommended to adjust the output voltage before connecting a sensitive load.

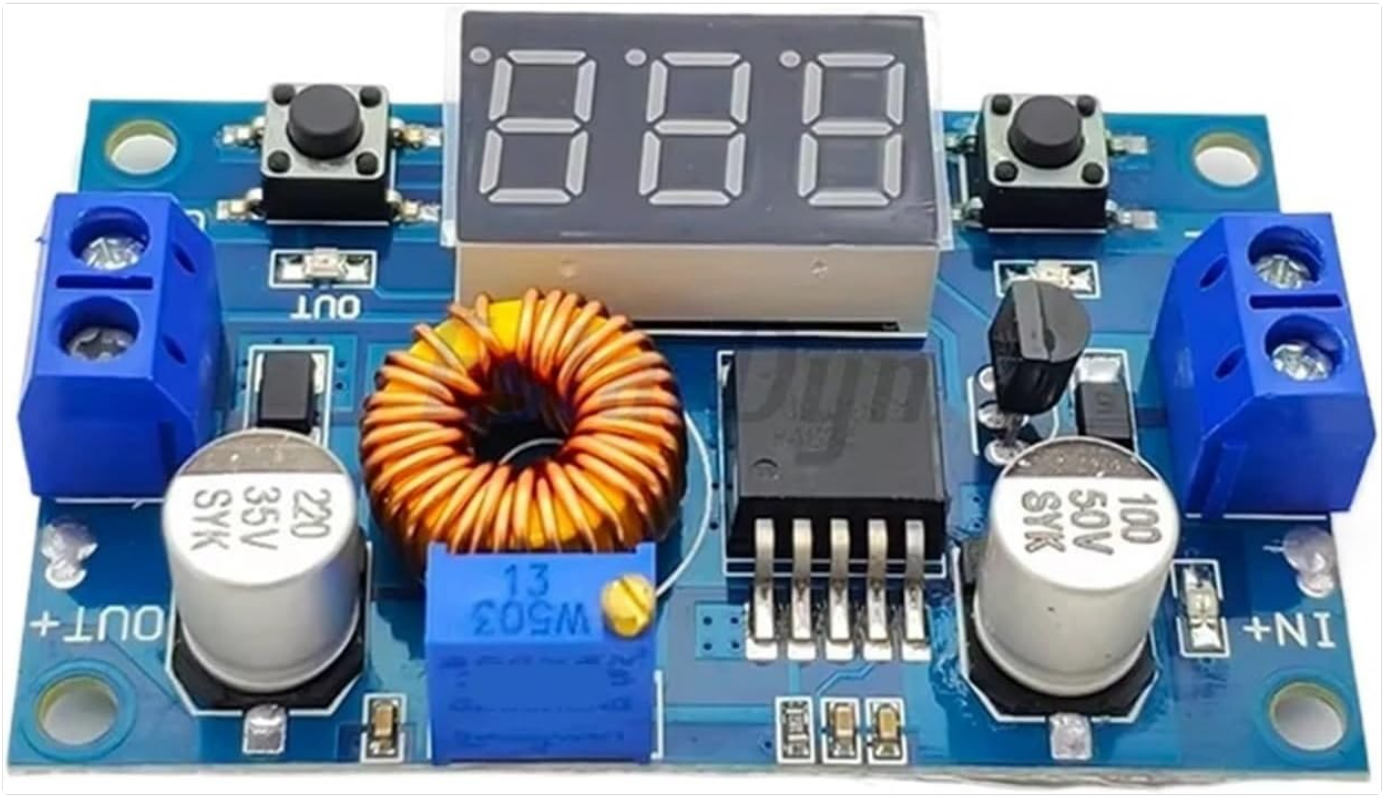


Image: The XL4015 Buck Converter module, showing the main components including the large inductor, heatsink on the main IC, digital voltmeter, and the blue potentiometer for voltage adjustment.

7. Operating Instructions

7.1 Powering On

Once all connections are secure and the output voltage is set to the desired level (or adjusted with no load), apply power to the IN+ and IN- terminals. The integrated voltmeter will display the current voltage.

7.2 Voltmeter Functionality

The module features a digital voltmeter to display either the input or output voltage. There are usually two small buttons near the voltmeter:

- One button (often labeled 'IN/OUT' or similar) switches the display between input voltage and output voltage.
- The other button (often labeled 'ON/OFF' or similar) can turn the voltmeter display on or off to save power.

Refer to the specific markings on your module for exact button functions.

7.3 Load Connection

After setting the desired output voltage, connect your load to the OUT+ and OUT- terminals. Ensure the load's current

draw does not exceed the module's maximum output current (5A).

8. Maintenance

- Keep the module clean and free from dust and debris.
- Periodically check all connections to ensure they are secure.
- Ensure the heatsink is free from obstructions to allow for proper airflow.
- Store the module in a dry, cool environment when not in use.

9. Troubleshooting

9.1 No Output Voltage / Voltmeter Off

- Check if the input power source is connected correctly and providing voltage within the specified range.
- Verify the polarity of the input connections.
- Ensure the voltmeter display is not turned off (if applicable, press the ON/OFF button).
- Check for any short circuits on the output.

9.2 Incorrect Output Voltage

- Adjust the potentiometer carefully. Multiple turns may be required to see a significant change.
- Ensure the input voltage is stable and within the operational range.
- If the output voltage is significantly lower than expected, the module might be overloaded. Reduce the load or check for short circuits.

9.3 Module Overheating

- Ensure the heatsink is properly attached and free from dust.
- Provide adequate ventilation around the module.
- Reduce the load current or the difference between input and output voltage if possible, as larger voltage drops at high currents generate more heat.

10. Warranty and Support

This GENTERUN product is covered by a standard manufacturer's warranty against defects in materials and workmanship for a period of one (1) year from the date of purchase. This warranty does not cover damage caused by misuse, accident, unauthorized modification, or improper installation.
For technical support or warranty claims, please contact your retailer or the manufacturer directly. Please have your purchase information and product model number ready when contacting support.

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