**Youmile JK-YM-456B**

# Youmile 12V 300mA 3.5W AC-DC Buck Converter Module Instruction Manual

Model: JK-YM-456B

## 1. Introduction

The Youmile 12V 300mA 3.5W AC-DC Buck Converter Module is an isolated industrial power supply designed for various electronic applications. It features temperature protection, over-current protection, short-circuit protection, and high/low voltage isolation. This module accepts a wide AC voltage input (85V to 265V) and provides a regulated DC12V output. Its compact size and stable performance make it suitable for integration into various projects.
This manual provides essential information for the safe and effective use of your buck converter module, including setup, operation, specifications, and troubleshooting.

## 2. Safety Information

**WARNING: This module operates with high voltage AC input. Improper handling can result in electric shock or damage to equipment. Installation and operation should only be performed by qualified personnel. Ensure proper insulation and grounding.**

- Always disconnect power before making any connections or adjustments to the module.
- Do not exceed the specified input or output parameters.
- Ensure adequate ventilation to prevent overheating.
- Keep the module away from moisture and conductive materials.
- Verify correct polarity for all connections before applying power.

## 3. Product Features

- Isolated industrial module power supply.
- Integrated protection: Temperature protection, over-current protection, over-voltage protection, and short-circuit protection.

- High and low voltage isolation for enhanced safety.
- Wide voltage input range: AC 85V-265V (or DC 70V-390V).
- Regulated DC 12V output.
- Compact size and stable performance.
- Operating temperature range: -20°C to 70°C.
- Equipped with input and output EMI filtering circuits for good electrical filtering and noise-free voltage conversion.
- Mounting holes at the four corners to prevent vibration damage.
- High-quality solid capacitor for output filtering.


Image 3.1: The module highlights its overvoltage, over temperature, overcurrent, and short circuit protection features.

## 4. Setup and Connection

Before connecting the module, ensure all power sources are disconnected. Refer to the pinout diagram below for correct wiring.

## FUNCTION DESCRIPTION

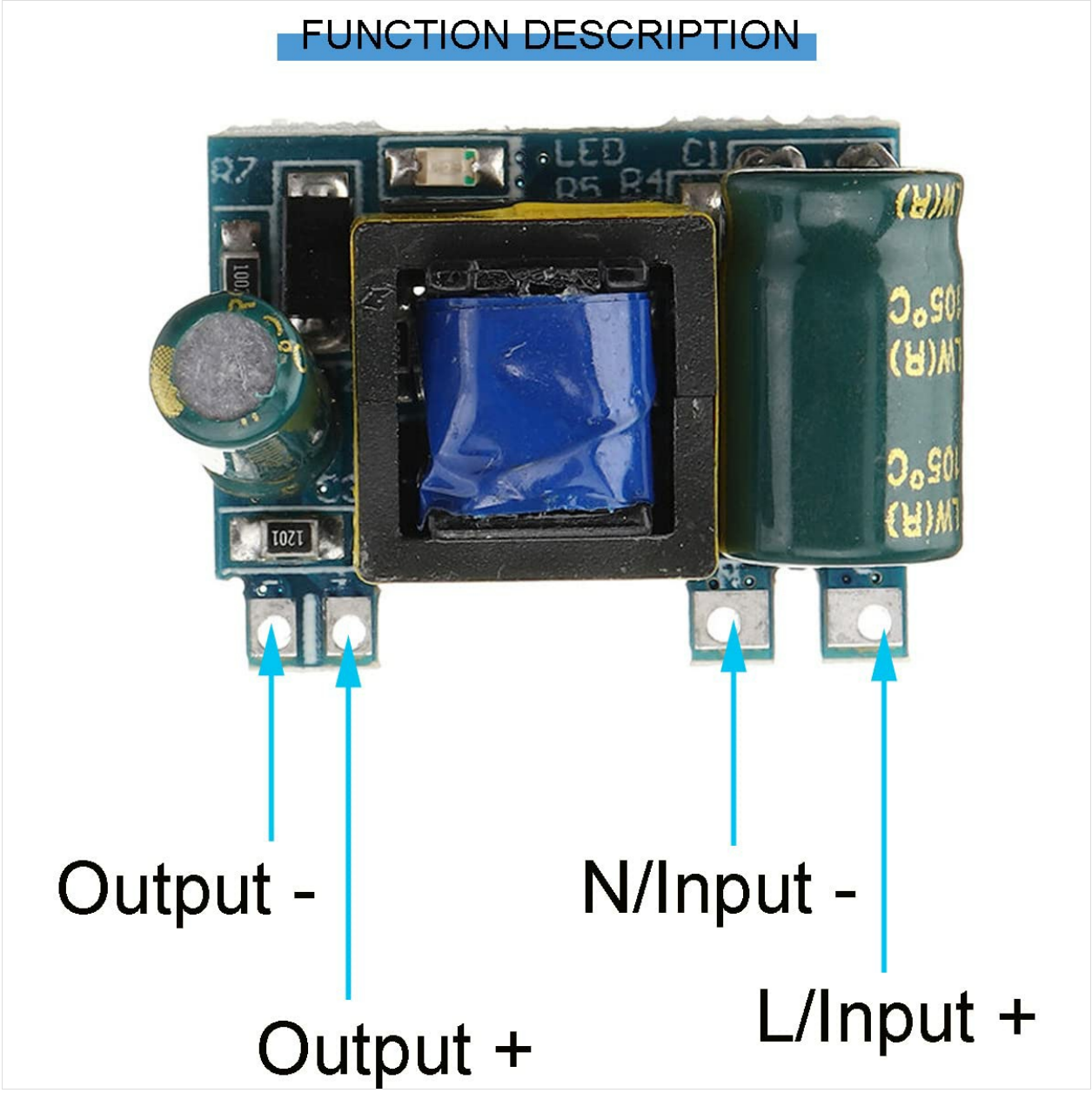


Image 4.1: Pinout diagram for the buck converter module. 'L/Input +' and 'N/Input -' are for AC input, 'Output +' and 'Output -' are for DC output.

1. **Input Connection:** Connect your AC power source (AC 85V-265V) to the input terminals. Connect the Live (L) wire to 'L/Input +' and the Neutral (N) wire to 'N/Input -'. For DC input (DC 70V-390V), connect the positive to 'L/Input +' and negative to 'N/Input -'.
2. **Output Connection:** Connect your DC load to the output terminals. Ensure the positive terminal of your load is connected to 'Output +' and the negative terminal to 'Output -'.
3. **Secure Connections:** Double-check all connections to ensure they are secure and that there are no loose wires or potential short circuits.
4. **Insulation:** Properly insulate all exposed wires and terminals to prevent accidental contact.

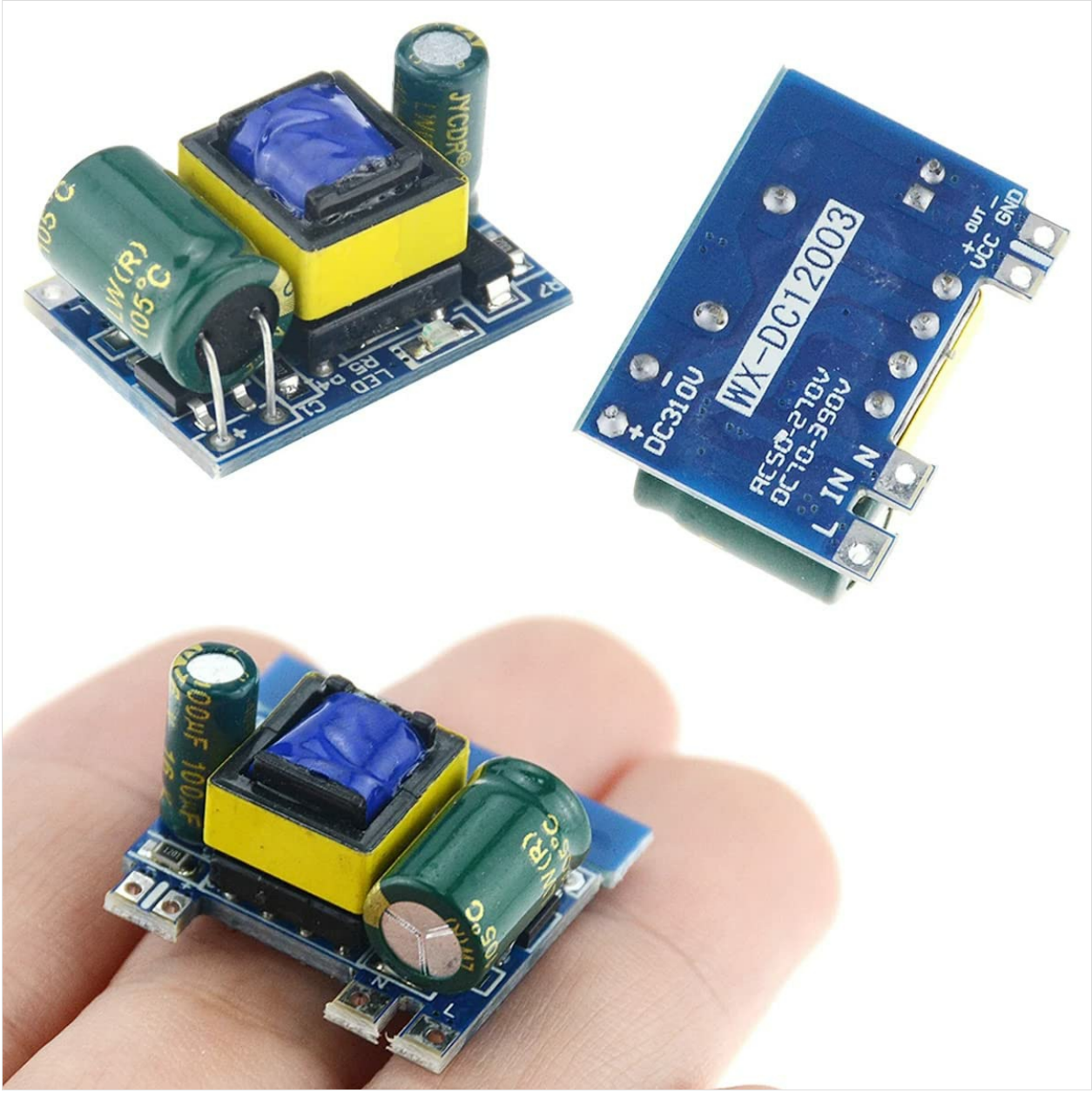


Image 4.2: General views of the Youmile 12V 300mA Buck Converter Module, showing its compact design and components.

## 5. Operating Instructions

Once the module is correctly wired and all safety precautions are observed, you can apply power.

1. **Power On:** Connect the AC input power.
2. **Indicator Light:** A green indicator light on the module will illuminate, signifying that the module is receiving power and operating.
3. **Output Verification:** Use a multimeter to verify the output voltage is approximately 12V DC before connecting sensitive loads.
4. **Load Connection:** Connect your DC load to the output terminals. The module will provide a stable 12V DC output up to 300mA.

The module is designed for continuous operation within its specified parameters. Avoid exceeding the maximum output current of 300mA to prevent damage.

## 6. Specifications

The following table details the technical specifications of the Youmile 12V 300mA 3.5W AC-DC Buck Converter Module.

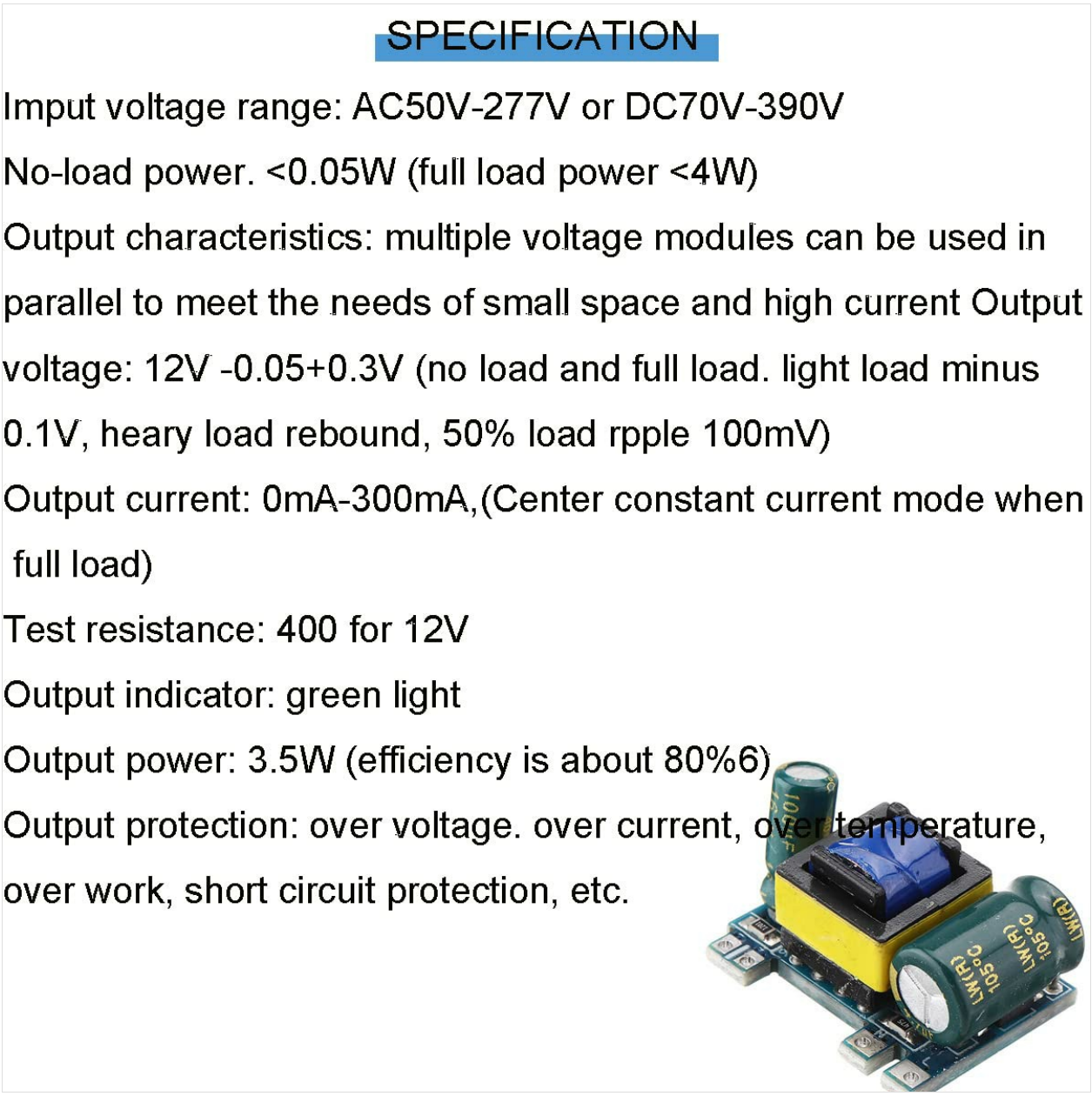


Image 6.1: Detailed specifications of the buck converter module, including input/output voltage, current, and power.

| Parameter | Value |
|---|---|
| Model Number | JK-YM-456B |
| Input Voltage Range | AC 50V-277V or DC 70V-390V |
| No-load Power Consumption | < 0.05W |
| Output Voltage | 12V (-0.05V to +0.3V, no load and full load) |
| Output Current | 0mA-300mA (Center constant current mode at full load) |
| Output Power | 3.5W (Efficiency approx. 80%) |
| Output Ripple (50% load) | 100mV |

| Parameter | Value |
|---|---|
| Output Indicator | Green LED |
| Operating Temperature | -20°C to 70°C |
| Protection Features | Over voltage, over current, over temperature, over work, short circuit protection |
| Dimensions (approx.) | 23.6mm x 18.1mm (0.92in x 0.71in) |
| Weight (approx.) | 30 grams (for 5 pcs package) |

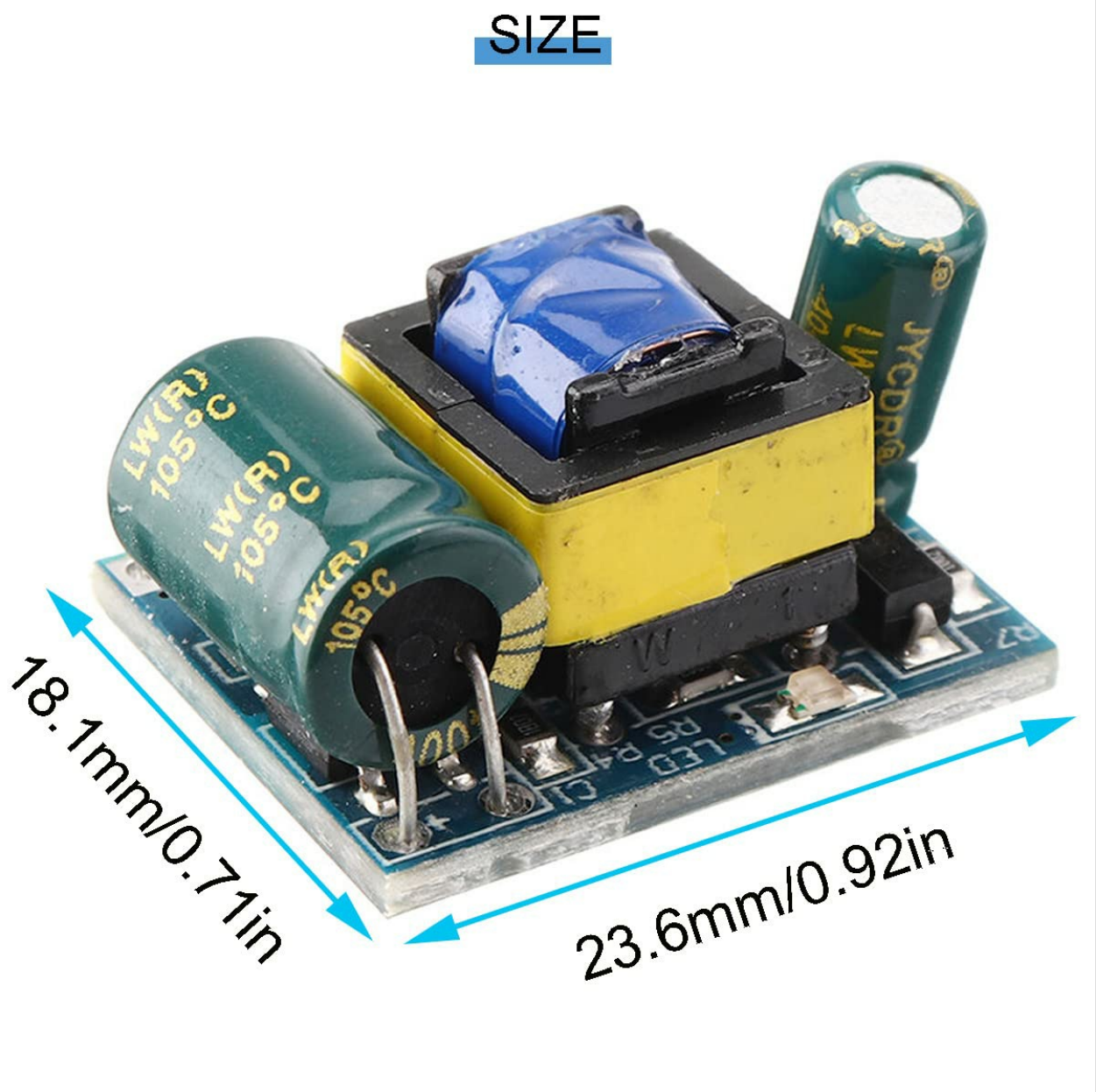


Image 6.2: Physical dimensions of the buck converter module.

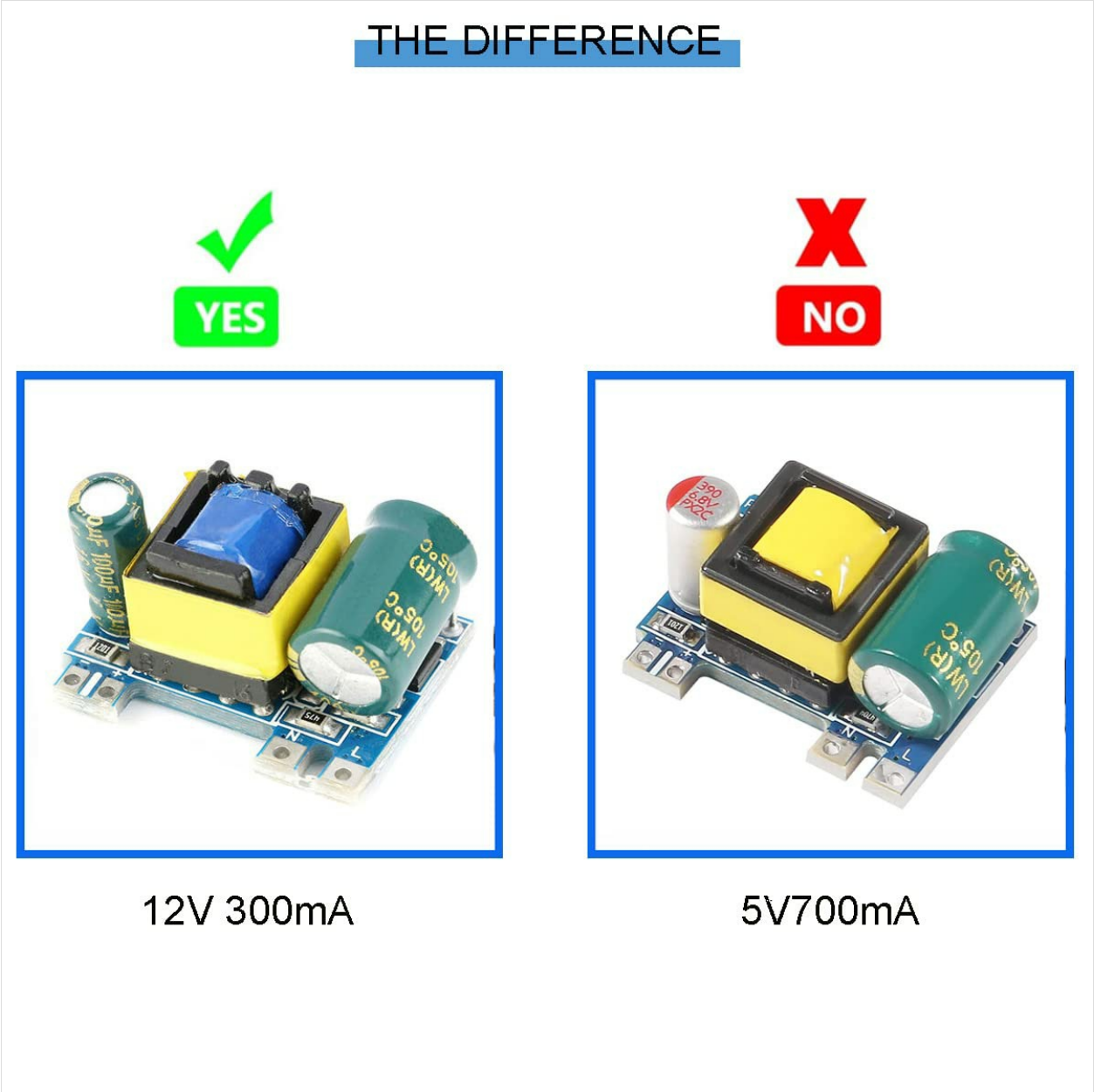


Image 6.3: This image illustrates the specific 12V 300mA module, differentiating it from other variants like a 5V 700mA module.

## 7. Maintenance

The Youmile buck converter module is designed for long-term stable operation and typically requires no routine maintenance. To ensure optimal performance and longevity, consider the following:

- **Cleanliness:** Keep the module clean and free from dust, dirt, and debris. Use a soft, dry brush or compressed air for cleaning.
- **Environment:** Avoid exposing the module to excessive moisture, corrosive substances, or extreme temperatures outside its specified operating range.
- **Connections:** Periodically inspect all wiring connections to ensure they remain secure and free from corrosion.
- **Ventilation:** Ensure that the module has adequate airflow, especially when operating at higher loads, to prevent heat buildup.

## 8. Troubleshooting

If you encounter issues with your buck converter module, refer to the following troubleshooting steps:

- **No Output Voltage:**
  - Verify that the input power source is connected and active.
  - Check if the input voltage is within the specified range (AC 50V-277V or DC 70V-390V).
  - Ensure all input and output wiring connections are correct and secure, paying close attention to polarity.
  - Check if the green indicator light on the module is illuminated. If not, there might be an issue with the input power or the module itself.
- **Incorrect Output Voltage:**
  - Measure the output voltage with a multimeter to confirm the reading.
  - Ensure the load connected is not exceeding the maximum output current of 300mA. Overloading can cause voltage drop.
  - Check for any short circuits on the output side of the module.
- **Module Overheating:**
  - Disconnect power immediately.
  - Ensure the module is not overloaded (current draw exceeding 300mA).
  - Verify that there is adequate ventilation around the module.
  - Allow the module to cool down before reapplying power.
- **Module Not Functioning After Power On:**
  - If the module does not show any signs of life (e.g., no indicator light), and input power is confirmed, the module may be damaged.

## 9. Warranty and Support

For technical support or warranty inquiries regarding your Youmile 12V 300mA 3.5W AC-DC Buck Converter Module, please contact your retailer or the manufacturer, Youmile. Specific warranty details may vary by region and retailer. Please retain your proof of purchase for any warranty claims.