DROK 200664

DROK Boost Buck Converter Instruction Manual

Model: 200664

1. Introduction

This manual provides essential information for the safe and effective use of the DROK DC-DC Boost Buck Converter, Model 200664. This device is designed to regulate voltage, converting an input DC voltage range of 9V-36V to a stable 12V DC output. Its robust aluminum shell and IP67 waterproofing make it suitable for various applications, including automotive, solar power systems, and industrial controls.
The converter features over-current and over-temperature protection, ensuring reliable performance. Please read this manual thoroughly before installation and operation to ensure proper functionality and safety.

Image 1: The DROK Boost Buck Converter, showcasing its aluminum shell and pre-wired input/output connections.

2. Technical Specifications

The following table details the technical specifications of the DROK Boost Buck Converter:

Parameter	Value
Input Voltage Range	DC 9V ~ 36V
Output Voltage	DC 12V
Output Current (Max)	3A
Output Power (Max)	36W
Conversion Efficiency	>90%
No Load Voltage Range	Set voltage ±3%
Load Regulation	±3%
Quiescent Power Dissipation	<10mA
Operating Temperature	-25°C ~ 65°C
Storage Temperature	-40°C ~ 80°C
Operating Humidity	10% ~ 90%
Waterproofing Grade	IP67

Parameter	Value
Over-current Protection	Yes
Over-temperature Protection	Yes
Short-circuit Protection	No
Dimensions (L x W x H)	2.24 x 1.54 x 0.87 inches (5.7 x 3.9 x 2.2 cm)
Installation Ear Diameter	0.16 inch (0.4 cm)

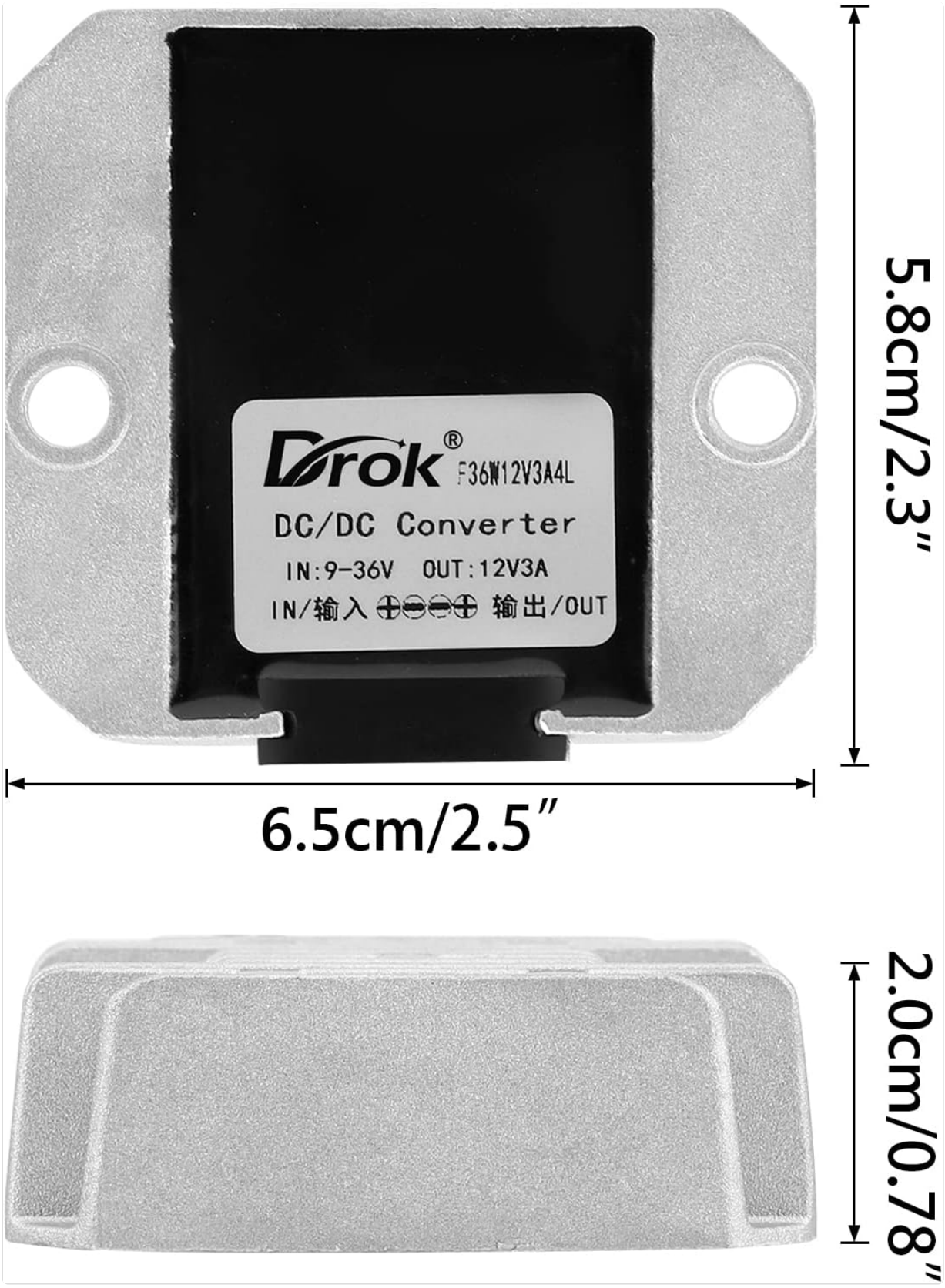

Image 2: Physical dimensions of the converter, indicating length, width, and height for installation planning.

3. Package Contents

The package includes:

- 1x DROK DC-DC Stabilizer (Boost Buck Converter)

4. Safety Precautions

WARNING: Failure to follow these safety instructions may result in fire, electric shock, or other injury or damage.

- Ensure the input voltage is within the specified range (DC 9V-36V). Exceeding this range can damage the device.
- Do not exceed the maximum output current of 3A or output power of 36W. Overloading the converter can lead to overheating and failure.
- This module does not have short-circuit protection. Exercise caution during wiring to prevent short circuits, which can cause damage to the converter and connected devices.
- Connect wiring strictly according to the provided instructions. Incorrect wiring can lead to malfunction or damage.
- Use appropriate wire gauges for input and output connections to ensure stable voltage and power delivery.
- Ensure proper ventilation if operating in enclosed spaces, although the aluminum shell aids in heat dissipation.
- Keep the device away from flammable materials.
- This is a non-isolated module; ensure proper grounding practices.

5. Installation Guidelines

Follow these steps for proper installation of your DROK Boost Buck Converter:

1. **Prepare Wiring:** Identify the input wires (Red for positive, Black for negative) and output wires (Yellow for positive, Black for negative).
2. **Input Connection:** Connect the red input wire to your DC power source's positive terminal (9V-36V). Connect the black input wire to the DC power source's negative terminal.
3. **Output Connection:** Connect the yellow output wire to the positive terminal of your 12V DC load. Connect the black output wire to the negative terminal of your 12V DC load.
4. **Wire Gauge:** Use short and thick input and output wires to minimize voltage drop and ensure sufficient power delivery to your load.
5. **Load Management:** If connecting multiple loads, ensure their combined current draw does not exceed 3A. Do not combine loads if there are multiple output wires from the converter.
6. **Power Margin:** Always leave a margin for the power supply. For long-term stable operation, it is recommended to operate the converter at 80% or less of its maximum rated power (e.g., for 36W, aim for loads up to 28.8W).
7. **Mounting:** The converter features mounting ears with 0.16-inch diameter holes for secure installation. Mount the device in a location that allows for adequate heat dissipation.

Image 3: Detailed wiring diagram for the DROK Boost Buck Converter, showing input (IN) and output (OUT) connections with corresponding wire colors.

6. Operating Instructions

Once properly installed and wired according to the instructions in Section 5:

1. **Power On:** Apply DC power within the 9V-36V range to the input terminals. The converter will automatically step up or step down the voltage to a stable 12V output.
2. **Monitor Load:** Ensure the connected load does not draw more than 3A. Continuous operation above the rated current can trigger over-current protection or lead to device failure.
3. **Environmental Conditions:** The converter is designed for operation in temperatures from -25°C to 65°C and is IP67 waterproof, dust-proof, moisture-proof, and shock-proof. However, avoid prolonged exposure to extreme conditions beyond its specified limits.

7. Maintenance

The DROK Boost Buck Converter is designed for low maintenance. Follow these general guidelines to ensure its longevity:

- **Regular Inspection:** Periodically check all wiring connections to ensure they are secure and free from corrosion or damage.
- **Cleaning:** If necessary, gently clean the exterior of the converter with a dry, soft cloth. Do not use harsh chemicals or abrasive materials.
- **Environmental Protection:** Despite its IP67 rating, avoid submerging the device in water for extended periods or exposing it to high-pressure water jets.
- **Load Management:** Ensure the connected load remains within the specified limits to prevent undue stress on the converter.

8. Troubleshooting

If you encounter issues with your DROK Boost Buck Converter, consider the following:

- **No Output Voltage:**
  - Verify input voltage is present and within the 9V-36V range.
  - Check all wiring connections for proper polarity and secure contact.
  - Ensure the load is not short-circuited, as this module lacks short-circuit protection.
  - Check if the converter has triggered its over-current or over-temperature protection. Disconnect power, allow it to cool, and reduce the load before reconnecting.
- **Unstable Output Voltage:**
  - Ensure input wires are short and thick enough to prevent significant voltage drop.
  - Verify the load current does not exceed 3A.
  - Check for loose connections.
- **Overheating:**
  - Reduce the connected load to ensure it is within the recommended operating margin.
  - Ensure the converter is mounted in a location with adequate airflow.
  - Verify ambient operating temperature is within the specified range.

If problems persist after following these steps, contact DROK customer support for further assistance.

9. Warranty and Support

DROK products are designed for reliability and performance. For specific warranty details regarding your Boost Buck Converter, please refer to the product packaging or the official DROK website. Typically, DROK offers a one-year warranty period for quality issues, providing a brand new replacement if applicable.
For technical support, troubleshooting assistance, or warranty claims, please contact DROK customer service through their official channels. You can often find contact information on the product's purchase page or the manufacturer's website.