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DROK 090600AFA

DROK 12V to 5V DC-DC Buck Converter

MODEL: 090600AFA - USER MANUAL

1. Introduction

This manual provides detailed instructions for the installation, operation, and maintenance of your DROK 12V to 5V DC-DC Buck Converter. This device is designed to efficiently step down a DC input voltage range of 8V-35V to a stable 5V DC output, suitable for various electronic applications. Please read this manual thoroughly before use to ensure proper function and safety.

DC to DC BUCK CONVERTER

 OUTPUT REVERSE CONNECTION

 SHORT CIRCUIT PROTECTION

 OVER CURRENT PROTECTION

 OVER TEMPERATURE PROTECTION

 HIGH EFFICIENCY

 COMPACT SIZE

 RATED POWER

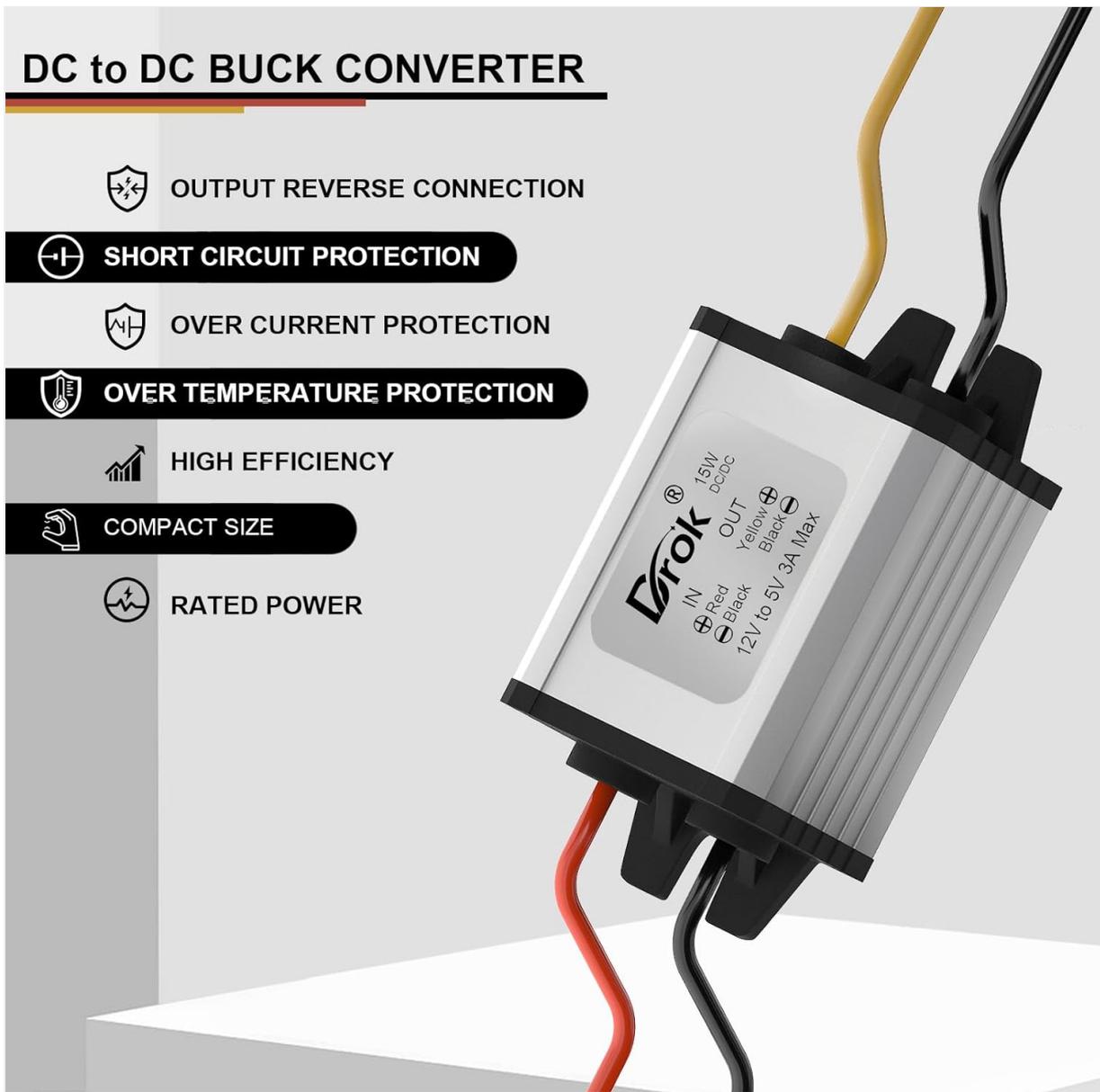


Image 1: DROK 12V to 5V DC-DC Buck Converter. This image shows the compact, silver-colored converter with red, black, and yellow wires for input and output connections.

2. Safety Information

- Ensure the input voltage is within the specified range (DC 8V-35V). Exceeding this range may damage the device.
- Observe correct polarity when connecting input and output wires. Reverse polarity can cause damage.
- Do not exceed the maximum output current of 3A or output power of 15W.
- Install the converter in a well-ventilated area to prevent overheating, although it features good heat dissipation.
- Keep the device away from flammable materials during operation.
- If the device shows signs of damage or malfunction, disconnect power immediately.

3. Product Features

- **Wide Input Voltage Range:** Accepts DC 8V-35V (compatible with 9V, 12V, 24V systems).
- **Stable Output:** Provides a regulated DC 5V output.

- **High Output Capacity:** Delivers up to 3A current and 15W power.
- **Robust Protection:** Includes over-current protection, over-temperature protection, input reverse connection protection, and short-circuit protection.
- **High Conversion Efficiency:** Achieves over 95% maximum conversion efficiency, minimizing heat generation.
- **Durable Construction:** Features an aluminum case for good heat dissipation and is waterproof, dust-proof, moisture-proof, and shock-proof.
- **Compact Size:** Small form factor for easy integration into various projects.

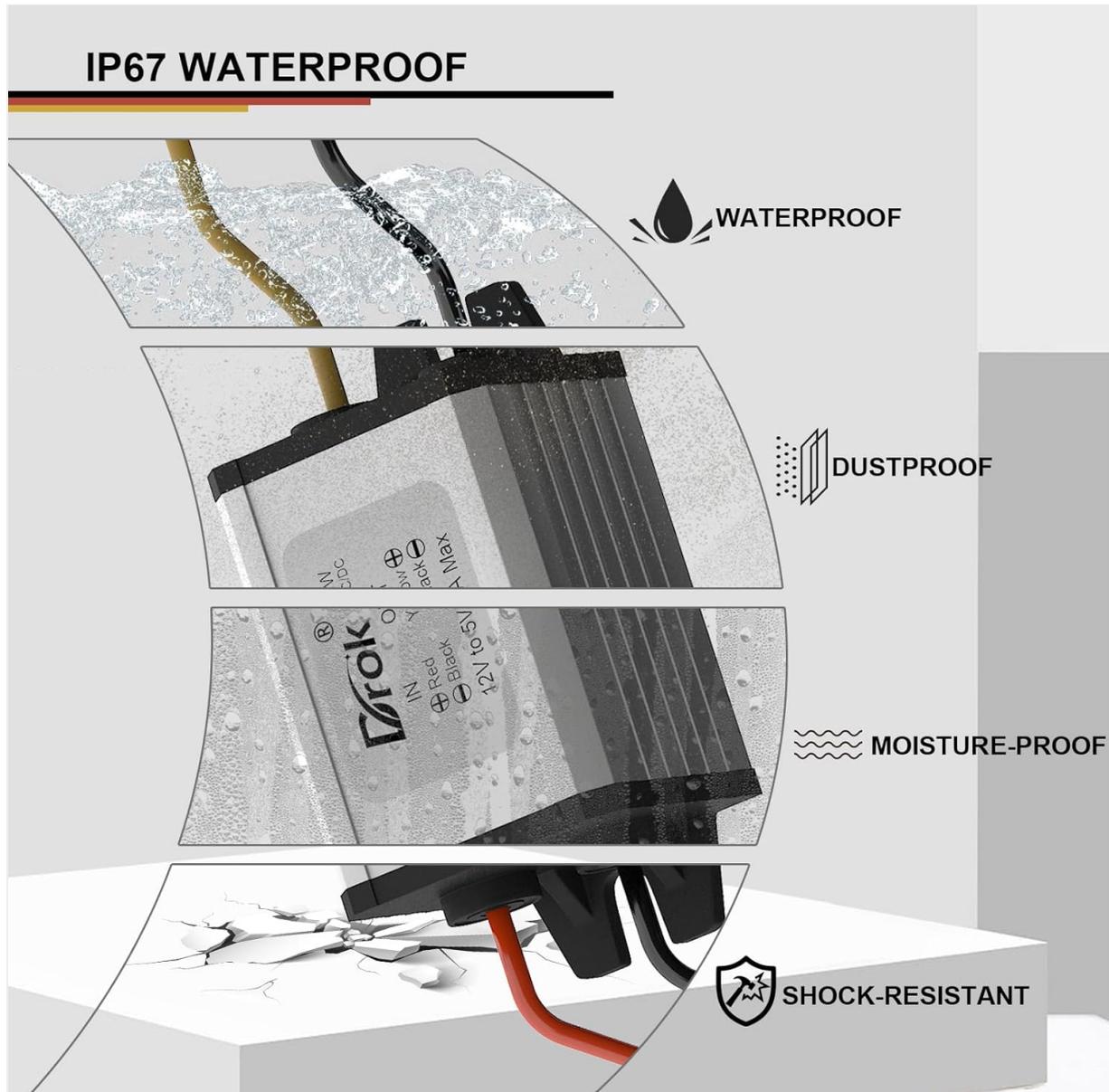


Image 2: Visual representation of the converter's features, highlighting output reverse connection protection, short circuit protection, over current protection, over temperature protection, high efficiency, compact size, and rated power.

4. Technical Specifications

Parameter	Value
Input Voltage	DC 8V-35V
Output Voltage	DC 5V

Parameter	Value
Output Current	3A (Max)
Output Power	15W (Max)
Conversion Efficiency	>95%
Working Temperature	-25°C to 65°C
Dimensions (L x W x H)	51mm x 34mm x 21mm (approx.)
Item Weight	0.01 ounces (approx.)

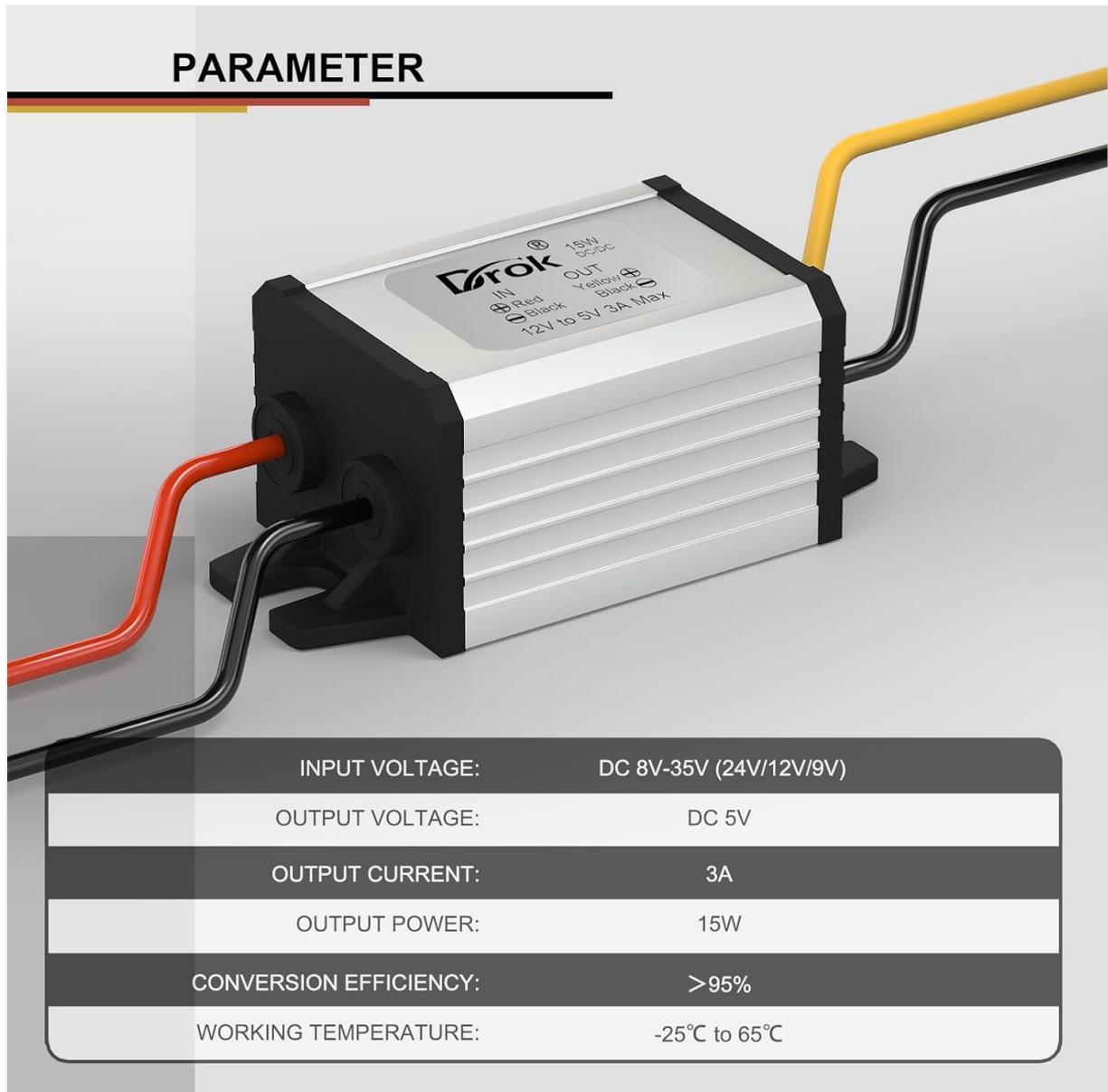


Image 3: Detailed parameter table for the DROK DC to DC Buck Converter, showing input voltage, output voltage, output current, output power, conversion efficiency, and working temperature.

5. Wiring and Installation

Follow these steps for correct wiring and installation:

1. **Identify Wires:** The converter has three wires for input and two for output. Typically:

- **Input:** Red (Positive +), Black (Negative -)
 - **Output:** Yellow (Positive +), Black (Negative -)
2. **Connect Input:** Connect the **Red** input wire to the positive terminal of your DC power source (8V-35V). Connect the **Black** input wire to the negative terminal of your DC power source.
 3. **Connect Output:** Connect the **Yellow** output wire to the positive terminal of your 5V DC load. Connect the **Black** output wire to the negative terminal of your 5V DC load.
 4. **Secure Connections:** Ensure all connections are secure and insulated to prevent short circuits.
 5. **Mounting:** The converter is compact and can be mounted using appropriate fasteners or placed in a suitable enclosure.

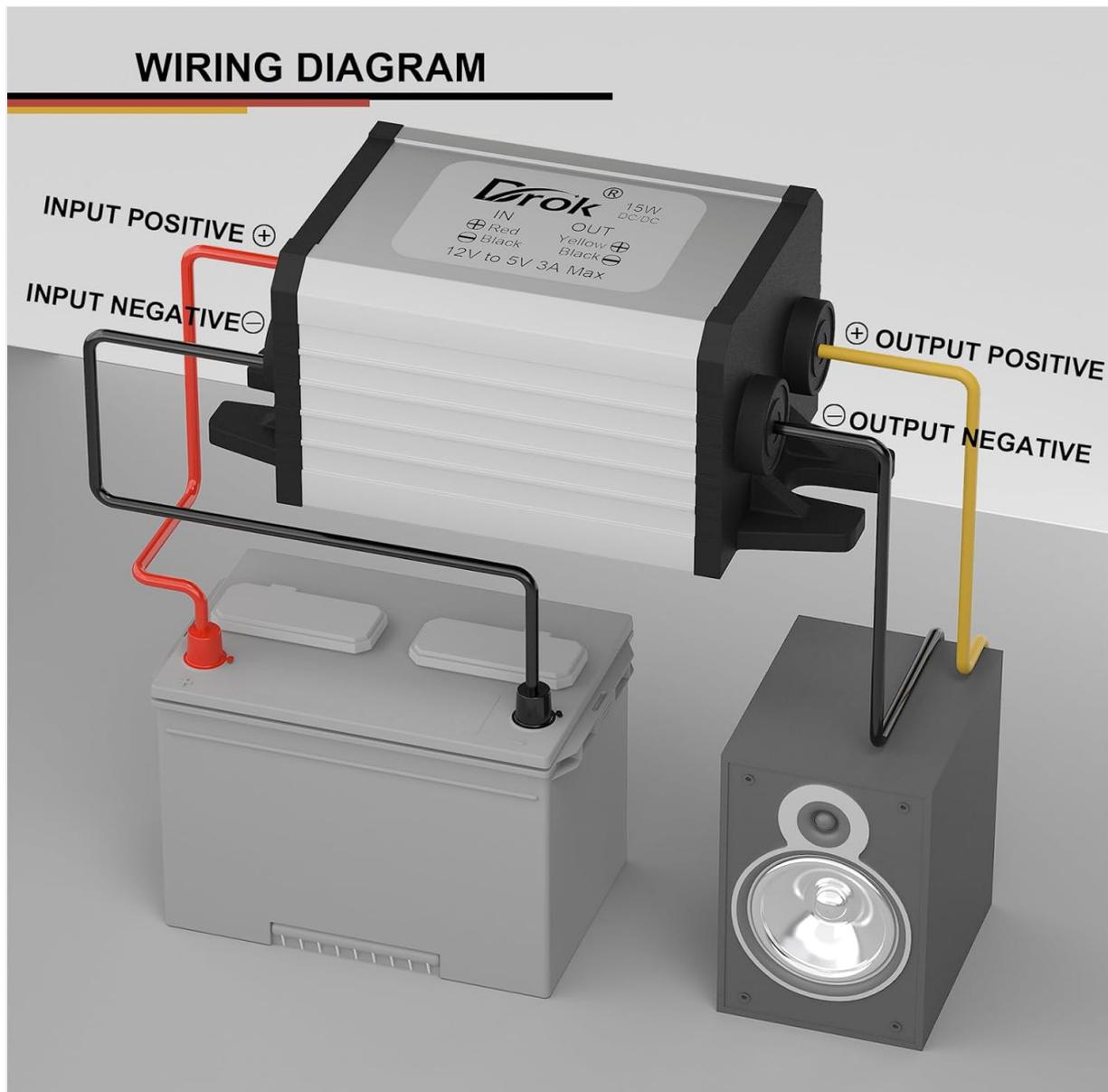


Image 4: Wiring diagram illustrating how to connect the DROK DC to DC Buck Converter. It shows the input positive (red wire) and negative (black wire) connected to a battery, and the output positive (yellow wire) and negative (black wire) connected to a speaker.

Installation Demonstration Video

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Video 1: This video demonstrates the DROK 090600 5V Buck Converter in operation, including testing its output voltage with a multimeter and showing it powering a small motor while submerged in water, highlighting its waterproof capability.

6. Operation

Once properly wired, the DROK DC-DC Buck Converter operates automatically. It will convert the input DC voltage to a stable 5V DC output. No user configuration is required. The device's internal protection mechanisms will safeguard it against common electrical faults.

7. Applications

The DROK 12V to 5V Buck Converter is versatile and can be used in a wide range of applications, including but not limited to:

- Car audio systems
- LED displays
- Motors and speakers
- Auto map navigators
- Hard disk players and media devices
- Electric fans and toy cars
- Air conditioning systems
- Solar energy systems

WIDE APPLICATION



DASH CAMERA

CAR CONVERSION

AUDIO

SOLAR SYSTEM

Image 5: Examples of wide applications for the converter, including dash cameras, car conversions, audio systems, and solar systems.

8. Physical Dimensions

The converter features a compact design for easy integration. Refer to the diagram below for detailed measurements.

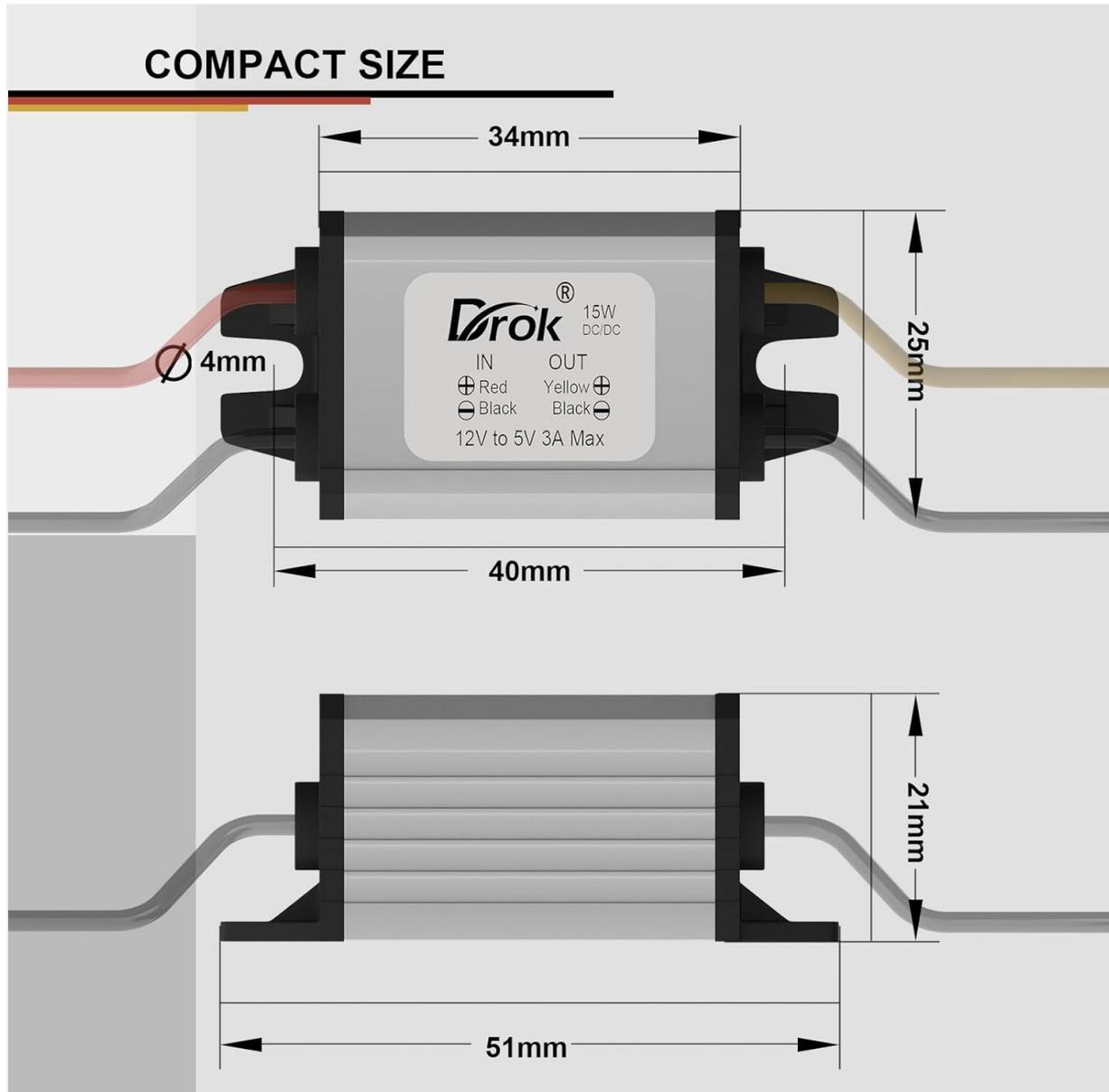


Image 6: Diagram showing the compact size and dimensions of the DROK DC to DC Buck Converter, with measurements in millimeters.

9. Maintenance and Care

The DROK DC-DC Buck Converter is designed for durability and requires minimal maintenance due to its robust construction:

- **Waterproof and Dust-proof:** The device is sealed to protect against water, dust, and moisture, making it suitable for harsh environments.
- **Shock-proof:** Its design provides resistance against physical shocks.
- **Cleaning:** If necessary, gently wipe the exterior with a dry or slightly damp cloth. Do not use harsh chemicals.

- **Inspection:** Periodically check wiring connections for tightness and signs of wear or corrosion.

10. Troubleshooting

If you encounter issues with your converter, consider the following:

- **No Output Voltage:**
 - Check input voltage to ensure it is within the 8V-35V range.
 - Verify input polarity (Red to +, Black to -).
 - Check for short circuits in the output wiring or load. The device has short-circuit protection, which may temporarily shut down output.
 - Ensure the load does not exceed 3A/15W.
- **Output Voltage is Unstable or Incorrect:**
 - Confirm input voltage stability.
 - Check for loose connections.
 - Ensure the device is not overheating. Over-temperature protection may reduce output.
- **Device Overheating:**
 - Ensure adequate ventilation around the converter.
 - Reduce the load if it is consistently near the maximum limits.

11. Warranty and Support

DROK products are backed by a one-year service period. If you experience any quality issues with your item within this period, you may be eligible for a brand new replacement. For support or warranty claims, please contact DROK customer service through your purchase platform or the official DROK website.