DROK 200206

DROK L298 Dual H-Bridge DC Motor Driver (Model 200206) Instruction Manual

1. INTRODUCTION

This manual provides detailed instructions for the DROK L298 Dual H-Bridge DC Motor Driver, Model 200206. This module is designed for controlling the speed and direction of two independent DC motors. It features a wide input voltage range, high current capability, and integrated protection mechanisms, making it suitable for various industrial and hobby applications.
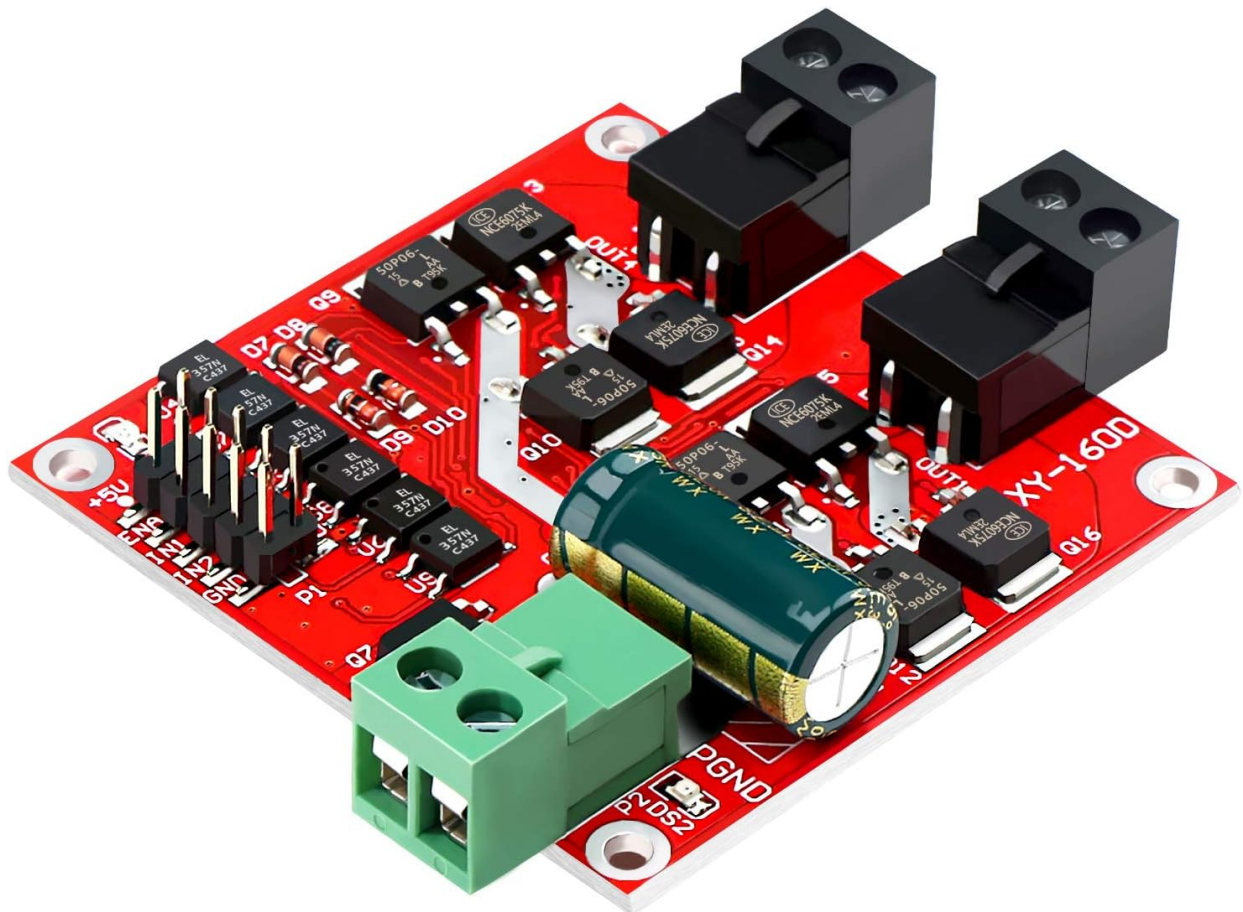

Figure 1: DROK L298 Dual H-Bridge DC Motor Driver (Model 200206)

2. SPECIFICATIONS

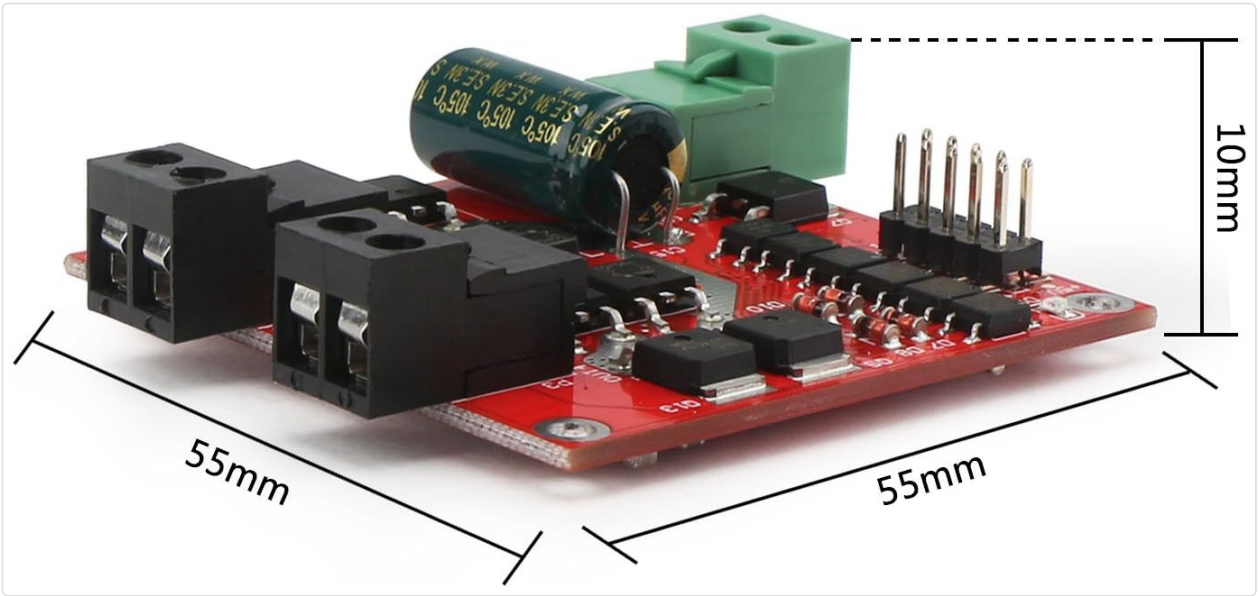| Feature	Value
Brand	DROK
Model Number	200206
Input Voltage Range	DC 6.5V - 27V
Rated Output Current (per port)	7A
Total Output Power	160W
Control Type	Dual H-Bridge
PWM Frequency Range	0 - 10KHz
Protection Features	Under Voltage Protection
Dimensions	2.17 x 2.17 x 0.63 inches (55 x 55 x 16 mm)
Item Weight	1.44 ounces (40.8 grams)

Figure 2: Physical Dimensions of the Motor Driver

3. SETUP AND WIRING

Proper wiring is crucial for the safe and effective operation of the motor driver. Refer to the diagram below for connection points.
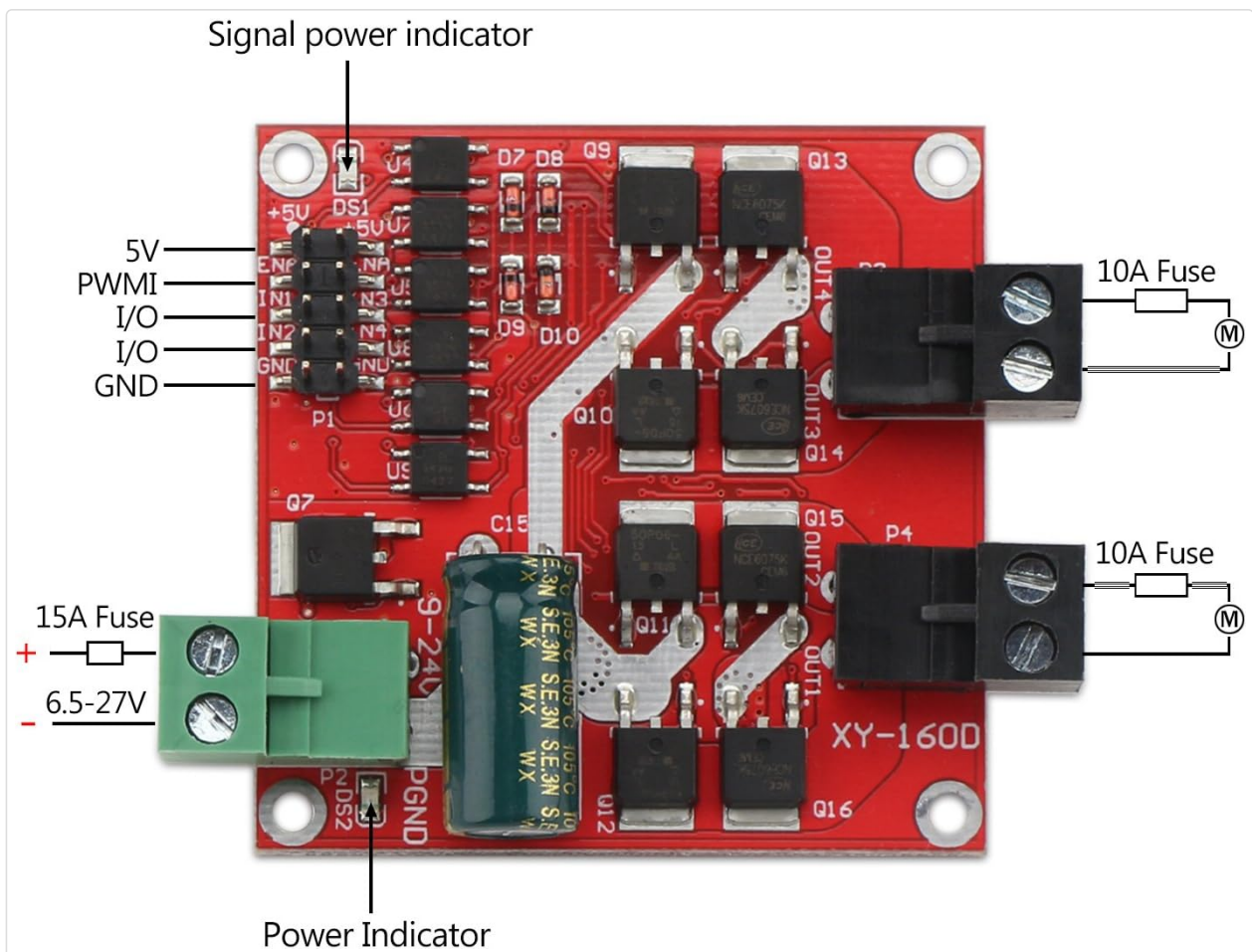
Figure 3: Wiring Diagram and Pinout

3.1 Power Connections

- **Main Power Input (6.5V-27V):** Connect your DC power supply to the green screw terminal labeled "6.5-27V" and "GND". Ensure the polarity is correct (+ to + and - to -). A 15A fuse is recommended in series with the positive power input.
- **Logic Power Input (+5V):** The module requires a separate 5V logic power supply. Connect a stable 5V DC source to the "+5V" pin on the control signal header and its corresponding "GND" pin. *Note: The logic supply voltage should match the control signal voltage from your microcontroller (e.g., 3.3V for a 3.3V microcontroller).*

3.2 Motor Connections

- **Motor 1 Output:** Connect the first DC motor to the screw terminals labeled "OUT1" and "OUT2".
- **Motor 2 Output:** Connect the second DC motor to the screw terminals labeled "OUT3" and "OUT4".
- Each motor output port is rated for 7A. It is advisable to include a 10A fuse in series with each motor for protection.

3.3 Control Signal Connections

The control signals are typically provided by a microcontroller (e.g., Arduino). The module supports two independent motors.

- **Motor 1 Control:**

    - **IN1, IN2:** These digital input pins control the direction of Motor 1.
    - **ENA (PWM1):** This pin enables Motor 1 and accepts a Pulse Width Modulation (PWM) signal for

speed control.

- **Motor 2 Control:**
  - **IN3, IN4:** These digital input pins control the direction of Motor 2.
  - **ENB (PWM2):** This pin enables Motor 2 and accepts a PWM signal for speed control.

4. OPERATING INSTRUCTIONS

The DROK L298 Dual H-Bridge Motor Driver allows for precise control over DC motors. The following tables outline the logic for controlling motor direction and speed.

4.1 Motor Direction Control (for Motor 1, using IN1 and IN2)

IN1	IN2	Motor 1 Action
HIGH	LOW	Forward Rotation
LOW	HIGH	Reverse Rotation
LOW	LOW	Brake (Short Circuit)
HIGH	HIGH	Brake (Short Circuit)

Note: The same logic applies to Motor 2 using IN3 and IN4.

4.2 Motor Speed Control (using ENA/PWM1 or ENB/PWM2)

Motor speed is controlled by applying a Pulse Width Modulation (PWM) signal to the ENA (for Motor 1) or ENB (for Motor 2) pin. The PWM signal should have a frequency range of 0-10KHz.

- A 0% duty cycle PWM signal will result in the motor being off.
- A 100% duty cycle PWM signal will result in the motor running at full speed.
- Intermediate duty cycles will adjust the motor speed proportionally.

Example: To run Motor 1 forward at 50% speed, set IN1 to HIGH, IN2 to LOW, and apply a 50% duty cycle PWM signal to ENA.

4.3 Operational Demonstration

Your browser does not support the video tag.

Video 1: Demonstration of the DROK Motor Driver controlling a DC motor with PWM speed adjustment. This video illustrates the connection of the motor driver to a motor and a PWM signal generator, showing how the motor speed can be varied.

5. MAINTENANCE

- **Cleaning:** Keep the module free from dust and debris. Use a soft, dry brush or compressed air for cleaning. Avoid using liquids.
- **Environmental Conditions:** Operate the module within its specified temperature and humidity ranges. Avoid exposure to extreme temperatures, moisture, or corrosive environments.
- **Connections:** Periodically check all wiring connections to ensure they are secure and free from corrosion. Loose connections can lead to intermittent operation or damage.

- **Heat Management:** While the module is designed for efficient operation, ensure adequate ventilation, especially when driving motors at high currents or for extended periods.

6. TROUBLESHOOTING

- **Motor Not Responding:**

  - Verify all power connections (main power and logic power) are correctly wired and supplied with the correct voltage.
  - Check motor connections for proper polarity and secure contact.
  - Ensure control signals (IN1/IN2 or IN3/IN4) are correctly applied and the ENA/ENB pin is receiving a valid PWM signal.
  - Confirm the motor itself is functional by testing it directly with a power source.

- **Motor Runs Only at Full Speed or Not at All:**

  - Check the PWM signal on the ENA/ENB pin. Ensure it is within the 0-10KHz frequency range and has a varying duty cycle for speed control.
  - Verify that the logic power supply voltage matches the control signal voltage from your microcontroller. A mismatch can cause incorrect logic interpretation.

- **Module Overheating:**

  - Ensure the motor current does not exceed the rated 7A per channel.
  - Provide adequate ventilation around the module.
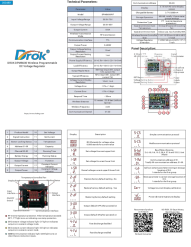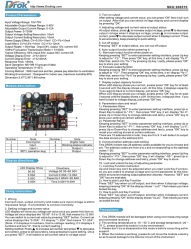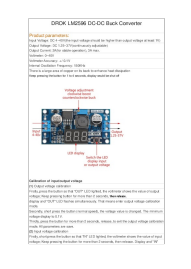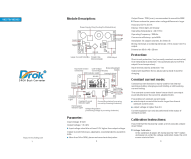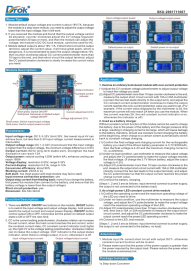 - Check for short circuits in the motor wiring or the motor itself.

- **Under Voltage Protection Triggered:**

  - The module has built-in under voltage protection. If the input voltage drops below a certain threshold, the module may cease operation to prevent damage.
  - Verify your main power supply can provide sufficient voltage and current under load.

7. WARRANTY AND SUPPORT

DROK products are designed for reliability and performance. For specific warranty information, please refer to the product packaging or contact DROK customer support directly. Technical assistance and further resources may be available through the official DROK website or authorized distributors.
For additional support, please visit the DROK Store on Amazon.

Related Documents - 200206

[DROK DPM8600 Wireless Programmable DC Voltage Regulator Technical Specifications](#)
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[DROK SKU:200310 Adjustable DC-DC Power Supply Module - Specifications & User Guide](#)
Explore the features and usage of the DROK SKU:200310 adjustable DC-DC power supply module. This guide provides detailed specifications, module layout, operating instructions, and essential precautions for optimal performance and safety.

[DROK Boost Converter 200150 User Manual](#)
This document provides a detailed introduction and operating instructions for the DROK Boost Converter 200150, covering display functions, simple mode, and fully functional mode operations, including parameter saving, loading, and input voltage protection settings.

[DROK LM2596 DC-DC Buck Converter: Specifications and Calibration Guide](#)
Comprehensive details and step-by-step instructions for the DROK LM2596 DC-DC Buck Converter, covering product parameters, voltage calibration, and operational features.

[DROK Buck Converter User Manual and Specifications](#)
Comprehensive guide to the DROK Buck Converter, detailing its module description, parameters, protections, constant current mode, calibration, display settings, USB output, and important cautions. Includes technical specifications and troubleshooting Q&A.

[DROK DC Buck Converter 12A CC CV Adjustable Power Supply User Guide](#)
This guide provides detailed instructions and specifications for the DROK DC Buck Converter, a 12A adjustable power supply with CC/CV functionality and an LCD display. Learn how to use it for various applications including battery charging and LED driving.