

## ZK-PP4K

# Generic ZK-PP4K PWM Pulse Generator Instruction Manual

Model: ZK-PP4K

## 1. INTRODUCTION

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The ZK-PP4K is a versatile PWM (Pulse Width Modulation) pulse generator designed for controlling LED lighting, motor speed, and other applications requiring precise dimming or speed regulation. It features a digital LCD display for clear parameter viewing and supports slow start and slow stop functions for smooth operation. This manual provides essential information for the proper setup, operation, and maintenance of your ZK-PP4K device.

## 2. PRODUCT OVERVIEW

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The ZK-PP4K unit consists of a main control module with an LCD display, a rotary encoder for adjustments, and terminal blocks for electrical connections.



**Figure 2.1:** Front view of the ZK-PP4K PWM Pulse Generator. The LCD displays output status, frequency, and duty cycle. A rotary encoder knob is visible on the right for parameter adjustment.



**Figure 2.2:** Dimensions of the ZK-PP4K PWM Pulse Generator. The unit measures approximately 79mm in length, 43mm in width, and 26mm in height.

### 3. SETUP AND WIRING

Proper wiring is crucial for safe and effective operation. Ensure the device is powered off before making any connections.

#### 3.1 Terminal Connections



**Figure 3.1:** Rear view of the ZK-PP4K showing the terminal block. From left to right, the terminals are labeled GND, PWM, V-, and V+.

- **V+:** Positive power input (DC).
- **V-:** Negative power input (DC).
- **PWM:** PWM signal output to the load.
- **GND:** Ground connection for the PWM signal.

### 3.2 Power Supply Requirements

Connect a stable DC power supply to the V+ and V- terminals. Refer to the specifications section for the acceptable voltage range. Ensure correct polarity to prevent damage to the device.

### 3.3 Load Connection

Connect your load (e.g., LED strip, DC motor) to the PWM and GND terminals. The PWM output provides the modulated signal to control the connected device.

## 4. OPERATING INSTRUCTIONS

Once wired, power on the device. The LCD will illuminate, displaying the current frequency and duty cycle settings.

## 4.1 Adjusting Frequency and Duty Cycle

- **Rotary Encoder:** Rotate the knob to adjust the displayed parameter.
- **Short Press:** A short press of the rotary encoder button will switch between adjusting the frequency and the duty cycle. The active parameter will typically blink or be highlighted.
- **Long Press:** A long press of the rotary encoder button may enter or exit advanced settings or save current settings, depending on the firmware version. Refer to the on-screen prompts.

## 4.2 Slow Start and Slow Stop Functions

The ZK-PP4K supports slow start and slow stop features, which allow the PWM output to gradually increase or decrease to the set value. This is particularly useful for applications requiring smooth transitions, such as dimming LEDs or gradually accelerating motors. These functions are typically configured within the advanced settings menu, accessible via a long press of the rotary encoder.

## 5. MAINTENANCE

The ZK-PP4K is designed for reliable operation with minimal maintenance.

- **Cleaning:** Use a dry, soft cloth to clean the device. Do not use liquid cleaners or solvents.
- **Environment:** Operate the device in a clean, dry environment, away from excessive dust, moisture, and extreme temperatures.
- **Connections:** Periodically check all electrical connections to ensure they are secure.

## 6. TROUBLESHOOTING

If you encounter issues with your ZK-PP4K, consider the following common problems and solutions:

- **No Display/No Power:**
  - Check power supply connections (V+, V-).
  - Verify the power supply voltage is within the specified range.
  - Ensure correct polarity.
- **No PWM Output:**
  - Check connections to the load (PWM, GND).
  - Verify that the duty cycle is set to a non-zero value.
  - Ensure the device is powered correctly.
- **Incorrect Output/Unstable Operation:**
  - Ensure the load is compatible with the PWM output specifications.
  - Check for loose connections or interference.
  - Reset the device to factory settings if possible (refer to advanced settings).

## 7. SPECIFICATIONS

Feature	Description
Model	ZK-PP4K
Function	PWM Pulse Generator, LED Motor Speed Control, Dimming Controller
Display	Digital LCD

Feature	Description
Control Method	Rotary Encoder with Push Button
Special Features	Slow Start, Slow Stop
Dimensions (approx.)	79mm x 43mm x 26mm (Length x Width x Height)

## 8. SUPPORT AND ADDITIONAL RESOURCES

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For further assistance or detailed technical documentation, please refer to the manufacturer's resources. A relevant link found on the product packaging is provided below:

Additional instructions may be available at: <http://www.qingdaowuzhi.com/DownLoad/60302.html?a=download>

### 8.1 Warranty Information

Specific warranty details for this product are not provided in the available documentation. Please consult your retailer or the manufacturer's website for warranty terms and conditions.