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SLMLSGB PWM150

SLMLSGB PWM150 2-Channel PWM Signal Generator User Manual

Model: PWM150

Brand: SLMLSGB

1. Introduction

The SLMLSGB PWM150 is a versatile 2-channel Pulse Width Modulation (PWM) signal generator designed for various applications including servo motor control, square wave generation, and pulse wave modulation. It offers precise control over frequency, duty cycle, and phase, with independent or synchronous output modes for its two channels. This manual provides detailed instructions for the setup, operation, and maintenance of the PWM150 to ensure optimal performance and longevity.

2. Product Overview

The PWM150 features a clear digital display and intuitive controls for easy parameter adjustment. It is equipped with two independent output channels (CH1 and CH2) capable of generating precise PWM signals.

Front Panel Layout



Figure 2.1: Front view of the PWM150 signal generator. This image displays the main interface, including the digital screen, rotary encoder, and function buttons (MOD, SYNC, SET, OUT).

- **Digital Display:** Shows current frequency, duty cycle, and phase settings.
- **Rotary Encoder:** Used for adjusting parameter values. Turn to change value, press to confirm or switch selection.
- **MOD Button:** Switches between parameter adjustment modes (Frequency, Duty Cycle, Phase).
- **SYNC Button:** Toggles synchronous output mode for both channels.
- **SET Button:** Enters or exits parameter setting mode.
- **OUT Button:** Toggles output signal for the selected channel.
- **CH1/CH2 Indicators:** LEDs indicating the active channel.

Rear Panel Terminals



Figure 2.2: Rear view of the PWM150 showing the input power terminals (INPUT DC3.3V-24V) and the two output terminals (OUT1, OUT2) with their respective ground connections.

- **INPUT (DC3.3V-24V):** Power input terminals. Connect a DC power supply within this voltage range.
- **GND:** Ground connection for the power input.
- **OUT1/OUT2:** Signal output terminals for Channel 1 and Channel 2, respectively.
- **GND (OUT1/OUT2):** Ground connections for the output signals.

3. Specifications

Parameter	Value
Input Voltage	DC 5V-24V (External power supply)
Frequency Range	1Hz-150KHz (Default 10KHz), step adjustable
Duty Cycle	0.0%-100% (Default 50%), 0.1% precision
Channels	2 independent channels
Phase Adjustment	0°~360° (Step 1°), synchronous mode available
Output Voltage	5-24V DC (Matches input voltage)

Parameter	Value
Output Current	Max. 0.2A per channel
Overall Dimensions	120mm x 80mm x 25mm
Item Weight	1.76 ounces (approx. 50g)
Batteries Required	No

4. Setup

Follow these steps to set up your PWM150 signal generator:

1. **Power Connection:** Connect a DC power supply (5V-24V) to the **INPUT** terminals on the rear panel. Ensure correct polarity: positive to '+' and negative to '-'. The device will power on automatically.
2. **Output Connection:** Connect your target device (e.g., servo motor, LED driver) to the **OUT1** and/or **OUT2** terminals. Ensure the signal wire is connected to the respective OUT terminal and the ground wire to the corresponding GND terminal.
3. **Initial Check:** Upon powering on, the display should illuminate, showing default frequency and duty cycle values.

5. Operating Instructions

The PWM150 allows for precise adjustment of signal parameters. Refer to the front panel layout for button locations.



Figure 5.1: Detailed view of the PWM150 controls, highlighting the display, rotary encoder, and function buttons.

5.1 Adjusting Parameters (Frequency, Duty Cycle, Phase)

1. **Select Channel:** The CH1 or CH2 indicator LED shows the currently active channel. Press the rotary encoder briefly to switch between channels if needed.
2. **Enter Setting Mode:** Press the **SET** button to enter parameter setting mode. The currently adjustable parameter will blink on the display.
3. **Select Parameter:** Press the **MOD** button to cycle through Frequency (Hz/KHz), Duty Cycle (%), and Phase (°) parameters.
4. **Adjust Value:** Turn the rotary encoder clockwise to increase the value, and counter-clockwise to decrease it. The step size for frequency is adjustable, and duty cycle has 0.1% precision.
5. **Confirm Setting:** Once the desired value is set, press the **SET** button again to confirm and exit the setting mode for that parameter.

5.2 Synchronous Mode Operation

The PWM150 supports synchronous output, where both channels operate with the same frequency and duty cycle, but their phase can be independently adjusted.

- To activate synchronous mode, press the **SYNC** button. An indicator on the display will confirm synchronous operation.
- In synchronous mode, adjusting the frequency or duty cycle for one channel will automatically apply the same setting to the other channel.
- Phase adjustment remains independent for each channel even in synchronous mode.
- To exit synchronous mode, press the **SYNC** button again.

5.3 Toggling Output

To enable or disable the signal output for the currently selected channel:

- Press the **OUT** button. The output indicator LED will light up when the output is active and turn off when disabled.

6. Maintenance

Proper maintenance ensures the longevity and reliable operation of your PWM150 signal generator.

- **Cleaning:** Use a soft, dry cloth to clean the device. Do not use abrasive cleaners or solvents.
- **Storage:** Store the device in a cool, dry place away from direct sunlight and extreme temperatures.
- **Handling:** Avoid dropping the device or subjecting it to strong impacts.
- **Power Supply:** Always use a stable DC power supply within the specified voltage range (5V-24V).

7. Troubleshooting

If you encounter issues with your PWM150, refer to the following common problems and solutions:

Problem	Possible Cause	Solution
Device does not power on.	Incorrect power supply voltage or polarity. Loose power connection.	Verify power supply is within 5V-24V DC and connected with correct polarity. Check all power connections.
No output signal.	Output is disabled. Incorrect wiring to target device. Faulty target device.	Press the **OUT** button to enable output. Check wiring between PWM150 and target device. Test with a known working load.
Parameters cannot be adjusted.	Not in setting mode. Rotary encoder malfunction.	Press the **SET** button to enter setting mode. Ensure the rotary encoder is clean and functioning correctly.
Inconsistent output.	Unstable power supply. Interference.	Use a regulated power supply. Ensure proper grounding and minimize electromagnetic interference.

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