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› GW Instek GPD-3303D Multi Output, Programmable Linear DC Power Supply User Manual

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Model: GPD-3303D

1. INTRODUCTION

This manual provides comprehensive instructions for the safe and efficient operation of the GW Instek GPD-3303D Multi Output, Programmable Linear DC Power Supply. The GPD-3303D is a versatile instrument designed for various applications requiring precise and stable DC power. It features three independent outputs: two adjustable 0-30V/3A channels and one fixed 2.5V/3.3V/5V/3A channel, offering high accuracy with 1mV/1mA resolution.

2. SAFETY INSTRUCTIONS

Always observe the following safety precautions to prevent injury and damage to the instrument:

- Ensure the power supply is connected to a grounded AC outlet with the correct voltage.
- Do not operate the instrument in wet or damp conditions.
- Avoid operating the instrument if the power cord is damaged or if the instrument shows signs of damage.
- Do not attempt to open the casing; there are no user-serviceable parts inside. Refer servicing to qualified personnel.
- Ensure proper ventilation to prevent overheating. Do not block ventilation openings.
- Always turn off the power supply and disconnect it from the AC outlet before cleaning or moving.
- Use only the specified test leads and accessories.

3. PRODUCT OVERVIEW

3.1 Front Panel

The front panel of the GPD-3303D provides all necessary controls, indicators, and output terminals for operation.



Figure 1: Front Panel of GW Instek GPD-3303D

The image above displays the front panel of the GW Instek GPD-3303D. Key features include two large digital displays for Voltage (V) and Current (A) readings for Channel 1 (CH1) and Channel 2 (CH2). On the right side, there are rotary encoder switches for fine and coarse adjustment of Voltage and Current, along with memory save/recall buttons (1-4), CH1/CH2 selection buttons, and an OUTPUT ON/OFF button. The bottom section features the main power button, output terminals for CH1 (Master), CH2 (Slave), and the fixed voltage outputs (2.5V, 3.3V, 5V).

Front Panel Components:

- **Digital Displays:** Two sets of 4-digit displays show real-time voltage and current for CH1 and CH2. (e.g., "30.000 V" and "3.000 A").
- **Voltage/Current Knobs:** Rotary encoders for precise adjustment of output voltage and current. Separate coarse and fine adjustments are available.
- **Memory Buttons (1-4):** Used to save and recall up to four different output settings.
- **CH1/CH2 Select Buttons:** Used to select which channel's parameters are being adjusted or displayed.
- **OUTPUT Button:** Toggles the output power on or off. An audible warning buzzer may sound when toggling.
- **LOCK/UNLOCK Button:** Engages or disengages the key lock function to prevent accidental changes to settings. (Long push to activate/deactivate).
- **Power Button:** Main power switch for the unit.
- **Output Terminals:**
 - **CH1 (Master):** Positive and negative terminals for the primary adjustable output (0-30V, 3A).
 - **CH2 (Slave):** Positive and negative terminals for the secondary adjustable output (0-30V, 3A).
 - **GND (Ground):** Common ground terminal.
 - **Fixed Outputs:** Terminals for fixed voltage outputs (2.5V, 3.3V, 5V) at 3A.
- **Tracking/Parallel/Series Mode Indicators:** LEDs or labels indicating the current operating mode (e.g., CV/CC, Tracking Series, Parallel).

3.2 Rear Panel

The rear panel typically includes the AC power input, cooling fan, and communication interfaces such as USB. Refer to the specific product documentation or the label on the rear of your unit for exact port locations and specifications.

3.3 Included Accessories

The following accessories are typically included with the GPD-3303D:

- Two (2) Test leads (GTL-104)
- One (1) Test lead (GTL-105)
- Power Cord
- User Manual (this document)

4. SETUP

1. **Unpacking:** Carefully remove the power supply from its packaging. Retain the packaging for future transport or storage.
2. **Placement:** Place the unit on a stable, level surface with adequate ventilation around all sides. Ensure the cooling fan at the rear is not obstructed.
3. **Power Connection:** Connect the supplied AC power cord to the power input on the rear panel of the unit, then plug the other end into a grounded AC outlet. Verify the AC voltage matches the rating specified on the unit.
4. **Initial Inspection:** Before powering on, visually inspect the unit for any signs of physical damage.

5. OPERATING INSTRUCTIONS

5.1 Basic Operation

1. **Power On:** Press the **POWER** button on the front panel. The digital displays will illuminate.
2. **Setting Voltage and Current (CH1/CH2):**
 - Press the **CH1** or **CH2** button to select the desired channel.
 - Rotate the **VOLTAGE** coarse/fine knobs to set the desired output voltage.
 - Rotate the **CURRENT** coarse/fine knobs to set the desired current limit. The display will show the set values.
3. **Connecting Load:** Connect your load to the appropriate output terminals (CH1, CH2, or Fixed). Ensure correct polarity.
4. **Output ON/OFF:** Press the **OUTPUT** button to enable or disable the power output to the terminals. The button's indicator will show the output status.
5. **Using Fixed Outputs:** For the 2.5V, 3.3V, or 5V fixed outputs, simply connect your load to the corresponding terminals. These outputs are always active when the unit is powered on and the main output is enabled.

5.2 Advanced Features

- **Tracking Mode (Series/Parallel):** The GPD-3303D supports tracking, series, and parallel operation for CH1 and CH2.
 - **Series Mode:** Connect CH1 and CH2 in series to achieve higher voltage (up to 60V).
 - **Parallel Mode:** Connect CH1 and CH2 in parallel to achieve higher current (up to 6A).
 - Refer to the detailed connection diagrams in the full product manual for proper setup of these modes.

- **Memory Save/Recall:**

- To **Save** a setting: Adjust voltage and current for the desired channel. Press and hold one of the **MEMORY** buttons (1-4) until a confirmation sound or display indication appears.
- To **Recall** a setting: Briefly press the desired **MEMORY** button (1-4). The saved settings will be loaded to the selected channel.

- **Key Lock Function:** To prevent accidental changes to settings, press and hold the **LOCK/UNLOCK** button. The display will indicate "LOCK". To unlock, press and hold the button again.

6. MAINTENANCE

Proper maintenance ensures the longevity and reliable operation of your power supply.

- **Cleaning:** Disconnect the power supply from the AC outlet. Use a soft, dry cloth to clean the exterior. For stubborn dirt, a cloth lightly dampened with water and mild detergent may be used, ensuring no liquid enters the unit. Do not use abrasive cleaners or solvents.
- **Ventilation:** Regularly check that the ventilation openings are clear of dust and debris. The SMART cooling fan helps maintain optimal operating temperature.
- **Calibration:** The GPD-3303D is factory calibrated. If you suspect accuracy issues, contact GW Instek authorized service centers for professional calibration.

7. TROUBLESHOOTING

This section addresses common issues you might encounter. For problems not listed here, contact technical support.

Problem	Possible Cause	Solution
Unit does not power on.	No AC power; power cord loose; internal fuse blown.	Check AC outlet and power cord connection. If still no power, contact service.
No output voltage/current.	Output is OFF; current limit set too low; overload protection activated.	Press OUTPUT button to turn ON. Increase current limit. Check for short circuit in load.
Voltage/Current display is unstable.	Poor load connection; external interference.	Ensure secure connections. Move unit away from strong electromagnetic fields.
Unit overheats.	Blocked ventilation; excessive load.	Ensure clear ventilation. Reduce load or operating time.

8. SPECIFICATIONS

The following are key specifications for the GW Instek GPD-3303D DC Power Supply:

- **Output Channels:** Three independent outputs (CH1, CH2, Fixed)
- **Adjustable Outputs (CH1, CH2):** 0-30V, 0-3A each
- **Fixed Output:** 2.5V / 3.3V / 5V, 3A
- **Resolution:** 1mV / 1mA
- **Display:** 4-digit LED displays for Voltage and Current
- **Control:** Intuitive digital panel control with rotary encoder switch and rubber keys
- **Memory:** 4 sets of save/recall functions
- **Modes:** Tracking Series and Parallel mode

- **Cooling:** SMART cooling fan
- **Interface:** USB interface
- **Dimensions:** Approximately 14.09 x 13.07 x 9.45 inches (L x W x H)
- **Weight:** Approximately 16.99 Pounds (7.7 kg)
- **Included Accessories:** GTL-104 Test Leads (x2), GTL-105 Test Lead (x1)

9. WARRANTY AND SUPPORT

GW Instek products are designed for reliability and performance. This product comes with a standard manufacturer's warranty. For detailed warranty terms and conditions, please refer to the warranty card included with your product or visit the official GW Instek website.

For technical support, service, or inquiries regarding your GW Instek GPD-3303D, please contact your local distributor or GW Instek customer service. Contact information can typically be found on the GW Instek official website or in the product packaging.