



## **P3000 Series DC Power Supply User Manual**

■ P3033

■ P3053

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## Warranty Summary

Our company warrants that this product will be free from defects in materials and workmanship for a period of one year from the date of initial purchase from our company. This limited warranty is applicable only to the original purchaser and shall not be transferred to any third party. If the product is indeed defective within the warranty period, our company will provide repair or replacement services in accordance with the complete warranty statement.

If the product is proven to be defective within the applicable warranty period, our company may, at its sole discretion, either repair the defective product without charging for parts and labor, or replace the defective product with an equivalent product (as determined by our company). Parts, modules and replacement products used by our company for warranty purposes may be new or repaired to perform as well as new products. All replaced parts, modules and products shall become the property of our company.

To obtain the services promised by this warranty, the customer must notify our company of the defect within the applicable warranty period and make appropriate arrangements for the performance of the services. The customer shall be responsible for packing and shipping the defective product to the repair center designated by our company, and shall provide a copy of the purchase proof of the original purchaser.

This warranty does not apply to any defects, malfunctions or damages caused by accidents, normal wear and tear of machine parts, use beyond the specified scope of the product, improper use, or improper or insufficient maintenance.

Our company is not obligated to provide the following services under this warranty: a) Repairing damages caused by installation, repair or maintenance of the product by personnel other than our company's service representatives; b) Repairing damages caused by improper use or connection with incompatible equipment; c) Repairing any damages or malfunctions caused by the use of power supplies not provided by our company; d) Repairing products that have been modified or integrated with other products (if such modification or integration increases the time or difficulty of product repair).

If service is needed, please contact the nearest sales and service office of our company.

**Except for the warranties provided in this summary or the applicable warranty statement, our company makes no warranties of any kind, express or implied, including but not limited to the implied warranties of merchantability and fitness for a particular purpose. Our company shall not be liable for any indirect, special, or consequential damages.**

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# Chapter 1 Product Introduction

The P3000 series DC power supply is a new generation of high-quality linear DC power supplies. Both of its two channels can independently adjust voltage and current, with one channel providing a fixed 5V/3A output. It features automatic conversion between constant voltage and constant current modes, along with high stability, high reliability, and high precision. The output voltage and current of the two channels can be displayed simultaneously, offering an extremely high cost-performance ratio.

This series of power supplies has the following characteristics:

- Stepless servo and intelligent fan system
- Voltage and current preset function
- Independent control of output ON/OFF
- Over-temperature protection function
- High resolution of 10mV and 1mA
- Voltage and current range limitation function
- Both channels can independently adjust voltage and current
- One-key series and parallel connection function
- Capable of forming positive and negative voltages in parallel mode

# Chapter 2 Technical Specifications

## 2.1 Main Technical Specifications

DC Power Supply Technical Specification Table:

| Model                 |                     | P3033              |       |       | P3053       |       |       |
|-----------------------|---------------------|--------------------|-------|-------|-------------|-------|-------|
| channel               |                     | CH1                | CH2   | CH3   | CH1         | CH2   | CH3   |
| Rated Output          | Voltage             | 0~30V              | 0~30V | 5V    | 0~60V       | 0~60V | 5V    |
|                       | current             | 0~3A               | 0~3A  | 3A    | 0~5A        | 0~5A  | 3A    |
| load regulation       | Voltage             | ≤0.01%+5mV         |       | ≤15mV | ≤0.01%+5mV  |       | ≤15mV |
|                       | current             | ≤0.1%+5mA          |       | -     | ≤0.1%+5mA   |       | -     |
| line regulation       | Voltage             | ≤0.01%+5mV         |       | -     | ≤0.01%+5mV  |       | -     |
|                       | current             | ≤0.1%+5mA          |       | -     | ≤0.1%+5mA   |       | -     |
| set resolution        | Voltage             | 10mV               |       | -     | 10mV        |       | -     |
|                       | current             | 1mA                |       | -     | 1mA         |       | -     |
| readback resolution   | Voltage             | 10mV               |       | -     | 10mV        |       | -     |
|                       | current             | 1mA                |       | -     | 1mA         |       | -     |
| setpoint accuracy     | Voltage             | ≤0.03%+10mV        |       | -     | ≤0.03%+10mV |       | -     |
|                       | current             | ≤0.1%+5mA          |       | -     | ≤0.1%+5mA   |       | -     |
| readback accuracy     | Voltage             | ≤0.03%+10mV        |       | -     | ≤0.03%+10mV |       | -     |
|                       | current             | ≤0.1%+5mA          |       | -     | ≤0.1%+5mA   |       | -     |
| parallel mode         | power supply effect | ≤0.01%+5mV         |       | -     | ≤0.01%+5mV  |       | -     |
|                       | load effect         | ≤0.01%+5mV         |       | -     | ≤0.02%+5mV  |       | -     |
| series mode           | power supply effect | ≤0.01%+5mV         |       | -     | ≤0.02%+5mV  |       | -     |
|                       | load effect         | ≤0.01%+5mV         |       | -     | ≤0.01%+5mV  |       | -     |
| Ripple and Noise      | Voltage             | ≤2mV(rms)          |       |       |             |       |       |
|                       | Current             | ≤5mA(rms)          |       |       |             |       |       |
| interface             |                     | optional USB、RS232 |       |       |             |       |       |
| operating environment |                     | 0~40℃ ≤80%RH       |       |       |             |       |       |
| Size ( W*H*D )        | mm                  | 250*150*330        |       |       |             |       |       |
| Weight                | kg                  | 8                  |       |       |             |       |       |

## 2.2 Supplementary Features

Recommended calibration frequency: Once a year

Heat dissipation method: Forced air cooling

Operating ambient temperature: 0 to 40 °C

Storage ambient temperature: -15 to 80 °C

Operating environment: Designed for indoor use, pollution degree 2, maximum humidity 80%RH

# Chapter 3 Quick Start

This chapter will briefly introduce the appearance and basic functions of the P3000 series DC power supply, allowing you to quickly get to know the P3000 series DC power supply. It will also tell you the basic checks to be done after receiving the power supply to ensure the normal operation of the product.

## 3.1 Introduction to Front and Rear Panels

The front panel is shown in the figure below.

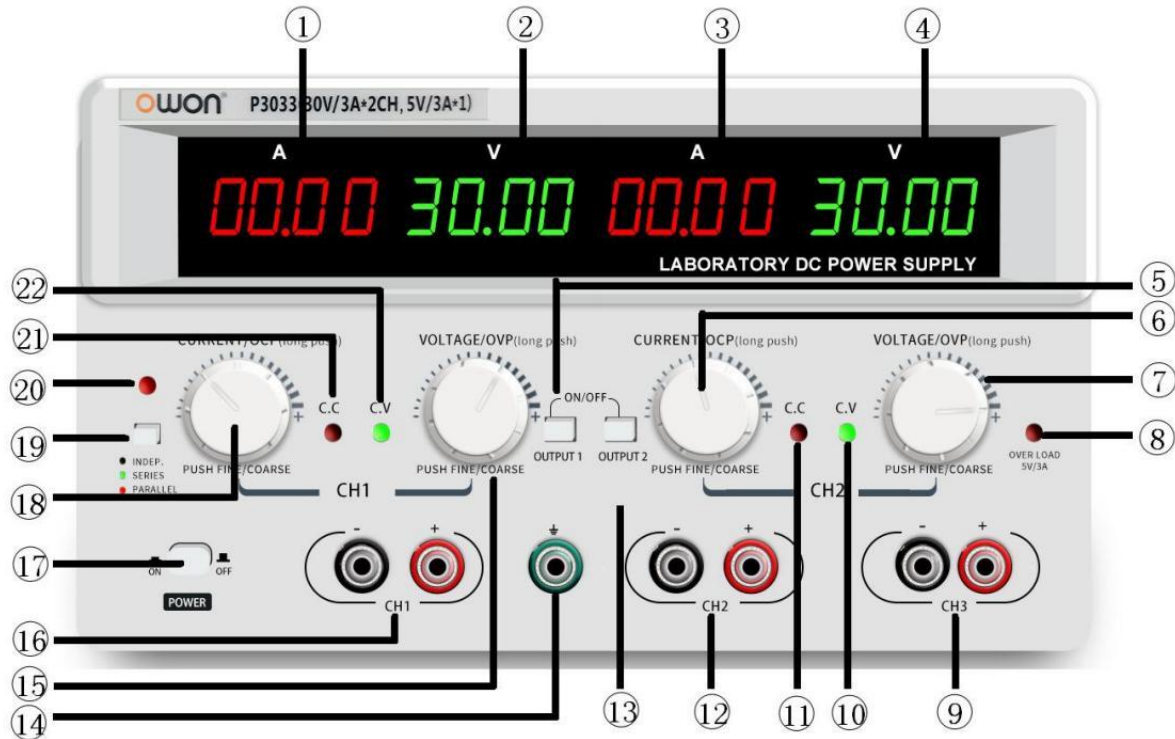


Figure 3.1

1. CH1 current display window;
2. CH1 voltage display window;
3. CH2 current display window;
4. CH2 voltage display window;
5. CH1 output switch;
6. CH2 current adjustment knob/OCP setting knob;
7. CH2 voltage adjustment knob/OVP setting knob;
8. CH3 overload indicator;
9. CH3 output terminal;
10. CH2 constant voltage indicator;
11. CH2 constant current indicator;
12. CH2 output terminal;
13. CH2 output switch;
14. ground terminal;
15. CH1 voltage adjustment knob/OVP setting knob;
16. CH1 output terminal;

- 
- 17. instrument power switch;
  - 18. CH1 current adjustment knob/OCP setting knob;
  - 19. one-key series-parallel/function menu button;
  - 20. series-parallel indicator;
  - 21. CH1 constant current indicator;
  - 22. CH1 constant voltage indicator;

**The rear panel is shown in the figure below.**



Figure 3.2 Rear Panel of DC Power Supply

- ① Instrument power input socket;
- ② Instrument power input changeover switch;
- ③ Heat dissipation holes;

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## 3.2 Pre-Inspection

Please follow the steps below to inspect the power supply to ensure it can be used normally.

### 1. Goods Inspection

Upon receiving the power supply, please check if you have received the following accessories. If any are missing, please contact your nearest distributor.

- ☐ One power cord (compliant with the local voltage standards)
- ☐ One operation manual (standard accessory)
- ☐ One warranty card (standard accessory)

### 2. Connect the Power Cord and Turn on the Power

After power is applied, the power supply will first perform a system self-test and then enter the standby state.



**Warning:** The power supply comes with a three core power cord, and your power supply should be connected to the three core junction box. Before operating this power supply, you should first ensure that the power supply is well grounded.

## 3.3 If the Power Supply Fails to Start

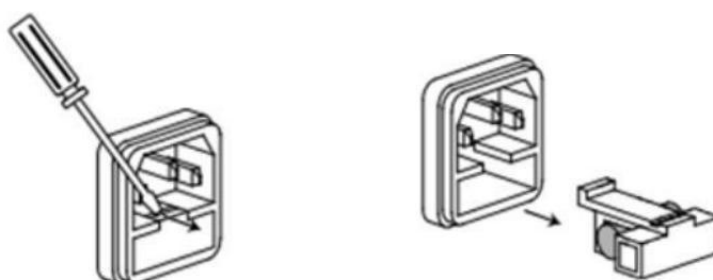
Use the following methods to resolve issues you may encounter when turning on the power supply.

1. Check if the power cord is properly connected.

| Model | Fuse Specifications |      |
|-------|---------------------|------|
|       | 230V                | 115V |
| P3033 | 5A                  | 8A   |
| P3053 | 5A                  | 8A   |

### 2. Fuse Replacement Method

Use a screwdriver to open the small plastic cover under the power input socket on the rear panel of the power supply (as shown in the figure below), and then you can see the fuse. Please use a fuse with matching specifications.



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## Chapter 4 Operating Instructions

This chapter will introduce the operation of the power supply's front panel in detail, including the following parts:

- Voltage/current setting
- Output on/off operation
- Series/parallel setting operation
- Menu setting operation
- Introduction to CH3 functions
- Introduction to initialization function

### 4.1 Voltage/Current Setting

When the power supply is in standby or output state, press the voltage/current knob lightly, and the corresponding setting digit on the screen will flash. At this time, you can turn the knob left or right to change the setting value—turning clockwise increases the value, and counterclockwise decreases it. When the setting value is flashing, press the knob lightly again to change the setting digit. If no operation is performed on the knob within 5 seconds, the system will automatically exit the setting state.

Notes:

The voltage/current setting methods for CH1 and CH2 are the same.

### 4.2 Output On/Off Operation

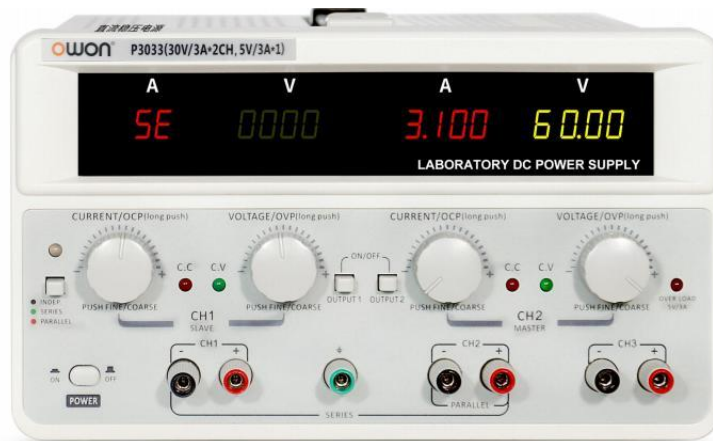
When the power supply is turned on, the ON/OFF buttons can be used to control the on/off state of the power supply output.

Notes:

1. The "OUTPUT1" button controls the on/off state of CH1.
2. The "OUTPUT2" button controls the on/off state of CH2.
3. In parallel or series mode, the main "OUTPUT2" button controls the on/off state of the power supply.
4. In parallel or series mode, the "OUTPUT1" button is inactive.

### 4.3 Series/Parallel Setting Operation

When the power supply is in standby or output state, press the left "One-Key Series-Parallel / Function Menu Button" lightly, and the power supply will enter the series/parallel working state. The CH1 current window will display the corresponding working state, as shown in the figure:



Series Mode



Parallel Mode



Independent Mode

Notes:

1. Press the left "One-Key Series-Parallel / Function Menu Button" once, and the power supply will enter the series working state. The current window will display "SE", and the series-parallel indicator will show green, as shown in "Series Mode". In this case, the output should be

connected to the negative terminal of CH1 and the positive terminal of CH2, and the on/off state of the power supply is controlled by the main "OUTPUT2" button.

2. Press the left "One-Key Series-Parallel / Function Menu Button" twice, and the power supply will enter the series/parallel working state. The current window will display "PA", and the series-parallel indicator will show red, as shown in "Parallel Mode". In this case, it is recommended that the output be connected to the positive and negative terminals of CH2, and the on/off state of the power supply is controlled by the main "OUTPUT2" button. If the current is too large, it is recommended to use appropriate wires to connect the positive terminals of CH1 and CH2 together, and the negative terminals of CH1 and CH2 together in parallel externally.

3. Press the left "One-Key Series-Parallel / Function Menu Button" three times, and the power supply will return to the independent working state, as shown in "Independent Mode". The series-parallel indicator will go off, and CH1 and CH2 will no longer be associated at this time.

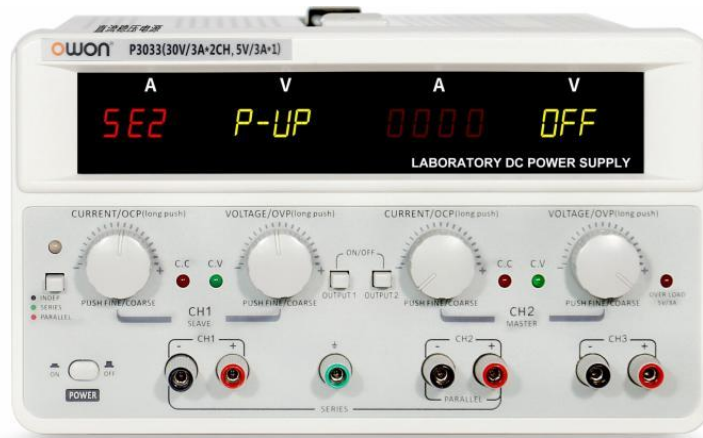
## 4.4 Menu Setting Operation

Long-press the left "One-Key Series-Parallel / Function Menu Button", and the power supply will enter the menu setting mode. The settings are as follows:

1. Power-on parameter retention setting: SE1 P-ST ON/OFF (ON means retaining the data at the last power-off, OFF means retaining the factory default values. Use the CH1 current knob to switch menu steps, use the CH2 voltage knob to switch between ON/OFF states, and press the "One-Key Series-Parallel / Function Menu Button" lightly to exit the menu.)



2. Power-on output state setting: SE2 P-UP ON/OFF (ON means maintaining the output state when the power is turned on, OFF means maintaining the off state when the power is turned on. Use the CH1 current knob to switch menu steps, use the CH2 voltage knob to switch between ON/OFF states, and press the "One-Key Series-Parallel / Function Menu Button" lightly to exit the menu.)



3. Buzzer sound setting: SE3 BEEP ON/OFF (ON means the buzzer sound is enabled, OFF means the buzzer sound is disabled. Use the CH1 current knob to switch menu steps, use the CH2 voltage knob to switch between ON/OFF states, and press the "One-Key Series-Parallel / Function Menu Button" lightly to exit the menu.)



4. CH1 voltage and current lower limit setting: SE4 CH1L 0.000 0.000 (The CH2 current display window shows the current lower limit value, and the CH2 voltage display window shows the voltage lower limit value. Use the CH1 current knob to switch menu steps. Press the CH2 current knob lightly, and the value in the current window will flash. At this time, you can turn the knob left or right to change the current lower limit value; press the knob lightly to switch the setting digit. Press the CH2 voltage knob lightly, and the value in the voltage window will flash. At this time, you can turn the knob left or right to change the voltage lower limit value; press the knob lightly to switch the setting digit. Press the "One-Key Series-Parallel / Function Menu Button" lightly to exit the menu.)



5. CH1 voltage and current upper limit setting: SE5 CH1H 5.100 31.00 (The CH2 current display window shows the current upper limit value, and the CH2 voltage display window shows the voltage upper limit value. Use the CH1 current knob to switch menu steps. Press the CH2 current knob lightly, and the value in the current window will flash. At this time, you can turn the knob left or right to change the current upper limit value; press the knob lightly to switch the setting digit. Press the CH2 voltage knob lightly, and the value in the voltage window will flash. At this time, you can turn the knob left or right to change the voltage upper limit value; press the knob lightly to switch the setting digit. Press the "One-Key Series-Parallel / Function Menu Button" lightly to exit the menu.)



6. CH2 Voltage and Current Lower Limit Setting: SE6 CH2L 0.000 0.000 (The CH2 current display window shows the current lower limit value, and the CH2 voltage display window shows the voltage lower limit value. Use the CH1 current knob to switch menu steps. Press the CH2 current knob lightly to make the current value flash, then turn the knob left/right to adjust the current lower limit. Press the knob again to change the setting digit. Similarly, press the CH2 voltage knob lightly to adjust the voltage lower limit. Press the "One-Key Series-Parallel/Function Menu Button" to exit the menu.)



7. CH2 Voltage and Current Upper Limit Setting: SE7 CH2H 5.100 31.00 (The CH2 current display window shows the current upper limit value, and the CH2 voltage display window shows the voltage upper limit value. Use the CH1 current knob to switch menu steps. Press the CH2 current knob lightly, and the value in the current window will flash; at this time, you can turn the knob left or right to change the current upper limit value, and press the knob lightly to switch the setting digit. Press the CH2 voltage knob lightly, and the value in the voltage window will flash; at this time, you can turn the knob left or right to change the voltage upper limit value; press the knob lightly to switch the setting digit. Press the "One-Key Series-Parallel/Function Menu Button" to exit the menu.)

upper limit value, and press the knob lightly to switch the setting digit. Press the "One-Key Series-Parallel / Function Menu Button" lightly to exit the menu.)



#### 4.5 Introduction to CH3 Function

CH3 is a fixed 5V/3A output channel. When the current exceeds approximately 3A, the CH3 overload indicator will light up. When the current exceeds 3.3A, the 5V output will be protected. To restore normal operation, simply remove the load when the indicator is lit or the output is in a protected state.

#### 4.6 Introduction to OCP/OVP Functions

Long-press the voltage/current adjustment knob to enter the OVP/OCP function setting mode. When the OVP/OCP values are set and the functions are enabled, if the output voltage or current of CH1/CH2 exceeds the set OVP/OCP values, the corresponding channel will display an OVP/OCP prompt and turn off the output. The settings are as follows:

1. OCP Setting: Long-press the CH1/CH2 current adjustment knob to enter the OCP function setting (as shown in the figure below). To change the OCP setting value, lightly press the CH1/CH2 current adjustment knob—the numbers in the corresponding current window will flash. Adjust the setting value by turning the knob left or right. In the setting state, lightly press the knob to switch the setting digit (the CH1 current adjustment knob sets the OCP for CH1, and the CH2 current adjustment knob sets the OCP for CH2). To enable or disable the OCP function, lightly press the CH1/CH2 voltage adjustment knob, then turn the knob left or right to switch between ON/OFF (ON enables the OCP function, OFF disables it; the CH1 voltage adjustment knob controls the enabling/disabling of CH1's OCP function, and the CH2 voltage adjustment knob controls the enabling/disabling of CH2's OCP function).



2. OVP Setting: Long-press the CH1/CH2 voltage adjustment knob to enter the OVP function setting (as shown in the figure below). To change the OVP setting value, lightly press the CH1/CH2 voltage adjustment knob—the numbers in the corresponding voltage window will flash. Adjust the setting value by turning the knob left or right. In the setting state, lightly press the knob to switch the setting digit (the CH1 voltage adjustment knob sets the OVP for CH1, and the CH2 voltage adjustment knob sets the OVP for CH2). To enable or disable the OVP function, lightly press the CH1/CH2 current adjustment knob, then turn the knob left or right to switch between ON/OFF (ON enables the OVP function, OFF disables it; the CH1 current adjustment knob controls the enabling/disabling of CH1's OVP function, and the CH2 current adjustment knob controls the enabling/disabling of CH2's OVP function).



3. OCP Protection: When the output current exceeds the OCP set value, the current window of this channel will display "OCP" and turn off the output (as shown in the figure below). Channels CH1 and CH2 have independent OCP settings and protection functions; they are not associated with each other. Only the channel that exceeds the set value will be turned off, while the other channel will continue to maintain its output state.



CH1 OCP Protection Alert



CH2 OCP Protection Alert

4. OVP Protection: When the output voltage exceeds the OVP set value, the voltage window of this channel will display "OVP" and turn off the output (as shown in the figure below). Channels CH1 and CH2 have independent OVP settings and protection functions; they are not associated with each other. Only the channel that exceeds the set value will be turned off, while the other channel will continue to maintain its output state.



CH1 OVP Protection Alert



CH2 OVP Protection Alert

## 4.7 Introduction to Initialization Function

Press and hold the left "One-Key Series-Parallel / Function Menu Button" while powering on the device to reset all "Function Menu" settings to their factory defaults. After successful initialization, the power supply will emit three beeps ("beep-beep-beep"). The initialized settings are as follows:

1. Power-on parameter retention: SE1 P-ST ON
2. Power-on output state: SE2 P-UP OFF
3. Buzzer sound: SE3 BEEP ON
4. CH1 voltage/current lower limits: SE4 CH1L 0.000 0.000
5. CH1 voltage/current upper limits: SE5 CH1H [Max Voltage] [Max Current]
6. CH2 voltage/current lower limits: SE6 CH2L 0.000 0.000
7. CH2 voltage/current upper limits: SE7 CH2H [Max Voltage] [Max Current]

Note:

The initialized upper limits for voltage and current may vary slightly depending on the device model. After initialization, these values will be set to the maximum rated values for the specific model.

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# Chapter 5 Appendix

## 5.1 Appendix A: Accessories

(The pictures are for reference only. Please refer to the actual product.)

Standard accessories:



Power cord



User  
Manual



Output Cable

## 5.2 Appendix B: Maintenance and Cleaning

General Maintenance

Do not store or place the instrument in a location where the LCD screen is exposed to direct sunlight for extended periods.

Caution: Keep sprays, liquids, and solvents away from the instrument to avoid damage.

Cleaning

Inspect the instrument regularly based on usage. Follow these steps to clean the exterior surface of the instrument:

1. Wipe off loose dust from the exterior using a soft cloth. When cleaning the LCD screen, take care not to scratch the transparent LCD protective panel.
2. Wipe the instrument with a damp (but not dripping) soft cloth. Ensure the power is disconnected before doing so. A mild detergent or clean water can be used for cleaning. Do not use any abrasive chemical cleaners, as they may damage the instrument.



**Warning:** Before reconnecting the power for use, ensure the instrument is completely dry to avoid electrical short circuits or even personal injury caused by moisture.

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