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## Jesverty SPS-3010 & JDS210

# Jesverty DC Power Supply Variable & Digital Oscilloscope User Manual

Models: SPS-3010 (DC Power Supply) & JDS210 (Digital Oscilloscope)

## 1. INTRODUCTION

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This manual provides detailed instructions for the safe and effective operation, maintenance, and troubleshooting of your Jesverty DC Power Supply (SPS-3010) and Digital Oscilloscope (JDS210). Please read this manual thoroughly before using the devices to ensure proper functionality and to prevent damage or injury.



Figure 1.1: Jesverty DC Power Supply SPS-3010 and Digital Oscilloscope JDS210.

## 2. SAFETY INSTRUCTIONS

Always observe the following safety precautions to prevent electric shock, injury, or damage to the devices:

- Ensure the power supply voltage matches the local mains voltage before connecting.
- Do not operate the devices in wet or damp conditions.
- Do not open the casing of the devices. Refer all servicing to qualified personnel.
- Ensure proper ventilation; do not block cooling vents.
- Disconnect power before making or breaking connections to the output terminals.
- Use only specified probes and accessories with the oscilloscope.
- Be aware of the maximum input voltage ratings for the oscilloscope channels.



Figure 2.1: The power supply features multiple protection mechanisms including Short Circuit, Leakage, Thermal, Over Voltage, and Overload Protection to ensure safety and extend product life.

### 3. PRODUCT OVERVIEW AND COMPONENTS

#### 3.1 DC Power Supply (SPS-3010)

The Jesverty SPS-3010 is a variable DC power supply offering adjustable voltage and current output. It features a 4-digit LED display for real-time monitoring of V/A/W.

# Component Names



- ① Voltage Display
- ② Current Display
- ③ Power Display
- ④ C.V. Mode Indicator
- ⑤ C.C. Mode Indicator
- ⑥ Voltage Knob (Coarse)
- ⑦ Current Knob (Coarse)
- ⑧ Voltage Knob (Fine)
- ⑨ Current Knob (Fine)
- ⑩ USB Charging Port (5V/2A)

- ⑪ Output Terminal + (Red)
- ⑫ Grounding Terminal (Green)
- ⑬ Output Terminal - (Black)
- ⑭ Power Switch
- ⑮ Cooling Fan
- ⑯ AC Power Inlet
- ⑰ Fuse Box (Spare Fuse Inside)

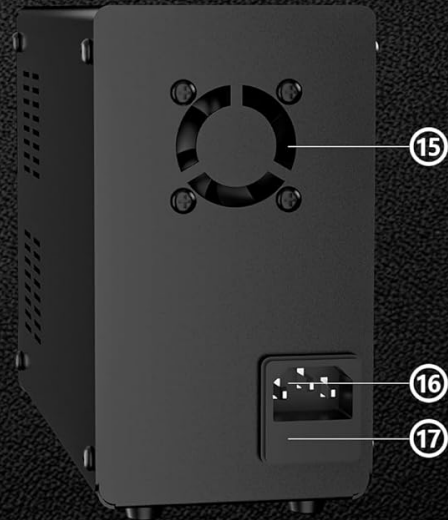


Figure 3.1: Front and Rear Panel Components of the SPS-3010 DC Power Supply.

1. Voltage Display
2. Current Display
3. Power Display
4. C.V. Mode Indicator (Constant Voltage)
5. C.C. Mode Indicator (Constant Current)
6. Voltage Knob (Coarse Adjustment)
7. Current Knob (Coarse Adjustment)
8. Voltage Knob (Fine Adjustment)
9. Current Knob (Fine Adjustment)
10. USB Charging Port (5V/2A)
11. Output Terminal + (Red)
12. Grounding Terminal (Green)
13. Output Terminal - (Black)
14. Power Switch
15. Cooling Fan

16. AC Power Inlet
17. Fuse Box (Spare Fuse Inside)

### 3.2 Digital Oscilloscope (JDS210)

The Jesverty JDS210 is a 100MHz dual-channel digital oscilloscope designed for precise waveform analysis.



Figure 3.2: Front Panel of the JDS210 Digital Oscilloscope.

Key controls include:

- **Display:** 7-inch TFT LCD (800x480 resolution) for waveform visualization.
- **Horizontal Controls:** Scale and Position knobs for time base adjustment.
- **Vertical Controls:** Scale and Position knobs for voltage per division adjustment for each channel (CH1, CH2).
- **Trigger Controls:** For stabilizing repetitive waveforms.
- **Function Buttons:** Auto, Utility, Measure, Acquire, Cursor, Copy, Single, Run/Stop, Math, Menu, Force.
- **Input Channels:** CH1 and CH2 BNC connectors.
- **USB Port:** For data storage and transfer.



## 4. SETUP

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### 4.1 DC Power Supply (SPS-3010) Setup

1. **Placement:** Place the power supply on a stable, level surface with adequate ventilation. Ensure cooling fan vents are not obstructed.
2. **Power Connection:** Connect the supplied AC power cord to the AC Power Inlet (16) on the rear panel and plug it into a grounded wall outlet.
3. **Output Connections:** Connect your load to the Output Terminals: Red (+) to positive, Black (-) to negative. The Green (GND) terminal is for chassis ground.
4. **Initial Power On:** Ensure Voltage and Current knobs are set to minimum before turning on the Power Switch (14).

### 4.2 Digital Oscilloscope (JDS210) Setup

1. **Placement:** Place the oscilloscope on a stable, flat surface.
2. **Power Connection:** Connect the supplied power adapter to the oscilloscope's power input and then to a power outlet.
3. **Probe Connection:** Connect the oscilloscope probes to the CH1 or CH2 BNC input connectors. Ensure the probe's attenuation setting (e.g., 1X, 10X) matches the oscilloscope's probe setting. The oscilloscope supports 1X/10X/100X/1000X probes.
4. **Probe Compensation:** Before taking measurements, compensate your probes. Connect the probe to CH1 and the probe tip to the probe compensation output (usually a small terminal near the BNC inputs). Adjust the probe until a perfect square wave is displayed.

## 5. OPERATING INSTRUCTIONS

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### 5.1 DC Power Supply (SPS-3010) Operation

1. **Power On:** Press the Power Switch (14). The LED display will illuminate.
2. **Setting Voltage:** Use the Voltage Coarse (6) and Fine (8) knobs to set the desired output voltage. The Voltage Display (1) shows the current setting.
3. **Setting Current Limit:** Use the Current Coarse (7) and Fine (9) knobs to set the maximum output current. This acts as a current limit to protect your circuit. The Current Display (2) shows the current limit.
4. **Constant Voltage (C.V.) and Constant Current (C.C.) Modes:**
  - When the load resistance is high, the power supply operates in C.V. mode (Constant Voltage), indicated by the C.V. Mode Indicator (4). The output voltage remains constant at the set value.
  - When the load resistance is low, causing the current to reach the set limit, the power supply automatically switches to C.C. mode (Constant Current), indicated by the C.C. Mode Indicator (5).

The output current remains constant at the set limit, and the voltage drops.

5. **USB Charging Function:** The 5V/2A USB Charging Port (10) can be used to charge compatible devices. This port provides a fixed 5V output at up to 2A, independent of the main output settings.



Figure 5.1: The SPS-3010 supports 5V/2A USB charging for various devices.

## 5.2 Digital Oscilloscope (JDS210) Operation

1. **Power On/Off:** Press the power button on the front panel to turn the oscilloscope on or off.
2. **Auto-Ranging:** Press the 'Auto' button for automatic setup of vertical, horizontal, and trigger settings to display a stable waveform.
3. **Channel Selection:** Use the CH1 and CH2 buttons to enable or disable channels.
4. **Vertical Scaling (Voltage):** Use the 'Scale' knob for each channel (V/Div) to adjust the vertical sensitivity. The 'Position' knob moves the waveform vertically.
5. **Horizontal Scaling (Time):** Use the 'Scale' knob (s/Div) to adjust the time base. The 'Position' knob moves the waveform horizontally.
6. **Triggering:** Adjust the 'Trigger' level knob to stabilize the waveform. The trigger mode can be set via the menu.

7. **Measurements:** Use the 'Measure' button to access automatic measurements (e.g., Vpp, Vrms, Frequency). Use the 'Cursor' button to enable manual cursors for precise voltage ( $\Delta V$ ) and time ( $\Delta T$ ) measurements.
8. **USB Storage:** Connect a USB drive to the USB port to save waveform data or screenshots. Use the 'Copy' button or menu options to transfer data.



Figure 5.2: The JDS210 oscilloscope provides a clear display for waveform analysis.

## 6. MAINTENANCE

- **Cleaning:** Disconnect power before cleaning. Use a soft, dry cloth to clean the exterior. Do not use abrasive cleaners or solvents.
- **Ventilation:** Regularly check that the cooling vents on both devices are clear of dust and debris. Use compressed air if necessary to clear dust from the fan and vents.
- **Storage:** Store the devices in a cool, dry place away from direct sunlight and extreme temperatures.
- **Fuse Replacement (SPS-3010):** If the power supply does not turn on, check the fuse located in the Fuse Box (17) on the rear panel. Replace with a fuse of the same type and rating if blown. A spare fuse is typically included inside the fuse box.

## 7. TROUBLESHOOTING

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

- **No Power:**
  - Check if the power cord is securely connected to the device and the wall outlet.
  - Verify the wall outlet has power.
  - For SPS-3010, check and replace the fuse if necessary (refer to Maintenance section).
- **SPS-3010 Output Voltage/Current Not Stable or Zero:**
  - Ensure output terminals are correctly connected to the load.
  - Check if the current limit is set too low for the load. Increase the current limit using the current knobs.
  - If in C.C. mode, the voltage will drop to maintain the set current. This is normal operation.
- **JDS210 No Waveform or Unstable Waveform:**
  - Ensure probes are correctly connected to the oscilloscope and the circuit under test.
  - Check probe compensation.
  - Adjust vertical (V/Div) and horizontal (s/Div) scales.
  - Adjust the trigger level or use the 'Auto' button.
  - Verify the input signal is within the oscilloscope's measurement range.
- **Display Issues:**
  - If the display is blank or distorted, power cycle the device.
  - Ensure proper ventilation to prevent overheating.

If problems persist, contact Jesverty customer support for assistance.

## 8. SPECIFICATIONS

### 8.1 DC Power Supply (SPS-3010)

Parameter	Value
Output Voltage	0-30V (Adjustable)
Output Current	0-10A (Adjustable)
Maximum Power	300 Watts
Display Resolution (Voltage)	0.01V
Display Resolution (Current)	0.001A
Display Resolution (Power)	0.1W
USB Port Output	5V/2A

### 8.2 Digital Oscilloscope (JDS210)

Parameter	Value
Bandwidth	100MHz
Channels	2
Real-Time Sampling Rate	500 MS/s
Time Base Range	2 ns/Div to 1000 s/Div
Vertical Scaling	20 mV/Div to 5 V/Div
Display	7-inch TFT LCD (800x480 resolution)
Waveform Storage	Up to 16 waveform sets
Sampling Points	10K+ per acquisition
Probe Compatibility	1X/10X/100X/1000X

## 9. WARRANTY AND SUPPORT

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Jesverty products are designed for reliability and performance. For warranty information, technical support, or service inquiries, please refer to the contact information provided with your product packaging or visit the official Jesverty website. Please have your model number (SPS-3010 or JDS210) and purchase details ready when contacting support.