

# PS303 and PS305 Regulated DC Power Supplies



## ***Introduction***

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Congratulations on your purchase of the Triplett PS303/PS305 Regulated DC Power Supply. These DC power supplies are high-quality and stable devices that output pure and reliable signals. Other features include 4-digit voltage and current LED display, short-circuit protection, overload protection, and reverse polarity protection and more. These power supplies are ideal tools for university and technical trade schools, electronics production lines, household appliance repair companies, etc.

## Specifications

| Model | Voltage output range | Current output range |      | LED display digits |
|-------|----------------------|----------------------|------|--------------------|
|       | 0-30V                | 0-3A                 | 0-5A | 4 digits           |
| PS303 | ●                    | ●                    |      | ●                  |
| PS505 | ●                    |                      | ●    | ●                  |

### Technical Parameters

#### Operating Conditions

Operating voltage: AC 110V/220V  $\pm$  5% 50Hz/60Hz

Operating conditions: Temperature 0°C~40°C, relative humidity  $\leq$ 85%

Storage conditions: Temperature -10°C~80°C, relative humidity  $\leq$ 80%

#### Technical specifications

| Basic Function                         | Technical specifications        |                                 |
|--|---------------------------------|---------------------------------|
| Model                                  | PS303                           | PS305                           |
| Rated output voltage                   | 0~30V                           | 0~30V                           |
| Rated output current                   | 0~3A                            | 0~5A                            |
| Output power                           | 96W                             | 160W                            |
| Load regulation                        | Voltage: $<0.01\% + 3\text{mV}$ | Voltage: $<0.01\% + 5\text{mV}$ |
|  | Current: $<0.1\% + 5\text{mA}$  | Current: $<0.1\% + 10\text{mA}$ |
| Line regulation                        | Voltage: $<0.01\% + 3\text{mV}$ | Voltage: $<0.01\% + 3\text{mV}$ |
|  | Current: $<0.1\% + 3\text{mA}$  | Current: $<0.1\% + 3\text{mA}$  |
| Setting resolution<br>(25°C $\pm$ 5°C) | Voltage: 10mV                   | Voltage: 10mV                   |
|  | Current: 1mA                    | Current: 1mA                    |

|                                  |   |  |
|----------------------------------|---|--|
| Setting accuracy<br>(20Hz~20MHz) | Voltage: <math><0.5\% + 20\text{mV}</math>                        | Voltage: <math><0.5\% + 20\text{mV}</math> |
|                                  | Current: <math><0.5\% + 5\text{mA}</math>                         | Current: <math><0.5\% + 10\text{mA}</math> |
| Ripple and noise                 | Voltage: <math>\leq 1\text{mVrms}</math>                          | Voltage: <math>\leq 2\text{mVrms}</math>   |
|                                  | Current: <math>\leq 3\text{mA rms}</math>                         | Current: <math>\leq 3\text{mA rms}</math>  |
| Recall resolution                | Voltage: 10mV   | Voltage: 10mV                              |
|                                  | Current: 1mA  | Current: 1mA                               |
| Temperature coefficient          | Voltage: <math>\leq 300\text{ppm}/^\circ\text{C}</math>           |  |
|                                  | Current: <math>\leq 300\text{ppm}/^\circ\text{C}</math>           |  |
| Instantaneous response time      | <math><100\mu\text{s}</math> (50% load change, minimum load 0.5A) |  |
| <b>Display</b>                   |   |  |
| Display type                     | 4-digit voltage and current LED display                           |  |
| <b>Power</b>                     |   |  |
| Voltage                          | AC 110V/220V± 5%  |  |
| Frequency                        | 50Hz/60Hz   |  |
| <b>Mechanical specifications</b> |   |  |
| Dimensions(W*H*D)                | 105mm*155mm*210mm   |  |
| Weight                           | 3kg   | 4kg  |

## Front Panel

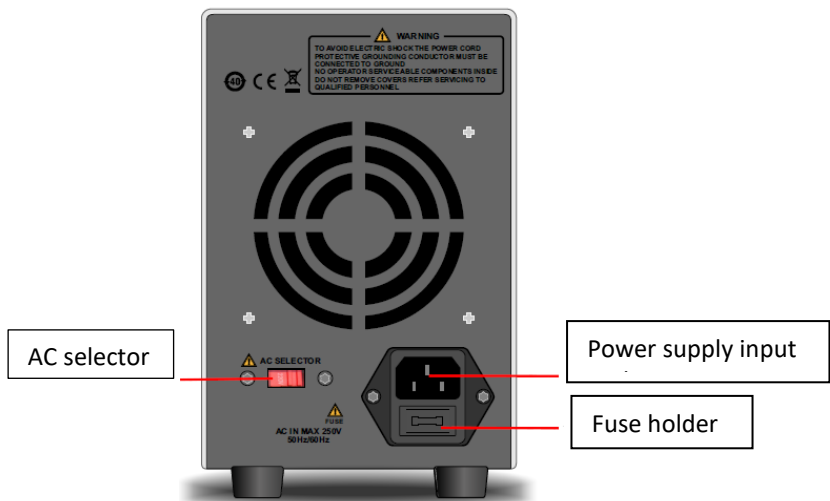
- 1) Power button
- 2) CC (constant current) indicator: This indicator is on during constant current operation.
- 3) CV (constant voltage) indicator: This indicator is on during constant voltage operation.
- 4) Voltage display
- 5) Current display
- 6) Voltage coarse adjustment knob: Turn it clockwise to increase the output voltage and turn it counterclockwise to decrease the output voltage.
- 7) Voltage fine adjustment knob: Turn it clockwise to increase the output voltage and turn it counterclockwise to decrease the output voltage. FINE and COARSE can be used together to adjust the output voltage to the exact value required.
- 8) Current coarse adjustment knob: Turn it clockwise to increase the output current and turn it counterclockwise to decrease the output current.
- 9) Current fine adjustment knob: Turn it clockwise to increase the output current and turn it counterclockwise to decrease the output current. FINE and COARSE can be used together to adjust the output current to the exact value required.
- 10) 0~30V output terminal “-”pole (black).
- 11) Ground terminal (GND, green): This terminal is connected to the chassis and the ground wire of the power cord.
- 12) 0~30V output terminal “+”pole (red).

### Note:

*A temperature recovery fuse is installed inside the transformer of the product, when the internal temperature of the transformer exceeds 130 degrees, the temperature recovery fuse is automatically disconnected, and the transformer is powered off; when the temperature drops below 130 degrees, the temperature recovery fuse is automatically connected, and the transformer starts to supply power.*



## Rear Panel



## **Operation and Protective Measures**

- 1) Switch the POWER to the off state and connect the power cord attached to the power supply. Connect the L terminal of the power cord plug to the live wire of the power socket. The ground wire of the power cord should be ensured a good connection to the ground.
- 2) The PS303/PS305 is a floating type power supply. If grounding is required in use, connect the 0~30V output terminals “+”pole or “-”pole on the front panel to the GND with a wire.
- 3) To ensure good ventilation, keep a gap of 10cm between the upside/downside/left side/right side and other objects. Do not expose this device to dusty environment, corrosive gases and other harmful substances.
- 4) Constant voltage output: Switch the POWER switch to the on state. The CV indicator will be on and the power supply will be under constant voltage operation. Adjust VOLTAGE knobs (COARSE and FINE) to obtain desired output voltage.
- 5) Constant current output: When no load is present, adjust the output voltage within 2~ 5V and counterclockwise turn the CURRENT knobs (COARSE and FINE) to “0” position. Use a wire size not less than 0.5mm<sup>2</sup> to short-circuit the 0~30V output terminals “+” pole and “-” pole. At this time, the CC indicator will be on. Adjust the CURRENT knobs to reach the desirable current and disconnect the short-circuited wire.
- 6) In order to match the specifications, the power supply should be used after warming up for 15 minutes.

### **Packing List**

- |                    |     |
|--------------------|-----|
| 1) DC power supply | 1pc |
| 2) Power cord      | 1pc |
| 3) User manual     | 1pc |
| 4) Fuse            | 1pc |

## Check before Booting

AC input power and AC selector settings

| Model | AC input power | AC selector | Fuse specifications |
|-------|----------------|-------------|---------------------|
| PS303 | 110Vac<br>±5%  | 110Vac      | F2.5AL250V          |
|       | 220Vac<br>±5%  | 220Vac      | F2AL250V            |
| PS305 | 110Vac<br>±5%  | 110Vac      | F3.15AL250V         |
|       | 220Vac<br>±5%  | 220Vac      | F2.5AL250V          |

Please follow the steps below before booting.

1. Check the input power

Make sure that the AC power cord meets the requirements in the AC input power column above (NOTE: Maximum input voltage  $\leq$  250V).

2. Check the AC selector

Make sure that the settings of the AC selector on the rear panel of the device match the actual AC input power (please refer to the form above).

3. Check the fuse

Check to see if the fuse specifications match the fuse required for the input voltage (please refer to the form above).

## **Maintenance**

- 1) If the supply voltage is normal and the CC and CV indicators are not on or the digits are not displayed after starting up, the fuse may be blown or there may be other malfunctions. Turn off the power switch and unplug the power cord, then replace the fuse or seek professional advice.
- 2) At constant voltage state, if the output voltage is less than the preset value and the CC indicator is on (current protection), the device will automatically switch to the constant current working state. Users should check the load or increase the maximum current as required (adjust the CURRENT knobs clockwise).
- 3) At constant current state, if the output current is less than the preset value and the CV indicator is on (open circuit voltage protection), the device will automatically switch to the constant voltage working state. Users should check the load or increase the maximum voltage as required (adjust the VOLTAGE knobs clockwise).
- 4) At constant voltage state, if the device is unstable, the AC supply voltage may be lower than 99V/198V. If any malfunction is serious and cannot be resolved, please contact your local dealer.

### **Warranty Information**

Triplett / Jewell Instruments extends the following warranty to the original purchaser of these goods for use. Triplett warrants to the original purchaser for use that the products sold by it will be free from defects in workmanship and material for a period of (1) one year from the date of purchase. This warranty does not apply to any of our products which have been repaired or altered by unauthorized persons in any way or purchased from unauthorized distributors so as, in our sole judgment, to injure their stability or reliability, or which have been subject to misuse, abuse, misapplication, negligence, accident or which have had the serial numbers altered, defaced, or removed. Accessories, including batteries are not covered by this warranty

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