04.07.03.264

VARIABLE DC POWER SUPPLY
REGULATED DUAL-LINE OUTPUT

OPERATION INSTRUCTION

English

Made in China

Thank you for purchasing this product. Please read the manual carefully before operating and keep this manual for future reference.

● This product should not be thrown in the garbage. In accordance with the European directive 2012/19/EU, electronic equipment at the end of their life must be collected & returned to an authorized recycling facility. ● Este producto no debe desecharse en la basura. De acuerdo a la directiva europea 2012/19/EU, los equipos electrónicos al final de su vida se deberàn recoger y trasladar a una planta de reciclaje autorizada. ● Dieses Produkt sollte nicht mit dem Hausmüll entsorgt werden. In Übereinstimmung mit der europäischen Richtlinie 2012/19/EU müssen elektronische Geräte am Ende ihrer Lebensdauer eingesammelt und einem autorisierten Recyclingbetrieb zugeführt werden.

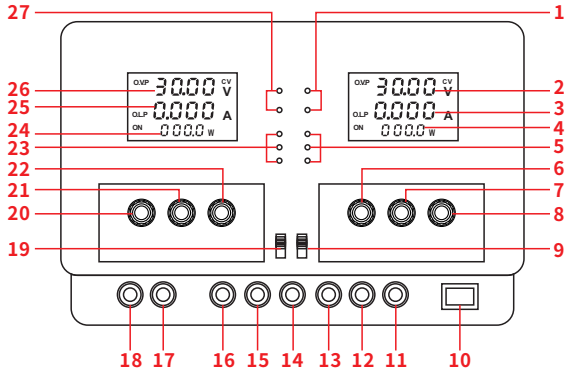
SPECIFICATIONS

Operation Mode		Constant Voltage / Constant Current
Types of Protection		Current/Voltage Limiting, Short-Circuit Protection, Overheat Protection
Cooling		Air-Cooled
Main Unit Dimensions		L370xW250xH160mm ±5mm
Operating Ambient Temperature		-10°C~40°C /14°F~104°F
Relative Humidity		<90%
Line I /II Independent		
Output Range (Voltage)		0~30V
Output Range (Current)		0~5A
Line Regulation		CV≤0.01%+1mV
		CC≤0.2%+1mA
Load Regulation		CV≤0.01%+5mV（I≤3A）/CC≤0.2%+5mA（I≤3A）
		CV≤0.01%+7mV（I>3A）/CC≤0.2%+10mA（I>3A）
Ripple & Noise(5Hz-1MHz)		CV≤0.5mVrms（I≤3A）/CC≤3mArms（I≤3A）
		CV≤1mVrms（I>3A）/CC≤5mArms（I>3A）
Accuracy (Voltage)		±0.5%rdg+2 Units
Accuracy (Current)		±0.5%rdg+2 Units
Display Resolution		±0.5%rdg+2 Units
Line III Output Characteristics		
Output Range (Rated Voltage)		2.5V/3.3V/5V±0.1V
Output Range (Rated Current)		3A
Line Regulation		≤1mV
Load Regulation		≤10mV
Ripple & Noise (5Hz-1MHz)		≤1mVrms
Tracking Characteristics		
Charact-eristics (In Series)	Line Regulation	≤1mV
	Load Regulation	≤30mV
	Ripple & Noise (5Hz-1MHz)	≤1mVrms
Charact-eristics (In Parallel)	Ripple & Noise (5Hz-1MHz)	CV≤0.5mVrms（I≤6A）
		CV≤1mVrms（I>6A）

I. APPLICATIONS & FEATURES

Developed specifically for scientific research, product development, test labs, higher education institutes, laptop repair labs, and electronic assembly lines. This dual-line regulated DC power supply's voltage and current values are variable / adjustable within the specified range. The unit comes with large LCD display, hidden knob mechanism to prevent mis-adjusting. The dual-line of power output can operate independently, and perform automatic tracking on series, or parallel circuits. The third line has 3 sets of constant output of 2.5V, 3.3V, or 5V for your selection. The unit is highly precise, reliable, and is equipped with a full set of overload protection circuitry, making it an ideal choice for the industry.

II. CONTROL PANEL GUIDE



1. *Line II – C.V. / C.C. Indicator (Constant Voltage / Constant Current)*
2. *Line II – Output Voltage*
3. *Line II – Output Current*
4. *Line II – Output Power*
5. *Series/Parallel/Independent Mode Indicator (PAR – Parallel/IND – Independent/SER-Series)*
6. *Line II – Current Adjustment Knob*
7. *Line II – Voltage Fine Adjustment Knob*
8. *Line II – Voltage Coarse Adjustment Knob*
9. *Series/Parallel/Independent Mode Selector Switch*
10. *Power Switch*
11. *Line II – Output Terminal (Positive +)*
12. *Terminal (Ground GND)*
13. *Line II – Output Terminal (Negative -)*
14. *Line I – Output Terminal (Positive +)*
15. *Terminal (Ground GND)*
16. *Line I – Output Terminal (Negative -)*
17. *Line III – Output Terminal (Positive +)*
18. *Line III – Output Terminal (Negative -)*
19. *Line III – Output Voltage Selector Switch*
20. *Line I – Current Adjustment Knob*
21. *Line I – Voltage Fine Adjustment Knob*
22. *Line I – Voltage Coarse Adjustment Knob*
23. *Line III – Output Voltage Indicator*
24. *Line I – Output Power*
25. *Line I – Output Current*
26. *Line I – Output Voltage*
27. *Line I – C.V. / C.C. Indicator (Constant Voltage/Constant Current)*

III. OPERATION

1. Connect the power supply's power cord to an electrical outlet.
2. Turn ON the power supply, and the C.V. Indicator turns ON (The current coarse and fine adjustment knobs are not at 0). The current and voltage display turns ON, and the current display will show value "0000", the voltage display will show the output voltage.
3. Adjust the voltage fine/coarse adjustment knob to set the desired voltage (When the voltage coarse and fine adjustment knobs are not at 0).

4. C.C. Mode (Constant Current)

4-1. Set the voltage coarse/fine adjustment knob to any value between 2V to 5V. (When the current coarse/fine adjustment knobs are not at 0)
4-2. Then, turn the current adjustment knob to 0 (Turn all the way anticlockwise).
4-3. Use the leads to connect the positive end "+" and negative end "-".
4-4. Then, turn clockwise the current adjustment knob and adjust to the desired current value for use.

5. Connect the power supply's positive "+" and negative "-" pole to the load to begin powering the load.

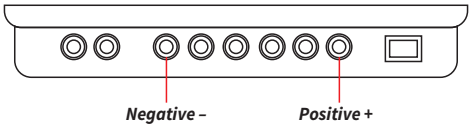
6. Characteristics of Constant Voltage / Constant Current

This power supply's key function is referred to as "automatic C.V. and C.C. switching". This power supply can switch between C.V. mode and C.C. mode automatically based on the load change connected to the power supply. We refer to the change between modes as the point of change.

How it works: If the load puts the DC power supply in C.V. (Constant Voltage) Mode, then the power supply will output stabilized voltage (with the CV indicator ON). As the load increases, the output voltage will remain stabilized until it reaches the preset current. At this point, the output current will remain stabilized (with the CC indicator ON). As the load increases the output voltage will decrease in ratio to the load increase. The change from C.C. (Constant Current) mode to C.V. (Constant Voltage mode) occurs as the load decreases.

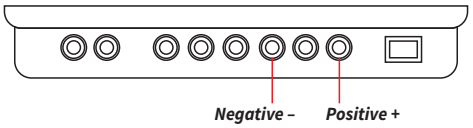
7. Independent Mode

Slide the tracking mode selector switch to the "IND" pole., and the display shows "IND". In this mode, the power supply's output voltage and current will be controlled via the voltage and current adjustment knobs on the line's control panel.



8. Tracking Mode (Series Connection)

Slide the tracking mode selector switch to the "SER" pole, and its LED indicator light turns on. In this mode, the power supply's voltage value and output voltage is controlled via the line II's voltage adjustment knobs. The output current is controlled via the line I and II's current adjustment knobs. When any line's current enters the constant current mode, the output current stays constant. At this point, the power supply's positive output terminal is line II's positive output terminal, the negative terminal is the line I's negative output terminal. As shown in the graph, to allow better series tracking, we recommend shorting the Line I Positive Output Terminal with Line II Negative terminal with wire / test leads that are in AWG20# specifications or above.



9. When the internal temperature of the power supply is equal to or greater than 45°C / 113°F, the fan will automatically turn ON to cool the power supply.

10. Overheat Protection

This power supply is equipped with a full set of overheat protection measures, which protects the power supply's internal components from over heating/failing and burning devices under abnormal operation conditions. If the power supply's transformer is overheating, the power supply will automatically cut off the AC input voltage. When the power supply's internal component is overheating, the power supply will cut off the output. When the power supply's internal temperature cools to its normal range, the power supply will return to its normal operation state.

IV. MAINTENANCE & PRECAUTIONS

1. When charging the battery, DO NOT connect the positive and negative poles incorrectly.
2. The power supply cannot be used in its full output capacity for a long period, and please control the usage rate within 60%. Failure to do so may result in premature failure of the power supply caused by human error. Set aside additional current capacity based on your application when ordering this unit.
3. The cooling fan is located at the rear of the station, reserve enough room for sufficient cooling. When the power supply is turned ON, the cooler will automatically turn ON. DO NOT USE the power supply in environments where the ambient temperature is above 40°C/104°F.
4. As the output power is relatively high, DO NOT short the circuit if the voltage setting is set to above 5V.