

0 - 30 V Adjustable voltage, current stabilized voltage

supply Installation instructions

This is a a A high quality product which can continue to adjust Voltage supply. Adjust Voltage is 0-30V, It contains Output current limiting circuit, which can effectively control the output current from 2mA to 3A(Continuous adjustable). This feature makes the stabilized voltage supply as an indispensable tool of many practices Test circuit. It can limit the current in Maximum current in the typical experimental circuit. Boldly open power supply and don't have to worry about failure or incorrect installation to destroy Current experimental circuit.

Technical specifications:

Input voltage: AC 24

Input current: 3 A (maximum)

Output voltage: DC 0-30V(adjustable)

Output current: 2mA-3A (adjustable)

output voltage ripple: maximum 0.01%

The circuit features:

All straight cutting components, convenient installation and repair

Easy to adjust output voltage

The LED indicate Output current limit

Overload Or malfunction provide protection

Element listing:

R1=2.2K 1W	C4=100nF
R2=82R	C5=220nF
R3=220R	C6=100P
R4=4.7K	C7=10uF/50V
R5 , R6 , R13 , R20 , R21=10K	C8=330P
R7=0.47R 5W	C9=100P
R8, R11=27K	D1,D2,D3,D4=1N5408
R9, R19=2.2K	D5,D6=1N4148
R10=270K	D7,D8=5.6 V DZ
R12, R18=56K	D9,D10=1N4148
R14=1.5K	D11=1N4004
R15,R16=1K	Q1=9014
R17=33R	Q2=2SD882
R22=3.9K	Q3=9015
RV1=100K 3296	Q4=2SD1047
P1,P2=10K W	U1,U2,U3=TL081
C1=3300Uf/50V	D12=LED
C2,C3=47uF/50V	

The installation steps :

The first Step is to install Resistance, diode, etc according to the PCB mark;Using multimeter check resistance to ensure that it is correct ,be care ful to Diode type and direction.



Potentiometer can install on the board directly, can install on breadboard by using socket and wire. It can also change a Multi-turn potentiometer which make adjustable finer.

After installation and inspection, you can power on it to test. Before power on, please make sure that Q4(D1047) have been installed enough big area Heat sinks. If the heat sinks is too small, you have to add a fan to cool it. There are 24 v Fan interface stay on board. Heat sink must insulate circuit

Circuit adjustment:

1. Set the Voltage regulation potentiometer (green, mark "V") to the minimum (inverse Clockwise rotation To the minimum). Adjust the RV1 to make output voltage as 0V (may appear negative voltage and the value is very small, please use Digital multimeter do this). The maximum output voltage no need to adjust, it is about 33V when the input voltage is AC 24V.

2. Current Calibration : connect $10\ \Omega$ as a load (Make sure the power is enough), slow to add voltage to 1V, adjust Current limiting potentiometer (green, mark "A") to just light luminotron. At this time Circuit limit current is 0.1 A, mark down the position of potentiometer. then adjust to 2 v , 5 v , 10 v , 20 v , 30 v etc, and can Calibrate different output current. Computational formula: $I = U/R = U/10 = 0.1U$ (10 ohm is load), when U is 30V, $I = 3A$ (maximum output). It can change other resistance as load, but the power must enough and

the heat dissipation is good.

Cautions:

1. Transformer use above 80W single 24V or double 12V(Center Head Vacant).If the power output voltage drops more, you need to switch to a more powerful transformer.
- 2.The output of the regulator should be noted that when the D1047 is installed radiator,it must insulate circuit, because this circuit are linear regulated power supply, if long-term operate with low-voltage high-current,must ensure D1047 in good heat dissipation
- 3.Power production is a large-current and high-voltage circuit,please be sure to check the part number and installation correctly.

Circuit diagram:

