UNI-T

UTP3000C SERIES

User Manual

PROGRAMMABLE DC POWER SUPPLY

Safety Overview

This section discusses the UTP3000C series safety instructions and storage conditions. Please read the information below carefully before using the device.

Safety Symbols

These symbols will be presented in the manual or the device.

 Caution

 Risk of Electric Shock

 Ground Terminal

Safety Guide

General

- Donot cover the air inlet and fan outlet.
- Avoid physical impact or improper usage of the device.
- Perform ESD protection for the device
- Donot open the device if you are not a specialist.

AC Input

- AC Voltage Input: 100V/120V/220V/230V, 50/60Hz
- Connect ground wire to avoid electric shock

Fuses

The fuses models of the device are:

Model	110V/120V	220V/230V
UTP3303C	T4A/250V(20X5mm)	T2A/250V(20x5mm)
UTP3305C	T8A/250V(20X5mm)	T5A/250V(20x5mm)

- Make sure correct fuse is used before power on.
- Replace all broken fuses with fuses of correct specification and rated value.
- Donot connect device to power socket before replacing any fuses in order to prevent electric shock.
- Find out the reason of broken fuse before replacing.

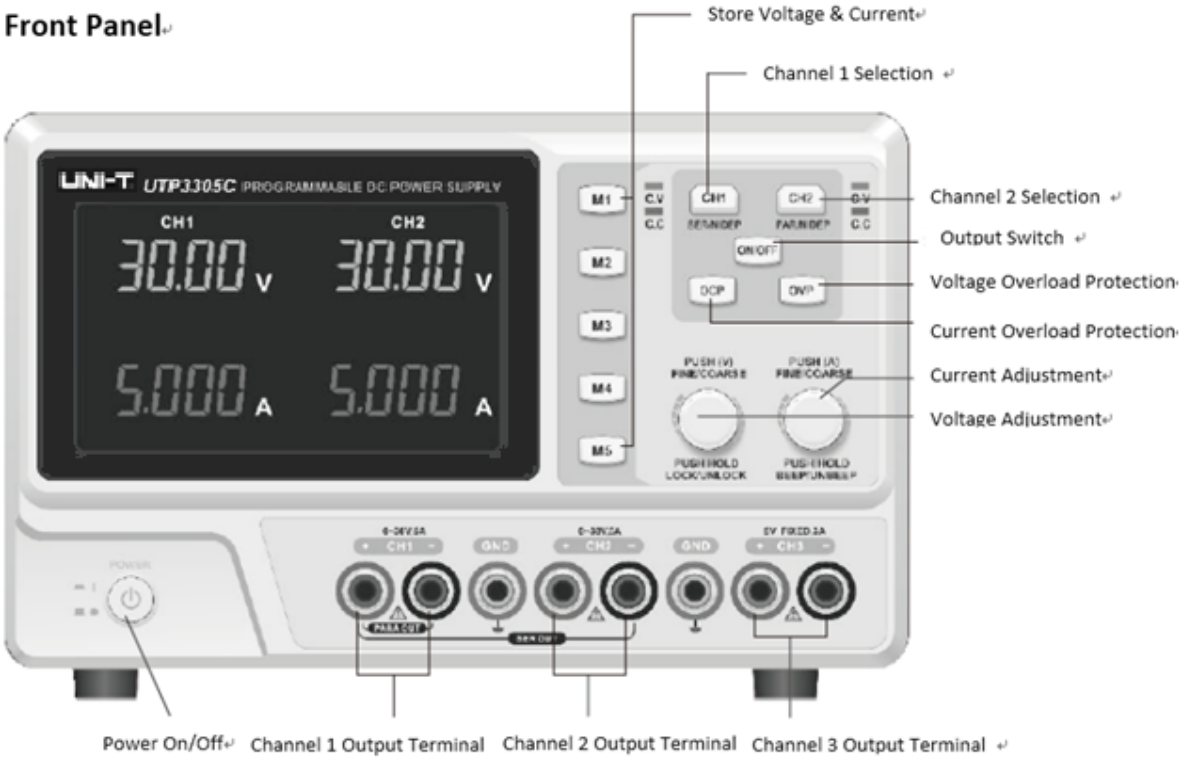
Profile

UTP3000C Series Programmable DC Power Suppliesare high precision 4-bit display devices with 3-way output. It is built with voltage and current overload protection, convenient operation panel,and one key storage recall. It can be used in aging test, electronics circuit behavior test, and automated system test of different environments. This device is suitable to use in education fields such as special trade schools, universities, colleges, and research labs.

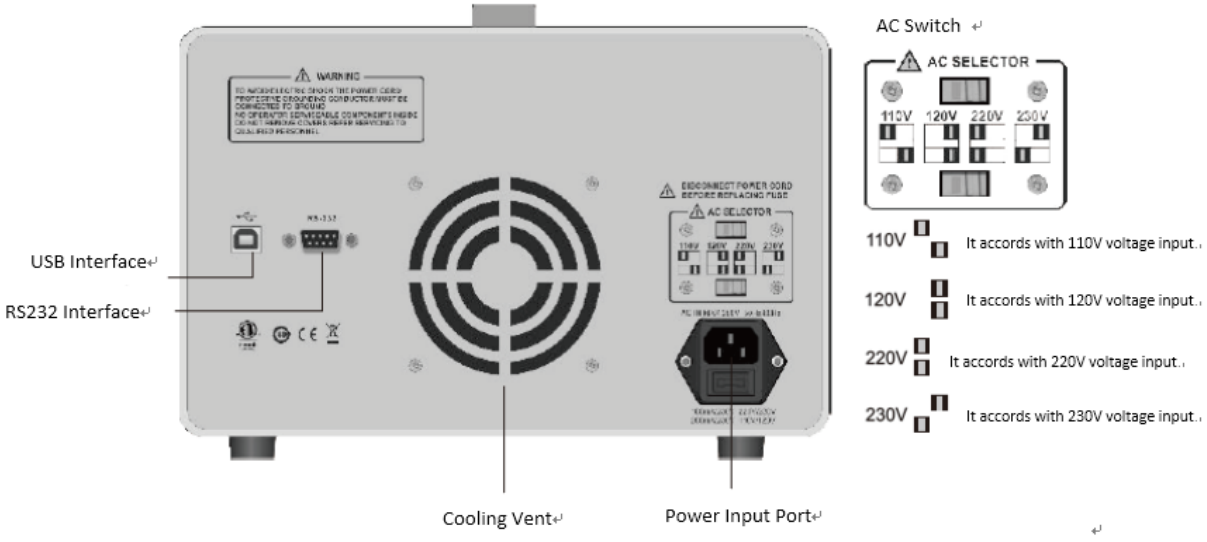
Main Features

- Precise 4-bit voltage & current display
- Settable voltage & current overload protection
- 5 sets of storage recall
- Power-off memory
- Software calibration
- Keyboard lock
- Low operation noise
- Out-of-range temperature protection
- USB and RS232 interface

Front Panel



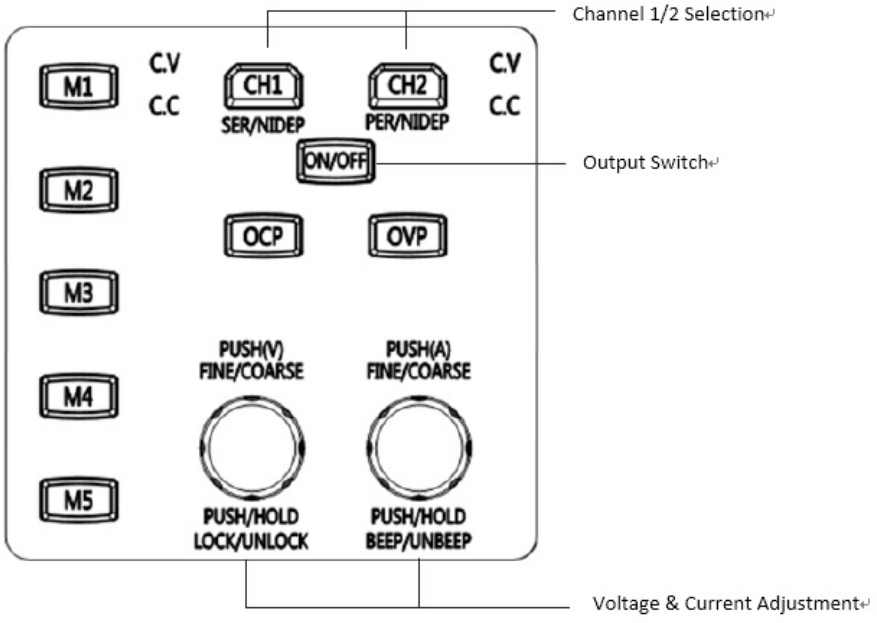
Rear Panel



Function

1. Voltage and Current Settings and Output

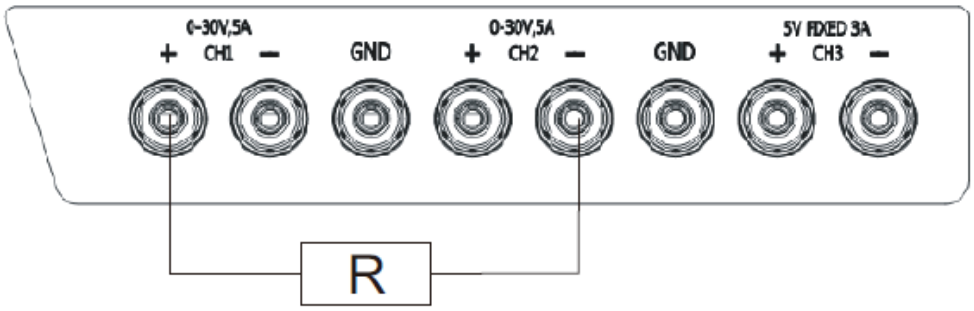
1. Press CH1 , the displayed voltage of CH1 flashes, during which turn voltage adjustment knob to set the value; Press CH1 again to switch from voltage to current, during which turn current adjustment knob to set the value; keep pressingto switch between voltage and current. When the displayed voltage or current is flashing, press the voltage or current knobto adjust resolution.
2. After setting the voltage and current values, press On /Off to output them.The ON light will also be on; Press On /Off again to stop the output and ON light will be out.



2. Series and Parallel Settings

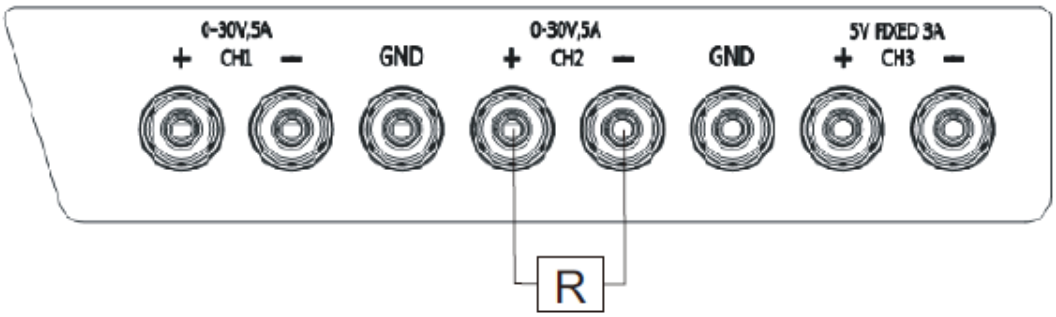
1. Series settings:

Press CH1 for 3s to enter into series mode and SER light will be on. Then CH1 operation is shielded, and CH2 will actas the main control; Press On/Off to enable/disable output.The connection method of series terminal is as below,



2. Parallel Operations:

Press CH2 PARA/INDEP for 3s to enter into parallel mode and PARA light will be on. Then CH1 operation is shielded, and CH2 will act as the main control; Press On/Off to enable/disable output. The connection method of parallel terminal is as below,



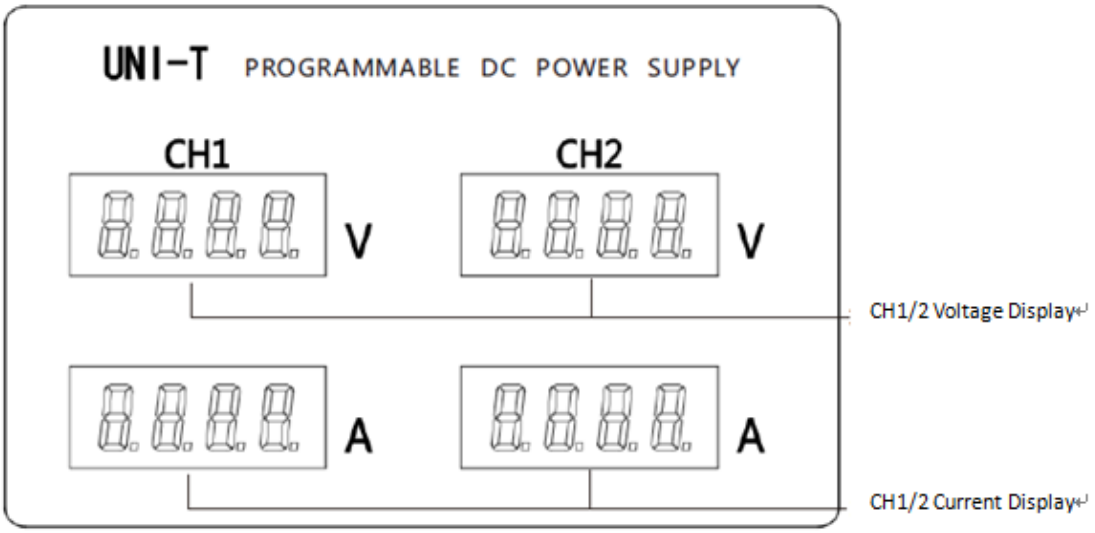
3. Recall and Output

No matter under what condition, you can have storage valuesrecalled by pressing any key from M1 to M5.

4. Over Current Protection Setting

Press OCP for 3s to enter into Over Current Protection (OCP) setting and OCP SET light willflash; Press CH1/2 to select the channel, and turn the current knob to adjust value; Press OCP again for 3s, the device exists setting and OCP SET light will beoff; Then the set current value will bedisplayed.

Short press OCP to turn on OCPand OCP light will be on. Whencurrent is larger than the value set in OCP, output willbe disabled; Press OCP again to turn off OCP.



5. Over Voltage Protection Setting

Press OVP for 3s to enter into Over Voltage Protection (OVP) setting and OVP SET light willflash; Press CH1/2 to select the channel, and turn voltage adjustment knob to adjust value; Press OVP again for 3s, the device exists setting and OVP light will be off. Then the setvoltagevalue will bedisplayed.

Short press OVP to turn on OVPandOVP light will be on. When voltage is larger than the value set in OVP, output will be disabled. Press OVP again to turn off OVP.

6. Key Lock

After pressing the voltage knob for 3s, keys are locked; press it again for 3s, keys are unlocked.

7. Turning on/off Buzzer

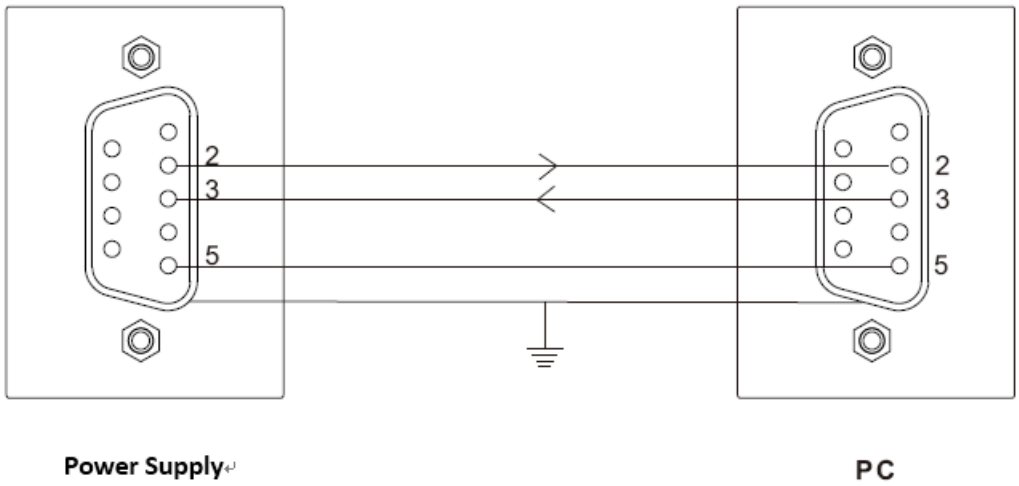
After pressing the current knob for 3s, the buzzer will be turned off; Press it again for 3s, the buzzer will be turned on again.

Remote Control

COM setting: set computer COM portsetting as below:

- Baud Rate: 9600
- Calibration Bit: None
- Data Bit: 8
- Stop Bit: 1

RS232 Interface Definition



Communication protocol V2.0

Order Format: VSET＜X＞:＜NR2＞

1. VSET: Order Parameter
2. X: Channel
3. :Separator
4. NR2: Parameter

Order Description:

1. LOCK＜NR2＞

Function Description:Lock power supply operation panel

Example: LOCK1

Lock power supply operation panel

Example:LOCK0

Unlock power supply operation panel

2. ISET＜X＞: ＜NR2＞

Function Description: Set current value

Example: ISET1:2.225

Set current value as 2.225A

3. ISET＜X＞?

Function Description: Read the set current value

Example: ISET1?

Returnset current value

4. **VSET＜X＞ : ＜NR2＞**

   Function Description: Set voltage value

   Example: VSET1:20.50

   Set voltage value as 20.50V

5. **VSET＜X＞?**

   Function Description: Read voltage value

   Example: VSET1?

   Return set voltage value

6. **IOUT＜X＞?**

   Function Description: Read current output value

   Example: IOUT1?

   Read the set current value

7. **VOUT＜X＞**

   Function Description: Read voltage output value

   Example: VOUT1?

   Read the set voltage value

8. **OUT＜Boolean＞**

   Function Description: Turn on/off power supply output

   Boolean: 0 off; 1 on

   Example: OUT1 Turn on power supply output

9. **BEEP＜Boolean＞**

   Function Description: Turn on/off buzzer

   Example: BEEP1 Turn on buzzer

10. **STATUS?**

    Function Description: Read power supply output status

    Contents 8 bits in the following format

Bit	Item	Description
0	CH1	0=CC mode, 1=CV mode
1	CH2	0=CC mode, 1=CV mode
2,3,4,5	N/A	
6		Output 0=Off, 1=On
7	N/A	N/A

11. ***IDN?**

    Function Description: Return to device model & factory information

    Example: *IDN?

    Contents UNI-T P33XC V2.0 (manufacturer, model name)

12. **RCL＜NR1＞**

    Function Description:Storage recall by pressing keys from M1-M5

13. **SAV＜NR1＞**

    Function Description: Storage setting

    Example: SAV1 Stores the panel setting in memory number 1

14. **TRACK＜NR1＞**

Function Description: Set series & parallel output
NR1:0=independent output; 1=series output; 2=parallel output
Example: TRACK1

15. **OCP＜Boolean＞**
    Function Description: Turn on over current protection
    Boolean: 0 OFF, 1 ON
    Example: OCP1 Turn on OCP
16. **OVP＜Boolean＞**
    Function Description: Turn on over voltage protection
    Boolean: 0 OFF, 1 ON
    Example: OVP1 Turn on OVP
17. **OCPSTE: ＜X＞ : ＜NR2＞**
    Function Description: Set OCP value
    Example: OCPSTE1: 5.100
18. **OVPSTE: ＜X＞ : ＜NR2＞**
    Function Description: Set OVP value
    Example: OVPSTE1: 31.00

Technical Index

Note: The measurement below are taken in environment of 25℃ and after preheating equipment for 5 minutes.

Model	UTP3303C	UTP3305C
Voltage Output	0-30V (CH1/CH2)	0-30V (CH1/CH2)
Current Output	0-3A (CH1/CH2)	0-5A (CH1/CH2)
Loading Effect		
Voltage	≤0.01%+3mV	≤0.01%+5mV
Current	≤0.1%+5mA	≤0.1%+10mA
Power Supply Effect		
Voltage	≤0.01%+3mV	≤0.01%+3mV
Current	≤0.1%+3mA	≤0.1%+3mA
Resolution Setting		
Voltage	10mV	10mV
Current	1mA	1mA
Precision Setting (25℃±5℃)		
Voltage	≤0.5%+20mV	≤0.5%+20mV
Current	≤0.5%+5mA	≤0.5%+10mA
Ripple (20-20M)		
Voltage	$\leq 1mV_{rms}$	$\leq 2mV_{rms}$
Current	$\leq 3mA_{rms}$	$\leq 3mA_{rms}$
Output Temperature Coefficient		
Voltage	≤150ppm	≤150ppm
Current	≤150ppm	≤150ppm
Read-back Resolution		

Voltage	10mV	10mV
Current	1mA	1mA
Read-back Temperature Coefficient		
Voltage	≤150ppm	≤150ppm
Current	≤150ppm	≤150ppm
Voltage Rise Delay		
Voltage Rise Delay	≤100ms (10% Rated load)	≤100ms (10% Rated load)
Parallel Load Effect		
Voltage	≤0.1%+0.1V	
Series Load Effect		
Voltage	≤0.1%+0.1V	
CH3 Output Parameter		
Voltage Range	5V	
Current Range	3A	
Voltage Precision	±50mV	
Loading Effect	±50mV	
Accessories		
User manual, Wire, PC software CD(only for model with interface)		
Weight & Size(mm)		
252(W)×135(H)×370(D); UTP3303C×6.5kg, UTP3305C×9.1kg		