

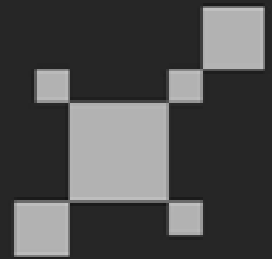
UNI-T®

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.

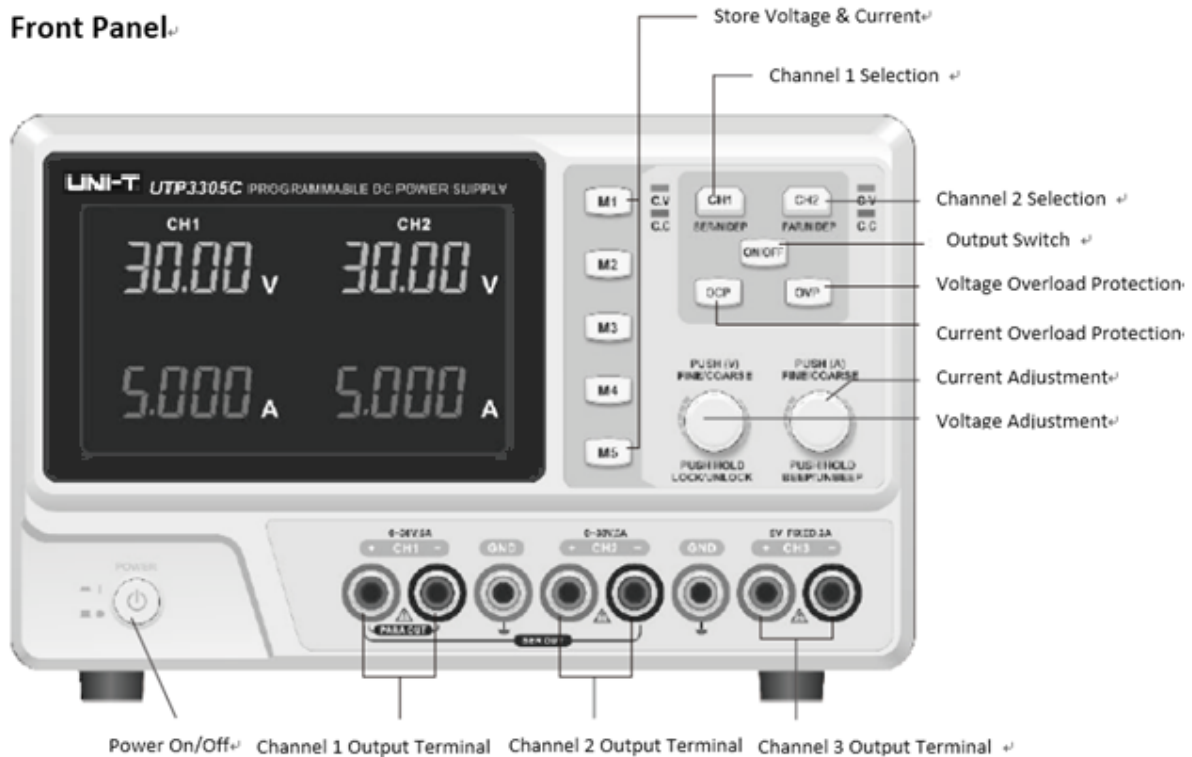
Profile

UTP3000C Series Programmable DC Power Supplies are 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.

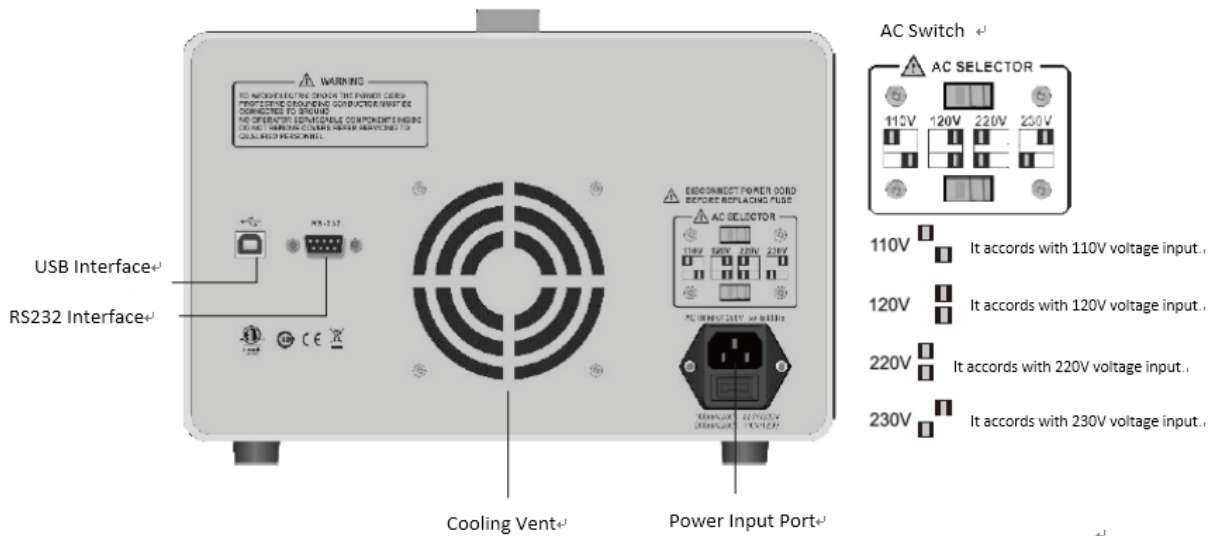
Main Features

- 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



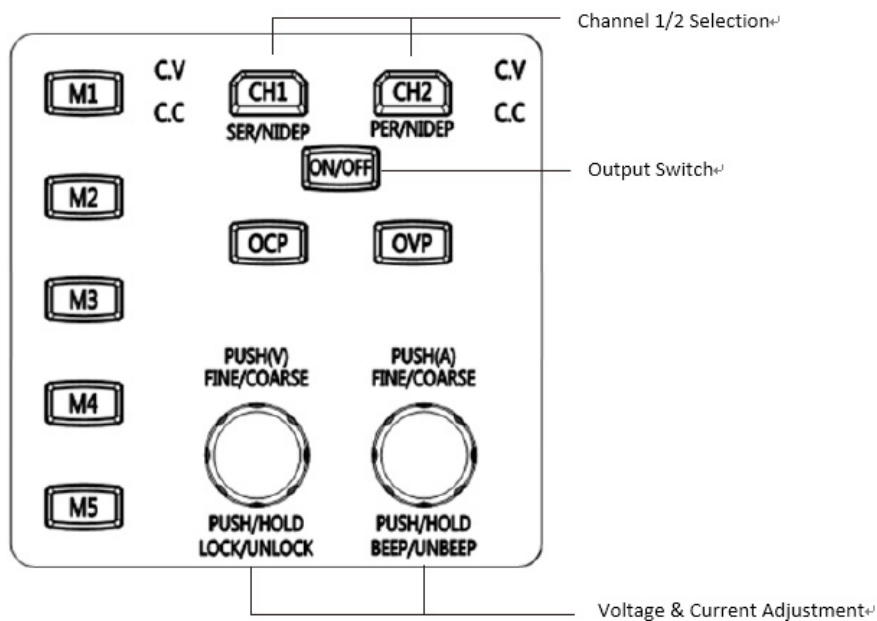
Rear Panel



Function

1. Voltage and Current Settings and Output

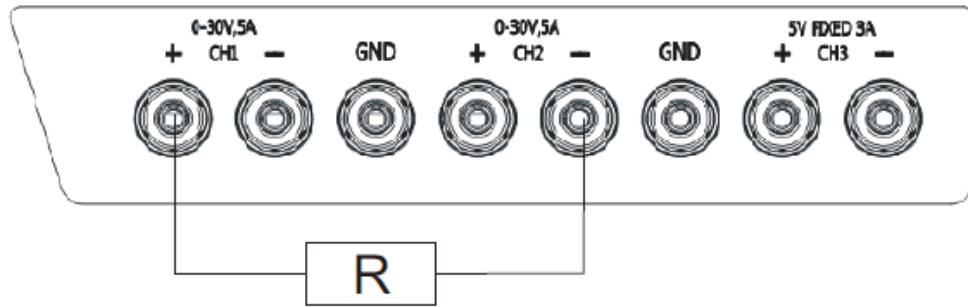
1. Press **[CH1]**, the displayed voltage of CH1 flashes, during which turn voltage adjustment knob to set the value; Press **[CH1]** again to switch from voltage to current, during which turn current adjustment knob to set the value; keep pressing to switch between voltage and current. When the displayed voltage or current is flashing, press the voltage or current knob to 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

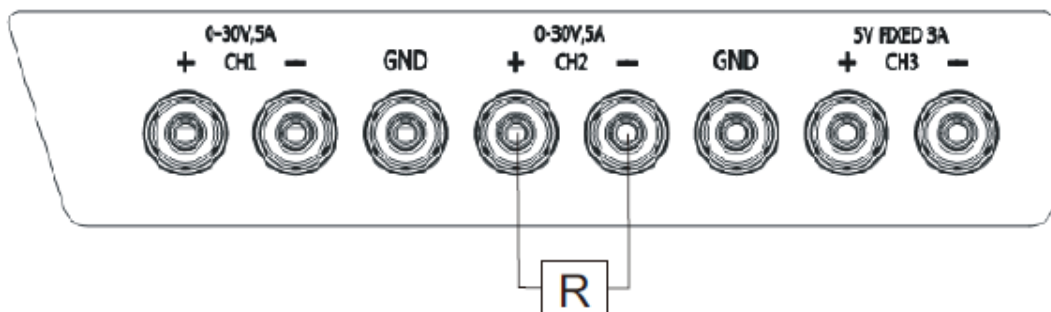
1. Series settings:

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



2. Parallel Operations:

Press **CH2** 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,



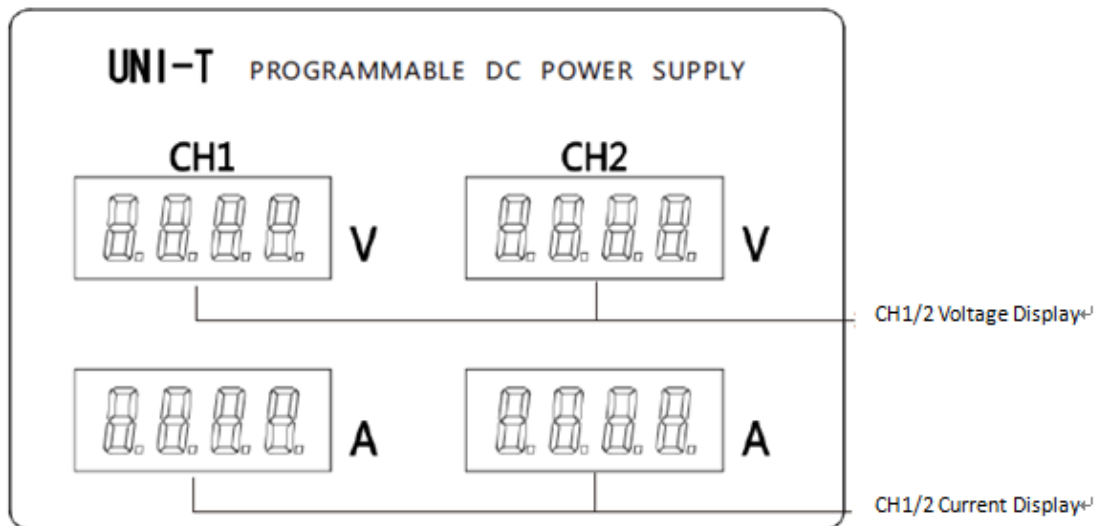
3. Recall and Output

No matter under what condition, you can have storage values recalled 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 will flash; 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 be off; Then the set current value will be displayed.

Short press **OCP** to turn on OCP and OCP light will be on. When current is larger than the value set in OCP, output will be 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 will flash; 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 set voltage value will be displayed.

Short press **OVP** to turn on OVP and OVP 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

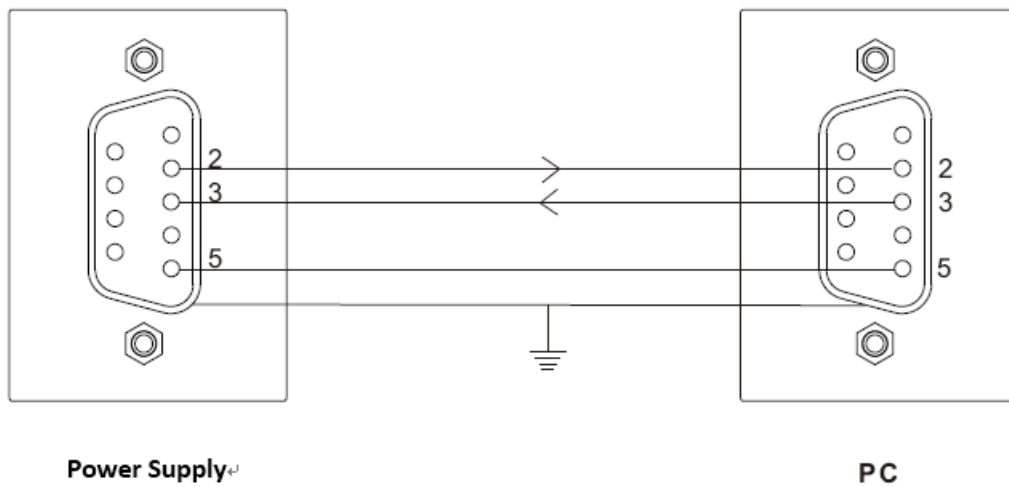
After pressing the current knob for 3s, the buzzer will be turned off; Press it again for 3s, the buzzer will be turned on again.

Remote Control

COM setting: set computer COM port setting 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°C 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°C±5°C)		
Voltage	≤0.5%+20mV	≤0.5%+20mV
Current	≤0.5%+5mA	≤0.5%+10mA
Ripple (20-20M)		
Voltage	≤1mV _{rms}	≤2mV _{rms}
Current	≤3mA _{rms}	≤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		