

T3PS3000 Programmable DC Power Supply Quick Start Guide



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General Safety Summary

Read the following precautions carefully to avoid any personal injuries, or damage to the instrument or products connected to it. Use the instrument only as specified.

Use only the power cord supplied for the instrument.

Ground the instrument. The instrument is grounded through the ground conductor of the power cord. To avoid electric shock, always connect to grounded outlets. Make sure the instrument is grounded correctly before connecting its input or output terminals.

Connect the signal wire correctly. To avoid damage, observe input polarity and maximum voltage/current ratings at all times.

Observe all terminal ratings and signs on the instrument to avoid fire or electric shock. Before connecting to the instrument, read the manual to understand the input/output ratings.

Do not operate with suspected failures. If you suspect that the instrument is damaged, contact the Teledyne LeCroy service department immediately.

Do not operate in wet/damp conditions.

Do not operate in an explosive atmosphere.

Keep the surface of the instrument clean and dry.

Avoid touching exposed circuits or wires. Do not touch exposed contacts or components when the power is on.

Do not operate without covers. Do not operate the instrument with covers or panels removed.

Use only the fuse specified for the instrument.

Use proper over voltage protection.

Use anti-static protection. Operate in an anti-static protected area. Ground measurement cable conductors before connecting to the instrument to discharge any static electricity before connecting the cables to the instrument.

Observe ventilation requirements. Ensure good ventilation. Check the vent and fan regularly to prevent overheating.

Safety Terms and Symbols

The following terms may appear on the instrument:

DANGER: Direct injury or hazard may occur.

WARNING: Potential injury or hazard may occur.

CAUTION: Potential damage to instrument/property may occur.

The following symbols may appear on the instrument:

						
CAUTION Risk of injury or damage. Refer to manual.	WARNING Risk of electric shock or burn	Earth Ground Terminal	Protective Conductor Terminal	Frame or Chassis Terminal	ON/ Standby Power	Alternating Current

Operating Environment

Temperature: 0 °C to 40 °C

Humidity: 5% to 90% relative humidity (non-condensing) up to + 30 °C. Upper limit derates to 50% relative humidity (non-condensing) at 40 °C.

Altitude: ≤ 2000 m

AC Power

AC Input Voltage and Frequency: 100V / 120V / 220V / 230V ±10%, at 50 / 60Hz

Manual AC Selection with two slide switches.

Power Consumption: 380 Watts / 490 VA Max.

Mains Supply Connector: CAT II per IEC/EN 61010-1:2010, instrument intended to be supplied from the building wiring at utilization points (socket outlets and similar).

Fuse Types: 100 V / 110 V : T6.3A / 250 V

220 V / 230 V : T3.15A / 250 V

Introduction

The Programmable DC Power Supply is convenient, flexible and multi-functional instrument. It has three independent outputs, two sets of adjustable voltage value and a fixed set of selectable voltage value of 2.5V, 3.3V, and 5V, and it also provides output short circuit and overload protection.



Main features

4.3" TFT color LCD display.

Three independent outputs, two of which are adjustable, with a total power of up to 195W.

Four power line input voltage values of 100V, 120V, 220V and 230V $\pm 10\%$, 50 / 60Hz.

Store and call setting parameters.

Timing output function.

Waveform display, Real-time display of voltage or current waveforms and digital display of voltage, current and power values.

Automatic screen saver routine if there is no product activity / use for 30 minutes.

Remote program control through USBTMC and LAN.

Chapter 1 Set Up and Overview

In this chapter, we introduce the front panel and display Interface of the power supply, as well as the unpacking and first use inspection. Reading this chapter will give you a quick understanding of the basic power supply operation.

Brief introduction:

- General Inspection

- The front panel

- The rear panel

- User interface

- The rear panel

- Output check

1.1 General Inspection

Please check the instrument according to the following steps.

1. Inspect the shipping container.

Keep the shipping container and packaging material until the contents of the shipment have been completely checked and the instrument has passed both electrical and mechanical tests. It is always good practice to save the shipping container and packaging for use when returning the power supply to Teledyne LeCroy for service or calibration.

The consigner or carrier will be responsible for damage to the instrument resulting from shipping. Teledyne LeCroy will not provide free maintenance or replacement in this instance.

2. Inspect the instrument.

If the instrument is found to be damaged, defective or fails in electrical or mechanical tests, please contact the Teledyne LeCroy service department immediately.

3. Check the accessories.

Please check that you have received the accessories on the packing list. If the accessories are incomplete or damaged, please contact Teledyne LeCroy immediately.

1.2 Power and Electrical Check

To ensure that the power supply will work according to its specifications, please conduct an inspection before using the instrument.

Input Power Requirement

The power supply requires 50Hz / 60Hz power line frequency, at any of four AC voltage levels: 100V / 120V / 220V / 230V, $\pm 10\%$. Select the required power voltage level with the “DIP Switch” on the rear panel.



Warning

Set the required input power voltage “DIP Switches” before connecting the power cord.

Electrical Check

Please use the power cord provided and adjust the DIP Switches to the local AC line voltage, then connect the instrument to AC power.

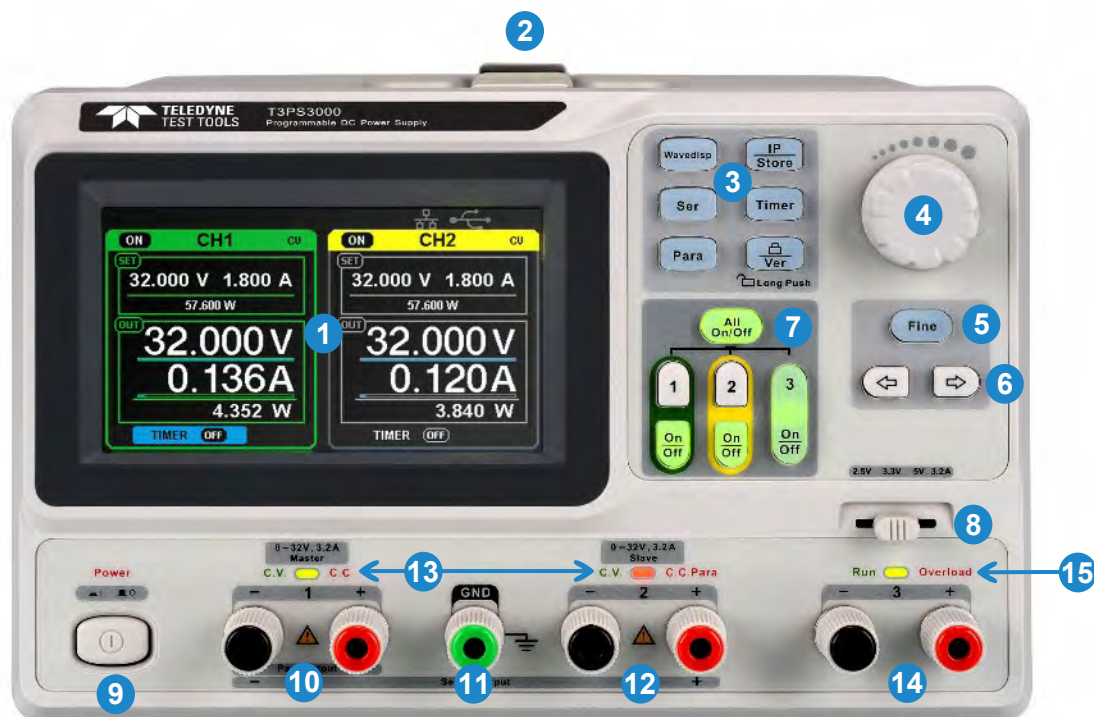
1. Set the DIP Switches to the local AC power voltage.
2. Connect the power cord to the T3PS3000 before connecting the power cord to wall socket.
3. Use a DMM to check the power cord ground pin is connected to the T3PS3000 ground terminal, then attach the power cord to the wall socket.
4. Turn on the power switch.
5. Press the button POWER to enter the T3PS3000 power on sequence. The T3PS3000 will run its power on self tests then return to the power on default settings.



Warning

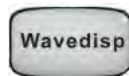
To avoid electric shock, please make sure that the instrument is grounded correctly before powering on.

1.3 Front Panel

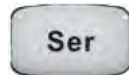


NO.	Description	NO.	Description
①	Display Area	⑧	CH3 Voltage Selector Switch
②	Carrying Handle	⑨	Power Switch
③	System parameter configuration buttons	⑩	CH1 Output Terminals
④	Multi-function knob	⑪	Ground Terminal
⑤	Fine Adjust button	⑫	CH2 Output Terminals
⑥	Right/Left Direction buttons	⑬	CH1 and CH2 CV / CC indicator lights
⑦	Channel Control buttons	⑭	CH3 Output Terminal
		⑮	CH3 Run / Overload Indicator

Buttons for setting parameters



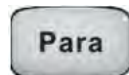
Press the button to turn on/off the waveform display interface.



Press the button to set series mode of CH1 / CH2. The logo



is displayed to indicate series mode is on.



Press the button to set parallel mode of CH1 / CH2. The logo



is displayed to indicate parallel mode in on.



Press the button to enter the LAN setting and storage function Interface.



Press the timer button to enter timer settings interface.



Hold the button pressed to turn on / off the keylock function.

A short press of the button will turn on the system information interface.

Buttons for controlling the channel



Press the All On / Off button to turn all the channels on or off.



Press the 1 button to select CH1 as the current channel.



Press the 2 button to select CH2 as the current channel.



Press the On / Off button to turn the output of the current channel on or off.



Press the 3 On / Off button to turn the CH3 output on or off.

Other buttons



Select the digit position by moving the cursor using the Right or Left Direction buttons and the Fine button. Press the button to move the cursor.

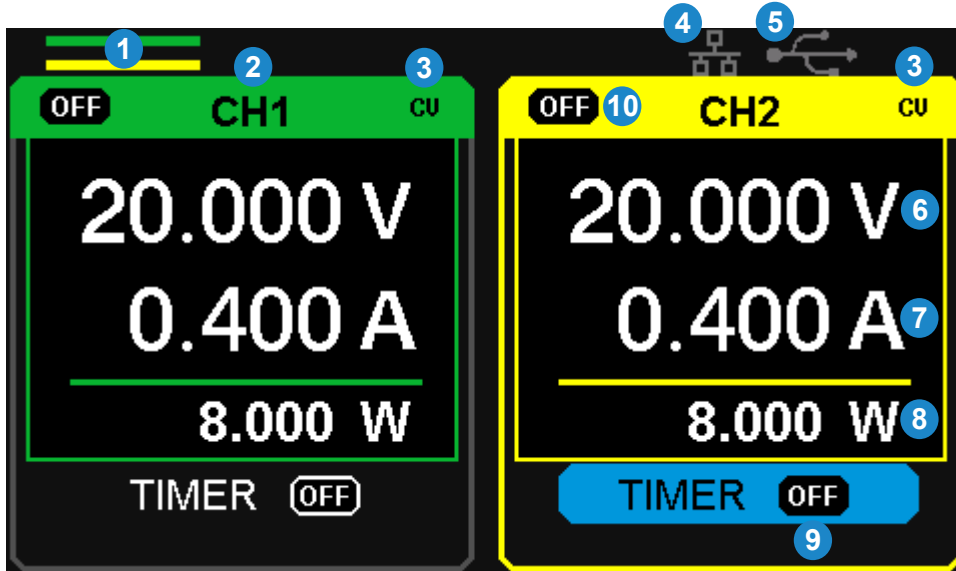


The output terminals on the front panel



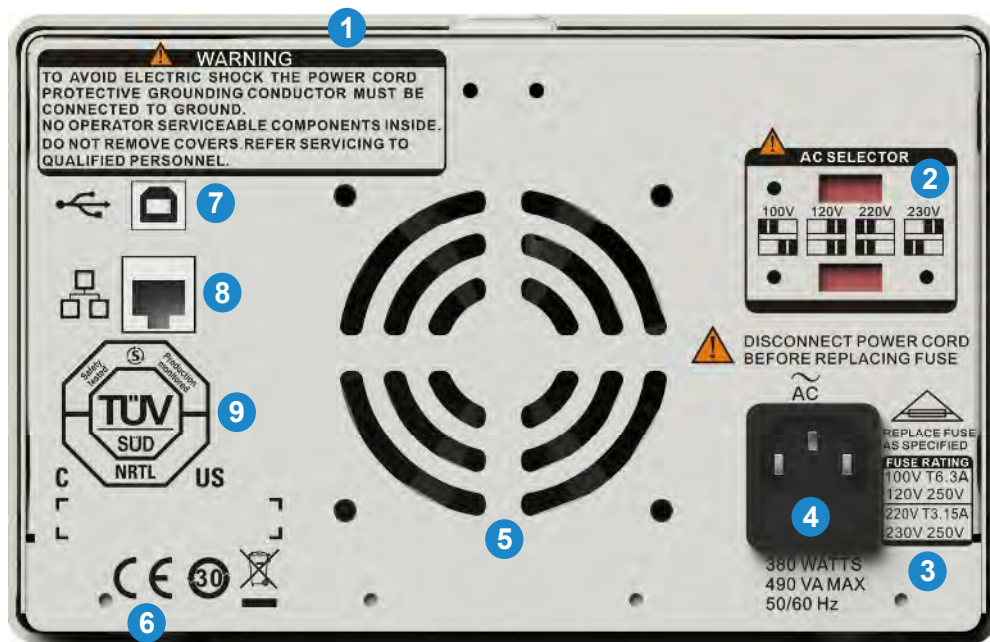
The output terminals of CH1, CH2 and CH3 are clearly labelled and include a positive terminal in red, a negative terminal in black, and a common ground in green for CH1 and CH2. The operation details are introduced in the following "control panel operation" section.

1.4 User Interface



- ① Parallel/Series logo: The logo will be displayed when the corresponding parallel or series mode is on.
- ② Channel Number (CH1 or CH2)
- ③ Operating mode logo: The corresponding letters will be displayed depending on which mode the channel is in, either CV or CC mode.
- ④ LAN logo: It will display when there is a LAN connection.
- ⑤ USB logo: It will display when there is a USB connection.
- ⑥ Voltage value.
- ⑦ Current value.
- ⑧ Power value.
- ⑨ Timer ID: Timer state identification.
- ⑩ Channel on/off logo.

1.5 Rear Panel



- ① Product safety / warning message.
- ② The DIP switch selection for the AC input voltage. This should be set before use.
- ③ The description of the AC input voltage and fuse ratings.
- ④ AC power socket.
- ⑤ The fan air vents.
- ⑥ CE certification mark.
- ⑦ USB interface and identification.
- ⑧ LAN interface and identification.
- ⑨ TÜV certification mark.

1.6 Output Check

The output check includes voltage check of all channels with no load, and current check with a short circuit so as to make sure that the instrument is working correctly.

Voltage Output Check

1. Within no load, turn on the power, and make sure the current setting values of all channels are not zero.
2. Turn on CH1 and CH2 outputs, and check that the instrument is working in constant voltage mode (CV on the display of each channel). Check whether the output voltage value can be adjusted from 0V to 32V.

Current Output Check

1. Turn on the power, and make sure the current setting values of all channels are not zero.
2. Use an insulated wire to connect the positive and negative terminal of CH1/CH2.
3. Turn on CH1/CH2 and check that the instrument is working in constant current mode. (CC on the display of each channel). Check whether the current value could be adjusted from 0A to 3.2A.

Chapter 2 Control Panel Operation

In this chapter the function and operation of the power supply control panel will be covered in detail.

Output summary

CH1/CH2 independent output

CH3 independent output

Series output

Parallel output

LAN setting

Save and recall

Timer

Waveform display

Version information

Firmware upgrade

Keylock

2.1 Output Summary

The power supply has three independent outputs, two of which have adjustable voltage or current values (depending on the operating mode) and the third having selectable 2.5V, 3.3V or 5.0V output.

Independent / Parallel / Series

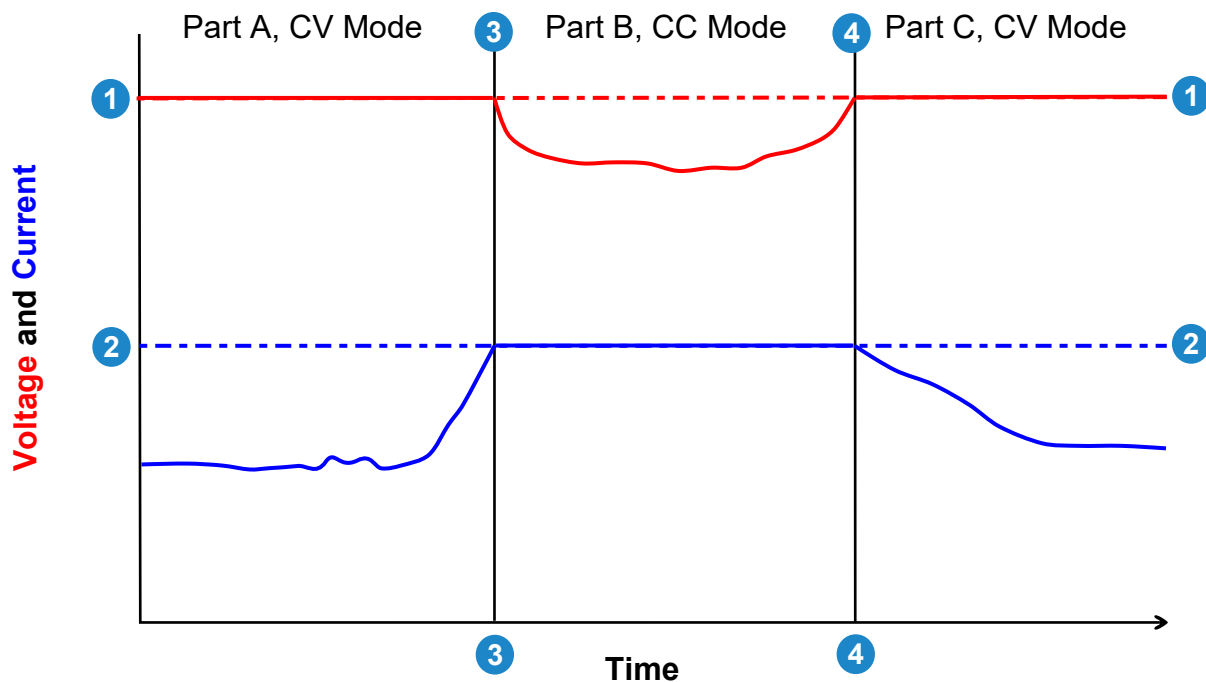
The power supply outputs of CH1 and CH2 have three output modes: independent, parallel and series, which can be selected through the track switch on the front panel. In the independent mode, the output current and voltage are controlled independently for each channel. In the parallel mode, the current value is twice that of the single channel. In the series mode, the voltage value is twice that of the individual channels.

Constant Voltage / Current

In the constant current mode (independent or tracking mode), the current value is set and controlled through the front panel. The output current will follow the front panel, user set, output current level provided that the output voltage value is less than its maximum preset voltage value. If less current is required by the target system, then the output will switch to constant voltage mode, only returning to constant current mode as the current demand rises to the maximum preset current level.

In the constant voltage mode the voltage value is controlled through the front panel. The output voltage will follow the front panel, user set, output voltage level provided that the output current value is less than its maximum preset current value. If more current is required by the target system, then the output will switch to constant current mode, only returning to constant voltage mode as the current demand falls below the maximum preset current level.

Understanding Constant Voltage and Constant Current Modes



The Red line represents Voltage.

The Blue line represents Current.

The level between the two ① points represents the user preset maximum output voltage level in this example.

The level between the two ② points represents the user preset maximum output current level in this example.

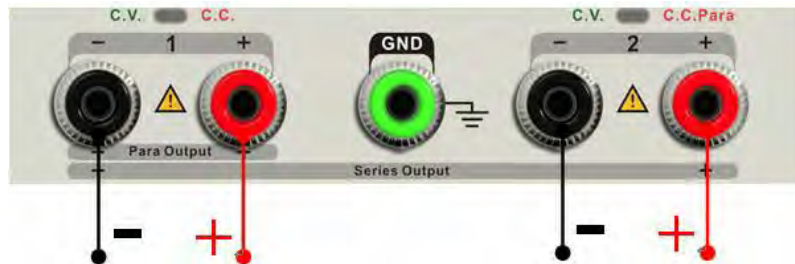
At the beginning of the graph, “zero time”, the PSU is running in Constant Voltage mode shown by the thick Red line tracking along the user present output voltage line, Part A. The current is varying (due to load change) but is always below the user present current threshold.

At time point ③ the current has risen by the DUT current requirement, to reach it's user preset level. At this point the PSU automatically switches to Constant Current mode whereby the current output will remain at the user preset level and the voltage will fall according to the changing DUT load requirements, Part B.

If the DUT current requirement falls below the user preset current level then the PSU will automatically switch back to Constant Voltage mode as show at point ④

2.2 CH1 / CH2 Independent Output Mode

When CH1 and CH2 are working in independent mode, they each output their set voltages and currents on their respective output terminals as shown below. They are isolated from ground.



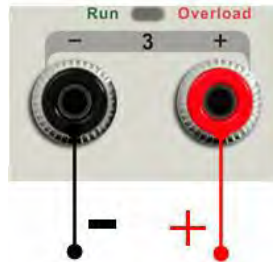
Output rating: 0~32V / 0~3.2A per channel for channels 1 and 2.

Operation

1. Make sure that parallel / series mode is off.
2. Connect the load to the positive and negative terminals of CH1 or CH2.
3. Set voltage and current value of CH1 or CH2:
 - a) Press “1”/”2” button to select the wanted channel
 - b) Move the cursor through direction button to select the wanted parameter (voltage, current).
 - c) Press “Fine” to select the digit position and then adjust the multi-function knob to change the corresponding parameter.
4. Turn on the output: Press the “on/off” button to turn on the output, the corresponding indicator light will illuminate immediately and “CC” or “CV” is showed on the channel interface.

2.3 CH3 Independent Mode

CH3 is independent from CH1 and CH2, and it therefore does not work in parallel or in series mode with CH1 or CH2. Its voltage and current ratings can be set to any of the preset values of 2.5V, 3.3V, or 5V at up to 3.2A.



Output ratings: 2.5V / 3.3V / 5V at up to 3.2A.

Operation:

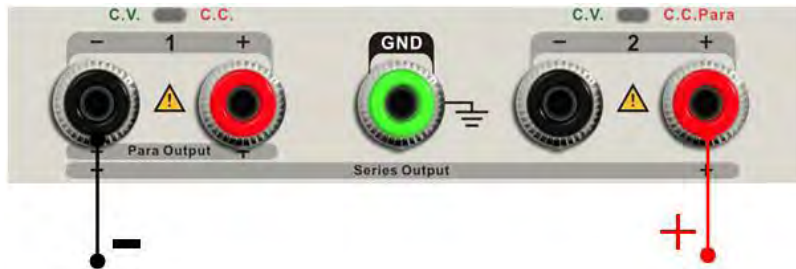
1. Connect the load to the positive and negative terminals of CH3 on the front panel.
2. Select the wanted voltage value by moving the CH3 “DIP switch”.
3. Turn on the output: Press “on/off” button to turn on the output, the corresponding indicator light is lit immediately.

When the current value is higher than 3.2A, the overload indicator light turns red and the working mode turns to CC mode from CV mode.

Note: “Overload” does not indicate abnormal operation.

2.4 CH1 / CH2 Series Mode

In series mode, CH1 and CH2 are linked internally into one channel which is controlled by CH1, and the output voltage value is twice that of a single channel.



Output rating 0~64V / 0~3.2A

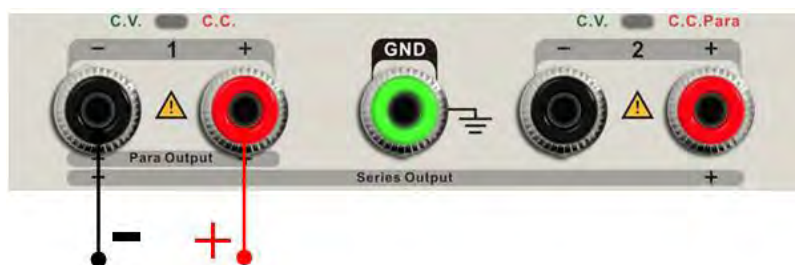
Operation:

1. Press the “Ser” button to start the Series mode. The indicator light turns on and the logo “  ” displays at the top of the screen.
2. Connect the load to the positive terminal of CH2 and the negative terminal of CH1.
3. Set voltage and current values:
 - a) Press the “1” button to select the channel 1
 - b) Use the direction buttons to move the cursor to the desired parameter (voltage, current).
 - c) Press “Fine” to select the digit position and then turn the multi-function knob to change the corresponding parameter value.
4. Press the “on/off” button corresponding to CH1 to turn on the output.

Note: You can identify if the PSU is in “CC” or “CV” mode by referring to the indicator light of CH1 / CH2. (red indicates CV, yellow indicates CC).

2.5 CH1 / CH2 Parallel Mode

In parallel mode, CH1 and CH2 are linked internally to one channel, which is controlled by CH1. Its output current value is twice as much as that of the single channel current value.



Output rating 0~32V / 0~6.4A

Operation:

1. Press the “Para” button to start Parallel mode, the indicator light turns on immediately and the logo “”display at the top of screen.
2. Connect the load to the positive and negative terminal of CH1.
3. Set voltage and current value:
 - a) Press “1” button to select the channel 1
 - b) Use the direction button to move the cursor to the desired parameter (voltage, current),
 - c) Press “Fine” to select the digit position and then revolve the multi-function knob to change the corresponding parameter.
4. Press “on/off” button corresponding CH1 to turn on the output.

Note: You can identify if the PSU is in “CC” or “CV” mode by referring to the indicator light of CH1 / CH2. (red indicates CV, yellow indicates CC).
In parallel mode, CH2 only works in CC mode.

2.6 LAN Setting

Operation:

1. Connect the T3PS3000 PSU to your local area network using the network cable.
2. Press the “IP/Store” button to enter the LAN setting interface.
3. Press the direction button to go to the DHCP line. Turn the multi-function knob to turn the DHCP ON/OFF, then press the multi-function knob to make the setting effective
 - **ON:** the DHCP server in the current network will assign the network parameters (such as the IP address) for the instrument.
 - **OFF:** you can manually set the IP address, subnet mask, and gateway.
 - Turn the multi-function knob to change the digits.
 - Press “Fine” to select the digit position.
 - Press the direction button to move the cursor around.
 - Press the multi-function knob to store the setting.

(The setting is effective only when the knob is pressed)

The left side of the interface will display the current network settings when setup is completed.

4. Press “IP/Store” again to exit the current interface and return to main interface.

2.7 Save and Recall

Five group setups can be saved in memory. The contents of the setup file include:

- Independent/series/parallel mode
- Output voltage/current value
- Timer setup

Save Setup

1. Set the state that you want to save.
2. Short press the “IP/Store” button, then long press the “IP/Store” button to enter Store/Recall interface.
3. Press the direction button to move the cursor to “FILE CHOICE”.
4. Select file store position(FILE1~FILE5) by revolving the multi-function knob.
5. Press the direction button to move the cursor to “OPER CHOICE”.
6. Move the cursor to “STORE” by turning the multi-function knob, then press it to save the current setup.

Recall Setup

1. Short press the “IP/Store” button, then long press the “IP/Store” button to enter Store/Recall interface.
2. Press the direction button to move the cursor to “FILE CHOICE”.
3. Select the desired file by turning the multi-function knob.
4. Press the direction button to move the cursor to “OPER CHOICE”.
5. Move the cursor to “RECALL” by turning the multi-function knob, then press it to recall the saved setup.

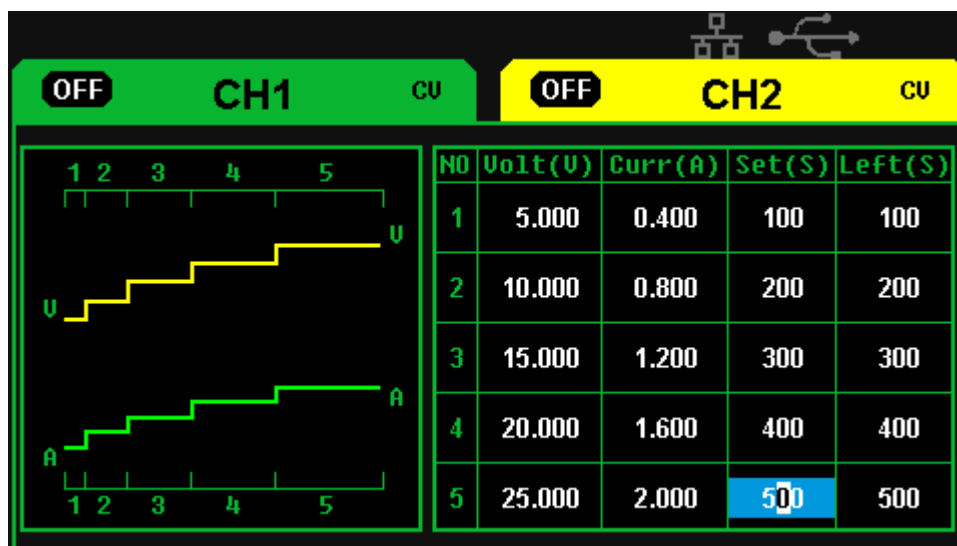
Note: if you want to delete the file that has been saved, after selecting the file in step 3 above, move the cursor to “DELETE”, then press the multi-function knob.

2.8 Timer

The timer works in the Independent output mode, and can save five timing setups, each of which is independent from the others. You can set any voltage/current value that is within the range of the instrument. The timer supports consecutive output, and the longest time of each group is 10000s.

Set Up Timer

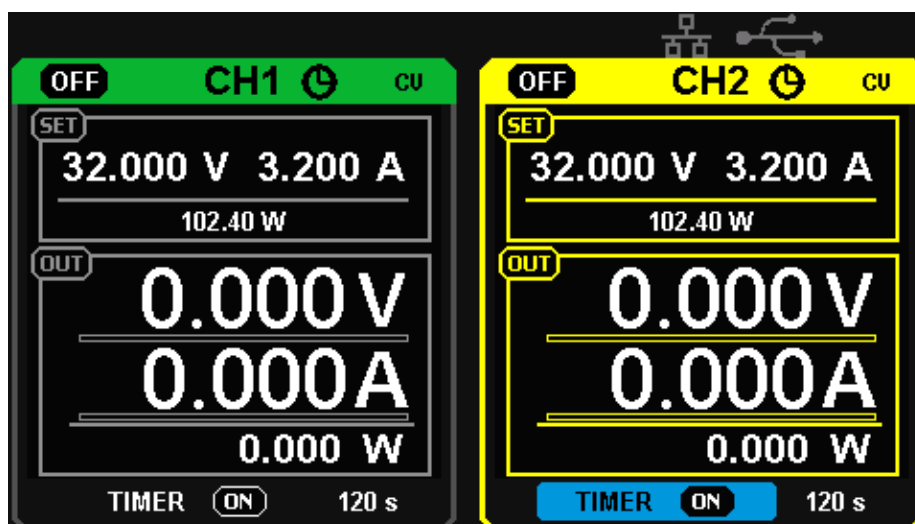
1. Press “TIMER” to enter the Timer Setup interface. The indicator light turns on immediately.
2. Press the “1” or “2” button to select the desired channel.
3. Press the direction button to move the cursor to the desired parameter (voltage/current/time).
4. Set the corresponding value using the “Fine” button and multi-function knob.
5. Press “Timer” again to exit the interface.



Turn the Timer On or Off

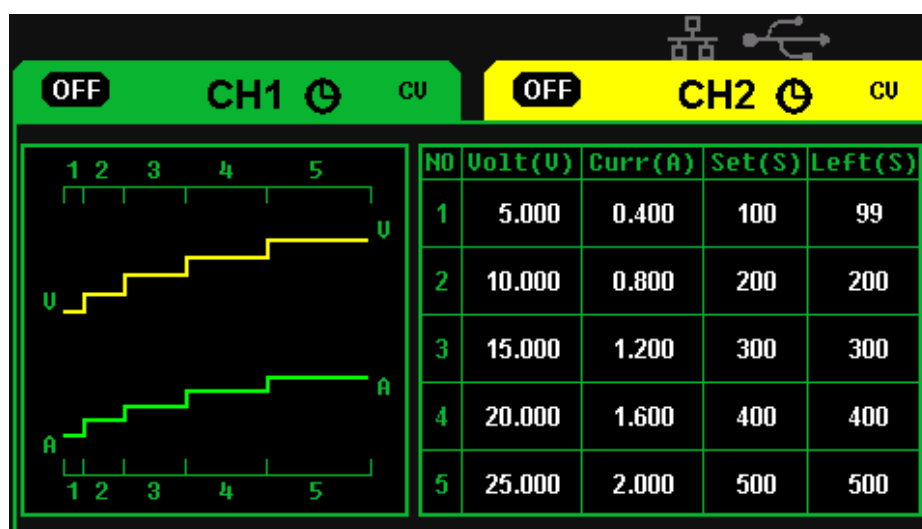
Method 1:

1. Press the “1” or “2” button to select the desired channel on the main interface.
2. Press the direction button to move the cursor to the “TIMER” menu.
3. Turn the multi-function knob to change the Timer setting to “ON” or “OFF”.
4. Press the knob to enter the Timer setting.



Method 2:

1. Press the “Timer” button to enter the timer interface.
2. Press the “1” or “2” button to select the desired channel.
3. Press the multi-function knob to start the Timer.
4. Press the knob again to turn off the Timer



If you press the “On/Off” button to turn off the output when the timer is running, the countdown will stop. The countdown will resume when the channel output is turned on again.

The Timer will automatically turn off when the time reduces to 0.

Note: The timer function is invalid when the series mode or parallel mode is turned on.

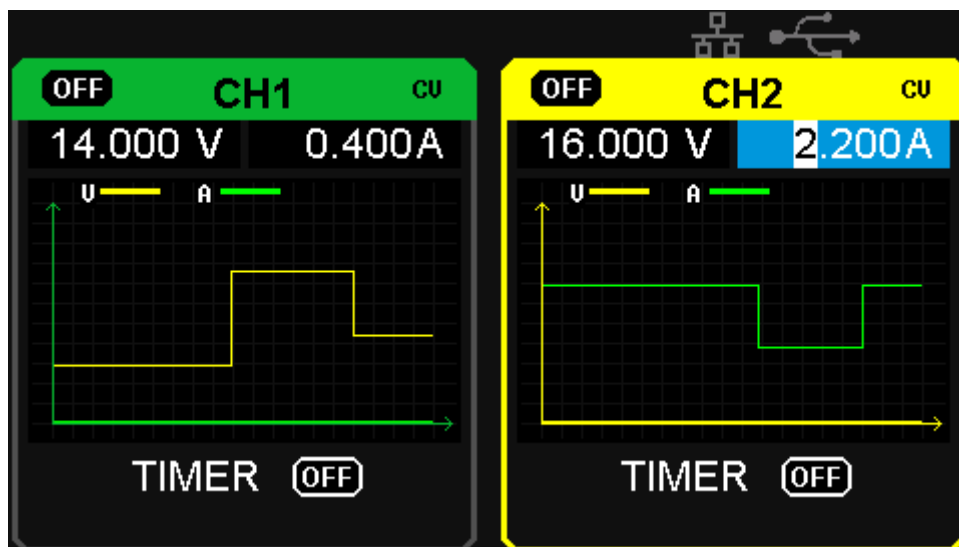
2.9 Waveform Display

The T3PS3000 can display the changing voltage and current values in real time as a waveform plot.

Operation:

1. Select CH1 / CH2, then set the voltage / current parameters.
2. Press the “Wavedisp” button to enter the Waveform Display interface. The indicator light turns on immediately.
3. Press CH1 / CH2 “On/Off” button to turn on the output. The corresponding indicator light turns on immediately, and you can observe the real-time changes of the voltage or current on the display.

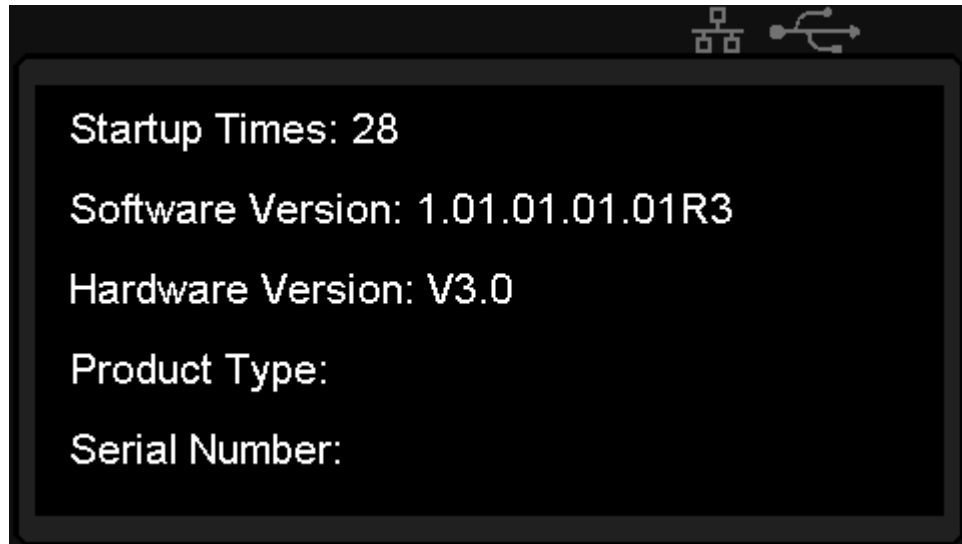
Waveform interface:



Note: The yellow line represents voltage, the green line represents current, and the Y axis indicates relative voltage or current value (0~32V / 0~3.2A).

2.10 Version Information

Short press of the  button to enter Version Information interface.



Long press of the  button to lock the interface, which will lock all the buttons and knobs. The “lock” icon will be displayed.

Long press  again to turn off the keylock function. The “lock” icon will no longer be illuminated and the knobs and buttons will become functional again.

Chapter 3 Remote Control

The T3PS3000 supports communication with remote computers through USB and LAN interfaces on the rear panel.

SCPI (Standard Commands for Programmable Instruments) is an ASCII based programming language that can be used to control the power supply from a remote computer installed with NI Measurement & Automation software.

In this chapter, we introduce the SCPI commands supported by the T3PS3000.

3.1 Syntax Conventions

Most commands are written in a mixture of upper- case and lower-case letters. The upper-case letters indicate the command's abbreviated spelling, which yields shorter program lines. For better program readability, use the long form. For example:

[{CH1|CH2}:]VOLTage <voltage>

For the keyword VOLTage, you can type VOLT or VOLTage in any combination of upper- or lower-case letters. Therefore, VolTaGe, volt and Volt are all acceptable. Other forms, such as VOL and VOLTAG, will generate an error.

- Braces ({ }) enclose the parameter choices. The braces are not sent with the command string.
- A vertical bar (|) separates parameter choices. For example, {CH1|CH2} in the above command indicates that you can specify a channel. The bar is not sent with the command string.
- Angle brackets (< >) indicate that you must specify a value for the enclosed parameter. For example, the above syntax statement shows the <voltage> parameter in angle brackets. You must specify a value for the parameter (for example " CH1:VOLT 10"). The angle brackets are not sent with the command string.
- Optional parameters are enclosed in square brackets ([]). If you do not specify a value for an optional parameter, the instrument uses a default value. For example, {CH1|CH2} in the above command can be omitted (for example, "VOLT 10"). In this case, the command would work on the current channel. The brackets are not sent with the command string.

3.2 Command List

1. *IDN?
2. *SAV
3. *RCL
4. INSTRument Subsystem
5. MEASure Subsystem
6. CURRent Subsystem
7. VOLTage Subsystem
8. OUTPut Subsystem
9. TIMER Subsystem
10. SYSTem Subsystem
11. IPAddr Subsystem
12. MASKAddr Subsystem
13. GATEAddr Subsystem
14. DHCP Subsystem

3.3 Command Descriptions

1. *IDN?

<i>Command format</i>	*IDN?
Description	Query the manufacturer, product type, series No., software version and hardware version
Return Info	Manufacturer, product type, series No., software version, hardware version
Typical Return	T3, Teledyne Test Tools, T3PS3000, PS00001130025, 1.01.01.01.02,V3.0

2. *SAV

<i>Command format</i>	*SAV {1 2 3 4 5}
Description	Save current state in nonvolatile memory
Example	*SAV 1

3. *RCL

<i>Command format</i>	*RCL {1 2 3 4 5}
Description	Recall state that had been saved from nonvolatile memory.
Example	*RCL 1

4. INSTrument

<i>Command format</i>	INSTrument {CH1 CH2}
Description	Select the channel that will be operated
Example	INSTrument CH1

<i>Command format</i>	INSTrument?
Description	Query the current operating channel
Example	INSTrument?
Typical Return	CH1

5. MEASure

<i>Command format</i>	MEASure: CURRent? [{CH1 CH2}]
Description	Query current value for specified channel, if there is no specified channel, query the current channel
Example	MEASure: CURRent? CH1
Typical Return	3.000

<i>Command format</i>	MEASure: VOLTage? [{CH1 CH2}]
Description	Query voltage value for specified channel, if there is no specified channel, query the current channel
Example	MEASure: VOLTage? CH1
Typical Return	30.000

<i>Command format</i>	MEASure: POWER? [{CH1 CH2}]
Description	Query power value for specified channel, if there is no specified channel, query the current channel
Example	MEASure: POWER? CH1
Typical Return	90.000

6. CURRent

<i>Command format</i>	[{CH1 CH2}:]CURRent <current>
Description	Set current value of the selected channel
Example	CH1:CURRent 0.5

<i>Command format</i>	[{CH1 CH2}:]CURRent?
Description	Query the current value of the selected channel
Example	CH1: CURRent?
Typical Return	0.500

7. VOLTage

<i>Command format</i>	[{CH1 CH2}:]VOLTage <voltage>
Description	Set voltage value of the selected channel
Example	CH1: VOLTage 25

<i>Command format</i>	[{CH1 CH2}:]VOLTage?
Description	Query the voltage value of the selected channel
Example	CH1: VOLTage?
Typical Return	25.000

8. OUTPut

<i>Command format</i>	OUTPut {CH1 CH2 CH3},{ON OFF}
Description	Turn on/off the specified channel output
Example	OUTPut CH1,ON

<i>Command format</i>	OUTPut:TRACK {0 1 2}
Description	Select operation mode. Parameters {0 1 2} mean independent, series and parallel, respectively
Example	OUTPut: TRACK 0

<i>Command format</i>	OUTPut:WAVE {CH1 CH2},{ON OFF}
Description	Turn on/off the Waveform Display function of specified channel
Example	OUTPut:WAVE CH1,ON

9. TIMEr

<i>Command format</i>	TIMEr:SET {CH1 CH2},{1 2 3 4 5},<voltage>,<current>,<time>
Description	Set timing parameters of specified channel, including group{1 2 3 4 5}, voltage, current, time
Example	TIMEr:SET CH1,2,3,0.5,2

<i>Command format</i>	TIMEr:SET? {CH1 CH2},{1 2 3 4 5};
Description	Query the voltage/current/time parameters of specified group of specified channel

Example	TIMER:SET? CH1,2
Typical Return	3,0.5,2

<i>Command format</i>	TIMER {CH1 CH2},{ON OFF};
Description	Turn on/off Timer function of specified channel
Example	TIMER CH1,ON

10. SYSTem

<i>Command format</i>	SYSTem: ERRor?
Description	Query the error code and the information regarding the equipment
Typical Return	0 No Error

<i>Command format</i>	SYSTem: VERSion?
Description	Query the software version running on the equipment
Typical Return	1.01.01.01.02

<i>Command format</i>	SYSTem: STATus?
Description	Query the current working state of the equipment
Typical Return	0x0224
Note	The return info is hexadecimal format, but the actual state is binary, so you must change the return info into a binary. The state correspondence relationship is as follows.

Bit No.	Corresponding state
0	0: CH1 CV mode; 1: CH1 CC mode
1	0: CH2 CV mode; 1: CH2 CC mode
2,3	01: Independent mode; 10: Parallel mode
4	0: CH1 OFF 1: CH1 ON
5	0: CH2 OFF 1: CH2 ON
6	0: TIMER1 OFF 1: TIMER1 ON
7	0: TIMER2 OFF 1: TIMER2 ON
8	0: CH1 digital display; 1: CH1 waveform display
9	0: CH2 digital display; 1: CH2 waveform display

11. IPAddr

<i>Command format</i>	IPAddr <IP address>
Description	Assign a static Internet Protocol (IP) address for the instrument
Example	IPAddr 10.11.13.214
Note	The command is invalid when DHCP is used

<i>Command format</i>	IPAddr?
Description	Query the current IP address of the instrument
Typical Return	10.11.13.214

12. MASKAddr

<i>Command format</i>	MASKAddr <NetMask>
Description	Assign a subnet mask for the instrument
Example	MASKAdd 255.255.255.0
Note	The command is invalid when DHCP is used

<i>Command format</i>	MASKaddr?
Description	Query the current subnet mask of the instrument
Typical Return	255.255.255.0

13. GATEaddr

<i>Command format</i>	GATEaddr <GateWay>
Description	Assign a gateway for the instrument
Example	GATEaddr 10.11.13.1
Note	The command is invalid when DHCP is used

<i>Command format</i>	GATEaddr?
Description	Query the current gateway of the instrument
Typical Return	10.11.13.1

14. DHCP

<i>Command format</i>	DHCP {ON OFF}
Description	Assign the network parameters (such as the IP address) for the instrument automatically
Example	DHCP ON

<i>Command format</i>	DHCP?
Description	Query whether the automatic network parameters configuration function is turned on
Typical Return	DHCP:ON

Chapter 4 Troubleshooting

Question 1: What if a short circuit occurs on the output terminal?

Answer 1: There are over current protection and short circuit protection inside the power supply, so current will be kept within a safe range.

Question 2: Is there a problem when the CH3 overload indicator is lit?

Answer 2: No, that only means the current value has reached 3.2 A, which is the maximum value within its range. You may continue to use the power supply, but we suggest that you decrease the output load.

Question 3: Is it normal that in series mode, the voltage and current values of one channel may be 0, while those of another channel are not 0?

Answer 3: Yes, because when current output load is higher than the limited current value, the working mode turns to CC from CV.

Question 4: On startup why is the observed value not the same as the set value and even changes slowly?

Answer 4: On startup the instrument components are in the process of warm up, so this is normal. Readings will be stable after about 30 minutes.



TELEDYNE TEST TOOLS
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ABOUT TELEDYNE TEST TOOLS

Company Profile

Teledyne LeCroy is a leading provider of oscilloscopes, protocol analyzers and related test and measurement solutions that enable companies across a wide range of industries to design and test electronic devices of all types. Since our founding in 1964, we have focused on creating products that improve productivity by helping engineers resolve design issues faster and more effectively. Oscilloscopes are tools used by designers and engineers to measure and analyze complex electronic signals in order to develop high-performance systems and to validate electronic designs in order to improve time to market.

The Teledyne Test Tools brand expands on the Teledyne LeCroy product portfolio by adding a comprehensive range of test equipment solutions for its customers. The new range of product solutions deliver engineers with a broad range of quality test solutions that enables speed to market product validation and design. More and more designers, engineers and lecturers are relying on Teledyne Test Tools to meet their testing, education and electronics validation needs with confidence and within budget.

Location and Facilities

Headquartered in Chestnut Ridge, New York, Teledyne Test Tools and Teledyne LeCroy have sales, service and development subsidiaries in the US and throughout Europe and Asia. Teledyne Test Tools and Teledyne LeCroy products are employed across a wide variety of industries, including semiconductor, computer, consumer electronics, education, military/aerospace, automotive/industrial, and telecommunications.

