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CSIPPS / SERIES

PROGRAMMABLE DC POWER SUPPLY

CSIPPS33T / CSIPPS55T

User's Manual

CBN018701

Circuit Specialists, Inc.

CSIPPS Programmable Dc Power Supply Series

PROGRAMMABLE DC POWER SUPPLY

Thanks for using our products, please read this manual thoroughly before operation.

CONTENTS

[Step 3]

After finishing the voltage zeroing of three channels, which are also saved, move the cursor to **[CURRENT] of [CH1]**. Connect the ammeter and adjust the knob to make the current to be 0MA when selecting the channel. Then press **[ENTER]** to finish the zeroing storage of the channel's current. Move the cursor down to process the current zeroing storage of channel 1 and channel 2 with the same procedure.

Zero Correct	H
CH1Votage	Current ✛
CH2Votage	Current
CH3Votage	Current

[Step 4]

After completing step 3, move the cursor to the left; press key 2 into the interface of range calibration. When the cursor is moved to the corresponding channel, you can adjust the output voltage by using the shuttle knob. And you can also regulate the voltage of the corresponding channel to be 32V(the smallest unit of the test voltmeter is Mv). Press **[ENTER]** and then the calibration data of the corresponding channel is stored. Move the cursor down into the calibration of another channel. And the operation is the same.

Output Correct	H
CH1Votage ✛	Current
CH2Votage	Current
CH3Votage	Current

[Step 5]

Connect the ammeter and adjust the knob to make the current be 5A(or 3A), after finishing the maximum voltage calibration of the three channels and storing them respectively. Press **[ENTER]** to save the current of the channel. Then move the cursor to carry on with the current calibration and storage of channel 2 and ch

Output Correct	H
CH1Votage	Current ✛
CH2Votage	Current
CH3Votage	Current

3. Cleaning

Use a wet cloth or cleanser to wipe the case to clean the unit. Never use solvents which may damage the surfaces of the instrument.

2. Adjustment and Calibration

2.1.1 Preparation
a. 30 minutes warm up before calibration
b. Ambient temperature: 73.4°F ± 5ºF Humidity: Under 80%RH
c. Select six and a half digital voltmeter, the current test range:
    CSIPPS33T > 3A
    CSIPPS55T > 5A

2.1.2 Output Calibration Steps
[Step 1]
Press [SHIFT][4] to display password input window, input Password
(varies with different models) by using the number keys, press
[ENTER] key. If an incorrect value has been input by mistake, the
password display is cleared and the correct password can be re-input.
Press [ENTER] to go to the calibration interface.

```
        Password
        ******
```
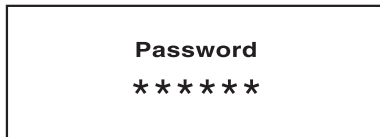
[Sep 2]
Input the correct password. At this time, the cursor is controlled by
keys **[8]**, **[2]**, **[4]**, **[6]** (up, down, left, right).
Set the cursor to the desired item of the corresponding channel and
then use the shuttle knob to adjust the input parameters and regulate
the voltage of the corresponding channel to be 0V (the smallest unit
of the test voltmeter is mV). Press [ENTER] and the data of the
corresponding channel is stored. Move the cursor down to calibrate
another channel. The procedure is the same.

```
    Zero Correct        H
CH1Votage +    Current
CH2Votage      Current
CH3Votage      Current
```
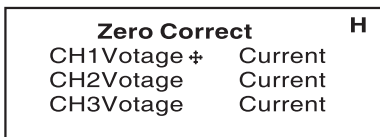
Safety Symbols

In order to protect the machine, these symbols may appear in this manual or on
the product :

WARNING: Warning statements identify condition or practices that might result in injury or loss of life.

CAUTION: Caution statements identify conditions or practices that could result in damage to this product or other property.

Ground: Ground terminal

Frame or chasis terminal

⚠ Safety Precautions

- Do not subject unit to high levels of vibration or pressure.
- Unit contains no user serviceable parts, refer servicing to a qualified service technician.
- NOTE: For the correct operating voltage and coresponding fuse requirement, see chart on page 6.
- Make sure the unit is connected to a properly grounded electrical outlet.
- Operating temperature range is 0 to 40 degrees C
    Do not operate or store in an environment of greater than
    80% Relative humidity.
- Do not operate the unit in the presence of large magnetic fields.

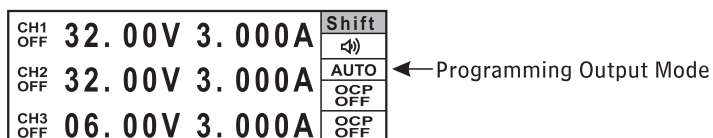## Product Overview

Additional Features

5.2 Data Recall Setting

Press **[SHIFT][STORE]** into menu screen, after moving the cursor to the delay parameter of the storage address to be recalled, press the **[AUTO]** button, then shape identifier "▐" appears, which says the group is the output parameters of the corresponding channels.
For example: call out parameters of CH1 storage address "03" to the present state of setting equipment, press **[SHIFT][RECALL]** into menu screen. After using knob to switch the cursor to time delay parameter of address 03, press [AUTO], then the shape identifier "▐" appears completing the call setting.
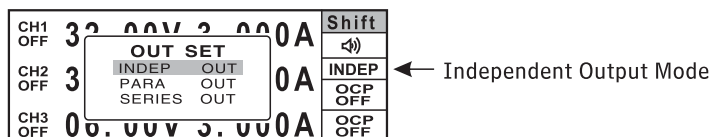
6. Automatic Sequence Execution

In the main window, click **[AUTO]**, the interface displays AUTO by pressing by pressing **[OUTPUT]**, press **[OUTPUT]** then the output is output continuously according to the set voltage, current and delay parameters. Press **[AUTO]** again to cancel the automatic sequence.

```
CH1  32.00V 3.000A   Shift
OFF                   🔊
CH2  32.00V 3.000A   AUTO       ◄─ Programming Output Mode
OFF                   OCP
                      OFF
CH3  06.00V 3.000A   OCP
OFF                   OFF
```

7. Series and Parallel Operation Mode
Click [SHIFT][PARA/SER] to select parallel operation mode; use the shuttle knob to select the output mode. Press [ENTER] for confirmation and return to the main interface. When the unit operates in series and parallel operation mode, the output voltage and current of Ch2 is the master, the Ch1 outputs automatically follow the Ch2 output.

```
CH1  32.00V 3.000A   Shift
OFF       OUT SET     🔊
CH2  3  INDEP   OUT  0A  INDEP   ◄─ Independent Output Mode
OFF     PARA    OUT     OCP
        SERIES  OUT     OFF
CH3  06.00V 3.000A   OCP
OFF                   OFF
```

Technical specifications

Note: the following indexes are tested after 20 minutes' warming-up.

Specifications		CSIPPS33T	CSIPPS55T
Output	Voltage	0～32V x 2, 0-6V 1	0～32V x 2, 0–6V x 1
	Current	0～3A x 3	0～5A x 2 0～3A x 1
Load Effect	Voltage	≤3mV(≤8mV rated current＞3.0A)	
	Current	≤3mA(≤5mA rated current＞3.0A)	
Power Effect	Voltage	≤3mV(AC±5%)	
	Current	≤3mA	
Resolution	Voltage	10mV	
	Current	1mA（2mA rated current＞3A）	
Set Accuracy (25±5℃)	Voltage	≤0.05%＋10 mV(＋20 mV rated voltage＞36V)	
	Current	≤0.1%＋5ma(＋10 mA rated current＞3.0A)	
Ripple (20Hz-20MHz)	Voltage	Ripple≤1 mVrms	
	Current	≤3mArms(≤5mArms rated current＞3.0A)	
Temperature Coefficient (0～40℃)	Voltage	100ppm+3mV	
	Current	100ppm+3mA	
Read back Resolution	Voltage	10 mV	
	Current	1mA(2mA rated current＞3.0A)	
Response Time	Voltage rise	10%~90%≤100ms	
	Current fall	90%~10%≤10ms(≥10% rated load)	
Readback Temperature Coefficient	Voltage	≤100ppm+10 mV	
	Current	≤150ppm+10 mA	
Drift	Voltage	≤100ppm+10 mV	
	Current	≤150ppm+10 mA	
Serial synchronous operation	Serial synchronous error	≤0.1%＋20 mV	
	Series(Load)	20 mA	

Parallel Synchronous Operation	Set Accuracy	Voltage≤0.05%+20 mV Current≤0.1%+20 mV
	Load regulation	Voltage≤5mA Current≤6mA
	Power regulation	Voltage≤3 mV Current≤6mA
Memory		Store/Recall points 0~90
Timer	Setting time	1s~9999s
	Resolution	1s
	Function	Auto Step running
Interface		RS232,USB interface
Mechanical Spec.	Dimensions	230（W）×140（H）×380（L）mm
	Weights	10Kg
Operation Environment		Indoor use, Altitude up to 2000 m

Precautions before operation

1. Unpacking the Instrument
The product has been fully tested and inspected before shipping from the factory. Upon receiving the instrument, please unpack and inspect it to check if there is any damage caused during transportation. If any sign of damage is found, notify the shipper or the dealer immediately.

2. Checking the Line Voltage
The product can be powered by any kind of line voltages shown in the table below. Before connecting the power plug to an AC line outlet, make sure the voltage selector on the rear panel is set to the correct position corresponding to the line voltage. The unit could be damaged by connecting to the wrong AZ line voltage.

When the voltages are changed, replace the fuses as shown below:

MODEL	Line Voltage	Input Range	Fuse
CSIPPS33T	110V	105V~115V	T5A - 250V
CSIPPS55T	110V	105V~115V	T8A - 250V

Example: Set current at 1.000A.
Press **[I SET][1][.][0][0][0][ENTER]**
When the load current through output terminal exceeds the set value, the instrument is operated in the C.C. mode, otherwise the instrument is operated in the C.V. mode.

3. **Over Current Protection Setting**
Click **[OCP]** to select OCP mode. This instrument will display OCP ON; OCP mode is cancelled by pressing **[SHIFT][OCP]**.

4. **Voltage/Current Step Setting**
By pressing F/C, the voltage and the current step size will change.

5. **Data Storage and Recall**
5.1 The Data Storage Setting
Press **[SHIFT][STORE]** into menu screen, and use the cursor of the corresponding switch knob, and then press **[ENTER]**; move the direction key (**[8]**,**[2]**,**[4]**,**[6]**) to select voltage, current and delay time; the selected items are the white values; press **[ENTER]**, then you can input the data directly; after that, press **[ENTER]**, then this is stored.
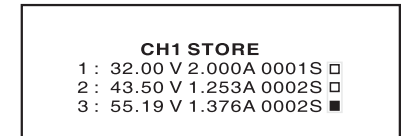
Example: set output voltage, current and delay time of the CH1 storage address "01" to be 15.00V, 3.00A, 20S. Press **[SHIFT][STORE]** into menu screen, and adjust wheel knob to switch to Ch1 channel. Then press **[ENTER]** into Ch1 storage interface; move the cursor to the voltage, current and delay time respectively, press **[ENTER]** to input data and then press **[ENTER]** to store data.

Operation Method

1.Output Voltage Setting

At first, select the wanted channel by pressing **[SHIFT][CHx]**, now

the cursor is set to **CHx (x=1, 2 or 3)**. Please refer to the drawing:

Method 1: Set output voltage by pressing **[V SET]** and using

number key to key in **[voltage value]**, then press **[ENTER].**

Method 2: Press **[V SET]** and using knob to input **[voltage value]**,the output voltage

setting will be changed immediately, then press **[ENTER]** to terminate the

voltage setting.

Obviously, using this method, the output voltage will be changed

immediately following the input value through knob.

CH1 OFF	32.00V 3.000A	Shift ◁))
CH2 OFF	32.00V 3.000A	INDEP / OCP OFF
CH3 OFF	06.00V 3.000A	OCP OFF

CH1 OFF	__ __V 3.000A	Shift ◁))
CH2 OFF	32.00V 3.000A	INDEP / OCP OFF
CH3 OFF	06.00V 3.000A	OCP OFF

Example: Set voltage at 30.00V.

Press **[V SET][3][2][.][0][0][ENTER].**

2. Output Current Setting:

At first, select the wanted channel by pressing **[SHIFT][CHx]**, now the cursor is set

to **CHx (x=1, 2 or 3)**. Please refer to the drawing:

Method 1: Set output current by pressing **[I SET]** and using

number key to key in **[current value]**, and **[ENTER]**.

Method 2: Press **[I SET]** and using knob to input **[current value]**,

the output current setting will be changed immediately,

then press **[ENTER]** to terminate the current setting. Obviously, using this

method, the output current will be changed immediately following the input

value through knob.

CH1 OFF	32.00V 3.000A	Shift ◁))
CH2 OFF	32.00V 3.000A	INDEP / OCP OFF
CH3 OFF	06.00V 3.000A	OCP OFF

CH1 OFF	32.00V __ __A	Shift ◁))
CH2 OFF	32.00V 3.000A	INDEP / OCP OFF
CH3 OFF	06.00V 3.000A	OCP OFF

⚡ **WARNING:** To avoid electrical shock the power cord protective
grounding conductor must be connected to ground.

⚠ **CAUTION:** To avoid personal injury and fire, disconnect the
power cord before removing the fuse holder.

### 3. Operation Environment

The normal ambient temperature range of this instrument is from 0° to 40°C
(32° to 104°F). To operate the instrument, exceeding this specific temperature
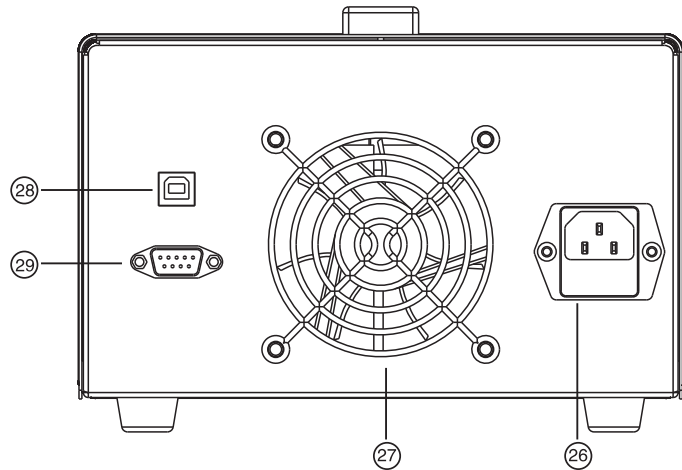range may cause damage to the circuits of instrument.

⚠ **CAUTION:** To avoid damage to the instrument, never use it at
the temperature of over 40°C.

Panel Introduction

Ichnography of Front Panel as below
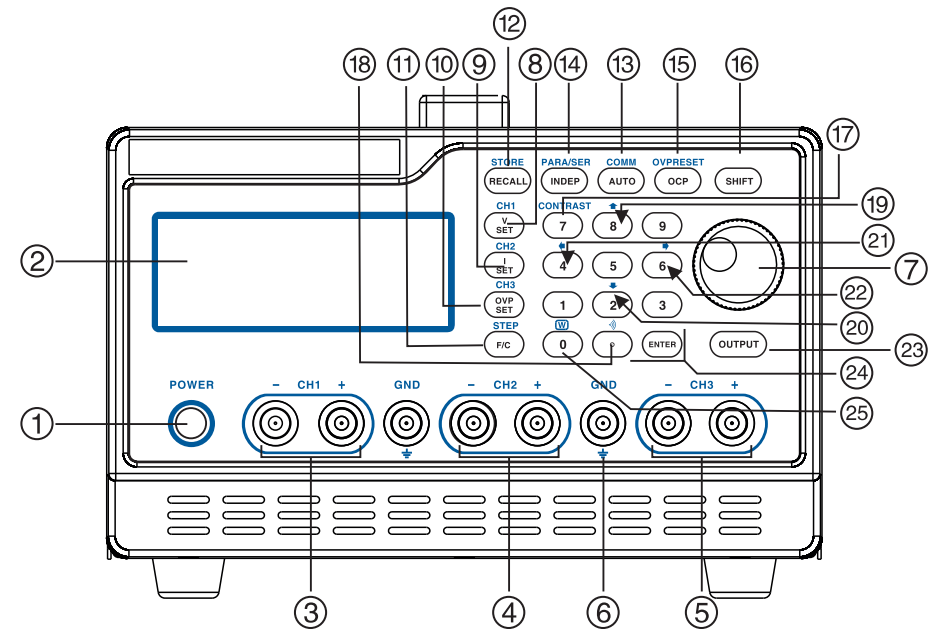
Ichnography of Rear Panel as below

Function description as below:

1	POWER	Press this button to turn the power on
2	DISPLAY	The display Settings of voltage and current, output voltage and output current, setting and output condition
3	CH1 OUT	CH1 output terminals
4	CH2 OUT	CH2 output terminals
5	CH3 OUT	CH3 output terminals
6	GND Terminal	Ground terminal connecting to CASE
7	Rotary Encoder	Shuttle knob: Adjusts the output voltage & current
8	V SET(CH1)	Set Output voltage: Switch to channel 1 by pressing [SHIFT] [CH1] to proceed group setting
9	I SET(CH2)	Set Output current: Switch to channel 2 by pressing [SHIFT] [CH2] to proceed group setting
10	OVP SET(CH3)	Set OVP value: Switch to channel 3 by pressing [SHIFT] [CH3] to proceed group setting

11	F/C (STEP)	Switches the shuttle knob between macro-tuning and micro-tuning: you can increase the step size by pressing F/C
12	RECALL(STORE)	Recall stored information. To store, press [SHIFT][STORE]
13	AUTO(COMM)	Click to set automatic execute mode. Click [SHIFT][COMM] to set communications settings
14	INDEP (PARA/SER)	Press [SHIFT][PARA/SER] to select parallel mode. Single click [INDEP] key to independently operate the supplies.
15	OCP (OVP RESET)	OCP on/off Press [SHIFT][RESET] keys to clear over-voltage selection.
16	SHIFT	To select alternate functions.
17	CONTRAST	Set the contrast adjustment of the display by pressing [SHIFT][CONTRAST]. The rotary shuttle knob adjusts the display contrast; press [ENTER] to exit setting.
18	)))	Turn on/off the buzzer by pressing [SHIFT] [ )))]
19	⬆	Move the cursor upward by pressing [⬆] in the condition of storage
20	⬇	Move the cursor downward by pressing [⬇] in the condition of storage
21	⬅	Move the cursor on the left by pressing [⬅] in the condition of storage
22	➡	Move the cursor on the right by pressing [➡] in the condition of storage
23	OUTPUT	Turn on or off output by pressing the knob; when you select a channel, you can turn on/off the corresponding channel; when you select no channel, you turn on/off all channels.
24	0~9 ".", ENTER	Data entry, ENTER Value output
25	W , "0"	Press [SHIFT] [W] to restore factory settings
26	AC Power Socket	AC Power Socket AC power input terminal
27	Cooling Fan	Cooling Fan
28	Interface	USB interface
29		RS232C communication interface