

INSTRUCTION MANUAL

REGULATED DC POWER SUPPLY

MODEL : P3030 (30V/3A SINGLE OUTPUT)

MODEL : P3050 (30V/5A SINGLE OUTPUT)

MODEL : P6015 (60V/1.5A) SINGLE OUTPUT)

MODEL : P3015D (30V/1.5A DUAL INDEPENDENT OUTPUT)

MODEL : P3030D (30V/3A DUAL INDEPENDENT OUTPUT)

MODEL : P3015T (30V/1.5A x 2, 5V/5A FIXED, TRIPLE OUTPUT)

MODEL : P3035T (30V/3A x 2, 5V/3A FIXED, TRIPLE OUTPUT)

MODEL : P3050T (30V/5A x 2, 5V/3A FIXED, TRIPLE OUTPUT)

MODEL : P3625T (36V/2.5A x2, 3.3V or 5V/5A FIXED, TRIPLE OUTPUT)

SAFETY SUMMARY

SAFETY PRECAUTIONS

Please take a moment to review these safety precautions. They are provided for your protection and to prevent damage to the power supply.

This safety information applies to all operator and service personals.

※NOTE : If the equipment is used in a manner not specified by the manufacture, the protection provided by the equipment may be impaired.

CAUTION AND WARNING STATEMENTS.

CAUTION : Is used to indicate correct operating or maintenance procedures in order to prevent damage to or destruction of equipment or other property.

WARNING : Calls attention to a potential danger that requires correct procedures or practices in order to prevent personal injury.

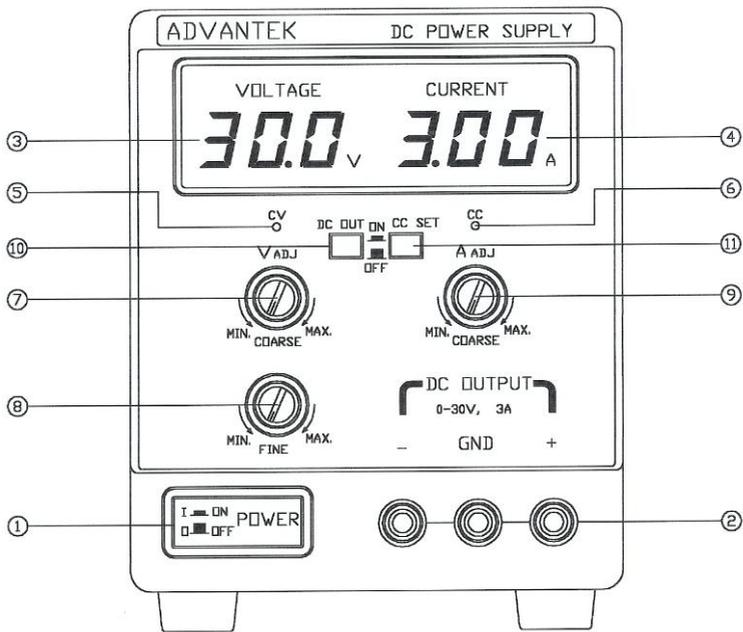
SYMBOLS

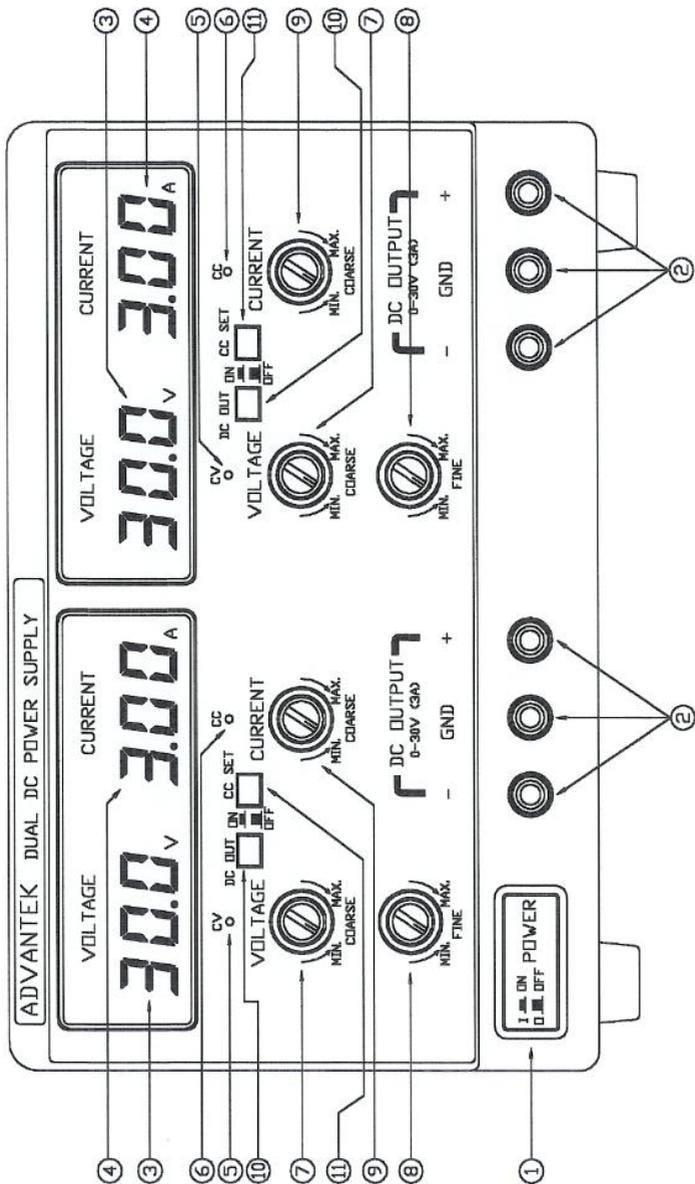


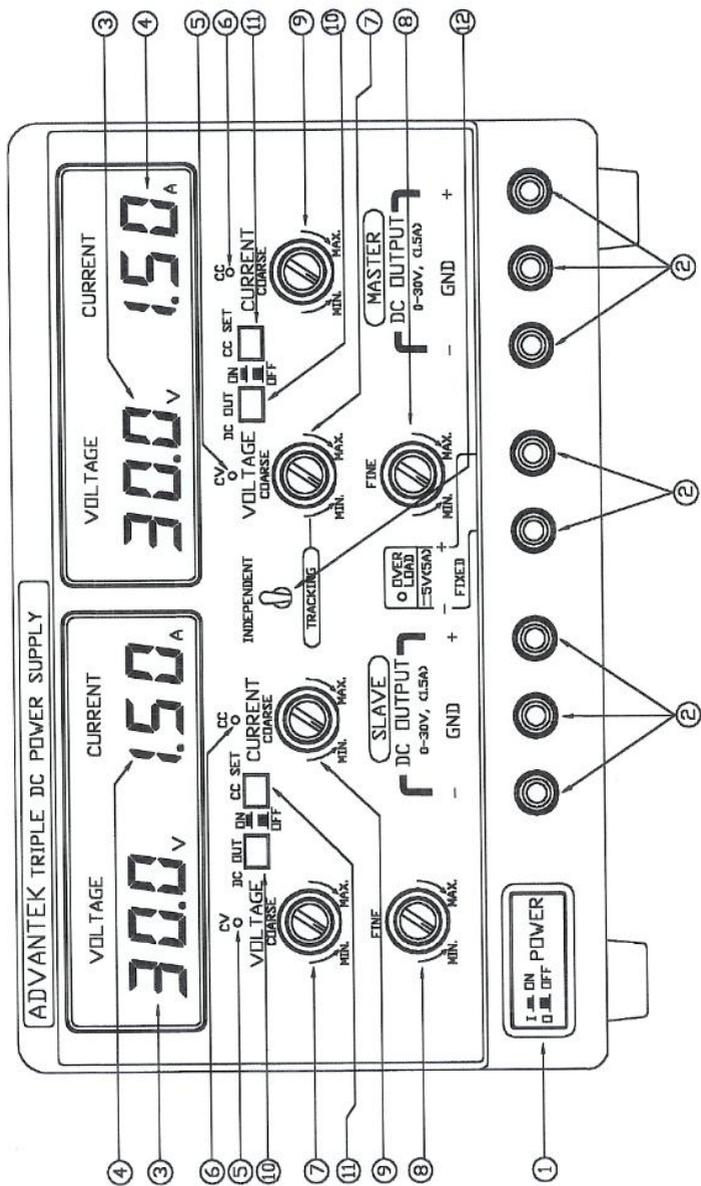
Caution (refer to accompanying documents)

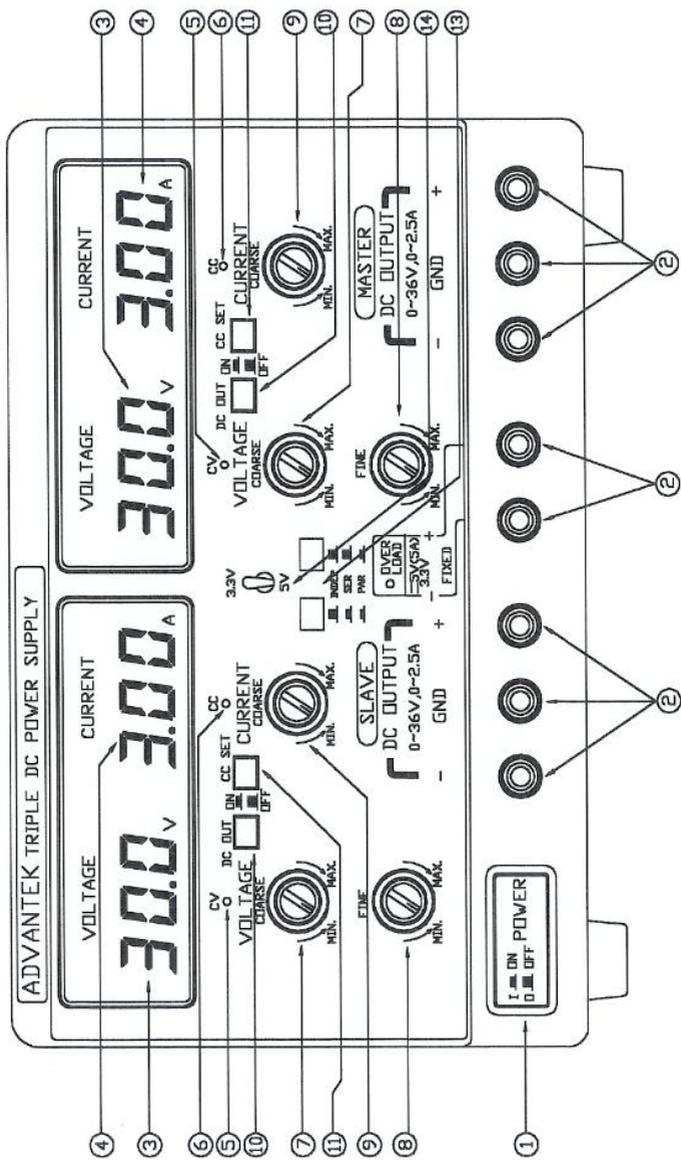


Protective conductor terminal









1,DESCRIPTION

CONTROLS AND INDICATORS

- ① POWER SWITCH ; On / Off Switch.
- ② OUTPUT TERMINAL ; positive polarity(+) is red.
Negative polarity(-) is black.
Earth and chassis ground is green.
- ③ DIGITAL VOLT METER ; Indicates the output voltage.
- ④ DIGITAL CURRNT METER ; Indicates the output current.
- ⑤ CV LAMP ; Lights when the power turn on and constant voltage operation.
- ⑥ CC LAMP ; Lights when this unit in constant current operation.
- ⑦ VOLT ADJ (COARSE) KNOB ; For the coarse adjustment of the output voltage.
- ⑧ VOLT ADJ (FINE) KNOB ; For the fine adjustment of the output voltage.
- ⑨ CURRENT ADJ KNOB ; For the adjustment of the output current.
- ⑩ DC OUTPUT SWITCH ; On/off switch for the DC OUTPUT.
- ⑪ CC SET SWITCH ; Current limiting set-up without output terminal shorting or various loads, and provide current limiting value preview facility.
- ⑫ INPEPENDENT/TRACKING SWITCH(Model P3015T only) ;
Covering from independent applying of Master and Slave outputs to a serial connect. In the tracking mode, because(-) of Slave and Master are internally connected, it is output inbetween(+) of Slave and (-) of Master. In case short pins are used inbetween(-) terminal and ground, eliminate short pins from output terminal of Master and Slave.
- ⑬ PARALLEL / SERIES OPERATIONS SWITCH (MODEL P3625T / 3035T / 3050T only);
In case of “independence usage”, set the both of two

switches return(off) position.

Series mode : Setting the left switch to “push(on) position” and right switch to “return(off) position”, the value connected (+) of Master and (-) of Slave is generated by internal connecting (-) of master and (+) of slave.

Parallel mode : Setting the both switches to “push(on) position”, the Master and Slave value is generated by parallel connection.

In Series / Parallel mode, both of voltage and current will be controlled by Master only.

- ⑭ 5V / 3.3V OPERATIONS SWITCH (MODEL P3625T only) ; Setting the ‘toggle switch’ on 5V or 3.3V of Front Panel, it will be generated output for 5V or 3.3V.

2, SPECIFICATION

MODEL		P3030	P3050	P6015
OUTPUT	VOLTAGE	0 to 30V	0 to 30V	0 to 60V
	CURRENT	0 to 3A	0 to 5A	0 to 1,5A
Constant Voltage	Load Regulation (0 to 100% load variation)	8mV		14mV
	Line regulation (0 to 10% line variation)	8mV		14mV
	Ripple & noise (rms)	1mV rms		
Constant Current	Load Regulation (0 to 100% load variation)	10mA	20mA	8mA
	Line regulation (0 to 10% line variation)	4mA	8mA	3mA
	Ripple & noise (rms)	3mA	5mA	2mA
Display	Voltmeter	Type	3 digit red LED	
		Accuracy	$\pm 0.5\% + 3$ digits	
		Resolution	100mV	
	Ammeter	Type	3 digit red LED	
		Accuracy	$\pm 1.0\% + 3$ digits	
		Resolution	10mA	
	LED indicators		Green LED for CV and red LED for CC	
Temperature	Operating Temp	0°C to 32°C @ 10 to 80% RH		
	Storage Temp	-20°C to 60°C @ 10 to 80% RH		
	Cooling method	Free air	Fan	Free air
Resistance	Max. Voltage to ground	$\pm 200V$		
	Insulation Resistance	30M Ω @ 500V: AC input to Chassis		
20M Ω @ 500V: Chassis to terminal				
Dimensions	Size (mm) W×H×D	124 × 160 × 326		
	Weight (Kg)	5	5.5	5

MODEL		P3015D	P3030D
Output	VOLTAGE	Output 1 and 2 0 to 30V	
	CURRENT	0 to 1.5A	0 to 3A
Constant Voltage	Load Regulation (0 to 100% load variation)	8mV	
	Line regulation (0 to 10% line variation)	8mV	
	Ripple and noise (rms)	1mV rms	
Constant Current	Load Regulation (0 to 100% load variation)	8mA	10mA
	Line regulation (0 to 10% line variation)	3mA	4mA
	Ripple and noise (rms)	2mA	3mA
Display	Voltmeter	Type	3 digit red LED
		Accuracy	$\pm 0.5\% + 3$ digits
		Resolution	100mV
	Ammeter	Type	3 digit red LED
		Accuracy	$\pm 1.0\% + 3$ digits
		Resolution	10mA
	LED indicators		Green LED for CV and red LED for CC
Temperature	Operating Temp	0°C to 32°C @ 10 to 80% RH	
	Storage Temp	-20°C to 60°C @ 10 to 80% RH	
	Cooling method	Free air	
Resistance	Max. Voltage to ground	$\pm 200V$	
	Insulation Resistance	30M Ω @500V: AC input to Chassis	
		20M Ω @500V: Chassis to terminal	
Dimensions	Size (mm) W×H×D	234 × 160 × 326	
	Weight (Kg)	7.5	

MODEL		P3015T		
Output	VOLTAGE	Output 1and 2 0 to 30V	Output 3 5V(fixed)	
	CURRENT	0 to 1.5A	0 to 5A	
Constant Voltage	Load Regulation (0 to 100% load variation)	8mV	0.1%+5 mV	
	Line Regulation (0 to 10% line variation)	8mV	0.1%+5 mV	
	Ripple and noise (rms)	1mV	2mV	
Constant Current	Load Regulation (0 to 100% load variation)	10mA	N/A	
	Line Regulation (0 to 10% line variation)	3mA		
	Ripple and noise (rms)	2mA		
Display	Voltmeter	Type	3 digit red LED	N/A
		Accuracy	±0.5% + 3 digits	
		Resolution	100mV	
	Ammeter	Type	3 digit red LED	
		Accuracy	±1.0% + 3 digits	
		Resolution	10mA	
	LED indicators		Green LED for CV and red LED for CC	Overload Red LED
Temperature	Operating Temp	0°C to 32°C @ 10 to 80% RH		
	Storage Temp	-20°C to 60°C @ 10 to 80% RH		
	Cooling method	Free air		
Resistance	Max. Voltage to ground	±200V		
	Insulation Resistance	30MΩ@500V: AC input to Chassis		
		20MΩ@500V:Chassis to terminal		
Dimensions	Size (mm) W×H×D	234 × 160 × 326		
	Weight (Kg)	7.5		

MODEL		P3625T		
Output	VOLTAGE	Output 1and 2 0 to 36V	Output 3 3.3V/5V	
	CURRENT	0 to 2.5A	0 to 5A	
Constant Voltage	Load Regulation (0 to 100% load variation)	8mV	0.1%+5 mV	
	Line Regulation (0 to 10% line variation)	8mV	0.1%+5 mV	
	Ripple and noise (rms)	1mV	2mV	
Constant Current	Load Regulation (0 to 100% load variation)	10mA	N/A	
	Line Regulation (0 to 10% line variation)	4mA		
	Ripple and noise (rms)	3mA		
Display	Voltmeter	Type	3 digit red LED	N/A
		Accuracy	±0.5% + 3 digits	
		Resolution	100mV	
	Ammeter	Type	3 digit red LED	
		Accuracy	±1.0% + 3 digits	
		Resolution	10mA	
LED indicators		Green LED for CV and red LED for CC	Overload Red LED	
Temperature	Operating Temp	0°C to 32°C @ 10 to 80% RH		
	Storage Temp	-20°C to 60°C @ 10 to 80% RH		
	Cooling method	Fan		
Resistance	Max. Voltage to ground	±200V		
	Insulation Resistance	30MΩ@500V: AC input to Chassis		
		20MΩ@500V:Chassis to terminal		
Dimensions	Size (mm) W×H×D	234 × 160 × 326		
	Weight (Kg)	9.5		

MODEL		P3035T		
Output	VOLTAGE	Output 1and 2 0 to 30V	Output 3 5V	
	CURRENT	0 to 3A	0 to 3A	
Constant Voltage	Load Regulation (0 to 100% load variation)	8mV	0.1%+5 mV	
	Line Regulation (0 to 10% line variation)	8mV	0.1%+5 mV	
	Ripple and noise (rms)	1mV	2mV	
Constant Current	Load Regulation (0 to 100% load variation)	10mA	N/A	
	Line Regulation (0 to 10% line variation)	4mA		
	Ripple and noise (rms)	3mA		
Display	Voltmeter	Type	3 digit red LED	N/A
		Accuracy	$\pm 0.5\% + 3$ digits	
		Resolution	100mV	
	Ammeter	Type	3 digit red LED	
		Accuracy	$\pm 1.0\% + 3$ digits	
		Resolution	10mA	
	LED indicators		Green LED for CV and red LED for CC	Overload Red LED
Temperature	Operating Temp	0°C to 32°C @ 10 to 80% RH		
	Storage Temp	-20°C to 60°C @ 10 to 80% RH		
	Cooling method	Fan		
Resistance	Max. Voltage to ground	$\pm 200V$		
	Insulation Resistance	30M Ω @500V: AC input to Chassis		
		20M Ω @500V: Chassis to terminal		
Dimensions	Size (mm) W×H×D	234 × 160 × 326		
	Weight (Kg)	9.5		

MODEL		P3050T		
Output	VOLTAGE	Output 1and 2 0 to 30V	Output 3 5V	
	CURRENT	0 to 5A	0 to 3A	
Constant Voltage	Load Regulation (0 to 100% load variation)	8mV	0.1%+5 mV	
	Line Regulation (0 to 10% line variation)	8mV	0.1%+5 mV	
	Ripple and noise (rms)	1mV	2mV	
Constant Current	Load Regulation (0 to 100% load variation)	10mA	N/A	
	Line Regulation (0 to 10% line variation)	4mA		
	Ripple and noise (rms)	3mA		
Display	Voltmeter	Type	3 digit red LED	N/A
		Accuracy	$\pm 0.5\% + 3$ digits	
		Resolution	100mV	
	Ammeter	Type	3 digit red LED	
		Accuracy	$\pm 1.0\% + 3$ digits	
		Resolution	10mA	
	LED indicators		Green LED for CV and red LED for CC	Overload Red LED
Temperature	Operating Temp	0°C to 32°C @ 10 to 80% RH		
	Storage Temp	-20°C to 60°C @ 10 to 80% RH		
	Cooling method	Fan		
Resistance	Max. Voltage to ground	$\pm 200V$		
	Insulation Resistance	30M Ω @500V: AC input to Chassis		
		20M Ω @500V: Chassis to terminal		
Dimensions	Size (mm) W×H×D	234 × 160 × 326		
	Weight (Kg)	12		

3, OPERATION

WARNING ; Before connecting line power to your power supply, make sure that the AC input voltage is correct for your power source.

TURN ON CHECKOUT PROCEDURE.

- a) Turn CURRENT control fully clockwise.
- b) Set AC power switch push to on position, digital display and CV lamp should light.
- c) Turn VOLTAGE controls fully counterclockwise to ensure that output decreases to 0V DC then fully clockwise to ensure that output voltage increase to the maximum output voltage.
- d) While depressing CC SET push button, turn the CURRENT control fully counterclockwise and then fully clockwise to ensure that the current limit value can be set from zero to maximum rated value.
- e) Connect load to output terminals.

CONSTANT VOLTAGE OPERATION

To set up a power supply for a constant voltage operation, proceed as follows;

- a) Turn on power supply and adjust VOLTAGE adjust control for desired output voltage (output terminals open). CV lamp should light.
- b) While depressing CC SET push button, adjust CURRENT control for maximum output current allowable (current limit). During actual operation, if a load change causes the current limit to be exceeded, the power supply will automatically crossover to constant current mode and output voltage will drop proportionately.

- c) Push on DC OUT push button switch for DC voltage output.

CONSTANT CURRENT OPERATION

To set up a power supply for a constant current operation, proceed as follows;

- a) Turn CURRENT control fully counter clockwise to ensure that output decreases to 0A, and then on power supply.
- b) Adjust VOLTAGE control (no load connected) for maximum output voltage allowable (voltage limit), as determined by load conditions. During actual operation, if a load change causes the voltage limit to be exceeded, the power supply will automatically crossover to constant voltage operation at the preset voltage limit and output current will drop proportionately.
- c) Adjust CURRENT control for desired output current while depressing CC SET button.
- d) Push on DC OUT push button switch for DC voltage output.

CONNECTING LOADS

The output of the supply is isolated from earth ground.

Either output terminal may be grounded or the output can be floated up to 200 voltage off ground.

TRACKING OPERATION (MODEL P3015T Only)

To select a tracking operation output as follows;

- a) Set independent and tracking select switch to tracking position.
- b) Depressing CC SET push button switch and adjust CURRENT control of the each for maximum output current allowable (current limit), as determined by load conditions.
- c) Adjust VOLTAGE control (COARSE,FINE) of the Master for desired output voltage. This time, VOLTAGE control (COARSE and FINE) of the Slave should be set on maximum.
- d) Connect load using the negative(black) terminal of the Slave

- supply and the positive(red) terminal of the Master supply.
- e) Push DC OUT switch of both.

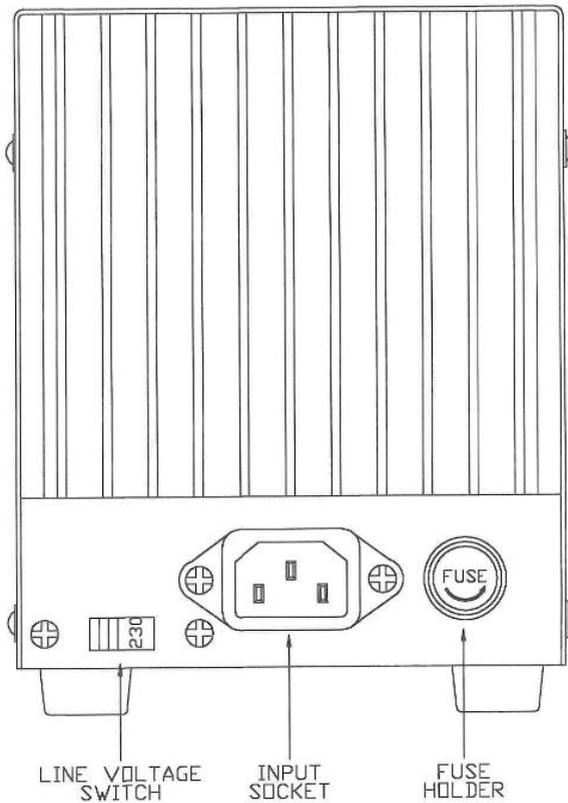
TRACKING OPERATION (MODEL P3625T Only)

In case of “independence usage”, set the both of two switches return(off) position.

- a) Series mode : Setting the left switch to “push(on) position” and right switch to “return(off) position”, the value connected (+) of Master and (-) of Slave is generated by internal connecting (-) of master and (+) of slave.
- b) Parallel mode : Setting the both switches to “push(on) position”, the Master and Slave value is generated by parallel connection.
- d) In Series / Parallel mode, both of voltage and current will be controlled by Master only.

4, MAINTENANCE

WARNING : The following instructions are for use by qualified personnel only. To avoid electrical shock, do not perform any servicing other than contained in the operating instructions unless you are qualified to do so.



FUSE REPLACEMENT

If the AC fuse blows, the CV or CC lamp will not light and power supply will not operate. The fuse should not normally be open unless a problem has developed in the unit. Try to determine and correct the cause of the blown fuse, then replace only with a fuse of the correct rating and type. The fuse is located on the rear panel.

LINE VOLTAGE CONVERSION

The primary winding of the power transformer is tapped to permit operation from 115/230V AC, 50/60Hz line voltage. Conversion from one line voltage to another is done by AC select switch on the rear panel. The line voltage to which the unit was factory set is indicated on the rear panel. To convert to a different line voltage, perform the following procedure;

- a) Make sure the power cord is unplugged.
- b) Change the AC select switch to the desired line voltage position.
- c) A change in line voltage may also require a corresponding change of fuse value. Install the correct fuse value as listed on rear panel.

5,CALIBRATION ADJUSTMENT

ADJUSTMENT OF THE RATING VOLTAGE.

- a) Connect digital multimeter across output terminals of supply and set the DC volt position.
- b) Turn on supply, and push on DC OUT push button switch.
- c) Adjust voltage controls (COARSE, FINE) fully clockwise.
- d) Adjust SVR203 for a reading of rate volts $\times 1.03$ on the digital multimeter.
- e) Adjust SVR401 until digital multimeter reads exactly maximum rated output voltage.
- f) Push off DC OUT push button switch and adjust SVR202 until front panel meter reads exactly digital multimeter reading.

ADJUSTMENT OF THE RATING CURRENT

- a) Connect load resistor and digital multimeter with series and set the range to DC 20 amp position.
- b) Turn on power supply.
- c) Adjust voltage controls and current control to minimum (fully counter clockwise).
- d) Adjust SVR201 for reading of 0 amp on the digital multimeter.
- e) Adjust voltage controls and current control to maximum (fully clockwise).
- f) Adjust SVR501 until front panel meter exactly digital multimeter reading.
- g) Push on CC SET push button switch.
- h) Adjust SVR204 until digital multimeter exactly the maximum rated output current.