MODEL 7324

REGULATED DC POWER SUPPLY

OPERATION MANUAL

印刷表紙使用のこと

KKIKUSUI EALECTRONICS CORP.

Power Requirements of this Product

Power requirements of this product have been changed and the relevant sections of the Operation Manual should be revised accordingly.
(Revision should be applied to items indicated by a check mark ☑.)

☐ Input voltage

The input voltage of this product is _____ VAC,
and the voltage range is _____ to _____ VAC. Use the product within this range only.

☐ Input fuse

The rating of this product's input fuse is _____A, _____VAC, and _____.

WARNING

- To avoid electrical shock, always disconnect the AC power cable or turn off the switch on the switchboard before attempting to check or replace the fuse.
- Use a fuse element having a shape, rating, and characteristics suitable for this product. The use of a fuse with a different rating or one that short circuits the fuse holder may result in fire, electric shock, or irreparable damage.

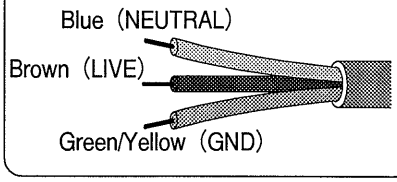
☐ AC power cable

The product is porvided with AC power cables described below. If the cable has no power plug, attach a power plug or crimp-style terminals to the cable in accordance with the wire colors specified in the drawing.

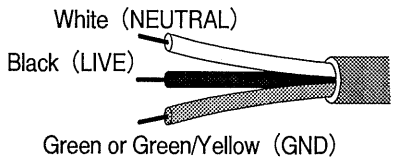
WARNING

- The attachment of a power plug or crimp-style terminals must be carried out by qualified personnel.

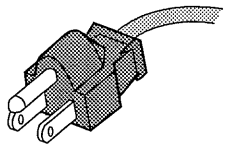
☐ Without a power plug



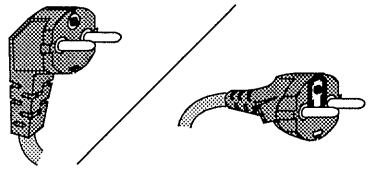
☐ Without a power plug



☐ Plugs for USA



☐ Plugs for Europe



☐ Provided by Kikusui agents

Kikusui agents can provide you with suitable AC power cable.
For further information, contact your Kikusui agent.

☐ Another Cable _____

 Kikusui Part No. Z9-000-027 IB001681

KIKUSUI

Kikusui Electronics' MODEL 7324, compact in size and light in weight provided with a voltmeter and ammeter on the panel, is a transistorized, series and regulated DC power supply that is continuously variable by double variable resistor in the voltage range of 1 - 30V and enables to make use of 0.5A as the maximum output current.

An output current limiting circuit of accurate performance operates against such troubles as overload and output shortcircuit, and current limitation can be set continuously in the range of 10% ~ 100% thereof, so that this power supply is also usable as a constant-current supply.

This model permits series and parallel operation.

C O N T E N T S

S P E C I F I C A T I O N

Power source		_____V 50/60 Hz
Power consumption	Full load (output 30V, 0.5A)	Approx. 40 VA
Ambient temperature		40°C maximum
Dimensions	* 106W x 145H x 150D mm	
(Max.)	111W x 158H x 215D mm	
Weight		Approx. 3 kg
Accessories	Short bar	1
	Instruction manual	1

Output

Terminal	With color distinction in red, white and black, disposed in an equilateral triangle spaced by 19mm	
Polarity		Positive or negative polarity
Voltage to ground		± 100V maximum
Voltage	Continuously variable	1 ~ 30V
Current		0.5A
Ripple		2mV p-p
Stability	10mV for power voltage fluctuation ± 10%	
	10mV for load variation 1 ~ 30V, 0 ~ 0.5A **	
Current limitation	(Constant-current automatic crossover type)	
	Continuously variable	0.05A ~ 0.5A
Voltmeter	Full scale 32V	Class 2.5
Ammeter	Full scale 0.6A	Class 2.5

Insulation (DC 250V between chassis and output terminal) more than 10MΩ

(DC 1000V between chassis and power source) more than 50MΩ

Series and parallel operation are possible.

* Four sets can be fitted side by side on 19' or 500mm standard rack.

** Voltage drop by the ammeter is circuit-compensated.

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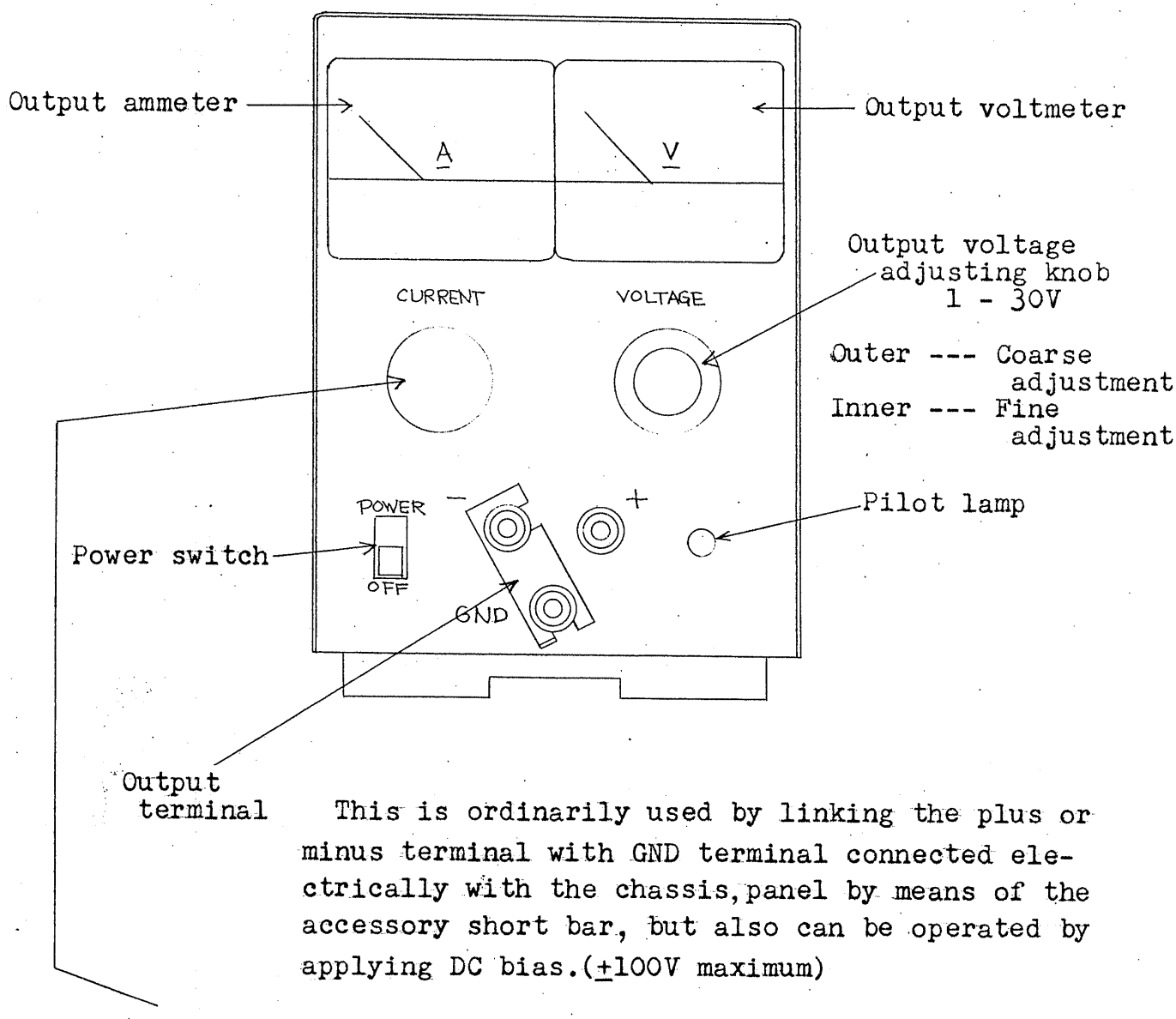
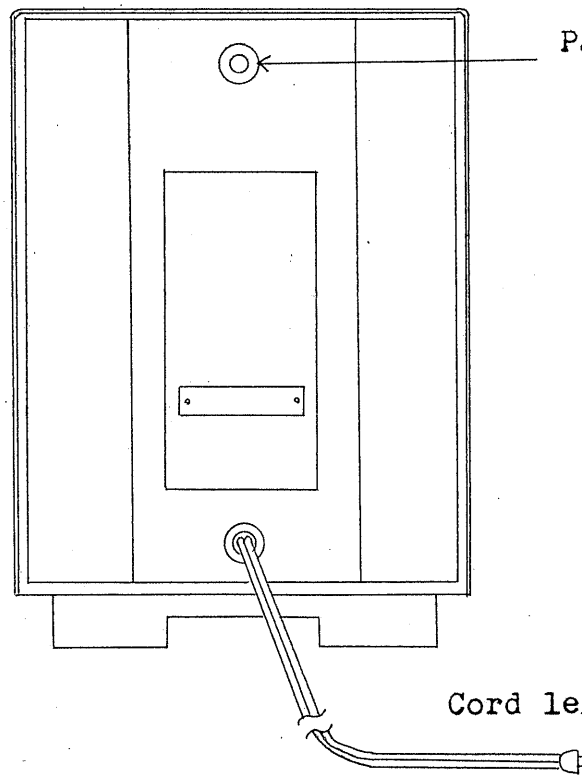
EXPLANATION OF PANEL (1)



This is ordinarily used by linking the plus or minus terminal with GND terminal connected electrically with the chassis, panel by means of the accessory short bar, but also can be operated by applying DC bias. (±100V maximum)

Current limiting knob This knob enables to limit output current in the range of 0.1A ~ 0.5A, within which this model can be used as a constant-current power supply.

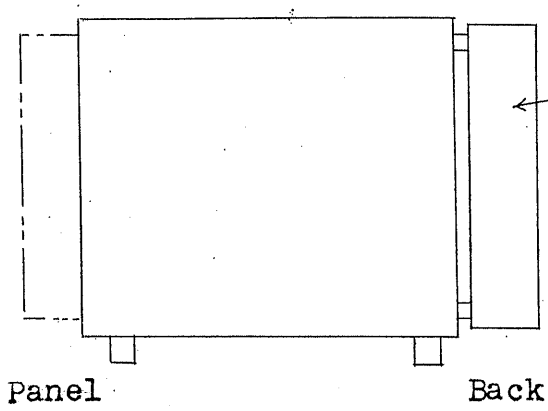
Explanation of Back



Parallel operating terminal

Parallel operation can be made by using this terminal.

Cord length more than 2m



Radiator

When this model is used at or near to the maximum rating, the radiator part shall be cared if well ventilated.

4.1. Operation

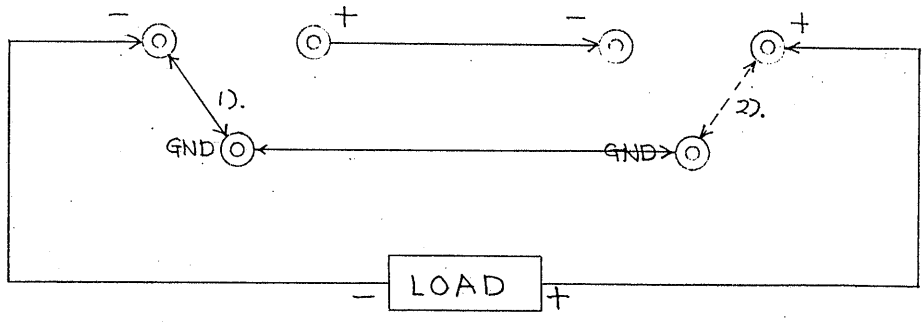
4.1.1. Single operation

When this model is used singly, operate it as it is.

4.1.2. Series operation

Voltage higher than 30V can be put to use by connecting two sets or more in series. In this case, no terminal shall exceed ± 100V for the panel chassis.

The series operation of two sets enables to make use of ± 60 Volts, 0.5 Amperes.



GND terminal shall be connected as follows.

1) In case of minus ground (as per the above full line)

2) In case of plus ground (as per the above dotted line)

If the foregoing operation is neglected, you will be shocked electrically when your body touches between the chassis. You shall pay your sufficient attention to this matter.

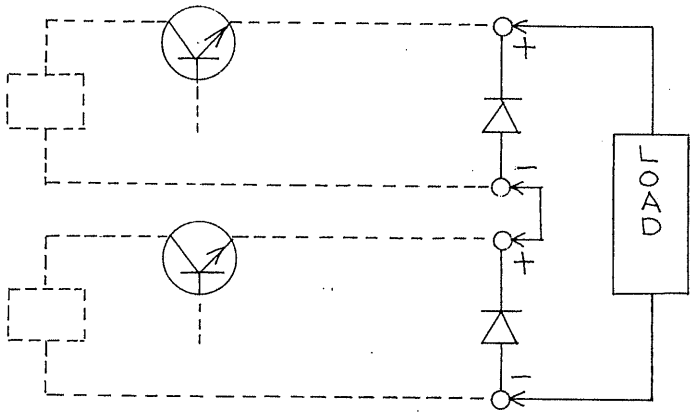
4.1.3. Overload protection in series operation

In case of two or more power supplies in series connection having been overloaded, one set, the protective circuit of which operates earlier, is impressed by the output voltage of the other set in the reverse direction, so that the

series transistors of the former set are damaged.

In order to avoid such a trouble, diode is connected with each of the output terminals as mentioned below.

Incorporating of Japanese Patent No. 308280



4.1.4. Parallel operation

When two sets of this model are operated in parallel for making use of output more than 0.5A, the following steps shall be taken.

At the time of performing this wiring, be sure to do so in the state of power source turned off.

In case of parallel operation, one set operates as (master) set and the other as (slave) set, and the adjustment of output voltage and output current is conducted by (master) set.

1) Take off the cover of (slave) set and turn the slide switch in the printed board from MASTER to SLAVE.
2) Connect the parallel operating terminal provided at the back of (master) set to the parallel operating terminal

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of (slave) set.

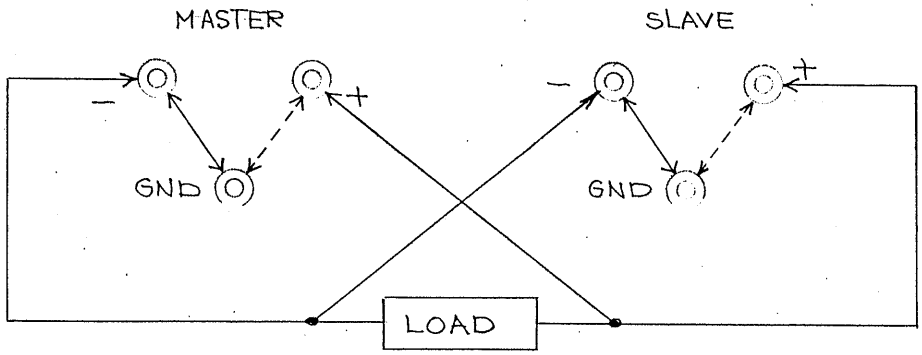
3) Set CURRENT knob of (slave) set to the position of the maximum current value, that is to say the position rotated clockwise to the extreme. The position of VOLTAGE also set to the position of the maximum voltage value.

4) Attach the cover of (slave) set again and turn on the power switch. The voltage and current can be varied by (master) set.

Output current limitation can be optionally selected in the range of 0.2A ~ 1.0A.

The short bar shall be used with both (master) set and (slave) set minus-grounded or plus-grounded, but different polarities shall not be grounded for both (master) set and (slave) set.

Be careful that no output comes out even if the power switch is turned on in the state of the slide switch in the printed board set to SLAVE.



Note: The maximum number of this model permitted for parallel operation is two sets, and the maximum num-

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ber permitted for series operation is up to three sets.

Note: No parallel operation with different models shall be performed.

4.2. Precaution for setting location

Try to avoid using in the place where the ambient temperature exceeds 40°C. Also, when ventilation is blocked or this set is subjected to radiant heat from other heat sources such as the direct ray of the sun and the like, continuous maximum output current shall adequately be limited.

The range of power source voltage on which this set operates safely is 90 ~ 110% of the rating.

4.3. Overshoot of output voltage

Voltage exceeding the prescribed value is not produced between the output terminals at the time of turning power on and off.

4.4. Voltage drop by ammeter

Voltage drop by the output ammeter is circuit-compensated.

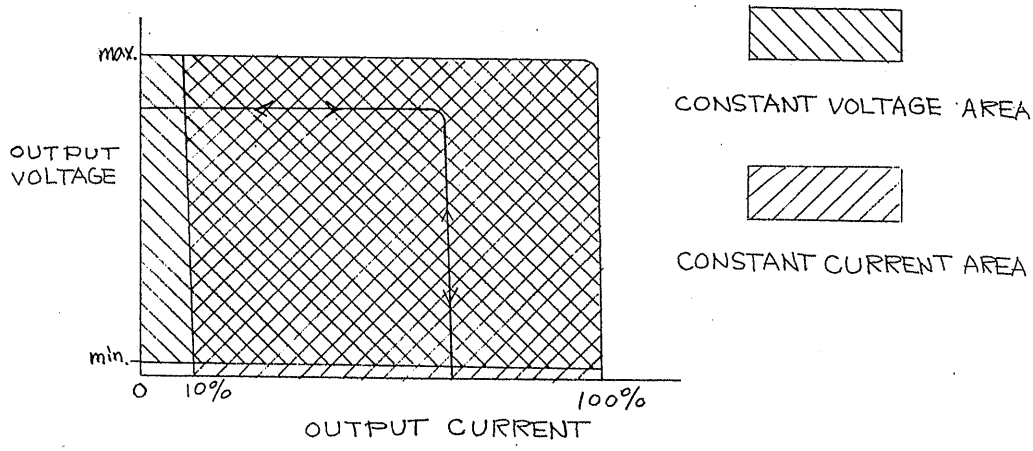
4.5. Current limiting circuit

In order to prevent the series transistors, output ammeter, etc., from being damaged instantly when the output terminal is short-circuited by mistake, this model is provided with an electronic current limiting circuit of accurate performance, so that output current is limited to the rated value.

Output current limitation can continuously be varied in the range of 10% ~ 100% of the maximum rating, and this model operates as a constant-current power supply when the output current reaches to the preset value.

As soon as the output current returns to a value less than

the preset value, this model automatically and successively comes to operate as a constant-voltage power supply.



5. Maintenance

If the component parts were changed or output voltage was varied due to troubles, etc,., by any change, the following step of adjustment shall be taken.

OV ADJ. 32V ADJ.

The semi-fixed resistor in the printed board (the semi-fixed resistor applied ~~with copper foil~~ lower side in the printed board) shall be adjusted so that voltage between the output terminals becomes OV in the state of the voltage adjusting knob on the panel rotated counterclockwise to the extreme. In this case, the adjustment shall be made so as the output voltage to take the range of ± 0.5V as the maximum.

And then, the semi-fixed resistor in the printed board (the semi-fixed resistor on ~~the reverse side~~ upper side of OV ADJ in the printed board, ~~that is of having many parts thereto~~) shall be adjusted so that voltage between the output terminals becomes 32V in the state

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of the voltage adjusting knob rotated clockwise to the extreme.

This adjustment shall be conducted several times repeatedly.

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