印刷表紙使用のこと

MODEL 7326

REGULATED DC POWER SUPPLY

OPERATION MANUAL

KIKUSUI ELECTRONICS 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.

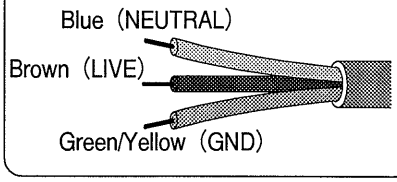
☐ AC power cable

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.

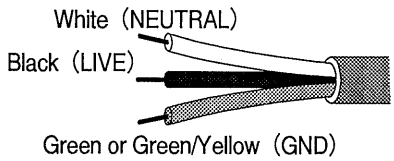
WARNING

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

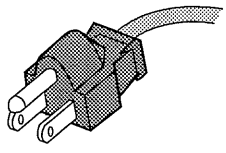
☐ Without a power plug



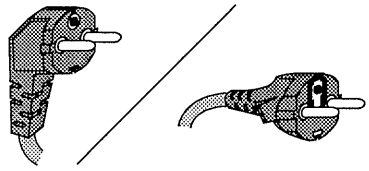
☐ Without a power plug



☐ 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

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1. General

The Kikusui Electronics Model 7326 is a series type DC stabilization power unit employing transistors and varies voltage continuously in a range of 1V - 30V by its double type variable resistance. The maximum output current of 2A is available. It is a compact and light power unit provided with a voltmeter and an ammeter on its panel.

If an overload phenomenon should develop or a short-circuiting accident should happen, the output current limit circuit will work positively. The limit current can be set continuously in a range of 10% - 100% of the maximum rated current (2A) and it can be employed as a constant current power unit.

The unit can be operated in series or parallel.

2. Specification

o Power.....V 50/60Hz

o Power consumption full-load (output 30v, 2A)..... Approx. 150VA

o Ambient temperature..... 40°C max.

o Dimensions

	*106mm (W) x 145mm (H) x 301mm (D)
Biggest part	111mm (W) x 158mm (H) x 355mm (D)

o Weight..... Approx. 6.5Kg

o Accessories

Short bar..... 1

Operation manual 1

Output

o Terminals

Red, white and black colors: arranged in an equilateral triangle at intervals of 19mm.

o Polarity..... Positive or negative

o Earthing voltage..... ±100V max.

o Voltage ..... Variable continuously

o Current..... 2A

o Ripple..... 2mVp-p

o Stability

10mV against a fluctuation of ±10% power voltage

** 10mV against a load fluctuation of 1-30V, 0-2A

o Current limit (constant current automatic return type)

0.2A - 2A variable continuously

o Voltmeter

Full scale	32V	Class 2.5

o Ammeter

Full scale	2.2A	Class 2.5

o Insulation

(DC250V between chassis and output terminal)

10MΩ or above

(DC1000V between chassis and power)

50MΩ or above

Possible to operate in series or parallel.

NOTES

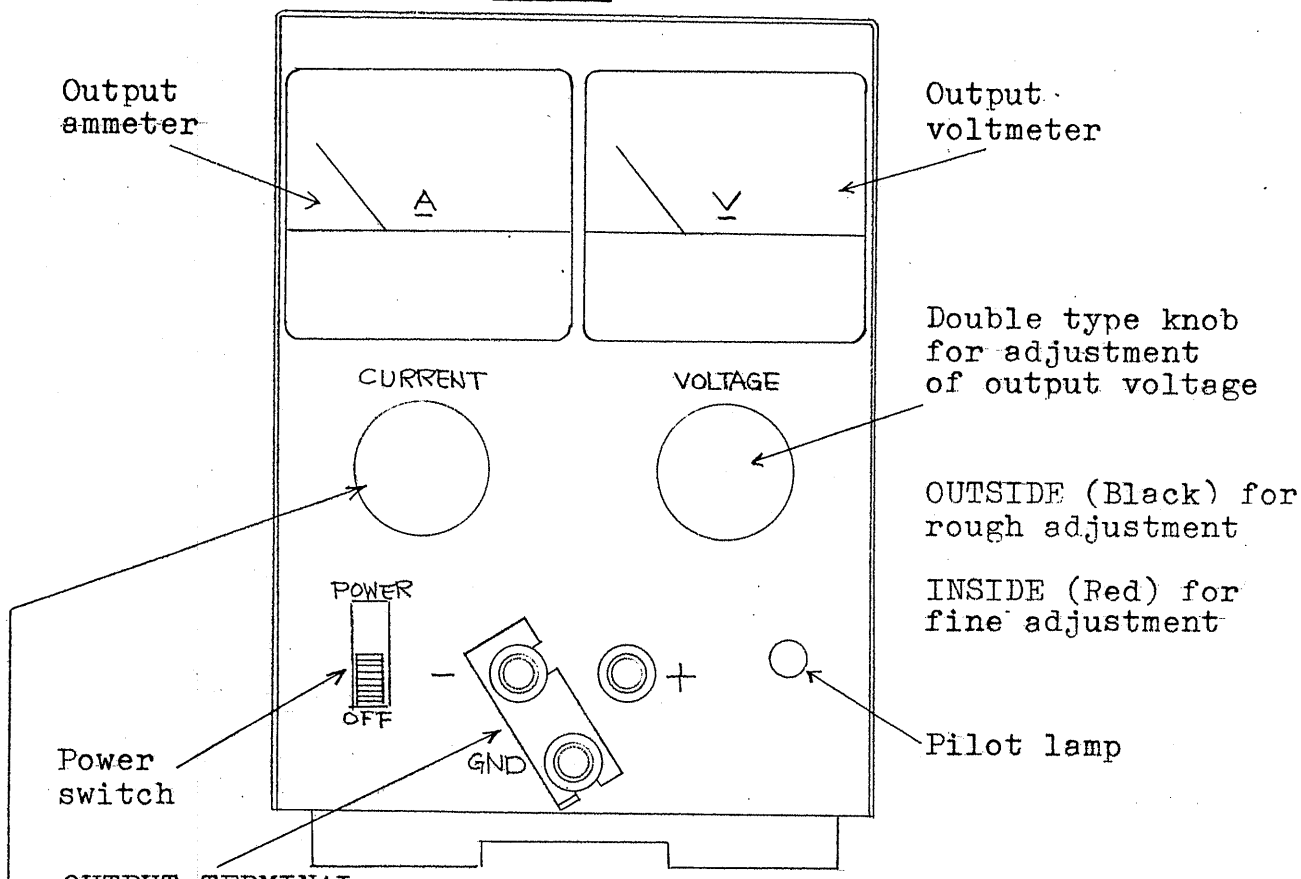
* Possible to install 4 units in the 19" and 500mm standard rack.

** The drop in voltage of the ammeter is compensated through circuits.

3. Description for panel

3-1. Description for panel front

FIG. 1



The plus or minus terminal is, usually, connected with the GND terminal connected electrically with the chassis/ panel by means of the attached short bar. It can be worked with DC bias current. (Refer to Item EARTHING VOLTAGE of the specification 3/10 for the details.)

CURRENT LIMIT KNOB

Output current is limited in a range of 10% - 100% of the maximum rated current. It can be used as a constant current power unit in the said range.

3-2. Description for panel back

Fig. 2

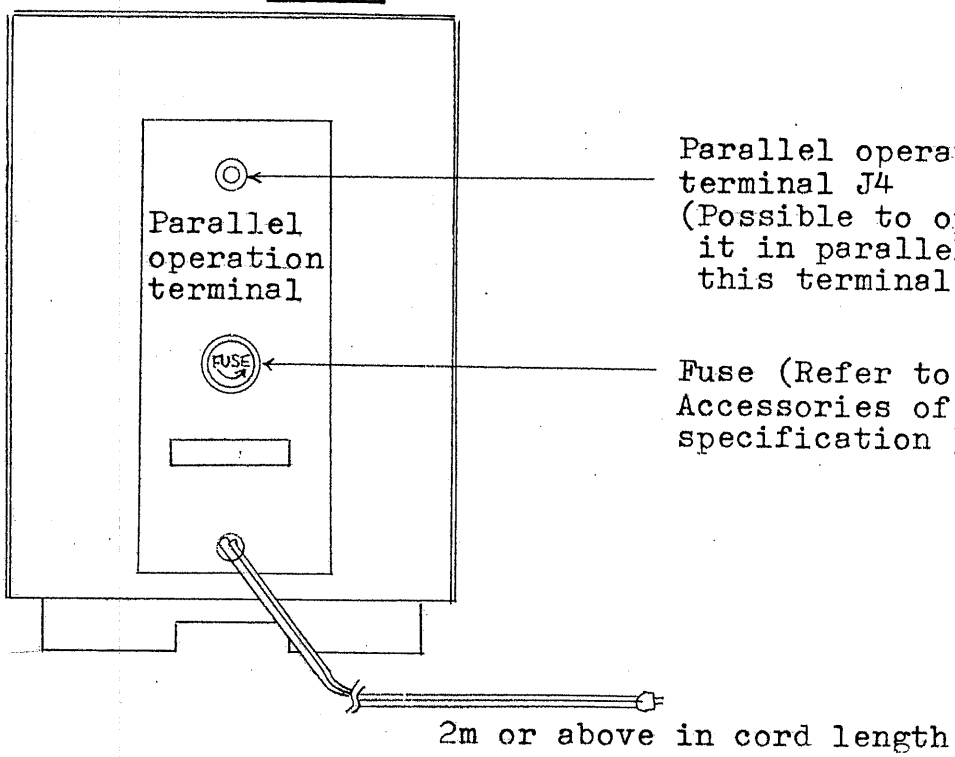
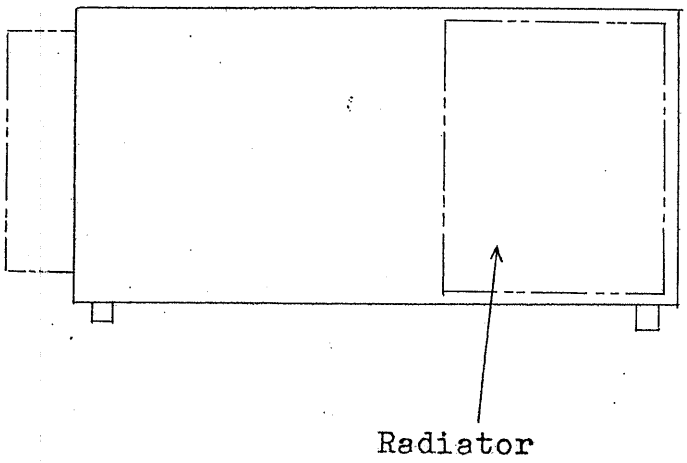


Fig.3



Pay your attention to the ventilating condition at the radiator when the unit is used in the vicinity of the maximum current value with low voltage.

4. Operation

4-1. Single, series and parallel operations

4-1-1. Single operation

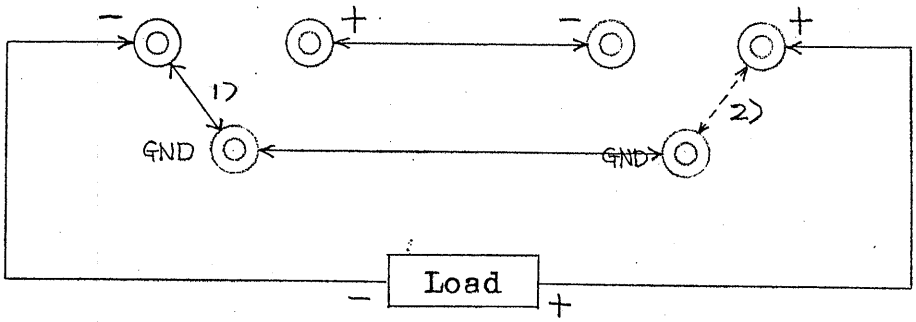
Use the unit as it is for single operation.

4-1-2. Series operation

When more than 2 units are connected in series, higher voltage than that for 1 unit operation will be available. In this case, the voltage of any terminal must not exceed the rated earthing voltage against the panel/chassis.

In series operation of 2 units, you may utilize the voltage 2 times as big as the rated one and the rated current for 1 unit operation.

Fig.4



Wiring must be executed as mentioned hereunder for connection of GND TERMINAL.

1) Connect as shown with the line in Fig.4 in the case of minus earthing.
2) Connect as shown with the dotted line in Fig.4 in the case of plus earthing.

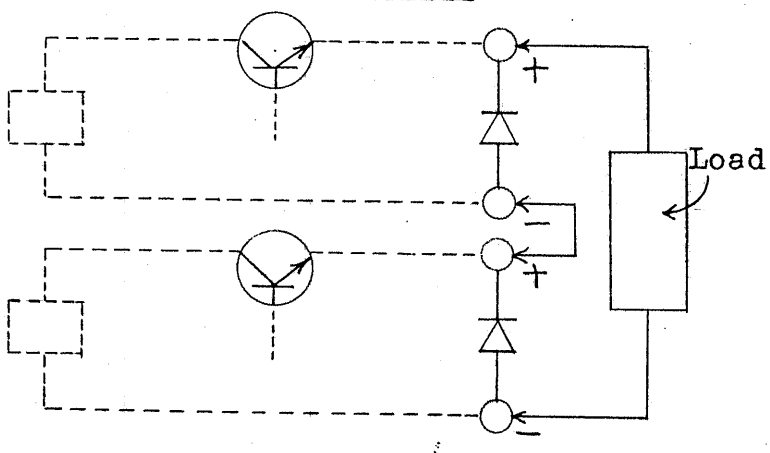
Be sure to avoid earthing the GND terminal in a different polarity.

4-1-3. Protection against overload in series operation

If an overload phenomenon should develop when more than 2 stabilization power units are operated in series, output voltage of one of the units will be given in the reverse direction to the other unit of which protection circuit has worked earlier, resulting in damage of its series control element.

In order to prevent it from being damaged, the diode has been connected between the output terminals of the respective stabilization power units. (Patent No.308280)

Fig.5



4-1-4. Parallel operation

Operate as mentioned hereafter for utilizing the current 2 times as big as the rated one by operating 2 units of the machine in parallel.

Be sure to turn off the power switch and execute the wiring for this purpose.

In parallel operation, one of the 2 units serves as "master" unit and the other, as "slave" unit. Output voltage and output current are set at the "master" unit.

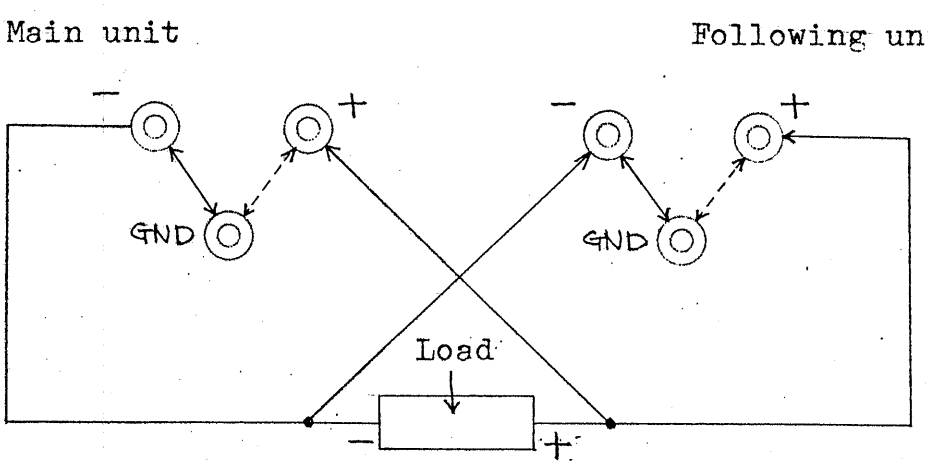
1) Remove the perforated plate for the "slave" unit and turn the slide switch in the print board from "MASTER" to "SLAVE".

2) Connect the J4 of the "slave" unit with the parallel operation terminal J4 located at the back of the "master" unit.

3) Turn fully the knob for CURRENT of the "slave" unit to the position "Maximum Current ". In other words, turn it fully in the clockwise direction. At the same time, place the knob for VOLTAGE at the position MAXIMUM.

4) Replace the cover for the "slave" unit again and turn on the power switch. Voltage and current may be varied optionally by the "master" unit.
The output current limit may be selected optionally in a range of 10% - 100% of the value 2 times as big as the maximum rated one.
Minus or plus earthing must be provided both for the "master" and "slave" units in use of short bar. The same polarity must be earthed both in "master" and "slave" units. (Refer to Fig.6 for the details.)

Fig.6

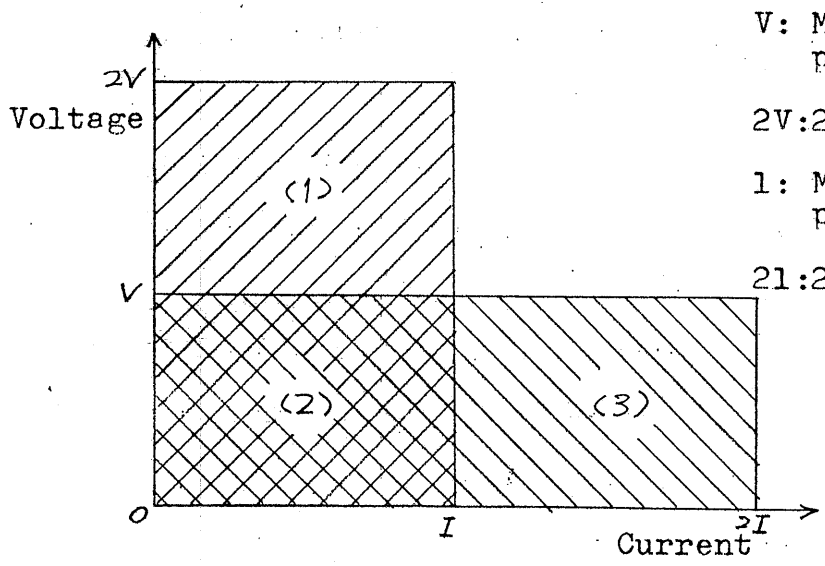


The maximum number of parallel operation units of this type of machine is only 2. This type of machine can not be operated, in principle in parallel with other types of machines.

Pay your attention to the point that when the power switch is turned on with the slide switch in the print board positioned at SLAVE, no output will be induced.

Fig.6 shows the usable limit of series and parallel operation of 2 units of the machine.

Fig.7



V: Max. utilizable voltage per unit

2V:2 times as big as V

1: Max. utilizable current per unit

2I:2 times as big as 1

Single operation..... Within the limit of (2)

Series operation..... Within the limit of (1) + (2)

Parallel operation..... Within the limit of (2) + (3)

The single, series and parallel operations can be carried out as described hereabove.

4-2. Cautions for installing place

Be sure to avoid using the unit in a place where the ambient temperature exceeds 40°C so far as practicable.

When ventilation is hindered or the unit is exposed to the direct rays of the sun or radiation heat emitted from other heat sources, limit appropriately the continuous maximum output current.

90% - 110% of the rated voltage is the range of power voltage where the unit works positively and safely.

4-3. Overshort of output voltage

No voltage bigger than the set value is induced between output terminals when the power switch is turned on or off.

4-4. Drop in voltage of ammeter

The drop in voltage of the output ammeter is compensated through circuits.

4-5. Current limit circuit

In order to prevent the serias control element and output ammeter from being damaged instantaneously when the output terminal should be shortcircuited, the unit has been provided with a current control circuit which works electronicly and positively for preventing bigger current than the rated value from being given.

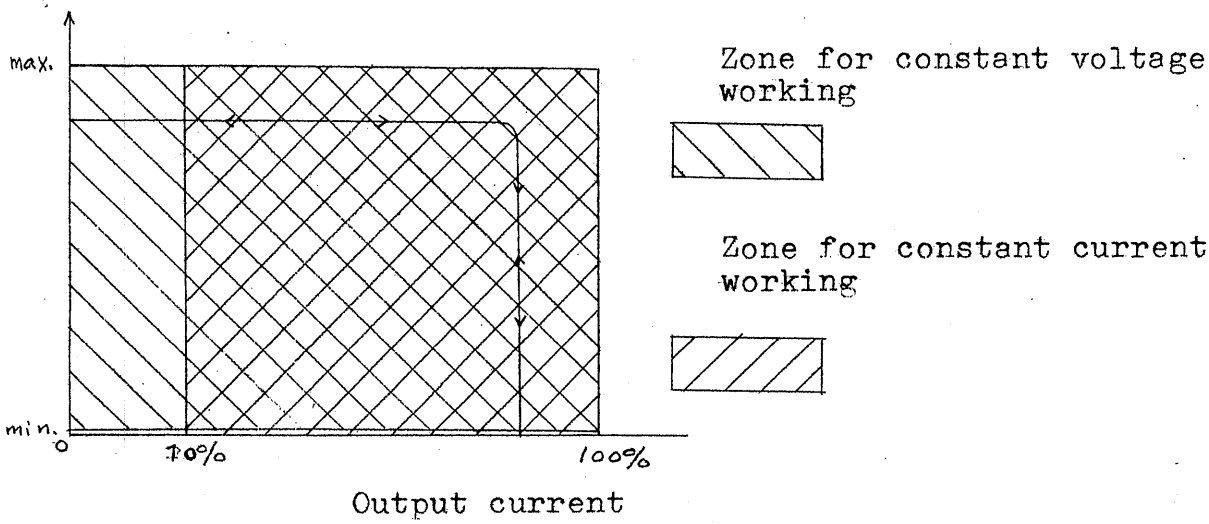
The output limit current can be varied continuously in a range of 10% - 100% of the maximum rated value at option.

When the output current reaches the set value, the unit will serve as a constant current power unit.

When the output current drops lower than the set value, the unit will serve as a constant voltage power unit automatically and continuously again.

(Refer to Fig.8 for the details.)

Fig.8



5. Maintenance

When troubled parts have been exchanged for new ones or the output voltage is not correct, it will be necessary to make the following adjustment.

5-1. OV ADJ

Adjust the semi-fixed resistor in the print board (copper foiled one in the print board i.e. the semi-fixed resistor of (1) in Fig.9) in such a way that the voltage among output terminals is OV with the knob for voltage adjustment on the panel turned fully counterclockwise. In such a case, adjust the output voltage in such a range as ±0.5V.

5-2. Maximum voltage ADJ

Adjust the semi-fixed resistor in the print board (semi-fixed resistor provided with numerous parts in the print board i.e. the semi-fixed resistor of (2) in Fig.9) in

such a way that the output terminal voltage is the maximum rated value with the knob for voltage adjustment on the panel turned fully clockwise (when fine adjustment knob is provided, with the knob turned almost at the central position).

Repeat the aforementioned adjustment several times.

Fig.9