MODEL 7375

REGULATED DC POWER SUPPLY

OPERATION MANUAL

印刷表紙使用のこと

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.

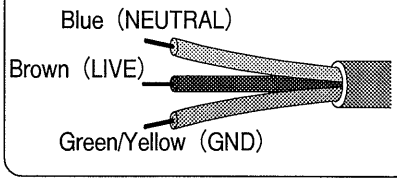
☐ AC power cable

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.

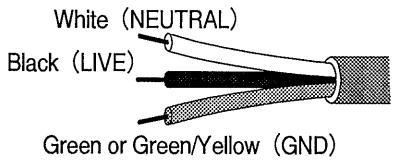
WARNING

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

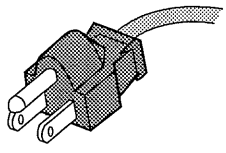
☐ Without a power plug



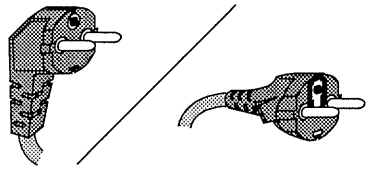
☐ Without a power plug



☐ 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. Outline

Model 7375 is a stabilization power unit employing vacuum tubes and transistors. Output of 0 - 300V 1A can be utilized as constant voltage or constant current. Output voltage and output current can be read off very positively by independent voltmeter and ammeter.

For setting of output voltage, it has been provided with a knob for varying 0 - 300V continuously in 10 revolutions. Fine adjustment of 30V/revolution can be made by the said knob.

Incidentally, the shifting of constant voltage ⟷ constant current is effected both automatically and continuously.

For setting of output current, it has been provided with a knob for varying the range of 0.1 - 1.0A continuously by dividing it into 3 ranges.

It works positively when a shortcircuiting phenomenon should develop or for non-linear load.

There are 2 pilot lamps on the panel i.e. the voltage lamp is lighted within the range of constant voltage and current lamp, lighted within the range of constant current for indicating the working range.

Besides, the remote control operation of the unit can be carried out.

2. Specification

External dimensions..... 430mm(W) x 170mm(H) x 450mm(D)

(Largest part)..... 435mm(W) x 185mm(H) x 502mm(D)

Weight..... Approx. 24Kg

Power:

_____V 50/60 Hz Full load 800VA

Ambient temperature.....	Max. 40°C
Output voltage.....	0 - 300V 1 range Variable continuously
Output current.....	Constant voltage 0 - 1A
	Constant current 0.1 - 1A

Stability:

Fluctuation in power(1)	Constant voltage ±(0.01% + 10mV)
	Constant current ±(0.2% + 0.1mA)
Fluctuation in load(2)	Constant voltage 0.02% + 10mV
	Constant current 0.5% + 0.1mA

Ripple:

Constant voltage	10mV p-p
Constant current	0.1% + 0.1mA

Operation.....	Possible to carry out remote control operation
Voltmeter.....	Class 2.5 Full scale 300V
Ammeter.....	Class 2.5 Full scale 1.2A

Accessories

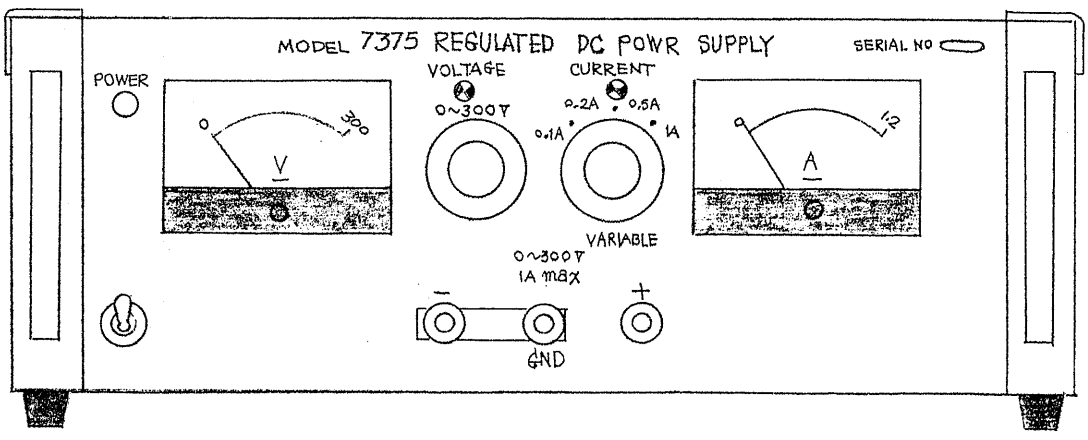
Short bar (long).....	1
Operation manual.....	1
Test table.....	1

(NOTES)

(1) Against ±10% of power voltage

(2) Against 0 - 100% of load

3. Description for panel surface



POWER

Power switch. When it is brought down to the side ON, the pilot lamp will be lighted, indicating the turning on of power.

VOLTAGE

Output voltage adjusting knob.

When it is turned clockwise, voltage will be increased and 0 - 300V can be varied continuously.

A 10-revolution potentiometer has been adopted. Accordingly, fine adjustment of 30V/revolution can be made positively.

LAMP AT VOLTAGE SIDE

When the unit works within the specified range of constant voltage, it will be lighted.

LAMP AT CURRENT SIDE

When the unit works within the specified range of constant current, it will be lighted.

CURRENT

Change-over switch for set value of output current limit. It is possible to limit the current in steps of 0.1 - 0.2, 0.2 - 0.5, 0.5 - 1 (A).

VARIABLE

This is a knob for fine adjustment of the respective ranges of the set value for current limit.

V LEFT SIDE

Voltmeter. Full scale 300V Class 2.5

A RIGHT SIDE

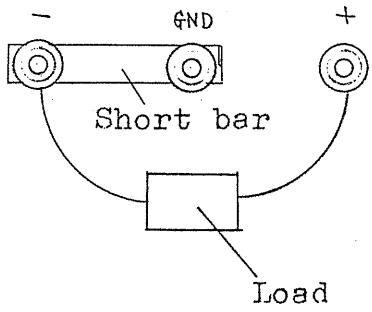
Ammeter. Full scale 1.2A Class 2.5

+, - TERMINAL GND TERMINAL

Output terminal. The plus or minus terminal is connected usually with the GND terminal by the attached short bar.

It is possible to work it with DC bias of ±300V max.

given.



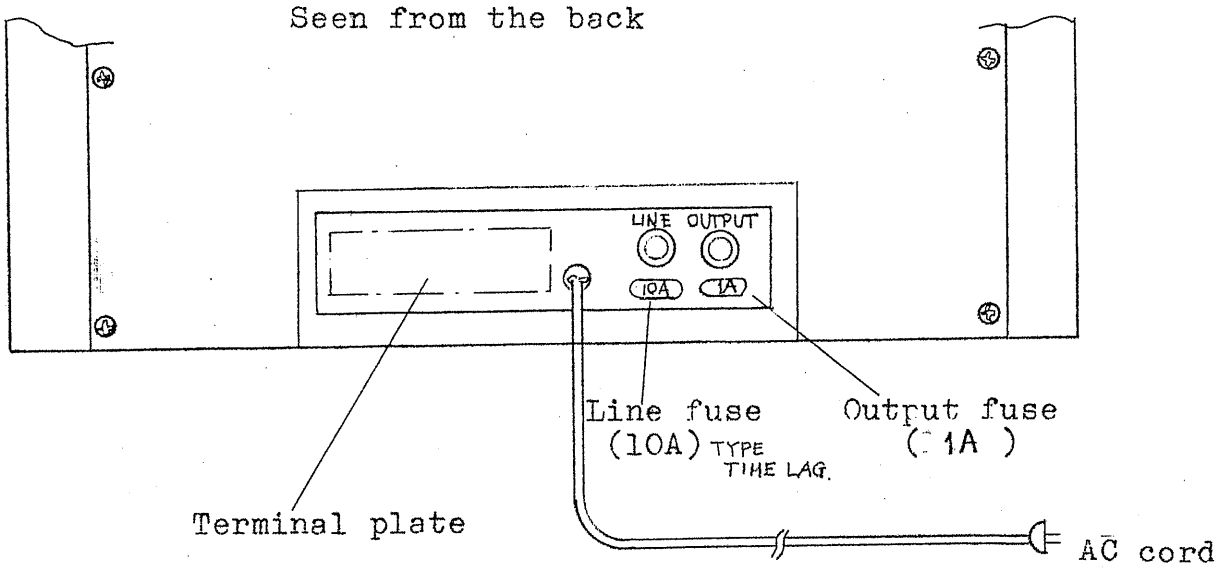
LINE FUSE

Fuse for the AC power input circuit.

The current capacity is 10A. It is arranged at the right side of the back of the unit.

OUTPUT FUSE

Fuse for output circuit. The current capacity is 1A. It is arranged at the right side of the back of the unit.

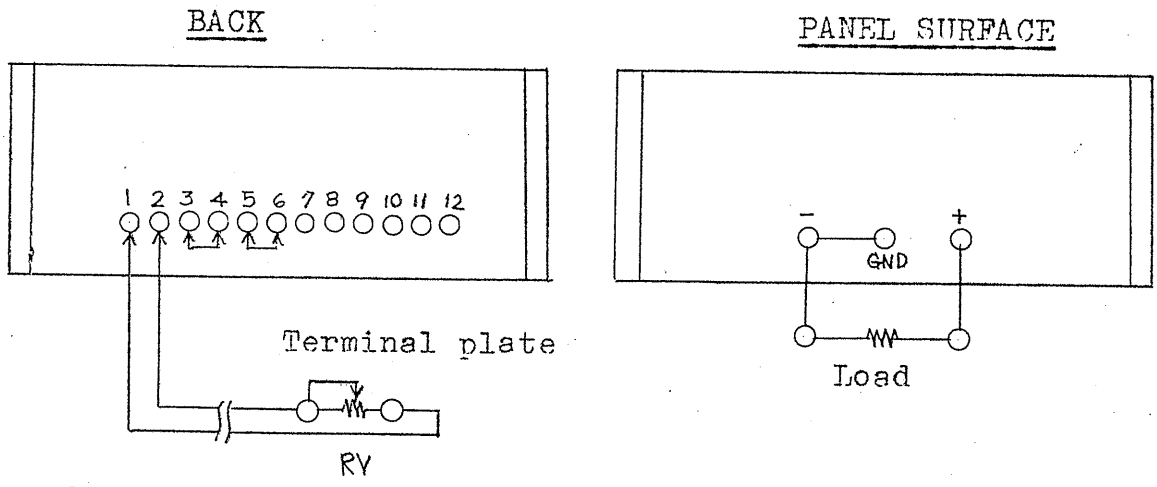


4. Remote control

4-1. Operating method for remote control

1. In remote control operation, it is impossible to control the output voltage by the VOLTAGE knob on the panel. In this case, the output voltage is controlled by the RV installed outside.

The value of RV is 0.166 KΩ/V with 50KΩ at 300V.



2. For remote control operation, RV is installed to the terminals (1) and (2) at the back terminal plate for control of output voltage. Refer to the aforementioned sketch.

4-2. Series operation

An example for connection for series operation of 2 units is shown in Page 8.

A. Operating method in the range of constant voltage

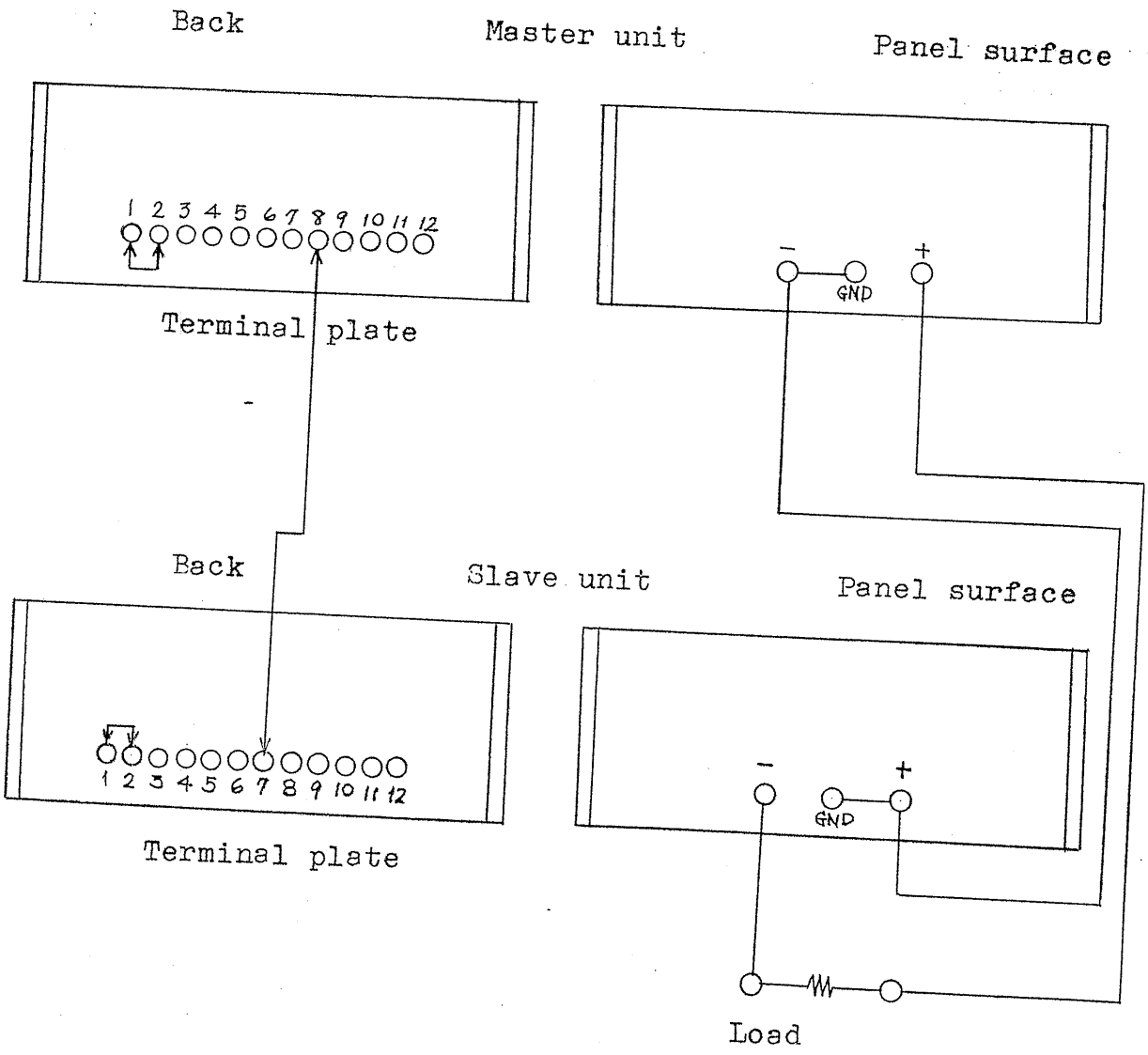
1) With the VOLTAGE knob for the slave unit turned fully clockwise, the adjustment of output voltage is made by the VOLTAGE knob for the master unit.

When the output voltage adjusting knob for master unit is turned clockwise, the output voltage of both units will increase at almost equal rate.

2) The current limit is set by the CURRENT change-over switch and VARIABLE knob of the master unit. The change-over switch for the slave unit is placed at 0.5 - 1A maximum value and the VARIABLE knob, turned fully clockwise.

* Terminals Nos. 7 - 12 are not used.

3) When the load exceeding the set value of current limit is connected with the output voltage, the pilot lamp for VOLTAGE will be put out and that for CURRENT, be lighted on the panel of master unit. (Shifting of constant voltage ⟷ constant current range).
In case the set value of current limit of the slave unit is smaller than that for the master unit, the change in lighting of lamps will be made earlier in the slave unit. In case the set value of current limit of the slave unit is equal to that for the master unit, the change in lighting of lamps will be made at the same time at both units. For this reason, it is necessary to confirm the range of working by the pilot lamps of the master unit.



4. The earthing method in series operation is as shown hereabove. That is, the minus of the master unit is connected with the GND terminal by the attached short bar and the plus of the slave unit, with the GND terminal by the attached short bar, respectively.
5. In series operation of 2 units, the fluctuation of output voltage against the change in load current is approx. 2 times as that for 1 unit.

B. Operating method in the range of constant current

1) Place the VOLTAGE knob, CURRENT change-over switch and VARIABLE knob at the position where turned fully clockwise. The follow-up voltage and output current must be set by the respective knobs for the master unit.

2) Confirmation of the working range must be made by the pilot lamps on the panel of the master unit.

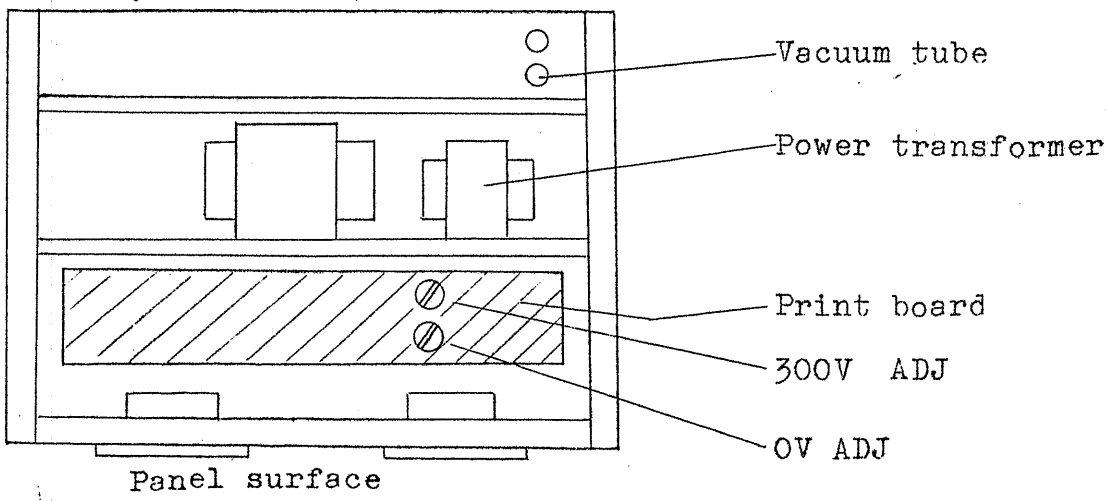
3) In series operation of 2 units, the stability against the change in load resistance of output current is approx. 2 times as big as that for the fluctuation value for 1 unit.

The connection method for load and earthing one are quite the same as those for constant voltage.

5. Adjustment OV 300V ADJ (adjustment)

Adjust the variable resistor in the following sketch in such a way that the output voltage is 300V or 0V at the maximum position (position where turned fully clockwise) or minimum one of the VOLTAGE knob.

Mutual influence is exerted over the adjustment of both units. Accordingly, it is necessary to repeat it several times at 2 points of 300V and 0V.

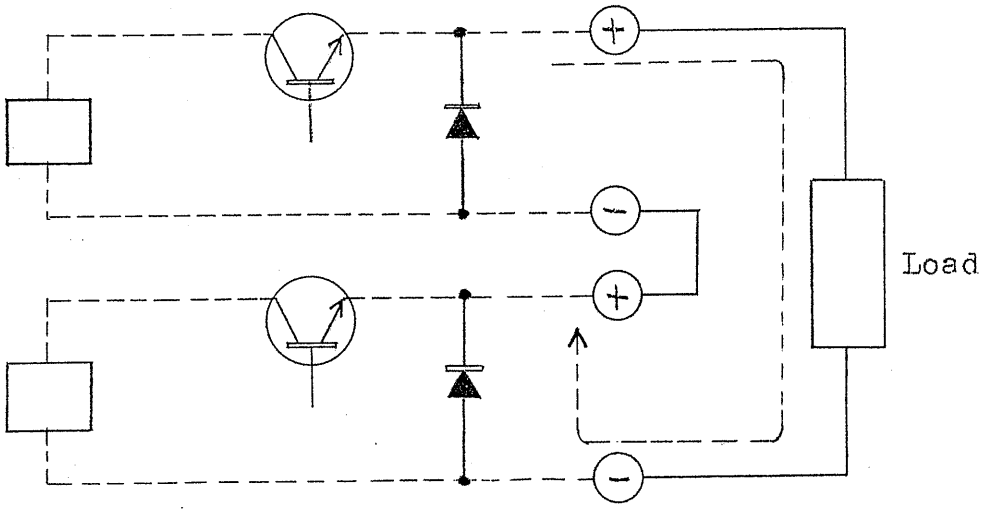


Seen from the upper side.

6. Protection against inverse voltage in series operation

In the series operation of more than 2 units, when the operation enters the range of constant current, inverse current will be applied to the unit of which constant current circuit works earlier, resulting in damage of series transistors.

For avoiding such, the diode is connected with the respective output terminals as shown hereunder.



(Patent No.308280)

BLOCK DIAGRAM