

MODEL 7315B
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

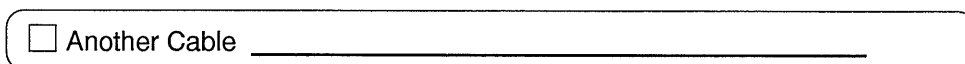
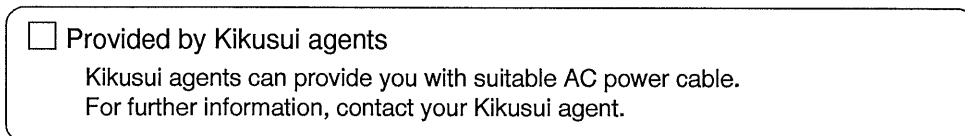
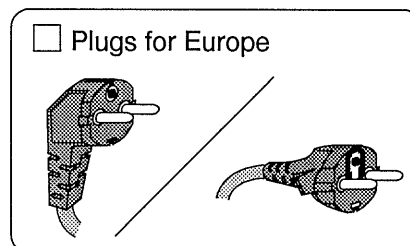
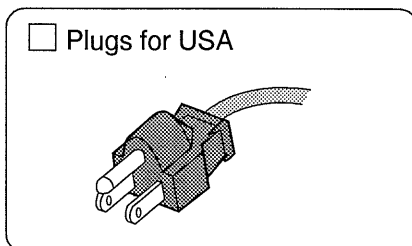
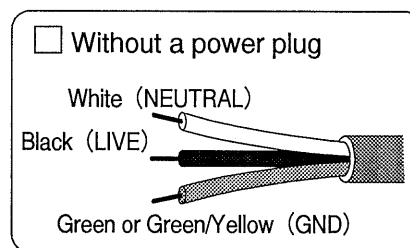
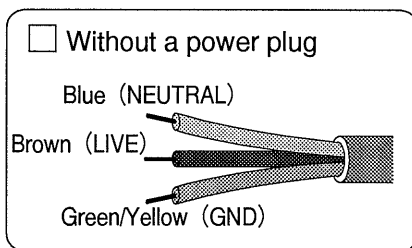
- To avoid electrical shock, always disconnect the AC power cable or turn off the switch on the switchboard before attempting to check or replace the fuse.
- Use a fuse element having a shape, rating, and characteristics suitable for this product. The use of a fuse with a different rating or one that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

AC power cable

The product is provided 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.



GENERAL

Model 7315B is a transistorized, regulated DC power supply of series-control type. It is designed to be especially suitable for use in adjustment and test of radio receivers and tape recorders. For these purposes, Model 7315B is equipped with two voltage control knobs which can be selected by switch operation. (The voltage control range may be either 2-13 V or 9-20 V.)

The maximum current output is 1 A. Linked with a current limiting circuit, the ammeter range can be set to 30 mA, 0.1A, 0.3 A or 1 A.

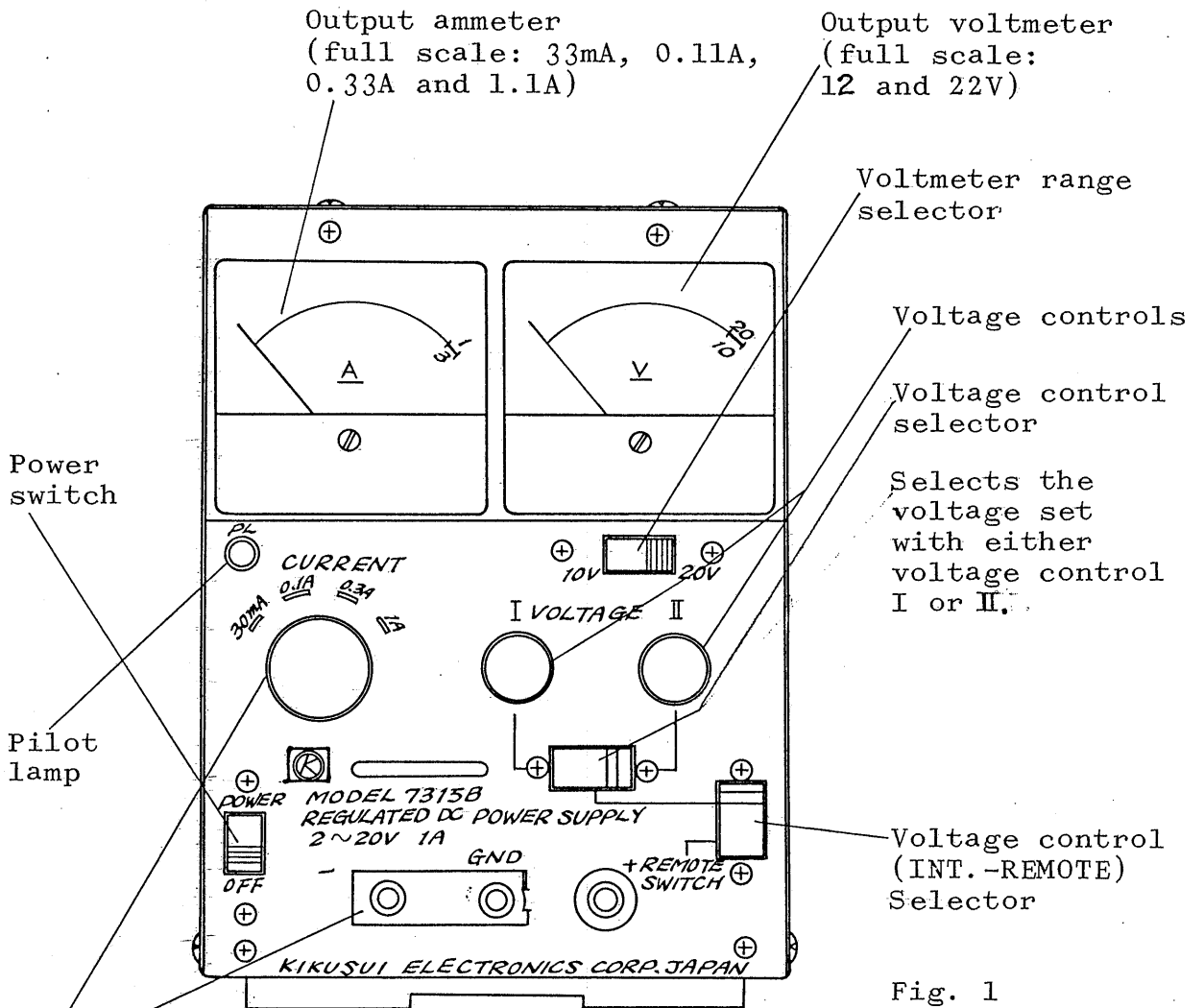
The current limiter is a fold-back type by which both voltage and current decrease in case of an overload. For allowing the voltages set by the voltage controls to be switchable from an external switch, a remote switch connector is provided on the rear of the equipment.

CONTENTS

General	2
Specifications	3
Front Panel	5
Right Side and Rear Panels	6
Installation	7
Operation	7
Current Limiting Circuit	8
Maintenance	10

Regulation	Within 10 mV when AC input voltage varies $\pm 10\%$ Within 10 mV for the entire range from no load to full load
Voltage control	Two variable resistors, one of which is selected by switch operation. A connector is provided for allowing the selection from an external switch.
Overload protection circuit	Fold-back type voltage and current limiting circuit. Four ranges, 30 mA, 0.1 A, 0.3 A and 1 A, interlinked with the ammeter range.
Voltmeter	12 V and 22 V ranges, with an accuracy of $\pm 2.5\%$ of full scale.
Ammeter	1.1 A, 0.33 A, 0.11 A and 33 mA ranges with an Accuracy of . . . 1.1 A range . . . $\pm 2.5\%$ of full scale 0.33 A and 0.11 A ranges $\pm 3\%$ of full scale 33 mA range $\pm 3\%$ of full scale + 2 mA

FRONT PANEL



Model 7315B is normally used with the positive (+) or negative (-) terminal connected to the ground (GND) terminal (electrically connected to the chassis and panels) by using the accessory short bar. The equipment may also be operated by applying a maximum DC bias of $\pm 100V$.

Ammeter range selector: Selects the range (33mA, 0.11A, 0.33A or 1.1A) of the ammeter, and simultaneously sets the range of the output current limiting circuit so that the equipment and external circuits are protected from an accidental overload or short circuit.

RIGHT SIDE AND REAR PANELS

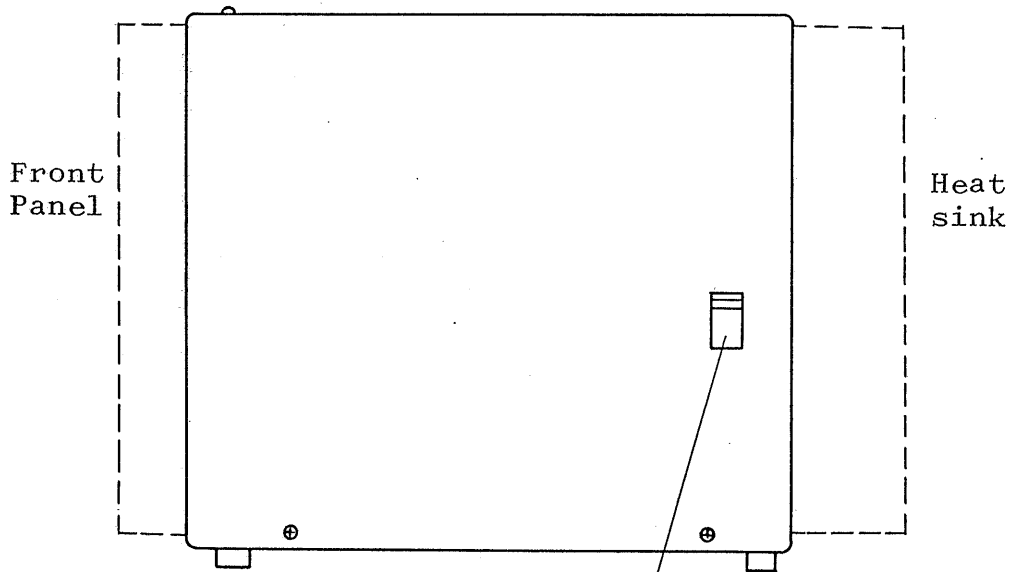


Fig. 2

(Right Side Panel)

Output voltage range selector

Push upward:
High (9 - 20 V)

Push downward:
Low (2 - 13 V)

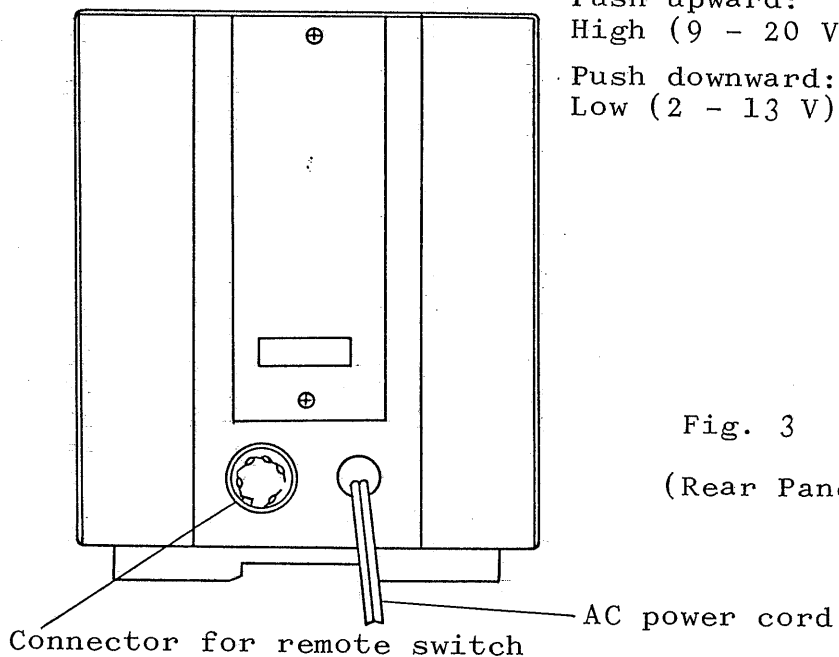


Fig. 3

(Rear Panel)

Connector for remote switch

AC power cord

INSTALLATION

Avoid using Model 7315B where the ambient temperature exceeds 40°C. When using the equipment where it cannot be well ventilated, or it will be exposed to direct sunlight or radiation of a heat source, limit the maximum output current (1 A) as appropriate.

OPERATION

1. According to the desired output voltage range, set the output voltage range selector to either the higher range (9 - 20 V) or the lower range (2 - 13 V) position. (See Fig. 2.)
2. Set the voltmeter range selector according to the position of output voltage range selector selected as in Item 1 above.
3. Considering the current capacity of the load, set the ammeter range selector appropriately.
4. Turn on the power switch, push the voltage control selector to the "I" side, and set voltage control I to one of the desired voltages. Push the voltage control selector to the "II" side, and set voltage control II to the other desired voltage.

The above permits to obtain two different voltages by pushing the voltage control selector to "I" or "II" side.

When selection from the two voltages is desired to be effected by using a remote switch, follow the instructions below:

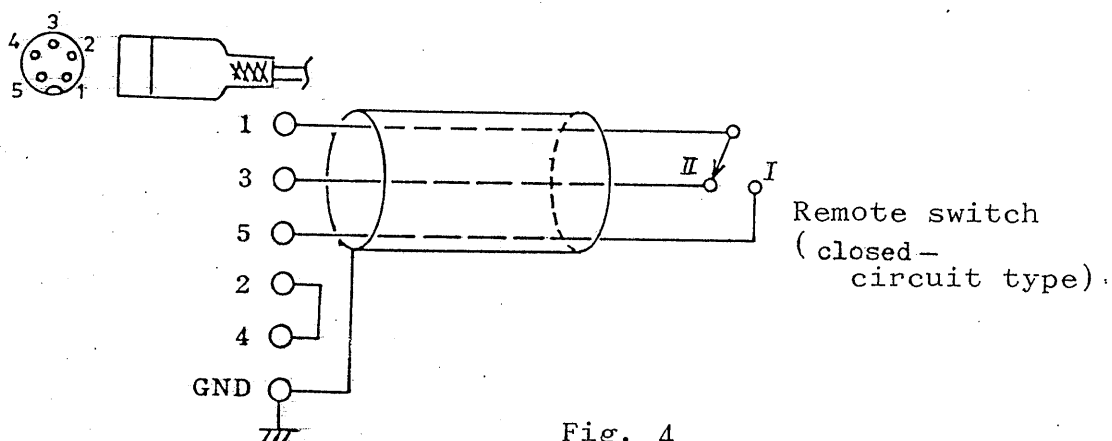


Fig. 4

Connect a remote switch to the connector located on the rear of the equipment, as shown above, and set the voltage control (INT-REMOTE) selector to the "REMOTE SWITCH" position. Then the remote switch will operate identically with the voltage control selector on the front panel.

NOTE: A closed-circuit switch must be used for the above purpose. If an open-circuit switch is used, a voltage similar to non-regulated input voltage will be applied to the output terminals when the switch is operated.

CURRENT LIMITING CIRCUIT

To protect series transistors, DC ammeter, and other parts from damage when the output terminals are accidentally shorted, Model 7315B is provided with an output current limiting circuit which is a trouble-free electronic circuit. This circuit is of the fold-back type which decreases both output voltage and current when the output current reaches the preset value.

The setting of the limiting current is linked with the ammeter range selector located on the front panel. With the ammeter range selector set to 30 mA, 0.1 A, 0.3 A or 1 A, the current limiting function operates below 120% of the current value preset. When the load resumes its normal condition, the equipment recommences its regulated voltage operation automatically and continuously.

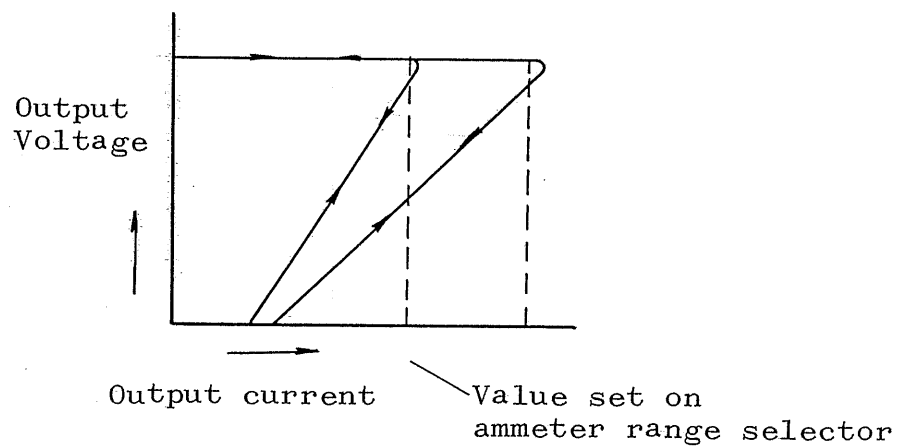


Fig. 5

MAINTENANCE

When a variation in output voltage is caused by replacement of a defective part, or other reason, adjust it as follows:

1. Preparation

- a. Set the output voltage range selector to the higher range (9 - 20 V) position.
- b. Turn the voltage controls fully clockwise, switch the voltage control selector to positions "I" and "II" alternately, and adjust, as below, the semi-fixed resistors with respect to the lower output voltage. If the meter pointer deflects over the scale, appropriately adjust the output voltage with calibration resistor R₃₀. For adjusting parts, see Fig. 6.

2. 20.5 V adjustment

Adjust the output voltage to 20.5 V by turning the semi-fixed resistor R₃₀ (marked "CAL") provided for calibration.

- a. Set the output voltage variable range selector to the lower range (2 - 13 V) position.
- b. Turn the voltage controls fully counterclockwise.
- c. Adjust the output voltage to 1.5 V with the semi-fixed resistor R₂₆ (marked "ZERO"), provided for zero adjustment, located on the printed.

NOTE: Adjustments described in Items 2 and 3 above affect each other. Repeat both adjustments a few times alternately.

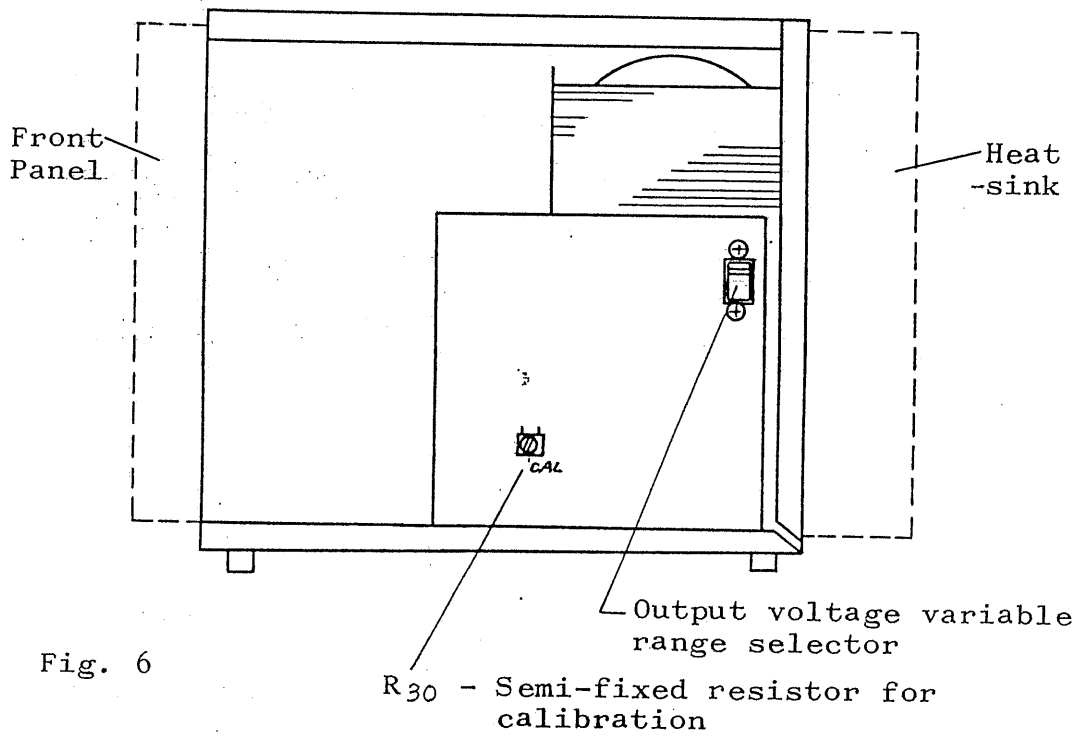


Fig. 6

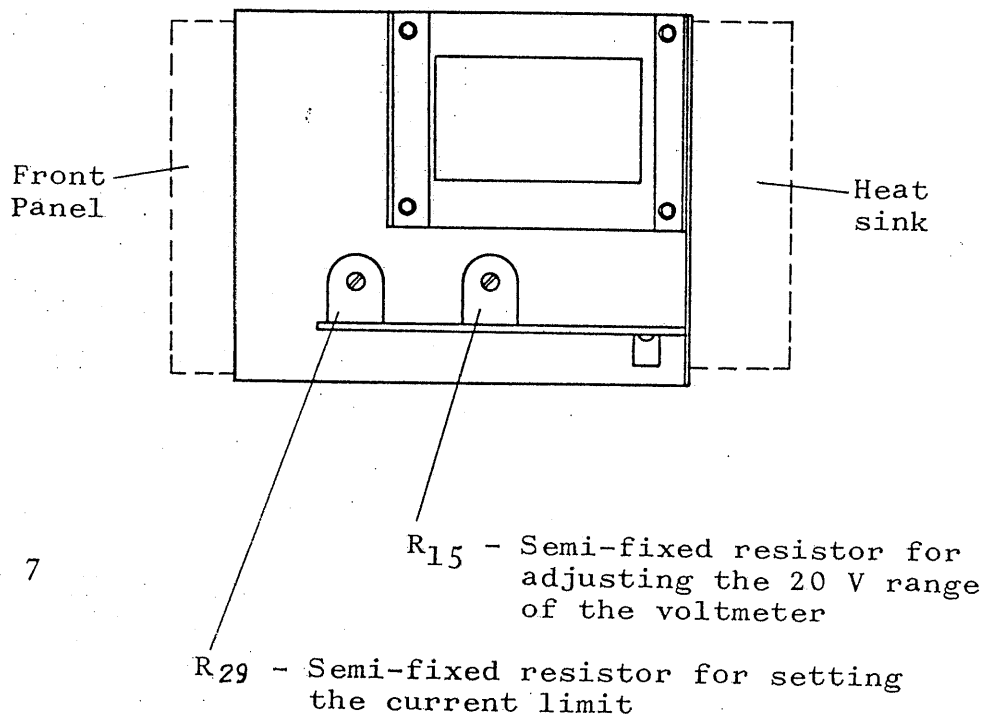


Fig. 7