

MODEL **7314**

REGULATED DC POWER SUPPLY

INSTRUCTION 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 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.



KIKUSUI ELECTRONICS' MODEL 7314 is an all transistorized, low voltage, series-regulated DC power supply of 1 ~ 15V divided into 2 ranges of being continuously variable, by which the output current of 500mA can be utilized; and is a power supply compact in size and light in weight, provided with a voltmeter and ammeter on the panel.

Also, this power supply is equipped with a short-circuit current limiter circuit of accurate performance which enables to return to the normal action automatically and continuously as soon as the short-circuited state is over, in the event of such troubles as short-circuit, etc.

C O N T E N T S

	Page
o Specification	2
o Description of Panel	3
o Precaution for Operation (1)	4
1. Setting place	4
2. Heat run	4
3. ON OFF switching of power	4
4. Short-circuit current limiter circuit	4
o Precaution for Operation (2)	5
5. 10V, 16V ADJ	5
6. Voltage drop of ammeter	6
o Precaution for Operation (3)	6
7. Series, parallel operation	6

MODEL 7314 SPECIFICATION

Power from Line	-----V	50/60 Hz
No load	(Output 1V 0A)	approx. 7VA
Full load	(Output 15V 500mA)	approx. 27VA
Ambient Temperature		max. 35°C
Dimensions*	106W x 145H x 150D mm	
	(max. part)	111W x 158H x 205D mm
Weight		approx. 3kg
Accessories	Short bar	1
	Instruction manual	1
	Test data	1

OUTPUT

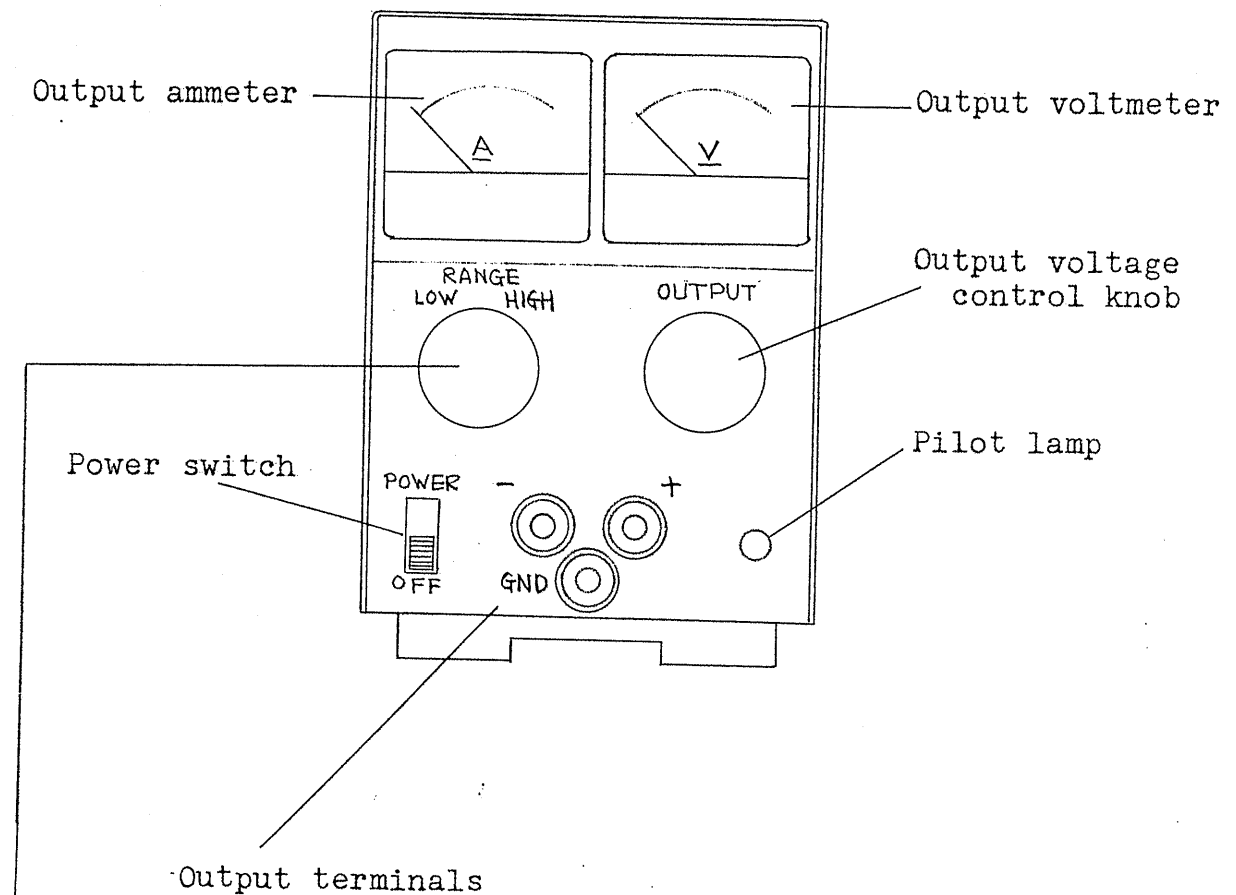
Terminals	Disposed in triangle at intervals of 19 mm Distinctive by colour in white, red and black Positive or negative polarity	
Floating Voltage		max. \pm 100V
Voltage	Divided into 2 ranges of 1 ~ 8 / 8 ~ 15V of being continuously variable	
Current		500mA
Ripple		2 mVp-p
Regulation	30 mV for \pm 10% change in line voltage 30 mV for 1~15V 0~500mA change in load**	

Voltmeter & Ammeter

Voltmeter	Full scale 16V	Class 2.5
Ammeter	Full scale 0.6A	Class 2.5

* 4 sets can be mounted side by side on the standard rack of either 19" or 500mm.

** The voltage drop at the ammeter can be circuit-compensated.

DESCRIPTION of PANEL

These are used generally in such a method as that either the plus or minus terminal is connected by means of the accessory short bar to the GND terminal which is electrically connected to the chassis/panel, but also can be operated by applying DC bias voltage of $\pm 100V$ max.

Selector knob of output voltage to LOW(1~8V) and HIGH(8~15V). In order to vary the output voltage in the (), adjust the output voltage control knob.

PRECAUTION for OPERATION (1)

1. Setting place

Avoid using this instrument where the ambient temperature exceeds 35°C . Also, when the ventilation is blocked or the instrument is subjected to radiant heat from the direct rays of the sun and other heat sources, limit suitably the maximum continuous output current (500mA).

The line voltage range, within which this instrument works safely, is 90 ~ 110% of the rating.

2. This instrument can be used at a few seconds after turning ON the power switch, but is to be used after the heat run of some 30 minutes if the drift is a particular question.

3. ON OFF switching of power

Be sure to perform ON OFF change of the power by means of the power switch of this instrument.

If the AC plug is drawn out suddenly from the socket while being operated under a light load, the output voltage jumps higher than the preset value for an instant and then comes down to zero. Because of this, bad effect may be given to the load. Such does not occur with this instrument if the ON OFF change of power is performed by the power switch.

4. Short-circuit current limiter circuit

In order to prevent the series transistors and output ammeter, etc., from being damaged in a moment when the out-

put is short-circuited by mistake, a constant-current tube is inserted in series to them so that the short-circuit current is limited to about 0.9A.

This ensures safety against the short-circuit troubles, but it is not desirable to leave it in the short-circuited state.

Also, this short-circuit current limiter circuit returns to the normal condition automatically and continuously as soon as the short-circuited state is over.

PRECAUTION for OPERATION (2)

5. 10V, 16V ADJ

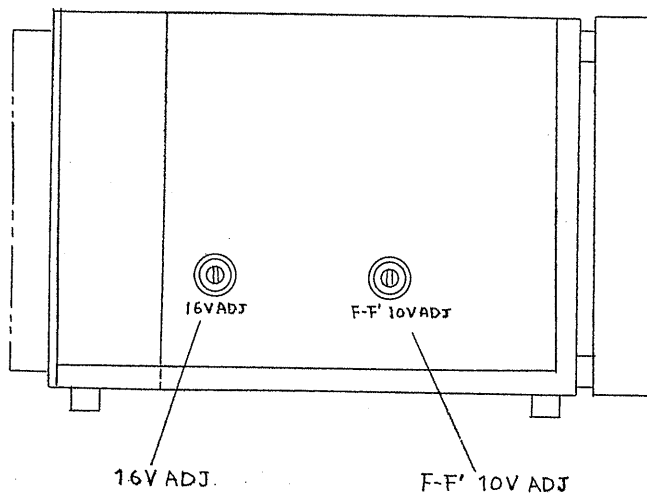
It is little necessary to adjust the 10V and 16V ADJ, but this adjustment of 10V and 16V ADJ is performed when the component parts are replaced due to troubles, etc., or the output voltage (LOW: 1~8V, HIGH: 8~15V) is varied.

5.1 10V ADJ

The semi-fixed resistor of 10V ADJ as shown at the following drawing is adjusted so that the voltage between the F(+) and -F'(-) of the circuit becomes 10V.

5.2 16V ADJ

In the state of RANGE, having been set to HIGH and the voltage control knob rotated clockwise to the extreme, adjust the semi-fixed resistor of 16V ADJ shown hereinafter so that the output voltage becomes 16V.



6. Voltage drop of ammeter

The voltage drop by the output ammeter is circuit-compensated with this instrument.

PRECAUTION for OPERATION (3)

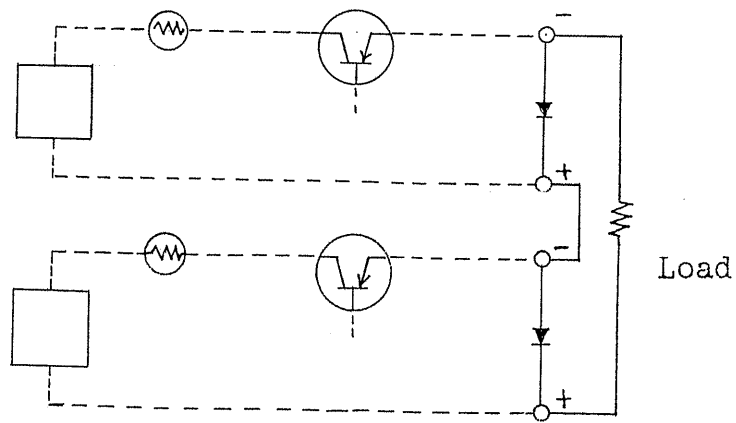
7. Series, parallel operation

7.1 Series operation

With this instrument by more than two sets connected in series, the output of more than 15V can be utilized. In this case, any of the terminals should not exceed $\pm 100V$ against the panel/chassis.

7.2 Overload protection in series operation

When the series operation of more than two sets is overloaded, an inverse voltage is given to either instrument which worked first in relation to the overload protection circuit. For preventing this, diodes are connected to each output terminal as shown at the following drawing.



Under Japanese Patent No.308280

7.3 Parallel operation

Since a slight difference in the output voltage results in a large difference in the output current, the parallel operation can not be performed direct.