

MODEL 717C  
REGULATED DC POWER SUPPLY  
OPERATION MANUAL

KIKUSUI ELECTRONICS CORP.

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## 1. GENERAL

The Model 717C is an all-transisterized, low voltage, series-regulated DC power supply. Having 7 ranges, DC voltages up to 35 volts are obtained, and voltage is continuously variable in each range. Maximum current rating is 1.5 amperes.

The feature of this equipment include compact construction, big size volt-ampere meter, and newly developed electronic overload cutoff provision to eliminate the damage to accidental short circuit of the output.

## 2. SPECIFICATION

Power requirement	----- volts, 50 to 60 Hz At no load (output voltage 2.5 volts open approx. 12VA) At full load (output 35 volts and 1.5 amperes approx. 135VA)
Ambient Temperature	Maximum 40 °C
Dimensions (Maximum)	150 W x 200 H x 251 Dmm 160 W x 215 H x 325 Dmm
Weight	Approx. 7 kgs.
Accessories	Short Bar 1 Operation Manual 1 Test Data 1
<u>Output</u>	
Output Terminals	Provided triangularly, 19mm apart each other.
Polarity	Either positive or negative
Floating voltage	Maximum ±100 volts.
Output voltage	Divided in 7 ranges and con- tinuously variable

	in each range; 0 ~ 5, 5 ~ 10, 10 ~ 15, 15 ~ 20, 20 ~ 25, 25 ~ 30, and 30 ~ 35V.
Output Current	Continuous rating, maximum When line voltage is $\pm 10\%$ In all ranges 1.5 amperes max.
Ripple	2 millivolts p-p.
Overload Cutoff Circuit	Electronically operates detecting voltage drop when output is short circuited (patent pending)
<u>Regulation</u>	
Regulation	For $\pm 10\%$ changes in line voltage 20 millivolts For 1.5 amps. change in load current 20 millivolts
Meter	Accuracy 2.5%, 2 ranges, 35 volts and 1.5 amperes Voltage drop in the meter is compensated.

### 3. Explanation of Front panel

- 1 Output volts External black colored knob is to select output voltage range.  
7 ranges in 5 volt step
- 2 Red colored knob Internal red colored knob is a fine control of output voltage.
- 3 Output, On, Off This switch serves to turn power line on or off and output terminals also, and to change the range of the meter, and has 4 positions as follows:

Position	POWER OFF	OUTPUT OFF	OUTPUT ON	
			35V	1.5A
Power	Off	on		
Output	Both + and - are open circuited			on
Pilot Lamp	Off	on		
Meter	#	35 volts range		1.5amps. range

# The meter is short-circuited in this position.

4 Pilot lamp

5 Output terminals

Generally, either plus or minus terminal is connected to ground terminal using short bar. In special case, however DC voltage up to  $\pm 100$  volts may be applied to the output.

6 Overload

Overload indicating lamp.

#### 4. PRECAUTIONS

##### Ambient Temperature

This equipment should not be used where ambient temperature exceeds 40 °C. Even ambient temperature may be lower than 40 °C, maximum output current should be derated where the equipment may be subjected to the direct sun light, or where other type of heat radiation exist.

##### OVERLOAD CUTOFF CIRCUIT

When the output of the equipment is overloaded or short-circuited, this circuit detects it and operates to reduce the load current. (The current becomes minimum when short-circuited.) This operates all electronically and the output voltage recovers automatically when overload is removed. Overload indicating lamp lights when the output is overloaded, but avoid the continuous operation under these condition as well as frequent short-circuit, lest the life of the equipment should be reduced.

##### Fuse

Fuse in power line : ----- A fuse is put in the power line.  
Fuse in output circuit; 1. 7A fast-blow-type fuse is put in the output circuit. This fuse is located at lower left corner of the backside.



When possible, it is recommended to use lower rating fuses than 1.7A.

### Series Operation

When more than two equipments are connected in series to give the output voltage over 35 volts, the voltage inverse in polarity to the output may be applied to the output terminal of the equipment, the overload circuit of which operates at first. To avoid the damage of the series transistors, regulated from this voltage, a diode is connected across the output terminals of each equipment as shown in the figure.

### Parallel Operation

Parallel operation should not be allowed because slight difference in output voltages may result in output currents.

Voltage Drop within the Meter

When meter is used as ampere meter, voltage drop across the meter is compensated. ( Voltage drop at full scale is 50 millivolts.)

5. ADJUSTMENT

Adjustment of 2.5 V ADJ and 32.5 V ADJ

Placing range switch in 0 ~ 5 volt position and fine control in center position, 2.5 ADJ screw driver adjustment is adjusted to obtain 2.5 volts output. Similarly, placing range switch in 30 ~ 35 volt position, 32.5 V ADJ screw driver adjustment is adjusted to obtain 32.5 volt output. This procedure repeated several times.

These screw driver adjustments are provided lefthand of the cabinet, and turning clockwise, output voltage increases.