

MODEL 111A VACUUM TUBE VOLTMETER

INSTRUCTION MANUAL

This equipment is a changed model of MODEL 107A, the AC voltmeter portion of this model is changed from peak-to-peak indication type to peak type ( indicates according to the positive peak value of waveform. The scale is calibrated with sine wave of 400 or 1000 c/s and is shown as RMS value. ).

For detailed instruction, please refer the instruction of MODEL 107A. The meter scale of MODEL 111A is same as that of MODEL 107A. and the scale is a peak to peak value. As MODEL 111A is a peak indication type, each reading has to be converted to a half of the indication value.

Kikusui Electronics Corporation

# 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.



MODEL 111A VACUUM TUBE VOLTMETER

SPECIFICATIONS

Type Peak voltage indication type  
Power Requirement AC 1 V 50 / 60 c/s  
Dimensions - Cabinet 150 (W) x 200 (H) x 100 (D) mm  
Maximum 160 (W) x 213 (H) x 137 (D) mm  
Weight Approx. 2.6 kg  
Meter Length of scale 105 mm, sensitivity 200  $\mu$ A  
Tube Used 1 - 6AL5 AC Voltage Rectifier  
1 - 12AU7 DC Amplifier

Items Supplied with Equipment

- 1 - Type G - 1 Probe
- 1 - Instruction Manual
- 1 - Test Data

Resistance

Range 7 range covering from 0.1 ohm to 1000 megohms  
Scale Center Values 10 / 100 / 1k / 10k / 100k / 1M / 10M ohms  
Test Voltage 1.7 volts max.  
Accuracy Between 0.3 and 3 on the scale. within + 5% of center value.  
Between 0.1 and 10 on the scale. within + 10% of center value.

DC Voltage

Polarity Either positive or negative.  
Range 0 - 1.5 / 5 / 15 / 50 / 150 / 500 / 1500 volts  
Input Resistance 11 megohms in all ranges.  
Input Capacitance 1.6 pF maximum in all range.  
Sensitivity 7.33 megohms / volt in range 1.5 V  
Accuracy Within  $\pm$  3% of full scale.  
Maximum Input Pure DC Voltage : 1500 volts maximum  
Composite wave : 1500 volts maximum at peak.

## AC Voltage

### Range

In RMS Value 0 - 1.5 / 5 / 15 / 50 / 150 / 500 / 1500 V RMS  
In Peak Value 0 - 2.1 / 7 / 21 / 70 / 210 / 700 / 2100 V Peak  
( Reading a half of p-p scale )  
In dbm Value - 21 +6/+16/+26/+36/+46/+56/+66 dbm  
( 0 dbm equals to 1 milliwatt into 600 ohms)

Input Resistance Approx. 100 k $\Omega$  at 1 Mc

### Input Capacitance

Direct at input In ranges 1.5/5/15/50/150 V : 25 pF max.  
Terminal In ranges 500/1500 V : 15 pF max.  
Using G - 1 Probe In ranges 1.5/5/15/50/150 V : 80 pF max.  
In ranges 500/1500 V : 70 pF max.

Accuracy Within  $\pm$  5% of full scale.

### Frequency Response (Using G - 1 Probe)

3% drop as referred to 1000 cps : 30 cps to 2 Mc

10% drop as referred to 1000 cps : 15 cps to 4 Mc

### Maximum Input

Pure sine-wave : 1500 volts RMS max.

Composite wave : 2100 volts peak max.