

MODEL 453A
LOW FREQUENCY
FUNCTION GENERATOR
OPERATION MANUAL

印刷技術用のり

KIKUSUI ELECTRONICS CORP.

On Power Supply Source, it is requested to replace the related places in the instruction manual with the following items.

(Please apply the item of \checkmark mark.)

- Power Supply Voltage: to _____ V AC
- Line Fuse: to _____ A
- Power Cable: to 3-core cable (See Fig. 1 for the colors.)

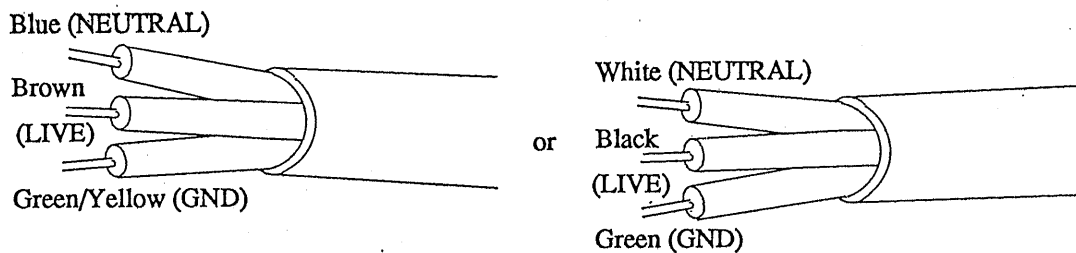


Fig. 1

Please be advised beforehand that the above matter may cause some alteration against explanation or circuit diagram in the instruction manual.

- * AC Plug: In case of Line Voltage 125V AC or more, AC Plug is in principle taken off and delivered, in view of the safety.
(AC Plug on 3-core cable is taken off in regardless of input voltages.)
To connect the AC Plug to the AC power cord, connect the respective pins of the AC Plug to the respective core-wires (LIVE, NEUTRAL, and GND) of the AC power cord by referring to the color codes shown in Fig. 1.

Before using the instrument, it is requested to fix a suitable plug for the voltage used.

KIKUSUI ELECTRONICS' MODEL 453A LOW FREQUENCY FUNCTION GENERATOR

- S P E C I F I C A T I O N -

Power supply	100V 50/60 c/s	Approx. 160VA
Dimensions	520W x 240H x 404D	mm
(the maximum)	545W x 260H x 455D	mm
Weight		Approx. 20 kg
Accessories	Instruction manual	1
	Test data	1
	Short bar	1
	(Distortion test filter -- equipped inside)	

- Oscillation frequency 0.008 c/s ~ 1200 c/s
 - Range x0.01, x0.1, x1, x10, x100
 - Dial scale Equal division 0.8 ~ 12
 - Accuracy 2% + (± 0.03 of dial scale)
 - Stability Max. $\pm 1\%$ at 5 ~ 60 minutes after starting operation*
Max. $\pm 0.5\%$ for $\pm 10\%$ fluctuation of power voltage
- Output Sine, triangular, sawtooth and square wave
 - Load resistance Balance and unbalance Min. 2K Ω
 - Max. output voltage 30V p-p
 - Frequency response ± 0.2 dB against 1000 c/s
(± 1 dB in case of sawtooth wave)
 - Distortion factor (sine wave) 20 ~ 100 c/s Max 1%
100 ~ 1000 c/s Max 2%
 - Output impedance Approx. 25 Ω
 - Stability Max. $\pm 2\%$ for $\pm 10\%$ fluctuation of power voltage
 - Mutual voltage deviation Max. $\pm 3\%$ between sine, triangular and square wave

○ Voltmeter

Type of indication Open-circuit output voltage is indicated by
half-wave voltage doubling

Accuracy 3% of full scale

○ Synchronizing output Synchronized to the positive maximum
point of sine, triangular and saw tooth wave,
and to the positive rise point of square
wave

Voltage Min -10V p-p

Pulse width Max 5 μ S

* excluding x0.01 range

POWER Power switch. When turned ON, power is made and the frequency dial is illuminated. At about 30 seconds after then, operable state is attained.

FUNTION^c Selector knob for output waveform. SINE, TRIANGULAR, SAWTOOTH or SQUARE can be taken out. Stable new waveform can be utilized at the same time as selecting operation, and output voltage (V p-p) is almost never changed by waveform.

FREQ Vernier knob for varying frequency continuously. Frequency is increased by rotating this knob counterclockwise. When the knob at the center of the dial is rotated directly, it shall be done so carefully as not to damage the mechanism, since the movement is heavy and thus excessive force is apt to be given thereto.

FREQ RANGE Selection switch for frequency range. The outer black knob of the double knob. The value of the dial figure multiplied by x0.01 . . . x100 is the frequency of ourput waveform. Output voltage is constant in no relation to frequency, and new frequency output can be utilized at the same time of selecting operation.

OUTPUT VOLTS Inner red knob coaxial with the above FREQ RANGE.

CHECK When this knob is rotated clockwise by 30°, OUTPUT terminal is open-circuited, and the voltmeter indicates open-circuit output voltage (it can be taken

that $V_{p-p} = \text{OUTPUT terminal voltage}$). And when the knob is left from holding, the original position is regained by back mechanism.

AMPLITUDE Variable knob for output voltage. Output is increased when this knob is rotated clockwise from 0 position. Distortion is rapidly increased when the maximum output voltage (30V p-p) is exceeded.

DC BAL DC amplifier balancing semi-fixed resistor for output. This knob shall be so adjusted that the DC component of output voltage becomes zero.

OUTPUT Output terminal, balanced and unbalanced output (either one of the red terminals shall be connected to the black GND terminal) can be utilized. If a load lower than the minimum load resistance value ($2K\Omega$) is used, distortion is increased and the maximum output is decreased.