



## Frequency Source Model 40A



### General description

Altek Model 40A Frequency Source provides 40 precise frequencies from 0.5 to 60,000 Hertz. Output is a square wave\* of 15 volt peak-to-peak amplitude which can be set to any lower value with a built-in attenuator. A switch selects zero based or zero center outputs for standard or zero crossing inputs.

The Model 40A checks and calibrates the electronics of turbine meters, vortex shedding meters, positive displacement meters, oscilloscopes, electronic counters, tachometers and many other frequency input devices. LED flashes to calibrate optical and fiber optic devices.

Frequency accuracy is  $\pm 8$  parts per million. Long term stability is  $\pm 3$  parts per million per year.

Instant turn-on allows long life from the two 9 volt alkaline batteries (200 hours continuous). Frequency is adjusted with the 8 position frequency selector switch and a 5 position range multiplier switch.

The low cost Model 40A is a complete, compact source for checkout and calibration of all frequency instruments in the field, shop, lab and control room.

\*20 KHz = 1:3 ratio  
12 KHz = 2:5 ratio

- Frequency output  
40 precise steps 0.5 Hz to 60 KHz
- Tuning fork crystal  
0.0008% accuracy
- Laboratory stability  
 $\pm 0.001\%$  per deg C
- Zero based & zero crossing square wave  
Switch selected outputs
- Pocket sized

## Specifications

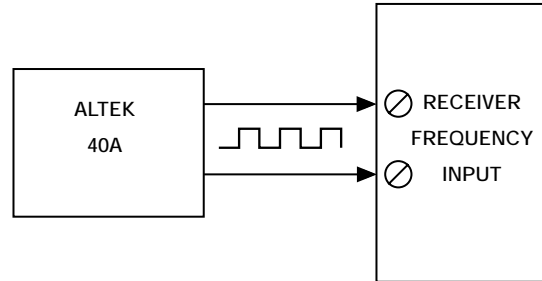
(Unless otherwise indicated, specifications are at 23°C)

Accuracy:  $\pm 0.0008\%$  (8 parts per million)  
 Frequencies: 5, 6, 10, 12, 15, 20, 30 and 60 Hz times multiplier  
 Multiplier: 0.1, 1, 10, 100 and 1000 times frequency scale  
 Output: Nominal 15V peak-to-peak square wave (1:3 ratio 20KHz, 2:5 ratio 12KHz)  
 Waveform: Switch selected zero based or zero crossing squarewave  
 Attenuator: Sliding potentiometer, logarithmic taper  
 Output impedance: 2500 ohms maximum  
 Output drive current: 6mA at max output voltage  
 Rise time: 1 microsecond nominal into resistive load  
 Operating temperature range: 14 to 158° F (-10 to +70°C)  
 Storage temperature range: -22 to +185° F (-30 to +85°C)  
 Temperature effect:  $\pm 0.001\%/^{\circ}\text{C}$   
 Batteries: 2 x 9-volt Alkaline  
 Battery life: Nominal 200 hours of operation. Batteries should be removed when storing the unit for >3 months.  
 Battery indication: LED flashes with frequency if batteries OK  
 Size: 2-1/8 x 4 x 2-1/4 inches (54x102x55mm)  
 Weight: 7 oz. (0.2 kg)

## Operating instructions

Connect the Model 40A to the frequency input of the device to be checked or calibrated. Select the frequency and multiplier for the initial frequency desired. Turn the power switch "on" and observe the glow in the light emitting diode (LED).

If the diode glows, the battery is at a sufficient level to provide proper operation. At low frequencies, the LED flashes in synchronism with the selected frequency. Adjust the attenuator for proper level. Check at all desired frequencies, turn off and disconnect the Model 40A.



Multiplier Switch	Output frequency							
	0.1	0.5	0.6	1	1.2	1.5	2	3
1	5	6	10	12	15	20	30	60
10	50	60	100	120	150	200	300	600
100	500	600	1K	1.2K	1.5K	2K	3K	6K
1000	5K	6K	10K	12K	15K	20K	30K	60K
	5	6	10	12	15	20	30	60
	Hx (x Multiplier) Switch							

## Warranty

Altek products are warranted to be free from defects in material and workmanship (excluding fuses, batteries and leads) for a period of three years from the date of shipment. Warranty repairs can be obtained by returning the equipment prepaid to our factory. Products will be replaced, repaired, or adjusted at our option. *Altek gives no other warranties, including any implied warranty of fitness for a particular purpose.* Also, Altek shall not be liable for any special, indirect, incidental or consequential damages or losses arising from the sale or use of its products.

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