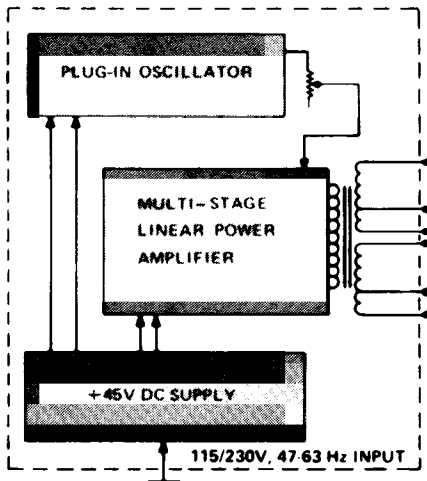


# FREQUENCY CONVERTERS



Elgar has long been the industry leader in producing solid-state Frequency Converters (AC power sources) for a variety of applications. These include laboratories, receiving inspection, production testing, computer-controlled automatic test systems, and facilities which require variable voltage, fixed or variable frequencies independent of power

line and load variations.

Think of an Elgar AC power source as a high-power linear amplifier driven by a precision oscillator. Actually, the basic power amplifier consists of a  $\pm$  DC supply and a multi-state amplifier with a multiple-tap power output transformer. Output frequency is established by a plug-in oscillator.

Although frequently classed as instruments, Elgar power sources are actually power systems. They can deliver a variety of voltages and frequencies at the output, and the phase angles of the oscillators can be controlled, enabling the user to interconnect the output of two or more power sources into 2-phase

and either Delta or Wye, 3-phase configurations.

Because of the relative ease of control of the output frequency, amplitude and phase angle, Elgar power sources can be externally programmed by a computer or other digital commands via an Elgar Decoder Programmer Oscillator. This enables avionics and other system designers to automatically "exercise" their end products under simulated power conditions.

Since the many possible output variations are achieved either by a plug-in device or by external interconnection, Elgar power sources can serve many needs without fear of obsolescence.

## STANDARD MODELS

SINGLE PHASE		TWO PHASE		THREE PHASE			
RATING MODEL VA		RATING MODEL VA		RATING MODEL VA		RATING MODEL VA	
121	120	240-2	240	153A	150	1500-3	1500
251	250	500-2	500	240-3D	240	1753A	1750
501A	500	1000-2	1000	360-3	360	2000-3D	2000
751A	750	1500-2	1500	503	500	2250-3	2250
1001A	1000	2000-2	2000	500-3D	500	3000-3	3000
1751	1750	3500-2	3500	750-3	750	3500-3D	3500
2000-1	2000			1000-3D	1000	5250-3	5250
3500-1	3500			1000-3Y	1000	10500-3	10500

Note: D is an open delta configuration.

## GENERAL SPECIFICATIONS

Output Voltage Ranges: 0-32, 0-130, 0-260  
 Output Frequency Range: 45-10,000 Hz  
 Load Power Factor:  $\pm 0.7$  at full VA  
 Output Harmonic Distortion: 0.6% THD worst case

Line Regulation:  
 $\pm 0.25\%$  at full load vs.  $\pm 10\%$  change of input line voltage.

Load Regulation:  
 $\pm 1\%$  from no load to full load over full frequency range and  $\pm 10\%$  input range. Adjustable to better than 0.1% for specific load conditions. Fixed frequency systems always less than  $\pm 0.25\%$ .

Response Time: Less than 50  $\mu$ sec.

Noise Level: 70db below full output. Includes plug-in oscillator.

Gain Stability:  
 $\pm 0.25\%$  for 24 hours at constant line, load and temperature.

Temperature Range:  
 Operating,  $-20^\circ$  to  $+50^\circ\text{C}$ ;  
 Storage,  $-40^\circ$  to  $+80^\circ\text{C}$ .

## PLUG-IN OSCILLATOR MODULES

### VARIABLE FREQUENCY

Type	Model	Frequency Range (Hz)	Phase*	Calibration Accuracy	Frequency Temp. Coeff.
Decade Dial	401-V	45-10000	1	$\pm 1\%$	$\pm 0.02\%/^\circ\text{C}$
Continuous Dial	431-V	300-500	1	$\pm 0.25\%$	$\pm 0.02\%/^\circ\text{C}$
	461-V	45-70	1	$\pm 0.25\%$	$\pm 0.02\%/^\circ\text{C}$
	4641-V	45-70 & 350-450	1	$\pm 0.25\%$	$\pm 0.02\%/^\circ\text{C}$

\*Oscillators are also available in two- and three-phase versions. To indicate a multi phase oscillator, change the last digit of the model number; for example, 403-V = 3-phase, and so on.

\*\*These oscillators provide 0.01% line and 0.01% load regulation and  $0.01^\circ$  phase angle regulation around the power amplifier(s) at the point(s) of sense. They also provide 0.1% amplitude and  $0.1^\circ$  phase angle stability for 1000 hours at constant line, load and temperature. Normally for fixed voltage applications. Please specify voltage. Amplitude temperature coeff.  $0.005\%/^\circ\text{C}$ .

### FIXED FREQUENCY

Type	Model	Frequency Range (Hz)	Phase*	Calibration Accuracy	Frequency Temp. Coeff.
R-C Phase Shift	451-1	50	1	$\pm 0.1\%$	$\pm 0.015\%/^\circ\text{C}$
	461-1	60	1	$\pm 0.1\%$	$\pm 0.015\%/^\circ\text{C}$
	441-1	400	1	$\pm 0.1\%$	$\pm 0.015\%/^\circ\text{C}$
** Crystal Control	461-01	60	1	$\pm 0.01\%$	$\pm 0.0002\%/^\circ\text{C}$
	441-01	400	1	$\pm 0.01\%$	$\pm 0.0002\%/^\circ\text{C}$
	461-0001	60	1	$\pm 0.0001\%$	$\pm 0.00005\%/^\circ\text{C}$
	441-0001	400	1	$\pm 0.0001\%$	$\pm 0.00005\%/^\circ\text{C}$
Crystal Control with Amplitude Servo Control	461-01SS	60	1	$\pm 0.01\%$	$\pm 0.0002\%/^\circ\text{C}$
	441-01SS	400	1	$\pm 0.01\%$	$\pm 0.0002\%/^\circ\text{C}$



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