

# AC POWER SOURCES MODEL SELECTION GUIDE

## "B" SERIES POWER AMPLIFIER SELECTION GUIDE/SPECIFICATIONS \*

MODEL NO.	Volt Amperes Total	OUTPUT		Frequency Range [Hz]	INPUT		PHYSICAL			COMMENTS	
		Voltage Range [RMS]	Max. Current [RMS] / $\phi$		Voltage and Phase	Maximum Volt Amps [KVA]**	Height [in./mm]	Depth [in./mm]	Weight [lbs./kg]		Shipping [lbs./kg]
<b>SINGLE PHASE OUTPUT POWER</b>											
121B	120	0-130/1.1, 0-260/0.55		45 to 5K	115 or 230, 1 $\phi$	0.4	3.5/89	15/381	47/21	50/23	0-32/4.4A range available; Model 121B-101.
251B	250	0-32/9.2, 0-130/2.25 0-260/1.1		45 to 5K	115 or 230 1 $\phi$	0.8	5.25/133	16/405	49/22	55/25	
351B	350	0-130/3.2, 0-260/1.6		45 to 5K	115 or 230, 1 $\phi$	1.0	5.25/133	16/405	70/32	78/35.5	0-32V/12.8A range available; Model 351B-101.
501B	500	0-65/9, 0-130/4.5 0-260/2.25		45 to 5K	115 or 230 1 $\phi$	1.5	7/178	19/482	90/41	105/47	
751B	750	0-65/13.6, 0-130/6.8 0-260/3.4		45 to 5K	115 or 230 1 $\phi$	2.2	7/178	19/482	115/52	125/57	
1001B	1000	0-65/18.2, 0-130/9.1 0-260/4.5		45 to 5K	115, 230 or 208 1 $\phi$	3.0	12.25/311	19/482	190/86	200/91	
1751B	1750	0-32/63.6, 0-65/31.8 0-130/15.9, 0-260/7.9		45 to 5K	208 or 416 L-L 3 $\phi$	5.3	14/356	19/482	227/101	237/108	115 or 230V, 1 $\phi$ input option, 1500VA rating; Model 1751B-125.
2000-1	2000	0-130/18.2, 0-260/9.1 0-520/4.5		45 to 5K	115, 230 or 208 1 $\phi$	6.0	24.5/622	19/482	380/172	400/182	2 ea. 1001B (series), 1 ea. 400SR, 1 ea. 307 cable.
3001B	3000	0-65/54, 0-130/27 0-260/13.5		45 to 3K	208 or 416 L-L 3 $\phi$	9.0	17.5/445	22/560	315/143	361/164	480V 3 $\phi$ input option; Model 3001B-137.
3500-1	3500	0-65/63.6, 0-130/31.8 0-260/15.9, 0-520/7.9		45 to 5K	208 or 416 L-L 3 $\phi$	10.5	28/712	19/482	444/202	474/216	2 ea. 1751B (series), 1 ea. 400SR, 1 ea. 307 cable.
5250-1	5250	0-130/48 0-260/24		45 to 5K	208 or 416 L-L 3 $\phi$	15.0	42/1068	19/482	666/303	712/323	3 ea. 1751B (parallel), 2 ea. 400SR, 1 ea. 291 cable. ***
6000-1	6000	0-130/54, 0-260/27 0-520/13.5		45 to 3K	208 or 416 L-L 3 $\phi$	18.0	35/890	22/560	630/286	722/328	2 ea. 3001B (series), 1 ea. 400SR, 1 ea. 307 cable.
7000-1	7000	0-130/63.6, 0-130/31.8 0-260/15.9		45 to 5K	208 or 416 L-L 3 $\phi$	21.0	56/1422	19/482	888/404	948/431	4 ea. 1751B (parallel), 3 ea. 400SR, 1 ea. 734 cable. ***
9000-1	9000	0-130/81 0-260/40.5		45 to 3K	208 or 416 L-L 3 $\phi$	27.0	62.5/1333	22/560	945/430	1085/492	3 ea. 3001B (parallel), 2 ea. 400SR, 1 ea. 291 cable. ***
12000-1	12000	0-130/108 0-260/54		45 to 3K	208 or 416 L-L 3 $\phi$	36.0	70/1780	22/560	1260/573	1444/656	4 ea. 3001B (parallel), 3 ea. 400SR, 1 ea. 734 cable. ***
15000-1	15000	0-130/135 0-260/67.5		45 to 3K	208 or 416 L-L 3 $\phi$	45.0	87.5/2223	22/560	1575/716	1805/820	5 ea. 3001B (parallel), 4 ea. 400SR, 1 ea. 035 cable. ***
18000-1	18000	0-130/162 0-260/81		45 to 3K	208 or 416 L-L 3 $\phi$	54.0	105/2667	22/560	1890/859	2166/985	6 ea. 3001B (parallel), 5 ea. 400SR, 1 ea. 938 cable. ***
21000-1	21000	0-130/190 0-260/95		45 to 3K	208 or 416 L-L 3 $\phi$	63.0	122.5/3112	22/560	2205/1002	2527/1150	7 ea. 3001B (parallel), 6 ea. 400SR, 1 ea. 036 cable. ***
24000-1	24000	0-130/216 0-260/108		45 to 3K	208 or 416 L-L 3 $\phi$	72.0	140/3556	22/560	2520/1145	2888/1313	8 ea. 3001B (parallel), 7 ea. 400SR, 1 ea. 037 cable. ***
<b>TWO PHASE OUTPUT POWER (QUADRATURE)</b>											
240-2	240	0-130/1.1, 0-260/0.55		45 to 5K	115 or 230, 1 $\phi$	0.7	7/128	15/381	94/42	102/46	2 ea. 121B in 2 $\phi$ 90°, 1 ea. 400SR, 1 ea. 307 cable.
500-2	500	0-32/9.2, 0-130/2.25 0-260/1.1		45 to 5K	115 or 230 1 $\phi$	1.5	10.5/267	16/406	98/44	110/50	2 ea. 251B in 2 $\phi$ 90°, 1 ea. 400SR, 1 ea. 307 cable.
700-2	700	0-130/3.2, 0-260/1.6		45 to 5K	115 or 230, 1 $\phi$	2.2	10.5/267	16/406	140/64	156/71	2 ea. 351B in 2 $\phi$ 90°, 1 ea. 400SR, 1 ea. 307 cable.
1000-2	1000	0-65/9, 0-130/4.5 0-260/2.25		45 to 5K	115 or 230 1 $\phi$	3.0	14/356	19/482	180/82	210/96	2 ea. 501B in 2 $\phi$ 90°, 1 ea. 400SR, 1 ea. 307 cable.
1500-2	1500	0-65/13.6, 0-130/6.8 0-260/3.4		45 to 5K	115 or 230 1 $\phi$	4.5	14/356	19/482	230/104	250/114	2 ea. 751B in 2 $\phi$ 90°, 1 ea. 400SR, 1 ea. 307 cable.
2000-2	2000	0-65/18.2, 0-130/9.1 0-260/4.5		45 to 5K	115, 230 or 208 1 $\phi$	6.0	24.5/622	18/457	380/172	400/182	2 ea. 1001B in 2 $\phi$ 90°, 1 ea. 400SR, 1 ea. 307 cable.
3500-2	3500	0-32/63.6, 0-65/31.8 0-130/15.9, 0-260/7.9		45 to 5K	208 or 416 L-L 3 $\phi$	10.5	28/712	18/457	444/202	474/215	2 ea. 1751B in 2 $\phi$ 90°, 1 ea. 400SR, 1 ea. 307 cable.
6000-2	6000	0-65/54, 0-130/27 0-260/13.5		45 to 3K	208 or 416 L-L 3 $\phi$	18.0	35/890	22/560	630/286	722/328	2 ea. 3001B in 2 $\phi$ 90°, 1 ea. 400SR, 1 ea. 307 cable.

\*The power amplifiers are not complete power sources or frequency converters in themselves and thus require a plug-in oscillator or external signal of some type.  
 Two phase outputs require a two-phase plug-in oscillator; three-phase outputs require a three-phase plug-in oscillator; one phase outputs can use a one, two, or three phase plug-in oscillator.

\*\*Under worst case conditions of load and input line.

\*\*\*Remote sense option required.

Single Unit Power Amplifier  
 Multi-Amplifier Systems

"B" SERIES POWER AMPLIFIER SELECTION GUIDE/SPECIFICATIONS \*

MODEL NO.	Volt Amperes Total	OUTPUT		Frequency Range (Hz)	INPUT		PHYSICAL			COMMENTS	
		Voltage Range (RMS)	Max. Current (RMS) / $\phi$		Voltage and Phase	Maximum Volt Amps (KVA) **	Height (in/mm)	Depth (in/mm)	Weight (lbs/kg)		Ship (lbs/kg)
THREE PHASE OUTPUT POWER											
153B	150	L-N 0-30/2, 0-130/0.45		45 to 5K	115 or 230, 1 $\phi$	0.5	5.25/133	17/432	70/32	80/27	For 0-30V range, specify Model 153B-121.
240-3D	240	L-L 0-130/0.67, 0-260/0.33		45 to 5K	115 or 230, 1 $\phi$	0.7	7/178	15/381	94/42	102/46	2 ea. 121B (open $\Delta$ ), 1 ea. 400SR, 1 ea. 307 cable.
360-3	360	L-N, 0-130/1.1 0-260/0.55		45 to 5K	115 or 230 1 $\phi$	1.3	10.5/267	15/381	141/64	153/70	3 ea. 121B (4 wire Y), 2 ea. 400SR, 1 ea. 291 cable
503A	500	L-N, 0-75/2.6 0-130/1.5		45 to 5K	115 or 230 1 $\phi$	1.5	8.75/220	19/482	125/57	130/59	75V L-N (130V L-L $\Delta$ ), 0-32V L-N option; Model 503B-121.
500-3D	500	L-L, 0-32/5.5 0-130/1.4, 0-260/0.7		45 to 5K	115 or 230 1 $\phi$	1.5	10.5/267	16/406	98/44	110/50	2 ea. 251B (open $\Delta$ ), 1 ea. 400SR, 1 ea. 307 cable
750-3	750	L-N, 0-32/9.2 0-130/2.25, 0-260/1.1		45 to 5K	115 or 230 1 $\phi$	2.2	15.75/400	16/406	147/66	165/75	3 ea. 251B (4 wire Y), 2 ea. 400SR, 1 ea. 291 cable.
1000-3D	1000	L-L, 0-65/5.6 0-130/2.8, 0-260/1.4		45 to 5K	115 or 230 1 $\phi$	3.0	14/356	19/482	180/82	210/98	2 ea. 501B (open $\Delta$ ), 1 ea. 400SR, 1 ea. 307 cable
1050-3	1050	L-N, 0-130/3.2 0-260/1.6		45 to 5K	115 or 230 1 or 3 $\phi$	3.3	15.75/400	16/406	210/95	225/106	3 ea. 351B (4 wire Y), 2 ea. 400SR, 1 ea. 291 cable.
1500-3	1500	L-N, 0-65/9 0-130/4.5, 0-260/2.25		45 to 5K	115 or 230 1 or 3 $\phi$	4.5	21/533	19/482	370/123	315/141	3 ea. 501B (4 wire Y), 2 ea. 400SR, 1 ea. 291 cable.
1500-3D	1500	L-L, 0-65/8.4 0-130/4.2, 0-260/2.1		45 to 5K	115 or 230 1 $\phi$	4.5	14/356	19/482	230/104	250/114	2 ea. 751B (open $\Delta$ ), 1 ea. 400SR, 1 ea. 307 cable.
1753B	1750	L-N, 0-75/9.1 0-130/5.3		45 to 5K	208 or 416 L-L, 3 $\phi$	5.2	14/356	19/482	230/105	245/110	75V L-N (130V L-L $\Delta$ ). For 0-260V L-N option, specify Model 1753B-110.
2000-3D	2000	L-L, 0-65/11 0-130/5.5, 0-260/2.25		45 to 5K	115, 230 or 208 1 $\phi$	6.0	24.5/622	19/482	380/172	400/182	2 ea. 1001B (open $\Delta$ ), 1 ea. 400SR, 1 ea. 307 cable.
2250-3	2250	L-N, 0-65/13.6 0-130/6.8, 0-260/3.4		45 to 5K	115 or 230 1 or 3 $\phi$	6.8	21/533	19/482	345/157	375/170	3 ea. 751B (4 wire Y), 2 ea. 400SR, 1 ea. 291 cable
3000-3	3000	L-N, 0-65/18.2 0-130/9.1, 0-260/4.5		45 to 5K	115, 230 or 208 1 or 3 $\phi$	9.0	38.75/923	19/482	570/259	600/273	3 ea. 1001B (4 wire Y), 2 ea. 400SR, 1 ea. 291 cable.
3500-3D	3500	L-L, 0.32/38.8 0-130/9.7, 0-260/4.9		45 to 5K	208 or 416 L-L, 3 $\phi$	10.5	18/712	19/482	444/202	474/216	2 ea. 1751B (open $\Delta$ ), 1 ea. 400SR, 1 ea. 307 cable
3603B	3600	L-N, 0-130/10.9		45 to 5K	208 or 416 L-L 3 $\phi$	10.9	22.75/578	24/610	325/146	372/167	2 boxes. For 0-260V L-N option, specify Model 3603B-101.
5250-3	5250	L-N, 0-32/64.6 0-130/15.9, 0-260/7.9		45 to 5K	208 or 416 L-L 3 $\phi$	15.9	42/1068	19/482	666/303	712/323	3 ea. 1751B (4 wire Y), 2 ea. 400SR, 1 ea. 291 cable.
6000-3D	6000	L-L, 0-65/33 0-130/16.7, 0-260/8.3		45 to 5K	208 or 416 L-L 3 $\phi$	18.0	35/890	22/560	630/286	722/328	2 ea. 3001B (open $\Delta$ ), 1 ea. 400SR, 1 ea. 307 cable.
7000-3D	7000	L-L, 0-130/19.4 0-260/9.7, 0-520/4.9		45 to 5K	208 or 416 L-L 3 $\phi$	21.0	56/1422	19/482	920/418	980/445	4 ea. 1751B (open $\Delta$ ), 3 ea. 400SR, 1 ea. 734 cable
9000-3	9000	L-N, 0-65/54 0-130/27, 0-260/13.5		45 to 3K	208 or 416 L-L 3 $\phi$	27.0	52.5/1333	22/560	945/430	1085/492	3 ea. 3001B (4 wire Y), 2 ea. 400SR, 1 ea. 291 cable.
10500-3	10,500	L-N, 0-130/31.8 0-260/15.9, 0-520/7.9		45 to 5K	208 or 416 L-L 3 $\phi$	31.0	84/2134	19/482	1332/605	1566/712	6 ea. 1751B (4 wire Y), 5 ea. 400SR, 1 ea. 938 cable.
12000-3D	12,000	L-L, 0-130/33 0-260/16.7, 0-520/8.3		45 to 3K	208 or 416 L-L 3 $\phi$	36.0	70/1778	22/560	1260/573	1444/656	4 ea. 3001B (open $\Delta$ ), 3 ea. 400SR, 1 ea. 734 cable.
18000-3	18,000	L-N, 0-130/54 0-260/27, 0-520/13.5		45 to 3K	208 or 416 L-L 3 $\phi$	54.0	105/2666	22/560	1890/859	1980/900	6 ea. 3001B (4 wire Y), 5 ea. 400SR, 1 ea. 938 cable.
27000-3	27,000	L-N, 0-130/81 0-260/40.5		45 to 3K	208 or 416 L-L 3 $\phi$	81	9 pcs. 17.5/444	22/560	2835/ 1288	2970/ 1350	9 ea. 3001B (parallel, 4 wire Y), 8 ea. 400SR, 1 set cables. ***
36000-3	36,000	L-N, 0-130/108 0-260/54		45 to 3K	208 or 416 L-L 3 $\phi$	108	12 pcs. 17.5/444	22/560	3780/ 1718	3960/ 1800	12 ea. 3001B (parallel, 4 wire Y), 11 ea. 400SR, 1 set cables. ***
45000-3	45,000	L-N, 0-130/135 0-260/67.5		45 to 3K	208 or 416 L-L 3 $\phi$	135	15 pcs. 17.5/444	22/560	4725/ 2148	4950/ 2250	15 ea. 3001B (parallel, 4 wire Y), 14 ea. 400SR, 1 set cables. ***

\*The power amplifiers are not complete power sources or frequency converters in themselves and thus require a plug-in oscillator or external signal of some type.  
 Two phase outputs require a two-phase plug-in oscillator; three-phase outputs require a three-phase plug-in oscillator; one phase outputs can use a one, two, or three phase plug-in oscillator.

\*\*Under worst case conditions of load and input line.

Single Unit Power Amplifier

\*\*\*Remote sense option required.

Multi-Amplifier Systems

# POWER SOURCE RATINGS

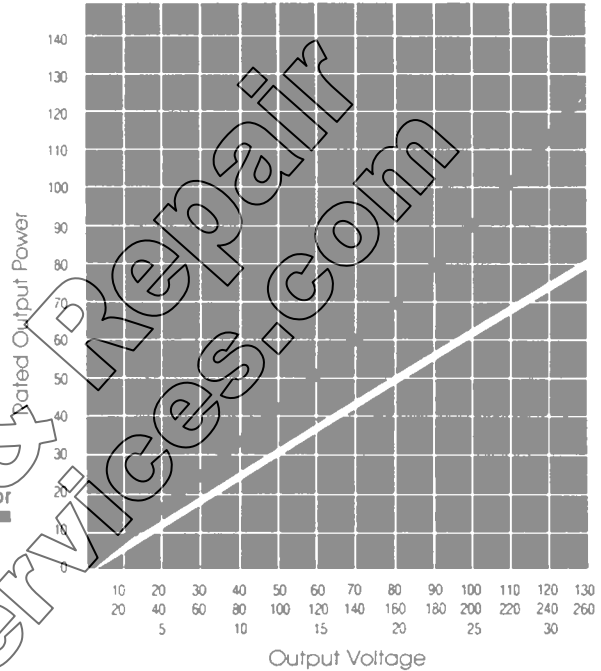
All Elgar power source output ratings (VA) are guaranteed at 50 C°. This includes VA output as a function of voltage . . . Power factor of ± 0.7 to unity . . . 140% crest factor . . . ± 10% power-line variation . . . noise . . . distortion . . . voltage regulation . . . all with specified overload protection operating!

In the last 20 years we have delivered over 50,000 AC Power sources to a generation of design and test engineers. Engineers who have come to rely on Elgar for real world specifications, on time delivery, and dependable, precise AC power.

Do not be misled by ambiguous specifications, contradictory power curves, or vague claims of "50% more power". A demonstration unit for your evaluation and comparison will be provided to you at no cost. You can prove to yourself that Elgar power sources are everything we say they are.

**POWER DERATING  
 VS.  
 POWER FACTOR  
 AT 50C°**

Unity Power Factor  
 $\frac{\text{Rated Output Power}}{\text{Power Factor}}$



## OUR PROMISE TO YOU

The highest performance . . .  
 the most reliability . . .  
 and the greatest value  
 at the lowest cost.

Contact your local Elgar sales engineer  
 or contact Gene Wilder  
 at the factory for all  
 your power source requirements  
 1-800-854-2213



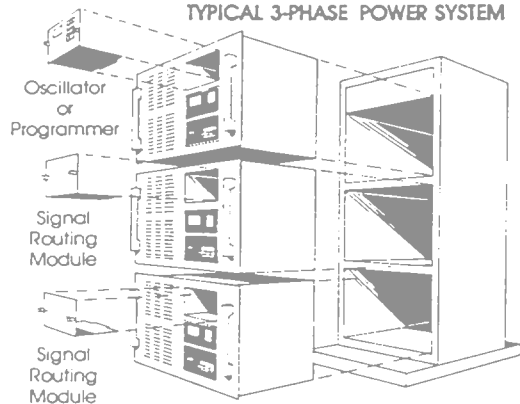
## HOW TO ASSEMBLE YOUR POWER SYSTEM

Power Systems are configured from individual power amplifiers and a plug-in signal source (oscillators or programmers). Power amplifiers are highlighted in the Model Selection Guides. Oscillators are described on page 9. Programmers (PIP)s are described on page 8.

A Power System consists of two or more power amplifiers, a plug-in signal source, associated cables, and signal routing modules. Power Systems are configured for multi-phase output and/or in tandem for higher output power.

Power System Components are fully described in the comment column of the Selection Guides.

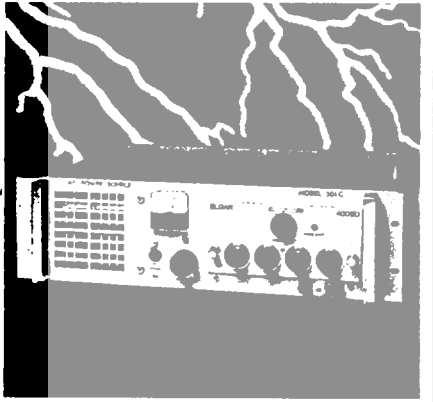
## TYPICAL 3-PHASE POWER SYSTEM



Elgar Model 1001B AC Power Amplifiers

Portable Cabinets are available for any AC Power System. Standard Cabinet assemblies are described on page 13.

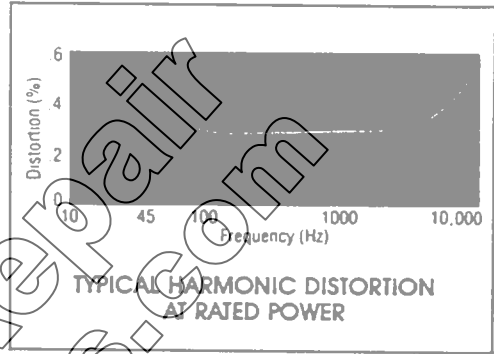
# DIRECT-COUPLED POWER SOURCES... WIDER FREQUENCY RANGE, LOWER DISTORTION, MORE EFFICIENT.



conservative direct-coupled design, a wider frequency range is provided. The output remains isolated from the input power line and operates with the low side grounded.

Multiple phase configurations can be accomplished by using 2 or more units with a multiple phase plug-in oscillator.

The standard 0-125 VAC output range is fully regulated. Optional voltage ranges are provided through the use of internally mounted auto-transformers. Since these are outside the feed-back loop, voltage regulation is slightly degraded (2-4%) during a no load to full load change.



TYPICAL HARMONIC DISTORTION AT RATED POWER

### Specifications

**Response Time:** Less than 20 micro seconds.

**Line Regulation:**  $\pm 0.25\%$  at full rated load and maximum output voltage for a  $\pm 10\%$  input voltage change.

**Load Regulation:**  $\pm 0.25\%$  at full rated load from 45 Hz to 10 KHz;  $\pm 1\%$  at full rated load from 15 Hz to 10 KHz.

**Distortion:** 45 Hz to 10 KHz; 0.5% max. 15 Hz to 15 KHz; 1% max.

All other Specifications are the same as the "B" series. See the "C" series Selection Guide for specific model information.

Smaller and lighter, the "C" series AC power sources complement the more versatile "B" series. By eliminating the output transformer, in favor of a

### "C" SERIES POWER AMPLIFIER SELECTION GUIDE/SPECIFICATIONS \*

MODEL NUMBER	OUTPUT			Frequency Range (Hz)	INPUT		PHYSICAL				COMMENTS
	Volt Amperes Total	Voltage Range (RMS)	Max. Current (RMS)		Voltage and Phase	Maximum Volt Amps (KVA)	Height (in./mm)	Depth (in./mm)	Net Weight (lbs./kg)	Ship Weight (lbs./kg)	
SINGLE PHASE OUTPUT POWER											
501C	500	0-125/4	15 to 15K	117 or 234, 1 $\phi$	1.4	5.25/133	16/405	50/23	54/25		
501C-103	500	0-125/4, 0-250/2	45 to 10K	117 or 234, 1 $\phi$	1.4	5.25/133	16/405	60/27	64/29	Auto-Xlfr, load reg., 250V range, 2-4%.	
1001C	1000	0-125/8	15 to 15K	117 or 234, 1 $\phi$	2.8	8.75/222	17/432	80/36	90/41		
1001C-103	1000	0-125/8, 0-250/4	45 to 10K	117 or 234, 1 $\phi$	2.8	8.75/222	17/432	95/43	105/48	Auto-Xlfr, load reg., 250V range, 2-4%.	
2000C-1	2000	0-125/16	15 to 15K	117 or 234, 1 $\phi$	5.6	17.5/444	17/432	160/72	180/82	2 ea. 1001C (parallel), 1 ea. 400SR, 1 ea. 307 cable.	
2000C-1-103	2000	0-125/16, 0-250/8	45 to 10KHz	117 or 230, 1 $\phi$	5.6	17.5/444	17/432	190/86	210/95	2 ea. 1001C-103 (parallel), 1 ea. 400SR, 1 ea. 307 cable.	
3000C-1	3000	0-125/24	15 to 15K	117 or 230, 1 $\phi$ or 3 $\phi$	8.4	26.25/667	17/432	240/109	270/123	3 ea. 1001C (parallel), 2 ea. 400SR, 1 ea. 291 cable.	
3000C-1-103	3000	0-125/24, 0-250/12	45 to 10KHz	117 or 230, 1 $\phi$ or 3 $\phi$	8.4	26.25/667	17/432	285/130	315/143	3 ea. 1001C-103 (parallel), 2 ea. 400SR, 1 ea. 291 cable.	
TWO PHASE OUTPUT POWER (QUADRATURE)											
1000C-2	1000	0-125/4	15 to 10KHz	117 or 234, 1 $\phi$	2.8	10.5/266	16/405	100/26	108/50	2 ea. 501C in 2 $\phi$ 90°, 1 ea. 400SR, 1 ea. 307 cable.	
2000C-2	2000	0-125/8	15 to 10KHz	117 or 234, 1 $\phi$	5.6	17.5/445	17/432	160/72	180/82	2 ea. 1001C in 2 $\phi$ 90°, 1 ea. 400SR, 1 ea. 307 cable.	
THREE PHASE OUTPUT POWER											
1500C-3	1500	L-N 0-125/4	15 to 10KHz	117 or 234, 1 or 3 $\phi$	4.2	15.75/400	16/405	150/68	162/74	3 ea. 501C (4 wire Y), 2 ea. 400SR, 1 ea. 291 cable.	
1500C-3-103	1500	L-N 0-125/4, 0-250/2	45 to 10KHz	117 or 234, 1 or 3 $\phi$	4.2	15.75/400	16/405	160/73	192/87	3 ea. 501C-103 (4 wire Y), 2 ea. 400SR, 1 ea. 291 cable.	
1503C	1500	L-N 0-125/4	15 to 10KHz	208 or 416 L-L, 3 $\phi$	4.2	8.75/222	20/508	105/48	115/52		
3000C-3	3000	L-N 0-125/8	15 to 10KHz	117 or 234, 1 or 3 $\phi$	8.4	26.25/667	17/432	240/109	270/123	3 ea. 1001C (4 wire Y), 1 ea. 400SR, 1 ea. 291 cable.	
3000C-3-103	3000	L-N 0-125/8, 0-250/4	45 to 10KHz	117 or 234, 1 or 3 $\phi$	8.4	26.25/667	17/432	285/130	315/143	3 ea. 1001C-103 (4 wire Y), 2 ea. 400SR, 1 ea. 291 cable.	

\* The power amplifiers are not complete power sources or frequency converters in themselves and thus require a plug-in oscillator or external signal of some type.

Two phase outputs require a two-phase plug-in oscillator; three-phase outputs require a three-phase plug-in oscillator; one phase outputs can use a one, two, or three phase plug-in oscillator.

\*\* Under worst case conditions of load and input line.

□ Single Unit Power Amplifier

△ Multi-Amplifier Systems

# VERSATILE, DEPENDABLE PIPS . . . THE ULTIMATE IN ATE POWER SOURCE PROGRAMMING.

Elgar is the undisputed, world-wide leader in programmable AC power sources. In addition to the worlds largest installed base of programmed power equipment, we also have the largest selection of Power Source Programmars (PIP)s currently available.

Unique features, innovative design, and rugged dependability have made Elgar PIPs the overwhelming choice of both commercial and military ATE manufacturers and users.

## NEW PROGRAMMABLES

PIP models 9012 and 9030 are the newest Elgar programmers. No nonsense design and microprocessor technology provide the most sought after features at the lowest possible cost. The "no frills" 9030 PIP costs less than half as much as competitive models.

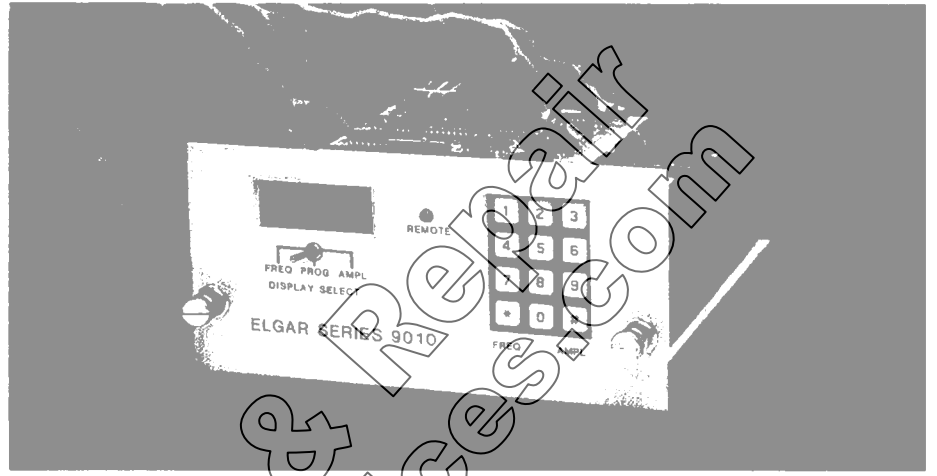
The PIP 9012, with optional test board, packs more usable features in a smaller package than any other programmer available. Programming flexibility of the PIP 9012 and 9030 makes Elgar power systems software transparent. This means you can upgrade your existing ATE system to Elgar equipment with no costly software modifications.

## \*MATE COMPATIBILITY

PIP Models 9012, 9022 and 9030 all include optional CIL language programming, confidence and embedded TMA function. Several "B" series power sources include built-in confidence relays. The soon to be introduced "SL" series AC power sources will include full Mate compatibility as a standard option.

\*U.S. Air Force

M)odular A)utomatic T)est E)quipment



In addition to the many unique features listed here, all Elgar PIP models provide:

- Remote sense for 0.15% amplitude accuracy
- Digitally synthesized, crystal controlled for .001% frequency accuracy
- Load regulation of 0.015%; 0-100% load
- Line regulation of 0.01%;  $\pm 10\%$  line change
- Phase angle accuracy of  $\pm 1^\circ$
- Automatic shut down above or below amplifier frequency range
- Open sense/over shoot limiting to 10% of programmed value

All PIP models except PIP 9030 provide complete local control of all parameters via the front panel keypad as well as interface to a digital computer. The bright LED display provides monitoring of program values and operating fault conditions.

All Elgar PIPs are universal and can be used with any Elgar AC power source, except the 'C' series.

## STANDARD FEATURES

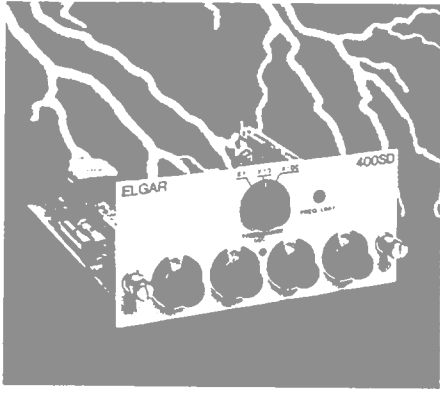
Keyboard Control	12 Key
Display	Four Digit LED
Annunciators	Mode, Range
Interface	IEEE-488 or BCD
Syntax	ABLE, CIL, DAP, User defined
Frequency Range	45Hz - 10kHz
Frequency Resolution	0.01Hz - 1Hz
Frequency Initialization	60Hz or 400Hz
Voltage Range	0-280V, up to 3 ranges
Voltage Resolution	0.01 to 0.1VAC
Voltage Initialization	Zero
Current Limit	Programmable
Current Limit Range	5-99.9% In Percent 5-100% in Amps
Phase	One, Two, or Three Phase Fixed or Programmable
Phase Programming	0°-399° in 0.5° increments

## UNIQUE FEATURES

- Status reporting via GPIB up to 14 functions
- Continuous self test with SRQ
- Fault shutdown with soft start
- True RMS measurement and reporting of volts, amps, frequency, watts
- Programmable amplitude execution at zero-crossing or peak
- Programmable single cycle dropout up to 70 Hz
- Programmable frequency range
- External sync

**For complete PIP information contact your local sales office  
 or call Toll Free 1-800-854-2213, Dept. P.**

# PLUG-IN OSCILLATORS AND TRANSIENT GENERATORS



The output frequency of the power source is determined by the plug-in oscillator. The output of the oscillator is a low distortion 3 volt RMS sine wave. The frequency, amplitude accuracy and stability is determined by the oscillator selected.

The oscillators come in two types:

- RC phase shift controlled.
  - Variable frequency.
  - Fixed frequency.
- Frequency synthesized crystal controlled.
  - Decade dial variable frequency.
  - Fixed synthesized frequency.

RC phase shift oscillators offer the lowest cost alternative when the application doesn't require the frequency accuracy and stability of crystal control. The phase shift oscillators are also the best choice when a continuous sweep of frequency is required. Phase shift oscillators can be amplitude programmed with an external resistor.

The 400 series crystal controlled oscillators provide variable frequency by means of front panel decade switches or can be fixed internally with DIP switches. Frequency range up to 9999 Hz and resolution to .01 Hz provide maximum flexibility. The crystal controlled oscillators are factory set to shut down the output voltage if a frequency out of the set range is selected. The set range is 44 Hz to 5100 Hz. The output voltage returns with a soft start (250 ms to full output) when a proper frequency is selected. The shut down frequency can be extended to cover the wider range of the "C" series power amplifiers.

Using the remote sensing option of the crystal oscillators the line and load regulation at the point of sense is  $\pm 0.01\%$  and  $\pm 0.015\%$  respec-

tively. A variety of other options are available, see the model number selection guide.

## RC PHASE SHIFT OSCILLATORS MODEL NUMBER SELECTION GUIDE

Type	Model No.	Phase	Frequency Range (Hz)	Calibration Accuracy	Phase Angle	Frequency Temp. Coefficient
Variable Frequency Continuous Dial	431-V	1	300-300	$\pm 0.25\%$	—	$\pm 0.02\%/^{\circ}\text{C}$
	432-V	2	300-300	$\pm 0.25\%$	$90 \pm 1^{\circ}$	$\pm 0.02\%/^{\circ}\text{C}$
	433-V	3	300-300	$\pm 0.25\%$	$120 \pm 1^{\circ}$	$\pm 0.02\%/^{\circ}\text{C}$
	461-V	1	45-70	$\pm 0.25\%$	—	$\pm 0.02\%/^{\circ}\text{C}$
	462-V	2	45-70	$\pm 0.25\%$	$90 \pm 1^{\circ}$	$\pm 0.02\%/^{\circ}\text{C}$
	463-V	3	45-70	$\pm 0.25\%$	$120 \pm 1^{\circ}$	$\pm 0.02\%/^{\circ}\text{C}$
	464-V	1	45-70 & 350-450	$\pm 0.25\%$	—	$\pm 0.02\%/^{\circ}\text{C}$
Fixed Frequency	4642-V	2	45-70 & 350-450	$\pm 0.25\%$	$90 \pm 1^{\circ}$	$\pm 0.02\%/^{\circ}\text{C}$
	4643-V	3	45-70 & 350-450	$\pm 0.25\%$	$120 \pm 1^{\circ}$	$\pm 0.02\%/^{\circ}\text{C}$
	451-1	1	50	$\pm 0.1\%$	—	$\pm 0.015\%/^{\circ}\text{C}$
	452-1	2	50	$\pm 0.1\%$	$90 \pm 1^{\circ}$	$\pm 0.015\%/^{\circ}\text{C}$
	453-1	3	50	$\pm 0.1\%$	$120 \pm 1^{\circ}$	$\pm 0.015\%/^{\circ}\text{C}$
	461-1	1	60	$\pm 0.1\%$	—	$\pm 0.015\%/^{\circ}\text{C}$
	462-1	2	60	$\pm 0.1\%$	$90 \pm 1^{\circ}$	$\pm 0.015\%/^{\circ}\text{C}$
463-1	3	60	$\pm 0.1\%$	$120 \pm 1^{\circ}$	$\pm 0.015\%/^{\circ}\text{C}$	
441-1	1	400	$\pm 0.1\%$	—	$\pm 0.015\%/^{\circ}\text{C}$	
442-1	2	400	$\pm 0.1\%$	$90 \pm 1^{\circ}$	$\pm 0.015\%/^{\circ}\text{C}$	
443-1	3	400	$\pm 0.1\%$	$120 \pm 1^{\circ}$	$\pm 0.015\%/^{\circ}\text{C}$	

## CRYSTAL CONTROLLED OSCILLATORS MODEL NUMBER GUIDE AND OPTION SELECTOR

Model	Programming	Sensing	Voltage/Frequency
* 403 SD	2	0	1
<b>400 SD Series</b>	0. No external programming 1. External resistance programming 0 to 13K ohm for 0 to full scale 2. External voltage programming 0 to 10VDC for 0 to full scale	0. No remote sense with servo control 1. 1 Phase remote sense with servo control 2. 2 Phase remote sense with servo control 3. 3 Phase remote sense with servo control	1. 0 to 130V output of power source 2. 0 to 260V output of power source 3. 0 to 32V output of power source 4. 0 to 65V output of power source
401 SD Single Phase			
402 SD 2 Phase			
403 SD 3 Phase	3. External voltage programming 0 to 13VDC for 0 to 130V output 4. External voltage programming 0 to 26VDC for 0 to 260V output	4. 3 Phase open DELTA 5. 3 Phase open DELTA remote sense with servo control	5. Frequency range of 400SD extended from 15Hz to 10KHz
Digitally Synthesized Decade Dial 15 Hz To 9999 Hz			
<b>400 SP Series</b>			
401 SP Single Phase			
402 SP 2 Phase			
403 SP 3 Phase			
Any Fixed Frequency From 15 Hz To 9999 Hz			
Freq. Temperature Coefficient 3 PPM/ $^{\circ}\text{C}$		Freq. Calibration Accuracy - 0C1%	
Multi-Phase Accuracy - 1%			