

PRODUCT OVERVIEW

Elgar SL and B Series power sources are wide range, solid-state linear amplifiers that convert the incoming line to low distortion, stable sine wave power.

These solid-state frequency changers are benchtop/19" rackmount units that can be driven over their full voltage and frequency ranges by fixed, variable or programmable plug-in oscillators.

The SL and B's offer overload and over-temperature protection, can operate continuously at up to 150% rated capacity, and provide up to three output voltage ranges.

FEATURES AND BENEFITS

CONTINUOUS DUTY AT

150% RATED CAPACITY

Due to their conservative design, the SL Series provides continuous duty at 150% rated capacity into a linear resistive load, while the B Series models are rated at 100%.

Low Harmonic Distortion

The SL and B Series power sources provide low harmonic distortion normally below 0.3% midband, 0.6% over the full frequency range.

WIDE FREQUENCY RANGE

Elgar AC power sources offer frequencies from 45 Hz to 5 kHz at full rated power. (optionally expandable to 10 kHz)

CONFIGURABLE

SL and B Series components can be used as building blocks for creating a full range of single, dual and three-phase AC power sources.

OUTPUT POWER	VOLT AMPERE RATING
Single phase	120 VA to 1 kVA
Dual phase	240 VA to 2 kVA
Three phase	360 VA to 3 kVA

WARRANTY

Elgar offers a two year warranty on the SL and B Series power supplies.



1001 SL and 400 SD

OPTIONS

PROGRAMMABLE VIA IEEE-448 GPIB

Elgar's SL and B Series, when used with a Plug-In Programmer, provide full GPIB control of voltage, frequency, phase angle, voltage dropouts and test readback of output parameters.

RANGE CHANGE RELAYS

An optional internal range change relay switches between 130 VAC and 260 VAC ranges under GPIB control or front panel local control when used with a PIP or a modified oscillator.

TEST OPTION/BUILT-IN TEST EQUIPMENT (BITE)

This feature is available when used with an Elgar PIP9012A, PIP9023 or PIP704 that also has the test option. Depending on the PIP, the RMS voltage, RMS current, frequency, phase angle and true power in watts can be read from the front panel or over the GPIB.

PROGRAMMABLE CURRENT LIMIT

When equipped with the test option (Built-in Test Equipment/BITE), a current limit may be programmed via the GPIB or from the front panel which, if exceeded, will cause system shutdown and status reporting.

REMOTE SENSE

This feature provides full programming accuracy without sacrificing response time and is available with Elgar Plug-In Programmers and other selected oscillators for 0.015% regulation.

DISCONNECT RELAY

The optional internal output relay connects the load to the output of the power source under GPIB control or from the front panel keypad with a Plug-In Programmer.

APPLICATIONS

The linear design of the SL and B Series provides a highly regulated, clean sine wave, making these units ideal for linear loads in general purpose test applications as well as for Automatic Test Equipment systems and avionics testing.

- Power fault simulation when used with an Elgar Plug-In Programmer
- Frequency conversion (60 to 50 Hz or 50 to 60 Hz) for generating international or USA power
- Power supply testing
- Gyro testing
- Avionics testing (400 Hz)

SPECIFICATIONS

OUTPUT

Voltage Range: SL Series: 0-65, 0-130, 0-260 VAC; B Series: 0-32, 0-65, 0-130, 0-260 VAC (varies per model). Specific output range is selected by jumper change on rear panel. Consult Elgar for other voltage ranges.

Rated Power Voltage Range: Full rated VA from 55-65 VAC, 110-130 VAC, or 220-260 VAC over a $\pm 10\%$ input and rated PF range

SL Series: Continuous duty at 150% of rated capacity at 55C*

B Series: Continuous duty at 100% of rated capacity*

Load Power Factor: Unity to ± 0.7 PF at rated VA with an output voltage adjustment range of 85-100% of full scale*

Frequency Range: 45 Hz to 5 kHz at full rated power

Total Harmonic Distortion:

SL Series: 0.4% 200 Hz to 1000 Hz
0.6% Full frequency range

B Series: 0.5% 100 Hz to 1000 Hz
0.9% Full frequency range

Load Regulation: $\pm 1\%$ no load to full load over full frequency range. Better than $\pm 0.25\%$ for fixed frequency output. Adjustable to $\pm 0.1\%$ for specific load conditions and to $\pm 0.015\%$ with a PIP

Line Regulation: $\pm 0.25\%$ at rated load for a $\pm 10\%$ input change at full scale output voltage

Response Time: < 50 microseconds

AC Noise Level: 70 dB below full output voltage with input grounded

INPUT

Voltage SL Series: See model number description on page 23.

Three Phase B Series Models: See table

Frequency: 47 to 63 Hz (400 Hz option, special order)

Efficiency: Up to 45%

GENERAL

Operating Temperature Range: 0° to +55°C

Operating Humidity Range: Up to 95% non-condensing

Metering: SL Series: 0-300 VAC output voltmeter, $\pm 3\%$ accuracy

B Series: 0-150 VAC

Controls: Input power switch/circuit breaker and pilot light. Full range, 10-turn output voltage control potentiometer

*See Power Rating Curve on page 23.

Single Phase Output Power											
Model	Power		Output		Input		Physical			Comments	
	Total VA	Vol. Range (RMS)L-N	Max Current (RMS) ¹	Frequency Range (Hz)	Voltage and Nominal/Max		Height and Depth (in/mm)		Weight WT		
					Phase	(kVA) ²					
121B	120	0-130 0-260	1.1 0.55	45 to 5k	115 or 230, 1ø	0.4	3.5/89 5/127	H D	47/21 51/23	Net Ship	0-32V/4.4A range available; Model 121B-101
251B	250	0-32 0-130 0-260	9.2 2.25 1.1	45 to 5k	115 or 230, 1ø	0.8	5.25/133 16/405	H D	49/22 55/25	Net Ship	
351 SL-XX	350	0-65 0-130 0-260	8.0 4.0 2.0	45 to 5k	115 or 230, 1ø	1.0/1.6	5.25/133 21/533	H D	75/34 83/38	Net Ship	
501 SL-XX	500	0-65 0-130 0-260	11.5 5.8 2.9	45 to 5k	115 or 230, 1ø	1.5/2.2	5.25/133 21/533	H D	80/36 88/40	Net Ship	
751 SL-XX	750	0-65 0-130 0-260	17.3 8.65 4.3	45 to 5k	115, 208 or 230, 1ø	2.2/3.2	7.00/178 21/533	H D	115/52 25/57	Net Ship	
1001 SL-XX & 1001 SLE-2X	1000	0-65 0-130 0-260	23.1 11.5 5.8	45 to 5k	115, 208 or 230, 1ø	3.0/4.2	7.00/178 21/533	H D	125/57 135/61	Net Ship	CE 1001 SLE-21 only

¹ All SL models are specified at 150% of normal output current into a linear resistive load

² SL models show value in kVA for both nominal and 150% load

SL and B Series Specifications

Dual Phase Output Power											
Model	Power		Output		Input		Physical				Comments
	Total VA	Vol. Range (RMS)L-N	Max Current (RMS) ¹	Frequency Range (Hz)	Voltage and Nominal/Max		Height and Depth (in/mm) ³		Weight WT		
					Phase	(kVA) ²					
240-2	240	0-130 0-260	1.1 0.55	45 to 5K	115 or 230, 1ø	0.7	7/128 15/381	H D	94/42 102/46	Net Ship	2ea 121B in 2ø 90°, 1ea 400 SR, 1ea signal cable
500-2	500	0-32 0-130 0-260	9.2 2.25 1.1	45 to 5K	115 or 230, 1ø	1.5	10.5/267 16/406	H D	98/44 110/50	Net Ship	2ea 251B in 2ø 90°, 1ea 400 SR, 1ea signal cable
1000 SL-2-XX	1000	0-65 0-130 0-260	11.5 5.8 2.9	45 to 5K	115 or 230, 1ø	3.0/4.4	10.5/267 21/533	H D	160/73 176/80	Net Ship	2ea 501SL in 2ø 90°, 1ea 400 SR, 1ea signal cable
1500 SL-2-XX	1500	0-65 0-130 0-260	17.3 8.65 4.3	45 to 5K	115, 208 or 230, 1ø	4.5/6.4	14/356 21/533	H D	230/105 250/114	Net Ship	2ea 751SL in 2ø 90°, 1ea 400 SR, 1ea signal cable
2000 SL-2-XX & 2000 SLE-2-2X	2000	0-65 0-130 0-260	23.1 11.5 5.8	45 to 5K	115 or 208 or 230, 1ø	6.0/8.4	14/356 21/533	H D	260/118 280/127	Net Ship	2ea 1001 SL (or 1001 SLE) in 2ø 90°, & 1ea 400 SR, 1ea signal cable ☑ 2000 SLE-2-21 only

(lbs/kg)

Three Phase Output Power											
360-3	360	0-130 0-260	1.1 0.55	45 to 5K	115 or 230, 1ø	1.3	10.5/267 15/381	H D	141/64 153/70	Net Ship	3ea 121B (4 wire Y), 2ea 400 SR, 1ea signal cable
750-3	750 0-130	0-32 2.25 0-260	9.2 2.25 1.1	45 to 5K	115 or 230, 1ø	2.2 16/406	15.75/400 D	H D	147/66 165/75	Net Ship	3ea 251B (4 wire Y) 2ea 400 SR, 1ea signal cable
2253 SL-0X ³	2250	0-65 0-130 0-260	17.3 8.65 4.3	45 to 5K	208, 3ø	6.7/9.6	14/536 19/482	H D	207/95 225/103	Net Ship	
3000 SL-3-XX & 3000 SLE-3-2X	3000	0-65 0-130 0-260	23.1 11.5 5.8	45 to 5K	115, 208, 230, 1ø or 3ø	9.0/12.6	21/533 21/533	H D	390/177 420/191	Net Ship	3ea 1001 SL or 1001 SLE (4 wire Y), 2ea 400 SR, 1ea signal cable ☑ 3000 SLE-3-21 only
5250 SLE-3-2X	5250	0-130 0-260	20.2 10.1		1ø or 3ø		21/533	D	600/273	Ship	2ea 400 SR, signal cable ☑ 5250 SLE-3-21 only

*Other configurations available, please contact the factory.

¹ All SL models are specified at 150% of nominal output current into a linear resistive load.

² SL models show value in VA for both nominal and 150% load.

³ Three-phase system in one chassis.

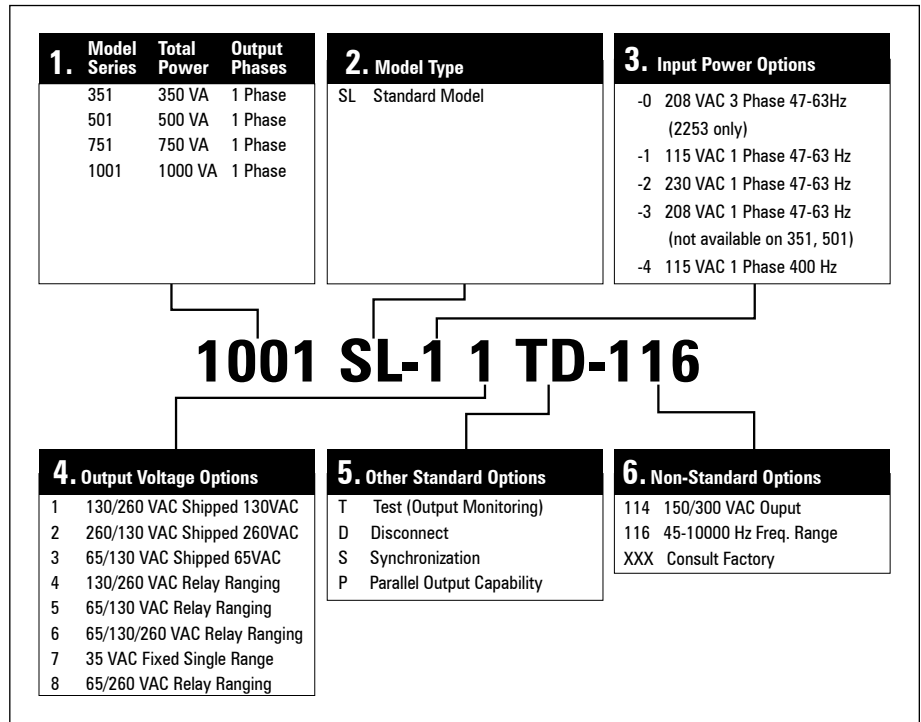
SL AND SX MODELS

Elgar’s knowledgeable application engineers and sales administrators will help you determine which AC power source and oscillator or Plug-In Programmer fits your application. Here are the steps we’ll go through with you to determine the model number of a single chassis unit. For multiple unit configurations, please consult an applications engineer or sales administrator.

To determine the model number, please refer to the diagram on the right and follow the steps below.

1. First, determine the power range necessary. This will help to indicate the basic model number (eg. 350 VA = model 351, 500 VA = model 501, 750 VA = model 751, etc.).
2. Determine the model type depending upon the specific application (either SL or SX).
3. Select the input power option; see chart for the choices available.
4. Determine the output voltage range you require. There are eight voltage ranges from which to choose.
5. Indicate any standard options you may need (test, disconnect, synchronization or parallel output capability).
6. If any non-standard options or features are required for your specific application, an additional three-digit number will be assigned to our power source.

MODEL NUMBER DESCRIPTION



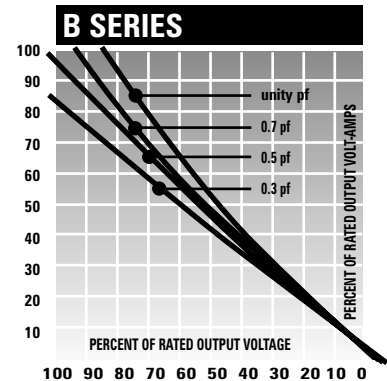
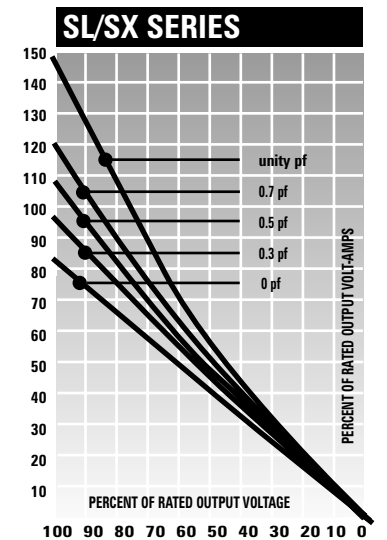
B SERIES MODELS

Many of the options available on the SL and SX Series are available on the B Series. Please call Elgar to discuss your specific requirements with an applications engineer or sales administrator.

CONFIGURATION TIPS

1. Automatic Range Change requires the use of a PIP or a 400 SD/SP oscillator with -110 option (e.g. 401 SD-001-110).
2. The Test (“T”) option must be selected on both the AC source and the PIP.
3. The Synchronization (“S”) option allows two or more PIP 9023 controllers to be frequency phase locked together.

POWER SOURCE RATINGS



PRODUCT OVERVIEW

Elgar's SX Series AC linear power sources are designed to drive non-linear, capacitive input filter rectifier loads. They meet all the electrical power requirements for testing modern switch mode DC power supplies.

Increased peak power capacity and a reduced physical size make the SX units ideal for benchtop testing as well as for automated DC power supply test systems.

FEATURES AND BENEFITS

CONTINUOUS DUTY AT 150% RATED CAPACITY

Due to their conservative design, the SX Series provides continuous duty at 150% rated capacity into a linear resistive load (see chart on page 25).

HIGH CREST FACTOR

The SX Series is ideal for power supply test, with a crest factor capability of 3.5 and up to 6.1 on firing angles of less than 10 degrees from the voltage peak.

LOW EFFECTIVE OUTPUT IMPEDANCE

High impedance inhibits the quick transfer of current to the load source, which reduces peak current. Elgar linear sources typically offer less than 0.05%, allowing quick transfer of peak current to the load.

RANGE CHANGE RELAYS

The SX Series comes standard with programmable range change relays, making switching between the 0-130 and 0-260V ranges easy. This allows quick testing of both U.S. and European electronic equipment.

CONFIGURABLE

SX Series components are used as building blocks for creating a full range of single, dual and three phase AC power sources.

OUTPUT POWER	VOLT AMPERE RATING
Single-phase	500 VA to 5250 VA
Dual-phase	1000 VA to 10.5 kVA
Three-phase	1500 VA to 15.75 kVA

TWO YEAR WARRANTY

Elgar offers a two year warranty on the SX Series power supplies.

OPTIONS

PROGRAMMABLE VIA IEEE-488 GPIB



1001 SX AND PIP 704

The SX Series, when used with an Elgar Plug-In Programmer, provides full GPIB control of voltage, frequency, phase angle, voltage dropouts and test readback of output parameters.

TEST OPTION/BUILT-IN TEST EQUIPMENT (BITE)

This optional feature is available when used with an Elgar PIP 9012A, PIP 9023 or PIP 704 that also has the test option. Depending on the PIP, the RMS voltage, RMS current, frequency, phase angle and RMS power in watts can be read from the front panel or over the GPIB.

PROGRAMMABLE CURRENT LIMIT

When equipped with the test option (Built-In Test Equipment/BITE), a current limit may be programmed via the GPIB or from the front panel, which if exceeded, will cause system shutdown and status reporting.

REMOTE SENSE

This feature provides full programming accuracy without sacrificing response time and is available with Elgar Plug-In Programmers and other selected oscillators for 0.015% regulation.

DISCONNECT RELAY

The optional internal output relay connects the load to the output of the power source under GPIB control or from the front panel keypad with a Plug-In Programmer.

EMC/SAFETY (SXE Models Only)

The 1751SXE has been designed to meet the requirements for CE mark.

MATE QUALIFIED – EMBEDDED TMA

The SX Series can be modified to meet U.S. Air Force (MATE) guidelines. All

requirements of MATE-STD-280673 including built-in TMA for CIIL interfacing can be met when the SX is used with a MATE-compatible Plug-In Programmer.

APPLICATIONS

The SX Series can maximize power supply test productivity and improve test quality. Key tests can be performed under program control for repeatability and accuracy, such as static line regulation and frequency margins, dynamic line regulation to check sudden line drops or missing cycles, start-up time under various line conditions, hold-up time and power sequencing, inrush current testing, plus ramp-up and ramp-down tests for soft start and power failure signals.

High speed, high accuracy testing of DC power supplies is now possible at a reduced cost in a reduced package size. The SX Series is designed for testing both AC and DC switch mode power supplies.

- Production line testing
- Power cycling for burn-in applications
- Testing for power line disturbance susceptibility
- Uninterruptible power supply testing



SPECIFICATIONS

OUTPUT

Voltage Range: 0-65/130/260 VAC (varies per model). Specific output range is selected by jumper change on rear panel. Consult Elgar for other voltage ranges.

Rated Power Voltage Range: Full rated VA from 55-65 VAC, 110-130 VAC, or 220-260 VAC over a $\pm 10\%$ input and rated PF range. Continuous duty at 150% of rated capacity at 55°C*

Load Power Factor: Unity to ± 0.7 PF to rated VA with an output voltage adjustment range of 80-100% of full scale*

Frequency Range: 45 Hz to 1kHz

Total Harmonic Distortion:
 0.5% from 45 Hz to 1 kHz with linear load
 1.0% from 45 Hz to 75 Hz with pulsed load
 4.0% from 75 Hz to 450 Hz with pulsed load

Load Regulation: $\pm 1\%$ from 45 Hz to 450 Hz with pulsed load or from 45 Hz to 1 kHz with linear load

Line Regulation: $\pm 0.25\%$ at rated load for a $\pm 10\%$ input change at full scale output voltage

Response Time: < 2 ms

AC Noise Level: 70 dB below full output voltage with input grounded

INPUT

Voltage: 115/208/230 VAC, $\pm 10\%$ (208 VAC not available on 501 SX.) User selectable (See model description on page 23)

Frequency: 47 to 63 Hz (400 Hz option, special

order)

Efficiency: Up to 45%

GENERAL

Operating Temperature Range: 0° to +55°C

Operating Humidity Range: Up to 95% non-condensing

Metering: 0 to 300 VAC output voltmeter, $\pm 3\%$ accuracy

Controls: Input power switch/circuit breaker and pilot light. Full range, 10-turn output voltage control potentiometer

* See power derating curve on page 23.

Single-Phase Output Power

Model	Power		Output		Input		Physical			Comments	
	Total VA	Vol. Range (RMS)L-N	Max Current (RMS) ¹	Frequency Range (Hz)	Voltage and Nominal/Max		Height and Depth (in/mm)	Weight			
					Phase	(kVA) ²					
501 SX-X4	500	0-65 0-130 0-260	11.5/36 5.8/18 2.9/9	45 to 1k	115 or 230, 1ø	1.5/2.2	5.25/133 21/533	H D	80/36 88/40	Net Ship	
1001 SX-X4	1000	0-65 0-130 0-260	23.1/72 11.5/36 5.8/18	45 to 1k	115, 208 or 230, 1ø	3.0/4.2	7.00/178 21/533	H D	130/59 140/64	Net Ship	
1751 SX-X4 & 1751 SXE-2X	1750	0-65 0-130 0-260	40.4/120 20.2/60 10.1/30	45 to 1k	115,108 or 230, 1ø	5.2/7.5	12.25/311 21/533	H D	195/89 205/93	Net Ship	CE 1751 SXE-24 only

Dual-Phase Output Power

1000 SX-2-X4	1000 0-130	0-65 5.8/18 0-260	11.5/36 5.8/18 2.9/9	45 to 1k 1ø	115 or 230,	3.0/4.4 21/533	10.50/267 D	H 176/80	160/73 Ship	Net 1ea signal cable	2 ea 501 SX in 2ø 90°, 1ea 400 SR,
2000 SX-2-X4	2000	0-65 0-130 0-260	23.1/72 11.5/36 5.8/18	45 to 1k	115,208 or 230, 1ø	6.0/8.4	14/356 21/533	H D	260/118 280/127	Net Ship	2ea 1001 SX in 2ø 90°, 1ea 400 SR, 1ea signal cable
3500 SX-2-X4 & 3500 SXE-2-2X	3500	0-65 0-130 0-260	40.4/120 20.2/60 10.1/30	45 to 1k	115, 208 or 230, 1ø	10.5/15.0	24.50/622 21/533	H D	390/177 410/186	Net Ship	2 ea 1751 SX or 1751 SXE in 2ø 90°, 1 ea 400 SR, 1 ea signal cable CE 3500 SXE-2-24 only

Three-Phase Output Power

1500 SX-3-X4	1500	0-65 0-130 0-260	11.5/36 5.8/18 2.9/9	45 to 1k	115 or 230, 1ø or 3ø	4.5/6.6	15.75/400 21/533	H D	240/109 264/120	Net Ship	3 ea 501 SX (4 wire Y), 2 ea 400 SR, 1 ea signal cable
3000 SX-3-X4	3000	0-65 0-130 0-260	23.1/72 11.5/36 5.8/18	45 to 1k	115, 208 or 230, 1ø or 3ø	9.0/12.6	21/533 21/533	H D	390/177 420/191	Net Ship	3 ea 1001 SX (4 wire Y) 2 ea 400 SR, 1 ea signal cable
5250 SX-3-X4 & 5250 SXE-3-2X	5250	0-65 0-130 0-260	40.4/120 20.2/60 10.1/30	45 to 1k	115, 208 or 230, 1ø or 3ø	15.7/22.5	36.75/933 21/533	H D	585/266 615/280	Net Ship	3 ea 1751 SX or 1751 SXE (4 wire Y), 2 ea 400 SR, 1ea signal cable CE 5250 SXE-3-24 only

¹ All SX models specified are at 150% of nominal output current into a linear resistive load.

² Maximum volt/amps under worst case conditions of load and input line at 150% capacity.