SL Series: 1.5 kW to 6 kW



SL Series 1.5 kW, 2.6 kW, 4 kW, 6 kW

Product Name:	SL Series		
Number of Models:	70		
Power Levels:	1.5 kW, 2.6 kW, 4 kW, and 6 kW		
Voltage Range:	Models from 0-5 Vdc to 0-1000 Vdc		
Current Range:	Models from 0-1.5 Adc to 0-250 Adc		
Enclosure	Rack-mount, 1U		

Overview

Magna-Power Electronics SL Series was designed for high reliability and to provide market leading 1U (1.75" height) rack-mount power density, with output isolation up to 1000 Vdc. This product series utilizes Magna-Power Electronics signature current-fed power processing, delivering robust power conversion with high efficiency. A wide variety of input voltages are available, from 208 Vac up to 480 Vac. A single-phase universal input (UI) featuring active power factor correction is available for 1.5 kW models. High accuracy programming and monitoring levels allow confidence in power supply measurements, eliminating the need for external power meters.

All SL Series power supplies come standard with isolated 37-pin external I/O, RS232, Remote Interface Software, IVI drivers for integration into a variety of programming environments, and modulation capabilities for non-linear output profile emulation. Two front panel types are available for different application requirements. The standard SL Version front panel (pictured in the image above) provides front panel control and calibration, start and stop buttons, and a digital display for voltage and current. The C Version front panel provides a blank display panel, allowing control only from the computer or isolated 37-pin I/O connection.

Available Options

- Single Phase Universal Input (UI) (1.5 kW Only)
- Cabinet and Integrations (+CAB1, +CAB2, +CAB3)
- High Slew Rate Output (+HS)
- IEEE-488 GPIB Interface (+GPIB)
- LXI TCP/IP Ethernet Interface (+LXI)
- Photovoltaic Power Profile Emulation (+PPPE)
- RS-485DSS Interface (External) (+RS485)
- UID47: Universal Interface Device (+UID)
- USB Edgeport Interface (External) (+USB)



SL Series Specifications

Input Specifications				
Nominal Voltage 1 phase, 2 wire + ground	85 - 265 Vac, 1Φ (UI—Universal input) (Available on 1.5 kW Models Only)			
Nominal Voltage 3 phase, 3 wire + ground	208 Vac, 3Ф (operating range 187 - 229 Vac) 240 Vac, 3Ф (operating range 216 - 264 Vac) 380 Vac, 3Ф (operating range 342 - 418 Vac) 415 Vac, 3Ф (operating range 373 - 456 Vac) 440 Vac, 3Ф (operating range 396 - 484 Vac) 480 Vac, 3Ф (operating range 432 - 528 Vac)			
Frequency	50 Hz - 400 Hz (operating range 45 - 440 Hz)			
Power Factor	0.99 at maximum power for 1Φ units > 0.82 at maximum power for 3Φ units			
Output Specifications				
Ripple	(See Models Chart)			
Line Regulation	Voltage Mode: $\pm0.004\%$ of full scale Current Mode: $\pm0.02\%$ of full scale			
Load Regulation	Voltage Mode: $\pm0.01\%$ of full scale Current Mode: $\pm0.04\%$ of full scale			
Load Transient Response	$2ms$ to recover within $\pm1\%$ of full scale output, with a 50% to 100% or 100% to 50% step load change			
Efficiency	≥ 86% at full load (See Models Chart)			
Stability	$\pm0.10\%$ for 8 hrs. after 30 min. warmup			
Isolation	User inputs and outputs: referenced to earth ground Maximum input voltage to ground: ±2500 Vac Maximum output voltage to ground: ±1000 Vdc			
Maximum Slew Rate	Standard Models: 100 ms for output voltage change from 0 to 63% 100 ms for output current change from 0 to 63% With High Slew Rate Option (+HS): 4 ms for output voltage change from 0 to 63% 8 ms for output current change from 0 to 63%			
Bandwidth	Standard Models: 3 Hz for remote analog voltage programming 2 Hz for remote analog current programming With High Slew Rate Option (+HS): 60 Hz for remote analog voltage programming 45 Hz for remote analog current programming			

Note: Specifications are subject to change without notice. For three-phase configurations, input specifications are line-to-line. Unless otherwise noted, input voltages and currents are specified for three-phase configurations.

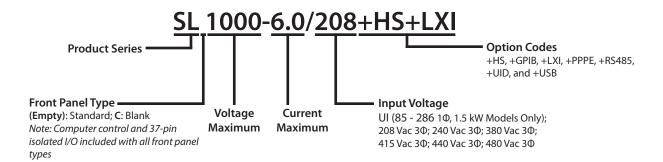
Physical S	pecifications				
Power	Size (H"xW"xD")		Weight		
1.5 kW	1.75 x 19 x 24 in (4.44 x 4	3.3 x 61.0 cm) 34 lbs (15.42 kg) 3.3 x 61.0 cm) 35 lbs (15.88 kg)			
2.6 kW	1.75 x 19 x 24 in (4.44 x 4				
4 kW	1.75 x 19 x 24 in (4.44 x 4				
6 kW	1.75 x 19 x 24 in (4.44 x 48				
Control S	pecifications				
Voltage Pro	ogramming Accuracy	± 0.075% of full scale voltage			
OVT Progra	amming Accuracy	± 0.075% of full scale voltage			
Current Pro	ogramming Accuracy	± 0.075% of full scale current			
OCT Progra	amming Accuracy	± 0.075% of full scale current			
Voltage Re	adback Accuracy	± 0.2% of full scale voltage			
Current Re	adback Accuracy	± 0.2% of full scale current			
External A	nalog Programming and g Levels	0 - 10 Vdc			
External A	nalog Output Impedances	Voltage output monitoring: 100Ω Current output monitoring: 100Ω + 10 Vdc reference: 1Ω Input: $0 \text{ to } 5 \text{ Vdc}$, 10k input inpedance Output: $0 \text{ to } 5 \text{ Vdc}$, 5 mA drive capacity 3% maximum voltage drop from output to loa			
External Di	igital Programming and g Limits				
Remote Se	nse Limits				
Environm	ental Specifications				
Ambient O	perating Temperature	0 °C to 50 °C			
Storage Te	mperature	-25 °C to 85 °C			
Humidity		Relative humidi	ty up to 95% non-condensing		
Temperatu	re Coefficient		aximum output voltage aximum output current		



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SL Series Models

Model Ordering Guide



Models Chart

The following chart details the available standard SL Series models. The Current Maximum (Adc) column is separated by the available power levels. To determine the appropriate model, first select your output Voltage Maximum (Vdc) to find appropriate row. Next, select one desired Current Maximum from the row that contains your desired Voltage Maximum. Then, construct you model number according to the model ordering guide, above. Non-standard voltage and current configurations are available.

	1.5 kW	2.6 kW	4 kW	6 kW		
Voltage Maximum (Vdc)	Current Maximum (Adc)				Ripple (mVrms)	Efficiency (%)
5	250	N/A	N/A	N/A	50	86
10	150	250	N/A	N/A	40	86
16	93*	162	250	N/A	35	86
20	75*	130	200	250	40	86
32	46*	81	125	186	40	86
40	37*	65	100	150	40	87
50	30	52	80	120	50	87
80	18	32	50	75	60	87
100	15*	26	40	60	60	87
125	12	20	32	48	100	87
160	9*	16	25	36	120	87
200	7.5*	13	20	30	125	87
250	6	10.4	16	24	130	88
375	4*	6.9	10.4	16	170	88
400	3.7*	6.5	10	15	180	88
500	3*	5.2	8	12	220	88
600	2.5	4.3	6.4	10	250	88
800	1.8	3.2	5.0	7.5	300	88
1000	1.5	2.6	4.0	6.0	350	88
	Input Currer	nt Per Phase (A				
UI (85 - 265 Vac, 1Φ)	21-7	N/A	N/A	N/A		
208/240 Vac, 3Ф	6	11	16	24		
380/415 Vac, 3Φ	5	8	11	16		
440/480 Vac, 3Φ	4	6	9	14		

(*) Indicates non-stock model, available at a price premium for quantities less than 5. Stock pricing available for UI input only.

Ripple specified for standard models. For models with the High Slew Rate Output Option (+HS), ripple will be higher.

SL Series Diagrams

SL Front Panel (Standard)

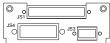


C Version Front Panel



Optional (+LXI) Interface

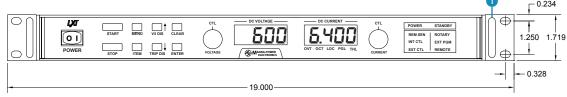


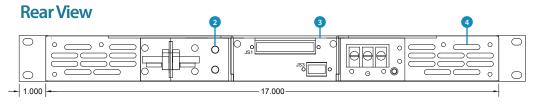


- Optional (+GPIB) Interface

- MODE POWER: Indicates power output STANDBY: Indicates control power only
- B FUNCTION KEYS MENU: Selects function ITEM: Selects item within function V/I DIS: Displays voltage/current settings TRIP DIS: Displays OVT and OCT settings CLEAR: Clears setting or resets fault **ENTER: Selects item**
 - Meters display output voltage, output current, voltage set point, current set point, over voltage trip, and over current trip
- Power switch energized control circuits without engaging main power
- Engages and disengages main power
- Stepless rotary knob to set voltage/current
- G DIAGNOSTIC ALARMS LOC: Interlock PGL: External input voltage beyond limits THL: Indicates over-temperature condition OVT: Over-voltage protection has tripped OCT: Over-current protection has tripped
- CONFIGURATION REM SEN: Remote sense enabled INT CTL: Front panel start/stop/clear enabled EXT CTL: External start/stop/clear enabled ROTARY: Front panel control EXT PGM: External voltage/current control **REMOTE: Computer control**

Front View





Top View (Rear Side)

- 0 0 0.750 \oplus 1.261 12.080
- Front Panel Handles (Removable)
- Remote Sense Connections
- Computer and External Control Connections
- Rear Air Exhaust
- **Output DC Connections** 0.25" x 0.75" Tin Plated Copper Bus Qty (2) 3/8-16 Threaded Insert
- 6 Input AC Connections 38660 Molex Input Connector
- 10-32 Ground Stud
- Side Air Intake
- Qty (2) Rear Metal Covers (Removable)

Side View 0 \bigcirc \bigcirc 0 0 \bigcirc \bigcirc 24.000 1.000 25.500

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