SLX 系列

Programmable DC Power Supply

多功能数字机架电源，1U 中的 1.5 kW 至 10 kW

认证



功率	电压	电流	型号	尺寸
1.5 kW to **10** kW	**5** Vdc to **1000** Vdc	**1.5** Adc to **250** Adc	**171**	**1**U

1 描述

SLX 系列以 40 多年的电源创新为基础，拥有超过 26,500 多种不同的模型配置，是 Magna-Power 有史以来最可编程的 DC 电源系列。SLX 系列提供 6 个不同功率水平的型号，具有高度颗粒状的电压和电流。凭借行业领先的领先电力密度，坚固的电流式电源处理以及最先进的 MagnAlink™分布式 DSP 数字控制架构，SLX 系列符合研发，工业自动化的长期 DC 功率要求和过程控制应用程序。

2 主要特点

- 电压，电流和电源控制
- 崎
- 单位控制的 16 位精度
- SCPI 和 MODBUS 命令集
- 可编程保护功能
- 互锁和硬件紧急停止
- 驱动率控制
- 连续的全功率运行最多可达 50°C 的环境
- 可配置的模拟数字 26 针 I/O 端口
- 数字杂志 Magnalink™大师
- 本地，遥控和无铅电压感应
- USB（前后）和 RS485 接口标准
- 可以，EtherCAT，以太网/IP，LXI TCP/IP 以太网，ModbusTCP 和 Profinet 完全集成的通信选项
- 包括 Magnactrl 软件平台
- 美国制造

3 可用集成选件

+C1	Black Enclosure
+FP1	Blank Front Panel
+CAN	CANopen
+ECAT	EtherCAT
+EIP	EtherNet/IP
+LXI	LXI TCP/IP Ethernet
+MTCP	Modbus-TCP
+PROF	PROFINET
+RUG	Ruggedized
+WC	Water Cooling

4 产品规格

规格如有变更，恕不另行通知。除非另有说明，所有规格均在产品的最大额定值下测量。

4.1 AC Input Specifications

参数	值	条件
Input Voltages Available	UI, 100-240 Vac, 1-phase UI2, 208-240 Vac, 1-phase 208 Vac, 3-phase 240 Vac, 3-phase 380/400 Vac, 3-phase 415 Vac, 3-phase 440 Vac, 3-phase 480 Vac 3-phase	Refer to models table for AC input voltage availability by power level. AC Input voltage specified at time of order and cannot be modified
Input Voltage Tolerance	± 10%	
Input Voltage Frequency	50-400 Hz	
Power Factor	> 0.99, 1-phase UI and UI2 AC inputs > 0.92, 3-phase AC inputs	Measured at max power
Input Isolation	± 2000 Vdc	Measured line-to-ground

4.2 DC Output Specifications

参数	值	条件
Voltage Ripple	Model specific. Refer to models table.	
Line Regulation	Voltage control: ± 0.04% of rated voltage Current control: ± 0.03% of rated current Power control: ± 0.05% of rated power	
Load Regulation	Voltage control: ± 0.02% of rated voltage Current control: ± 0.06% of rated current Power control: ± 0.08% of rated power	
Stability	Voltage control: ± 0.005% of rated voltage Current control: ± 0.075% of rated current	FWHM, measured at 25°C over 8 hrs after 30 min warm-up
Temperature Coefficient	Voltage control: 0.01%/°C of rated voltage Current control: 0.04%/°C of rated current Power control: 0.04%/°C of rated power	
Efficiency	Up to 95%. Model specific. Refer to Models table.	
Slew Rate, Voltage	Minimum (Slowest): Rated voltage x 2^{-15} [V/ms] Maximum (Fastest): Rated voltage x 0.006 [V/ms]	Standard models, programmable
Slew Rate, Current	Minimum (Slowest): Rated current x 2^{-15} [A/ms] Maximum (Fastest): Rated current x 0.005 [A/ms]	Standard models, programmable
Slew Rate, Power	Minimum (Slowest): Rated power x 2^{-15} [W/ms] Maximum (Fastest): Rated power x 0.0025 [W/ms]	Standard models, programmable
Output Isolation	± 2000 Vdc	Models Rated ≤ 1500 Vdc, Measured output-to-ground
Output Isolation	± (2750 Vdc + Vo/2), where Vo is the maximum output voltage of the power supply	Models Rated > 1500 Vdc, Measured output-to-ground

4.3 Programming Specifications

参数	值	条件
Resolution, Digital Programming	16-bit, 0.00153% of rated voltage, current or power	Front panel or communication interfaces
Accuracy, Digital Programming	Voltage: ± 0.06% of rated voltage Current: ± 0.06% of rated current Power: ± 0.10% of rated power	Output value to set point value, programmed via front panel or communication interfaces

4.3 Programming Specifications

参数	值	条件
Accuracy, Digital Measurement	Voltage: ± 0.08% of rated voltage Current: ± 0.08% of rated current Power: ± 0.10% of rated power	Output value to returned value, via front panel display or communication interfaces
Resolution, Analog Programming	12-bit, 0.025% of rated voltage, current or power	0-10 V analog input
Accuracy, Analog Programming	Voltage: ± 0.12% of rated voltage Current: ± 0.08% of rated current Power: ± 0.10% of rated power	Output value to set point value, programmed via analog input
Accuracy, Analog Programming, High Speed Input	Voltage: ± 0.80% of rated voltage Current: ± 0.80% of rated current Power: ± 1.20% of rated power	Output value to set point value, programmed via the high-speed analog input
Accuracy, Analog Measurement	Voltage: ± 0.08% of rated voltage Current: ± 0.08% of rated current Power: ± 0.10% of rated power	Output value to returned value, via analog output
Analog I/O	High-Speed Input Sampling Rate: 2 kHz Programming Voltage: 0-10 V Monitoring Voltage: 0-10 V, 3 mA capacity Monitoring Impedance: 0.005 Ω Reference Voltage: 10 V, 20 mA capacity	3 configurable standard analog inputs, 1 configurable high-speed analog input, 4 configurable analog outputs, reference signal provided

4.4 Interface Specifications

参数	值	条件
Front Panel Programming	Machined aluminum rotary knob with encoder, keypad, and up-down arrow for single bit control	
Communication Interfaces	USB Host (Front): Type B USB Host (Rear): Type B RS485 (Rear): RJ-45 MagnaLINK™: RJ-25 x 2	Standard
External User I/O Port	26-pin D-sub DB-26, female Referenced to ground; isolated from the DC output See User Manual for pin layout	Standard
Communication Interfaces	CANopen (+CAN): DB-9 EtherCAT (+ECAT): RJ-45 x 2 EtherNet/IP (+EIP): RJ-45 x 2 LXI TCP/IP Ethernet (+LXI): RJ-45 ModbusTCP (+MTCP): RJ-45 x 2 PROFINET (+PROF): RJ-45 x 2	Optional

4.5 Physical Specifications

参数	值	条件
Size	1U 1.75” H x 19” W x 24” D (4.4 x 48.3 x 61.0 cm)	All models
Weight	1.5 kW models: 32 lbs (14.52 kg) 2.6 kW models: 34 lbs (15.42 kg) 4 kW models: 35 lbs (15.88 kg) 6 kW models: 35 lbs (15.88 kg) 8 kW models: 36 lbs (16.33 kg) 10 kW models: 36 lbs (16.33 kg)	
Racking Standard	EIA-310	
Rear Support Rails	Included	

4.6 Environmental Specifications

参数	值	条件
Ambient Operating Temperature	0°C to 50°C	
Storage Temperature	-40°C to +85°C	
Humidity	Relative humidity up to 95% non-condensing	
Air Flow	Side air inlet, rear exhaust	

4.7 Regulatory Specifications

参数	值	条件
EMC	Complies with 2014/30/EU (EMC Directive) CISPR 22 / EN 55022 Class A	
Safety	Complies with EN61010-1 and 2014/35/EU (Low Voltage Directive)	
CE Mark	Yes	
RoHS Compliant	Yes	
REACH Compliant	Yes	

5 型号订购指南

SLx10-800-12.5/480+ECAT

- Integrated Options
- AC Input Voltage (Vac)
- Maximum DC Output Current (Adc)
- Maximum DC Output Voltage (Vdc)
- Output Power (kW)
- Product Series

6 型号

Max Voltage Vdc	1.5 kW	2.6 kW	4 kW	6 kW	8 kW	10 kW	Ripple mVrms	Efficiency
			Max Current Adc					
5	250	–	–	–	–	–	30	84%
10	150	250	–	–	–	–	30	89%
16	93	162	250	–	–	–	40	89%
20	75	130	200	250	–	–	40	90%
25	60	104	160	240	–	–	50	91%
32	46	81	125	186	250	–	60	91%
40	37	65	100	150	200	250	80	91%
50	30	52	80	120	160	200	70	92%
60	25	43	66	100	133	166	100	93%
80	18	32	50	75	100	125	120	93%
100	15	26	40	60	80	100	120	93%
125	12	20	32	48	64	80	110	93%
160	9	16	25	36	50	60	110	93%
200	7.5	13	20	30	40	50	110	94%
250	6	10.4	16	24	32	40	110	94%
300	5	8.6	13.2	20	26.4	33.3	160	94%
375	4	6.9	10.4	16	21.3	26.5	160	94%
400	3.7	6.5	10	15	20	25	170	95%
500	3	5.2	8	12	16	20	250	95%
600	2.5	4.3	6.4	10	13.3	16.5	250	95%
800	1.8	3.2	5	7.5	10	12.5	350	95%
1000	1.5	2.6	4	6	8	10	400	95%
1250	1.2	2	3.2	4.8	6.4	8	700	95%
1500	1	1.7	2.6	4	5.3	6.6	1000	95%
2000	0.75	1.3	2	3	4	5	6500	95%
2500	0.6	1	1.6	2.4	3.2	4	7500	95%
3000	0.5	0.86	1.3	2	2.6	3.3	8500	95%

AC Input Voltage Vac	Input Current Per Phase Aac					
UI (100-240 Vac, 1Φ)	18 - 8[1]	–	–	–	–	–
UI2 (208-240 Vac, 1Φ)	–	15 - 13	–	–	–	–
208/240 Vac, 3Φ	6	9	14	20	27	33
380/415 Vac, 3Φ	4	6	9	12	17	19
440/480 Vac, 3Φ	3	5	7	10	14	16

[1] 15 Aac input current at 120 Vac, 1Φ

7 特点

Do more with MagnaLINK™ distributed digital control.

精密控制与测量

从设定点到负载点，DSP 驱动的精密控制。



SLx 系列采用 Magna-Power 的 xGen MagnaLINK™ 数字控制平台，该平台使用分布式 DSP 网络和高速板间通信，利用内部开发的底层通信协议。内部增益调度与现场可调增益相结合，支持广泛的负载条件。

- 电压、电流和功率控制，具有 16 位分辨率。
- 可编程压摆率控制。
- 原生 100 ppm 稳定性。
- 本地、远程和无引线电压检测，实现精确的负载点调节。

直观、明亮的前面板控制

明亮的显示屏，精细控制，经久耐用。

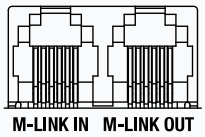


SLx 系列搭载长寿命混合显示屏——高可见度绿色 V/I 数码管与多行状态/配置屏幕——以及精密耐用的控制装置。黑色阳极氧化机加工铝旋钮可实现精细设定值调节，10 键数字键盘和方向键支持精确的数字输入。专用锁定按钮可保护设置安全，前置 USB 端口使 PC 连接轻松便捷（后面板同样配备 USB 端口）。

- 混合显示屏：明亮的 V/I 数码管 + 多行状态和菜单显示。
- 机加工铝制控制旋钮，实现精细调节。
- 10 键 + 方向键，支持 16 位设定值输入。
- 前面板锁定功能和前置 USB，操作快捷安全。

即插即用主从控制

通过聚合系统额定值实现无缝功率扩展。



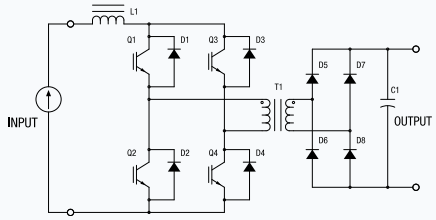
双 MagnaLINK 端口提供新一代数字混合主从控制，单台设备即可指挥同步堆叠系统。通过最多 16 台设备并联扩展电流能力。辅助电流检测连接可向主机实时反馈模拟电流，实现精确的聚合与显示。

- 通过简单的接口接线即可并联多达 16 台设备。
- 单一设定值；同步输出与保护。
- 辅助电流检测反馈，确保精确均流。
- 自动配置和聚合测量，集中显示于单一主机界面。

Rugged by design: safety + reliability, as you'd expect from Magna-Power.

可靠的电流馈电功率处理

坚固耐用的设计：自保护拓扑结构，确保持续运行。



The SLx Series uses a high-frequency, current-fed architecture that adds a control stage beyond conventional voltage-fed designs. This topology inherently limits fault energy—avoiding fast-rising current spikes and magnetic core saturation so the supply self-protects and your load stays safe. Paired with state-of-the-art SiC power semiconductors, SLx delivers class-leading power density, efficiency, and reliability, including continuous full-power operation up to 50°C ambient.

- Current-fed architecture with an added control stage vs. voltage-fed.
- Inherent surge immunity—no current spikes or core saturation.
- Self-protecting behavior under fault conditions.
- SiC devices for high density and efficiency; full power to 50°C.

目标诊断

LED 矩阵映射至内部组件，实现快速现场故障排查。



SLx 系列引入了目标诊断功能：每个主要组件的状态 LED 均映射至后置 LED 矩阵。技术人员无需拆卸机架和外壳，即可精准定位故障或配置问题。配合 MagnaCTRL 的 EEPROM 编辑器，可实现高效的远程支持，确保系统持续运行。

- 后置 LED 矩阵复现各组件状态 LED。
- 产品安装就位且外壳闭合状态下即可诊断故障和配置。
- 配合 MagnaCTRL 的 EEPROM 编辑器进行远程检查/更新。
- 缩短故障排查时间，减少停机。

多层安全保护、联锁与紧急停机

标准可编程限制加硬接线停机保护。



软启动阶段将浪涌电流控制在稳态电流以下，内置诊断功能持续监控线路、温度和内部状态。发生故障时，单次触发（OSHT）保护立即停止逆变器运行。故障信息显示在前面板状态显示屏上，并通过 SCPI/Modbus 输出，便于快速排查。

- 软启动限制浪涌电流；交流电流保持在满载电流以下。
- 可编程保护：过压、过流、过功率。
- 散热器和输出电容器温度监控。
- 5V 联锁输入，支持干接点锁定抑制（控制电源保持供电）。
- 24 V 紧急停机绕过逻辑直接切断交流电源；执行完全硬件停机。

From lab scripts to factory PLCs, flexible programming & integration.

轻松实现软件集成

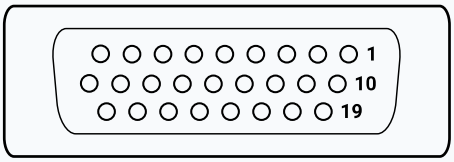
可读命令，快速响应——兼容任何编程语言。

SLx 系列提供清晰的文本化 API，原生支持 SCPI 和 Modbus。超过 60 条详细文档化的命令涵盖启动/停止、电压/电流/功率设定值、斜率控制、高精度测量及完整配置——助您的脚本和系统从概念验证快速迈向生产部署。

- SCPI 和 Modbus 命令集，行为一致可靠。
- 启动/停止与保护：启用输出、设置跳闸限值、查询状态。
- 高精度读数：电压、电流、功率及检测反馈。
- 面向开发者的文档与示例。

外部用户 I/O

灵活的隔离式模拟-数字控制。



所有 SLx 系列电源均标配一个 26 针 D-Sub 连接器，指定为外部用户 I/O。该连接器提供：

- 8 路数字输出（5V 逻辑）
- 4 路数字输入（5V 逻辑）
- 4 路模拟输出（0-10V 逻辑）
- 4 路模拟输入（0-10V 逻辑）

外部用户 I/O 与输出端子隔离，并以接地为参考。连接器引脚可由用户配置，允许用户选择其应用所需的功能，同时为未来新功能提供扩展能力。使用数字输出可将电源与外部使能信号或数字故障监测逻辑等集成，或使用 0-10V 模拟输出监测电压和电流。还提供了一个专用高速模拟输入，采样率为 2 kHz，可实现近实时控制。

工业通信与控制

从实验室网络到 PLC——按您的方式集成。

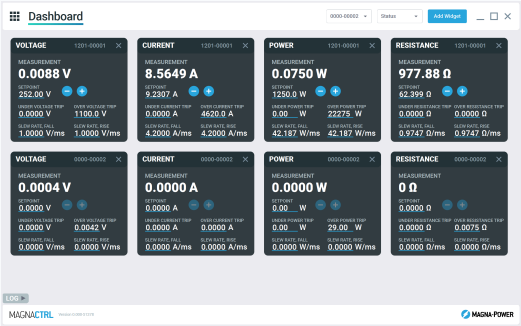


该系列出厂即配备双 USB（前置和后置）和 RS485 接口，支持 SCPI 和 Modbus 协议。针对网络和工厂自动化需求，可选择完全集成的选项，支持 Modbus，提供详尽的文档，并附带设备描述文件，以加速 PLC 设置和标签映射。

- 标配双 USB（前置+后置）和 RS485。
- 通过 LXI TCP/IP 以太网（+LXI）选项实现 TCP/IP 网络连接。
- PLC 现场总线选项：CANopen（+CAN）、EtherCAT（+ECAT）、EtherNet/IP（+EIP）、Modbus-TCP（+MTCP）、PROFINET（+PROF）。
- 包含设备文件：EDS（CANopen/EtherNet/IP）、ESI XML（EtherCAT）、GSDML（PROFINET），实现快速 PLC 集成。
- 完整的命令文档、示例和诊断工具。

内置 MagnaCTRL 软件

多产品仪表板控制、诊断和更新——开箱即用。



MagnaCTRL 是一款现代化的多产品控制平台，随 xGen 产品附带提供。构建仪表板、配置 I/O、运行更新以及访问深度诊断功能——一切尽在一个应用中。

- 可配置仪表板：添加/排列小组件，监控和控制多台已连接设备。
- 产品浏览器：自动检测设备、保存连接，并在后续会话中自动重连。
- 外部用户 I/O 面板：映射 26 针 I/O，导出/导入引脚映射，实现快速部署。
- 固件/软件更新：自动检测新版本发布；如需要，可离线执行手动更新（请参阅更新日志）
- 校准工具：调整编程/测量增益/偏移量；在指引下，调谐控制回路增益。
- 数据记录：图形化输出及 .csv 格式记录电压、电流和功率的测量值与设定值随时间的变化

State-of-the-art USA manufacturing with worldwide support

美国制造

垂直整合制造，实现全面质量管控。

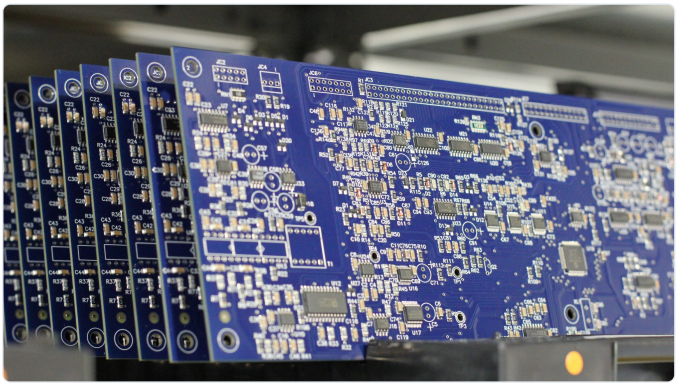


Magna-Power 产品的设计、制造、测试和售后服务均在位于新泽西州弗莱明顿的 Magna-Power 总部完成，总部面积达 73,500 平方英尺。金属加工、磁性元件制造、PCB 组装和老化测试均在内部完成，从而严格把控质量、成本和交货周期。

- 美国制造：工程设计、生产制造和售后服务集于一处。
- 内部生产：金属加工、磁性元件、SMT PCB 和表面处理。
- 可靠性验证：每台设备均经过全面测试、校准和老化试验。

全球服务与 OEM 零部件支持

工厂级专业技术，本地化响应。

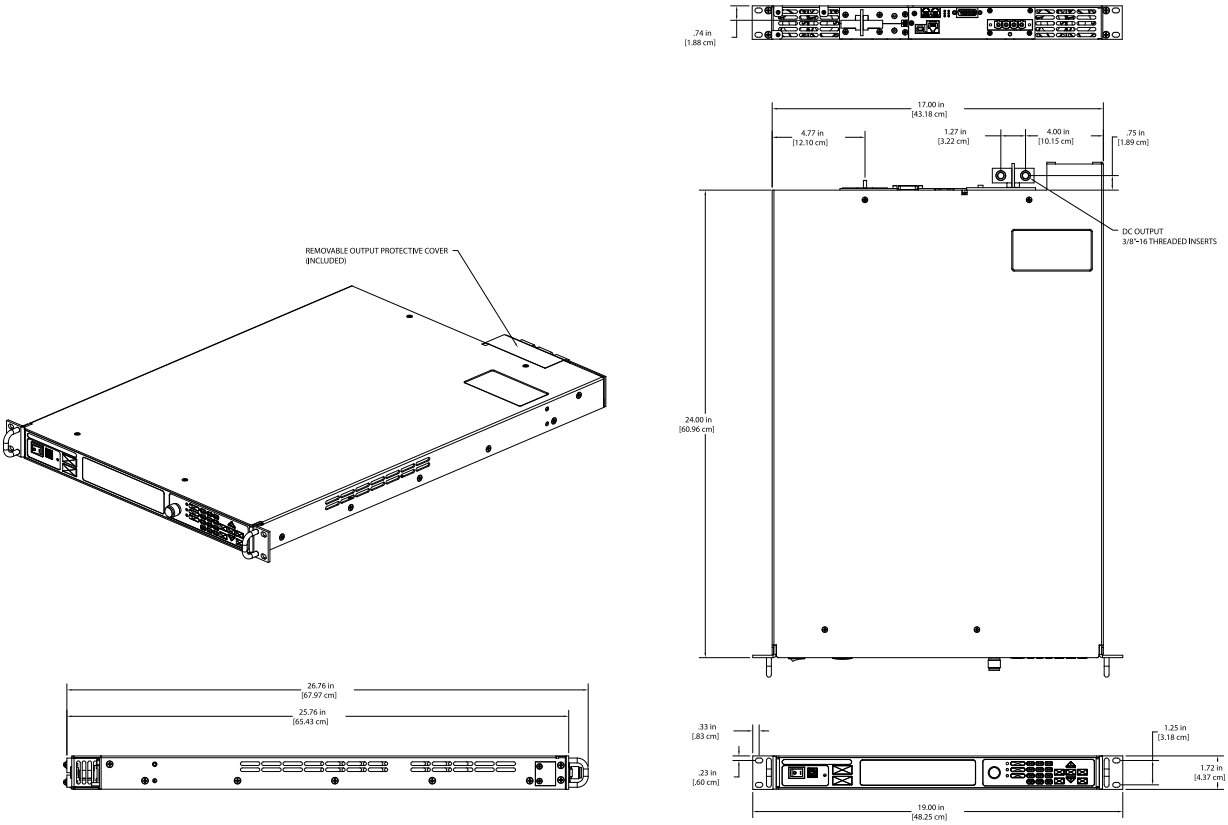


Magna-Power 以工厂及授权服务中心为其产品提供全面支持，服务网络覆盖北美、欧洲、英国、亚太、东亚及南美地区。无论是否在保修期内，均采用工厂标准流程和原厂零部件，将设备恢复至出厂规格。

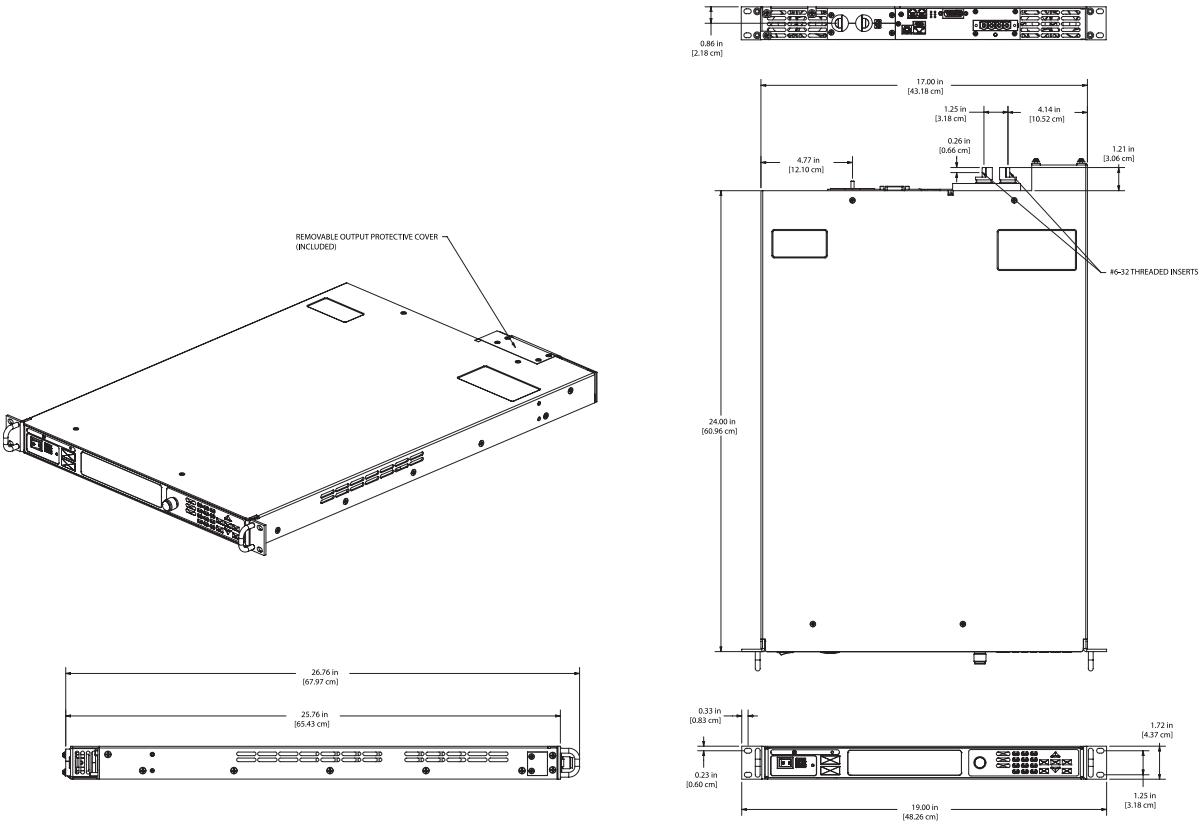
- 全球覆盖：总部位于新泽西州，并设有多个区域授权服务中心。
- 一致的维修标准：采用工厂诊断流程、作业指导书和系统图纸。
- 原厂 OEM 零部件：经过测试的替换组件，确保可靠、高效的维修服务，最大限度减少停机时间。

8 图纸

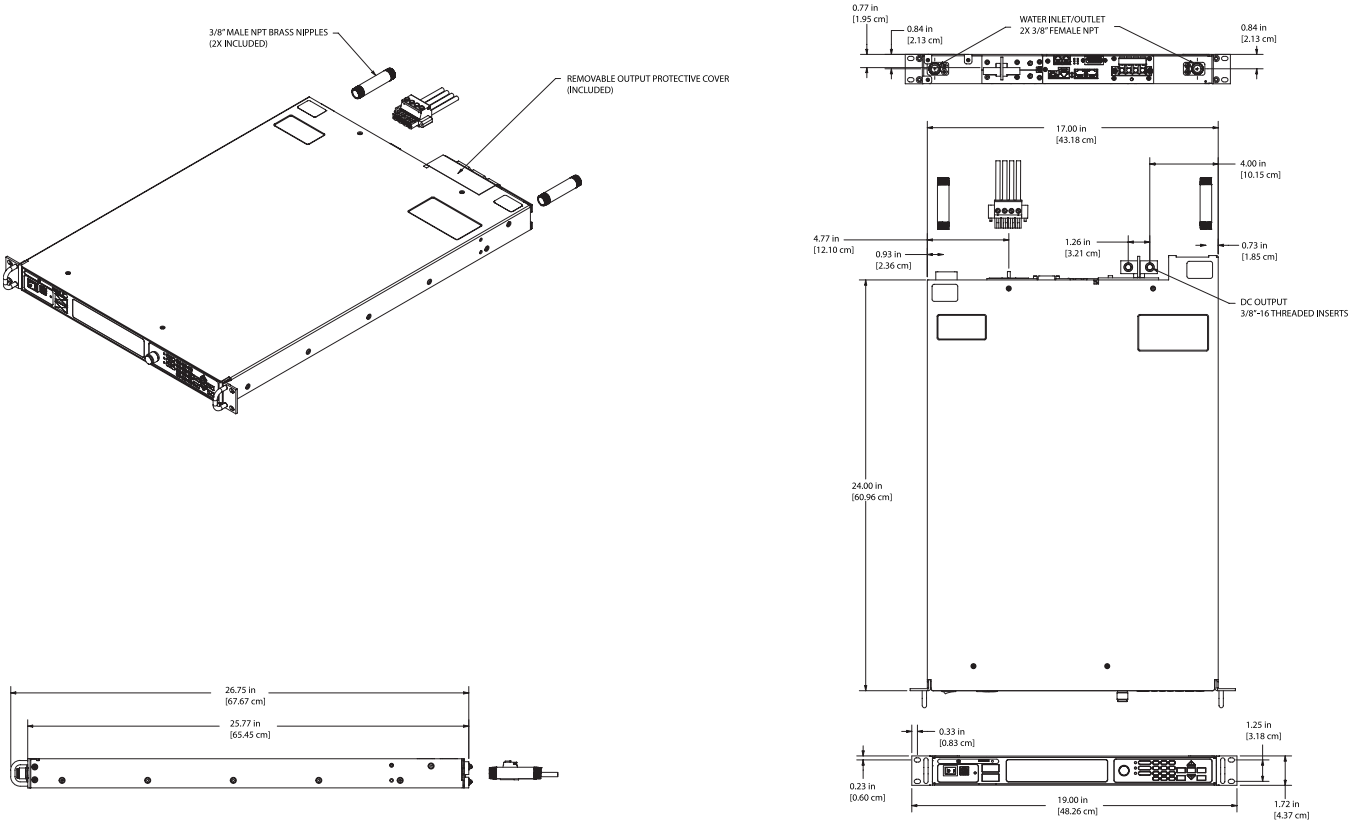
Dimensional Diagrams • Standard SLx Series Models Up To 1500 Vdc



Dimensional Diagrams • Standard SLx Series Models Above 1500 Vdc

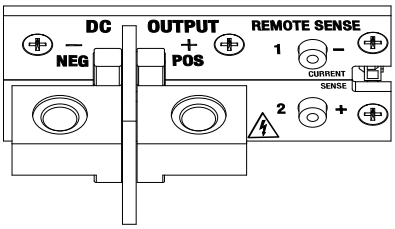


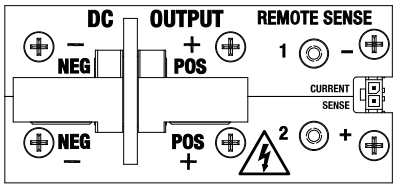
Dimensional Diagrams • SLx Series Models Up To 1500 Vdc with Water Cooling (+WC) Option



DC Output Bus Bars without Included Cover, Models up to 1500 Vdc

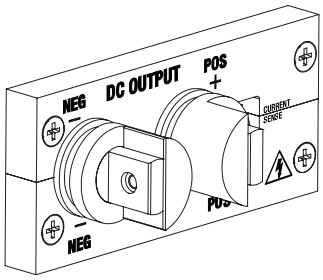
Two views shown, 3/8" mating hardware included (not shown)

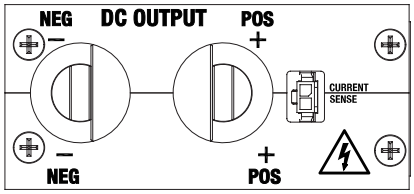




DC Output Bus Bars without Included Cover, Models above 1500 Vdc

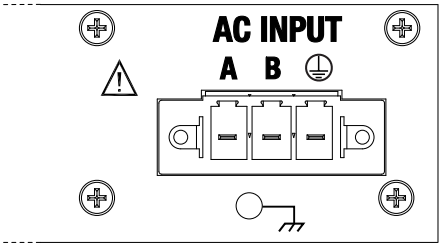
Two views shown, #6 mating hardware included (not shown)





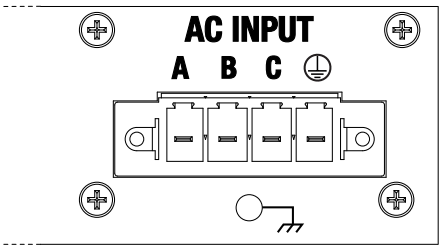
AC Input • 1-phase, 8 AWG

For SLx Series models with 1-phase UI or UI2 input. Phoenix Contact 1720916, 2-wire + ground connector. Pheonix Contact 1777846 mating adapter included.



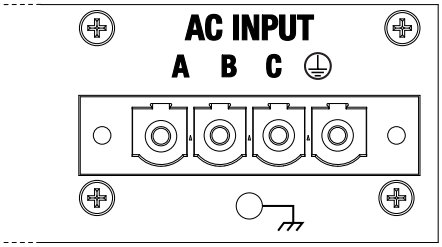
AC Input • 3-phase, 8 AWG

For SLx Series models with 3-phase input, except 10 kW models with 208/240 Vac input. Phoenix Contact 1720929, 3-wire + ground connector. Pheonix Contact 1777859 mating adapter included.

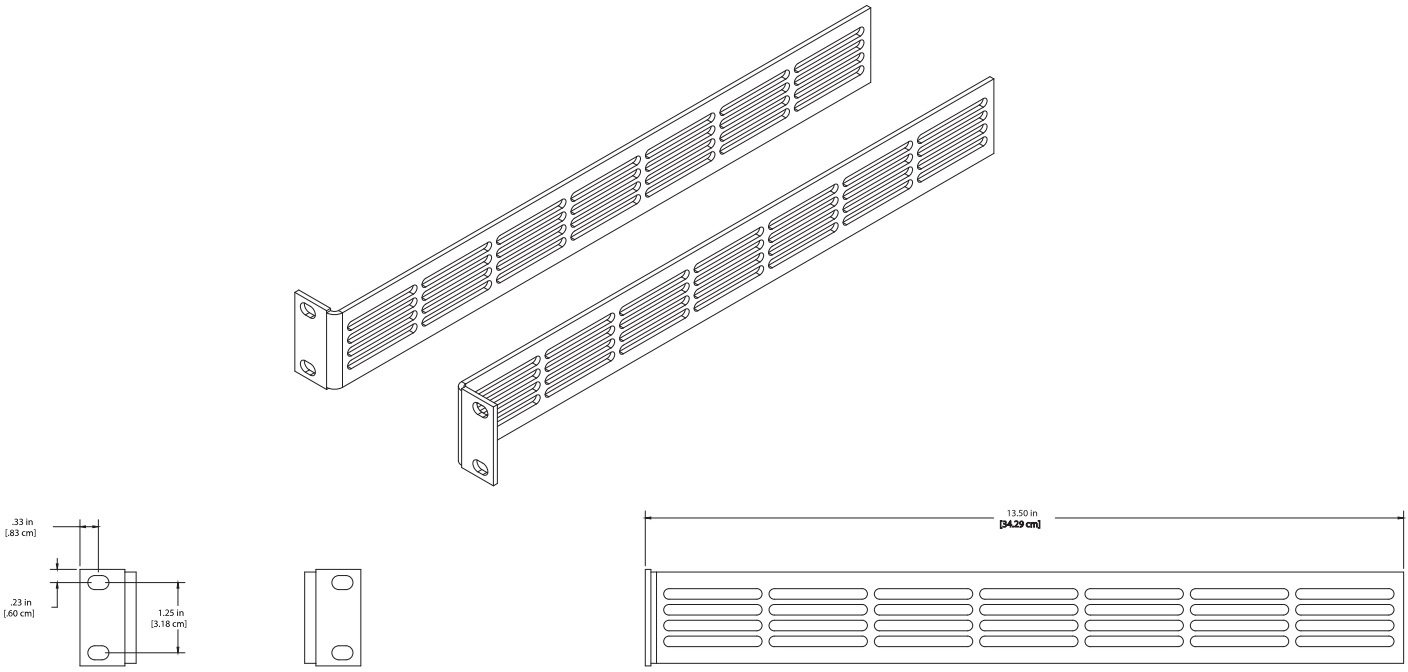


AC Input • 3-phase, 6 AWG

For 10 kW SLx Series models with 208/240 Vac 3-phase input. Phoenix Contact 1998881, 3-wire + ground connector. Pheonix Contact 1967472 mating adapter included.



Rear Mounting Rails
Included



9 可用集成选件

+C1 Black Enclosure
纹理黑色粉末涂层表面处理及黑色前面板

+FP1 Blank Front Panel
FP1 空白前面板选项移除所有前面板控件，仅保留状态指示灯和开/关摇臂开关，同时仍可通过计算机和用户 I/O 控制实现完整功能

+CAN CANopen
CANopen 通信协议及双 RJ-45 接口，支持 CAN 总线通信，广泛应用于汽车行业

CANopen is a high-level communication protocol that is widely used in industrial automation and embedded systems. It is based on the Controller Area Network (CAN) bus, a robust and efficient serial communication bus commonly found in automotive and industrial applications.

CANopen defines a set of communication protocols and application layer services built on top of the CAN physical layer. It provides a standardized way for devices to communicate and exchange data. CANopen devices communicate using an Object Dictionary, which defines the data structure and parameters that can be exchanged between devices. This dictionary is essential for device configuration and data exchange. It includes objects like PDOs (Process Data Objects) for real-time data exchange and SDOs (Service Data Objects) for parameterization and configuration. Each CANopen device on the network has a unique Node ID, which allows devices to address each other for communication. This addressing scheme simplifies the setup of multi-device networks.

Magna-Power's CANopen Implementation
Magna-Power has designed its CANopen (+CAN) option to allow for seamless integration into a variety of automation and industrial environments. The following are some of the key features for Magna-Power's +CAN option:

- Magna-Power developed CANopen Electronic Data Sheet (EDS), used by network configuration software tools to help set up devices on the network.
- Support for the product's full command set
- Extensive HTML- and PDF-based documentation, detailing connection setup and commands
- D-Sub 9-pin male connector

+ECAT EtherCAT
EtherCAT 通信协议和双 RJ-45 接口，用于工厂自动化、运动控制和机器人领域的高性能通信

EtherCAT is a real-time Ethernet network protocol developed by Beckhoff Automation for communicating among multiple nodes. EtherCAT networks are formed using CAT cabling, where master and nodes can be directly wired together through RJ-45 ports, in a daisy chain configuration, without need for external networking switches. The protocol is standardized in IEC 61158 and is popular for demanding high-speed communication requirements in automation technology. As a result of its flexibility and scalability, EtherCAT can be found in a wide range of applications, including factory automation, motion control, robotics, and more.

One of the key advantages of EtherCAT is its ability to handle large amounts of data at very high speeds. It uses a unique "processing on the fly" technique, in which each node in the

network can add or remove data from the data stream as it passes through, without interrupting the overall data flow. This allows for very low latency and high precision in control applications. It can support a wide range of different communication topologies, from simple point-to-point connections to complex multi-node configurations. It is also highly customizable, with support for different data formats, communication protocols, and network configurations.

Magna-Power's EtherCAT Implementation

Magna-Power has designed its EtherCAT (+ECAT) option to allow for seamless integration into a variety of automation and industrial environments. The following are some of the key features for Magna-Power's +ECAT option:

- Support for EtherCAT protocol and Ethernet over EtherCAT
- Support for the product's full command set
- Extensive HTML- and PDF-based documentation, detailing connection setup and commands
- Dual RJ-45 connectors with bi-color activity and error LEDs

+EIP EtherNet/IP

EtherNet/IP 通信协议及双 RJ-45 接口，具有 EIS 配置文件，适用于工业自动化，常用于 Allen Bradley、Schneider Electric 和 Omron PLC

The EtherNet/IP standard (EIP) is the application layer protocol for industrial automation developed by four independent groups: ODVA, the Industrial Open Ethernet Association (IOANA), Control Net International (CI) and the Industrial Ethernet Association (IEA). EtherNet/IP provides wide-ranging, comprehensive, certifiable standard in the public domain that is suitable to a wide variety of automation devices. EtherNet/IP is used by Ethernet modules for several programmable logic controllers including Allen Bradley, Schneider Electric, and Omron

EtherNet/IP uses a client-server model, where the client sends requests to the server, and the server responds with the requested information. The information is transmitted in the form of messages, which are divided into two types: Explicit and Implicit messages.

Explicit messages are used for data exchange and are initiated by the client. The client sends a request for data to the server, and the server responds with the requested data. Implicit messages, on the other hand, are used for real-time control and monitoring. They are sent by the server to the client without any request from the client.

One of the key advantages of EtherNet/IP is its high speed and bandwidth. It allows for real-time data exchange, which is essential in many industrial applications, such as motion control, where high-speed communication is required for precise control of machines and processes.

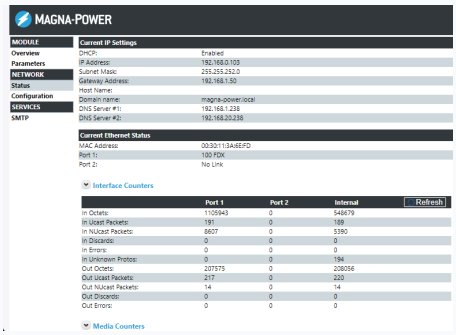
Another advantage is its flexibility and scalability. EtherNet/IP allows for easy integration of devices and systems from different vendors, making it an ideal choice for multi-vendor environments. It also allows for easy expansion of the network, with the ability to add or remove devices without affecting the rest of the network.

EtherNet/IP also provides robust security features to ensure the integrity and confidentiality of data. It uses standard Ethernet security protocols, such as IPsec and SSL/TLS, to protect data in transit.

Magna-Power's EtherNet/IP Implementation

Magna-Power has designed its EtherNet/IP (+EIP) option to allow for seamless integration into Allen Bardley, Schneider Electric and Omron PLCs. The following are some of the key features for Magna-Power's +EIP option:

- Support for the product's full command set
- Extensive HTML- and PDF-based documentation, detailing connection setup and commands
- Dual RJ-45 connectors with bi-color activity and error LEDs
- Magna-Power developed electronic data sheet (EDS) for device discovery and network setup
- Hosted a EtherNet/IP web page for easily accessing local network settings, device parameters, and operation status (figure below)



EtherNet/IP 网页，托管于 Magna-Power 的+EIP 选项中

+LXI LXI TCP/IP Ethernet

TCP/IP 以太网通信协议及单个 RJ-45 接口，符合 LXI C 类标准认证，适用于通过传统计算机网络进行套接字通信

Certified to the LXI Standard (Class C), version 1.4, this option allows the product to be fully controlled over an integrated TCP/IP Ethernet interface. LXI is an instrumentation platform based on industry standard Ethernet technology designed to provide modularity, flexibility, and performance to small- and medium-sized systems. All of the product's standard SCPI commands are supported over the +LXI option, along with all provided software and drivers.

LXI's advantages are exemplified in its compact, flexible package providing high-speed I/O and reliable measurements. The Magna-Power Electronics LXI TCP/IP Ethernet option includes an embedded web-server, allowing web browser power supply control and monitoring from virtually anywhere.

Note: For xGen products, only the SCPI command protocol is available when LXI TCP/IP Ethernet interface is installed. Modbus communication protocol is not available through any interface when the LXI TCP/IP Ethernet interface is installed.

+MTCP Modbus-TCP

Modbus-TCP 通信协议和双 RJ-45 接口，支持完整命令集作为 Modbus 命令

Modbus-TCP is a communication protocol that enables communication between industrial devices over Ethernet networks. It is an extension of the Modbus protocol, which was originally developed in the 1970s for communication between programmable logic controllers (PLCs) and other devices. Modbus-TCP uses the same protocol as Modbus, but it is transmitted over Ethernet rather than serial communication.

Modbus-TCP is a widely used protocol in industrial control and automation applications because it is open and simple to implement. It supports a wide range of devices, including PLCs, sensors, and actuators. Modbus-TCP provides fast and reliable communication, with data rates of up to 100 Mbps. It also supports multiple connections and can handle up to 65,535 devices on a single network.

Magna-Power's Implementation of Modbus-TCP

Magna-Power has designed its Modbus-TCP (+MTCP) option to allow for seamless integration into a variety of automation and industrial environments. The following are some of the key features for Magna-Power's +MTCP option:

- Support for the product's full command set as Modbus commands
- Extensive HTML- and PDF-based documentation for all the commands and interfacing
- Dual RJ-45 connectors with bi-color activity and error LEDs

+PROF PROFINET

PROFINET 通信协议和双 RJ-45 接口，用于工业自动化，常用于西门子 PLC

PROFINET is a widely-used industrial Ethernet protocol for communication between automation systems and devices in manufacturing and process industries. It was developed by PROFIBUS & PROFINET International (PI), an organization that oversees the development and maintenance of the protocol. PROFINET is used mainly by Siemens PLCs.

PROFINET provides a high-speed and real-time communication capability that enables efficient data exchange and control between various automation components such as PLCs, robots, sensors, and drives. It supports both TCP/IP and UDP/IP communication, and offers a wide range of features such as integrated safety, motion control, and diagnostics.

PROFINET also provides a flexible network topology that can be configured to suit different industrial applications. It supports various physical media such as copper, fiber optic, and wireless, and allows for the use of different network topologies including star, ring, and line.

PROFINET is widely adopted by many leading manufacturers and system integrators in different industries due to its reliability, flexibility, and interoperability. It has a large ecosystem of compatible products and tools, and is supported by a global network of PI-certified experts and service providers.

Magna-Power's PROFINET Implementation

Magna-Power has designed its PROFINET (+PROF) option to allow for seamless integration into Siemens PLCs. The following are some key features for Magna-Power +PROF option:

- Support for the product's full command set
- Extensive HTML- and PDF-based documentation, detailing connection setup and commands
- Dual RJ-45 connectors with bi-color activity and error LEDs

+RUG Ruggedized

内部产品加固处理，已经过独立测试，符合特定的 MIL-STD-810G 和 RTCA DO-160 冲击与振动规范。

The Ruggedized Option (+RUG) provides additional mechanical security for large power components and sub-assemblies within SLx Series, SL Series, and XR Series products.

SLx Series, SL Series, and XR Series units with the Ruggedized Option have been independently tested to comply with the following MIL-STD-810G shock and vibration specifications:

- MIL-STD-810G CHG1 Method 516.7 Functional Shock, Procedure I; which subjects the product to 40G, 11 ms terminal saw tooth pulse; three shocks in each direction along three mutually perpendicular axes
- MIL-STD-810G CHG1 Method 514.7 Vibration; which subjects the product to two hours of vibration per axis along three mutually perpendicular axes

In addition to the specifications listed above, the air cooled SLx Series products with the Ruggedized Option have also been independently tested to comply with RTCA/DO-160G Section 8.0 Vibration, Profile B4 with its associated total energy of 2.2 G_{rms} for equipment installed in Fixed Wing aircrafts with Turbojet or Turbofan engines.

With the Ruggedized Option, SL Series and XR Series products maintain ambient operating temperatures from -25°C to 50°C, while SLx Series products maintain ambient operating temperatures from 0°C to 50°C. Storage temperature for all products is rated from -40°C to +85°C.

+WC Water Cooling

采用集成式中央热交换器和特殊绕制的磁性元件，水冷功能适用于特定的 Magna-Power 电源，专为高密度封装系统机柜设计，适用于产品标准风冷方式散热能力受限的应用场合。

Water Cooling (+WC) is available for Magna-Power power supplies to enable high-power density in cabinets where heat removal via standard air cooling is a challenge.

Water cooling is accomplished with chill plates and an integrated central heat exchanger. The chill plates provide a thermal conduction path for heat-sensitive components, while the central heat exchanger removes heat from the air internal to the enclosure. 1U, 3U, 6U and 9U water-cooled models feature enclosures without vent holes and are essentially sealed from the environment. An internal solenoid valve enables water flow only when the chill plate reaches 60°C; this operation prevents internal condensation.

Plumbing and Connections

1U SLx Series as well as 3U and 4U TS Series models utilize a 1/4" NPT male inlet and outlet for water flow. For **6U, 8U, 12U and 16U TS Series**, external plumbing interconnects power supply modules to a single 1/2" NPT male connection for the inlet and another for the outlet.

A minimum of 2.5" of clearance is recommended behind the enclosure for plumbing hardware and user connections. For systems requiring more than one power supply, plumbing connections must be paralleled; water should not flow from one power supply into another. When water-cooled power supplies are ordered with the Cabinet and Integration accessory, Magna-Power will parallel these connections, providing a single inlet and outlet for the entire rack.

> **Note:** The Water Cooling (+WC) option cannot be combined with the High Isolation Output (+ISO) option. On the TS Series, the Water Cooling (+WC) option is only available for models rated up to 1000 Vdc. On the SLx Series, *the Water Cooling (+WC) option is only available for models rated up to 1500 Vdc.*

Water Cooling Specifications

Series	Model Size	Min. Flow Rate	Pipe Size (NPT Male)	Max. Pressure	Max. Inlet Temp
SLx Series	1U	1.2 GPM	1/4"	80 PSI	40°C
TS Series	3U, 4U	1.5 GPM	1/4"	80 PSI	25°C
TS Series	6U, 8U	3.0 GPM	1/2"	80 PSI	25°C
TS Series	9U, 12U	4.5 GPM	1/2"	80 PSI	25°C
TS Series	16U	6.0 GPM	1/2"	80 PSI	25°C

*Front air intake and rear exhaust applicable to 6U through 16U models only.

10 产品图片





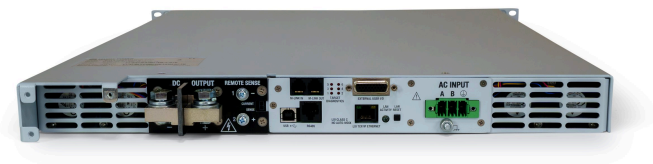




SLx Series with Blank Front Panel (+FP1) option



SLx Series, 1U, rear panel of unit with UI/UI2 1-phase input with protective cover attached



SLx Series, 1U, rear panel of unit with UI/UI2 1-phase input with protective cover removed



SLx Series, 1U, rear panel of 10 kW unit with 208 Vac 3-phase input with protective cover removed

11 下载

https://magna-power.com/zh/products/magnadc/slx#downloads

12 联系

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