SLx Series

Programmable DC Power Supply

Versatile digital rack-mount power supply, 1.5 kW to 10 kW in 1U

CERTIFICATIONS



POWER	VOLTAGE	CURRENT	MODELS	SIZE
1.5 kW to 10 kW	5 Vdc to 3,000 Vdc	1.5 Adc to 250 Adc	171	1U

1 Description

The next generation (xGen) SLx Series delivers 1.5 to 10 kW of programmable DC power in a 1U rack-mount platform with six power levels, 171 models, and over 26,500 configurations from 5 to 3000 V and up to 600 A for finely tuned system requirements. A high-efficiency current-fed topology with SiC devices, MagnaLINK™ distributed digital control, and extensive industrial communication and user I/O options reduces thermal, control, and networking overhead, simplifying integration into demanding ATE, automation, and process control systems.

2 Key Features

- Voltage, current, and power control
- Rugged current-fed power processing
- Fully digital control with 16-bit precision
- SCPI and Modbus command sets with various communication options
- Programmable protection features

3 Integrated Options Available

+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 Specifications

Specifications are subject to change without notice. Unless otherwise noted, all specifications measured at the product's maximum ratings.

4.1 AC Input Specifications

PARAMETER	VALUE	CONDITIONS
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

PARAMETER	VALUE	CONDITIONS
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 25ºC over 8 hrs after 30 min warm-up
Temperature Coefficient	Voltage control: 0.01%/ºC of rated voltage Current control: 0.04%/ºC of rated current Power control: 0.04%/ºC 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

PARAMETER	VALUE	CONDITIONS
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

PARAMETER	VALUE	CONDITIONS
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

PARAMETER	VALUE	CONDITIONS
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

PARAMETER	VALUE	CONDITIONS
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

PARAMETER	VALUE	CONDITIONS
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

PARAMETER	VALUE	CONDITIONS
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 Model Ordering Guide

SLx10-800-12.5/480+ECAT

- SLx — Product Series
- 10 — Output Power (kW)
- 800 — Maximum DC Output Voltage (Vdc)
- 12.5 — Maximum DC Output Current (Adc)
- 480 — AC Input Voltage (Vac)
- +ECAT — Integrated Options

6 Models

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 Features

Do more with MagnaLINK™ distributed digital control.

Precision control & measurement

DSP-driven precision from setpoint to point-of-load.



The SLx Series features Magna-Power's xGen MagnaLINK™ digital control platform, which uses a distributed network of DSPs and high-speed board-to-board communications utilizing an internally developed low-level communication protocol. Internal gain scheduling with field-tunable gains supports a broad range of load conditions.

- Voltage, current, and power control with 16-bit resolution.
- Programmable slew-rate controls.
- Native 100 ppm stability.
- Local, remote, and leadless voltage sensing for accurate point-of-load regulation.

Intuitive, bright front-panel control

Bright readouts, fine control, built to last.

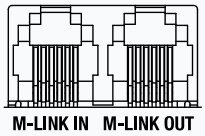


The SLx Series pairs a long-life hybrid display—high-visibility green V/I segments plus a multi-line status/config screen—with precise, durable controls. A black-anodized machined aluminum knob enables fine setpoint dialing, while a 10-key pad and arrow keys support exact digital entry. A dedicated Lock button secures settings, and a front USB port makes PC hookup effortless (rear USB also provided).

- Hybrid display: bright V/I segments + multi-line status and menu.
- Machined aluminum control knob for fine adjustments.
- 10-key + arrows for 16-bit setpoint entry.
- Front-panel Lock and front USB for fast, secure use.

Plug-and-play master-slaving

Scale power seamlessly with aggregate system ratings.



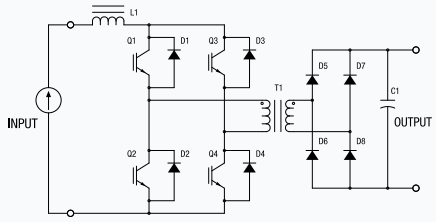
Dual MagnaLINK ports provide next-generation digital-hybrid master-slaving, so one unit can command a synchronized stack. Expand current capability by paralleling up to 16 units. A secondary current-sense connection feeds real-time analog current to the master for accurate aggregation and display.

- Parallel up to 16 units with simple inteface wiring.
- One setpoint; synchronized output and protections.
- Secondary current-sense feedback for accurate sharing.
- Auto-configuration and aggregate measurements to a single master display.

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

Reliable current-fed power processing

Rugged by design: self-protecting topology for uptime.



MagnaDC power supplies utilize 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.

Target diagnostics

LED matrix mapped to internal assemblies for fast field triaging.



The SLx Series introduces Target Diagnostics: the status LEDs from every major assembly are mapped to a rear-mounted LED matrix. Techs can pinpoint faults or configuration issues while the unit stays racked and sealed. Paired with MagnaCTRL's EEPROM editor, it enables effective remote support to keep systems running.

- Rear LED matrix replicates per-assembly status LEDs.
- Diagnose faults and configs with the product mounted and covers on.
- Works with MagnaCTRL's EEPROM editor for remote checks/updates.
- Shortens troubleshooting time and reduces downtime.

Layered safety, interlock & emergency stop

Standard programmable limits plus hardwired shutdown.



A soft-start stage keeps inrush below steady-state draw, while built-in diagnostics watch line, thermal, and internal conditions. On a fault, an immediate one-shot (OSHT) trip halts the inverter. Faults are reported on the front-panel status display and via SCPI/Modbus for fast troubleshooting.

- Soft-start caps inrush; AC draw stays below full-load current.
- Programmable trips: over-voltage, over-current, over-power.
- Thermal monitoring on heatsink and output capacitors.
- Integrated electronic bleeder to discharge output capacitors.
- 5V interlock input for dry-contact, latching inhibit (control power maintained).
- 24 V emergency stop bypasses logic to interrupt AC; full hardware shutdown.

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

Software integration made easy

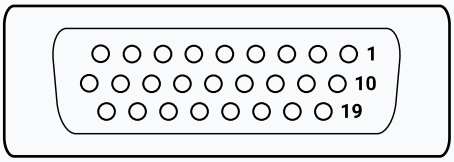
Readable commands, quick results—works with any language.

The SLx Series exposes a clear, text-based API with native SCPI and Modbus. Over 60 well-documented commands cover start/stop, set points for voltage, current & power, slew-rate control, high-accuracy measurements, and full configuration—so your scripts and systems go from proof-of-concept to production fast.

- SCPI and Modbus command sets with consistent behavior..
- Start/stop & protections: enable output, set trip limits, query status.
- High-accuracy reads: voltage, current, power, and sense feedback.
- Developer-driven documentation & examples.

External User I/O

Flexible isolated analog-digital controls.



All SLx Series power supplies come standard with a 26-pin D-Sub connector designated as the External User I/O. This connector provides:

- 8 Digital Outputs (5V logic)
- 4 Digital Inputs (5V logic)
- 4 Analog Outputs (0-10V logic)
- 4 Analog Inputs (0-10V logic)

The External User I/O is isolated from the output terminals and referenced to earth ground. The connector's pins are user configurable, allowing users to select the functions needed in their application, while providing future capability for new features. Use the digital outputs to integrate the power supply with, for example, external enable signals or digital fault monitoring logic, or monitor voltage-current using the analog 0-10V outputs. A dedicated high-speed analog input is also provided, sampled at 2 kHz for near real-time control.

Industrial communications & control

From lab networks to PLCs—integrate on your terms.

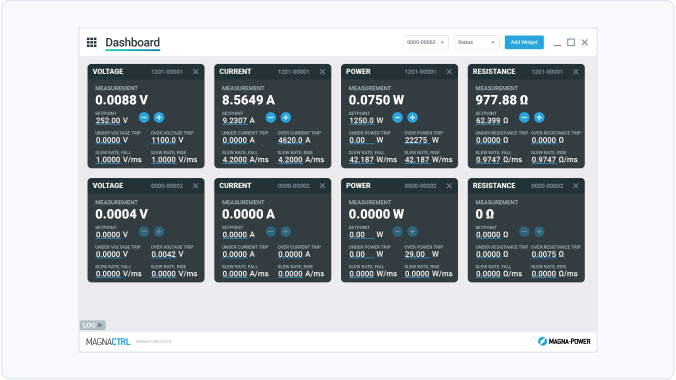


The Series ships ready to connect with dual USB (front & rear) and RS485, with support for SCPI and Modbus. For networks and factory automation, choose fully integrated options with Modbus support, thorough docs—and device description files to speed PLC setup and tag mapping.

- Standard dual USB (front + rear) and RS485.
- TCP/IP networking with LXI TCP/IP Ethernet (+LXI) option
- PLC fieldbuses options: CANopen (+CAN), EtherCAT (+ECAT), EtherNet/IP (+EIP), Modbus-TCP (+MTCP), PROFINET (+PROF).
- Device files included: EDS (CANopen/EtherNet/IP), ESI XML (EtherCAT), GSDML (PROFINET) for quick PLC integration.
- Full command documentation, examples, and diagnostics.

Included MagnaCTRL software

Multi-product dashboard control, diagnostics, and updates—out of the box.



MagnaCTRL is a modern, multi-product control platform included with xGen products. Build dashboards, configure I/O, run updates, and access deep diagnostics—all from one app.

- Configurable dashboard: add/arrange widgets to monitor and control multiple connected units.
- Product Explorer: auto-detect devices, save connections, and auto-reconnect in future sessions.
- External User I/O panel: map 26-pin I/O, export/import pin maps for fast deployments.
- Firmware/software updates: detect new releases automatically; perform manual updates offline if needed (see Changelog)
- Calibration tools: adjust programming/measurement gains/offsets; with guidance, tune control-loop gains.
- Data logging: Graphical output and .csv logging of voltage, current and power measurements and settings over time

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

Made in the USA

Vertically integrated manufacturing for full quality control.

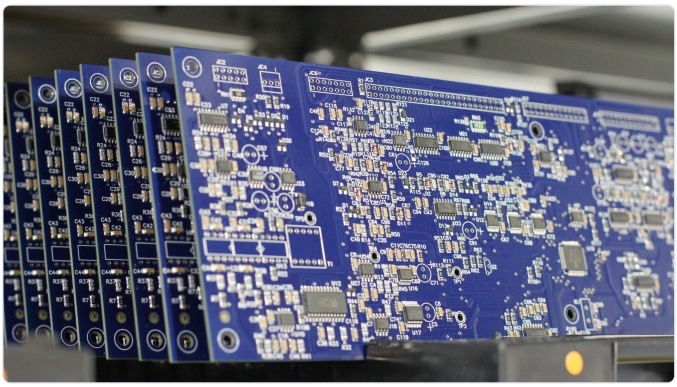


Magna-Power products are designed, built, tested, and serviced at Magna-Power's 73,500 sq-ft headquarters in Flemington, New Jersey, where metalwork, magnetics, PCB assembly, and burn-in are all done in-house for tight control over quality, cost, and lead-time.

- USA-built: Engineering, manufacturing, and service under one roof.
- In-house production: Metalwork, magnetics, SMT PCBs, and finishes.
- Proven reliability: Every unit fully tested, calibrated, and burned in.

Worldwide service & OEM parts support

Factory expertise, local response.

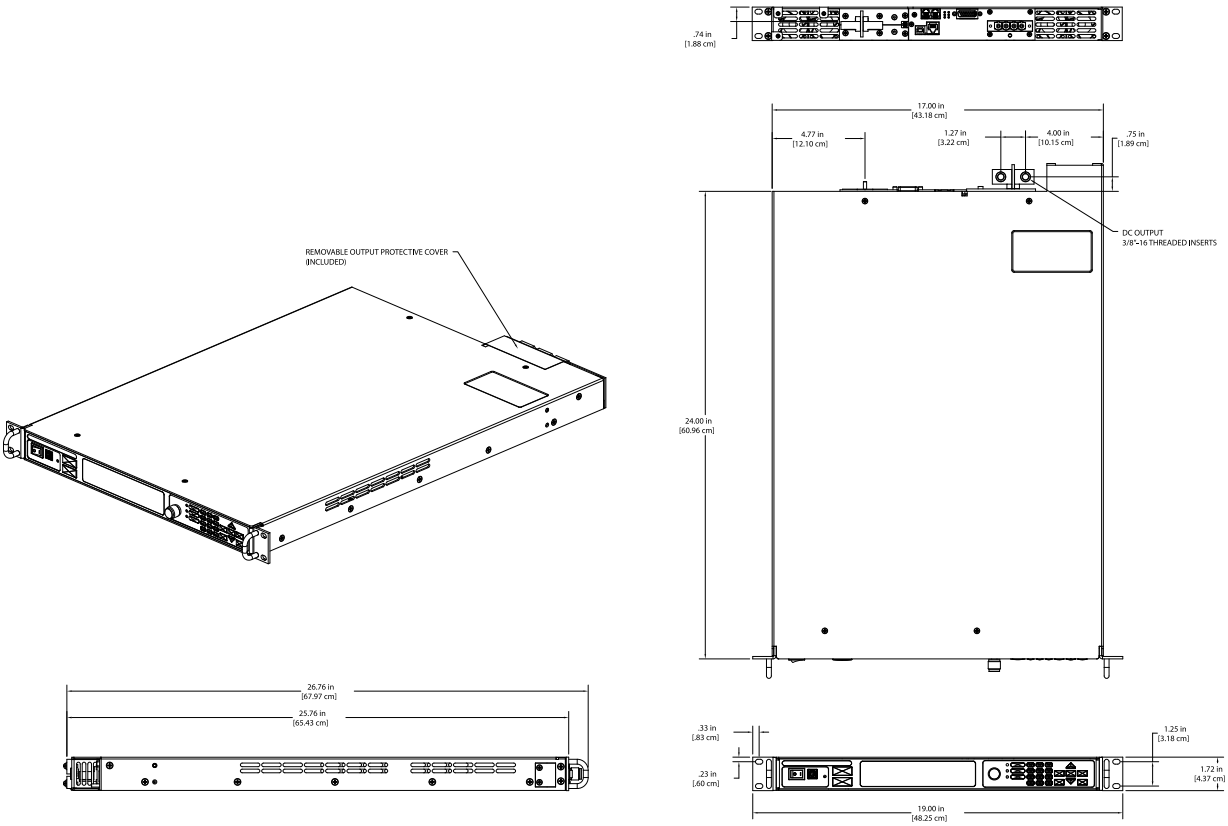


Magna-Power backs its products with factory and authorized service centers across North America, Europe, the UK, Asia-Pacific, East Asia, and South America—using factory procedures and genuine parts to restore units to original specifications, in or out of warranty.

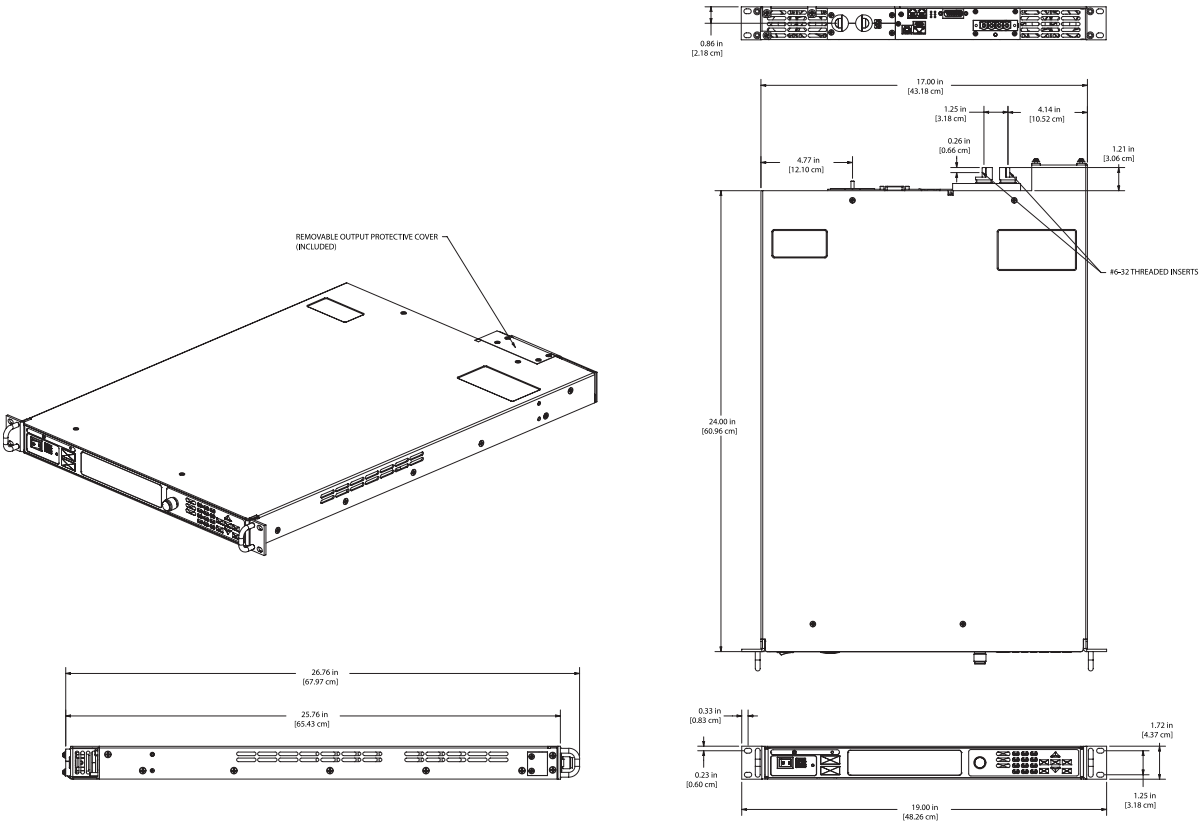
- Global coverage: HQ in New Jersey plus regional authorized service centers.
- Consistent repairs: Factory diagnostics, work instructions, and system diagrams.
- Genuine OEM parts: Tested replacement assemblies for predictable, low-downtime service.

8 Diagrams

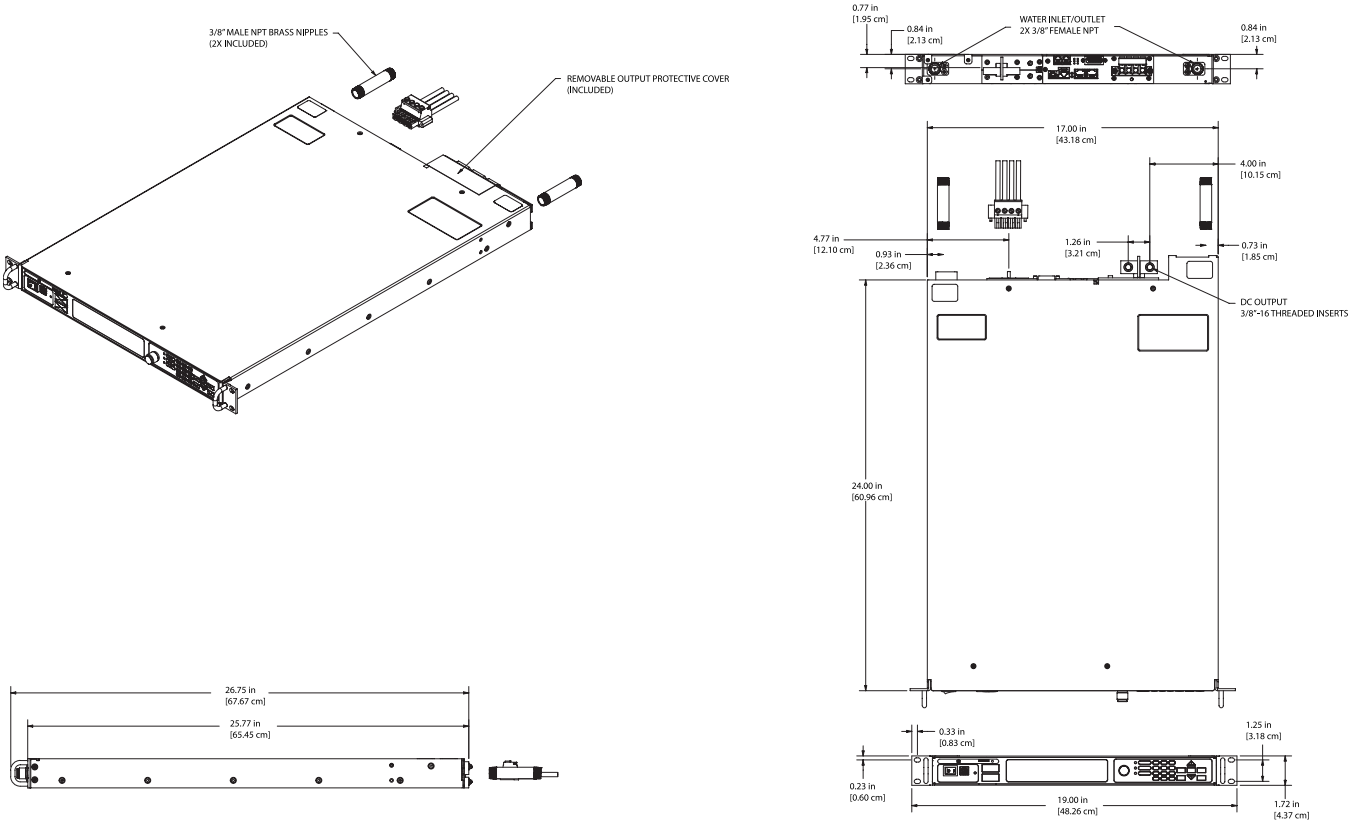
Dimensional Diagrams • Standard SLx Series Models Up To 1500 Vdc



Dimensional Diagrams • Standard SLx Series Models Above 1500 Vdc

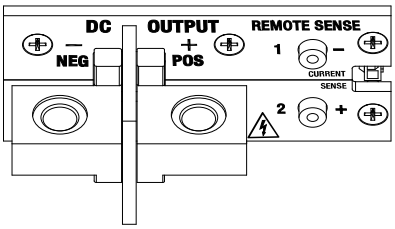


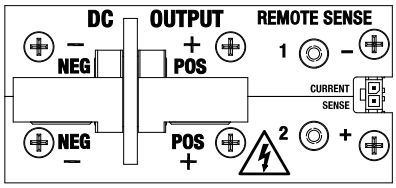
Dimensional Diagrams • SLx Series Models Up To 1500 Vdc with Water Cooling (+WC) Option



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

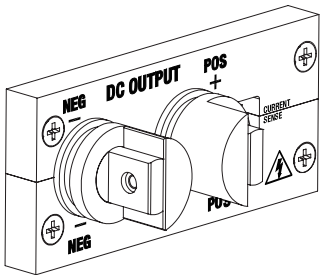
Two views shown, 3/8" mating hardware included (not shown)

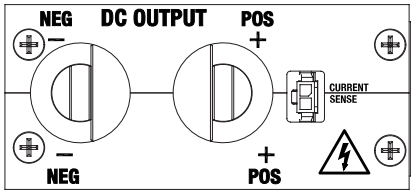




DC Output Bus Bars without Included Cover, Models above 1500 Vdc

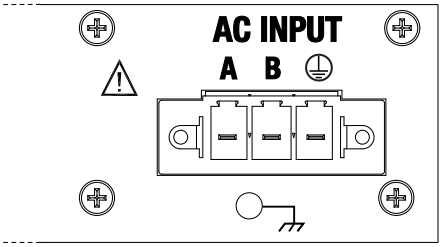
Two views shown, #6 mating hardware included (not shown)





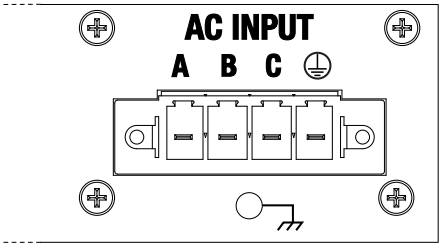
AC Input • 1-phase, 8 AWG

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



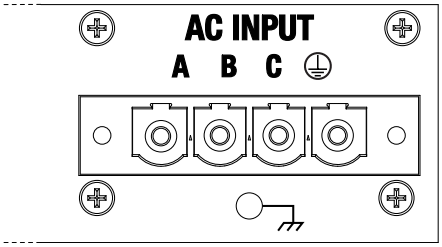
AC Input • 3-phase, 8 AWG

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.



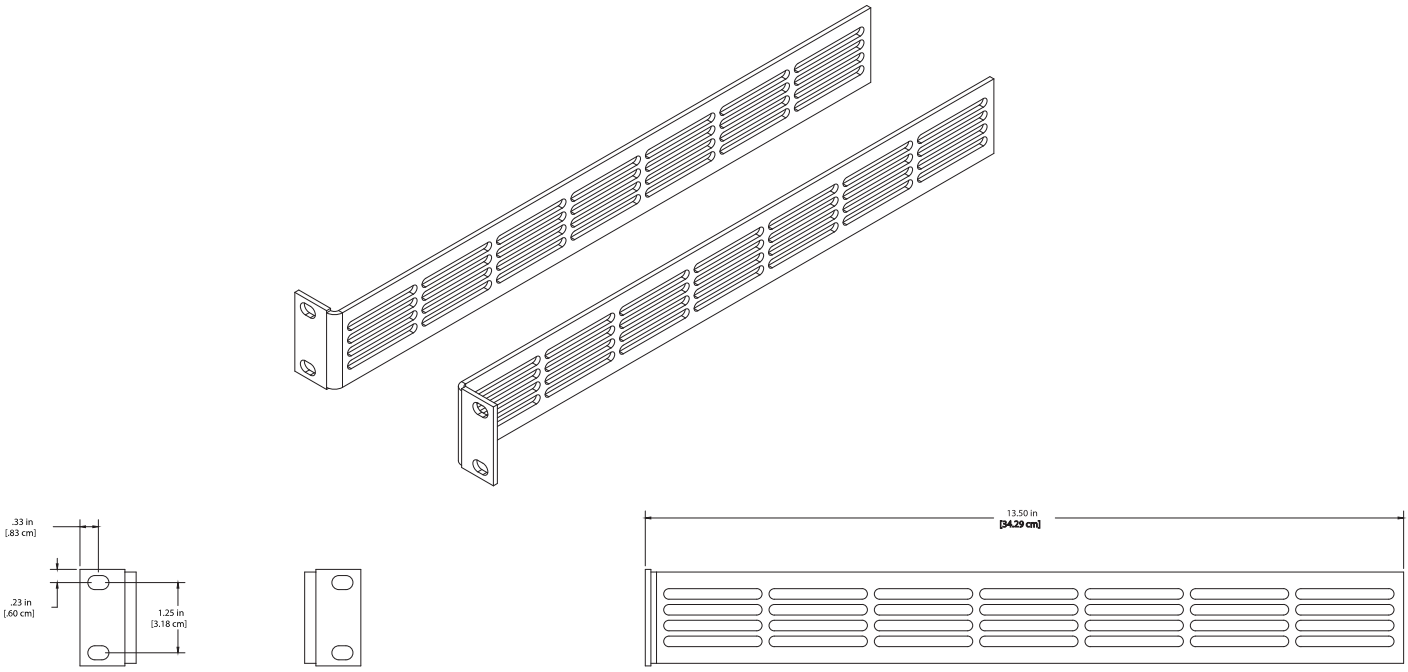
AC Input • 3-phase, 6 AWG

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 Integrated Options Available

+C1 Black Enclosure

Textured black powder coat finish and black front panel

+FP1 Blank Front Panel

The FP1 blank front panel option removes all front-panel controls except for a status indicator and on/off rocker switch, while still providing full functionality via computer and User I/O control

+CAN CANopen

CANopen communication protocol and dual RJ-45 interface enabling CAN bus communications, popular within automotive applications

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 communication protocol and dual RJ-45 interface for high-performance communication in factory automation, motion control, and robotics

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 communication protocol and dual RJ-45 interface with EIS profile for industrial automation, commonly used in Allen Bradley, Schneider Electric, and Omron PLCs

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.

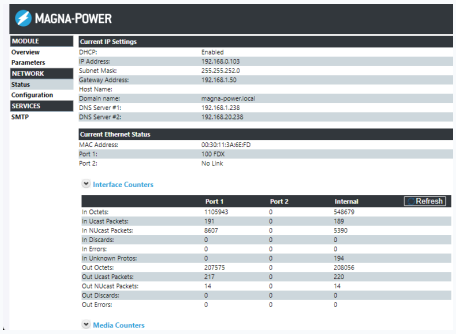
Another advantage is its flexibility and scalability. EtherNet/IP allows for easy integration of devices and systems from different vendors, making it an ideal choice for multi-vendor environments. It also allows for easy expansion of the network, with the ability to add or remove devices without affecting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

+LXI LXI TCP/IP Ethernet

TCP/IP Ethernet communication protocol and single RJ-45 interface, certified to the LXI Class C standard, for socket communications using conventional computer networks

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 communication protocol and dual RJ-45 interface with full command set support as Modbus commands

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 communication protocol and dual RJ-45 interface for industrial automation, commonly used in Siemens PLCs

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

Internal product ruggedization, which has been independently tested to comply with select MIL-STD-810G and RTCA DO-160 shock and vibration specifications.

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 0ºC to 50ºC. Storage temperature for all products is rated from -40°C to +85°C.

+WC Water Cooling

Using an integrated central heat exchanger and specially wound magnetic components, water cooling is available for select Magna-Power power supplies for use in densely packaged system cabinets, where heat removal by the product's standard air cooling presents a challenge.

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 Product Images







SLx Series with Blank Front Panel (+FP1) option



SLx Series with Black Enclosure (+C1) 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 Downloads

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

12 Contact

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