# Serie SLX

## Programmable DC Power Supply

Fuente de alimentación de montaje de estante digital versátil, 1.5 kW a 10 kW en 1U

CERTIFICACIONES



| POTENCIA | VOLTAJE | CORRIENTE | MODELOS | TAMAÑO |
|---|---|---|---|---|
| **1.5** kW to **10** kW | **5** Vdc to **1000** Vdc | **1.5** Adc to **250** Adc | **171** | **1** U |

## 1 Descripción

Sobre la base de más de 40 años de innovación de la fuente de alimentación y con más de 26,500 más configuraciones de modelos diferentes, la serie SLX es la serie de fuente de alimentación DC más verstaile de Magna-Power jamás creada. La serie SLX ofrece modelos a 6 niveles de potencia diferentes, con un rango altamente granular de voltajes y corrientes. Con la densidad de potencia líder líder en la industria, el procesamiento de potencia de alimentación de corriente resistente y la arquitectura de control digital DSP DSP DSP DSP de última generación, la serie SLX cumple con los requisitos de potencia de DC a largo plazo de la investigación y el desarrollo, la automatización industrial y aplicaciones de control de procesos.

## 2 Características clave

- Control de voltaje, corriente y potencia
- Procesamiento de potencia alimentado por corriente resistente
- Precisión de 16 bits con control de un solo bit
- Conjuntos de comandos SCPI y Modbus
- Características de protección programables
- Talado de emergencia de enclavamiento y hardware
- Control de tasa de juego
- Operación continua de energía completa hasta 50 ° C ambiental
- Puerto de E/S de 26 pines analógico configurable
- Digital-Hybrid Magnalink ™ Master-Skining
- Sensado de voltaje local, remoto y sin plomo
- Estándar de interfaces USB (delantera y trasera) y RS485
- Can, EtherCat, Ethernet/IP, LXI TCP/IP Ethernet, ModbusTCP y Profinet Opciones de comunicaciones totalmente integradas disponibles
- Plataforma de software MagnaCTRL incluida
- Hecho en los Estados Unidos

## 3 Opciones Integradas Disponibles

| | |
|---|---|
| **+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 Especificaciones

Las especificaciones están sujetas a cambios sin previo aviso. Salvo que se indique lo contrario, todas las especificaciones se miden en los valores nominales máximos del producto.

## 4.1 AC Input Specifications

| PARÁMETRO | VALOR | CONDICIONES |
|---|---|---|
| **Input Voltages Available** | UI, 100-240 Vac, 1-phase<br>UI2, 208-240 Vac, 1-phase<br>208 Vac, 3-phase<br>240 Vac, 3-phase<br>380/400 Vac, 3-phase<br>415 Vac, 3-phase<br>440 Vac, 3-phase<br>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<br>> 0.92, 3-phase AC inputs | Measured at max power |
| **Input Isolation** | ± 2000 Vdc | Measured line-to-ground |

## 4.2 DC Output Specifications

| PARÁMETRO | VALOR | CONDICIONES |
|---|---|---|
| **Voltage Ripple** | Model specific. Refer to models table. | |
| **Line Regulation** | Voltage control: ± 0.04% of rated voltage<br>Current control: ± 0.03% of rated current<br>Power control: ± 0.05% of rated power | |
| **Load Regulation** | Voltage control: ± 0.02% of rated voltage<br>Current control: ± 0.06% of rated current<br>Power control: ± 0.08% of rated power | |
| **Stability** | Voltage control: ± 0.005% of rated voltage<br>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<br>Current control: 0.04%/ºC of rated current<br>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]<br>Maximum (Fastest): Rated voltage x 0.006 [V/ms] | Standard models, programmable |
| **Slew Rate, Current** | Minimum (Slowest): Rated current x $2^{-15}$ [A/ms]<br>Maximum (Fastest): Rated current x 0.005 [A/ms] | Standard models, programmable |
| **Slew Rate, Power** | Minimum (Slowest): Rated power x $2^{-15}$ [W/ms]<br>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

| PARÁMETRO | VALOR | CONDICIONES |
|---|---|---|
| **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<br>Current: ± 0.06% of rated current<br>Power: ± 0.10% of rated power | Output value to set point value, programmed via front panel or communication interfaces |

## 4.3 Programming Specifications

| PARÁMETRO | VALOR | CONDICIONES |
|---|---|---|
| **Accuracy, Digital Measurement** | Voltage: ± 0.08% of rated voltage<br>Current: ± 0.08% of rated current<br>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<br>Current: ± 0.08% of rated current<br>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<br>Current: ± 0.80% of rated current<br>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<br>Current: ± 0.08% of rated current<br>Power: ± 0.10% of rated power | Output value to returned value, via analog output |
| **Analog I/O** | High-Speed Input Sampling Rate: 2 kHz<br>Programming Voltage: 0-10 V<br>Monitoring Voltage: 0-10 V, 3 mA capacity<br>Monitoring Impedance: 0.005 Ω<br>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

| PARÁMETRO | VALOR | CONDICIONES |
|---|---|---|
| **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<br>USB Host (Rear): Type B<br>RS485 (Rear): RJ-45<br>MagnaLINK™: RJ-25 x 2 | Standard |
| **External User I/O Port** | 26-pin D-sub DB-26, female<br>Referenced to ground; isolated from the DC output<br>See User Manual for pin layout | Standard |
| **Communication Interfaces** | CANopen (+CAN): DB-9<br>EtherCAT (+ECAT): RJ-45 x 2<br>EtherNet/IP (+EIP): RJ-45 x 2<br>LXI TCP/IP Ethernet (+LXI): RJ-45<br>ModbusTCP (+MTCP): RJ-45 x 2<br>PROFINET (+PROF): RJ-45 x 2 | Optional |

## 4.5 Physical Specifications

| PARÁMETRO | VALOR | CONDICIONES |
|---|---|---|
| **Size** | 1U<br>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)<br>2.6 kW models: 34 lbs (15.42 kg)<br>4 kW models: 35 lbs (15.88 kg)<br>6 kW models: 35 lbs (15.88 kg)<br>8 kW models: 36 lbs (16.33 kg)<br>10 kW models: 36 lbs (16.33 kg) | |
| **Racking Standard** | EIA-310 | |
| **Rear Support Rails** | Included | |

## 4.6 Environmental Specifications

| PARÁMETRO | VALOR | CONDICIONES |
|---|---|---|
| **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

| PARÁMETRO | VALOR | CONDICIONES |
|---|---|---|
| **EMC** | Complies with 2014/30/EU (EMC Directive)<br>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 Guía de pedido de modelos

**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 Modelos

| 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 Características

## Do more with MagnaLINK™ distributed digital control.

### Control y medición de precisión

Precisión impulsada por DSP desde el punto de ajuste hasta el punto de carga.

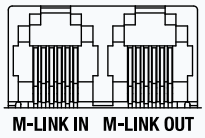



La Serie SLx cuenta con la plataforma de control digital xGen MagnaLINK™ de Magna-Power, que utiliza una red distribuida de DSPs y comunicaciones de alta velocidad entre placas mediante un protocolo de comunicación de bajo nivel desarrollado internamente. La programación interna de ganancias con ganancias ajustables en campo admite una amplia gama de condiciones de carga.

- Control de voltaje, corriente y potencia con resolución de 16 bits.
- Controles programables de velocidad de respuesta.
- Estabilidad nativa de 100 ppm.
- Detección de voltaje local, remota y sin cables para una regulación precisa en el punto de carga.

### Master-slaving plug-and-play

Escale la potencia sin interrupciones con clasificaciones de sistema agregadas.




Los puertos duales MagnaLINK proporcionan master-slaving digital-híbrido de última generación, permitiendo que una unidad controle un conjunto sincronizado. Amplíe la capacidad de corriente conectando en paralelo hasta 16 unidades. Una conexión secundaria de detección de corriente proporciona corriente analógica en tiempo real al maestro para una agregación y visualización precisas.

- Conexión en paralelo de hasta 16 unidades con cableado de interfaz sencillo.
- Un solo punto de ajuste; salida y protecciones sincronizadas.
- Retroalimentación secundaria de detección de corriente para un reparto preciso.
- Autoconfiguración y mediciones agregadas en una única pantalla maestra.

## Control intuitivo y brillante desde el panel frontal

Pantallas brillantes, control preciso, construido para durar.



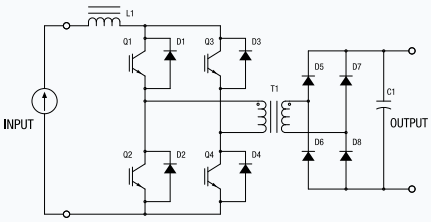

La serie SLx combina una pantalla híbrida de larga duración—segmentos V/I de alta visibilidad en verde más una pantalla multilínea de estado/configuración—con controles precisos y duraderos. Una perilla de aluminio mecanizado con anodizado negro permite un ajuste fino del punto de operación, mientras que un teclado numérico de 10 teclas y teclas de dirección permiten la entrada digital exacta. Un botón dedicado de bloqueo asegura la configuración, y un puerto USB frontal facilita la conexión a PC (también se incluye USB trasero).

- Pantalla híbrida: segmentos V/I brillantes + estado y menú multilínea.
- Perilla de control de aluminio mecanizado para ajustes finos.
- Teclado de 10 teclas + flechas para entrada de punto de operación de 16 bits.
- Bloqueo en el panel frontal y USB frontal para un uso rápido y seguro.

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

## Procesamiento de energía alimentado por corriente confiable

Robusto por diseño: topología autoprotegida para máximo tiempo de actividad.




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.

## Seguridad en capas, enclavamiento y parada de emergencia

Límites programables estándar más desconexión por cableado directo.



Una etapa de arranque suave mantiene la corriente de irrupción por debajo del consumo en estado estacionario, mientras que los diagnósticos integrados supervisan las condiciones de línea, térmicas e internas. Ante una falla, un disparo instantáneo (OSHT) detiene el inversor. Las fallas se reportan en la pantalla de estado del panel frontal y a través de SCPI/Modbus para una resolución rápida de problemas.

- El arranque suave limita la corriente de irrupción; el consumo de CA se mantiene por debajo de la corriente a plena carga.
- Disparos programables: sobretensión, sobrecorriente, sobrepotencia.
- Monitoreo térmico en disipador de calor y capacitores de salida.
- Entrada de enclavamiento de 5V para contacto seco, inhibición con retención (se mantiene la alimentación de control).
- Parada de emergencia de 24 V que bypasea la lógica para interrumpir la CA; desconexión completa por hardware.

### Diagnósticos de objetivo

Matriz LED mapeada a los ensamblajes internos para una rápida clasificación en campo.




La Serie SLx presenta Target Diagnostics: los LEDs de estado de cada ensamblaje principal están mapeados a una matriz LED montada en la parte trasera. Los técnicos pueden localizar fallos o problemas de configuración mientras la unidad permanece montada en rack y sellada. Junto con el editor EEPROM de MagnaCTRL, permite un soporte remoto eficaz para mantener los sistemas en funcionamiento.

- La matriz LED trasera replica los LEDs de estado de cada ensamblaje.
- Diagnostique fallos y configuraciones con el producto montado y las cubiertas puestas.
- Funciona con el editor EEPROM de MagnaCTRL para verificaciones/actualizaciones remotas.
- Reduce el tiempo de resolución de problemas y minimiza el tiempo de inactividad.

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

### Integración de software simplificada

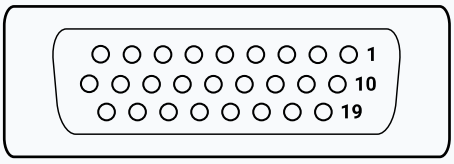
Comandos legibles, resultados rápidos—funciona con cualquier lenguaje.

La serie SLx ofrece una API clara basada en texto con SCPI y Modbus nativos. Más de 60 comandos bien documentados cubren inicio/parada, puntos de ajuste para voltaje, corriente y potencia, control de velocidad de respuesta, mediciones de alta precisión y configuración completa—para que sus scripts y sistemas pasen del concepto a la producción rápidamente.

- Conjuntos de comandos SCPI y Modbus con comportamiento consistente.
- Inicio/parada y protecciones: habilitar salida, establecer límites de disparo, consultar estado.
- Lecturas de alta precisión: voltaje, corriente, potencia y retroalimentación de sensor.
- Documentación y ejemplos orientados al desarrollador.

### E/S de usuario externo

Controles analógico-digitales aislados y flexibles.




Todas las fuentes de alimentación de la Serie SLx incluyen de serie un conector D-Sub de 26 pines designado como E/S de usuario externo. Este conector proporciona:

- 8 salidas digitales (lógica de 5V)
- 4 entradas digitales (lógica de 5V)
- 4 salidas analógicas (lógica de 0-10V)
- 4 entradas analógicas (lógica de 0-10V)

La E/S de usuario externo está aislada de los terminales de salida y referenciada a tierra. Los pines del conector son configurables por el usuario, lo que permite seleccionar las funciones necesarias para su aplicación, al tiempo que ofrece capacidad futura para nuevas características. Utilice las salidas digitales para integrar la fuente de alimentación con, por ejemplo, señales de habilitación externas o lógica de monitoreo de fallas digitales, o monitoree el voltaje-corriente utilizando las salidas analógicas de 0-10V. También se proporciona una entrada analógica dedicada de alta velocidad, muestreada a 2 kHz para un control casi en tiempo real.

## Comunicaciones y control industrial

De redes de laboratorio a PLCs: integre en sus propios términos.

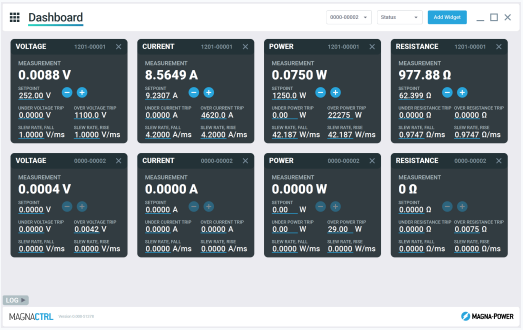



La Serie se entrega lista para conectar con USB dual (frontal y trasero) y RS485, con soporte para SCPI y Modbus. Para redes y automatización industrial, elija opciones totalmente integradas con soporte Modbus, documentación completa y archivos de descripción de dispositivos para agilizar la configuración del PLC y el mapeo de etiquetas.

- USB dual estándar (frontal + trasero) y RS485.
- Red TCP/IP con la opción LXI TCP/IP Ethernet (+LXI)
- Opciones de buses de campo para PLC: CANopen (+CAN), EtherCAT (+ECAT), EtherNet/IP (+EIP), Modbus-TCP (+MTCP), PROFINET (+PROF).
- Archivos de dispositivos incluidos: EDS (CANopen/EtherNet/IP), ESI XML (EtherCAT), GSDML (PROFINET) para una rápida integración con PLC.
- Documentación completa de comandos, ejemplos y diagnósticos.

## Software MagnaCTRL incluido

Control de panel multi-producto, diagnósticos y actualizaciones—listos para usar.




MagnaCTRL es una plataforma de control multi-producto moderna incluida con los productos xGen. Cree paneles de control, configure E/S, ejecute actualizaciones y acceda a diagnósticos avanzados—todo desde una sola aplicación.

- Panel configurable: agregue/organice widgets para monitorear y controlar múltiples unidades conectadas.
- Explorador de productos: detecte dispositivos automáticamente, guarde conexiones y reconéctese automáticamente en futuras sesiones.
- Panel de E/S de usuario externo: mapee E/S de 26 pines, exporte/importe mapas de pines para despliegues rápidos.
- Actualizaciones de firmware/software: detecte nuevas versiones automáticamente; realice actualizaciones manuales sin conexión si es necesario (consulte el Registro de cambios)
- Herramientas de calibración: ajuste ganancias/offsets de programación/medición; con orientación, ajuste las ganancias del lazo de control.
- Registro de datos: salida gráfica y registro .csv de mediciones y configuraciones de voltaje, corriente y potencia a lo largo del tiempo

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

### Made in the USA

Fabricación verticalmente integrada para un control de calidad total.

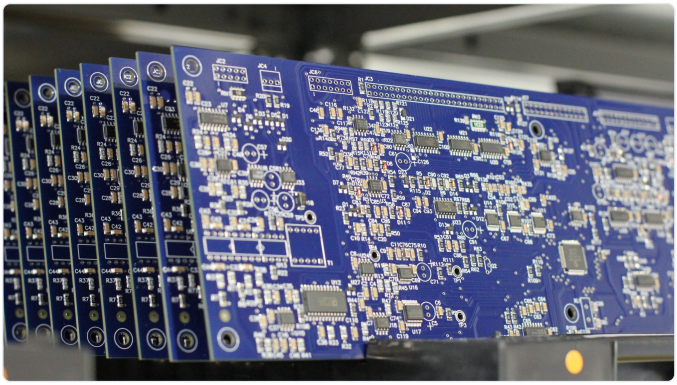


Los productos de Magna-Power se diseñan, fabrican, prueban y reciben servicio en la sede central de Magna-Power de 73,500 sq-ft en Flemington, New Jersey, donde el trabajo en metal, los magnéticos, el ensamblaje de PCB y el rodaje se realizan internamente para un control riguroso de la calidad, los costos y los tiempos de entrega.

- Fabricado en EE. UU.: Ingeniería, manufactura y servicio bajo un mismo techo.
- Producción interna: Trabajo en metal, magnéticos, PCBs SMT y acabados.
- Fiabilidad comprobada: Cada unidad completamente probada, calibrada y sometida a rodaje.

### Servicio mundial y soporte de piezas OEM

Experiencia de fábrica, respuesta local.

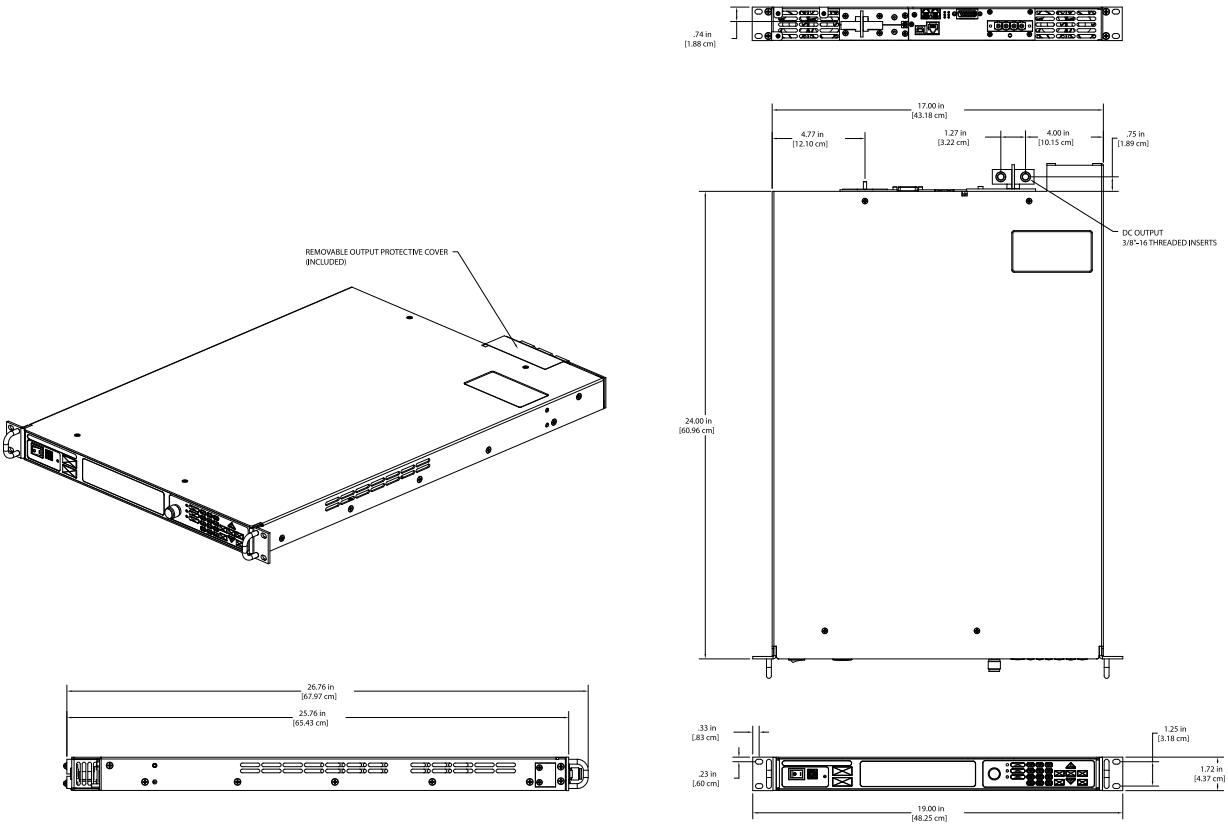


Magna-Power respalda sus productos con centros de servicio de fábrica y autorizados en América del Norte, Europa, el Reino Unido, Asia-Pacífico, Asia Oriental y América del Sur, utilizando procedimientos de fábrica y piezas originales para restaurar las unidades a sus especificaciones originales, dentro o fuera de garantía.

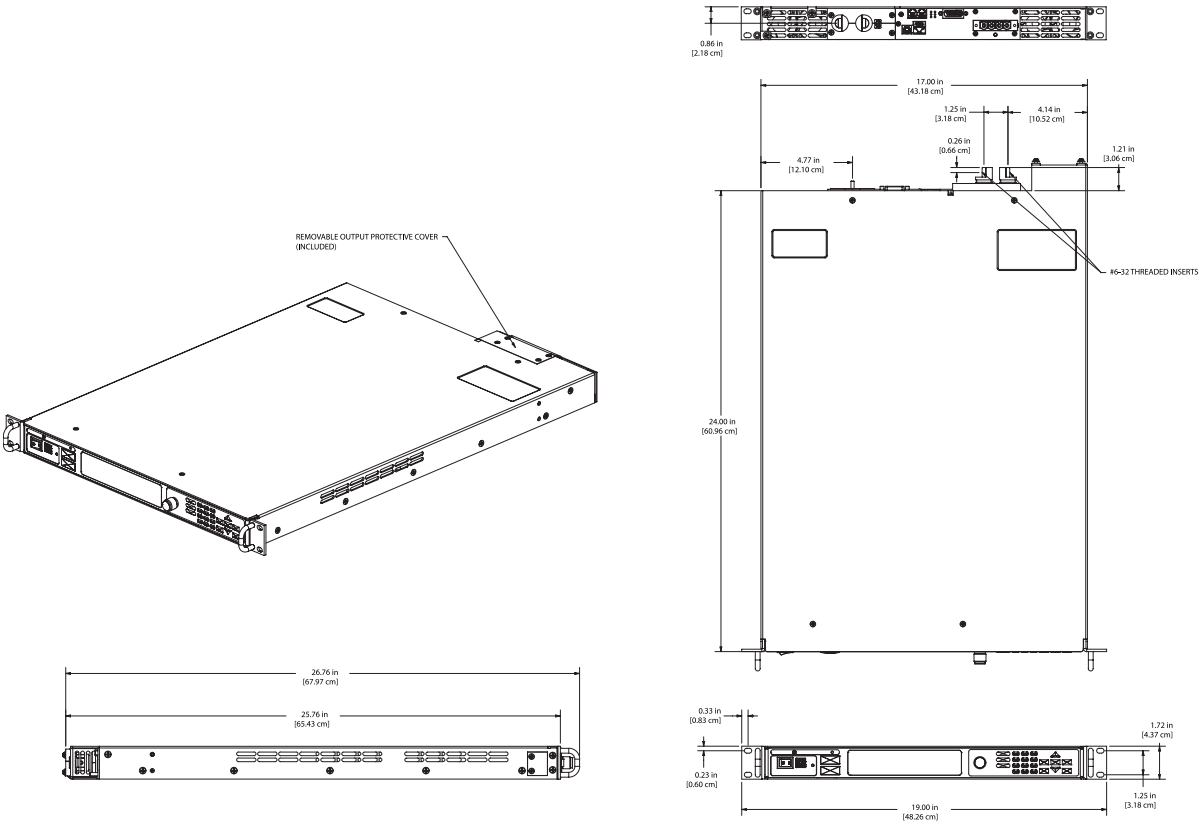
- Cobertura global: sede central en Nueva Jersey más centros de servicio autorizados regionales.
- Reparaciones consistentes: diagnósticos de fábrica, instrucciones de trabajo y diagramas del sistema.
- Piezas OEM originales: ensamblajes de repuesto probados para un servicio predecible y con mínimo tiempo de inactividad.

# 8 Diagramas

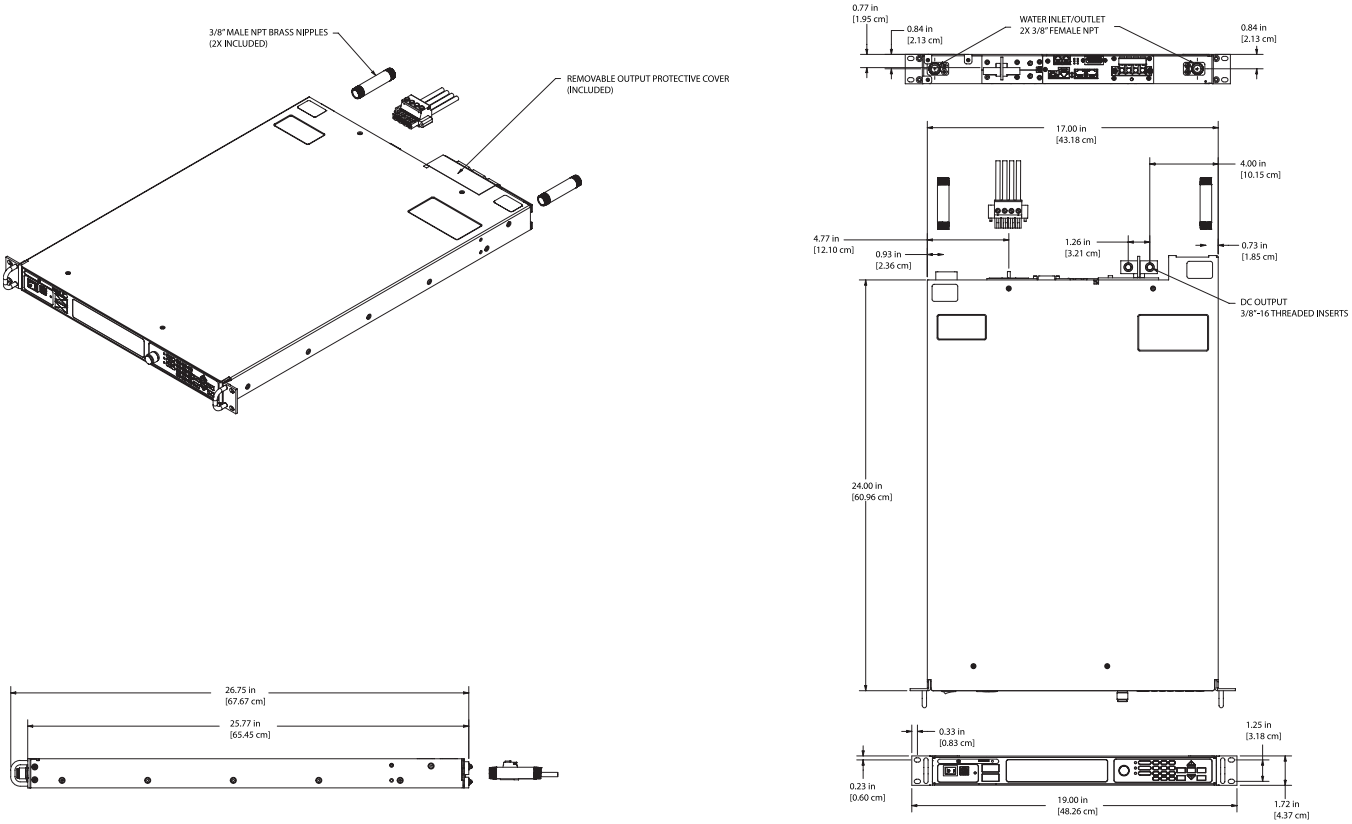
## Dimensional Diagrams • Standard SLx Series Models Up To 1500 Vdc



## Dimensional Diagrams • Standard SLx Series Models Above 1500 Vdc

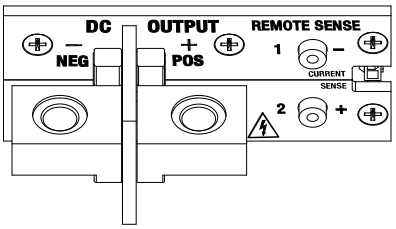


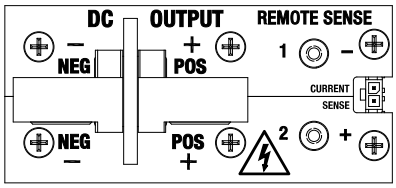

## Dimensional Diagrams • SLx Series Models Up To 1500 Vdc with Water Cooling (+WC) Option



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

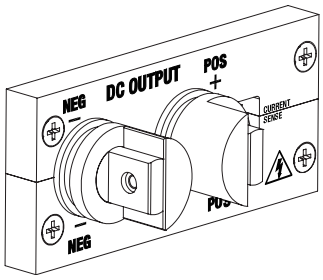
Two views shown, 3/8" mating hardware included (not shown)

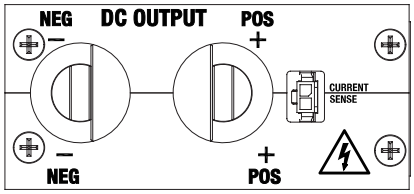



### DC Output Bus Bars without Included Cover, Models above 1500 Vdc

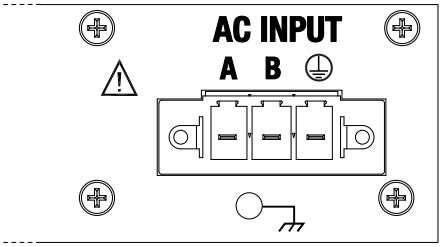
Two views shown, #6 mating hardware included (not shown)



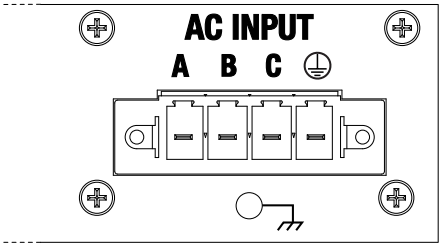

### AC Input • 1-phase, 8 AWG

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



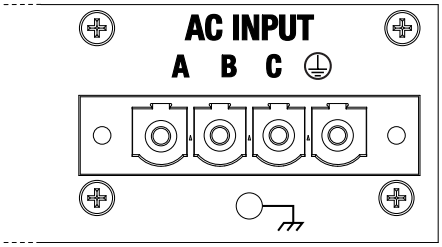

### AC Input • 3-phase, 8 AWG

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.



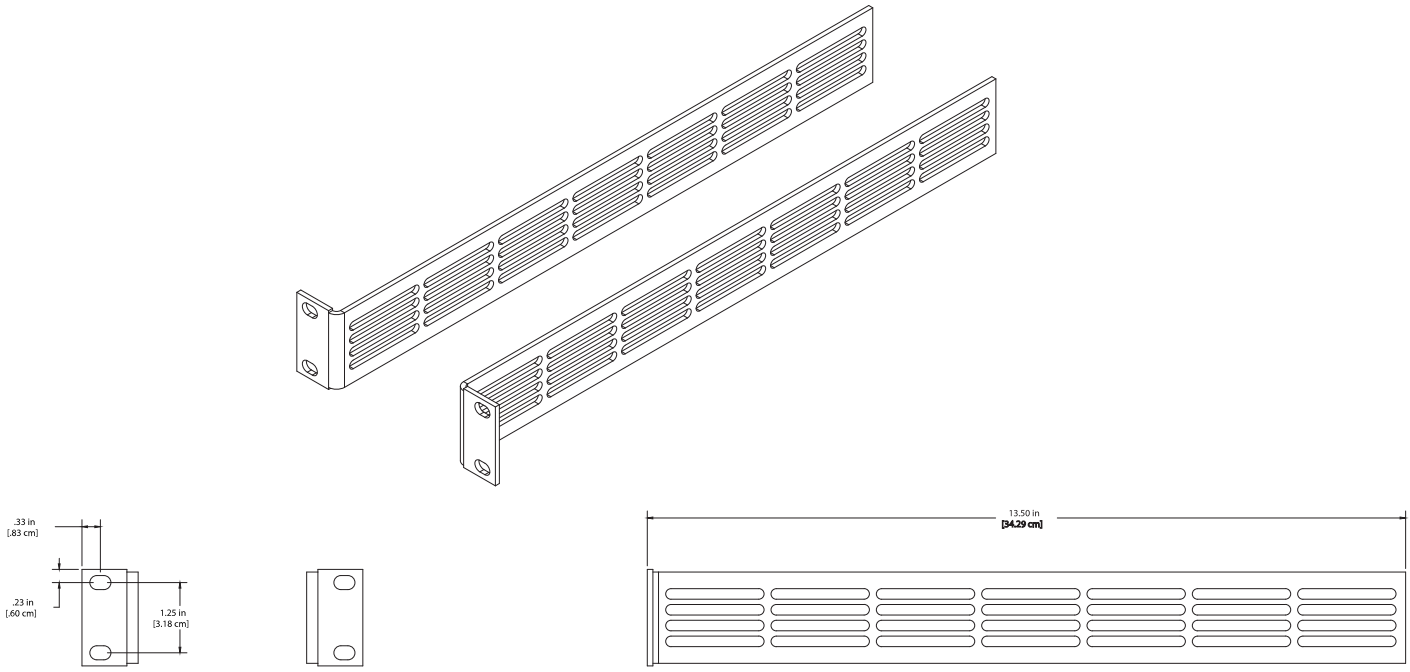

### AC Input • 3-phase, 6 AWG

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 Opciones Integradas Disponibles

### +C1 Black Enclosure

Acabado texturizado con pintura en polvo negro y panel frontal negro

### +FP1 Blank Front Panel

La opción de panel frontal en blanco FP1 elimina todos los controles del panel frontal excepto un indicador de estado y un interruptor basculante de encendido/apagado, manteniendo la funcionalidad completa mediante control por computadora y E/S de usuario

### +CAN CANopen

Protocolo de comunicación CANopen e interfaz RJ-45 dual que permite comunicaciones por bus CAN, popular en aplicaciones automotrices

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

Protocolo de comunicación EtherCAT e interfaz dual RJ-45 para comunicaciones de alto rendimiento en automatización industrial, control de movimiento y robótica

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

Protocolo de comunicación EtherNet/IP e interfaz RJ-45 dual con perfil EIS para automatización industrial, comúnmente utilizado en PLCs Allen Bradley, Schneider Electric y Omron

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.

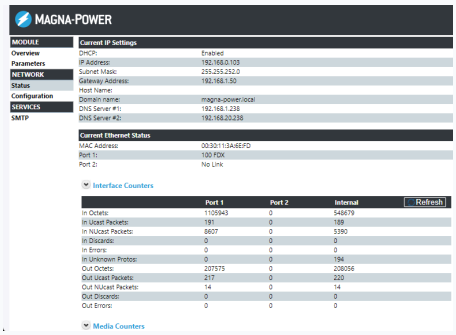
Another advantage is its flexibility and scalability. EtherNet/IP allows for easy integration of devices and systems from different vendors, making it an ideal choice for multi-vendor environments. It also allows for easy expansion of the network, with the ability to add or remove devices without affecting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




Página web EtherNet/IP alojada en la opción +EIP de Magna-Power

## +LXI LXI TCP/IP Ethernet

Protocolo de comunicación TCP/IP Ethernet e interfaz RJ-45 única, certificado con el estándar LXI Clase C, para comunicaciones por socket mediante redes informáticas convencionales

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

Protocolo de comunicación Modbus-TCP e interfaz RJ-45 dual con soporte completo del conjunto de comandos como comandos Modbus

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

Protocolo de comunicación PROFINET e interfaz RJ-45 dual para automatización industrial, de uso habitual en PLCs Siemens

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

Refuerzo interno del producto, probado de forma independiente para cumplir con especificaciones seleccionadas de choque y vibración de los estándares MIL-STD-810G y RTCA DO-160.

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

Mediante un intercambiador de calor central integrado y componentes magnéticos con devanado especial, el enfriamiento por agua está disponible para fuentes de alimentación Magna-Power seleccionadas, para su uso en gabinetes de sistema con alta densidad de empaquetado, donde la extracción de calor mediante el enfriamiento de aire estándar del producto representa un desafío.

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 Imágenes del producto









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 Descargas

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

## 12 Contacto

**Magna-Power Electronics, Inc.**
39 Royal Road, Flemington, NJ 08822, United States of America
TELÉFONO +1 908-237-2200 CORREO ELECTRÓNICO
sales@magna-power.com