ML Serie

Programmable DC Power Supply

ZERTIFIZIERUNGEN



LEISTUNG	SPANNUNG	STROM	MODELLE
500 kW to **10** MW+	**100** Vdc to **6000** Vdc	**83** Adc to **5000** Adc (per unit)	**38**

1 Beschreibung

Die ML Serie von Magna-Power Electronics wurde von Grund auf entwickelt, um einen neuen Standard in Leistungsdichte und Performance zu setzen. Durch die Nutzung fortschrittlicher Wasser-Kühltechnologie erreichen die 500 kW und 1.000 kW ML Serienmodelle eine nahezu vierfache Erhöhung der Leistungsdichte im Vergleich zu den luftgekühlten Modellen von Magna-Power. Mit der Fähigkeit, in Master-Slave-Parallelschaltungen zu arbeiten, kann die ML Serie Leistungsstufen von über 10 MW erreichen. Basierend auf Magna-Powers bewährter stromgespeister Leistungstopologie und innovativer Harmonischenneutralisationstechnologie bieten die Netzteile der ML Serie zuverlässige und effiziente Stromumwandlung mit geringer harmonischer Verzerrung. Entwickelt und hergestellt in Flemington, New Jersey, verkörpern die Netzteile der ML Serie Magna-Powers Engagement für Qualität, Zuverlässigkeit und fortschrittliche Technik.

2 Hauptmerkmale

- 500 kW und 1.000 kW Modelle; erweiterbar auf 10 MW
- 12-Bit Präzisionssteuerung
- Fernprogrammierung mit SCPI-Befehlen
- Programmierbare Schutzfunktionen
- Sicherheitsverriegelung für externen Not-Aus
- LabVIEW-Treiber
- Dauerbetrieb mit voller Leistung bis 50°C Umgebungstemperatur
- 37-poliger Analog-Digital Benutzer-I/O-Anschluss
- Integriertes Magnetventil zur Kondensationskontrolle
- Hochleistungs-Master-Slaving
- Lokale, entfernte und kabellose Spannungsmessung
- RS232-Standard und LAN TCP/IP Ethernet-Kommunikationsoptionen verfügbar
- RIS Panel Softwareplattform enthalten
- Hergestellt in den USA

3 Integrierte Optionen verfügbar

+ISO	High Isolation Output
+HS	High Slew Rate Output
+GPIB	IEEE-488 GPIB
+BD	Integrated Blocking Diode
+LXI	LXI TCP/IP Ethernet

4 Spezifikationen

Spezifikationen können ohne Vorankündigung geändert werden. Sofern nicht anders angegeben, wurden alle Spezifikationen bei den maximalen Nennwerten des Produkts gemessen.

4.1 AC Input Specifications

PARAMETER	WERT	BEDINGUNGEN
Input Voltages Available	440 Vac, 3-phase 480 Vac, 3-phase	AC Input voltage specified at time of order and cannot be modified
Input Voltage Tolerance	± 10%	
Input Voltage Frequency	50-60 Hz	
Power Factor	> 0.96	Measured at max power
Input Isolation	± 2000 Vdc	Measured line-to-ground
AC Circuit Protection	UL/CSA listed circuit breaker	

4.2 DC Output Specifications

PARAMETER	WERT	BEDINGUNGEN
Voltage Ripple	Model specific. Refer to models table.	
Line Regulation	Voltage control: ± 0.04% of rated voltage Current control: ± 0.03% of rated current	
Load Regulation	Voltage control: ± 0.02% of rated voltage Current control: ± 0.06% of rated current	
Stability	± 0.10%	FWHM, measured at 25ºC over 8 hrs after 30 min warm-up
Temperature Coefficient	Voltage control: 0.04%/°C of rated voltage Current control: 0.06%/ºC of rated current	
Efficiency	Up to 96%. Model specific. Refer to Models table.	
Slew Rate	< 170 ms, output voltage change from 0 to 63% < 200 ms, output current change from 0 to 63%	Standard Models
Slew Rate	< 5 ms, output voltage change from 0 to 63% < 10 ms, output current change from 0 to 63%	Models with High Slew Rate (+HS) Option
Output Isolation	± 1500 Vdc	Measured output-to-ground, models rated ≤ 1000 Vdc
Output Isolation	± 6000 Vdc	Measured output-to-ground, models rated > 1000 Vdc or models with High Isolation Output (+ISO) option

4.3 Programming Specifications

PARAMETER	WERT	BEDINGUNGEN
Resolution, Digital Programming	12-bit, 0.025% of rated voltage, current or power	Front panel or communication interfaces
Accuracy, Programming	Voltage: ± 0.075% of rated voltage Current: ± 0.075% of rated current	Output value to set point value
Accuracy, Measurement	Voltage: ± 0.20% of rated voltage Current: ± 0.20% of rated current	Output value to returned value
Trip Settings Range	Over Voltage: 10% to 110% of rated voltage Over Current: 10% to 110% of rated current	
Computer Command Protocol	Standard Commands for Programmable Instruments (SCPI) (ASCII-based commands)	
Remote Sense Limits	3% maximum voltage drop from output to load	Wired; Available on Models Rated ≤ 1000 Vdc

4.3 Programming Specifications

PARAMETER	WERT	BEDINGUNGEN
Analog I/O	Analog programming inputs: 0-10 V Analog programming impedance: 10 kΩ Analog measurement outputs: 0-10V, 5 mA capacity Analog measurement impedance: 100 Ω Analog reference signal: 10 V, 5 mA capacity, 1 Ω	4 analog programming inputs, 2 analog measurement outputs, Reference signal provided
Digital I/O	Digital control inputs: 5 V Digital control inputs impedance: 10 kΩ Digital monitoring outputs: 5 V, 5 mA capacity Digital reference signal: 5 V, 25 mA capacity	5 digital control inputs, 15 digital monitoring outputs, Reference signal provided

4.4 Interace Specifications

PARAMETER	WERT	BEDINGUNGEN
Front Panel Programming	Two machined aluminum 10-turn knobs and keypad	
Communication Interfaces	RS232: D-sub DB-9, Female	Standard
Communication Interfaces	LXI TCP/IP Ethernet (+LXI): RJ-45	Optional
External User I/O Port	37-pin D-sub DB-37, female Referenced to ground; isolated from the DC output See User Manual for pin layout	Standard

4.5 Physical Specifications

PARAMETER	WERT	BEDINGUNGEN
Size & Weight	76.4” H x 72” W x 31.5” D (194.1 x 182.9 x 80.0 cm) 6800 lbs (3084 kg)	500 kW models
Size & Weight	Ships as two components: 1000 kW Power Supply 76.4” H x 72” W x 31.5” D (194.1 x 182.9 x 80.0 cm) 4750 lbs (2155 kg) 1000 kW Harmonic Neutralizer 76.4” H x 48” W x 31.5” D (194.1 x 121.9 x 80.0 cm) 4350 lbs (1973 kg)	1000 kW Models

4.6 Environmental Specifications

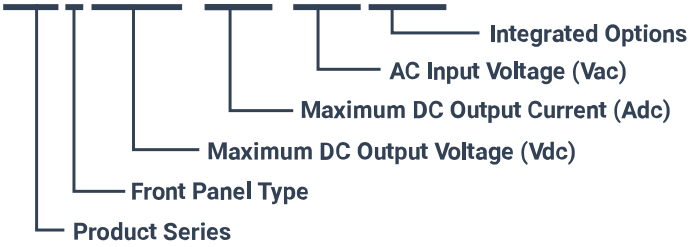
PARAMETER	WERT	BEDINGUNGEN
Ambient Operating Temperature	0°C to 50°C	
Storage Temperature	-40°C to +85°C	
Humidity	Relative humidity up to 95% non-condensing	
Air Flow	Bottom air inlet, top exhaust	To ensure even heat distribution for water cooling system
Water Coolant Supply	Maximum inlet temperature: 25ºC Maximum inlet pressure: 80 psi Inlet and outlet fittings provided: 1” Female NPT Materials in coolant path: Copper pipe, PEX tubing, brass solenoid & fittings	Requirement for supplied coolant
Minimum Coolant Flow Rate	9 GPM	500 kW models
Minimum Coolant Flow Rate	15 GPM	1000 kW models

4.7 Regulatory Specifications

PARAMETER	WERT	BEDINGUNGEN
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	

5 Modell-Bestellleitfaden

MLD1250-800/480+LXI



6 Modelle

Max Voltage Vdc	500 kW Max Current Adc	1000 kW Max Current Adc	Ripple mVrms	Efficiency
100	5000	–	100	91%
125	4000	–	100	91%
160	3125	–	120	92%
200	2500	5000	125	92%
250	2000	4000	130	92%
300	1666	3333	160	93%
375	1333	2666	170	93%
400	1250	2500	180	95%
500	1000	2000	220	95%
600	833	1666	300	95%
800	625	1250	400	96%
1000	500	1000	500	96%
1250	400	800	500	96%
1600	312	625	600	96%
2000	250	500	800	96%
2500	200	400	900	96%
3000	166	333	1000	96%
4000	125	250	1100	96%
5000	100	200	1500	96%
6000	83	166.6	2000	96%

7 Merkmale

High power density, water cooled megawatt-scale DC power systems

Hochdichte, wassergekühlte Leistung

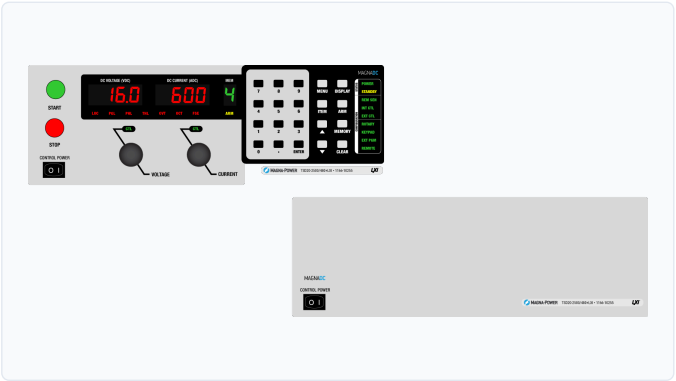
Saubere, präzise Ausgangsleistung von 500 kW bis 10 MW+.



Die programmierbaren DC-Netzgeräte der ML Serie nutzen fortschrittliche wassergekühlte Kühlplatten und interne Verteiler, um 500 kW und 1.000 kW pro Schrank bei bis zu 96% Wirkungsgrad zu liefern. Damit erreichen sie eine nahezu vierfach höhere Leistungsdichte als vergleichbare luftgekühlte Modelle und arbeiten bei voller Nennleistung bis 50°C Umgebungstemperatur. Basierend auf der stromgespeisten Topologie von MagnaDC bieten die Geräte der ML Serie eine 12-Bit-Programmierauflösung (0,025%), enge Leitungs-/Lastregelung und eine Spannungs- und Stromprogrammiergenauigkeit von ±0,075% bei geringer Restwelligkeit – und bringen so laborgerechte Leistung in Multi-Megawatt-Test- und Prozesssysteme.

Stufenlose Frontpanelsteuerung mit Blindplatten-Option

Bedienung dort, wo Sie sie brauchen – verborgen, wo nicht.



The standard SL front panel provides rotary and key-based control, bright digital metering, and clear status indicators, so operators can configure setpoints, start and stop the supply, and see system health at a glance. For OEMs and production tools, the optional blank (C-version) front panel removes local controls altogether while retaining full control via communication interfaces and rear 37-pin user I/O, keeping systems secure, clean, and operator-proof.

Konfiguriert nach Bestellung mit integrierten Optionen

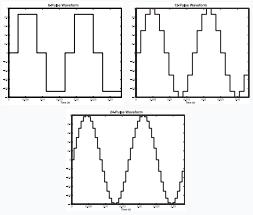
Umfangreiche Standardfunktionen, bei Bedarf erweiterbar.



Like the rest of the MagnaDC line, MT Series supplies start with a strong control base: SCPI over RS232, isolated rear User I/O, LabVIEW and IVI drivers, and Remote Interface Software included. From there, integrated options let you tailor each system for its role—High Isolation Output (+ISO) for extended series stacking, High Slew Rate Output (+HS) for faster dynamics, LXI TCP/IP Ethernet (+LXI) and IEEE-488 GPIB (+GPIB) for additional communications, plus protection and mechanical options such as an Integrated Blocking Diode (+BD) and Pedestal Base (+PB) for fixed installations.

Harmonic Neutralizers für sauberere Hochleistungssysteme

Reduzieren Sie THD an der Quelle für eine einfachere Einhaltung der Netzqualitätsanforderungen.



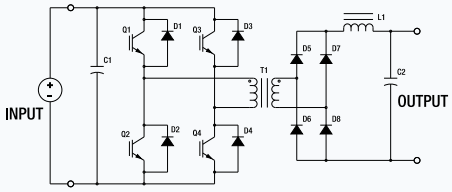
Oberschwingungen des Eingangsstroms sind ein inhärentes Nebenprodukt von Dreiphasen-Gleichrichtern: Ein standardmäßiges 6-Puls-Frontend erzeugt Oberschwingungsströme beim 1-, 5-, 7-, 11-, 13-fachen… der Grundfrequenz, wobei allein die 5. und 7. Harmonische bei etwa 20 % bzw. 14 % der Grundschwingung liegen. Diese Ströme können empfindliche Lasten anregen – wie Vorschaltgeräte für Beleuchtung mit Reihenkondensatoren/ Induktivitäten – und die Einhaltung von Netzqualitätsrichtlinien wie IEEE 519 erschweren. Der zuverlässigste Weg, Oberschwingungsprobleme zu minimieren, ist die Eliminierung der Oberschwingungsströme an der Quelle.

Für Hochleistungssysteme fertigt Magna-Power speziell gewickelte Harmonic Neutralizers, die die Anzahl der Eingangsphasen vervielfachen und den THD des Eingangsstroms passiv drastisch reduzieren. Standard-Magna-Power-Netzgeräte von 1,5–150 kW erzeugen eine 6-Puls-Wellenform, während 250 kW MT Series und 500 kW ML Series Modelle einen integrierten 12-Puls Harmonic Neutralizer und 1000 kW ML Series Modelle einen integrierten 24-Puls Harmonic Neutralizer besitzen – für den Anwender vollständig transparent.

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

Zuverlässige stromgespeiste Leistungsverarbeitung

Robust durch Design: selbstschützende Topologie für maximale Betriebszeit.



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.

Sicherheitsfunktionen & Verriegelung

Sanftanlauf, programmierbare Schutzfunktionen und eine mechanische Netztrennung für echte Sicherheit.



MagnaDC supplies start gently and watch continuously. A soft-start stage keeps inrush below steady-state draw, while built-in diagnostics monitor line, thermal, and control conditions. In standby or on a diagnostic fault, an embedded AC contactor mechanically disconnects the mains, assuring the unit only processes power when intended. Faults are shown on the front-panel status display, through 5V digital outputs, and are queryable via SCPI.

- Programmable trips: Over voltage (OVT) and over current (OCT)/
- Control integrity: Program-line over-voltage detection.
- Thermal protection: Over temperature on internal heatsinks.
- Interlock/E-stop fault monitoring as a standard diagnostic.
- Field integration: 5V interlock input (with 5V reference) for a dry-contact, latching inhibit with control power maintained.

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

Softwareintegration leicht gemacht

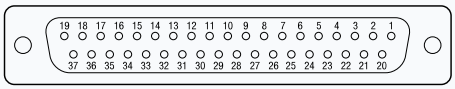
Lesbare Befehle, schnelle Ergebnisse – funktioniert mit jeder Programmiersprache.

MagnaDC-Netzgeräte bieten eine übersichtliche, textbasierte API mit nativem SCPI, einer ASCII-basierten Befehlssprache, die über Socket-Kommunikation gesendet wird. Über 40 gut dokumentierte Befehle decken Start/Stopp, Sollwerte für Spannung, Strom, hochpräzise Messungen und die vollständige Konfiguration ab – so gelangen Ihre Skripte und Systeme schnell vom Proof-of-Concept in die Produktion.

- SCPI-Befehlssätze mit konsistentem Verhalten.
- Start/Stopp & Schutzfunktionen: Ausgang aktivieren, Auslösegrenzen setzen, Status abfragen.
- Hochpräzise Messwerte: Spannung, Strom, Leistung und Sense-Rückmeldung.
- Entwicklerorientierte Dokumentation & Beispiele.

Externer User I/O für SPS-Steuerung oder PHIL-Simulation

Verdrahten wie ein I/O-Modul – keine zusätzliche Isolation erforderlich.



Via the included rear 37-pin User I/O connector, MagnaDC supplies can be fully driven and monitored by external signals or a PLC. Voltage, current, OVT, and OCT set points are programmed with 0–10 V analog inputs, while each diagnostic condition has its own +5V digital status pin. Built-in +2.5V, +5V, and +10V reference rails let you use dry contacts without adding external supplies. All I/O is isolated from the output and referenced to earth ground as standard.

- 0–10 V analog programming for V, I, OVT, and OCT.
- Per-fault digital outputs: each diagnostic has its own +5V pin.
- Isolated user I/O referenced to earth ground—no extra isolators.
- With High Slew Rate Output (+HS), high-bandwidth response and fast rise times support HIL/PHIL simulation applications.

Hochleistungs-Master-Slave-Betrieb

Spannung oder Strom skalieren ohne Leistungseinbußen.

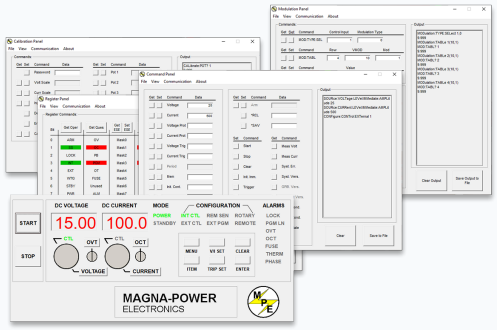


All MagnaDC supplies support master-slave operation, using gate-drive signals from the master when configured for parallel, so the whole stack behaves like a single supply—with one control loop and no noisy long analog references. The optional UID47 accessory simplifies wiring for series or parallel sets with near-equal sharing.

- Single control loop parallel operation: Master gate-drive to slaves for consistent dynamics.
- Plug & play with the UID47, enabling parallel or series stacks with current/voltage sharing.
- Series up to the DC isolation rating without added hardware.
- No additional ORing diodes required for parallel operation.

Magna-Power Software, LabVIEW- & IVI-Treiber

Vom virtuellen Bedienfeld bis zur vollständigen Automatisierung – sofort einsatzbereit.



Jedes MagnaDC-Netzteil enthält einen IVI-Treiber und einen NI LabVIEW-Treiber mit einem vollständigen Satz von VIs sowie Beispielprogramme, mit denen Sie in wenigen Minuten mit der Hardware kommunizieren können. Für die direkte Steuerung im Bedienfeld-Stil von einem PC aus bietet die Remote Interface Software von Magna-Power einen umfassenden Einblick in das Netzteil – von Befehlen und Registern bis hin zu Kalibrierung und Firmware.

- IVI- & NI LabVIEW-Treiber mit vollständigem VI-Satz enthalten.
- Beispielprogramme für den schnellen Einstieg in Integration und Tests.
- Remote Interface Software mit:
  - Virtuelles Bedienfeld für manuelle Steuerung
  - Befehlsfeld zum Erkunden und Senden von Befehlen
  - Registerfeld für Live-Statusüberwachung
  - Kalibrierungsfeld für interne digitale Potentiometer
  - Firmware-Feld für Vor-Ort-Upgrades
  - Modulationsfeld zur Emulation nichtlinearer Profile
- Alle Kommunikationsschnittstellen werden software- und treiberübergreifend unterstützt – für ein einheitliches Programmiererlebnis.

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

Made in the USA

Vertikal integrierte Fertigung für vollständige Qualitätskontrolle.

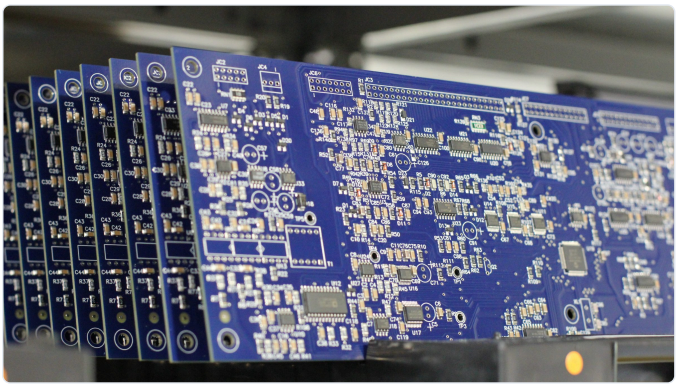


Magna-Power Produkte werden am 73.500 sq-ft großen Hauptsitz von Magna-Power in Flemington, New Jersey, entworfen, gebaut, getestet und gewartet. Metallbearbeitung, Magnetfertigung, PCB-Bestückung und Burn-in erfolgen vollständig im eigenen Haus – für maximale Kontrolle über Qualität, Kosten und Lieferzeiten.

- Made in USA: Entwicklung, Fertigung und Service unter einem Dach.
- Eigenfertigung: Metallbearbeitung, Magnetfertigung, SMT-PCBs und Oberflächenbehandlung.
- Bewährte Zuverlässigkeit: Jedes Gerät wird vollständig getestet, kalibriert und eingebrannt.

Weltweiter Service & OEM-Ersatzteilsupport

Fachwissen ab Werk, Reaktion vor Ort.



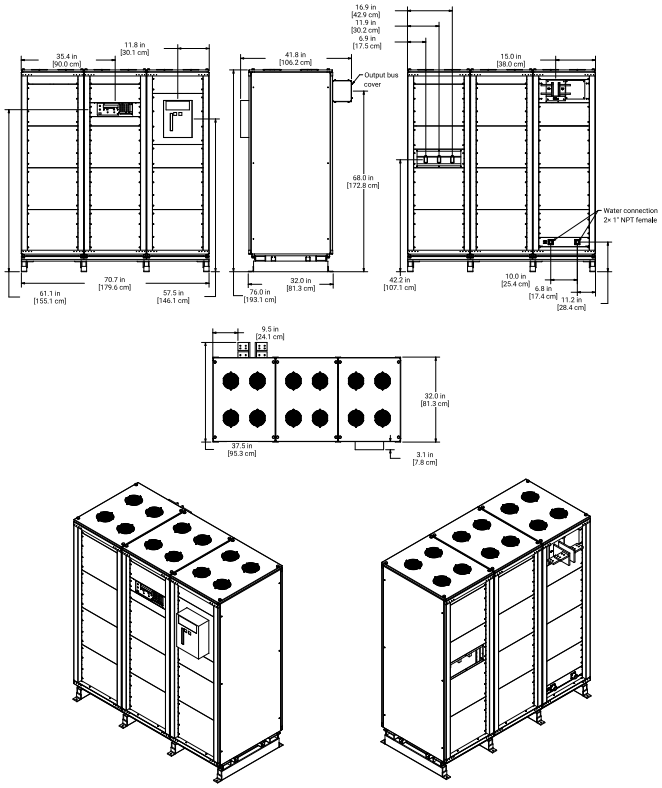
Magna-Power unterstützt seine Produkte mit werks- und autorisierten Servicezentren in Nordamerika, Europa, Großbritannien, dem asiatisch-pazifischen Raum, Ostasien und Südamerika – mit werkseitigen Verfahren und Originalteilen, um Geräte innerhalb und außerhalb der Garantie auf die ursprünglichen Spezifikationen zurückzusetzen.

- Globale Abdeckung: Hauptsitz in New Jersey sowie regionale autorisierte Servicezentren.
- Einheitliche Reparaturen: Werksdiagnosen, Arbeitsanweisungen und Systemdiagramme.
- Original-OEM-Teile: Geprüfte Ersatzbaugruppen für planbaren Service mit minimalen Ausfallzeiten.

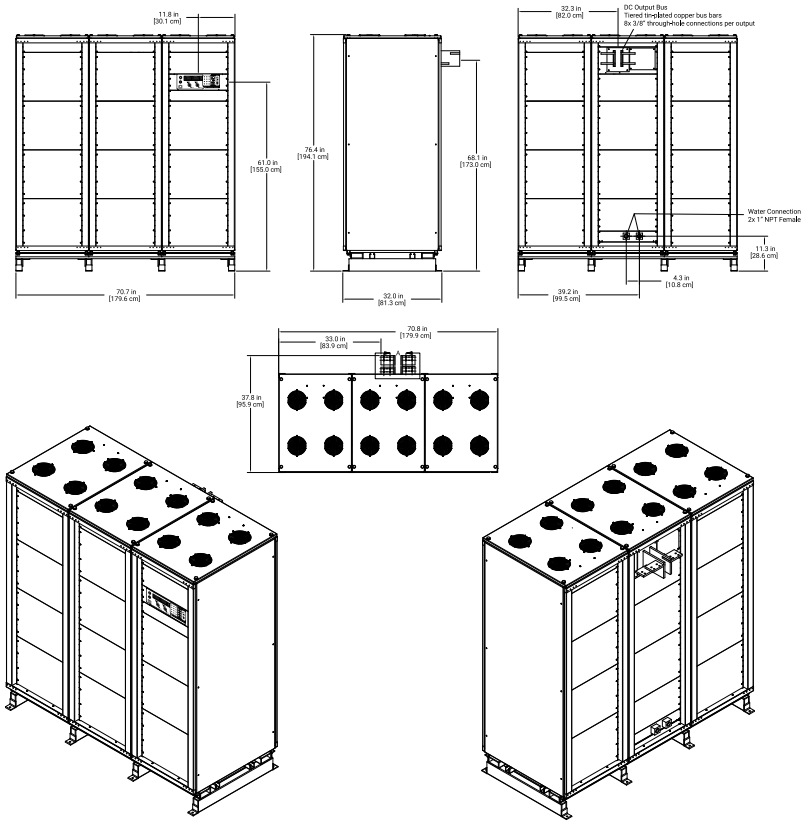
8 Diagramme

500 kW Power Supply

12-pulse harmonic neutralizer integrated

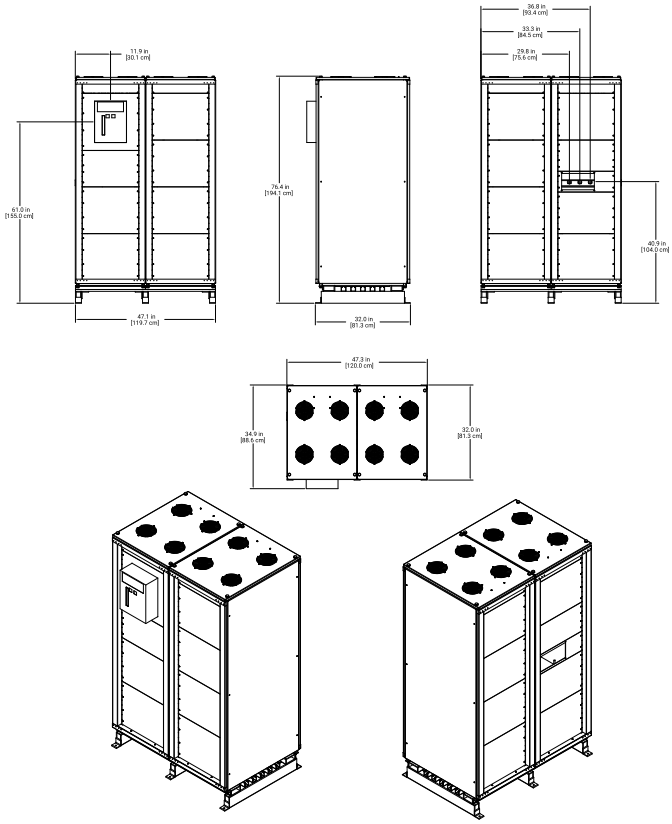


1000 kW Power Supply

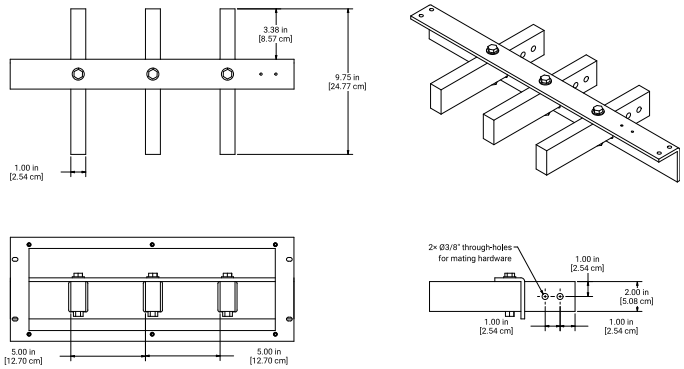


1000 kW Harmonic Neutralizer

24-pulse, integrated with power supply at install

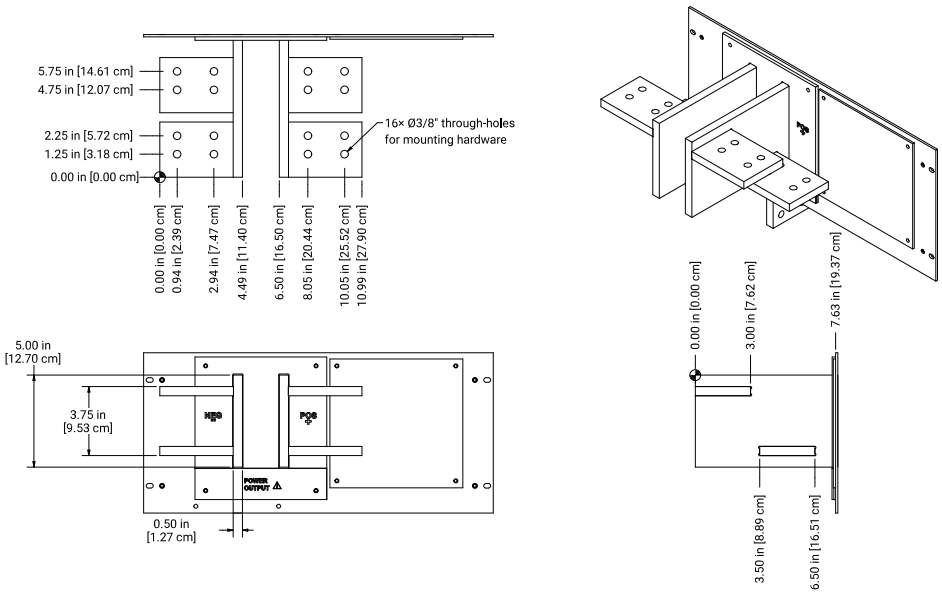


AC Input Bus



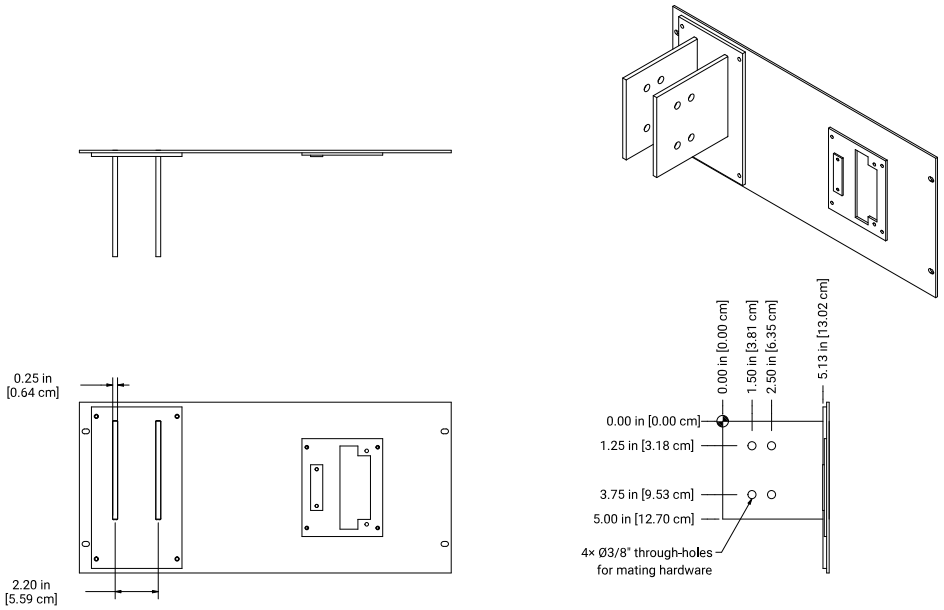
DC Output Bus

Models with Maximum DC Output Voltage ≤ 500 Vdc



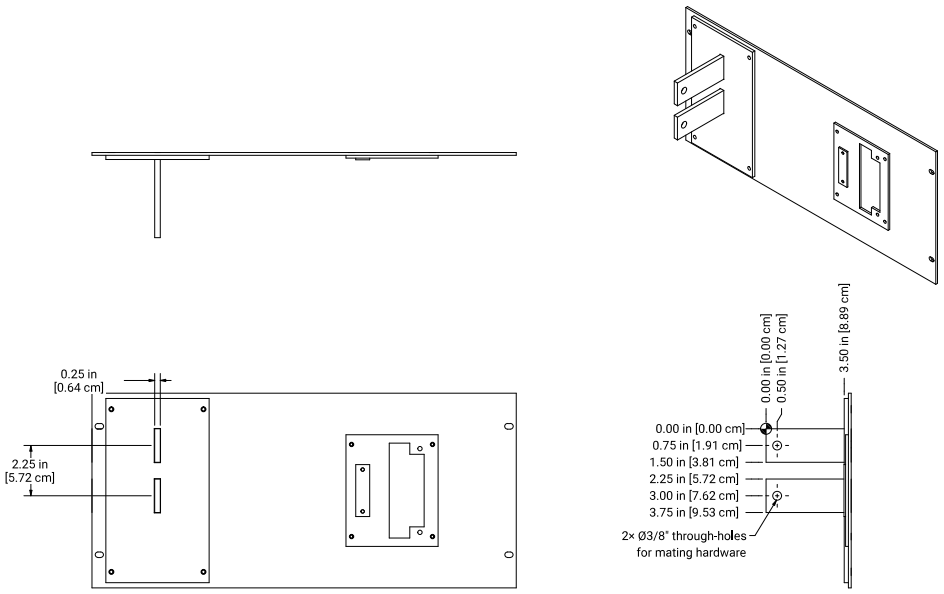
DC Output Bus

Models with Maximum DC Output Voltage > 500 Vdc, ≤ 2000 Vdc



DC Output Bus

Models with Maximum DC Output Voltage > 2000 Vdc, ≤ 6000 Vdc



9 Integrierte Optionen verfügbar

+ISO High Isolation Output

Verfügbar für Modelle mit einem Nennwert von 250 Vdc bis 1000 Vdc, erhöht die +ISO-Option die Ausgangs-Isolation erheblich und wird eingesetzt, wenn die Anwendung erfordert, Geräte schwebend zu betreiben oder in Reihe zu schalten, was über die standardmäßige Ausgangs-Isolation von ±1000 Vdc hinausgeht.

Certain applications require floating the output voltage to values beyond the power supply isolation rating. Magna-Power's High Isolation Output Option (+ISO) enables any TS Series or MT Series model with a peak output voltage rating of 250 Vdc through 1000 Vdc to be rated for a higher voltage output isolation. Improved isolation is achieved by a novel output stage with improved controller isolation. In addition to being able to float the power supply to a higher output voltage, this option also enables lower voltage units to be tied together in series up to its new higher isolation rating, in accordance with the table below.

Availability

The +ISO option is available for models with maximum output voltage rating from 250 Vdc to 1000 Vdc from the following product series:

- TS Series
- MT Series
- ML Series

The +ISO option cannot be combined with the +BD or +WC options. Addition of the +ISO option will cause the product's wired remote sense feature to be removed.

Specifications

The output isolation for Magna-Power Electronics TS Series and MT Series programmable DC power supplies is as follows, where Vo is output voltage rating of the particular model:

Product Series	DC Output Isolation (Standard) (Models Rated Up to 1000 Vdc)	DC Output Isolation (With +ISO Option) (Models Rated Up to 1000 Vdc)
TS Series	±1000 Vdc, max output voltage to ground	±(3000 Vdc + Vo/2), max output voltage to ground, where Vo is the max rated voltage
MT Series	±1000 Vdc, max output voltage to ground	±6000 Vdc
ML Series	±1500 Vdc, max output voltage to ground	±6000 Vdc

+HS High Slew Rate Output

Eine Hardware- und Steuerungsmodifikation, die die Standard-Ausgangsstufe durch Folienkondensatoren mit niedriger Kapazität und/oder Aluminium-Elektrolytkondensatoren mit hohem RMS-Nennstrom ersetzt. Diese Option bietet eine höhere Bandbreite mit schnelleren Anstiegs- und Abfallzeiten am Ausgang.

The high slew rate option solves several limitations inherent in switching power supply design. Rapid voltage transitions require internal electronics to supply the energy to charge and discharge output capacitors. Peak currents internal to the power supply define slew rate; utilizing less capacitance enables voltage transitions in shorter time periods. Additionally, less capacitance reduces requirements for discharge demands during open circuit conditions.

The standard output stage Magna-Power Electronics power supplies has been designed to provide the lowest possible output ripple voltage within the constraints of available components, size, and cost. Part of the output stage consists of a bank of aluminum electrolytic capacitors which has the desired electrical properties to provide this function. These components require bleed resistors to discharge any voltage when the power supply has no load and is disabled. While the presence of these components and the resulting performance are normally industry accepted, there are applications where lower output capacitance and lower loss bleed resistors are extremely desirable and higher ripple voltage is acceptable. To meet this need, a high-slew rate option is available which has an output stage consisting of low capacitance film and aluminum electrolytic capacitors and lower loss bleed resistors. Applications for the high-slew rate option include battery charging, photovoltaic emulation, power waveform generation, and medium speed power pulsing. These applications all benefit from higher bandwidth and in many cases, can tolerate increased ripple voltage.

Key Applications

For **battery charger applications**, output capacitance and internal bleed resistors present themselves as a load to the connecting batteries. One common practice is to use a series diode to block reverse current flow with the sacrifice of increased cost and lower efficiency. The high slew rate option, with its lower output capacitance and lower loss bleed resistors, enables direct connection to batteries without series blocking diodes.

For **photovoltaic emulation applications**, higher bandwidth and lower output capacitance enable improved performance with higher speed, maximum power tracker algorithms. Maximum power tracker circuitry deviates the operating point of photovoltaic arrays to determine maximum power output. Slow responding emulation sources can present a problem when the speed of the algorithm exceeds that of the source. Furthermore, with lower output capacitance, changes in the operating point and transients, caused by shorting the solar inverter input, produce lower unwanted input currents.

The high-slew rate option enables the power supply to operate as a **low frequency, power pulse generator**. With the special capacitors selected for this option, it is possible to superimpose waveforms or produce a medium speed pulse on top of the dc output and expect normal capacitor life. It is important to note that the power supply output is single quadrant; that is, the output voltage or current cannot reverse.

Specifications

SL Series Output Stage Ratings with the High Slew Rate Output Option Integrated

Voltage Maximum Rating (Vdc)	Output Capacitance (uF)	Output Voltage Ripple (Vrms)
5	4235	0.5
10	1740	0.6
16	1740	0.6
20	775	0.6
25	775	0.8
32	775	0.8
40	760	1.5
50	760	1.5
60	760	2.0
80	110	1.5
100	110	1.6
125	70	1.7
160	70	1.8
200	70	1.8
250	70	1.8
300	70	1.8
375	70	1.8
400	70	1.8
500	40	2.0
600	40	2.2
800	30	2.5
1000	30	3.4
1250	—	3.4

Voltage Maximum Rating (Vdc)	Output Capacitance (uF)	Output Voltage Ripple (Vrms)
1500	—	4.0

XR Series Output Stage Ratings with the High Slew Rate Output Option Integrated

Voltage Maximum Rating (Vdc)	Output Capacitance (uF)	Output Voltage Ripple (Vrms)
5	13200	1.5
10	4080	1.6
16	4080	1.7
20	2340	1.8
25	1170	1.8
32	1170	1.8
40	240	1.8
50	240	1.8
60	240	2.0
80	240	2.2
100	160	2.5
125	160	3.0
160	160	2.8
200	160	4.0
250	160	1.6
300	160	1.8
375	160	1.8
400	160	1.8
500	56	3.0
600	56	3.0
800	52	3.0
1000	52	3.0
1250	18	3.5
1500	18	3.5
2000	18	5.0
3000-10000	—	—

TS Series Output Stage Ratings with the High Slew Rate Output Option Integrated

Voltage Maximum Rating (Vdc)	Output Capacitance (uF)	Output Voltage Ripple (Vrms)
5	13200	0.5
8	9000	0.5
10	9000	0.5
16	4080	0.5
20	2340	0.8
25	2340	0.8
32	1170	0.8
40	1170	0.8
50	1170	0.8
60	300	1.2
80	300	1.2
100	200	1.6
125	200	1.6
160	200	1.6
200	200	2.0
250	200	2.0
300	200	2.2
375	200	2.2
400	200	2.4
500	200	2.7
600	120	2.6
800	70	2.6
1000	60	3.5
1250	18	3.5
1500	18	4.3
2000	18	3.8
3000	9	7.2
4000	9	4.0

Note:
For 20 to 30 kW models, multiply capacitance by 2
For 40, 50, 75, and 100 kW models, contact Magna-Power support

For MT Series and ML Series output stage ratings with the high slew rate output option, please inquire with your local sales partner regarding the specific model.

+GPIB IEEE-488 GPIB

IEEE-488 General Purpose Interface Bus (GPIB) Kommunikationsschnittstelle mit vollständiger Befehlsunterstützung und Kompatibilität mit anderen GPIB-Geräten

The IEEE-488 interface, sometimes called the General Purpose Interface Bus (GPIB), is a general purpose digital interface system that can be used to transfer data between two or more devices. It is particularly well-suited for interconnecting computers and instruments. Some of its key features are:

- Up to 15 devices may be connected to one bus
- Total bus length may be up to 20 m and the distance between devices may be up to 2 m
- Communication is digital and messages are sent one byte (8 bits) at a time
- Message transactions are hardware handshaked
- Data rates may be up to 1 Mbyte/sec

The IEEE-488 GPIB interface in integrated with the power supply's rear communication ports. The IEEE 488 interface offers full compatibility with Magna-Power provided drivers, software and SCPI command set.

+BD Integrated Blocking Diode

Eine Schutzdiode mit internem Kühlkörper am positiven Ausgangsanschluss eines programmierbaren MagnaDC-Gleichstromnetzteils, um den Geräteausgang vor Rückspannungen zu schützen, die die Ausgangsspannungsnennung des Produkts weit überschreiten.

The Integrated Blocking Diode Option (+BD) provides an internally heat-sunk protection diode on the positive output terminal of a MagnaDC programmable DC power supply. This diode protects the product's output from reverse voltage up to 1200 Vdc. All voltage sensing is performed after the protection diode—at the product's output terminals—making the diode's operation completely transparent to the performance of the power supply.

The +BD option is recommended for applications where there is significant back-emf or the possibility of a DC output voltage that could exceed the power supply's output voltage rating, such as:

- DC motor drives
- Battery and capacitor charging
- Large electromagnets

In these applications, the integrated blocking diode can be used to prevent back-emf from the energy stored in the load into the power supply's output. Furthermore, the integrated blocking diode will prevent the power supply's internal bleed resistance from discharging the energy storaged in the load when the power supply is off or in standby.

Availability

The +BD option is available for models with maximum output voltage rating as specified for the following product series:

- TS Series, models rated from 40 Vdc to 1000 Vdc
- MT Series, models rated from 125 Vdc to 1000 Vdc
- ML Series, models rated from 250 Vdc to 1000 Vdc

The +BD option cannot be combined with the +ISO option.

Specifications

Table 1. Specification for Integrated Blocking Diode (+BD) option

Reverse Voltage Rating Models Rated 125 Vdc to 1000 Vdc	1200 Vdc
Reverse Voltage Rating Models Rated Below 125 Vdc	200 Vdc
Additional Losses Models Rated 125 Vdc to 1000 Vdc	Up to 1.4%
Additional Losses Models Rated Below 125 Vdc	Up to 2.5%

+LXI LXI TCP/IP Ethernet

TCP/IP Ethernet-Kommunikationsprotokoll und einzelne RJ-45-Schnittstelle, zertifiziert nach dem LXI Class C-Standard, für Socket-Kommunikation über konventionelle Computernetzwerke

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.

10 Produktbilder









1 MW ML Series programmable DC power supply

11 Downloads

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

12 Kontakt

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