

DC Power Supplies



Manufacturing Is A Tough Business

Today's markets have expanded to global proportions. Competition is intense. Margins are narrow. Specifications are tight. To stay competitive, you can't afford ineffective methods, out-of-spec product, or unexpected down time.

When you depend on DC power for a smooth running and productive operation, a lot is riding on the equipment supplying that power.

A DC power supply that doesn't deliver peak performance year in and year out will cost you profit. One that breaks down when you have a tight production schedule can cost you customers.

Since your process is only as good as your equipment, Spang engineers DC power supplies for high reliability, energy efficiency, and extended life.

Every design incorporates 35 years of experience, research and development, and application expertise in the power conversion field. We've had time to perfect and prove our power supplies over years of actual field use under rugged conditions and diverse applications.

Spang's engineering group is constantly developing new solutions to power conversion problems. Assisted by the latest in computer design technology, our staff of technical experts transforms your most demanding requirements into an optimized, reliable system.

But design is only part of the story. The ultimate performance of a DC power supply depends on the components that make it up. Controlling their quality is essential to producing a reliable unit.

That's why we engineer and manufacture all the major systems components in-house. To further enhance reliability, every component is

subjected to rigorous testing before assembly and then retested in a systems environment after the power supply is complete.

All manufacturing, from component level through final system integration and test, is performed at our centrally located facility in Sandy Lake, Pennsylvania. The modern 100,000 square foot plant is equipped with high bay erection floors, overhead cranes, and advanced testing facilities.

Spang's commitment to your power supply's performance continues long after it's delivered. We offer a complete range of support services including application engineering, technical assistance and consultation, start-up supervision, operator training, preventative maintenance contracts, and fast, world-wide field service.

Our capabilities range from large scale, one-of-a-kind projects to high volume production of standard designs. This brochure illustrates only a few of our application-specific power supplies. We invite you to call a power expert at Spang Power Control to discuss your specific requirement for these or any other power conversion equipment.



Spang

ELECTROCHEMICAL RECTIFIER SYSTEMS

For high current, high power electrochemical applications. These systems are designed to deliver large blocks of DC power to processes such as electrowinning, electrorefining, electroforming, and chemical processing.



INPUT

AC Input Voltage : 480 or high voltage
Phase : Three
Frequency : 50 or 60 Hertz

OUTPUT

DC Output Voltage : Up to 300 volts
Output Current : Up to 125,000 amps.

FEATURES

Air or liquid cooling.
Computer monitoring and control.
Harmonic minimization.

DC PLATING AND ANODIZING POWER SUPPLIES

Designed to meet the metal finishing industries' demand for exact control, reliability, and energy efficiency. These power supplies incorporate the most advanced solid state components and circuitry to provide precisely regulated, low ripple DC power for any conventional or pulse plating, anodizing, or color anodizing process.

INPUT

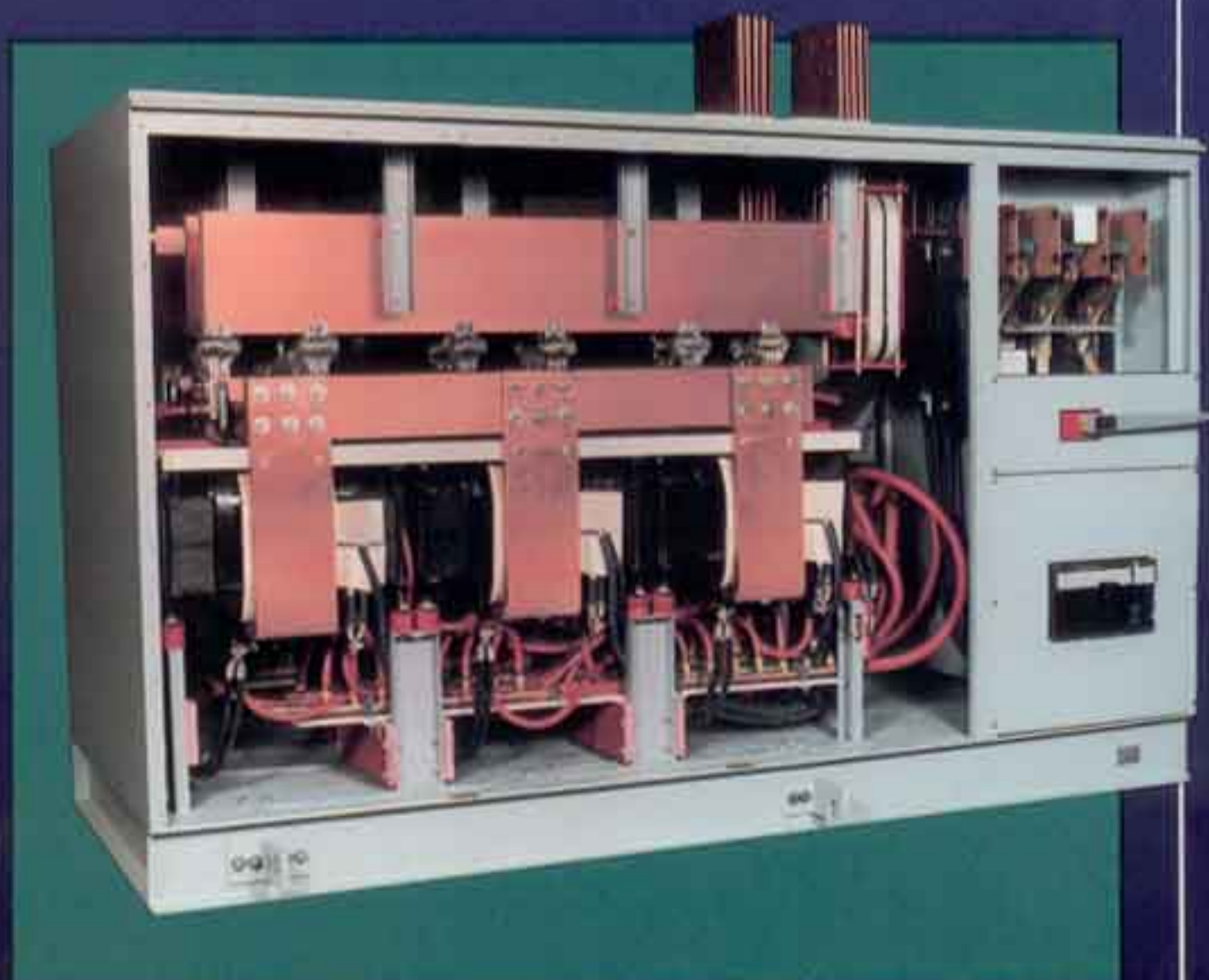
AC Input Voltage : 230/460 (high voltage inputs are available)
Phase : Three
Frequency : 50 or 60 Hertz

OUTPUT

DC Output Voltage : Up to 125 volts
Output Current : Up to 50,000 amps.

FEATURES

Constant Current Control : From 0 to 100% load with voltage limit protection.
Constant Voltage Control : From 0 to 100% at nameplate rating with current limit protection.
5% RMS Ripple : At rated voltage and current. Optional ripple reduction filtering is available.
Air or Liquid Cooling.
Computer Monitoring and Control.



ELECTROCOATING POWER SUPPLIES

Delivers regulated, low-ripple DC power for electrophoretic paint deposition in both automotive and industrial applications. The 100% modular design provides simplified maintenance and troubleshooting and unlimited expansion capability. Fuseless electronic overcurrent circuitry with automatic reset eliminates downtime caused by nuisance fuse blowing and circuit breaker tripping from momentary tank shorts.



INPUT

AC Input Voltage : 230/460 (high voltage inputs are available)
Phase : Three
Frequency : 50 or 60 Hertz

OUTPUT

DC Output Voltage : Up to 700 volts
Output Current : Up to 2500 amps.

FEATURES

Modular Design.
Fuseless Load Fault Protection.
Adjustable Electronic Overcurrent Protection.
Voltage Regulated to $\pm 1\%$.
5% RMS Ripple.
NEMA 1 or 12 Enclosure.
Computer Monitoring and Control.

BATTERY FORMING POWER SUPPLIES

Engineered specifically for efficient, low energy cost formation of lead-acid automotive and industrial batteries. Both single and multiple circuit models include ramp starting, polarity reversal protection, and current smoothing circuitry.

MULTI-CIRCUIT SYSTEMS

INPUT

AC Input Voltage : Up to 600 volts
Phase : Three
Frequency : 50 or 60 Hertz

OUTPUT

DC Output Voltage : Up to 400 volts
Output Current : Up to 100 amps.

INDUSTRIAL FORMING SYSTEMS

INPUT

AC Input Voltage : Up to 600 volts
Phase : Three
Frequency : 50 or 60 Hertz

OUTPUT

DC Output Voltage : Up to 400 volts
Output Current : Up to 500 amps.

FEATURES

Constant
Current Control : $\pm 1\%$ with a 0-100% change in battery voltage or a $\pm 10\%$ change in AC input voltage.
Timer or Ampere Hour Control.
Microprocessor Control.



INDUSTRIAL RECTIFIERS

These heavy-duty solid state power supplies are designed for use in any industrial or commercial application requiring DC power. Every unit is a pre-wired, pre-tested, self-contained system. Connection of the line and load leads is all that is necessary to get into operation. Regenerative control is available for use in high inertia load applications.



INPUT

AC Input Voltage : 230/460 (high voltage inputs are available)
Phase : Three
Frequency : 50 or 60 Hertz

OUTPUT

DC Output Voltage : Up to 600 volts
Output Current : Up to 10,000 amps.

FEATURES

Regulated or Unregulated.
Regenerative Control Available.
Computer Monitoring and Control.

COMPUTER CONTROL

Computer control provides real bottom-line advantages for your operation and fast payback on your investment. Improvements in productivity, quality, and energy efficiency along with a reduction in waste and reject rates are just a few of the immediate benefits.

With computer control, you can automatically retrieve and set process profiles, quickly revise process parameters, and monitor real-time data. A PC-based system can also centralize control of a number of rectifiers, collect and store process performance information, and generate reports for trend analysis and statistical process control.

Spang offers a level of computer integration to match your process requirements and investment plans. Configurations range from PLCs for control of logic functions and data acquisition of individual or multiple rectifiers to complete process or batch automation using host PC networks.



Other applications for Spang DC Rectifiers and DC Power Supplies:

- Electrowinning
- Electrorefining
- Electroforming
- Chemical Processing
- Cathodic Protection
- Traction Power
- Focusing Magnet Excitation
- Electromagnetic Separators
- Electric Holding Furnace
- Synchronous Motor Field Excitation
- Plasma Power Supply
- Lifting Magnet
- Crane Power

Spang Power Control

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Location

Spang Power Control is located in Sandy Lake, Pennsylvania, 65 miles north of Pittsburgh and close to the intersection of Interstate Routes 80 (E-W) and 79 (N-S). Airports within 100 miles include Pittsburgh and Erie, Pennsylvania, Youngstown and Cleveland, Ohio.

