

Where To Find Power Supplies For Industrial Applications

by David G. Morrison, Editor, How2Power.com

Power supplies developed for industrial applications address a wide range of electrical, mechanical and environmental requirements based on application-specific needs. On the electrical side, power supplies in this category may satisfy requirements for high-voltage (kilovolt level and above) or high power (tens of kilowatts and above) outputs, but also include products to meet lower voltage or power requirements. On the environmental side, these supplies may be asked to operate in or withstand extreme temperatures (hot or cold); wet, humid or dusty conditions; or high levels of shock and vibration. Or they may need to operate in the presence of electrical noise including line transients and voltage spikes.

Because environmental conditions may dictate use of a sealed enclosure, which precludes use of forced air cooling, convection cooling is frequently a requirement for industrial-grade power supplies and occasionally liquid cooling is demanded. These same applications typically demand high reliability and long operating life.

As new power supply units are developed, they often differentiate from existing supplies by offering higher efficiency and power density (the same trends affecting development of almost all power supplies). However, newer industrial power supplies may also differentiate by offering better or more sophisticated power protection, monitoring or telemetry. These power supplies frequently must carry industry or application-specific certifications, and the presence of more or newer certifications may be another differentiator for new power supplies in this category.

The list of applications (or application areas) requiring industrial-grade power supplies is long. Among those cited by power supply manufacturers are factory/industrial automation, railway, ships, industrial vehicles, power utilities and energy generation, mining, oil and gas exploration and drilling, medical equipment and scientific research. The companies listed in this source list provide a range of power supply products for these applications including ac-dc power supplies, dc-dc converters, battery chargers, dc-ac inverters, frequency converters, EMI filters and other functions.

The listings in this section describe power supply manufacturers' product offerings and capabilities with emphasis on those for industrial applications. These descriptions are based on those provided on the vendor websites.

As noted in these listings, some of these same manufacturers also offer power supply products for military/aerospace, telecommunications, data center and computing applications; however, these areas are beyond the scope of this list and are mentioned here in the company descriptions only to give a broader view of a company's focus. For those interested in power supplies for military/aerospace applications, see How2Power's [Military Power Supplies section](#).

This list will be updated and expanded periodically. If you have questions or comments on this list, or know of a company offering industrial-grade power supplies that could be added to this list, please contact [me](#).

Companies listed in this section include:

- Acopian
- ABSOPULSE Electronics
- Advanced Energy
- Aegis Power Systems
- Applied Power Systems
- Astrodyne TDI
- Behlman Electronics
- Cosel
- Delta Electronics Group
- Eltek
- Espey Mfg & Electronics
- Gaia Converter
- Helios Power Solutions
- HVM Technology
- Integrated Power Designs

- Magna-Power Electronics
- Martek Power
- MKS Instruments
- MTM Power
- Murata
- Powerbox
- Schaefer
- Spellman High Voltage Electronics
- TDK-Lambda Americas
- UNIPOWER
- Vicor
- XP Power

Acopian

(Easton, PA)

Whatever you prefer to call it—power supply, rectifier, power system, power module, power brick— the company makes millions of different kinds that can be used in thousands of different applications including electronic equipment, manufacturing, machinery, process control, factory automation, astrophysics, chemical processing, telecommunications, monitoring systems, audio, scientific research, aerospace, amusement, energy, and wastewater treatment facilities (WWTF). Ac-dc, dc-dc, power supplies & systems, redundant power packages, rack mounting, customized solutions, programmable, high voltage, single output, dual output, triple output, wide adjust output, linear regulated, switching regulated, unregulated, wall mounting, DIN rail mounting, NEMA 4X enclosed, UL508, and every voltage from 0 volts to 30 kV.

ABSOPULSE Electronics

(Ottawa, Ontario, Canada)

Established in 1982, ABSOPULSE Electronics specializes in the design, development and manufacture of rugged, reliable switching power supply solutions. Their product line includes dc-dc power converters, ac-dc power supplies, rectifiers and battery chargers, dc-ac sine wave inverters, ac-ac phase and frequency converters, and complete power systems in 19-in. and 23-in. racks.

Today, the company's power conversion solutions perform reliably in almost every conceivable application in installations around the globe. Typical application environments include railway, industrial automation, automotive, power utilities, mining, marine and telecommunications.

As a custom design manufacturer, they can meet almost any electrical configuration requirements within an output power range of a few watts to several kilowatts. Drawing on its broad selection of field-proven designs, the company will design and build a cost-effective power conversion solution for you, while keeping lead times short. All of its power supply products are manufactured in-house. They work directly with customers worldwide, from small or medium size enterprises to global corporations. For more information, see the [website](#).

Advanced Energy

(Fort Collins, CO)

Advanced Energy is a global leader in the design and manufacturing of highly engineered, precision power conversion, measurement and control solutions for mission-critical applications and processes. The company's power solutions enable innovation in complex applications for various industries that include semiconductor equipment, industrial, manufacturing, telecommunications, data center computing, and healthcare.

Products include plasma power generators, high-voltage power supplies, low-voltage power supplies, remote plasma sources, SCR power controllers, temperature measurement/ sensor products and other products. High-voltage power supplies include these types: standard-size, micro-size, mass spectrometry, rack-mount, e-beam, chassis-mount and x-ray. For more information, see the [website](#).

Aegis Power Systems

(Murphy, NC)

Aegis Power Systems been designing and building highly reliable custom power supplies since 1995. The

company offers a complete line of switch mode power supplies and power converters for a variety of markets including defense, industrial, aircraft, VME, and telecom. Aegis Power Systems is a USA manufacturer of dc-dc, single-phase ac-dc, and three-phase ac-dc power supplies for a variety of industrial applications including both high load and low load needs. The company's industrial switching power supply units can be used in VME racks, data centers, nuclear power systems, robotic and automated warehouse equipment, electric vehicle converters, and many other systems with specialized needs.

The company builds industrial power supplies that are highly reliable, efficient, and capable of meeting requirements for EMI, resistance, leakage, temperature, dielectric withstand, and others. Additionally, special coatings, packaging, and shock or vibration standards may be included as part of the overall security and uniformity of the system, per customer request. The company offers a full line of standard power supply products but customized power supply solutions are its area of expertise. For more information, see the [website](#).

Applied Power Systems

(Hicksville, NY)

Applied Power Systems (APS) is a power electronics company specializing in power conversion systems and thermal management of high-power semiconductors since 1996. APS applies unique, high technology solutions in the design and manufacture of a broad array of power control systems, ranging from high-power ac and dc power supplies to driver circuits for IGBT, SCR, MOSFET devices and power blocks. Power stage products include power converters and inverters. System-level products include power supplies and uninterruptible power supplies for on-board rail applications, for high-temperature and low-temperature cryogenic magnets, hi-voltage modulators, frequency changers, motor drives and a host of specialized supplies and inverter systems. Markets served include welding, inverters, induction melting, motor control, induction heating, traction, transportation, heat treating, UPS and battery charging, communications and SMPS. For more information, see the [website](#).

Astrodyne TDI

(Hackettstown, NJ)

Astrodyne TDI designs and manufactures innovative power and EMI filter solutions for demanding applications worldwide. Company products include power supplies and EMI filters for a variety of markets, including aerospace, industrial, medical, military and semiconductor manufacturing. With more than 50 years of experience as a custom power supply and EMI Filter manufacturer, the company is known for its ability to produce highly reliable and durable products for some of the most demanding industries and end markets. The company can also custom design power supplies and EMI filters to meet your exact specifications.

Astrodyne TDI solutions can be found in semiconductor equipment, life saving heart assist devices, medical carts, surgical tools, ion and proton beam steering (magnet driving) oil and gas exploration equipment, in-flight aircraft entertainment systems, missile and radar systems, satellite communication systems, electric vehicle, irrigation systems, as well as test and measurement devices. All units are approved and designed to meet or exceed worldwide safety and EMI specifications.

Behlman Electronics

(Hauppauge, NY)

Behlman was founded over sixty years ago as an engineering, manufacturing and consulting firm for power products. Over the past sixty plus years Behlman has grown to become a world class provider of the highest quality standard, modified standard, custom and COTS ac power sources, frequency converters, inverters, dc-dc, ac-dc, dc-ac, and uninterruptible power sources (UPSs) for commercial, industrial and military mission-critical applications.

The company has a proven ability to solve any power requirement, and supports its products with personal service that exceeds even your highest expectations. The company's expertise includes a diverse line of products, to meet the needs of production test (ATE); aerospace and avionics; gas and oil exploration; railroad; utility/telecom, and more. For more information, see the [website](#).

Cosel

(Toyoma City, Japan with U.S. division in San Jose, CA)

Established in Japan 1969, COSEL is a leading designer and manufacturer of high performance ac-dc power supplies, dc-dc converters and EMI filters. With quality, reliability & flexibility as the company's main focus, it prides itself on developing some of the highest quality and most reliable products seen anywhere in the world today. Its product range is aimed mostly at demanding applications within the industrial, factory automation, medical, telecoms, lighting, audio/broadcast & renewable energy sectors. A flexible approach with full in-house design means the company delivers products using the very latest technology meeting the growing demands of its customers. For more information, see the [website](#).

Delta Electronics Group

(Taipei, Taiwan)

Delta Electronics Group is a multi-billion dollar global company and the world's leading producer of power supplies for the top names in industrial, medical and consumer electronics devices. For more than 40 years, Delta has been a well regarded and trusted ODM (original design manufacturer) partner by many top tier companies on the Fortune 500 list.

In 2008, Delta introduced its own brand of standard power supply units (PSU) which offer customers the same world class technology and quality that Delta's ODM partners demand. Due to the fast growing popularity of Delta's CliQ DIN rail power supply and PMC panel mount power supply series, Delta has been introducing many more standard power supply form factors for a wide-variety of demanding applications from factory automation to the F&B industry. Delta now offers more than four types of power supplies including medical grade type and more than 500 models in the portfolio that is continuously expanding. For more information, see the [website](#).

Eltek, A Delta Group Company

(Drammen, Norway)

Eltek is a global power specialist that develops, manufactures, sells and distributes cutting-edge power solutions and services. Its solutions provide power and backup power required for efficient and stable operation of essential infrastructure that makes the world work, such as telecom, power utilities, data centers, railway & metro, marine & offshore and rural electrification. Power systems, distributions, enclosures, monitoring, UPS systems, rectifiers, rectifiers, converters, windchargers, solar converters and front end. The company is committed to pushing the technological frontiers of power conversion forward, to reduce the cost and environmental footprint of energy usage, and to reduce the cost of ownership of power equipment. For more information, see the [website](#).

Espey Mfg & Electronics

(Saratoga Springs, NY)

Espey is a leading edge supplier for industrial power supply technology. Espey designs and manufactures industrial ac-dc and dc-dc ruggedized power supplies. Each industrial application has its own set of challenges with demanding environments. Espey has taken on many challenges from dusty and dirty locations to the extent of submersible power applications. Although the mainstay of power applications that the company designs are customer specification driven, the development of its configurable chassis power supplies in the section will allow for quick turn quote response and short lead times.

With hundreds of designs over 80 years in emerging industrial markets, the company is well versed in the power requirements and standards necessary to meet your requirement. Its solutions are designed and manufactured to meet the requirements of UL, CE, TUV and can be certified when necessary. Its designs are geared for transportation, power generation, alternative energy, mining, construction and industrial equipment, metro, bus, aircraft, and smart grids. The company's industrial product line is fully configurable with some special features to meet the industrial market requirements such as short lead time, universal ac input, power factor correction, overtemperature protection, no minimum load, overvoltage protection and front to back airflow. For more information, see the [website](#).

Gaia Converter

(Le Haillan, France)

Gaia Converter is recognized as a leading manufacturer of high-reliability dc-dc converter products, PFC front end modules and related input protection devices. Strongly focused on power modules, Gaia Converter has

developed over 3500 off-the-shelf (COTS) solutions for a wide range of aerospace and military, transportation and industrial applications, from 4 W to 350 W or more. For more information, see the [website](#).

Helios Power Solutions

(Auckland, New Zealand)

Helios Power Solutions is an expert in providing power conversion solutions for industrial dc and ac power requirements...in business for more than 30 years. From designed in PCB power supply components and dc-dc converters to large integrated industrial dc and ac UPS systems with battery back up...the company's solutions include its own designed and manufactured products from its ISO9001 accredited facility, a wide range of industry leading products from its global supply partners, and its in-house designed and built dc and ac systems using the best products available. These can be provided as a turnkey, factory acceptance tested product.

The company can even customize products and components to meet your specific requirements. These solutions can be found in critical applications all over the world, in oil and gas, remote communications, electrical utilities, rail, and critical infrastructure to name a few. Anywhere you cannot afford a failure. For more information, see the [website](#).

HVM Technology

(New Braunfels, TX)

HVM Technology designs, manufactures and markets high performance electronic products for a variety of applications in the military, aerospace, scientific and analytical fields. HVM specializes in miniature high-voltage power converters, as the name suggests (HVM is an abbreviation for high voltage microelectronics). HVM Technology was established in 2004 as a producer of specialized multi-output high-voltage dc-dc converters used in night vision image intensifiers. It is this technology base that has established HVM as an industry leader in the field of high voltage microelectronics.

This highly critical and specialized high voltage niche has led the company into markets that require extremely small high-voltage packaging in order to take their newest technologies to the next smaller level and to stay competitive in today's world marketplace. Because of the growing demand for products to be smaller and portable, HVM continues to push the limits of high-voltage miniaturization by offering a variety of standard and custom products ranging from single-output high-voltage dc-dc converters to complex multiple output modulated designs. For more information, see the [website](#).

Integrated Power Designs

(Wilkes-Barre, PA)

Integrated Power Designs (IPD) is a U.S. power supply manufacturer of ac-dc and dc-dc supplies ranging from 25 to 400 W. Since its founding in April of 1985, the company has been committed to on-time delivery of quality product while minimizing its environmental impact. Reduced environmental impact is achieved by constantly improving power supply efficiency. The company now designs products with 90% peak efficiency and these compact solutions are ideal for ITE, audio/video, communications, and medical applications.

IPD has a wide range of industrial switching power supplies from 25 W to 400 W. It has power supplies that will fit 1U applications and offer a solution from one to four outputs with standard dc outputs of 2.5 V, 3.3 V, 5 V, 12 V, 15 V, 24 V, 28 V and 48 V. These power supplies meet the latest approvals to 60950-1 for the industrial industry. IPD has the capability to modify its standard units to meet your special output voltage requirements. Contact the company to see how quick it can turnaround a semi-customized unit for you. For more information, see the [website](#).

Magna-Power Electronics

(Flemington, NJ)

Magna-Power Electronics designs and manufactures robust programmable dc power products (dc power supplies and dc electronic loads) in the USA that set industry standards for quality, size, and control. Its products can be found around the world feeding power to national laboratories, universities, and a wide range of industrial sites. The company's experience in power electronics is reflected in its 1.25 kW to 2000 kW+ product line, quality service, and reputation for excellence. For more information, see the [website](#).

Martek Power

(Torrance, CA)

Martek Power designs and manufactures a wide range of switching power supplies and linear power supplies. They include standard, semi-custom and custom ac-dc power supplies, dc-dc power converters, dc-ac power inverters and EMI filters for military, aerospace, medical, railway, automotive, computing, data storage, telecom, networking, instrumentation and industrial applications. The company's switching and linear power supplies range in output power from 1 to 50,000 W. With its broad range of field proven standard power supplies, it is capable of providing unique custom power solutions that meet special requirements of its customers worldwide in all market segments it serves. For more information, see the [website](#).

MKS Instruments

(Andover, MA)

MKS Instruments is a global provider of instruments, subsystems and process control solutions that measure, monitor, deliver, analyze, power and control critical parameters of advanced manufacturing processes to improve process performance and productivity for its customers. MKS develops and manufactures RF generators that deliver solid state power from low to very high frequencies (VHF) and control plasma. Combined with MKS' Impedance Matching Network and V/I Probe, the company provides a complete RF delivery system. In addition, MKS provides pulsed and continuous dc power generators from 5 kW to 20 kW. For more information, see the [website](#).

MTM Power

(Mellenbach, Germany)

For over 25 years, MTM Power has been developing and manufacturing power supplies and transformers for industrial, railway and power engineering applications in Germany. MTM Power has its own R&D department, its own EMC laboratory, state-of-the-art technical equipment and highly qualified employees in all departments to continuously maintain technological leadership and produce innovative solutions. Thus, innovation and creativity in R&D go hand in hand with the precision and quality in manufacturing. MTM Power produces power supplies for its national and international customers which are exceptionally powerful, stressable and durable.

Products include ac-dc power supplies, IP67 modules, DIN rail modules, 19-in. power supplies, dc-dc converters, converters for transportation, multi-power systems, battery chargers, and transformers. Applications include railway applications, e-mobility, transport, special vehicles, wind energy, the telecom industry, power plants, the chemical industry, industrial robots, programmable logic controls and safety-conscious areas (e.g. petrochemical drilling platforms). For more information, see the [website](#).

Murata

(Kyoto, Japan)

Among the top suppliers of power electronics, Murata's ac-dc front-end power solutions and market leading offering of dc-dc converters have been designed into countless applications, including communications products and infrastructure equipment, industrial, video equipment, household information appliances, energy, lighting, healthcare equipment, and more.

The company's ac-dc power supply solutions can be designed to meet almost every conceivable application requirement in terms of power, performance, efficiency, communications, protection, size, approvals compliance, and cooling requirements. The company's proven ability to blend circuit topologies and high-performance components with contemporary construction techniques has led to its position in the industry as the largest supplier of dc-dc converters. From standard models to modified products and complete custom designs, Murata's dc-dc converters can meet the needs for miniaturization, low profile, high efficiency, power-saving, low noise designs. For more information, see the [website](#).

Powerbox

(Gnesta, Sweden)

Founded in 1974, with headquarters in Sweden and operations in 15 countries across four continents, Powerbox serves customers all around the globe. The company focuses on four major markets—industrial, medical,

transportation/railway and defense—for which it designs and markets premium quality power conversion systems for demanding applications. Powerbox's mission is to use its expertise to increase customers' competitiveness by meeting all of their power needs. Every aspect of the company's business is focused on that goal, from the design of advanced components that go into products, to high levels of customer service.

Powerbox is recognized for technical innovations that reduce energy consumption and its ability to manage full product lifecycles while minimizing environmental impact. Powerbox is a Cosel Group company. Power supply product categories include ac-dc, dc-dc, dc-ac and ac-ac with single, dual, triple and multi-output at output voltages of 0 to 35,000 V. Product groups including battery charging, cassette/rack, custom, DIN-rail, open frame/enclosed, systems, modules, externals, configurable, miscellaneous and LED. For more information, see the [website](#).

Schaefer

(Hopkinton, MA)

Demanding power conversion applications deserve a manufacturer with decades of expertise in the design and production of dependable and rugged power supply solutions. Schaefer's thorough understanding of the transit, light rail, bus, military, shipboard, subsea, industrial automation, telecommunications, renewable energy, oil and gas industries power supply conversion needs and overall application that will lead to a solution that best fit your requirements.

Schaefer provides superior technical experience and attention to detail during every step of your application design. Starting with proof of concept, through prototype development and final design deployment, the company's robust, ruggedized design construction employs industrial grade components for high performance and superb reliability.

Manufacturer of more than 6,000 COTS power solutions from 500 W to 3 MW, over 100,000 MOTS, and over 2,000 custom power solutions (power conversion, power quality, and power electronics units, modules, and systems), its diverse product lines range from ac-dc power supplies and battery chargers, dc-dc converters, dc-ac inverters, ac-ac frequency converters to active harmonic filters and electronic loads. For more information, see the [website](#).

Spellman High Voltage Electronics

(Hauppauge, New York)

Spellman, a family owned and managed company established in 1947, is a leading independent supplier of precision dc high-voltage power supplies, x-ray generators and Monoblock x-ray sources for medical, industrial and scientific applications. Spellman offers custom and application-specific high-voltage power supplies. The company has expertise in numerous switching topologies including resonant, quasi-resonant, soft switching, pulse width modulated and linear converter designs.

Modules are often the form factor of choice for OEM applications where the high-voltage power supply will be integrated into a higher level system. A cost effective solution, modules will typically not have a front panel or local controls. Indicators and trim pots may be available but, typically, control and monitoring is done by remote analog or digital signals. Spellman's rack mount and bench top high-voltage power supplies span output voltages from 500 V to 360 kV while providing power ranging from 10 W to >100 kW.

Spellman's power supplies are used in a wide range of applications including mass spectrometry, electron and ion beam sources, power feed equipment, capillary zone electrophoresis, electrospinning, capacitor charging, electrostatic chucks, and image intensifiers and magnetrons. For more information, see the [website](#).

TDK-Lambda Americas

(Neptune, NJ)

TDK-Lambda Americas is a leading producer of high-current and high-voltage power sources including high-power programmable ac-dc, and high-voltage capacitor charging and dc power supplies. Ranging in output from 200 W to over 100 kW, TDK-Lambda Americas products provide power to many of today's semiconductor, automotive and component burn-in systems. TDK-Lambda Americas- power supplies are also used in medical applications (light sources, laser surgery, magnetic resonance imaging), oil well logging, electroplating, particle physics research and other general laboratory and in industrial processes. TDK-Lambda Americas (with ALE systems) is a vertically integrated manufacturer. All manufacturing is done in Neptune, New Jersey. For more information, see the [website](#).

UNIPOWER

(Coral Springs, FL)

UNIPOWER is a leading provider of dependable high-efficiency power electronics, energy conversion systems and power supplies. UNIPOWER solutions include a complete line of high-efficiency rectifiers, inverters and dc power systems for mission critical applications. With over 25 years' experience supporting customers in more than 60 countries, UNIPOWER is focused on bringing reliable power solutions to customers across all applications and environments. UNIPOWER designs, manufactures and markets power solutions for a wide range of markets and applications, including telecom, cable, power utilities, energy, government, medical and industrial. For more information, see the [website](#).

Vicor

(Andover, Massachusetts)

Vicor is a global power module technology company, focused on providing power system designers with advanced, high-performance modular solutions for their toughest power design challenges. It continuously advances the density, efficiency and power delivery capabilities of its power modules by staying on the forefront of distribution architectures, conversion topologies and packaging technology. The company enables a competitive advantage for its customers in infrastructure, industrial and automotive applications to rapidly advance their unique power system designs.

Examples of industrial applications include industrial 3D printing; medical diagnostics; energy/renewables such as bus WiFi, digital video recorder, and vehicle GPS location system; instrumentation and controls; LED display and signage; medical diagnostics and medical cart supply; industrial welding laser; optical sorting machine; railway applications such as rail trackside signaling; automated test equipment; and tethered UAVs. Products include ac-dc converters and input modules; dc-dc converters including isolated regulated, isolated fixed ratio, nonisolated regulated and nonisolated fixed ratio; and filters. For more information, see the [website](#).

XP Power

(Singapore)

XP Power is committed to being a leading provider of power solutions, including ac-dc power supplies, dc-dc converters, high-voltage power supplies and RF power supplies. XP offers total quality, from in-house design in Asia, Europe and North America through to manufacturing facilities around the world. The company offers the widest range of power products available from one source and unrivalled technical and customer support, aiding both vendor consolidation and cost reduction programs. Applications include healthcare, high-voltage dc-dc converters, high-voltage rack & chassis mount, three-phase power supplies, RF power, custom power supplies, railway and defense & avionics.

The RF power supplies find application in the semiconductor, advanced materials, induction heating, dielectric heating and laser industries. The three-phase input power supplies are designed to operate from a variety of global sources, including 208, 380/400/415 and 480 Vac. The product range includes DIN rail mounting supplies rated at 120, 240, 480 and 960 W, chassis mount supplies to 5 kW and configurable power supplies from 1500 W to 3 kW with output voltages from 3.3 to 400 Vdc.

High voltage rack & chassis mount applications include semiconductor fabrication equipment, vacuum/plasma processing, analytical instrumentation, medical diagnostic and therapeutic systems, test equipment and research/academic. High-voltage power supply applications include mass spectrometry, electro adhesion, electrostatic precipitators, electrophoresis, capacitor charging, photomultiplier tubes, avalanche photodiodes, solid state detectors, lamp supplies, light sources, piezo devices, ignitors/spark ignition, printers, ion pumps, grid bias and image intensifiers. For more information, see the [website](#).