Data Center Power Solutions

Accelerate, Improve and Enhance the Capabilities of Your Next System Design

As one of the largest power supply companies in the world, Artesyn Embedded Technologies has many years’ experience designing and manufacturing advanced power solutions for data center, enterprise, telecom, industrial and medical applications. We have an unmatched ability to design power conversion solutions for your specific needs.

Artesyn’s innovations for hyperscale and cloud computing data centers have a relentless focus on optimizing efficiency and power density to reduce the total cost of ownership.

Talk to your Artesyn contact about how we can help you reduce operating costs for your data center, backed by a dedicated R&D and operations team to ensure swift deployment and stable operation for your program needs.
Why Work with Artesyn?

- **Shorter Time-to-market**
  We use modular hardware and software approaches to help drive mature solutions during development. Your custom power solution will benefit from our design experience and years of applied deployments. Our in-house EMI/EMC compliance and safety certification laboratory help speed the product design process.

- **Higher Reliability**
  A wide range of on-site environmental testing capabilities ensures Artesyn products are designed for quality and reliability.

- **Greater Scalability**
  Our design philosophy helps drive common platforms that are scalable, programmable and plug-compatible with our earlier-generation products, enabling quick system changes or enhancements. You can now satisfy most changes in power requirements simply by reprogramming the power supplies — and if your needs change radically, our scalable platforms allow fast transitions to optimized designs.

- **Higher Efficiency**
  We not only design some of the highest efficiency power supplies on the market, Artesyn power solutions incorporate best-in-class technology, powerful programming, monitoring and self-testing software that provides the critical data you need to manage power consumption.

- **Dedicated Project Team**
  Your power conversion project will be handled by a seasoned and committed team of expert engineers, project managers and operations professionals to ensure it is delivered on time and on budget.

- **Outstanding Technical Support**
  Our experienced field application engineers, who will work with you to ensure the solution meets your needs, are backed by a dedicated customer application support lab, staffed by power engineering experts and full equipped to test almost any power supply for almost any application. Want to know how a power supply will perform in a certain situation? A written Application Test Note will answer your questions.

- **In-house Manufacturing**
  Artesyn products are backed by state-of-the-art equipment, innovative automation processes and industry-leading quality.

- **Operational Excellence**
  We use innovative demand and supply replenishment systems, all with an uncompromising focus on helping you succeed.
Power Supply Design Controls

Reliability Models and Predictions
- Our sophisticated modeling capability enables us to predict design reliability in terms of mean-time-between-failures (MTBF) using Telcordia, Bellcore or MIL-HDBK-217F.
- We provide design trade-off analysis and review of part stress derating performance.

Failure Modes and Effect Analysis
- Our analytical techniques enable us to identify, review and mitigate failure modes, their causes, mechanisms and effects.
- We provide a formal risk assessment to reduce field failures at the customer site.

Component Selection
- We maintain a database warehouse of all component information.
- Our design engineers can only select components rigorously approved from suppliers that have undergone strict qualification and auditing process.

Derating Analysis
- We implement custom or industry standard derating guidelines to predict and reduce the failure rate of the power supply.

Design for Manufacturability
- Our internal design rules regarding manufacturability ensure consistency and highest quality in the production process.

Common Firmware Platform
- Our rapid prototyping capability and faster firmware development helps to improve time to market.
- Modules are produced, tested, reviewed and revised, resulting in higher quality levels.

Artesyn uses the latest design methodologies and techniques to ensure that our power supplies meet the rigorous quality and reliability requirements of the hyperscale data center.
Power Solutions for Data Center Racks

Artesyn’s simplicity of architecture for rapid deployment makes it the ideal solution for hyperscale and cloud computing data centers.

Multi-faceted expertise in the design of power shelves:
- Integration of PDUs, shelves, and modules
- Power management and user interface
- Considerations for installation and maintenance
- Ingress protection
- Various input voltage options
- Future-proofing designs

PDU Solutions
Our designs provide a wide range of PDU solutions from the simple to the intelligently-managed distributed network power. Whatever your needs, we can provide filtering, load balancing, metering, and monitoring and control.

AC-DC Solutions
Our portfolio covers a wide output power range with options for 12 V or 48 V output voltage solutions. Our technology enables high density and high efficiency designs.

DC-DC Solutions
We offer alternative input options to our modules to enable flexibility in the ever-changing hyperscale market.

Battery Backup Modules
Our designs for backup power help fulfill power requirements for mission critical environments when you need it, where you need it.

Power Shelves
Our breadth of expertise will manage thermal complexity to handle cooling, and provide every watt of usable power from the power cord to the chip.

Fan Trays/Cooling Modules
Our capabilities include the design of cooling modules to effectively manage thermal challenges.
Power Shelf Solutions

12 V Shelf Power

18 kW 12 V AC-DC Power Shelf
- Platinum-level efficiency
- 18 kW output (15 kW N+1)
- Six (6) 3 kW PSU modules
- 19” rack, 1U height
- Dual AC input, built-in ATS
- Hot swappable PSUs
- RMC for management

14.4 kW 12 V Power Shelf
- Platinum-level efficiency
- 14.4 kW output (12 kW N+1)
- Six (6) 2.4 kW PSU modules
- 19” rack, 3U height
- Dual AC and DC input, built-in ATS
- Hot swappable PSUs
- RMC for management

16.8 kW 12 V Power Shelf
- Platinum-level efficiency
- 16.8 kW output (14.4 kW N+1)
- Seven (7) 2.4 kW PSU modules
- 21” rack, 3U height
- Dual AC and DC input, built-in ATS
- Hot swappable PSUs
- RMC for management

48 V Shelf Power

32 kW 48 V Power Shelf
- Titanium-level efficiency
- 32 kW output (28.8 kW N+1, 16 kW N+N)
- 10 3.2 kW PSU modules
- 21” rack, 30U height
- Supports AC and DC input
- Hot swappable PSUs
- RMC for management

Backup Power

4.4 kW 12 V Backup Power Shelf
- 4.4 kW power for 15 minutes
- Three (3) 1.47 kW BBU modules
- 21” rack, 1U height
- Hot swappable BBU modules
- I2C for remote management

18 kW 12 V BBU Shelf
- 18 kW power for three (3) minutes
- Six (6) 3 kW BBU modules
- 19” rack, 2U height
- Hot swappable BBU modules
- RMC for remote management

Stand-alone Power Modules

OCS Architecture
- Platinum-level efficiency
- 1600 W PSU with optional battery back-up (BBU) power; up to six (6) PSU in parallel
- Battery provides >35 seconds run time (plus 10 second 'walk-in' period)
- Flexible, optimized, customizable chassis/rack-level deployments

PS1000 and PL1000 12 V PSUs

Project Olympus Architecture
- 92% peak efficiency
- 1000 W PSU
- Internal 680 W N+1 redundant
- Dual three-phase AC input with input voltage selector
- Fault mode resiliency
- PMBus® compliant
- PL1000 includes embedded BBU

PS1650 12 V PSU

Project Olympus Architecture
- 91% peak efficiency
- 1650 W PSU
- Fault mode resiliency
- Up to four (4) hot pluggable PSUs per system
- PMBus compliant
Isolated and Non-Isolated Products

The Artesyn portfolio of DC-DC converters provides solutions both isolated and non-isolated converters. These products support a two-stage power conversion design approach, or a single, direct conversion design approach to realize power architectures within a server.

The ADC100 family of converters follow the industry’s first standardized footprint for this class of product. Artesyn is one of the founding members of the Power Stamp Alliance which defined the standard footprints.

**ADC100M and ADC100S Direct Conversion**
- 100 A PSA Main and Satellite footprints supported
- 100 A to 600 A combination of 1 Main plus 5 Satellites possible
- SVID and AVSBus control interface available
- 1.8V and 1V nominal output voltage versions
- >93% efficiency targeted

**LGA80D and LGA50D Non-Isolated**
- 160 A per inch² current density
- Flexibility of use with digital/analog control
- Wide-range O/P (0.6 to 5.2), dual independent channel
- Stackable up to four (4) units:
  - 320 A for LGA80D
  - 200 A for LGA50D

**Isolated 12 Vout 1/8 and 1/4 bricks**
- 300 W and 550 W in 1/8 bricks
- 500 W, 600 W, 700 W, 800 W and 1300 W in 1/4 bricks
- Digital controlled, digital interface
- Up to 97.5% efficiency
Industry Standard Power Supply Options

Industry standard form factors for computing, storage, and networking needs

**Industry Standard Features**
- Platinum-level efficiency
- -48 Vdc input options
- Standard and reverse airflow options
- 495 W to 2000 W
- N+1 or N+N redundancy
- Hot pluggable PSUs
- PMBus® compliant

**Custom PDU Solutions**

**Basic Features**
- Input options: Three-phase Wye or Delta up to 528 Vac, Single-phase up to 277 Vac
- Multiple output receptacle configurations including 277 Vac options
- Class A EMI
- Breaker protection for outputs
- Factory installed input cables
- Various mounting location options

**Advanced Features**
- Intelligent power management — remote monitoring and control
- Environmental monitoring
- Input overcurrent protection
- Surge suppression and filtering
- Status LED indicators for alarms

**Industry Standard Power Supply Options**

1U x 86 mm x 195 mm
- DS495SPE-3 (500 W)
- DS750PE-3 (750 W)
- DS1100PE-3 (1100 W)
- DS1600SPE-3 (1600 W)
- DS2000SPE-3 (2000 W)
- DS2400SPE-3 (2400 W)

1U x 80 mm x 280 mm
- DS1050-3 (1050 W)
- DS1200-3 (1200 W)

1U x 54.5 mm x 322 mm
- DS760SL-3 (760 W)
- DS1100SLPE (1100 W)

1U x 54.5 mm x 322 mm
- DS760SL-3 (760 W)
- DS1100SLPE (1100 W)

1U x 73.5 mm x 185 mm
- CSU550AP-3 (550 W)
- CSU800AP-3 (800 W)
- CSU1300AP-3 (1300 W)
- CSU1800AP-3 (1800 W)
- CSU2000AP-3 (2000 W)
- CSU2400AP-3 (2400 W)
About Artesyn Embedded Technologies

Artesyn is one of the world’s largest and most successful power supply companies, embracing the well-known Astec brand. The company’s extensive standard AC-DC product portfolio covers a power range of 3 watts to 24 kilowatts and includes open-frame and enclosed models, highly configurable modular power supplies, rack-mounting bulk front end units, DIN rail power supplies and external power adapters. Many of these products are available in medically approved versions and many of the higher power models feature extensive built-in intelligence.

As an industry leader in distributed power applications, Artesyn produces an exceptionally wide range of DC-DC power conversion products. These include isolated DC-DC converters, covering industry-standard sixteenth- to full-brick form factors with power ratings from 6 watts to 800 watts, and three application-optimized families of non-isolated DC-DC converters.

As a pioneer in low power switch mode adapters, Artesyn has designed and manufactured solutions for almost every major mobile phone supplier. With well over one billion chargers shipped from its best-cost facilities, Artesyn has aligned itself to meet the demands for the next billion chargers through new platforms, automated manufacturing methodology and unsurpassed quality and reliability.

For more than 40 years, customers have trusted Artesyn to help them accelerate time-to-market and shift development efforts to the deployment of new, value-add features and services.

Artesyn’s engineering and technical support is backed by world-class manufacturing that can significantly reduce time-to-market and help customers gain a clear competitive edge. Headquartered in Tempe, Arizona, Artesyn has over 15,000 employees worldwide across multiple engineering design centers, manufacturing facilities, and global sales and support offices.