



Electric Utilities

Delivering reliable power through smart grids

se.com/industrial-business-continuity

Life Is On

Schneider
Electric

Clean, reliable, sustainable and uninterrupted power, 24/7

With the variable nature of energy resources, new technologies improve the availability of power generation and power transmission to maximize energy output. You depend on your power supply to keep your operations running smoothly despite extreme temperature ranges and humidity levels, seismic activity, and exposure to water, dust, gases, and other abrasive elements. Power failures can put the safety of your people and equipment at risk, stall your operations, halt your ability to send and receive data, and cost you in non-productive time

As a global specialist in energy management, our mission is to be your digital partner for Sustainability and Efficiency.

We drive digital transformation by integrating world-leading process and energy technologies, end-point to cloud connecting products, controls, software and services, across the entire lifecycle, enabling integrated company management for power and grid companies.

For more than 40 years, major operators and engineering, procurement, and construction (EPC) companies have trusted us to ensure 24/7 power availability for their operations in the most demanding environments. We deliver commercial and industrial uninterrupted power supplies (UPS) to keep your operations running seamlessly, lowering risks in any time or environment.

The bottom line:

To be profitable in today's operating conditions, power has to be sustainable, reliable and efficient, no matter the energy source.



Comprehensive, integrated UPS solutions

Our solutions are supported by software and automation systems that keep your operations at peak efficiency, safety, and compliance. They support facilities and equipment plants:

- Wind farm
- Hydro Electricity
- Thermal plant
- Nuclear plant
- Hydrogen plant

We offer scalable UPS solutions that can be adapted to meet your needs or we can provide a fully custom industrial UPS solution. From design and installation to startup and personnel training, we can manage the entire implementation process for you.

Long-term peace of mind

We provide your critical power solution, and the service excellence required to maintain optimal performance. Proper care and regular maintenance will save you time and money, and prolong the life of your equipment. We offer warranties and service plans, preventive maintenance, continuous upgrades, and remote monitoring services. Should you require on-site assistance, our field technicians and service personnel are conveniently located worldwide to accommodate you, wherever you operate.

Schneider Electric's advantages

- End-to-end power solutions
- Full protection against disturbances in power availability and quality
- Long service life
- Adaptable or fully customizable solutions
- Compliance with all types of environments
- Streamlined project management
- Personnel training
- Ongoing support and maintenance
- Sustainability partner

10 Reasons to use a UPS

1. Mitigate the risk of power failures with high levels of power availability and quality
2. Avoid costly nonproductive time and remediation
3. Reduce energy costs — one of your largest operating expenses — by up to 30%
4. Keep critical processes and facilities online
5. Maintain data continuity
6. Maximize both operations and energy efficiency
7. Ensure regulatory compliance
8. Protect your crew and the environment
9. Enhance security
10. Help meet sustainability goals

Critical power and grid applications



Thermal plant

Control rooms: SCADA systems, power plant controller
 Generator: Generator control and protection system, motor starting, shaft turning devices
 Security: Access control, video surveillance (CCTV), telecommunication, emergency lighting, fire fighting
 Data: Data processing, cybersecurity, edge computing, network, computer rooms

Hydro electricity

Control rooms: SCADA systems, power plant controller
 Generator: Generator control and protection system, motor starting, shaft turning devices
 Security: Access control, video surveillance (CCTV), telecommunication, emergency lighting, fire fighting
 Data: Data processing, cybersecurity, edge computing, network, computer rooms



Nuclear power plant

Control rooms: SCADA systems, power plant controller
 Security: Access control, video surveillance (CCTV), telecommunication, emergency lighting, fire fighting

Wind farm

Control rooms: SCADA systems, power plant controller
 Wind turbine: Turbine control and protection system
 Security: Access control, video surveillance (CCTV), telecommunication, emergency lighting, fire fighting



UPS offer for Power & Grid

Smart UPS and Galaxy UPS solutions are standard and adaptable solutions

Single-phase UPS: APC Smart UPS Online, Easy BVS, DIN Rail UPS, Easy UPS SRVS

Smart UPS - RT models protect your critical hardware from damaging surges and power failures, boosting availability levels for critical applications. Units are available in both tower and standard 19" rack formats, mounted in just 2U of space.



Galaxy VS (1, 2, 3), VM (1, 2), VL (1, 2, 3), Galaxy VX (1, 2), Easy UPS 3-Phase Modular (3), Easy UPS 3S/3M/3L, Symmetra PX

Schneider Electric UPS line is at the top of its class. The three-phase UPS units, 10 – 1500 kVA, come parallel-ready to give you the highest power availability for your most critical applications. Both models come with small footprints and flexible designs, readily adaptable and scalable to handle each power event without a break in service.



- (1) Lithium Ion Battery
- (2) eConversion
- (3) Live Swap

Three-phase static transfer switch
30 – 2000 A, MGE Upsilon™ STS

- Supplies power to a range of equipment from two independent and redundant sources
- Automatically transfers power to a stable alternate source in less than four milliseconds
- Detection and transfer times up to 10 times faster than many other switches

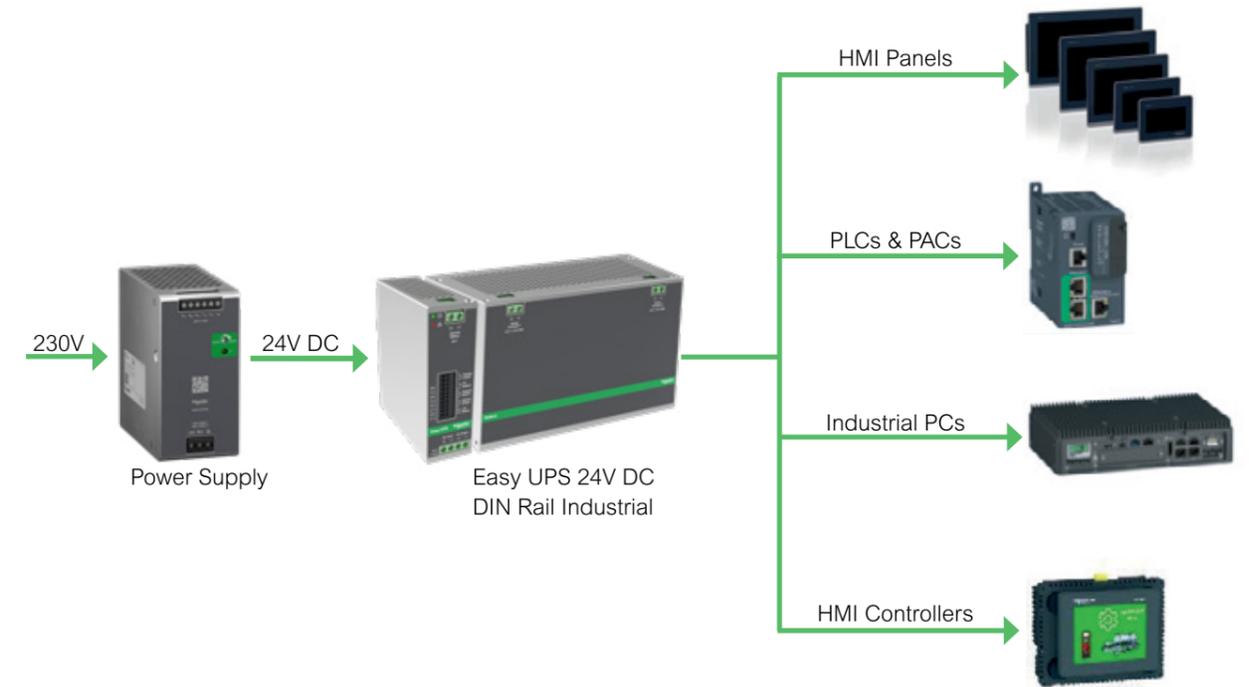
For further information on products please go to se.com

- Available from 0.5 to 20kVA, 50 and 60Hz (lower rating also available)
- Designed to be installed in racks or cabinets
- Hot-swappable, user-replaceable batteries
- Modbus communication enabled
- IEC and UL standard
- Elevation: 1000m no-derating, above contact us
- Double conversion topology UPS for ultra-high efficiency and power protection with harmonic free input rectifier
- Comes parallel-ready, so you can pay as you grow and meet your future needs
- Designed to be compliant IP 20, 21 & 54 on request
- Backup times up to two hours
- Fault-tolerant architecture due to automatic and maintenance bypass in a compact footprint
- Full front access with a user-friendly interface
- Operating temperature: upto 50°C
- IEC and UL standard
- eConversion mode with 99% efficiency



24V DC Din Rail UPS for Industrial Automation and Controls

Schneider Electric automation control solution example:



Schneider Electric industrial controls portfolio

PLCs

Modicon M221, 241, 251, 262
Zelio Logic Smart Relay SR2/SR3

PACs & Dedicated Controllers

Modicon MC80, M340, 580, X80, M172

Industrial PCs

Harmony P6
Harmony iPC, Edgebox

Power Supply

Modicon ABL5
Modicon ABL8RP/WP

Basic HMI Panels

Harmony ST6, STO, STU, GTO
Magelis XBT N, R, RT

Advanced HMI Panels

Harmony GTU, GTUX, GK M
Magelis XBT GH

HMI Controllers

Harmony SCU
Magelis XBT GC

Prefabricated modular data center solutions for Power & Grid

Our data center solutions protect and optimize data centers and networks architectures. Schneider Electric offer you the best data center solutions, providing the following advantages:

- Simplify and speed up planning, designing and building of your data center
- Roll out and implement software defined data centers
- Protect on-premise applications operating in tough environments
- Optimize costs and performance by balancing on-premise and cloud-based applications
- Secure critical process applications independent of developments in digitized processes and applications, as needed for the future
- Monitor, automate and control your entire data center physical infrastructure with integrated DCIM.

Prefabricated data center applications: all in one box and in all kinds of conditions

Easy-to-deploy, pre-engineered IT infrastructure packaged within a secure, weather-proof, fire-rated shipping container for remote or special applications.

Prefab data center: SmartShelter containers address the challenges of deploying data centers in remote sites for power and grid environments, where a dedicated building or space does not exist. They enable real-time processing and resolve latency and bandwidth issues by locating a datacenter closer to your operations. Benefit from the simplicity of an easy-to-deploy data center for a branch office or power and grid operation.



Power

Power increments between 200kW-1.2MW



IT space

IT solutions from 1 rack-200 racks



Cooling

Technologies: DX-chilled water-direct air-indirect air

Enabling IT/OT Convergence

EcoStruxure™ Micro Data Center R-Series for Rugged Environments



Solution at a Glance

Industrial Internet of Things (IIoT) and Industry 4.0 transformations mean that critical IT and OT equipment is moving closer to where it's used. That's why Schneider Electric™ has expanded its line of Micro Data Centers to include IP rated enclosures for indoor environments in commercial and industrial applications. This plug-and-play solution is everything you already love about EcoStruxure Micro Data Center – a complete, simple-to-deploy, simple-to-manage solution – designed to leverage existing space.



Up and running in weeks, not months.



Reduction in total cost of ownership.



Pre-configured solution for IT/OT convergence.

Secure digitally and physically for cybersecurity

- IP54 rating for dust and water protection in industrial environments
- 24/7 high sensible cooling for harsh environments
- Optional: Power backup, remote monitoring, video surveillance and fire suppression system



Ready-to-deploy industrial edge solutions

Implementing effective industrial edge computing solutions requires several components all working in concert. Core hardware and software applications, physical and cyber security, and remote monitoring and maintenance solutions help come together to ensure everything stays up and running 24/7.

With over four decades of experience delivering solutions that meet IT/OT requirements, Schneider Electric provides complete, pre-integrated industrial edge computing solutions that can be quickly deployed and easily managed at customer sites. Working with our network of leading technology partners and AVEVA, we have ensured that our pre-integrated solutions are designed to run industry-standard software.

EcoStruxure™ Micro Data Center solutions

From low-profile, wall-mount to larger, floor-standing enclosures complete with cooling, EcoStruxure Micro Data Center solutions offer a fast, easy way to build and deploy edge computing infrastructure in any environment. Features include:

- Pre-assembled, pre-tested enclosed rack systems including IT equipment, physical infrastructure, and management software
- Standardized, pre-integrated designs enabling speedy, reliable deployments
- Security cameras, environmental sensors, and access controls to prevent malfunctions and provide visibility into potential security breaches

EcoStruxure IT monitoring and maintenance solutions

Managing edge computing sites is critical to ensuring business continuity, requiring around-the-clock monitoring and proactive maintenance to detect and correct issues before they occur.

EcoStruxure IT cloud-based management solutions enable users to mitigate and anticipate risk of failure of critical IT infrastructure while reducing operational expenses through an open, vendor-agnostic platform.

Schneider Electric's global footprint and domain expertise in IT infrastructure provide users visibility, insights, 24/7 expert remote monitoring, and on-site support.

EcoStruxure IT gives users peace of mind as they take advantage of everything that Industry 4.0 has to offer.



Cooling solutions

Cooling solutions for operational efficiency

In the power and grid business, temperature control is essential to maintain continuous operations. HVAC (Heating, Ventilation and Air Conditioning) needs can vary enormously, from heat absorption in high temperature zones to insulation protection in extremely cold climates. In all environmental conditions, it's essential to keep components in data rooms and working areas at the right temperature levels.

Schneider Electric Aquaflair and Uniflair portfolio of cooling systems provides power and grid operators with flexible, reliable and cost-effective solutions.

- **Flexibility:** Adapted to specific local conditions and can be custom-engineered in a wide range of ambient temperatures (-40°C to +50°C).
- **Reliability:** continuous operation through cutting-edge solutions and redundancy on critical parts.
- **Total cost of ownership:** Closed circuit water supplies and low power consumption reduce operational and maintenance costs.
- **Manageability:** terminal displays indicating all unit settings and data points with network interface for remote monitoring and intervention servation of valuable building space.

Cooling solutions



Uniflair Chillers



Uniflair LE

Cooling solutions for data center

Technologies: DX-chilled water-direct air-indirect air



Services anytime anywhere

Schneider Electric provides complete service support for operators to ensure efficient and uninterrupted power supply, enabling customers to focus on their core business..

With power and grid operations often located in remote and harsh environments, it's essential to design, deliver and maintain critical power facilities at all times and in all places. This full-service offer includes:

Design, engineering and installation

Schneider Electric works with its customers to configure, custom-build and install the right solutions to ensure safety, reliability and optimal performance.

Maintenance services

Schneider Electric offers a complete portfolio of preventive, routine and emergency maintenance services to make sure critical systems receive the care they need, including timely upgrades developed by our industry experts.

Remote monitoring and intervention services

Schneider Electric provides 24/7 monitoring both locally and remotely through network connections built into the systems. Schneider Electric experts and service partners monitor the health status of power facilities to diagnose, notify and, if needed, intervene from a distance or by coming on site.

Service plans

Schneider Electric offers customized service packages at predictable costs to maintain the highest performance levels and reduce downtime to a minimum.

Key figures

- A 170-year history of service culture
- 1,200 field service engineers
- 170 service centers in 100 countries
- 90 service-provider partners worldwide
- 6 regional service centers
- 49 rapid deployment centers
- Over 100 million man/hours of field experience



Become an EcoCare member and get exclusive access to our experts

EcoCare for single-phase UPS

Next generation services membership

Managing a fleet of single-phase uninterruptible power supplies (UPSs) and related accessories with your on-site team can be a challenge, not only when it comes to budget but also your team's time and bandwidth.

With EcoCare membership, Schneider Electric offers expertise combined with innovative digital capabilities across the single-phase UPS lifecycle.

As an EcoCare member, you have a trusted ally by your side, who has comprehensive knowledge of the unique edge architecture that powers your business, so you can minimize downtime, maximize operational efficiency and safety, and contribute to a smaller carbon footprint.

Unlock the full potential of your connectable single-phase UPS with 24/7 proactive monitoring and advice from our experts to support, maintain, and manage your equipment while empowering your team. EcoCare also gives you access to fast response times and on-site intervention with labor and spare parts included. You will also get preferred rates for our on-site data asset collection service to gain visibility into your inventory baseline for current and future distributed IT asset management.

With EcoCare, Schneider Electric's expertise helps you in your decarbonization journey to make the most of your energy and resources.

Why become an EcoCare member?

- **Exclusive access to experts**, both on-site and remote, allowing you to free up your personnel to focus on other priorities.
- **Optimize your maintenance costs** with replacement parts covered, including batteries.
- Help **reduce your OPEX** by relying on our services to manage your single-phase UPS fleet.
- Contribute to your **company's sustainability goals** with proper disposal and recycling of old equipment.
- **Get maintenance recommendations and insights** into your operations to help improve your business performance and efficiency.
- **Empower your team** and develop their skills with specialized training.

Maximum availability, third-party certified

Enjoy the highest energy efficiency available today without sacrificing load protection. Every Galaxy V-series UPS includes eConversion mode and delivers these benefits:



Class 1 protection

Choose eConversion mode with confidence; its performance has been certified Class 1 per IEC® 62040-3, the same class as Double Conversion.



Third-party certified performance

eConversion is the first UL-verified high efficiency mode. It has passed the rigorous testing of this 3rd-party, industry-leading certification agency.



Excellent load protection, including patented zero-break transfer design

The UPS continues to deliver input power factor correction, harmonic filtering, and no-break transfer to Double Conversion mode or battery operation.



Continuously charging batteries

With eConversion mode, your batteries are ready when you need runtime.



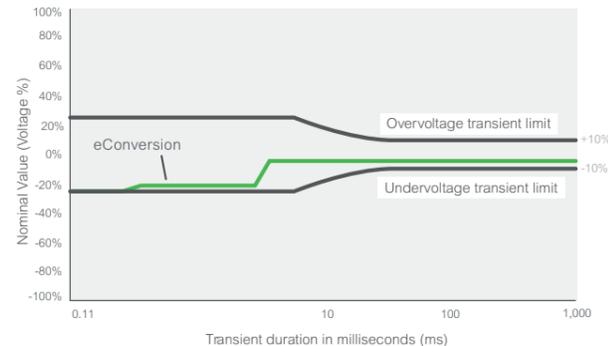
Over 8 years of field deployment

Since its launch in 2014, eConversion has been successfully deployed all over the world. Join thousands of customers who use it daily to protect their critical loads.



Ideal for IT and non-IT applications

- Data centers
- Factories
- Commercial offices
- Transportation
- Hospitals



eConversion meets Class 1 of IEC 62040-3: zero-break transfer during power outage.

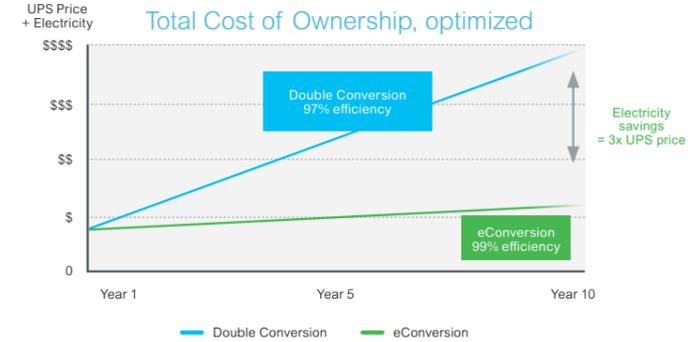
3x reduction in electricity use

Sustainably reduce your operating costs

Using eConversion mode achieves 99% efficiency, which provides significant savings every year on your electricity bill. Compared to Double Conversion, the savings are typically equivalent to 3 times the UPS acquisition price after 10 years.

Optimize your energy consumption

eConversion power savings accrue fast. For example, Galaxy VL with eConversion mode conserves every year as much power as the electricity generated by 30 rooftop solar installations, equivalent to the electricity required to recharge 50 electric cars.



1x

Galaxy VL in eConversion



30x

Rooftop solar installations



50x

Cars powered



UPS eConversion savings over 10 years

UPS	kW rating	Electricity savings*	Carbon Emissions (Metric Tons) Savings	Equivalent solar rooftop production	Cars powered
Galaxy VS	150 kW	\$41,000	135	10	16
Galaxy VM	225 kW	\$73,000	243	17	28
Galaxy VL	500 kW	\$146,000	484	31	53
Galaxy VX	1500 kW	\$684,000	2300	154	263

*Model dependent; based on a market electricity price: \$0.15 /kWh and CO₂ emissions factor of 0.5 kg/kWh. The annual electricity and carbon emissions savings are done by comparing the UPS efficiency in Double Conversion mode to its efficiency in eConversion mode. Carbon emissions are calculated based on the world average reported by the International

Energy Agency (IEA): <https://www.iea.org/reports/global-energy-co2-status-report-2019/emissions>
Calculate your efficiency and carbon emissions savings using the eConversion vs Double Conversion calculator, using this link or the QR code on page 6: <https://www.se.com/ww/en/work/solutions/system/s1/data-center-and-network-systems/trade-off-tools/econversion-vs-double-conversion-calculator/>

To learn more about secure power solutions,
visit our website.

se.com/industrial-business-continuity

Life Is On



Schneider Electric Industries SAS
35, rue Joseph Monier - CS 30323
F92506 Rueil-Malmaison Cedex