



Water and wastewater secure power solutions

Guaranteed availability for mission-critical
systems in every stage of the municipal
water cycle

se.com/industrial-business-continuity

Life Is On

Schneider
Electric

Secure power for your water and wastewater facilities

With today's steadily growing populations, water and wastewater facilities have a crucial role in every community.

They must simultaneously:

- protect the environment
- keep waterborne diseases in check
- provide water suitable for industrial and human consumption

In addition, they also must keep rates low, adapt and comply with changing regulations, and operate on a restricted budget. As a water or wastewater facility, one of the most significant challenges you face is the unpredictable cost of energy, especially in the form of electricity. Energy is typically second only to staff in water or wastewater facility expenses, and can represent up to 30 percent or more of your total operating costs. UPS protection, dependable power architecture, and intelligent power monitoring systems are necessary to ensure reliability and optimization. Having these systems in place protects power-critical applications such as ultraviolet disinfection, valve pulsing in the membrane system, and operation of controllers on remote panels.



Comprehensive, integrated UPS solutions

Schneider Electric™ offers a long-standing reputation for reliability, a comprehensive range of solutions designed specifically for electrical environments and industrial applications, a high level of engineering and service capabilities, and a global network of support with a local presence, anywhere you need us.

We supply critical power solutions from design to services that maximize the availability of utility power for all types of process-critical equipment, systems, and applications, including PLCs, SCADA, pumps, UV treatment, and security devices throughout the entire water treatment process.

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



9 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

Mission-critical systems at every stage in the water/wastewater cycle

1 Pumping station

Pumps and motors
Single and Three phase UPS: 1-120 kVA

2 Treatment plant

Process automation
(FU), network, SCADA Single and Three phase UPS: 1-120 kVA

3 UV treatment

UV filters
Single and Three phase UPS: 1-120 kVA

4 Desalination plant

Process automation (FU), monitoring
Single and Three phase UPS: 1-500 kVA

5 Storage station

Pumps
Single and Three phase UPS: 1-120 kVA

6 Data center

Control center
Three phase UPS: 10-500 kVA

7 Remote control services

Control center, SCADA
Single phase UPS: 1-20 kVA

8 Lift stations

Pumps; motors
Single and Three phase UPS: 1-120 kVA

9 Wastewater treatment

Process automation, monitoring
Single and Three phase UPS: 1-120 kVA





UPS offers

For harsh environments

Gutor AC and DC systems are pre-engineered or engineered solutions for unique requirements

Three-phase UPS: Gutor PXC, Gutor PXP,
Gutor PxW Inverter: Gutor WxW

The Gutor UPS's (5 up to 220 kVA*) are successfully tested under extreme environmental conditions as well as under seismic conditions. With a very flexible design, they can meet nearly any requirement.



* Higher ratings on request

DC Rectifier: Gutor SDC

Gutor SDC is very flexible and can meet specific requirements and a wide range of backup times. Similar to the other products built on the xxW platform. Gutor SDC withstands the harshest environmental conditions.



- Double conversion topology UPS for ultra-high efficiency and power protection with harmonic free input rectifier
- High protection class IP 42 up to IP54 as an option, Dust Filter
- Backup times 10 min up to 2 hours and 8 hours on request
- Seismic design up to 2g
- Wide temperature range from -10°C up to +55°C
- Full-front service access
- IEC and UL standard
- Elevation: 1000m no-derating, above contact us



- Output voltage VDC 24 up to 220V
- Output Current 25 up to 1200 A
- Ambient temperature range from -10 to +55°C
- Battery management system
- Communication interface
- IEC and UL standard
- Seismic design up to 2g

UPS offers

For control area environments

Smart and Galaxy solutions are standard and adaptable solutions

Single-phase UPS: APC Smart UPS, Easy UPS SRV 1 Ph online

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.



Smart UPS Online



Easy UPS 1ph Online



- Available from 1 to 20 kVA, 50 and 60 Hz (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

Three-phase UPS: Galaxy VS⁽¹⁾⁽²⁾, VM⁽¹⁾⁽²⁾, VX⁽¹⁾⁽²⁾; Easy UPS 3S, 3M, 3L

Schneider Electric UPS line is at the top of its class. The three-phase UPS units, 10-1100 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.



Easy UPS 3S



Galaxy VS



Galaxy VM



- 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, IP32 on option and IP 44 (upon 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: 0 to 40°C
- IEC and UL standard

Data centers and networks for water and wastewater IT room applications

Our data center solutions protect and optimize data centers and network architecture. Schneider Electric offers 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 water and wastewater 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 water and wastewater 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

Cooling solutions

Cooling solutions for operational efficiency

In the water and wastewater 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.

The Schneider Electric Aquaflair and Uniflair portfolio of cooling systems provides water and wastewater 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



Aquaflair Chillers



Uniflair LE

Cooling solutions for data center

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



Uniflair IX*V



InRow®



Ecoflair Air Economiser

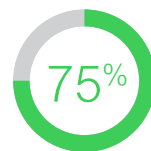
Industrial edge computing

A critical enabler of Industry 4.0

In the commercial and industrial space, talk of Industry 4.0 is nearly inescapable, and for good reason. The application of Industry 4.0 technology — artificial intelligence, robotics, digital twins can help companies more effectively gather and analyze data, enabling more agile, efficient processes that help them increase quality and productivity while reducing costs.

But Industry 4.0 involves implementing significant amounts of new technologies that require edge computing¹, meaning compute power close to the users or things that need them. And if these edge systems are not deployed and maintained properly, it can result in downtime for the entire business operation — throwing a wrench into the expected ROI from industrial transformation projects.

75.4B connected devices globally by 2025²

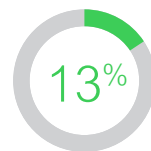


of enterprise data is expected to be created and processed at the edge by 2025³

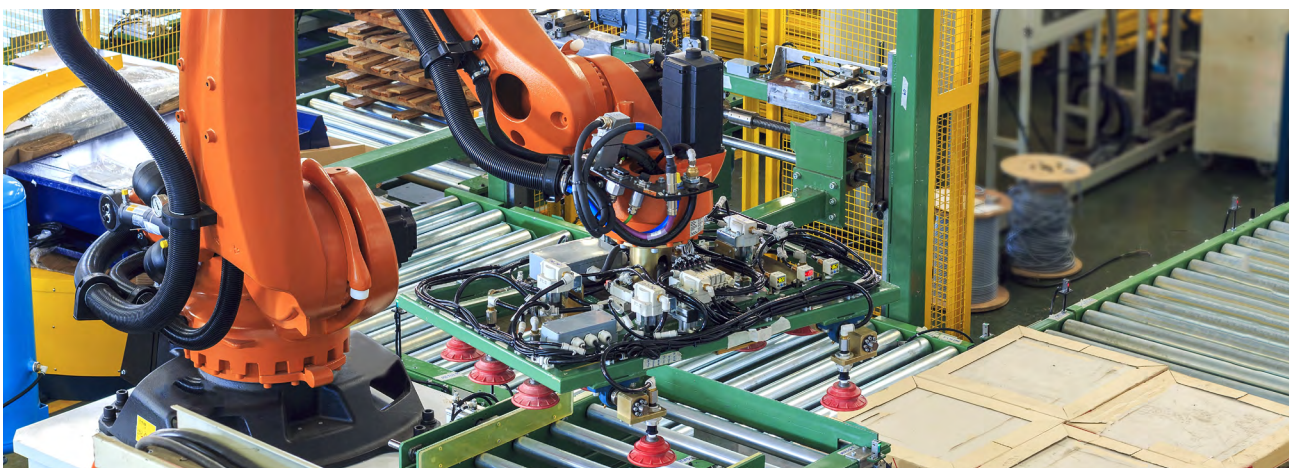
232B will be spent by enterprises

on artificial intelligence, machine learning, and robotic process automation technologies by 2025⁴

72% of companies implementing industrial transformation projects are still in the definitional or pilot phase, and of this,



are “stuck” in the pilot phase with no real results to show⁵



1 APC — “Edge Computing: Supporting Your Digital Transformation,” May 2020

2 IHS Markit — “IoT platforms: enabling the Internet of Things,” March 2016

3 Gartner — “What Edge Computing Means for Infrastructure and Operations Leaders,” October 2018

4 KPMG — “Ready, set, fail? Avoiding setbacks in the intelligent automation race,” July 2018

5 LNS Research — “Industrial Transformation (IX): Four Organizational Disconnects That Hinder Momentum,” May 2019

Industrial edge solutions – deployments made simple, reliable, and secure

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.



Pre-approved reference designs — reduce time to market

No one company can deliver all the components that comprise a fully functional edge computing solution. That's why Schneider Electric has cultivated relationships with the most respected global brands of IT compute, storage, and network equipment to develop a network of partners that can deliver reliable, long-term solutions.

We've also worked hard to pre-configure complete solutions that are ready to implement — so you can have peace of mind that all the components will work together as intended.

Our pre-configured reference designs can ...

- ✓ save up to 40%* in field engineering costs
- ✓ get systems to market 20%* faster
- ✓ reduce maintenance costs by 7%*

... meaning the customer gets a faster time to value.¹ Everybody wins.

* Based on previous data, 2019. This is not a guarantee of future performance or performance in your particular circumstances.

What are reference designs?

Reference designs are configurations of hardware, software, networking, and storage components approved by their respective manufacturers to work together. These can even be customized to a client's specific installation needs.

Schneider Electric worked with AVEVA, the market leader in industrial automation software, to understand the requirements for small, medium, and large installations. We then worked with our IT technology partners to define the best compute, network, and storage equipment to support each set of requirements.



Small installation

1 to 25,000 I/O²
per system



Medium installation

25,000 to 50,000 I/O
per system



Large installation

50,000 to 400,000 I/O
per system

The result? Comprehensive, approved reference designs that can be implemented in our EcoStruxure Micro Data Center enclosures, complete with supporting electrical and (if needed) cooling systems. The entire system can be monitored and managed by EcoStruxure IT, ensuring ongoing reliability and uptime.

Access the latest reference designs in the [Industrial Edge Computing Forum](#) on Exchange.

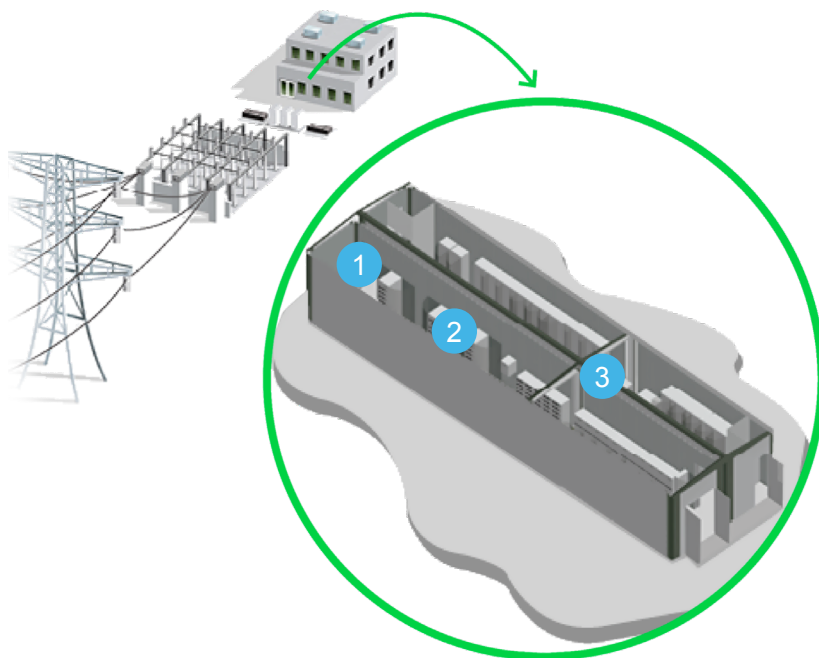
¹ World Wide Technology — "Your Digital Transformation is Only as Good as Your Supply Chain," June 2019

² Stands for "inputs/outputs"

Schneider Electric: Global specialists in energy management

A comprehensive portfolio of integrated solutions

Schneider Electric designs, realizes and implements innovative technical solutions for safe, efficient, reliable and clean energy. We support you in your energy management strategy by offering you various offers.



1 Medium voltage



2 Low voltage



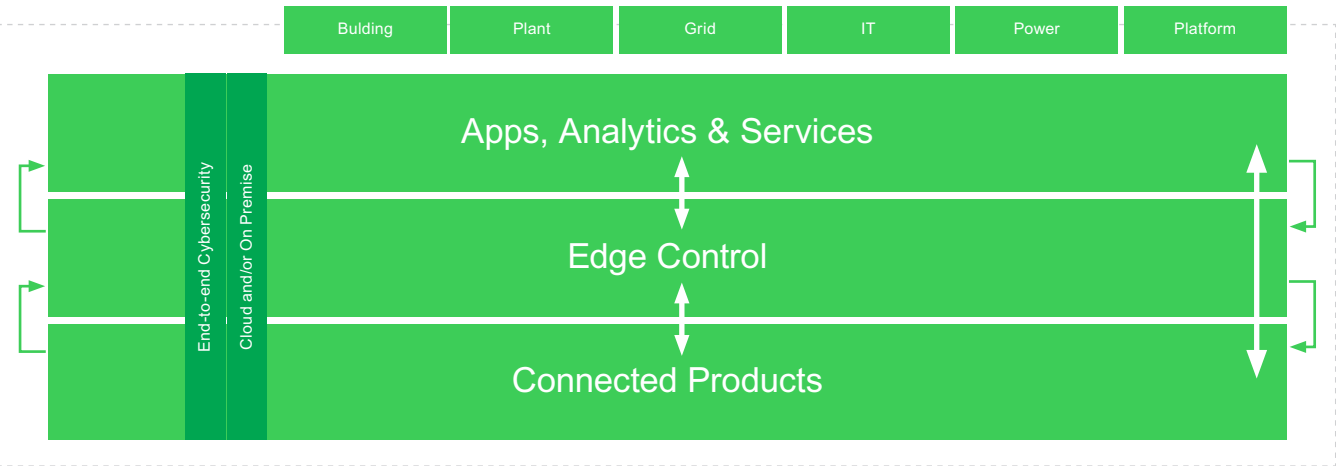
3 Secure Power



EcoStruxure: A total solution

EcoStruxure is an IoT-enabled architecture that delivers Innovation at Every Level from connected products to edge control, and apps, analytics and Services delivering enhanced value around safety, reliability, operational efficiency, sustainability, and connectivity to our customers.

EcoStruxure improves efficiency, safety, customer satisfaction with the right information to the right person, anytime and anywhere.



Lower
cost of maintenance,
reduced idle time and
unscheduled downtime



Better
data analytics for
operations optimization
and efficiency



Greater
safety and security of
people and asset



Higher
recovery, productivity
and reliability

Services at anytime and anywhere

Dedicated teams with experience you can trust.

The worldwide dedicated service team at Schneider Electric Critical Power and Cooling Services enables your water and wastewater plants to operate smoothly, ensuring optimized facility plans and streamlined project management, as well as guaranteed power availability for all stages of the water treatment and distribution process.

With Schneider Electric Critical Power and Cooling Services, you can concentrate on protecting the safety and security of your facilities while we take care of the details on the back end. Your solution can be safely and efficiently implemented with installation and startup performed by our certified field service engineers. Project services - such as project management, installation management, and site coordination - help you implement your solution on time and on budget. Our trusted Remote Monitoring Service acts as a second set of eyes, with secure 24-hour monitoring to detect and resolve problems before they become critical.

For hassle-free maintenance that minimizes downtime and protects your investment, choose one of our comprehensive Advantage Plan service packages. Advantage Plans include technical support, preventive maintenance, quick on-site response, and remote monitoring, providing you with the peace of mind that your solution is receiving the care it needs.



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

se.com/industrial-business-continuity

Life Is On



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