



# Critical Power Solutions for Airports

Guaranteed availability and  
sustainable mission critical systems

[se.com/industrial-business-continuity](https://se.com/industrial-business-continuity)

Life Is On

**Schneider**  
Electric

# Because airports never close

From their daily hustle and bustle to the quiet whirl of overnight operations, airports truly are 24/7/365 facilities. Changes and upgrades throughout the industry are placing even greater demands on airports' round-the-clock availability. Advanced scanning technologies, high-tech access controls, baggage security, and security-related lighting, for example, have made guaranteed availability as critical as airports' mission-critical systems themselves.



## When the stakes are high

Today, securing power for airfield ground lighting is more critical than ever. Recent ICAO regulations stipulate that the runway light transfer time must be less than one second, with the electrical change over time, from the main source to the emergency source, less than 1.4 to 1.5 seconds. Power protection therefore means protected safety.

And when it comes to security systems, the stakes are just as high. Now, 100 percent of baggage is automatically checked and screened by high-tech EDS (explosive detection systems); closed-circuit television security is essential in terminals and parking areas; and super-secure access control is fundamental to overall airport security.



# Comprehensive, integrated UPS solutions



## 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. Sustainability

## 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

## Enabling energy-efficient, "green" airports

Airports face the challenge of complying with carbon emission reduction standards. Schneider Electric can help airports renovate their existing infrastructure to increase the energy efficiency of facilities.

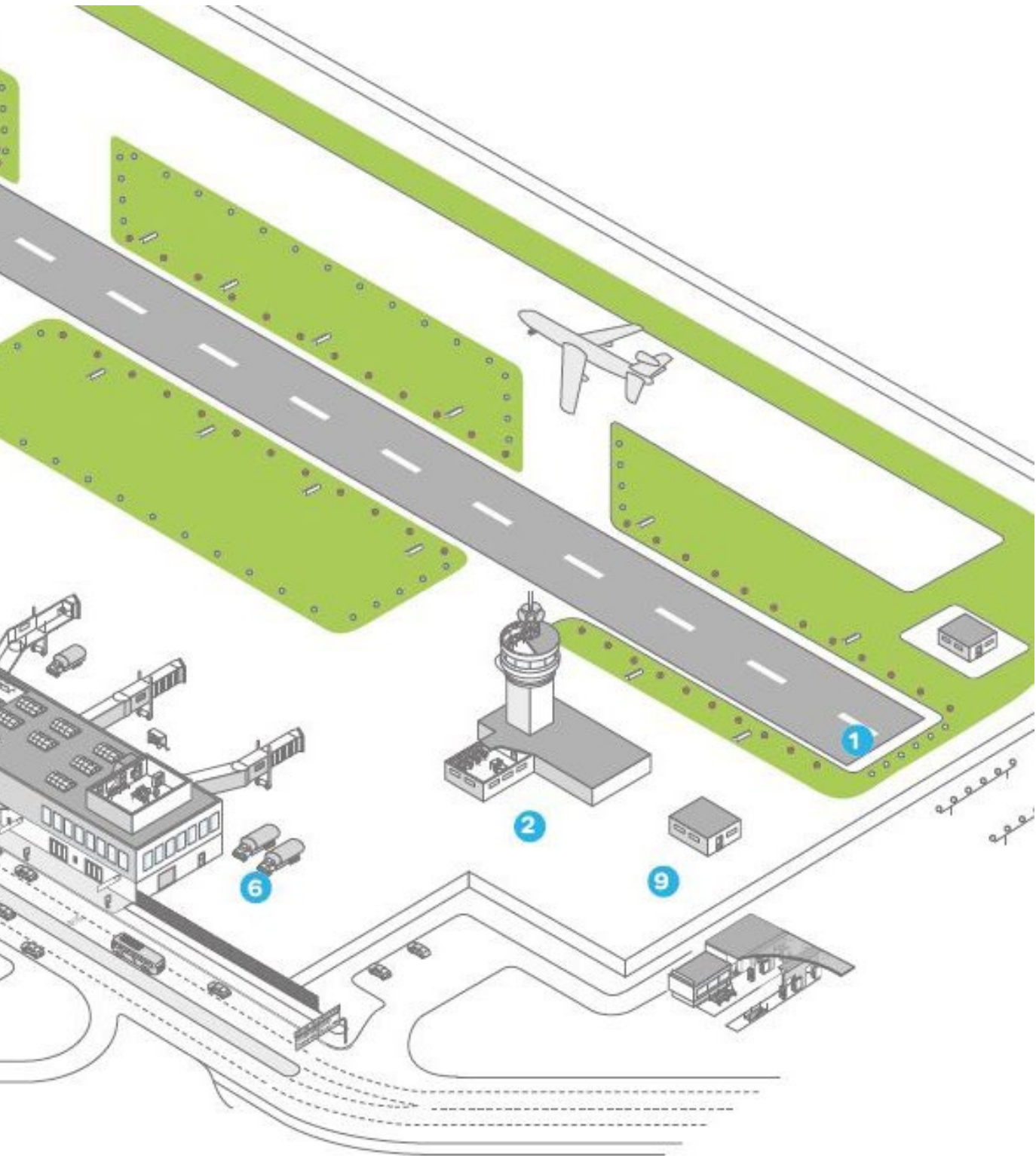
Specifically, our solution results in energy savings across lighting, building, power, and cooling systems.

Our energy monitoring and management capabilities help you continue to realize reduced operating costs through efficiently run operations now and in the future.

# What are the most mission-critical airport systems?

- 1 Airfield ground lighting, runway**  
Lighting, control automation  
Three-phase: 10 - 500 kVA
- 2 Air traffic control**  
Medical panels, mobile modalities,  
and sensitive electronic equipment.  
Single phase and Three-Phase: 10 - 500 kVA,
- 3 Passenger boarding, access security,  
and building security**  
Access control, screening systems, CCTV  
and cameras, fire alarm  
Single Phase : 1- 20 kVA
- 4 Parking management and security**  
Payment systems, cameras, emergency  
call stations, IT systems  
Single Phase: 1- 20 kVA
- 5 Passenger-facing terminal  
systems (e.g., ticketing,  
information display, shops)**  
IT network and data center,  
information screens, telecom systems  
Three-Phase: 10 - 500 kVA
- 6 Control room, command center  
and BMS**  
Control automation, monitoring and  
supervision systems, communication  
systems  
Single Phase and Three-phase: 1 - 40 kVA
- 7 Luggage screening**  
Console and work station, EDS (scanners),  
process automation  
Single Phase and Three-Phase: 1 - 500 kVA
- 8 Emergency lighting**  
Emergency lighting  
Single Phase and Three-Phase: 1- 80 kVA
- 9 MV electrical network automation**  
Process and control automation  
Single Phase: 1- 20 kVA





# Uninterruptible power supplies

Smart-UPS, Easy UPS and Galaxy UPS solutions are standard and adaptable solutions

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



Smart-UPS On-Line (1-10kVA)



Smart-UPS Modular Ultra



Easy UPS (1-10kVA)

- Available from 0.5 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
- Protection of critical hardware from damaging surges and power failures

1-Phase Online UPS: Galaxy V Series, Easy UPS 3-Phase



Easy UPS 3-Phase Modular



Galaxy VS\*\*



Galaxy VL\*\*



Easy UPS 3S



Easy UPS 3L



Easy UPS 3M

- Double conversion on-line 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
- Flexible protection ratings IP20 by default; optional kits for ratings up to IP52
- Backup times up to two hours
- Fault-tolerant architecture 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

\*Lithium-ion battery, Live Swap

\*\*eConversion, Lithium-ion battery, Live Swap

Three-phase static transfer switch

30 – 630 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



# 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.



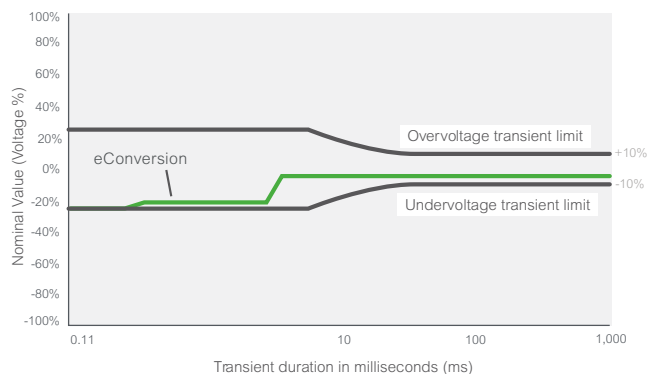
## Over 8 years of field deployment

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.

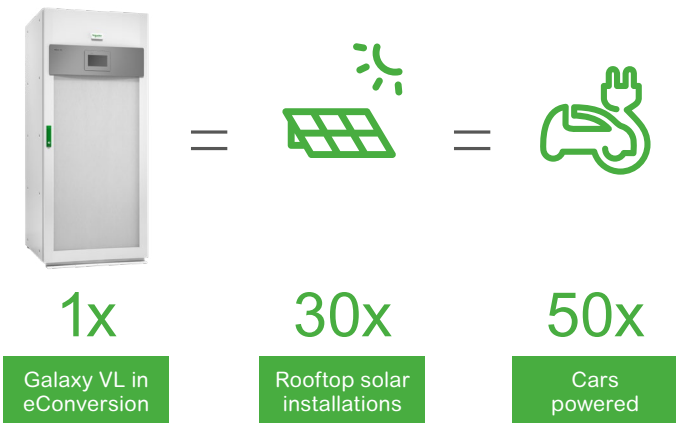
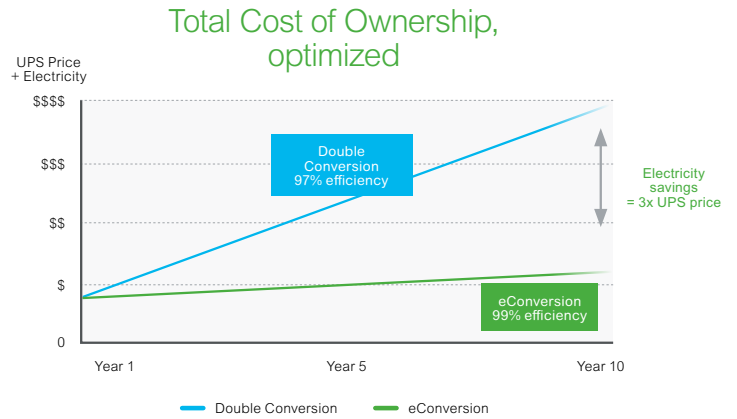
# 3x reduction in electricity use

## 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.



## 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 CO<sub>2</sub> 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:

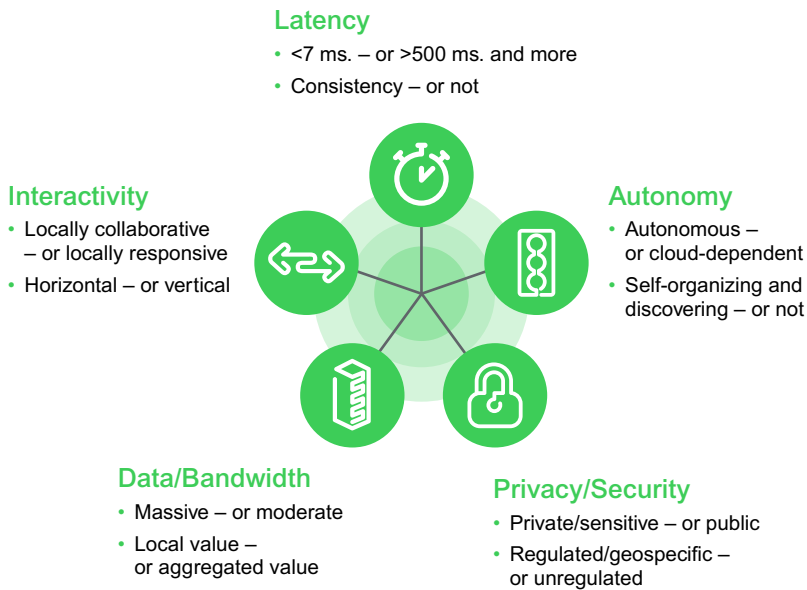
<https://www.se.com/ww/en/work/solutions/system/s1/data-center-and-network-systems/trade-off-tools/econversion-vs-double-conversion-calculator/>



# Industrial edge computing

## Why industrial edge computing?

Five imperatives driving computing to the edge



## Industrial edge

# 40%

of IoT data will be stored, processed, analyzed and acted upon at the edge

## Application for edge solutions



Automated Immigration Gates



Self Check in Kiosk



Retail Stores

# Network Edge instead of Industrial edge

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.



# Enabling IT/OT Convergence

EcoStruxure™ Micro Data Center R-Series



## Solution at a Glance

Critical IT and OT equipment are moving closer to applications as new technology innovations transform physical spaces. Autonomous systems, analytics, and robotics are examples of technology driving business growth and improving customer experience in airports. To provide solutions in these applications, EcoStruxure™ Micro Data Center R-series is NEMA and IP rated for harsh environments. Get a complete, simple-to-deploy, simple-to-manage solution – fine-tuned for industrial use.



Up and running in weeks, not months.



Protect equipment in harsh environments.



Pre-configured solution for IT/OT convergence.



Solution availability varies by region.

## Secure digitally and physically

- NEMA and IP rated for dust and water protection in industrial environments
- Integrated cooling options for harsh environments
- Additional options include: Power backup, remote monitoring, video surveillance and fire suppression system
- EcoStruxure IT ensures business continuity by enabling secure monitoring and remote management at the edge

# 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.<sup>1</sup> 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/O<sup>2</sup>  
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.

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

<sup>2</sup> Stands for "inputs/outputs"

# 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.



\*The Schneider Electric industrial software business and AVEVA have merged to trade as AVEVA Group plc, a UK listed company. The Schneider Electric and Life is On trademarks are owned by Schneider Electric and are being licensed to AVEVA by Schneider Electric.



**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

# Visibility and peace of mind

## EcoStruxure IT enables resilient, secure, and sustainable data centers and IT environments

Schneider Electric's comprehensive Data Center Infrastructure Management (DCIM) solution, EcoStruxure IT, ensures business continuity by enabling secure monitoring, management, insights, planning, and modeling – whether from a single IT rack to hyper-scale IT – on-premises, in the cloud, and at the edge.



Resilient



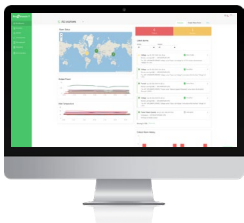
Secure



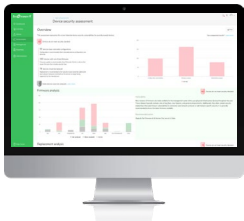
Sustainable

### Simplified visibility

Monitoring and management software streamlines data center device management:



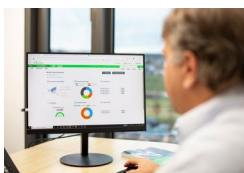
**EcoStruxure IT Expert** provides you a hands-on approach with **cloud-based** monitoring software that synthesizes and analyzes performance and alert data into proactive recommendations and enables wherever-you-go visibility from any device. Try it now: [www.ecostruxureit.com/ecostruxure-it-expert/#trial](http://www.ecostruxureit.com/ecostruxure-it-expert/#trial)



**EcoStruxure Data Center Expert** is a scalable end-to-end **on-premise** monitoring software that collects, organizes, and distributes critical device information, providing a comprehensive view of your company-wide, multi-vendor physical infrastructure.

### 24/7 peace of mind

Digital services proactively monitor your critical devices:

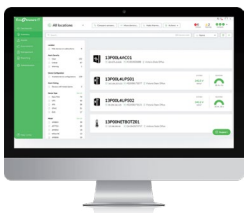


**EcoStruxure Asset Advisor\*** for secure power and cooling provides you a hands-off approach with 24/7 remote monitoring service by the Schneider Electric Connected Services Hub experts.

We monitor and troubleshoot, you relax.

### Operations, optimized

Planning and modeling software transforms data into performance insights:



**EcoStruxure IT Advisor** is a data center infrastructure planning and modeling solution that provides Data Center Managers in large enterprises and colocation data centers with full insights into their infrastructure to improve profitability, sustainability, and resiliency.

### Comprehensive on-site services

#### Start-up service: included with UPS

- Commission the installation in accordance with manufacturer's recommendations. Ensure optimal system performance from Day 1

#### Schneider Electric-certified installation services

- Expert configuration of your equipment for optimal performance and reliability

#### Maintenance services

- Ensure proper care of your mission-critical applications
- Preventive maintenance and response time upgrades, where available

#### Flexible service plans/ on-site extended warranty

- Hassle-free system maintenance
- Improve uptime at a predictable cost

\* Contact your local representative for availability.



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# Services at anytime and anywhere

## 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





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

[se.com/industrial-business-continuity](https://se.com/industrial-business-continuity)

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