Maximise the reliability and efficiency of your power network

Integrated power and energy management solutions

www.schneider-electric.ca

Schneider Electric™

Power has become a critical asset for every organization

Are you doing all you can to leverage it?

No matter what type of facility, power is critical to your operation. This brings significant management challenges: unpredictable power supply, unplanned outages, complex emission regulations, and volatile energy prices. You may also need to support power-sensitive processes that require high levels of power reliability, availability, and quality. In addition, there is more pressure to drive efficiencies, lower operating costs, and increase productivity without putting profits at risk.

What's your plan?

The changing energy landscape has created the opportunity to use less and save more, but it's also made power and energy management a much more complex job. Energy and facility managers are being asked to take on a more strategic role that includes long-term planning and investment decisions that have a greater impact on an organization's overall health.

We can help!

Schneider Electric delivers solutions that exceed conventional power and energy management, and unite your entire enterprise to help meet all your goals simultaneously.

[1] "Ensuring Resilience of US Electrical Grid", Lexington Institute, January 2013
[2] Energy Efficiency Services Sector: Workforce Size, Expectations for Growth, and Training Needs, LBNL, 2012
[3] "Meaningful Brands" study, Havas Media, June 2013

Without energy improvements, the average firm faces a

20 - 30%

energy loss[1]

$119 Billion

Annual productivity losses due to power disruptions and outages[2]

Sustainable brands outperform the market by **120%**[3]

Next Generation solutions deliver more. . .

More performance. More intelligence. More integration.

So what makes our solutions "Next Generation"? Our industry-leading systems offer the latest in technological advancements to help you simultaneously maximize reliability, availability, and quality, as well as improve operational and cost efficiency for your entire enterprise. You'll benefit from:

Holistic approach

Our solutions aggregate data from all your energy assets, including power, building, and process systems, into one user-friendly view so you can make more informed decisions and address problems efficiently.

Actionable intelligence

Our solutions provide real-time and historical information to multiple stakeholders anywhere in the world, including easy-to-use analytics, alarms and controls, as well as regulatory compliance and financial reporting.

Proactive capabilities

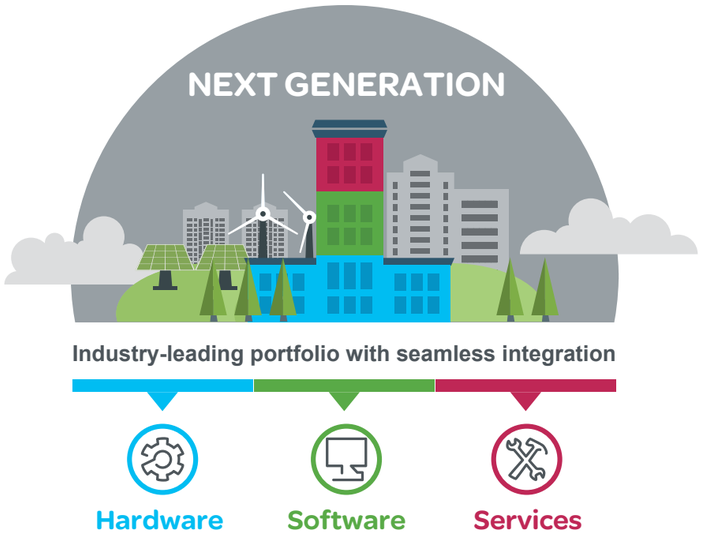
Our sophisticated products help you analyze and identify future needs so you can develop a long-term plan for things like energy purchasing, demand response, load changes, and equipment maintenance or replacement.

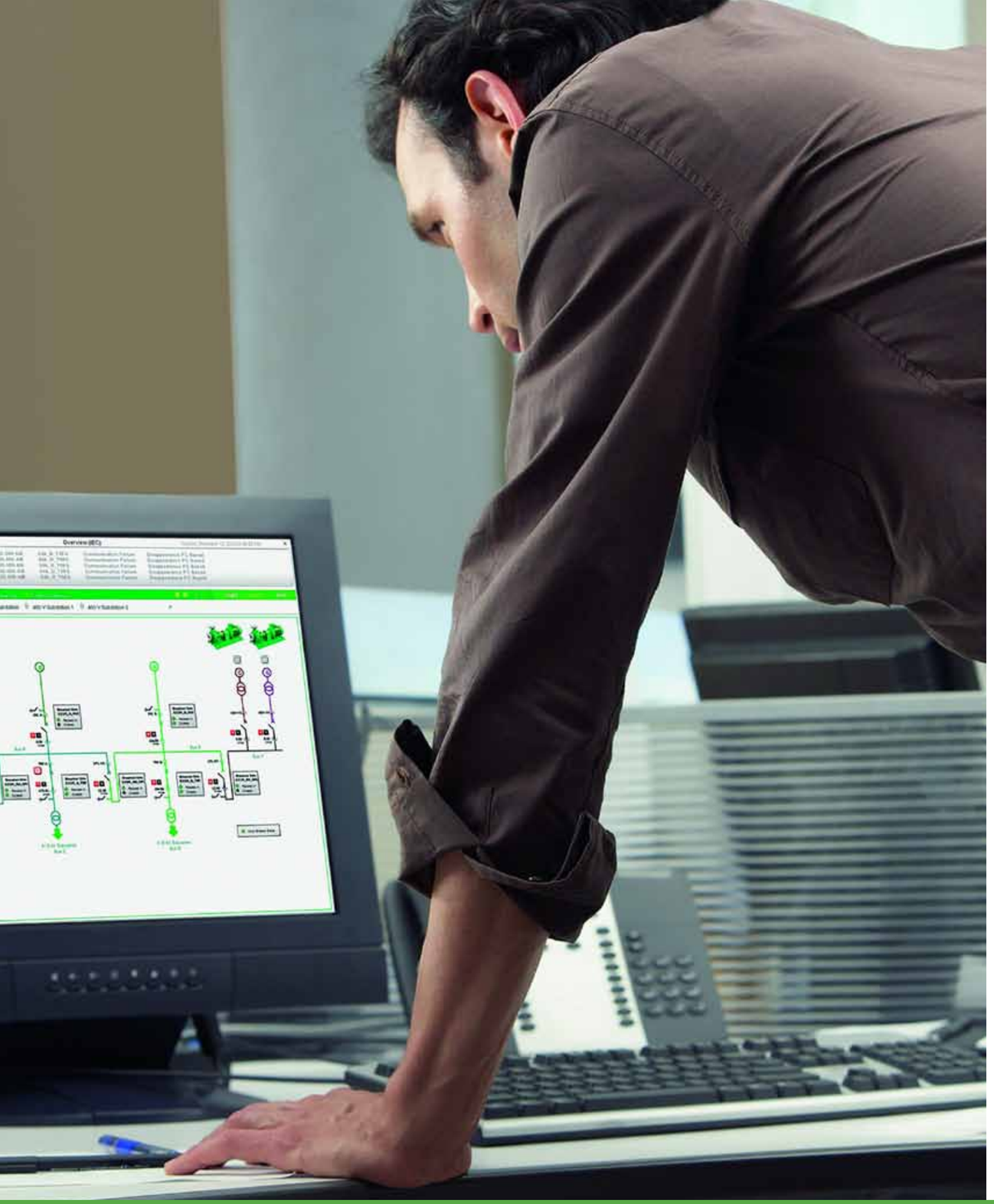
Don't settle for fragmented views and unreliable data

Maximize performance with a fully integrated power management solution

There are many vendors out there that offer pieces and parts of energy or power management, but Schneider Electric offers a best-in-class total solution.

You'll benefit from our decades of expertise in electrical system management, hardware and software development, and integration. Our solutions are designed for compatibility so your installation is both optimized and more efficient. Our systems are modular and interoperable for better continuity of supply, enhanced safety for people and equipment, and more effective monitoring and control. Plus, our full range of in-person and remote services keep your system operating at peak performance.





Next Generation Power and Energy Management

A winning combination to drive performance

Become an energy super hero with a comprehensive system designed to help you manage it all from one central point. You'll deliver actionable intelligence to help drive key business objectives at every level of your organization.

Advanced Power Management

Delivers power reliability, availability, and quality

- Maximize facility uptime by reducing power outages and ensuring back-up power generation
- Verify reliable power equipment operation and proactively optimize power networks
- Improve power reliability, availability, and quality through proactive analytics and diagnostics
- Optimize existing infrastructure capacity and avoid over-building
- Prolong asset life with proactive maintenance and optimization
- Reduce peak demand and power factor penalties with monitoring, alerts, and corrective actions
- Deliver enhanced network protection and control with data integration and automation

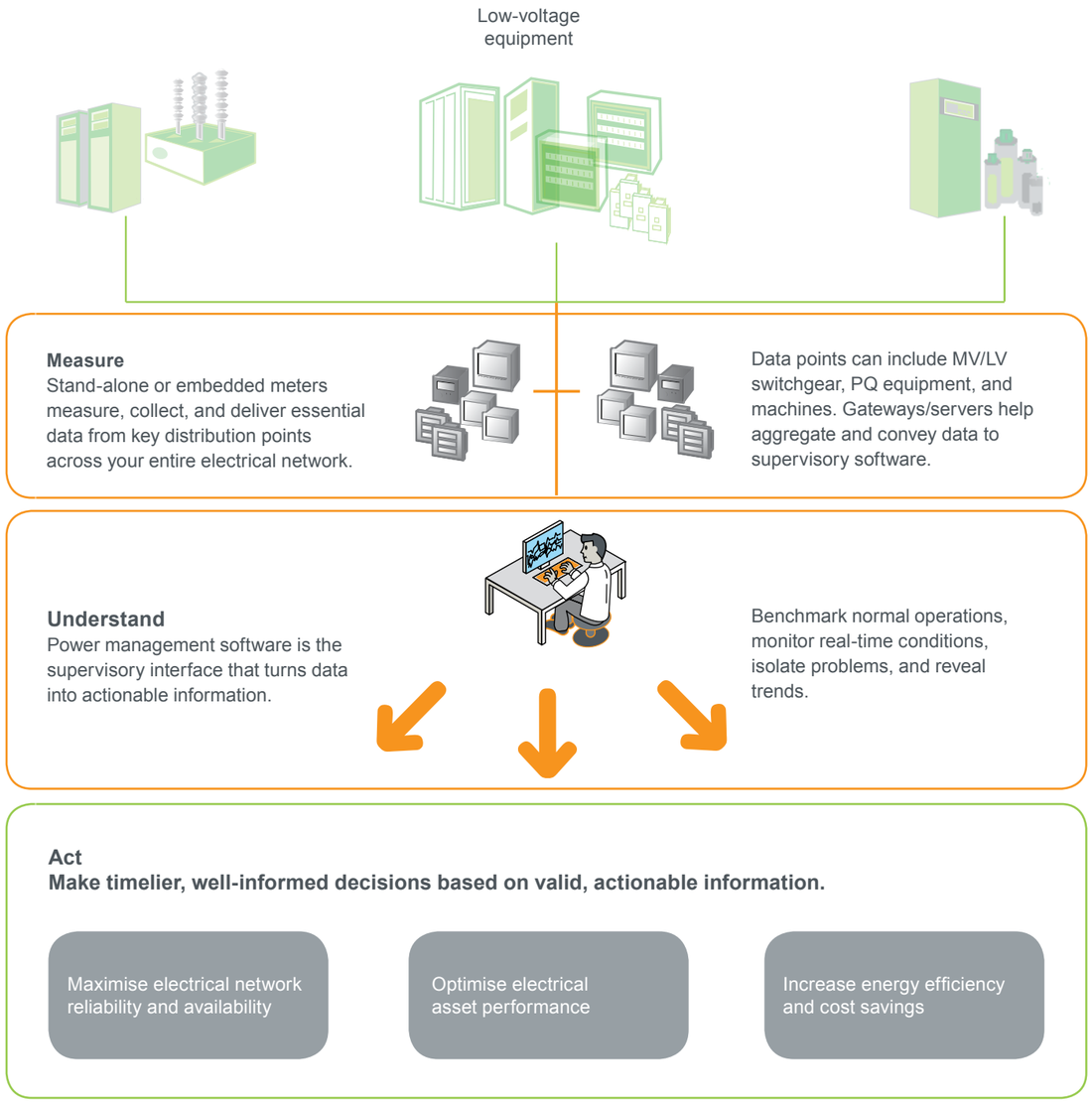
Superior Energy Management

Delivers cost and operational efficiency

- Identify, prioritize, and verify savings through automated load management, benchmarking, and progress reporting
- Improve sustainability performance with greenhouse gas emissions tracking and industry compliance reporting
- Improve rates with energy suppliers through demand response programming
- Confirm ROI for system improvements with advanced reporting and analysis
- Identify billing discrepancies and avoid contract penalties by validating utility bills and confirming onsite generation benefits
- Encourage conservation among tenants, departments, and processes through cost allocation reporting

Measure, understand, and act: tenets of a power management solution

With decades of expertise in electrical system management, technology manufacturing, and hardware/software integration, we deliver modular, interoperable solutions tailored to meet your immediate needs and able to scale as your needs change. You determine exactly what you want to measure, what you want to understand, and how to act upon that information. Measure, understand, and act. These are the tenets of power management. Measure means you gather data from throughout your facility. But data is useless unless it is meaningful. Power management software analyses the data and gives it context, so you can understand the status of your facility. Once you understand, you are able to act and make decisions that can help maximise reliability and efficiency.



Measure

Gather accurate power and energy data from key distribution points, monitor power quality, log events

Our electrical hardware devices — circuit breakers, switches, meters, gateways, switchboards, and UPS systems — are globally recognised as the most reliable performance equipment for protection, control, and measurement. An integrated power management system incorporates all of these components. Thousands of organisations worldwide choose Schneider Electric because our solutions:

> Are interoperable and complementary, so you can share data between platforms and benefits between users.

> Have comprehensive protocol, form factor, and standards support for easy integration and expansion into existing systems and multivendor environments.

> Are scalable in size, performance, and functionality via flexible system customisation,so you dictate how, where, and when to expand.

Our expertise spans the entire medium voltage through final distribution spectrum. We can help ensure your electrical distribution system works seamlessly from utility service entrance to plug.

Circuit breaker trip units

In addition to ensuring the most reliable protection, our Masterpact™ and Compact circuit breakers and switches support power management by providing energy consumption data, equipment status, and operational support information. Data is accessible locally or remotely thanks to the embedded Micrologic™ control units.

Smart panel communications

Smart panels communication devices uses your electrical distribution equipment to deliver relevant information using robust, open industry-standard protocols for high-integrity data transmission even in the most severe environments. Improve asset management, overall reliability, and operational efficiency with a simple Ethernet connection to access data from breakers.

Power and energy meters

Highly accurate, intelligent meters monitor key distribution points 24/7 from generators, substations, and service entrances to mains, feeders, and loads. PowerLogic power meters enable network reliability improvement applications by tracking real-time power quality, monitoring equipment status, trending loads, and logging events and alarms. PowerLogic™ and Acti 9™ energy meters enable energy efficiency, submetering, subbilling, and cost allocation applications by tracking energy use.

Contactors and protection relays

Our complete range of contactors and relays is designed to protect against equipment failure and danger created by voltage faults, excessive loads, or overcurrent conditions.

Power factor correction

Higher-rated capacitors, state-of-the-art switching devices, and harmonic filtering equipment are available for virtually every industry and application: reduce electricity bills, power losses, and process-related voltage fluctuations; mitigate harmonics to avoid voltage and current distortion. All products are perfectly coordinated to meet all your medium- and low-voltage power distribution needs, engineered to be scalable as your requirements evolve, and optimised to provide maximum power system efficiency.

Understand

Turn data into meaningful, actionable information for you and your stakeholders

You need insight to plan, to respond to changing power conditions that impact your operations, and to make informed decisions in real time. Our power management software provides this insight with extensive analysis and reporting tools, as well as intuitive visualisation and control interfaces that turn your power data into meaningful, actionable information.

Get the functionality you need to be successful. Our power management software is available in a variety of specialised editions to address the unique needs of your business. Specialised application modules and tailored, tested, and validated architectures match your terminology, your work flow, and your equipment. So it all operates seamlessly in your unique environment.

Real-time and historical power quality analysis

Detect, diagnose, evaluate, and isolate power quality disturbances. Trend measured parameters to identify potential disturbance patterns. Display millisecond-accurate alarms and trends for sequence of events and root cause analysis. Amalgamate trend and alarm data for sophisticated disturbance views and analysis.

Robust, flexible platform architectures

Designed for step-by-step investment, our software delivers exceptional scalability to grow with your changing business requirements, thereby driving down the total cost of ownership. Choose from pre-engineered or customised options. Full redundancy for communications, network servers, alarming, trending, and data synchronisation is also possible.

Intuitive visualisation and reporting tools

Display any measurement from your electrical distribution network; integrate live Internet data streams into smart dashboards. Access network diagrams, waveforms, and real-time or historical trend graphs from the convenience of any Web browser. Use predefined or custom device comparison tables for an at-a-glance status of the assets in your network. Distribute preconfigured or fully customised reports manually, by schedule, or by alarm/event trigger.

Seamless hardware integration and system interoperability

Native support with a vast selection of Schneider Electric products as well as third-party devices enhances overall capability. Open standards-based interoperability lets you cater to other departments and share data with third-party SCADA, automation, building management, and accounting systems for a comprehensive view.

The dashboard view can present any measured parameter from the database as well as pull in real-time data feeds from the Internet to give you exactly the information you desire on screen.

Real-time energy consumption monitoring

Track and trend any parameter to reveal demand peaks and systemwide energy costs. Identify patterns in operational usage trends. Disseminate information to a larger audience and educate stakeholders to help drive changes in behaviour. Optimise network capacity and avoid overbuilding.

Dynamic control interfaces

Control of devices, objects, and electrical distribution points in real time with dynamic single-line diagrams. Use point-and-click navigation to reveal deeper layers of detail in the electrical distribution system.

One-line diagrams use animated, interactive, industry-standard symbols as well as dynamic line colouring for connection status to enhance control and display functions.

Act

Make timelier, intelligent decisions based on valid, actionable information

Effective applications result from measuring and understanding the intricacies of your energy and power usage — more than just power network management. Gain new levels of energy efficiency, cost savings for your business, demonstrated sustainability and environmental responsibility for shareholders, and answers to governmental regulations and directives for energy performance. Get it all without compromising productivity.

Increase energy efficiency and cost savings

Identify billing discrepancies

> Validate utility bills, note errors, measure energy supply contract compliance
> Confirm on-site generation benefits
> Allocate costs/tenant billing
> Accurately collect, calculate, and report costs to tenants, departments, and processes
> Reduce expenses, enable best practices, and validate conservation initiatives

Reduce peak demand, power factor penalties

> Auto-monitor capacitor banks, load tap changers, filter banks to stay alert, take corrective action
> Participate in load curtailment programmes to automate and aggregate load management to verify real-time limit

Find opportunities, verify savings

> Benchmark processes, identify areas for improvement
> Measure progress, adjust to sustain savings

Green standards compliance

> Track, reduce greenhouse gas emissions
> Comply with industry benchmarks and energy certificates

Reduce rates with energy suppliers

> Negotiate lower rates by agreeing to reduce loads in response utility curtailment requests

Maximise electrical network reliability and availability

Increase facility uptime

> Reduce power outages from poor power quality or inaccurately set equipment
> Ensure backup power generation systems are in optimum condition

Verify reliable power equipment operation

> Ensure and validate normal operations
> Proactively optimise electrical networks

Improve response to power-related issues

> Verify normal activities, proactively assess issues
> Differentiate between mechanical/electrical cases

Ensure PQ/energy contract compliance

> Analyse and verify metrics to ensure compliance with agreed levels of quality

Network protection and control

> Integrate data from all electrical network devices for accurate, systemwide decision-making information
> Automate tasks to improve personnel safety/productivity

Optimise electrical asset performance

Leverage infrastructure, avoid over-building

> Reveal historical vs. current load patterns and hidden capacity
> Determine if existing infrastructure can accommodate new equipment

Prolong asset life with proactive maintenance

> Reveal real-time/historical data relationships between equipment and conditions affecting system stability

Manage EPSS/backup power

> Automate emergency/backup power supply testing and reporting to comply with industry standards
> Avoid financial risks and liability exposure due to unplanned power system failures

Monitor and validate battery health

> Automate and verify proper operation and charging of generator startup batteries
> Provide precise functional assessments of battery health to reporting requirements

Solutions tailored to meet your specific business needs

20%

An average facility can save 10 – 20% per year by eliminating wasted energy consumption

50%

Energy costs now consume up to 50% of a typical data centre's operating budget

30-40%

Percentage of process down time attributed to power-related issues

Solutions for buildings

For facility and building operators who need to maintain their buildings' comfort and operation, our solutions provide actionable information to ensure electrical system health, increase operational efficiency, gain energy insight, and improve energy accountability. Designed and built for building applications, these solutions can be stand-alone or embedded to combine building and power management in a 'single pane of glass'.

Solutions for industry

For plant management, facility, and electrical teams looking to reduce business risk from down time and power-related utility penalties, we provide simple, meaningful PQ analytics that turn raw data into actionable intelligence to help ensure process continuity and protect margins. Preventive views of your electrical infrastructure help clarify causes and mitigate events that put business at risk.

Solutions for data centres

For facility engineering and operation teams, and third-party engineering consultants responsible for designing and operating large, purpose-built data centre facilities, our solutions offer data centre-centric features that integrate into multivendor environments and can effectively be promoted, demonstrated, and specified. We offer standardised, repeatable, flexible, scalable, and factory-validated power management solutions specific to data centres and tested in centre-realistic environments.

Solutions for healthcare

For energy, sustainability, and facility managers, our solutions let you become aware of your energy usage, save money through energy optimisation and predictive maintenance, and improve patient safety by avoiding unexpected outages. We provide preventive views into the electrical infrastructure to mitigate events that put the hospital at risk and also provide visibility into the cause of power system failures, typically enabling a 50 per cent faster crisis recovery. On average you can save 10 to 20 per cent per year by eliminating wasted energy.

Support and Training Services

Ongoing support and troubleshooting
Enjoy peace of mind knowing that superior technical support is always available

Proactive Diagnostics and Maintenance
Ensure your system is operating at peak performance and identify issues before they become a problem

Robust Training Options
Get the most from your system with training offered on-line, on-site or at one of our advanced training centres

Take advantage of proactive services to increase the reliability of your critical systems, extend the life of your equipment, and improve your energy performance. You won't believe what your power management system can do with our help

Installation and commissioning

Let our certified engineering professionals install and commission your power management system to ensure optimal performance

Training

Power Management University is where knowledge saves you money. Select from a wide variety of standard and custom online or inperson courses designed to help you get the most from your system. You can also access more than 200 on-demand training modules

Technical support

Technical support should go beyond basic troubleshooting. Continued optimisation and maintenance extend the life of your system and ensure it's working efficiently. Choose from a variety of service levels, and add on options, such as 24X7 support when needed

Onsite maintenance

Bring our team onsite to install new equipment, troubleshoot a complex issue, or simply provide regular maintenance

Energy consulting

We'll analyze your data to help you develop a long-term plan to drive operational and cost efficiencies

Power system studies

Let our team of experts help you solve your most complex issues. From ARC flash and harmonics to system design and code compliance, we can provide the expertise you need

Find more information about our power monitoring and control solutions on:

www.schneider-electric.com
website

tv.schneider-electric.com
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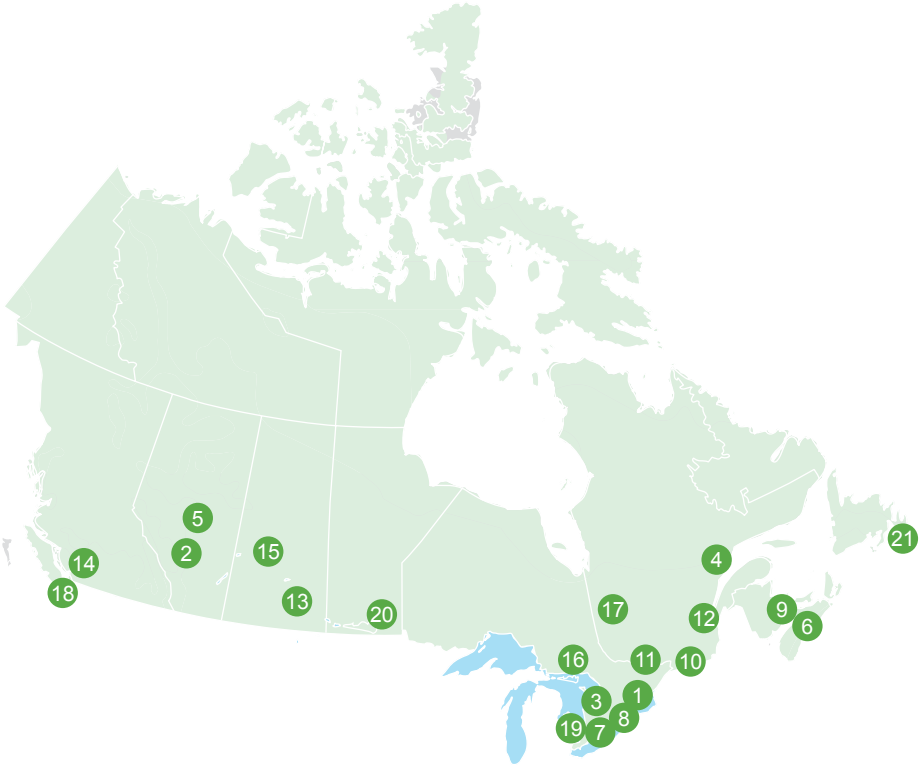
blog site



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> **We offer** complete service solutions to install, maintain, analyze and modernize your automation system

> **We provide** a wide range of comprehensive, focused solutions for any type of automation equipment

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July 2015