

# Maximise the reliability and efficiency of your power network

Integrated power management solutions for power-critical facilities



# Discover your power network's hidden potential



## Improve availability and reliability while creating cost and operational savings

Your business runs on electrical power, which brings its own management challenges: unpredictable power supply, unplanned outages, complex emissions regulations, and volatile energy prices. You also need to balance the needs of power-sensitive processes that require high levels of power availability and reliability without raising operational costs or putting profits at risk. You need solutions that exceed conventional power management, solutions that unite your enterprise and meet all these goals simultaneously.

Schneider Electric™ provides these power management solutions. We offer innovative ways to maximise power system availability and reliability while also optimising energy and operational efficiency. We can help you:

- > Meet or exceed your power reliability requirements within budget constraints
- > Proactively avoid or mitigate your power quality issues to reduce duration or eliminate outages
- > Enable proactive system maintenance to help avoid costly equipment failures
- > Comply with corporate or regulatory energy standards like ISO 50001
- > Ensure the comfort and safety of staff and equipment



High availability and reliability



Increased savings and sustainability

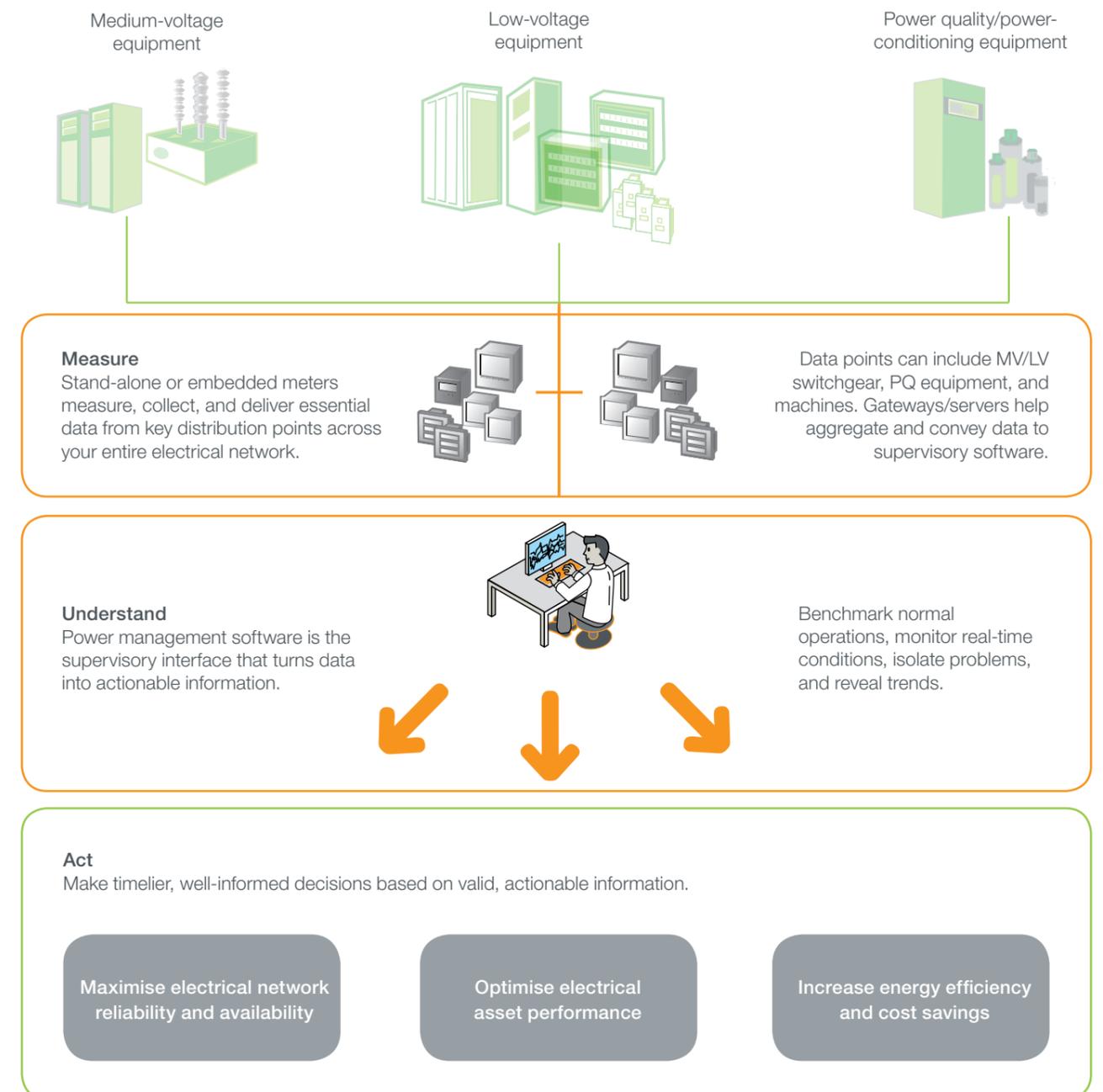


High-performing assets

# 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.

## 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.



## 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 powered by Enerlin'X communication devices are an innovative connected solution that 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 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.

### Real-time and historical power quality analyses

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.

### 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.

### 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.

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.

### 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.

### 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.

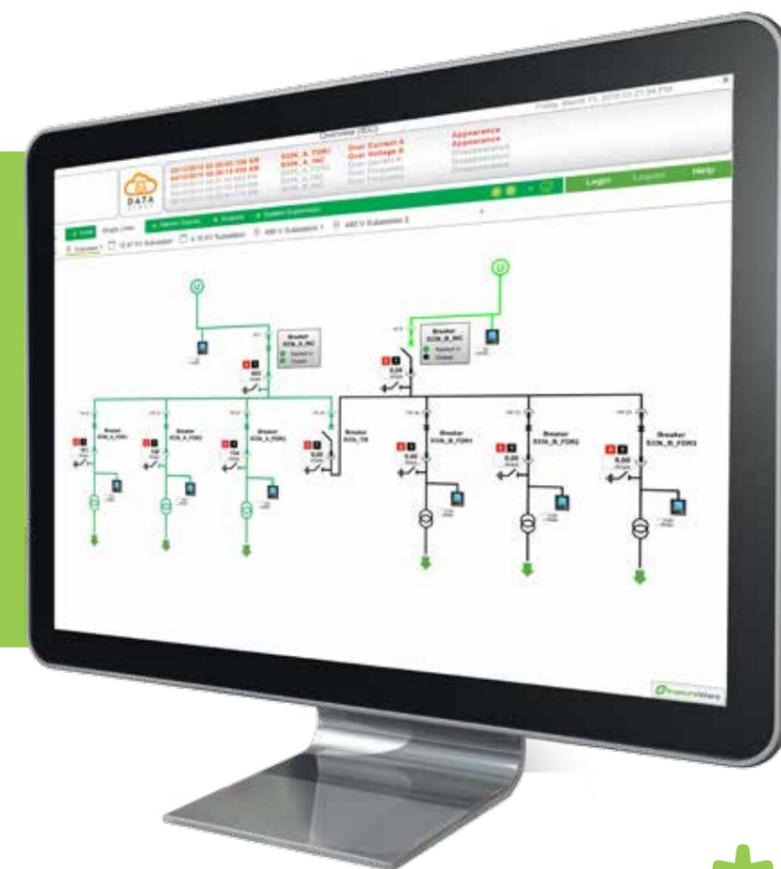
### Dynamic control interfaces

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.



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.



# 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



### 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.

30 - 40%

Percentage of process down time attributed to power-related issues



### 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.

50%

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

## Services that leverage and protect your investment

Support service plans provide security and help improve your business performance

The right people make all the difference. Our on-demand or proactive support services mitigate your risk of down time and unexpected maintenance costs. They provide you with the security of an expert partnership that helps ensure the long-term operational effectiveness of your power management system. You can tailor your support service plan so it becomes a bridge to your business goals. Think of us as your trusted power system advisors.

66%

Percentage of reduced down time possible from an effective prevention maintenance programme

**Add an Energy Expert to your team.**  
They will help to:

- > Ensure a sense of security with predictable operating costs and easy, comprehensive support. Priority escalation gives you fast issue resolution and access to support engineers when you need it most.
- > Maximise your business performance with ongoing system optimisation improvements. Correlate energy and power events to business results, identify possible issues, and validate metering system data.



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

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