



PowerLogic ION Enterprise Power management software

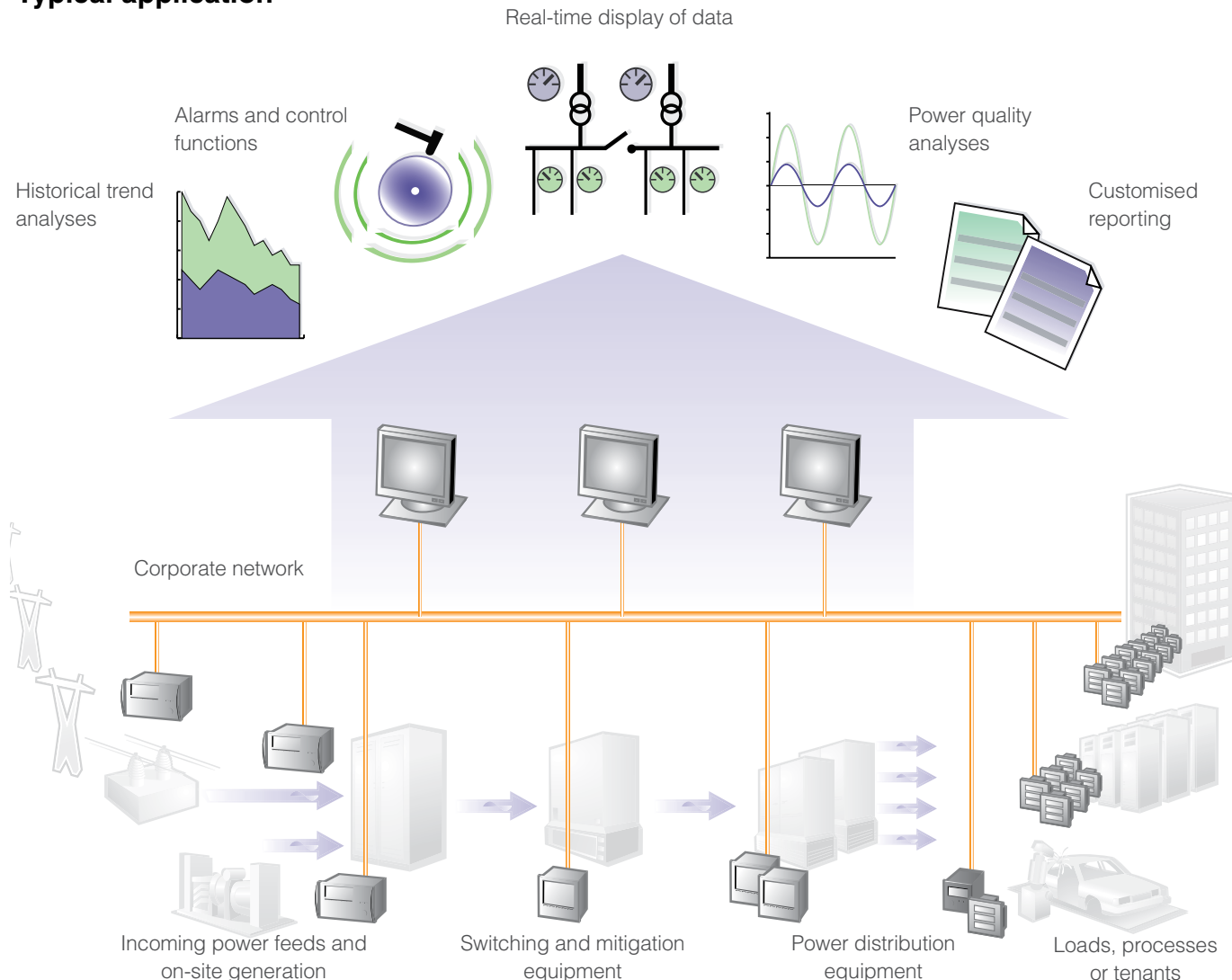
A complete solution for cutting energy-related costs and avoiding power-quality equipment failures and downtime.

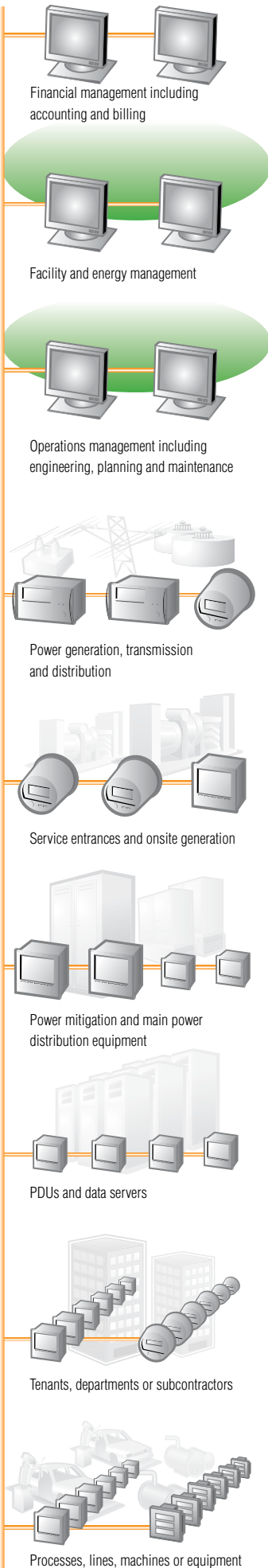
Manage real-time power conditions and energy efficiency

PowerLogic ION Enterprise software is a complete power management solution for energy providers and industrial or commercial operations. It gives engineering and management personnel the information they need to cut energy-related costs, avoid downtime and optimise equipment utilisation. The software uses a choice of industry-standard network technologies, including Ethernet and wireless, to automatically collect and store data from key electrical distribution points and physical assets. It forms a layer of energy intelligence across your facility, campus, service area or your entire enterprise, acting as a unified interface to electricity and other consumable resources such as water, compressed air, gas and steam. Web-enabled access gives each user a personalised view to timely, relevant information.

PowerLogic ION Enterprise helps you track real-time power conditions, analyse power quality and reliability, and respond quickly to alarms to avoid critical situations. It helps you study historical trends to reveal energy waste or unused capacity as well as verify efficiency improvements and allocate costs to buildings, departments or processes. The software includes sophisticated load aggregation and arithmetic calculation. Coordinated control capabilities can be used to manage demand or power factor and to manage loads or generators. Customised information is easily seamlessly shared with all stakeholders and with other business and automation systems.

Typical application





Financial management including accounting and billing

Facility and energy management

Operations management including engineering, planning and maintenance

Power generation, transmission and distribution

Service entrances and onsite generation

Power mitigation and main power distribution equipment

PDUs and data servers

Tenants, departments or subcontractors

Processes, lines, machines or equipment

Typical applications

For infrastructure, industrials and buildings

- Energy savings
 - Measure efficiency, reveal opportunities and verify savings
 - Sub-bill tenants for energy costs
 - Allocate energy costs to departments or processes
 - Reduce peak demand surcharges
 - Reduce power factor penalties
 - Strengthen rate negotiation with energy suppliers
 - Enable participation in load curtailment programs (e.g. demand response)
 - Identify billing discrepancies
 - Leverage existing infrastructure capacity and avoid over-building
 - Support proactive maintenance to prolong asset life
- Energy availability and reliability
 - Validate that power quality complies with the energy contract
 - Verify the reliable operation of equipment
 - Improve response to power quality-related problems
 - Optimise system relay coordination

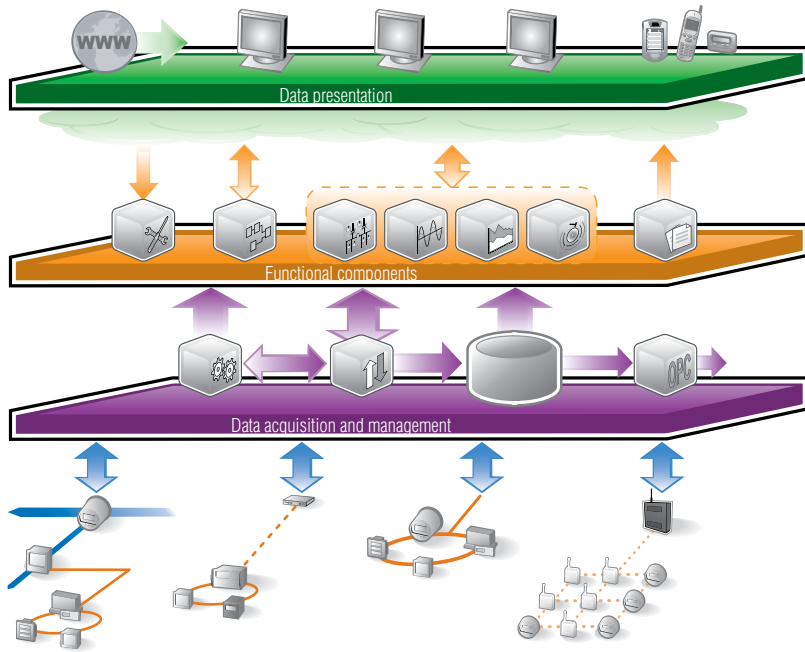
For electric utilities

- Energy availability and reliability
 - Improve T&D network reliability
 - Enhance substation automation to reduce field service time
 - Maximise the use of existing infrastructure
- Power quality
 - Verify compliance with new power quality standards
 - Analyse and isolate the source of power quality problems

Key features

- **Scalable, flexible architecture:** grow your system to hundreds of metering points; add distributed servers and clients; use ION modular programming for complex data processing and control functions
- **Data acquisition:** eliminate manual meter reading by collecting system-wide data from PowerLogic energy meters, MicroLogic breaker control units and third-party water, air, gas, electricity or steam ("WAGES") meters, as well as from power distribution or mitigation equipment web services; communicate over Internet, Ethernet, wireless and other methods
- **Interoperability:** share data with third-party SCADA, automation and business systems; compliant with ODBC, OPC and PQDIF standards
- **Web portal:** multi-user access to customised graphical views of system diagrams, real-time and historical data, status indicators and alarm messages; multi-level security
- **Reporting:** preconfigured and custom reports; support for Microsoft Excel and other third-party reporting tools; scheduled distribution via email or web
- **Trending:** graph any combination of measured parameters; aggregate loads
- **Power quality analysis:** wide-area event monitoring and plotting (ITIC, SEMI); power quality compliance monitoring and reporting to international standards (IEC 61000-4-30, EN50160); waveform viewer; harmonics, K-factor, crest factor, and symmetrical components measurements
- **Alarms and events:** trigger on complex conditions; generate alarm notifications; log all relevant event data
- **Control:** manual or setpoint-triggered control functions; coordinated control of multiple loads, generators, relays or other power distribution and mitigation equipment

Software architecture



Data presentation

- Enterprise-wide, multi-user data and control access through local server interface, thin-client web browser, or terminal services; tiered security
- Information and alerts via mobile phone, PDA and other devices

Functional components (on main server or workstations)

- Management Console – configure your PowerLogic ION Enterprise network, including communication paths, devices and logical groups.
- Designer – customise the modular functionality of ION devices and Virtual Processors (see below)
- Vista – real-time displays of measurements and status indicators, power quality analysis, historical trending, alarms and manual control
- Reporter – predefined or custom reports; support for third-party reporting tools

Data acquisition and management

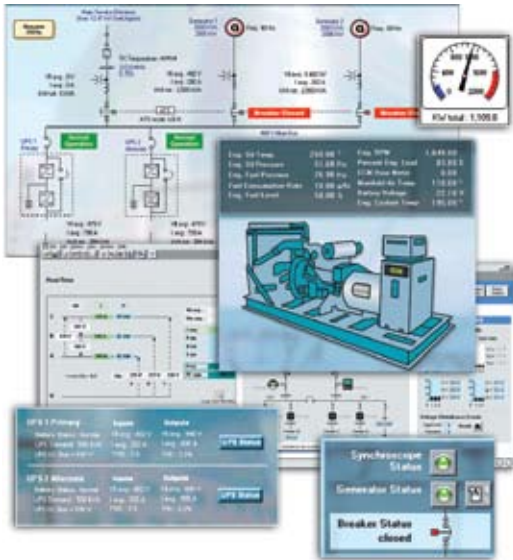
- Virtual Processor - multi-site aggregation, coordinated control, complex calculations and alarming, logging for non-recording devices (e.g. interval kWh)
- Site Server - continuous or scheduled retrieval of data from up to hundreds of remote devices over Internet, Ethernet, telephone, serial, wireless, or satellite connections
- SQL ODBC-compliant databases - Microsoft SQL Server 2005 (with support of SQL Server 2000). Log device data, system data and events with accurate meter synchronisation (± 16 ms or ± 1 ms using GPS) for precise event timestamping, power quality analysis and revenue billing; data is securely accessible using industry-standard database tools; add distributed databases and servers as required for load balancing
- OPC DA Client (standard), OPC DA Server (optional) and PQDIF Exporter (optional) – supports data import/export with compliant devices and systems

Data acquisition and integration



Connect to meters, sensors, controllers, web services and other systems.
Extract values from spreadsheets to combine with dynamic power and energy calculations.

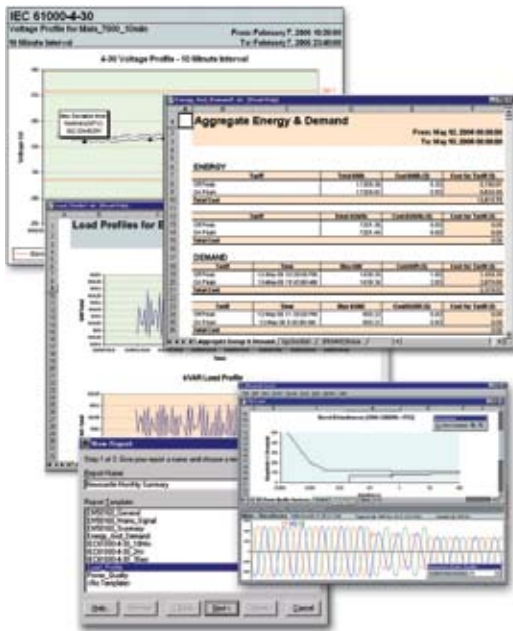
- Integrate metering of electricity and other consumed services such as gas, steam, air, and water.
- Standard product offers native support for PowerLogic ION series, PM800 series, PM700 series, PM210 and legacy ACM series power and energy meters. Enables access to all real-time and logged data, control of on-board relays and digital outputs, remote configuration and firmware upgrading. Also supports data access from MicroLogic circuit breaker control units (types A, P and H).
- Easily customised to add support for third-party meters, transducers, PLCs, RTUs and power distribution or mitigation equipment. Quickly add and configure direct communications with remote devices over Modbus RTU or Modbus TCP protocols using easy-to-use device templates. Or connect the outputs of transducers or other devices to the digital and analog inputs of PowerLogic meters.
- Use MeterM@il[®] encrypted email messaging to securely access meter data over the Internet within firewall restrictions.
- Scalable platform enables remote devices and user clients to be added as needs grow while maintaining your original investment.
- Integrate with other energy management or automation systems (e.g. SCADA, BAC, DCS, ERP) through ODBC, XML, OPC, email, FTP, CSV and PQDIF compliance; integrate with web services through XML.



Desktop access to power system information from any department, building or region. Graphical views of relevant, actionable information customized for each user.

Real-time monitoring

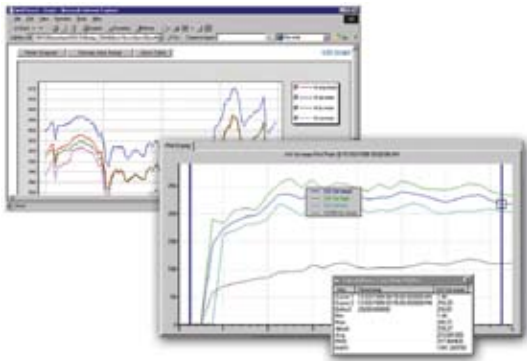
- View key distribution points across one or more facilities or substations, accessible from any workstation, locally or around the world.
- Display real-time power and energy measurements, historical trends and data logs, alarm conditions, equipment status (on/off, temperature, pressure, etc.), control triggers and analysis tools.
- Use the Virtual Processor to perform sophisticated data computations, then display and log derived values.
- Select pre-configured diagrams or easily create customised views comprising digital readouts, dials, bar or trend graphs, one-line or elevation diagrams, maps, photos and animation.
- Set up hyperlinks between diagrams, then use easy point-and-click navigation to reveal deeper layers of detail, e.g. start with a site overview, click once to reveal a feeder, click again to see a disturbance analysis.
- Group relevant measurements, indicators and controls into a library of convenient views.
- Easily extract and analyse selected ranges of information from the database using a query wizard.



Allocate costs, consolidate billing or negotiate contract volume pricing. Assure compliance with PQ standards and verify the results of operational improvements.

Reporting

- Reports can be generated manually, on schedule or event-driven. Distribute automatically as email or HTML.
- Standard reports:
 - Generate reports through Microsoft Excel using a fast and convenient report wizard interface.
 - Aggregate energy and demand reports – combines multiple feeds, costs for each tariff period over requested intervals, matched to utility billing structures, with multi-year scheduling and time-of-use activity profiles.
 - Aggregate load profile reports – system-wide usage patterns over the specified date range, including timestamps and peak usage.
 - IEC 61000-4-30 and EN50160 compliance reports – pass/fail indicators help you quickly assess system power quality levels, including flicker.
 - Power quality analysis reports – disturbance waveforms, voltage tolerance curves, and harmonic histograms.
- Custom reports:
 - Use Visual Basic for Applications or any off-the-shelf SQL Server reporting tools, such as Crystal Reports, to customise reports and enable further analysis.
 - Combine PowerLogic ION Enterprise data with other databases to reveal true business conditions.
 - Our services team can help you with custom report development.

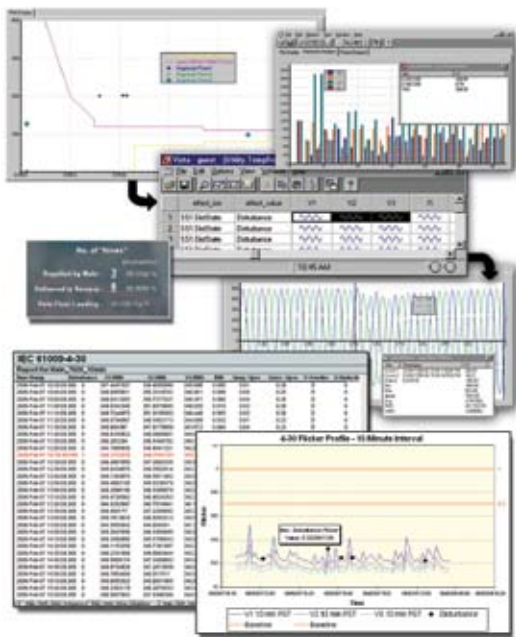


Support load studies or expansion planning, optimise equipment use by maximising capacity or balancing loads. Reveal critical trends, expensive processes or energy waste.

Trend analysis

- Generate one or more trend graph overlays for interpretation of data using simple visual analyses.
- Trend on any measured parameter: voltage, current, power, power factor, demand, predicted demand, energy, harmonics, temperature, etc.
- Graph aggregate load profiles from multiple metering points or compare related parameters from across your enterprise.
- Create usage profiles to reveal demand peaks, dangerous trends, or unused capacity.
- Track system-wide energy-related costs for each building, feeder, process or tool.

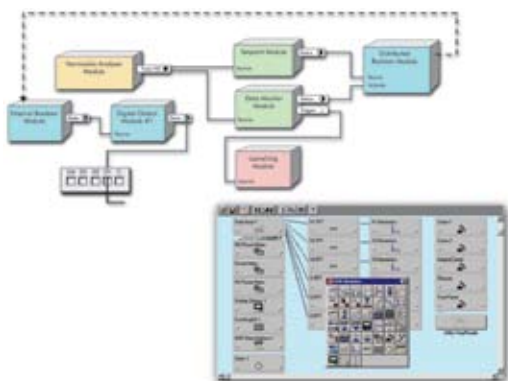
Power quality analysis



Minimise equipment damage and downtime by pinpointing the source of disturbances, verifying the effect of system upgrades, and validating compliance with power quality standards.

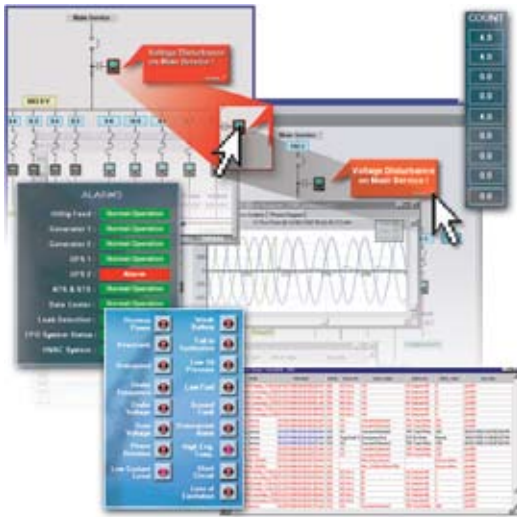
- Continuous, wide-area monitoring, data capture and reporting for power quality and reliability conditions.
- IEC 61000-4-30 and EN50160 compliance reporting verifies power quality performance to international standards. Quickly review power quality indices as numeric charts or graphic profiles. Requires PowerLogic ION7650 meters or other devices that support compliance monitoring.
- Display harmonic histograms, odd/even harmonics, THD, K-factor, crest factor, phasor diagrams and symmetrical components.
- Plot waveforms of up to many seconds in duration, with overlays that correlate phase-to-phase relationships between voltages, currents and cascading failures.
- Plot sags, swells, short duration transients and other disturbance events on industry-standard voltage tolerance curves, including ITIC (CBEMA) and SEMI.
- For any event, display a list of associated time-stamped incidents, then click on any incident to see more detailed information.
- Supports a wide range of applications:
 - Diagnose and isolate the cause of power quality-related equipment or process problems.
 - Proactively assess current power quality conditions and trends.
 - Identify equipment vulnerabilities and verify reliable operation of power distribution and mitigation equipment.
 - Benchmark power quality performance and compare service areas, facilities or processes.
 - Set a performance baseline and verify the results of system changes or equipment upgrades.

Patented ION technology



Use drag-and-drop icons to quickly create customised ION metering, logging or control functionality within your software or hardware.

- PowerLogic ION Enterprise and a variety of PowerLogic ION metering products feature the unique ION architecture.
- Modular, flexible architecture offers extensive customisation of functionality using a simple “building block” approach.
- Uniquely addresses advanced monitoring and control applications.
- Adapts to changing needs, avoiding obsolescence.



Respond to a notification, then click an on-screen indicator to retrieve the time, location, and nature of the event. Click again to study waveforms, tolerance curves or a report.

Alarms and events

- Receive alerts to outages or impending problems that could lead to equipment stress, failures or downtime.
- Configure alarms to trigger on power quality events, power thresholds or equipment conditions.
- Meter-based alarms are immediately pushed to the software without waiting for system polls.
- Annunciate alarms through operator workstations, email, mobile phone or PDA using messages customised for the task.
- Configure the combinational logic of the Virtual Processor to trigger on complex or summary conditions and automatically send out notifications, upload all associated event data and generate a report.
- Log complete information on an event, including related coincident conditions and waveform captures, all with accurate timestamps.
- Correlate and categorise sequences of events.
- Schedule maintenance based on operating history, events and alarms.



Control loads, generation, and power quality mitigation equipment across your enterprise or service area. Optimise switching with the latest status and base loading data.

Manual and automated control

- Perform fast, manual control operations by clicking on-screen trigger buttons; operate remote breakers, relays and other power distribution and mitigation equipment
- Use the Virtual Processor to perform automated control over distributed equipment:
 - Gathers data from multiple devices and incorporates process variables
 - Initiates automatic, coordinated control actions if predefined thresholds are exceeded
- Supports a wide range of applications:
 - Shed loads or start up peak-shaving generators in response to interruptible rates, real-time pricing, or to avoid setting a new peak demand
 - Manage distributed generation assets
 - Control capacitor banks to correct power factor, improve energy efficiency and avoid penalties
 - Start fans to prevent transformer overheating if total harmonic distortion is too high

Features	Standard	Optional
Automated data acquisition from sites/devices	▶	
SQL 2005 Express Edition database	▶	
SQL 2005 Standard Edition database		▶
Web-enabled real-time monitoring	▶	
Reporting	▶	
Trend analysis	▶	
Power quality analysis, compliance reporting	▶	
Alarms and events	▶	
Manual and automated control	▶	
OPC DA client	▶	
OPC DA server		▶
PQDIF data export		▶

Supported devices	
<i>PowerLogic power and energy meters:</i>	<i>Power Measurement legacy power and energy meters:</i>
ION8800	ION8500/8400/8300
ION8600	ION7700
ION7650/7550 series	ION7600/7500 series
PM800 series	ACM3720
ION7300 series	ACM3710
PM710, PM750	ACM3300
ION6200	
PM210	
<i>Circuit breaker control units:</i>	<i>Other:</i>
MicroLogic, Type A, P and H	Modbus-compatible devices
	Other devices through OPC

System requirements

Please consult your local Schneider Electric representative for complete system requirements and commissioning information for PowerLogic ION Enterprise. The following are minimum requirements to support 1 to 25 meters with factory default settings.

Server hardware: CPU requirements are dependent on number of devices and clients to be supported; minimum is 2 GHz CPU, 1 GB RAM, 40 GB disk drive, CDROM drive and Ethernet port. For applications with a single primary server and single client, server can run Windows XP Professional. For larger systems primary server requires 32-bit Windows Server 2003 certified (see Microsoft website). Use of secondary servers is also supported.

Server software: Microsoft Office 2003 Suite, Microsoft Windows IIS (Internet Information Services)

Client software requirements: 32-bit Windows XP Professional or Windows Server 2003, Microsoft Office 2003 Suite

Modem support: For dial-up connections, supports any modem compatible with the WinModem standard.

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PLSED106018EN 01-2008



"The 2007 award recognizes Schneider Electric for its technological advancements and wide product range in the field of power quality (PQ) and energy management solutions. In total, this is the fourth award that Schneider Electric and [recently acquired] Power Measurement have received from Frost & Sullivan in recognition of achievements in this arena."
Prithvi Raj, Frost & Sullivan research analyst



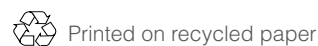
Power Measurement and its ION products were recently acquired by Schneider Electric and integrated within our PowerLogic range of software and hardware, creating the world's largest line of power and energy management solutions.



Please contact your local sales representative for ordering information.

Visit www.powerlogic.com for more information on other PowerLogic products, applications and system solutions.

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Publishing : Schneider Electric
Production : Schneider Electric PMC
Printing : Imprimerie du Pont de Claix - made in France