

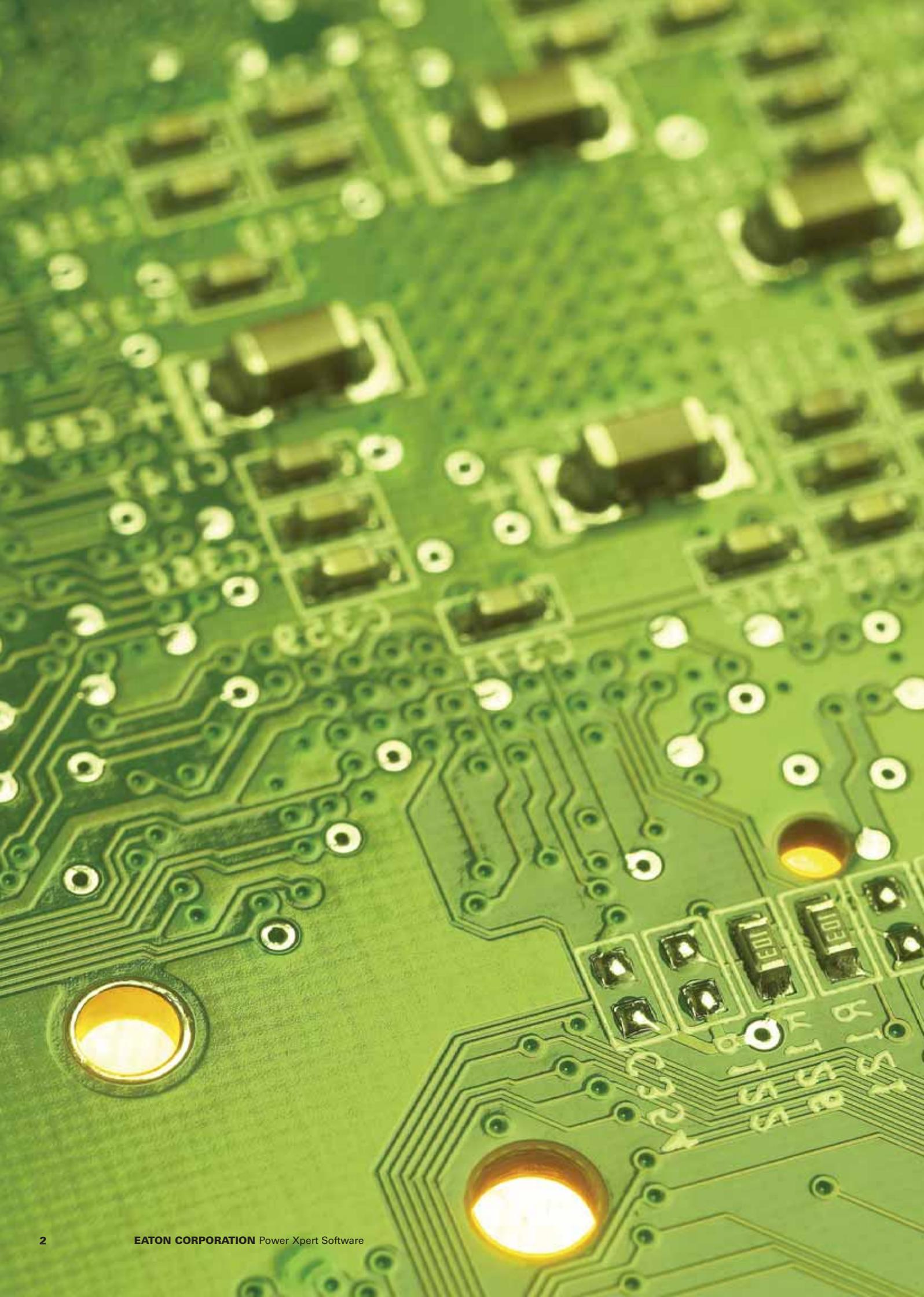
Power Xpert Architecture

Power Xpert Software



EATON

Powering Business Worldwide





Power Xpert Software

Connect the dots in the power system. Eaton and third party alike. Bring it all together.

If your power distribution system is anything like the vast majority out there, you will find yourself operating in a diverse electrical infrastructure. Your CRAC units, switchgear, UPSs, PDUs, meters, relays, MCCs and other power systems are a collection of equipment purchased from a multitude of vendors over many years. To manage all this, you would have had to set up several incompatible software tools and processes to gain a glimpse of what is going on.

Power Xpert Software aggregates the information arriving from different types of device families via various communication methods. Its unique Web-based design, alarm bubble-up and advanced trend, waveform analysis tools help you quickly turn your attention to the most important events and identify reliability issues and cost-saving opportunities. The standard custom graphic package, the Layout Manager, with an icon library, allows you to import and mimic your physical environment and gauges.

Open protocol support makes Power Xpert Software compatible with most newer generation third-party equipment. Older legacy, proprietary protocols are supported by Power Xpert Gateways and custom software drop-in drivers made available by Eaton®. Power Xpert Software is the first power system software of this caliber to put all of these powerful features at your fingertips.

Did you know?

Power Xpert Software is powered by Foreseer®.

Power Xpert Software uses the same system engine as the prestigious Eaton Foreseer software product used by Fortune 500 companies.

For over 15 years and with thousands of installations around the globe, Foreseer provides fully tailored turn-key service solutions catered toward mid-sized and large enterprises requiring custom applications.



Power Xpert Software—Customize to your liking

The Power Xpert Software Layout Manager module provides the user a library of powerful design tools for the creation of custom Human-Machine Interface (HMI) graphical layouts. Objects can be easily animated, various gauges can be selected, and custom bitmaps can be imported with little effort. The Layout Manager module is standard with Power Xpert Software!



- 1 Custom layouts can be created for any supported devices.
- 2 Indicators can appear animated and change color on status changes.
- 3 You can choose from a variety of available gauges.
- 4 Links to other custom layout Web pages can be easily embedded for drilling up or down for more information.
- 5 Critical and cautionary alarms can be reviewed and acknowledged at a glance.
- 6 Custom bitmaps and graphical elements can be easily imported.
- 7 Third-party devices can be integrated into custom layouts easily.
- 8 Custom mathematical formulas are supported to create calculations based on multiple variables, for example, PUE, DCiE.

Two editions to meet your needs



“Most of the power systems I monitor consist of Eaton equipment, with some others mixed in. I use Power Xpert Software Professional Edition to manage it all.”

Power Xpert Software Professional Edition

The Professional Edition is geared toward end users with mostly Eaton power distribution products, such as switchgear, UPSs, breakers, PDUs, RPPs, meters, relays, VDFs and MCCs, among others. Next-generation Eaton products connect with the software directly via an Ethernet connection, while legacy devices use a Power Xpert Gateway (PXG) to Web-enable their communications. A subset of third-party meters and devices are supported as standard via the PXG connection.



“My power system consists of disparate systems and devices due to multiple acquisitions. Power Xpert Software Enterprise Edition is my choice for energy management.”

Power Xpert Software Enterprise Edition

The Enterprise Edition offers extensive support for third-party devices via standard SNMP and Modbus[®] TCP protocols. In addition, a variety of ready-made third-party drop-in drivers are made available for the Enterprise Edition. This software package is ideal for advanced power users, system integrators and enterprises with heterogeneous device spectrum and system developers who can take advantage of the included SNMP and Modbus integration development utilities.

Power Xpert Software Features

Feature Sets	Power Xpert Software Professional Edition	Power Xpert Software Enterprise Edition
Server Module	•	•
Trend Viewer Module	•	•
Layout Manager Module	•	•
Quality Manager Module	•	•
Eaton Device Support (switchgear, UPSs, breakers, ePDUs, meters, relays, VDFs, MCCs, etc.)	•	•
Power Xpert Gateway third-party device support	•	•
SNMP Connector		•
Modbus Connector		•
Online third-party driver download support		•
Custom third-party device driver support		•

Power Xpert Software highlights

Graphic View—see status changes at a glance

The Power Xpert Software Graphic View device template provides a standard layout for displaying Eaton device-specific measurements and data.

Each device category has its own template presenting pertinent information and metrics that are customized for that device type (UPS, PDU, meter, VDF, MCC, etc.).

You will be able to review a short list of the latest events time-stamped to the millisecond, the picture of the device, and its model information including name, location, contact and serial number among others.

At any point you can create a custom user view of any device with various gauges, custom icons and imported graphics that change color (green–yellow–red) depending on event status.

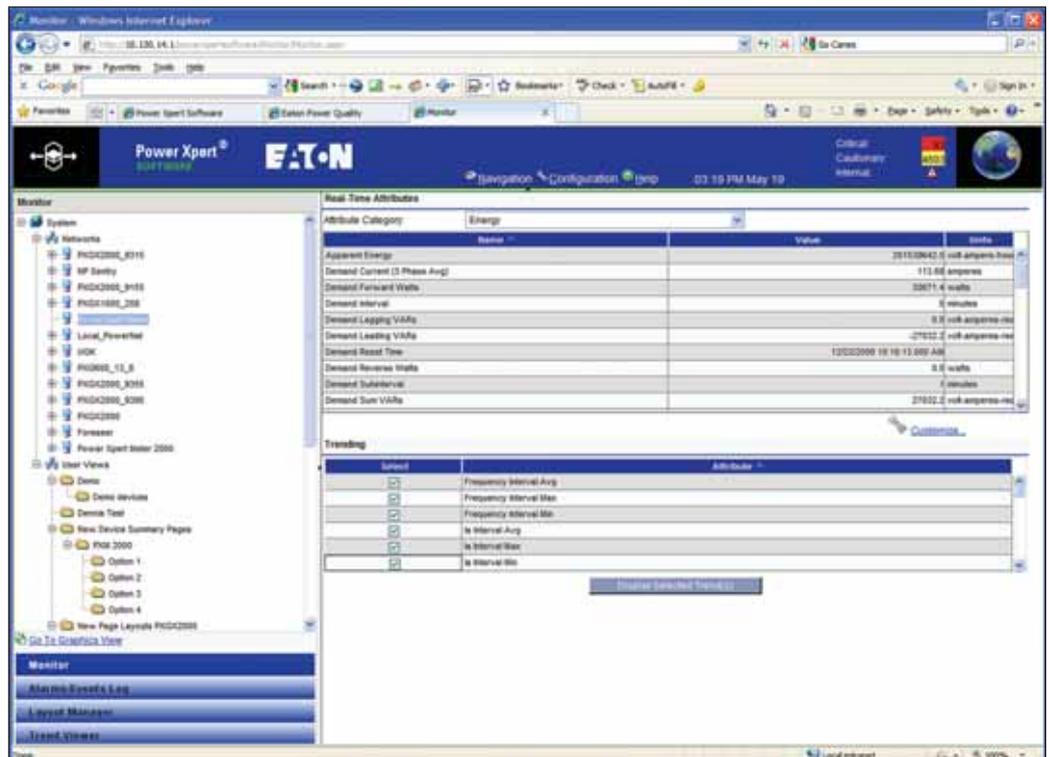


Graphic templates are built into the software for all standard Eaton devices. Viewing all of the most vital parameters along with self-explaining legends and one-line diagrams are available at a glance. Device-specific information is gathered at the bottom of the screen, including a product picture, location, system contact, maintenance schedule and asset serial number.

Grid View—get all the details quickly

The Power Xpert Software Grid View device template is provided as a standard layout for all devices, including third-party systems.

The Grid View presents all measurements and data in a spreadsheet format that can be easily viewed and acted upon.



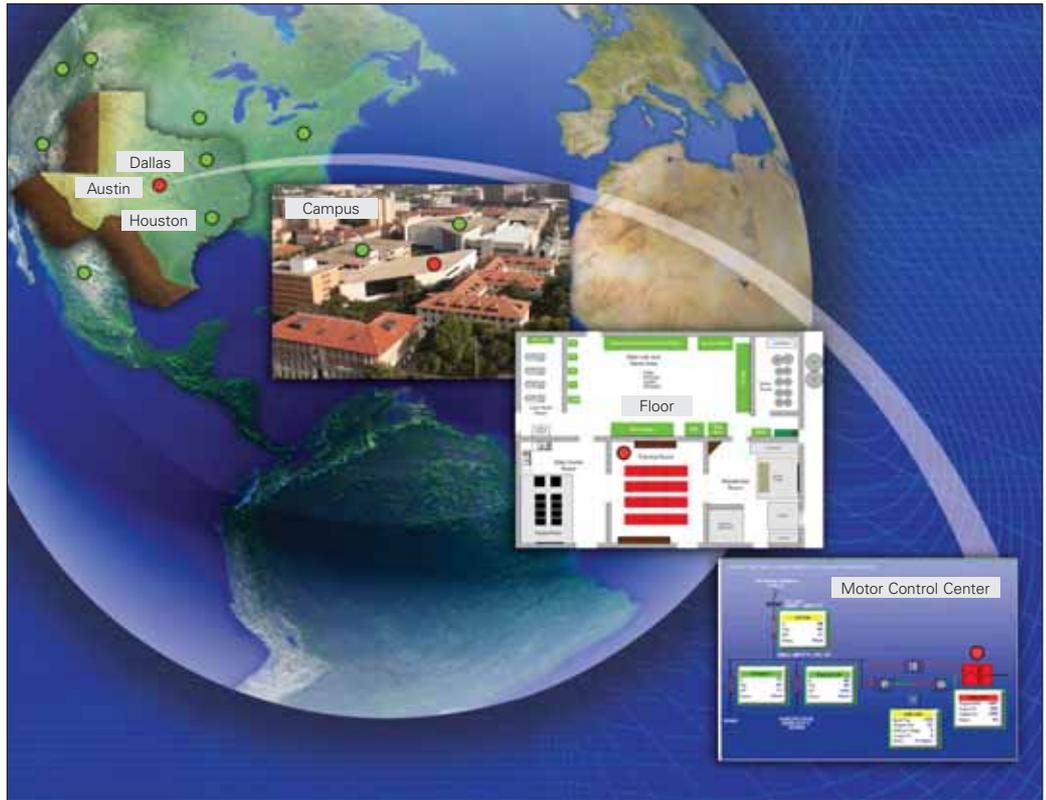
The Grid View is available for any device integrated into Power Xpert Software, including third-party products. Typically it arranges product attributes into logical categories and displays them in a spreadsheet format, including continuously updated values and field labels.

Power Xpert Software highlights, continued

Layout Manager—easily develop custom graphics

Power Xpert Software includes the Layout Manager module for custom graphics and Human-Machine Interface (HMI) development. This enables you to create multiple interactive Web pages linked together with custom graphics depicting your geographical locations, facilities, floor and individual devices within the infrastructure. When events occur that trigger an alarm, the alarm will bubble-up through the pages to all levels and draw your attention to them using pre-programmed yellow-red color-coded status indicators.

The Layout Manager module has a large library of symbols, icons, devices, background gradients and other graphic elements for you to develop your own customized graphical HMI. Best of all, new designs and devices can be added without actually having live connections. This enables creating layouts in advance, off-site and then easily and efficiently deploying the software at the installation location.



Use Layout Manager to import world and city maps, including their facilities and specific gear that is monitored by the Power Xpert Software. They can design an easy drill-down user interface that also allows an alarm to bubble-up when devices trigger alarming events.

Trend Viewer—understand where things are heading

Understanding power system device measurement trends can make all the difference in the world. Preventing system overloads, planning future capacity and preventing expensive downtime can be achieved by monitoring and keeping an eye on critical system trends.

The Power Xpert Software Trend Viewer offers a multitude of sophisticated trending capabilities. Device measurement attributes and other parameters can be easily selected from either the Grid View or the custom User View with a few clicks of the mouse. The trend graphs can be presented in a chart of data formats, or they can be mixed and matched. Single and multiple trends can be shown at a time with fixed or custom time frames. Results can be easily exported to a Microsoft® Excel® spreadsheet.



The charts are plotted with blazing speed thanks to Microsoft's latest SilverLight™ technology.

Power Xpert Software highlights, continued

Event notification—get events wherever you are

Power Xpert Software can be set up to send automatic e-mail messages to one or multiple users, or user groups, when events or alarms are triggered. E-mails can also be forwarded to mobile phones, PDA systems and pagers.

Events and alarms can be quickly and efficiently filtered in Power Xpert Software. An available search function pinpoints any certain event. Once events are reviewed, the user can acknowledge, clear or close them accordingly.

Alarm bubble-up—intuitive, color-coded information

A picture is worth a thousand words. In Power Xpert Software it gets even better, because the picture can actually change colors to indicate status severity levels based on information. When events trigger an alarm, the alarm will bubble-up through the Web page links through all levels ending at the top. The user's attention is drawn to the devices by using pre-programmed green-yellow-red color-coded status indicators.

Excel integration—enables custom analysis

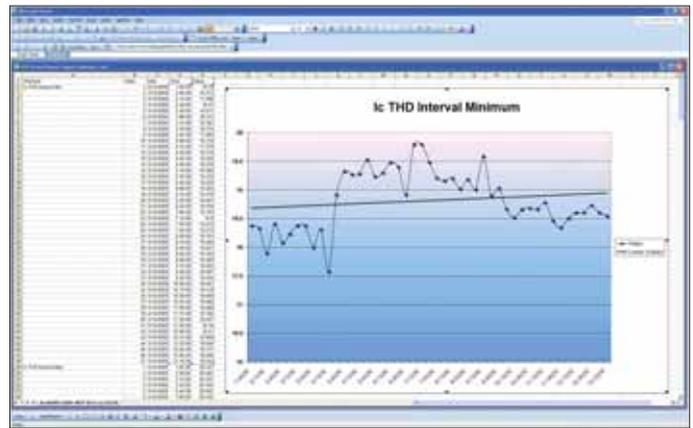
Power Xpert Software provides you with a wealth of detailed information about your power distribution systems, locally and around the enterprise network. However, if you are a power user and need to generate custom scenarios, crunch numbers in a different way or create tailored charts, then our Microsoft Excel integration feature is right for you. Power Xpert Software lets you open report data directly in Excel for any kind of further analysis you may deem necessary.

Just use your Web browser—no client software to install

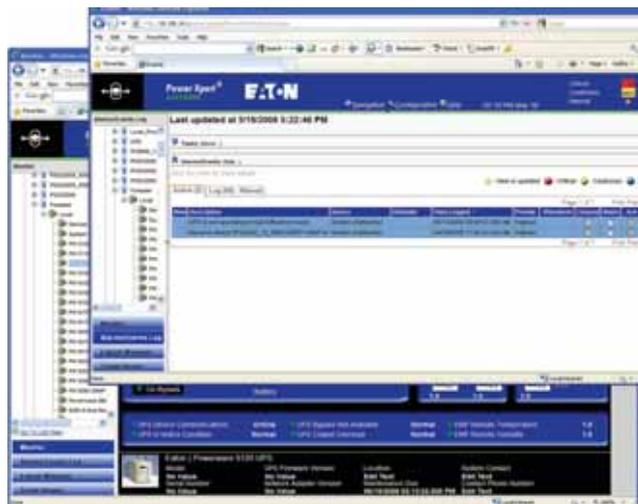
With Power Xpert Software there is no need to install a "fat" software client on your computer system to view data. You can easily and conveniently access all of your power distribution system devices over the network using your standard Web browser.



Selected Power Xpert Software alarms and events can be immediately sent via e-mail and reviewed conveniently on mobile devices.



Trend data can easily be exported in CSV file format to applications such as Excel for further analysis if necessary.



Sample Power Xpert Software screen as seen in a Web browser.

Power Xpert Software highlights, continued

Extended third-party device support—with SNMP and Modbus Connectors (Enterprise Edition)

Open protocol support makes Power Xpert Software compatible with most newer generation third-party equipment. Using the Power Xpert Software SNMP and Modbus third-party device integration utilities, system integrators can establish communications between Power Xpert Software and third-party devices that support standard SNMP or Modbus protocols.

These tools have been created for software development personnel who have a basic understanding of importing SNMP MIB or Modbus register files. They can make adjustments to them using the provided file editor and then finalize parsing and create a Power Xpert Software device driver install file to drop into the software.

Power Xpert Enterprise Edition includes the SNMP and Modbus Connector utilities as standard and ships with online documentation covering this type of system integration in detail.

Download third-party device drivers—get them online and drop them in (Enterprise Edition)

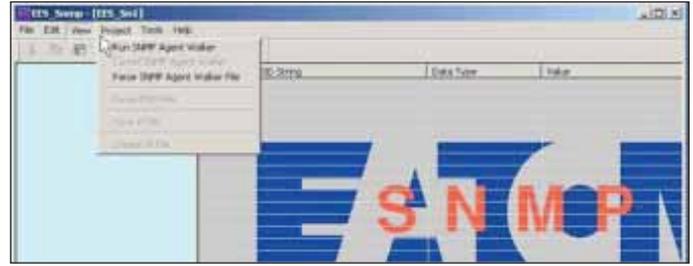
The easiest way to add third-party support to Power Xpert Software is by downloading ready-made device drivers directly from Eaton's Power Xpert Web page. An online library with a variety of the most common third-party device drivers has been made available for Power Xpert Software Enterprise Edition users. Drivers can be purchased online, downloaded and then dropped into the software without delay.

Quality Manager

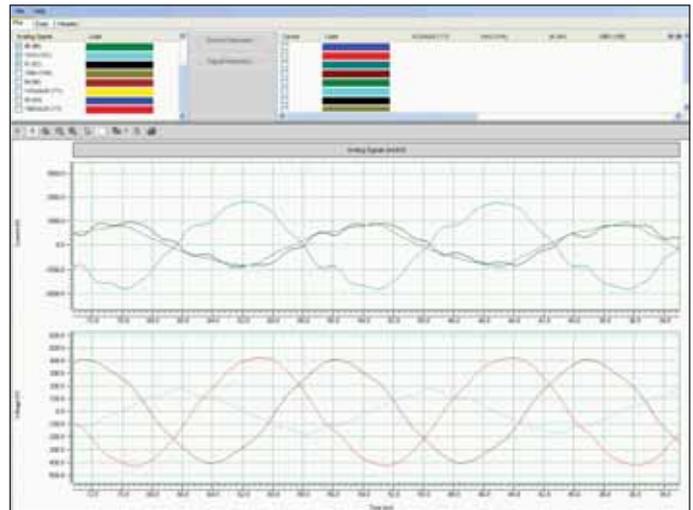
When electrical events such as sags, swells or transients occur, Eaton metering products can capture and store the waveforms associated with these disruptions. The standard Quality Manager, invoked directly from the event log, provides an excellent tool for detailed waveform analysis. Determining and comparing waveform signatures provides a wealth of information on electrical phenomena, allowing you to take necessary protective action to prevent or protect against further occurrences. Quality Manager allows you to zoom in and out of waveforms, sample individual parts of a waveform in great detail, and provide accurate measurement information per points of sampling versus time scale—all the way up to the millisecond time resolution. In addition, this module can open third-party and individual COMTRADE standard files for examination.

Deployment Utility validates and fixes issues automatically

Thanks to the Power Xpert Software Deployment Utility, all key setup requirements are automatically validated. If any of the prerequisites are not met or are incorrectly configured, the Deployment Utility will alert you to resolve the situation. The best part of using the Deployment Utility is that it has a button you can click to fix the discovered problem.



SNMP and Modbus Connectors are powerful device driver development utilities that enable the integration of third-party devices into Power Xpert Software Enterprise Edition.



The Quality Manager is an integrated software module that enables detailed waveform analysis and can be directly invoked from the individual captured meter event. Any standard COMTRADE waveforms can be opened for examination with this utility.



The Deployment Validation Utility takes the guesswork out of creating Windows® groups, configuring your Internet Information Server, opening the right firewall ports and enabling database access. It will check the current status of these settings and then offer to automatically configure them for you.

Power Xpert Software setup

The Power Xpert Software is the overarching component of Eaton's Power Xpert Architecture. Power Xpert Software seamlessly supports the other Power Xpert components such as Power Xpert Gateways, Power Xpert Meters and Power Xpert Gateway Communication Cards. All of these may be found in the following Eaton equipment:

- Data center equipment (UPSs and PDUs)
- Power distribution equipment
- Motor Control Centers

In addition to communicating with other Power Xpert Architecture products in a new installation, existing PowerNet systems are easily migrated to Power Xpert Software.

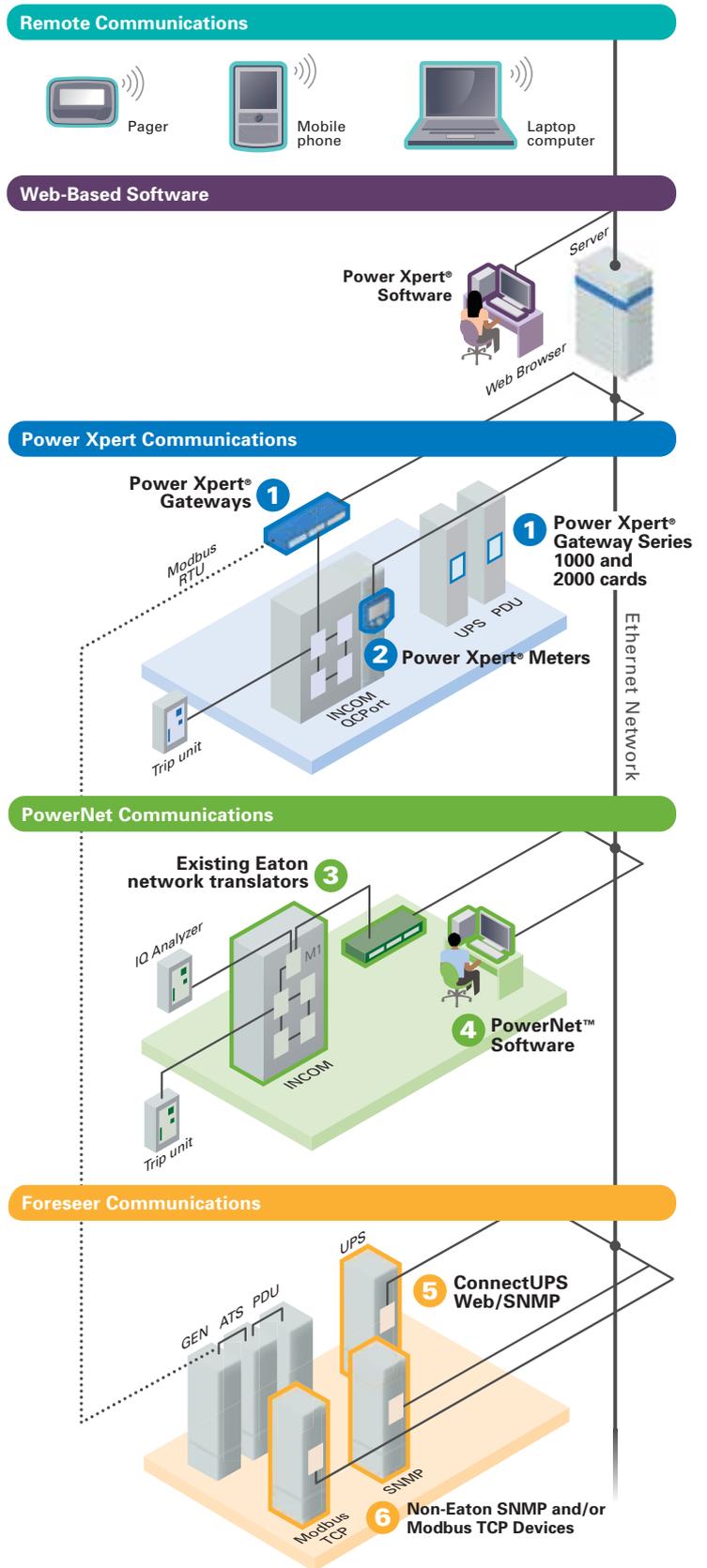
The bottom line is that Eaton's Power Xpert Architecture utilizes intelligent hardware and software to transform your power system, new or existing, into an integrated, agile system that you can monitor, control and manage effectively and efficiently, transforming your power system from an unmanaged liability into a strategic asset.

The diagram to the right illustrates six different Power Xpert Software scenarios:

Power Xpert Software setup

- 1 Monitor multiple Power Xpert Gateways 400 and 600 and Power Xpert Gateway Series 1000 and 2000 cards.
- 2 Monitor multiple Power Xpert Meters.
- 3 Monitor multiple Eaton existing network translators (EMINT, NetLink, CONI or MINTII).
- 4 Monitor an existing PowerNet system.
- 5 Monitor multiple Eaton UPSs.
- 6 Monitor multiple non-Eaton Ethernet-enabled devices via SNMP or Modbus TCP. Power Xpert Software Enterprise Edition is recommended.

Legend	
	Ethernet network
	Modbus RTU



Seamless integration of existing investments

Whether you've previously invested in Eaton's PowerNet software to connect your INCOM devices, or are starting fresh with a Power Xpert Software installation, we've got your investment protected going forward. Migration from PowerNet to Power Xpert is an easy, software-based process. PowerNet is integrated 'as is' into Power Xpert Software without any major device setup.

New installations in turn are genuinely Web and Power Xpert enabled, and with open protocol support such as SNMP and Modbus, can be easily integrated into third-party applications, or directly interrogated by a Web browser without any additional software.

Power Xpert Software— Device categories supported*



Eaton products

- Assemblies Electronic Monitor (AEM)
- Automatic Transfer Switch (ATS)
- Circuit Breaker Trip Units
- Breaker Interface Module (BIM)
- Central Monitoring Unit (CMU)
- Drives
- Dynamic Input Module (DIM)
- EMS-PDU
- Environmental Monitoring Probe (EMP)
- ePDU
- I/O Devices
- IQ Meters
- Legacy INCOM Devices (via Eaton Gateways, PowerNet)
- Motor Control Centers (MCCs)
- Network Protectors
- Power Distribution Rack (PDR)
- Power Distribution Unit (PDU)
- Power Xpert Meters
- Protective Relays
- QCPort Devices (via Eaton Gateways)
- Remote Panel Monitor (RPM)
- Remote Power Panel (RPP)
- Starters
- Switchgear
- Uninterruptible Power Systems (Single-Phase)
- Uninterruptible Power Systems (Three-Phase)



Third-party products

- Power Xpert Gateway third-party device support
 - ABB TPU 2000
 - GE 369 Motor Relay
 - GE 469 Motor Relay
 - InsulGard Insulation Monitor
 - PML 7350 Meter Series
 - PML 7550 Meter Series
 - PML 7650 Meter Series
- Square D CM3000 Meter Series
- Square D CM4000 Meter Series
- Square D PM710 Meter Series
- Square D PM850 Meter Series
- Third-party custom device driver drop-in support**
- Third-party Modbus TCP-compatible devices**
- Third-party SNMP-compatible devices**



*For a full list of compatible Power Xpert Software devices, please visit us at www.eaton.com/pxs and look for PXS Hardware Compatibility List (PXS-HWCL)

**Supported by Power Xpert Software Enterprise Edition

Did you know?

Power Xpert Software can easily do PUE and DCiE calculations too!

PUE is the ratio of a facility's total power to the power being drawn by IT equipment, which falls on an effective scale of 1.0 to 4.0. Lower scores are more desirable, and ideally, a facility should strive for a score that is lower than 2.0.

DCiE, on the other hand, is the percentage of IT equipment power to total facility power. Therefore, the higher the percentage a facility receives, the better its DCiE rating.

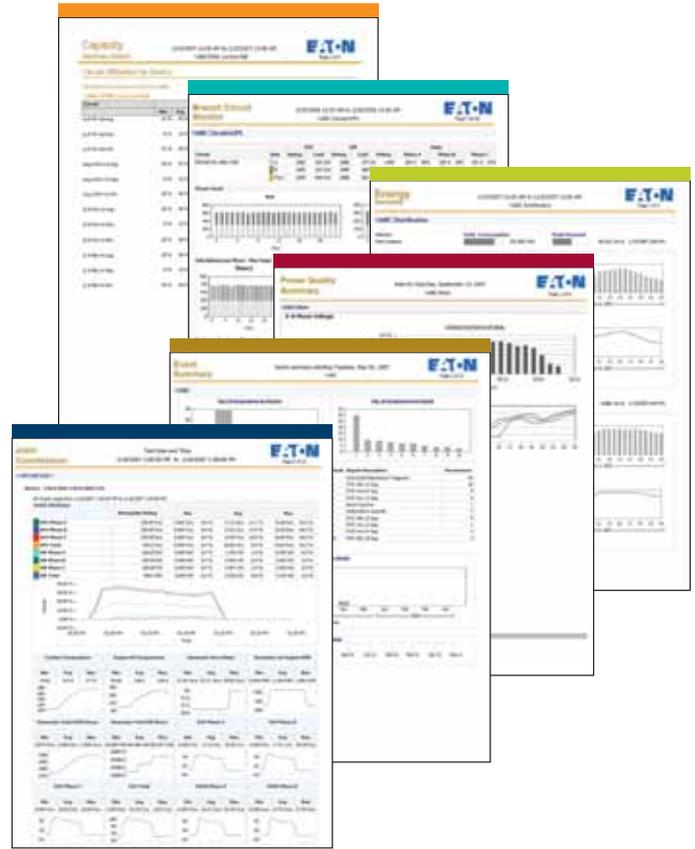
Download the Power Xpert Software PUE/DCiE Application Note from www.eaton.com/powerxpert to learn more about this feature.

Optional Item: Power Xpert Reporting—the perfect complement

Power Xpert Reporting helps bring information from the software together

Power Xpert Software brings together your power system information from around the floor to around the world—data and information that is invaluable. Power Xpert Reporting brings all the power system information together to compare, contrast and generally give you the big picture. Power Xpert Reporting provides a standard set of reports, including:

- Capacity Summary Report:** The summary of top- and bottom-loaded circuits, as well as loading details for each circuit according to user-defined date/time range and facility hierarchy location
- Branch Circuit Monitoring Report:** Determine branch circuit loading levels at a glance with color-coded graphics indicating loading status against capacity. Redundant sources can be reviewed, as well as single source loads
- Energy Summary Report:** The summary of consumption (kWh) and demand (kW) for a user-defined date/time range and facility hierarchy location
- Energy Cost Allocation Report:** The total energy bill dollar value or a cost per kWh across a facility hierarchy for a user-defined date/time range
- Power Quality Report:** The distribution and trend for amps, volts and THD according to user-defined date/time ranges and facility hierarchy location
- Event Summary Report:** Provides a Pareto chart of events according to user-defined date/time ranges and facility hierarchy location
- Joint Commission (JCAHO) Report:** Standard JCAHO-compliant report supports hospital power test requirements. It checks events, key metrics of generators and automatic transfer switches (ATS) during generator testing at user-defined date/time ranges and facility hierarchy location



Energy Cost Allocation		11/4/2007 12:00 AM to 11/6/2007 12:00 AM		EATON	
		\ABC Distribution		Page 1 of 1	
Total for Period		Consumption:	599,379 kWh	Cost:	\$47,950.35
		Rate:	\$0.08 per kWh		
\ABC Distribution					
Device	Consumption	Cost	% of Total		
West Campus	372,559 kWh	\$29,804.73	62.16 %		
East Campus	226,820 kWh	\$18,145.62	37.84 %		
Total	599,379 kWh	\$47,950.35	100.00 %		
\ABC Distribution\East Campus					
Device	Consumption	Cost	% of Total		
East 1 + East 2	105,888 kWh	\$8,471.04	17.67 %		
East 3 + East 4	120,932 kWh	\$9,674.58	20.18 %		
East Campus	226,820 kWh	\$18,145.62	37.84 %		

The Energy Cost Allocation report allows you to see your total energy consumption, then easily distribute your energy costs based on each location's individual usage.

- Get total kWh and costs of energy clearly in dollars and cents.
- Allocate energy costs between departments and facilities based on consumption.
- Determine which facility is frugal and which one consumes the lion's share.

Power Xpert Software

Go green.



An Eaton Green Solution



Power Xpert Software is a key component to help you go green.

Environmental stewardship, innovation and leadership are becoming increasingly important as we take steps to create a sustainable environment for future generations by going green. Power Xpert Software can help a building or campus go green and qualify for Leadership in Energy and Environmental Design (LEED®) credits through the U.S. Green Building Council (USGBC).



Eaton offers several solutions that assist you in reducing your energy consumption, minimizing environmental and economic impacts associated with excessive energy use.



Power Xpert Software, along with Power Xpert Reporting, aggregates information into understandable charts and graphs that allow users to easily identify energy-saving opportunities throughout their buildings and campuses, worldwide. Power Xpert Software can provide some of the valuable information you need in the short-term and long-term to identify energy, cost saving and power quality enhancement opportunities, through control, monitoring and management of your power systems.

Comparing short- and long-term usage across all facilities.

Go green.

Power Xpert Software helps you understand and manage your critical power systems and energy flow as a whole, providing you with a short-term and long-term view of your individual and overall power consumption.

It allows you to easily compare month-to-month energy usage graphs throughout your facility and campus. And it will automatically store the energy data for long-term analysis. Report scheduling and report subscriptions can be set up to keep you automatically updated on what's going on with the power consumption and quality in your facilities, helping you achieve your savings and green goals.

Eaton can help your building go green



Save energy

Pow-R-Command™ lighting controls

Eaton 9395 UPS
and Eaton BladeUPS™

Harmonic mitigating transformers

Power factor correction
capacitors and filters

Paralleling switchgear

Energy audits

Automatic transfer switches

Variable frequency drives
and soft start motor controls

Power Xpert® software and meters

Protect the environment

Prefabricated product assemblies

Circuit breakers

Busway

Medium voltage switchgear

Integrated Facilities Systems™ (IFS)

Refurbishing services



An Eaton Green Solution

Want to find out more? Visit:

www1.eatonelectrical.com/flash/green

Features and benefits

Feature	Benefit
General	
Web browser user interface	There is no need to install a separate client piece of software on your computer. Simple and easy access via Web browser from any location in the world.
Web-based monitoring capabilities	Monitor all power system equipment through the Internet.
Event Notification	
Event notification via e-mail notification	Receive automatic e-mails when events are triggered.
Event notification via pagers, text message or third-party interfaces	Receive alarms on event changes via pagers, text message or third-party interfaces.
Alarm state management	Acknowledge, clear and close alarms through Power Xpert Software.
Event indicator displayed without Web page active	The Web page you are on does not need to be active to display the event indicator.
Alarm/event searching and filtering	Conveniently search and filter alarms and events to quickly find what you are looking for.
Waveform attached to applicable power event	Waveforms captured by meters are attached to actual power events, making them easy to understand and interpret.
Web browser based waveform viewing	There is no need to install a separate waveform viewer on your computer. Waveforms can be easily reviewed right in your Web browser.
Alarm capabilities based on device driven events	Alarms and triggered events come to the software directly from the associated devices, eliminating false alarms.
Analysis and Trending	
Graphic Trend Viewer	Displays power system device measurements in an easy-to-understand graphical chart format.
Chart or data option selection	Conveniently view the data in either spreadsheet type data format or a graphic line chart plot.
Multiple trends display	Displaying multiple trends at a time helps analyze event ramifications and impact in more detail.
Multiple axis support	Multiple trends can be plotted on multiple x and y axis, displaying pertinent time and scale information.
View multiple variables (i.e., Ia, Ib, Ic, Vab, Vbc, etc.) for a single waveform	Multiple waveform variables can be viewed at a time, eliminating the need of changing views frequently.
Standard COMTRADE file format support	View, import and open any waveform captures in standard IEEE® (C37.111-1999) COMTRADE file format.
Customizable Trend Viewer look and feel	The formatting of the data, and the look and feel of it can be easily customized according to user preferences.
Fixed or custom time frames	Information displayed in the Trend Viewer can have either system-defined fixed or user-selected custom time frames.
Trend analysis capabilities	Trends can be easily spotted and analyzed on screen or exported to third-party software for further analysis if necessary.
Data export	Trend data can be easily exported to Excel for further analysis.
Custom Graphics and Layouts	
Custom graphics development via Web browser	Customized Web pages can be easily developed using a plain Web browser, eliminating the need to install a separate application to be installed, learned and utilized.
iFrame capability	iFrames enable embedding browser portals into custom Web page layouts.
Browser Portal Widget support	Browser Portal Widgets can be embedded in iFrames to accommodate streaming media feeds.
Streaming media support	Multiple streaming media feeds can be embedded into a single Web page, utilizing iFrames technology.
Graphic object library included as standard	A large object library including most common power devices is embedded within the system, enabling the user to develop mimic screens from the start.
ISO® standard electrical picture objects available	Add ISO standard compliant graphics to one-line diagrams or other layouts for ISO compatibility.
Graphic files import capability	Import floor plans, street maps or photographs to be used as background images or mimic objects in Web pages.
Graphic object animation capability	Graphics can be animated based on event and threshold changes. An object could change color, for example, when a threshold is reached.
Gauge object library support	A multitude of gauges are provided in the standard object library to enable easy Web page custom measurement gauges design.
External Web links support	Add Web links to Power Xpert Software pages, which link to any device, Web page on the Internet, and network around the globe with a Web user interface.
Alarm bubble-up support through several page layers	Alarms can be easily bubbled-up through multiple Web pages with the folder link feature. Event can be seen on the topmost page and the user can drill down for more information.
Trend object support	Trend objects can be embedded into the layout, enabling viewing the data directly in the Trend Viewer.

Features and benefits, continued

Feature	Benefit
UPS Shutdown	
File saving during shutdown	During an emergency shutdown due to an extended power failure outlasting the UPS battery, open files on the computer systems are closed and saved in an orderly fashion.
Automatic, orderly and sequential shutdown	All operating systems running Power Xpert Software Shutdown Agent will be shut down in an orderly and sequential fashion to prevent data loss.
Parallel redundant UPS shutdown capability	Built-in software logic will initiate shutdown only after UPS redundancy has been lost and the last UPS is out of runtime.
Security and Administration	
Windows Authentication Security	Control access to Power Xpert Software via Windows Authentication Service.
Two-tier secure system access support	Access the Power Xpert Software with read or write privileges to prevent unauthorized tampering.
SSL	Supported via OpenSSL.
Secure Web browser access (support for HTTPS)	Supported via OpenSSL.
Time Synchronization	
Time Synchronization support for connected devices with 1 millisecond time resolution	Millisecond-based timestamp support (when supported by connected device) enables understanding the sequence of rapidly occurring events.
Export and Integration	
Extended Excel spreadsheet support	Open report files directly in Excel. (Only applicable to countries with CDMA cellular network)
SQL database query support	Power Xpert uses standard SQL database format that can be queried by third-party applications for system integration and data exchange.
Logs	
System Log	The System Log gathers information on system-level events for error and security purposes.
Error Log	The Error Log gathers information on errors occurred for diagnostic purposes.
Documentation and Training Videos	
System Administrator's Guide	Guides users on how to administer Power Xpert Software.
Power Xpert Software User's Guide	Detailed information of Power Xpert Software features and functionality along with screenshots and references.
Layout Manager Guide	Detailed information on how to use Layout Manager's features and functionality to create custom graphic system pages.
Quick Start Guide	Takes the guesswork out of initial software installation and configuration with clear step-by-step instructions on how to get started.
Power Xpert Software Introduction and Training Video	Learn the main features and functionality of Power Xpert Software by watching a hands-on video showing you how to install, configure and use the software.
Power Xpert Reporting Introduction and Training Video	Learn the main features and functionality of Power Xpert Reporting by watching a hands-on video showing you how to install and configure reporting. Included are step-by-step instructions on how create reporting hierarchies and pull data out of different databases.

NOTE: These specifications are subject to change without notice and represent the maximum capabilities of the product with all options installed. This is not a complete feature list. Features and functionality may vary depending on selected options and product model. Please refer to the technical data sheet and user manual for detailed specifications.

Communication Protocol Support	Description
Dry-contact/contact closure/relay	Contact closure support is enabled via various Eaton Gateway devices. Please refer to Power Xpert Software Hardware Compatibility List for details.
BACnet WS+	BACnet WS+
Modbus RTU	Modbus RTU
Modbus TCP	Modbus Protocol over TCP
TCP/IP	Transmission Control Protocol
SNMP	Simple Network Management Protocol
SMTP	Simple Mail Transfer Protocol
INCOM	Eaton Legacy Protocol
HTTP	Hypertext Transfer Protocol
HTTPS	Hypertext Transfer Protocol with SSL
SSL	Secure Sockets Layer

System requirements

Hardware requirements

Power Xpert Software (PXS) requires a server-class machine with the following minimum hardware specifications:

Hardware	Specification
Processor	2.8 GHz, dual-core processor
Memory	2 GB allocated for PXS (allocate 3 GB of memory to a virtual machine session running PXS)
Disk space required for application	The PXS application itself requires 451 MB of disk storage
Disk space required for database	A typical database will grow to 2 GB within a year. If you have a large number of devices, reserve additional storage space
Video resolution	1280 by 1024 pixels or higher
Removable media	DVD RW drive

You may wish to add the following hardware as well:

- Local printer
- Sound card (if sounds are assigned to specific alarm conditions)
- Modem (for remote alarm notification to machines not available via your network)

Software requirements

Supported operating systems

- Microsoft Windows Server 2003 (Standard or Enterprise) with Service Pack 2
- Microsoft Windows XP Professional (32-bit) with Service Pack 2 or Service Pack 3

Software components

- IIS 5.0 or higher (must be installed prior to installing PXS)
- Microsoft Internet Explorer® 6.0 or 7.0

Third-party software installed

The following Microsoft software is also installed during the PXS installation.

- .NET Framework 3.5 SP1
- Windows Installer 3.0
- C++ Runtime Library 2008
- Microsoft Data Access 2.8
- SQL Server 2005 Express SP2
- SQL Server 2005 Express Management Studio SP2



Ordering information

Power Xpert Software Catalog Numbering System

Catalog Number	Description
Power Xpert Software Professional Edition	
PXS-PRO	Power Xpert Software Professional Edition
Power Xpert Software Enterprise Edition	
PXS-ENT	Power Xpert Software Enterprise Edition
Power Xpert Reporting	
PXR	Power Xpert Reporting



Eaton's electrical business is a global leader in power distribution, power quality, control and automation, and monitoring products and services. Eaton's global electrical product series, including Cutler-Hammer®, Moeller®, Powerware®, Holec®, MEM®, and Santak® provide customer-driven PowerChain™ solutions to serve the power system needs of the data center, industrial, institutional, public sector, utility, commercial, residential, IT, mission critical, alternative energy and OEM markets worldwide.

Eaton Corporation is a diversified power management company with 2009 sales of \$11.9 billion. Eaton is a global technology leader in electrical components and systems for power quality, distribution and control; hydraulics components, systems and services for industrial and mobile equipment; aerospace fuel, hydraulics and pneumatic systems for commercial and military use; and truck and automotive drivetrain and powertrain systems for performance, fuel economy and safety. Eaton has approximately 70,000 employees and sells products to customers in more than 150 countries. For more information, visit www.eaton.com.

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Note: Features and specifications listed in this document are subjected to change without notice and represent the maximum capabilities of the software and products with all options installed. This is not a complete feature list. Features and functionality may vary.

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