Power Monitoring Expert software

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Schneider Electric Canada

Schneider Electric
Drivers for Energy Management

- Generate savings
  - Procurement
  - Incentives
  - Better business performance
  - Stay competitive

- Power Reliability/Safety/Availability
  - Avoid downtimes
Getting information is key

"If you can not measure it, you can not improve it."

*William Thomson, Lord Kelvin (1824, 1907)*

Data management is key

- Data acquisition, validation – companies need accurate data, delivered instantly, able to be verified
- Operational intelligence – data must serve to help enable good decision making, not just “more data”
- Global stakeholder visibility – closed internal systems giving way to more open platforms that deliver heightened visibility
Optimize your power network with data-driven decisions

StruxureWare Power Monitoring Expert software collects data across your entire electrical distribution system and turns it into actionable information

- Improve operational efficiency and reduce energy-related costs
- Ensure electrical network reliability and reduce downtime
- Optimize equipment utilization and reduce the cost of operations

Maximize network reliability and performance

Optimize power distribution system

Improve bottom-line performance
Power Monitoring **Expert** helps you

- Avoid critical conditions, equipment failure and downtime
- Track consumption of power, gas water and other resources
- Allocate costs by building, department or process
- Identify energy waste and unused system capacity
- Extend equipment performance and life span
- Grow their energy management competency at their own pace

**Maximize network reliability and performance**

**Optimize power distribution system**

**Improve bottom-line performance**
Details of power distribution system are provided for facility people

- Voltage regulation, voltage balance and disturbances
- Current levels and Power flow
- Power Factor (kvar)
- Neutral current and Harmonics

Improve response to power-related problems

- Verify normal activities and provide information to proactively assess issues
- Differentiate between mechanical and electrical power problems
Verify the reliable operation of power equipment

- Ensure and indicate that operations are normal
- Proactively optimise electrical distribution network
- Monitor transformers, breakers, PDU, ATS, UPS, generators and capacitor banks
Power Monitoring Expert provides power quality insights

Be informed about the quality of power in your electrical network

- Detect, capture, analyze, understand and prevent power quality issues
- Sags, swells & transients
- Disturbance direction detection

Up to 80K
Annual facility cost of power quality problems
Power Monitoring Expert maximizes asset performance

Monitor the power consumed by equipment and prolong the life of key assets

- Real-time and historical data reveals relationships between equipment and conditions affecting system stability
- Support proactive maintenance to prolong asset life

60%
The amount of industrial electricity consumed by motors

![Power Monitoring Expert](image_url)

Inrush Current on Startup (Amps)

Time (Sec)

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Power Monitoring Expert tracks all energy consumption

Allocate costs to departments or processes

- Collect, calculate and report costs for buildings, departments, processes, shifts, lines, or equipment
- Reduce expenses, enable best practices and validate all your conservation initiatives
- Track non-electrical utilities (WAGES)
Power Monitoring **Expert**

improves energy efficiency

Measure efficiency, reveal opportunities and verify savings

- Measure and compare consumption against departments, processes and industry KPIs to identify places for improvement or adjustment
- Confirm ROI for system improvements with advanced reporting and analysis
Power Monitoring Expert lowers energy costs

Reduce peak demand, power factor penalties

- Alert on demand levels, analyze trends to identify demand reduction and load shifting opportunities
- Identify locations of poor power factor
- Justify power factor improvement
- Monitor capacitor banks

Up to 24%
Utility surcharge for poor power factor
Power Monitoring Expert lowers energy costs

Identify billing discrepancies

- Validate utility bills, document errors and assess contract compliance
- Identify false penalty charges and authenticate benefits of on-site generation

Participate in demand response programs

- Review historical patterns to build a curtailment plan to enable participation in utility programs
- Negotiate reduced electricity rates for being able to shed load quickly upon request from the utility
- Automate, aggregate load management to verify curtailment, coordinate backup systems, and ensure contract compliance
What’s New?

StruxureWare
Power Monitoring Expert v7.2
## Web Client Browser Support

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Hierarchies for data aggregation

- PME v7.2 has a Hierarchy Manager that allows one to define a system hierarchy to **automatically “roll up” or “aggregate” data**
  - More robust, easier to deploy solution than using the VIP component
    - Eliminates manual configuration
  - Supports multiple “Views” of the hierarchy for user-friendly displays/outputs
  - Start/End dates allows hierarchy changes to be managed over time
    - Tenant “Move In – Move Out” is supported
  - Used for **cost allocation applications** and **tenant “charge back” billing**

Level = “Site”

Level = “Building”
- Building 1
- Building 2

Level = “Floor”
- Floor 1A
- Floor 2A

Level = “Area”
- Area 51
- Area 52
- Area 53
- Area 54
- Area 55

Device(s)
Source Hierarchies
In Power Monitoring Expert v7.2

- Organize sources into physical locations and areas for easier management.

- **Default** and **custom** hierarchies to model any business:
  - Data centers
  - High-rise buildings
  - Multi-building campus

- Customizable templates (.xml) define the levels in the business model.
  - Site > Building > Area
  - Building > Panel > Circuit > Tenant

- User-defined attributes (contact name, address, etc.) can be added to each level and leveraged in custom reports.
Hierarchies for data aggregation

- **Cost Allocation** example for Industry

- **Tenant Billing** example for Buildings

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### Cost Allocation example for Industry

- **Site**
  - ABC Factory
  - Area A
  - Area B
  - Line 1
  - Line 2
  - Process 1A
  - Process 2A
  - Process 1B
  - Process 2B
  - Device 1Ai
  - Device 2Ai
  - Device 2Aii
  - Device 1Bi
  - Device 2Bi
  - Device 1Bii

### Tenant Billing example for Buildings

- **Property Manager**
  - XYZ Property
  - Tenant 1
  - Tenant 2
  - Tenant 3
  - Tenant 4
  - Tenant 5
  - Tenant 6
  - Tenant 7
  - Tenant 8
  - Tenant 9
  - Tenant 10
  - Tenant 11
  - Tenant 12

- **Tenant**

- **Billing Meter**

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Use Hierarchies in the Software

- Hierarchies supported in **Dashboards** and **Reports**.
  - Consumption data is **summed** (energy and power)
  - Non-consumption data is **averaged** (voltage, current, etc.)
  - Calculations are done during runtime

**Dashboards**
- Supported in all gadgets.

**Reports**
- Hourly, Multi Device, and Single Device usage reports
- Tabular and Trend reports
- Billing report
Supports Tenant *Move-In Move-Out*

- Hierarchies will have the ability to track configuration changes over time
  - Update name(s) in the hierarchy (e.g. Tenants) at any time (even in the past) to ensure accurate reporting of associated data points.

For Example
- Report on energy consumption for a Tenant who expanded, re-located or moved in/out during the billing period.
Billing Module
Optional Module

- **Advanced and flexible Billing Report** to replace the Energy Cost Report.

- **Flexible tariff engine** with flat & tiered rates, time-of-use (TOU), power factor (PF) penalties, coincident demand, taxes and fees.
  - Tariff definition is managed separately from the report.

- **Uses new Hierarchies feature**
  - Buildings, departments, processes, shifts, lines, equipment, etc.
  - Track changes over time and update hierarchy for tenants, departments, etc.
Web Reports work with SQL Express

- PME systems installed using the factory provided SQL Server Express will support the Reports application in the Web Client
  - All 16 default report templates
  - Configure and save reports (pdf, xml, html, xls)
  - Schedule reports to run automatically
Web Image Gadget

● Display external web content in a Dashboard using image snapshots
  ● Intranet or external website content
  ● Selected part of a Report
  ● Custom images
  ● Web cameras

● Image is a “user selected” portion of webpage using a “cropping” tool
● Image will automatically update at user specified interval
Web Image Gadget examples
Web Image Gadget setup

Specify the **URL**, a **delay** to wait before loading the page and a **refresh interval**.

Quickly select (crop) the webpage content with the mouse, then make final adjustments.
Custom Tabs in Web Client

- Modify the navigation tabs in the toolbar to integrate local applications to provide a seamless single experience for the user.
  - Integrate any application that can be hosted in an iFrame.

- Tab pictures/icons are in .xaml format.
  - We provide some .xaml images, or
  - You can create your own
EcoStruxure Web Services (EWS)

- Power Monitoring Expert v7.2 is an **EWS v1.1 server** (not client).
  - Publish **Real-time**, **Historical**, and **Alarm** data to other systems.

- Modern web services architecture
  - Schneider Electric and selected partners can use EWS to provide PME data to custom applications.
  - Documentation included in **Productivity Toolkit**.
Registration & Software Enforcement

- **User Registration is required** and is done by creating a Web User Management (WUM) account
  - WUM account creation is fast and easy
  - Complete a simple web form, providing **email address**, first name, last name, password, mailing address

- **PME Software Licences are enforced** using Activation IDs
  - PME Software Licence “activation” provides copy protection and enforcement of:
    - Primary Server Licence
    - Device Licences
    - Client Licences
Communities

Solutions Expert Community
> Connect for answers. Collaborate for excellence.
> https://powersolutionscommunity.schneider-electric.com
> A global community for projects & services and system integrators
> Contains advanced troubleshooting articles and procedures

> http://shoppingkiosk.schneider-electric.com

> http://www.schneider-electric.com