

## Product Overview



# Power Distribution Solutions

Answers for industry.

**SIEMENS**

# Compatible Products Overview

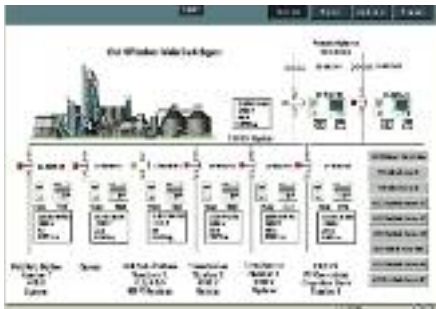
## WinPM.Net Power Monitoring and Control Software

Siemens web-enabled, open and flexible, reporting analysis tool for electrical engineers, energy managers and facility managers, is a window into your electrical distribution system. View real-time data from any work station, capture and record events and waveforms, log data for energy usage reports. WinPM.Net gives you desktop access to all your power system information. In the event of a power related event, you will have all the information you need to understand the cause -- and subsequent effects, and

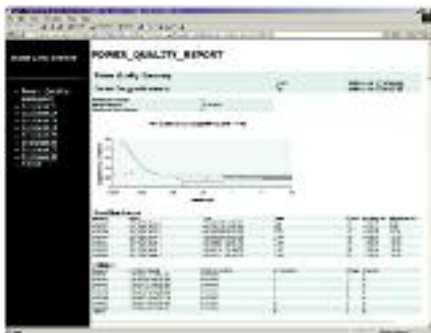
when it's time to increase electrical system capacity historical data will empower an intelligent cost-effective decision. Integrate your process control parameters, building management information, and other vital system attributes through OPC, PQDIF (Comtrade) Modbus or analog I/O for a complete enterprise power management system.

**Data Acquisition** – Ethernet, wireless, serial, or modem connectivity to intelligent devices

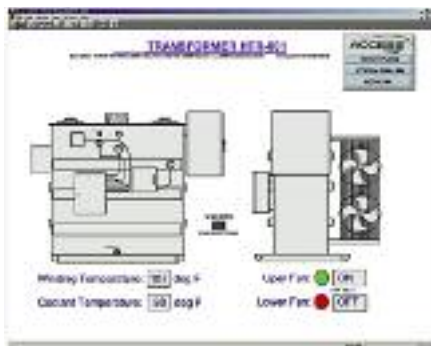
**Monitoring** – Web page access, customized graphics, waveforms, alarm management



**Power Quality Analysis** – Sag/Swell and transient detection



**System status indications** – Breakers and protective relay trip and event log data



**TIP (Totally Integrated Power™) delivers comprehensive and cost effective integrated power products and systems**

Power System Management and Monitoring

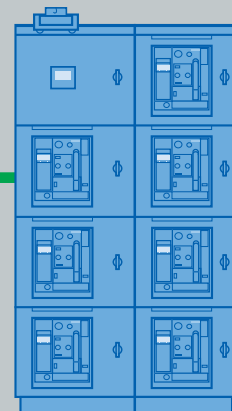
WinPM.Net Server



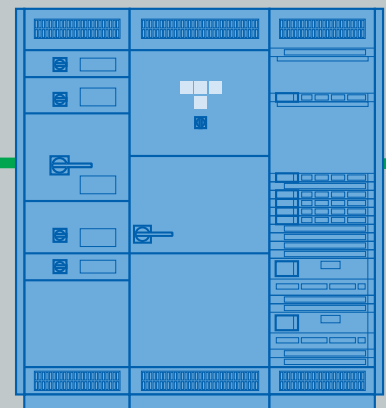
Ethernet/Internet/Intranet



Web-based Client Station



Low Voltage Switchgear



Switchgear, MCC's, Panelboards

Complete Power System Integration

# Compatible Products Overview

## ACCESS System Features

**Reduced Downtime** – Advanced warning eliminates unplanned outages. Avoid overloading breakers, bus duct, motors, or other electrical apparatus by knowing how much power the electrical system is using and when.

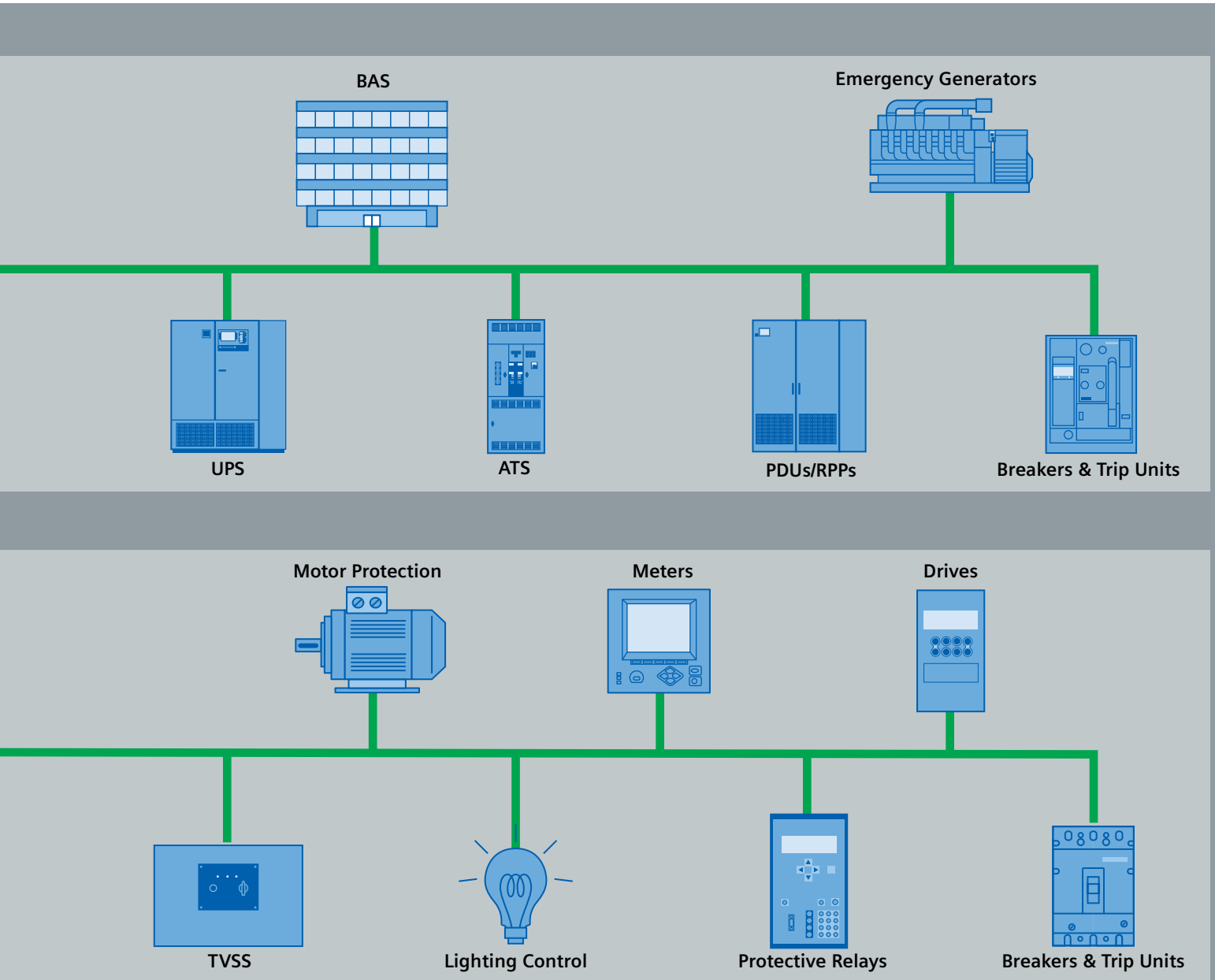
**Power Quality Analysis** – Harmonics, dirty power, utility switching. Find out which threat is most eminent for your facility. Monitor how loading affects your power system.

**Asset Management** – Efficient equipment maintenance means doing what you need when you need to—Intelligent breakers, power meters and protective relays alert operators as to when system events create conditions where product or apparatus

maintenance may be required. Motor run time, breaker history, and other system parameters can be tracked and reported on to help schedule shutdowns and preventive maintenance schedules.

**Future Expansion/Open Connectivity** – Look for pockets of untapped power potential before the next capital expansion. Maximize your system by connecting to existing installed equipment.

**Cost allocation** – Create energy awareness and thereby influence usage patterns by posting power usage amounts and costs to intranet websites. Bill internal customers for their energy usage.



# Compatible Products Overview

## Advanced Power Monitors



### PAC3100 Basic Power Meter

The SENTRON PAC3100 meter offers high functionality in a compact meter. This meter is will provide for basic power monitoring requirements. With a multitude of features built in, the PAC3100 offers:

- Over 25 parameters that can be monitored
- Modbus RTU built-in
- ANSI 12.20 class 1s
- Alarming on up to 6 functions
- Large backlit LCD display



### PAC3200 Basic Power Meter

The SENTRON PAC3200 meter offers high functionality in a compact meter. This meter is will provide the needed measuring capability to meet LEED certification, basic government metering requirements, and provides a direct connection to your automation network with PROFIBUS DP communications. With a multitude of features built in, the PAC3200 offers:

- Over 60 parameters that can be monitored
- ANSI 12.20 Class 0.5
- Alarming on up to 6 functions
- Modbus TCP built In
- Optional modules for PROFIBUS and Modbus RTU
- Large backlit LCD display
- Can serve two modbus masters, one RTU and one Ethernet
- Capable of custom logic functions



### PAC4200 Power Meters

The SENTRON PAC4200 meter offers high functionality in a compact meter. This meter is will provide the needed measuring capability to meet LEED certification, basic government metering requirements, and provides a direct connection to your automation network with PROFIBUS DP communications. With a multitude of features built in, the PAC4200 offers:

- Over 200 parameters that can be monitored
- Modbus TCP Built In capable of serving two masters via Ethernet
- ANSI 12.20 Class 0.2S
- Harmonics displayed up the 31st. harmonic
- Capable of custom logic functions
- Optional modules for PROFIBUS and Modbus RTU
- Data logging Kw, Kwd Min./Max 40 days @ 15 minute intervals
- Large backlit LCD display
- Four user define screens



### 9340 and 9360 Advanced Power Meters

The 9340 and 9360 advanced power meters support a wide range of applications where increased accuracy, sampling and a large display is required. Features include:

- Standard Modbus RTU communications
- Simple logic functions
- Waveform capture at 128 samples/cycle for up to 185 cycles in the 9360
- Optional I/O modules for analog and digital inputs and outputs
- Customizable web pages with optional Ethernet module
- Optional Modbus TCP
- Harmonics up to 63rd
- Logging, alarming
- Sag/swell ability in the 9360
- Will fit into an existing 4" ANSI cutout
- EN50160 PQ compliance (9360)



### 9510/9610 Series Quality Power Meters

The 9510 and 9610 Power Quality meters are the most advanced power meters in the industry. They include 256 samples per cycle in the 9510; 512 or optional 1024 sampling/cycle in the 9610 meter. Both of these meters use patented 4 times over sampling, which produces high accuracy and fast transient detection. Modbus master capability is also included which enables downstream devices such as protective devices, other Siemens or third party Modbus meters to be displayed on the meter's internal web pages, turning the power meter into a powerful web server for complete switchboard and switchgear monitoring without the need for software. The Modbus master feature will also display downstream device data on the meter's screen making the meter a central display and a meter simultaneously.

- Customizable high visibility 1/4 VGA display
- Meter displays that include trend plots, phasor diagrams, sequence-of-event recording
- Data concentrator, central display for downstream devices
- Large memory for logging, 5MB standard and 10MB optional
- Advanced harmonics on all channels simultaneously
- Flicker, IEEE 519 compliance, number of 9's analysis
- Waveform capture, sag/swell, transients, CBEMA
- High speed 1/2 cycle updates of most electrical values
- Analog and digital I/O for water, air, gas, electric and steam (WAGES) monitoring
- Fault direction detection
- Web server/XML server/e-mail server built In for all Ethernet equipped units
- Fully customizable web pages

# Compatible Products Overview

## Low Voltage Protective Devices

### WL Power Circuit Breaker



The WL Power Circuit breaker is reliable, compact and easy to use. It provides a wide range of circuit breaker and metering information to WinPM.Net when ordered with the COM 16 for Modbus communication interface.

#### Information available in WinPM.Net

##### Measurements

Phase amps, avg., neutral and ground	KW, KVAR, KVA	Trip Log – Last 5 trip events, time date, current values and cause event log Remote open close* *Auxiliary components required for remote open close functionality
Breaker status and position in frame	KWhr, KVARhr forward and reverse	
Power factor	Waveform capture for all phases	
KW demand		
Amp demand		

Min/max data on volts, amps, THD, KW, KVA, KVAR, KW demand, temperature and power factor  
Accuracy – Current/voltage 1% of sensor, power +/- 3%

### SENTRON Breaker Energy Communicating Trip Unit (SB-EC)



The SB-EC Trip Unit which is provided on Siemens insulated case circuit breakers communicates important circuit information to WinPM.Net.

#### Information available in WinPM.Net

##### Measurements

Phase amps, avg., neutral and ground	KW, KVA, KVAR	Trip log – Last 5 trip events, time date, current values and cause event log Remote open close* *Auxiliary components required for remote open close functionality
Breaker position/status	PF	
Volts per phase and avg.	Frequency	
KW demand	Crest factor	
KW hours forward and reverse	Current harmonics to the 19th	
KVAR hours forward and reverse	Waveform capture	

Min/max data on volts, amps, THD, KW, KVA, KVAR, KW demand and power factor  
Accuracy – Current  $\pm 2\%$  from 10-200% of rated value

### VL Power Circuit Breaker



The VL Breaker is reliable, compact, and easy to use. It provides a wide range of circuit breaker and metering information to WinPM.Net when ordered with the COMMODORE Modbus communication interface.

#### Information available in WinPM.Net

##### Measurements

Phase amps, avg., neutral and ground amp demand	Trip Log – Last 3 trip events, time, date, current values and cause event log
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Min/max data on amps, current demand

# Compatible Products Overview

## Medium Voltage Protective Devices



### Siprotec 7SJ602

Numerical overcurrent relay with optional auto-recloser operation and motor protection. The 7SJ602 can be used for feeder protection, motor protection and communicates all metering information to WinPM.Net when equipped with the Modbus/RTU communication interface.

#### Measurements

Operation voltage and currents  
Power measurements, KW, KVAR, KVA  
Demand values for current and KW  
Temperature monitoring

#### Alarm indications

Time overcurrent  
Ground fault  
Breaker failure  
Locked rotor  
Restart inhibit

Accuracy – Current  $\pm 1\%$  of sensor



### Siprotec 4 7SJ61

Time overcurrent protection/motor protection with simple local control of a circuit-breaker and automation functions. Communicates all metering, protection and event information to WinPM.Net through Modbus/RTU interface.

#### Measurements

Operation currents  
Demand values for currents  
Temperature monitoring

#### Alarm indications

Time overcurrent, definite, inverse and user defined  
Ground fault  
Breaker failure  
Locked rotor  
Restart inhibit

Accuracy – Current/voltage  $\pm 1\%$  of sensor, power  $\pm 3\%$



### Siprotec 4 7SJ62

The 7SJ62 numerical overcurrent relay is suitable for line protections and includes all of the features of the 7SJ61, plus directional overcurrent, extended protective functions and voltage and power metering. The 7SJ62 communicates all metering, protection and event information to WinPM.NET through Modbus/RTU interface.

#### Measurements

Operational voltage, current and Hz  
Power measurements, KW, KVAR, KVA  
Demand values for current and KW  
Temperature monitoring

#### Alarm indications

Time overcurrent, definite, inverse and user defined  
Directional time overcurrent  
Ground fault  
Breaker failure  
Lockout  
Locked rotor, restart inhibit  
Under/overvoltage protection  
Under/overfrequency protection

Accuracy – Current/voltage 1% of sensor, power  $\pm 3\%$



### Siprotec 4 7SJ63 / 7SJ64

The 7SJ63 and 7SJ64 numerical overcurrent relays are suitable for line protection and include all of the features of the 7SJ62, plus extended control functionality. The 7SJ63/64 communicates all metering, protection and event information to WinPM.Net through Modbus/RTU interface. The 7SJ64 includes a configurable graphical display as local human machine interface (HMI).

#### Measurements

Operation voltage, current and Hz  
Power measurements, KW, KVAR, KVA  
Demand values for current and KW  
Temperature monitoring

#### Alarm indications

Time overcurrent, definite, inverse and user defined  
Directional time overcurrent  
Ground fault  
Breaker failure  
Lockout  
Locked rotor, restart inhibit  
Under/overvoltage protection  
Under/overfrequency protection

Accuracy – Current/voltage 1% of sensor, power  $\pm 3\%$

# Compatible Products Overview

## Motor Protection Devices

### SIMICODE Pro and SIMICODE Pro V Motor Protection Devices



The SIMICODE provides microprocessor based motor protection and can be equipped with a thermistor detector for complete motor protection. The SIMICODE provides important circuit and motor information to WinPM.Net through a PROFIBUS to Modbus/TCP Gateway.

#### Information available in WinPM.Net

##### Measurements

Current, current unbalance  
Run time  
Number of starts  
Number of trips, last trip current  
Cause of trip

##### Alarm Indications

Overload  
Jam protection  
Loss of load  
Current unbalance  
Time delays

Start/Stop Control Accuracy – Current  $\pm 2\%$  from 10-200% of rated value

### Simpro-100 Medium Voltage Motor Protection



The Simpro-100 Relay provides locked rotor, running overload, and negative sequence current unbalance protection using a patented thermal model. Optional external or internal RTD monitoring inputs extend the thermal protection to include direct measurement to protect motor windings and load bearings. The Simpro-100 communicates valuable real-time data, trip logs, event logs as well as motor status information to WinPM.Net through Modbus/RTU protocol.

#### Information available in WinPM.Net

##### Measurements

Phase amps, avg., residual  
Power - KW, KVAR, KVA  
Energy - KW hr, KVAR hr, KVA hr  
Frequency, PF  
Real power in horsepower  
Motor running time  
Number of starts

##### Alarm indications

Jam protection  
Loss of load  
Current unbalance  
Phase reversal  
Start inhibit

Average and peak starting time, current, power and temperature

Accuracy – Current  $\pm 1\%$  of full scale, voltage  $\pm 1\%$  of full scale, power/energy  $\pm 1\%$  of full scale

# Compatible Products Overview

## Speciality Monitoring and Communication Interface Devices



### 9510-ADR

The ADR 9000 can provide local display of feeder breakers, submeters and provides up to 20 digital and analog inputs and outputs and includes customizable web pages for displaying down stream device information. It communicates via Ethernet, Modem, or RS 485. The typical ADR will support up to 20 external devices like WL, VL or PAC3200 meters.



### S7-I/O Expansion Module

The S7-I/O expansion module is used for remote input status monitoring and output control of non-communicating devices. S7-I/O communicates the following information to WinPM.Net: I/O status, operation counters, and output control.



### Transformer Temperature Monitors

Typical third party transformer temperature monitoring devices for dry or liquid filled transformers are routinely connected to the WinPM.Net software. Reading inputs for alarming include temperature per phase, fan settings and fan status.



### Siemens Metering Unit (SMU)

The SMU integrated metering design will provide energy and demand information for cost allocation and sub-billing to the Siemens WinPM.Net or ACCESS Energy Manager software.

## Communication Interface Devices



### COM32 – COM 128 and Ethernet converter

RS232 to RS485 converter – support 32 devices on 1 RS 485 daisy chain, COM 128 expands to 4 – RS485 loops with a maximum of 128 devices. The Ethernet Converter enables serial devices to be connected to a TCP/IP Ethernet LAN



### SPI – 1000 and PKV-50 Protocol Converters

Communication converters like the Siemens SPI and PKV-50 unit allow Seabus or PROFIBUS DP to Modbus RTU and TCP.



# Compatible Products Overview

## Legacy Metering Devices



### 9200, 9300, 9330, 9350 and 4000 Series Power Meters

The WinPM.Net software is fully backwards compatible with all the legacy metering devices Siemens has provided over the years. Each meter is fully supported in WinPM.Net and will display all the metering and setup information as in the past.



### Siemens Advanced Motor Management System (SAMMS)

The SAMMS is used for Low Voltage electronic motor control and overload protection. SAMMS is used in Siemens Motor Control Centers and communicates the following information to WinPM.Net.

#### Information available in WinPM.Net

##### Measurements

Current, current unbalance  
Run time  
Number of starts  
Number of trips, last trip current  
Motor status, I/O status

##### Alarm indications

Overload  
Jam protection  
Loss of load  
Current unbalance  
Time delays

Start/stop control      Accuracy – current .1A



### RL Power Breaker Trip Unit Static Trip III

The Static Trip IIIC, CP and CPX are the protective devices used on Low Voltage draw-out switchgear mains and feeders. It can communicate valuable real-time data, trip logs, event logs, as well as breaker status information to WinPM.Net.

#### Information available in WinPM.Net

##### Static Trip IIIC

Phase amps, avg., neutral and ground  
Breaker status  
Trip log – Last 3 trip events, time date, current values and cause  
Event log  
Remote open close\*  
\*Auxiliary components required for remote open close functionality

##### Static Trip IIICP, CPX

All of the above PLUS  
voltage, L-L, L-N, avg.  
Frequency  
Power factor  
KW, KVAR, KVA, KW demand  
KWhr, KVARhr

Min/Max data on volts, amps, KW, KVA, KVAR, KW demand and power factor

Accuracy – Current  $\pm 1\%$  of sensor, voltage  $\pm 1\%$  of reading, power/energy  $\pm 2\%$  of reading



### 9700 Metering RTU

The 9700 provides up to 42 digital and analog inputs and output communicating via Ethernet, Modem or RS485. In addition, the 9700 provides basic power quality metering data.

# Compatible Products Overview

## Integrated Third Party Devices

### WinPM.Net — Fully Integrated Third Party Components

Siemens recognizes the need for system integration of third party components, especially in critical power applications. Devices with complex data structures for events and time stamps require a more sophisticated integration into WinPM.Net. The ASCO Group 5 controller for transfer switch control and monitoring, the Cutler Hammer IQ Analyzer and Digitrip 1150 are three examples of a more fully developed integration.

#### ASCO Group 5 Controller

##### Information available in WinPM.Net

###### Measurements

Voltages  
Frequency  
% Unbalance

###### Status information

Source available  
Status of main – Normal or emergency  
Event log – Transfer data



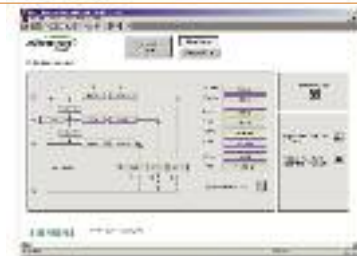
#### IQ Analyzer

##### Information available in WinPM.Net

###### Measurements

Amps per phase and average  
Volts per phase and average  
Power factor  
Power - KW, KVAR, KVA  
Dir. energy - KWhr, KVARhr, KVAhr

Power demand  
Waveform capture  
Events  
Min/max



#### Digitrip 1150

##### Information available in WinPM.Net

###### Measurements

Amps per phase and average  
Volts per phase and average  
Power factor  
Power - KW, KVAR, KVA  
Dir. Energy - KWhr, KVARhr, KVAhr

Crest factor  
THD  
Breaker status  
Current/power demand



# Compatible Products Overview

## Integrated Third Party Devices

### WinPM.Net – Modbus Device Importer

The Modbus Device Importer functionality allows WinPM.Net to communicate to any Modbus/RTU or Modbus/TCP device. This flexible configuration tool enables a multitude of third party and competitor's devices real time data to be integrated into WinPM.Net.

#### Devices available in WinPM.Net

##### MGE UPS and PDU Products

##### PowerWare

##### Liebert Products

##### Caterpillar, Detroit Diesel and

##### Cummins Generators

##### Veris Metering Products

##### PDI – Branch Circuit Metering

#### GE Devices

Multilin Relays

PQM

EPM Series

#### Electro-Industries

DMMS Series

Nexus Series

Shark

#### Qualitrol

Transformer Temp Monitor

#### Square D Devices

CM 4000 Series

CM 3000 Series

PM 600/620/650

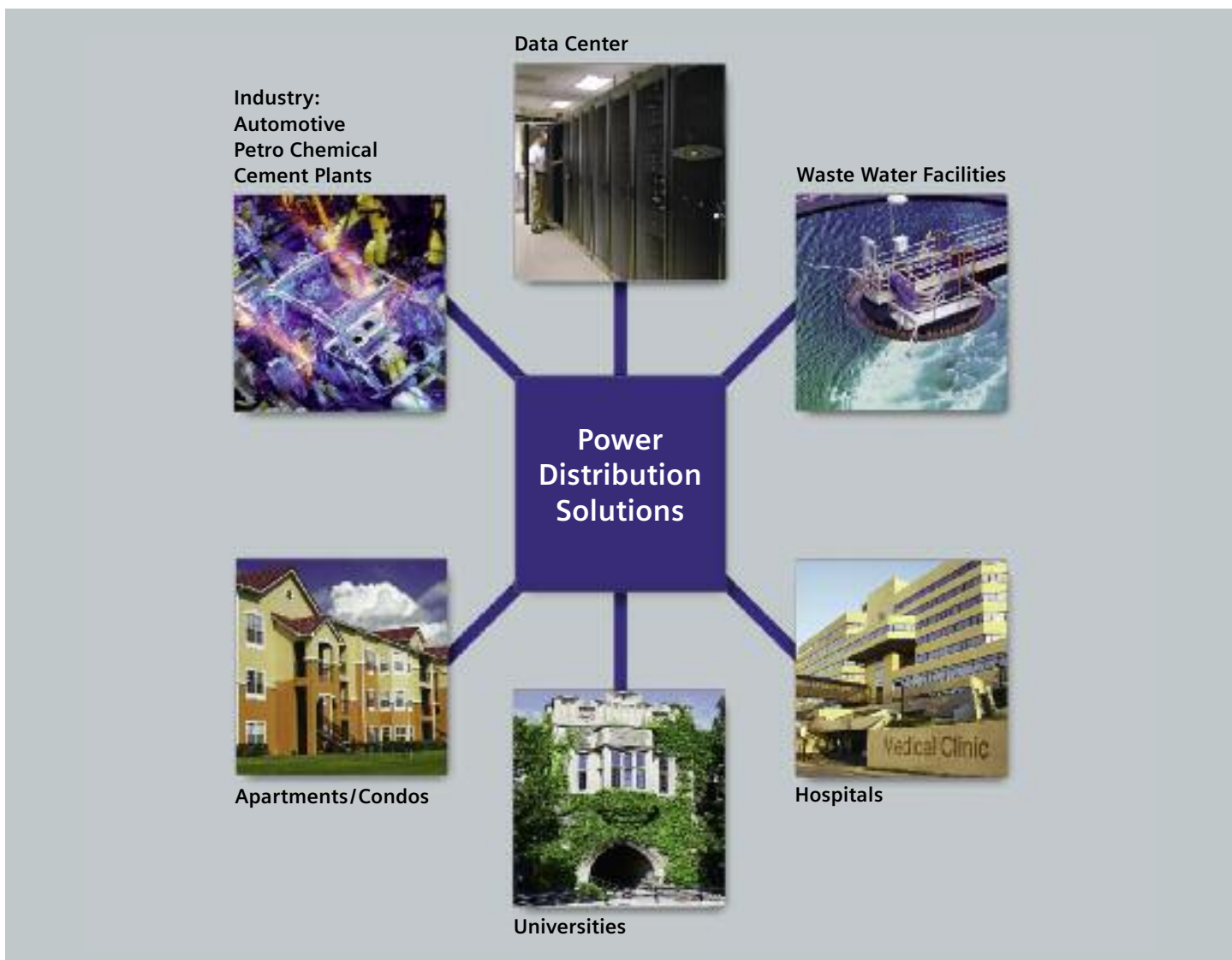
CM 2000 Series

PM 700 Series

PM 800 Series

#### Cutler Hammer

4000 / 6000 / 8000 series



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