

ION8650
Power and
Energy Meters



ION7550 and ION7650
Power and Energy Meters



PowerLogic PM8000 Power and Energy Meters / CM4000
page DE 13-10 / DE 13-6



Sepam Series 80, page DE13-22

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DE13 POWER MONITORING AND CONTROL

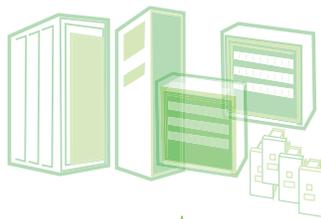
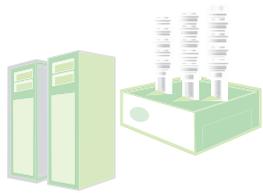
Measure, understand, and act: tenets of a power management solution

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.

POWER MONITORING
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Low-voltage
equipment



Measure

Stand-alone or embedded meters measure, collect, and deliver essential data from key distribution points across your entire electrical network.



Data points can include MV/LV switchgear, PQ equipment, and machines. Gateways/servers help aggregate and convey data to supervisory software.

Understand

Power management software is the supervisory interface that turns data into actionable information.



Benchmark normal operations, monitor real-time conditions, isolate problems, and reveal trends.

Act

Make timelier, well-informed decisions based on valid, actionable information.

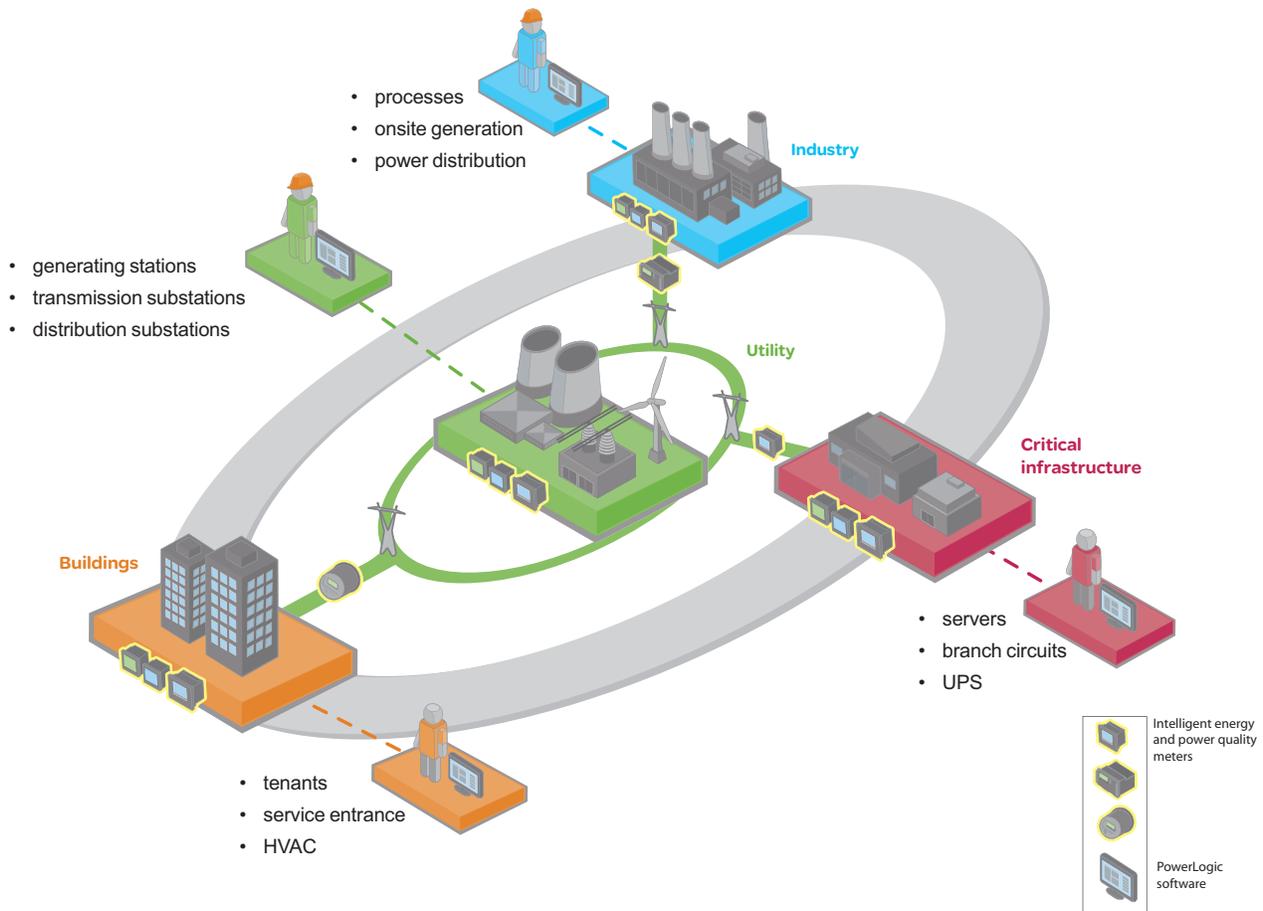
Maximise electrical network reliability and availability

Optimise electrical asset performance

Increase energy efficiency and cost savings

Energy insight = energy control

PowerLogic solutions help energy consumers and suppliers world-wide make the most of their energy. They enable businesses to improve their competitiveness by giving them a complete understanding their organisation's unique energy landscape. PowerLogic technology also provides hands-on tools to improve energy efficiency, reduce operating costs, enhance productivity, and increase power system reliability. Comprising metering, communication hardware and advanced analysis software, a PowerLogic solution acts like a layer of intelligence across all of your energy assets. It monitors key energy points and inputs 24 hours a day, then processes and delivers that data as timely and relevant information to everyone that needs it.



The PowerLogic advantage

PowerLogic solutions are the world's largest and most advanced range of energy management products. Thousands of organisations world-wide choose PowerLogic systems because of key advantages:

- A fast, quantifiable return on investment through both a low total cost of ownership and rich functionality that returns multiple financial benefits
- A comprehensive portfolio of modular, scalable components that enable affordable system expansion as needs dictate and budgets allow
- End-to-end interoperability offering seamless integration with business, accounting, BAS and SCADA applications
- A complete range of compatible, complementary, single-sourced Schneider Electric power and automation solutions
- Support for numerous global metering accuracy and power quality monitoring standards.

(cont.)

Cutting-edge technology to increase profitability

PowerLogic technology converts the complex dynamics governing the relationship between power generation and distribution on the utility side, and energy consumption, cost and reliability on the consumer side, into timely, easily understood information. Businesses can use this powerful to improve tactical actions and strategic decision making.

From a single facility to an entire enterprise, PowerLogic meters monitor key distribution points 24 hours a day. Whether from generators, substations, service entrances, mains, feeders, loads or 3rd party equipment and systems, PowerLogic technology tracks, records and reports all real-time conditions and historical performance data. Intuitive web-based interfaces give stakeholders access to this data as well as advanced analytics, alarm annunciation and control capabilities. It supports comprehensive energy management programs by tracking performance and empowering you to make effective decisions.

Applications

SUPPLY

Energy availability and reliability

- Improve T&D network reliability
- Enhance substation automation
- Maximise the use of your existing infrastructure

Revenue metering and power quality

- Maximise metering accuracy at all interchange points
- Verify compliance with new power quality standards
- Analyse and isolate the source of power quality problems

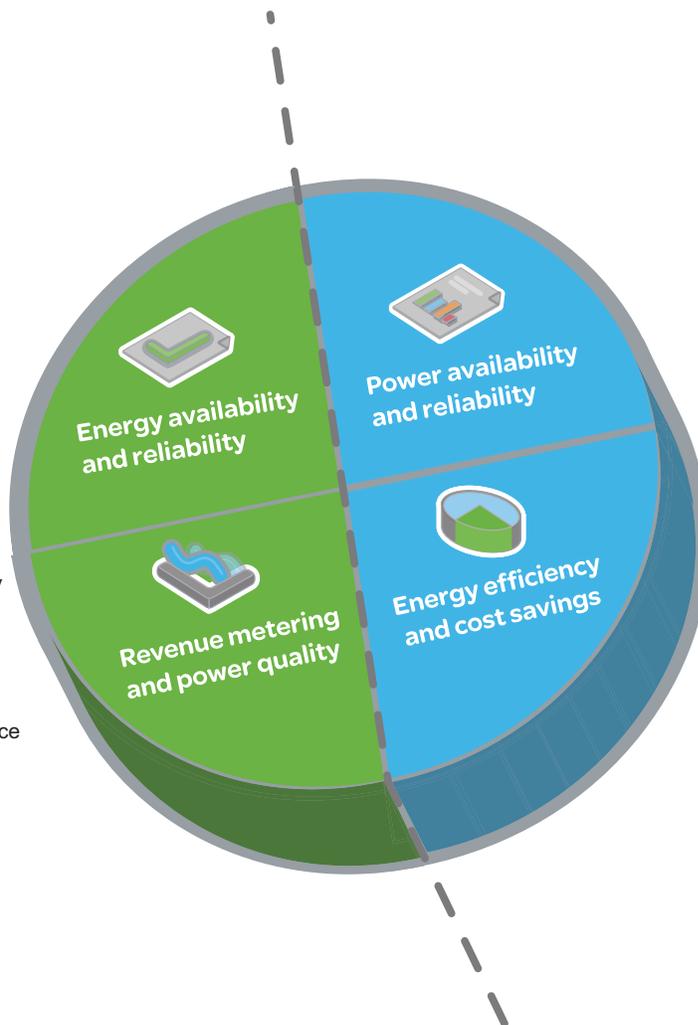
DEMAND

Power availability and reliability

- Validate that power quality complies with the energy contract
- Verify the reliable operation of power and mitigation equipment
- Improve response to power-related problems
- Leverage existing infrastructure capacity and avoid over-building
- Support proactive maintenance to prolong asset life

Energy efficiency and cost savings

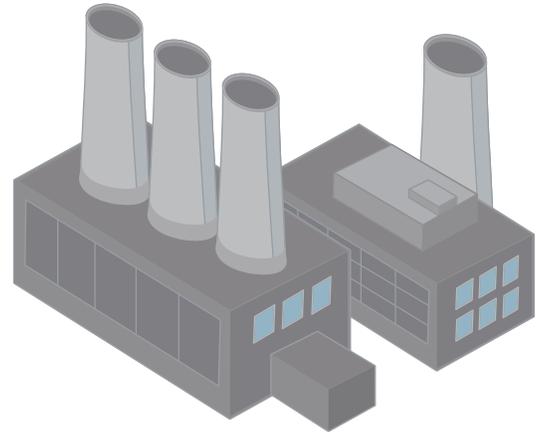
- Measure efficiency, reveal opportunities and verify savings
- Manage green house gas emissions
- Allocate energy costs to departments or processes
- Reduce peak demand and power factor penalties
- Enable participation in load curtailment programs (e.g. demand response)
- Strengthen rate negotiation with energy suppliers
- Identify billing discrepancies
- Sub-bill tenants for energy costs



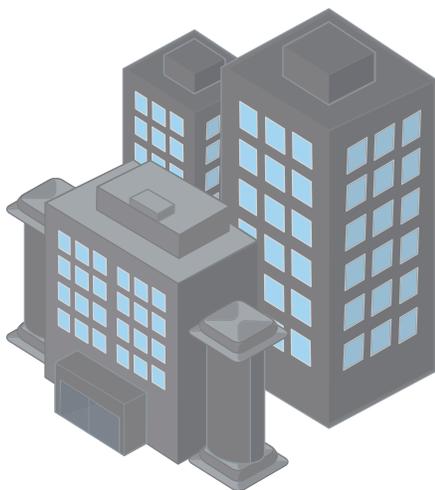
POWER MONITORING AND CONTROL DE13

Industry

From finance to engineering, PowerLogic technology gives industry professionals the energy intelligence and control they need to support strategic decisions and establish best energy practices. It will help you reduce operational costs and meet new emissions standards without compromising production schedules or product quality. Key points are monitored throughout your power distribution, building and backup systems. Enterprise-level software helps you maximise the use of your existing energy assets, increase energy efficiency and avoid demand or power factor penalties. Use it to uncover hidden power problems that can shorten equipment life or cause costly downtime.



- cost allocation
- procurement optimisation
- power factor correction
- measurement and verification
- infrastructure optimisation
- power quality analysis



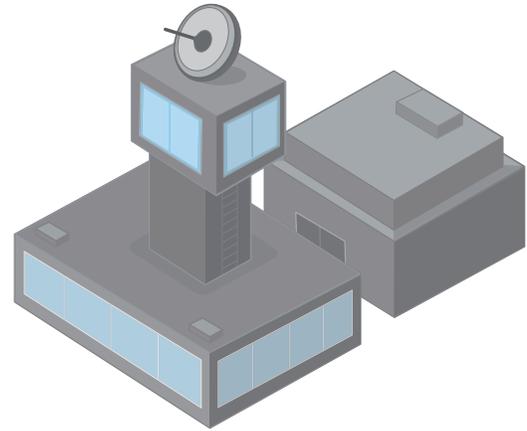
Buildings

Building managers through operations staff can cut energy and maintenance costs without effecting the comfort or productivity of their tenants, employees, students, patients or customers. A PowerLogic system will track all utilities and equipment conditions, and enterprise-level software will help you analyse and improve electrical reliability. You can forecast energy requirements, optimise multi-site contracts and accurately allocate or sub-bill costs. Key performance indicators help you find and sustain energy savings, reduce emissions and meet “green” building standards in order to increase asset value and attract or retain tenants.

- tenant sub-billing
- cost allocation
- energy efficiency / benchmarking
- procurement optimisation
- power availability
- demand response / load curtailment

Critical infrastructure

PowerLogic technology helps keep your systems operating continuously and securely with an economical supply of energy. Whether you manage data, communication, transportation or environmental services, minimising the risk of power-related downtime and keeping costs under control is a priority. A PowerLogic solution monitors all power and cooling systems and accurately tracks their energy consumption. Enterprise-level software delivers insightful diagnostics and metrics to help verify the reliability of your backup systems and maximise the use of existing capacity to defer new capital investments. You can also reveal energy inefficiencies and strengthen energy procurement across multiple sites.



- infrastructure optimisation
- energy efficiency
- power quality analysis compliance
- cost allocation
- alarming and event notification
- procurement optimisation

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- revenue metering
- power availability and reliability

Utilities

Today's energy market is more complex than ever before. Whether you generate, transmit or distribute electricity, more stakeholders need shared access to timely, accurate energy data from more exchange points and you need to maintain power availability and reduce price volatility in the face of rising demand and transmission congestion. A PowerLogic energy information system helps you meet all of these challenges by:

- Metering all key interchange points with the highest possible accuracy
- Improving the quality of power delivered to your customers
- Ensuring the reliability and efficiency of your network and equipment.

From advanced energy and power quality metering systems to enterprise-level analytic software, PowerLogic solutions deliver business-critical information that conventional metering, SCADA and billing systems cannot. It gives you the energy intelligence and control needed to track performance, stay informed of critical conditions and empower you to make strategic decisions. It will help you increase reliability, maximise the use of resources and improve service.

PB111286



StruxureWare Power Management software

EB 100263



Dashboard sample

A choice of powerful, effective solutions

StruxureWare™ power management software provides a complete power management supervisory interface that gives you access from anywhere to your entire electrical network. It helps you maximise energy efficiency and cut energy-related costs, avoid power-quality related equipment failures and downtime, and increase network-wide operational efficiency. It is ideal for all power critical facilities, including industrial operations, large commercial and institutional buildings, data centres, healthcare sites, and utilities.

The software converts energy-related data into timely, accurate information for you to act on. Track real-time power conditions, analyze power quality and reliability, and respond quickly to alarms to avoid critical situations. Our power management software provides extensive analysis and reporting tools, intuitive visualization and control interfaces, and flexible, scalable architectures that can meet your unique needs today and continue to do so well into the future. The depth of different offerings makes it easy to match a product to your goals, your business and your budget.

Extensive reach and flexibility

Software forms an important part of your overall energy efficiency and reliability solutions from Schneider Electric. Power management software can grow with your business, giving you the level of energy intelligence and control you need to reduce energy consumption and costs, minimise environmental impacts, prolong equipment life, and assure power availability, uptime and safety.

Each product collects energy-related data from a variety of sources, including PowerLogic or third-party meters and sensors. Some products offer integration with other Schneider Electric or third-party automation systems, and other energy-relevant information feeds.

Object-based, standard graphics and symbols provide operators with an interactive and user-friendly interface. Intuitive commands and controls increase efficiency of operators to interact with the system interface.

StruxureWare power management software controls your system with high reliability, performance and data integrity through the use of advanced architectures, such as hot/warm redundant I/O device configurations, self-healing ring communications, and primary and standby server configurations. Comprehensive user-based security is integrated into all interface elements, ensuring a secure control system.

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

System requirements

Whether you're building a new system or enhancing an existing operation, a Schneider Electric representative will advise you on complete system requirements and commissioning information for StruxureWare power management software.

Applications for power critical facilities

Category		Application
	Energy efficiency & cost	Energy usage analysis
		Cost allocation
		Procurement optimisation
		Peak demand reduction
		Demand response and curtailment
		Power factor correction
	Power availability & reliability	Electrical distribution (ED)
		Power quality analysis and compliance
		ED commissioning, monitoring, and troubleshooting
		ED alarming and events
	Asset management	Capacity planning
		Generator monitoring
		Breaker aging management
		UPS battery monitoring

Typical applications

StruxureWare power management software has many applications:

- Monitor the facility electrical network and verify reliable operation.
- Improve response to power-related events and restore operations quickly.
- Analyze and isolate the source of power quality problems.
- Analyze energy use to identify waste and reduce cost.
- Estimate utility bills to verify accuracy and identify errors.
- Allocate energy costs to departments to drive accountability and awareness.
- Reduce peak demand surcharges and power factor penalties.
- Identify excess capacity in existing infrastructure and avoid over-building.
- Support proactive maintenance to prolong asset life.
- Network protection and control.
- Operate distribution network safely and reliably.
- Improve continuity of electrical service.
- Equipment monitoring and control.
- Energy availability and reliability.
- Verify the reliable operation of equipment.
- Support proactive maintenance to prolong asset life.

For electric utilities:

- Improve T&D network reliability.
- Enhance substation automation.
- Maximise the use of existing infrastructure.
- Verify compliance with new power quality standards.
- Analyse and isolate the source of power quality problems.
- Help customers manage reliability using operational and power quality data.



Dashboard - Energy Summary (sample)

Scalable, flexible architecture

Functional components

Provides operators with a rich environment to view and navigate real-time displays of measurements and status indicators; perform power quality and reliability analysis; historical trending; alarms; and manual control. This software offers secure, operator-dedicated, multi-user data and control access through a local server interface, full control client and also via web clients.

Web Clients

Access power monitoring system from anywhere on your network using a web browser. Day-to-day functionality including system status, alarm response, or viewing dashboards. Web client provides authenticated access to common functions:

- Diagrams – navigate network displays to check system status and analyze trends.
- Tables – quickly compare multiple devices in your network in real-time.
- Reports – generate or edit historical reports for energy cost, consumption, and power quality.
- Alarms – quickly identify alarm states in your system and investigate root causes.
- Dashboards – share information from your power monitoring system with any occupant.

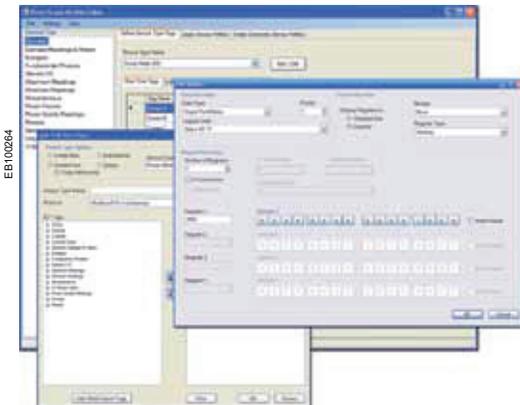
Engineering Workstations

Client software gives engineers and power users access to administrative and configuration functions of the software, and real-time display, control, and historical analysis functions.

- Build and edit custom graphical displays to represent your facility. One-line diagrams, campus maps, equipment plan views and mimic diagrams are easily created using Vista graphical objects and imported graphic files.
- Use the designer interface to program ION devices and create system applications with ION Technology and Virtual ION ProcessorsReporter - generate or edit historical report for energy cost, consumption, and power quality.

Data acquisition and management

- Communicate with over 300 different powerlog and third-party meters.
- Scale from 1 to 1000s of devices.
- Perform advanced logic and arithmetic operations on real-time and historical data.
- Use web services to interoperate and integrate with other software platforms.



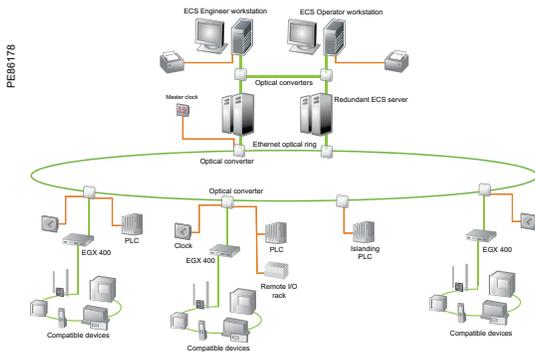
Easily edit pages to depict your entire system



Load profiles, comparisons, and energy allocation

Monitoring software

StruxureWare™ Power Management Software



Functions

StruxureWare power management software offers a wide range of functions:

- Data acquisition and integration.
- Real-time monitoring.
- Trend analysis.
- Power quality analysis.
- Alarms and events.
- Reporting.
- Dashboards.
- Manual and automated control.

Data acquisition and integration

Integrate WAGES (Water, Air, Gas, Electricity, Steam) metering. Native, out-of-the-box support for dozens of devices (See Supported Devices section for details).

- Enables access to real-time and timestamped historical meter data, control of on-board relays and digital outputs, and server time synchronization. Communicate over Internet, Ethernet, wireless.
- Interface with third-party meters, transducers, PLCs, RTUs and power distribution or mitigation equipment through Modbus or OPC.
- Add and configure direct communications with remote devices over Modbus RTU or Modbus TCP protocols using easy-to-use device templates.

The scalable platform enables remote device and user client addition as needs grow while maintaining original investment. Integrate 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.

Real-time monitoring

View the status of your electrical network from any workstation:

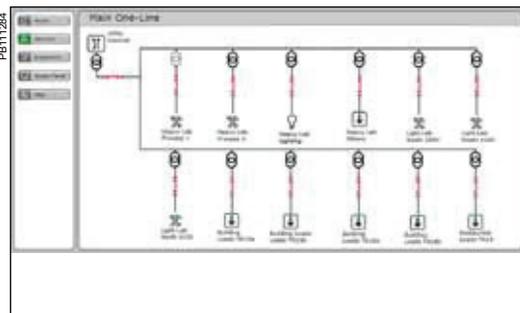
- See numeric values, status indicators, gauges, and trends, all with intuitive graphical navigation.
- Extend comprehensive out-of-the-box displays and create custom graphical diagrams to represent your facility; one-line diagrams, campus maps, equipment plan views and mimic diagrams can be created using embedded graphical objects and imported graphic files.
- Quickly compare multiple devices in your network in real-time in a tabular display.
- Choose from a library of pre-built tables, or create your own. Save your favorites for quick access later.

Trend analysis

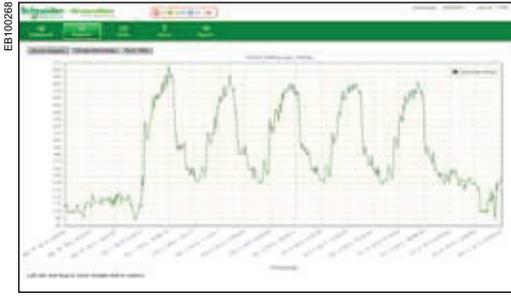
- Trend parameters to reveal demand peaks and track system-wide energy costs.
- Graph any combination of measured parameters.
- Plot time-series or scatter charts.
- Perform calculations, obtain statistics, and display historical data.
- Identify dangerous trends and redistribute loads.
- Optimise network capacity and avoid over-building.
- View operating parameters and determine when maintenance is required.
- Avoid peak demand surcharges and power factor penalties.



Consumption details by area and load type



Equipment Status example



Applications allow users to easily create trend plots and analyze historical data.

Power quality analysis

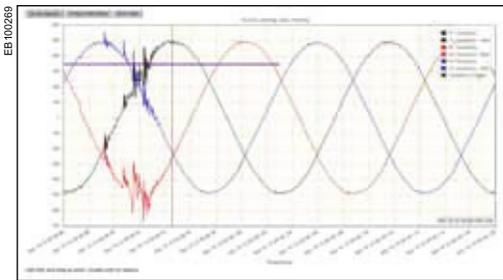
StruxureWare power management software allows continuous, wide-area monitoring and data capture for power quality and reliability conditions.

- Power quality events automatically detected by PQ-capable metering devices are uploaded to the system automatically. Analyze waveforms to determine source and cause of issue.
- Determine if power quality events are upstream or downstream (using PowerLogic meters with Disturbance Direction Detection feature).
- IEC 61000-4-30 and EN50160 compliance reporting verifies power quality performance to international standards and allows you to quickly review power quality indices as numeric charts or graphic profiles (using PowerLogic meters to 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.
- Display for any event a list of associated time-stamped incidents, then click on any incident to see more detailed information.

Alarms and events

Receive alerts to outages or impending problems that could lead to equipment stress, failures, or downtime.

- Quickly filter on active or unacknowledged alarms.
- Acknowledge alarms from anywhere in your facility.
- Trigger on complex conditions.
- Log all relevant data sequence of events for diagnosis.
- Flag and avert potential problems.
- Alert key personnel 24/7.
- Optimise maintenance scheduling.
- Easily discriminate between alarm criticality levels.
- High speed alarm response.
- Organise, filter and print by any alarm property. Configure specific alarm occurrences to change symbol color or flash an icon on a page.
- View the five most recent alarms from every page, providing detailed information in easy-to-understand formats.
- Event log for all PC-based and on-board field events, alarms.
- Easily configure to annunciate based on alarm type.



Users can view and analyze waveforms captured by devices.

Dashboards

Create engaging dashboard displays of your power monitoring system information and easily share information with anyone in your facility.

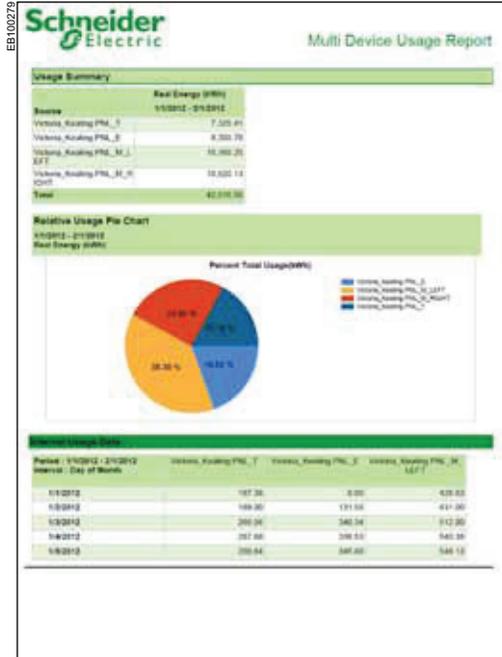
- Make power monitoring information visible and engaging.
- Promote education and drive behaviour.
- Display as an interactive kiosk on corporate intranet or on wall-mounted display.
- Replace hard to maintain home-grown portals and dashboards.
- Chart or trend any quantity in your power monitoring database.
- Simply convert into other units (e.g. dollars, emissions, normalizations, etc.).
- Compare multiple time-ranges.
- Show impact of temperature, occupancy, or production values on energy usage.
- Create eye-catching backgrounds to enhance presentation value.
- User authentication for configuration, and both authenticated and unauthenticated modes available for display.



Load profile dashboard (sample)

Monitoring software

StruxureWare™ Power Management Software



StruxureWare provides many different report templates to allow users to easily display and deliver the information they need.

Reporting

Reports - generate or edit historical reports for energy cost, consumption, and power quality (requires Microsoft SQL Server Standard Edition).

- Powerful, intuitive reporting options let users see critical information exactly how, where, and when they need it.
- Reports can be generated manually and saved as Excel, HTML and other formats or scheduled to automatically distribute to a printer or via email.

Configuration tools

Our power management software is supplied with a package of configuration tools designed to make set up uniquely easy and quick.

- Designed to help make project set up and network configuration fast and easy.
- Provides standard device types and their associated profiles and allows engineers to easily customise the profiles of the devices specific to the project.
- Standardized tags per device profile (configurable), XML file.
- Standard interface for quick database generation:
 - Instantiation of devices, on a per object basis.
 - Creates tags, trends, alarms and events when devices are added to system.
 - Batch editing supported by automation interface.

Manual and automated control

- Perform fast, manual control operations by clicking on-screen trigger buttons, and operate remote breakers, relays, and other power distribution and mitigation equipment.
- Perform manual or setpoint-triggered functions.
- Coordinate control of multiple loads, generators, relays, etc.
- Support energy-saving applications.
- Manage distributed energy assets.
- Automate substations & reduce service time.

Interoperability

- Integrate all energy management and automation systems (SCADA, BAC, DCS, ERP, etc.)
- Share data with third-party SCADA, automation, and accounting systems.
- Comply with ODBC, OPC, and PQDIF standards.

Patented ION technology

StruxureWare power management software and a variety of PowerLogic ION metering products feature the unique ION architecture. This modular, flexible architecture offers extensive customisation of functionality using a simple building block approach. The technology uniquely addresses advanced monitoring and control applications and adapts to changing needs, avoiding obsolescence.

Global solutions

Software is available in many languages - English, French, Spanish, German, and Chinese. Contact your Schneider Electric representative.



Power Quality Summary Report example

Monitoring software

StruxureWare™

Power Management Software

New Systems & Expansions

Part number	Short Description	Description
Base Licences		
PSWSANCZSPEZZ	PME-STD Base	PME Standard Edition BASE license (includes 1 Engineering Client)
PSWSYNCZSPEZZ	PME Starter Edition	PME Starter Edition (includes Server, 9 Entry-Range Devices, 1 High-End Device, 1 Engineering Client, 2 Web Clients, no PQ reports)

SQL, Connectivity and Notification

IE7SQLCZSNPEZZ	SQL Server 2012 License - 2 COREs	SQL Server 2012 License - 2 COREs
PSWSONCZSPEZZ	PME OPC DA Server	OPC DA Server for Power Monitoring Expert software
PSWSNCZSNPEZZ	PME Secondary Server	Secondary Server for Power Monitoring Expert software
PSWSNMP15	SNMP-OPC Gateway (1-15) + 1YR Support	SNMP-OPC gateway (1-15 devices) with 1 year Support and Maintenance Agreement
PSWSNMP50	SNMP-OPC Gateway (16-50) + 1YR Support	SNMP-OPC gateway (16-50 devices) with 1 year Support and Maintenance Agreement
PSWSNMPUL	SNMP-OPC Gateway (51+) + 1YR Support	SNMP-OPC gateway (51+ devices) with 1 year Support and Maintenance Agreement
PSWSNMP15SA	SNMP-OPC Gateway (1-15) Support Renewal	SNMP-OPC gateway (1-15 devices) annual Support and Maintenance Agreement renewal
PSWSNMP50SA	SNMP-OPC Gateway (16-50) Support Renewal	SNMP-OPC gateway (16-50 devices) annual Support and Maintenance Agreement renewal
PSWSNMPULSA	SNMP-OPC Gateway (51+) Support Renewal	SNMP-OPC gateway (51+ devices) annual Support and Maintenance Agreement renewal
PSWSNMP50X	SNMP-OPC Gateway (16-50) from (1-15)	SNMP-OPC gateway (16 - 50 devices) - Expansion from (1 - 15 devices)
PSWSNMP15LX	SNMP-OPC Gateway (51+) from (1-15)	SNMP-OPC gateway (51+ devices) - Expansion from (1 - 15 devices)
PSWSNMP50LX	SNMP-OPC Gateway (51+) from (16-50)	SNMP-OPC gateway (51+ devices) - Expansion from (16 - 50 devices)
PSWVNCZSPEZZ	Event Notification Module	Event Notification Module for Power Monitoring Expert software

System Scale - (Devices and Users)

PSWDANCZSNPEZZ	PME 5 Device Pack	5 Device Pack for Power Monitoring Expert software
PSWDBNCZSNPEZZ	PME 25 Device Pack	25 Device Pack for Power Monitoring Expert software
PSWDCNCZSNPEZZ	PME 50 Device Pack	50 Device Pack for Power Monitoring Expert software
PSWDDNCZSNPEZZ	PME 100 Device Pack	100 Device Pack for Power Monitoring Expert software
PSWDFNCZSNPEZZ	PME 200 Device Pack	200 Device Pack for Power Monitoring Expert software
PSWCENCZSNPEZZ	PME Engineering Client	Engineering Client for Power Monitoring Expert software
PSWCWNCZSNPEZZ	PME Web Client	Web Client for Power Monitoring Expert software
PSWDZNCZSPEZZ	PME Unlimited Devices	Unlimited Devices for Power Monitoring Expert software
PSWCZNCZSPEZZ	PME Unlimited Clients	Unlimited Engineering and Web Clients for Power Monitoring Expert software

Application Modules

PSWMBNCZSPEZZ	Billing Module	Billing Module for Power Monitoring Expert software
PSWMXNCZSPEZZ	Breaker Performance Module	Breaker Performance Module for Power Monitoring Expert software
PSWMZNCZSPEZZ	Energy Analysis Module	Energy Analysis Module for Power Monitoring Expert software
PSWMYNCZSPEZZ	Energy Awareness Module	Energy Awareness Module for Power Monitoring Expert software
PSWMUNCZSPEZZ	UPS Performance Module	UPS Performance Module for Power Monitoring Expert software

System Upgrades

Part number		Description
Edition Licences		
PSWSANPAZSPEZZ	PME-STD Base Upgrade	PME Standard Edition BASE license version upgrade (includes 1 Engineering Client)
PSWSYNPAZSPEZZ	PME Starter Edition Upgrade	PME Starter Edition version upgrade (includes Server, 9 Entry-Range Devices, 1 High-End Device, 1 Engineering Client, 2 Web Clients, no PQ reports)

SQL, Connectivity and Notification

PSWSONPAZSPEZZ	PME OPC DA Server Upgrade	OPC DA Server version upgrade from IONE, SPM7, or SMS to Power Monitoring Expert
PSWSNPAZSNPEZZ	PME Secondary Server Upgrade	Secondary Server for Power Monitoring Expert software version upgrade
PSWVNPASZSPEZZ	Event Notification Module Free Upgrade	Event Notification Module free version upgrade from v7.0 or v7.2

System Scale - (Devices and Users)

PSWDANPAZSNPEZZ	PME 5 Device Pack Upgrade	5 Device Pack for Power Monitoring Expert software version upgrade
PSWDBNPAZSNPEZZ	PME 25 Device Pack Upgrade	25 Device Pack for Power Monitoring Expert software version upgrade
PSWDCNPAZSNPEZZ	PME 50 Device Pack Upgrade	50 Device Pack for Power Monitoring Expert software version upgrade
PSWDDNPAZSNPEZZ	PME 100 Device Pack Upgrade	100 Device Pack for Power Monitoring Expert software version upgrade
PSWDFNPAZSNPEZZ	PME 200 Device Pack Upgrade	200 Device Pack for Power Monitoring Expert software version upgrade
PSWCENPAZSNPEZZ	PME Engineering Client Upgrade	Engineering Client for Power Monitoring Expert software version upgrade
PSWCWNPAZSNPEZZ	PME Web Client Upgrade	Web Client for Power Monitoring Expert software version upgrade
PSWDZNPASZSPEZZ	PME Unlimited Devices Upgrade	Unlimited Devices for Power Monitoring Expert software version upgrade
PSWCZNPASZSPEZZ	PME Unlimited Clients Upgrade	Unlimited Engineering and Web Clients for Power Monitoring Expert software version upgrade

Application Modules

PSWMBNPAZSPEZZ	Billing Module Free Upgrade	Billing Module free version upgrade from v7.2 or for SMS Migrations
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Power Quality Meters

PowerLogic™ Energy and Power Management Systems



POWER MONITORING AND CONTROL
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Features	Included	Optional
Dashboards	■	-
Diagrams	■	-
Tables	■	-
Alarms	■	-
Reports*	■	-
Modbus Device Importer	■	-
Designer	■	-
EGX300 Log File Importer	■	-
SQL Server Express Edition	■	-
SQL Server 2012	-	■
OPC client	■	-
OPC server	-	■

Minimum system requirements

Please consult your local Schneider Electric representative for complete system requirements and commissioning information for StruxureWare Power Monitoring.

***Note:** There are two different report engines that may be used: Reporter and web-based Reports. The Reporter application is always available as an Engineering Client tool. The web-based Reports feature is only available when the system has been installed using SQL Server Standard Edition.

Supported devices

Utility Meter

- ION8800 Series
- ION8650 Series

Advanced Meter

- ION7700 Series
- ION7x50 Series
- CM4000 Series

Intermediate Meter

- PM8000 Series
- CM3000 Series
- PM800 Series
- ION7300 Series

Multi-Circuit Meter

- BCPM (A, B, C models)
- EM4000 Series
- Veris BCPM
- Enersure iBCPM/BCPM

Basic Meter

- PM5000 Series
- ION6200
- EM3500 Series
- PM700 Series
- PM3000 Series
- PM200 Series
- CM100/200
- EM3460
- Enercept Meter

Entry Meter

- EM1200
- PM1200 / DM6200
- PM9C
- iEM3000 Series
- EM1200 Series
- EM6400 Series

Circuit Breaker Trip Units

- Micrologic A, E, P and H devices
- Micrologic Compact NSX Type A and Type E.

Protective Relay

- Sepam Series 10, 20, 40, 48, 80

Active Harmonic Filters

- Accusine PCS

Demand Controller

- EM7000

Motor Controller

- Altivar 61
- Tesys T

Power Quality Meter

- Varlogic NRC 12

Sequence of Event Recorder

- SER2408
- SER3200

Switchboard Monitoring

- Acti9 Smartlink
- Micrologic IFE/IFM

Communication

- Com'X 200 / 210 / 510
- EGX100 / 300

"Limited Edition" (LE) drivers available for download from website

- Modbus-compatible devices
- Other devices through OPC.



ION8650 Power and Energy Meters

The web-enabled PowerLogic ION8650 is used to monitor electric distribution networks, service entrances and substations. It enables businesses to manage complex energy supply contracts that include power quality guarantees. Low-range current accuracy makes it ideal for independent power producers and cogeneration applications that require the accurate bi-directional measurement of energy. It is well suited to load curtailment, equipment monitoring and control and energy pulsing and totalization applications. Integrate it with Power Management Software applications.

ION8650 Power and Energy Meter Features

Feature set C includes:

- 9S, 35S, 36S socket and switchboard cases
- True RMS 3-phase voltage, current, power and meets stringent ANSI revenue metering standards including ANSI C12.20 0.2 and Class 2, 10, & 20
- Power quality: sag/swell, individual, even, odd, total harmonics to the 31st and symmetrical components
- 32MB log/event memory, min/max for any parameter, historical logs up to 80 channels, timestamp resolution to 0.001 seconds and GPS time synchronization
- Transformer/line loss compensation and Instrument transformer correction
- Communications: Ethernet, Serial, Modem, Internet and Ethernet to serial gateway and ION, DNP 3.0, Modbus RTU, Modbus TCP, MV-90 protocols, IEC 61850
- C model limited to IR + 2 other ports at one time. Ports can be enabled/disabled by user
- Dial-out capability when memory is near full
- Multi-user, multi-level security with control and customized access to sensitive data for up to 50 users
- Data push capability through SMTP (email)
- 65 setpoints — math, logic, trig, log, linearization formulas
- Password protection and anti-tamper seal protection
- Built-in I/O: 4 KYZ digital outs and 3 form A digital ins, 4 KYZ digital outs and 1 form A digital out and 1 form A digital in, an optional external I/O expander provides additional I/O

Feature set B adds the following to feature set C:

- Harmonics—individual, total even, total odd up to the 63rd
- 64MB standard memory
- Historical logs up to 320 channels
- Modbus RTU Master on serial ports
- Cycle setpoint minimum response time

Feature set A adds the following to feature sets C and B:

- Waveform capture up to 1024 samples/cycle, PQ compliance monitoring, flicker to EN50160 Ed2, IEC 61000-4-7/4-15 (also configurable to IEEE519 2014, IEEE159, SEMI)CBEMA/ITIC
- Transient detection to 6517µs at 60Hz;
- Harmonics: magnitude, phase and inter-harmonics to the 50th
- 128MB standard memory
- Max 96 cycles of waveform logs and 800 channels of historical logs

Typical PowerLogic ION8650 Power and Energy Meter Ordering Configurations

Description	Catalog No.
ION8650, feature set A, 9S socket base, 5 A nominal current inputs, 10MB memory, 127–177 Vac, 60 Hz, communications card with: 10BaseT, RS-232/485, RS-485, Optical port, 4 Digital Outputs, 3 Digital Inputs	M8650A0C0E6E1B0A
ION8650, feature set A, 35S socket base, 5 A nominal current inputs, 10MB memory, 120–480 Vac, 60 Hz, communications card with: 10Base T, RS-232/485, RS-485, Optical port, 4 Digital Outputs, 3 Digital Inputs	M8650A1C0E6E1B0A
ION8650, feature set C, 9S socket base, 5 A nominal current inputs, 2MB memory, 120–277 Vac, 60 Hz, communications card with: RS-232/485, RS-485, Optical port, 4 Digital Outputs, 3 Digital Inputs	M8650C0C0E6A0B0A
ION8650, feature set C, 35S socket base, 5 A nominal current inputs, 2MB memory, 120–277 Vac, 60 Hz, communications card with: RS-232/485, RS-485, Optical port, 4 Digital Outputs, 3 Digital Inputs	M8650C1C0E6A0B0A

Power Quality Meters

PowerLogic™ Energy and Power Management Systems



ION7550 and ION7650 Power and Energy Meters

Used at key distribution points and sensitive loads, the web-enabled PowerLogic ION7550 and PowerLogic ION7650 meters combine a wealth of advanced features from power quality analysis capabilities, revenue accuracy and multiple communications options, through web compatibility, and control capabilities. Both are compatible with PowerLogic Power Management Software applications and can be integrated with other energy management or building control systems through multiple communication channels and protocols.

The meters are ideal for compliance monitoring, disturbance analysis, cost allocation and billing, demand and power factor control and equipment monitoring and control. The meters have a high visibility, adjustable front panel display that can depict TOU, harmonics, event logs, phasers, and instantaneous power parameters. They meet stringent ANSI C12.20 0.2, Class 10 & 20 revenue metering standards.

PowerLogic ION7550 and ION7650 Power and Energy Meter Features:

- 3.5" x 4.5" (87 x 112 mm) backlit LCD display
- True RMS 3-phase voltage, current, and power that meets stringent ANSI C12.20 0.2, Class 2, 10, & 20
- Power quality: sag/swell, harmonics - individual, even, odd, total to the 63rd, waveform capture at 256 samples/cycle
- 5MB log/event memory (10MB optional), waveform logging up to 96 cycles, up to 800 channels historical, min/max, timestamp resolution to 0.001 seconds, GPS time synchronization and historical trends through front panel
- Communications: fiber, Ethernet, serial, internal modem, optical port, and a gateway functionality, ION, DNP 3.0, Modbus RTU - master & slave, Modbus TCP, MV-90, and IEC 61850. IEC 61850 only available with Ethernet options
- Dial-out capability when memory is near full
- Data push capability through SMTP (email)
- Multi-user, multi-level security with control and customized access to sensitive data for up to 16 users
- 65 configurable 1/2 cycle setpoints for single, multi-condition and dial out on alarm and math, logic, trig, log, linearization formulas
- Password protection and anti-tamper seal protection enhance meter security
- Extensive standard I/O includes: 8 digital inputs, 4 digital outputs and 3 onboard relays
- Disturbance direction detection determines disturbance location and direction relative to the meter.
- Alarm setpoint learning analyzes the circuit and recommends optimum alarm setpoints to minimize nuisance or missed alarms.
- Customize metering or analysis functions at your work station, without hard wiring via ION Frameworks technology

The ION7650 has all the features of the ION7550 and adds:

- Waveform capture up to 1024 samples/cycle
- Transient detection to 17µs at 60Hz
- Harmonics: magnitude, phase and inter-harmonics to the 40th
- Flicker to EN50160 and IEC 61000-4-7/4-15 (also configurable for IEEE 519-1992, IEEE159, SEMI), plus CBEMA/ITIC
- Symmetrical components
- Power quality measurements per IEC 61000-4-30 Class A, Ed. 2

Typical PowerLogic ION7550/7650 Power and Energy Meter Ordering Configurations

Description	Catalog No.
Typical PowerLogic ION7550 Power and Energy Meter Ordering Configurations	
Integrated display, with 256 samples/cycle, 5 MB logging memory, 5 A inputs, standard power supply, standard comms. (1 RS232/RS485 port, 1 RS485, 1 Type 2 optical port) plus Ethernet, standard I/O	P7550A0C0B6E0A0A
Integrated display, with 256 samples/cycle, 5 MB logging memory, 5 A inputs, standard power supply, standard comms. (1 RS232/RS485 port, 1 RS485, 1 Type 2 optical port), standard I/O	P7550A0C0B6A0A0A
Typical PowerLogic ION7650 Power and Energy Meter Ordering Configurations	
Integrated display, with 1024 samples/cycle, 10 MB logging memory, 5 A inputs, standard power supply, standard comms. (1 RS232/RS485 port, 1 RS485, 1 Type 2 optical port) plus Ethernet, standard I/O, EN50160 compliance monitoring	P7650B1C0B6E0A0E
Integrated display, with 512 samples/cycle, 5 MB logging memory, 5 A inputs, standard power supply, standard comms. (1 RS232/RS485 port, 1 RS485, 1 Type 2 optical port) plus Ethernet, standard I/O	P7650A0C0B6E0A0A
Integrated display, with 512 samples/cycle, 5 MB logging memory, 5 A inputs, standard power supply, standard comms. (1 RS232/RS485 port, 1 RS485, 1 Type 2 optical port) plus Ethernet and 56k modem, standard I/O	P7650A0C0B6C1A0A
Integrated display, with 512 samples/cycle, 5 MB logging memory, 5 A inputs, standard power supply, standard comms. (1 RS232/RS485 port, 1 RS485, 1 Type 2 optical port), standard I/O	P7650A0C0B6A0A0A
Integrated display, with 1024 samples/cycle, 10 MB logging memory, 5 A inputs, standard power supply, standard comms. (1 RS232/RS485 port, 1 RS485, 1 Type 2 optical port) plus Ethernet, standard I/O	P7650B1C0B6E0A0A

NOTE: Please refer to www.schneider-electric.ca for the most complete and up-to-date list of feature availability. Some features are optional.

Power Quality Meters

PowerLogic™ Energy and Power Management Systems



CM4000T with VFD Display

Series 4000 Circuit Monitor

The award winning, Web-enabled PowerLogic Series 4000 Circuit Monitor (CM4000T) is the most advanced permanently mounted circuit monitor in the industry today. Designed for critical power and large energy users who cannot afford to be shut down, the CM4000T provides the ability to monitor, troubleshoot and preempt power quality problems. Transients (disturbances lasting less than one cycle) are particularly difficult to detect, due to their short duration. The CM4000T detects and captures oscillatory and impulsive transients (up to 10,000V peak, line-to-line at 5 MHz per channel) as short as one microsecond in duration. The CM4000T automatically performs a high-speed transient waveform capture and a longer disturbance capture to show the conditions surrounding an event. The CM4000T maintains a complete historical record of the number of transients per phase, along with the magnitude, duration and time of occurrence of each. It also performs a stress calculation to determine the circuits that have received the greatest stress from transient overvoltages.

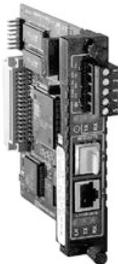
- Waveform capture with up to 512 samples/cycle
- Built-in Trending and Forecasting functionality allows you to forecast energy usage up to 4 days in advance
- Sag/Swell disturbance monitoring
- Two option card slots for field installable cards
- Optional field installable Ethernet communications card with standard and custom web pages
- Alarm Setpoint Learning feature allowing optimum threshold setting (patent pending)
- Multiple alarms: standard, digital, Boolean, high-speed, and disturbance alarms
- Waveshape alarm monitoring
- High speed transient voltage detection at 5 MHz per channel with field installable CVMT current/voltage module
- True RMS Metering through the 255th harmonic
- Extended waveform capture (up to 110 seconds)
- Field installable Digital/Analog I/O cards and flexible I/O extender modules
- Harmonic powerflows up to the 40th harmonic
- Standard KYZ pulse output
- Standard 32 MB of non-volatile memory
- Integrated power quality standards including EN50160, IEC 61000-4-15 (Flicker)
- Sequence of events recording using GPS synchronization technology
- Oscillatory transient detection and recording
- UL Listed, CSA Approved, NOM Approved, FCC compliant

PowerLogic Series 4000 Circuit Monitor Optional Displays

- High visibility remote VF (vacuum fluorescence) display
- Displays metering data, min/max values, alarms, inputs
- Remote LC (liquid crystal) display with backlighting also available
- Optional user configurable display screens

Series 4000 Circuit Monitors

Description	Catalog
Series 4000 Circuit Monitors Instrumentation, On-board Data Logging, Waveform Capture, Disturbance Recording, Configurable I/O, 0.04% Accuracy, Impulsive Transient Detection and Flicker (IEC 61000-4-15)	CM4000T
Series 4000 Circuit Monitor Accessories	
Field installable I/O card with 3 relay outputs, 1 pulse output (KYZ) and 4 status inputs	IOC44
I/O Extender module with 4 DC status inputs, 2 DC digital outputs, 1 analog input and 1 analog output	IOX2411
I/O Extender module with 4 status inputs and 4 analog inputs (4–20 mA)	IOX0404
I/O Extender module with 8 status inputs	IOX08
I/O Extender module with no pre-installed I/O [1]	IOX
Ethernet Communications Card; 100 MB Fiber or 10/100 MB UTP Ethernet port and 1 RS-485 master port	ECC21
Current/Voltage module with high speed transient detection	CVMT
4-line x 20—character liquid crystal display with backlighting	CMDLC
4-line x 20—character vacuum fluorescent display with proximity sensor	CMDVF
4 foot display cable	CAB4
12 foot display cable	CAB12
30 foot display cable	CAB30



ECC21



IOC44 I/O Card

SER Time Synchronization

Description	Catalog No.
PowerLogic Satellite Time System, Circuit Monitor and SEPAM GPS Time Synchronization, 100 microsecond accuracy	STS3000
Satellite Time Reference Module	STRM
CyTime Sequence of Events Recorder, 24 Vdc power / 24 Vdc inputs, 32 inputs, web server	9788SER3200
SER 3200 EZ connector for IRIG-B signal	9788EZCIRIGB
Smart Antenna Module	SAM
Smart Antenna Module Interface Cable—200 FT	SAIF200
Power Supply, 24DC/50W, DIN-mountable	PS080

POWER MONITORING AND CONTROL
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Power Quality Meters

PowerLogic™ Energy and Power Management Systems

New!

PowerLogic PM8000 Power and Energy Meters

These compact meters help ensure the reliability and efficiency of your facility by making the management of power quality, availability, and reliability easy. Measure, understand, and act on insightful power and energy data gathered from your entire system.



Address power issues before they cause problems

- Monitor harmonics to mitigate excessive heating and premature failure of transformers
- Use trending and alarming to detect fluctuations in current pull of critical equipment to prevent motor failure
- Utilize millisecond time stamping to analyze sequence of events
- Identify root cause by analyzing electrical faults with patented disturbance direction detection
- Identify power quality issues per EN 50160, including frequency inconsistency, voltage fluctuations and unbalance, and harmonic contribution
- Allocate costs for water, air, gas, electricity, and steam (WAGES) across departments, phases of industrial process, or cost centers
- Utilize time-of-use calendar to capture electrical consumption for specific times, including on/off peak and holidays

The best choice for power management

PM8000 meters combine accurate 3-phase energy and power measurements with data logging, power quality analysis, alarming and I/O capabilities not typically available in such compact meters. Four-metered current inputs allow direct measurement of 3-phase currents and neutral current for enhanced view of harmonics. Dual Ethernet ports support daisy-chaining, removing need for an Ethernet switch inside power equipment, while redundant ring topology provides enhanced availability. Modular, field installable I/O provides expandable scalability. Patented ION technology combines convenient, pre-configured functionality with the ability to customize the meter configuration to meet unique requirements. This embedded capability can save the expense and complexity of additional equipment, both today and tomorrow. Plus, simple installation and networking make energy information quickly accessible, while integration with StruxureWare™ software and your energy management system make it immediately actionable.

PM8000 Series Features

Intermediate meter		
General		
Use on LV and MV systems		■
Current accuracy (5A Nominal)		0.1 % reading
Voltage accuracy (57 V LN/100 V LL to 400 V LN/690 V LL)		0.1 % reading
Active energy accuracy		0.2 %
Number of samples/cycle or sample frequency		256
Instantaneous rms values		
Current, voltage, frequency		■
Active, reactive, apparent power	Total and per phase	■
Power factor	Total and per phase	■
Current measurement range (autoranging)		0.05 - 10A
Energy values		
Active, reactive, apparent energy		■
Settable accumulation modes		■
Demand values		
Current	Present and max. values	■
Active, reactive, apparent power	Present and max. values	■
Predicted Active, reactive, apparent power		■
Synchronization of the measurement window		■
Setting of calculation mode	Block, sliding	■
Power quality measurements		
Harmonic distortion	Current and voltage	■
Individual harmonics	Via front panel and web page	63
	Via StruxureWare software	127
Waveform capture		■
Detection of voltage swells and sags		■
Fast acquisition	1/2 cycle data	■
EN 50160 compliance checking		■
Customizable data outputs (using logic and math functions)		■
Data recording		
Min/max of instantaneous values		■
Data logs		■
Event logs		■
Trending/forecasting		■
SER (Sequence of event recording)		■
Time stamping		■
GPS synchronization (+/- 1 ms)		■
Memory (in Mbytes) 512		■
Display and I/O		
Front panel display		■
Wiring self-test		■
Pulse output 1		■
Digital or analog inputs(max)		27 digital 16 analog
Digital or analog outputs (max, including pulse output)		1 digital 8 relay 8 analog
Communication		
RS 485 port		1
Ethernet ports		2
Serial port (Modbus, ION, DNP3)		■
Ethernet port (Modbus/TCP, ION TCP, DNP3 TCP, IEC 61850)		■
Ethernet gateway		■
Alarm notification via email		■
HTTP web server		■
SNMP with custom MIB and traps for alarms		■
SMTP email		■
NTP time synchronization		■
FTP File transfer		■

PM8000 Power and Energy Meter Catalog Numbers

Description	Catalog Number
PM8000 Panel Mount Meter with Integrated Display	METSEPM8240
PM8000 DIN Rail Mount Meter without Display	METSEPM8243
PM8000 DIN Rail Mount Meter + Remote Display	METSEPM8244
Remote Display, Color LCD, 96 x 96	METSEPM89RD96
I/O module, 2 relay outputs, 6 digital inputs	METSEM89M2600
I/O module, 2 analog outputs, 4 analog inputs	METSEM89M0024
Display Cable, 10 meters	METSECAB10
Display Cable, 3 meters	METSECAB3
Display Cable, 1 meters	METSECAB1
Sealing kit	METSEPM8000SK
Mounting adapter kit (ANSI 4")	METSEPM8000MAK
Replacement hardware kit, PM8000 meter	METSEPM8HWK
Replacement hardware kit, PM8000 remote display	METSEPM8RDHWK

Power Quality Meter Selection

Features [2]	A	ION8650 B	C	ION7650	ION7550	CM4000T	PM8000
Inputs, outputs and control power							
3-phase / single-phase	• / •	• / •	• / •	• / •	• / •	• / •	• / •
Digital in and out / analog in and out 1	6 / 4	16 / 4	16 / 4	20 / 8	20 / 8	24 / 4	36/24
Power supply options A	C/DC	AC/DC	AC/DC	AC/DC	AC/DC	AC/DC	AC/DC
Power and energy measurements							
Voltage, current, frequency, power factor	•	•	•	•	•	•	•
Power / Demand	• / •	• / •	• / •	• / •	• / •	• / •	• / •
Energy / time-of-use (energy per shift)	• / •	• / •	• / •	• / •	• / •	• / •	• / •
IEC / ANSI energy accuracy class (% of reading)	0.2(1)	0.2(1)	0.2(1)	0.2	0.2	0.2	0.2
Loss compensation	•	•	•	•	•	-	-
Power quality analysis							
EN50160 compliance reporting / IEC 61000-4-30 Class A or S	• / A	• / S	- / -	• / A	- / -	• / -	• / S
Flicker measurement	•	•	-	•	-	•	-
Transient detection duration	17 μs -	-	17 μs	-	200 ns	-	-
Sag and swell monitoring / disturbance direction detection	• / -	• / -	• / -	• / •	• / •	• / •	• / •
Harmonic distortion: total/ individual / inter	• / • / •	• / • / -	• / • / -	• / • / •	• / • / -	• / • / -	• / • / -
Waveform capture	•	-	-	•	•	•	•
On-board data and event logging							
Trending / forecasting / billing	• / - / •	• / - / •	• / - / •	• / • / •	• / • / •	• / • / •	• / • / •
Minimum and maximum	•	•	•	•	•	•	•
Events and alarms with timestamps	•	•	•	•	•	•	•
Timestamp resolution (seconds)	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Time sync: Network / GPS / IRIG-B / DCF77-B	• / • / -	• / • / -	• / • / -	• / • / - / -	• / • / - / -	• / • / - / •	• / • / - / -
Setpoints, alarms and control							
Log alarm conditions / call out on alarm	• / •	• / •	• / •	• / •	• / •	• / •	• / •
Trigger data logging / waveform capture	• / •	• / -	• / -	• / •	• / •	• / •	• / •
Trigger relay or digital output	•	•	•	•	•	•	•
Special features							
Custom programming	•	•	•	•	•	•	•
Downloadable firmware	•	•	•	•	•	•	•
Communications							
Ports:							
Ethernet: Copper / Fiber	• / •	• / •	• / •	• / •	• / •	• / •	2 / -
Ethernet-to-serial gateway	•	•	•	•	•	•	•
Telephone modem	•	•	•	•	•	-	-
Modem-to-serial gateway	•	•	•	•	•	-	-
Infrared port	•	• / •	• / •	• / •	• / •	-	-
RS485/RS232	• / •	• / •	• / •	• / •	• / •	• / •	• / -
Misc: Web server / Email / SNMP / XML	• / • / - / •	• / • / - / •	• / • / - / •	• / • / • / •	• / • / • / •	• / • / - / •	• / • / • / •
Protocols: Modbus / DNP / MV-90 / DLMS	• / • / • / -	• / • / • / -	• / • / • / -	• / • / • / -	• / • / • / -	• / - / - / -	• / • / • / -
Protocols: IEC61850 / Jbus / M-Bus / LON / BACnet	• / - / - / - / -	• / - / - / - / -	• / - / - / - / -	• / - / - / - / -	• / - / - / - / -	- / - / - / - / -	• / - / - / - / -

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NOTE:

1. The ION8650 is two times more accurate than the 0.2 IEC/ANSI accuracy classes according to the same conditions used to specify the 0.2 accuracy class.
2. ION8650, ION8600, ION7650, ION7550, PM8000 also offer Modbus Master capabilities.

[2] Specifications represent maximum capabilities with all options installed. Some options are not available concurrently. This is not a complete feature list, please refer to detailed product specifications.



PM5000 Series
Power Meter



New!

Series 5000 Power Meters

The PowerLogic PM5000 series power meters are the new benchmark in affordable, precision metering. It is the ideal fit for high-end cost management applications, providing the measurement capabilities needed to allocate energy usage, perform tenant metering and sub-billing, pin-point energy savings, optimize equipment efficiency and utilization, and perform a high level assessment of the power quality in an electrical network.

- Panel instrumentation (OEMs)
- Sub-billing and cost allocation
- Remote monitoring of an electrical installation
- Harmonic monitoring (THD)

Series 5000 Power Meters

Description	Catalog No.
Power Meter, Class 0.5 Serial Port	METSEPM5110
Meter, Class 0.5 Alarms TOU Serial Port	METSEPM5330
Power Meter, Class 0.5 Alarms TOU Ethernet Port	METSEPM5340
Power Meter Class 0.2 Serial Port and Dual Ethernet	METSEPM5560
Power Meter without Display Class 0.2 Serial Port and Dual Ethernet	METSEPM5563
Remote Display for METSEPM5563	METSEPM5563RD
Power Meter with Remote Display Class 0.2 Serial Port and Dual Ethernet	METSEPM5563RD

ION6200 Power and Energy Meter

The modular PowerLogic ION6200 is a low-cost, ultra-compact meter that offers outstanding versatility and functionality. It is simple to use, and has a big, bright LED display. It offers four-quadrant power, demand, energy, power factor and frequency measurements, and is available in a variety of flexible configurations. It is available as a low-cost base model to which enhanced functionality can be added over the long term. The PowerLogic ION6200 is ideal for customers who need revenue-accurate and/or certified measurements and want easy integration with power distribution assemblies and building automation systems. A Megawatt version is available for applications requiring readings in megawatts and kilovolts. It is well suited for sub-metering, energy cost tracking load profiling, and substation panel metering and is an ideal replacement for analog meters. It can be used for stand-alone metering in custom panels, switchboards, switchgear, gensets, motor control centers and UPS systems. The meter consists of a base unit with options card and a power supply pack, with a remote display being optional.

PowerLogic ION6200 Power and Energy Meter Features

- Only two inches deep, and fits a standard ANSI four-inch switchboard cutout, or as a TRAN model with no display and can be fastened to a flat surface with a 4" (10cm) ANSI bolt pattern or mounted to a DIN rail.
A remote display module (RMD) can be ordered for the TRAN and mounted through an ANSI 4" (10cm) and DIN 96 cutout.
- LED display with twelve 3/4" (19mm) high digits that display all basic power parameters
- Pulse Outputs: optional kWh, kVARh and/or kVAh pulsing
- Via two Form A outputs
- Communications: optional RS-485 port with Modbus RTU and ION compatible
- 64 samples per cycle true RMS
- 3-phase voltage and current inputs

The standard ION6200 is available with the following parameters: Voltage L-N average and per phase, Voltage L-L average and per phase, Current average and per phase.

Option EP#1, includes the standard measurements and provides the following additional parameters: I4, kW/mW total, kWh/mWh total, kW/mW peak, Current demand average and per phase, Current peak demand average and per phase, Power factor total.

Optional Enhanced Package, includes the standard measurements and provides the following additional parameters: kW/mW per phase, kVAR/mVAR total and per phase, kVA/mVA total and per phase, kWh/mWh and del/rec per phase, kVARh/mVARh total and del/rec per phase, kVAh/mVAh total and per phase, kW/mW demand, kVAR/mVAR demand and peak, kVA/mVA demand and peak, Power Factor per phase, Voltage THD per phase, Current THD per phase.

Typical PowerLogic ION6200 Power and Energy Meter Ordering Configurations

Description	Catalog No.
Integrated display, 10 A inputs, standard 100–240 Vac power supply, RS485 port (Modbus RTU), 2 pulse outputs, Enhanced Package #2	P6200A0A0B0A0B0R
TRAN Model, with remote display, 10 A inputs, standard 100–240 Vac power supply, RS485 port (Modbus RTU), 2 pulse outputs, Enhanced Package #2	P6200R1A0B0A0B0R
TRAN Model, (no display), 10 A inputs, standard 100–240 Vac power supply, RS485 port (Modbus RTU), 2 pulse outputs, Enhanced Package #2	P6200T1A0B0A0B0R

NOTE: Please refer to www.schneider-electric.ca for the most complete and up-to-date list of feature availability. Some features are optional.



EM3500 Series
Energy and Power Meter

Series 3500 Energy and Power Meter

The EM3500 series Energy and Power Meter combines exceptional performance and easy installation to deliver a cost-effective solution for power monitoring applications. The EM3500 series can be installed on standard DIN rail or surface mounted, and has bi-directional monitoring designed expressly for renewable energy applications.

- Pulse output and phase alarms
- Data logging capability in some models
- Modbus and BACnet output options

Series 3500 Energy and Power Meters

Description	Catalog Number
Power Meter, DIN-rail, Pulse Output Only, for LVCTs	METSEEM3502
Power Meter, DIN-rail Pulse Output Only, for U018 Rope CTs	METSEEM3502A
Power Meter, DIN-rail Modbus Output for LVCTs METSEEM3550	
Power Meter, DIN-rail, Modbus Output, for U018 Rope CTs	METSEEM3550A
Power Meter, DIN-rail Modbus Output Bi-Directional, Logging for LVCTs	METSEEM3555
Power Meter, DIN-rail, BACnet Output, Logging for LVCTs	METSEEM3560
Power Meter, DIN-rail, BACnet Output, Logging for U018 Rope CTs	METSEEM3560A
Power Meter, DIN-rail, BACnet Output, for LVCTs	METSEEM3561
Power Meter, DIN-rail, BACnet Output, for U018 Rope CTs	METSEEM3561A

U018 Series Rope-Style Current Transformers

The U018 series works exclusively with the EM3500A series power and energy meters. These meters have a built in power supply and integrator, so CT connection is fast and simple. The coil opens at the connector junction for fast and easy installation onto an existing cable or buss-bar. The flexible core makes it easy to fit in tight enclosure

- Agency Approvals cURus, ANSI/IEEE 57.13, CE, RoHS
- Accuracy $\pm 1\%$ from 50 A to 5000 A
- Insulation up to 600 Vac

Description	Catalog Number
12 inch dia. Rope CT for use with EM3500A DIN-Rail Meters, 50 A–5000 A, 1%, 8 ft. leads	U018-0001
18 inch dia. Rope CT for use with EM3500A DIN-Rail Meters, 50 A–5000 A, 1%, 8 ft. leads	U018-0002
24 inch dia. Rope CT for use with EM3500A DIN-Rail Meters, 50 A–5000 A, 1%, 8 ft. leads	U018-0003
36 inch dia. Rope CT for use with EM3500A DIN-Rail Meters, 50 A–5000 A, 1%, 8 ft. leads	U018-0004
12 inch dia. Rope CT for use with EM3500A DIN-Rail Meters, 50 A–5000 A, 1%, 12 ft. leads	U018-0005
18 inch dia. Rope CT for use with EM3500A DIN-Rail Meters, 50 A–5000 A, 1%, 12 ft. leads	U018-0006
24 inch dia. Rope CT for use with EM3500A DIN-Rail Meters, 50 A–5000 A, 1%, 12 ft. leads	U018-0007
36 inch dia. Rope CT for use with EM3500A DIN-Rail Meters, 50 A–5000 A, 1%, 12 ft. leads	U018-0008

LVCT Series Current Transformers

LVCT current transducers provide a 0.333 V output for use with EM3500 series meters. Available in both solid and split core styles. e makes it easy to fit in tight enclosure

- Solid core accuracy ± 0.5 of reading from 5% to 120% of rated current
- Split core accuracy 1% from 10% to 100% of rated current
- Leads 22 AWG, 600 Vac, UL 1015 bonded pair, 6 ft. (1.8 m) standard length

Description	Catalog Number
Split core	
Low-Voltage CT, Split Core, Size 0, 50 A:0.33 V	LVCT00050S
Low-Voltage CT, Split Core, Size 1, 100 A:0.33 V	LVCT00101S
Low-Voltage CT, Split Core, Size 2, 100 A:0.33 V	LVCT00102S
Low-Voltage CT, Split Core, Size 1, 200 A:0.33 V	LVCT00201S
Low-Voltage CT, Split Core, Size 2, 200 A:0.33 V	LVCT00202S
Low-Voltage CT, Split Core, Size 2, 300 A:0.33 V	LVCT00302S
Low-Voltage CT, Split Core, Size 3, 400 A:0.33 V	LVCT00403S
Low-Voltage CT, Split Core, Size 3, 600 A:0.33 V	LVCT00603S
Low-Voltage CT, Split Core, Size 3, 800 A:0.33 V	LVCT00803S
Low-Voltage CT, Split Core, Size 4, 800 A:0.33 V	LVCT00804S
Low-Voltage CT, Split Core, Size 4, 1000 A:0.33 V	LVCT01004S
Low-Voltage CT, Split Core, Size 4, 1200 A:0.33 V	LVCT01204S
Low-Voltage CT, Split Core, Size 4, 1600 A:0.33 V	LVCT01604S
Low-Voltage CT, Split Core, Size 4, 2000 A:0.33 V	LVCT02004S
Low-Voltage CT, Split Core, Size 4, 2400 A:0.33 V	LVCT02404S
Solid core	
Low-Voltage CT, Solid Core, Size 0, 50 A:0.33 V	LVCT20050S
Low-Voltage CT, Solid Core, Size 0, 100 A:0.33 V	LVCT20100S
Low-Voltage CT, Solid Core, Size 2, 200 A:0.33 V	LVCT20202S
Low-Voltage CT, Solid Core, Size 3, 400 A:0.33 V	LVCT20403S

Power Monitoring & Control

PowerLogic™ Energy and Power Management Systems

Power and Energy Meter Selection

Features [3]	PM5110	PM5330	PM5340	PM5500	ION6200	EM3500
Inputs, outputs and control power						
3-phase / single-phase	•/•	•/•	•/•	•/•	•/•	•/•
Digital in and out / analog in and out	1 / 0	4 / 0	4 / 0	6 / 0	2/-	2 or 3 / 0
Power supply options	AC/DC	AC/DC	AC/DC	AC/DC	AC/DC	AC/DC
Power and energy measurements						
Voltage, current, frequency, power factor	•	•	•	•	•	•
Power / Demand	•/•	•/•	•/•	•/•	•/•	•/•
Energy / time-of-use (energy per shift)	•/-	•/•	•/•	•/•	•/-	-/-
IEC / ANSI energy accuracy class (% of reading)	0.5	0.5	0.5	0.2	0.5	0.5
Loss compensation - - - - -						
Power quality analysis						
EN50160 compliance reporting / IEC 61000-4-30 Class A or S	-/-	-/-	-/-	-/-	-/-	-/-
Flicker measurement	-	-	-	-	-	-
Transient detection duration	-	-	-	-	-	-
Sag and swell monitoring / disturbance direction detection	-/-	-/-	-/-	-/-	-/-	-/-
Harmonic distortion: total/ individual / inter	•/•/-	•/•/-	•/•/-	•/•/-	•/•/-	-/-/-
Waveform capture	-	-	-	-	-	-
On-board data and event logging						
Trending / forecasting / billing	-/-/-	-/-/-	-/-/-	-/-/-	-/-/-	-/-/-
Minimum and maximum	•	•	•	•	-	-
Events and alarms with timestamps	-	•	•	•	-	-
Timestamp resolution (seconds)	1	1	1	1	-	1
Time sync: Network / GPS / IRIG-B / DCF77-B	-/-/-/-	-/-/-/-	-/-/-/-	-/-/-/-	-/-/-/-	-/-/-/-
Setpoints, alarms and control						
Log alarm conditions / call out on alarm	-/-	•/•	•/•	•/•	-/-	-/-
Trigger data logging / waveform capture	-/-	-/-	-/-	-/-	-/-	-/-
Trigger relay or digital output	-	•	•	•	-	-
Special features						
Custom programming	-	-	-	-	-	-
Downloadable firmware	•	•	•	•	-	-
Communications						
Ports:						
Ethernet: Copper / Fiber	-/-	-/-	1/-	2/-	-/-	-/-
Ethernet-to-serial gateway	-	-	-	•	-	-
Telephone modem	-	-	-	-	-	-
Modem-to-serial gateway	-	-	-	-	-	-
Infrared port	-	-	-	-	-	-
RS485/RS232	•/•	•/•	-/-	•/•	•/•	•/•
Misc: Web server / Email / SNMP / XML	-/-/-/-	-/-/-/-	-/-/-/-	•/•/-/-	-/-/-/-	-/-/-/-
Protocols: Modbus / DNP / MV-90 / DLMS	•/•/-/-	•/•/-/-	•/•/-/-	•/•/-/-	•/•/-/-	•/•/-/-
Protocols: IEC61850 / Jbus / M-Bus / LON / BACnet	-/-/-/-/-	-/-/-/-/-	-/-/-/-/-	-/-/-/-/-	-/-/-/-/-	-/-/-/-/-



Energy Meter

Basic 120/240 V to 208Y/120 V

Description	Catalog No.
Basic 100 A, .518"x1.28" ID, 1 CT	EMB1010
Basic 200 A, 0.75" x 1.10" ID, 1 CT	EMB1021
Basic 300 A, .90"x1.90" ID, 1 CT	EMB1032
Basic 100 A, .518"x1.28" ID, 2 CTs	EMB2010
Basic 200 A, 0.75" x 1.10" ID, 2 CTs	EMB2021
Basic 300 A, .90"x1.90" ID, 2 CTs	MB2032
Basic 400 A, 2.45"x2.89" ID, 2 CTs	EMB2043
Basic 800 A, 2.45"x2.89" ID, 2 CTs	EMB2083
Basic 100 A, .518"x1.28" ID, 3 CTs	EMB3010
Basic 200 A, 0.75" x 1.10" ID, 3 CTs	EMB3021
Basic 300 A, .90"x1.90" ID, 3 CTs	EMB3032
Basic 400 A, 2.45"x2.89" ID, 3 CTs	EMB3043
Basic 800 A, 2.45"x2.89" ID, 3 CTs	EMB3083
Basic 800 A, 2.45"x5.50" ID, 3 CTs	EMB3084
Basic 1600 A, 2.45"x5.50" ID, 3 CTs	EMB3164

Energy Meter Accessories

Description	Catalog No.
Energy Meter Communication Board [4]	EMCB
Energy Meter Fuse Pack, Set of 1	EMFP1
Energy Meter Fuse Pack, Set of 2	EMFP2
Energy Meter Fuse Pack, Set of 3	EMFP3
Energy Meter Bonding Kit	EMBOND



Enercept Meter

Enercept Meter

Description	Catalog No.
Basic 100 A, 1.25" x 1.51" ID	3020B012 [5]
Basic 300 A, 1.25" x 1.51" ID	3020B032 [5]
Basic 400 A, 2.45" x 2.89" ID	3020B043 [5]
Basic 800 A, 2.45" x 2.89" ID	3020B083 [5]
Basic 800 A, 2.45" x 5.50" ID	3020B084 [5]
Basic 1600 A, 2.45" x 5.50" ID	3020B164 [5]
Basic 2400 A, 2.45" x 5.50" ID	3020B244 [5]
Enhanced 100 A, 1.25" x 1.51" ID	3020E012
Enhanced 300 A, 1.25" x 1.51" ID	3020E032
Enhanced 400 A, 2.45" x 2.89" ID	3020E043
Enhanced 800 A, 2.45" x 2.89" ID	3020E083
Enhanced 800 A, 2.45" x 5.50" ID	3020E084
Enhanced 1600 A, 2.45" x 5.50" ID	3020E164
Enhanced 2400 A, 2.45" x 5.50" ID	3020E244

[4] Energy Meter communication board (EMCB) can be used with all models of the Energy Meter. Order one EMCB for each Energy Meter where either kW demand and/or communication is specified.

[5] See Handout / Instruction Bulletin for derating properties.

PowerLogic Energy Meter

The Energy Meter is ideal for stand-alone and systems-based submetering applications. It is easy to install and provides exceptional metering accuracy. Available in Basic and Extended Range models. The Basic model is designed for metering of 120/240 and 208Y/120 volt services. The Extended Range model will meter 120/240 volt up to 480 volt Wye connected services. Extended Range meters come with pulse output and phase loss output not available on the Basic unit. Optional Modbus™ RS-485 serial communications are provided with the Energy Meter Comms Board, EMCB. Optional kW demand is also provided by the EMCB.

Meter up to 3 individual services with one Energy Meter. The Energy Meter will allow the addition of up to 3 sets of parallel CTs for metering multiple electric loads. Additional sets of CTs can be ordered separately. Please refer to the multiple CT application notes in the Energy Meter instruction bulletin for the proper installation procedures.

Extended Range 120/240 V to 480Y/277 V

Description	Catalog No.
Extended Range 100 A, .518"x1.28" ID, 1 CT	EME1010
Extended Range 200 A, 0.75" x 1.10" ID, 1 CT	EME1021
Extended Range 300 A, .90"x1.90" ID, 1 CT	EME1032
Extended Range 100 A, .518"x1.28" ID, 2 CTs	EME2010
Extended Range 200 A, 0.75" x 1.10" ID, 2 CTs	EME2021
Extended Range 300 A, .90"x1.90" ID, 2 CTs	EME2032
Extended Range 400 A, 2.45"x2.89" ID, 2 CTs	EME2043
Extended Range 800 A, 2.45"x2.89" ID, 2 CTs	EME2083
Extended Range 100 A, .518"x1.28" ID, 3 CTs	EME3010
Extended Range 200 A, 0.75" x 1.10" ID, 3 CTs	EME3021
Extended Range 300 A, .90"x1.90" ID, 3 CTs	EME3032
Extended Range 400 A, 2.45"x2.89" ID, 3 CTs	EME3043
Extended Range 800 A, 2.45"x2.89" ID, 3 CTs	EME3083
Extended Range 800 A, 2.45"x5.50" ID, 3 CTs	EME3084
Extended Range 1600 A, 2.45"x5.50" ID, 3 CTs	EME3164

Additional CT Sets

Description	Catalog No.
100 A, .518" x 1.28" ID, 1 CT	EMCT010
200 A, 0.75" x 1.10" ID, 1 CT	EMCT021
300 A, .90" x 1.90" ID, 1 CT	EMCT032
400 A, 2.45" x 2.89" ID, 1 CT	EMCT043
800 A, 2.45" x 2.89" ID, 1 CT	EMCT083
800 A, 2.45" x 5.50" ID, 1 CT	EMCT084
1600 A, 2.45" x 5.50" ID, 1 CT	EMCT164

NOTE: CT quantity and amperage must match meter model. Total of combined loads must not exceed rating of meter. All additional CTs shipped with 6 ft. white and black color-coded wire leads.

PowerLogic Enercept™ Meter

The Enercept Meter is the ideal solution for submetering electric loads where space is at a premium. The compact design consists of three interconnected split-core CTs with the metering and communication electronics built into the CT housing. Simply snap on the CTs, connect the voltage inputs, the communication lines, and installation is complete. Both versions can be connected to either three-phase or single-phase circuits.

Enercept meters employ the Modbus™ RTU 2-wire communication protocol, and can utilize the same communication network and Power Management Software applications as other PowerLogic devices. Data from the Enercept meters can be presented in tabular or graphical format, used for alarming and historical logging and trending, and to produce reports.

Optional Submeter display (SMD) acts as a stand-alone operator interface supporting up to 32 meters (63 with a repeater). In addition, the Submeter display (SMD) can act as a network adapter allowing Enercept meters to be incorporated into a network.

Accessories

Description	Catalog No.
Submeter display mounted in enclosure	SMD
Open style submeter display, no enclosure	SMD OPN
2-Wire 232-485 Conv	30502W485C
Enercept Mounting Brackets (Set of 3)	3050EMBK-3

Enercept Metering Quantities

Basic [5]	Enhanced*
kWh, energy usage kW, real power	kWh, kW per phase and total, min kW, max kW, kWd, kVAR, kVA, PF per phase and total voltage- V, L-L, L-N per phase and avg. Current - A, per phase and average

Power and Energy Meters

PowerLogic™ Energy and Power Management Systems



SA Split-Core Current Transformers

PowerLogic Instrument Grade 5 Amp Split-Core Current Transformers

The 3090 SCCT series of split-core current transformers provide secondary amperage proportional to the primary (sensed) current. For use with Circuit Monitors, Power Meters, data loggers, chart recorders and other instruments the 3090 SCCT series provides a cost-effective means to transform electrical service amperages to a 0–5A level compatible with monitoring equipment.

Description	Catalog No.
Split Core CT—200 A (sz.2): 1.25" x 1.51	3090SCCT022
Split Core CT—300 A (sz.2): 1.25" x 1.51	3090SCCT032
Split Core CT—400 A (sz.3): 2.45" x 2.89	3090SCCT043
Split Core CT—600 A (sz.3): 2.45" x 2.89	3090SCCT063
Split Core CT—800 A (sz.3): 2.45" x 2.89	3090SCCT083
Split Core CT—800 A (sz.4): 2.45" x 5.05	3090SCCT084
Split Core CT—1200 A (sz.4): 2.45" x 5.50	3090SCCT124
Split Core CT—1600 A (sz.4): 2.45" x 5.50	3090SCCT164

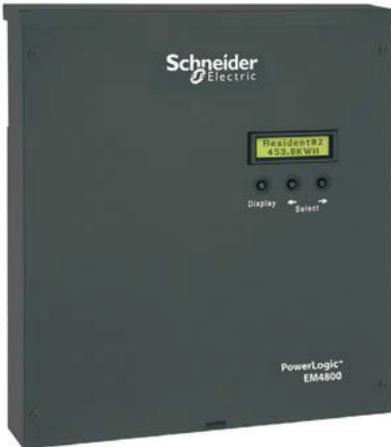
NOTE: Max. Voltage without additional insulation 600 Vac. Do not apply 600 V Class current transformers to circuits having a phase-to-phase voltage greater than 600 V, unless adequate additional insulation is applied between the primary conductor and the current transformers. Square D assumes no responsibility for damage of equipment or personal injury caused by transformers operated on circuits above their published ratings.

Multi Circuit Energy Meters

The PowerLogic EM4800 and EM4000 multi-circuit energy meters combine accurate electricity sub-metering with advanced communications technology. They are ideal for multi-tenant or departmental metering and M&V applications within office towers, condominiums, apartment buildings, shopping centers and other multipoint environments, or small footprint retail. This meter is available separately or as part of a Square D integrated power center (IPC) for use in building retrofits or new construction.

Each compact multipoint meter provides energy measurement for up to 24 (1CT) or 12 (2CT) single-phase circuits or 8 (3CT) 3-phase circuits. Select a model to match the desired CT type. The 0.333 V output CT option does not require shorting blocks, making it the ideal choice for retrofit installations.

All meters have an accuracy of Class 0.5%, have onboard interval logging, and feature flexible communication options with an Ethernet port that supports multiple protocols: Modbus TCP/IP, HTTP, BACnet/IP, FTP, and SNMP. EM4800 series meters have a V.90 modem while EM4000 series meters provide Modbus RTU over RS-485.



POWER MONITORING AND CONTROL
DE13

Multi Circuit Energy Meters

Description	Catalog No.
EM4800 series; Ethernet; modem; compatible with 80mA low-power CTs; 120V control power 60 Hz	METSEEM488016
EM4800 series; Ethernet; modem; compatible with standard 5A CTs; 120V control power 60 Hz	METSEEM480516
EM4000 series; Ethernet; Modbus RTU over RS-485; compatible with 80mA low-power CTs; 120V control power 60 Hz	METSEEM408016
EM4000 series; Ethernet; Modbus RTU over RS-485; compatible with 80mA low-power CTs; 277V control power 60 Hz	METSEEM408036
EM4000 series; Ethernet; Modbus RTU over RS-485; compatible with 333mV low-power CTs; 120V control power 60 Hz	METSEEM403316
EM4000 series; Ethernet; Modbus RTU over RS-485; compatible with 333mV low-power CTs; 277V control power 60 Hz	METSEEM403336
200 A current transformer (CT), 80 mA secondary, solid-core (1 CT)	METSECT80200
400 A current transformer (CT), 80 mA secondary, solid-core (1 CT)	METSECT80400
600 A current transformer (CT), 80 mA secondary, solid-core (1 CT)	METSECT80600
50 A .333 V Split Core Current Transformer with 0.75 in Window Size	ECT075050SC
100 A .333 V Split Core Current Transformer with 0.75 in Window Size	ECT075100SC
150 A .333 V Split Core Current Transformer with 0.75 in Window Size	ECT075150SC
200 A .333 V Split Core Current Transformer with 0.75 in Window Size	ECT075200SC
100 A .333 V Split Core Current Transformer with 1.25 in Window Size	ECT125100SC
150 A .333 V Split Core Current Transformer with 1.25 in Window Size	ECT125150SC
200 A .333 V Split Core Current Transformer with 1.25 in Window Size	ECT125200SC
400 A .333 V Split Core Current Transformer with 1.25 in Window Size	ECT125400SC
200 A .333 V Split Core Current Transformer with 2.00 in Window Size	ECT200200SC
400 A .333 V Split Core Current Transformer with 2.00 in Window Size	ECT200400SC
600 A .333 V Split Core Current Transformer with 2.00 in Window Size	ECT200600SC
600 A .333 V Split Core Current Transformer with 3 x 5 in Window Size	ECT300600SC
800 A .333 V Split Core Current Transformer with 3 x 5 in Window Size	ECT300800SC

PowerLogic Branch Circuit Power Meter

The ideal solution for data center managers, energy or facility managers, engineers and operational executives who are responsible for delivering power to critical applications. In corporate and hosted data center facilities, this technology helps you plan and optimize the critical power infrastructure to meet the demands of continuous availability.

The PowerLogic BCPM is a highly accurate, full-featured metering product designed for the unique, multi-circuit and minimal space requirements of a high performance power distribution unit (PDU) or remote power panel (RPP). It offers class 1 (1%) power and energy system accuracy (including 50 A or 100 A CTs) on all branch channels.

The BCPM monitors up to 84 branch circuits with a single device and also monitors the incoming power mains to provide information on a complete PDU. It also offers multiphase measurement totals with flexible support for any configuration of multi-phase breakers. Full alarming capabilities ensure that potential issues are dealt with before they become problems.

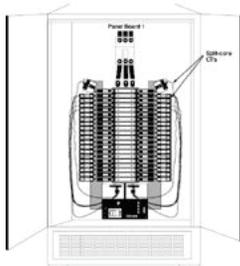
Unlike products designed for specific hardware, the flexible BCPM will fit any PDU or RPP design and supports both new and retrofit installations. It has exceptional dynamic range and accuracy, and optional feature sets to meet the energy challenges of mission critical data centers.

Key Features:

- Integrated Ethernet with advanced SNMP, BACnet, and Modbus TCP support on BCPME models
- Class 1% system accuracy (including 50 A or 100 A branch CTs)
- Flexible configuration of Logical Meters for multi-phase loads
- Full PDU monitoring
- Flexible configuration
- Split core version for retrofit installations
- Wide monitoring range
- Low current monitoring
- Advanced alarming
- Easily integrates into a PowerLogic system or other existing networks using Modbus™ communications

BCPM with Solid-Core CTs

Description	Catalog Number
42-circuit solid-core power & energy meter, 100A CTs (2 strips), ¾ in. spacing	BCPMA042S
84-circuit solid-core power & energy meter, 100A CTs (4 strips), ¾ in. spacing	BCPMA084S
42-circuit solid-core power & energy meter, 100A CTs (2 strips), 1 in. spacing	BCPMA142S
84-circuit solid-core power & energy meter, 100A CTs (4 strips), 1 in. spacing	BCPMA184S
24-circuit solid-core power & energy meter, 100A CTs (2 strips), 18 mm spacing	BCPMA224S
36-circuit solid-core power & energy meter, 100A CTs (2 strips), 18 mm spacing	BCPMA236S
42-circuit solid-core power & energy meter, 100A CTs (2 strips), 18 mm spacing	BCPMA242S
48-circuit solid-core power & energy meter, 100A CTs (4 strips), 18 mm spacing	BCPMA248S
72-circuit solid-core power & energy meter, 100A CTs (4 strips), 18 mm spacing	BCPMA272S
84-circuit solid-core power & energy meter, 100A CTs (4 strips), 18 mm spacing	BCPMA284S
42-circuit solid-core branch current, mains power meter, 100A CTs (2 strips), ¾ in. spacing	BCPMB042S
84-circuit solid-core branch current, mains power meter, 100A CTs (4 strips), ¾ in. spacing	BCPMB084S
42-circuit solid-core branch current, mains power meter, 100A CTs (2 strips), 1 in. spacing	BCPMB142S
84-circuit solid-core branch current, mains power meter, 100A CTs (4 strips), 1 in. spacing	BCPMB184S
24-circuit solid-core branch current, mains power meter, 100A CTs (2 strips), 18 mm spacing	BCPMB224S
36-circuit solid-core branch current, mains power meter, 100A CTs (2 strips), 18 mm spacing	BCPMB236S
42-circuit solid-core branch current, mains power meter, 100A CTs (2 strips), 18 mm spacing	BCPMB242S
48-circuit solid-core branch current, mains power meter, 100A CTs (4 strips), 18 mm spacing	BCPMB248S
72-circuit solid-core branch current, mains power meter, 100A CTs (4 strips), 18 mm spacing	BCPMB272S
84-circuit solid-core branch current, mains power meter, 100A CTs (4 strips), 18 mm spacing	BCPMB284S
42-circuit solid-core branch current meter, 100A CTs (2 strips), ¾ in. spacing	BCPMC042S
84-circuit solid-core branch current meter, 100A CTs (4 strips), ¾ in. spacing	BCPMC084S
42-circuit solid-core branch current meter, 100A CTs (2 strips), 1 in. spacing	BCPMC142S
84-circuit solid-core branch current meter, 100A CTs (4 strips), 1 in. spacing	BCPMC184S
24-circuit solid-core branch current meter, 100A CTs (2 strips), 18 mm spacing	BCPMC224S
36-circuit solid-core branch current meter, 100A CTs (2 strips), 18 mm spacing	BCPMC236S
42-circuit solid-core branch current meter, 100A CTs (2 strips), 18 mm spacing	BCPMC242S
48-circuit solid-core branch current meter, 100A CTs (4 strips), 18 mm spacing	BCPMC248S
72-circuit solid-core branch current meter, 100A CTs (4 strips), 18 mm spacing	BCPMC272S
84-circuit solid-core branch current meter, 100A CTs (4 strips), 18 mm spacing	BCPMC284S
42-circuit solid-core power & energy meter w/Ethernet, 100A CTs (2 strips), ¾ in. spacing	BCPME042S
84-circuit solid-core power & energy meter w/Ethernet, 100A CTs (4 strips), ¾ in. spacing	BCPME084S
42-circuit solid-core power & energy meter w/Ethernet, 100A CTs (2 strips), 1 in. spacing	BCPME142S
84-circuit solid-core power & energy meter w/Ethernet, 100A CTs (4 strips), 1 in. mm spacing	BCPME184S
24-circuit solid-core power & energy meter w/Ethernet, 100A CTs (2 strips), 18 mm spacing	BCPME224S
36-circuit solid-core power & energy meter w/Ethernet, 100A CTs (2 strips), 18 mm spacing	BCPME236S
42-circuit solid-core power & energy meter w/Ethernet, 100A CTs (2 strips), 18 mm spacing	BCPME242S
48-circuit solid-core power & energy meter w/Ethernet, 100A CTs (4 strips), 18 mm spacing	BCPME248S
72-circuit solid-core power & energy meter w/Ethernet, 100A CTs (4 strips), 18 mm spacing	BCPME272S
84-circuit solid-core power & energy meter w/Ethernet, 100A CTs (4 strips), 18 mm spacing	BCPME284S



Typical BCPMSC panelboard installation

POWER MONITORING AND CONTROL
DE13

Power and Energy Meters

PowerLogic™ Energy and Power Management Systems

POWER MONITORING AND CONTROL
DE13

1/3 V Low-Voltage Split-Core CTs for Aux Inputs (Mains)

Amperage Rating	Inside Dimensions	Catalog Number
50A	10 x 11 mm	LVCT00050S
200A	16 x 20 mm	LVCT00101S
200A	32 x 32 mm	LVCT00202S
100A	30 x 31 mm	LVCT00102S
200A	30 x 31 mm	LVCT00202S
300A	30 x 31 mm	LVCT00302S
400A	62 x 73 mm	LVCT00403S
600A	62 x 73 mm	LVCT00603S
800A	62 x 73 mm	LVCT00803S
800A	62 x 139 mm	LVCT00804S
1000A	62 x 139 mm	LVCT01004S
1200A	62 x 139 mm	LVCT01204S
1600A	62 x 139 mm	LVCT01604S
2000A	62 x 139 mm	LVCT02004S
2400A	62 x 139 mm	LVCT02404S

1/3 V Low-Voltage Solid-Core CTs for Aux Inputs (Mains)

Amperage Rating	Inside Dimensions	Catalog Number
50A	10 mm	LVCT20050S
100A	10 mm	LVCT20100S
200A	25 mm	LVCT20202S
400A	31 mm	LVCT20403S

BCPM with Split-Core CTs

Description	Catalog Number
42-circuit split-core power and energy meter, CTs and cables sold separately	BCPMSCA1S
84-circuit split-core power and energy meter, CTs and cables sold separately	BCPMSCA2S
30-circuit split-core power and energy meter, (30) 50A CTs & (2) 4 ft. cables	BCPMSCA30S
42-circuit split-core power and energy meter, (42) 50A CTs & (2) 4 ft. cables	BCPMSCA42S
60-circuit split-core power and energy meter, (60) 50A CTs & (4) 4 ft. cables	BCPMSCA60S
42-circuit split core power and energy meter, all boards on backplate, CTs and cables sold separately	BCPMSCAY63S
84-circuit split-core power and energy meter, with (84) 50A CTs & (4) 4 ft. cables	BCPMSCA84S
42-circuit split-core branch current, mains power meter, CTs and cables sold separately	BCPMSCB1S
84-circuit split-core branch current, mains power meter, CTs and cables sold separately	BCPMSCB2S
30-circuit split-core branch current, mains power meter, (30) 50A CTs & (2) 4 ft. cables	BCPMSCB30S
42-circuit split-core branch current, mains power meter, (42) 50A CTs & (2) 4 ft. cables	BCPMSCB42S
60-circuit split-core branch current, mains power meter, (60) 50A CTs & (4) 4 ft. cables	BCPMSCB60S
42-circuit split-core branch current, mains, all boards on backplate, CTs and cables sold separately	BCPMSCBY63S
84-circuit split-core branch current, mains power meter, (84) 50A CTs & (4) 4 ft. cables	BCPMSCB84S
42-circuit split-core current meter, CTs and cables sold separately	BCPMSCC1S
84-circuit split-core current meter, CTs and cables sold separately	BCPMSCC2S
30-circuit split-core current meter, (30) 50A CTs & (2) 4 ft. cables	BCPMSCC30S
42 circuit split-core current meter, (42) 50A CTs & (2) 4 ft. cables	BCPMSCC42S
60-circuit split-core current meter, (60) 50A CTs & (4) 4 ft. cables	BCPMSCC60S
42-circuit split-core current meter, all boards on backplate, CTs and cables sold separately	BCPMSCCY63S
84-circuit split-core current meter, (84) 50A CTs & (4) 4 ft. cables	BCPMSCC84S
42-circuit split-core power and energy meter w/Ethernet, CTs and cables sold separately	BCPMSCCE1S
84-circuit split-core power and energy meter w/Ethernet, CTs and cables sold separately	BCPMSCCE2S
30-circuit split-core power and energy meter w/Ethernet, (30) 50A CTs & (2) 4 ft. cables	BCPMSCCE30S
42-circuit split-core power and energy meter w/Ethernet, (42) 50A CTs & (2) 4 ft. cables	BCPMSCCE42S
60-circuit split-core power and energy meter w/Ethernet, (60) 50A CTs & (4) 4 ft. cables	BCPMSCCE60S
84-circuit split-core power and energy meter w/Ethernet, (84) 50A CTs & (4) 4 ft. cables	BCPMSCCE84S

BCPM Split-Core Branch CTs and Adapter Boards

Description	Catalog Number
BCPM adapter boards, quantity 2, for split core BCPM	BCPMSCADPBS
BCPM 50A split core CTs, Quantity 6, 1.8 m lead lengths	BCPMSCCT0
BCPM 50A split core CTs, quantity 6, 6 m lead lengths	BCPMSCCT0R20
BCPM 100A split core CTs, Quantity 6, 1.8 m lead lengths	BCPMSCCT1
BCPM 100A split core CTs, Quantity 6, 6 m lead lengths	BCPMSCCT1R20
BCPM 200A split core CTs, Quantity 1, 1.8 m lead lengths	BCPMSCCT3
BCPM 200A split core CTs, Quantity 1, 6 m lead lengths	BCPMSCCT3R20

Additional Accessories for use with BCPM Products

Description	Catalog Number
BCPM circuit board cover	BCPMCOVERS
CT repair kit for solid core BCPM (includes one CT)	BCPMREPAIR
Additional 100A split core CT for use with solid core repair kit	H6803R-0100
Modbus to BACnet protocol converter	E8951
Flat Ribbon cable (quantity 1) for BCPM, length = 0.45 m	CBL008
Flat Ribbon cable (quantity 1) for BCPM, length = 1.2 m	CBL016
Flat Ribbon cable (quantity 1) for BCPM, length = 1.5 m	CBL017
Flat Ribbon cable (quantity 1) for BCPM, length = 1.8 m	CBL018
Flat Ribbon cable (quantity 1) for BCPM, length = 2.4 m	CBL019
Flat Ribbon cable (quantity 1) for BCPM, length = 3.0 m	CBL020
Flat Ribbon cable (quantity 1) for BCPM, length = 6.1 m	CBL021
Round Ribbon cable (quantity 1) for BCPM, length = 1.2 m	CBL022
Round Ribbon cable (quantity 1) for BCPM, length = 3 m	CBL023
Round Ribbon cable (quantity 1) for BCPM, length = 6.1 m	CBL024
Round Ribbon cable (quantity 1) for BCPM, length = 0.5 m	CBL031
Round Ribbon cable (quantity 1) for BCPM, length = 0.8 m	CBL033

PowerLogic Multi-Circuit Meter

Designed for OEM style placement in electrical distribution equipment the MCM8364 is configurable to meter 1 or 3 phases of up to eight individual loads, six loads if neutral monitoring is required. The MCM will monitor up to 10,000 amps per service using standard 5 Amp CTs. All of the metered circuits must share a common voltage source. The MCM8364 is a great solution for monitoring critical power distribution equipment and provides 24 different electrical metering quantities plus an additional nine Modbus register alarms.

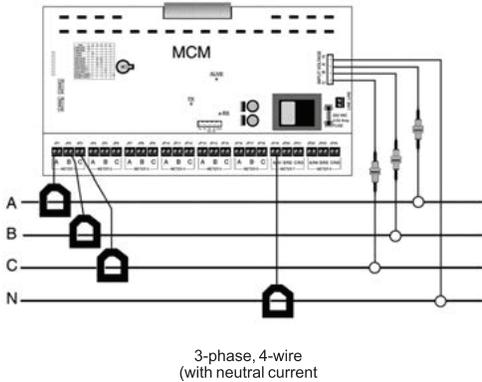
With one RS-485 connection, the multi-circuit meter provides Modbus RTU communications output that communicates to each individual metered circuit. Up to 30 multi-circuit meters can be addressed on the same Modbus network. The multi-circuit meter can provide warnings to the central monitoring computer via its Modbus output using the MNode software provided or can be integrated into PowerLogic SMS software. The MCM also works with the submeter display as shown below.

Electrical Data:

Energy Consumption (kWhr), Real Power (kW), Reactive Power (kVAR), Apparent Power (kVA), Power Factor Total, Voltage, L-L, avg. of 3 phases, Voltage, L-N, avg. of 3 phases, Current, average of 3 phases, Real Power (kW) phase A, B, & C, Power Factor, phase A, B,&C, Line to Line Voltage, phase A-B, B-C, A-C, Line to Neutral Voltage, phase A-N, B-N, C-N, Current, phase A, B, & C, Frequency (measured from phase A) (Hz).

Modbus Alarms:

Over Voltage, Under Voltage, Over Current, Under Current, Over kVA, Under kVA, Phase Loss A, Phase Loss B, Phase Loss C



Description	Catalog No.
Multi-Circuit Meter 8364	MCM8364

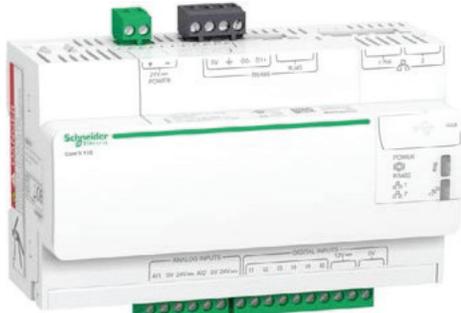
PowerLogic Submeter Display

The PowerLogic Submeter Display (SMD) is a comprehensive electrical submetering display that provides a view of electrical parameters from multiple metering products with one networked LCD. In addition to viewing system data on the display itself, you can also view data on a remote PC via a network connection. Touch pad buttons provide a convenient way to view downstream devices on the power-monitoring network. The display is RS-485 Modbus RTU compatible. It has additional RS-485 and RS-232 Modbus ports for networking to additional displays or to a master PC. The submeter display is compatible with the following metering devices: BCM, BCPM, EM3500, MCM, & Enercept™ meters.



Submeter Display

Description	Catalog No.
Submeter display mounted in enclosure	SMD
Open style submeter display, no enclosure	SMD OPN



Com'X 510 Energy Server

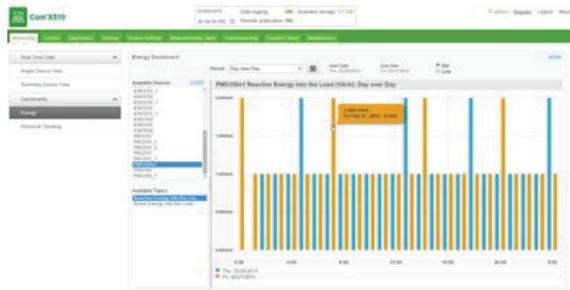
New!

Com'X Data Loggers and Energy Servers
Powerful data logging with flexible communication options

Connect your entire power system with Com'X data loggers and energy servers. Com'X surpasses conventional gateways and data loggers by incorporating multiple capabilities into one compact device. In addition to being a real-time gateway to downstream devices, Com'X logs all essential WAGES and environmental readings through a broad range of downstream data feeds and local I/O. Logged data can be automatically pushed to a hosted platform or downloaded for report generation. Ethernet and Wi-Fi ready, Com'X leverages on the building's existing IT infrastructure to reduce cost. Its GPRS capability makes it ideal for sites with no access to IT networks.

Easy configuration and commissioning

Configuration and commissioning is made easy by automatic device detection, and IP address setting and allocation. No additional software is needed for the intuitive, webbased configuration pages. A device library enables quick configuration for more than 70 Modbus devices and also provides for custom configuration of additional devices. Configuration via Wi-Fi lets technicians use tablets or notebooks to work comfortably away from switchboard rooms.



Com'X 510 Energy Dashboard

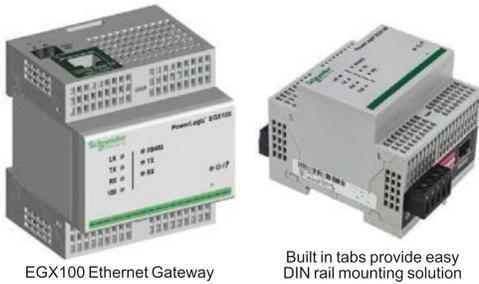
Embedded energy management software

The Com'X 510 Energy Server further includes embedded web pages that display data in a meaningful way so you can make informed decisions about your energy usage. Web pages display real-time data in easy to understand tabular and summary formats. In addition, you can access simple analysis of historical data in bar graph or trending formats. Pages are accessible via any standard web browser without plug-ins or additional components.

Com'X Data Loggers, Energy Services, and Accessories

Description	Catalog Number
Com'X210 Data logger with expandable I/O. Requires 24VDC power supply.	EBX210
Com'X510 Energy server with expandable I/O. Requires 24VDC power supply.	EXB510
Wi-Fi USB stick	EBXAUSBWIFI
Zigbee USB stick	EXBAUSBZIGBEE
GPRS modem with SIM card	EBXAGPRSSIM
GPRS modem without SIM card	EBXAGPRS
External GPRS antenna	EBXAANT5M

POWER MONITORING AND CONTROL
DE13



EGX100 Ethernet Gateway

Built in tabs provide easy DIN rail mounting solution



EGX100 lets the Administrator assign access to setup pages by user groups



EGX300 Ethernet Gateway offers you a "window" into your power equipment

Ethernet Gateways

Communications for high-speed access to critical information

From a single building to a multi-site enterprise, PowerLogic Web-Enabled Network Components provide fast, reliable serial to Ethernet connectivity in the most demanding applications:

- Energy management
- Power distribution
- Building automation
- Factory automation

PowerLogic Ethernet Gateways are available in two models-EGX100 and provide direct connection to Ethernet-Modbus™/TCP networks to make energy and power monitoring information available over local and wide area networks.

- The EGX100 provides low-cost, reliable, Ethernet to serial-line connectivity in a compact, DIN-rail mounted package. Enabled by Power over Ethernet (PoE IEEE 802.3af), the EGX100 simplifies installation by eliminating the need for power supplies plus provides a Web-based interface for configuration and diagnostics.
- The EGX300 is an integrated gateway-server that is web based with 1 serial port and has the ability to connect to an additional 32 devices remotely through Ethernet, plus log/trend historical data allowing electrical distribution systems to be better managed by utilizing Ethernet and Internet technologies.

Advantages:

- Easy to install—easy DIN rail mounting solution.
- Easy to setup—No special software required. Configuration via Microsoft Internet Explorer or Hyperterminal.
- Easy to troubleshoot—Detailed diagnostics for communication ports through a Web interface.
- Easy to maintain—Field upgradable firmware lets you add new features while reducing costly downtime.
- Secure-Customizable, password-protected access to configuration.
- Cost-effective, high-speed communications—Use existing LAN infrastructure to reduce communications wiring and network management costs.
- Open platform provides broad connectivity—Modbus TCP/IP over Ethernet allows transparent access via intranet/internet. Each gateway supports up to 32 Modbus or PowerLogic protocol devices.
- Subnet initiated communications—The gateway supports a slave mode for connecting a serial-line based system to Ethernet. For example, a building management system with a Modbus serial interface can route to 16 remote Modbus TCP/IP interfaces supporting up to 128 serial-line devices.
- Extended temperature range— -25 to 70°C enables operation in harsh environments.

Ethernet Gateways

Type	Catalog Number	EGX100	EGX300
Control Power			
24 Vdc / 7W DIN mount power supply (SOLD SEPARATE)	3090PS24		
Power Over Ethernet Injector Kit (SOLD SEPARATE)	TCSEAV0100		
Protocols			
Ethernet: HTTP, FTP, Modbus TCP/IP, SMTP, SNMP (MIB2), SNTP, TCP, UDP, ICMP, ARP		x	x
Serial: Modbus RTU, Modbus ASCII (EGX100 only), JBUS, PowerLogic (SY/MAX)		x	x
Ports			
Serial: RS485			1
Serial: RS232/485 configurable		1	1
Ethernet UTP (10/100)		1	1
Fiber (100 Mb)			1
Integral web server			
On-board web pages to view data via dashboards			x
Custom Device Type Generator for 3rd party devices			x
Maintenance/diagnostics		x	x
Gateway administration setup		x	x
Comprehensive meter reading			x
Interval logging/trends			x [6]
User defined custom pages			x
Historical Data Logging			
Interval data			x
Transfer files on an interval and periodic scheduled basis			email
Export to Excel via web query			x
Export files by e-mail, FTP, or HTTP			x

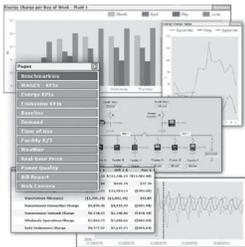
Entry-Level Energy Management in a box...

The EGX300 provides the end-user with immediate visibility into energy consumption throughout the site. As soon as the EGX300 is connected to the Local Area Network (LAN), several web pages are accessible via any standard web browser, (without plug-in or additional components).

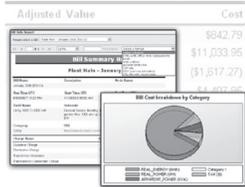
[6] Up to 64 devices total. Max 32 serially connected.

Power Monitoring & Control

PowerLogic® ION EEM Enterprise Energy Management Software



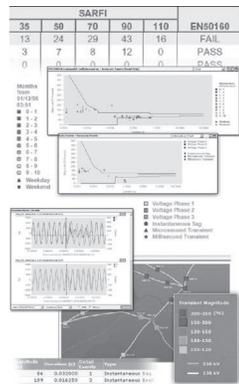
Personalized dashboards help management and operations personnel monitor all aspects of energy use and respond to opportunities or threats.



Produce aggregate billing, load profile, cost allocation, power quality, forecasting or budget reports to help inform stakeholders and track results against goals.



Use advanced billing functions to support energy procurement and manage load or generation assets in response to curtailment or pricing signals.



Monitor power quality risk factors, benchmark performance, determine impacts, validate contract compliance, isolate problem sources, and confirm your return-on-investment.

PowerLogic ION EEM is a complete enterprise energy management solution that unites business and energy strategies across your entire enterprise by unifying and extending the benefits of your existing energy-related data resources. Stakeholders from management to operations will be empowered by actionable energy intelligence to reveal opportunities, isolate problems and drive cost and risk reduction strategies.

PowerLogic ION EEM automatically acquires data from power monitoring and control systems, building and process automation systems, utility information systems, weather services, spot-market energy pricing feeds, and enterprise business applications, cleanses and warehouses it. Personalized, browser-based dashboards and innovative visualization and modeling tools then make the information available to whomever needs it, so you can accurately monitor, validate, predict and control energy-related expenses.

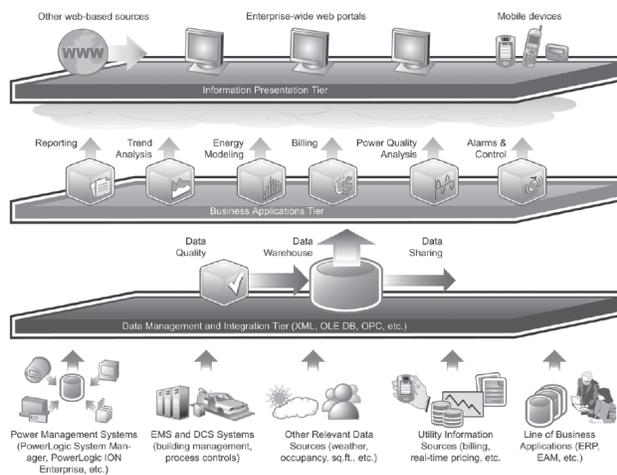
From operational cost reductions to procurement support through cost allocation, benchmarking and budgeting, key performance indicators and advanced analytics, PowerLogic ION EEM helps you manage energy in financial terms. It also helps you gain unique insight into the impacts of power quality on your business and all energy assets. From the service entrance to the boardroom, PowerLogic ION EEM software allows energy to be managed as a variable cost.

Key features

- True enterprise-level software architecture: data quality assurance, data warehouse, web framework
- Web portal: personalized dashboards, key performance indicators, charts, trends, real-time conditions
- Reporting: rich and customized content, support for complex data and graphics, scheduled distribution
- Trending: advanced visualization, dimensional analysis, prediction, statistical rollups
- Modeling: regression analysis, normalization, correlation, integration of all relevant drivers and contextual data
- Billing: built-in rate engine and rate wizard
- Power quality analysis: wide-area event monitoring, classification, filtering, correlation
- Alarms and events: triggering on complex conditions, notification, logging
- Integration: meters and other devices, weather and pricing feeds, other enterprise applications (e.g. BAC, ERP)

Typical applications

- Manage all utilities (electricity, gas, water, etc.) and emissions through a single, unified interface
- Benchmark facility performance across an entire enterprise to identify energy inefficiencies
- Measure and verify savings from energy conservation projects or performance contracts
- Reduce operational costs, improve processes, and prolong asset life
- Meet corporate environmental stewardship goals or mandated impact targets
- Manage demand control schemes, load shedding, peak shaving, base loading or on-site generation
- Enable participation in real-time pricing and load curtailment programs
- Optimize procurement by forecasting and budgeting for energy needs and comparing utility rates
- Identify utility billing errors and validate contract compliance
- Allocate and recover utilities costs from tenants, departments, processes, etc.
- Maximize the use of existing infrastructure capacity and avoid overbuilding
- Identify and reduce risks to uptime



Data presentation tier

Web portal delivers enterprise-wide access through personalized dashboards, reports, detailed analytics, and integration of views from third-party systems. Information and alerts via cell phone, PDA, pager and more.

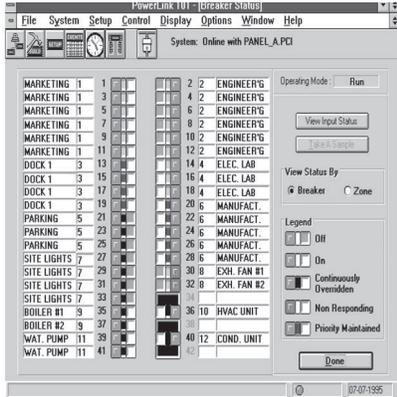
Business applications tier

Standard and optional modules tailor functionality to specific needs. Advanced analytics and reporting on every driver and relationship affecting energy cost and reliability.

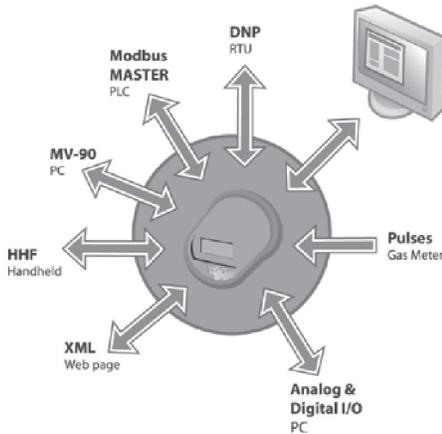
Data management tier

Integration of data from many sources: power monitoring and control systems (PowerLogic or third party), utility metering systems (water, air, gas etc.), Internet weather, real-time energy pricing feeds, manual input, energy assets (power distribution and reliability equipment, generators), line-of-business systems (BAC, DCS, ERP, EAM, accounting). Data quality module assures complete and reliable data from all inputs.

For price and ordering information, contact your local PowerLogic Sales Specialist or PowerLogic Inside Sales at 1-866-466-7627.

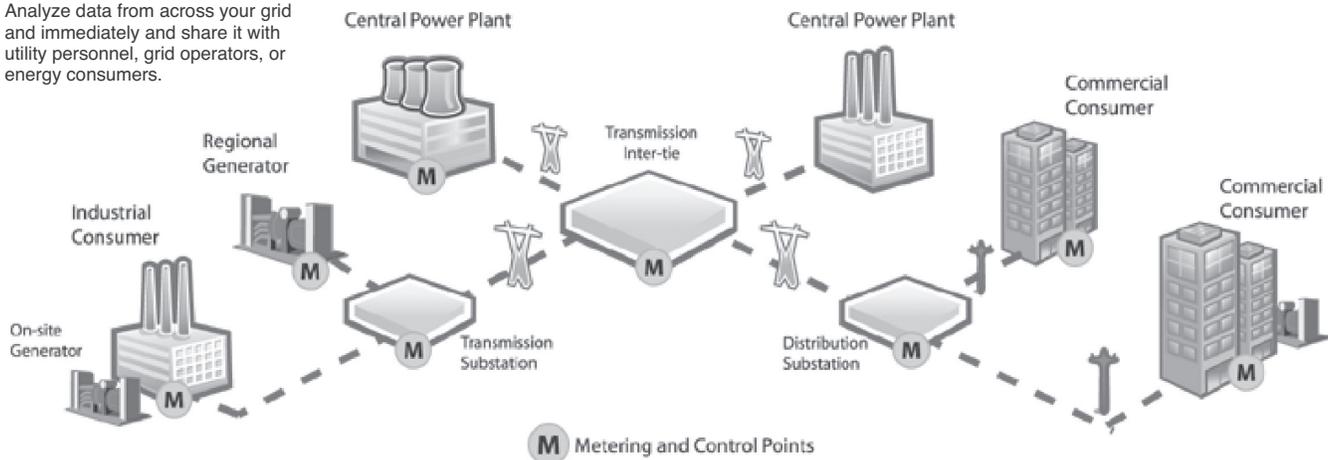


With the flexibility of ION technology, multiple form factors, extensive I/O, and an unmatched feature set, the PowerLogic ION8600 is a powerful device in substation automation, SCADA, and billing applications.



Multi-port, (serial, optical, internal modem, Ethernet) plus multi-protocol communications (Modbus RTU, Master, Slave, DNP 3.0, Modbus TCP) and a unique gateway capability provide industry leading integration capability

Analyze data from across your grid and immediately and share it with utility personnel, grid operators, or energy consumers.



PowerLogic Solutions for Utilities

Schneider Electric PowerLogic delivers complete, cutting-edge web-enabled solutions for many of the utility industry's most demanding metering, billing and information management challenges. For many years, regulated utilities, ESCOs and deregulated energy providers have utilized our proven, scalable meters and software to obtain the accurate, real-time information they need to meet their organization's business goals.

Cost-effective PowerLogic systems enable energy providers to:

- Maximize competitiveness, increase reliability, streamline operations, and improve service
- Manage wholesale energy transactions across wide geographical areas
- Provide value-added services that enhance customer relationships
- Improve revenue metering, billing accuracy and ensure and report on regulatory compliance
- Provide key personnel with energy information to make analytical and strategic business decisions, optimize distribution assets, and profit from free market opportunities

PowerLogic's advanced revenue meters are high quality, flexible and scalable devices that offer a combination of capabilities unmatched in the industry. Whether integrated with third-party systems or combined with compatible PowerLogic software, Schneider Electric can help utilities address:

- **Transmission grid and revenue metering**
PowerLogic provides high-accuracy meter information for grid-wide billing applications and offers MV-90 support and integration into SCADA.
- **Substation monitoring**
A PowerLogic solution provides the tools to protect valuable equipment from faults, disturbances, and overloading.
- **Power quality analysis**
Waveform recording, transient detection, sag/swell, symmetrical components and many more additional capabilities are available when combined with PowerLogic ION Enterprise software.
- **Service entrance metering**
The PowerLogic ION8600 billing meter can be used to manage electricity contracts for energy suppliers and consumers, plus web reporting, sub-metering services, load management and much more.
- **Demand response and load curtailment**
PowerLogic meters and software can also be used as part of a demand response/load curtailment system.

Schneider Electric PowerLogic utility solutions resist obsolescence and are engineered to provide fast payback and easy scalability so you can add metering points and communications channels as your organization evolves.



Energy Action

With a comprehensive energy strategy, escalating energy prices don't have to be a roadblock to industrial growth. As part of Schneider Electric's power application engineering portfolio that targets improving energy efficiency, Energy Action is a consultative service consisting of our Professional Engineers who work with you to ensure the success of your energy strategy. With the development of an Energy Action Plan tailored for your site, we evaluate energy opportunities for system optimization in the following areas:

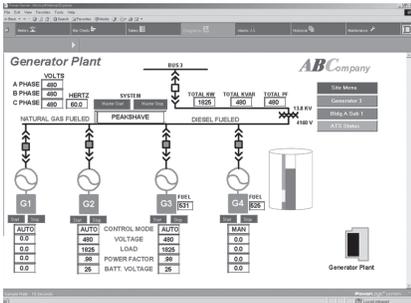
- Lighting
- Motor Application
- Process Cooling
- Alternative Fuels
- Power Generation
- Chilled Water
- Refrigeration
- Demand Control
- Ventilation
- Air Handling
- Compressed Air
- Heat Recovery Application
- Process Heating

We're confident that together, we will reduce the total cost of energy at your facility. Take the logical next step in energy efficiency with the most trusted name in the power industry for over 100 years.

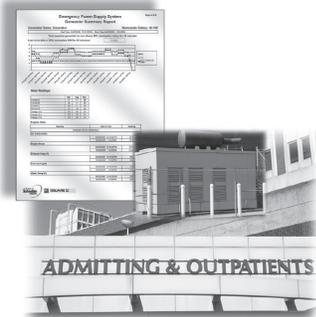
Power System Automation

Avoid high energy cost associated with peak demands

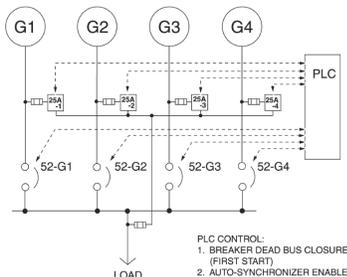
- Reduce loading requirements to match generator supply
- Shed non-essential loads while maintaining critical processes and lighting requirements
- Retrofit existing generator equipment for peak shaving
- Generate revenue possibilities, export power to the utility during peak periods
- Verify generator performance and ATS status
- Record Sequence of Events to 1 ms for root cause analysis
- Automate existing equipment to seek the utility source, control breakers, and keep the electrical system operational



PowerLogic Engineers provide graphic solutions for realtime monitoring of power systems.



PowerLogic Engineers specialize in the



PowerLogic Engineers design power control systems that meet your operational requirements.

Utility Cost Reduction	Power System Reliability
LOAD CONTROL SYSTEMS Load shedding and sequencing	EMERGENCY POWER SUPPLY SYSTEMS (EPSS) Automatic Generator testing and report generation
GENERATOR CONTROL Peak shaving Import/export <ul style="list-style-type: none"> • Load following (utility base loading) • Generator base loading 	ATO (Automatic Throw Over) SYSTEMS Utility to Utility <ul style="list-style-type: none"> • Main-Tie-Main • Main-Main • Open and closed transition Utility to Generator <ul style="list-style-type: none"> • Basic ATS control with breakers • Momentary Closed Transition • Extended Closed Transition (ramped load control) • Maintained Parallel Operation (Import/Export Control)
ENERGY BILLING & COST ALLOCATION	LOAD PRESERVATION SYSTEMS High speed load shed Pre-armed load shed schemes
LIGHTING CONTROLS	SEQUENCE OF EVENTS RECORDING (SER) GPS Time synchronization of events

For additional information, contact your nearest Schneider Electric Services and Projects.

System Integration

Power Management Services provides a complete range of design and operational services including specifying, developing, installing, commissioning, supporting and training users of power monitoring and control systems and remote power switching systems. Engineers maintain expertise in many areas such as communications, personal computers, protective relaying, automatic control systems and programmable controllers.

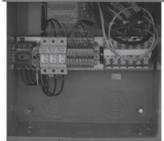
- System Design and Bill of Material Recommendations
- Power Monitoring and Control
- WAGES (Water, Air, Gas, Electric, Steam)
- Enterprise web-based monitoring
- Specification development, drawings, documentation
- Enclosure panel design and build
- Metering Connection Verification/Testing
- Power distribution automation
- On-Site Installation Assistance, Component Configuration & Startup
- Turn-key project management
- Third Party Device and communication interfaces
- Configured Workstations, User Software Interfaces
- Interactive Graphic Design to mimic facility layout, one-lines, equipment status
- Custom Software, Reports & Applications – Billing and Paging

For additional information, contact your nearest Schneider Electric Services and Projects.

POWER MONITORING AND CONTROL DE13

Power Monitoring & Control

Schneider Electric Services and Projects Engineering Services



Factory Assembled Enclosures

PMO Engineering Services provides a variety of factory assembled enclosures designed for a wide range of power monitoring and control applications. Professional workmanship and layout offer speed and flexibility during installation. Factory tested, pre-wired enclosures with well marked terminals help avoid wiring errors and needless troubleshooting during installation.

- Assemblies include meters & devices wired to terminal blocks, disconnects and shorting blocks
- Tailored to any system voltage :
 - 120/208V, 277/480V & 347/600V Wye
 - 240V, 480V & 600V Delta
 - Utilization of PT's required for higher voltage levels
- Wall mountable and easy to install using concealed holes in the back of the enclosure.
- Complete with necessary documentation and mounting hardware for quick and easy installation
- Carbon steel construction, with industry standard ANSI 61 gray powder coat finish
- Equipped with concealed hinged door, and universal pad-lockable latch.
- Custom engraved nameplates available for all units.

Industrial Enclosure Types 1 & 4 L & C L A Listed

Available Meter Types	Digital Inputs	Digital Outputs	Analog Inputs	Analog Outputs
PM 820, 850 & 870 CM 4000T ION 6200	Up to 11 / Meter Up to 8 / Meter N/A	Up to 7 / Meter Up to 7 / Meter Up to 2 / Meter	Up to 2 / Meter Up to 1 / Meter N/A	Up to 2 / Meter Up to 1 / Meter N/A
ION 7330 & 7350 ION 7550 & 7650	Up to 4 / Meter Up to 16 / Meter	Up to 4 / Meter Up to 7 / Meter	Up to 4 / Meter Up to 4 / Meter	Up to 4 / Meter Up to 4 / Meter

- Supports Single or Multiple Voltage Sources for Indoor (Type 12) & Outdoor (Type 4) applications
- Available with 1 - 4 meters per panel. Serial & Ethernet Communications are options for all units
- EGX & ION RTU Communication Enclosures with 1-4 devices per panel also available

Commercial Enclosure Type 1 L & C L A Listed

- Available for the following meter types: PM210, PM710, PM820, and ION6200
- Supports Single Voltage Source only for Indoor (Type 1) applications.
- Available with 1 - 12 meters per panel. Serial Communications are standard for all units.
- No Digital or Analog I/O is available for this option.

Industrial Utility Socket Enclosure Type 3R L & C L A Listed

- Available for ION8600 only, with up to 3 Digital Inputs and 4 Digital Outputs
- Supports Single Voltage Source only for Indoor & Outdoor (Type 3R) applications.
- Units are Ring Type with removable cover.
- Available with 1 meter per panel. Serial & Ethernet Communications options available.
- Supports Form 9S, 35S, 36S, 39S and 76S configurations.
- Options available for remote mounted CTs
- Options available for integrated, bar type CTs
- Optional Test Switch.

Additional engineered to order products are available for a wide variety of custom applications

- Touch Screen, PC & Server Cabinets
- Generator Control Panels
- PLC Controls & I/O Status Panels
- Retrofit Mechanical Meter Draw Out Cradles with PM and ION Digital Meters
- Communication & Gateway Panels
- Switchgear Automatic Transfer Control Panels
- Water, Air, Gas & Steam (WAGES) Panels

For additional information and pricing please contact your local PowerLogic sales specialist or PowerLogic Inside Sales Support at 1-800-441-4444. Enclosure pricing and literature available for download on our website at www.powerlogic.com

To better serve you please have the following information on hand when calling

- Enclosure type (Indoor or Outdoor) and Environment details (Corrosive or Non-Corrosive)
- Power System Voltage Level and Type (Wye, Delta, or Single Phase)
- Meter Type and Quantity or Device Type and Quantity per enclosure
- Digital & Analog Input and Output requirements
- Ethernet and Serial Communication Requirements

What Technical Support Should Be

At Schneider Electric, we believe technical support should go beyond basic troubleshooting. We know that continued optimization and maintenance extends the life of your system and ensures it's working efficiently and effectively. Our number one priority is to help you protect your investment and get the most out of it.

The Power of Choice

Choose from a variety of service levels based on your needs and budget, and add on optional services, such as onsite maintenance or 24X7 support when you need them. No matter what level you choose, our support services are always best in class.

Premium

If you're an experienced manager with complex power management systems and/or multiple locations, you can choose Premium support and partner with a dedicated engineer to help you drive improved system performance, increase utilization and reduce total cost of ownership. This level also includes remote monitoring of your servers, periodic power system analyses, and online and in-person training.

Priority

Sign up for Priority support and benefit from the expertise of our senior technical engineers. They can remotely connect to your system and resolve issues while you observe or work on other tasks. Plus, you'll also benefit from a bi-annual power system analysis and unlimited online training.

Standard

We stand behind our products. If you have the time and knowledge to do-it-yourself, then we're happy to assist you with troubleshooting or answer your questions at no extra cost.



Add Our Energy Experts to Your Team

The right people make all the difference. Let our highly skilled energy managers and professional engineers with backgrounds in energy management, computer science, and power systems partner with your in-house staff to conduct maintenance, address alarms, and optimize your system for results you'll see from day one.

Plus, customers with Premium service enjoy support from a dedicated engineer who knows their system inside and out.

POWER MONITORING AND CONTROL
DE13



Power Monitoring & Control

PowerLogic® Support Services

You Spoke, We Listened... More Support, Better Value

We've added even more of the services you love

	Standard	Priority	Premium
Ongoing Support and Troubleshooting Enjoy peace of mind knowing superior technical support is always available			
Basic Product Support Telephone and e-mail support from 8 am – 8 pm ET	✓	✓	✓
Remote Access Troubleshooting Remote connectivity with your system to resolve issues efficiently		✓	✓
Dedicated Senior Support Engineer Senior engineer acts as a single point of contact for your site			✓
24X7 Support After-hour calls are returned within 2 hours and issues can often be resolved via a remote connection to your system		Option	Option
Robust Training Options Get the most from your system with training online, on-site or at one of our state-of-the-art training centres			
Self-Help Web Portal Web access to service packs and knowledge base	✓	✓	✓
NEW! On-Demand Training Access to 200+ self-paced learning modules		✓	✓
Factory Training Courses (Buy 1/Get 1) Purchase one course and a colleague can join you for free at our state-of-the-art training center		✓	✓
Proactive Diagnostics and Maintenance Ensure your system is functioning at peak performance and identify issues before they become problems			
Software Assurance Free license for service packs and new software releases Installation and SQL license not included		✓	✓
NEW! Power Analysis Diagnostic Report¹ (Per Year) Remote diagnostics check the health of your metering system, including configuration, CT/PT ratios, data accuracy and more <small>*Requires client assistance with metering hierarchy</small>		up to 2*	up to 4*
Real-Time Monitoring Real-time monitoring of your power management server and software alerts us to potential issues quickly			✓
Energy Management Services Work with our experts to customize and maintain your energy management system to meet your individual needs			
Custom Services and Maintenance Flexible services to use as you need including training, system configuration and customization, software upgrades and installation, system repairs and maintenance, firmware upgrades, hardware installation and more	Option	Option	Option

¹Power Analysis requires client to have PME 7.01 version or later.

Unleash Your System's True Potential

Don't get stuck in the deferred maintenance cycle. Take advantage of these proactive services to increase the reliability of your critical systems, extend the life of your equipment and improve your energy performance. You won't believe what your power management system can do with our help!

Take Monitoring Diagnostics to a New Level with Power Analysis

Power Analysis raises metering diagnostics from device-based troubleshooting to full-system analysis. Built on exclusive, patented technology, it ensures your power monitoring and control system is providing accurate data you can count on. Whether validating a new expansion or reviewing existing equipment, our experts help you understand, correct and optimize your system based on recommendations from our advanced analytics engine. Included with Priority and Premium.

Leverage Our Onsite Maintenance Program

If you're like most facility professionals, managing energy isn't your only priority. Bring our team onsite to install new equipment, troubleshoot a complex issue or simply provide regular maintenance.



Power Monitoring & Control

Sepam Series Digital Protective Relay



Series 80
Advanced Display
(A Suffix)



Series 40 or 20
Advanced Display
(A Suffix)



Series 80 Pro
Display
(P Suffix)

80, 40, and 20 Series

The Sepam family of digital protection units, Series 20, 40 and 80, is the newest generation of Sepam relay, a time tested product with a 20-year worldwide history. Modular relay design allows quick and easy future upgrades to communications, digital I/O, analog output or temperature acquisition. The 64x128 bit, graphic LCD display and keypad permit basic relay setting of Series 20 and 40 without a PC. Comprehensive self-testing provides assurance of readiness to protect. The Sepam family also has exceptional withstand to environmental electromagnetic disturbances. An optional 128 x 240 LCD display can show one-line or electrical vectors.

Quick Select Guide

		Feeder or main (Substation)	Transformer	Motor	Generator	Bus	Capacitor Bank
Network structure	Radial (51, 51N, 46)	S23	T23	M20	G40	B80	C86
	Long feeders (67N)	S41		M41			
	Closed loop (67N, 67)	S42					
	Parallel mains [transf] [sources] (67N, 67)	S42	T42		G82		
	Sync-check required (25)(67N, 67)	S82	T82		G82	B80	
Grounding system	Solid or low/high impedance (51N)	S23	T23	M20	G40		
	Ungrounded or compensated (67N/NC)	S41	T42	M41	G82		
Protection	Basic Feeder [Transf][Motor]	S23	T23	M20	G40		
	Voltage/frequency (27/59/81)	S40	T40	M41	G40	B21	
	ROCOF (81R)	S84				B22	
	Advanced Fdr/Main[Transf] [Motor][Gen]	S41	T82	M81	G82	B83	
	Thermal overload (49)-cable	S81					
	Thermal OL (49)- capacitor bank						C86
	Differential (87T)		T87				
Metering	Machine differential (87M)			M87	G87		
	Machine-transformer unit differential			M88	G88		
	I	S23	T23	M20			
Temperature	V, f					B21	
	I, V, f, P, E	S40	T40	M41	G40	B80	
	I, V, V, f, P, E					B83	
	I, I, V, F, P, E		T87	M87	G87		
	THD-I, THD-V	S80	T81	M81	G82	B80	
I/Os	<8 RTDs of same type		T23	M20	G40		
	> 8 RTDs (< 16) or 2 types of RTDs		T40	M41	G40		
Program logic customization	< 10 I / 8 O	S23	T23	M20	G40	B21	
	> 10 I / 8 O and < 42 I / 23 O	S80	T81	M81	G82	B80	
	Control matrix	S23	T23	M20	G40	B21	
Modbus communication	Logic equation editor	S40	T40	M41	G40	B80	
	Ladder-logic software	S80	T81	M81	G82	B80	
Modbus communication	1 Modbus port	S23	T23	M20	G40	B21	
	2 Modbus ports	S80	T81	M81	G82	B80	

Note: Units in table depict least complex device types compliant with criterion.

Sepam Series 80 Relay Features

- Standard footprint for enhanced protection of Mains/Feeders, Transformer, Motor, Generator, Capacitor, Bus Applications
- Differential protection of transformer or machine transformer units
- Differential protection of motors and generators
- Protection for mains and ties and important feeders including pre-programmed transfer schemes
- Increased metering capabilities I, V, E, P, PF, THD, vector diagram
- Expanded logic equation capabilities (an option for Logipam PLC ladder logic)
- Setting software with graphical assistance, opt mimic-based display
- Battery backup for historical and fault waveform data retention, wide range DC control power
- Two rear communication interfaces
- Includes all Series 20 and Series 40 features

Sepam Series 40 Relay Features

- Compact standard footprint (< 4" deep) for enhanced protection of Mains/Feeders, Transformer, Motor, Generator Applications
- Directional overcurrent protection for dual mains and ties and closed loop feeders
- Current and voltage inputs I, V, E, P, PF
- Setting software with Boolean logic equation assistance
- CT/VT and Trip Circuit supervision
- Sixteen seconds of fault recording, last 5 trip reports, and last 200 time-tagged alarms
- Rear communication port for interface to optional Modbus® communications modules
- Includes all Series 20 features

Sepam Series 20 Relay Features

- Backlit LCD graphic bitmap display
- Compact standard footprint (< 4" deep) for basic protection of Mains/Feeders, Transformer, Motor, Bus (Voltage) Applications
- 16 inverse time overcurrent characteristic curves
- Setting software with offline file creation and download to relay
- Two 86 cycle records of fault recording, last trip fault values, and last 64 time-tagged alarms retained
- Provides trip diagnostic information for analysis of faults
- Self-test diagnostic ensures correct operation of relay and integrity of protection
- Wide range of control power inputs
- Display operation minimal training required for operation.
- Application specific design for Main/Feeder, Transformer, Motor, Bus (Voltage) zones
- Zone selective interlocking (ZSI) improved protection coordination
- Rear communication port for interface to optional Modbus communications modules, plus dual port module, opt protocols DNP3 and IEC60870-5-103, and also F/O
- Modular architecture
- Breaker diagnostics

Series 80 Applications

Protection	Application ANSI Code	S80	S81	S82	S84	T81	T82	T87	M81	M87	M88	G82	G87	G88	B80	B83	C86
Phase overcurrent▲	50/51	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
Ground fault / Sensitive ground fault▲	50N/51N 50G/51G	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
Breaker failure	50BF	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Negative sequence / unbalance	46	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Thermal overload for cables	49RMS		2	2	2												
Thermal overload for machines▲	49RMS					2	2	2	2	2	2	2	2	2			
Thermal overload for capacitors	49RMS																2
Capacitor bank unbalance	51C																8
Restricted ground fault	64REF					2	2	2				2		2			
Two-winding transformer differential	87T							1			1			1			
Machine differential	87M								1				1				
Directional phase overcurrent▲	67			2	2		2	2				2	2	2			
Directional ground fault▲	67N/67NC		2	2	2	2	2	2	2	2	2	2	2	2			
Directional active overpower	32P		2	2	2	2	2	2	2	2	2	2	2	2			
Directional reactive overpower	32Q								1	1	1	1	1	1			
Directional active underpower	37P				2							2					
Phase undercurrent	37								1	1	1						
Excessive starting time, locked rotor	48/51LR								1	1	1						
Starts per hour	66								1	1	1						
Field loss (underimpedance)	40								1	1	1	1	1	1			
Pole slip	78PS								1	1	1	1	1	1			
Overspeed (2 set points)■	12								▼	▼	▼	▼	▼	▼			
Underspeed (2 set points)■	14								▼	▼	▼	▼	▼	▼			
Voltage-restrained overcurrent	50V/51V											2	2	2			
Underimpedance	21B											1	1	1			
Inadvertent energization	50/27											1	1	1			
Third harmonic undervoltage/100% stator ground fault	27TN/64G2/64G											2	2	2			
Overfluxing (V / Hz)	24							2				2	2	2			
Positive sequence undervoltage	27D	2	2	2	4	2	2	2	2	2	2	2	2	2	4	4	4
Remanent undervoltage	27R	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Undervoltage (L-L or L-N)	27	4	4	4	2	4	4	4	4	4	4	4	4	4	2	2	2
Overvoltage (L-L or L-N)	59	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Neutral voltage displacement	59N	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Negative sequence overvoltage	47	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Overfrequency	81H	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Underfrequency	81L	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Rate of change of frequency	81R				2												
Recloser (4 cycles)■	79	▼	▼	▼	▼												
Thermostat / Buchholz■	26/63					▼	▼	▼	▼		▼	▼		▼			
Temperature monitoring (16 RTDs)◆	38/49T					▼	▼	▼	▼	▼	▼	▼	▼	▼			▼
Synchronism-check★	25	▼	▼	▼	▼	▼	▼	▼				▼	▼	▼	▼	▼	

Series 40/20 Applications

Protection	Application ANSI Code	S23	S40	S41	S42	T23	T40	T42	M20	M41	G40	B21	B22
Phase overcurrent▲	50/51	4	4	4	4	4	4	4	4	4	4		
Voltage-restrained overcurrent	50V/51V										1		
Ground fault / Sensitive ground fault▲	50N/51N 50G/51G	4	4	4	4	4	4	4	4	4	4		
Breaker failure	50BF	1	1	1	1	1	1	1	1	1	1		
Negative sequence / unbalance	46	1	2	2	2	2	1	2	2	1	2	2	
Directional phase overcurrent▲	67				2			2					
Directional ground fault▲	67N/67NC			2	2						2		
Directional active overpower	32P			1	1						1	1	
Directional reactive overpower	32Q/40										1	1	
Thermal overload▲	49RMS					2	2	2	2	2	2		
Phase undercurrent	37								1	1			
Excessive starting time, locked rotor	48/51LR/14								1	1			
Starts per hour	66								1	1			
Positive sequence undervoltage	27D/47											2	2
Positive sequence undervoltage	27D									2			
Remanent undervoltage	27R									1		1	1
Phase-to-phase undervoltage	27											2	2
Phase-to-neutral undervoltage	27S											1	1
Undervoltage◆	27/27S		2	2	2		2	2		2	2		
Overvoltage◆	59		2	2	2		2	2		2	2	2	2
Neutral voltage displacement	59N		2	2	2		2	2		2	2	2	2
Negative sequence overvoltage	47		1	1	1		1	1		1	1		
Overfrequency	81H		2	2	2		2	2		2	2	1	1
Underfrequency	81L		4	4	4		4	4		4	4	2	2
Rate of change of frequency	81R												1
Recloser (4 cycles)■	79	▼	▼	▼	▼								
Thermostat / Buchholz	26/63					▼	▼	▼	▼	▼	▼		

Note: Numerals in table indicate number of protection setpoints

- ▲ Protection functions with 2 groups of settings
- Requires MES120 I/O module
- ◆ Requires MET1482 RTD Input module
- ★ Requires MCS025 synch check module
- ▼ Option

Power Monitoring & Control

Sepam Series Pricing and Accessories

List Price by Catalogue Number

Model	Application	Catalogue No.	Price	Model	Application	Catalogue No.	Price	
Series 80	S80 - Substation/feeder [current & voltage]	SQ1S80A▲		Series 40	S40 - Substation/feeder [current & voltage]	SQ1S40A		
	S81 - Substation/feeder [directional grd O/C]	SQ1S81A			S41 - Substation/feeder [directional grd O/C]	SQ1S41A		
	S82 - Substation/feeder [directional ph & grd O/C]	SQ1S82A			S42 - Substation/feeder [directional ph & grd O/C]	SQ1S42A		
	S84 - Substation/main [separation/ load shed]	SQ1S84A			T40 - Transformer [current & voltage]	SQ1T40A		
	T81 - Transformer [current & voltage]	SQ1T81A			T42 - Transformer [Dir. Ph & Grd O/C]	SQ1T42A		
	T82 - Transformer [Dir. Ph & Grd O/C]	SQ1T82A			M41 - Motor [Dir. Grd O/C]	SQ1M41A		
	T87 - Transformer [Diff.-2 wdg]	SQ1T87A			G40 - Generator [Dir. Real & Reac Power, Volt-Restr O/C]	SQ1G40A		
	M81 - Motor [Dir. Grd O/C]	SQ1M81A						
	M87 - Motor [Mach. Diff.]	SQ1M87A			Series 20	S23 - Substation/feeder [breaker failure]	SQ1S23A	
	M88 - Motor [Transf. Diff.]	SQ1M88A				T23 - Transformer [breaker failure]	SQ1T23A	
	G82 - Generator [Dir. Watt & Var, Volt-Restr O/C]	SQ1G82A				M20 - Motor	SQ1M20A	
	G87 - Generator [Mach diff]	SQ1G87A				B21 - Bus (Voltage/Freq)	SQ1B21A	
	G88 - Generator [Transf diff]	SQ1G88A		B22 - Loss of Mains (Voltage/Freq/ROCOF)		SQ1B22A		
	B80 - Bus [Main+1ph volt]	SQ1B80A						
	B83 - Bus [Tie +3ph volt]	SQ1B83A						
	C86 - Capacitor [4 step 2xWye banks]	SQ1C86A						

▲ Replace "A" suffix with "P" to select the "Pro" version mimic display.

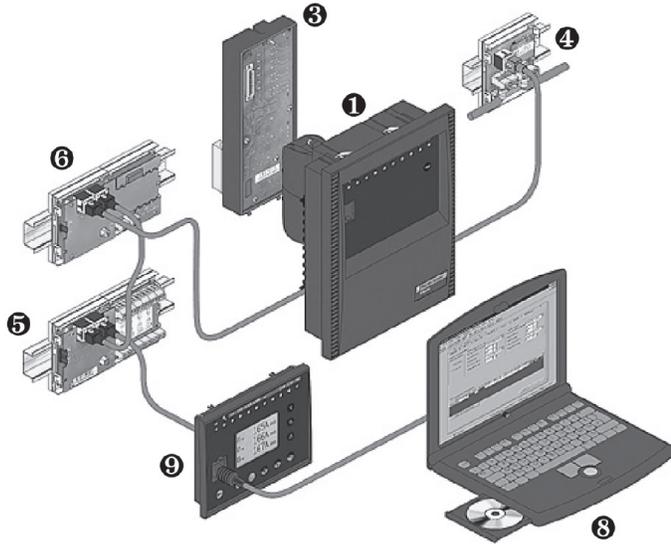
Series 80+40+20 Accessory List

Accessory Type	Series 80	Series 40/20	Catalogue No.	Description	Price
Digital I/O Module	x		MES120	14 inputs + 6 outputs / 24-250Vdc	
	x		MES120G	14 inputs + 6 outputs / 220-250Vdc/hi p.u.	
	x		MES120H	14 inputs + 6 outputs / 110-125 Vdc/hi p.u.	
		x	MES114	10 Input / 4 output module	
		x	MES114E	10 inputs + 4 outputs 110/125V	
		x	MES114F	10 inputs + 4 outputs 220/250V	
Communication I/F Module	x	x	ACE959	RS485 4-wire Interface Module (requires ext. 24VDC control pwr)	
	x	x	ACE9492	RS485 2-wire Interface Module (requires ext. 24VDC control pwr)	
	x	x	ACE937	Fiber optic Interface Module	
	x	x	ACE969TP	(2)RS485 2wire I/F	
	x	x	ACE969FO	(1) RS485 2wire + (1) F/O I/F	
Analog I/O module	x		MCS025	Synch check module (includes cable CCA785)	
	x	x	MET1482	8 temperature sensor input module	
	x	x	MSA141	Analog output module	
	x	x	DSM303	Remote advanced MMI (requires cable CCA77x see below)	
	x		SFT080	Logipam plc logic software	
	x		AMT840	Assembly plate for surface mounting of MCS module	
Analog I/O Cables	x	x	CCA770	2ft cable from remote display to base unit	
	x	x	CCA772	2m cable from remote display to base unit	
	x	x	CCA774	4m cable from remote display to base unit	
Ground Sensor CTs (mV out)	x	x	CSH30	Interposing window CT for Residual current input	
	x	x	CSH120	Ground Sensor CT - 120 mm window	
	x	x	CSH200	Ground Sensor CT - 200 mm window	
	x	x	ACE990	Aux. CT for Ground Sensor CT Ratio Adjustment (for retrofit)	
Configure software ♦	x	x	SFT2841KIT	Setting/operating software kit (including SFT2826 osc s/w+CCA783 cable)	
Selected spares ★	x	x	2640KIT	Terminal blocks for MES modules	
	x	x	CCA634	1 or 5 A CT Current Connector	
	x	x	CCT640	Voltage Connector	
	x	x	CCA612	Cable for communication module to relay connection	
	x	x	CCA783	Cable for pc to relay connection	
	x		CCA785	MCS025 cable	
		x	CCA670	LPCT Current Connector	
	x		CCA671	LPCT Current Connector	

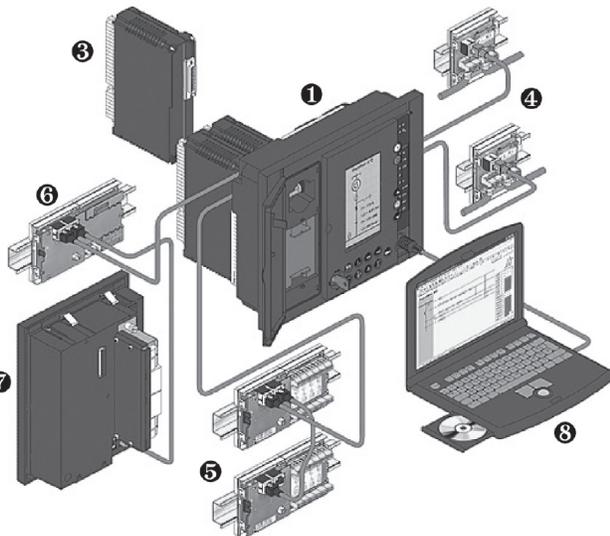
■ Includes CCA612 cable to relay rear port

♦ One s/w kit required per Series 80 order and recommended per Series 40/20 order

★ To be ordered as spare or replacement



Series 20 and Series 40



Series 80

- 1 Base Unit ▼
- 2 Parameter and protection settings saved on removable memory cartridge (Series 80 only)
- 3 42 logic inputs and 23 relay outputs, with 3 optional modules. (Series 80): 10 logic inputs and 8 relay outputs with optional module (Series 20/40)
- 4 Connection to communication networks
- 5 Temperature sensors
- 6 Low-level analog output
- 7 Synchro-check module (Series 80 only)
- 8 Software tools
- 9 Remote display ▼

▼ Remote Display for use with "Basic" Base Units
-- contact local sales office

Selection Example

Follow these steps:			Example:			
Selection Sequence	Type Part	QTY	Catalogue No.	Description	Price	
[1]	Select from Table 4.35 per system, features Table 4.32 & 4.33/4.34	Relay unit	1	SP1T87A	T87- Transformer [Diff.-2 wdg]	
[2]	Spare by application	Memory module	0	MMS020xxx	Spare memory module	
[3]	Select from Table 4.36 (as required)	Digital I/O	1	MES120	14 inputs + 6 outputs / 24-250Vdc	
[4]	Select from Table 4.36 (as required)	Communication module	1	ACE959	RS485 4-wire Interface Module I	
[5]	Select from Table 4.36 (as required)	RTD Input	1	MET1482	8 temperature sensor input module	
[6]	Select from Table 4.36 (as required)	Analog output	0	MSA141	Analog output module (1 channel)	
[7]	Select from Table 4.36 (as required)	Sync check (25) module	1	MCS025	Synch check module (includes cable CCA785)	
[8]	Select from Table 4.36 (as required)	Config S/W	1	SFT2841KIT	Setting / operating software kit	
[9]	Select from Table 4.36 (as required)	Cable for RTD I/F Module	1	CCA772	2m cable from remote display to base unit	