Power Monitoring & Control

Table of Contents

<table>
<thead>
<tr>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PowerLogic® Energy and Power Management Systems</strong></td>
<td></td>
</tr>
<tr>
<td>Introduction</td>
<td>13-2, 13-3</td>
</tr>
<tr>
<td>PowerLogic ION Enterprise Operations Software Overview</td>
<td>13-4</td>
</tr>
<tr>
<td>PowerLogic ION Enterprise Software Ordering Information</td>
<td>13-5</td>
</tr>
<tr>
<td>PowerLogic ION Power and Energy Meters</td>
<td>13-6</td>
</tr>
<tr>
<td>ION8600</td>
<td>13-6</td>
</tr>
<tr>
<td>ION7550/7650</td>
<td>13-6</td>
</tr>
<tr>
<td>ION7350/7330/7300</td>
<td>13-7</td>
</tr>
<tr>
<td>ION6500</td>
<td>13-7</td>
</tr>
<tr>
<td>PowerLogic ION Enterprise Energy Management Software Overview</td>
<td>13-8</td>
</tr>
<tr>
<td>PowerLogic詞Monitor and Power Meter Selection</td>
<td>13-8</td>
</tr>
<tr>
<td>PowerLogic Metering</td>
<td>13-9</td>
</tr>
<tr>
<td>Series 800 Power Meter</td>
<td>13-9</td>
</tr>
<tr>
<td>Series 3000 Circuit Monitor</td>
<td>13-9</td>
</tr>
<tr>
<td>Series 4000 Circuit Monitor</td>
<td>13-10</td>
</tr>
<tr>
<td>PowerLogic Submetering</td>
<td>13-11</td>
</tr>
<tr>
<td>Energy Meter</td>
<td>13-11</td>
</tr>
<tr>
<td>Enercept® Meter</td>
<td>13-11</td>
</tr>
<tr>
<td>Split Core Current Transformers</td>
<td>13-12</td>
</tr>
<tr>
<td>Branch Current Monitor</td>
<td>13-12</td>
</tr>
<tr>
<td>Multi-Circuit Meter</td>
<td>13-13</td>
</tr>
<tr>
<td>Submeter Display</td>
<td>13-13</td>
</tr>
<tr>
<td>PowerLogic ION EEM Enterprise Energy Management Software</td>
<td>13-14</td>
</tr>
<tr>
<td>PowerLogic Solutions for Utilities</td>
<td>13-15</td>
</tr>
<tr>
<td>PowerLogic Energy Profiler Online</td>
<td>13-16</td>
</tr>
<tr>
<td>Web-Enabled Network Components</td>
<td>13-17</td>
</tr>
<tr>
<td>Ethernet Gateways</td>
<td>13-17</td>
</tr>
<tr>
<td>Web Page Generator</td>
<td>13-17</td>
</tr>
<tr>
<td>Engineering Services</td>
<td>13-18</td>
</tr>
<tr>
<td>Consulting &amp; Analysis</td>
<td>13-19</td>
</tr>
<tr>
<td>Energy Action</td>
<td>13-19</td>
</tr>
<tr>
<td>Power System Automation</td>
<td>13-19</td>
</tr>
<tr>
<td>System Integration</td>
<td>13-19</td>
</tr>
<tr>
<td>Factory Assembled Enclosures</td>
<td>13-20</td>
</tr>
<tr>
<td>Technical Support</td>
<td>13-21</td>
</tr>
<tr>
<td>Power Management University</td>
<td>13-21</td>
</tr>
<tr>
<td><strong>Sepam Digital Protective Relays</strong></td>
<td></td>
</tr>
<tr>
<td>Series 80, 40 &amp; 20 Features</td>
<td>13-22</td>
</tr>
<tr>
<td>Series 80, 40 &amp; 20 Applications</td>
<td>13-23</td>
</tr>
<tr>
<td>Series 80, 40 &amp; 20 Pricing and Accessories</td>
<td>13-24</td>
</tr>
<tr>
<td>Selection Example</td>
<td>13-25</td>
</tr>
</tbody>
</table>
Icebergs. Typically, we think of them as huge peaks rising above the water. In reality, the majority of an iceberg is actually under the water, out of view. Utility savings at most facilities can be thought of in much the same way.

Think of your utility bills as being the peak, easy to see every month. By simply installing a PowerLogic energy and power management system, you can realize a 2–4% savings—but that’s just the “tip of the iceberg” in terms of your potential savings.

The majority of savings, using a PowerLogic system, can be derived by looking beyond a utility bill—or below the surface. An additional 2–5% can be saved through better equipment utilization and avoiding unnecessary capital purchases.

Another 10% can be found in power system reliability. PowerLogic systems give you the power to achieve this kind of savings, resulting in a quick return on your investment.

At Schneider Electric, we pride ourselves on reliable products, innovative systems, expert engineering services, and our ability to provide single-source energy and power management solutions. It’s not just a concept to us, it’s a legacy and a promise—for companies that seek an edge in productivity. That’s why leaders turn to Schneider Electric.
The New PowerLogic System

As the key component of Schneider Electric’s smart energy efficiency offering, the Schneider Electric PowerLogic system now consists of the most complete energy and power management portfolio available.

Backed by experienced power system experts, and offering the most comprehensive range of technical support and engineering services, we are ready to handle your energy efficiency and reliability challenges. Our recent acquisition of Power Measurement has both doubled our resources and increased the breadth of needs that can be solved by leading-edge Schneider Electric PowerLogic solutions. Our total solution approach includes a range of products from simply configurable to highly flexible with ION® technology options for building and customizing solutions for your business.

The PowerLogic system acts like a layer of energy and power intelligence across all of your power equipment and piped utility assets, helping you meter and monitor all types of energy and, in turn, reduce energy costs, optimize equipment utilization and improve system reliability performance.

A tightly integrated network of software and meters can span a single facility or an entire multi-site enterprise. The system monitors key points from the circuit breaker and equipment throughout the power delivery chain, 24 hours a day, from generators and substations to service entrances, mains, feeders and individual branch circuits.

At the administrative level, PowerLogic acts as a web portal, delivering timely, relevant information to anyone that needs it, anywhere they are. Advanced analytic tools enable effective decisions, while coordinated control capabilities help you act on them. Together, this represents a fast and quantifiable return on investment.

The PowerLogic Advantage

Schneider Electric has decades of experience in delivering energy and power management solutions to thousands of customers, including most of the Fortune 500. We are a complete single-source provider that can fully integrate energy and power management with power distribution and automation solutions.

• PowerLogic is innovative technology featuring enterprise-level features such as energy modeling, web-enabled communications and the world’s most advanced line of energy and power quality instrumentation.

• PowerLogic supports industry standards, including accuracy certifications, power quality compliance standards, and measurement and verification protocols.

• PowerLogic is scalable: take advantage of modular applications and hardware to add or upgrade components easily and affordably.

• PowerLogic fits perfectly with other business, automation, metering or billing systems.

• PowerLogic represents a low cost of installation and ownership, systems are cost-effective, feature-rich, easy to use, and supported by extensive services that ensure you get the most from your solution.

Reduce Energy Costs  Optimize Equipment  Improve System Reliability  Your ROI Solution Partner
Power Logic ION Enterprise Operations Software is an all-in-one package for operational power system monitoring, analysis and control that helps you reduce energy-related costs. It offers control capabilities, comprehensive power quality and reliability analysis and helps reduce energy-related costs. This software is a suite of applications that allows you to collect, process, analyze, store, and share data across your entire enterprise. PowerLogic ION Enterprise software is designed to give you the information and analysis tools you need to make sound decisions. Its cutting-edge flexibility and compatibility allow you to extend your energy management system at your own pace, adding newer components as they become available, without disturbing or compromising existing functionality. PowerLogic ION Enterprise software is available through direct Ethernet, modem or Ethernet links and can manage a single site or, through the Internet, connect a global network of devices.

Interface to existing software systems and integrate third-party equipment, leveraging support for a variety of industry-standard protocols. ION Enterprise also enables you to access information from any desktop, locally or around the world, in the format you need. Control of your system is always within easy reach. Thanks to patented ION technology, you get out-of-the-box usability, plus you can quickly add or rearrange functions with drag-and-drop icons and a few clicks of a mouse.

PowerLogic ION Enterprise Operations Software is ideal for energy suppliers and energy consumers and provides powerful tools for:

- Power quality and reliability analysis
- Load studies and circuit optimization
- Demand and power factor control
- Equipment monitoring and control
- Preventative maintenance
- Cost allocation and billing

Respond to notifications, click an indicator to retrieve the time, location, and nature of the event. Click again to study tolerance curves, waveforms, or a report. Control loads, generation, and power quality mitigation equipment. Optimize switching with the latest status and base loading data. Allocate costs, consolidate billing or negotiate contract volume pricing. Assure compliance with PQ standards and verify operational progress.
### PowerLogic ION Enterprise Software Ordering Information

<table>
<thead>
<tr>
<th>Description</th>
<th>Catalogue No.</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Core Software Products</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ION Enterprise Base software</td>
<td>IONE55BASE</td>
<td></td>
</tr>
<tr>
<td>ION Enterprise Device license (for 100+ devices, please call the factory for volume pricing)</td>
<td>IONE56DL</td>
<td></td>
</tr>
<tr>
<td>ION Enterprise Client license</td>
<td>IONE56CL</td>
<td></td>
</tr>
<tr>
<td>OPC Server support for ION Enterprise</td>
<td>IONEOPCV1</td>
<td></td>
</tr>
<tr>
<td>SQL Server 2005 bundle option (IC and 1-FU license)</td>
<td>IONESQL2005</td>
<td></td>
</tr>
<tr>
<td>SQL Server 2005 additional CPU license</td>
<td>IONESQL2005CPU</td>
<td></td>
</tr>
<tr>
<td>Upgrades from PowerLogic ION Enterprise 5.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ION Enterprise Device upgrade</td>
<td>IONE56DLUPG</td>
<td></td>
</tr>
<tr>
<td>ION Enterprise Client license upgrade</td>
<td>IONE56CLUPG</td>
<td></td>
</tr>
<tr>
<td>Related Items</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ION Enterprise 5.5 Software Documentation Binder</td>
<td>IONE55DOC</td>
<td></td>
</tr>
<tr>
<td>ION Enterprise 5.5 Administrator Guide</td>
<td>DOC-I55ADMIN</td>
<td></td>
</tr>
<tr>
<td>ION Enterprise 5.5 User Guide</td>
<td>DOC-UGUIDE204</td>
<td></td>
</tr>
<tr>
<td>ION Enterprise 5.5 Client User Guide</td>
<td>DOC-UGUIDE205</td>
<td></td>
</tr>
</tbody>
</table>

### PowerLogic ION Power and Energy Meter Selection

**Features**

<table>
<thead>
<tr>
<th>Feature</th>
<th>ION8600</th>
<th>ION7650</th>
<th>ION7550</th>
<th>ION7350</th>
<th>ION7320</th>
<th>ION7310</th>
<th>ION7300</th>
<th>ION6200</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **Inputs, outputs and control power**
  - Single-phase
  - Three-phase
- **Voltage and energy measurements**
  - V, I, F, W
  - Power, demand
  - Energy / time-of-use (energy per shift)
- **Power quality analysis**
  - Compliance monitoring (e.g., EN50160)
  - Flicker measurement
  - Waveform capture
- **Data and event logging**
  - Trend / snapshot
  - Min/max
  - Events

- **Special features**
  - Custom programming: arithmetic, boolean, object-oriented
  - Downloadable firmware
  - Communications:
    - Ethernet port / web / email
    - Telephone modem port
    - Infrared port
    - RS485 / RS232 ports
    - Modbus / DNP / MV-90 protocols

### PowerLogic ®

PowerLogic ION Enterprise ® Software Ordering Information/Meter Selection

---

Power Monitoring & Control

DE13

POWER MONITORING 
AND CONTROL

12/08

Every new system must be ordered with 1 IONE55-Base software and a minimum of 5 IONE55-DL device licenses.

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.

For the ION Enterprise Software Ordering Information, please refer to the online documentation and manuals at the PowerLogic support website.
Power Monitoring & Control

PowerLogic®
ION8600/7550/7650 Power and Energy Meters

ION8600/7550/7650 Power and Energy Meters

The web-enabled PowerLogic ION8600 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 PowerLogic ION EEM enterprise energy management software or other energy management and SCADA systems.

PowerLogic ION8600 Power and Energy Meter Features

- Typical PowerLogic ION8600 Power and Energy Meter Ordering Configurations

PowerLogic ION7550 and ION7650 Power and Energy Meters

- The meters are ideal for compliance monitoring, disturbance analysis, cost allocation and billing, demand and power factor control and equipment operations software can be integrated with other energy management or building control systems through multiple communication channels and monitoring and control. The meters have a high visibility, adjustable front panel display that can depict TOU, harmonics, event logs, phasers, and control capabilities. Both are compatible with PowerLogic ION EEM enterprise energy management software, PowerLogic ION Enterprise operations software or other energy management and SCADA systems.

Note: Please refer to powerlogic.com for the most complete and up-to-date list of feature availability. Some features are optional.

Typical PowerLogic ION8600 Power and Energy Meter Ordering Configurations

**Description** | Catalogue No. | Price
--- | --- | ---
Integrated display, with 512 samples/cycle, 5 MB logging memory, 5A inputs, standard power supply, standard case, 1 RS232/10base T Ethernet | F70400C0B001A0 | $7,900

PowerLogic ION7550 and ION7650 Power and Energy Meters

**Feature set C includes:**
- 50, 230, 3.3 kV, 385, 115, 750 socket and switchboard cases
- True RMS 3 phase voltage, current, power and meets stringent ANSI revenue metering standards including ANSI C12.20.3 and Class 2, 10, & 20
- Power quality, harmonics, individual even, odd and symmetrical components
- Digital time memory, memory for any parameter, logical logs up to 32 channels, time resolution to 0.001 seconds and GPS time synchronization
- Communications between devices from various protocols including ION, DNP 3.0, Modbus RTU, Modbus TCP and ION 40 protocols.
- Data push capability through SMTP (email)
- Multiuser, multilevel security with control and custom access to sensitive data (up to 16 users)
- 65 configurable _ cycle setpoints for single, multi-condition and dial out
- Waveform capture up to 1024 samples/cycle
- Power quality: sag/swell, harmonics - individual, total even, total odd up to the 63rd, true RMS 3-phase voltage, current, and power that meets stringent ANSI C12.20.3 and Class 2, 10, & 20
- Cycle setpoint minimum response time
- Symmetrical components
- Transformer/line loss compensation and Instrument transformer correction
- Cycle setpoint minimum response time
- History logs up to 650 channels
- Modbus RTU master on serial ports
- Optional gateway for ION8600 and ION, DNP 3.0, Modbus RTU, Modbus TCP and MV-90 protocols
- Historical logs up to 320 channels
- 10MB standard memory
- Max 468 cycles of waveform logs and 800 channels of historical logs
- Multiuser, multilevel security with control and custom access to sensitive data (up to 16 users)
- Password protection and anti-tamper seal protection enhance meter security
- Multiuser, multilevel security with control and custom access to sensitive data (up to 16 users)

Note: Please refer to powerlogic.com for the most complete and up-to-date list of feature availability. Some features are optional.

Typical PowerLogic ION7550 Power and Energy Meter Ordering Configurations

**Description** | Catalogue No. | Price
--- | --- | ---
Integrated display, with 512 samples/cycle, 5 MB logging memory, 5A inputs, standard power supply, standard case, 1 RS232/10base T Ethernet | F70400C0B001A0 | $7,900

PowerLogic ION7550 and ION7650 Power and Energy Meters

**Feature set B adds the following to feature set C:**
- Harmonics - individual, even, odd and symmetrical components
- Data push capability through SMTP (email)
- Multiuser, multilevel security with control and custom access to sensitive data (up to 16 users)
- Password protection and anti-tamper seal protection enhance meter security
- Multiuser, multilevel security with control and custom access to sensitive data (up to 16 users)
- 65 configurable _ cycle setpoints for single, multi-condition and dial out
- Waveform capture up to 1024 samples/cycle
- Power quality: sag/swell, harmonics - individual, total even, total odd up to the 63rd, true RMS 3-phase voltage, current, and power that meets stringent ANSI C12.20.3 and Class 2, 10, & 20
- Cycle setpoint minimum response time
- Symmetrical components
- Transformer/line loss compensation and Instrument transformer correction
- Cycle setpoint minimum response time
- History logs up to 650 channels
- Modbus RTU master on serial ports
- Optional gateway for ION8600 and ION, DNP 3.0, Modbus RTU, Modbus TCP and MV-90 protocols
- Historical logs up to 320 channels
- 10MB standard memory
- Max 468 cycles of waveform logs and 800 channels of historical logs
- Multiuser, multilevel security with control and custom access to sensitive data (up to 16 users)
- Password protection and anti-tamper seal protection enhance meter security
- Multiuser, multilevel security with control and custom access to sensitive data (up to 16 users)

Note: Please refer to powerlogic.com for the most complete and up-to-date list of feature availability. Some features are optional.

Typical PowerLogic ION7550 Power and Energy Meter Ordering Configurations

**Description** | Catalogue No. | Price
--- | --- | ---
Integrated display, with 512 samples/cycle, 5 MB logging memory, 5A inputs, standard power supply, standard case, 1 RS232/10base T Ethernet | F70400C0B001A0 | $7,900

PowerLogic ION7550 and ION7650 Power and Energy Meters

**Feature set A adds the following to feature sets C and B:**
- Waveform capture up to 256 samples/cycle
- Power quality: sag/swell, harmonics - individual, total even, total odd up to the 63rd, true RMS 3-phase voltage, current, and power that meets stringent ANSI C12.20.3 and Class 2, 10, & 20
- Cycle setpoint minimum response time
- Symmetrical components
- Transformer/line loss compensation and Instrument transformer correction
- Cycle setpoint minimum response time
- History logs up to 650 channels
- Modbus RTU master on serial ports
- Optional gateway for ION8600 and ION, DNP 3.0, Modbus RTU, Modbus TCP and MV-90 protocols
- Historical logs up to 320 channels
- 10MB standard memory
- Max 468 cycles of waveform logs and 800 channels of historical logs
- Multiuser, multilevel security with control and custom access to sensitive data (up to 16 users)
- Password protection and anti-tamper seal protection enhance meter security
- Multiuser, multilevel security with control and custom access to sensitive data (up to 16 users)

Note: Please refer to powerlogic.com for the most complete and up-to-date list of feature availability. Some features are optional.

Typical PowerLogic ION7550 Power and Energy Meter Ordering Configurations

**Description** | Catalogue No. | Price
--- | --- | ---
Integrated display, with 512 samples/cycle, 5 MB logging memory, 5A inputs, standard power supply, standard case, 1 RS232/10base T Ethernet | F70400C0B001A0 | $7,900

PowerLogic ION7550 and ION7650 Power and Energy Meters

**Feature set A adds the following to feature set B:**
- Data push capability through SMTP (email)
- Multiuser, multilevel security with control and custom access to sensitive data (up to 16 users)
- Password protection and anti-tamper seal protection enhance meter security
- Multiuser, multilevel security with control and custom access to sensitive data (up to 16 users)

Note: Please refer to powerlogic.com for the most complete and up-to-date list of feature availability. Some features are optional.
Power Monitoring & Control

ION7350/7330/7300/6200 Power and Energy Meters

PowerLogic ION7350, ION7330 and ION7300 Power and Energy Meter Features

Typical PowerLogic ION6200 Power and Energy Meter Ordering Configurations

PowerLogic ION7350 and ION7330 Power and Energy Meter Features

The PowerLogic ION7350 includes:

- Multi-function inputs: transducer integrated and remote display
- LCD display with 60 samples per cycle true RMS
- Power quality, harmonics: individual, total, and real-time
- Communications: 1 RS-485 port, optional Ethernet port
- Extended standard PC include A analog inputs, B analog outputs
- Maximum harmonic recording

The ION7350 offers the following features:

- 4-digit inputs for current monitoring and power quality
- Communications: a second 10/100 port, external modem
- Enhanced Package

Typical PowerLogic ION7330/7300 Power and Energy Ordering Configurations

Integrated display with optical port, 5A inputs, standard power supply, standard comms, (one RS-485 port) P7330A0B0B0A0A0A
Integrated display with optical port, 5A inputs, standard power supply, standard comms, (two RS-485 ports) plus 10BaseT Ethernet P7300A0B0B0E0A0A
Integrated display with optical port, 5A inputs, standard power supply, standard comms, (two RS-485 ports) P7330A0B0B0B0A0A0A

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 bright LED display. It offers a wide range of inputs, including 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 data acquisition systems and building automation systems. Megawatt versions are ideal for customers who need revenue-accurate and/or certified measurements and want easy integration with power data acquisition systems and building automation systems. Megawatt versions are ideal for customers who need revenue-accurate and/or certified measurements and want easy integration with power data acquisition systems and building automation systems.

PowerLogic ION6200 Power and Energy Meter Features

- Only 2 inches deep, fits a standard ANSI 4"x4"x10" cubicle or a 2R 1/2" deep cutout
- LED display with optional 600/2000 display
- 32 samples per cycle true RMS
- Communications: 1 RS-485 port
- Power Quality: sag/swell, individual, total, even, odd harmonics
- Voltage L-N average and per phase
- Current demand average and per phase
- Time-of-use scheduling

Typical PowerLogic ION6200 Power and Energy Meter Ordering Configurations

Package #2 P6200R1A0B0A0A0R
TRAN Model, with remote display, 10A inputs, onboard web server, Modbus RTU, ION, Ethernet, optional printing

The ION6200 includes the following features:

- Pulse Outputs: optional kWh, kVARh
- Communications: optional RS-485 port, optional Ethernet port
- 4 digital inputs for power supply
- Modbus RTU, ION, Ethernet

Please refer to powerlogic.com for the most complete and up-to-date list of feature availability. Some features are optional.

Typical PowerLogic ION6200 Power and Energy Meter Ordering Configurations

Please refer to powerlogic.com for the most complete and up-to-date list of feature availability. Some features are optional.

Typical PowerLogic ION7350/7330/7300 Power and Energy Ordering Configurations

Package #1 P6200T1A0B0A0A0R
TRAN Model, with remote display, 10A inputs, onboard web server, Modbus RTU, ION, Ethernet, optional printing

The ION7300 series is suitable for high-accuracy power and energy metering, bill verification, cost allocation and billing, demand and power factor monitoring, and energy management. They are ideal replacements for analog meters, with a multitude of power and energy measurements, analog and digital I/O, communications ports, and industry standard protocols. The ION7300 is an industrial grade power and energy metering instrument designed to measure and report data storage, remote data logging, remote control, and an optional modem. The ION7350 meter is further augmented by more sophisticated power quality analysis, alarms and a call-back-on-alarm feature. They are compatible with PowerLogic ION EEM enterprise energy management software, PowerLogic XM Enterprise operations software or can be integrated with other energy management or building control systems through multiple communication channels and protocols.

The PowerLogic ION7330 includes:

- Multiple-function inputs: transducer integrated and remote display
- LCD display with 60 samples per cycle true RMS
- Power quality, harmonics: individual, total, and real-time
- Communications: 1 RS-485 port
- Extended standard PC include A analog inputs, B analog outputs
- Maximum harmonic recording

The ION7330 offers the following features:

- 4-digit inputs for current monitoring and power quality
- Communications: a second 10/100 port
- Enhanced Package

The PowerLogic ION7300 includes:

- Multiple-function inputs: transducer integrated and remote display
- LCD display with 60 samples per cycle true RMS
- Power quality, harmonics: individual, total, and real-time
- Communications: 1 RS-485 port, optional Ethernet port
- Extended standard PC include A analog inputs, B analog outputs
- Maximum harmonic recording

The ION7300 offers the following features:

- 4-digit inputs for current monitoring and power quality
- Communications: a second 10/100 port
- Enhanced Package

The PowerLogic ION6200 includes:

- Multi-function inputs: transducer integrated and remote display
- LCD display with 60 samples per cycle true RMS
- Power quality, harmonics: individual, total, and real-time
- Communications: 1 RS-485 port, optional Ethernet port
- Extended standard PC include A analog inputs, B analog outputs
- Maximum harmonic recording

The ION6200 offers the following features:

- 4-digit inputs for current monitoring and power quality
- Communications: a second 10/100 port
- Enhanced Package

The PowerLogic ION7350 includes:

- Multi-function inputs: transducer integrated and remote display
- LCD display with 60 samples per cycle true RMS
- Power quality, harmonics: individual, total, and real-time
- Communications: 1 RS-485 port, optional Ethernet port
- Extended standard PC include A analog inputs, B analog outputs
- Maximum harmonic recording

The ION7350 offers the following features:

- 4-digit inputs for current monitoring and power quality
- Communications: a second 10/100 port
- Enhanced Package

PowerLogic ION EEM enterprise energy management software, PowerLogic XM Enterprise operations software or can be integrated with other energy management or building control systems through multiple communication channels and protocols.

Please refer to powerlogic.com for the most complete and up-to-date list of feature availability. Some features are optional.

Typical PowerLogic ION6200 Power and Energy Meter Ordering Configurations

Package #2 P6200R1A0B0A0A0R
TRAN Model, with remote display, 10A inputs, onboard web server, Modbus RTU, ION, Ethernet, optional printing

The ION6200 includes the following features:

- Pulse Outputs: optional kWh, kVARh
- Communications: optional RS-485 port, optional Ethernet port
- 4 digital inputs for power supply
- Modbus RTU, ION, Ethernet

Please refer to powerlogic.com for the most complete and up-to-date list of feature availability. Some features are optional.
Power Monitoring & Control

PowerLogic System Manager Software Ordering Information

<table>
<thead>
<tr>
<th>Description</th>
<th>Catalogue No.</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Core Software Products</td>
<td></td>
<td></td>
</tr>
<tr>
<td>System Mgr. Device Limited (1 web-enabled client, up to 16 devices with SMSDL) (Intermediate Graphics)</td>
<td>SMSDL</td>
<td></td>
</tr>
<tr>
<td>System Mgr. Standard Ed. (1 web-enabled client, SMSDL or SQL Personal Edition with Interactive Graphics)</td>
<td>SMSS</td>
<td></td>
</tr>
<tr>
<td>System Mgr. Professional Edition (30 enabled clients, SQL Server, Advanced Reports, Interactive Graphics)</td>
<td>SMSPE</td>
<td></td>
</tr>
<tr>
<td>Add On Modules</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SMS OPC - Sensor Application</td>
<td>SMSOPC</td>
<td></td>
</tr>
<tr>
<td>SQL Server 2005 End User License</td>
<td>SMSQL</td>
<td></td>
</tr>
<tr>
<td>Remote Pager Module: Paging applications with conditional alarms assigned by SMS</td>
<td>SMS978</td>
<td></td>
</tr>
<tr>
<td>WAGES Module: Monitoring electrical and piped utilities available with engineered project</td>
<td>Available on engineered project</td>
<td></td>
</tr>
<tr>
<td>SMS Manager - Sequence of Events software interface for UPS line-catch available with engineered project</td>
<td>SMSMGR1000</td>
<td></td>
</tr>
<tr>
<td>AIDS Test Report Module available with engineered project</td>
<td>SMS9789EPSSTSTRPT</td>
<td></td>
</tr>
<tr>
<td>Extension Products</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Engineered Design (35 &amp; 50 SIC with variable data clients (5 pk licenses))</td>
<td>VARIOUS</td>
<td></td>
</tr>
<tr>
<td>Frame 1 SMSDL (12 device limit)</td>
<td>SMS1201</td>
<td></td>
</tr>
<tr>
<td>frame 2 SMSDL (12 device limit)</td>
<td>SMS1202</td>
<td></td>
</tr>
</tbody>
</table>

PowerLogic Circuit Monitor and Power Meter Selection

<table>
<thead>
<tr>
<th>Features</th>
<th>CM4000T</th>
<th>CM4250</th>
<th>CM3350</th>
<th>CM3250</th>
<th>PM870</th>
<th>PM850</th>
<th>PM820</th>
<th>PM810</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inputs, outputs and control power</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3-phase / single-phase</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Digital input and output</td>
<td>24/8</td>
<td>24/8</td>
<td>9/0</td>
<td>9/0</td>
<td>18/8</td>
<td>18/8</td>
<td>18/8</td>
<td>18/8</td>
</tr>
<tr>
<td>Power supply options</td>
<td>AC/DC</td>
<td>AC/DC</td>
<td>AC/DC</td>
<td>AC/DC</td>
<td>AC/DC</td>
<td>AC/DC</td>
<td>AC/DC</td>
<td>AC/DC</td>
</tr>
<tr>
<td>Power and energy measurements</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>V, I, F, PF</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power, demand</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Energy monitoring</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Energy accuracy (%)</td>
<td>0.2</td>
<td>0.2</td>
<td>0.5</td>
<td>0.5</td>
<td>0.5</td>
<td>0.5</td>
<td>0.5</td>
<td>0.5</td>
</tr>
<tr>
<td>Power quality analysis</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Compliance monitoring (e.g. ANSI/IEC)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Voltage measurement</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High-speed transient disturbance capture</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transient disturbance capture</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Resistance and fault identification</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sequence monitoring</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Harmonic measurement</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Voltage tolerance of the transients</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Voltage capture</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Waveform capture</td>
<td>9/6</td>
<td>9/6</td>
<td>9/6</td>
<td>9/6</td>
<td>9/6</td>
<td>9/6</td>
<td>9/6</td>
<td>9/6</td>
</tr>
<tr>
<td>Voltage alarms</td>
<td>9/6</td>
<td>9/6</td>
<td>9/6</td>
<td>9/6</td>
<td>9/6</td>
<td>9/6</td>
<td>9/6</td>
<td>9/6</td>
</tr>
<tr>
<td>Data and event logging</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trend / billing</td>
<td>9/6</td>
<td>9/6</td>
<td>9/6</td>
<td>9/6</td>
<td>9/6</td>
<td>9/6</td>
<td>9/6</td>
<td>9/6</td>
</tr>
<tr>
<td>Minimum and maximum</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trends / maintenance</td>
<td>9/6</td>
<td>9/6</td>
<td>9/6</td>
<td>9/6</td>
<td>9/6</td>
<td>9/6</td>
<td>9/6</td>
<td>9/6</td>
</tr>
<tr>
<td>Historical trend monitoring</td>
<td>0.377</td>
<td>0.377</td>
<td>0.377</td>
<td>0.377</td>
<td>0.377</td>
<td>0.377</td>
<td>0.377</td>
<td>0.377</td>
</tr>
<tr>
<td>Setpoints / alarms</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Data / waveform</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trigger logging</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trigger delay on digital input control</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Special features</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Custom programming, enhanced, boolean</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Computer availability, firmware</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Communications</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ethernet connection, network</td>
<td>9/6</td>
<td>9/6</td>
<td>9/6</td>
<td>9/6</td>
<td>9/6</td>
<td>9/6</td>
<td>9/6</td>
<td>9/6</td>
</tr>
<tr>
<td>Infrared port</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Serial ports</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power supply options</td>
<td>AC/DC</td>
<td>AC/DC</td>
<td>AC/DC</td>
<td>AC/DC</td>
<td>AC/DC</td>
<td>AC/DC</td>
<td>AC/DC</td>
<td>AC/DC</td>
</tr>
</tbody>
</table>

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.
PowerLogic Series 800 Power Meters

The PowerLogic PM800 series Power Meter is a high-performance power-monitoring unit able to provide advanced power measurement capabilities in a compact 96x96 mm unit. Its large, easy to read display allows you to monitor all three phases and neutral simultaneously. With its easy to use intuitive interface and self guiding menus, the large anti-glare and back lit display makes this meter the easiest yet to navigate and use. The modular design allows for flexibility with an easy upgrade path to grow the meter’s capabilities with the addition of Communication and I/O Modules.

- Monitor current, voltage, power and energy simultaneously
- Trending/Forecasting Curves functionality (PM850/870)
- 128 samples/cycle-zero blind metering
- Waveform-capture (PM850), configurable waveform capture (PM870)
- Onboard logging (50k in PM820, 500k in PM850/PM870)
- Detection of voltage sags and swells
- Individual harmonic measurements on current and voltage
- Available with 2 standard Digital I/O
- Available with THD measurement
- Meets IEC 60687 and ANSI C12.20 Class 0.5S accuracy
- Programmable (logic and mathematical functions)
- Optional field installable ethernet communications card with standard and custom web pages

Series 800 Power Meters

<table>
<thead>
<tr>
<th>Description</th>
<th>Catalogue No.</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>PM810 Power Meter with integrated display, MD, Alarming</td>
<td>PM810</td>
<td></td>
</tr>
<tr>
<td>PM820 Power Meter with integrated display, THD, Alarming, 80kb Logging</td>
<td>PM820</td>
<td></td>
</tr>
<tr>
<td>PM820 Power Meter without display</td>
<td>PM820U</td>
<td></td>
</tr>
<tr>
<td>PM850 Power Meter with integrated display, THD, Alarming, 800kb Logging, Waveform Capture</td>
<td>PM850</td>
<td></td>
</tr>
<tr>
<td>PM850 Power Meter without display</td>
<td>PM850U</td>
<td></td>
</tr>
<tr>
<td>PM870 Power Meter with integrated display, THD, Alarming, 800 kb Logging, configurable Waveform Capture, Sag/Swell Detection</td>
<td>PM870</td>
<td></td>
</tr>
<tr>
<td>PM870 Power Meter without display</td>
<td>PM870U</td>
<td></td>
</tr>
</tbody>
</table>

Series 800 Power Meter Accessories

<table>
<thead>
<tr>
<th>Description</th>
<th>Catalogue No.</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>PM800 Display for integrated meter unit</td>
<td>PM8D</td>
<td></td>
</tr>
<tr>
<td>PM800 Module, 2 digital outputs, 2 digital inputs</td>
<td>PM8M20</td>
<td></td>
</tr>
<tr>
<td>PM800 Module, 2 digital outputs, 6 digital inputs</td>
<td>PM8M26</td>
<td></td>
</tr>
<tr>
<td>PM800 Module, 2 digital out, 2 digital in, 2 analog out, 2 analog in</td>
<td>PM8M2222</td>
<td></td>
</tr>
<tr>
<td>PM8ECC Ethernet Communications Card; 10/1000mb ethernet port and 1 RS-485 masterport</td>
<td>PM8ECC</td>
<td></td>
</tr>
</tbody>
</table>

PowerLogic Series 3000 Circuit Monitor

The PowerLogic Series 3000 Circuit Monitor is designed for industrial, commercial and OEM users and is the ideal monitoring device for electrical mains, branch feeders, as well as OEM applications, such as computer power. It provides instant access to real time web pages without installing or learning special software.

- Comes with 8Mb of standard memory allowing for more data logging than any other meter in its class
- 128 samples/cycle allow for zero blind metering
- Sag/Swell disturbance monitoring (CM3350)
- 100 ms Event recording (CM3350)
- Harmonic Powerflows to the 40th Harmonic
- Sequence of events recording using GPS synchronization
- Built-in Trending and Forecasting functionality allows you to forecast energy usage up to 4 days in advance
- Custom web pages with optional Ethernet Communications Card
- Field installable Digital I/O card
- Meets IEC 60687 and ANSI C12.20 Class 0.5S accuracy

Series 3000 Circuit Monitors

<table>
<thead>
<tr>
<th>Description</th>
<th>Catalogue No.</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instrumentation, On-board Data Logging, Waveform Capture, Disturbance Waveform Capture, Configurable I/O, 0.15% Accuracy</td>
<td>CM3250</td>
<td></td>
</tr>
<tr>
<td>Same as CM3250 plus Sag/Swell Disturbance Detection and 100 ms RMS Event Recording</td>
<td>CM3350</td>
<td></td>
</tr>
</tbody>
</table>

Series 3000 Accessories

<table>
<thead>
<tr>
<th>Description</th>
<th>Catalogue No.</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>PM8ECC Ethernet Communications Card; 10/1000mb ethernet port and 1 RS-485 masterport</td>
<td>PM8ECC</td>
<td></td>
</tr>
</tbody>
</table>

NOTE: See page DE13-10 for Series 3000 Accessories.
Power Monitoring & Control

PowerLogic®

Metering

PowerLogic Series 4000 Circuit Monitor

The award-winning, Web-enabled PowerLogic Series 4000 Circuit Monitor (CM4250) 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 CM4250 provides the ability to monitor, troubleshoot and prevent 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
- Brute 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
- High-speed transient voltage detection at 5 MHz per channel with field-installable CVMT current/voltage module
- True RMS Metering through the 25th harmonic
- Also available in a rugged sealed case as a Portable Circuit Monitor

PowerLogic Series 4000 Circuit Monitor Optional Displays

- High-visibility remote VF (vacuum fluorescence) display with IR communications port
- 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

Series 4000 Circuit Monitors

<table>
<thead>
<tr>
<th>Description</th>
<th>Catalogue No.</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Field installable CVMT current/voltage module</td>
<td>CVM</td>
<td></td>
</tr>
<tr>
<td>Current/Voltage module</td>
<td>CVMT</td>
<td></td>
</tr>
<tr>
<td>Current/Voltage module with extended current range</td>
<td>CVMT</td>
<td></td>
</tr>
<tr>
<td>Current/Voltage module with high-speed transient detector</td>
<td>CVMT</td>
<td></td>
</tr>
<tr>
<td>Ethernet Communications Card 10/100 MB Filter at 10/100 MB UTP Ethernet port and 1 RS-485 (monitor port)</td>
<td>ECC21E</td>
<td></td>
</tr>
<tr>
<td>4-line x 20 - character vacuum fluorescent display with IR port and proximity sensor</td>
<td>CVMFT</td>
<td></td>
</tr>
<tr>
<td>4-line x 20 - character vacuum fluorescent display with 2 RS-485 (monitor port)</td>
<td>CVMFT</td>
<td></td>
</tr>
<tr>
<td>2 RS-485 (monitor port)</td>
<td>CVMFT</td>
<td></td>
</tr>
<tr>
<td>4 line display cable</td>
<td>CAB4</td>
<td></td>
</tr>
</tbody>
</table>
In today’s increasingly competitive commercial property market, attracting and retaining high-quality, long-term tenants by offering exceptional value is the primary goal. Balancing these premium services and reliable infrastructure vs. the financial exposure to volatile utility costs is the challenge.

Minimizing energy costs requires information on how energy usage translates into money spent. PowerLogic energy sub-metering systems are specifically engineered to address the measurement, verification and billing needs of multi-tenant properties.

- Residential high-rise and low-rise
- Campuses
- Shopping centers
- Hotels / food courts
- Offices
- Commercial buildings

PowerLogic energy management and metering systems are ideal for multi-tenant buildings providing:
- Metering & Verification tools to assure compliance to Energy Policy Act 2005
- Integrated approach from simple energy allocation requirements to high-end power quality
- Monitor energy usage and efficiency to accurately recover the costs while providing tenants with energy and a reliable infrastructure

Schneider Electric, a trusted equipment supplier for over 100 years, can be your single source for all your energy management needs — reliable metering systems, services, installation, operational costs, training and maintenance agreements.

PowerLogic® Submetering

From the Global Leader
In Power Distribution
Power Monitoring & Control

PowerLogic® Submetering

PowerLogic Energy Meter

The PowerLogic Energy 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.

Basic 120/240 Volt, 208 Volt Wye

Extended Range 120-480 Volt Wye

Additional CT Sets

Catalogue No. Description Price

Energy Meter Accessories

Catalogue No. Description Price

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 PowerLogic® System Manager™ software 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 Enercept Display Interface acts as a stand-alone operator interface supporting up to 32 meters (33 with a repeater). In addition, the EDI can act as a network adapter allowing Enercept meters to be incorporated into a 4-wire network. The Enercept Network Adapter (ENA) is designed to act as a network adapter, allowing the Enercept meters to be integrated into a PowerLogic 4-wire network. The ENA converts the signals from the 4-wire network to the 2-wire network, as well as changing the current balance between the two networks.

Enercept Meter Accessories

Catalogue No. Description Price

PowerLogic Split Core Current Transformers-Instrument Grade 5 Amp Split Core Current Transformers

The 3000 SCCT series of split core current transformers provide secondary amperage proportions to the primary (sensed) current. For use with Circuit Monitors, Power Meters, data loggers, chart recorders and other instruments the 3000 SCCT series provides a cost-effective means to transform electrical service amperages to 5A for a level compatible with monitoring equipment.

Catalogue No. Description Price

Catalogue No. Description Price

SA Split Core Current Transformers

Catalogue No. Description Price

Note: Max. Voltage without additional insulation 600Vac. Do not apply 600Vac class current transformers to circuits having a phase-to- phase voltage greater than 600Vac, unless adequate additional insulation is applied between the primary conductor and the current transformers. Square D assumes no responsibility for damages of any kind that may occur when transformers operated on circuits above their published ratings.

SA Split Core Current Transformers

Catalogue No. Description Price
Power Logic Branch Current Monitor

The branch current monitoring system provides a cost-effective solution for electrical load management making it ideally suited for applications where load capacity requirements are dynamic, such as power distribution units (PDUs) for the data center industry or in any location where monitoring individual electrical loads is critical.

The Branch Current Monitor reports the current level of each of the breakers of a panelboard to provide timely circuit loading information. In addition, as the circuit load approaches one of two user set levels, an alarm can be generated back to the monitoring software such as PowerLogic System Manager Software.

Four models of the Branch Current Monitor are available. The BCM42 consists of rail mounted solid-core CTs intended for mounting inside new panelboards or complete panel retrofits. The BCM42ER is designed to fit into a column width panel design. The BCMSC model is made up of split-core CTs that are an ideal solution for retrofit applications in existing panelboards. The BCMSC-H is a 100 Amp version of the split core design.

- Up to 32 BCMs can be daisy chained on one Modbus RS485 string for easy networking capability.
- One BCM42 provides current levels on each circuit of a 42 circuit NQOD panelboard.
- Split-core CTs are perfect for quick installation on critical load applications that can’t be powered down.
- Provides Modbus registers for current limit alarms to help prevent overload breaker trips.
- Integrates to an optional network display for local indication.

<table>
<thead>
<tr>
<th>Catalogue No.</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCM42</td>
<td>Branch Circuit Monitor 42 circuits, 3/4&quot; center line CT spacing, 10-50 Amps range, configurable</td>
<td></td>
</tr>
<tr>
<td>BCM42ER</td>
<td>Branch Circuit Monitor 42 circuits, 1&quot; center line CT spacing, 10-50 Amps range, configurable</td>
<td></td>
</tr>
<tr>
<td>BCMSC12</td>
<td>Branch Circuit Monitor, split-core, 12 CTs</td>
<td></td>
</tr>
<tr>
<td>BCMSC24</td>
<td>Branch Circuit Monitor, split-core, 24 CTs</td>
<td></td>
</tr>
<tr>
<td>BCMSC30</td>
<td>Branch Circuit Monitor, split-core, 30 CTs</td>
<td></td>
</tr>
<tr>
<td>BCMSC42</td>
<td>Branch Circuit Monitor, split-core, 42 CTs</td>
<td></td>
</tr>
<tr>
<td>BCMSC12H</td>
<td>Branch Circuit Monitor, 100A split-core, 12 CTs</td>
<td></td>
</tr>
<tr>
<td>BCMSC24H</td>
<td>Branch Circuit Monitor, 100A split-core, 24 CTs</td>
<td></td>
</tr>
<tr>
<td>BCMSC30H</td>
<td>Branch Circuit Monitor, 100A split-core, 30 CTs</td>
<td></td>
</tr>
<tr>
<td>BCMSC42H</td>
<td>Branch Circuit Monitor, 100A split-core, 42 CTs</td>
<td></td>
</tr>
<tr>
<td>BCMSC12H</td>
<td>Branch Circuit Monitor, 100A split-core, 12 CTs</td>
<td></td>
</tr>
<tr>
<td>BCMSC24H</td>
<td>Branch Circuit Monitor, 100A split-core, 24 CTs</td>
<td></td>
</tr>
<tr>
<td>BCMSC30H</td>
<td>Branch Circuit Monitor, 100A split-core, 30 CTs</td>
<td></td>
</tr>
<tr>
<td>BCMSC42H</td>
<td>Branch Circuit Monitor, 100A split-core, 42 CTs</td>
<td></td>
</tr>
</tbody>
</table>

Note: 41 Amp wire accommodates up to 26 THHN insulated conductor (3 phase, 4 wires (with neutral/ground wiring)).

PowerLogic Multi-Circuit Meter

The MCM8364 is an OEM style multi-circuit meter based on the same functionality as the PowerLogic Enclosed 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 32 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:


Modbus Alarms:

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

<table>
<thead>
<tr>
<th>Catalogue No.</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>MCM8364</td>
<td>Multi-Circuit Meter 8364</td>
<td></td>
</tr>
</tbody>
</table>

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 compatible with the following metering devices: BCM, MCM, & Enercept meters.

<table>
<thead>
<tr>
<th>Catalogue No.</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>SMD OEM</td>
<td>OEM style submeter display</td>
<td></td>
</tr>
<tr>
<td>SMD OEM</td>
<td>OEM style submeter display</td>
<td></td>
</tr>
</tbody>
</table>
Power Monitoring & Control

PowerLogic®
ION EEM Enterprise Energy Management Software

PowerLogic ION EEM is a complete enterprise energy management solution that enables business and energy strategy across your entire enterprise by unifying and optimizing the benefits of your existing energy-related data resources. Stakeholders from operations to management to operations will be empowered by actionable energy intelligence to reveal opportunities, manage energy-related expenses, 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 systems, and other enterprise business applications, cleanses and warehouses it, personalizes browser-based dashboards and innovative visualization and modeling tools, and then makes the information available to whomever needs it. 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 rollovers
- Modeling: regression analysis, normalization, correlation, integration of all relevant drivers and contextual data
- Biling: 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)
- 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 efficiencies
  - Measure and verify savings from energy conservation projects or performance contracts
  - Reduce operational costs, improve processes, and printing assets
  - 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 utility costs from tenants, departments, processes, etc.
  - 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 and 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 costs and savings.

Data management tier
- Integration of data from many sources: power monitoring and control systems (PowerLogic or third party), weather systems, 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.

Typical applications:
- Reduce operational costs, improve processes, and prolong asset life
- Manage demand control schemes, load shedding, peak shaving, base loading or on-site generation
- Benchmark facility performance across an entire enterprise to identify energy inefficiencies
- 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 utility costs from tenants, departments, processes, etc.
- Identify and reduce risks to uptime

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

Schneider Electric’s 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.
- Substation monitoring
  The PowerLogic ION8600 metering system is designed 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.
Power Monitoring & Control

PowerLogic®
PowerLogic Energy Profiler Online

PowerLogic Energy Profiler Online (EPO) is a web-hosted service that is the industry's foremost load data visualization and analysis application. This flexible, easy to use system turns customer usage data into actionable information, freely accessible to all customers and internal users. For commercial and industrial energy customers, managing energy costs is the primary objective, but they can't control what they can't measure. EPO enables energy customers to take control of their costs by providing the information they need to understand how their organization uses energy. They can then take steps to reduce costs by implementing conservation measures, investing in more efficient equipment, or participating in new pricing or load curtailment programs.

For the utility, EPO provides an intuitive, easy-to-maintain tool for better understanding customer usage patterns and meeting customers' growing need for information. It also provides a convenient platform from which to administer real-time pricing (RTP) or load curtailment programs. EPO's instinctive online functionality gives first-time users an extremely short learning curve, while its powerful configuration options address the needs of more sophisticated users. The service is available to users at their convenience, 24/7, and regular updates ensure that customers get the most current information.

Key features:

- Data access and analysis
- Automated reporting
- Estimated bills and rate comparisons
- Demand response and curtailment programs
- RTP programs
- Alerting
- Administration tool

Applications:

- Energy load analysis
- Energy budgeting and bill forecasting
- Demand response and load curtailment program management
- Real-time pricing program management
- EPO's Real-Time Pricing module lets users see internal data for accounts with future pricing information, and multiply that data against a price stream.

Bill estimates provide valuable information for budgeting and forecasting

Comparison statistics display

Typical comparison graph showing time of usage

For price & ordering information, contact your local PowerLogic Sales Specialist or PowerLogic Inside Sales at 1-866-466-7627.
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 line 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 EGX400—providing 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 EGX400 has two serial ports providing Ethernet access to 64 serial devices (more with repeaters) and includes the ability to e-mail historical data plus provide browser-based access to near-time and historical interval data logging/trending information allowing electrical distribution systems to be better managed by utilizing Ethernet and Internet technologies.

Advantages

- 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 downtimes.
- 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.
- Extends temperature range—-25 to 70˚C enables operation in harsh environments.

EGX100 Ethernet Gateway

Built in tabs provide easy DIN rail mounting solution.

EGX400 Ethernet Gateway shows you a "window" into your power equipment.

PowerLogic Web Page Generator

The PowerLogic Web Page Generator (WPG) creates and downloads application-specific web pages to PowerLogic Ethernet gateways (EGX100 / EGX400, ECC21) with minimal user intervention. The user simply identifies the serial devices connected to the Ethernet gateway in this wizard-based software utility. The utility takes care of the rest. This utility is available for download from www.powerlogic.com.
Power Monitoring & Control
Schneider Electric Services and Projects
Engineering Services

Consulting & Analysis
Power System Engineering
Schneider Electric Services and Projects Power Systems Engineering team offers a wide range of engineering services to improve the safety, efficiency and reliability of your power distribution system. The team is comprised of registered, professional engineers, safety trained and equipped, to perform a variety of engineering functions, such as power system design, testing, troubleshooting, and analysis.

Arc Flash Analysis
Schneider Electric Services and Projects offers on-site services to perform arc flash analysis for a facility, complex, office, or campus. An Arc flash analysis is used to determine...
- Flash Protection Boundary
- Incident Energy Value
- Hazard Risk Category

Features of Schneider Electric Services and Projects arc flash analysis offerings include...
- Time current coordination analysis showing both existing and recommended over-current device settings
- Onsite verification and documentation of equipment
- Arc flash label affixation
- NFPA 70E—Safe Workplace Practices Training provided by OSHA authorized outreach instructors

Power System Studies
The Schneider Electric Services and Projects Power System Engineering Team provides expertise for a variety of electrical power system studies. Some of the more common system studies include...
- Power quality studies
- Power system design

Power System Assessment
Schneider Electric Services and Projects offers engineering services to address a variety of power system needs...

Power Quality Studies
Schneider Electric Services and Projects offers onsite power quality engineering studies and solutions to eliminate process disruptions, power system shutdowns, and equipment damage due to electrical power system disturbances. A power quality study is used to...
- Determine compliance with the IEEE 519—Recommended Practices and Requirements for Harmonic Control in Electrical Power Systems guidelines
- Identify most cost-effective solution to power quality problems
- Solve process disruptions due to power disturbances
- Reduce economic effects of poor power quality
- Identify disturbances originating on electric utility system and improvements to reduce the number and severity

Load Studies
Schneider Electric Services and Projects offers onsite services to perform loading studies for your electrical distribution system. Load studies are used to...
- Evaluate power management and loading levels of electrical circuits
- Determine adequacy of circuit to serve sensitive loads
- Record power measurements on key circuits, including loading, power factor, voltage and current parameters

Power System Design
Schneider Electric Services and Projects offers engineering services to address a variety of power system needs...
- New equipment installation
- Existing equipment modification
- Ground Fault Schemes for multiple source distribution systems
- High Resistance Grounding (HRG) Conversion

Schneider Electric Services and Projects professional engineers - safety trained and equipped - will listen to your concerns and goals, define the problem of enhancement, and engineer the solution that best satisfies your needs.
For additional information on power system engineering services and pricing, contact your nearest Schneider Electric Services and Projects representative.
Power Monitoring & Control
Schneider Electric Services and Projects
Engineering Services

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
- C-Used Water
- Refrigeration

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

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, drawing, 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-line, equipment status
- Custom Software, Reports & Applications – Billing and Paging

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

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:
  — 1000VW, 277/480V, 347/600V Wye
  — 240V, 480V, 600V Delta
• Designed 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 12, 4, UL & CUL 508A Listed

<table>
<thead>
<tr>
<th>Available Meter Types</th>
<th>Digital Inputs</th>
<th>Digital Outputs</th>
<th>Analog Inputs</th>
<th>Analog Outputs</th>
</tr>
</thead>
<tbody>
<tr>
<td>PM 820, 850 &amp; 870</td>
<td>Up to 11 Meter</td>
<td>Up to 7 Meter</td>
<td>Up to 2 Meter</td>
<td>Up to 2 Meter</td>
</tr>
<tr>
<td>CH 4200 &amp; 4300</td>
<td>Up to 11 Meter</td>
<td>Up to 7 Meter</td>
<td>Up to 2 Meter</td>
<td>Up to 2 Meter</td>
</tr>
<tr>
<td>ION 6200</td>
<td>Up to 4 Meter</td>
<td>Up to 4 Meter</td>
<td>Up to 4 Meter</td>
<td>Up to 4 Meter</td>
</tr>
<tr>
<td>ION 7300, 7330 &amp; 7350</td>
<td>Up to 4 Meter</td>
<td>Up to 4 Meter</td>
<td>Up to 4 Meter</td>
<td>Up to 4 Meter</td>
</tr>
</tbody>
</table>

- 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, UL & CUL 508A Listed

- Available for the following meter types: PM92A, 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 IO is available for this option.

Industrial/Utility Socket Enclosure Type 3R, UL & CUL 508A Listed

- Available for ION6200 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 99, 355, 365, 395 and 765 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 1-866-466-7627. Enclosure pricing and literature available for download on our website at www.powerlogic.com/products/enclosures.

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
Technical Support

There are several ways to receive top quality support on PowerLogic and ION® products:

Priority Support: Excellent Service, Free Software Upgrades, Training Discounts & More!
- Latest PowerLogic and ION software upgrades to ensure up-to-date systems
- Direct access to expertise for quick issue resolution
- More efficient PowerLogic and ION system utilization
- Higher reliability
- Improved productivity and personal efficiency on the job

Premium Support: Priority + Proactive System Checks + Sr. Technician Assigned to your site

Choose Premium Support when you need to...
- Enhance your PowerLogic or ION system’s operation with single-sourced pro-active problem identification, solutions recommendations and change management skills
- Partner with technical experts who help coordinate support, provide hands-on assistance, and share best practices tailored to your business environment and objectives
- Take advantage of remote software upgrade capabilities
- Anticipate and communicate necessary change

Power Management University

Our training centers offer a variety of training courses designed to improve your total energy management skills. Our instructor-led courses are 70% hands-on, with each student having their own lab workstation. We have two main training centers located in Nashville, TN and Victoria, BC and offer training at a variety of Schneider Electric sites across the US and Canada. For more information about how and where we can meet your training needs please call 1-866-466-7627 Ext. 7595.

<table>
<thead>
<tr>
<th>Course No.</th>
<th>Course Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>3000PLUC120CR</td>
<td>PowerLogic Fundamentals</td>
</tr>
<tr>
<td>3000PLUC100CR</td>
<td>PowerLogic System Installation &amp; Troubleshooting</td>
</tr>
<tr>
<td>3000PLUC140</td>
<td>Critical Power and Power Quality</td>
</tr>
<tr>
<td>3000PLUC205</td>
<td>Regional SMS Overview Bundle (Includes 3000PLUC120CR)</td>
</tr>
<tr>
<td>3000PLUCSite</td>
<td>System Manager Customer Site Training</td>
</tr>
<tr>
<td>3000PMUFUND</td>
<td>ION Enterprise Fundamentals</td>
</tr>
<tr>
<td>3000PMUPROG</td>
<td>ION Enterprise Programmer</td>
</tr>
<tr>
<td>3000PMUADMIN</td>
<td>ION Enterprise Administrator</td>
</tr>
<tr>
<td>3000PMUCION</td>
<td>ION Enterprise Overview</td>
</tr>
<tr>
<td>3000PMUCPROG</td>
<td>ION Program Overview</td>
</tr>
<tr>
<td>3000PMUSITE</td>
<td>Customer Site Training</td>
</tr>
<tr>
<td>3000PMUSITE</td>
<td>ION Enterprise Customer Site Training</td>
</tr>
</tbody>
</table>

PowerLogic Support Services

DE13_P21.fm  Page 21  Friday, November 28, 2008  3:35 PM
Power Monitoring & Control

Sepam Series Digital Protective Relay

80, 40, and 20 Series

- The Sepam family of digital protection units, Series 20, 40 and 80, is the newest generation of Sepam relays, 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 outputs 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

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Series 80</th>
<th>Series 40</th>
<th>Series 20</th>
</tr>
</thead>
<tbody>
<tr>
<td>Network structure</td>
<td>1 Modbus port</td>
<td>2 Modbus ports</td>
<td>2 Modbus ports</td>
</tr>
<tr>
<td>Grounding system</td>
<td>4 transducers</td>
<td>3 transducers</td>
<td>2 transducers</td>
</tr>
<tr>
<td>Protection</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Metering</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Temperature</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I/Os</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Program logic</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Modbus communication</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

Sepam Series 80 Relay Features

- 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, PF
- Setting software with base and logic equation capability
- CT/VT and Trip Circuit supervision
- 5 second operation and fault recording, last 5 trip reports, and last 100 time-tagged alarms
- Rear communication port for interface to optional Modbus® communications modules
- Includes all Series 20 and Series 40 features

Sepam Series 40 Relay Features

- Backlit LCD graphic bitmap display
- Compact standard footprint (<4”deep) for basic protection of Mains/Feeders, Transformer, Motor, Generator Applications
- 16 inverse time overcurrent characteristic curves
- Setting software with offline file creation and downloaded to relay
- Two 8 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
- Some selectable 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

Sepam Series 20 Relay Features

- Standard footprint (<4”deep) for enhanced protection of Mains/Feeders, Transformer, Motor, Generator Applications
- Differential protection of transformer or machine transformer units
- Protection for mains and ties and important feeders including pre-programmed transfer schemes
- Increased metering capabilities I, V, E, PF, THD, vector diagram
- Expanded logic equation capabilities (an option for Logipam PLC ladder logic)
- Setting software with graphical assistance, opt metric based display
- Battery backup for historical and fault waveform data retention, wide range DC control power
- Two rear communication interfaces
- Includes all Series 20 features
# Power Monitoring & Control

## Sepam Series

### Selection Table

#### Series 80 Applications

<table>
<thead>
<tr>
<th>Protection</th>
<th>Application #/Code</th>
<th>S23</th>
<th>S40</th>
<th>S41</th>
<th>S42</th>
<th>T23</th>
<th>T40</th>
<th>T42</th>
<th>T50</th>
<th>MB1</th>
<th>G12</th>
<th>G30</th>
<th>R31</th>
<th>R32</th>
<th>R33</th>
<th>L32</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ground fault</td>
<td>2102-2RA</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Overvoltage</td>
<td>27/27S</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Short circuit</td>
<td>27/27S</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Undervoltage</td>
<td>27/27S</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Overload</td>
<td>49RMS</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Overcurrent</td>
<td>78PS</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Overfluxing</td>
<td>24</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Voltage-restrained overcurrent</td>
<td>50V/51V</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Inadvertent energization</td>
<td>50/27</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Undervoltage</td>
<td>27</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Underimpedance</td>
<td>21B</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Thermal overload for capacitors</td>
<td>49RMS</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Thermal overload for machines</td>
<td>49RMS</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

#### Series 40/20 Applications

<table>
<thead>
<tr>
<th>Protection</th>
<th>Application #/Code</th>
<th>S23</th>
<th>S40</th>
<th>S41</th>
<th>S42</th>
<th>T23</th>
<th>T40</th>
<th>T42</th>
<th>T50</th>
<th>MB1</th>
<th>G12</th>
<th>G30</th>
<th>R31</th>
<th>R32</th>
<th>R33</th>
<th>L32</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ground fault</td>
<td>2102-2RA</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Overvoltage</td>
<td>27/27S</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Short circuit</td>
<td>27/27S</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Undervoltage</td>
<td>27/27S</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Overload</td>
<td>49RMS</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Overcurrent</td>
<td>78PS</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Overfluxing</td>
<td>24</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Voltage-restrained overcurrent</td>
<td>50V/51V</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Inadvertent energization</td>
<td>50/27</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Undervoltage</td>
<td>27</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Underimpedance</td>
<td>21B</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Thermal overload for capacitors</td>
<td>49RMS</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Thermal overload for machines</td>
<td>49RMS</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

Note: Numerals in table indicate number of protection setpoints.
- Requires EM120 I/O module.
- Requires DE13-23 RTD input module.
- Requires DE13-23 synch check module.
- Requires DE13-23 synch check module.

© [by Manufacturer] 2021
## Power Monitoring & Control

### Sepam Series

#### Pricing and Accessories

<table>
<thead>
<tr>
<th>Model Application</th>
<th>Catalogue No.</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Series 80 Substation/feeder [current &amp; voltage]</td>
<td>SQ1S80A</td>
<td></td>
</tr>
<tr>
<td>Series 40 Substation/feeder [current &amp; voltage]</td>
<td>SQ1S40A</td>
<td></td>
</tr>
<tr>
<td>Series 81 Substation/feeder [directional grd O/C]</td>
<td>SQ1S81A</td>
<td></td>
</tr>
<tr>
<td>Series 82 Substation/feeder [directional ph &amp; grd O/C]</td>
<td>SQ1S82A</td>
<td></td>
</tr>
<tr>
<td>Series 84 Substation/main [separation/ load shed]</td>
<td>SQ1S84A</td>
<td></td>
</tr>
<tr>
<td>Series 20 Substation/feeder [breaker failure]</td>
<td>SQ1S23A</td>
<td></td>
</tr>
<tr>
<td>Series 88 Motor [Transf. Diff.]</td>
<td>SQ1M88A</td>
<td></td>
</tr>
<tr>
<td>Series 87 Generator [Mach diff]</td>
<td>SQ1G87A</td>
<td></td>
</tr>
<tr>
<td>Series 60 Water</td>
<td>SQ1W60A</td>
<td></td>
</tr>
</tbody>
</table>
| Series 80+40+20 Accessory List

<table>
<thead>
<tr>
<th>Accessory Type</th>
<th>Series 80</th>
<th>Series 40/20</th>
</tr>
</thead>
<tbody>
<tr>
<td>Digital I/O Module</td>
<td>x MES120 14 inputs + 6 outputs / 24-250Vdc</td>
<td>x MES120G 14 inputs + 6 outputs / 220-250Vdc/hi p.u.</td>
</tr>
<tr>
<td>Communication I/F Module</td>
<td>x ACE959 RS485 4-wire Interface Module (requires ext. 24VDC control pwr)</td>
<td>x ACE9492 RS485 2-wire Interface Module (requires ext. 24VDC control pwr)</td>
</tr>
<tr>
<td>Analog I/O Module</td>
<td>x MET1482 8 temperature sensor input module</td>
<td>x DSM303 Remote advanced MMI (requires cable CCA785 see below)</td>
</tr>
<tr>
<td>Analog I/O Cables</td>
<td>x CCA780 1 or 5 A CT Current Connector</td>
<td>x CCA781 Voltage Connector</td>
</tr>
<tr>
<td>Ground Sensor CTs (mV out)</td>
<td>x CSH200 Ground Sensor CT - 200 mm window</td>
<td>x CSH30 Interposing window CT for Residual current input</td>
</tr>
<tr>
<td>Configure software</td>
<td>x SFT2841KIT Setting/operating software kit (including SFT2826 osc s/w+CCA783 cable)</td>
<td></td>
</tr>
</tbody>
</table>

### Series B0-40+20 Accessory List

<table>
<thead>
<tr>
<th>Accessory Type</th>
<th>Series 80</th>
<th>Series 40/20</th>
</tr>
</thead>
<tbody>
<tr>
<td>Digital I/O Module</td>
<td>x MES114 10 Input / 4 output module</td>
<td>x MES114E 10 inputs + 4 outputs 110/125V</td>
</tr>
<tr>
<td>Communication I/F Module</td>
<td>x ACE937 Fiber optic Interface Module</td>
<td>x ACE969TP (2)RS485 2wire I/F</td>
</tr>
<tr>
<td>Analog I/O Module</td>
<td>x MSA141 Analog output module</td>
<td>x DSM303 Remote advanced MMI (requires cable CCA77x see below)</td>
</tr>
<tr>
<td>Analog I/O Cables</td>
<td>x CCA772 2m cable from remote display to base unit</td>
<td>x SFT080 Logipam plc logic software</td>
</tr>
<tr>
<td>Ground Sensor CTs (mV out)</td>
<td>x CSHA200 Ground Sensor CT - 200 mm window</td>
<td>x CSHA30 Interposing window CT for Residual current input</td>
</tr>
</tbody>
</table>

#### Accessories

- **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: 10 inputs + 4 outputs / 110-125V/hi p.u.
  - x MES114: 10 Input / 4 output module
- **Communication I/F Module**
  - x ACE937: Fiber optic Interface Module
  - x ACE959: RS485 4-wire Interface Module (requires ext. 24VDC control pwr)
  - x ACE9492: RS485 2-wire Interface Module (requires ext. 24VDC control pwr)
- **Analog I/O Module**
  - x MSA141: Analog output module
  - x MET1482: 8 temperature sensor input module
- **Analog I/O Cables**
  - x CCA780: 1 or 5 A CT Current Connector
  - x CCA781: Voltage Connector
- **Ground Sensor CTs (mV out)**
  - x CSHA200: Ground Sensor CT - 200 mm window
  - x CSHA30: Interposing window CT for Residual current input
- **Configure software**
  - x SFT2841KIT: Setting/operating software kit (including SFT2826 osc s/w+CCA783 cable)

#### Notes

- 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
### Selection Example

#### Follow these steps:

<table>
<thead>
<tr>
<th>Selection Sequence</th>
<th>Type Part</th>
<th>QTY</th>
<th>Catalogue No.</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Relay Unit</td>
<td>1</td>
<td>SP11X00</td>
<td>Transformer (400 V)</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Memory module</td>
<td>1</td>
<td>M4022200</td>
<td>250 Vdc memory module</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Communication module</td>
<td>1</td>
<td>M4221100</td>
<td>Ethernet interface module</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Temperature sensors</td>
<td>1</td>
<td>M2214100</td>
<td>Temperature sensors</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Low-level analog output</td>
<td>1</td>
<td>M3223100</td>
<td>Low-level analog output</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Synchro-check module (Series 80 only)</td>
<td>1</td>
<td>M3224100</td>
<td>Synchro-check module</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Software tools</td>
<td>1</td>
<td>M4225100</td>
<td>Software tools</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Remote display</td>
<td>1</td>
<td>M5226100</td>
<td>Remote display</td>
<td></td>
</tr>
</tbody>
</table>

- **Base Unit**
- **Parameter and protection settings saved on removable memory cartridge (Series 80 only)**
- **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)**
- **Connection to communication networks**
- **Temperature sensors**
- **Low-level analog output**
- **Synchro-check module (Series 80 only)**
- **Software tools**
- **Remote display**

**Remote Display for use with "Basic" Base Units — contact local sales office**
This page is left intentionally blank.