Advanced Power Meters with BACnet or Modbus Protocols

Monitor and improve energy efficiency with real time, accurate power monitoring and submetering

www.usa.siemens.com/hvac
Siemens MD-BMS Series Power Meters provide real time electricity, power and energy metering, enabling greater insight and control over energy costs. Their flexibility, features, and ease-of-use make them an ideal tool for gathering detailed consumption information in commercial, industrial, governmental, and retail environments.

Data provided from MD-BMS Series Power Meters can be used to:

• Gain a better understanding of your energy baseline or load profile
• Measure and verify energy conservation and performance contract projects
• Determine equipment and system energy efficiency
• Identify performance problems in equipment and processes
• Determine opportunities for energy efficiency improvement projects
• Forecast building demand and optimize energy efficiency through load management applications
• Support responsibility-based budgeting and departmental cost allocation
• Support tenant energy billing applications
• Support new LEED v4 rating system making energy metering a pre-requisite for certification.

Installing advanced power meters to monitor loads not only allows the facility management team to measure energy usage of critical systems in real time, but also provides information for sophisticated scheduling, advanced diagnosis and preventative maintenance.

These MD-BMS meters communicate with most Building Automation Systems (BAS) using BACnet MS/TP or Modbus RTU, allowing scheduling programs that can synchronize a building’s electrical loads with the building’s schedule and occupancy, to improve energy efficiency.

The Siemens MD-BMS meter provides accurate, real-time data to the BAS to support continuous monitoring and alarming that alerts maintenance staff to problems via the use of BAS trending and reporting tools. Trending and reports can be created to compare the levels of energy usage over time, whether measuring a single facility or an entire enterprise. Reports can be normalized based on historical temperature data, factoring out the effects of different weather patterns year after year. This gives contractors or a facilities maintenance team the ability to monitor energy usage conditions and to make operational adjustments from a single point of control.

Key specifications

• Works with single phase, three phase WYE, three phase DELTA services (use on 120/240V, 480/277V, 580/355V, or 380/220V services); 50/60 Hz
• Meter has three voltage channels: 80 to 346V line-to-neutral, 600V line-to-line, and CAT III
• Automatically checks for CT phase orientation, reducing set-up time and all but eliminating installation errors
• ANSI C12-20-2010 Class 0.2 revenue grade meter supports submetering applications
• Includes a digital pulse output port to support pulse accumulators to collect energy data
• Data updates occur every 0.5 seconds
• Monitors over 75 voltage, current, power, energy, and other electrical parameters on single- and three-phase electrical systems
• Communicates via BACnet MS/TP protocol (default) or Modbus RTU protocol, allowing flexible integration to any BAS or control system
• MD-BMED series adds ethernet capability via BACnet IP or Modbus TCP, and features a convenient backlit display.
A cost-effective metering solution with flexible installation & commissioning

MD-BMS Series Power Meters measure building loads from a whole-building perspective all the way down to plug loads. The meter captures kWh/kW energy consumption and power demand data, as well as relevant electrical, power and energy parameters for diagnostics and monitoring on three-phase or single-phase circuit installations.

Flexible and capable
The MD-BMS has the flexibility for your monitoring and assessment needs of today while being exceptionally capable for future diagnostic measurements to validate energy savings opportunities. This “revenue grade” meter supports submetering applications and provides more measurement parameters than any other meter of its type.

BAS compatible
The BACnet and Modbus protocols allow for installation flexibility and maximizes compatibility to most Building Automation Systems.

Fast installation
MD-BMS Model Meters are compact, easily installed and can be positioned inside or outside of an electrical panel. They are available pre-configured to the Current Transformer (CT) ordered, helping to reduce installation time. A new USB port both powers the meter during setup along with providing easy use of service software for monitoring or diagnostics.

Low cost
Powerful features, industry leading technology, competitive pricing and fast installation makes the MD-BMS Series one of the best power/energy metering values of its kind. The meter derives its own power from 80-600 Vac within the electrical panel, no external supplies or transformers are needed.

Advanced technology
The MD-BMS Series employs split-core, low-voltage signal CTs, which are inherently safer than amp-signal CTs and have high linearity at low loads. Meters use direct connections to each phase of the voltage uses and uses various interchangeable CT options, such as split-core CTs or flexible Rogowski coils (for large loads or large cables and bus bars) to monitor current on each phase.

Display and ethernet model
The MD-BMED features a backlit 2 line by 16 character display to aid in setup, and real time monitoring along with added ethernet capability via BACnet IP or Modbus TCP.

Product Ordering

<table>
<thead>
<tr>
<th>CT Rating</th>
<th>Description</th>
<th>MD-BMS Power Meter (No Display) Part No.</th>
<th>MD-BMED Power Meter (Ethernet and Backlit Display) Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>100 Amps</td>
<td>Meter bundled with three 100-Amp, 333mV midi hinged CTs with 1” window</td>
<td>MD-BMS-3-CTSC-100A</td>
<td>MD-BMED-3-CTSC-100</td>
</tr>
<tr>
<td>200 Amps</td>
<td>Meter bundled with three 200-Amp, 333mV midi hinged CTs with 1” window</td>
<td>MD-BMS-3-CTSC-200A</td>
<td>MD-BMED-3-CTSC-200</td>
</tr>
<tr>
<td>400 Amps</td>
<td>Meter bundled with three 400-Amp, 333mV medium split-core CTs with 1.25” window</td>
<td>MD-BMS-3-CTSC-400A</td>
<td>MD-BMED-3-CTSC-400</td>
</tr>
<tr>
<td>600 Amps</td>
<td>Meter bundled with three 600-Amp, 333mV large split-core CTs with 2” window</td>
<td>MD-BMS-3-CTSC-600A</td>
<td>MD-BMED-3-CTSC-600</td>
</tr>
<tr>
<td>4000 Amps</td>
<td>Meter bundled with three 4000-Amp, 131mV 16” Rogowski coils with 5” diameter window</td>
<td>MD-BMS-3-RC-16</td>
<td>MD-BMED-3-RC-16</td>
</tr>
<tr>
<td>4000 Amps</td>
<td>Meter bundled with three 4000-Amp, 131mV 36” Rogowski coils with 10.4” diameter window</td>
<td>MD-BMS-3-RC-36</td>
<td>MD-BMED-3-RC-36</td>
</tr>
</tbody>
</table>

The Federal Government owns 1.3 trillion dollars in real estate: office buildings, hospitals, R&D labs, data centers, universities, financial, campus facilities, communications facilities, public works, and special purpose facilities. The General Services Administration (GSA) is the country’s largest landlord, providing workspace for more than a million federal workers who work in both federally owned and leased space, that makes up more than 9,000 properties or 377.9 million square feet of workspace. To increase performance and decrease costs, the GSA has set a goal to reduce energy consumption in federal buildings by 30 percent by 2015.  
Source: PR Newswire

Executive Order (E.O.) 13423 requires Federal agencies to reduce energy intensity by 3% each year, leading to 30% by the end of fiscal year (FY) 2015 compared to an FY 2003 baseline. Section 103 of EPAct 2005 directs that all Federal buildings be metered for the purposes of efficient energy use and reduction in the cost of electricity used in such buildings by October 1, 2012. Advanced meters or metering devices must provide data at least daily and measure the consumption of electricity at least hourly. These devices must be used to the maximum extent practicable.  