

A 3D architectural rendering of a complex facility, likely a hospital and industrial plant. The scene includes several large, multi-story buildings with various rooflines and window patterns. One building features a prominent red cross on its roof, indicating a hospital. There is a large parking lot filled with numerous cars in red, blue, and white. A tall, red and white striped chimney stack is visible on the right side. The overall environment is a mix of green grass and paved areas, suggesting an urban or industrial setting.

SIEMENS

Power Distribution

Products for efficiency
and sustainability.

www.usa.siemens.com/powerdistribution



Our commitment to an efficient, sustainable future.

Siemens provides customers in the industrial, institutional and construction sectors with energy efficient products and solutions. For the last 160 years, Siemens has been making substantial contributions to environmental protection with over 6,000 energy related patents.

We recognize that high performance facilities make for high performance business. Energy is the lifeline of your business, and better efficiency and sustainability can have a large positive impact on your bottom line.

Our mission is to help our customers increase energy efficiency, improve productivity and make their businesses more profitable. We accomplish this by providing intelligent, communications-capable products that protect your equipment and allow smarter more effective use of energy.

We help our customers define their objectives, implement green energy saving strategies, and then maintain efficient, sustainable operations. Now more than ever, businesses need to take control of their energy consumption from beginning to end. Siemens helps provide that control by integrating products and solutions that monitor and reduce your energy use.

Product focus

Energy efficiency and sustainability



Businesses need to do more with less. Siemens offers products that can reduce your maintenance costs and help increase productivity, as well as lower your utility costs to help increase profitability. Let us be your first choice for energy efficient and sustainable power distribution solutions.

Environmental care



Siemens is committed to helping our customers become more environmentally friendly. Reduce the impact you have on the environment by shrinking your carbon footprint with Siemens innovative products.

Leadership in energy efficient design



The LEED® (Leadership in Energy and Environmental Design) Green Building Rating System is the nationally accepted benchmark for the design, construction, and operation of high performance green buildings. Companies are becoming more aware of LEED and its positive impact on the planet. Our innovative products can help support your LEED certification efforts in new construction and upgrades to existing buildings.*

*For more information on LEED, visit www.USGBC.org
LEED and related logo is a trademark owned by the U.S. Green Building Council and is used by permission.

Efficient and reliable power distribution



Medium Voltage Switchgear



Low Voltage Switchgear



Transformers



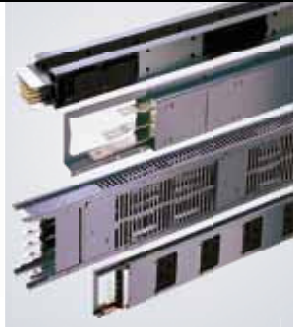
Switchboards and Panelboards



Circuit Breakers



Motor Controls



Busway






Power Monitoring



i-3 Lighting Controls

Medium voltage switchgear



	The vacuum interrupters used in GMSG gear are manufactured by Siemens and have been proven in thousands of installations since 1976 to achieve durability and long life.
	Compact and efficient equipment designs allow significant space savings.
	EA Credit 1: Optimize energy performance






Features and benefits

Siemens GM-SG 5kv, 7.2kv and 15kv metal-clad power switchgear assemblies with horizontal drawout type GMSG vacuum circuit breakers take advantage of the latest developments in vacuum interrupter technology.

- GM-SG design allows two-high breaker mounting in a single section, allowing significant space savings
- GM-SG objective has been to incorporate features designed to enhance safety, while simplifying operation and maintenance, and minimize installations costs
 - Common operator family
 - "Universal" spare circuit breaker concept
 - Low maintenance vacuum interrupter
 - Ten-year maintenance interval under usual service
 - Floor roll-out for lower mounted breakers
- GM-SG utilizes the full line of Siemens SIPROTEC relays, supporting the new IEC 61850 communications standard and "smart-gear" medium voltage distribution solutions
- GM38 switchgear is available for 38kv applications
- GM-SG-AR arc resistant design is also available

Low voltage switchboards/switchgear



	<p>Energy management capability helps you monitor power consumption.</p>
	<p>Smallest footprint in the industry allows you to optimize usable space</p>
	<p>EA Credit 1: Optimize energy performance</p>

Siemens Type WL low voltage metal-enclosed switchgear is designed, constructed and tested to provide superior power distribution, power monitoring and control. Our switchgear can be designed to fit virtually every application and any requirement. No other product on the market today offers more flexibility or greater reliability.






Features and benefits

- The WL breaker supports energy management through advanced metering and power quality analysis, allows cellular alarm paging to maintenance personnel, and offers complete ratings and accessories meeting every need with one design.
- Contributes to achieving EA Credit 1: Optimize Energy Performance by facilitating load shedding and control.
- The compact size and modular configuration save real estate, offering the smallest gear footprint without energy-wasting heat sinks.
- Remotely manage your energy use through Internet, MODBUS, or PROFIBUS communications.
- UL1558 switchgear vertical sections allow up to four enclosed breakers or auxiliary compartments, allowing for superior modularity and uniform height.
- UL891 switchboards allow more flexibility with a wide range of breakers - insulated case and molded case, thermal magnetic and solid state - as well as fusible devices and other miscellaneous components.

Transformers



Siemens supplies all types of distribution transformers both low voltage (600V), and medium voltage (up to 34.5kV). Our low voltage TP1S units offer greater efficiency than industry standards and our medium voltage units can be designed to meet efficiency standards for virtually any application.

	Our medium voltage transformers comply with Department of Energy 2010 ruling for higher efficiency.®
	Our high efficiency transformers reduce your environmental impact by shrinking your carbon footprint.
	EA Credit 1: Optimize energy performance



Features and benefits




- Capability for utility, unit substation and distributor dry types.
- Our medium voltage dry-type transformers are fully compliant with 2010 Department of Energy (DOE) efficiency standards ruling for medium voltage transformers. This ruling calls for higher efficiencies that lead to energy and cost savings.
- Siemens can provide transformers with optimum efficiency based on your facility's energy requirements which can contribute toward achieving LEED EA Credit 1: Optimize Energy Performance.
- High efficiency transformers reduce the need for additional energy production and associated green house gases.
- TP1S Low Voltage Transformers are 25% more efficient than NEMA™ TP1 standards, offering you increased carbon footprint reduction.®
- Our harmonic mitigating transformers are TP1 and Energy Star rated.
- We offer a range of ventilated dry, cast dry and liquid substation transformers to meet all specifications and environmental demands.

Distribution switchboards and panelboards



Siemens switchboards and panelboards integrate seamlessly to fulfill all of your power distribution needs. Intelligent communications, lighting controls, and power monitoring can be combined into one comprehensive solution giving you the benefit of central access to all your circuit protection and control devices.



	Integrate Power Monitoring and i-3 lighting controls to maximize efficiency.
	Multiple devices per section shrinks equipment footprint and reduces electrical space requirements.
	EA Credit 1: Optimize energy performance

Features and benefits

- Integrated Power System Switchboards (IPS) can contain lighting panels, dry type distribution transformers and i-3 lighting controls as well as Power Monitoring equipment to help manage energy costs from one central location as well as provide more system flexibility.
- Integrating Siemens unique embedded metering solution into IPS provides an innovative cost and space saving solution for allocating energy costs to commercial applications.
- Reduce the space requirements for typical electrical equipment installations by up to 40% by integrating components that are typically individually mounted.
- Ability to monitor and control energy contributes to achieving LEED EA Credit 1: Optimize Energy Performance.
- Smaller footprint can free up valuable square footage for other profitable uses.
- By consolidating panelboards, transformers, power monitoring, TVSS, and environmental control components into one integrated switchboard, the owner reaps the benefits of faster installation, smaller footprint, easier commissioning, and reduced material handling costs.
- We offer a full range of lighting and distribution panelboards from 125A through 1200A for efficiency and flexibility.

Circuit breakers






WL - Low Voltage Power



VL - Molded Case

Our circuit breakers protect your electrical system, helping to minimize down time and lower costs. We offer a wide range of circuit breakers with ampacities up to 6,000A that are equipped with numerous communication capabilities, have various modular designs and are certified with global ratings.



	Integrate with Siemens Power Management system to optimize energy use.
	Protect the environment with Restriction of Hazardous Substances (ROHS) compliant breaker construction.
	EA Credit 1: Optimize energy performance

Features and benefits




- Siemens WL Power Breakers, WL Insulated Case Circuit Breakers, and VL thermal-magnetic Molded Case Circuit Breakers are manufactured to ROHS (Restriction of Hazardous Substance) compliant standards to minimize impact on the environment.
- The WL breaker supports energy management through advanced metering and quality analysis, letting you take control of your power management initiatives.
- The smaller footprint of our VL circuit breakers allow more devices per panel, potentially reducing the amount of space needed for your application.
- Ability to control loads, including load shedding, can contribute towards achieving LEED EA Credit 1: Optimize Energy Performance.
- Communication functionality enables integration into any cross-application system solutions.
- Easy integration into a power management system allows you to optimize power distribution by balancing peak loads.

Motor controls



Electric motor and generator driven systems account for nearly 70% of the electricity consumed in the U.S. industrial manufacturing sector, and 23% of all electricity consumed in the U.S. Improvements in motor-driven systems can yield significant energy cost savings and reduction of the estimated 290 billion kWh annually consumed.^① Siemens motor controls supports these efforts by packaging controls, drives, and communications within one tiastar Motor Control Center.



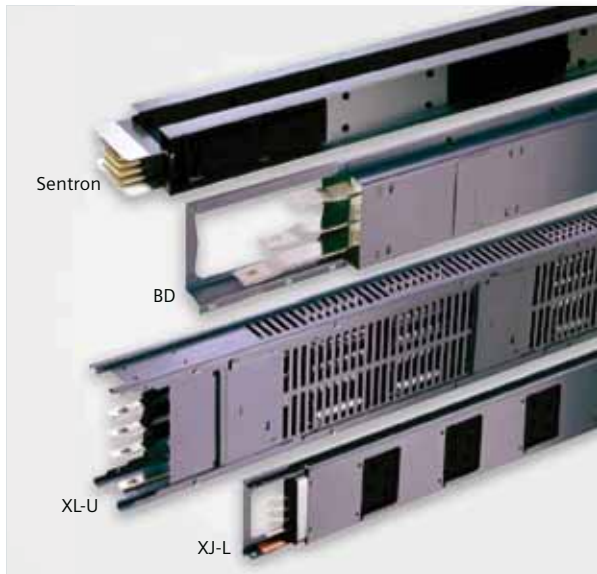
	<p>Optimize energy for motors and reduce utility costs.</p>
	<p>Energy savings are the fastest way to reduce carbon footprint. Tiastar™ motor control centers do this with Siemens motor control technologies.</p>
	<p>EA Prerequisite 2: Minimum energy performance EA Credit 1: Optimize energy performance</p>

Features and benefits

- Reduce energy consumption by integrating all of our innovative motor controls into the tiastar Motor Control Center.
- Siemens Standard Drives are an easy way to reduce energy consumption by your electric motors.
- Maximizing and increasing levels of energy performance with motor controls contributes toward achieving LEED:
 - EA Prerequisite 2: Minimum energy performance
 - EA Credit 1: Optimize energy performance
- Achieve 10-14% reduction in energy costs and increase uptime with lower resources with a proper motor maintenance program using Profibus-DP communications.
- Minimize power losses and keep your MCC cool with horizontal bus rated for 50°C temperature rise.
- Tiastar MCC starters are sized for Design B (general purpose) energy efficient motor as standard, allowing a simple design when energy savings are a priority.
- Saves floor space by placing several starters and drives in a single cabinet.




① www.NEMA.org

Busway/bus plugs



Since 1932, Siemens has offered the industry's most complete and modern line of busway products. When in need of a cost-effective power delivery solution we can offer a selection of four different types of busway, giving you the flexibility to choose the right solution that matches your site-specific requirements for an optimized power delivery solution.



	<p>Low impedance translates into energy savings and better voltage regulation.</p>
	<p>Conserve raw materials and produce less waste.</p>
	<p>EA Credit 1: Optimize energy performance</p>

Features and benefits

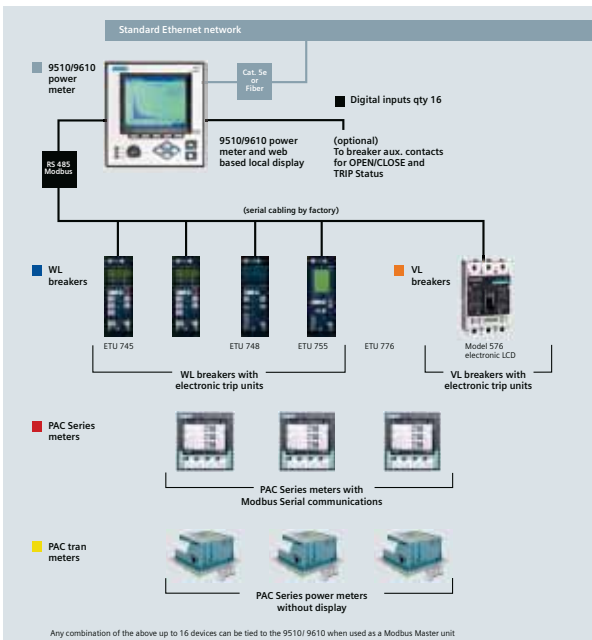
- Busway has lower impedance in comparison to cable and conduit sized for the same application. Lower impedance means less energy required which translates into cost savings.
- Siemens Access meters can be factory installed in bus plugs and busway tap boxes to monitor and optimize loads to further reduce energy requirements. Busway lowers your carbon footprint and helps save you money.
- The higher efficiency of Siemens busway can contribute to achieving LEED EA Credit 1: Optimize energy performance.
- Material and labor cost for busway is typically 15-30% lower cost for 100-2000A and 20-40% lower for 2500-5000A than cable and conduit. Save money on raw materials and create less waste by buying pre-engineered lengths of busway.
- The compact profile of busway typically requires 50% less installed space compared to cable and conduit. With a smaller cross section, busway is up to 50% lighter in weight which translates to less structural load on the building.
- XJ-L type busway utilized as data center server bus in 225-400A applications continues to be a leading solution for demanding high density needs. XJ-L HD busway is the optimal choice for both contractors and users concerned with designing superior electrical systems that require a high plug density and optimal space utilization.

Energy Management and Control Systems



	<p>Optimize energy performance by identifying opportunities to increase efficiency.</p>
	<p>Establishing an energy usage baseline is the first step to reducing your carbon footprint.</p>
	<p>Multiple LEED prerequisites and credits (SS, EA, EQ)</p>

ACCESS™ Energy Management and Control Systems from Siemens are complete enterprise solutions that help you manage the energy costs and availability of your business. With our advanced meters and controls, you can be sure to use only the energy you need, when you need it.



- 9510/9610 power meter with local display and web server capabilities
- WL breaker trip unit types ETU 745, 748, 755, or 776 with Modbus communication and metering capabilities
- PAC Series power meter with full metering capabilities and individual display
- PAC power meter with full metering capabilities and no display (information displayed at the main meter)
- 9510/9610 has 16 digital inputs which are available for circuit breaker open/close and trip status, or transfer switch status, transformer alarms, or any other equipment status the customer may require
- VL breaker with 576 LCD electronic trip units and ComMod communications module




Features and benefits

- Energy management systems and advanced power meters can be used to reduce peak loads in your system and avoid utility charges that can be up to 100 times the normal rate.
- Contributes toward the following LEED categories:
 - Energy & Atmosphere Prerequisite 2: Minimum Energy Performance
 - Energy & Atmosphere Credits 1: Optimize Energy Performance
 - Energy & Atmosphere Credits 5: Measurement & Verification
- Establish an energy baseline to identify areas for improved efficiency and document the results of your energy saving actions.
- Produce custom reports that show the reduction of your carbon footprint in a number of units, from CO₂ to acres of trees.
- Siemens Energy meters Management and Control Systems can help create documentation to become Energy Star certified.
- Meters can be configured for pulse counting applications to monitor all of your utilities: electric, gas, water, air, and steam.
- Document cooperation with demand response requests from utilities.
- Siemens meters can be configured to alarm on out-of-limit conditions on a wide variety of inputs, and integrated for communications via standard industry protocols.

i-3 lighting controls



The Siemens P1 Series Lighting Panelboard with i-3 Control Technology™ is the next step in engineering innovation for our lighting control product portfolio. i-3 is a lighting control solution that allows engineers and end users to integrate, install, and interface controllable breakers into their electrical applications.

	Directly reduce your energy costs with smart schedules and automated controls.
	Reduce your carbon footprint with less energy consumption, and promote open space with the smallest controllable breaker panel available.
	Multiple LEED prerequisites and credits (SS, EA, EQ)



Features and benefits

- Reduces energy costs by creating automated lighting schedules, controlling outdoor lighting based on local sunset/sunrise times for your geographical location, and controlling indoor lighting with occupancy sensors.
- Can contribute towards achieving LEED credits in multiple categories:
 - Sustainable sites credit 8: light pollution reduction
 - Energy and atmosphere Prerequisites 1 and 2
 - Energy and atmosphere Credits 1, 5
 - Indoor environmental quality credits 6.1 and 8.1
- Lighting control can be retro-fitted into Siemens P1 lighting panels to help upgrade lighting systems in existing buildings to directly manage and reduce energy consumption.
- Smallest footprint for a controllable breaker system allowing for more open usable space.
- Modular design produces an intelligent breaker system that lowers installation costs, minimizes the impact and cost of future system modifications, makes retrofit applications less tedious, and reduces component replacement costs.
- Users can control and monitor system via remote access or touch screen panel.

Realize energy savings with Siemens



Water Technology

Siemens Water Technologies provides the most comprehensive, cost-effective and reliable treatment systems and services. We offer everything from emergency water supply and conventional water treatment processes to wastewater reuse systems.

Smart Grid

Siemens Smart Grid Division provides systems and services for smarter production, transmission and delivery of electricity to utility, industrial, commercial, federal and public transit customers. Our mission is to provide comprehensive metering services to the North American utility industry, including meter data management system (MDMS) software, integration services, and consulting.



Wind Power

As demand for clean power generation to meet the world's growing energy need increases, Siemens Wind Power has the answers. With highly efficient, robust and reliable wind turbines, Siemens has a demonstrated history in delivering proven solutions to onshore, coastal and offshore sites. Siemens also offers integrated solutions and services that meet the demands of the entire wind energy conversion chain.

The information provided in this brochure contains merely general descriptions or characteristics of performance which in case of actual use do not always apply as described or which may change as a result of further development of the products. An obligation to provide the respective characteristics shall only exist if expressly agreed in the terms of contract.

All product designations may be trademarks or product names of Siemens AG or supplier companies whose use by third parties for their own purposes could violate the rights of the owners.



Siemens Industry, Inc.
5400 Triangle Parkway
Norcross, GA 30092

800-241-4453
info.us@siemens.com

Subject to change without prior notice
Order No.: PDBR-CPDCS-0412
All rights reserved
Printed in USA
© 2012 Siemens Industry, Inc.