

One Superior System. One Efficient Design.

Square D® Unit Substations



Make the most of your energySM



by Schneider Electric

> A tradition of unsurpassed excellence and superior service

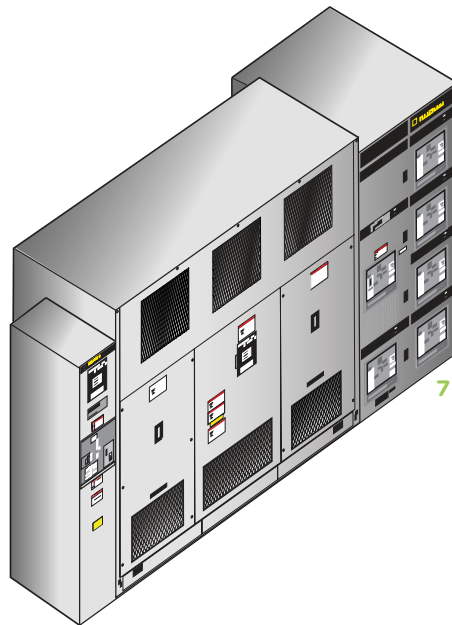
People choose Square D unit substations for a multitude of reasons. Here are a few of the benefits you'll find:

- A single point of contact during system design and single-source assistance with pricing, delivery and warranties
- Flexible range of products for any application
- Total coordination – each section engineered, manufactured and divided into shipping sections to ensure ease of installation
- All interconnection hardware and installation instructions are provided
- Warranty coverage for the entire unit substation
- A single composite drawing for the entire unit substation – no confusion over multiple drawings for separate sections
- Each component is built and tested to the applicable ANSI, NEMA, UL or IEEE standards
- Start-up service and training in installation, operation and preventative maintenance

Schneider Electric has it all – the widest selection of ratings and product options, full system integration and the support personnel to meet all your needs. These benefits make your unit substation truly one product. Overall, it means better performance and the highest value for your investment.



Schneider Electric engineers and manufactures every section of both primary and secondary unit substations to meet the highest levels of quality, system integration and simplified installation. No one else offers as wide a range of options for primary equipment, transformers and secondary equipment. And no one else is more qualified to be your single-source supplier.



- 1** Motorpact™ medium voltage motor controller can be close-coupled to a main device. This reduces space and cost by eliminating the need to connect remotely with cable or bus duct. With a rating up to 7.2 kV it meets global industry codes and standards; NEMA, UL, cUL and IEC.
- 2** HVL/cc™ metal-enclosed switchgear gives you clear and impressive performance advantages in the 2.4 kV to 38 kV range, with ANSI and CSA ratings that far surpass anything in the market for a wide range of applications. The full range of HVL/cc switchgear is UL and cUL listed.
- 3** Power-Dry™ II transformer, a true solid dielectric transformer, uses Vacuum Pressure Impregnated (VPI) technology to provide outstanding long-term performance.
- 4** Masterclad® medium voltage metal-clad drawout switchgear (per ANSI/IEEE C37.20.2) is designed to ensure reliability and minimal maintenance. The main interrupter contacts are sealed from all contaminants in a vacuum environment. This high dielectric strength environment allows for short clearing time during fault interruptions.
- 5** HVL™ metal-enclosed ANSI-rated switchgear is ideal for unit substation primary applications. It offers a cost effective, reliable disconnect switch that provides fault protection up to 38 kV.
- 6** Square D unit substations can also be configured with HVL medium voltage metal-enclosed switchgear, Power-Dry II transformers, and QED Power-Style® switchboards to meet your power distribution needs.
- 7** Square D unit substations can be configured with a variety of Square D components, including HVL/cc medium voltage metal-enclosed switchgear, Power-Dry II transformers and Power-Zone® 4 low voltage switchgear.



single-source supplier

> A tradition of quality choices

To meet your power distribution requirements, we offer primary components that range from 600 V switchboards to 5 kV to 38 kV switchgear. Our transformers range from 2.4 kV to 34.5 kV, while our secondary equipment offers a variety of cost-effective power distribution solutions.

Our solutions are designed to help you address individual facility environments, floor space issues and budgetary concerns. They also incorporate the most efficient choices of technology. In addition, all of our components are available with either NEMA 1 indoor or NEMA 3R outdoor enclosures.

These quality choices come together in a system design that gives you optimal performance for your specific application.

Primary



HVL/cc
medium voltage
metal-enclosed
switchgear
2.4 kV – 34.5 kV
600 A or 1,200 A
continuous rating



HVL
medium voltage
metal-enclosed
switchgear
2.4 kV – 34.5 kV
600 A or 1,200 A
continuous rating



Visi-Vac®
medium voltage
circuit interrupter
2.4 kV – 14.4 kV
600 A or 800 A
continuous rating



Masterclad
metal-clad switchgear
with type VR vacuum
circuit breaker
2.4 kV – 26.4 kV
1,200 A – 3,000 A
continuous rating



Power-Zone
medium voltage
busway
2.4 kV – 14.4 kV
5,000 A
continuous rating

Secondary



HVL/cc
medium voltage
metal-enclosed
switchgear
2.4 kV – 34.5 kV
600 A or 1,200 A
continuous rating



HVL
medium voltage metal-
enclosed switchgear
2.4 kV – 34.5 kV
600 A or 1,200 A
continuous rating



Visi-Vac
medium voltage
circuit interrupter
2.4 kV – 14.4 kV
600 A or 800 A
continuous rating



Masterclad
metal-clad switchgear
with type VR vacuum
circuit breaker
2.4 kV – 26.4 kV
1,200 A – 3,000 A
continuous rating



Motorpact
medium voltage motor
controller
Power 2.4 kV – 6.9 kV
Max. 50 Hz – 60 Hz
Bus ratings up to 50 KA
Control: 120 V, 60 Hz;
110 V, 50 Hz

We are committed to upholding our reputation for quality and reliability. No other manufacturer gives you a wider range of quality choices precisely designed to perform as one superior system. And no other manufacturer has the resources and expertise to ensure that all of your application needs are integrated into one efficient design.

Transformer



QED Power-Style switchboard
Fixed or drawout mounted
600 V and below



Power-Dry II transformer
kVA sizes:
225 kVA – 5,000 kVA
Primary voltage classes:
480 V – 34.5 kV



Uni-Cast II transformer
Cast coil primary
encapsulated secondary
kVA sizes:
500 kVA – 3,000 kVA
Primary voltage classes:
2.4 kV – 34.5 kV



Liquid-filled transformer
Oil, seed oil or silicone
kVA sizes:
225 kVA – 10,000 kVA
Primary voltage classes:
2.4 kV – 34.5 kV



Power-Cast® II transformer
Cast coil transformer
kVA sizes:
225 kVA – 10,000 kVA
Primary voltage classes:
2.4 kV – 34.5 kV



QED Power-Style switchboard
Fixed, group, and drawout
mounted 600 V and below
Bus rating up to 5,000 A



Power-Zone 4 low voltage drawout switchgear
Masterpact NT and NW
power circuit breakers
Bus ratings up to 5,000 A,
600 V and below



QED-6 Power-Style® switchboard
Masterpact NT and NW
power circuit breaker
Bus ratings up to 5,000 A,
600 V and below



Low voltage Model 6 motor control center
600 V maximum
Bus ratings up to 2,500 A
Control: 120 V, 60 Hz;
110 V, 50 Hz



I-Line® low voltage busway
600 V and below
1,200 A – 4,000 A
continuous rating

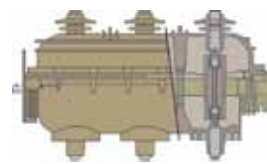
> A tradition of performance and innovation

Industrial applications demand quality, durability and performance. Schneider Electric builds rugged unit substations to match these requirements. We have the technology and engineering expertise to help you keep your facility operating at peak performance.

The HVL/cc medium voltage load-interrupter switch is one example of how we address your industrial needs for primary equipment. The switch enclosure maintains a low volume of SF6 gas at a pressure of 5.8 PSI. The switch is sealed for life and never requires refilling. The sealed interruption feature also eliminates the need for maintenance on main switch contacts. Both the main and ground contacts of the switch can be viewed through the two viewing windows on the mechanism compartment. The HVL/cc load interrupter can be equipped with time overload, under voltage and over voltage relaying. The design of the sealed interrupter switch also contains arcing from switch contacts – critical in environments with explosive gases.

HVL/cc medium voltage metal-enclosed switchgear

Schneider Electric understands that the cost for switchgear includes the cost of installation, maintenance, modifications and future expansion. HVL/cc switchgear addresses the total cost of ownership, giving you longer switch life, reduced maintenance, more flexibility and better performance.



Cut away view of internal contacts of the "sealed for life" switch

Power-Cast II transformer

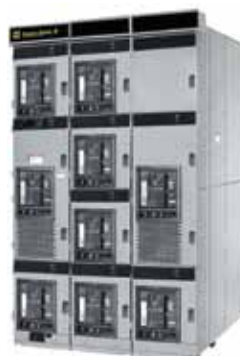
The primary and secondary windings of the Power-Cast II transformer are permanently embedded between layers of fiberglass and impregnated by a vacuum molding process with a high-temperature filled resin. This design provides long service under extreme conditions.



Expanded view of transformer construction

Secondary Power-Zone 4 switchgear

Rugged, long life operation – the foundation of Power-Zone 4 performance is our Masterpact circuit breakers. Known and admired by users for over a decade, they deliver the reliability and durability you expect along with improved functionality. If you're looking for ways to increase electrical system uptime, Power-Zone 4 with Masterpact technology helps to ensure continuity of service. Masterpact circuit breakers offer short-time withstand ratings up to 100,000 A and interrupting ratings up to 200,000 A – without fuses. They have been tested to meet ANSI endurance levels without the allowed intermediate maintenance.



A historical leader in the engineering and manufacturing of electrical distribution equipment, Schneider Electric continues to pioneer the development of new technologies designed to help you optimize your power usage. For example, we have expanded power monitoring and control system capabilities through the use of web-enabled equipment, microprocessor-based services and computer networks. Our PowerLogic monitoring and control system can be configured with your unit substation for intelligent usage monitoring, event recording and alarm detection.

Transparent Ready® web-enabled power and control

Square D unit substations are now enabled and are part of Schneider Electric's Transparent Ready power equipment family.

Transparent Ready power equipment provides "plug and play" communications systems allowing authorized users access to equipment status and monitoring information using only a standard web browser.

With Transparent Ready substations you can monitor fan status and coil temperatures of all three phases of dry-type transformers equipped with the Model 98 digital temperature controller. By correlating temperatures with loading, you'll be able to ensure longer life for your investment.



PowerLogic® circuit monitors

The PowerLogic Series 4000 circuit monitor is the most powerful member of a complete family of power monitoring devices from Schneider Electric and sets new standards for capabilities related to power quality. In fact, it is the only permanently-mounted circuit monitor with impulsive transient detection capability in the industry.

The PowerLogic Series 3000 circuit monitor gives you instant access to real time web pages without installing or learning special software. Using a standard web browser, the highly accurate CM3000 can serve up instantaneous readings of its own, plus summary data from other devices connected downstream.

PowerLogic circuit monitors can establish a baseline for power usage, determine equipment utilization and help increase uptime by capturing data, waveforms and other information so you find and solve problems quickly.



> A tradition of flexibility and value in design

Square D unit substations have been proven in countless commercial applications, where there is as much emphasis on flexibility in design as on cost- and time-savings. We understand that the value of a unit substation is determined by how easily it fits your application needs and by how efficiently it allows you to manage your power usage.

Flexibility in Square D unit substation design starts with a range of components designed for application versatility. Our consulting engineering specialists help you choose the primary, transformer and secondary equipment that is ideal for your application. Future expansion, cost-effectiveness and floor space requirements are a few of the critical factors we analyze in developing the most efficient solution possible.

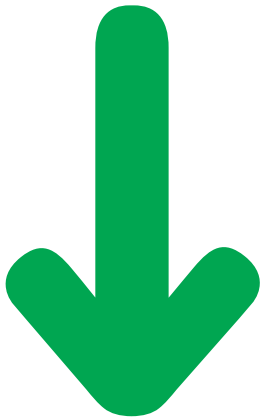
Other Schneider Electric technology can also be used to control your energy cost and power usage with such products as our Micrologic® electronic trip units (used in our QED Power-Style family of switchboards) and PowerLogic circuit monitors. These products are another example of how we are committed to helping you manage your power distribution systems while improving performance.

Masterpact NT circuit breaker

Unsurpassed performance in the world's smallest, full-featured package! The Masterpact NT circuit breaker is a fully tested, full-featured power circuit breaker in the smallest footprint available on the market today – 70% smaller than the Masterpact NW circuit breaker! The Masterpact NT circuit breaker is designed to protect electrical conductors from damage caused by overloads, short circuits and equipment ground faults. Plus, it incorporates the latest advances in breaker technology.



Masterpact NT breaker in its fully withdrawn position



70% smaller

Featuring the smallest footprint on the market, the Masterpact NT circuit breaker is 70% smaller than the Masterpact NW circuit breaker.

Square D unit substations are the ideal choice for utility, industrial, commercial and institutional applications because they are exceptionally engineered for systems integration, have a long tradition of quality and technological innovation, and offer a high level of customer support.

Primary HVL metal-enclosed switchgear

HVL load interrupter fuse compartment door is mechanically interlocked with the position of the switch. Live parts and fuses are not accessible unless the switch has been opened and its load terminals de-energized. In duplex or selector switch configurations, the fuse compartment door is key interlocked with associated devices.



Interior view of disconnect switch and fuse assembly

Power-Dry II transformer

Power-Dry II transformers offer the most economical dry solution for a wide range of applications, with proven performance and reliability unequalled in the industry.



Transformer with enclosure removed

Secondary QED-6 switchboard and Micrologic electronic trip units

QED-6 offers compartmentalized construction. Each breaker is isolated from adjoining breakers and each breaker compartment is barriered from the main bus. The breakers are drawout style to simplify installation and maintenance.



Four Micrologic electronic trip units for maximum flexibility

> A tradition of meeting customer needs

One of the most important features of Square D unit substations is the way they are designed to meet individual needs. Every Square D unit substation is totally engineered to meet your specifications. Every member of the support team – from engineering and manufacturing to field sales and service – is focused on making your job easier and your power distribution system more efficient. We provide individualized and responsive results on everything from scheduling to installation and training. You can also leverage our engineering expertise for short circuit analysis, circuit, and equipment coordination and more.





For more information on how we can meet your individual needs, contact your local field sales representative. With over 200 locations around the world, there's an office near you that's ready to focus on your unique application. Go to www.us.squared.com today to find your local contact and learn more.



For more information call:

- > US: 1.888.SquareD (1.888.778.2733)
- > Canada: 1.800.565.6699

Or, visit our website at:

- > www.us.squared.com
- > www.us.schneider-electric.com

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