S&C Metal-Enclosed Switchgear
Simple, reliable, flexible, and economical . . . the intelligent solution to your in-plant medium-voltage switching and protection needs.

S&C Metal-Enclosed Switchgear, rated 4.16 kv through 34.5 kv, features reliable, time-tested fuses and manual or power-operated interrupter switches in rugged 11-gauge steel enclosures. Switchgear bays are configured into integrated packages for application flexibility, operating simplicity, and superior dependability in switching and protecting medium-voltage power circuits in commercial, institutional, industrial, and high-rise installations. S&C’s expertise in this field has been established during nearly 50 years of metal-enclosed-switchgear design and manufacture, and is complemented by UL® listing of all S&C Metal-Enclosed Switchgear rated 4.16 kv through 13.8 kv with 600-ampere or 1200-ampere main bus.

S&C Metal-Enclosed Switchgear is available in two types-modular and custom. S&C System II Modular Metal-Enclosed Switchgear consists of pre-engineered single-bay modules assembled into configurations that fit most application requirements. Drawing preparation and approval time is minimized, and you gain all the economies of repetitive manufacture. For those requirements that cannot be fully satisfied with modules, S&C’s experienced team of specialists will custom design switchgear for your application.

Power-System-Matched Switching and Protection
Full-load switching, plus S&C’s unique one-time and two-time duty-cycle fault closing ratings. S&C Interrupter Switches carry and interrupt rated load currents even after being closed into available fault currents corresponding to their fault-closing ratings—you can restore power quickly without first having to repair switches inadvertently closed into a fault.

One-cycle total clearing with S&C SM and SML Power Fuses — compared to the 5 cycles or more required by circuit breakers . . . simplifies upstream coordination, minimizes short-circuit stresses on the system.

A choice of unique response curves with maintenance-free S&C Electronic Power Fuses — providing protection not available with any other protective devices, even circuit breakers with their relays and batteries.

Three-phase protection for three-phase loads. S&C electronic overcurrent relays provide isolation for three-phase loads from single phasing and other open-phase conditions.

Single-phase protection for single-phase loads. Fuses . . . unlike circuit breakers . . . selectively isolate only faulted phases of feeders serving single-phase loads.

Threefold Economy
Low purchase cost — economies inherent in the interrupter switch and fuse protection concept translate into significant first-cost savings.

Low installation cost — metal-enclosed switchgear, light by comparison with breaker gear, is easy to handle and needs no foundation, no support channels . . . only a level floor or pad. Multibay lineups assemble with a minimum of interbay bolting, and inter-unit bus connections need no taping. Simple field assembly . . . with no relays to set and test . . . means less time, equipment, and manpower for installation. And future additions to a lineup are readily accomplished as your system expands.

Low maintenance cost — S&C fuses are nondamageable and do not require any maintenance or calibration to perpetuate the accuracy of their time-current characteristics. S&C Interrupter Switches are maintenance free . . . requiring only an occasional exercising. And all that’s required with S&C gear is a check of the insulators and, if necessary, a simple cleaning.
Matchless Construction Features Assure Long Service Life.

The top-quality features of S&C's switchgear bring the superior reliability and security needed to assure service continuity on your medium-voltage distribution system. Described below are some of the many built-in reasons for specifying S&C Metal-Enclosed Switchgear... in both the outdoor style illustrated below and the indoor style that differs only in a finish suited to indoor requirements and omission of certain weatherproofing features.

Rugged construction. Each bay of S&C Metal-Enclosed Switchgear—fabricated from 11-tough steel—is a monocoque unit with an integral channel base around all four sides. With this unitized design, there are always double walls between adjoining bays. Accurately formed, matching enclosures assure perfect alignment in multibay lineups.

No exposed bolts on enclosure sheets or roofs to attract the vandal. Even future bus extensions are internally secured.

Comprehensive access controls—all doors have heavy-duty latches and hinges and are padlockable; manual switch handles are padlockable in both switch-closed and switch-open positions. Access is further limited by snapocks or interlocks.

Category A enclosures. When specified, S&C Metal-Enclosed Switchgear includes additional features—such as window covers, handle covers, and the S&C Pentalatch or Pentalock—to provide the industry's highest standard of security for this class of equipment.

Wide bulkhead-type doors provide convenient front access for cable termination. There's no need for rear access... gear can be placed back-to-back or against a wall, using a minimum of floor space.

Inner screen doors—bolted closed—are a second barrier guarding against inadvertent entry.

S&C's unique Ultadr™ finish guards against corrosion. S&C's proven multicoat finishing system provides lasting protection that cuts enclosure maintenance costs. In addition, all hardware is galvanized, zinc-nickel plated, or of stainless steel or nonferrous materials to resist corrosion.

Specially designed gasketing or sealants provide weathertight seals at door openings, at top and side edges of adjoining bays and interbay bus openings, and at the roof.

Insulating "no-drip" compound on the underside of the roof checks condensation.

Cypoxy®, S&C's cycloalkaphic epoxy resin insulation system, insulates all live parts from ground—it's non-tracking, self-scouring, and nonweathering. Cypoxy Insulators have greater leakage distances... optional through bushings provide isolation between bays.

Grounding provisions—heavy-duty bolts on all cable termination points, and on the ground bus, accommodate portable grounding equipment.

Bus connections—protected by an oxide-inhibiting compound, are bolted to a uniform torque... special-purpose washers and bolts maintain optimum contact pressure.
A wide choice of S&C components—exhaustively tested, field proven, of unequaled performance and operational dependability—all expressly designed to solve your power distribution problems.
Simplified Power-System Planning

Simple, reliable, economical-S&C Metal-Enclosed Switchgear is readily configured into basic circuit arrangements that make power-system planning and design easy . . . implementation is logical and straightforward. The basic arrangements shown below are often combined to handle even the most complex distribution system need . . . assuring maximum service continuity for extremely critical loads. Illustrated here are some of the most common arrangements.

A radial system is the simplest system . . . and it is economical, permitting extensive use of dedicated radial circuits. The direct circuitry facilitates quick location and repair of faulted circuits. Segmentation of any distribution system with multiple radial circuits limits the extent of service interruption due to faults. In the above example, the service-entrance bay is provided with electronic power fuses to achieve full coordination with the upstream protective device.

Common-bus primary selective S&C Metal-Enclosed Switchgear assures a higher level of service continuity when two utility primary-feeder circuits—one source preferred, the other alternate—supply power to metal-enclosed switchgear applied as the service-entrance switching center, as diagramed above. A power-operated interrupter switch for each source plus a source-transfer control effect automatic two-way transfer in the primary-selective switchgear. Interrupter switches with power fuses switch and protect the load circuits—two are manually operated the third is power operated, with an electronic overcurrent relay and switch operator providing automatic three-phase isolation when a fuse operates.

### MAXIMUM SHORT-CIRCUIT RATINGS AND THREE-PHASE LOAD CAPABILITY

<table>
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<tr>
<th>Voltage, Kilo-Voltages</th>
<th>Nominal</th>
<th>4.16</th>
<th>6.6</th>
<th>13.8</th>
<th>25</th>
<th>34.5</th>
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<tbody>
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<td>Max</td>
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<tr>
<td>DIL</td>
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<td>90</td>
<td>90</td>
<td>95</td>
<td>125 or 150</td>
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<tr>
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<td>600, 1200, or 2000</td>
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<td>Short-Circuit and Duty-Cycle Fault-Closing (Amperes, RMS, Sym.)</td>
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