

SWITCHBOARDS

DISTRIBUTION SWITCHBOARDS



Cutler-Hammer

EAT•N

Group Mounted Distribution Switchboards

Pow-R-Line C

Pow-R-Line C Switchboards

Cutler-Hammer Distribution Switchboards combine a space-saving design with modular construction and increased systems ratings to provide economical and dependable electrical system distribution and protection.

Features

- 6000A maximum main bus rating.
- 600V AC and below.
- Front or rear accessible.
- Type 1 or Type 3R enclosures.
- ANSI-61 gray powder coat paint finish.
- The IQ family of microprocessor-based metering and monitoring devices.
- Utility metering provisions.
- Transient Voltage Surge Suppression (TVSS).
- Ground fault protection on mains and distribution devices.
- Busway and transformer connections.
- Complete protective device accessory capability.
- 65 kAIC standard bus bracing. Optional 100 or 200 kAIC.
- Standard tin-plated aluminum bus. Optional copper or silver-plated copper bus.
- Meet NEMA Standard PB-2 and UL 891.
- Seismically qualified.



Utility metering compartments are available to meet standard or specific requirements. Units can be arranged for hot or cold sequence.



Main Devices

- DS/DSL Power Circuit Breakers, 800-4000A, fixed or drawout.
- SPB Insulated Case Circuit Breakers, 800-5000A fixed, 800-4000A drawout.
- Magnum DS Power Circuit Breakers, 800-5000A, fixed or drawout.
- Molded case circuit breakers, 400-2500A, fixed mounted.
- Bolted pressure switches, 800-5000A.
- FDPW Fusible Switches, 400-1200A.



Series C Molded Case Circuit Breakers



Magnum DS Power Circuit Breakers

Group Mounted Distribution Devices

- Molded case circuit breakers, 15-1200A.
- FDPW Fusible Switches, 30-1200A.



The single chassis design provides device flexibility, accommodating both circuit breaker and fusible switches.

IQ Metering and Monitoring Devices

These microprocessor-based devices provide more usable information with greater accuracy than is usually obtainable with conventional meters and switches. IQ devices monitor and display electrical data from basic amperes and volts to complete system parameters including detailed power quality information.



IQ Analyzer

IQ Data

IQ 200

Advanced Technology Options Offer Superior Protection, Energy Management and Communications

Digitrip OPTIM™ Trip Unit System

Programmable Trip Unit System

Provides enhanced accuracy and reliability for protection, and optimum system coordination. Digitrip OPTIM has advanced system early warning features, as well as system diagnostics, load, power and energy, power monitoring capability, and communications. It will help reduce system downtime which will add to increased productivity.



Programming and trip unit monitoring can be completed at the trip unit with the hand-held OPTIMizer while the Breaker Interface Module provides programming and monitoring at the assembly. With a Cutler-Hammer communications system, programming and monitoring can be accomplished remotely from a personal computer.



Clipper Power System

Transient Voltage Surge Suppression

The Clipper Power System (CPS) consists of Transient Voltage Surge Suppression (TVSS) and active hybrid filtering. The CPS protects sensitive electronic equipment from the damaging effects of high and low energy transients, as well as high frequency noise.

The CPS, combined with our innovative direct bus bar connection, yields the industry's lowest let-through voltage.

Wide Range of Surge Ratings

Surge current ratings from 100 to 400 kA per phase provide a range of cost-effective facility-wide protection solutions. Products are third party tested to verify published surge current ratings.

TVSS mounted within the enclosure, eliminating extra wiring and outboard wall space:

- UL 1449 and UL 1283 listed high performance suppression system and parallel hybrid filter technology.
- Integral 200 kAIC fusing system.
- TRI-Monitor™ diagnostic system.
- Integral circuit breaker disconnect.
- Direct bus bar connection.



Monitoring and diagnostics for all internal components are provided by our patented TRI-Monitor system.

IQ Analyzer

The Premier Electronic Meter

A powerful analyzer and accurate meter that provides extensive system information on an easy-to-read display. It measures an extensive list of electrical parameters including power and energy. With its ANSI C12.16 Class 10 accuracy specification for revenue meters, the IQ Analyzer is the ideal meter for utility bill verification at the utility point of coupling. It also provides detailed power quality information.



IQ Energy Sentinels

Cost-Effective Submetering Throughout the Electrical System

These devices monitor power and energy readings down to the smaller loads. They measure watts, peak demand, and watthours within a one-percent accuracy level.

The device mounts directly on F-, J- or K-Frame feeder breakers without requiring additional panel height. A Universal Sentinel is available where breaker mounting is not feasible and for the larger frame breakers.



Power and energy information from IQ Sentinels can be communicated to a PC, a panel mounted Central Energy Display (CED), or even existing building management or distribution control systems.

Compartmentalized Design for Increased Device Isolation

Pow-R-Line *i*

Pow-R-Line *i* Switchboards

Pow-R-Line *i* Distribution Switchboards are engineered in a compartmentalized design for applications where a greater degree of component isolation is required. A wide variety of configurations is possible including utility metering, customer metering, main devices, branch devices, accessories, and enclosures.

Significant Safety Features

- Individual compartments for branch devices – glass polyester for breakers and steel for fusible switches. Compartments help eliminate possible contact with the main bus and reduce fault propagation.
- Three-section construction with each barriered from the other:
 - Device section. Each device is mounted in its own compartment.
 - Bus bar section. Contains both horizontal and vertical busses.
 - Rear cable compartment. Completely isolated from the bus bars.
- Insulated copper runbacks. Power is taken from the protective device by the runback through a standard full height glass-polyester barrier to the rear cable compartment, virtually eliminating the possibility of accidental contact with the main busses during installation or maintenance.



A Wide Selection of Branch Devices

Circuit Breakers

Branch circuit breakers range from 150 to 1200 ampere frames. They are available in standard and high interrupting ratings for increased performance. Devices are tandem mounted through 400 amperes and single mounted for ratings above 400 amperes.

Fusible Switches

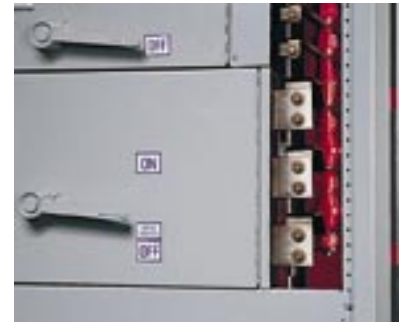
Branch fusible switches are available from 100 to 1200 ampere frames. The units are horizontally mounted in single unit steel enclosure construction.



Utility metering compartments are available to meet standard or specific requirements. Units can be arranged for hot or cold sequence.



Branch circuit breakers in single and tandem mounted construction.



Branch fusible switches in single unit construction.



Branch circuit breaker ground fault protection can be provided integral to the device or with separate relay and test panel mounted in compartments similar to the circuit breakers for convenience and space savings.



Digitrip OPTIM Trip Units are wired at the factory to customer specifications and are shipped ready for customer programming.



Provisions for future include line side connectors, load side runbacks, terminals, and glass-polyester compartments and covers for circuit breakers. Space only for both circuit breakers and fusible switches is also available.

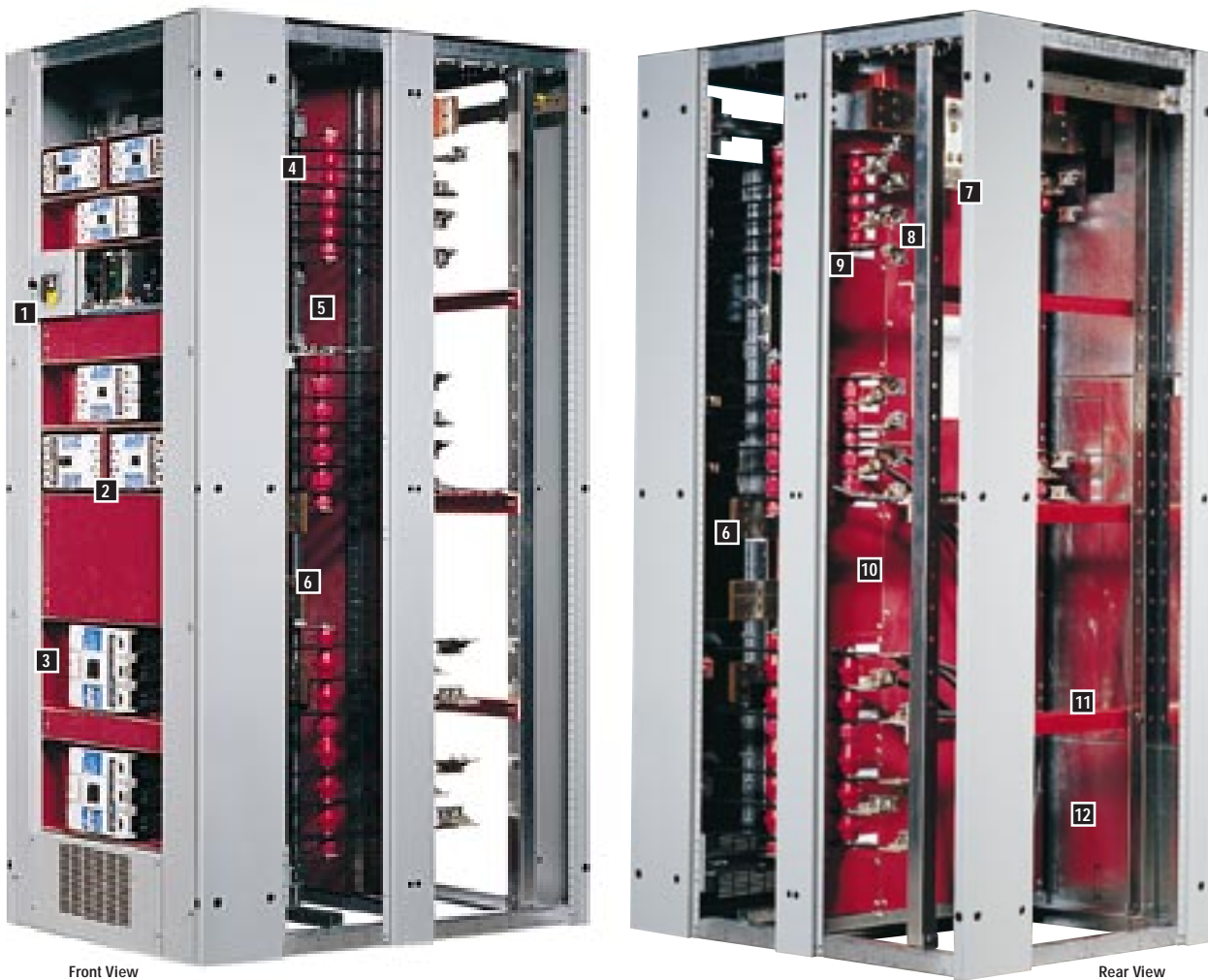
Barriered Construction for Rear Connection

Distribution Section

- 1** Available zero sequence ground fault.
- 2** Tandem mounted circuit breakers through 400 amperes.
- 3** Glass-polyester circuit breaker compartment.
- 4** Insulated copper load side runbacks.
- 5** Isolated bus compartment.
- 6** Horizontal cross bus.
- 7** Angled neutral connections.
- 8** Anti-turn lugs.
- 9** A-, B-, and C-phase labeling.
- 10** Full length barrier isolating the cable compartment.
- 11** Movable cable brace.
- 12** Generous conduit space.



Load side runbacks in the barriered rear cable compartment provide for easy termination plus ample room for cable bending.



Front View

Rear View

Construction Features

- Full family of IQ metering and protective devices available.
- Utility metering compartments built to specific utility requirements.
- Individually mounted main devices.
- Compartmentalized feeder devices.
- Meets NEMA Standard PB-2 and UL 891.
- Rear accessible.
- 6000 ampere main bus.
- 65 kAIC standard bus bracing. Optional 100 and 200 kAIC.
- Standard aluminum bus. Optional copper- or silver-plated bus bar.
- A full range of device modifications.
- ANSI-61 gray powder coat paint finish.
- Type 1 or Type 3R enclosures.
- Seismically qualified.

Reliable Multiple Circuit Distribution and Metering for Commercial Applications

Pow-R-Line \bar{C} Commercial Metering Switchboards

Cutler-Hammer commercial metering switchboards provide electrical system distribution and metering for shopping centers, office buildings, and other commercial multimetering applications.

Features

- Freestanding rugged Pow-R-Line \bar{C} Switchboard construction.
- Factory-assembled sections come ready for connection of tenant cables and installation of utility-provided watt-hour meters.
- Reduced field wiring and installation costs.
- Front-accessible design provides for mounting against a wall.
- Tamper-proof enclosed assembly provides safety and convenience.
- Utility-approved incoming service terminations and sealable covers over unmetred sections.
- Meet NEMA Standard PB-2 and UL 891.
- Seismically qualified.
- 120/240V, single-phase, three-wire.
- 240/120, 208Y/120 or 480Y/277V, three-phase, four-wire.
- Type 1 or Type 3R enclosures.

Tenant Metering Sections

Tenant metering sections provide arrangements for grouping individual tenant feeder circuits rated 200 amperes or less. Each circuit consists of a utility-approved meter socket and an appropriate disconnect device.

Requirements for tenant-metered circuits over 200 amperes can be met using separate sections with appropriate disconnect devices installed in combination with a current transformer/metering compartment.



Type WCMS



Type WWCMS

Type WWCMS for EUSERC Service Areas – Tenant Metering Section



The meter socket is a ring-type device rated 200 amperes continuous for self-contained metering applications. The assembly includes a bypass test block in a fully busfed combination to meet EUSERC standard requirements.

Sealable covers are provided to comply with utility standard requirements.

WWCMS Construction

Assembly includes meter socket and test block per EUSERC requirements, prewired to tenant disconnect.



Type WCMS – Tenant Metering Section



The meter socket is a ringless-type device rated 200 amperes continuous for self-contained metering applications. All sockets include a manual lever bypass device.

Each meter socket is provided with an individual screwless cover that includes a sealing bracket with provisions for barrel locks, sealing wire, or sealing bands. Individual internal barriers are provided around each socket.

WCMS Construction
Typical 200 ampere seven-jaw sockets with manual lever bypass connected to circuit breaker disconnects in hot sequence arrangement.



Preassembled and Available from Stock

Pow-R-Line C Instant Switchboards

Instant Switchboards are suitable for use as service entrance equipment. They include EUSERC utility metering provisions and a fused main switch with optional distribution panelboard in a single compact section for easy installation with or without underground pull sections.

Construction Features

- Completely enclosed with front, rear, and side covers.
- Manufactured of code-gauge steel with ANSI-61 gray powder coat paint finish.
- Available in Type 1 and Type 3R enclosures.
- Outdoor units include front hinged padlockable door.
- UL listed and meets EUSERC, NEC, and NEMA standards.
- Seismically qualified.

Service Ratings

- 120/240V AC (Single-phase, three-wire).
- 208Y/120 or 240/120V AC (Three-phase, four-wire).
- 480Y/277V AC (Three-phase, four-wire).



INSTANT

Metering Compartment

- Meets EUSERC standards.
- Barrired hot sequence CT provisions.
- Provisions for meter socket with test block provision.
- Hinged sealable compartment doors.
- Standard section includes two 15-inch high doors (one for socket, one blank).

Main Switch

- 400 or 600 ampere ratings.
- Factory installed Class T Fuses.
- Load lugs or connection to panelboard.
- Padlocking provisions for switch.
- Hinged cover with interlock.

Distribution Panelboard

- Factory installed.
- Provisions for bolt-on circuit breakers.

Cutler-Hammer Switchboards

Quality Construction

All Cutler-Hammer Switchboards are assembled using superior components. Parts are manufactured by robotic equipment to exacting specifications to assure precision construction of stable, rigid structures.

Seismic Qualification

Pow-R-Line C Switchboards are seismically tested and qualified to exceed requirements of both the Uniform Building Code (UBC) and California Building Code (CBC). Contact Cutler-Hammer for details.



Quality Assurance

Final testing helps assure that each switchboard performs in accordance with UL standards and customer specifications. Each assembly is shipped with a "Switchboard Verification Report" that documents completion of every inspection and test.

All switchboards are backed by the Cutler-Hammer commitment to quality, safety, and reliability.

Best Service in the Industry



Cutler-Hammer Switchboards are custom-built to your requirements utilizing world-class manufacturing techniques at our plants in Sumter, SC and Grand Prairie, TX.

In addition, Cutler-Hammer has an extensive network of regional Satellite Plants located across the country that are specifically oriented to providing Pow-R-Line C Panelboards and Switchboards to meet your fast service needs. Highly trained and experienced personnel will manage your order and assure that you receive on-time delivery of high quality equipment that meets your specifications.

For More Information

For more information, contact your Cutler-Hammer representative or authorized distributor.

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Cutler-Hammer, a part of Eaton Corporation, is a worldwide leader providing customer-driven solutions. From power distribution and electrical control products to industrial automation, Cutler-Hammer utilizes advanced product development, world-class manufacturing, and offers global engineering services and support.

For more information on Cutler-Hammer products, call 1-800-525-2000 or 1-616-982-1059, for engineering services call 1-800-498-2678 or visit our website at www.cutlerhammer.eaton.com



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