



Distribution switchboards

The broadest offering
in the industry

EATON

Powering Business Worldwide



Industry-leading Eaton switchboards

Eaton's electrical group offers the widest selection of switchboard types in the industry, and this is only the start.

Our switchboards are built from the ground up based on customer input and needs. From the simplest 800A switchboard to Web-enabled, Eaton switchboards offer flexibility in designs to accommodate any power distribution need you have.

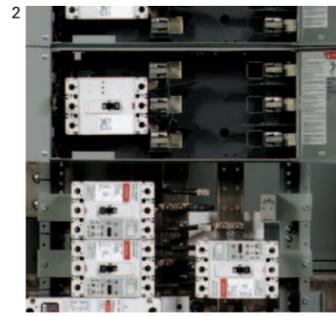
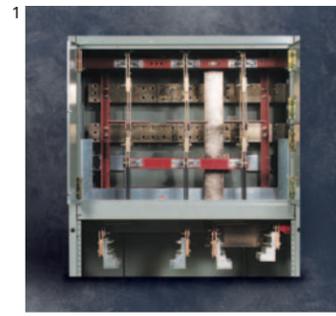
Our flexible designs are only as good as the people and service that bring the products to you. Eaton has uniquely positioned manufacturing centers of excellence throughout the United States.

Our 18 facilities, strategically located near our customers, provide more than just switchboards and panelboards. They are *your* personal plants. These Regional Manufacturing Facilities have the capability of much larger facilities. They understand your needs and your markets... because they are right there. Our goal, and the goal of our outstanding sales team, is to exceed your expectations.

From emergency shipments to large projects, from new construction to aftermarket and renovation, we have the experience and expertise to help you.

As you review the products in this brochure, remember that this is only a sampling of our capabilities. To learn more, we invite you to contact your local sales office or plant, and to come visit us.

Distribution switchboards



- 1. Utility Metering Compartments**
Available to meet standard or specific requirements. Units can be arranged for hot or cold sequence.
- 2. Single Chassis Design**
Provides device flexibility, accommodating both circuit breaker and fusible switches.
- 3. Pow-R-Line C Switchboards**
Group-mounted distribution switchboards.

Pow-R-Line C switchboards

Eaton's 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
- 600 Vac and below
- Front or rear accessible
- Indoor or outdoor enclosures
- ANSI-61 gray powder coat paint finish
- Microprocessor-based metering, monitoring and communication devices
- Utility metering provisions
- Surge protective devices (SPD)
- Ground fault protection
- Busway and transformer connections
- Integrated panelboards (IFS™)
- 65 kAIC standard bus bracing; optional 100 or 200 kAIC
- Aluminum or optional copper bus
- Meets NEMA® Standard PB-2 and UL® 891
- Seismically qualified



Main devices

- Magnum™ DS power circuit breakers, 800–5000A
- Molded-case circuit breakers, 400–2500A, fixed mounted
- Pringle® bolted pressure contact switches, 800–5000A
- Fusible switches, 400–1200A

Group-mounted distribution devices

- Molded-case circuit breakers, 15–2000A
- Fusible switches, 30–1200A

Metering and monitoring devices

A wide range of metering options for power measurement and power quality is available. Along with local display, these meters can provide Web-enabled monitoring of Eaton switchboards and other equipment via an open communications architecture. The Power Xpert® Gateway enables third-party equipment to communicate across this same system.



- 4. Eaton Molded-Case Circuit Breakers**
225A, electronic trip frame (left); 600A, electronic trip frame (middle); and 2500A, electronic trip frame (right).
- 5. Magnum DS Power Circuit Breakers**



Electronic trip unit system

Eaton electronic trip units provide enhanced accuracy and reliability for protection and optimum system coordination.

Surge protective devices

Eaton's surge protective devices (SPDs) protect sensitive electronic equipment from the damaging effects of high and low energy transients, as well as high-frequency noise.

The SPD, combined with our innovative 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.

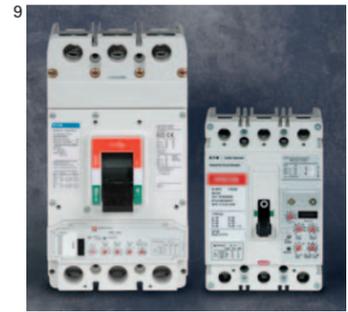
SPD mounted within the enclosure eliminates extra wiring and the need for outboard wall space:

- UL 1449 Listed high-performance suppression system and parallel hybrid filter technology
- Diagnostic system
- Integral circuit breaker disconnect



- 6. Electronic Trip Unit System**
Advanced technology options offer superior protection, energy management and communications.

- 7. Surge Protective Device**
Integrally mounted with overcurrent feeder.



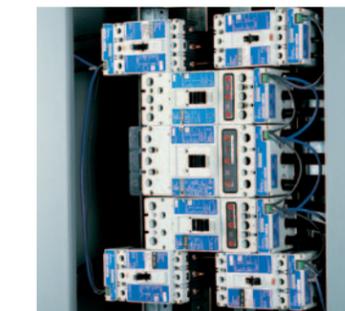
- 8. Metering and Monitoring Devices**
Power Xpert Gateway (front) and IQ 250 Meter (back).

- 9. Eaton's Power Xpert Communications System, Programming and Monitoring**
Accomplished remotely from a personal computer via the Web.

IQ Energy Sentinels

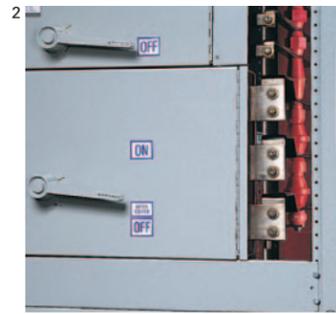
Cost-effective submetering throughout the electrical system

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



IQ Energy Sentinels

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.



- 1. Branch Circuit Breakers**
Shown in single- and tandem-mounted construction.
- 2. Fusible Switches**
Branch fusible switches in single-unit construction.

- 3. Pow-R-Line / Switchboards**
Compartmentalized design for increased device isolation.
- 4. Barriercd Construction**
Overcurrent devices isolated from bus.



- 5. Laser Cut and Power Coat Finish**
Laser cut panelboard trims with a high-quality baked-on powder coat finish provides a high-quality appearance.
- 6. Benefits of IFS**
IFS can be integrated with service equipment where panelboards are needed in the electrical distribution equipment room. IFS lowers installation time and saves space.

Pow-R-Line / switchboards

Pow-R-Line / 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 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
 - *Busbar section*—contains both horizontal and vertical busses
 - *Rear cable compartment*—completely isolated from the busbars
- Insulated runbacks, so that power is taken from the protective device by the runback through a 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

Construction features

- Full family of metering and protective devices available
- Custom-built utility metering compartments
- Individually mounted main devices



- Compartmentalized feeder devices
- Meets NEMA Standard PB-2 and UL 891
- Rear accessible
- 65 kAIC standard bus bracing; optional 100 and 200 kAIC
- Aluminum or optional copper busbar
- ANSI-61 gray powder coat paint finish
- Indoor and outdoor enclosures
- Seismically qualified

A wide selection of branch devices

Circuit breakers

Branch circuit breakers range from 150A to 1200A

Fusible switches

Branch fusible switches are available from 100A to 1200A frames



Integrated facility systems (IFS)

Eaton is the industry leader in integrated switchboards with more than 100,000 IFS sections delivered to customers. Eaton's Integrated Facility Systems™ (IFS) switchboards can reduce the overall space requirement over traditional panelboard and transformer installations. Because IFS is factory assembled and wired between major components, there are fewer pieces to handle and install, thus reducing installation time.

IFS is ideal for both new construction and renovation. Each IFS switchboard is custom designed to meet customer requirements. Specific requirements for panelboard configurations, as well as transformers and other equipment, can be customized into IFS switchboards. Eaton's experience and capabilities ensure that your IFS is configured to your exacting standards and delivered on time from one of Eaton's 18 assembly plants.



Standard panelboard and transformer configurations can ship in as few as two weeks. These include IFS sections with 480Y/277 Vac lighting panelboards with a feeder to a NEMA TP1 transformer feeding one or more 208Y/120 Vac panelboard(s). All breakers are installed to your drawings and factory wired between the transformer feeder device and the 208 Vac lighting panelboard.

Features

- Single - and three-phase
- 600 Vac maximum
- Integrated lighting panelboards
- Integrated power panels
- Lighting control
- Dry-type distribution transformers
- Breakers and fusible devices
- Provisions for customer-installed equipment
- Special heights and depths
- Metering
- UL 891 Listed and meets NEMA PB-2 standards
- Seismically qualified
- Designs for raised floors
- Indoor and outdoor enclosures
- Automatic transfer switches



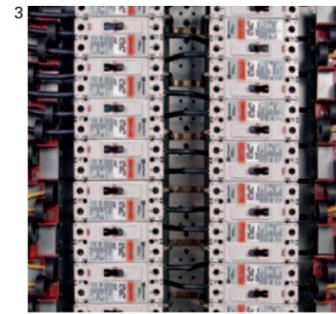
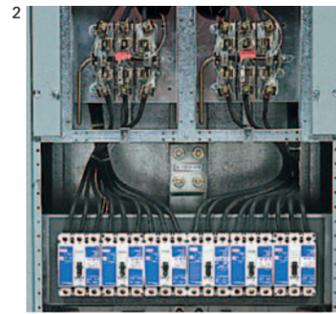
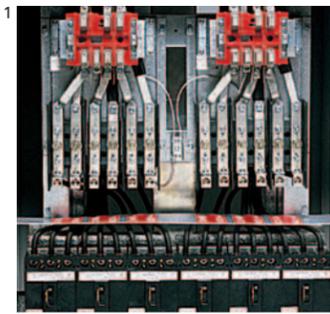
IFS Space-Saving Capabilities

An IFS switchboard can significantly reduce the size of an electrical room. Replacing traditional panelboards and transformers with IFS can free up valuable space for the owner. Ideal for facility electrical upgrades where space is limited.



Factory Installed Wiring

Transformers are pre-wired in Eaton's assembly facility from the primary side feeder (when in the same switchboard) to the secondary overcurrent device. All wiring is marked "Factory Installed" using industry convention colored wire markings. All factory cabling is in accordance with the National Electrical Code® using the same standards as field wiring.



1. **WWCMS Construction**
Assembly includes meter socket and test block per EUSERC requirements, pre-wired to tenant disconnect.
2. **WCMS Construction**
Typical 200A seven-jaw sockets with manual lever bypass connected to circuit breaker disconnects in hot sequence arrangement.
3. **IQ Multipoint Energy Submeter II Tenant Mains and Sensors**



7. **Quadlogic with Integrated Communications, Load Profiling, Time-of-Use Data**
8. **Pow-R-Line C Instant Switchboards**
Preassembled and available from stock.
9. **Seismic Qualification**

Commercial metering switchboards

Eaton offers a number of options for commercial metering switchboards. These include assemblies that meet utility requirements for bulb type watt-hour meters and electronic tenant metering switchboards.

Features

- Free-standing switchboard construction
- Factory-assembled complete with interconnections from incoming mains to the meter and to the tenant main
- UL 891 Listed and meets NEC and NEMA PB-1 standards
- Seismically qualified
- Indoor and outdoor enclosures

Utility type watt-hour meter switchboards

- Available with different meter socket configurations:
 - EUSERC- approved designs through 200A
 - Lever bypass meter sockets through 400A
- Choice of fusible or circuit breaker tenant mains
- Hot or cold sequences metering provisions



Electronic tenant metering

- Ideal for third-party metering of tenants
- Capabilities to read meters remotely
- Revenue-grade accuracy
- Monitor tenants and loads from 30A through 400A

- Choice of two metering solutions:
 - Eaton IQ Multipoint Energy Submeter II
 - Quadlogic
- Software and communications packages
- Secured remote access

4. Type WCMS (left) and Type WWCMS (right)

Reliable multiple circuit distribution and metering for commercial applications.



5. **IQ Multipoint Energy Submeter II Tenant Metering Switchboard**
6. **Eaton's Electronic Tenant Metering with Quadlogic Meters**



Pow-R-Line C instant switchboards

Instant switchboards include EUSERC utility metering provisions and a fused main switch with optional distribution panelboard.

Construction features

- Completely enclosed with front, rear and side covers
- Manufactured of code-gauge steel with ANSI-61 gray powder coat paint finish
- Indoor and outdoor enclosures
- Outdoor units include front hinged padlockable door
- UL Listed and meets EUSERC, NEC and NEMA standards
- Seismically qualified

Service ratings

- 120/240 Vac (single-phase, three-wire)
- 208Y/120 or 240/120 Vac (three-phase, four-wire)
- 480Y/277 Vac (three-phase, four-wire)

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

- 400A, 600A or 800A main overcurrent devices
- Load lugs or connection to panelboard
- Hinged cover with interlock

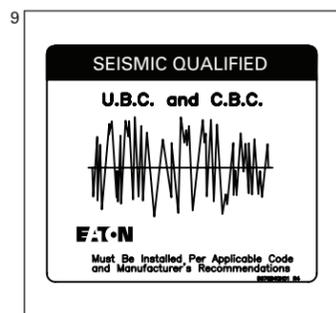
Distribution panelboard

- Factory installed
- Provisions for bolt-on circuit breakers

Eaton switchboards

Quality construction

Parts are manufactured to exacting specifications to ensure precision construction of stable, rigid structures



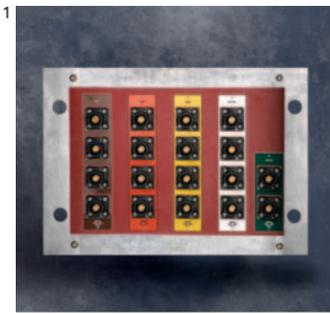
Seismic qualification

Eaton switchboards are seismically tested and qualified to exceed requirements of the Uniform Building Code® (UBC), the California Building Code (CBC) and the International Building Code (IBC)

Quality assurance

Final testing helps ensure that each switchboard performs in accordance with UL standards and customer specifications

All switchboards are backed by Eaton's commitment to quality, safety and reliability.



1. Receptacles Sub-Assembly
Receptacles are color-coded for Phase A, B and C, neutral and ground.

Roll-up generator Quick Connect switchboard

Product description

The Eaton generator Quick Connect switchboard is an engineered assembly designed to allow safe and fast connection of a mobile generator to your facility's electrical system or a portable load bank.

Through inclusion of cam-type receptacles, standard mechanical lugs, dedicated generator-service disconnect and a manual key-interlock transfer scheme, you can quickly and safely supply backup power to parts of your electrical power system that are not currently covered by your power system, or you can back up existing generators.

Loads connected to the generator quick connect switchboard can immediately be safely transitioned to an alternative power source, made possible by the generator quick-connect switchboard.

Specifications

- UL 891 Listed switchboard
- 480 Vac and below
- Sizes 400A–4000A
- Indoor and outdoor enclosures
- Key interlocked main overcurrent devices
- Quick-connects to speed and simplify generator connections

Benefits of the generator Quick Connect switchboard

Speed of connection

The owner does not have to do any of the following that are common roll-up generator power situations:

- No making additional field modifications to an internal switchboard in order to connect the generator cables after the initial installation
- No modifying the building's physical structure to accommodate generator cables (e.g., drilling holes in walls)
- No running cables through doorways or windows and through hallways or up stairs

Safer and more reliable

Reduction of the potential for safety problems associated with connecting the mobile generator to the facility's electrical system under lost-power conditions

- A permanent connection point for mobile power, not a temporary connection
- Installed under normal circumstances, not during a possibly chaotic lost power situation
- Tested as part of the installation, providing assurance when needed
- Eliminates the safety hazards of generator cables run through doorways and up stairways; building doors and/or windows remain closed for security and safety reasons

As part of the larger assembly, there are several sub-assemblies that provide greater function and benefit to facilities

- **Generator Service Disconnect**—A UL Listed circuit breaker interlocked with the service disconnect. The generator disconnect can be rated up to 4000A continuous and may include ground fault

protection, shunt trips, alarms, single-phase protection and auxiliary contacts. Such options can allow for integration into a larger control system to accomplish load shedding while the facility is under backup power

- **Cam-Type Receptacle Sub-Assembly**—Designed to work with the cam-type plugs commonly found on mobile generator cables. Includes color-coding for easy phase connector identification to help ensure proper field connection of the generator

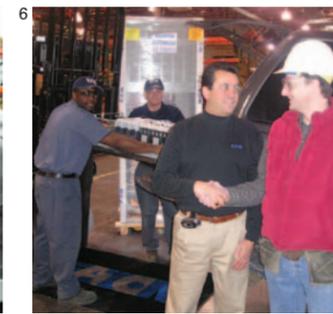
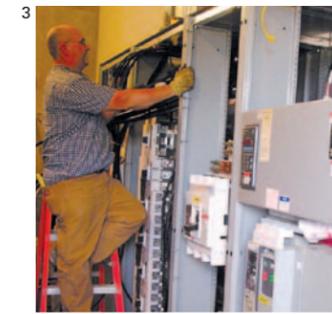
- **Permanent Operation Instructions**—Affixed to each generator quick-connect switchboard. Through the inclusion of these simple instructions, operation of the mechanisms can be performed by any authorized personnel

- **Generator Connection Lugs**—In addition to the cam-type receptacles, a set of standard mechanical lugs is provided with the generator quick-connect Switchboard to allow an alternate method of connecting generator cables

- **Bus Connection Sub-Assembly**—All connection methods described previously are connected together using only factory stamped and formed bus. Bus connection, as opposed to cable, provides a more robust and smaller construction



2. Generator Quick Connect Switchboard
2000A Quick Connect switchboard with key interlocked main and generator connections.



3. Customized, Design-Build and Retrofit Solutions

4. Panelboards and Enclosed Breakers Up to 1200A

5. Switchboards Up to 6000A

6. Emergency Quick Ship and Pickup

7. Satellite Plants



Satellite manufacturing facilities

Best service in the industry

Eaton's switchboards are custom-built to your requirements using world-class manufacturing techniques. Eaton is the only electrical manufacturer that not only uses huge manufacturing plants to meet the needs of our customers, but also has 16 smaller Satellite Business Centers across the country to cater to your individual needs. We're probably right in your backyard!

Located at strategic locations throughout the United States, these facilities manufacture and deliver standard or custom Eaton branded assembled switchboards, as well as panelboards and enclosed circuit breakers, when and where you need them. And when you have an emergency, they can have your equipment ready in just hours! Highly trained and experienced personnel will manage your order and ensure that you receive on-time delivery of high-quality equipment that meets your specifications.

Speedy delivery

- Panelboards—from one to five days
- Switchboards—between five and 10 days
- Assembled enclosed circuit breakers—from one to 10 days

For more information

For more information, contact your Eaton representative or authorized distributor.

Eaton's Electrical Sector is a global leader in power distribution, power quality, control and automation, and monitoring products. When combined with Eaton's full-scale engineering services, these products provide customer-driven PowerChain™ solutions to serve the power system needs of the data center, industrial, institutional, public sector, utility, commercial, residential, IT, mission critical, alternative energy and OEM markets worldwide.

PowerChain solutions help enterprises achieve sustainable and competitive advantages through proactive management of the power system as a strategic, integrated asset throughout its life cycle, resulting in enhanced safety, greater reliability and energy efficiency. For more information, visit www.eaton.com/electrical.

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