Maximum flexibility, uptime and convenience

Switchboard solutions for fast changing of breakers have offered two choices—plug-on devices or drawout switchgear with power air circuit breakers. Plug-in breakers can be clumsy, and loadside conductors must be disconnected from the breaker, incurring excessive labor and time. While switchgear remains a highly reliable solution, the large footprint and the lack of front-accessible connections require valuable space within a facility.

In the past few years, requests for drawout molded-case circuit breakers (MCCBs) have increased in the form of a new drawout MCCB class of switchboard with front accessibility and front connections—introducing Eaton's drawout MCCB Pow-R-Line® switchboard.

Powering Business Worldwide

This is the first design to offer three-pole MCCBs in a mechanical drawout design. Breakers use unique drawout cassettes and have ratings from 20A to 600A. Breakers are inserted and removed via a mechanical system similar to other drawout designs associated with switchgear; however, these breakers are horizontally mounted in a traditional switchboard group-mounted manner, providing greater density and reduced space. Feeder devices are up to 600A and are also front-accessible and front-connected.

Benefits

- Ease of maintenance
- Faster to remove and install
- Less downtime
- Space savings
- Safety

Market and segment applications

- Process industry
- Data centers
- Industrial facilities to minimize downtime
- Institutions
- Laboratories
- Health care facilities
- Critical load applications

Available ratings

Eaton's drawout Pow-R-Line switchboard is CSA C22.2 No.31 Listed through 4000A and is rated at 240 Vac, 480 Vac and 600 Vac. Fault current is available up to 200 kAIC at 240 Vac, 100 kAIC at 480 Vac and 50 kAIC at 600 Vac. The short-circuit current rating of the switchboard is determined by the short-circuit current rating of the lowest rated overcurrent device in the switchboard.

Drawout feeder MCCBs are available in three-pole offerings from 20A to 600A. Main breakers may be drawout or fixed-mounted.

Switchboard options

- Tin-plated copper and silver-plated copper bus
- Density-rated bus
- Customer-owned meters
- Service equipment construction
- Surge protective devices

Drawout MCCBs—group-mounted 600A maximum

Group-mounted drawout MCCBs include Eaton JG and LG breaker families and include standard thermal-magnetic trip units or optional Eaton 310+ electronic trip units.

The design uses a cassette that has two distinct parts. The cassette "base" is specially designed so that the lineside connections to the switchboard's vertical bus and the loadside connection to the feeder conductors can be permanent. The "drawout" cassette allows the breaker and any breaker accessory connections to be removed.

Standards

- CSA C22.2 No. 31
- Canadian Electrical Code

Base cassette

The base cassette is permanently factory-mounted to the switchboard's chassis. The cassette base lineside connections use bus connectors and are factory-connected to the switchboard vertical bus. The base cassette is designed to accept the drawout cassette that contains the breaker. The loadside feeder conductors are also part of the base cassette, allowing the loadside feeder conductors to remain with the base cassette when the breaker is removed without removing the loadside conductors.

The base cassette contains a drawout racking mechanism, a Connected/Disconnected position indicator and a pull-apart terminal block base (used for connections to the breaker accessories).

Note: Per industry practice, all power to the board section must be disconnected at its source before working on any electrical equipment.

Safety features include finger-safe connections to the drawout MCCB breaker cassette and a mechanism system that will not allow the breaker to be connected or removed while the breaker is in the energized, ON, position.

Drawout cassette

The drawout cassette contains the breaker and is group-mounted. The drawout cassette incorporates a viewing window and an external racking port. The viewing window allows personnel to visually inspect the breaker status and to see whether the breaker is connected to or disconnected from the bus. The window exposes the Connected/Disconnected position indicator on the base cassette. The external racking port allows access to the racking mechanism to draw out the breaker.

The drawout cassette contains handles attached to the deadfront to help easily remove the breaker. The drawout cassette also contains a pigtail wiring harness, which is factory-wired from the breaker accessory ports and contains a pull-apart terminal block that attaches the permanently mounted female terminal block located on the base cassette. External connections on the secondary side of the terminal block are provided by the installer.

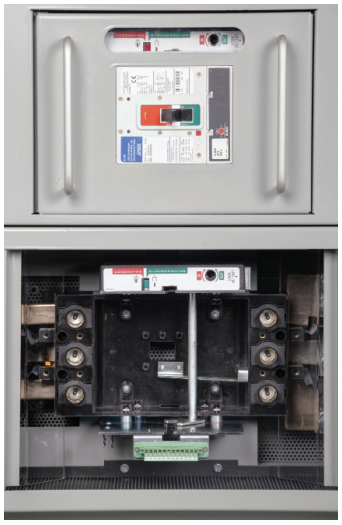
The drawout cassette employs two breaker families—the JG and the LG with standard thermal-magnetic trip unit. Optional 310+ electronic trip units offer ampere ratings from 20A to 250A on the JG and 100A to 600A on the LG.

Breaker options

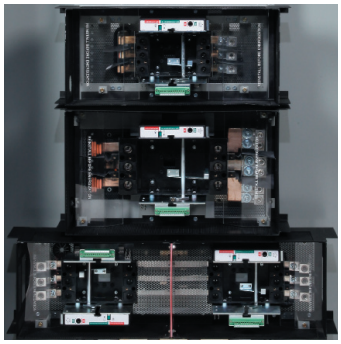
- Electronic trip units
- Infrared viewing windows for the lineside and loadside connections
- Shunt trips
- Auxiliary contacts
- Bell alarm
- Zone selective interlocking
- Arcflash Reduction Maintenance System

The JG and LG families of drawout breakers are available in either a single group-mounted design or a high-density, space-saving dual group-mounted design where two breakers occupy the same vertical space.

Drawout MCCB Disconnected from Bus



Drawout Molded-Case Circuit Breaker Installed



Drawout Molded-Case Circuit Breaker Base Cassettes

Powering Business Worldwide

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Printed in USA
Publication No. PA01509002E / Z12369
June 2012

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For more information on the Pow-R-Line drawout switchboard, contact your Eaton sales office or visit us at **www.EatonCanada.ca**