

Maximum flexibility, uptime and convenience



Choices to quickly change feeder breakers in electrical distribution equipment have evolved over the years. While using drawout switchgear with power air circuit breakers remains a highly reliable solution, requests for drawout molded-case circuit breakers (MCCBs) have increased. And, customers need a wall-mounted panelboard solution with front accessibility and front-connected equipment to meet space requirements and application needs.

Eaton's drawout MCCB Pow-R-Line® 4D (PRL4D) panelboard provides this solution.

This is the first design to offer two- and three-pole MCCBs in a mechanical drawout design. Breaker ratings from 20A to 600A use unique drawout cassettes. Breakers are inserted and removed via a mechanical removal system similar to other drawout designs associated with switchgear; however, these breakers are horizontally mounted in a traditional panelboard group-mounted manner.

Market and segment applications

While the drawout MCCB panelboard design may be substituted for nearly any traditional application with feeder MCCBs, it has been specifically designed to meet the needs of several industries, including:

- Electrical distribution systems where a changeout of circuit breakers is needed to upgrade equipment to a new process
- Data centers
- Industrial facilities to minimize downtime
- Institutions
- Laboratories
- Health care facilities
- Critical load applications

Standards and certifications

- UL® 67 Listed for wall-mounted applications from 600A to 1200A
- National Electrical Code®

Available ratings

The panelboards are 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 65 kAIC at 600 Vac. The short-circuit current rating of the panelboard is determined by the low short-circuit current rating of the lowest rated overcurrent device in the panelboard.

Boxes and trims are UL 50 Listed and labeled. Both the box and the trim are painted ANSI-61 light gray. Deadfront covers are also painted ANSI-61 light gray to match box and trim.

Drawout feeder MCCBs are available in two- and three-pole offerings from 20A to 600A. Main breakers above 600A are fixed-mounted using a traditional bolt-on design. Main breakers 600A and below are available with either the traditional fixed-mounted, bolt-on design or in a drawout cassette. For drawout mains or feeders above 600A, please use Eaton's switchboard offering.

Panelboard options

- Copper and silver-plated copper
- Copper lugs
- Density-rated bus
- Ground bars
- Customer-owned meters
- Service equipment construction
- Surge protective devices
- Seismically qualified panelboards



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Benefits

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

Drawout MCCBs—group-mounted 600A maximum

Group-mounted drawout MCCBs are available in Pow-R-Line 4D power panelboards. 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 unique features of the drawout cassette enable Eaton to provide high-density, front-accessible, front-connected feeder overcurrent protective devices.

Features of the drawout group-mounted MCCB design offer new options not available before in group-mounted distribution equipment.

The design uses a cassette that has two distinct parts. The cassette “base” is specially designed so that the lineside connections to the panelboard’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.

Base cassette

The base cassette is permanently factory-mounted to the panelboard’s chassis. The cassette base lineside connections use bus connectors and are factory-connected to the panelboard or 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, which is used when there are 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 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 mechanical racking mechanism to draw out and remove or insert the breaker.

The drawout cassette contains grab handles attached to the deadfront to help easily remove the breaker. When breaker accessories are used, the drawout cassette will contain a pigtail 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 ranges from 20A to 250A on the JG and 100A to 600A on the LG.

Drawout 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™ (LG breaker only)

The JG family is available in either a single group-mounted design or a high-density, space-saving dual group-mounted design where two JG breakers occupy the same vertical space.



Detail of Base Cassette in Panelboard



Drawout Single and Dual Breakers Installed in Panel



Drawout Breaker at Disconnected Drawout Position

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For more information on the Pow-R-Line 4D drawout MCCB panelboard, contact your Eaton sales office or visit us at www.eaton.com