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Product Description

Loadcenters are enclosures specifically designed to house the branch circuit breakers and wiring required to distribute power to individual circuits. They contain either a main breaker when used at the service entrance point or a main lug when used as a sub-panel to add circuits to existing service. The main breaker protects the main entire panel and can be used as a service disconnect. The branch breakers protect the wires leading to individual electrical loads such as fixtures and outlets.

Features, Benefits and Functions

Loadcenter Construction

Eaton's Type BR loadcenters have standard tin-plated aluminum bus with a limited availability of copper bus. The sum of the handle ratings connected to any stab is limited to 150A maximum on the 100 and 125A loadcenters, and 200A on loadcenters with 150A or higher main bus. NEMA Type 1 boxes or enclosures are manufactured from galvanized steel. Raintight boxes are manufactured from galvanized steel, then finished using an electrostatic powder coat, baked urethane paint process.

Neutrals

Eaton Type CH loadcenters feature two types of neutrals:

Insulated/Bondable Split Neutral

Panels are supplied with split insulated neutrals with an insulated cross strap. For service entrance applications, the neutral must be bonded by using the bonding strap supplied with the panel. For non-service entrance (sub-panel) applications, the panel may be installed with the bonding strap not connected to the neutral. Separate ground bars must be used on non-service entrance panels.

Insulated/Bondable Single Neutral

Panels are supplied with a single insulated neutral. For service entrance applications, all that is required to bond the neutral is to loosen the bonding screw and the neutral screw directly beside it, insert the bonding strap into the neutral bar, and re-tighten both connections. The single neutral can be moved by the contractor to the other side of the panel, if desired. When used as a service entrance panel, unused neutral connections may be used for the termination of equipment grounds. For non-service entrance (sub-panel) applications, the panel may be installed with the bonding strap not connected to the neutral. Separate ground bars must be used on non-service entrance panels.

Grounds

In service entrance applications where the neutral is bonded, unused neutral holes may be used for terminating ground conductors. In sub-feed panels, the neutral must be isolated (non-bonded), and ground wires must be terminated on a separate ground bar.

The insulated/bondable single/split neutral panels have sufficient terminations for both ground and neutral conductors. The insulated/bondable single split neutral panels are supplied with a separate factory-installed ground bar if the catalog number contains a "G." If not, a separate ground bar should be installed. Insulated/Bondable Single Neutral panels are supplied without a ground bar (unless otherwise noted), and ground bar kits if needed must be purchased separately.

Neutral and Ground Terminals

The standard terminals on grounds and neutrals are rated to accept (3) #14–#10 Cu/Al or (1) #14–4, provided the cables terminated are of the same material. For larger cables, add-on neutral lugs may be ordered from the accessories on **Page V1-T1-60**.

Note: NEC allows only one current-carrying conductor per hole on neutrals unless otherwise noted.

Bottom Fed Loadcenters

For single-phase 225A and below loadcenters that are bottom fed, a standard panel can be rotated 180 degrees to allow straight-in wiring of power cables to the main terminals. Because the main circuit breaker handle operates horizontally, the orientation of the main circuit breaker handle is consistent with the requirements of NEC 2008 Article 240.81.

Gutter Splicing

Loadcenters are not UL listed as wiring troughs. Therefore, gutter splicing of riser cables to tap off to the main device is not permitted. Refer to NEC 2008 Article 312.8.

Fire Rating

Due to the numerous openings in both loadcenter boxes and trims, they should not be mounted in firewalls. There is no approved method for sealing the enclosures for this application.

Date Code

The date of manufacture of each loadcenter is printed on the outside of the carton as well as inside the loadcenter. On the carton, the date code is printed on the end carton label. In the loadcenter, the date code is located on the small white label located on the right side wall (with the main device on top).

The date code is in the following format: F # # # &. The "F" is the numeric code for the Lincoln, IL plant, and the three numbers are the year and week of manufacturing, e.g., 023. The "!" sign at the end signifies the decade of the 2010. Therefore, the date code F023& would indicate that the product was manufactured in the 23rd week of 2010. The 1980s are represented by the "+" sign and the 1990s are represented by a "=" at the end of the code.

Surge Protectors

Complete home surge protection is available in multiple options, including a factory-installed option that provides the highest level of surge protection in a residential design. See Tab 3 for more details.

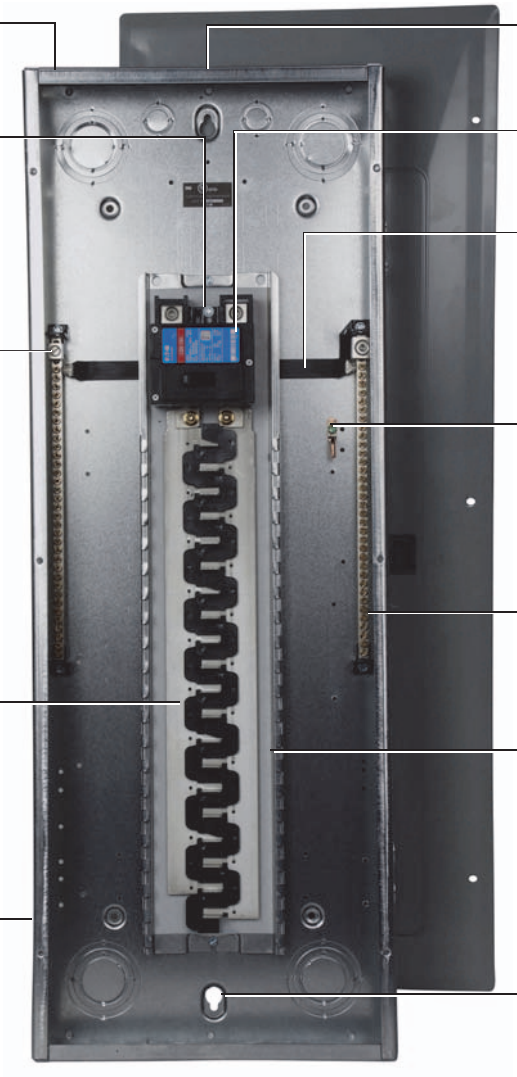
Circuit Breaker Case Interrupting Capacity

- 10 kAIC
- 22 kAIC
- 25 kAIC

Warranty Information

- 10-year limited loadcenter warranty
- 10-year limited branch breaker warranty

Type BR Loadcenter—BR4040B200



Extra 1.5-Inch (38.1 mm) Knockout
- Larger knockout provides easier installation and time savings

Top or Bottom Feed
- Straight-in wiring saves labor and material
- One panel for either top or bottom applications

2/0 Lug
- Easily removable and can be installed in any location on the neutral bar

Standard Tin-Plated Aluminum Bus
- Excellent conductivity and corrosion resistance
- Copper bus options are available for select catalog numbers

Drywall Marking on Enclosure
- Indicates proper mounting depth for flush applications

"Tangential" Center Knockout
- Easier installation for conduit applications

Commercial Grade Main Breaker
- 25 kAIC series rated main breaker for superior protection

Neutral Bus (Strap)
- Is easily removable for sub-panel applications

Bonding Z-strap
- Provides easy field conversion for service entrance applications

Split Neutral Bars
- A minimum of 150% neutral capacity

Steel Backpan
- Provides solid and reliable breaker mounting—single piece design for stability and durability

Single Keyhole Mounting
- One keyhole at the top and bottom provides easier mounting and leveling

Warranty

10-year warranty on all Type BR loadcenters and circuit breakers.

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Standards and Certifications

UL Listings

All Eaton Type BR loadcenters are listed under UL File E52977 except the 2–8 circuit loadcenters, up through and including 125A, which are listed under UL File E8741.

UL Listed

Catalog Number Selection

Single- and Three-Phase Through 225A

3 BR _ 30 42 B C 200 _ _

Phase
- **Blank** = Single-phase ①
- **3** = Three-phase

Eaton's Type BR Loadcenter

Factory Options
- **SUR** = Factory integrated surge

Number of 1-Inch (25.4 mm) Spaces

Maximum Number of Circuits

Main Device
- **B** = Main breaker
- **L** = Main lug
- **N** = Convertible main
- **H** = Main breaker high AIC

Bus
- **Blank** = Aluminum bus ①
- **C** = Copper bus

Amperes
- **50** = 50A
- **70** = 70A
- **100** = 100A
- **125** = 125A
- **150** = 150A
- **200** = 200A
- **225** = 225A

Enclosure
- **R** = NEMA Type 3R rainproof
- **S** = NEMA Type 1 indoor with surface trim
- **F** = NEMA Type 1 indoor with flush trim
- **Blank** = NEMA Type 1 indoor with combination trim ①
- **RIS** = Riser panel

Construction
- **Blank** = No feed thru lugs ①
- **F** = Feed-through lugs
- **G** = Ground bar
- **P** = Current design
- **NY** = NY City gutter space

Single- and Three-Phase 400–600A

3 B 30 42 D F N

Phase
- **Blank** = Single-phase ①
- **3** = Three-phase

Main
- **Blank** = Main lug ①
- **B** = Main breaker

Number of 1-Inch (25.4 mm) Spaces

Maximum Number of Circuits

Amperes
- **D** = 400A
- **E** = 600A

Enclosure
- **F** = NEMA Type 1 indoor with combination trim
- **S** = NEMA Type 1 indoor with surface trim
- **R1** = NEMA Type 3R rainproof

N = Current design

Example No. 1: BR1224L125G

Single-phase Type BR loadcenter rated at 125A with main lugs, 12 spaces allowing 24 poles, indoor combination enclosure, aluminum bus and ground bar.

Example No. 2: BR24L70RP

Single-phase Type BR loadcenter rated at 70A with main lugs, two spaces allowing four poles, rainproof enclosure with aluminum bus.

Example No. 3: 3B4242EFN

Three-phase Type BR loadcenter rated at 600A with main breaker, 42 spaces allowing 42 poles, indoor combination enclosure.

Note

① No character space used.

Single-Phase—Main Lug Loadcenters—400 and 600A

4242DFN

Single-Phase Three-Wire—120/240 Vac—Insulated/Bondable Split Neutral

Main Ampere Rating	Maximum Number 1-Inch (25.4 mm) Spaces	Circuits	Enclosure Type	Box Size	Wire Size Range Cu/Al 60°C or 75°C for Main Lugs	Commercial Loadcenter Catalog Number ①②③ With Flush or NEMA Type 3R Cover	With Surface Cover
400	12	24	Indoor	19	(1) #4/0–750 kcmil or (2) #3/0–400 kcmil	—	**1224DSN** ⑤
	12	24	Outdoor	42		**1224DR1N** ④⑤	—
	24	42	Indoor	20		—	**2442DSN**
	42	42	Indoor	22		**4242DFN**	**4242DSN**
	42	42	Outdoor	46		**4242DR1N** ④	—
600	42	42	Indoor	22	(2) #2–500 kcmil	—	**4242ESN**

Notes

① Ground bar kits priced separately unless otherwise noted. See **Page V1-T1-60**.
② Has notch for BRHDK125 hold-down kit.
③ Ground bar GBK8 installed.
④ Rainproof panels are furnished with hub closure plates. For rainproof hubs, refer to **Page V1-T1-60**.
⑤ Suitable for use as service equipment when not more than six main disconnecting means are provided and when not used as a lighting and appliance panelboard (see Article 408.34 of the NEC).