

Type BR

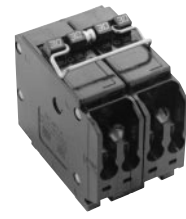
**CTL Plug-On Circuit Breakers, Type BD Duplex, BQ and BQC Quadplex
10,000 Amperes Interrupting Capacity 120/240V AC**



BD2020



BQ2302115

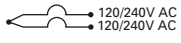
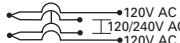
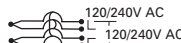


BQ230230

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Duplex and Independent Trip Quadplex Breakers

Table 3-119. Class CTL, 1-Inch (25.4 mm) per Pole 10,000 AIC — All Circuit Breakers Have Rejection Tab Feature

Type BD Duplex (UL Type BRD)			Wire Size Range Cu/Al 65°C or 75°C	Type BQ Quadplex Independent Trip (UL Type BRD)					Type BQ Quadplex Independent Trip (UL Type BRD)			
1-Pole ②				2-Pole ① and 1-Pole ②			Catalog Number	Price U.S. \$	2-Pole		Catalog Number	Price U.S. \$
												
Requires One 1-Inch (25.4 mm) Space			Requires Two 1-Inch (25.4 mm) Spaces					Requires Two 1-Inch (25.4 mm) Spaces				
10 per Shelf Carton			5 per Shelf Carton					5 per Shelf Carton				
Ampere Rating	10,000 AIC		10,000 AIC					10,000 AIC				
	120V AC		120V AC	120/240V AC	120V AC	Ampere Rating	120/240V AC		Catalog Number	Price U.S. \$		
Catalog Number	Price U.S. \$	Outer Left 1-Pole	Center 2-Poles Independent Trip	Outer Right 1-Pole	Outer 2-Poles Independent Trip		Center 2-Poles Independent Trip					
10 – 10	BD1010	38.	#14 – 4	15	20	15	BQ2202115	74.	15	15	BQ215215	74.
15 – 15	BD1515	38.		20	20	20	BQ2202120	74.	20	20	BQ220220	74.
15 – 20	BD1520	38.		15	30	15	BQ2302115	74.	20	30	BQ220230	74.
15 – 30	BD1530	38.		20	30	20	BQ2302120	74.	20	40	BQ220240	74.
20 – 15	BD2015	38.		15	40	15	BQ2402115	74.	20	50	BQ220250	74.
20 – 20	BD2020	38.		20	40	20	BQ2402120	74.	25	25	BQ225225	74.
20 – 30	BD2030	38.		15	50	15	BQ2502115	74.	30	30	BQ230230	74.
25 – 25	BD2525	38.		20	50	20	BQ2502120	74.	30	40	BQ230240	74.
30 – 15	BD3015	38.		—	—	—	—	—	30	50	BQ230250	74.
30 – 20	BD3020	38.		—	—	—	—	—	40	40	BQ240240	74.
30 – 30	BD3030	38.		—	—	—	—	—	40	50	BQ240250	74.
30 – 40	BD3040	38.		—	—	—	—	—	50	50	BQ250250	74.
30 – 50	BD3050	38.		—	—	—	—	—	—	—	—	—
50 – 30	BD5030	38.		—	—	—	—	—	—	—	—	—

① All Type BD Duplex and BQ Quadplex circuit breakers carry listing for HACR applications.

② All 15 and 20 ampere single poles are switch-duty rated.

Product Specifications

General

- A. The Contractor shall furnish and install deadfront loadcenters incorporating circuit breakers of the number, rating and type as specified herein and as shown on the contract drawings.
- B. The loadcenter and all components shall be designed, manufactured and tested in accordance with the latest applicable standards of UL, NEMA and NEC including:
 1. UL 67 — Standards for Panelboards.
 2. UL 50 — Standards for Cabinets and Boxes.
 3. UL 489 — Standards for Molded Case Circuit Breakers.
 4. UL 869 — Standards for Service Equipment.
 5. Federal Specification W-C 375B — Circuit Breakers.
 6. Federal Specification W-C P115b — Panel Power Distribution Type 1, Class 2.

Qualifications

- A. The manufacturer of the loadcenter shall be the manufacturer of the circuit breaker within the loadcenter.
- B. For the equipment specified herein, the manufacturer shall be ISO 9000 certified.
- C. The manufacturer of this equipment shall have produced similar electrical equipment for a minimum period of seven (7) years.

Manufacturers

- A. Cutler-Hammer.

Ratings

- A. Loadcenters shall be rated for 120/240V AC and shall have short circuit ratings as shown on the drawings or as herein scheduled, but not less than 10,000 amperes RMS symmetrical.
- B. Circuit breakers shall be a minimum of 125 ampere frame. Circuit breakers 15 through 125 amperes trip size shall take up the same pole spacing.

- C. Loadcenters shall be labeled with a UL short circuit rating. When series combination ratings are applied with integral or remote upstream devices, a label shall be provided. Series combination ratings shall cover all trip ratings of installed frames. It shall state the conditions of the UL series ratings including:
 1. Size and type of upstream device.
 2. Branch devices that can be used.
 3. UL series short circuit rating.

Construction

- A. All interiors, with the exception of the branch circuit breakers, shall be completely factory assembled with main breakers, main lugs, or no main device.
- B. Interiors shall be designed so that circuit breakers can be replaced without disturbing adjacent units and without removing the main bus connectors and shall be designed so that circuits may be changed without machining, drilling, or tapping.
- C. Physical means shall be provided to prevent the installation of more overcurrent devices than that number for which the enclosure was designed, rated, and approved. Half-size breakers shall have a UL listed rejection tab over the line terminals. Loadcenter interiors must have notched stabs to accept these rejection tab class CTL breakers, if required and approved.

Bus

- A. Bus bars for the main and cross connectors shall be [tin-plated aluminum] [copper] in accordance with Underwriters Laboratories standards. Busing shall be braced throughout to conform to industry standard practice governing short circuit stresses in loadcenters.

Note: Note to spec writer — select one (copper available in limited ratings).

- B. Neutral busing shall have a suitable lug for each outgoing feeder requiring a neutral connection of same ampacity as branch.

Wiring/Termination

- A. All wire connectors and terminals shall be of the anti-turn solderless type and shall be suitable for copper or aluminum wire of the sizes indicated. All connectors must meet the "Requirements for Wire Connectors and Soldering Lugs" as stated in UL 486B.
- B. All loadcenters where marked shall be suitable for use with 60°C or 75°C rated wire.

Circuit Breakers

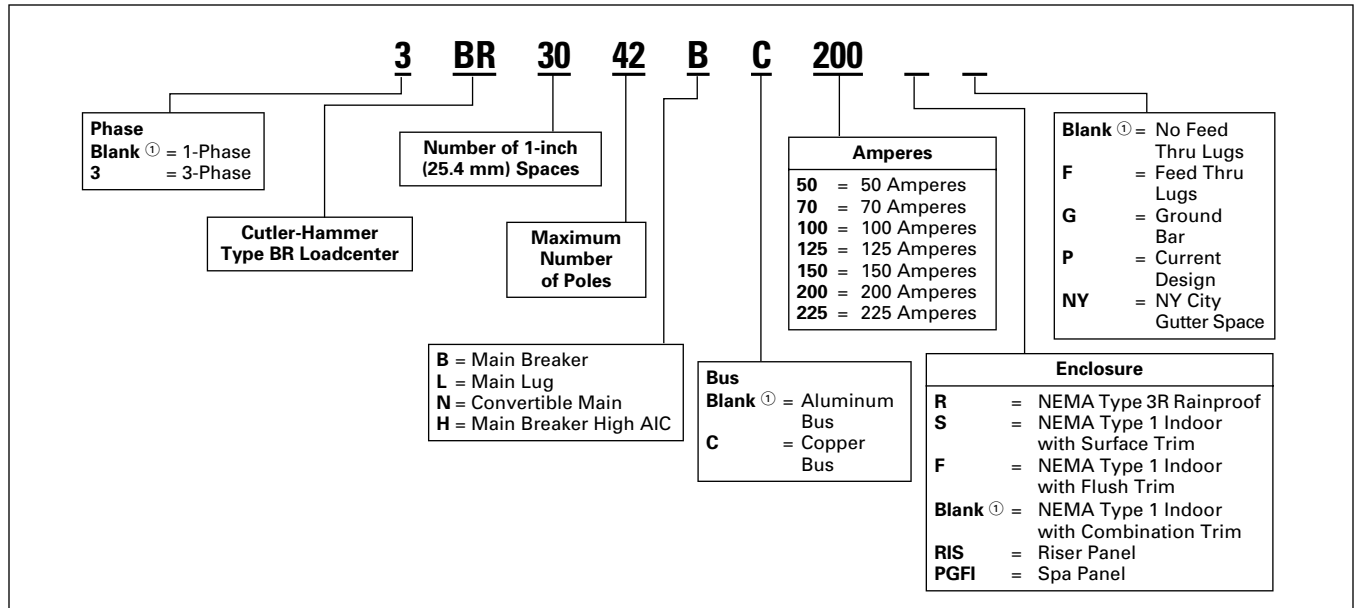
- A. Circuit breakers shall be molded case type. Circuit breakers shall have four-rivet construction (GFI Type — 5 rivets). Multipole circuit breakers shall be of a stack pole design to provide electrical phase isolation.
- B. Each pole of the circuit breaker will provide inverse time delay overload and instantaneous short circuit protection by means of both thermal and magnetic sensors.
- C. The circuit breaker calibration shall not be affected by environmental changes in relative humidity. The thermal bimetal element shall be welded to the steel frame and calibration shall be set independent of the molded case by computer controlled equipment.
- D. All circuit breakers shall be operated by a toggle-type handle and multipole circuit breakers shall have an internal common trip mechanism. The circuit breakers shall incorporate trip mechanisms that are mechanically trip-free from the handle. The handle position shall provide visual trip indication.
- E. Contacts shall be of non-welding silver alloy.
- F. All circuit breakers shall have the trip rating inscribed on the handle on each circuit breaker pole. Also, unique color-coded cases that indicate the UL listed 10 kA or 22 kA interrupting ratings. Breakers shall be able to be used as main or branch disconnect devices.

Type BR

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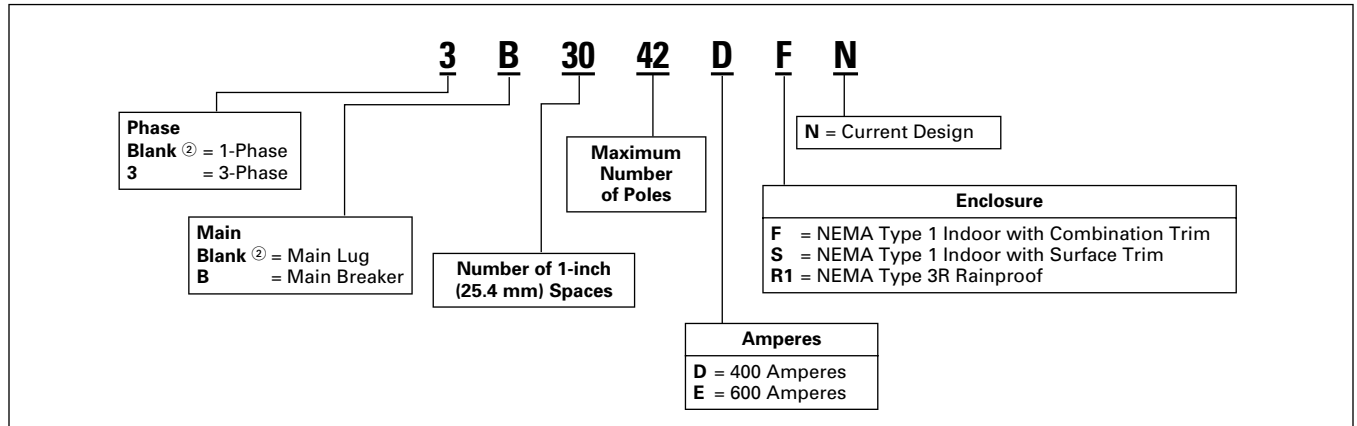
Product Selection

Table 3-65. Single- and Three-Phase Through 225 Amperes Catalog Numbering System



① No character space used.

Table 3-66. Single- and Three-Phase 400 Amperes Through 600 Amperes Catalog Numbering System



② No character space used.

Example No. 1: BR1224L125G

1-Phase Cutler-Hammer Type BR Loadcenter Rated at 125 Amperes with Main Lugs, 12 Spaces Allowing 24 Poles, Indoor Combination Enclosure, Aluminum Bus, and Ground Bar.

Example No. 2: BR24L70RP

1-Phase Cutler-Hammer Type BR Loadcenter Rated at 70 Amperes with Main Lugs, 2 Spaces Allowing 4 Poles, Rainproof Enclosure with Aluminum Bus.

Example No. 3: 3B4242EFN

3-Phase Cutler-Hammer Type BR Loadcenter Rated at 600 Amperes with Main Breaker, 42 Spaces Allowing 42 Poles, Indoor Combination Enclosure.