

**Technical Data and 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.
- C. UL 50—Standards for Cabinets and Boxes.
- D. UL 489—Standards for Molded Case Circuit Breakers.
- E. UL 869—Standards for Service Equipment.
- F. Federal Specification W-C 375B—Circuit Breakers.
- G. 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. Eaton.

**Ratings**

- A. Loadcenters shall be rated for 120/240 Vac 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 A frame. Circuit breakers 15 through 125 A 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. Busbars 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**

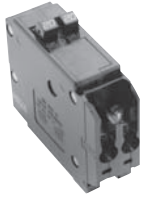
- A. All wire connectors and terminals shall be of the anti-turn solderless type and shall be suitable for copper or aluminum wire of the sizes indicated. All connectors must meet the "Requirements for Wire Connectors and Soldering Lugs" as stated in UL 486B.
- B. All loadcenters where marked shall be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

**Circuit Breakers**

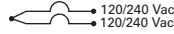
- A. Circuit breakers shall be molded case type. Circuit breakers shall have four-rivet construction (GFI Type—5 rivets). Multipole circuit breakers shall be of a stack pole design to provide electrical phase isolation.
- B. Each pole of the circuit breaker will provide inverse time delay overload and 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.

### CTL Plug-On Circuit Breakers, Type BD Duplex, BQ and BQC Quadplex—10 kAIC, 120/240 Vac

BD2020

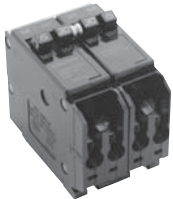


**Type BD Duplex**  
(UL Type BRD)

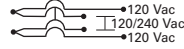


**Single-Pole** ①  
Requires One 1-Inch  
(25.4 mm) Space  
10 per Shelf Carton

BQ2302115

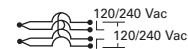


**Type BQ Quadplex Independent Trip**  
(UL Type BRD)



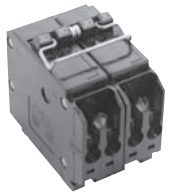
**Two-Pole** ② and **Single-Pole** ①  
Requires Two 1-Inch  
(25.4 mm) Spaces  
5 per Shelf Carton

**Type BQ Quadplex Independent Trip**  
(UL Type BRD)



**Two-Pole**  
Requires Two 1-Inch  
(25.4 mm) Spaces  
5 per Shelf Carton

BQ230230



Ampere Rating	Catalog Number	Wire Size Range Cu/Al 65 °C or 75 °C	Ampere Rating			Catalog Number	Ampere Rating		
			Outer Left Single-Pole	Center Two-Pole Independent Trip	Outer Right Single-Pole		Outer Two-Pole Independent Trip	Center Two-Pole Independent Trip	Catalog Number
10–10	<b>BD1010</b>	#14–4	15	20	15	<b>BQ2202115</b>	15	15	<b>BQ215215</b>
15–15	<b>BD1515</b>	#14–4	20	20	20	<b>BQ2202120</b>	15	20	<b>BQ215220</b>
15–20	<b>BD1520</b>	#14–4	15	30	15	<b>BQ2302115</b>	15	30	<b>BQ215230</b>
15–30	<b>BD1530</b>	#14–4	20	30	20	<b>BQ2302120</b>	15	40	<b>BQ215240</b>
20–15	<b>BD2015</b>	#14–4	15	40	15	<b>BQ2402115</b>	15	50	<b>BQ215250</b>
20–20	<b>BD2020</b>	#14–4	20	40	20	<b>BQ2402120</b>	20	20	<b>BQ220220</b>
20–30	<b>BD2030</b>	#14–4	15	50	15	<b>BQ2502115</b>	20	30	<b>BQ220230</b>
25–25	<b>BD2525</b>	#14–4	20	50	20	<b>BQ2502120</b>	20	40	<b>BQ220240</b>
30–15	<b>BD3015</b>	#14–4	—	—	—	—	20	50	<b>BQ220250</b>
30–20	<b>BD3020</b>	#14–4	—	—	—	—	25	25	<b>BQ225225</b>
30–30	<b>BD3030</b>	#14–4	—	—	—	—	30	30	<b>BQ230230</b>
30–40	<b>BD3040</b>	#14–4	—	—	—	—	30	40	<b>BQ230240</b>
30–50	<b>BD3050</b>	#14–4	—	—	—	—	30	50	<b>BQ230250</b>
50–30	<b>BD5030</b>	#14–4	—	—	—	—	40	40	<b>BQ240240</b>
50–50	<b>BD5050</b>	#14–4	—	—	—	—	40	50	<b>BQ240250</b>
—	—	—	—	—	—	—	50	50	<b>BQ250250</b>

**Notes**

- ① All 15 and 20 A single poles are switch-duty rated.
- ② All Type BD duplex and BQ quadplex circuit breakers carry listing for HACR applications.