



Connect:

QCB

Quick Connect with Breaker

0–480VAC, 150A–4000A, up to 100kAIC
Specification Sheet & Selection Guide

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QCB Overview

General Description



Lake Shore Electric's QCB (Quick Connect with Breaker) incorporates the over-current protection of a breaker with the convenience of camlock connections, to bring both new and existing systems up to NEC 700.3(F) code.

NEC 700.3(F) 2017 States:

If the emergency system relies on a single alternate source of power, which will be disabled for maintenance or repair, the emergency system shall include permanent switching means to connect a portable or temporary alternate source of power, which shall be available for the duration of the maintenance or repair.

The QCB is just one of the many ways Lake Shore Electric provides functional and real-world solutions for any type of power system.

Standard Configuration Includes:

- UL 489 Breakers
- Color-Coded Camlock Receptacles for Temporary Connections
- NEMA 3R Enclosure
- Grounded Dead Front Covers
- Auxiliary Contact & Indicating Lights for Source Availability (White)
- 2-Wire Start Binding Post
- 120VAC Shunt Trip¹
- NEMA 5-20R GFCI Receptacle²

Optional accessories are also available. See the QCB Selection Guide on page 4 for additional details.

¹ Control circuit provided by others
² Power by others

Technical Data

Molded Case & Insulated Case



Table 1: QCB Switching Device – Molded Case Technical Details

| kAIC @ 480V | Rated Current (A) | Disconnect Breaker | | |
|-------------|-------------------|--------------------|---------------|----------------|
| | | 2 Pole † | 3 Pole | 4 Pole |
| 35 | 150 | PDG22G0150TFF | PDG23G0150TFF | PDG24G0150TFF |
| | 400 | PDG32G0400TFA | PDG33G0400TFA | PDG34G0400TFA |
| 50 | 800 | PDG52K0800E2R | PDG53K0800E2R | PDG54K0800E2 |
| | 1200 | PDG53K1200E4R | PDG53K1200E4R | PDG54K1200E4R |
| 65 | 150 | PDG22M0150TFF | PDG23M0150TFF | PDG24M0150TFF |
| | 400 | PDG32M0400TFA | PDG33M0400TFA | PDG34M0400TFA |
| | 800 | PDG52M0800E2R | PDG53M0800E2R | PDG54M0800E2 |
| | 1200 | PDG52M1200E4R | PDG53M1200E4R | PDG54MK1200E4R |

Table 2: QCB Switching Device – Insulated Case Technical Details

| kAIC @ 480V | Rated Current (A) | Source Disconnect Breaker | |
|-------------|-------------------|---------------------------|---------------|
| | | 3 Pole | 4 Pole |
| 65 | 1600 | MPS6163VEA162 | MPS6164VEA162 |
| | 2000 | MPS6203VEA202 | MPS6204VEA202 |
| | 3200 | MPS6323VEA322 | MPS6324VEA322 |
| 100 | 1600 | MPSC163VEA162 | MPSC164VEA162 |
| | 2000 | MPSC203VEA202 | MPSC204VEA202 |
| | 3200 | MPSC323VEA322 | MPSC324VEA322 |
| | 4000 | MPSC4N3VEA402 | MPSC4N4VEA402 |

- Models 150A - 1200A are Eaton Power Defense Molded Case Breakers
- Models stated above are Eaton® Magnum PXR® Low Voltage Power Circuit Breakers
- An electronic trip unit may be used in place of thermal-magnetic trip unit at LSE discretion
- † 3-pole variant with the center phase open may be used in place of a 2-pole at LSE discretion
- Arcflash Reduction Maintenance System™ (ARMST™) is included on all breakers 1000A and greater
- A higher withstand rating and/or frame rating may be used in place of a lesser rating at LSE discretion
- Contact factory for technical information on switching devices or withstand ratings not listed in Table 1 or Table 2
- Data subject to change without notice

QCB Selection Guide

Model Code Configuration



Number of Poles

Following the QCB prefix of the model code is the number of poles. Available in configurations of 2-pole, 3-pole, and 4-pole, this selection is dependent on the system voltage.

Table 3: Number of Poles

| Poles | Alpha Numeric |
|-------|---------------|
| 2 | 2 |
| 3 | 3 |
| 4 | 4 |

Amperage

With the exception of the 150A model, standard sizes of the QCB are available in 400A increments through 4000A. Contact the factory for alternate amperages.

Table 4: Amperage Codes

| Amperage | Alpha Numeric |
|----------|---------------|
| 150A | 0150 |
| 400A | 0400 |
| 800A | 0800 |
| 1200A | 1200 |
| 1600A | 1600 |
| 2000A | 2000 |
| 3200A | 3200 |
| 4000A | 4000 |

Voltage Code

Identification of the voltage determines the color of camlock receptacles (per NEC standard), as well as control voltage circuits and service entrance requirements (when applicable).

Table 5: Voltage Codes

| Voltage | Phase/Wire | Alpha Numeric |
|-------------|------------|---------------|
| 120/240VAC | 1 Ph 3W | A |
| 208Y/120VAC | 3 Ph 4W | B |
| 480Y/277VAC | 3 Ph 4W | C |
| 120/240VAC | 3 Ph 4W | G |
| 480VAC | 3 Ph 3W | K |

Withstand Rating

The below tables are based on UL 489 & 1066 Switching Device Ratings at 480VAC; Lower voltages offer higher kAIC ratings within the same alphanumeric code. Contact the factory for these ratings.

Table 6: Molded Case Withstand Code

| Amperage | kAIC | Alpha Numeric |
|--------------|---------------|---------------|
| 150A – 400A | 35kAIC @ 480V | S |
| 800A – 1200A | 50kAIC @ 480V | S |
| 150A – 1200A | 65kAIC @480V | H |

Table 7: Insulated Case Withstand Code

| Amperage | kAIC | Alpha Numeric |
|---------------|----------------|---------------|
| 1600A – 3200A | 65kAIC @ 480V | S |
| 4000A | 100kAIC @ 480V | S |
| 1600A – 3200A | 100kAIC @480V | H |

NEMA Enclosure Rating

The QCB is built with a minimum enclosure rating of NEMA 3R. Additional ratings are listed below.

Table 8: NEMA Code

| Environmental Rating | Alpha Numeric |
|----------------------|---------------|
| NEMA 3R | 3 |

Enclosure Material

The standard enclosure material of the QCB is hot rolled steel with a textured ANSI 61 gray powder coat finish. Additional materials are listed below.

Table 9: Enclosure Code

| Material | Alpha Numeric |
|---|---------------|
| Hot Rolled Steel – ANSI 61 Gray Powder Coat | A |
| Stainless Steel – 304 (#4 Brushed Finish) | C |
| Stainless Steel – 316 (#4 Brushed Finish) | D |

Camlock Connection Style

The selection of the camlock style allows for the QCB to be configured with female or male 400A single pole UL 1691 listed receptacles.

Table 10: Camlock Style Code

| Connection Type | Ampacity | Alpha Numeric |
|-----------------|----------|---------------|
| Female | 400A | F |
| Male | 400A | M |

QCB Selection Guide

Accessory Code Configuration



Accessory Code Position 1

The first position of the four-digit accessory code is reserved for future expansion to the QCB product line with 0 being the only available character at this time.

Table 11: Accessory Code 1

| Description | Alpha Numeric |
|----------------------------|---------------|
| No Option (For Future Use) | 0 |

Accessory Code Position 2

The second position of the four-digit accessory code offers a Phase Rotation Monitor.

- Phase Rotation Monitor uses a blue indicator light for confirmation of proper phasing when connecting a portable power source (Alternate Source).

Table 12: Accessory Code 2

| Description | Alpha Numeric |
|------------------------|---------------|
| No Option | 0 |
| Phase Rotation Monitor | 2 |

Accessory Code Position 3

The third position of the four-digit accessory code provides the options for Space Heaters and Kirk Key on Breaker.

- Space Heaters operate on 120VAC and may include a control power transformer when necessary. Over-current protection and an adjustable thermostat are also provided.
- Kirk Key on Breaker accessory consists of a mounting plate and cylinder. The Kirk serial number will be provided at the time of shipment.

Table 13: Accessory Code 3

| Description | Alpha Numeric |
|-----------------------------------|---------------|
| No Option | 0 |
| Space Heater | 1 |
| Kirk Key on Breaker | 2 |
| Space Heater, Kirk Key on Breaker | 3 |

Accessory Code Position 4

The fourth position of the four-digit accessory code is reserved for future expansion to the QCB product line with 0 being the only available character at this time.

Table 14: Accessory Code 4

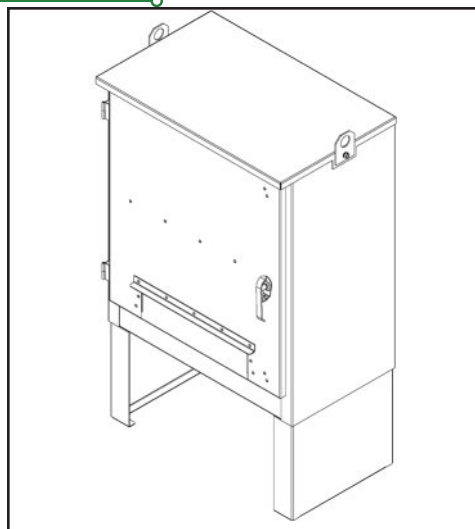
| Description | Alpha Numeric |
|-------------|---------------|
| No Option | 0 |

Optional Leg Kit

A leg kit is available for QCB wall mount enclosures, which allows the unit to become free-standing. This kit is sold separately and can be purchased by using the part number below that corresponds to the enclosure material of the QCB.

Table 15: Leg Kit

| Description | Part Number |
|---|-----------------|
| Hot Rolled Steel – ANSI 61 Gray Powder Coat | QC-LK-474025-3A |
| Stainless Steel – 304 (#4 Brushed Finish) | QC-LK-474025-3C |
| Stainless Steel – 316 (#4 Brushed Finish) | QC-LK-474025-3D |



Weights & Dimensions

Molded Case (150A - 1200A)

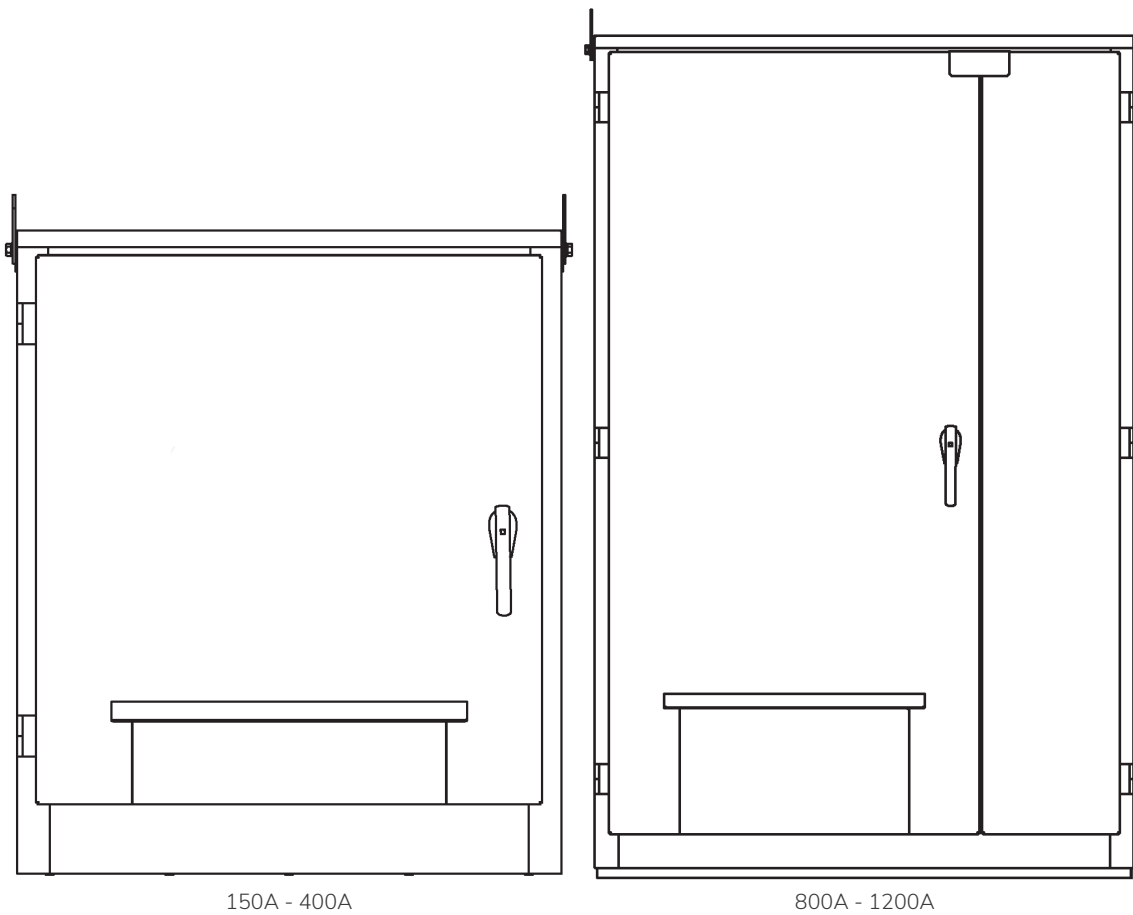


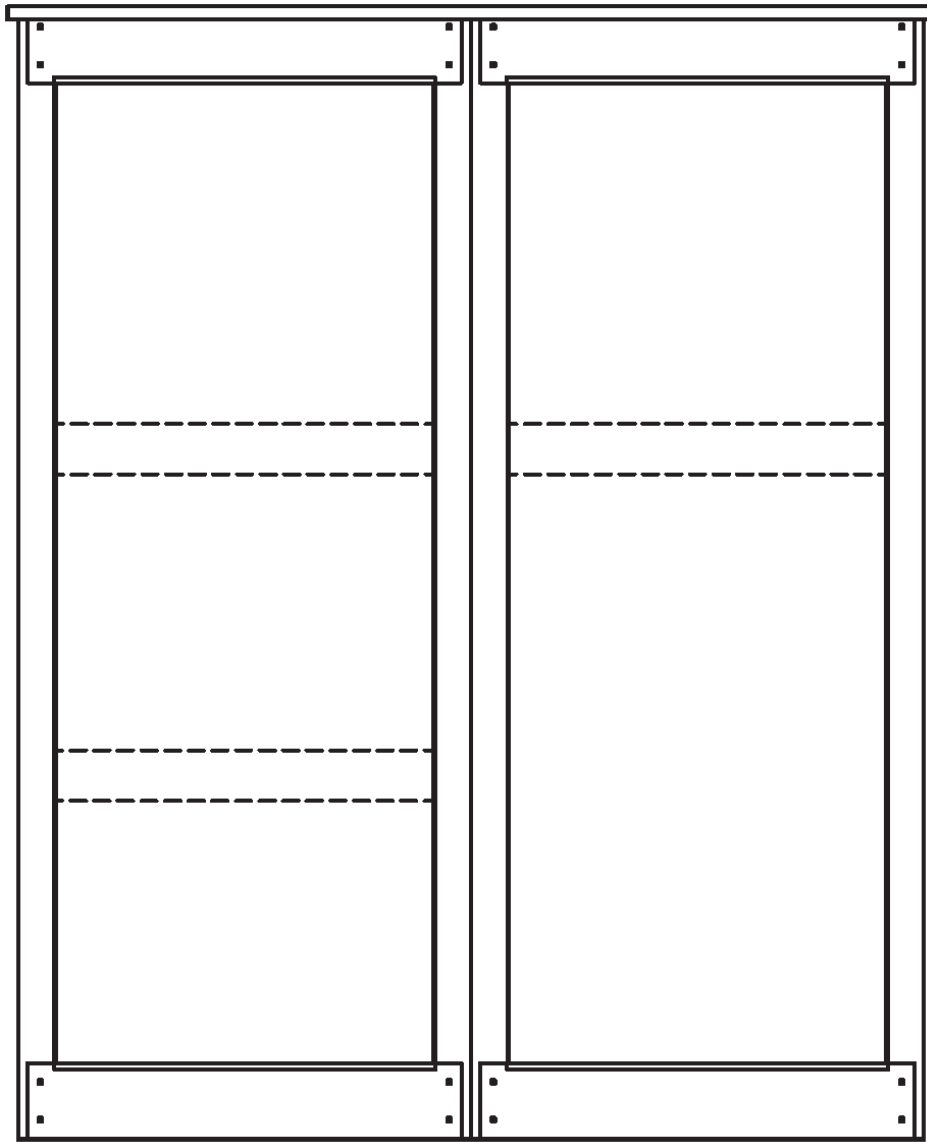
Table 16: Weights & Dimensions - Molded Case ¹

| Ampacity | 150 – 400 (Wall Mount Only) | 800 – 1200 (Free Standing) |
|-----------------------------|-----------------------------|----------------------------|
| Height | 47" | 84" |
| Width | 40" | 54" |
| Depth | 25" | 25" |
| Approximate Weight | 525 lbs | 1300 lbs. |
| Drawing Number ¹ | QCB0204-M001 | QCB0812-M001 |

¹ Weights and dimensions are not for construction. Please refer to drawing for complete information

Weights & Dimensions

Insulated Case (1600A - 4000A)



1600A - 3200A

Table 17: Weights & Dimensions - Insulated Case ¹

| | | |
|-----------------------------|--------------|-----------------|
| Ampacity | 1600 - 3200 | 4000 |
| Height | 91" | Contact Factory |
| Width | 72" | |
| Depth | 36" | |
| Approximate Weight | 2500 lbs | |
| Drawing Number ¹ | QCB1632-M001 | |

¹ Weights and dimensions are not for construction. Please refer to drawing for complete information

Connection Information

Lug Size & Quantity



Table 18: Permanent Cable Termination Data

| Ampacity | Location | Standard Lugs: Qty. & Range | Ground |
|----------|--------------------|--------------------------------|-----------------|
| 150A | Disconnect Breaker | (1) #6 – 350MCM | (1) #14 – 1/0 |
| | Neutral | (1) #6 – 350MCM | |
| 400A | Disconnect Breaker | (2) #2 – 600MCM | (1) #14 – 1/0 |
| | Neutral | (2) #2 – 600MCM | |
| 800A | Disconnect Breaker | (4) 300 – 750MCM | (1) #6 – 250MCM |
| | Neutral | (4) 300 – 750MCM | |
| 1200A | Disconnect Breaker | (4) 300 – 750MCM | (1) #6 – 250MCM |
| | Neutral | (4) 300 – 750MCM | |
| 1600A | Disconnect Breaker | (5) 300 – 750MCM | (4) #6 – 350MCM |
| | Neutral | (5) 300 – 750MCM | |
| 2000A | Disconnect Breaker | (6) 300 – 750MCM | (4) #6 – 350MCM |
| | Neutral | (6) 300 – 750MCM | |
| 3200A | Disconnect Breaker | (8) 300 – 750MCM | (4) #6 – 350MCM |
| | Neutral | (8) 300 – 750MCM | |
| 4000A | Disconnect Breaker | (12) 300 – 750MCM | (4) #6 – 350MCM |
| | Neutral | (12) 300 – 750MCM | |

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