



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

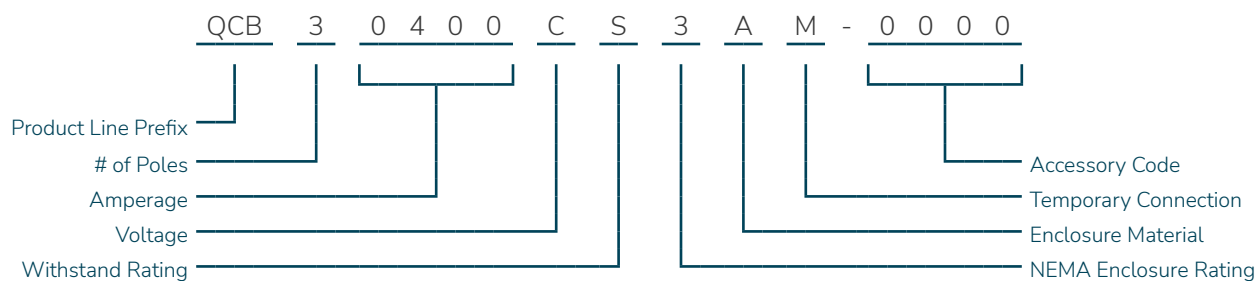
QCB Selection Guide

Characters & Designations



The QCB product line has a structured, smart-style model code ordering system. The complete model code is built up of 17 customer selected characters. Each character identifies features or functions that can be incorporated into the design. The first thirteen characters of the model code define the basic configuration, followed by four characters that identify any accessories.

Sample Model Code:



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 a fixed manufacturer code that is dependent on the amperage of the equipment.

Table 14: Accessory Code 4

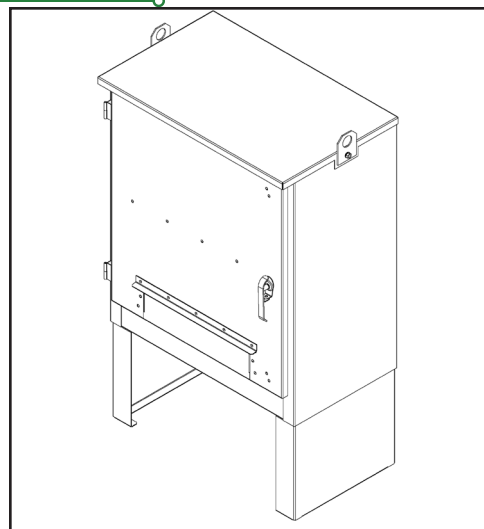
Description	Alpha Numeric
150A - 1200A	E
1600A - 4000A	S

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)

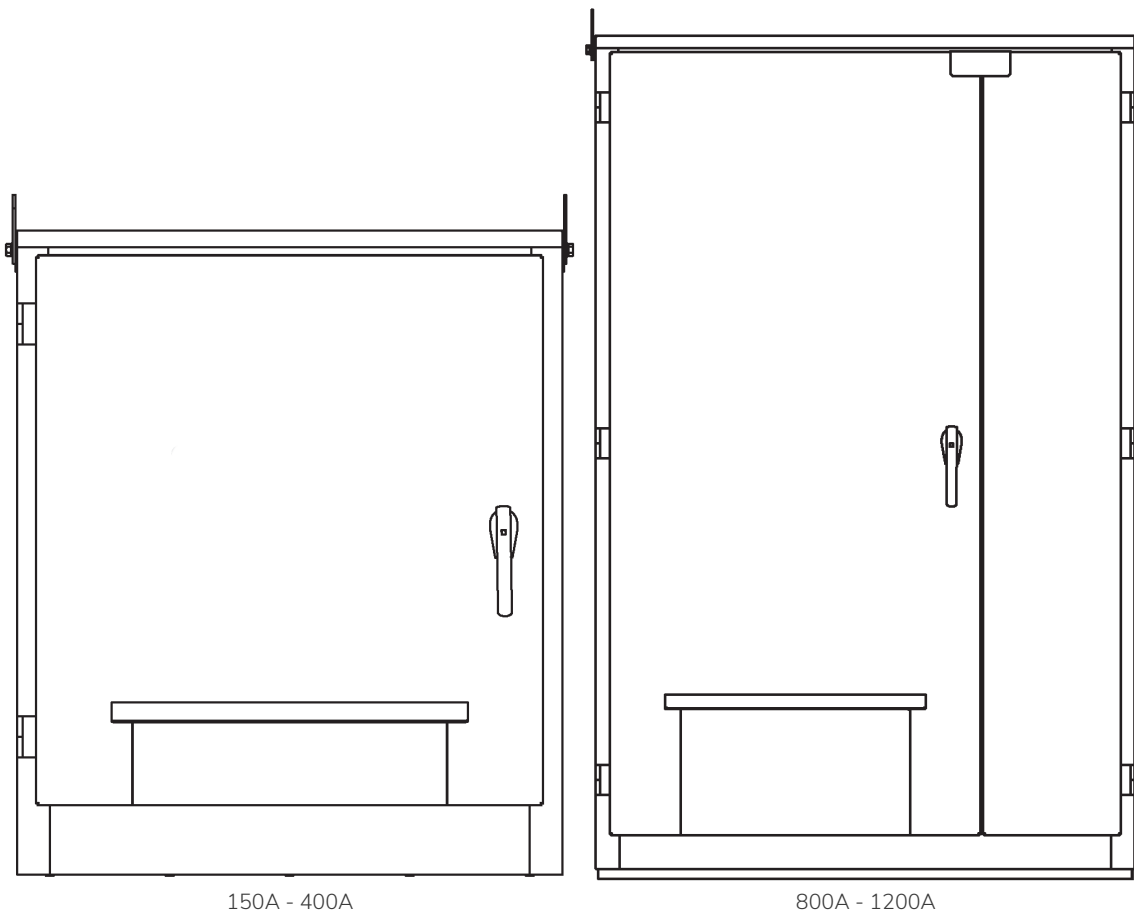


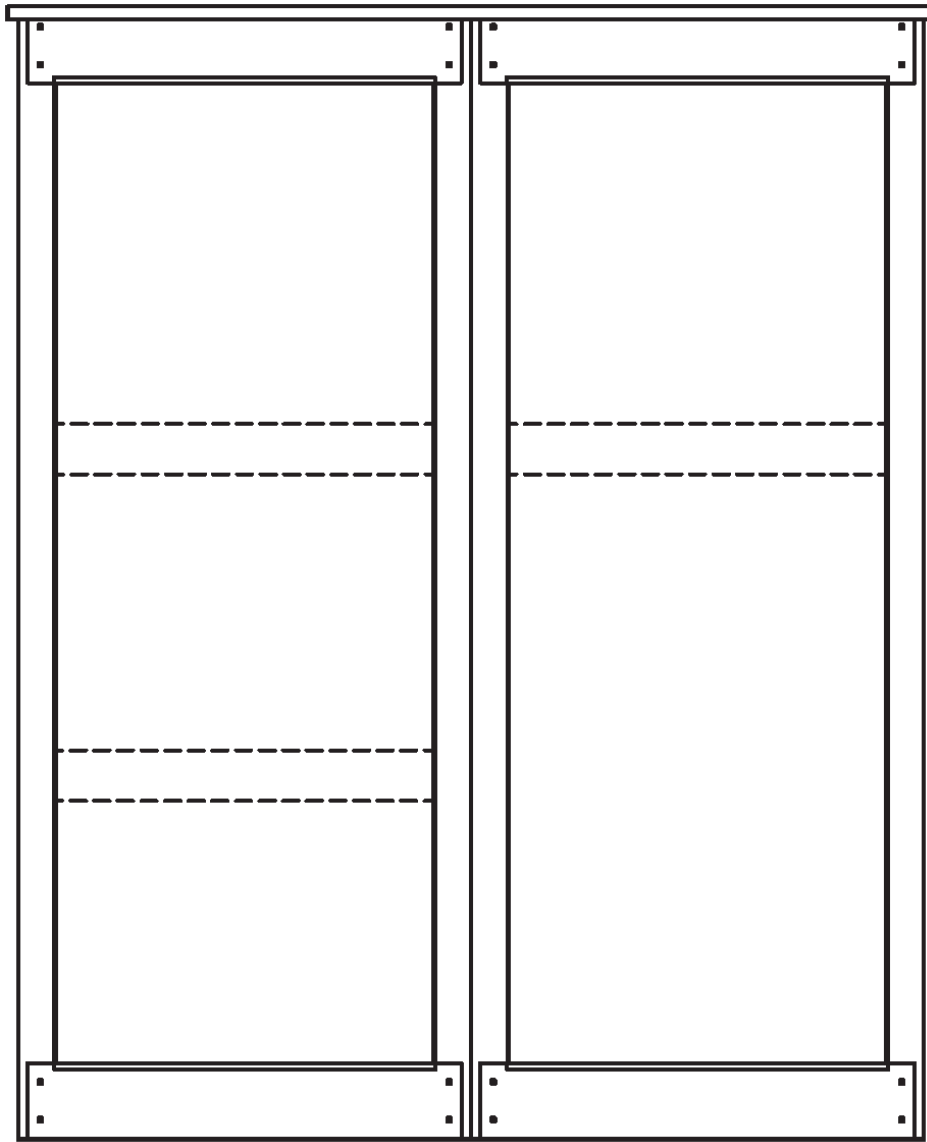
Table 16: Weights & Dimensions - Molded Case ¹

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	

Contact Us

Lake Shore Electric, LLC.
5 Hemisphere Way
Bedford, OH 44146

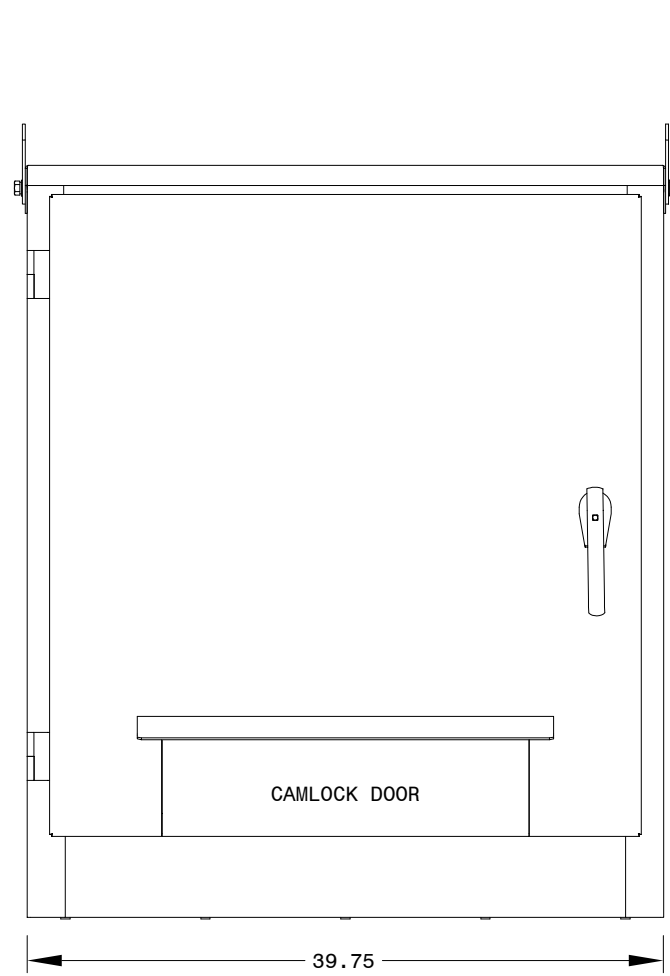
Phone: 440.232.0200

E-Mail: Sales@lake-shore-electric.com

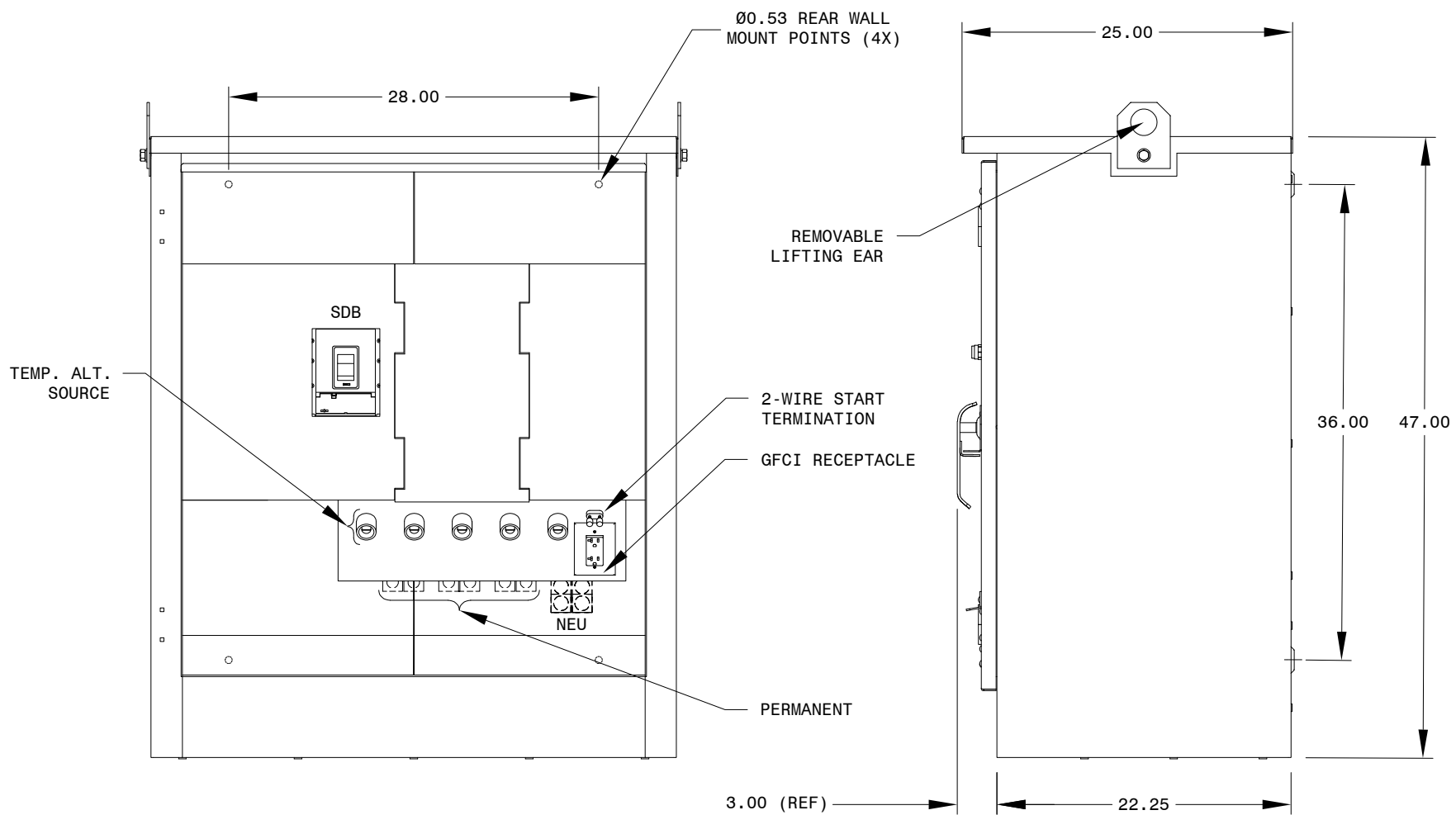
www.lseconnect.com/qcb

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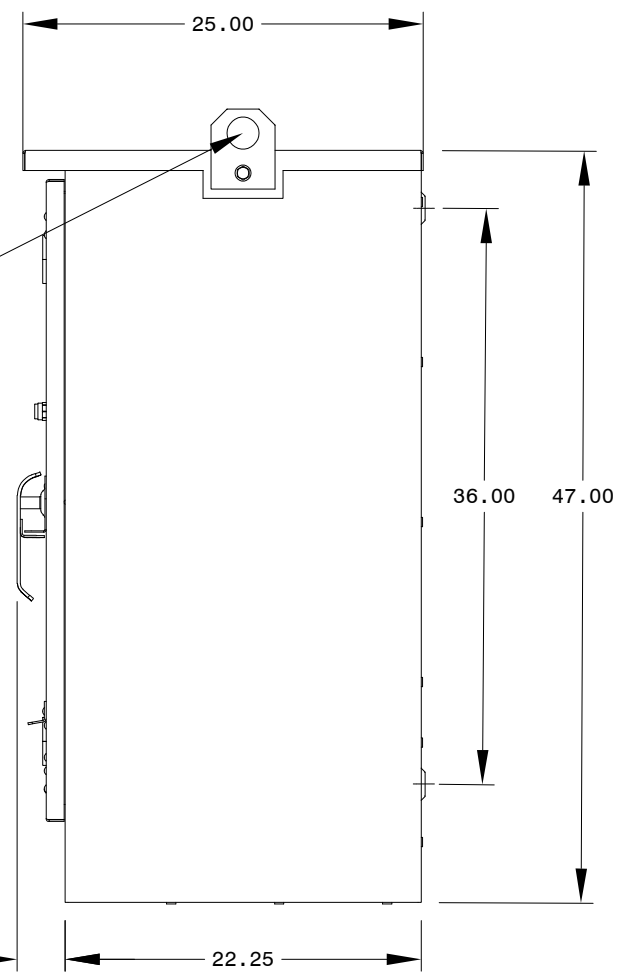




FRONT ELEVATION

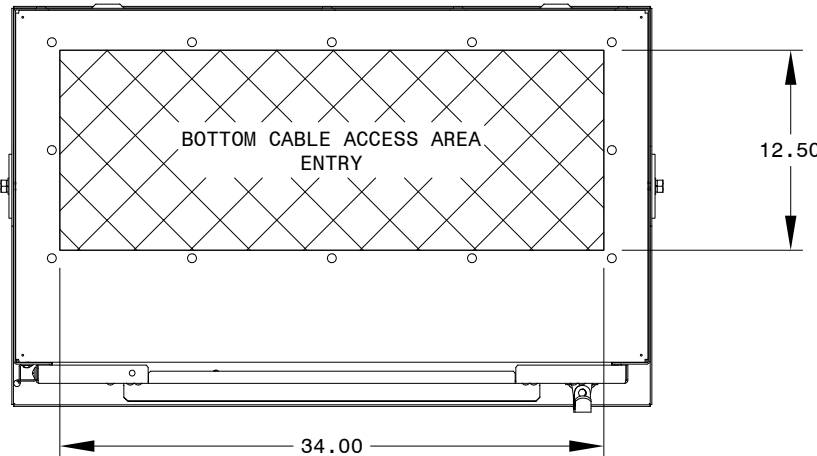
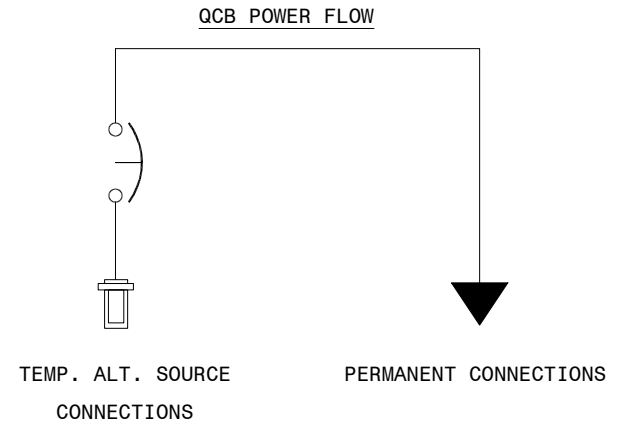


FRONT ELEVATION
DOOR REMOVED



SIDE ELEVATION

- OUTLINE NOTES**
- 1) ENCLOSURE CONSTRUCTION: NEMA 3R
 - 2) WALL MOUNT
 - 3) CABLE ENTRY LOCATION: BOTTOM
 - 4) DOOR INFORMATION:
 MAIN DOOR: LEFT HINGED, PADLOCKABLE WITH 3-POINT LATCHING
 CAMLOCK DOOR: TOP HINGED, INTERNAL LATCH
 - 5) DEADFRONTED
 - 6) CAMLOCKS
 A) COLOR AND ARRANGEMENT PER NATIONAL ELECTRIC CODE (NEC)
 B) MANUFACTURER & SERIES: CROUSE-HINDS "J" SERIES E1016, 400A RATING, ALL AMPACITIES, OR EQUIVALENT
 - 7) ALL DIMENSIONS EXPRESSED IN INCHES
 - 8) ESTIMATED WEIGHT: 510LBS



PLAN VIEW
FRONT

PERMANENT CABLE TERMINATION DATA			
AMPERAGE	TYPE	PHASE/NEU	GROUND
400A	NORMAL SOURCE	(2) #2-600MCM	(1) #14-1/0
	LOAD		
150A	NORMAL SOURCE	(1) #6-350MCM	
	LOAD		

REV	DESCRIPTION	BY	APV	DATE
-	ORIGINAL ISSUE	DGW	-	03/03/22
A	UPDATED DESIGN	DGW	-	10/25/22
-	-	-	-	-
-	-	-	-	-
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TITLE: QUICK CONNECT W/BREAKER 150A-400A
 PLAN AND ELEVATION VIEWS

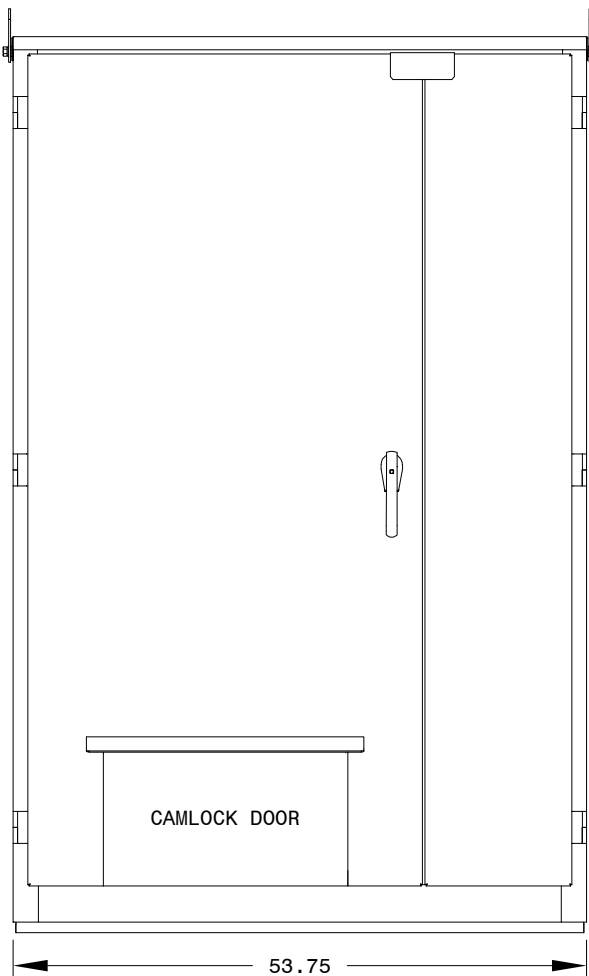
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LS LAKE SHORE ELECTRIC LLC
 BEDFORD, OHIO U.S.A.

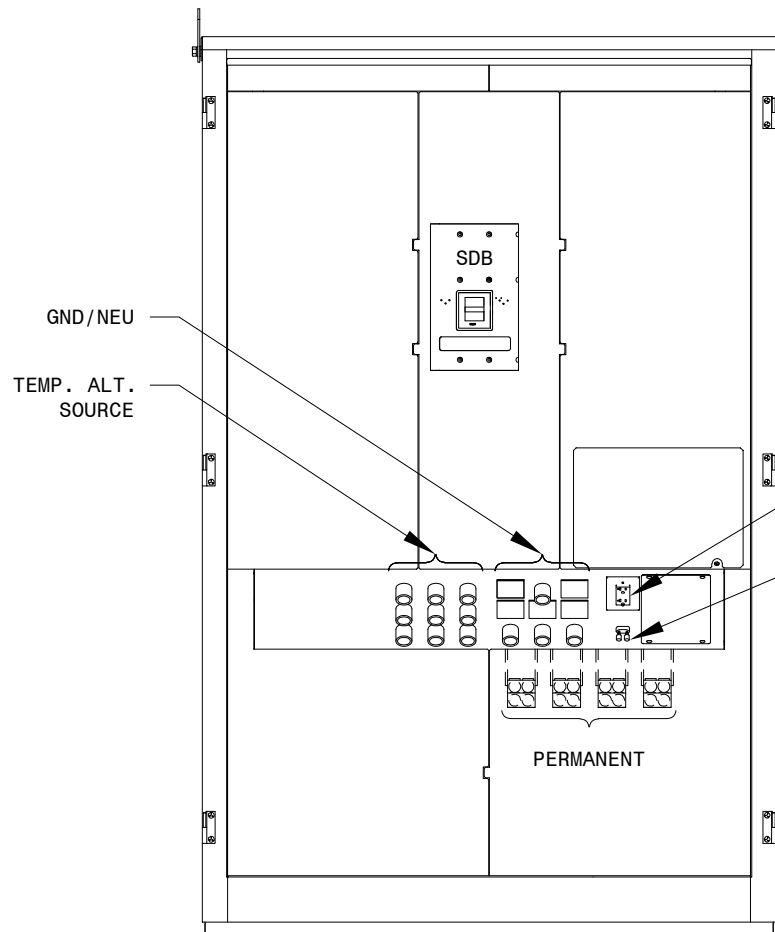
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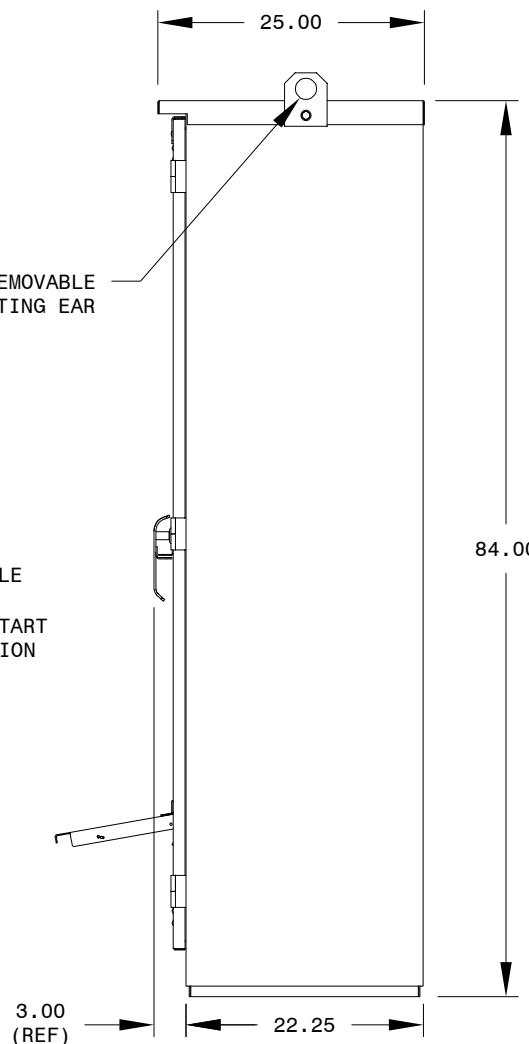
PG 1 OF 1



FRONT ELEVATION

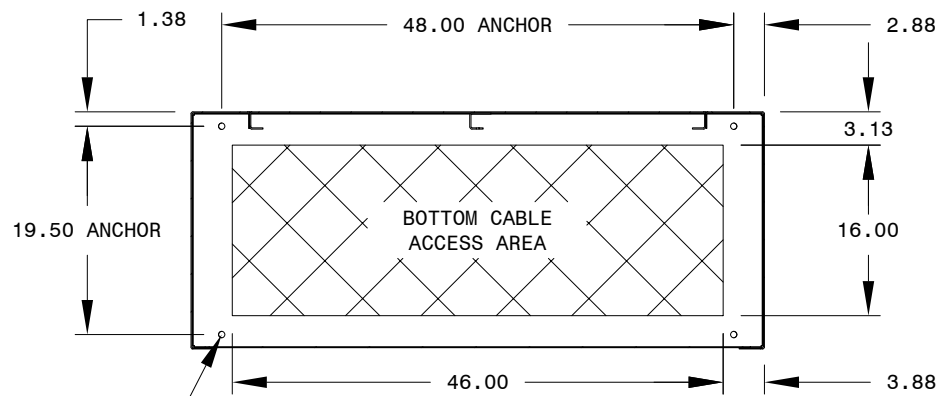
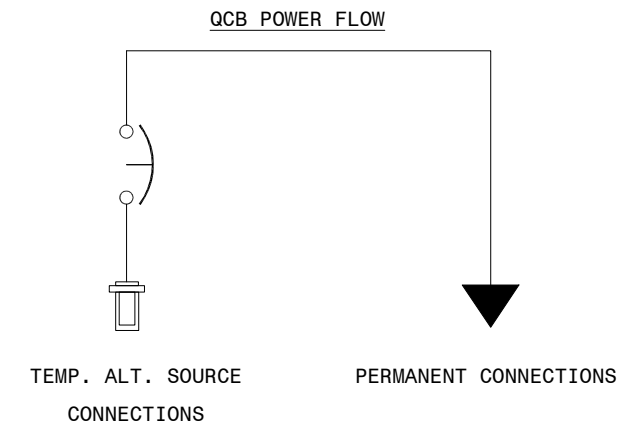


FRONT ELEVATION
DOORS REMOVED



SIDE ELEVATION

- OUTLINE NOTES
- 1) ENCLOSURE CONSTRUCTION: NEMA 3R
 - 2) FREE STANDING
 - 3) CABLE ENTRY LOCATION: BOTTOM
 - 4) DOOR INFORMATION
 - A) MAIN DOOR: LEFT HINGED, PADLOCKABLE, WITH 3-POINT LATCHING
 - B) CAMLOCK DOOR: TOP HINGED, INTERNAL LATCH
 - 5) DEADFRONTED
 - 6) CAMLOCKS
 - A) COLOR AND ARRANGEMENT PER NATIONAL ELECTRIC CODE (NEC)
 - B) MANUFACTURER AND SERIES: CROUSE HINDS "J" SERIES E1016, 400A RATING, ALL AMPACITIES, OR EQUIVALENT
 - 7) ALL DIMENSIONS EXPRESSED IN INCHES
 - 8) ESTIMATED WEIGHT: 975LBS



PLAN VIEW
FRONT

PERMANENT CABLE TERMINATION DATA			
AMPACITY	TYPE	(CONDUCTOR QTY) RANGE	GROUND
800A-1200A	SOURCE DISCONNECT BREAKER	(4) 300-750MCM	(1) #6-250MCM
	NEUTRAL		

TITLE: QUICK CONNECT W/BREAKER 800A-1200A
PLAN AND ELEVATION VIEWS

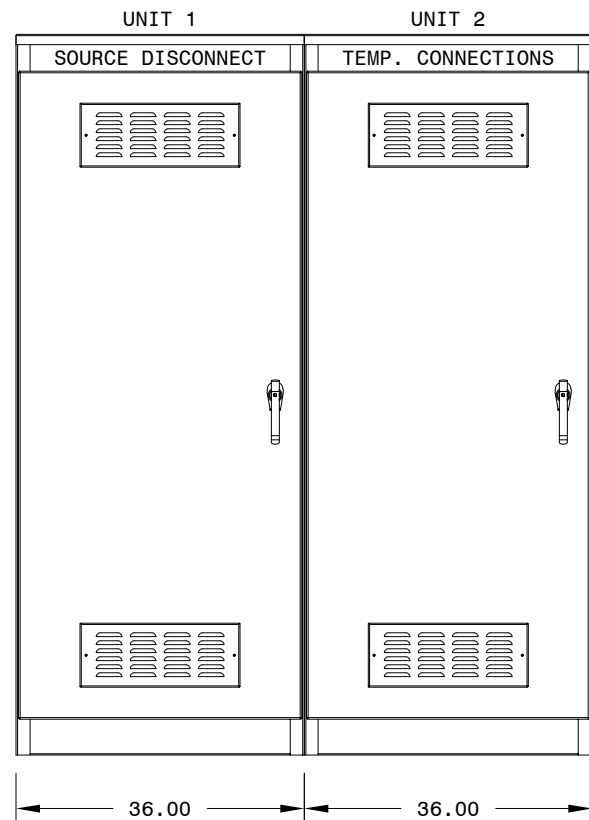
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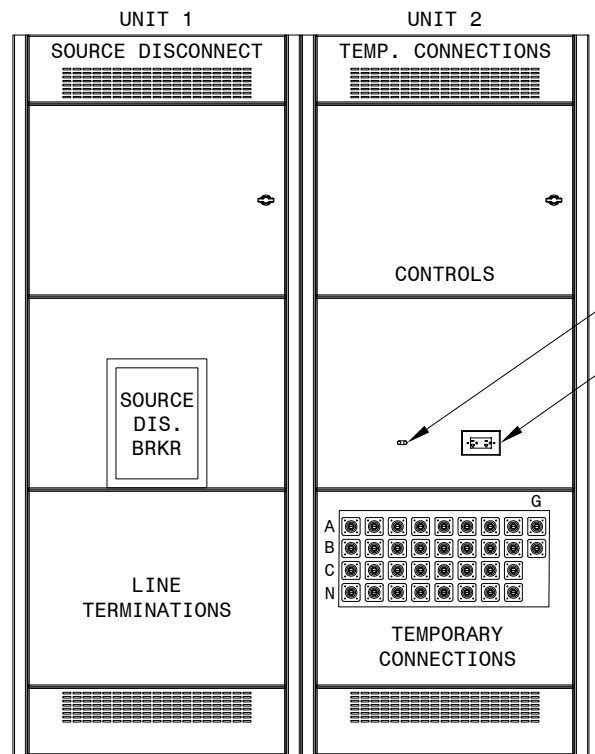
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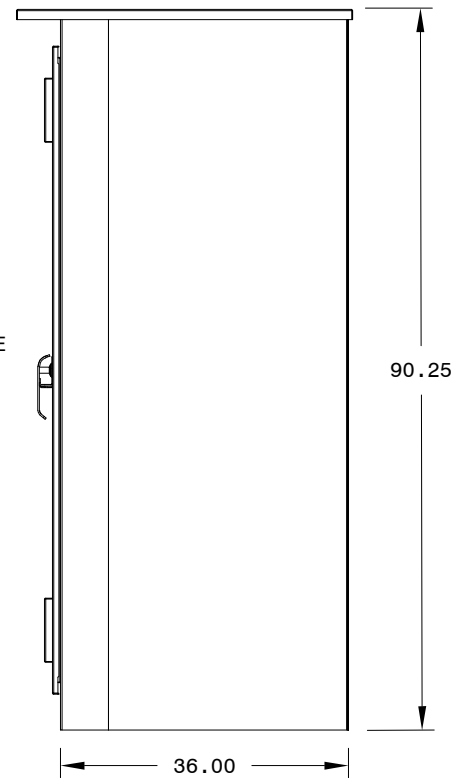
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A	UPDATED ENCLOSURE (RENAMED)	DGW	-	10/28/22
B	UPDATED LUG INFORMATION AND NOTES	DGW	-	01/25/23
-	-	-	-	-
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FRONT ELEVATION



2 WIRE START TERMINATION
GFCI RECPTACLE

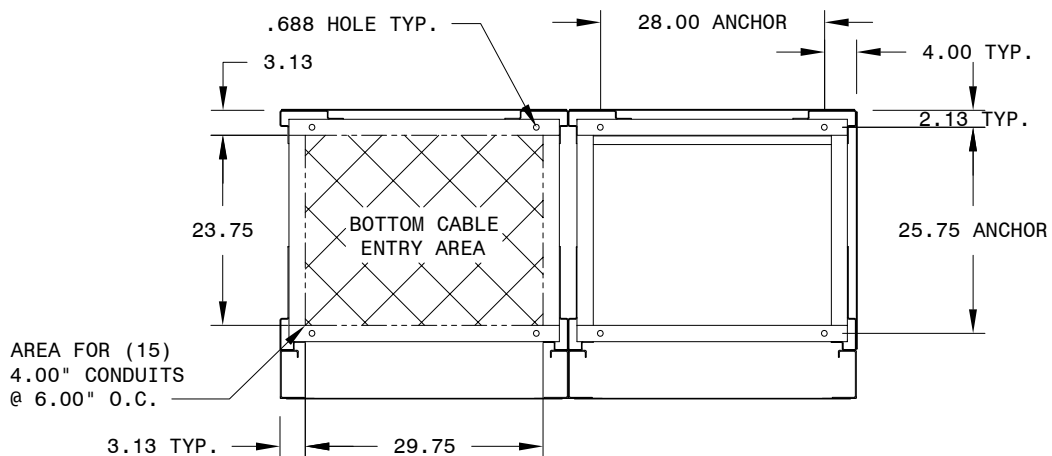
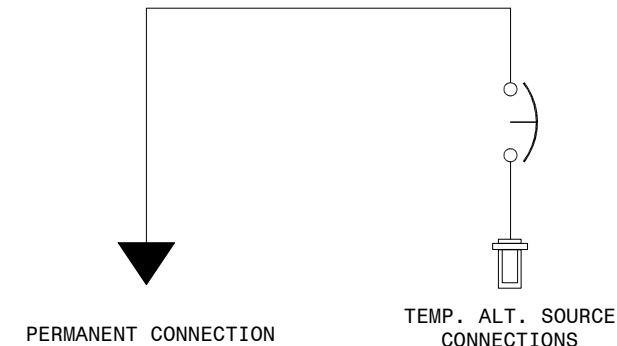


SIDE ELEVATION

OUTLINE NOTES

- 1) ENCLOSURE CONSTRUCTION: NEMA 3R
- 2) FREESTANDING
- 3) CABLE ENTRY LOCATION: BOTTOM
- 4) DOOR INFORMATION:
MAIN DOOR: LEFT HAND HINGE, PADLOCKABLE, WITH 3-POINT LATCHING
CAMLOCK DOOR: TOP HINGE, INTERNAL LATCH
- 5) DEADFRONTED
- 6) QUICK CONNECTORS
A) COLOR AND ARRANGEMENT PER NATIONAL ELECTRIC CODE (NEC)
B) MANUFACTURER & SERIES: CROUSE-HINDS "J" SERIES
E1016, 400A RATING, ALL AMPACITIES, OR EQUIVALENT.
- 7) ALL DIMENSIONS EXPRESSED IN INCHES
- 8) ESTIMATED WEIGHT: 2500LBS

QCB POWER FLOW



PLAN VIEW

PERMANENT CABLE TERMINATION DATA			
AMPACITY	TYPE	(CONDUCTOR QTY) RANGE	GROUND
1600	SOURCE DISCONNECT BREAKER	(5) #300-750MCM	(4) #6-350MCM
	NEUTRAL		
2000A	SOURCE DISCONNECT BREAKER	(6) #300-750MCM	
	NEUTRAL		
3200A	SOURCE DISCONNECT BREAKER	(8) 300-800MCM	
	NEUTRAL		

TITLE: QUICK CONNECT W/BREAKER
QCB 1600-3200A

DWG NUMBER
QCB1632-M001



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REV	DESCRIPTION	BY	APV	DATE
-	ORIGINAL ISSUE	DGW	-	01/04/23
A	UPDATED NOTES AND LUG INFORMATION	DGW	-	01/25/23
B	UPDATED DESIGN	DGW	-	09/19/23
C	-	-	-	-
D	-	-	-	-
E	-	-	-	-
F	-	-	-	-
G	-	-	-	-