Low-voltage power distribution and control systems > Panelboards >

Pow-R-Line 3FQS panelboards

Contents

General Description **22.8-2**
Panelboards Overview 22.8-2
Application Considerations and Definitions 22.8-4
Product Overview 22.8-7

Devices **22.8-8**
Bussmann Series CUBEFuse Devices 22.8-8
Metering and Surge Protective Devices 22.8-9

Layouts and Dimensions **22.8-10**
Pow-R-Line 3FQS Layout Guide 22.8-10

Powering Business Worldwide

More about this product
Eaton.com/panelboards

Complete library of design guides
Eaton.com/designguides

Panelboards Overview

Choices to quickly change feeder breakers in electrical distribution equipment have evolved over the years. While using drawout switchgear with power air circuit breakers remains a highly reliable solution, requests for drawout molded case circuit breakers (MCCBs) have increased. And, customers need a wall-mounted panelboard solution with front-accessibility and front-connected equipment to meet space requirements and application needs.

Eaton's drawout MCCB Pow-R-Line® 4DX (PRL4DX) panelboard provides this solution.

This is the first design to offer two- and three-pole MCCBs in a mechanical drawout design. Breaker ratings from 20 A to 600 A use unique drawout cassettes. Breakers are inserted and removed via a mechanical removal system similar to other drawout designs associated with switchgear; however, these breakers are horizontally mounted in a traditional panelboard group-mounted manner.

Market and Segment Applications

While the drawout MCCB panelboard design may be substituted for nearly any traditional application with feeder MCCBs, it has been specifically designed to meet the needs of several industries, including:

- Electrical distribution systems where a changeout of circuit breakers is needed to upgrade equipment to a new process
- Data centers
- Industrial facilities to minimize downtime
- Institutions
- Laboratories
- Healthcare facilities
- Critical load applications

Standards and Certifications

- UL® 67 Listed for wall-mounted applications from 600 A to 1200 A
- National Electrical Code®

Available Ratings

The panelboards are rated at 240 Vac, 480 Vac and 600 Vac. Fault current is available up to 200 kAIC at 240 Vac, 100 kAIC at 480 Vac and 65 kAIC at 600 Vac. The short-circuit current rating of the panelboard is determined by the low short-circuit current rating of the lowest rated overcurrent device in the panelboard.

Boxes and trims are UL 50 Listed and labeled. Both the box and the trim are painted ANSI-61 light gray. Deadfront covers are also painted ANSI-61 light gray to match box and trim.

Drawout feeder MCCBs are available in two- and three-pole offerings from 20 A to 600 A. Main breakers above 600 A are fixed-mounted using a traditional bolt-on design. Main breakers 600 A and below are available with either the traditional fixed-mounted, bolt-on design or in a drawout cassette. For drawout mains or feeders above 600 A, please use Eaton's switchboard offering.

Panelboard Options

- Copper and silver-plated copper
- Copper lugs
- Density-rated bus
- Ground bars
- Customer-owned meters
- Service entrance equipment construction
- Surge protective devices
- Seismically qualified panelboards

General Construction Features

Eaton's assembled panelboards are designed for sequence phase connection of branch circuit devices. This allows complete flexibility of circuit arrangement (single-, two- or three-poles) to allow balance of the electrical load on each phase.

Sturdy, rigid chassis assembly ensures accurate alignment of interior with panel front; prevents flexing and minimizes possibility of loosening or damage to current carrying parts during and after installation.

Four point in-and-out adjustment of panel interior is provided to meet critical depth dimensions on flush installations. This compensates for possible misalignment of box at installation.

Main lugs are mechanical solderless type and approved for copper and aluminum conductors.

Enclosures

Boxes are code-gauge galvanized steel except for column type panelboards, which include a painted box finished in ANSI-61 light gray to match the trim. Standard panelboard cabinets are designed for indoor use. Alternate types are available for outdoor and special purpose applications.

All enclosures are furnished in accordance with UL standards and include wiring gutters with proper wire bending space. Special cabinets can be provided at an additional charge.

The box dimensions shown are inside dimensions. For outside dimensions, add 0.25-inch (6.4 mm).

Standard panelboard boxes are supplied without knockouts (blank endwalls).

EZ™ Trim

The EZ Box and EZTrim are provided standard for Pow-R-Line 1X and Pow-R-Line 2X lighting panelboards, as well as Pow-R-Line 3X and Pow-R-Line 3E mid-range panelboards.

EZ Trim Provides Standard Door-in-Door Construction With No Exposed Hardware or Sharp Ridges. No Tools are Required for Installation.

The trims for lighting and appliance branch circuit panelboards and small power distribution panelboards include a door with rounded corners and concealed hinges. A flush-type latch and lock assembly is included. All locks are keyed alike. These trims are available in both surface and flush mounted designs.

Fronts for power distribution panelboards use a unique breaker front cover design in which each device has a dedicated bolt-on steel cover. The individual covers form a single deadfront for the panelboard that is used in conjunction with two wiring gutter covers to complete the trim. A door is not finished as part of the standard offering on these panelboards but can be provided, for an additional charge, using a deeper than standard box.

Combination AFCI Circuit Breakers

Eaton's 125 Vac AFCI single- and two-pole, 15 A and 20 A bolt-on breakers in panelboards meet Article 210.12 of the NEC®. See the NEC for definitions and details.

Application Considerations and Definitions

Standards

All Eaton's panelboards are designed to meet the following applicable industry standards, except where noted:

1. Underwriters Laboratories
   a. Panelboards: UL 67
   b. Cabinets, boxes and trims: UL 50

Note: Only panelboards containing UL listed devices can be UL labeled.

2. National Electrical Code
3. NEMA Standards: PB 1
4. Federal Specification W-P-115c
   Circuit breaker—Type I Class 1
   Fusible switch—Type II Class 1

Panelboard Selection Factors

In selecting a panelboard, the following factors must be considered:

a. Service (voltage and frequency).
b. Interrupting capacity (fully or series rated).
c. Ampere rating of main.
d. Ampere ratings of branches.
e. Installation environment.
f. Codes and standards mandates.

Panelboard Short-Circuit Rating

The short-circuit rating of Eaton's assembled panelboards are test verified by, and listed with, Underwriters Laboratories. Generally, these ratings are that of the lowest interrupting rated device in the panel.

Certain exceptions to this rule exist where branch devices have been UL tested in combination with specific main devices having a higher interrupting rating. Where these defined main breaker and branch breaker combinations are used, the **series short-circuit rating** of the assembled panelboard will be the same as the series tested rating of the approved rated main breaker.

These series ratings apply to panels having main devices, or main lug only panelboards fed remotely by the device listed in the series ratings chart as the main, for which UL listed tests were conducted.

Selective Coordination

Please refer to Molded Case Circuit Breakers Design Guides for detailed information on overcurrent protective device combinations for use on selectively coordinated systems.

Service Entrance Equipment

NEC Articles 230.F and G, and UL, require that:

a. Panels used as service entrance equipment must be located near the point where the supply conductors enter the building.
b. A panelboard having main lugs only shall have a maximum of six service disconnects to de-energize the entire panelboard from the supply conductors. Where more than six disconnects are required, a main service disconnect must be provided.
c. Must include connector for bonding and grounding neutral conductor.
d. A service-entrance-type UL label must be factory installed.
e. Ground fault protection of equipment shall be provided for solidly grounded wye electrical services of more than 150 V to ground, but not exceeding 600 V phase-to-phase for each service disconnecting means rated 1000 A or more.

Service entrance panels must be identified as such on the order entry to the manufacturing location.

Column Type Panelboards

The same general code restrictions apply as for standard width panels except where trough extensions are used.

Multi-Section Panelboards

When more than 42 overcurrent protective devices are required, two or more separate enclosures may be required. Separate fronts for each box are standard.

Interconnecting Multi-Section Panelboards

When a panelboard, for connection to one feeder, must be furnished in more than one section (box), each section must be furnished with main bus and terminals of the same rating, unless a main overcurrent device is provided in each section.

Sub-feed or through-feed provisions must also be added to provide connection capability to the second section.

Note: Sub-feed or through-feed lugs cannot be used on any panelboard that is not protected by a single main overcurrent device either in the panelboard or immediately upstream, i.e., service entrance panelboards with main lugs only using the six disconnect rule.

Sub-Feed Lugs (Figure 22.8-1)

Sub-feed lugs are one means of interconnecting multi-section panels. The sub-feed (second set of) lugs are mounted directly beside the main lugs. These are required in each section except the last panel in the lineup. The feeder cables are brought into the wiring gutter of the first section and connected to the main lugs. Another set of the same size cables are connected to the sub-feed lugs (Section 1) and are carried over to the main lugs of the adjacent panel. Cross connection cables are not furnished by Eaton. Sub-feed lugs are only available on main lug only panels.

Note: Sub-feed lugs may not be used on main lug only (six disconnect rule) service entrance panels.

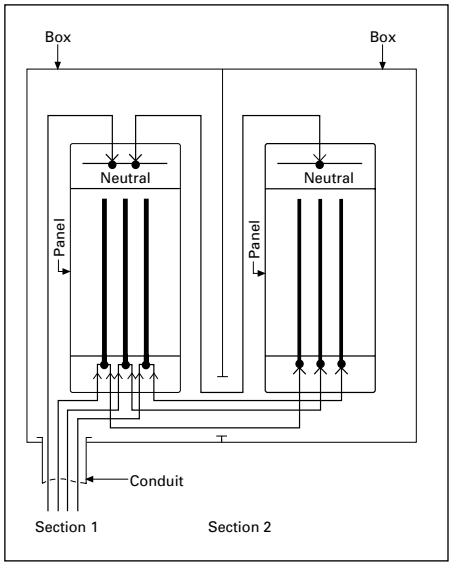

Figure 22.8-1. Sub-Feed Lugs

Through-Feed Lugs (Figure 22.8-2)

Through-feed lugs are another method to interconnect multi-section panelboards. The incoming feeder cables are connected to the main lugs or main breaker at the bottom of panel (Section 1). Another set of lugs (through-feed) are located at the opposite end of the main bus. The interconnecting cables are connected to the through-feed lugs in Section 1 and are carried over to the main lugs in Section 2. The connection arrangement could be reversed, i.e., main lugs at top; through-feed lugs at bottom end of panel. Cross cables are not furnished by Eaton.

Note: Through-feed lugs may not be used on main lug only (six disconnect rule) service entrance panels.

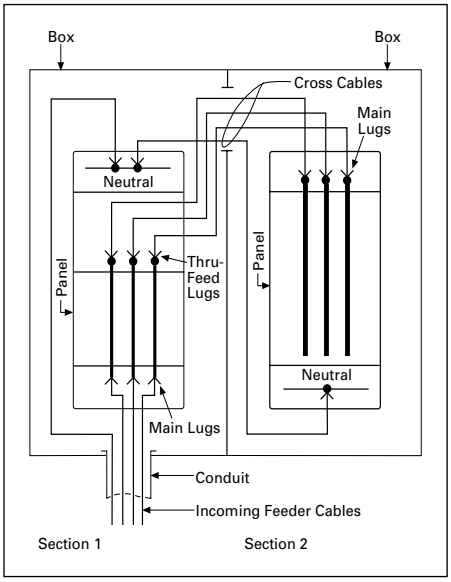

Figure 22.8-2. Through-Feed Lugs

Multiple Section Panelboard—Flush Mounted

Shown below is the standard method for flush mounting multiple section lighting and distribution panelboards using standard flush trims.

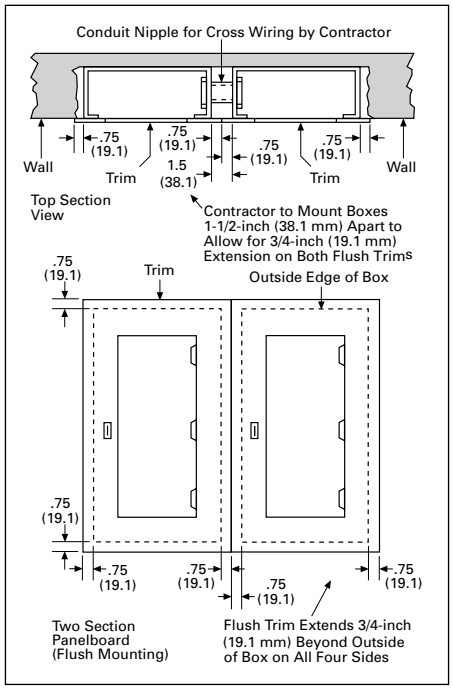

Figure 22.8-3. Multiple Section Panelboard—Flush Mounted—Dimensions in Inches (mm)

Branch Circuit Loading for Lighting Panels

The size of mains and branches should be selected based on the following:

a. Lighting circuits: NEC Article 210, 215, 220 and 240.
b. Distribution circuits, actual or continuous loads: NEC Article 384.16.
c. Motor circuits: NEC Article 430.
d. Diversity factor.
e. Provision for future loading.

Overcurrent Protection

National Electrical Code Article 408 states a panelboard shall be protected by an overcurrent protective device having a rating not greater than that of the panelboard. The overcurrent protective device shall be located within or at any point on the supply side of the panelboard.

Exceptions to Article 408 selectively apply. Refer to the National Electrical Code Article 408 for specifics.

Ground Fault Protection

Ground fault protection (GFP) may be added to most panelboards using Eaton's integral molded case circuit breaker GFP and included feeder devices on power panelboards and mains on all panelboards.

Arcflash Reduction Maintenance System™

Eaton's Arcflash Reduction Maintenance System is available on many molded case circuit breakers from 70 A to air power circuit breakers at 5000 A. Recognized by the 2011 National Electrical Code and the National Electrical Safety Code (NFPA 70E), the Arcflash Reduction Maintenance System allows breakers to trip quickly thus significantly reducing the available arc flash potential.

Ambient Temperatures

The primary function of an overcurrent device is to protect the conductor and its insulation against overheating. In selecting the size of the devices and conductors, consideration should be given to the ambient temperature surrounding the conductors within and external to the panelboard. Cumulative heating within the panelboard may cause premature operation of the overcurrent protective devices.

UL test procedures are based, in part, on 80% loading of panelboard branch circuit devices. Article 408 of the NEC limits the loading of overcurrent devices in panelboards to 80% of rating where in normal operation the load will continue for three hours or more.

Further derating may be required, depending on such factors as ambient temperature, duty cycle, frequency or altitude.

Exception: There is one exception to this rule in both UL and NEC. It applies to assemblies and overcurrent devices that have been approved for continuous duty at 100% of its rating. This exception is covered in NEC 210.20 (a). Also see Molded Case Circuit Breakers Design Guides for additional information.

Special Conditions

Standard panelboards, assembled with standard components, are adequate for most applications. However, special consideration should be given to those required for application under special conditions such as:

a. Excessive vibration or shock.
b. Frequencies above 60 cycles.
c. Altitudes above 6600 ft (2012 m).
d. Damp environment (possible fungus growth).
e. Compliance with federal, state and municipal electrical codes and standards.

Seismic Qualification

Refer to Power Distribution Systems Design Guides for information on seismic qualification for this and other Eaton products.

Harmonic Currents

Standard panelboard neutrals are rated for 100% of the panelboard current. However, because harmonic currents can cause overheated neutrals, an option is provided for neutrals to be rated at 200% (1200 A maximum neutral for 600 A main bus) of the panelboard phase current. Panelboards with the 200% rated neutral are UL listed as suitable for use with nonlinear loads.

Prior to specifying the 200% rated neutral, Eaton recommends a harmonic survey be conducted of the distribution system, be it new or existing.

Surge Protective Devices (SPD)

The quality of power feeding sensitive electronic loads is critical to the reliable operation of any facility. In modern offices, hospitals and manufacturing facilities, the most frequent causes of microprocessor-based equipment downtime and damage are voltage transients and electrical noise.

Electrical loads and microprocessor-based equipment are highly susceptible to both high and low energy transients. High energy transients include lightning induced surges and power company switching. These high energy transients can destroy components instantly.

More frequently the electrical system experiences low energy transients and high frequency noise.

The effects of continual low energy transients and high frequency noise can cause erratic equipment performance or sudden failure of electronic circuit board components.

Eaton can provide protective and diagnostic systems integral to panelboards. The SPD is integrated into the panelboards using a "zero lead length" direct bus bar connection. Integral disconnect is used on all Pow-R-Line 4 panels.

Eaton SPDs May be Integrated into Most Panelboards

The SPD protects sensitive electronic equipment from the damaging effects of high and low energy transients.

For complete product description and available ratings, refer to Surge Protection (SPD) & Power Conditioning Products Design Guides.

Compact Panelboard Meter

Most Eaton panelboards can integrate a compact meter for reading the panelboard power and energy usage. Eaton's Power Xpert Meter 350 has ANSI 12.20 0.5% accuracy, a bright backlit LCD display, real energy pulse output, phase loss alarm and optional RS-485 communication capability.

Product Overview

Pow-R-Line 3FQS

General Description

The Pow-R-Line 3FQS is a fusible lighting panel designed for high fault current applications where circuit breakers may not meet the application. This panel is ideal when the selective coordination mandates apply. Designed for use with Eaton's Bussmann CUBEFuse®, the panel will selectively coordinate with the maximum available fault current. The PRL 3FQS is ideal for control circuits below 15 A.

Panelboard Ratings

Listings

- UL 67 panelboard chassis
- UL 50 listed box and trim
- UL 98 listed fusible switches

Voltage

- 600 Vac maximum
- 125 Vdc maximum (80 A maximum branch)

Mains

- Main lugs: 30–400 A
- Main fusible switch: 30–400 A
- Main non-fused switch: 30–400 A

Voltage Systems

- 120 V, single-phase, two-wire
- 240 V, single-phase, two-wire
- 240 V, single-phase, two-wire—no neutral
- 277 V, single-phase, two-wire
- 120/240 V, single-phase, three-wire
- 208/120 V, single-phase, three-wire
- 480/240 V, single-phase, three-wire
- 277/480 V, single-phase, three-wire
- 480 V, single-phase, two-wire—no neutral
- 240 V, three-phase, three-wire
- 480 V, three-phase, three-wire
- 600 V, three-phase, three-wire
- 208/120 V, three-phase, four-wire
- 480/277 V, three-phase, four-wire
- 600/347 V, three-phase, four-wire
- 240/120 V, three-phase, four-wire
- 480/240 V, three-phase, four-wire
- 120/240 Vac, single-phase, three-wire
- 208Y/120 Vac, three-phase, four-wire
- 240 delta/120 Vac, three-phase, four-wire
- 480Y/277 Vac, three-phase, four-wire
- 600Y/347 Vac, three-phase, four-wire
- 240 delta Vac, three-phase, three-wire
- 480 delta Vac, three-phase, three-wire
- 600 delta Vac, three-phase, three-wire
- 25 Vdc

Branch Overcurrent Devices

- Eaton Bussmann Type CCPB (compact circuit protector base)
- 15–100 A
- Single-, two- and three-pole
- Branch fuses: Bussmann TCF or FCF CUBEFuse

Short-Circuit Current Ratings

- 50 kAIC symmetrical standard
- Up to 200 kAIC symmetrical when appropriate upstream overcurrent device is applied

Main Bus and Branch Connectors

- Tin plated, copper bus and branch connectors

Enclosures

- NEMA Type 1
- NEMA Type 3R

Branch Circuit Spaces

- 18, 30 and 42 circuit chassis

Incoming Line

- Top or bottom

Spare Fuse Compartment

- Provisions for six spare CUBEFuses, standard

Seismic Qualifications

Qualified for International Building Code (IBC) categories and site class A, B, C and D.

Application Description

- Hospitals
- Surgery centers
- Emergency systems
- Fire stations
- Police stations
- Laboratories
- Communication systems
- Ventilation and smoke removal systems
- Critical industrial processes
- Data centers
- Other critical or sensitive loads

Bussmann Series CUBEFuse Devices

Bussmann Series Low-Peak CUBEFuse

Bussmann Series Fast-Acting CUBEFuse

Time-Delay Low-Peak CUBEFuse (TCF)

Eaton's Bussmann™ series Low-Peak™ CUBEFuse™ is a UL Class CF current-limiting, dual-element, time-delay branch circuit fuse with Class J electrical performance. Available in indicating and non-indicating versions, this finger-safe fuse has a very compact, space-saving size and is easily applied using the CUBEFuse holder, UL 98 compact circuit protector switch or compact circuit protector base.

Features

- Smallest installed footprint of any UL Class CC, J or R fuse solution
- Holders and switches have an ampere rating rejection feature to help prevent overfusing:
  - 30, 60 and 100 A switches and holders will hold any CUBEFuse up to its rating
  - 200 and 400 A switches / 200, 225 and 400 A holders will hold any CUBEFuse 110 A and above up to its rating
- True dual-element fuse construction with a minimum 10 seconds time-delay at 500% of rating
- Available in indicating and non-indicating versions
- Indicating version features local easyl D™ open fuse technology for faster troubleshooting and reduced downtime

Ratings

- Listings
  - UL Listed Class CF fuse: Guide JDDZ, File E4273 (up to 400 A)
- Volts
  - 600 Vac
  - 300 Vdc
- Amperes
  - 6–400 A indicating
  - 1–400 A non-indicating
- Interrupting Rating
  - 300 kA rms sym. (up to 100 A UL)
  - 200 kA rms sym. (110 to 400 A UL)
  - 100 kA DC (up to 400 A UL)

Fast-Acting CUBEFuse (FCF)

Eaton's Bussmann series fast-acting CUBEFuse delivers a faster response to damaging faults to help reduce destructive thermal and magnetic forces. It is ideally suited for UPS and other critical applications.

The industry's first finger-safe CUBEFuse is a Class CF fuse that provides the same electrical performance as a Class J fuse, but with a significantly smaller footprint.

Features

- Fast-acting protection specifically for UPS and other critical applications
- Finger-safe fuse minimizes exposure to live parts, reducing the likelihood of accidental contact with energized parts
- Integral use with Compact Circuit Protector (cat. no. CCP2) or CUBEFuse holder to minimize panel space
- Minimizes incident energy and reduces arc flash hazards utilizing Class J current-limiting electrical characteristics
- Smallest footprint of any class fuse including Class CC, J, RK andT

Ratings

- Listings
  - UL Listed Class CF fuse: Guide JDDZ, File E4273
- Volts
  - 600 Vac/Vdc
- Amperes
  - 1–100 A
- Interupting Rating
  - 300 kA rms sym. (up to 60 A UL)
  - 200 kA rms sym. (70–100 A UL)
  - 50 kA DC (UL)

Bussmann Series CUBEFuse Devices, continued

CUBEFuse Compact Circuit Protector Base

CUBEFuse Compact Circuit Protector Base (CCP2B)

These single-, two- and three-pole switches are UL 98 horsepower rated branch circuit disconnects and are available in ratings up to 100 A. The CCP2B has ampere rejection breaks that prevent installing any CUBEFuse ampere rating greater than that of the switch. These coincide with standard conductor ampacities to help prevent overfusing and are available at 15, 20, 30, 40, 50, 60, 70, 90 and 100 A for all single-, two- and three-pole switches.

For Eaton's Bussmann series product information, visit: www.eaton.com/bussmannseries

Metering and Surge Protective Devices

Power Xpert Meter 350

Power Xpert Meter 350

The Power Xpert Meter 350 (PXM350) is a revenue grade energy meter that delivers a cost-effective solution for energy and submetering applications. This DIN rail mounted, three-phase energy meter provides high accuracy in a small form factor. The user-friendly LCD display is ideal for building energy management, energy monitoring and metering systems.

Features

- Data collection and management for energy and multi-parameters measurement
- Demand measurement and forecasting of current, active power, reactive power and apparent power
- System event logging with configurable parameter alarms
- LCD display with backlight support
- Electronic and physical sealing to prevent tampering

For more information on other available power meters, visit www.eaton.com/meters.

Integrated Surge Protective Devices

Integrated Surge Protective Devices

Eaton integrates our industry-leading surge protective devices (SPD) in to switchboards. Lead length is kept to a minimum to maximize SPD performance. SPD units are available with ratings up through 400k, and are UL listed and labeled to UL 1449 3rd Edition.

All switchboards with integrated SPD units are connected to a lineside overcurrent protective device for disconnecting means. When applied on the lineside of a service entrance main, the disconnecting means does not count as a service disconnect per National Electrical Code Article 230.71[A].

For complete SPD product description, application and ratings, visit www.eaton.com/spd.

Pow-R-Line 3FQS Layout Guide

Technical Data and Specifications

Table 22.8-1. Main Lugs Only

Ampere Rating	Standard Mechanical Lug Wire Range
100 200 400	(1) #1–300 kcmil (1) #1–300 kcmil (1) #4–600 kcmil

Table 22.8-2. Main Fused Switch (Class J Fuses Only)

Ampere Rating	Standard Mechanical Lug Wire Range
100 200 400	(1) #1–300 kcmil (1) #1–300 kcmil (1) #4–600 kcmil

Table 22.8-3. Main Non-Fused Switch

Ampere Rating	Standard Mechanical Lug Wire Range
100 200 400	(1) #1–300 kcmil (1) #1–300 kcmil (1) #4–600 kcmil

Branch Disconnects

Options

Loadside Chassis
- Feed-thru lugs
- Sub-feed lugs
- Sub-feed fused switch
- Surge protective device

Service Entrance Equipment
- Labeled suitable for use as service entrance equipment (bonded neutral)

Neutrals
- Isolated neutral
- Bonded neutral
- 200% rated neutrals

Ground Bars
- Bonded neutral
- Isolated neutral

Special Trims
- Door-in-door
- No trim

NEMA Type 1 Box Options
- No knockouts (standard)
- Knockouts, both top and bottom (optional)
- Knockouts, top or bottom (optional)

Replacement Fuses
- Replace only with Bussmann fuses of the same type and size
- Contact your authorized Eaton Bussmann distributor for replacement fuses
- Nameplates
- Permanent circuit numbering

Box Sizing and Selection

Enclosures

NEMA Type 1 Indoor
- Flush mount or surface mount
- Galvanized steel with removable end walls—blank or with knockouts (specify on order)

Table 22.8-4. NEMA Type 1 Box Sizes—Dimensions in Inches (mm)

Width	Depth	Height	Max. Number of Branch Circuits
20.00 (508.0)	5.75 (146.1)	33.00 (838.2)	18
20.00 (508.0)	5.75 (146.1)	50.00 (1270.0)	30
20.00 (508.0)	5.75 (146.1)	59.00 (1498.6)	42
20.00 (508.0)	5.75 (146.1)	69.00 (1752.6)	42

- Chassis mounts directly onto enclosure studs in the enclosure
- Trim finished with gray powder coat paint over phosphatized steel (ANSI 61) with door
- Circuit directory card is located on the inside of the door
- Concealed trim screws

NEMA Type 3R Outdoor (Optional)
- Surface mount only
- Finished with gray powder coat paint over phosphatized steel (ANSI 61)
- Bottom feed only, no knockouts

Table 22.8-5. NEMA Type 3R Outdoor Box Sizes—Dimensions in Inches (mm)

Width	Depth	Height	Max. Number of Branch Circuits
20.00 (508.0)	7.75 (196.9)	34.50 (876.3)	18
20.00 (508.0)	7.75 (196.9)	51.50 (1308.1)	30
20.00 (508.0)	7.75 (196.9)	60.50 (1536.7)	42
20.00 (508.0)	7.75 (196.9)	70.50 (1790.7)	42

- Chassis mounts directly onto studs in the enclosure
- Gasketed door has vault handle with lock
- Circuit directory card is located on the inside of the door
- Contact Eaton for other enclosure types

Table 22.8-6. Branch Circuit Disconnects Compact Circuit Protector Base (CCPB)

CCPB ① Part Number	Number of Poles	Fuse Ampere Range	Maximum CCPB Ampacity	Non-Indicating Fuses (Standard)	Indicating Fuses (Optional) ②
CCPB-1-15CF CCPB-2-15CF CCPB-3-15CF	1 2 3	1–15 1–15 1–15	15 15 15	TCF1RN,TCF3RN, TCF6RN,TCF10RN, TCF15RN	TCF6,TCF10, TCF15
CCPB-1-20CF CCPB-2-20CF CCPB-3-20CF	1 2 3	17.5–20 17.5–20 17.5–20	20 20 20	TCF17-1/2RN, TCF20RN	TCF17-1/2, TCF20
CCPB-1-30CF CCPB-2-30CF CCPB-3-30CF	1 2 3	25–30 25–30 25–30	30 30 30	TCF25RN, TCF30RN	TCF25, TCF30
CCPB-1-40CF CCPB-2-40CF CCPB-3-40CF	1 2 3	35–40 35–40 35–40	40 40 40	TCF35RN, TCF40RN	TCF35, TCF40
CCPB-1-50CF CCPB-2-50CF CCPB-3-50CF	1 2 3	45–50 45–50 45–50	50 50 50	TCF45RN, TCF50RN	TCF45, TCF50
CCPB-1-60CF CCPB-2-60CF CCPB-3-60CF	1 2 3	60 60 60	60 60 60	TCF60RN	TCF60
CCPB-1-70CF CCPB-2-70CF CCPB-3-70CF	1 2 3	70 70 70	70 70 70	TCF70RN	TCF70
CCPB-1-90CF CCPB-2-90CF CCPB-3-90CF	1 2 3	80–90 80–90 80–90	90 90 90	TCF80RN, TCF90RN	TCF80, TCF90
CCPB-1-100CF CCPB-2-100CF CCPB-3-100CF	1 2 3	100 100 100	100 100 100	TCF100RN	TCF100

① CCPB disconnect can accept CUBEFuses with ampere ratings less than or equal to the ampere rating of the CCPB disconnect.
② Correct fit with CCPB disconnect requires indicating CUBEFuses with date code R38 or later.
Note: Spare or replacement CCPB available only from authorized Eaton Bussmann distributors.

Table 22.8-7. CCPB Horsepower Ratings

CCPB Disconnect	Ampere Rating	Horsepower Rating at Vac			
		120	240	480	600
CCPB–(Poles)-15CF	15	0.5	3	5	7.5
CCPB–(Poles)-20CF	20	0.75	3	7.5	10
CCPB–(Poles)-30CF	30	1.5	5	15	10
CCPB–(Poles)-40CF	40	2	7.5	20	10
CCPB–(Poles)-50CF	50	3	7.5	20	10
CCPB–(Poles)-60CF	60	3	7.5	20	10
CCPB–(Poles)-70CF	70	3	15	30	40
CCPB–(Poles)-90CF	80	5	20	40	50
CCPB–(Poles)-100CF	100	5	20	50	50

Eaton
1000 Eaton Boulevard
Cleveland, OH 44122
United States
Eaton.com

Printed in USA
Publication No. DG014008EN / Z23483
February 2020

Powering Business Worldwide