Technical Data **TD01417001E**

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Supersedes June 2011

Pow-R-Line 3FQS fusible panelboard

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Overview

The Eaton Pow-R-Line® 3FQS (PRL3FQS) panelboard is designed for commercial, industrial and institutional applications where high available fault currents limit or prohibit use of circuit breakers.

The PRL3FQS is fully rated for fault currents up to 200 kAIC symmetrical and on voltage systems up through 600 Vac. Each panelboard is configured to order.

The PRL3FQS can also address the NEC® mandated Selective Coordination Requirements for Emergency, Legally Required Standby, Healthcare Essential Electrical and Critical Operation Power Systems (COPS) per NEC 700.27, 701.18, 517.26 and 708.54, respectively.

Each Pow-R-Line 3FQS panelboard is assembled to the customer's specifications for lighting panelboards through 400 amperes.

Mains

- Main lugs only
- Main fusible switch
- Non-fused main disconnect

Bus ampere ratings

- 125A
- 200A
- 400A

Bus bar and branch breaker connectors

- Tin-plated copper, standard

Voltage systems

- 120/240 Vac 1ph, 3W
- 240 Vac 3ph, 3W
- 208Y/120 Vac 3ph, 4W
- 240Δ/120 Vac 3ph, 4W
- 480Y/277 Vac 3ph, 4W
- 480Δ Vac 3ph, 4W
- 600Y/347 Vac 3ph, 4W
- 125 Vdc (40A maximum branch)

Listings

- UL® 67—panelboards
- UL 50/UL 50E—enclosures for electrical equipment
- cULus® to CSA® 22.2, No. 29-M1989—panelboards and enclosed panelboards
- Seismic qualified, to the International Building Code® (IBC) for categories A, B, C and D and also meet building Site Class A, B, C and D requirements

Branch circuits available

- 18-, 30- and 42-circuit

Branch devices

- Cooper Bussmann® Compact Circuit Protector Base (CCPB)
  - UL 98 listed
  - Single-pole, two-pole and three-pole
- Fuse specification
  - Cooper Bussmann CUBEFuses®
  - Catalog symbols
    - TCF_ (6–100A indicating version) time-delay
    - TCF_RN (1–100A non-indicating version) time-delay
    - FCF_RN (1–100A non-indicating) fast-acting

CUBEFuse description

- The CUBEFuse is finger-safe, dual-element, time-delay
- UL Class CF power fuse with Class J fuse electrical performance characteristics

CUBEFuse ratings

- Volts
  - 600 Vac/125 Vdc for panelboard applications
- Amps
  - 1–100A (non-indicating version) time-delay and fast-acting
  - 6–100A (indicating version) time-delay
  - AC short-circuit ratings 200 kA RMS symmetrical

CUBEFuse listing

- UL listed special-purpose fuse: guide JFHR, file E56412
- CSA certified fuse: class 1422-02, file 53787
- CE compliance for the European union low-voltage directive

Other CUBEFuse ratings/specifications

- Watts loss at rated current
  - TCF30: 3.99W
  - TCF60: 6.23W
  - TCF100: 9.51W
  - FCF15RN: 3.48W
  - FCF30RN: 5.45W
  - FCF60RN: 7.27W
  - FCF100RN: 11.00W

CUBEFuse operating and storage temperature range

- -40 to 80°C

CUBEFuse material specifications

- Case: glass-filled PES (polyethersulfone)
- Terminals: copper alloy
- Terminal plating: electroless tin
- Indicator lens: PES (indicating version only)
- Indicator: energetic chemical

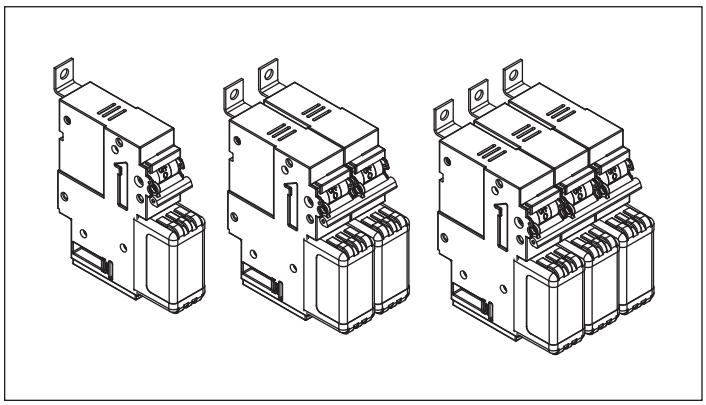

Figure 1. Branch disconnects

Table 1. Branch devices

CCPB ① part number	Poles	Fuse amp range	Maximum CCPB ampacity	Time-delay non-indicating fuses (standard)	Time-delay indicating fuses (optional) ②	Fast-acting non-indicating fuses
CCPB-1-15CF	1	1–15	15	TCF1RN, TCF3RN, TCF6RN, TCF10RN, TCF15RN	TCF6, TCF10, TCF15	FCF1RN, FCF3RN, FCF6RN, FCF10RN, FCF15RN
CCPB-2-15CF	2					
CCPB-3-15CF	3					
CCPB-1-20CF	1	17½–20	20	TCF17½RN, TCF20RN	TCF17½, TCF20	FCF20
CCPB-2-20CF	2					
CCPB-3-20CF	3					
CCPB-1-30CF	1	25–30	30	TCF25RN, TCF30RN	TCF25, TCF30	FCF25RN, FCF30RN
CCPB-2-30CF	2					
CCPB-3-30CF	3					
CCPB-1-40CF	1	35–40	40	TCF35RN, TCF40RN	TCF35, TCF40	FCF35RN, FCF40RN
CCPB-2-40CF	2					
CCPB-3-40CF	3					
CCPB-1-50CF	1	45–50	50	TCF45RN, TCF50RN	TCF45, TCF50	FCF45RN, FCF50RN
CCPB-2-50CF	2					
CCPB-3-50CF	3					
CCPB-1-60CF	1	60	60	TCF60RN	TCF60	FCF60RN
CCPB-2-60CF	2					
CCPB-3-60CF	3					
CCPB-1-70CF	1 ③	70	70	TCF70RN	TCF70	FCF70RN
CCPB-2-70CF	2 ③					
CCPB-3-70CF	3 ③					
CCPB-1-90CF	1 ③	80–90	90	TCF80RN, TCF90RN	TCF80, TCF90	FCF80RN, FCF90RN
CCPB-2-90CF	2 ③					
CCPB-3-90CF	3 ③					
CCPB-1-100CF	1 ③	100	100	TCF100RN	TCF100	FCF100RN
CCPB-2-100CF	2 ③					
CCPB-3-100CF	3 ③					

① CCPB disconnect can accept CUBEFuses with amp ratings less than or equal to the amp rating of the CCPB disconnect.

② Correct fit with CCPB disconnect requires indicating CUBEFuses with date code R38 or later.

③ Available for a bus rating of 225A or higher.

Note: Spare or replacement CCPB available only from authorized Cooper Bussmann distributors.

Table 2. Panelboard short-circuit current ratings

	AC main options				DC
SCCR	Main lug only (MLO) ①	70–200A main disconnect no fuses ① or w/ Class J fuses	225–400A main disconnect no fuses ① or w/ Class J fuses	CCP_CF main disconnect (60A) ②	Main lug only (MLO) ①
High	200 kA	200 kA	100 kA	200 kA	100 kA
Standard	50 kA	50 kA	50 kA	50 kA	20 kA

① Class J, T or RK1 fuses upstream, maximum amps = panel amps.

② CUBEFuse disconnect.

Spare fuse compartment

- A six-space spare fuse compartment is an integrated standard on all PRL3FQS panelboards. Spare fuses may be specified and selected at time of order and installed in the spare fuse compartment prior to shipment.

Enclosures

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

Table 3. NEMA Type 1 indoor box sizes

Width	Depth	Height
20"	5¾"	33"
20"	5¾"	50"
20"	5¾"	59"
20"	5¾"	69"

  - 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) 200A and below
  - Surface-mount only
  - Finished with gray powder-coat paint over phosphatized steel (ANSI 61)
  - Bottom feed only, no knockouts

Table 4. NEMA Type 3R outdoor box sizes

Width	Depth	Height
20"	7¾"	34½"
20"	7¾"	51½"
20"	7¾"	60½"
20"	7¾"	70½"

  - 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

Note: Contact Eaton for other enclosure types

Options

- 200% rated neutrals
- Ground bar
- Isolated ground bar
- Bonded neutral (service entrance equipment)
- Surge Protective Device (SPD)
- Door-in-door trim

Table 5. CCPB horsepower ratings

CCPB disconnect	Amp rating	HP rating			
		120 Vac	240 Vac	480 Vac	600 Vac
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

Table 6. Ground and neutral bars connection wire torques

Wire ① AWG	Torque Lb-In (N•m ②)	Maximum no. wires per opening	
		Neutral	Ground
Small opening			
14	25–35 (2.8–3.9)	2	2
12	25–35 (2.8–3.9)	2	2
10	25–35 (2.8–3.9)	2	2
8	30–40 (3.4–4.5)	1	1
6–4	35–40 (3.9–4.5)	1	1
Large opening			
14	25–35 (2.8–3.9)	3	3
12	25–35 (2.8–3.9)	3	3
10	35 (3.9)	3	3
8	30–40 (3.4–4.5)	1	1
6–4	35–40 (3.9–4.5)	1	1
3–1/0	40–50 (4.5–5.6)	1	1

① 60/75ºC, Cu-Al.

② Metric version of foot pounds.

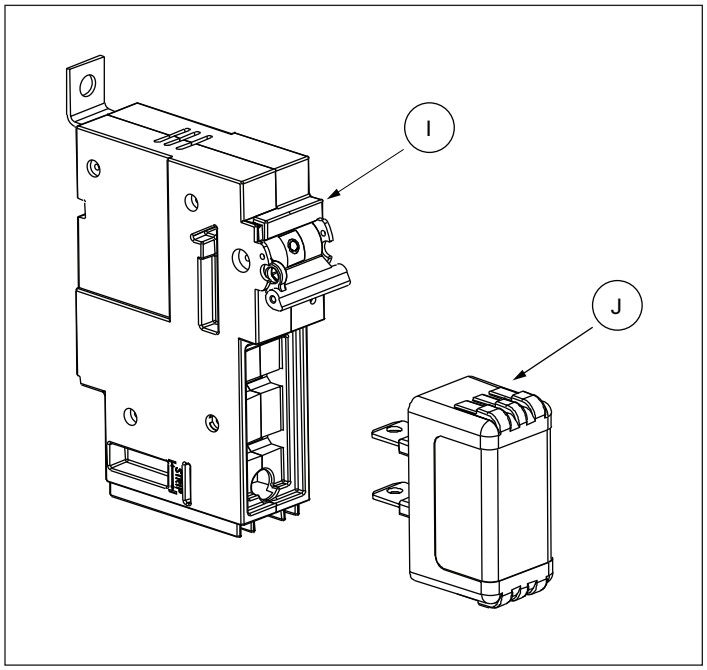

Figure 2. CCPB branch disconnects and CUBEFuse replacement parts

Table 7. I—CCPB branch disconnects

Poles	Ampacity	Part number
1-Pole	15A, 20A, 30A, 40A, 50A, 60A, 70A, 80A, 90A, 100A	CCPB-1-(amp)CF
2-Pole		CCPB-2-(amp)CF
3-Pole		CCPB-3-(amp)CF

Table 8. J—CUBEFuse fuses

For CCPB ① part number	Time-delay non-indicating part number TCF(amps)RN	Time-delay indicating ② part number TCF(amps)	Fast-acting non-indicating fuses
CCPB-(# of poles)-15CF	TCF1RN, TCF3RN, TCF6RN, TCF10RN, TCF15RN	TCF6, TCF10, TCF15	FCF1RN, FCF3RN, FCF6RN, FCF10RN, FCF15RN
CCPB-(# of poles)-20CF	TCF17½RN, TCF20RN	TCF17½, TCF20	FCF20
CCPB-(# of poles)-30CF	TCF25RN, TCF30RN	TCF25, TCF30	FCF25RN, FCF30RN
CCPB-(# of poles)-40CF	TCF35RN, TCF40RN	TCF35, TCF40	FCF35RN, FCF40RN
CCPB-(# of poles)-50CF	TCF45RN, TCF50RN	TCF45, TCF50	FCF45RN, FCF50RN
CCPB-(# of poles)-60CF	TCF60RN	TCF60	FCF60RN
CCPB-(# of poles)-70CF	TCF70RN	TCF70	FCF70RN
CCPB-(# of poles)-90CF	TCF80RN, TCF90RN	TCF80, TCF90	FCF80RN, FCF90RN
CCPB-(# of poles)-100CF	TCF100RN	TCF100	FCF100RN

① CCPB disconnect can accept CUBEFuses with amp ratings less than or equal to the amp rating of the CCPB disconnect.

② 1A indicating CUBEFuse not available. Correct fit with CCPB disconnect requires indicating CUBEFuse with date code R38 or later.

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