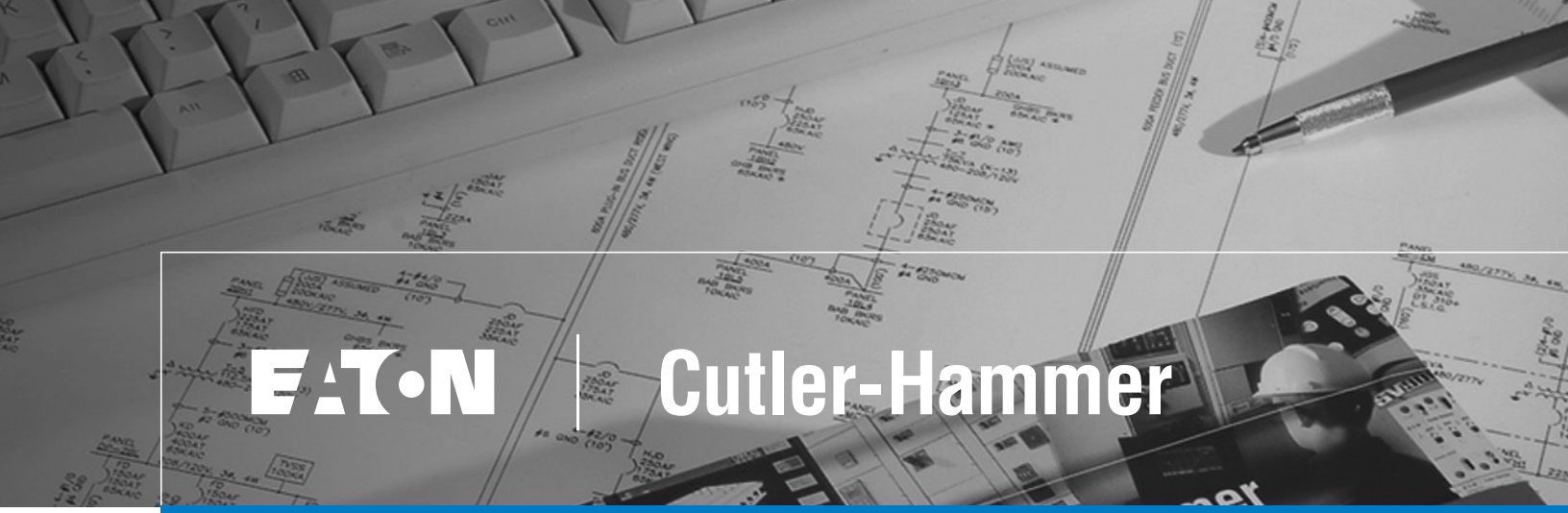

EATON | Cutler-Hammer

Selective Coordination Breaker Application by Short Circuit Current Ratings in Panelboards

Industry Application IA01400001E

Introduction

This guide is designed to facilitate the selection of Eaton lighting and power panelboards, Types PRL1a, PRL2a, PRL3a and PRL4B using molded case circuit breakers which attain full selective coordination. This document utilizes information contained in IA01200002E for selectively coordinated circuit breakers. The selective coordination values shown are based on Eaton test data.

The ratings indicate the load side fault current at which two breakers will selectively coordinate. The manufacturer's tested data typically are significantly higher than would be indicated by circuit breaker time-current curves. This is attributed to utilization of state-of-the-art load side high-speed performance molded case circuit breakers, which may be current limiting. Although some molded case circuit breakers may not be formally marked as current limiting, these breakers still begin to open before the first ½ cycle peak, inserting arc impedance into the circuit, thus reducing the peak let-through current with resulting lower I^2t. This reduction by the load side breaker reduces the current to a level below the instantaneous override of the line side breaker resulting in selective coordination.

The test circuit utilized by manufacturers to validate selective coordination must be known and reasonable. Eaton tests circuit breakers in a manner similar to the test circuit used in UL® 489 testing to list molded case circuit breakers. This test circuit allows for 4 feet of wire on the line side of the line side breaker and 4 feet of wire length for the combination of wire from the load side of the line breaker through the load breaker to the point of the fault. For each shown combination, the selective coordination test utilizes wire size based on the trip unit rating for the line and load breakers per National Electrical Code© Table 310.16.

In addition to the panelboard selective coordination data, we have provided secondary fault current data for select, commonly used aluminum and copper wound dry-type distribution transformers. This data can be found in the Appendix.

Organization of Data

The data contained in this publication is arranged in Panelboard Table format, utilizing Eaton tested breaker combinations of selectively coordinated Cutler-Hammer® molded case circuit breakers. The panelboard tables have been divided into two parts: Lighting Panelboards and Power Panelboards.

How to Use Tables

First, select either the Lighting Panelboard or the Power Panelboard category. Then go to the index for each of these two categories. From the index, select the applicable Table. Tables are organized by voltage, panelboard maximum amperage rating, location of the line side breaker and the kAIC rating of the branch breaker.

Line Side Main/ Feeder Breaker Frame Size	Line Side Main/ Feeder Breaker Trip Range	Line Side Main/ Feeder Breaker kAIC Rating	Trip Type ①	Eaton's Cutler-Hammer Frame Designation/ Type	Location of Line Side Main/ Feeder Breaker: Internal or External to Panel	Location of Line Side Main/ Feeder Breaker: External to Panel Only	10 kAIC Fully Rated Branch Breaker — Type BAB kAIC Shown Below Each Amperage is the Maximum kAIC which Selectively Coordinates with the Line Side Main or Feeder Breaker: 15 – 20 A 1, 2 & 3 Pole	30 A 1, 2 & 3 Pole	40 A 1, 2 & 3 Pole	50 – 60 A 1, 2 & 3 Pole	70 A 2 & 3 Pole	80 A 2 & 3 Pole	90 A 2 & 3 Pole	100 A 2 & 3 Pole

Indicates the frame size of the line side molded case circuit breaker.

Line side circuit breaker nameplate kAIC rating.

Line side frame designation that corresponds with breaker catalog number.

Indicates the trip amperage/ range of the line side breaker that will selectively coordinate.

Indicates the type of trip unit. T/M = Thermal Magnetic Trip ETU = Electronic Trip Unit

An "X" in the first column indicates if the line side breaker may be located in the same panelboard as the branch devices or located in a remote panel. An "X" in the second column indicates that the breaker frame size is too large, either physically or electrically, to fit in the panelboard and must be located remotely, such as a line side panelboard, switchboard or separately enclosed circuit breaker. **Note: The main breaker must have an interrupting rating equal to or greater than the available fault current at its point of application.**

Branch breaker amperage/range

Branch breaker kAIC rating and Cutler-Hammer frame designation, which corresponds with the breaker catalog number.

208Y/120 VAC LIGHTING PANELBOARD CUTLER-HAMMER DESIGNATION PRL1a WITH 10 KAIC FULLY RATED BRANCH BREAKERS

Line Side Main/ Feeder Breaker Frame Size	Line Side Main/ Feeder Breaker Trip Range	Line Side Main/ Feeder Breaker kAIC Rating	Trip Type ①	Eaton Cutler-Hammer Frame Designation/ Type	Location of Line Side Main/ Feeder Breaker: Internal or External to Panel	Location of Line Side Main/ Feeder Breaker: External to Panel Only	10 kAIC Fully Rated Branch Breaker — Type BAB kAIC Shown Below Each Amperage is the Maximum kAIC which Selectively Coordinates with the Line Side Main or Feeder Breaker: 15 – 20 A 1, 2 & 3 Pole	30 A 1, 2 & 3 Pole	40 A 1, 2 & 3 Pole	50 – 60 A 1, 2 & 3 Pole	70 A 2 & 3 Pole	80 A 2 & 3 Pole	90 A 2 & 3 Pole	100 A 2 & 3 Pole
225 A	100 A	65	T/M	EDB	X		1.0	1.0	1.0	N/A	N/A	N/A	N/A	N/A
225 A	150 A	65	T/M	EDB	X		1.5	1.5	1.5	1.5	N/A	N/A	N/A	N/A
225 A	225 A	65	T/M	EDB	X		2.2	2.2	2.2	2.2	2.2	2.2	2.2	1.8
225 A	100 – 225 A	65	ETU	FDE	X		2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
250 A	150 A	65	T/M	JD		X	2.1	2.1	1.5	1.5	1.5	N/A	N/A	N/A
250 A	250 A	65	T/M	JD		X	3.4	3.4	3.4	2.5	2.5	2.5	2.3	2.3
400 A	100 A	65	T/M	KD	X		2.0	2.0	1.2	1.2	N/A	N/A	N/A	N/A
600 A	300 A	65	T/M	LD		X	9.0	9.0	7.5	7.5	7.5	7.5	7.5	7.5
600 A	**400 A**	**65**	**T/M**	**LD**		**X**	**10.0**	**10.0**	**10.0**	**10.0**	**10.0**	**10.0**	**10.0**	**10.0**
600 A	**300 – 400 A**	**65**	**ETU**	**LD**		**X**	**10.0**	**10.0**	**10.0**	**10.0**	**10.0**	**10.0**	**10.0**	**10.0**
600 A	100 – 250 A	65	ETU	LGE		X	9.0	9.0	7.5	7.5	7.5	7.5	7.5	7.5
600 A	**160 – 400 A**	**65**	**ETU**	**LGE**		**X**	**10.0**	**10.0**	**10.0**	**10.0**	**10.0**	**10.0**	**10.0**	**10.0**

kAIC rating in which the combination of line side and load side breakers selectively coordinate.

kAIC ratings shown in **BOLD** indicate that the combination of line side and load side breakers selectively coordinate at the nameplate kAIC rating of the branch device.

LIGHTING PANELBOARD TABLES

Page Number	System Voltage (Vac)	Maximum Panelboard Ampere Rating	Branch Circuit Breaker Range	Fully Rated kAIC of Branch Circuit Breakers	Cutler-Hammer Panelboard Designation	Table Number
4	208Y/120	400 A	15 – 100 A	10 kAIC	Pow-R-Line 1a	Table 1
4	208Y/120	400 A	15 – 100 A	22 kAIC	Pow-R-Line 1a	Table 2
5	208Y/120	600 A	15 – 125 A	25 kAIC	Pow-R-Line 3E	Table 3
5	208Y/120	600 A	15 – 100 A	10 kAIC	Pow-R-Line 3a	Table 4
6	208Y/120	600 A	15 – 100 A	22 kAIC	Pow-R-Line 3a	Table 5
6	208Y/120	400 A	15 – 100 A	65 kAIC	Pow-R-Line 2a	Table 6
6	208Y/120	600 A	15 – 100 A	65 kAIC	Pow-R-Line 3a	Table 7
6	208Y/120	1200 A	15 – 100 A	65 kAIC	Pow-R-Line 4	Table 8
7	208Y/120	600 A	15 – 125 A	85 kAIC	Pow-R-Line 3E	Table 9
7	480Y/277	400 A	15 – 100 A	14 kAIC	Pow-R-Line 2a	Table 10
8	480Y/277	400 A	15 – 100 A	14 kAIC	Pow-R-Line 3a	Table 11
8	480Y/277	600 A	15 – 125 A	18 kAIC	Pow-R-Line 3E	Table 12
9	480Y/277	600 A	15 – 125 A	35 kAIC	Pow-R-Line 3E	Table 13
9	480Y/277	800 A	15 – 225 A	35 kAIC	Pow-R-Line 3a	Table 14
10	480Y/277	600 A	15 – 125 A	65 kAIC	Pow-R-Line 3E	Table 15
10	480Y/277	800 A	15 – 225 A	65 kAIC	Pow-R-Line 3a	Table 16
11	480Y/277	1200 A	15 – 225 A	35 kAIC	Pow-R-Line 4	Table 17
11	480Y/277	1200 A	15 – 225 A	65 kAIC	Pow-R-Line 4	Table 18

POWER PANELBOARD TABLES

Page Number	System Voltage (Vac)	Maximum Panelboard Ampere Rating	Branch Circuit Breaker Range	Fully Rated kAIC of Branch Circuit Breakers	Cutler-Hammer Panelboard Designation	Table Number
12	240	1200 A	15 – 400 A	65 kAIC	Pow-R-Line 4	Table 19
12	240	1200 A	300 – 600 A	65 kAIC	Pow-R-Line 4	Table 20
12	240	1200 A	15 – 600 A	65 kAIC	Pow-R-Line 4	Table 21
12	240	1200 A	15 – 400 A	100 kAIC	Pow-R-Line 4	Table 22
13	240	1200 A	300 – 600 A	100 kAIC	Pow-R-Line 4	Table 23
13	240	1200 A	15 – 600 A	100 kAIC	Pow-R-Line 4	Table 24
13	480	1200 A	15 – 400 A	35 kAIC	Pow-R-Line 4	Table 25
13	480	1200 A	300 – 600 A	35 kAIC	Pow-R-Line 4	Table 26
14	480	1200 A	15 – 600 A	35 kAIC	Pow-R-Line 4	Table 27
14	480	1200 A	15 – 400 A	65 kAIC	Pow-R-Line 4	Table 28
14	480	1200 A	300 – 600 A	65 kAIC	Pow-R-Line 4	Table 29
14	480	1200 A	15 – 600 A	65 kAIC	Pow-R-Line 4	Table 30

Note: 208Y/120 Vac lighting panelboard tables may be used for 240 Vac systems at the same combination ratings and 240 Vac Power Panelboard tables may be used on 208Y/120 Vac systems at the same combination ratings.

APPENDIX

Page Number	Title
15	Appendix A: General Purpose Transformers
16	Appendix B: Aluminum Wound Transformers
17	Appendix C: Copper Wound Transformers

Other Resources

Eaton has published other resources on selective coordination. These publications and aids are available at www.eaton.com. These include:

- Selective Coordination White Paper, Publication Number IA01200001E, May 2006.
- Selective Coordination Industry Application guide, Publication Number IA01200002E, June 2007.
- 2005 NEC Selective Coordination Design Issues, Publication Number IA08304001E, April 2007.
- Optimum Safety, Reliability and Electrical System Performance Through Balanced Selective Coordination Page and Protection, Publication Number TP01200001E, June 2006.
- Selective Coordination Calculator, Publication Number AP01200003E, updated September 2007.

For more information, please contact your District Application Engineer located in your nearest sales office. Also visit our Consultant Resource web page at: http://www.eaton.com/consultant.

TABLE 1. 208Y/120 VAC LIGHTING PANELBOARD CUTLER-HAMMER DESIGNATION PRL1a WITH 10 KAIC FULLY RATED BRANCH BREAKERS

Line Side Main/ Feeder Breaker Frame Size	Line Side Main/ Feeder Breaker Trip Range	Line Side Main/ Feeder Breaker kAIC Rating	Trip Type ①	Eaton Cutler-Hammer Frame Designation/ Type	Location of Line Side Main/ Feeder Breaker		10 kAIC Fully Rated Branch Breaker — Type BAB kAIC Shown Below Each Amperage is the Maximum kAIC which Selectively Coordinates with the Line Side Main or Feeder Breaker							
					Internal or External to Panel	External to Panel Only	15 – 20 A 1, 2 & 3 Pole	30 A 1, 2 & 3 Pole	40 A 1, 2 & 3 Pole	50 – 60 A 1, 2 & 3 Pole	70 A 2 & 3 Pole	80 A 2 & 3 Pole	90 A 2 & 3 Pole	100 A 2 & 3 Pole
225 A	100 A	65	T/M	EDB	X		1.0	1.0	1.0	N/A	N/A	N/A	N/A	N/A
225 A	150 A	65	T/M	EDB	X		1.5	1.5	1.5	1.5	N/A	N/A	N/A	N/A
225 A	225 A	65	T/M	EDB	X		2.2	2.2	2.2	2.2	2.2	2.2	2.2	1.8
225 A	100 – 225 A	65	ETU	FDE	X		2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
250 A	150 A	65	T/M	JD		X	2.1	2.1	1.5	1.5	1.5	N/A	N/A	N/A
250 A	250 A	65	T/M	JD		X	3.4	3.4	3.4	2.5	2.5	2.5	2.3	2.3
400 A	100 A	65	T/M	KD	X		2.0	2.0	1.2	1.2	N/A	N/A	N/A	N/A
400 A	125 – 250 A	65	ETU	KD	X		5.0	5.0	4.0	4.0	3.0	3.0	3.0	3.0
400 A	125 –150 A	65	T/M	LHH	X		7.5	7.5	5.3	5.3	4.3	N/A	N/A	N/A
400 A	**175 – 200 A**	**65**	**T/M**	**LHH**	**X**		**10.0**	**10.0**	**10.0**	**10.0**	7.5	7.5	7.5	N/A
400 A	200 A	65	T/M	KD	X		4.0	4.0	3.0	3.0	2.5	2.5	2.5	2.5
400 A	200 – 400 A	65	ETU	KD	X		8.0	8.0	6.0	6.0	5.0	5.0	5.0	5.0
400 A	**225 – 400 A**	**65**	**T/M**	**LHH**	**X**		**10.0**	**10.0**	**10.0**	**10.0**	**10.0**	**10.0**	**10.0**	**10.0**
400 A	400 A	65	T/M	KD	X		8.0	8.0	6.0	6.0	5.0	5.0	5.0	5.0
600 A	300 A	65	T/M	LD		X	9.0	9.0	7.5	7.5	7.5	7.5	7.5	7.5
600 A	**400 A**	**65**	**T/M**	**LD**		**X**	**10.0**	**10.0**	**10.0**	**10.0**	**10.0**	**10.0**	**10.0**	**10.0**
600 A	**300 – 400 A**	**65**	**ETU**	**LD**		**X**	**10.0**	**10.0**	**10.0**	**10.0**	**10.0**	**10.0**	**10.0**	**10.0**
600 A	100 – 250 A	65	ETU	LGE		X	9.0	9.0	7.5	7.5	7.5	7.5	7.5	7.5
600 A	**160 – 400 A**	**65**	**ETU**	**LGE**		**X**	**10.0**	**10.0**	**10.0**	**10.0**	**10.0**	**10.0**	**10.0**	**10.0**

① T/M = Thermal Magnetic Trip. ETU = Electronic Trip Unit.

TABLE 2. 208Y/120 VAC LIGHTING PANELBOARD — CUTLER-HAMMER DESIGNATION PRL1a WITH 22 KAIC FULLY RATED BRANCH BREAKERS

Line Side Main/ Feeder Breaker Frame Size	Line Side Main/ Feeder Breaker Trip Range	Line Side Main/ Feeder Breaker kAIC Rating	Trip Type ②	Eaton Cutler-Hammer Frame Designation/ Type	Location of Line Side Main/ Feeder Breaker		22 kAIC Fully Rated Branch Breaker — Type QBHW kAIC Shown Below Each Amperage is the Maximum kAIC which Selectively Coordinates with the Line Side Main or Feeder Breaker							
					Internal or External to Panel	External to Panel Only	15 – 20 A 1, 2 & 3 Pole	30 A 1, 2 & 3 Pole	40 A 1, 2 & 3 Pole	50 – 60 A 1, 2 & 3 Pole	70 A 2 & 3 Pole	80 A 2 & 3 Pole	90 A 2 & 3 Pole	100 A 2 & 3 Pole
225 A	100 A	65	T/M	EDB	X		1.0	1.0	1.0	N/A	N/A	N/A	N/A	N/A
225 A	150 A	65	T/M	EDB	X		1.5	1.5	1.5	1.5	1.5	N/A	N/A	N/A
225 A	225 A	65	T/M	EDB	X		2.2	2.2	2.2	2.2	2.2	2.2	2.2	1.8
225 A	100 – 225 A	65	ETU	FDE	X		2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
250 A	150 A	65	T/M	JD		X	2.1	2.1	1.5	1.5	1.5	N/A	N/A	N/A
250 A	250 A	65	T/M	JD		X	3.4	3.4	3.4	2.5	2.5	2.5	2.3	2.3
400 A	100 A	65	T/M	KD	X		2.0	2.0	1.2	1.2	N/A	N/A	N/A	N/A
400 A	125 – 250 A	65	ETU	KD	X		5.0	5.0	4.0	4.0	3.0	3.0	3.0	3.0
400 A	125 – 150 A	65	T/M	LHH	X		7.5	7.5	5.3	5.3	4.3	N/A	N/A	N/A
400 A	**175 – 200 A**	**65**	**T/M**	**LHH**	**X**		**10.0**	**10.0**	**10.0**	**10.0**	7.5	7.5	7.5	N/A
400 A	200 A	65	T/M	KD	X		4.0	4.0	3.0	3.0	2.5	2.5	2.5	2.5
400 A	200 – 400 A	65	ETU	KD	X		8.0	8.0	6.0	6.0	5.0	5.0	5.0	5.0
400 A	**225 – 400 A**	**65**	**T/M**	**LHH**	**X**		**22.0**	**22.0**	**22.0**	**22.0**	**22.0**	**22.0**	**22.0**	**22.0**
400 A	400 A	65	T/M	KD	X		8.0	8.0	6.0	6.0	5.0	5.0	5.0	5.0
600 A	300 A	65	T/M	LD		X	9.0	9.0	7.5	7.5	7.5	7.5	7.5	7.5
600 A	400 A	65	T/M	LD		X	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
600 A	**300 – 400 A**	**65**	**ETU**	**LD**		**X**	**22.0**	**22.0**	**22.0**	**22.0**	**22.0**	**22.0**	**22.0**	**22.0**
600 A	100 – 250 A	65	ETU	LGE		X	9.0	9.0	7.5	7.5	7.5	7.5	7.5	7.5
600 A	160 – 400 A	65	ETU	LGE		X	14.4	14.4	14.4	12.0	12.0	12.0	12.0	12.0

② T/M = Thermal Magnetic Trip. ETU = Electronic Trip Unit.

Notes: The tables indicate the maximum fault current value expressed in kA for which coordination is ensured. Downstream (branch) breakers' AIC ratings must be sized for the appropriate fault level at the installation point. Short time delay settings or magnetic trip settings must be set to properly coordinate for low level fault.

TABLE 3. 208Y/120 VAC LIGHTING PANELBOARD — CUTLER-HAMMER DESIGNATION PRL3E WITH 25 KAIC FULLY RATED BRANCH BREAKERS

Line Side Main/ Feeder Breaker Frame Size	Line Side Main/ Feeder Breaker Trip Range	Line Side Main/ Feeder Breaker kAIC Rating	Trip Type ①	Eaton Cutler-Hammer Frame Designation/ Type	Location of Line Side Main/ Feeder Breaker		25 kAIC Fully Rated Branch Breaker — Type EGB kAIC Shown Below Each Amperage is the Maximum kAIC which Selectively Coordinates with the Line Side Main or Feeder Breaker							
					Internal or External to Panel	External to Panel Only	15A 1, 2 & 3 Pole	20 – 30 A 1, 2 & 3 Pole	40 – 50 A 1, 2 & 3 Pole	60 A 1, 2 & 3 Pole	70 – 80 A 2 & 3 Pole	90 A 2 & 3 Pole	100 A 2 & 3 Pole	110–125 A 2 & 3 Pole
125 A	125 A	25	T/M	EGB	X		1.3	1.3	1.3	1.3	N/A	N/A	N/A	N/A
225 A	100 A	65	T/M	FD	X		1.0	1.0	1.0	N/A	N/A	N/A	N/A	N/A
225 A	150 A	65	T/M	FD	X		1.5	1.5	1.5	1.5	N/A	N/A	N/A	N/A
225 A	225 A	65	T/M	FD	X		2.2	2.2	1.8	1.8	1.8	1.8	1.8	1.8
225 A	60 – 150A	65	T/M	FDE	X		1.6	1.6	1.6	1.6	1.2	1.2	1.2	1.2
225 A	100 – 225 A	65	ETU	FDE	X		2.8	2.8	2.3	2.3	2.3	2.3	1.8	1.8
250 A	150 A	65	T/M	JD		X	1.5	1.5	1.5	1.5	N/A	N/A	N/A	N/A
250 A	250 A	65	T/M	JD		X	2.5	2.5	2.3	2.3	2.3	2.3	2.3	2.3
400 A	100 A	65	T/M	KD	X		2.0	2.0	1.6	N/A	N/A	N/A	N/A	N/A
400 A	125 – 250 A	65	ETU	KD	X		4.6	4.6	4.0	4.0	4.0	4.0	4.0	4.0
400 A	150 A	65	T/M	LHH	X		10.0	7.5	3.2	3.2	N/A	N/A	N/A	N/A
400 A	200 A	65	T/M	KD	X		2.5	2.5	2.5	2.5	2.5	2.5	2.5	N/A
400 A	**200 A**	**65**	**T/M**	**LHH**	**X**		**25.0**	14.0	10.0	10.0	10.0	10.0	10.0	10.0
400 A	200 – 400 A	65	ETU	KD	X		5.6	5.6	5.2	5.2	5.2	5.2	5.2	5.2
400 A	**300 – 400 A**	**65**	**T/M**	**LHH**	**X**		**25.0**	**25.0**	18.0	18.0	18.0	18.0	18.0	18.0
400 A	400 A	65	T/M	KD	X		5.6	5.6	5.2	5.2	5.2	5.2	5.2	5.2
600 A	300 A	65	T/M	LD		X	20.0	15.0	10.0	10.0	10.0	10.0	10.0	10.0
600 A	400 A	65	T/M	LD		X	20.0	15.0	10.0	10.0	10.0	10.0	10.0	10.0
600 A	**600 A**	**65**	**T/M**	**LD**		**X**	**25.0**	**25.0**	18.0	18.0	18.0	18.0	18.0	18.0
600 A	**300 – 600 A**	**65**	**ETU**	**LD**		**X**	**25.0**	**25.0**	18.0	18.0	18.0	18.0	18.0	18.0
600 A	100 – 250 A	65	ETU	LGE	X		4.6	4.6	4.0	4.0	4.0	4.0	4.0	4.0
600 A	175 – 400 A	65	ETU	LGE	X		20.0	15.0	10.0	10.0	10.0	10.0	10.0	10.0
600 A	**250 – 600 A**	**65**	**ETU**	**LGE**	**X**		**25.0**	**25.0**	18.0	18.0	18.0	18.0	18.0	18.0
1200 A	**150 – 350 A**	**65**	**ETU**	**ND**		**X**	**25.0**	**25.0**	**25.0**	**25.0**	N/A	N/A	N/A	N/A
1200 A	**400 – 600 A**	**65**	**ETU**	**ND**		**X**	**25.0**	**25.0**	**25.0**	**25.0**	**25.0**	**25.0**	**25.0**	**25.0**

① T/M = Thermal Magnetic Trip. ETU = Electronic Trip Unit.

TABLE 4. 208Y/120 VAC LIGHTING PANELBOARD — CUTLER-HAMMER DESIGNATION PRL3a WITH 10 KAIC FULLY RATED BRANCH BREAKERS

Line Side Main/ Feeder Breaker Frame Size	Line Side Main/ Feeder Breaker Trip Range	Line Side Main/ Feeder Breaker kAIC Rating	Trip Type ②	Eaton Cutler-Hammer Frame Designation/ Type	Location of Line Side Main/ Feeder Breaker		10 kAIC Fully Rated Branch Breaker — Type BAB kAIC Shown Below Each Amperage is the Maximum kAIC which Selectively Coordinates with the Line Side Main or Feeder Breaker							
					Internal or External to Panel	External to Panel Only	15 – 20 A 1, 2 & 3 Pole	30 A 1, 2 & 3 Pole	40 A 1, 2 & 3 Pole	50 – 60 A 1, 2 & 3 Pole	70 A 2 & 3 Pole	80 A 2 & 3 Pole	90 A 2 & 3 Pole	100 A 2 & 3 Pole
225 A	100 A	65	T/M	EDB	X		1.0	1.0	1.0	N/A	N/A	N/A	N/A	N/A
225 A	150 A	65	T/M	EDB	X		1.5	1.5	1.5	1.5	1.5	N/A	N/A	N/A
225 A	225 A	65	T/M	EDB	X		2.2	2.2	2.2	2.2	2.2	2.2	2.2	1.8
225 A	100 – 225 A	65	ETU	FDE	X		2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
250 A	150 A	65	T/M	JD	X		2.1	2.1	1.5	1.5	1.5	N/A	N/A	N/A
250 A	250 A	65	T/M	JD	X		3.4	3.4	3.4	2.5	2.5	2.5	2.3	2.3
400 A	100 A	65	T/M	KD	X		2.0	2.0	1.2	1.2	N/A	N/A	N/A	N/A
400 A	125 – 250 A	65	ETU	KD	X		5.0	5.0	4.0	4.0	3.0	3.0	3.0	3.0
400 A	125 – 250 A	65	T/M	LHH	X		7.5	7.5	5.3	5.3	4.3	N/A	N/A	N/A
400 A	**175 – 200 A**	**65**	**T/M**	**LHH**	**X**		**10.0**	**10.0**	**10.0**	**10.0**	7.5	7.5	7.5	N/A
400 A	200 A	65	T/M	KD	X		4.0	4.0	3.0	3.0	2.5	2.5	2.5	2.5
400 A	200 – 400 A	65	ETU	KD	X		8.0	8.0	6.0	6.0	5.0	5.0	5.0	5.0
400 A	**225 – 400 A**	**65**	**T/M**	**LHH**	**X**		**10.0**	**10.0**	**10.0**	**10.0**	**10.0**	**10.0**	**10.0**	**10.0**
400 A	400 A	65	T/M	KD	X		8.0	8.0	6.0	6.0	5.0	5.0	5.0	5.0
600 A	300 A	65	T/M	LD	X		9.0	9.0	7.5	7.5	7.5	7.5	7.5	7.5
600 A	**400 A**	65	**T/M**	**LD**	**X**		**10.0**	**10.0**	**10.0**	**10.0**	**10.0**	**10.0**	**10.0**	**10.0**
600 A	**300 – 400 A**	**65**	**ETU**	**LD**	**X**		**10.0**	**10.0**	**10.0**	**10.0**	**10.0**	**10.0**	**10.0**	**10.0**
600 A	100 – 250 A	65	ETU	LGE	X		9.0	9.0	7.5	7.5	7.5	7.5	7.5	7.5
600 A	**160 – 400 A**	**65**	**ETU**	**LGE**	**X**		**10.0**	**10.0**	**10.0**	**10.0**	**10.0**	**10.0**	**10.0**	**10.0**
600 A	**600 A**	**65**	**T/M**	**LD**	**X**		**10.0**	**10.0**	**10.0**	**10.0**	**10.0**	**10.0**	**10.0**	**10.0**
600 A	**250 – 600 A**	**65**	**ETU**	**LGE**	**X**		**10.0**	**10.0**	**10.0**	**10.0**	**10.0**	**10.0**	**10.0**	**10.0**

② T/M = Thermal Magnetic Trip. ETU = Electronic Trip Unit.

Notes: The tables indicate the maximum fault current value expressed in kA for which coordination is ensured. Downstream (branch) breakers' AIC ratings must be sized for the appropriate fault level at the installation point. Short time delay settings or magnetic trip settings must be set to properly coordinate for low level fault.

TABLE 5. 208Y/120 VAC LIGHTING PANELBOARD — CUTLER-HAMMER DESIGNATION PRL3a WITH 22 KAIC FULLY RATED BRANCH BREAKERS

Line Side Main/ Feeder Breaker Frame Size	Line Side Main/ Feeder Breaker Trip Range	Line Side Main/ Feeder Breaker kAIC Rating	Trip Type ①	Eaton Cutler-Hammer Frame Designation/ Type	Location of Line Side Main/ Feeder Breaker: Internal or External to Panel	Location of Line Side Main/ Feeder Breaker: External to Panel Only	22 kAIC Fully Rated Branch Breaker — Type QBHW kAIC Shown Below Each Amperage is the Maximum kAIC which Selectively Coordinates with the Line Side Main or Feeder Breaker: 15 – 20 A 1, 2 & 3 Pole	30 A 1, 2 & 3 Pole	40 A 1, 2 & 3 Pole	50 – 60 A 1, 2 & 3 Pole	70 A 2 & 3 Pole	80 A 2 & 3 Pole	90 A 2 & 3 Pole	100 A 2 & 3 Pole
225 A	100 A	65	T/M	EDB	X		1.0	1.0	1.0	N/A	N/A	N/A	N/A	N/A
225 A	150 A	65	T/M	EDB	X		1.5	1.5	1.5	1.5	1.5	N/A	N/A	N/A
225 A	225 A	65	T/M	EDB	X		2.2	2.2	2.2	2.2	2.2	2.2	2.2	1.8
225 A	100 – 225 A	65	ETU	FDE	X		2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
250 A	150 A	65	T/M	JD	X		2.1	2.1	1.5	1.5	1.5	N/A	N/A	N/A
250 A	250 A	65	T/M	JD	X		3.4	3.4	3.4	2.5	2.5	2.5	2.3	2.3
400 A	100 A	65	T/M	KD	X		2.0	2.0	1.2	1.2	N/A	N/A	N/A	N/A
400 A	125 – 250 A	65	ETU	KD	X		5.0	5.0	4.0	4.0	3.0	3.0	3.0	3.0
400 A	125 – 150 A	65	T/M	LHH	X		7.5	7.5	5.3	5.3	4.3	N/A	N/A	N/A
400 A	**175 – 200 A**	**65**	**T/M**	**LHH**	**X**		**10.0**	**10.0**	**10.0**	**10.0**	7.5	7.5	7.5	N/A
400 A	200 A	65	T/M	KD	X		4.0	4.0	3.0	3.0	2.5	2.5	2.5	2.5
400 A	200 – 400 A	65	ETU	KD	X		8.0	8.0	6.0	6.0	5.0	5.0	5.0	5.0
400 A	**225 – 400 A**	**65**	**T/M**	**LHH**	**X**		**22.0**	**22.0**	**22.0**	**22.0**	**22.0**	**22.0**	**22.0**	**22.0**
400 A	400 A	65	T/M	KD	X		8.0	8.0	6.0	6.0	5.0	5.0	5.0	5.0
600 A	300 A	65	T/M	LD	X		9.0	9.0	7.5	7.5	7.5	7.5	7.5	7.5
600 A	400 A	65	T/M	LD	X		10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
600 A	**300 – 400 A**	**65**	**ETU**	**LD**	**X**		**22.0**	**22.0**	**22.0**	**22.0**	**22.0**	**22.0**	**22.0**	**22.0**
600 A	100 – 250 A	65	ETU	LGE	X		9.0	9.0	7.5	7.5	7.5	7.5	7.5	7.5
600 A	160 – 400 A	65	ETU	LGE	X		14.4	14.4	14.4	12.0	12.0	12.0	12.0	12.0
600 A	**600 A**	**65**	**T/M**	**LD**	**X**		**22.0**	**22.0**	**22.0**	**22.0**	**22.0**	**22.0**	**22.0**	**22.0**
600 A	**250 – 600 A**	**65**	**ETU**	**LGE**	**X**		**22.0**	**22.0**	**22.0**	18.0	18.0	18.0	18.0	18.0

① T/M = Thermal Magnetic Trip. ETU = Electronic Trip Unit.

TABLE 6. 208Y/120 VAC LIGHTING PANELBOARD — CUTLER-HAMMER DESIGNATION PRL2a WITH 65 KAIC FULLY RATED BRANCH BREAKERS

Line Side Main/ Feeder Breaker Frame Size	Line Side Main/ Feeder Breaker Trip Range	Line Side Main/ Feeder Breaker kAIC Rating	Trip Type ②	Eaton Cutler-Hammer Frame Designation/ Type	Location of Line Side Main/ Feeder Breaker: Internal or External to Panel	Location of Line Side Main/ Feeder Breaker: External to Panel Only	65 kAIC Fully Rated Branch Breaker — Type HB kAIC Shown Below Each Amperage is the Maximum kAIC which Selectively Coordinates with the Line Side Main or Feeder Breaker: 15 – 20 A 1, 2 & 3 Pole	30 A 1, 2 & 3 Pole	40 A 1, 2 & 3 Pole	50 – 60 A 1, 2 & 3 Pole	70 A 2 & 3 Pole	80 A 2 & 3 Pole	90 A 2 & 3 Pole	100 A 2 & 3 Pole
1200 A	**400 A**	**65**	**ETU**	**ND**		**X**	**65.0**	**65.0**	**65.0**	**65.0**	**65.0**	**65.0**	**65.0**	**65.0**

② T/M = Thermal Magnetic Trip. ETU = Electronic Trip Unit.

TABLE 7. 208Y/120 VAC LIGHTING PANELBOARD — CUTLER-HAMMER DESIGNATION PRL3a WITH 65 KAIC FULLY RATED BRANCH BREAKERS

Line Side Main/ Feeder Breaker Frame Size	Line Side Main/ Feeder Breaker Trip Range	Line Side Main/ Feeder Breaker kAIC Rating	Trip Type ③	Eaton Cutler-Hammer Frame Designation/ Type	Location of Line Side Main/ Feeder Breaker: Internal or External to Panel	Location of Line Side Main/ Feeder Breaker: External to Panel Only	65 kAIC Fully Rated Branch Breaker — Type GHB kAIC Shown Below Each Amperage is the Maximum kAIC which Selectively Coordinates with the Line Side Main or Feeder Breaker: 15 – 20 A 1, 2 & 3 Pole	30 A 1, 2 & 3 Pole	40 A 1, 2 & 3 Pole	50 – 60 A 1, 2 & 3 Pole	70 A 2 & 3 Pole	80 A 2 & 3 Pole	90 A 2 & 3 Pole	100 A 2 & 3 Pole
1200 A	**400 A**	**65**	**ETU**	**ND**		**X**	**65.0**	**65.0**	**65.0**	**65.0**	**65.0**	**65.0**	**65.0**	**65.0**
1200 A	**400 – 600 A**	**65**	**ETU**	**ND**		**X**	**65.0**	**65.0**	**65.0**	**65.0**	**65.0**	**65.0**	**65.0**	**65.0**

③ T/M = Thermal Magnetic Trip. ETU = Electronic Trip Unit.

TABLE 8. 208Y/120 VAC LIGHTING PANELBOARD — CUTLER-HAMMER DESIGNATION PRL4 WITH 65 KAIC FULLY RATED BRANCH BREAKERS

Line Side Main/ Feeder Breaker Frame Size	Line Side Main/ Feeder Breaker Trip Range	Line Side Main/ Feeder Breaker kAIC Rating	Trip Type ④	Eaton Cutler-Hammer Frame Designation/ Type	Location of Line Side Main/ Feeder Breaker: Internal or External to Panel	Location of Line Side Main/ Feeder Breaker: External to Panel Only	65 kAIC Fully Rated Branch Breaker — Type GHB kAIC Shown Below Each Amperage is the Maximum kAIC which Selectively Coordinates with the Line Side Main or Feeder Breaker: 15 – 20 A 1, 2 & 3 Pole	30 A 1, 2 & 3 Pole	40 A 1, 2 & 3 Pole	50 – 60 A 1, 2 & 3 Pole	70 A 2 & 3 Pole	80 A 2 & 3 Pole	90 A 2 & 3 Pole	100 A 2 & 3 Pole
1200 A	**400 A**	**65**	**ETU**	**ND**	**X**		**65.0**	**65.0**	**65.0**	**65.0**	**65.0**	**65.0**	**65.0**	**65.0**
1200 A	**400 – 800 A**	**65**	**ETU**	**ND**	**X**		**65.0**	**65.0**	**65.0**	**65.0**	**65.0**	**65.0**	**65.0**	**65.0**
1200 A	**600 – 1200 A**	**65**	**ETU**	**ND**	**X**		**65.0**	**65.0**	**65.0**	**65.0**	**65.0**	**65.0**	**65.0**	**65.0**

④ T/M = Thermal Magnetic Trip. ETU = Electronic Trip Unit.

Notes: The tables indicate the maximum fault current value expressed in kA for which coordination is ensured. Downstream (branch) breakers' AIC ratings must be sized for the appropriate fault level at the installation point. Short time delay settings or magnetic trip settings must be set to properly coordinate for low level faults.

TABLE 9. 208Y/120 VAC LIGHTING PANELBOARD — CUTLER-HAMMER DESIGNATION PRL3E WITH 85 KAIC FULLY RATED BRANCH BREAKERS

Line Side Main/ Feeder Breaker Frame Size	Line Side Main/ Feeder Breaker Trip Range	Line Side Main/ Feeder Breaker kAIC Rating	Trip Type ①	Eaton Cutler-Hammer Frame Designation/ Type	Location of Line Side Main/ Feeder Breaker		85 kAIC Fully Rated Branch Breaker — Type EGS kAIC Shown Below Each Amperage is the Maximum kAIC which Selectively Coordinates with the Line Side Main or Feeder Breaker							
					Internal or External to Panel	External to Panel Only	15 A 1, 2 & 3 Pole	20–30 A 1, 2 & 3 Pole	40–50 A 1, 2 & 3 Pole	60 A 1, 2 & 3 Pole	70–80 A 2 & 3 Pole	90 A 2 & 3 Pole	100 A 2 & 3 Pole	110–125A 2 & 3 Pole
125 A	125 A	25	T/M	EGB	X		1.3	1.3	1.3	1.3	N/A	N/A	N/A	N/A
225 A	100 A	65	T/M	FD	X		1.0	1.0	1.0	N/A	N/A	N/A	N/A	N/A
225 A	150 A	65	T/M	FD	X		1.5	1.5	1.5	1.5	N/A	N/A	N/A	N/A
225 A	225 A	65	T/M	FD	X		2.2	2.2	1.8	1.8	1.8	1.8	1.8	1.8
225 A	60 – 150 A	65	T/M	FDE	X		1.6	1.6	1.6	1.6	1.2	1.2	1.2	1.2
225 A	100 – 225 A	65	ETU	FDE	X		2.8	2.8	2.3	2.3	2.3	2.3	1.8	1.8
250 A	150 A	65	T/M	JD		X	1.5	1.5	1.5	1.5	N/A	N/A	N/A	N/A
250 A	250 A	65	T/M	JD		X	2.5	2.5	2.3	2.3	2.3	2.3	2.3	2.3
400 A	100 A	65	T/M	KD	X		2.0	2.0	1.6	N/A	N/A	N/A	N/A	N/A
400 A	125 – 250 A	65	ETU	KD	X		4.6	4.6	4.0	4.0	4.0	4.0	4.0	4.0
400 A	150 A	65	T/M	LHH	X		10.0	7.5	3.2	3.2	N/A	N/A	N/A	N/A
400 A	200 A	65	T/M	KD	X		2.5	2.5	2.5	2.5	2.5	2.5	2.5	N/A
400 A	200 A	65	T/M	LHH	X		27.0	14.0	10.0	10.0	10.0	10.0	10.0	10.0
400 A	200 – 400 A	65	ETU	KD	X		5.6	5.6	5.2	5.2	5.2	5.2	5.2	5.2
400 A	300 – 400 A	65	T/M	LHH	X		65.0	35.0	18.0	18.0	18.0	18.0	18.0	18.0
400 A	400 A	65	T/M	KD	X		5.6	5.6	5.2	5.2	5.2	5.2	5.2	5.2
600 A	300 A	65	T/M	LD		X	20.0	15.0	10.0	10.0	10.0	10.0	10.0	10.0
600 A	400 A	65	T/M	LD		X	20.0	15.0	10.0	10.0	10.0	10.0	10.0	10.0
600 A	600 A	65	T/M	LD		X	35.0	35.0	18.0	18.0	18.0	18.0	18.0	18.0
600 A	300 – 600 A	65	ETU	LD		X	35.0	35.0	18.0	18.0	18.0	18.0	18.0	18.0
600 A	100 – 250 A	65	ETU	LGE	X		4.6	4.6	4.0	4.0	4.0	4.0	4.0	4.0
600 A	175 – 400 A	65	ETU	LGE	X		20.0	15.0	10.0	10.0	10.0	10.0	10.0	10.0
600 A	250 – 600 A	65	ETU	LGE	X		35.0	35.0	18.0	18.0	18.0	18.0	18.0	18.0
1200 A	150 – 350 A	65	ETU	ND		X	65.0	65.0	65.0	65.0	N/A	N/A	N/A	N/A
1200 A	400 – 600 A	65	ETU	ND		X	65.0	65.0	42.0	42.0	42.0	42.0	35.0	35.0

① T/M = Thermal Magnetic Trip. ETU = Electronic Trip Unit.

TABLE 10. 480Y/277 VAC LIGHTING PANELBOARD — CUTLER-HAMMER DESIGNATION PRL2a WITH 14 KAIC FULLY RATED BRANCH BREAKERS

Line Side Main/ Feeder Breaker Frame Size	Line Side Main/ Feeder Breaker Trip Range	Line Side Main/ Feeder Breaker kAIC Rating	Trip Type ②	Eaton Cutler-Hammer Frame Designation/ Type	Location of Line Side Main/ Feeder Breaker		14 kAIC Fully Rated Branch Breaker — Type GHB kAIC Shown Below Each Amperage is the Maximum kAIC which Selectively Coordinates with the Line Side Main or Feeder Breaker							
					Internal or External to Panel	External to Panel Only	15–20 A 1, 2 & 3 Pole	30 A 1, 2 & 3 Pole	40–50 A 1, 2 & 3 Pole	60 A 1, 2 & 3 Pole	70 A 2 & 3 Pole	80 A 2 & 3 Pole	90 A 2 & 3 Pole	100 A 2 & 3 Pole
225 A	100 A	35	T/M	FD	X		1.0	1.0	1.0	N/A	N/A	N/A	N/A	N/A
225 A	150 A	35	T/M	FD	X		1.5	1.5	1.5	N/A	N/A	N/A	N/A	N/A
225 A	225 A	35	T/M	FD	X		2.2	2.2	2.2	2.2	2.2	1.8	1.8	1.8
225 A	100 – 225 A	35	ETU	FDE	X		2.8	2.8	2.3	2.3	2.3	1.8	1.8	1.8
250 A	150 A	35	T/M	JD		X	1.5	1.5	1.5	N/A	N/A	N/A	N/A	N/A
250 A	250 A	35	T/M	JD		X	2.5	2.5	2.3	2.3	2.3	2.3	2.3	2.3
400 A	100 A	35	T/M	KD	X		2.0	2.0	1.6	N/A	N/A	N/A	N/A	N/A
400 A	125 – 150 A	35	T/M	LHH	X		3.2	3.2	3.2	N/A	N/A	N/A	N/A	N/A
400 A	175 – 200 A	35	T/M	LHH	X		7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6
400 A	125 – 250 A	35	ETU	KD	X		4.0	4.0	3.6	3.6	3.6	3.6	3.6	3.6
400 A	200 A	35	T/M	KD	X		2.7	2.7	2.7	2.5	2.5	2.5	2.5	2.5
400 A	200 – 400 A	35	ETU	KD	X		4.5	4.5	4.2	4.2	4.2	4.2	4.2	4.2
400 A	**225 – 400 A**	**35**	**T/M**	**LHH**	**X**		**14.0**	**14.0**	**14.0**	12.7	12.7	12.7	12.7	12.7
400 A	400 A	35	T/M	KD	X		4.5	4.5	4.2	4.2	4.2	4.2	4.2	4.2
600 A	300 A	35	T/M	LD		X	10.0	10.0	10.0	10.0	7.4	7.4	7.4	7.4
600 A	400 A	35	T/M	LD		X	10.0	10.0	10.0	10.0	7.4	7.4	7.4	7.4
600 A	300 – 400 A	35	ETU	LD		X	10.0	10.0	10.0	10.0	7.4	7.4	7.4	7.4
600 A	250 – 400 A	35	ETU	LGE		X	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
1200 A	**400 A**	**35**	**ETU**	**ND**		**X**	**14.0**	**14.0**	**14.0**	**14.0**	**14.0**	**14.0**	**14.0**	**14.0**

② T/M = Thermal Magnetic Trip. ETU = Electronic Trip Unit.

Notes: The tables indicate the maximum fault current value expressed in kA for which coordination is ensured. Downstream (branch) breakers' AIC ratings must be sized for the appropriate fault level at the installation point. Short time delay settings or magnetic trip settings must be set to properly coordinate for low level faults.

TABLE 11. 480Y/277 VAC LIGHTING PANELBOARD — CUTLER-HAMMER DESIGNATION PRL3a WITH 14 KAIC FULLY RATED BRANCH BREAKERS

Line Side Main/ Feeder Breaker Frame Size	Line Side Main/ Feeder Breaker Trip Range	Line Side Main/ Feeder Breaker kAIC Rating	Trip Type ①	Eaton Cutler-Hammer Frame Designation/ Type	Location of Line Side Main/ Feeder Breaker: Internal or External to Panel	Location of Line Side Main/ Feeder Breaker: External to Panel Only	14 kAIC Fully Rated Branch Breaker — Type GHB kAIC Shown Below Each Amperage is the Maximum kAIC which Selectively Coordinates with the Line Side Main or Feeder Breaker: 15 – 20 A 1, 2 & 3 Pole	30 A 1, 2 & 3 Pole	40 – 50 A 1, 2 & 3 Pole	60 A 1, 2 & 3 Pole	70 A 2 & 3 Pole	80 A 2 & 3 Pole	90 A 2 & 3 Pole	100 A 2 & 3 Pole
225 A	100 A	35	T/M	FD	X		1.0	1.0	1.0	N/A	N/A	N/A	N/A	N/A
225 A	150 A	35	T/M	FD	X		1.5	1.5	1.5	N/A	N/A	N/A	N/A	N/A
225 A	225 A	35	T/M	FD	X		2.2	2.2	2.2	2.2	2.2	1.8	1.8	1.8
225 A	100 – 225 A	35	ETU	FDE	X		2.8	2.8	2.3	2.3	2.3	1.8	1.8	1.8
250 A	150 A	35	T/M	JD	X		1.5	1.5	1.5	N/A	N/A	N/A	N/A	N/A
250 A	250 A	35	T/M	JD	X		2.5	2.5	2.3	2.3	2.3	2.3	2.3	2.3
400 A	100 A	35	T/M	KD	X		2.0	2.0	1.6	N/A	N/A	N/A	N/A	N/A
400 A	125 – 150 A	35	T/M	LHH	X		3.2	3.2	3.2	N/A	N/A	N/A	N/A	N/A
400 A	175 – 200 A	35	T/M	LHH	X		7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6
400 A	125 – 250 A	35	ETU	KD	X		4.0	4.0	3.6	3.6	3.6	3.6	3.6	3.6
400 A	200 A	35	T/M	KD	X		2.7	2.7	2.7	2.5	2.5	2.5	2.5	2.5
400 A	200 – 400 A	35	ETU	KD	X		4.5	4.5	4.2	4.2	4.2	4.2	4.2	4.2
400 A	**225 – 400 A**	**35**	**T/M**	**LHH**	**X**		**14.0**	**14.0**	**14.0**	12.7	12.7	12.7	12.7	12.7
400 A	400 A	35	T/M	KD	X		4.5	4.5	4.2	4.2	4.2	4.2	4.2	4.2
600 A	300 A	35	T/M	LD	X		10.0	10.0	10.0	10.0	7.4	7.4	7.4	7.4
600 A	400 A	35	T/M	LD	X		10.0	10.0	10.0	10.0	7.4	7.4	7.4	7.4
600 A	300 – 400 A	35	ETU	LD	X		10.0	10.0	10.0	10.0	7.4	7.4	7.4	7.4
600 A	250 – 400 A	35	ETU	LGE	X		10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
1200 A	**400 A**	**35**	**ETU**	**ND**		**X**	**14.0**	**14.0**	**14.0**	**14.0**	**14.0**	**14.0**	**14.0**	**14.0**

① T/M = Thermal Magnetic Trip. ETU = Electronic Trip Unit.

TABLE 12. 480Y/277 VAC LIGHTING PANELBOARD — CUTLER-HAMMER DESIGNATION PRL3E WITH 18 KAIC FULLY RATED BRANCH BREAKERS

Line Side Main/ Feeder Breaker Frame Size	Line Side Main/ Feeder Breaker Trip Range	Line Side Main/ Feeder Breaker kAIC Rating	Trip Type ②	Eaton Cutler-Hammer Frame Designation/ Type	Location of Line Side Main/ Feeder Breaker: Internal or External to Panel	Location of Line Side Main/ Feeder Breaker: External to Panel Only	18 kAIC Fully Rated Branch Breaker — Type EGB kAIC Shown Below Each Amperage is the Maximum kAIC which Selectively Coordinates with the Line Side Main or Feeder Breaker: 15 A 1, 2 & 3 Pole	20– 30 A 1, 2 & 3 Pole	40 – 50 A 1, 2 & 3 Pole	60 A 1, 2 & 3 Pole	70 – 80 A 2 & 3 Pole	90 A 2 & 3 Pole	100 A 2 & 3 Pole	110–125A 2 & 3 Pole
125 A	125 A	18	T/M	EGB	X		1.3	1.3	1.3	1.3	N/A	N/A	N/A	N/A
225 A	100 A	35	T/M	FD	X		1.0	1.0	1.0	N/A	N/A	N/A	N/A	N/A
225 A	150 A	35	T/M	FD	X		1.5	1.5	1.5	1.5	N/A	N/A	N/A	N/A
225 A	225 A	35	T/M	FD	X		2.2	2.2	1.8	1.8	1.8	1.8	1.8	1.8
225 A	60 – 150 A	35	T/M	FDE	X		1.6	1.6	1.6	1.6	1.2	1.2	1.2	1.2
225 A	100 – 225 A	35	ETU	FDE	X		2.8	2.8	2.3	2.3	2.3	2.3	1.8	1.8
250 A	150 A	35	T/M	JD		X	1.5	1.5	1.5	1.5	N/A	N/A	N/A	N/A
250 A	250 A	35	T/M	JD		X	2.5	2.5	2.3	2.3	2.3	2.3	2.3	2.3
400 A	100 A	35	T/M	KD	X		2.0	2.0	1.6	N/A	N/A	N/A	N/A	N/A
400 A	125 – 250 A	35	ETU	KD	X		4.6	4.6	4.0	4.0	4.0	4.0	4.0	4.0
400 A	150 A	35	T/M	LHH	X		10.0	7.5	3.2	3.2	N/A	N/A	N/A	N/A
400 A	200 A	35	T/M	KD	X		2.5	2.5	2.5	2.5	2.5	2.5	2.5	N/A
400 A	**200 A**	**35**	**T/M**	**LHH**	**X**		**18.0**	14.0	10.0	10.0	10.0	10.0	10.0	10.0
400 A	200 – 400 A	35	ETU	KD	X		5.6	5.6	5.2	5.2	5.2	5.2	5.2	5.2
400 A	**300 – 400 A**	**35**	**T/M**	**LHH**	**X**		**18.0**	**18.0**	**18.0**	**18.0**	**18.0**	**18.0**	**18.0**	**18.0**
400 A	400 A	35	T/M	KD	X		5.6	5.6	5.2	5.2	5.2	5.2	5.2	5.2
600 A	**300 A**	**35**	**T/M**	**LD**		**X**	**18.0**	15.0	10.0	10.0	10.0	10.0	10.0	10.0
600 A	**400 A**	**35**	**T/M**	**LD**		**X**	**18.0**	15.0	10.0	10.0	10.0	10.0	10.0	10.0
600 A	**600 A**	**35**	**T/M**	**LD**		**X**	**18.0**	**18.0**	**18.0**	**18.0**	**18.0**	**18.0**	**18.0**	**18.0**
600 A	**300 – 600 A**	**35**	**ETU**	**LD**		**X**	**18.0**	**18.0**	**18.0**	**18.0**	**18.0**	**18.0**	**18.0**	**18.0**
600 A	100 – 250 A	35	ETU	LGE	X		4.6	4.6	4.0	4.0	4.0	4.0	4.0	4.0
600 A	**175 – 400 A**	**35**	**ETU**	**LGE**	**X**		**18.0**	15.0	10.0	10.0	10.0	10.0	10.0	10.0
600 A	**250 – 600 A**	**35**	**ETU**	**LGE**	**X**		**18.0**	**18.0**	**18.0**	**18.0**	**18.0**	**18.0**	**18.0**	**18.0**
1200 A	**150 – 350 A**	**35**	**ETU**	**ND**		**X**	**18.0**	**18.0**	**18.0**	**18.0**	**N/A**	**N/A**	**N/A**	**N/A**
1200 A	**400 – 600 A**	**35**	**ETU**	**ND**		**X**	**18.0**	**18.0**	**18.0**	**18.0**	**18.0**	**18.0**	**18.0**	**18.0**

② T/M = Thermal Magnetic Trip. ETU = Electronic Trip Unit.

Notes: The tables indicate the maximum fault current value expressed in kA for which coordination is ensured. Downstream (branch) breakers' AIC ratings must be sized for the appropriate fault level at the installation point. Short time delay settings or magnetic trip settings must be set to properly coordinate for low level faults.

TABLE 13. 480Y/277 VAC LIGHTING PANELBOARD — CUTLER-HAMMER DESIGNATION PRL3E WITH 35 KAIC FULLY RATED BRANCH BREAKERS

Line Side Main/ Feeder Breaker Frame Size	Line Side Main/ Feeder Breaker Trip Range	Line Side Main/ Feeder Breaker kAIC Rating	Trip Type ①	Eaton Cutler-Hammer Frame Designation/ Type	Location of Line Side Main/ Feeder Breaker: Internal or External to Panel	Location of Line Side Main/ Feeder Breaker: External to Panel Only	35 kAIC Fully Rated Branch Breaker — Type EGS kAIC Shown Below Each Amperage is the Maximum kAIC which Selectively Coordinates with the Line Side Main or Feeder Breaker: 15 A 1, 2 & 3 Pole	20–30 A 1, 2 & 3 Pole	40–50 A 1, 2 & 3 Pole	60 A 1, 2 & 3 Pole	70–80 A 2 & 3 Pole	90 A 2 & 3 Pole	100 A 2 & 3 Pole	110–125A 2 & 3 Pole
125 A	125 A	18	T/M	EGB	X		1.3	1.3	1.3	1.3	N/A	N/A	N/A	N/A
225 A	100 A	35	T/M	FD	X		1.0	1.0	1.0	N/A	N/A	N/A	N/A	N/A
225 A	150 A	35	T/M	FD	X		1.5	1.5	1.5	1.5	N/A	N/A	N/A	N/A
225 A	225 A	35	T/M	FD	X		2.2	2.2	1.8	1.8	1.8	1.8	1.8	1.8
225 A	60 – 150 A	35	T/M	FDE	X		1.6	1.6	1.6	1.6	1.2	1.2	1.2	1.2
225 A	100 – 225 A	35	ETU	FDE	X		2.8	2.8	2.3	2.3	2.3	2.3	1.8	1.8
250 A	150 A	35	T/M	JD		X	1.5	1.5	1.5	1.5	N/A	N/A	N/A	N/A
250 A	250 A	35	T/M	JD		X	2.5	2.5	2.3	2.3	2.3	2.3	2.3	2.3
400 A	100 A	35	T/M	KD	X		2.0	2.0	1.6	N/A	N/A	N/A	N/A	N/A
400 A	125 – 250 A	35	ETU	KD	X		4.6	4.6	4.0	4.0	4.0	4.0	4.0	4.0
400 A	150 A	35	T/M	LHH	X		10.0	7.5	3.2	3.2	N/A	N/A	N/A	N/A
400 A	200 A	35	T/M	KD	X		2.5	2.5	2.5	2.5	2.5	2.5	2.5	N/A
400 A	200 A	35	T/M	LHH	X		27.0	14.0	10.0	10.0	10.0	10.0	10.0	10.0
400 A	200 – 400 A	35	ETU	KD	X		5.6	5.6	5.2	5.2	5.2	5.2	5.2	5.2
400 A	**300 – 400 A**	**35**	**T/M**	**LHH**	**X**		**35.0**	**35.0**	18.0	18.0	18.0	18.0	18.0	18.0
400 A	400 A	35	T/M	KD	X		5.6	5.6	5.2	5.2	5.2	5.2	5.2	5.2
600 A	300 A	35	T/M	LD		X	18.0	15.0	10.0	10.0	10.0	10.0	10.0	10.0
600 A	400 A	35	T/M	LD		X	20.0	15.0	10.0	10.0	10.0	10.0	10.0	10.0
600 A	**600 A**	**35**	**T/M**	**LD**		**X**	**35.0**	**35.0**	18.0	18.0	18.0	18.0	18.0	18.0
600 A	**300 – 600 A**	**35**	**ETU**	**LD**		**X**	**35.0**	**35.0**	18.0	18.0	18.0	18.0	18.0	18.0
600 A	100 – 250 A	35	ETU	LGE	X		4.6	4.6	4.0	4.0	4.0	4.0	4.0	4.0
600 A	175 – 400 A	35	ETU	LGE	X		20.0	15.0	10.0	10.0	10.0	10.0	10.0	10.0
600 A	**250 – 600 A**	**35**	**ETU**	**LGE**	**X**		**35.0**	**35.0**	18.0	18.0	18.0	18.0	18.0	18.0
1200 A	**150 – 350 A**	**35**	**ETU**	**ND**		**X**	**35.0**	**35.0**	**35.0**	**35.0**	**N/A**	**N/A**	**N/A**	**N/A**
1200 A	**400 – 600 A**	**35**	**ETU**	**ND**		**X**	**35.0**	**35.0**	**35.0**	**35.0**	**35.0**	**35.0**	**35.0**	**35.0**

① T/M = Thermal Magnetic Trip. ETU = Electronic Trip Unit.

TABLE 14. 480Y/277 VAC LIGHTING PANELBOARD — CUTLER-HAMMER DESIGNATION PRL3a WITH 35 KAIC FULLY RATED BRANCH BREAKERS

Line Side Main/ Feeder Breaker Frame Size	Line Side Main/ Feeder Breaker Trip Range	Line Side Main/ Feeder Breaker kAIC Rating	Trip Type ②	Eaton Cutler-Hammer Frame Designation/ Type	Location of Line Side Main/ Feeder Breaker: Internal or External to Panel	Location of Line Side Main/ Feeder Breaker: External to Panel Only	35 kAIC Fully Rated Branch Breaker — Type FD kAIC Shown Below Each Amperage is the Maximum kAIC which Selectively Coordinates with the Line Side Main or Feeder Breaker: 15 – 20 A 1, 2 & 3 Pole	30 A 1, 2 & 3 Pole	40 A 1, 2 & 3 Pole	50 – 60 A 1, 2 & 3 Pole	70 A 2 & 3 Pole	80 A 2 & 3 Pole	90–100 A 2 & 3 Pole	110–225 A 2 & 3 Pole
225 A	100 A	35	T/M	FD	X		1.0	1.0	1.0	N/A	N/A	N/A	N/A	N/A
225 A	150 A	35	T/M	FD	X		1.5	1.5	1.5	N/A	N/A	N/A	N/A	N/A
225 A	225 A	35	T/M	FD	X		1.8	1.8	1.8	1.8	1.8	1.8	1.8	N/A
225 A	100 – 225 A	35	ETU	FDE	X		2.3	2.3	2.3	1.8	1.8	1.8	1.8	N/A
250 A	150 A	35	T/M	JD	X		1.5	1.5	1.5	N/A	N/A	N/A	N/A	N/A
250 A	250 A	35	T/M	JD	X		2.5	2.5	2.5	2.3	2.3	2.3	2.3	N/A
400 A	100 A	35	T/M	KD	X		1.6	1.6	1.6	N/A	N/A	N/A	N/A	N/A
400 A	125 – 150 A	35	T/M	LHH	X		3.2	3.2	3.2	N/A	N/A	N/A	N/A	N/A
400 A	175 – 200 A	35	T/M	LHH	X		10.0	10.0	10.0	10.0	10.0	10.0	10.0	N/A
400 A	125 – 250 A	35	ETU	KD	X		3.2	3.2	3.2	3.2	3.2	3.2	3.2	N/A
400 A	200 A	35	T/M	KD	X		2.5	2.5	2.5	2.3	2.3	2.3	2.3	N/A
400 A	200 – 400 A	35	ETU	KD	X		4.2	4.2	4.2	4.0	4.0	4.0	4.0	4.0
400 A	225 – 400 A	35	T/M	LHH	X		16.0	16.0	16.0	14.0	14.0	14.0	14.0	12.0
400 A	400 A	35	T/M	KD	X		5.0	5.0	5.0	3.2	3.2	3.2	3.2	3.2
600 A	300 A	35	T/M	LD	X		8.3	8.3	8.3	7.0	7.0	7.0	7.0	N/A
600 A	400 A	35	T/M	LD	X		8.3	8.3	8.3	7.0	7.0	7.0	7.0	7.0
600 A	160 – 400 A	35	ETU	LGE	X		8.3	8.3	8.3	7.0	7.0	7.0	7.0	7.0
600 A	300 – 400 A	35	ETU	LD	X		12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
600 A	250 – 400 A	35	ETU	LGE	X		12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
1200 A	**400 A**	**35**	**ETU**	**ND**		**X**	**35.0**	**35.0**	**35.0**	**35.0**	**35.0**	**35.0**	**35.0**	30.0
1200 A	**400 – 800 A**	**35**	**ETU**	**ND**		**X**	**35.0**	**35.0**	**35.0**	**35.0**	**35.0**	**35.0**	**35.0**	30.0
2000 A	**800 A**	**35**	**ETU**	**RD**		**X**	**35.0**	**35.0**	**35.0**	**35.0**	**35.0**	**35.0**	**35.0**	**35.0**

② T/M = Thermal Magnetic Trip. ETU = Electronic Trip Unit.

Notes: The tables indicate the maximum fault current value expressed in kA for which coordination is ensured. Downstream (branch) breakers' AIC ratings must be sized for the appropriate fault level at the installation point. Short time delay settings or magnetic trip settings must be set to properly coordinate for low level faults.

TABLE 15. 480Y/277 VAC LIGHTING PANELBOARD — CUTLER-HAMMER DESIGNATION PRL3E WITH 65 KAIC FULLY RATED BRANCH BREAKERS

Line Side Main/ Feeder Breaker Frame Size	Line Side Main/ Feeder Breaker Trip Range	Line Side Main/ Feeder Breaker kAIC Rating	Trip Type ①	Eaton Cutler-Hammer Frame Designation/ Type	Location of Line Side Main/ Feeder Breaker		65 kAIC Fully Rated Branch Breaker — Type EGH kAIC Shown Below Each Amperage is the Maximum kAIC which Selectively Coordinates with the Line Side Main or Feeder Breaker							
					Internal or External to Panel	External to Panel Only	15 A 1, 2 & 3 Pole	20 – 30 A 1, 2 & 3 Pole	40 – 50 A 1, 2 & 3 Pole	60 A 1, 2 & 3 Pole	70 – 80 A 2 & 3 Pole	90 A 2 & 3 Pole	100 A 2 & 3 Pole	110 – 125 A 2 & 3 Pole
125 A	125 A	18	T/M	EGB	X		1.3	1.3	1.3	1.3	N/A	N/A	N/A	N/A
225 A	100 A	35	T/M	FD	X		1.0	1.0	1.0	N/A	N/A	N/A	N/A	N/A
225 A	150 A	35	T/M	FD	X		1.5	1.5	1.5	1.5	N/A	N/A	N/A	N/A
225 A	225 A	35	T/M	FD	X		2.2	2.2	1.8	1.8	1.8	1.8	1.8	1.8
225 A	60 – 150 A	35	T/M	FDE	X		1.6	1.6	1.6	1.6	1.2	1.2	1.2	1.2
225 A	100 – 225 A	35	ETU	FDE	X		2.8	2.8	2.3	2.3	2.3	2.3	1.8	1.8
250 A	150 A	35	T/M	JD		X	1.5	1.5	1.5	1.5	N/A	N/A	N/A	N/A
250 A	250 A	35	T/M	JD		X	2.5	2.5	2.3	2.3	2.3	2.3	2.3	2.3
400 A	100 A	35	T/M	KD	X		2.0	2.0	1.6	N/A	N/A	N/A	N/A	N/A
400 A	125 – 250 A	35	ETU	KD	X		4.6	4.6	4.0	4.0	4.0	4.0	4.0	4.0
400 A	150 A	35	T/M	LHH	X		10.0	7.5	3.2	3.2	N/A	N/A	N/A	N/A
400 A	200 A	35	T/M	KD	X		2.5	2.5	2.5	2.5	2.5	2.5	2.5	N/A
400 A	200 A	35	T/M	LHH	X		27.0	14.0	1.0	10.0	10.0	10.0	10.0	10.0
400 A	200 – 400 A	35	ETU	KD	X		5.6	5.6	5.2	5.2	5.2	5.2	5.2	5.2
400 A	**300 – 400 A**	**35**	**T/M**	**LHH**	**X**		**65.0**	35.0	18.0	18.0	18.0	18.0	18.0	18.0
400 A	400 A	35	T/M	KD	X		5.6	5.6	5.2	5.2	5.2	5.2	5.2	5.2
600 A	300 A	35	T/M	LD		X	18.0	15.0	10.0	10.0	10.0	10.0	10.0	10.0
600 A	400 A	35	T/M	LD		X	20.0	15.0	10.0	10.0	10.0	10.0	10.0	10.0
600 A	600 A	35	T/M	LD		X	35.0	35.0	18.0	18.0	18.0	18.0	18.0	18.0
600 A	300 – 600 A	35	ETU	LD		X	35.0	35.0	18.0	18.0	18.0	18.0	18.0	18.0
600 A	100 – 250 A	35	ETU	LGE	X		4.6	4.6	4.0	4.0	4.0	4.0	4.0	4.0
600 A	175 – 400 A	35	ETU	LGE	X		20.0	15.0	10.0	10.0	10.0	10.0	10.0	10.0
600 A	250 – 600 A	35	ETU	LGE	X		35.0	35.0	18.0	18.0	18.0	18.0	18.0	18.0
1200 A	**150 – 350 A**	**35**	**ETU**	**ND**		**X**	**65.0**	**65.0**	**65.0**	**65.0**	N/A	N/A	N/A	N/A
1200 A	**400 – 600 A**	**35**	**ETU**	**ND**		**X**	**65.0**	**65.0**	35.0	35.0	35.0	35.0	35.0	35.0

① T/M = Thermal Magnetic Trip. ETU = Electronic Trip Unit.

TABLE 16. 480Y/277 VAC LIGHTING PANELBOARD — CUTLER-HAMMER DESIGNATION PRL3a WITH 65 KAIC FULLY RATED BRANCH BREAKERS

Line Side Main/ Feeder Breaker Frame Size	Line Side Main/ Feeder Breaker Trip Range	Line Side Main/ Feeder Breaker kAIC Rating	Trip Type ②	Eaton Cutler-Hammer Frame Designation/ Type	Location of Line Side Main/ Feeder Breaker		65 kAIC Fully Rated Branch Breaker — Type HFD kAIC Shown Below Each Amperage is the Maximum kAIC which Selectively Coordinates with the Line Side Main or Feeder Breaker							
					Internal or External to Panel	External to Panel Only	15 – 20 A 1, 2 & 3 Pole	30 A 1, 2 & 3 Pole	40 A 1, 2 & 3 Pole	50 – 60 A 1, 2 & 3 Pole	70 A 2 & 3 Pole	80 A 2 & 3 Pole	90 – 100 A 2 & 3 Pole	110 – 225 A 2 & 3 Pole
225 A	100 A	35	T/M	FD	X		1.0	1.0	1.0	N/A	N/A	N/A	N/A	N/A
225 A	150 A	35	T/M	FD	X		1.5	1.5	1.5	N/A	N/A	N/A	N/A	N/A
225 A	225 A	35	T/M	FD	X		1.8	1.8	1.8	1.8	1.8	1.8	1.8	N/A
225 A	100 – 225 A	35	ETU	FDE	X		2.3	2.3	2.3	1.8	1.8	1.8	1.8	N/A
250 A	150 A	35	T/M	JD	X		1.5	1.5	1.5	N/A	N/A	N/A	N/A	N/A
250 A	250 A	35	T/M	JD	X		2.5	2.5	2.5	2.3	2.3	2.3	2.3	N/A
400 A	100 A	35	T/M	KD	X		1.6	1.6	1.6	N/A	N/A	N/A	N/A	N/A
400 A	125 – 150 A	35	T/M	LHH	X		3.2	3.2	3.2	N/A	N/A	N/A	N/A	N/A
400 A	175 – 200 A	35	T/M	LHH	X		10.0	10.0	10.0	10.0	10.0	10.0	10.0	N/A
400 A	125 – 250 A	35	ETU	KD	X		3.2	3.2	3.2	3.2	3.2	3.2	3.2	N/A
400 A	200 A	35	T/M	KD	X		2.5	2.5	2.5	2.3	2.3	2.3	2.3	N/A
400 A	200 – 400 A	35	ETU	KD	X		4.2	4.2	4.2	4.0	4.0	4.0	4.0	4.0
400 A	225 – 400 A	35	T/M	LHH	X		16.0	16.0	16.0	14.0	14.0	14.0	14.0	12.0
400 A	400 A	35	T/M	KD	X		5.0	5.0	5.0	3.2	3.2	3.2	3.2	3.2
600 A	300 A	35	T/M	LD	X		8.3	8.3	8.3	7.0	7.0	7.0	7.0	N/A
600 A	400 A	35	T/M	LD	X		8.3	8.3	8.3	7.0	7.0	7.0	7.0	7.0
600 A	160 – 400 A	35	ETU	LGE	X		8.3	8.3	8.3	7.0	7.0	7.0	7.0	7.0
600 A	300 – 400 A	35	ETU	LD	X		12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
600 A	250 – 400 A	35	ETU	LGE	X		12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
1200 A	400 – 600 A	35	ETU	ND		X	42.0	42.0	42.0	35.0	35.0	35.0	35.0	30.0
1200 A	400 – 800 A	35	ETU	ND		X	42.0	42.0	42.0	35.0	35.0	35.0	35.0	30.0
2000 A	**800 A**	**35**	**ETU**	**RD**		**X**	**65.0**	**65.0**	**65.0**	**65.0**	**65..0**	**65.0**	**65.0**	**65.0**

② T/M = Thermal Magnetic Trip. ETU = Electronic Trip Unit.

Notes: The tables indicate the maximum fault current value expressed in kA for which coordination is ensured. Downstream (branch) breakers' AIC ratings must be sized for the appropriate fault level at the installation point. Short time delay settings or magnetic trip settings must be set to properly coordinate for low level faults.

TABLE 17. 480Y/277 VAC LIGHTING PANELBOARD — CUTLER-HAMMER DESIGNATION PRL4 WITH 35 KAIC FULLY RATED BRANCH BREAKERS

Line Side Main/ Feeder Breaker Frame Size	Line Side Main/ Feeder Breaker Trip Range	Line Side Main/ Feeder Breaker kAIC Rating	Trip Type ①	Eaton Cutler-Hammer Frame Designation/ Type	Location of Line Side Main/ Feeder Breaker: Internal or External to Panel	Location of Line Side Main/ Feeder Breaker: External to Panel Only	35 kAIC Fully Rated Branch Breaker — Type FD kAIC Shown Below Each Amperage is the Maximum kAIC which Selectively Coordinates with the Line Side Main or Feeder Breaker: 15 – 20 A 1, 2 & 3 Pole	30 A 1, 2 & 3 Pole	40 A 1, 2 & 3 Pole	50 – 60 A 1, 2 & 3 Pole	70 A 2 & 3 Pole	80 A 2 & 3 Pole	90 – 100 A 2 & 3 Pole	110 – 225 A 2 & 3 Pole
225 A	100 A	35	T/M	FD	X		1.0	1.0	1.0	N/A	N/A	N/A	N/A	N/A
225 A	150 A	35	T/M	FD	X		1.5	1.5	1.5	N/A	N/A	N/A	N/A	N/A
225 A	225 A	35	T/M	FD	X		1.8	1.8	1.8	1.8	1.8	1.8	1.8	N/A
225 A	100 – 225 A	35	ETU	FDE	X		2.3	2.3	2.3	1.8	1.8	1.8	1.8	N/A
250 A	150 A	35	T/M	JD	X		1.5	1.5	1.5	N/A	N/A	N/A	N/A	N/A
250 A	250 A	35	T/M	JD	X		2.5	2.5	2.5	2.3	2.3	2.3	2.3	N/A
400 A	100 A	35	T/M	KD	X		1.6	1.6	1.6	N/A	N/A	N/A	N/A	N/A
400 A	125 – 150 A	35	T/M	LHH	X		3.2	3.2	3.2	N/A	N/A	N/A	N/A	N/A
400 A	175 – 200 A	35	T/M	LHH	X		10.0	10.0	10.0	10.0	10.0	10.0	10.0	N/A
400 A	125 – 250 A	35	ETU	KD	X		3.2	3.2	3.2	3.2	3.2	3.2	3.2	N/A
400 A	200 A	35	T/M	KD	X		2.5	2.5	2.5	2.3	2.3	2.3	2.3	N/A
400 A	200 – 400 A	35	ETU	KD	X		4.2	4.2	4.2	4.0	4.0	4.0	4.0	4.0
400 A	225 – 400 A	35	T/M	LHH	X		16.0	16.0	16.0	14.0	14.0	14.0	14.0	12.0
400 A	400 A	35	T/M	KD	X		5.0	5.0	5.0	3.2	3.2	3.2	3.2	3.2
600 A	300 A	35	T/M	LD	X		8.3	8.3	8.3	7.0	7.0	7.0	7.0	N/A
600 A	400 A	35	T/M	LD	X		8.3	8.3	8.3	7.0	7.0	7.0	7.0	7.0
600 A	160 – 400 A	35	ETU	LGE	X		8.3	8.3	8.3	7.0	7.0	7.0	7.0	7.0
600 A	300 – 400 A	35	ETU	LD	X		12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
600 A	250 – 400 A	35	ETU	LGE	X		12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
1200 A	**400 A**	**35**	**ETU**	**ND**	**X**		**35.0**	**35.0**	**35.0**	**35.0**	**35.0**	**35.0**	**35.0**	30.0
1200 A	**400 – 800 A**	**35**	**ETU**	**ND**	**X**		**35.0**	**35.0**	**35.0**	**35.0**	**35.0**	**35.0**	**35.0**	30.0
2000 A	**800 – 1200 A**	**35**	**ETU**	**RD**		**X**	**35.0**	**35.0**	**35.0**	**35.0**	**35.0**	**35.0**	**35.0**	**35.0**

① T/M = Thermal Magnetic Trip. ETU = Electronic Trip Unit.

TABLE 18. 480Y/277 VAC LIGHTING PANELBOARD — CUTLER-HAMMER DESIGNATION PRL4 WITH 65 KAIC FULLY RATED BRANCH BREAKERS

Line Side Main/ Feeder Breaker Frame Size	Line Side Main/ Feeder Breaker Trip Range	Line Side Main/ Feeder Breaker kAIC Rating	Trip Type ②	Eaton Cutler-Hammer Frame Designation/ Type	Location of Line Side Main/ Feeder Breaker: Internal or External to Panel	Location of Line Side Main/ Feeder Breaker: External to Panel Only	65 kAIC Fully Rated Branch Breaker — Type HFD kAIC Shown Below Each Amperage is the Maximum kAIC which Selectively Coordinates with the Line Side Main or Feeder Breaker: 15 – 20 A 1, 2 & 3 Pole	30 A 1, 2 & 3 Pole	40 A 1, 2 & 3 Pole	50 – 60 A 1, 2 & 3 Pole	70 A 2 & 3 Pole	80 A 2 & 3 Pole	90 – 100 A 2 & 3 Pole	110 – 225 A 2 & 3 Pole
225 A	100 A	35	T/M	FD	X		1.0	1.0	1.0	N/A	N/A	N/A	N/A	N/A
225 A	150 A	35	T/M	FD	X		1.5	1.5	1.5	N/A	N/A	N/A	N/A	N/A
225 A	225 A	35	T/M	FD	X		1.8	1.8	1.8	1.8	1.8	1.8	1.8	N/A
225 A	100 – 225 A	35	ETU	FDE	X		2.3	2.3	2.3	1.8	1.8	1.8	1.8	N/A
250 A	150 A	35	T/M	JD	X		1.5	1.5	1.5	N/A	N/A	N/A	N/A	N/A
250 A	250 A	35	T/M	JD	X		2.5	2.5	2.5	2.3	2.3	2.3	2.3	N/A
400 A	100 A	35	T/M	KD	X		1.6	1.6	1.6	N/A	N/A	N/A	N/A	N/A
400 A	125 – 150 A	35	T/M	LHH	X		3.2	3.2	3.2	N/A	N/A	N/A	N/A	N/A
400 A	175 – 200 A	35	T/M	LHH	X		10.0	10.0	10.0	10.0	10.0	10.0	10.0	N/A
400 A	125 – 250 A	35	ETU	KD	X		3.2	3.2	3.2	3.2	3.2	3.2	3.2	N/A
400 A	200 A	35	T/M	KD	X		2.5	2.5	2.5	2.3	2.3	2.3	2.3	N/A
400 A	200 – 400 A	35	ETU	KD	X		4.2	4.2	4.2	4.0	4.0	4.0	4.0	4.0
400 A	225 – 400 A	35	T/M	LHH	X		16.0	16.0	16.0	14.0	14.0	14.0	14.0	12.0
400 A	400 A	35	T/M	KD	X		5.0	5.0	5.0	3.2	3.2	3.2	3.2	3.2
600 A	300 A	35	T/M	LD	X		8.3	8.3	8.3	7.0	7.0	7.0	7.0	N/A
600 A	400 A	35	T/M	LD	X		8.3	8.3	8.3	7.0	7.0	7.0	7.0	7.0
600 A	160 – 400 A	35	ETU	LGE	X		8.3	8.3	8.3	7.0	7.0	7.0	7.0	7.0
600 A	300 – 400 A	35	ETU	LD	X		12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
600 A	250 – 400 A	35	ETU	LGE	X		12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
1200 A	400 – 600 A	35	ETU	ND	X		42.0	42.0	42.0	35.0	35.0	35.0	35.0	30.0
1200 A	400 – 800 A	35	ETU	ND	X		42.0	42.0	42.0	35.0	35.0	35.0	35.0	30.0
2000 A	**800 – 1200 A**	**35**	**ETU**	**RD**		**X**	**65.0**	**65.0**	**65.0**	**65.0**	**65.0**	**65.0**	**65.0**	**65.0**

② T/M = Thermal Magnetic Trip. ETU = Electronic Trip Unit.

Notes: The tables indicate the maximum fault current value expressed in kA for which coordination is ensured. Downstream (branch) breakers' AIC ratings must be sized for the appropriate fault level at the installation point. Short time delay settings or magnetic trip settings must be set to properly coordinate for low level faults.

TABLE 19. 240 VAC POWER PANELBOARD — CUTLER-HAMMER DESIGNATION PRL4 THERMAL MAGNETIC BRANCH BREAKERS ①

Line Side Main/ Feeder Breaker Frame Size	Line Side Main/ Feeder Breaker Trip Range	Line Side Main/ Feeder Breaker kAIC Rating @ 240 Vac	Trip Type ②	Eaton Cutler-Hammer Frame Designation/ Type	Location of Line Side Main/ Feeder Breaker		65 kAIC at 240 Vac Fully Rated Branch Breakers Thermal Magnetic Trips. kAIC Shown Below Each Amperage is the Maximum kAIC which Selectively Coordinates with the Line Side Main or Feeder Breaker (Includes 2 & 3 Pole)							
					Internal or External to Panel	External to Panel Only	15 – 40 A Type FD	50 – 100 A Type FD	110 – 225 A Type FD	125 – 250 A Type LCL	70 – 100 A Type KD	125 – 200 A Type KD	225 – 400 A Type KD	250 – 400 A Type LCL
600 A	600 A	65	T/M	LD	X		12.0	12.0	12.0	17.0	10.0	10.0	10.0	17.0
600 A	250 – 600 A	65	ETU	LGE	X		12.0	12.0	12.0	17.0	10.0	10.0	10.0	15.0
1200 A	600 – 1200 A	65	ETU	ND	X		42.0	35.0	30.0	65.0	22.0	18.0	18.0	30.0
2000 A	**800 – 1200 A**	**65**	**ETU**	**RD**		**X**	**65.0**	**65.0**	**65.0**	**65.0**	42.0	40.0	35.0	**65.0**

① Suitable for use on 208Y/120 Vac systems.
② T/M = Thermal Magnetic Trip. ETU = Electronic Trip Unit.

TABLE 20. 240 VAC POWER PANELBOARD — CUTLER-HAMMER DESIGNATION PRL4 THERMAL MAGNETIC BRANCH BREAKERS ③

Line Side Main/ Feeder Breaker Frame Size	Line Side Main/ Feeder Breaker Trip Range	Line Side Main/ Feeder Breaker kAIC Rating @ 240 Vac	Trip Type ④	Eaton Cutler-Hammer Frame Designation/ Type	Location of Line Side Main/ Feeder Breaker		65 kAIC @ 240 Vac Fully Rated Branch Breakers Thermal Magnetic Trips. kAIC Shown Below Each Amperage is the Maximum kAIC which Selectively Coordinates with the Line Side Main or Feeder Breaker (Includes 2 & 3 Pole)			
					Internal or External to Panel	External to Panel Only	300 A Type LD	400 A Type LD	600 A Type LD	400 – 600 A Type ND ⑤
1200 A	600 – 1200 A	65	ETU	ND	X		18.0	18.0	18.0	12.0
2000 A	800 – 1200 A	65	ETU	RD		X	25.0	22.0	20.0	16.0

③ Suitable for use on 208Y/120 Vac systems.
④ T/M = Thermal Magnetic Trip. ETU = Electronic Trip Unit.
⑤ Electronic trip unit only.

TABLE 21. 240 VAC POWER PANELBOARD — CUTLER-HAMMER DESIGNATION PRL4 ELECTRONIC TRIP UNIT BRANCH BREAKERS ⑥

Line Side Main/ Feeder Breaker Frame Size	Line Side Main/ Feeder Breaker Trip Range	Line Side Main/ Feeder Breaker kAIC Rating @ 240 Vac	Trip Type ⑦	Eaton Cutler-Hammer Frame Designation/ Type	Location of Line Side Main/ Feeder Breaker		65 kAIC @ 240 Vac Fully Rated Branch Breakers Electronic Trip Units. kAIC Shown Below Each Amperage is the Maximum kAIC which Selectively Coordinates with the Line Side Main or Feeder Breaker (Includes 2 & 3 Pole)							
					Internal or External to Panel	External to Panel Only	15 – 40 A Type FDE	50 – 100 A Type FDE	110 – 225 A Type FDE	70 – 100 A Type KD	125 – 200 A Type KD	225 – 400 A Type KD	250 – 400 A Type LGE	450 – 600 A Type LGE
600 A	600 A	65	T/M	LD	X		12.0	12.0	12.0	10.0	10.0	10.0	6.0	6.0
600 A	250 – 600 A	65	ETU	LGE	X		12.0	12.0	12.0	10.0	10.0	10.0	6.0	6.0
1200 A	600 – 1200 A	65	ETU	ND	X		42.0	35.0	30.0	22.0	18.0	18.0	18.0	18.0
2000 A	**800 – 1200 A**	**65**	**ETU**	**RD**		**X**	**65.0**	**65.0**	**65.0**	42.0	40.0	35.0	22.0	20.0

⑥ Suitable for use on 208Y/120 Vac systems.
⑦ T/M = Thermal Magnetic Trip. ETU = Electronic Trip Unit.

TABLE 22. 240 VAC POWER PANELBOARD — CUTLER-HAMMER DESIGNATION PRL4 THERMAL MAGNETIC BRANCH BREAKERS ⑧

Line Side Main/ Feeder Breaker Frame Size	Line Side Main/ Feeder Breaker Trip Range	Line Side Main/ Feeder Breaker kAIC Rating @ 240 Vac	Trip Type ⑨	Eaton Cutler-Hammer Frame Designation/ Type	Location of Line Side Main/ Feeder Breaker		100 kAIC @ 240 Vac Fully Rated Branch Breakers Thermal Magnetic Trips. kAIC Shown Below Each Amperage is the Maximum kAIC which Selectively Coordinates with the Line Side Main or Feeder Breaker (Includes 2 & 3 Pole)							
					Internal or External to Panel	External to Panel Only	15 – 40 A Type HFD	50 – 100 A Type HFD	110 – 225 A Type HFD	125 – 250 A Type LCL	70 – 100 A Type HKD	125 – 200 A Type HKD	225 – 400 A Type HKD	250 – 400 A Type LCL
600 A	600 A	65	T/M	HLD	X		12.0	12.0	12.0	17.0	10.0	10.0	10.0	17.0
600 A	250 – 600 A	65	ETU	LGH	X		12.0	12.0	12.0	17.0	10.0	10.0	10.0	15.0
1200 A	600 – 1200 A	65	ETU	HND	X		42.0	35.0	30.0	65.0	22.0	18.0	18.0	30.0
2000 A	800 – 1200 A	65	ETU	RD		X	65.0	65.0	65.0	65.0	42.0	40.0	35.0	65.0

⑧ Suitable for use on 208Y/120 Vac systems.
⑨ T/M = Thermal Magnetic Trip. ETU = Electronic Trip Unit.

Notes: The tables indicate the maximum fault current value expressed in kA for which coordination is ensured. Downstream (branch) breakers' AIC ratings must be sized for the appropriate fault level at the installation point. Short time delay settings or magnetic trip settings must be set to properly coordinate for low level faults.

TABLE 23. 240 VAC POWER PANELBOARD — CUTLER-HAMMER DESIGNATION PRL4 THERMAL MAGNETIC BRANCH BREAKERS ①

Line Side Main/ Feeder Breaker Frame Size	Line Side Main/ Feeder Breaker Trip Range	Line Side Main/ Feeder Breaker kAIC Rating @ 240 Vac	Trip Type ②	Eaton Cutler-Hammer Frame Designation/ Type	Location of Line Side Main/ Feeder Breaker		100 kAIC @ 240 Vac Fully Rated Branch Breakers Thermal Magnetic Trips. kAIC Shown Below Each Amperage is the Maximum kAIC which Selectively Coordinates with the Line Side Main or Feeder Breaker (Includes 2 & 3 Pole)			
					Internal or External to Panel	External to Panel Only	300 A Type HLD	400 A Type HLD	600 A Type HLD	400 – 600 A Type HND ③
1200 A	600 – 1200 A	65	ETU	HND	X		18.0	18.0	18.0	12.0
2000 A	800 – 1200 A	65	ETU	RD		X	25.0	22.0	20.0	16.0

① Suitable for use on 208Y/120 Vac systems.
② T/M = Thermal Magnetic Trip. ETU = Electronic Trip Unit.
③ Electronic trip unit only.

TABLE 24. 240 VAC POWER PANELBOARD — CUTLER-HAMMER DESIGNATION PRL4 ELECTRONIC TRIP UNIT BRANCH BREAKERS ④

Line Side Main/ Feeder Breaker Frame Size	Line Side Main/ Feeder Breaker Trip Range	Line Side Main/ Feeder Breaker kAIC Rating @ 240 Vac	Trip Type ⑤	Eaton Cutler-Hammer Frame Designation/ Type	Location of Line Side Main/ Feeder Breaker		100 kAIC @ 240 Vac Fully Rated Branch Breakers Electronic Trip Units. kAIC Shown Below Each Amperage is the Maximum kAIC which Selectively Coordinates with the Line Side Main or Feeder Breaker (Includes 2 & 3 Pole)							
					Internal or External to Panel	External to Panel Only	15 – 40 A Type HFDE	50 – 100 A Type HFDE	110 – 225 A Type HFDE	70 – 100 A Type HKD	125 – 200 A Type HKD	225 – 400 A Type HKD	250 – 400 A Type LGH	450 - 600 A Type LGH
600 A	600 A	65	T/M	HLD	X		12.0	12.0	12.0	10.0	10.0	10.0	6.0	6.0
600 A	250 – 600 A	65	ETU	LGH	X		12.0	12.0	12.0	10.0	10.0	10.0	6.0	6.0
1200 A	600 – 1200 A	65	ETU	HND	X		42.0	35.0	30.0	22.0	18.0	18.0	18.0	18.0
2000 A	800 – 1200 A	65	ETU	RD		X	65.0	65.0	65.0	42.0	40.0	35.0	22.0	20.0

④ Suitable for use on 208Y/120 Vac systems.
⑤ T/M = Thermal Magnetic Trip. ETU = Electronic Trip Unit.

TABLE 25. 480 VAC POWER PANELBOARD — CUTLER-HAMMER DESIGNATION PRL4 THERMAL MAGNETIC BRANCH BREAKERS ⑥

Line Side Main/ Feeder Breaker Frame Size	Line Side Main/ Feeder Breaker Trip Range	Line Side Main/ Feeder Breaker kAIC Rating @ 480Vac	Trip Type ⑦	Eaton Cutler-Hammer Frame Designation/ Type	Location of Line Side Main/ Feeder Breaker		35 kAIC @ 480 Vac Fully Rated Branch Breakers Thermal Magnetic Trips. kAIC Shown Below Each Amperage is the Maximum kAIC which Selectively Coordinates with the Line Side Main or Feeder Breaker (Includes 2 & 3 Pole)							
					Internal or External to Panel	External to Panel Only	15 – 40 A Type FD	50 – 100 A Type FD	110 – 225 A Type FD	125 – 250 A Type LCL	70 – 100 A Type KD	125 – 200 A Type KD	225 – 400 A Type KD	250 – 400 A Type LCL
600 A	600 A	35	T/M	LD	X		12.0	12.0	12.0	17.0	10.0	10.0	10.0	17.0
600 A	250 – 600 A	35	ETU	LGE	X		12.0	12.0	12.0	17.0	10.0	10.0	10.0	15.0
1200 A	**600 – 1200 A**	**35**	**ETU**	**ND**	**X**		**35.0**	**35.0**	30.0	**35.0**	22.0	18.0	18.0	30.0
2000 A	**800 – 1200 A**	**35**	**ETU**	**RD**		**X**	**35.0**	**35.0**	**35.0**	**35.0**	**35.0**	**35.0**	**35.0**	**35.0**

⑥ Suitable for use on 480Y/277 Vac systems.
⑦ T/M = Thermal Magnetic Trip. ETU = Electronic Trip Unit.

TABLE 26. 480 VAC POWER PANELBOARD — CUTLER-HAMMER DESIGNATION PRL4 THERMAL MAGNETIC BRANCH BREAKERS ⑧

Line Side Main/ Feeder Breaker Frame Size	Line Side Main/ Feeder Breaker Trip Range	Line Side Main/ Feeder Breaker kAIC Rating @ 480 Vac	Trip Type ⑨	Eaton Cutler-Hammer Frame Designation/ Type	Location of Line Side Main/ Feeder Breaker		35 kAIC @ 480 Vac Fully Rated Branch Breakers Thermal Magnetic Trips. kAIC Shown Below Each Amperage is the Maximum kAIC which Selectively Coordinates with the Line Side Main or Feeder Breaker (Includes 2 & 3 Pole)			
					Internal or External to Panel	External to Panel Only	300 A Type LD	400 A Type LD	600 A Type LD	400 – 600 A Type ND ⑩
1200 A	600 – 1200 A	35	ETU	ND	X		18.0	18.0	18.0	12.0
2000 A	800 – 1200 A	35	ETU	RD		X	25.0	22.0	20.0	16.0

⑧ Suitable for use on 480Y/277 Vac systems.
⑨ T/M = Thermal Magnetic Trip. ETU = Electronic Trip Unit.
⑩ Electronic trip unit only.

Notes: The tables indicate the maximum fault current value expressed in kA for which coordination is ensured. Downstream (branch) breakers' AIC ratings must be sized for the appropriate fault level at the installation point. Short time delay settings or magnetic trip settings must be set to properly coordinate for low level faults.

TABLE 27. 480 VAC POWER PANELBOARD — CUTLER-HAMMER DESIGNATION PRL4 ELECTRONIC TRIP UNIT BRANCH BREAKERS ①

Line Side Main/ Feeder Breaker Frame Size	Line Side Main/ Feeder Breaker Trip Range	Line Side Main/ Feeder Breaker kAIC Rating @ 480Vac	Trip Type ②	Eaton Cutler-Hammer Frame Designation/ Type	Location of Line Side Main/ Feeder Breaker		35 kAIC @ 480 Vac Fully Rated Branch Breakers Electronic Trip Units. kAIC Shown Below Each Amperage is the Maximum kAIC which Selectively Coordinates with the Line Side Main or Feeder Breaker (Includes 2 & 3 Pole)							
					Internal or External to Panel	External to Panel Only	15 – 40 A Type FDE	50 – 100 A Type FDE	110 – 225 A Type FDE	70 – 100 A Type KD	125 – 200 A Type KD	225 – 400 A Type KD	250 – 400 A Type LGE	450 – 600 A Type LGE
600 A	600 A	35	T/M	LD	X		12.0	12.0	12.0	10.0	10.0	10.0	6.0	6.0
600 A	250 – 600 A	35	ETU	LGE	X		12.0	12.0	12.0	10.0	10.0	10.0	6.0	6.0
1200 A	**600 – 1200 A**	**35**	**ETU**	**ND**	**X**		**35.0**	**35.0**	30.0	22.0	18.0	18.0	18.0	18.0
2000 A	**800 – 1200 A**	**35**	**ETU**	**RD**		**X**	**35.0**	**35.0**	**35.0**	**35.0**	**35.0**	**35.0**	22.0	20.0

① Suitable for use on 480Y/277 Vac systems.
② T/M = Thermal Magnetic Trip. ETU = Electronic Trip Unit.

TABLE 28. 480 VAC POWER PANELBOARD — CUTLER-HAMMER DESIGNATION PRL4 THERMAL MAGNETIC BRANCH BREAKERS ③

Line Side Main/ Feeder Breaker Frame Size	Line Side Main/ Feeder Breaker Trip Range	Line Side Main/ Feeder Breaker kAIC Rating @ 480 Vac	Trip Type ④	Eaton Cutler-Hammer Frame Designation/ Type	Location of Line Side Main/ Feeder Breaker		65 kAIC @ 480 Vac Fully Rated Branch Breakers Thermal Magnetic Trips. kAIC Shown Below Each Amperage is the Maximum kAIC which Selectively Coordinates with the Line Side Main or Feeder Breaker (Includes 2 & 3 Pole)							
					Internal or External to Panel	External to Panel Only	15 – 40 A Type HFD	50 – 100 A Type HFD	110 – 225 A Type HFD	125 – 250 A Type LCL	70 – 100 A Type HKD	125 – 200 A Type HKD	225 – 400 A Type HKD	250 – 400 A Type LCL
600 A	600 A	35	T/M	HLD	X		12.0	12.0	12.0	17.0	10.0	10.0	10.0	17.0
600 A	250 – 600 A	35	ETU	LGH	X		12.0	12.0	12.0	17.0	10.0	10.0	10.0	15.0
1200 A	600 – 1200 A	35	ETU	HND	X		42.0	35.0	30.0	65.0	22.0	18.0	18.0	30.0
2000 A	**800 – 1200 A**	**35**	**ETU**	**RD**		**X**	**65.0**	**65.0**	**65.0**	**65.0**	42.0	40.0	35.0	**65.0**

③ Suitable for use on 480Y/277 Vac systems.
④ T/M = Thermal Magnetic Trip. ETU = Electronic Trip Unit.

TABLE 29. 480 VAC POWER PANELBOARD — CUTLER-HAMMER DESIGNATION PRL4 THERMAL MAGNETIC BRANCH BREAKERS ⑤

Line Side Main/ Feeder Breaker Frame Size	Line Side Main/ Feeder Breaker Trip Range	Line Side Main/ Feeder Breaker kAIC Rating @ 480 Vac	Trip Type ⑥	Eaton Cutler-Hammer Frame Designation/ Type	Location of Line Side Main/ Feeder Breaker		65 kAIC @ 480 Vac Fully Rated Branch Breakers Thermal Magnetic Trips. kAIC Shown Below Each Amperage is the Maximum kAIC which Selectively Coordinates with the Line Side Main or Feeder Breaker (Includes 2 & 3 Pole)			
					Internal or External to Panel	External to Panel Only	300 A Type HLD	400 A Type HLD	600 A Type HLD	400 – 600 A Type HND ⑦
1200 A	600 – 1200 A	35	ETU	HND	X		18.0	18.0	18.0	12.0
2000 A	800 – 1200 A	35	ETU	RD		X	25.0	22.0	20.0	16.0

⑤ Suitable for use on 480Y/277 Vac systems.
⑥ T/M = Thermal Magnetic Trip. ETU = Electronic Trip Unit.
⑦ Electronic trip unit only.

TABLE 30. 480 VAC POWER PANELBOARD — CUTLER-HAMMER DESIGNATION PRL4 ELECTRONIC TRIP UNIT BRANCH BREAKERS ⑧

Line Side Main/ Feeder Breaker Frame Size	Line Side Main/ Feeder Breaker Trip Range	Line Side Main/ Feeder Breaker kAIC Rating @ 480 Vac	Trip Type ⑨	Eaton Cutler-Hammer Frame Designation/ Type	Location of Line Side Main/ Feeder Breaker		65 kAIC @ 480 Vac Fully Rated Branch Breakers Electronic Trip Units. kAIC Shown Below Each Amperage is the Maximum kAIC which Selectively Coordinates with the Line Side Main or Feeder Breaker (Includes 2 & 3 Pole)							
					Internal or External to Panel	External to Panel Only	15 – 40 A Type HFDE	50 – 100 A Type HFDE	110 – 225 A Type HFDE	70 – 100 A Type HKD	125 – 200 A Type HKD	225 – 400 A Type HKD	250 – 400 A Type LGH	450 – 600 A Type LGH
600 A	600 A	35	T/M	HLD	X		12.0	12.0	12.0	10.0	10.0	10.0	6.0	6.0
600 A	250 – 600 A	35	ETU	LGH	X		12.0	12.0	12.0	10.0	10.0	10.0	6.0	6.0
1200 A	600 – 1200 A	35	ETU	HND	X		42.0	35.0	30.0	22.0	18.0	18.0	18.0	18.0
2000 A	**800 – 1200 A**	**35**	**ETU**	**RD**		**X**	**65.0**	**65.0**	**65.0**	42.0	40.0	35.0	22.0	20.0

⑧ Suitable for use on 480Y/277 Vac systems.
⑨ T/M = Thermal Magnetic Trip. ETU = Electronic Trip Unit.

Notes: The tables indicate the maximum fault current value expressed in kA for which coordination is ensured. Downstream (branch) breakers' AIC ratings must be sized for the appropriate fault level at the installation point. Short time delay settings or magnetic trip settings must be set to properly coordinate for low level faults.

Prospective Short Circuit Current for General Purpose Dry-Type Transformers

Introduction

Tables B1 – **B3** and **Tables C1** – **C3** provide the prospective short circuit current or let-through values at the secondary windings for many of the popular Cutler-Hammer 3-phase dry-type distribution transformers. **Tables B1** – **B3** provide data for transformers with aluminum windings and **Tables C1** – **C3** show data for transformers with copper windings. These tables are intended as a guide to provide an estimate of maximum short circuit current available on the transformer secondary for use in the selection of transformer secondary overcurrent devices applied in selective coordination applications.

Each table contains listings for various ventilated transformer types. All transformers conform to NEMA® TP-1 standards. These tables include 150ºC, 115ºC and 80ºC rise units for standard (K-1) transformers, K-4 and K-13 transformers.

Secondary Transformer Let-Through

The prospective secondary short circuit current or let-through values were calculated based on an unlimited fault current at the primary windings of the transformer and a bolted 3-phase fault at the secondary of the transformer.

Assuming a 112.5 kVA transformer with an unlimited short circuit current at the primary windings, a secondary voltage of 208Y/120 Vac and 5.0% impedance, the following formula was utilized:

Solve for transformer full load amperes:

$$I_{fla} = \frac{kVA \times 1000}{E_{L\text{-}L} \times 1.732} = \frac{112.5 \times 1000}{208 \times 1.732} = \frac{112,500}{360.26} = 312.27$$

Solve for transformer multiplier

$$\text{Multiplier} = \frac{100}{\%Z_{trans}} = \frac{100}{5.0\%} = 20.00$$

Multiply transformer full load amperes times the transformer multiplier for short circuit current (let-through current) at the secondary windings of the transformer.

$$I_{S.C.} = I_{I.I.} \times \text{Multiplier} = 312.27 \times 20.00 = 6245$$

In this example, the prospective short circuit current (let-through current) at the secondary of the transformer is 6245 amperes. This same formula was applied to all calculations in the tables utilizing the indicated Eaton standard impedances. Tables reflect calculations in whole numbers. Calculations and table data may vary slightly due to rounding. These variations are insignificant.

Other Factors Impacting Short Circuit Current

Other characteristics of the installation can impact the let-through values.

An unlimited prospective fault current on the primary of the transformer is very unlikely. Incorporating a lower available fault current into the calculation will reduce the let-through values at the secondary windings of the transformer.

Wire from the secondary of the transformer to the first overcurrent protective device (OCPD) will add impedance to the circuit. The impedance of the conductors will lower the available fault current at that OCPD from what is shown in the tables. The level of reduction will vary depending on the wire type, raceway type-metallic or non-metallic, conductor size and length.

Motors on the secondary of the transformer are additive to the prospective fault current. Depending on the number and the combined inrush of these motors, this can raise the level of the prospective short circuit current through a generative effect. When motor loads are present these will have additive effect on the available fault current.

Eaton has developed a fault current calculator which allows the user to input application specific data for primary fault current levels, wire specifics and motor contribution. Microsoft® Excel® is required to use the calculator. This calculator is located at Eaton.com. The following is a link to the calculator:

http://www.eaton.com/EatonCom/Markets/Electrical/Tools/Calculators/index.htm. Simply click on the Selective Coordination Calculator from the right-hand column from "On Line Calculators" to access.

How to Use the Tables

Determine the transformer winding material. Then select either **Tables B1** – **B3** for aluminum wound transformers or **Tables C1** – **C3** for copper wound transformers.

From the appropriate table, select the transformer "Type" from the first column to determine the correct sub-table. Once found, select the transformer kVA and the corresponding Secondary Let-Through AIC (rms) from the right column. Transformer impedance is shown for reference only and is subject to change depending on changing manufacturing designs, methods and materials.

General Purpose Ventilated Energy Efficient NEMA TP-1 Dry-Type Transformers — Aluminum Windings

480 Vac:208Y/120 Vac, 3-phase dry-type transformer secondary let-through values (Fault Current) for selected types and calculated using an unlimited fault current at the primary windings of each transformer. (—) indicates that the data was not available at time of printing. Contact Eaton.

TABLE B1. TYPE 3-PHASE VENTILATED 150°C RISE

NEMA K-1 DT-3			NEMA TP-1 K-4			NEMA TP-1 K-13		
kVA	% Z Impedance	Secondary Let-Through AIC (RMS)	kVA	% Z Impedance	Secondary Let-Through AIC (RMS)	kVA	% Z Impedance	Secondary Let-Through AIC (RMS)
15	4.8	867	15	5.5	757	15	3.6	1157
30	4.5	1851	30	6.0	1388	30	3.5	2378
45	5.2	2402	45	4.8	2602	45	3.3	3785
75	5.0	4164	75	5.4	3855	75	4.5	4626
112.5	6.0	5205	112.5	6.0	5205	112.5	4.4	7097
150	4.9	8497	150	5.4	7711	150	4.6	9055
225	5.0	12,491	225	6.3	9914	225	6.1	10,239
300	5.1	16,328	300	6.0	13,879	300	6.2	13,431
500	7.7	18,025	500	5.4	25,702	500	5.5	25,235
750	8.0	26,023	N/A	N/A	N/A	N/A	N/A	N/A

TABLE B2. TYPE 3-PHASE VENTILATED 115°C RISE

NEMA TP-1 K-1			NEMA TP-1 K-4			NEMA TP-1 K-13		
kVA	% Z Impedance	Secondary Let-Through AIC (RMS)	kVA	% Z Impedance	Secondary Let-Through AIC (RMS)	kVA	% Z Impedance	Secondary Let-Through AIC (RMS)
15	4.4	833	15	4.3	968	15	2.8	1487
30	4.8	1735	30	4.6	1810	30	2.8	2974
45	4.6	2715	45	5.2	2402	45	3.5	3569
75	5.5	3785	75	5.4	3855	75	4.8	4337
112.5	5.6	5576	112.5	4.3	7262	112.5	3.9	8007
150	5.1	8164	150	5.7	7305	150	4.4	9463
225	6.6	9463	225	7.0	8922	225	5.1	12,246
300	5.3	15,712	300	6.3	13,218	300	6.1	13,651
500	6.6	21,029	500	5.5	25,235	N/A	N/A	N/A

TABLE B3. TYPE 3-PHASE VENTILATED 80°C RISE

NEMA TP-1 K-1			NEMA TP-1 K-4			NEMA TP-1 K-13		
kVA	% Z Impedance	Secondary Let-Through AIC (RMS)	kVA	% Z Impedance	Secondary Let-Through AIC (RMS)	kVA	% Z Impedance	Secondary Let-Through AIC (RMS)
15	3.1	1343	15	2.6	1601	15	—	—
30	3.4	2449	30	3.5	2379	30	3.6	2313
45	3.3	3785	45	3.4	3474	45	2.5	4996
75	4.3	4842	75	—	—	75	2.8	7435
112.5	4.2	7435	112.5	—	—	112.5	4.1	7617
150	4.8	8674	150	—	—	150	3.6	11,566
225	5.5	11,356	225	—	—	225	6.3	9914
300	6.1	13,651	300	—	—	300	4.5	18,505
500	5.3	26,187	N/A	N/A	N/A	N/A	N/A	N/A

General Purpose Ventilated Energy Efficient NEMA TP-1 Dry-Type Transformers — Copper Windings

480 Vac:208Y/120 Vac, 3-phase dry-type transformer secondary let-through values (Fault Current) for selected types and calculated using an unlimited fault current at the primary windings of each transformer. (—) indicates that the data was not available at time of printing. Contact Eaton.

TABLE C1. TYPE 3-PHASE VENTILATED 150°C RISE

NEMA TP-1 K-1			NEMA TP-1 K4			NEMA TP-1 K13		
kVA	% Z Impedance	Secondary Let-Through AIC (RMS)	kVA	% Z Impedance	Secondary Let-Through AIC (RMS)	kVA	% Z Impedance	Secondary Let-Through AIC (RMS)
15	4.8	867	15	4.9	850	15	2.5	1665
30	5.2	1601	30	4.3	1937	30	3.3	2523
45	4.8	2602	45	5.0	2498	45	3.0	4164
75	6.5	3358	75	5.9	3529	75	4.7	4429
112.5	5.2	6005	112.5	5.6	5576	112.5	4.8	6506
150	4.5	9253	150	5.1	8164	150	7.5	5552
225	7.8	8007	225	6.2	10,073	225	3.8	16,436
300	5.7	14,609	300	5.2	16,014	300	3.8	17,349
500	6.8	20,410	500	N/A	N/A	500	N/A	N/A
750	7.3	28,519	N/A	N/A	N/A	N/A	N/A	N/A

TABLE C2. TYPE 3-PHASE VENTILATED 115°C RISE

NEMA TP-1 K1			NEMA TP-1 K4			NEMA TP-1 K13		
kVA	% Z Impedance	Secondary Let-Through AIC (RMS)	kVA	% Z Impedance	Secondary Let-Through AIC (RMS)	kVA	% Z Impedance	Secondary Let-Through AIC (RMS)
15	4.8	867	15	5.0	833	15	2.1	1983
30	6.0	1388	30	4.2	1983	30	3.1	2686
45	4.4	2839	45	4.2	2974	45	4.1	3047
75	4.9	4249	75	5.9	3529	75	—	—
112.5	5.2	6005	112.5	3.8	8218	112.5	3.8	8218
150	4.4	9463	150	4.5	9253	150	3.8	10,957
225	8.3	7525	225	5.3	11,784	225	5.8	10,768
300	5.2	16,014	300	4.7	17,718	300	6.4	13,012
500	6.9	20,115	500	N/A	N/A	N/A	N/A	N/A

TABLE C3. TYPE 3-PHASE VENTILATED 80°C RISE

NEMA TP-1 K1			NEMA TP-1 K4			NEMA TP-1 K13		
kVA	% Z Impedance	Secondary Let-Through AIC (RMS)	kVA	% Z Impedance	Secondary Let-Through AIC (RMS)	kVA	% Z Impedance	Secondary Let-Through AIC (RMS)
15	2.2	1893	15	—	—	15	3.0	1388
30	3.0	2776	30	2.9	2872	30	2.8	2974
45	4.1	3047	45	3.0	4164	45	3.5	3569
75	4.3	4842	75	4.9	4249	75	2.6	8007
112.5	3.3	9463	112.5	—	—	112.5	4.3	7262
150	3.7	11,253	150	6.4	6506	150	4.0	10,409
225	4.0	15,614	225	—	—	225	2.9	21,536
300	6.1	13,651	300	6.3	13,218	300	4.5	18,505
500	5.2	26,690	N/A	N/A	N/A	N/A	N/A	N/A

Notes

Notes

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