



Selective coordination with fuses and circuit breakers

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Introduction

Selective coordination helps assure that only the nearest upstream overcurrent protective device will open during an overcurrent event. Overcurrent events can be an overload, or a short-circuit.

Regardless of the specific overcurrent event, a building’s electrical system main, feeder and branch circuits need to have properly specified and applied overcurrent protective devices to make selective coordination work.

Selecting and specifying the right overcurrent protective devices can be an intricate task requiring the comparison of system device time-current curves under differing opening conditions. This task can be simplified by selecting overcurrent protective devices off a chart.

This application note is designed to acquaint the reader with the selective coordination options of an all fused electrical system and a system using Bussmann® series fuses and upstream Eaton circuit breakers.

The tables are based on test results for the devices specified. By using the devices, whether fuse to fuse, or fuse to upstream circuit breaker, these tables allow for greater flexibility in designing a selectively coordinated electrical system.

For specific questions, please call our Applications Engineers at 1-855-BUSSMANN (1-855-287-7626)

Selective coordination using fuses

Adhering to published fuse selectivity ratios makes it easy to design and install a selectively coordinated fusible system. In the *Selectivity Ratio Guide* below, the top horizontal axis shows loadside fuses and the left vertical axis shows lineside fuses covering selectivity ratios for all levels of overcurrents up to the fuse interrupting ratings or 200kA, whichever is lower.

These ratios are valid for all overcurrents and opening times. The designer just needs to specify the proper amp ratings.

There is no need to plot time-current curves or do a short-circuit current analysis to determine selective coordination (if the available short-circuit current is equal to or less than 200kA or the interrupting rating of the fuses, whichever is less).

To assure selective coordination, just make sure the fuses and amp rating ratios for the mains, feeders and branch circuits meet or exceed the applicable selectivity ratios in Table 1.

If the ratios are not satisfied, then the designer should investigate another fuse type or design change.

Table 1. Selectivity ratio guide (upstream/lineside to downstream/loadside)¹

Circuit				Downstream / loadside fuse											
Amp rating range	Fuse type	Trade name (fuse class)	Bussmann fuse symbol	601-6000A	601-4000A	1-100A	0-600A			601-6000A	0-600A	0-1200A	0-600A	0-60A	0-30A
				Time-delay	Time-delay	Time-delay	Dual-element, time-delay			Fast-acting	Fast-acting	Fast-acting	Fast-acting	Time-delay	
				Low-Peak (L)	Limitron (L)	CUBEFuse (CF)	Low-Peak (J)	Low-Peak (RK1)	Fusetron (RK5)	Limitron (L)	Limitron (RK1)	Limitron (T)	Limitron (J)	SC (G)	(CC)
				KRP-C_SP	KLU	TCF	LPJ-SP	LPN-RK_SP LPS-RK_SP	FRN-R FRS-R	KTU	KTN-R KTS-R	JJN JJS	JKS	SC	LP-CC FNO-R KTK-R
601 to 6000A	Time-delay	Low-Peak (L)	KRP-C_SP	2:1	2.5:1	2:1	2:1	2:1	—	—	—	—	—	—	2:1
601 to 4000A	Time-delay	Limitron (L)	KLU	2:1	2:1	2:1	2:1	2:1	4:1	2:1	2:1	2:1	2:1	2:1	2:1
0 to 600A	Dual-element	Low-Peak (RK1)	LPN-RK_SP LPS-RK_SP	—	—	2:1	2:1	2:1	8:1	—	3:1	3:1	3:1	4:1	2:1
0 to 600A	Dual-element	Low-Peak (J)	LPJ-SP	—	—	2:1	2:1	2:1	8:1	—	3:1	3:1	3:1	4:1	2:1
0 to 100A	Dual-element	CUBEFuse (CF)	TCF	—	—	2:1	2:1	2:1	8:1	—	3:1	3:1	3:1	4:1	2:1
0 to 600A	Dual-element	Fusetron (RK5)	FRN-R FRS-R	—	—	1.5:1	1.5:1	1.5:1	2:1	—	1.5:1	1.5:1	1.5:1	1.5:1	2:1
601 to 6000A	Fast-acting	Limitron (L)	KTU	2:1	2.5:1	3:1	3:1	3:1	6:1	2:1	2:1	2:1	2:1	2:1	2:1
0 to 600A	Fast-acting	Limitron (RK1)	KTN-R KTS-R	—	—	3:1	3:1	3:1	8:1	—	3:1	3:1	3:1	4:1	—
0 to 1200A	Fast-acting	Limitron (T)	JJN JJS	—	—	3:1	3:1	3:1	8:1	—	3:1	3:1	3:1	4:1	—
0 to 600A	Fast-acting	Limitron (J)	JKS	—	—	3:1	3:1	3:1	8:1	—	3:1	3:1	3:1	4:1	—
0 to 60A	Time-delay	SC (G)	SC	—	—	3:1	3:1	3:1	4:1	—	2:1	2:1	2:1	2:1	—

General notes: Ratios given in this table apply to only Bussmann series fuses. When fuses are within the same case size, consult Bussmann Division.

1. Where applicable, ratios are valid for indicating and non-indicating versions of the same fuse. At some values of fault current, specified ratios may be lowered to permit closer fuse sizing. Consult Bussmann Division.

Selective coordination using upstream Eaton circuit breakers

The tables on pages 4 to 7 show the upstream/lineside Eaton thermal magnetic circuit breakers that have been tested to selectively coordinate with downstream/loadside time-delay or fast-acting CUBEFuses® up through the interrupting rating of the lineside circuit breaker.

Coordination tables are presented for 240Vac, 480Vac and 600Vac systems covering the tested breaker frame, family and the minimum and maximum amp ratings. The available Eaton Pow-R-Line panels for which those circuit breakers can be applied are also presented.

Test results are also summarized in “quick-pick” tables that are limited to system voltage, circuit breaker frame, family and maximum and minimum amp rating.

Using the coordination tables (Tables 6-11)

To use the MCCB/CUBEFuse Selective Coordination Combination tables, available fault current to which selective coordination must be achieved and system voltage must be known. With this information, perform the following:

Use the system voltage to determine the applicable table

- Locate the desired downstream CUBEFuse ampacity in the lower left hand column and read across the row for those values greater than the available fault current.
- Each column where the value exceeds the available fault current presents a possible upstream circuit breaker solution that will selectively coordinate to the maximum available fault current available.
- From the top section of the table, where the table kA exceeds the available fault current, locate the desired upstream Eaton circuit breaker frame and family with a minimum amp setting less than or equal to that which will protect the feeder circuit conductor
- The circuit breaker and the fuse will selectively coordinate for all values of overloads and short-circuits up to the values shown (kA).

Using the quick-pick tables (Tables 3-5)

The “quick-pick” tables present the same information as the coordination tables, only they omit the Pow-R-Line panel and QSCP information. They simply present solutions for the same system voltages and circuit breakers/amp ratings along with the permissible CUBEFuse ampacity. If you want to quickly determine if an upstream circuit breaker and the ampacity of a downstream CUBEFuse will selectively coordinate, start with these tables.

Notes on the QSCP

The QSCP is a highly configurable fusible panelboard that can be installed on systems up to 600Vac, three-phase.

The QSCP can be ordered with high 200kA or standard 50kA assembly SCCRs:

- Panel ratings of 30, 60, 100, 200 and 400 amps
- Three main options
 - MLO
 - Non-fused switch
 - Fused switch
- 1-, 2- or 3-pole branch circuit disconnects

NOTE: For purposes of this guide, only the MLO, non-fused main switch and 30, 60 and 100 amp main switch options are covered by the upstream circuit breaker coordination tables.

The 30, 60 and 100 amp main fused switch options use the Bussmann Compact Circuit Protector (CCP).

The branch circuit disconnect switches are the Bussmann Compact Circuit Protector Base (CCPB).

Both the CCP and CCPB are ampacity rejecting and will hold any time-delay or fast-acting CUBEFuse up to their amp rating. CUBEFuses with an amp rating greater than the switch cannot be installed.

When determining which 30, 60 or 100A fused main switch to select, size the switch to the lowest rating possible with the desired CUBEFuse ampacity. E.g., in a 240V system, if you want to selectively coordinate the GHB 100, the largest CUBEFuse that can be applied is 50 amps. This 50 amp CUBEFuse must be installed in a CCP greater than 30A. This would be the 60 or 100A CCP.

When working with MLO or non-fused main disconnect switch versions of the QSCP, this same consideration for ampacity rejection is applied to the CCPB branch disconnect switches.

Table 2. QSCP panelboard mains and branch disconnect switches

Panelboard amp ratings	Main options					
	MLO	Non-fused switch amps	Fused main switch		Branch disconnect switches	Branch amp rating (fuse amp range)
			Fused switch amps	Amp range / fuses		
400		400	400A switch	225-400A Bussmann series time-delay LPJ_SP UL® Class J Fuses		
200		200	200A switch	110-200A Bussmann series time-delay LPJ_SP UL Class J Fuses		
100	Yes	100	100A CCP	1-100A Bussmann series time-delay (TCF) or fast-acting (FCF) CUBEFuse UL Class CF Fuses		1-, 2-, 3-pole CCPB 15 (≤15A), 20 (≤20A), 30 (≤30A), 40 (≤40A), 50 (≤50A), 60 (≤60A), 70 (≤70A), 90 (≤90A), 100 (≤100A)
60		60A CCP	1-60A Bussmann series time-delay (TCF) or fast-acting (FCF) CUBEFuse UL Class CF Fuses			
30		30A CCP	1-30A Bussmann series time-delay (TCF) or fast-acting (FCF) CUBEFuse UL Class CF Fuses			

Table 3. 240Vac Eaton thermal magnetic circuit breaker “quick pick” selective coordination with CUBEFuse amp ratings*

Eaton lineside circuit breakers					Max circuit fault current (kA)	Loadside CUBEFuse (time-delay or fast-acting)
Breaker frame	Breaker family	Min. amp rating	Max amp rating	TCF or FCF amp ratings**		
G Frame	GHB	100	100	65	15, 20, 25, 30, 35, 40, 50	
E Frame	EGB	125	125	25	15, 20, 25, 30, 35, 40, 50, 60	
	EHD	100	100	18	15, 20, 25, 30, 35, 40, 50	
	FD	100	100	65	15, 20, 25, 30, 35, 40, 50	
F Frame	FD	150	150	65	15, 20, 25, 30, 35, 40, 50, 60, 70	
	FD	225	225	65	15, 20, 25, 30, 35, 40, 50, 60, 70, 80, 90, 100	
	JD	70	70	65	15, 20, 25, 30	
J Frame	JD	150	150	65	15, 20, 25, 30, 35, 40, 50, 60, 70	
	KD	200	400	65	15, 20, 25, 30, 35, 40, 50, 60, 70, 80, 90, 100	
K Frame	HKD	400	400	100	15, 20, 25, 30, 35, 40, 50, 60, 70, 80, 90, 100	

* For circuit breakers with an adjustable instantaneous trip, selective coordination is based upon instantaneous trip set at maximum.

** TCF (time-delay) and FCF (fast-acting) 600Vac fuses can be used on any 600Vac or less system. The CUBEFuses have an interrupting rating of 300kA at 600Vac or less.

Table 4. 480Vac Eaton thermal magnetic circuit breaker “quick pick” selective coordination with CUBEFuse amp ratings*

Eaton lineside circuit breakers					Max circuit fault current (kA)	Loadside CUBEFuse (time-delay or fast-acting)
Breaker frame	Breaker family	Min. amp rating	Max amp rating	TCF or FCF amp ratings**		
G Frame	GHB	100	100	14 [†]	15, 20, 25, 30, 35, 40, 50	
E Frame	EGB	125	125	18	15, 20, 25, 30, 35, 40, 50, 60	
	EHD	100	100	14	15, 20, 25, 30, 35, 40, 50	
F Frame	FD	100	100	35	15, 20, 25, 30, 35, 40, 50	
	FD	150	150	35	15, 20, 25, 30, 35, 40, 50, 60, 70	
	FD	225	225	35	15, 20, 25, 30, 35, 40, 50, 60, 70, 80, 90, 100	
J Frame	JD	70	70	35	15, 20, 25, 30	
	JD	150	150	35	15, 20, 25, 30, 35, 40, 50, 60, 70	
K Frame	KD	200	400	35	15, 20, 25, 30, 35, 40, 50, 60, 70, 80, 90, 100	
	HKD	400	400	65	15, 20, 25, 30, 35, 40, 50, 60, 70, 80, 90, 100	

* For circuit breakers with an adjustable instantaneous trip, selective coordination is based upon instantaneous trip set at maximum.

** TCF (time-delay) and FCF (fast-acting) 600Vac fuses can be used on any 600Vac or less system. The CUBEFuses have an interrupting rating of 300kA at 600Vac or less.

† 480/277Vac

Table 5. 600Vac Eaton thermal magnetic circuit breaker “quick pick” selective coordination with CUBEFuse amp ratings*

Eaton lineside circuit breakers					Max circuit fault current (kA)	Loadside CUBEFuse (time-delay or fast-acting)
Breaker frame	Breaker family	Min. amp rating	Max amp rating	TCF or FCF amp ratings**		
F Frame	FD	100	100	18	15, 20, 25, 30, 35, 40, 50	
	FD	150	150	18	15, 20, 25, 30, 35, 40, 50, 60, 70	
	FD	225	225	18	15, 20, 25, 30, 35, 40, 50, 60, 70, 80, 90, 100	
J Frame	JD	70	70	18	15, 20, 25, 30	
	JD	150	150	18	15, 20, 25, 30, 35, 40, 50, 60, 70	
K Frame	KD	200	400	25	15, 20, 25, 30, 35, 40, 50, 60, 70, 80, 90, 100	
	HKD	400	400	35	15, 20, 25, 30, 35, 40, 50, 60, 70, 80, 90, 100	
L Frame	LD	300	600	25	15, 20, 25, 30, 35, 40, 50, 60, 70, 80, 90, 100	
	HLD	300	600	35	15, 20, 25, 30, 35, 40, 50, 60, 70, 80, 90, 100	

* For circuit breakers with an adjustable instantaneous trip, selective coordination is based upon instantaneous trip set at maximum.

** TCF (time-delay) and FCF (fast-acting) 600Vac fuses can be used on any 600Vac or less system. The CUBEFuses have an interrupting rating of 300kA at 600Vac or less.

Table 6. MCCB/CUBEFuse selective coordination combinations* — all values in kAIR rms at 240Vac

				Breaker Frame	G Frame	E Frame	F Frame			
				Circuit Breaker Family	GHB	EGB	EHD	FD	FD	FD
				Trip Unit Type	T/M	T/M	T/M	T/M	T/M	T/M
				Minimum Amp Rating	100A	125A	100A	100A	150A	225A
				Maximum Amp Rating	100A	125A	100A	100A	150A	225A
				Pow-R-Line: Main	2a	3E	1a, 2a, 3a	1a, 2a, 3a	1a, 2a, 3a	1a, 2a, 3a
				Pow-R-Line: Branch	2a, 3a, 4	3E	3a, 4, Swbd	3a, 4, Swbd	3a, 4, Swbd	3a, 4, Swbd
Pow-R-Line: Sub-Feed	—	—	1a, 2a	1a, 2a	1a, 2a	1a, 2a				
CUBEFuse (TCF/FCF)**				Lineside circuit breakers selectively coordinate with downstream CUBEFuses up to the circuit breaker interrupting ratings listed below						
Fuse amps	Fusible Panel									
	Main	Branch	Sub-Feed****							
15	QSCP with 30A switch***	QSCP	—	65	25	18	65	65	65	
20		QSCP	—	65	25	18	65	65	65	
25		QSCP	—	65	25	18	65	65	65	
30		QSCP	—	65	25	18	65	65	65	
35	QSCP with 60A switch***	QSCP	—	65	25	18	65	65	65	
40		QSCP	—	65	25	18	65	65	65	
50		QSCP	—	65	25	18	65	65	65	
60		QSCP	—	—	25	—	—	65	65	
70	QSCP with 100A switch***	QSCP	—	—	—	—	65	65	65	
80		QSCP	—	—	—	—	—	65	65	
90		QSCP	—	—	—	—	—	65	65	
100		QSCP	—	—	—	—	—	65	65	

Table 7. MCCB selective coordination combinations* — all values in kAIR rms at 240Vac

				Breaker Frame	J Frame		K Frame		
				Circuit Breaker Family	JD	JD	KD	KD	HKD
				Trip Unit Type	T/M	T/M	T/M	T/M	T/M
				Minimum Amp Rating	70A	150A	200A	400A	400A
				Maximum Amp Rating	70A	150A	200A	400A	400A
				Pow-R-Line: Main	—	—	—	1a, 2a, 3a, 3E, 4, Swbd	1a, 2a, 3a, 3E, 4, Swbd
				Pow-R-Line: Branch	4, Swbd	4, Swbd	4, Swbd	4, Swbd	4, Swbd
Pow-R-Line: Sub-Feed	—	—	—	—	—				
CUBEFuse (TCF/FCF)**				Lineside circuit breakers selectively coordinate with downstream CUBEFuses up to the circuit breaker interrupting ratings listed below					
Fuse amps	Fusible Panelboard								
	Main	Branch	Sub-Feed****						
15	QSCP with 30A switch***	QSCP	—	65	65	65	65	100	
20		QSCP	—	65	65	65	65	100	
25		QSCP	—	65	65	65	65	100	
30		QSCP	—	65	65	65	65	100	
35	QSCP with 60A switch***	QSCP	—	—	65	65	65	100	
40		QSCP	—	—	65	65	65	100	
50		QSCP	—	—	65	65	65	100	
60		QSCP	—	—	65	65	65	100	
70	QSCP with 100A switch***	QSCP	—	—	65	65	65	100	
80		QSCP	—	—	65	65	100		
90		QSCP	—	—	65	65	100		
100		QSCP	—	—	65	65	100		

* For circuit breakers with an adjustable instantaneous trip, selective coordination is based upon instantaneous trip set at maximum.

** TCF (time-delay) and FCF (fast-acting) 600Vac fuses can be used on any 600Vac or less system. The CUBEFuses have an interrupting rating of 300kA at 600Vac or less.

*** The mains consist of main CCP switch and fuses. A CCP switch of a specific amp rating can accept any CUBEFuse of that same amp rating or less.

**** Sub-feed switch with LPJ-(amp)SP fuses are an option for the QSCP panels. However, at time of publication selective coordination testing results are not available for LPJ fuses to upstream Eaton circuit breakers.

Table 8. MCCB/CUBEFuse selective coordination combinations* — all values in kAIR rms at 480Vac

				Frame Family	G Frame	E Frame	F Frame			
				Circuit Breaker Family	GHB	EGB	EHD	FD	FD	FD
				Trip Unit Type	T/M	T/M	T/M	T/M	T/M	T/M
				Minimum Amp Rating	100A	125A	100A	100A	150A	225A
				Maximum Amp Rating	100A	125A	100A	100A	150A	225A
				Pow-R-Line: Main	2a [†]	3E	2a [†] , 3a			
				Pow-R-Line: Branch	2a [†] , 3a [†] , 4 [†]	3E	3a, 4, Swbd	3a, 4, Swbd	3a, 4, Swbd	3a, 4, Swbd
Pow-R-Line: Sub-Feed	—	—	2a [†]	2a [†]	2a [†]	2a [†]				
CUBEFuse (TCF/FCF)**				Lineside circuit breakers selectively coordinate with downstream CUBEFuses up to the circuit breaker interrupting ratings listed below						
Fuse amps	Fusible Panelboard									
	Main	Branch	Sub-Feed****							
15	QSCP with 30A switch***	QSCP	—	14	18	14	35	35	35	
20		QSCP	—	14	18	14	35	35	35	
25		QSCP	—	14	18	14	35	35	35	
30		QSCP	—	14	18	14	35	35	35	
35	QSCP with 60A switch***	QSCP	—	14	18	14	35	35	35	
40		QSCP	—	14	18	14	35	35	35	
50		QSCP	—	14	18	14	35	35	35	
60		QSCP	—	—	18	—	—	35	35	
70	QSCP with 100A switch***	QSCP	—	—	—	—	—	35	35	
80		QSCP	—	—	—	—	—	35	35	
90		QSCP	—	—	—	—	—	—	35	
100		QSCP	—	—	—	—	—	—	35	

Table 9. MCCB selective coordination combinations* — all values in kAIR rms at 480Vac

				Frame Family	J Frame		K Frame		
				Circuit Breaker Family	JD	JD	KD	KD	HKD
				Trip Unit Type	T/M	T/M	T/M	T/M	T/M
				Minimum Amp Rating	70A	150A	200A	400A	400A
				Maximum Amp Rating	70A	150A	200A	400A	400A
				Pow-R-Line: Main	—	—	—	2a [†] , 3a, 3E, 4, Swbd	2a [†] , 3a, 3E, 4, Swbd
				Pow-R-Line: Branch	4, Swbd	4, Swbd	4, Swbd	4, Swbd	4, Swbd
Pow-R-Line: Sub-Feed	—	—	—	—	—				
CUBEFuse (TCF/FCF)**				Lineside circuit breakers selectively coordinate with downstream CUBEFuses up to the circuit breaker interrupting ratings listed below					
Fuse amps	Fusible Panelboard								
	Main	Branch	Sub-Feed****						
15	QSCP with 30A switch***	QSCP	—	35	35	35	35	65	
20		QSCP	—	35	35	35	35	65	
25		QSCP	—	35	35	35	35	65	
30		QSCP	—	35	35	35	35	65	
35	QSCP with 60A switch***	QSCP	—	—	35	35	35	65	
40		QSCP	—	—	35	35	35	65	
50		QSCP	—	—	35	35	35	65	
60		QSCP	—	—	35	35	35	65	
70	QSCP with 100A switch***	QSCP	—	—	35	35	35	65	
80		QSCP	—	—	—	35	35	65	
90		QSCP	—	—	—	35	35	65	
100		QSCP	—	—	—	35	35	65	

* For circuit breakers with an adjustable instantaneous trip, selective coordination is based upon instantaneous trip set at maximum.

** TCF (time-delay) and FCF (fast-acting) 600Vac fuses can be used on any 600Vac or less system. The CUBEFuses have an interrupting rating of 300kA at 600Vac or less.

*** The mains consist of main CCP switch and fuses. A CCP switch of a specific amp rating can accept any CUBEFuse of that same amp rating or less.

**** Sub-feed switch with LPJ-(amp)SP fuses are an option for the QSCP panels. However, at time of publication selective coordination testing results are not available for LPJ fuses to upstream Eaton circuit breakers.

† 480/277Vac

Table 10. MCCB/CUBEFuse selective coordination combinations* — all values in kAIR rms at 600Vac

		Frame Family	F Frame			
		Circuit Breaker Family	FD	FD	FD	
		Trip Unit Type	T/M	T/M	T/M	
		Minimum Amp Rating	100A	150A	225A	
		Maximum Amp Rating	100A	150A	225A	
		Pow-R-Line: Main	3a	3a	3a	
		Pow-R-Line: Branch	3a, 4, Swbd	3a, 4, Swbd	3a, 4, Swbd	
Pow-R-Line: Sub-Feed	—	—	—			
CUBEFuse (TCF/FCF)**		Lineside circuit breakers selectively coordinate with downstream CUBEFuses up to the circuit breaker interrupting ratings listed below				
Fuse amps	Fusible Panelboard					
	Main	Branch	Sub-Feed****			
15	QSCP with 30A switch***	QSCP	—	18	18	18
20		QSCP	—	18	18	18
25		QSCP	—	18	18	18
30		QSCP	—	18	18	18
35	QSCP with 60A switch***	QSCP	—	18	18	18
40		QSCP	—	18	18	18
50		QSCP	—	18	18	18
60		QSCP	—	—	18	18
70	QSCP with 100A switch***	QSCP	—	—	18	18
80		QSCP	—	—	—	18
90		QSCP	—	—	—	18
100		QSCP	—	—	—	18

Table 11. MCCB selective coordination combinations* — all values in kAIR rms at 600Vac

		Frame Family	J Frame		K Frame			
		Circuit Breaker Family	JD	JD	KD	KD	HKD	
		Trip Unit Type	T/M	T/M	T/M	T/M	T/M	
		Minimum Amp Rating	70A	150A	200A	400A	400A	
		Maximum Amp Rating	70A	150A	200A	400A	400A	
		Pow-R-Line: Main	—	—	—	3a, 3E, 4, Swbd	3a, 3E, 4, Swbd	
		Pow-R-Line: Branch	4, Swbd	4, Swbd	4, Swbd	4, Swbd	4, Swbd	
Pow-R-Line: Sub-Feed	—	—	—	—	—			
CUBEFuse (TCF/FCF)**		Lineside circuit breakers selectively coordinate with downstream CUBEFuses up to the circuit breaker interrupting ratings listed below						
Fuse amps	Fusible Panelboard							
	Main	Branch	Sub-Feed****					
15	QSCP with 30A switch***	QSCP	—	18	18	25	25	35
20		QSCP	—	18	18	25	25	35
25		QSCP	—	18	18	25	25	35
30		QSCP	—	18	18	25	25	35
35	QSCP with 60A switch***	QSCP	—	—	18	25	25	35
40		QSCP	—	—	18	25	25	35
50		QSCP	—	—	18	25	25	35
60		QSCP	—	—	18	25	25	35
70	QSCP with 100A switch***	QSCP	—	—	18	25	25	35
80		QSCP	—	—	—	25	25	35
90		QSCP	—	—	—	25	25	35
100		QSCP	—	—	—	25	25	35

* For circuit breakers with an adjustable instantaneous trip, selective coordination is based upon instantaneous trip set at maximum.

** TCF (time-delay) and FCF (fast-acting) 600Vac fuses can be used on any 600Vac or less system. The CUBEFuses have an interrupting rating of 300kA at 600Vac or less.

*** The mains consist of main CCP switch and fuses. A CCP switch of a specific amp rating can accept any CUBEFuse of that same amp rating or less.

**** Sub-feed switch with LPJ-(amp)SP fuses are an option for the QSCP panels. However, at time of publication selective coordination testing results are not available for LPJ fuses to upstream Eaton circuit breakers.

Application Note 3148

Effective October 2015

Selective coordination with Bussmann series fuses and upstream Eaton circuit breakers

Reference materials

QSCP data sheet No. 1160

QSCP installation leaflet No. 3A1071

CCPB data sheet No. 1161

CCP data sheet No. 1157

Time-delay Class CF CUBEFuse data sheet No. 9000

Fast-acting Class CF CUBEFuse data sheet No. 2147

Time-delay Class J LPJ fuses, data sheet No. 1007

Fast-acting Class J JKS fuses, data sheet No. 1027

Selecting Protective Devices handbook No. 3002

Eaton molded case circuit breakers catalog No. CA08100005E

Eaton molded case circuit breakers and enclosures application data No. CA08104001E, sheet 27042

Eaton panelboards overview, No. CA08104001E, sheet 22002

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