

# Dare to Compare!

## The Cooper Bussmann® Quik-Spec™ Coordination Panelboard Sets the New Standard!

### Fusible Branch Circuit Panelboards

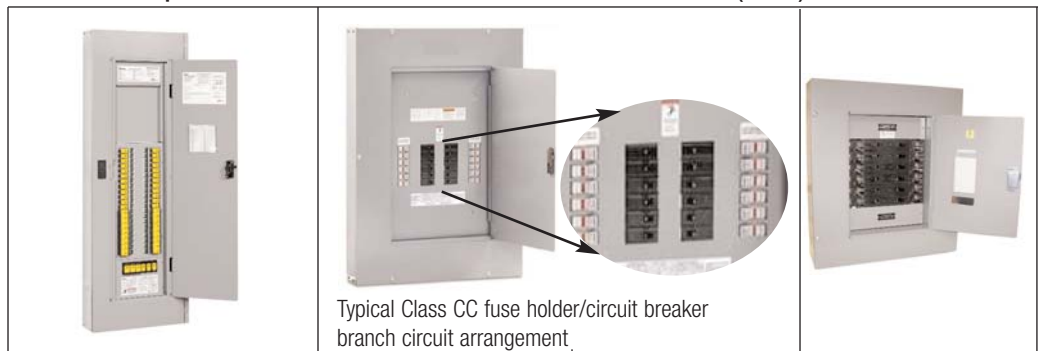
Now you can sell the fusible branch circuit panelboard that makes it easy to specify a selectively coordinated fusible system for compliance with the NEC®. Whether selling against other fusible solutions or circuit breaker solutions, this panelboard has the specs that beat them all.

Features and benefits over traditional fused panelboards include a 600Vac rating, high SCCR, high interrupting rated fuses, a broader range of branch circuit amp ratings, and a one-of-a-kind branch disconnect with a fuse ampacity rejection feature (using the IP20 finger-safe CUBEFuse®) along with an interlock to prevent fuse removal while the circuit is energized.

Table 1 below shows how two other fused solutions stack up to the Coordination Panelboard on cost, and safety and design features.

**Table 1 – Quik-Spec Coordination Panelboard Compared to Traditional Fusible Branch Circuit Panelboards (MLO\*)**

*This information is to provide a comparative analysis based upon the similarities and dissimilarities between Cooper Bussmann and competitive offerings. This does not replace specific product documentation for Cooper Bussmann products. Information in this document about other manufacturers' products was collected from published materials. This document is a general guideline and is not all inclusive.*



Panel Configuration		Quik-Spec™ Coordination Panelboard		Ferraz Shawmut (SCP)	Littelfuse (LCP)	Class H or Plug Fuse
	SCCR	50kA	200kA	100kA	100kA	10kA
	Voltage	600V	600V	480V	480V	250V
	Type	MLO	MLO	MLO	MLO	MLO
Branch Fuse Type		CUBEFuse®		Class CC or J	Class CC	Class H or Plug Fuse
Size		20" W x 5 3/4" D		28" W x 6" D	28" W x 6" D	20" W x 6" D
<b>Cost</b>		<b>\$\$</b>	<b>\$\$\$</b>	<b>\$\$\$\$</b>	<b>\$\$\$\$</b>	<b>\$</b>
<b>Design Features</b>						
• Branch-circuit amp ratings		Up to 60A (1-, 2- and 3-Pole)			Up to 30A (1-Pole <sup>2</sup> )	
• Branch amp rating rejection feature		15, 20, 30, 40, 50 and 60A (rejection breaks)		Non-rejection fuse holders (1 to 30 amps)	Non-rejection fuse holders (1 to 30 amps)	Class H - no rejection (plug fuse rejection requires adapters)
• Panel voltage rating		Up to 600Vac <sup>3</sup>		277/480V, 120/240V, 120/208V	277/480V, 120/208V	250Vac and less systems
• Branch circuit disconnect		UL 98 CCPB (innovative disconnect)		Circuit Breaker	Circuit Breaker	General use snap switch
<b>Safety Features</b>						
• Branch disconnect with integrated lockout means		Yes		No	No	No
• Interlock to prevent branch fuse removal while energized		Yes		No	No	No
• Lockable main disconnect (main configuration)		Yes (optional)		No	No	Yes (optional)

\* Also available with fused and non-fused main disconnects up to 200A.  
 1. Typical panelboard voltage ratings are 208Y/120 3-P, 4W, 120/240 1-P, 3W, & 480Y/277 3-P, 4W.  
 2. Multi-pole configurations may be available by special order.  
 3. Suitable for use on most systems up to 600Vac.

## Circuit Breaker Branch Circuit Panelboards

Features and benefits over circuit breaker panelboards include easy selective coordination, no expensive or time consuming time-current curve studies, greater application flexibility and higher ratings.

Table 2 contrasts several configurations of commonly available circuit breaker panelboards versus the Quik-Spec™ Coordination Panelboard.

This comparison is for fully rated, main lug only panelboards. Series rated panelboards are not included since series combination rated circuit breakers inherently lack the capability to selectively coordinate.

**Table 2 – Quik-Spec Coordination Panelboard Compared to Circuit Breaker Branch Circuit Panelboards (MLO)**

Panel Configuration		Quik-Spec™ Coordination Panelboard		Circuit Breaker Branch Circuit Panelboards						
		50kA	200kA	10kA	14kA	25kA	35kA	65kA	100kA	
SCCR		50kA	200kA	10kA	14kA	25kA	35kA	65kA	100kA	
Voltage		600V	600V	240V	480/277V	480/277V	480/277V	480/277V	480/277V	
Type		MLO	MLO	MLO	MLO	MLO	MLO	MLO	MLO	
<b>Selective Coordination Analysis<sup>1</sup></b>										
• Short-circuit current study required		No (if fault level below 200kA)		Yes (must calculate available fault current at each point circuit breakers are applied)						
• Ease of achieving selective coordination		Simplest (use fuse ratios)		Requires plotting time-current curves and proper interpretation. Limited to low available fault currents unless more sophisticated upstream circuit breakers are used						
• Study is job specific		Not specific (all systems up to 200kA)		Yes (coordination scheme is typically not transferable)						
• Study applicable if fault currents change		Yes (up to 200kA)		No (must re-verify selective coordination)						
Size		20" W x 5-3/4" D			20" W x 5-3/4" D					
Branch fuse/CB interrupting rating		300kA			10kA	14kA	25kA	35kA	65kA	100kA
Panel SCCR		50kA	200kA	10kA	14kA	25kA	35kA	65kA	100kA	
<b>Cost</b>		<b>\$\$</b>	<b>\$\$\$</b>	<b>\$</b>	<b>\$\$</b>	<b>\$\$</b>	<b>\$\$\$</b>	<b>\$\$\$\$</b>	<b>\$\$\$\$\$</b>	

1. Selective coordination analysis is based on upstream fuses for the Quik-Spec Coordination Panelboard and based on upstream circuit breakers for circuit breaker branch circuit panelboards.

### Explanation of Considerations in Table 2

**Selective Coordination Analysis** - The effort and cost required for completing selective coordination analysis can differ significantly and may affect equipment selection upstream. Four key considerations include:

- Short-Circuit Current Study Required** - With fuses, there is no need to complete detailed calculations as long as the available short-circuit current is less than or equal to 200kA or the fuse interrupting rating, whichever is lower. With circuit breakers, it is necessary to calculate the available short-circuit currents at each point a circuit breaker is applied.
- Ease of Achieving Selective Coordination** - With fuses, just use the selectivity ratio guide which is applicable for the full range of overcurrents up to the fuses' interrupting rating or 200kA, whichever is lower. With circuit breakers, it is necessary to do a detailed analysis including plotting the time-current curves, interpreting selective coordination for the available short-circuit currents and if necessary, investigating other circuit breaker alternatives.
- Study is Job Specific** - With fuses, the selective coordination scheme determined is not limited just to a specific job since it is a matter of utilizing the selectivity ratios. The same specification of fuse types and amp ratings could be utilized for another project as long as the short-circuit current is not greater than 200kA. With circuit breakers the selective coordination scheme that is used for one project is not generally transferable to another project; each project will have its own specific available short-circuit currents.

- Study Applicable if Fault Currents Change** - With fuses, even if there is a system change that increases the short-circuit current (such as when the main transformer gets changed), selective coordination is retained up to 200kA. With circuit breakers, selective coordination may be negated if the short-circuit current increases due to a system change.

**Cost** - Cost comparisons are relative and based on equivalent configurations of voltage rating, amp rating and same number of branch circuits.

**Size** - Standard branch circuit panelboard width and depth are noted. Heights vary by manufacturer.

**Circuit Breaker Interrupting Rating (IR)** - In accordance with NEC® Section 110.9 overcurrent protective device interrupting ratings must be sufficient for the available fault current at their line terminals. Table 2 contains a sampling of commercially available branch circuit breaker interrupting ratings.

**Panel Short-Circuit Current Rating (SCCR)** - Panelboard short-circuit current ratings are determined during product testing in accordance with UL 67 test procedures. These ratings must exceed the available fault current at the point of installation to ensure compliance with NEC® 110.10.