

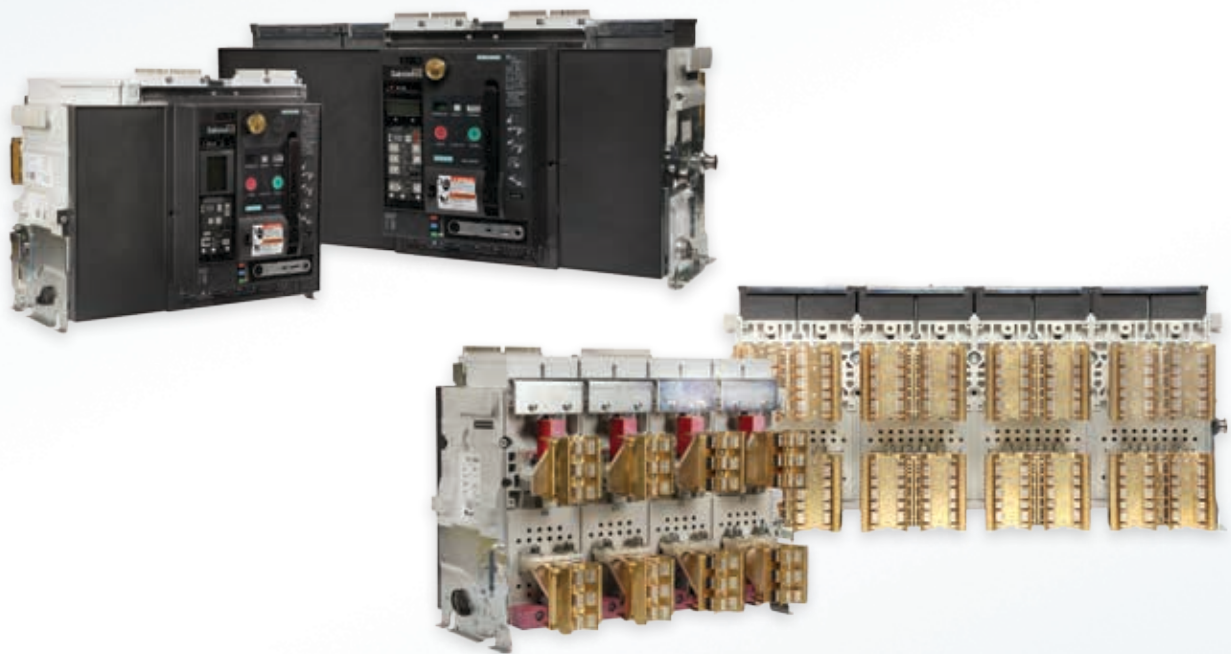
SIEMENS



4 Pole WL Low Voltage Switchgear

Selection and Application Guide

4 Pole WL Low Voltage Switchgear



4 pole breakers provide the neutral isolation capability that is advantageous for low voltage switchgear applications where multiple separately derived power sources are individually grounded.

In a typical 3 phase 4 wire Main-Main or Main-Tie-Main low voltage switchgear application the neutral is solidly connected throughout the equipment. Additionally the neutral is grounded (bonded) at each incoming source and this provides multiple paths for ground fault and normal neutral current to flow. If a 3

pole breaker is used in conjunction with traditional residual or zero sequence ground fault, nuisance ground fault tripping and/or failure to trip on ground fault can occur.

With a 4 pole main breaker the neutral is disconnected (isolated) when the breaker is open and provided that only one main breaker is closed at a time, the problem with multiple neutral grounding points and multiple paths for ground fault and normal neutral current is eliminated.

WL Power Circuit Breaker

Ratings for UL 1066 Listed (ANSI C37) Listed Breakers

WL Frame Ratings - Frame Size 2		800A			1600A		
Rating Class		S	H	L	S	H	L
Interrupting current frame I_{cs} (kAIR RMS) 50/60Hz							
	254VAC	65	85	100	65	85	100
	508VAC	65	85	100	65	85	100
	635VAC	65	65	85	65	65	85
Short-time current I_{cw} (kA RMS)	1 sec.	65	65	85	65	65	85
Close and latch rating (kA RMS)		65	65	85	65	65	85
Applicable rating plug range		200-800A			200-1600A		
Mechanical make-time (ms)		35			35		
Mechanical break-time (ms)		34			34		
Electric close make-time (ms)		50			50		
Electric trip/UV break-time (ms)		40/73			40/73		
Electric trip and reclose interval (ms)		80			80		
Mechanical duty cycles (with maint.) ^①		15000			15000		
Electrical duty cycles (with maint.) ^①		15000			15000		
Draw-out breaker efficiency (Watts loss at rated I_n)		85			320		
Ambient operating temperature (°C)		-25 to 40			-25 to 40		
Weights (D.O. Breaker/Cradle/Fixed mount) lbs.		210/161/185			210/161/185		

WL Frame Ratings - Frame Size 2		2000A			3200A		
Rating Class		S	H	L	S	H	L
Interrupting current frame I_{cs} (kAIR RMS) 50/60Hz							
	254VAC	65	85	100	65	85	100
	508VAC	65	85	100	65	85	100
	635VAC	65	65	85	65	65	85
Short-time current I_{cw} (kA RMS)	1 sec.	65	65	85	65	65	85
Close and latch rating (kA RMS)		65	65	85	65	65	85
Applicable rating plug range		200-2000A			200-3200A		
Mechanical make-time (ms)		35			35		
Mechanical break-time (ms)		34			34		
Electric close make-time (ms)		50			50		
Electric trip/UV break-time (ms)		40/73			40/73		
Electric trip and reclose interval (ms)		80			80		
Mechanical duty cycles (with maint.) ^①		15000			15000		
Electrical duty cycles (with maint.) ^①		15000			15000		
Draw-out breaker efficiency (Watts loss at rated I_n)		700			1650		
Ambient operating temperature (°C)		-25 to 40			-25 to 40		
Weights (D.O. Breaker/Cradle/Fixed mount) lbs.		227/181/203			258/212/229		

① Maintenance means: replacing main contacts and arc chutes (see operating instructions).

WL Power Circuit Breaker

Ratings for UL 1066 Listed (ANSI C37) Listed Breakers

WL Frame Ratings - Frame Size 3		4000A	5000A	6000A
Rating Class		L	L	L
Interrupting current frame I_{cs} (kAIR RMS) 50/60Hz				
	254VAC	100	100	100
	508VAC	100	100	100
	635VAC	85	85	85
Short-time current I_{cw} (kA RMS)	1 sec.	85	85	85
Close and latch rating (kA RMS)		85	85	85
Applicable rating plug range		800-4000A	800-5000A	800-6000A
Mechanical make-time (ms)		35	35	35
Mechanical break-time (ms)		34	34	34
Electric close make-time (ms)		50	50	50
Electric trip/UV break-time (ms)		40/73	40/73	40/73
Electric trip and reclose interval (ms)		80	80	80
Mechanical duty cycles (with maint.) ^①		10000	10000	10000
Electrical duty cycles (with maint.) ^①		10000	10000	10000
Draw-out breaker efficiency (Watts loss at rated I_n)		1100	1650	2475
Ambient operating temperature (°C)		-25 to 40	-25 to 40	-25 to 40
Weights (D.O. Breaker/Cradle/Fixed mount) lbs.		434/410/375	434/410/375	434/410/375

Ratings for UL 1066 Listed Non-Automatic Switches

WL Frame Ratings		Frame Size 2 800-2000A	Frame Size 3 3200-6000A
Rating Class		L	L
Breaking capacity with external relay (kA RMS)	254VAC	100	100
50/60Hz, instantaneous trip	508VAC	100	100
	635VAC	85	85
Short-time current I_{cw} (kA RMS)	1 sec.	85	100 ^②

① Maintenance means: replacing main contacts and arc chutes (see operating instructions).

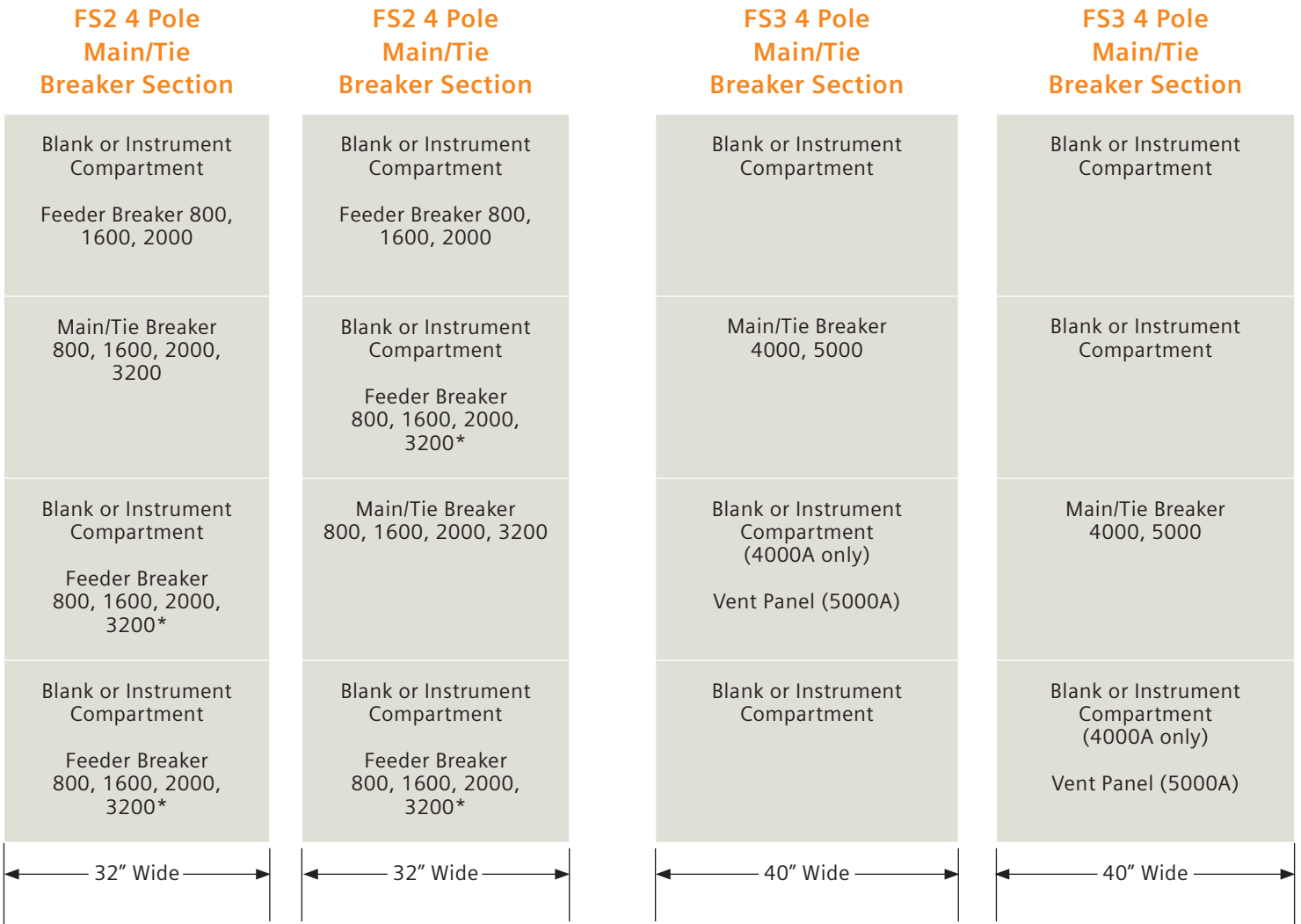
② Do not apply switch or breaker rated at 635VAC to a system with fault current > 85kA RMS.

Dimensional Information

Breaker Type	LVS Section Width
800-3200A (FS2)	32"
4000-6000A (FS3)	40"

Dimensional Information

4 Pole Main/Tie Section 800 – 5000A Breakers

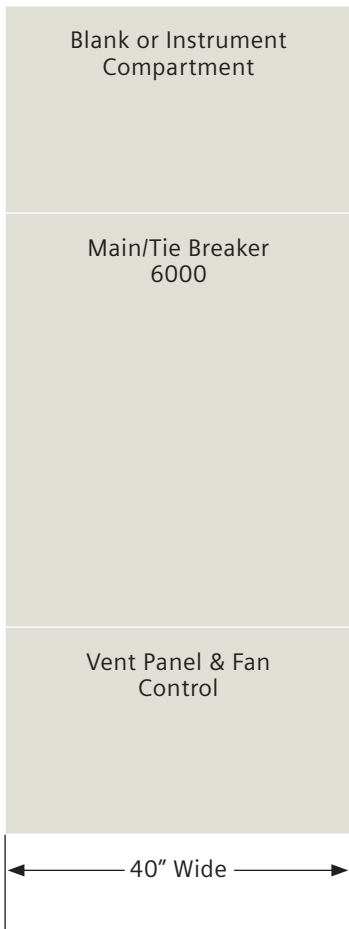


*Contact factory for 3200A feeder breaker application guidelines.

Dimensional Information

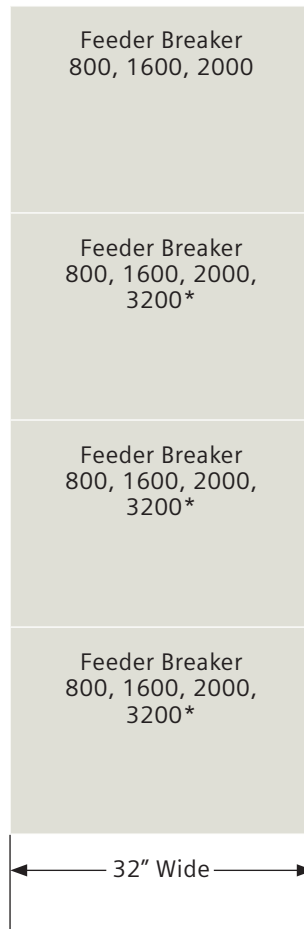
4 Pole Main/Tie Section 6000A Breaker

FS3 4 Pole Main/Tie Breaker Section



4 Pole Feeder Section 800 - 3200A Breakers

FS2 4 Pole Feeder Breakers



*Contact factory for 3200A feeder breaker application guidelines.



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