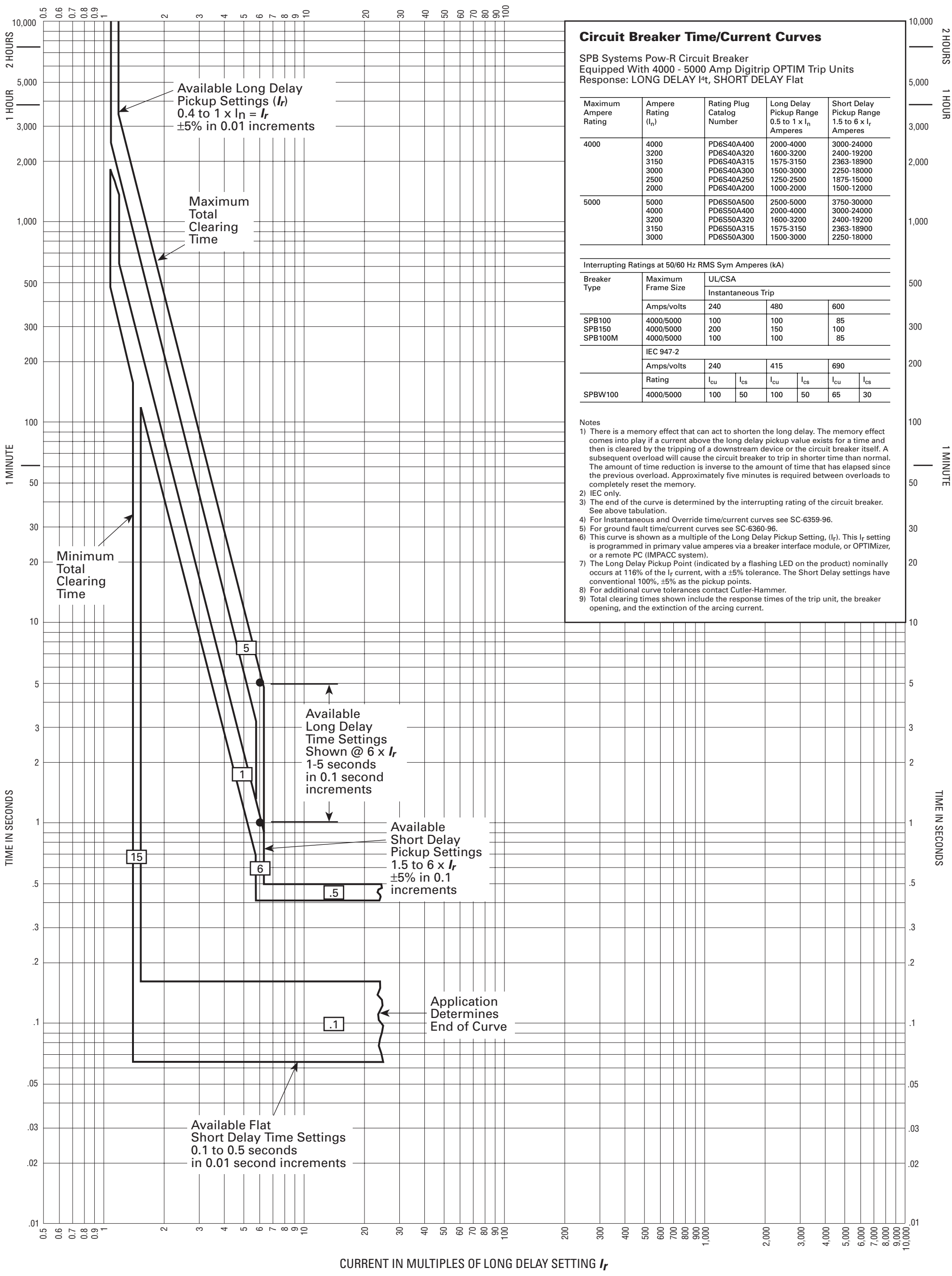

Circuit Breaker Time/Current Curves

SPB Systems Pow-R Circuit Breaker
Equipped With 4000 - 5000 Amp Digitrip OPTIM Trip Units
Response: LONG DELAY I^4t, SHORT DELAY Flat

Maximum Ampere Rating	Ampere Rating (I_n)	Rating Plug Catalog Number	Long Delay Pickup Range 0.5 to 1 x I_n Amperes	Short Delay Pickup Range 1.5 to 6 x I_r Amperes
4000	4000	PD6S40A400	2000-4000	3000-24000
	3200	PD6S40A320	1600-3200	2400-19200
	3150	PD6S40A315	1575-3150	2363-18900
	3000	PD6S40A300	1500-3000	2250-18000
	2500	PD6S40A250	1250-2500	1875-15000
	2000	PD6S40A200	1000-2000	1500-12000
5000	5000	PD6S50A500	2500-5000	3750-30000
	4000	PD6S50A400	2000-4000	3000-24000
	3200	PD6S50A320	1600-3200	2400-19200
	3150	PD6S50A315	1575-3150	2363-18900
	3000	PD6S50A300	1500-3000	2250-18000

Interrupting Ratings at 50/60 Hz RMS Sym Amperes (kA)

Breaker Type	Maximum Frame Size	UL/CSA					
		Instantaneous Trip					
	Amps/volts	240		480		600	
SPB100	4000/5000	100		100		85	
SPB150	4000/5000	200		150		100	
SPB100M	4000/5000	100		100		85	
	IEC 947-2						
	Amps/volts	240		415		690	
	Rating	I_{cu}	I_{cs}	I_{cu}	I_{cs}	I_{cu}	I_{cs}
SPBW100	4000/5000	100	50	100	50	65	30

Notes
1) There is a memory effect that can act to shorten the long delay. The memory effect comes into play if a current above the long delay pickup value exists for a time and then is cleared by the tripping of a downstream device or the circuit breaker itself. A subsequent overload will cause the circuit breaker to trip in shorter time than normal. The amount of time reduction is inverse to the amount of time that has elapsed since the previous overload. Approximately five minutes is required between overloads to completely reset the memory.
2) IEC only.
3) The end of the curve is determined by the interrupting rating of the circuit breaker. See above tabulation.
4) For Instantaneous and Override time/current curves see SC-6359-96.
5) For ground fault time/current curves see SC-6360-96.
6) This curve is shown as a multiple of the Long Delay Pickup Setting, (I_r). This I_r setting is programmed in primary value amperes via a breaker interface module, or OPTIMizer, or a remote PC (IMPACC system).
7) The Long Delay Pickup Point (indicated by a flashing LED on the product) nominally occurs at 116% of the I_r current, with a ±5% tolerance. The Short Delay settings have conventional 100%, ±5% as the pickup points.
8) For additional curve tolerances contact Cutler-Hammer.
9) Total clearing times shown include the response times of the trip unit, the breaker opening, and the extinction of the arcing current.