

Circuit Breaker Time / Current Curves (Phase Current)

Magnum and Magnum DS and Magnum SB Circuit Breakers Response: Instantaneous Trip This curve is for 50Hz and 60Hz applications.

1. If Long Delay thermal memory is enabled, trip times may be shorter than

2. The end of the curve is determined by the interrupting rating of the

3. This curve is shown as a multiple of the Rating Plug (I_n) .

4. The Instantaneous settings have conventional 100% ±10% as the

5. The adjustable range of the instantaneous setting is 2x to $10x I_n$. The M1 setting can extend the range according to the rating plug value as shown below. An OFF setting is available.

Narrow Fr	ame	
	200A through 1250A	M1 = 14x I _n
	1600A, 2000A	$M1 = 12x I_n$
Standard	Frame:	
	200A through 1250A	M1 = 14x I _n
	1600A, 2000A, 2500A	M1 = 12x I _n
	3000A, 3200A	$M1 = 10x I_n$
Double W	ide Frame:	
	2000A, 2500A	M1 = 14x I _n
	3200A, 4000A, 5000A	$M1 = 12x I_{p}$

6. For Magnum SB Narrow and Standard frames, and Magnum Single Narrow Frames MDNC, a fixed Instantaneous is always provided. The level is set at 18 x rms ±15%. This protection is functional even when the Instantaneous is

 $M1 = 10x I_{n}$

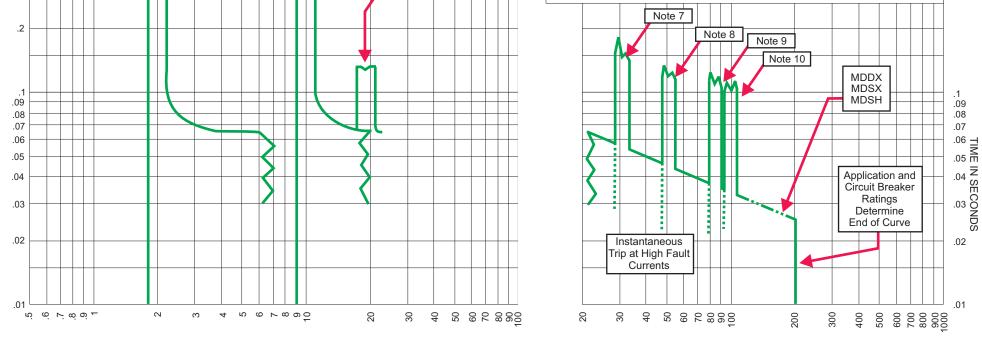
7. For Magnum MDSX/SBSE Standard Frame Current Limiting Power Circuit Breaker, an additional High Instantaneous Trip Module is provided in the circuit breaker set to pickup at 56.5kA ±7.5% instantaneous peak current level (30kA symmetrical RMS at 15% power factor). This protection is functional even when Instantaneous is set to the

8. For Magnum MDSX/SBSE Double Frame Current Limiting Power Circuit Breaker, an additional High Instantaneous Trip Module is provided in the breaker set to pickup at 94.1kA ±7.5% instantaneous peak current level (50kA symmetrical RMS at 15% Power Factor). This protection is functional even when Instantaneous is set to the OFF position.

9. For Standard Frame rated 3200A and less of MDSC type, an additional High Instantaneous Trip Module is provided in the breaker set to pickup at 160.0kA Instantaneous peak current level (85kA symmetrical RMS with 15% power factor). This protection is functional even when the Instantaneous is

10. For Magnum MDDX Frames, an additional High Instantaneous Trip Module is provided in the breaker set to pickup at 188.2kA \pm 7.5% instantaneous peak current level (100kA symmetrical RMS with 15% Power Factor). This protection is functional even when Instantaneous is set to the

11. These curves are comprehensive for the complete family of Magnum breakers, including all frame sizes, ratings, and constructions. The total Instantaneous clearing times shown are conservative and consider the maximum response times of the trip unit, the circuit breaker opening, and the interruption of the current under factors that contribute to worst case conditions, like: maximum rated voltages, single phase interruption, and minimum power factor. Faster clearing times are possible depending on the specific system conditions, the type of Magnum Circuit Breaker applied, and if any arc reduction settings are employed. Contact Eaton for additional



Current in Multiples of Rating (In)

Symmetrical RMS Current (kA)

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