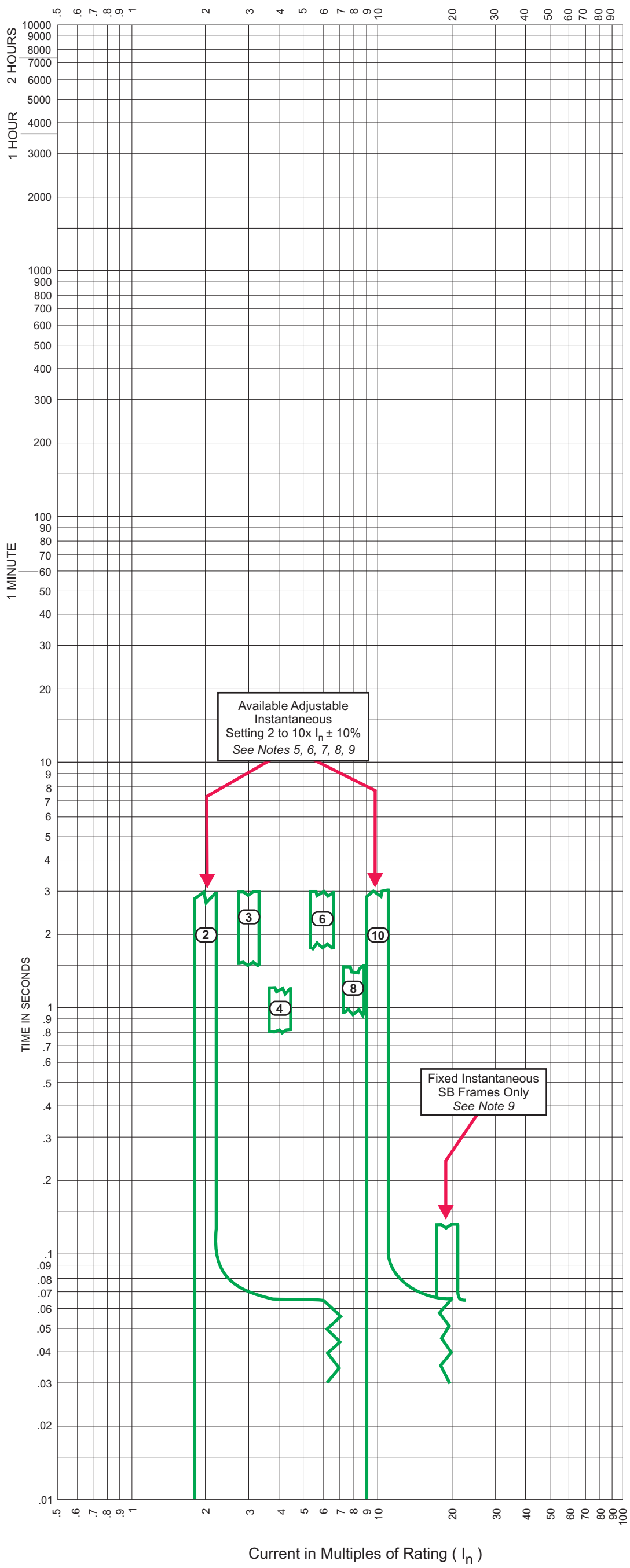


Circuit Breaker Time / Current Curves (Phase Current)

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

Notes:

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

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

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

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

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 Frame

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 Wide Frame:

2000A, 2500A	M1 = 14x I_n
3200A, 4000A, 5000A	M1 = 12x I_n
6000A, 6300A	M1 = 10x I_n

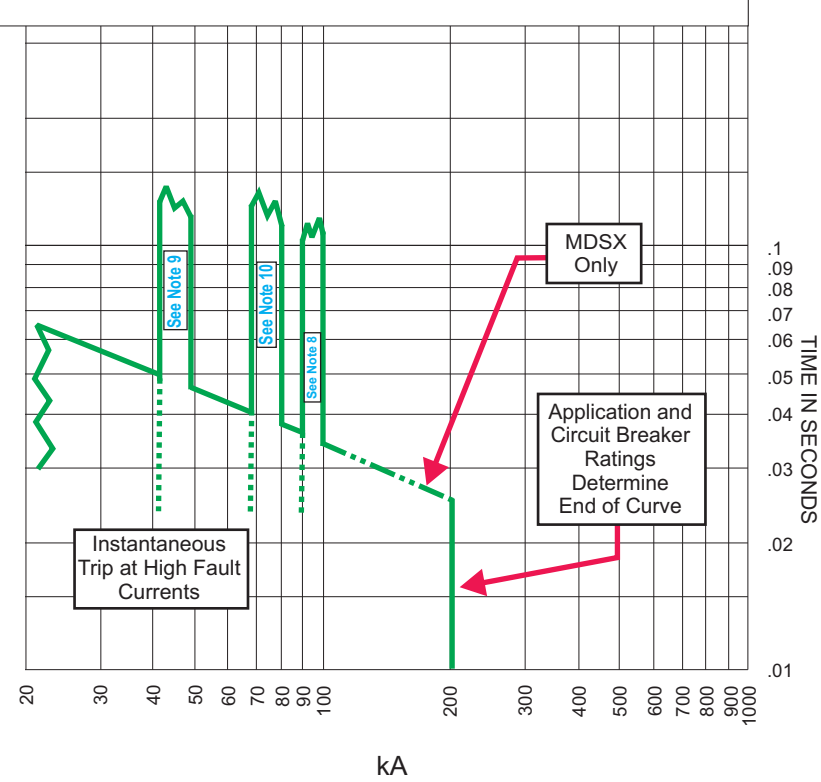
6. For Standard Frame rated 3200A and less of MDSC type, an additional High Instantaneous Trip Module is provided in the breaker set to pickup at 170kA Instantaneous peak current level. This protection is functional even when the Instantaneous is set to the OFF position.

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 65kA ±7.5% instantaneous peak current level. This protection is functional even when Instantaneous is set to the OFF position.

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 105kA ±7.5% instantaneous peak current level. This protection is functional even when Instantaneous is set to the OFF position.

9. For Magnum SB Narrow and Standard frames, and Magnum 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 set to the OFF position.

10. 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 information.



Dwg. No: 70C1007
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