Circuit Breaker Time / Current Curves (Phase Current)

Magnum, Magnum DS and Magnum SB Circuit Breakers
Response: Instantaneous Trip

This curve is for 50Hz or 60Hz applications.

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 delay 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 memory.

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

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

4. The Instantaneous settings have conventional 100% ± 10% as their pick up points.

5. Total clearing times shown include the response times of the trip unit, the circuit breaker opening and the interruption of the current.

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

7. For circuit breakers rated 3200A and less, of MDSC type, an additional High

8. For Magnum SB Narrow and Standard frames, and Magnum Narrow Frames

9. These curves are comprehensive for the complete family of Magnum Circuit 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 the 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 Corporation for additional information.

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