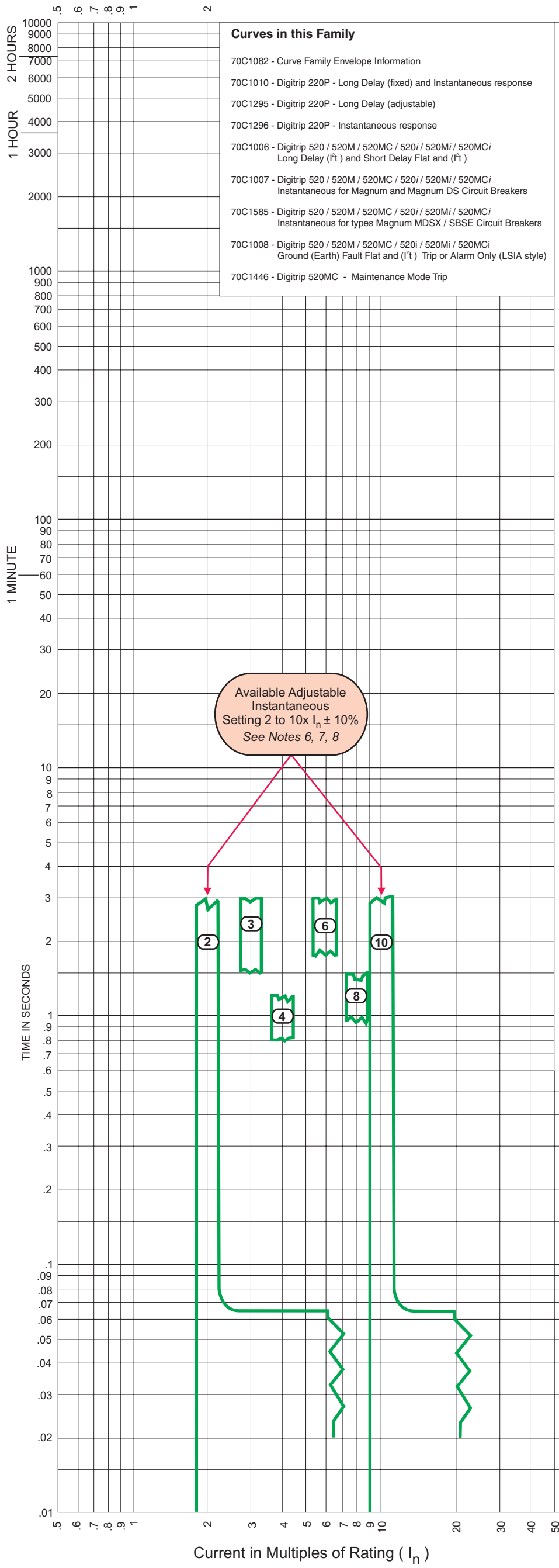
EATON | Cutler-Hammer

Digitrip 520 / 520M / 520MC / 520*i* / 520M*i* / 520MC*i*
Instantaneous Curve



Curves in this Family

70C1082 - Curve Family Envelope Information

70C1010 - Digitrip 220P - Long Delay (fixed) and Instantaneous response

70C1295 - Digitrip 220P - Long Delay (adjustable)

70C1296 - Digitrip 220P - Instantaneous response

70C1006 - Digitrip 520 / 520M / 520MC / 520*i* / 520M*i* / 520MC*i* Long Delay (I^2t) and Short Delay Flat and (I^2t)

70C1007 - Digitrip 520 / 520M / 520MC / 520*i* / 520M*i* / 520MC*i* Instantaneous for Magnum and Magnum DS Circuit Breakers

70C1585 - Digitrip 520 / 520M / 520MC / 520*i* / 520M*i* / 520MC*i* Instantaneous for types Magnum MDSX / SBSE Circuit Breakers

70C1008 - Digitrip 520 / 520M / 520MC / 520i / 520Mi / 520MCi Ground (Earth) Fault Flat and (I^2t) Trip or Alarm Only (LSIA style)

70C1446 - Digitrip 520MC - Maintenance Mode Trip

Circuit Breaker Time / Current Curves (Phase Current)

Magnum MDSX / SBSE Circuit Breakers
Response: Instantaneous Trip
This curve is for 50Hz and 60Hz applications.

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 pick up value exists for a time and then is cleared by the tripping of a down stream 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 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. Total clearing times shown include the response times of the trip unit, the circuit breaker opening and the interruption of the current.

6. Additional settings of OFF and M1 are also available with: (adjustable range is 2x to 10xI_n)

Narrow Frame (MDN / SBN):	
200A through 1250A	M1 = 14x I_n
1600A	M1 = 12x I_n
2000A	M1 = 12x I_n
Standard Frame (MDS / SBS):	
200A through 1250A	M1 = 14x I_n
1600A, 2000A, 2500A	M1 = 12x I_n
3000A, 3200A	M1 = 10x I_n
Double Wide Frame (MDS / SBS):	
2000A, 2500A	M1 = 14x I_n
3200A, 4000A, 5000A	M1 = 12x I_n
6000A, 6300A	M1 = 10x I_n

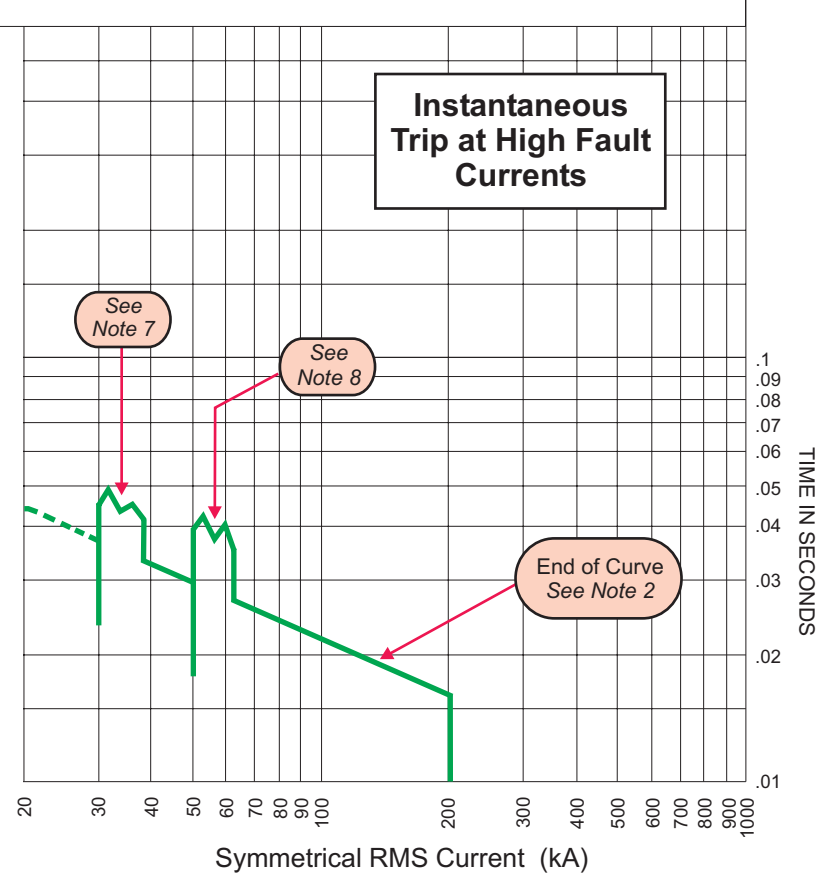
7. For Magnum Standard Frame MDSX (Current Limiting Power Circuit Breaker) and the SBSE (Standard Frame Power Circuit Breaker), an additional High Instantaneous Trip Module is provided in the circuit breaker even when Instantaneous is set to the OFF position.

The circuit breaker's Short Delay rating of 30kA, as marked on the circuit breaker label, is compliant to test methods and Standards. This current value equates to a first peak asymmetrical current value of 65kA.

8. For Magnum Double Wide Frame MDSX (Current Limiting Power Circuit Breaker) and the SBSE (Double Wide Frame Power Circuit Breaker), an additional High Instantaneous Trip Module is provided in the circuit breaker even when Instantaneous is set to the OFF position.

The circuit breaker's Short Delay rating of 50kA, as marked on the circuit breaker label, is compliant to test methods and Standards. This current value equates to a first peak asymmetrical current value of 105kA.

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 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.



Dwg. No: 70C1585
June 2008

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