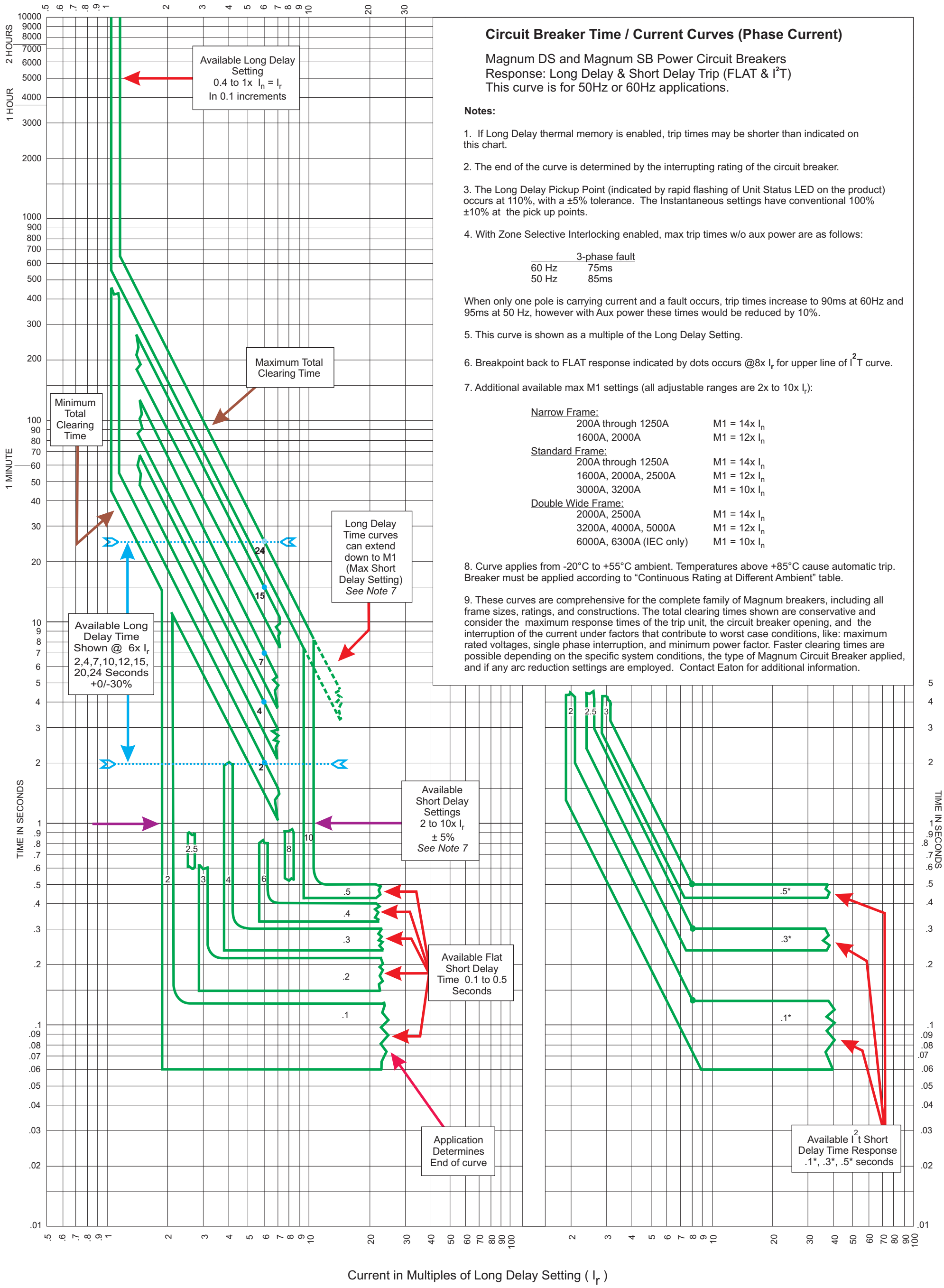

Circuit Breaker Time / Current Curves (Phase Current)

Magnum DS and Magnum SB Power Circuit Breakers
Response: Long Delay & Short Delay Trip (FLAT & I^2T)
This curve is for 50Hz or 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. The Long Delay Pickup Point (indicated by rapid flashing of Unit Status LED on the product) occurs at 110%, with a ±5% tolerance. The Instantaneous settings have conventional 100% ±10% at the pick up points.

4. With Zone Selective Interlocking enabled, max trip times w/o aux power are as follows:

	3-phase fault
60 Hz	75ms
50 Hz	85ms

When only one pole is carrying current and a fault occurs, trip times increase to 90ms at 60Hz and 95ms at 50 Hz, however with Aux power these times would be reduced by 10%.

5. This curve is shown as a multiple of the Long Delay Setting.

6. Breakpoint back to FLAT response indicated by dots occurs @8x I_r for upper line of I^2T curve.

7. Additional available max M1 settings (all adjustable ranges are 2x to 10x I_r):

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 (IEC only)	M1 = 10x I_n

8. Curve applies from -20°C to +55°C ambient. Temperatures above +85°C cause automatic trip. Breaker must be applied according to "Continuous Rating at Different Ambient" table.

9. These curves are comprehensive for the complete family of Magnum breakers, including all frame sizes, ratings, and constructions. The total 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.

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