

## Time-Current Characteristic Curves

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## Basis

Time-current characteristic (TCC) curves for VacuFuse II Self-Resetting Interrupters are shown in this publication. These curves are plotted for a system frequency of 60 Hz and are applicable to both 50- and 60-Hertz systems. All curves in this document were developed using discrete data points. These data points can be found in the “Time-Current Characteristic Curves” section at [sandc.com](http://sandc.com).

VacuFuse II interrupter TCC curves are also applicable over the VacuFuse II interrupter’s entire operating temperature range of -40°C (-40°F) to +50°C (+122°F). No adjustments need be made to these curves for ambient temperatures within this temperature range.

## Tolerances

TCC curves for VacuFuse II interrupters are plotted to minimum test points and maximum test points (minimum tripping curves and total clearing curves, respectively). Because the curves in this document (and the data points in S&C TCC Number 466-7) include device tolerances, no additional adjustment is necessary when plotting in coordination software.

## Coordination

When coordinating a VacuFuse II interrupter with upstream protective devices, it is necessary to compare the total clearing curve of the VacuFuse II interrupter with the minimum tripping/minimum melting curve of source-side protective devices such as a lateral recloser or sub-lateral fuse.

## Power-up Time

If the VacuFuse II interrupter is closed into a fault, it will take a small but finite amount of time for the control to power up and issue a trip signal. The effect of power-up time on device response is included in the TCC curves published in this document, no adjustment to these curves is necessary to account for power-up time.

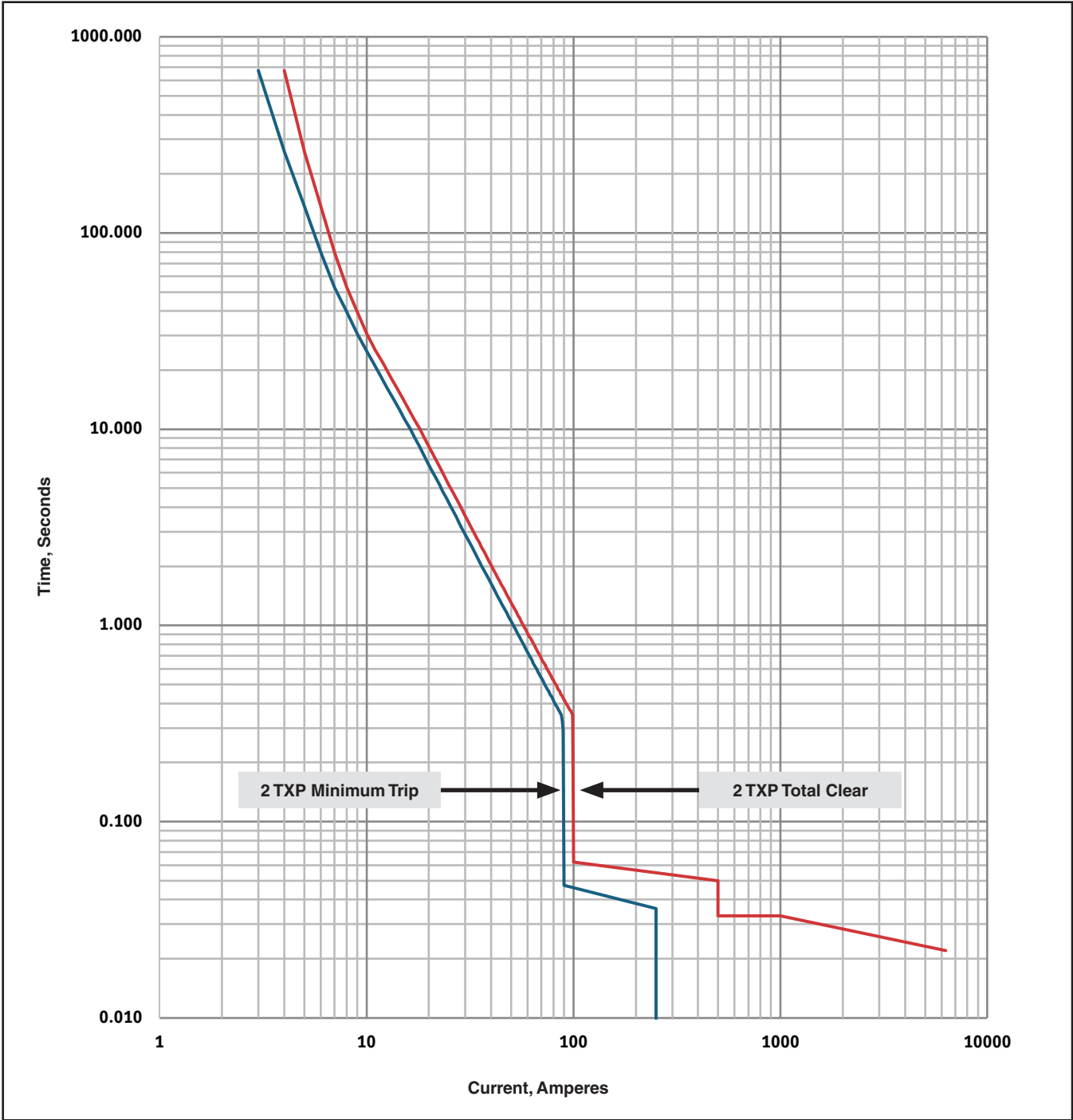
## Application

The maximum continuous current-carrying capability of a VacuFuse II interrupter is 20 amperes. The control is capable of sensing current in the range of 4.0 amperes to 6,300 amperes. A minimum of 4.0 amperes of load current must be flowing through the device to power the control.

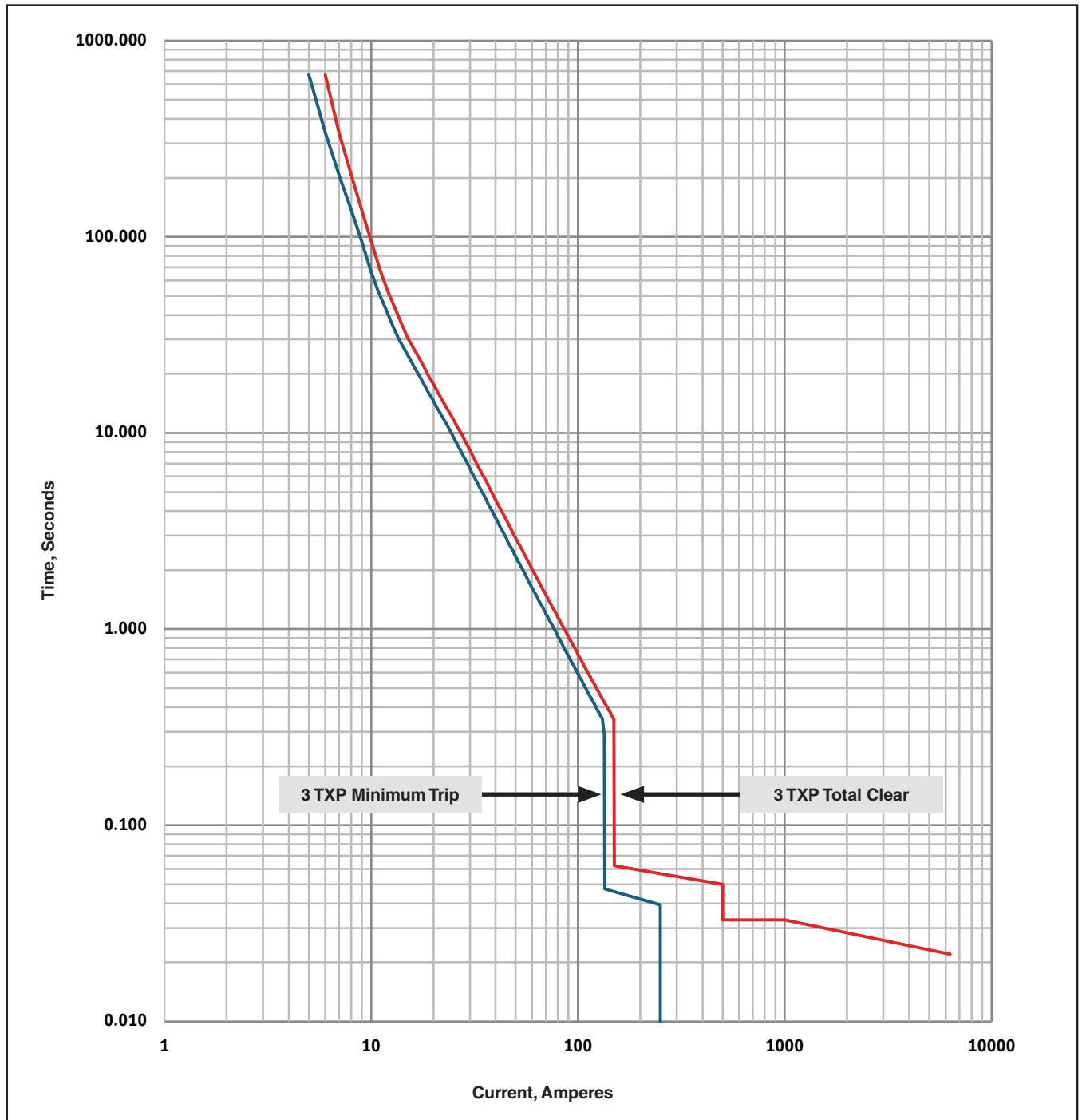
**Control Settings**—Time-current characteristic curves for VacuFuse II interrupters must be determined at the time of order and are set by the factory.

TXP-Speed TCC Curves with Definite Times at High Current

2-Ampere TXP-Speed TCC Curve with Definite Times at High Current

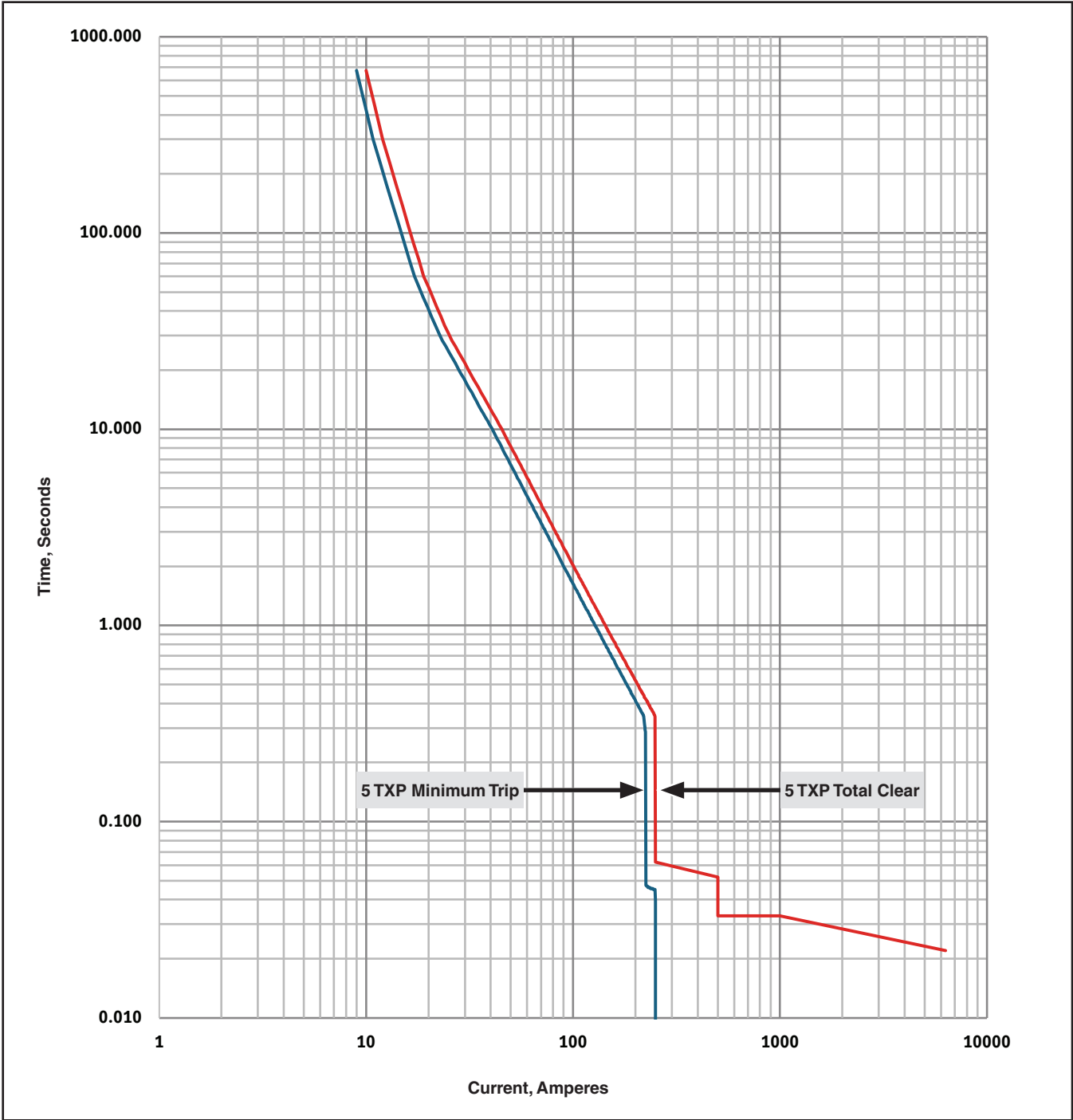


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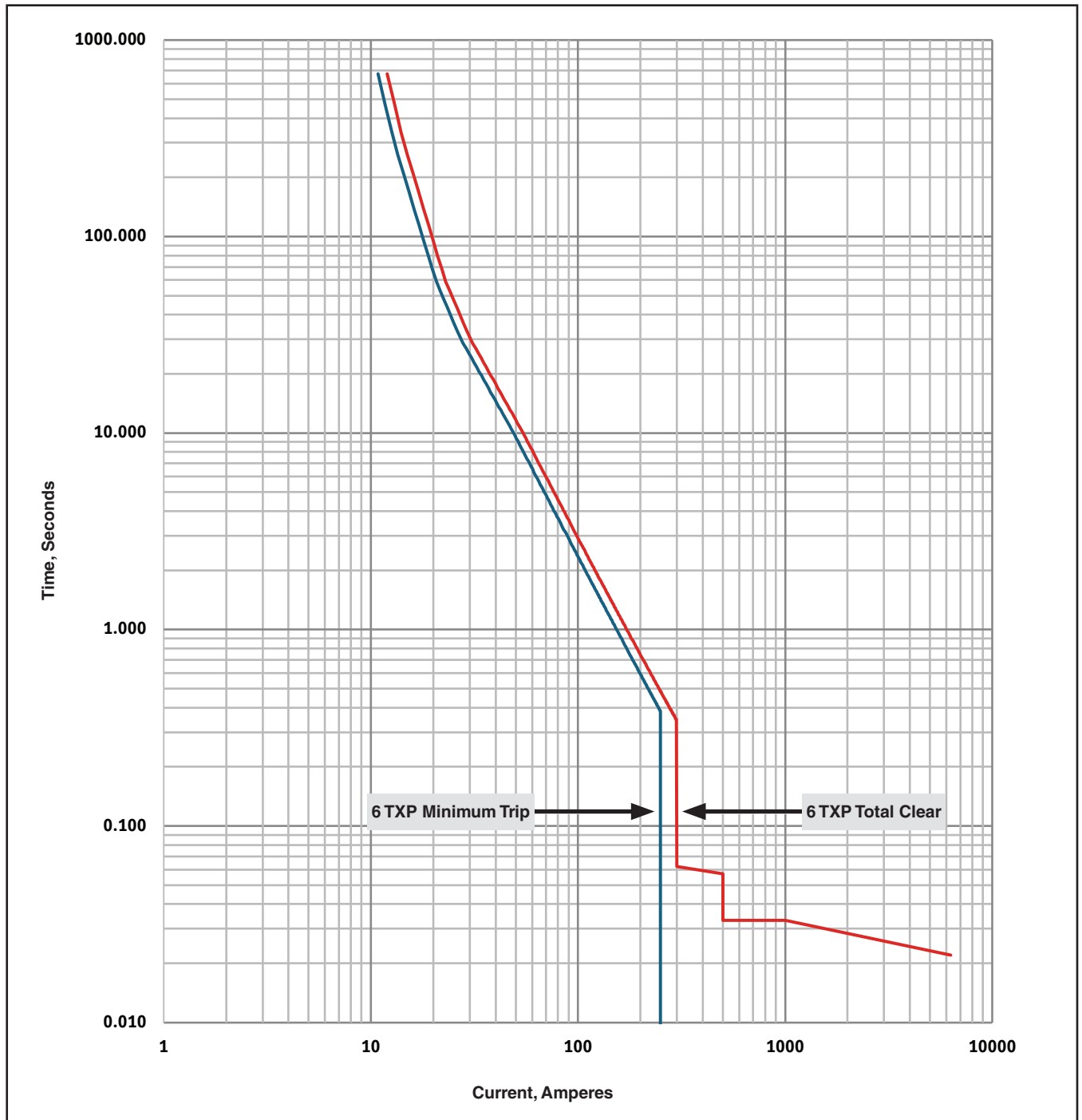


TXP-Speed TCC Curves with Definite Times at High Current

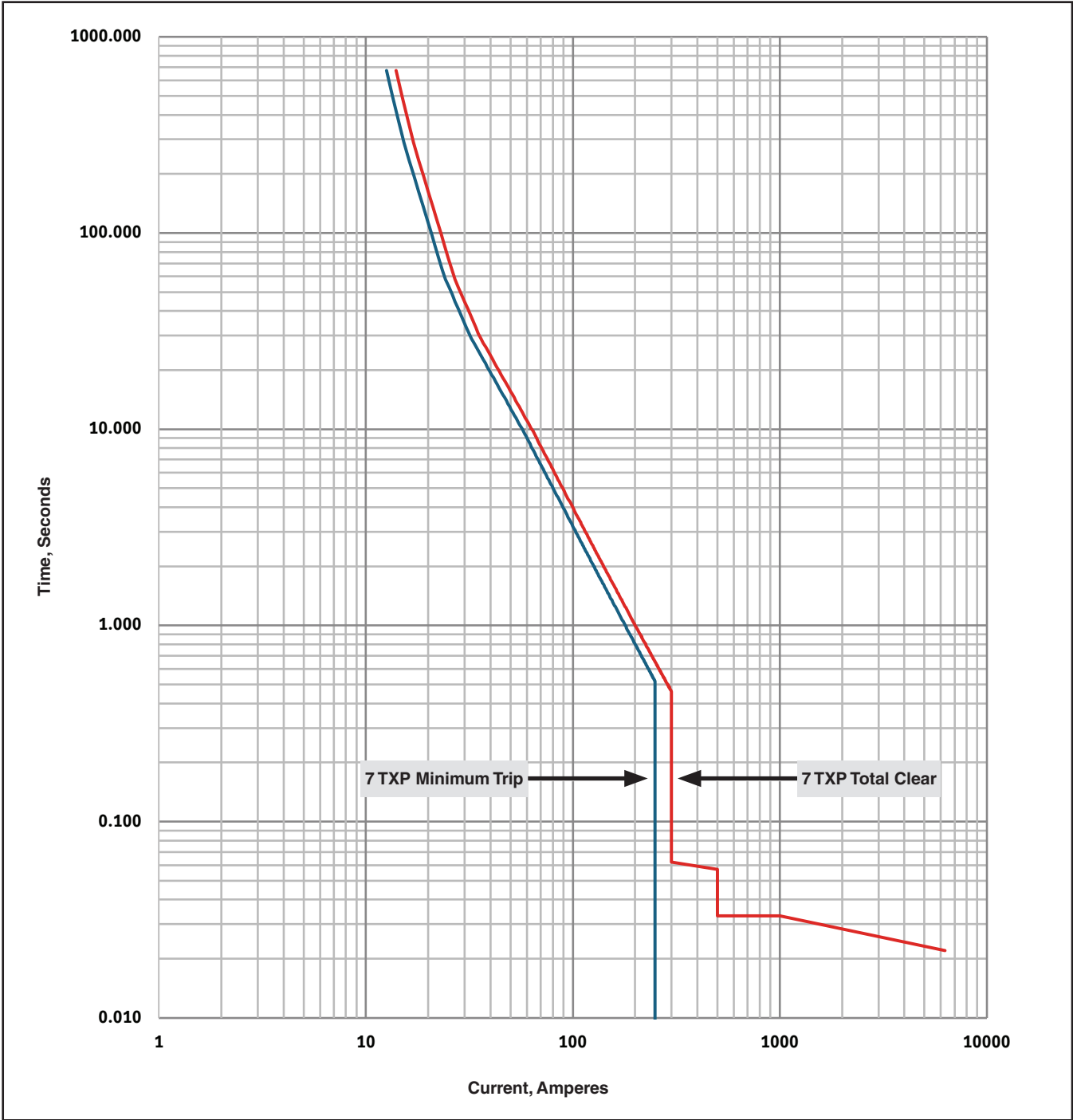
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6-Ampere TXP-Speed TCC Curve with Definite Times at High Current

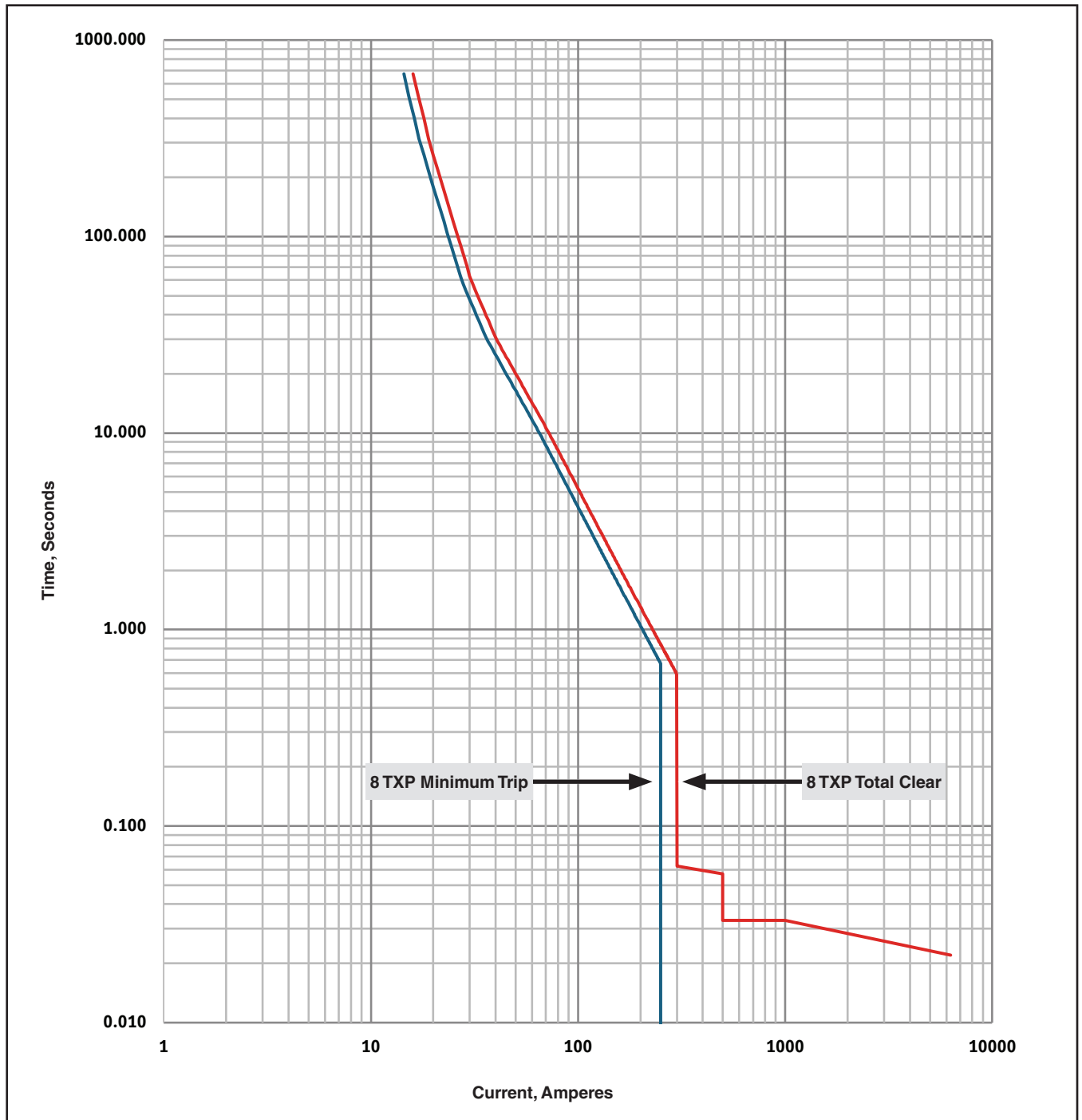


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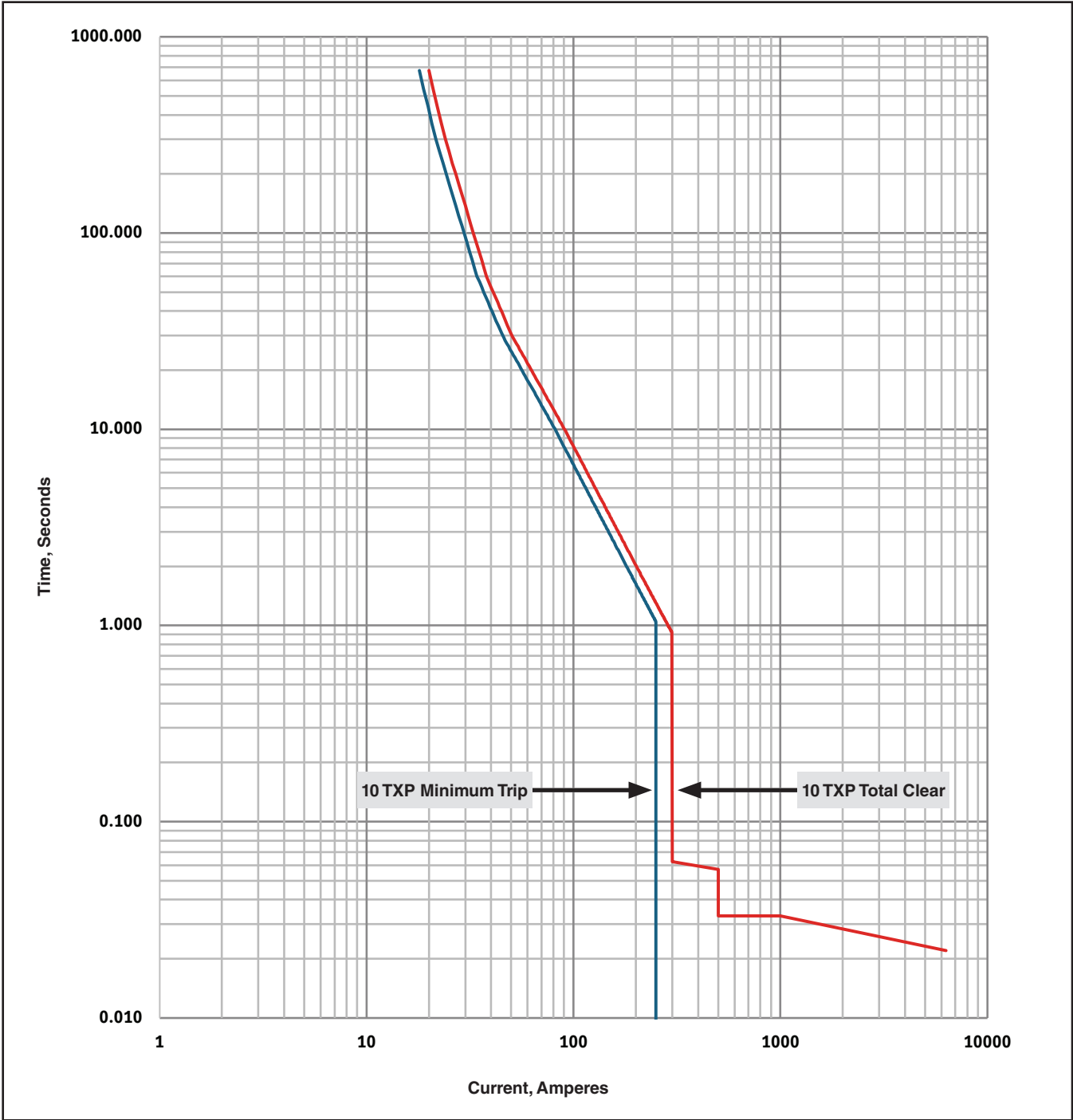




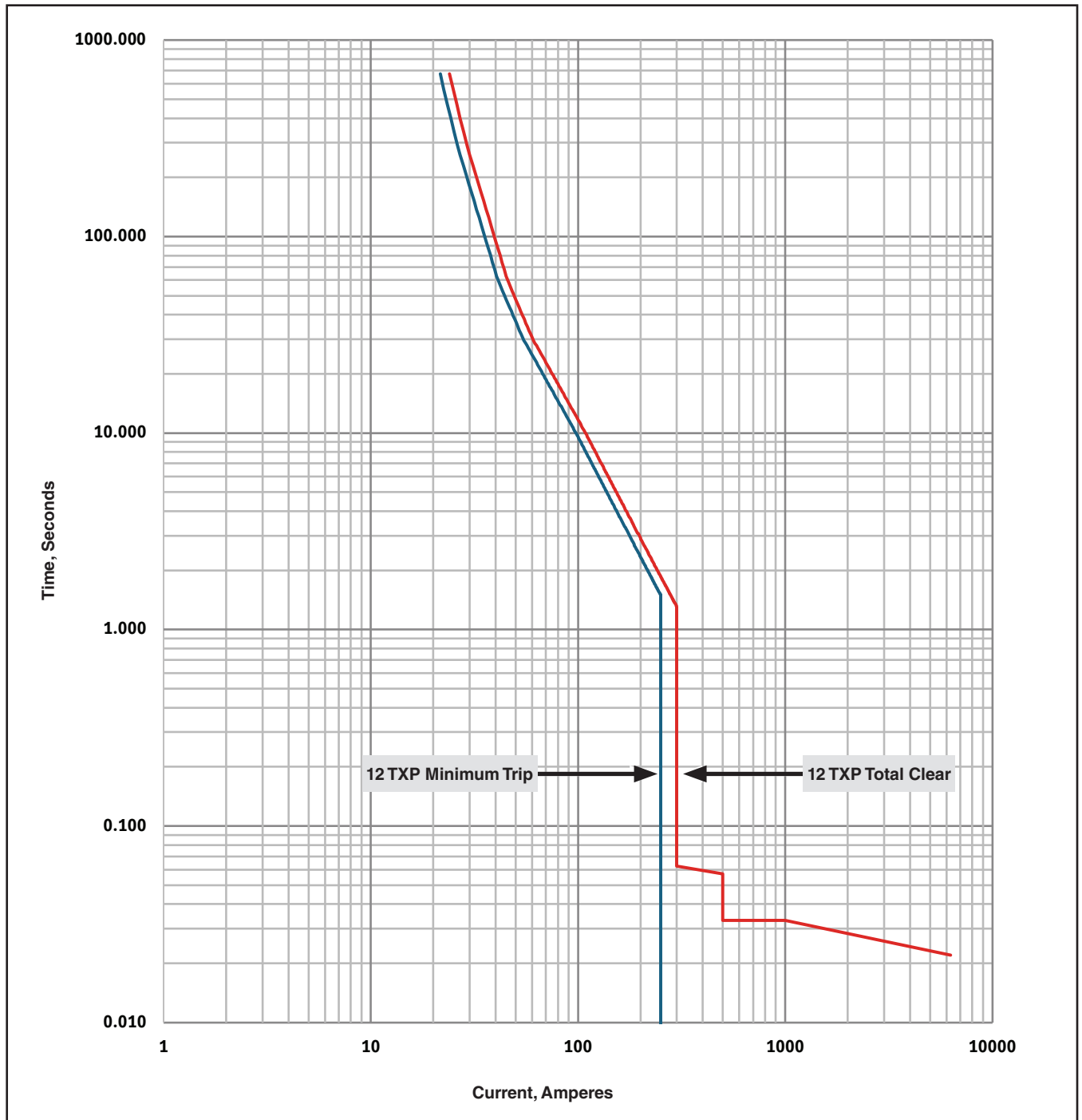
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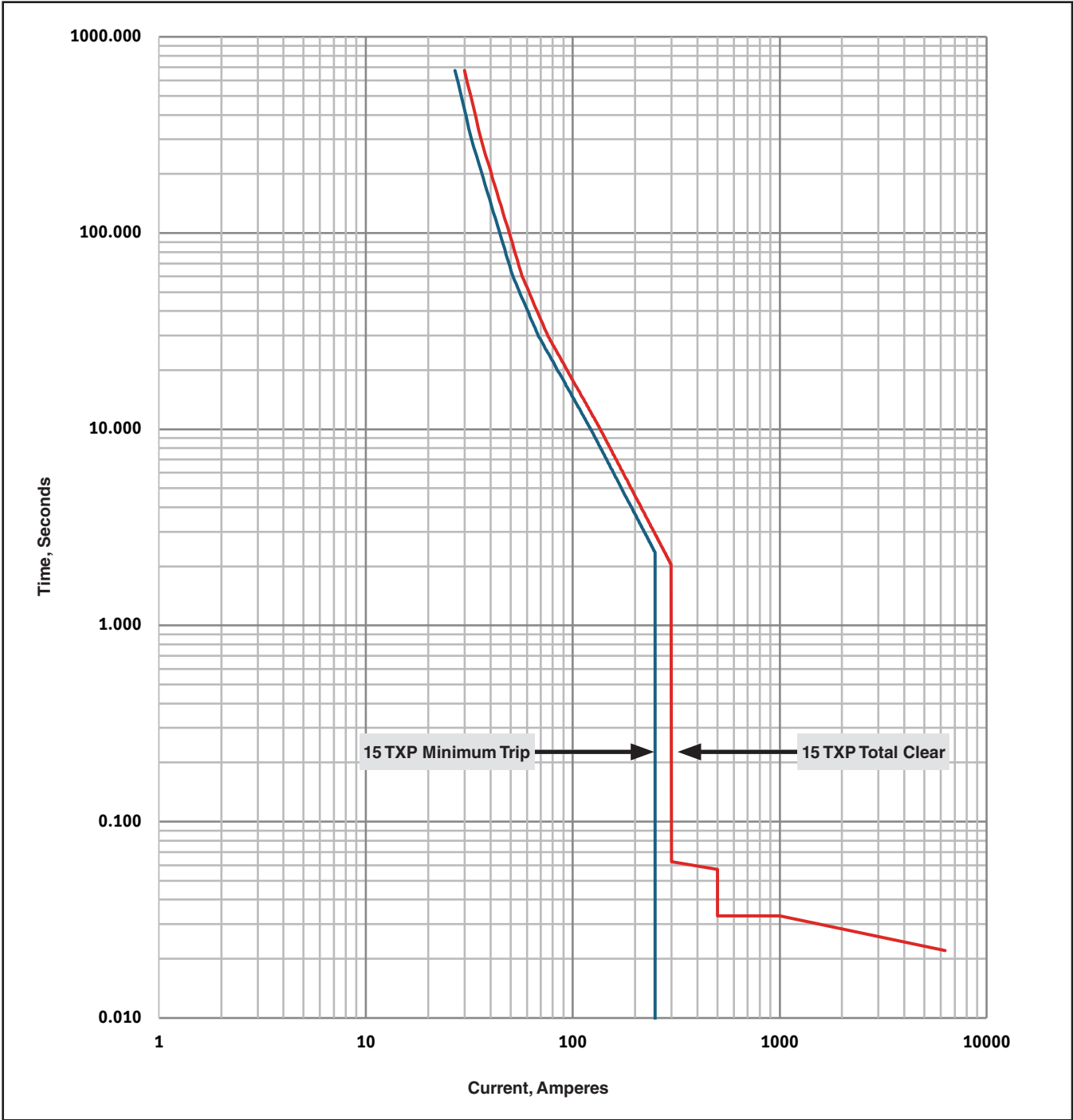
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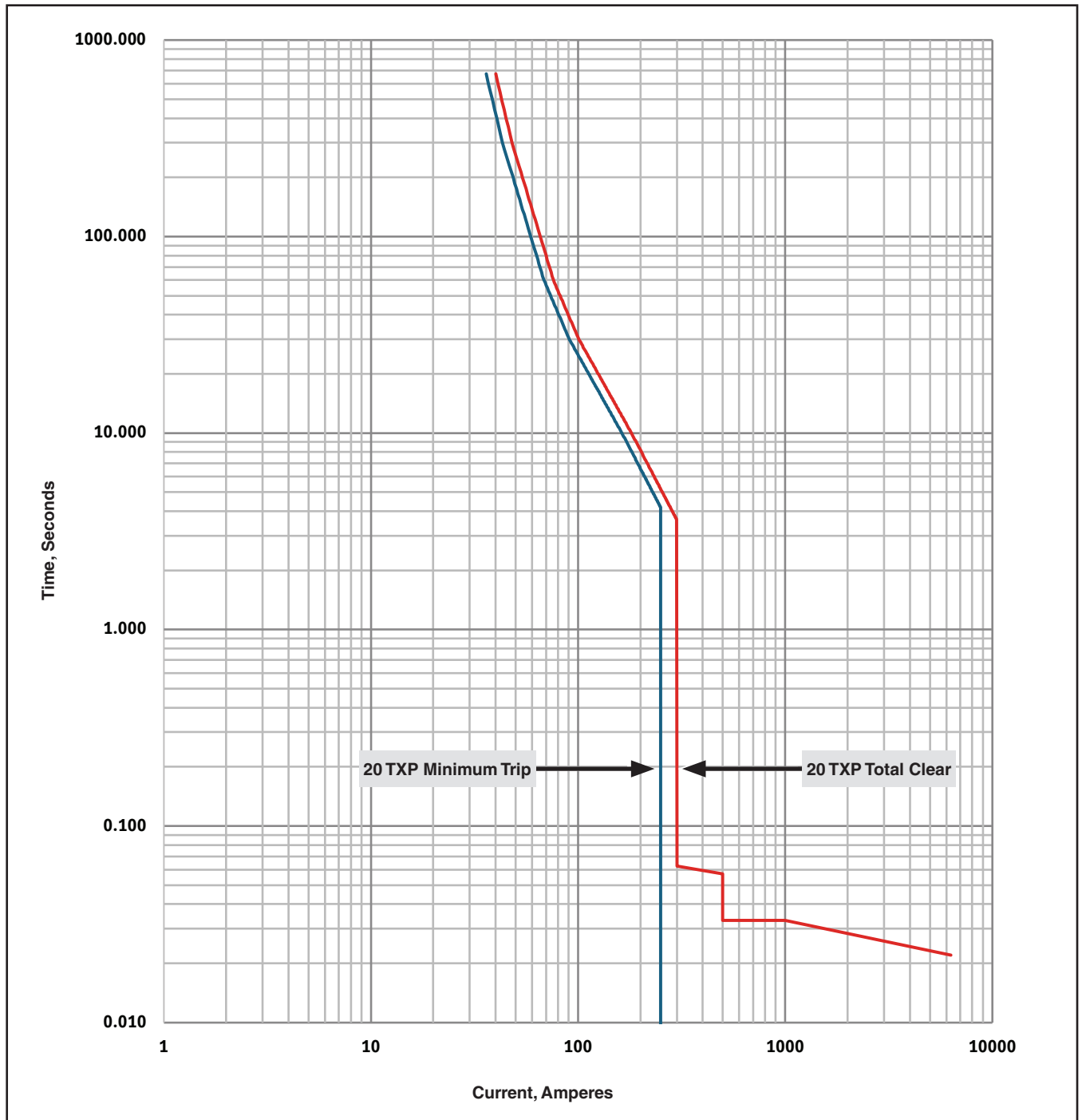
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15-Ampere TXP-Speed TCC Curve with Definite Times at High Current

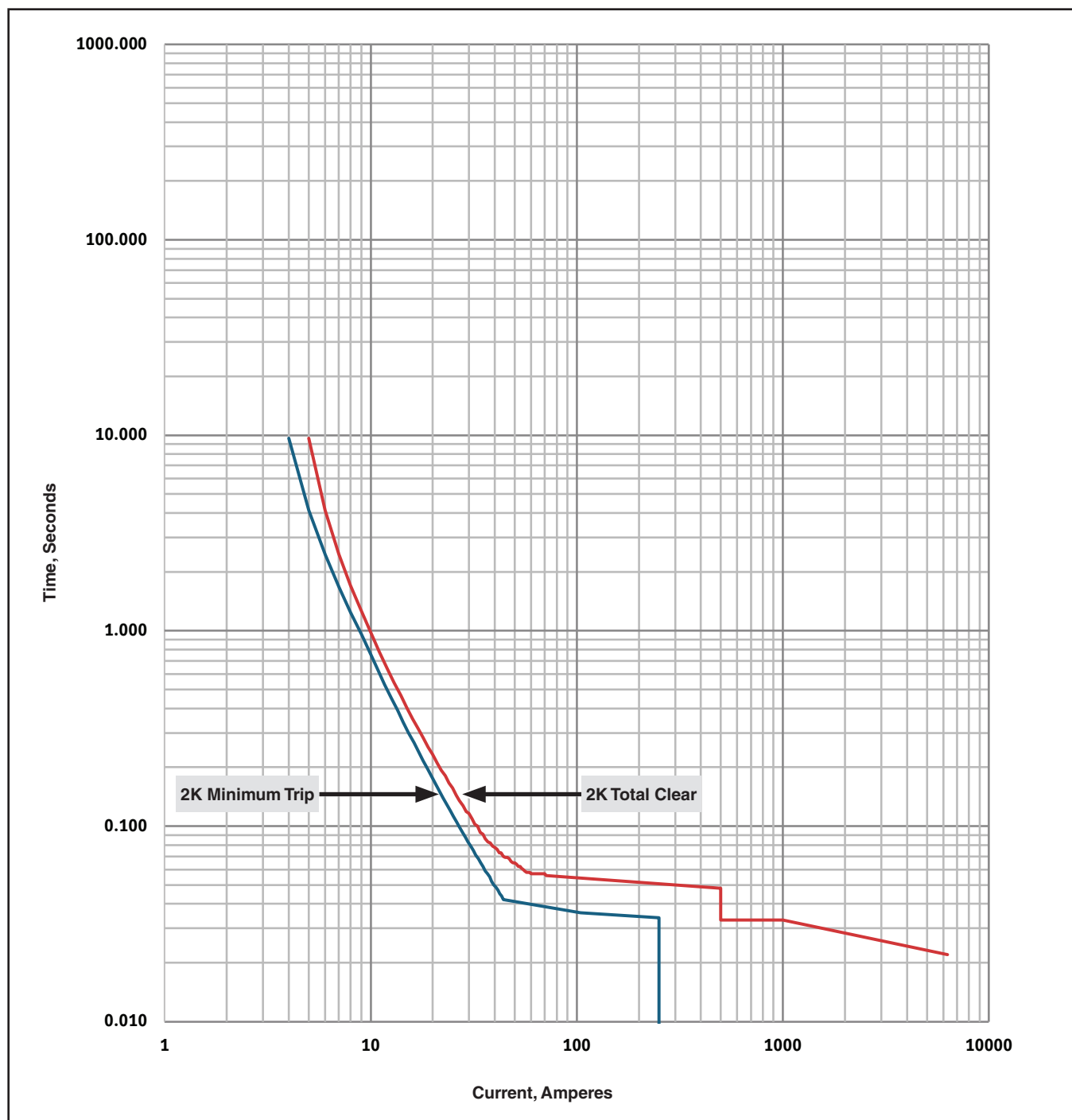


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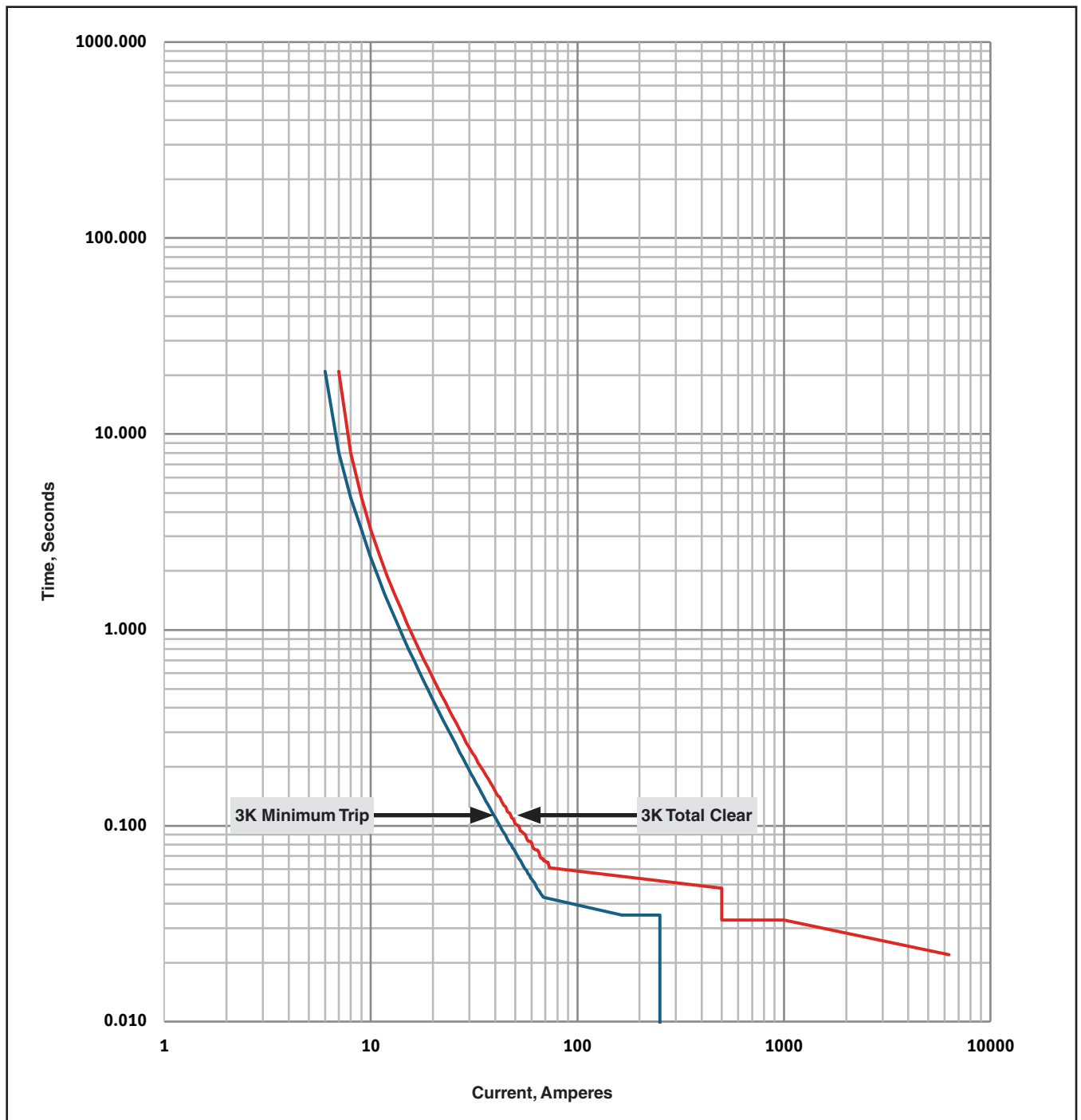


## K-Speed Time-Current Characteristic Curves with Definite Times at High Current

### 2-Ampere K-Speed TCC Curve with Definite Times at High Current

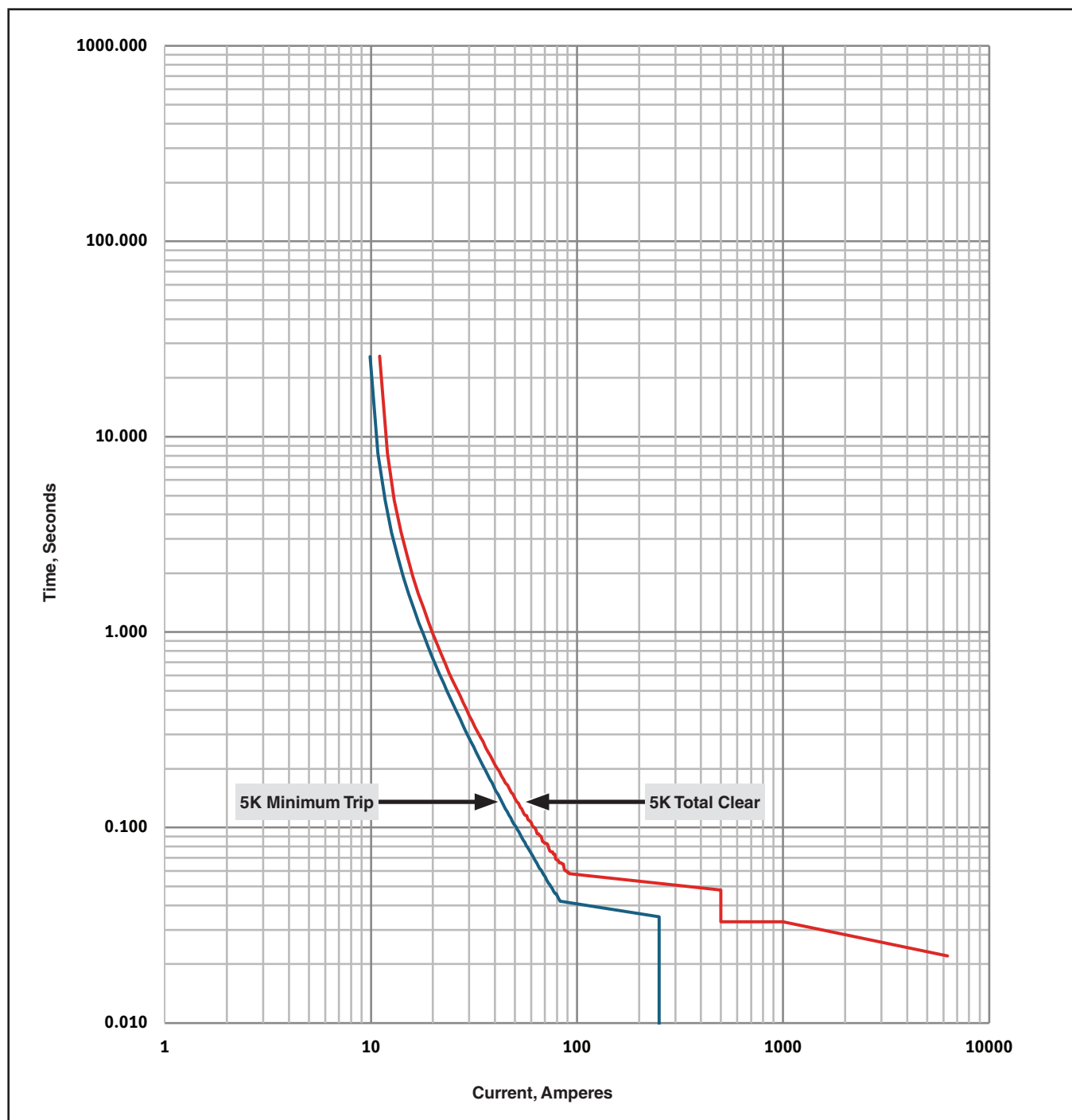


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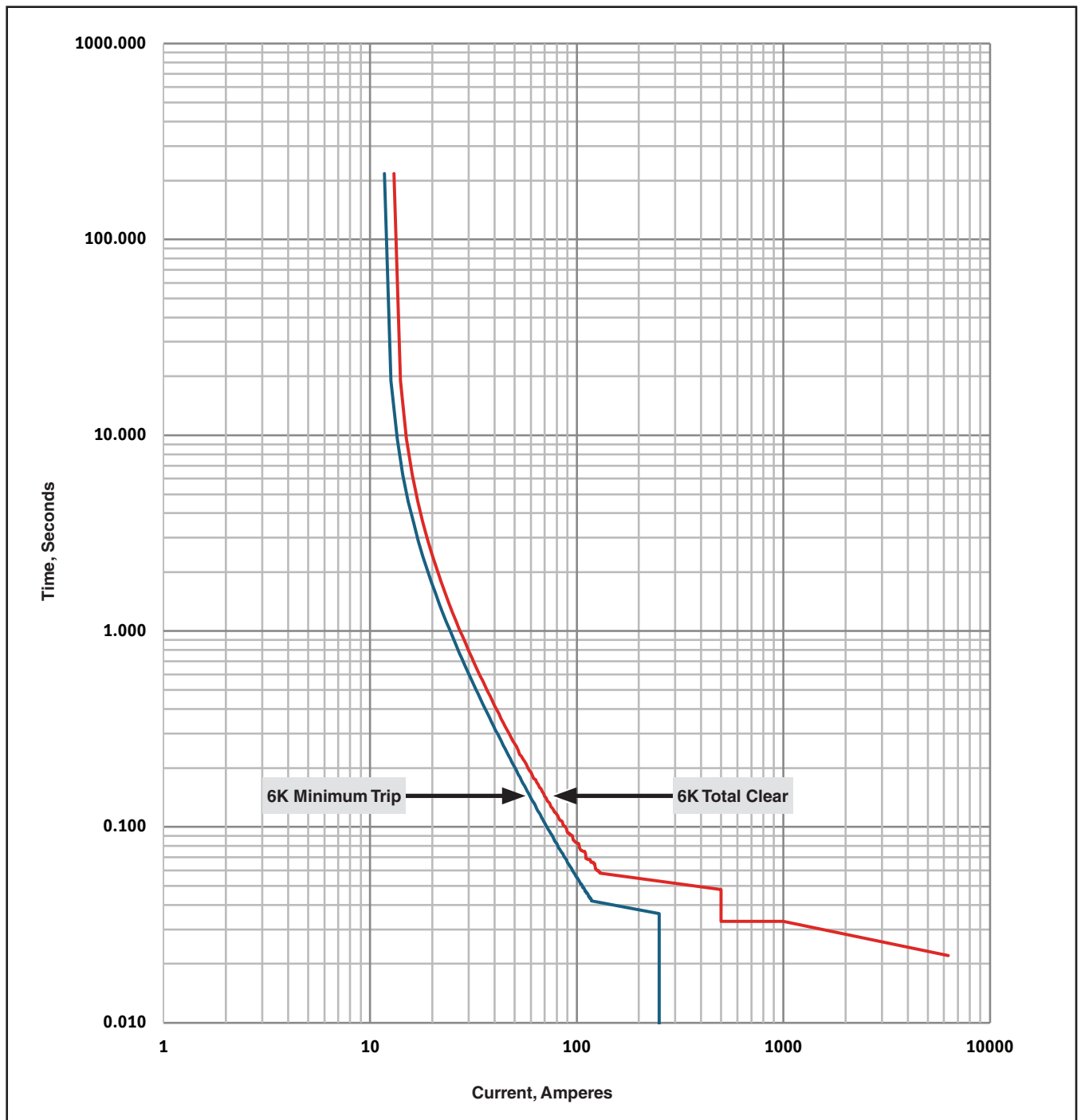
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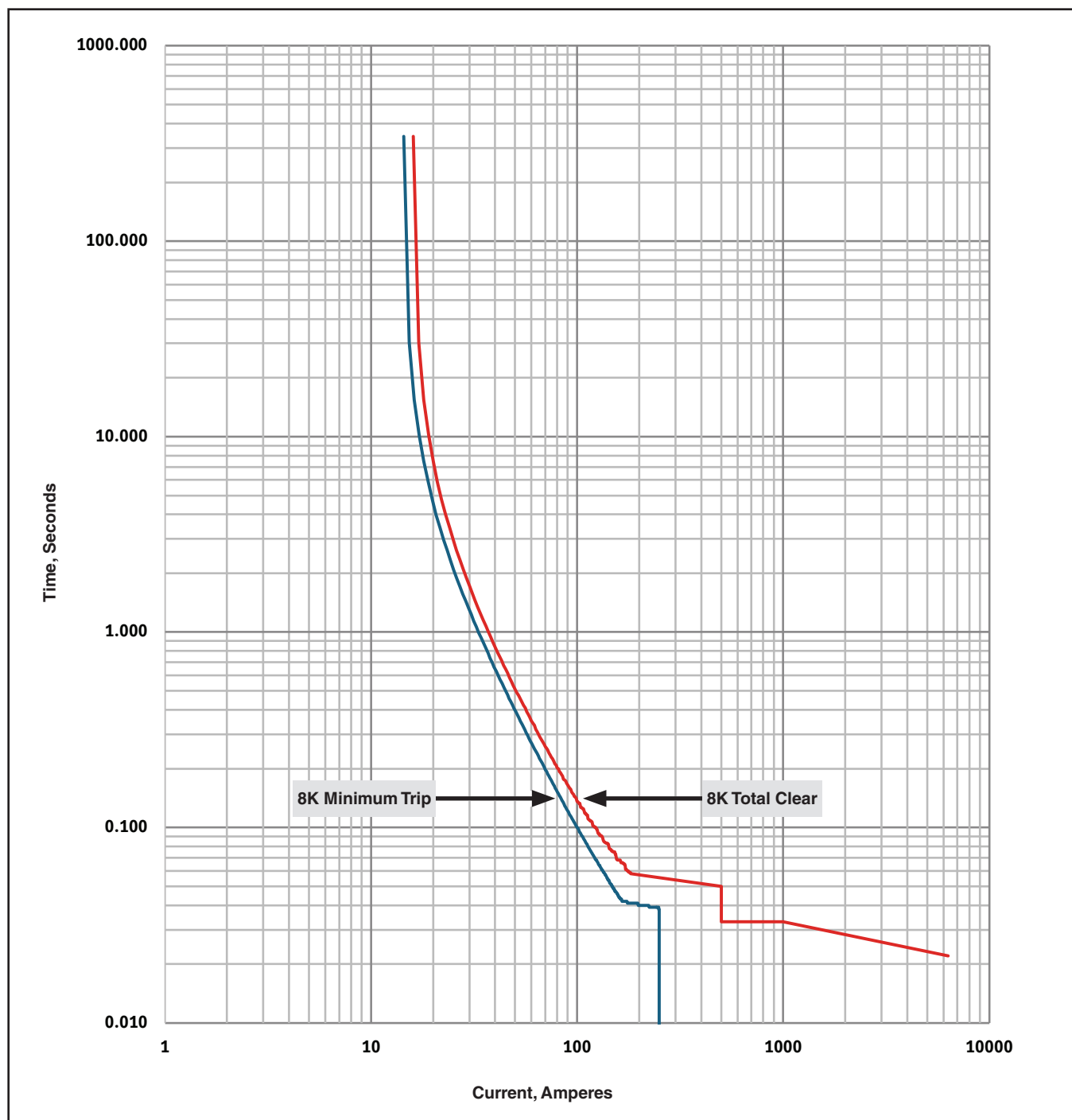


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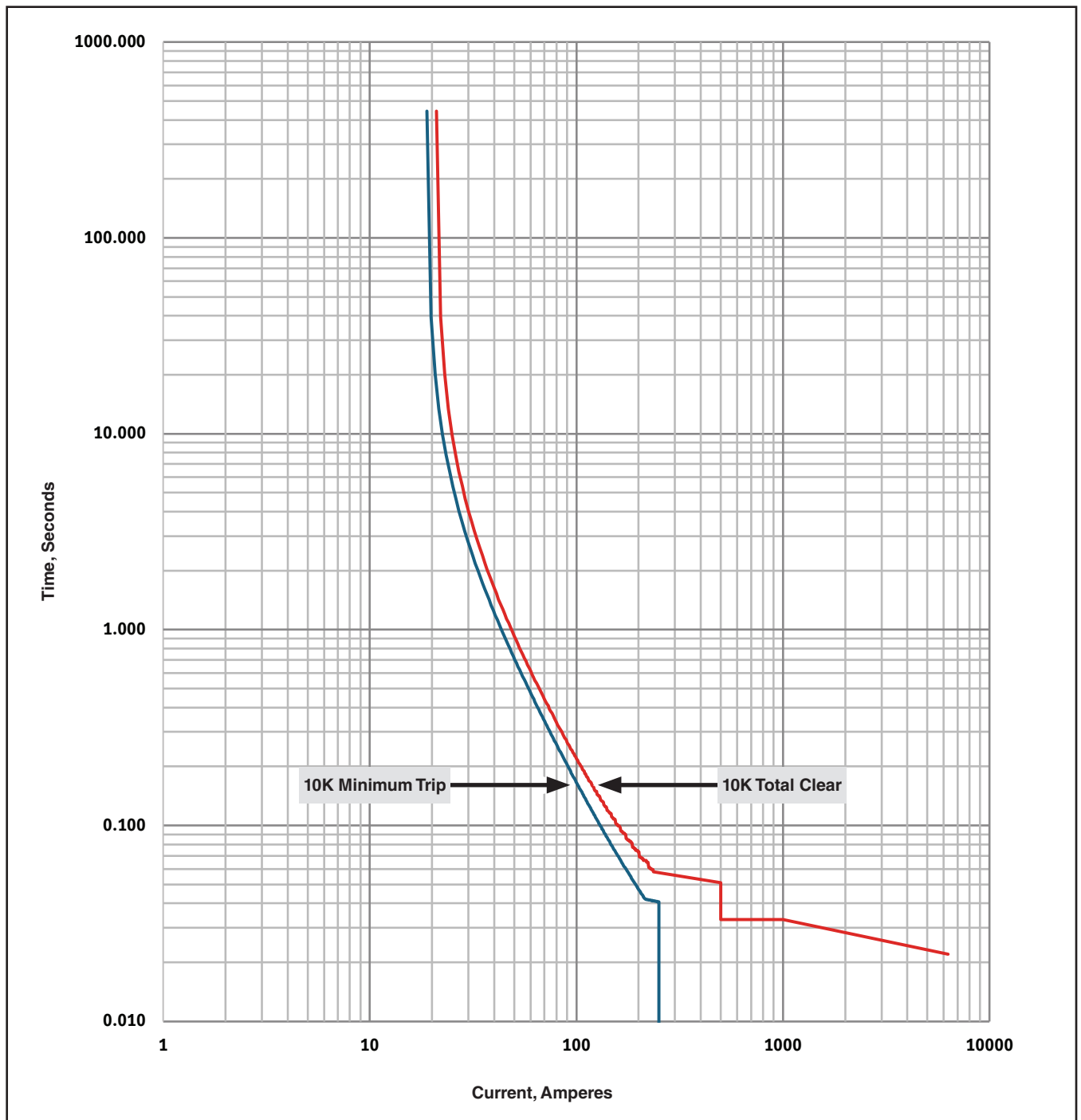


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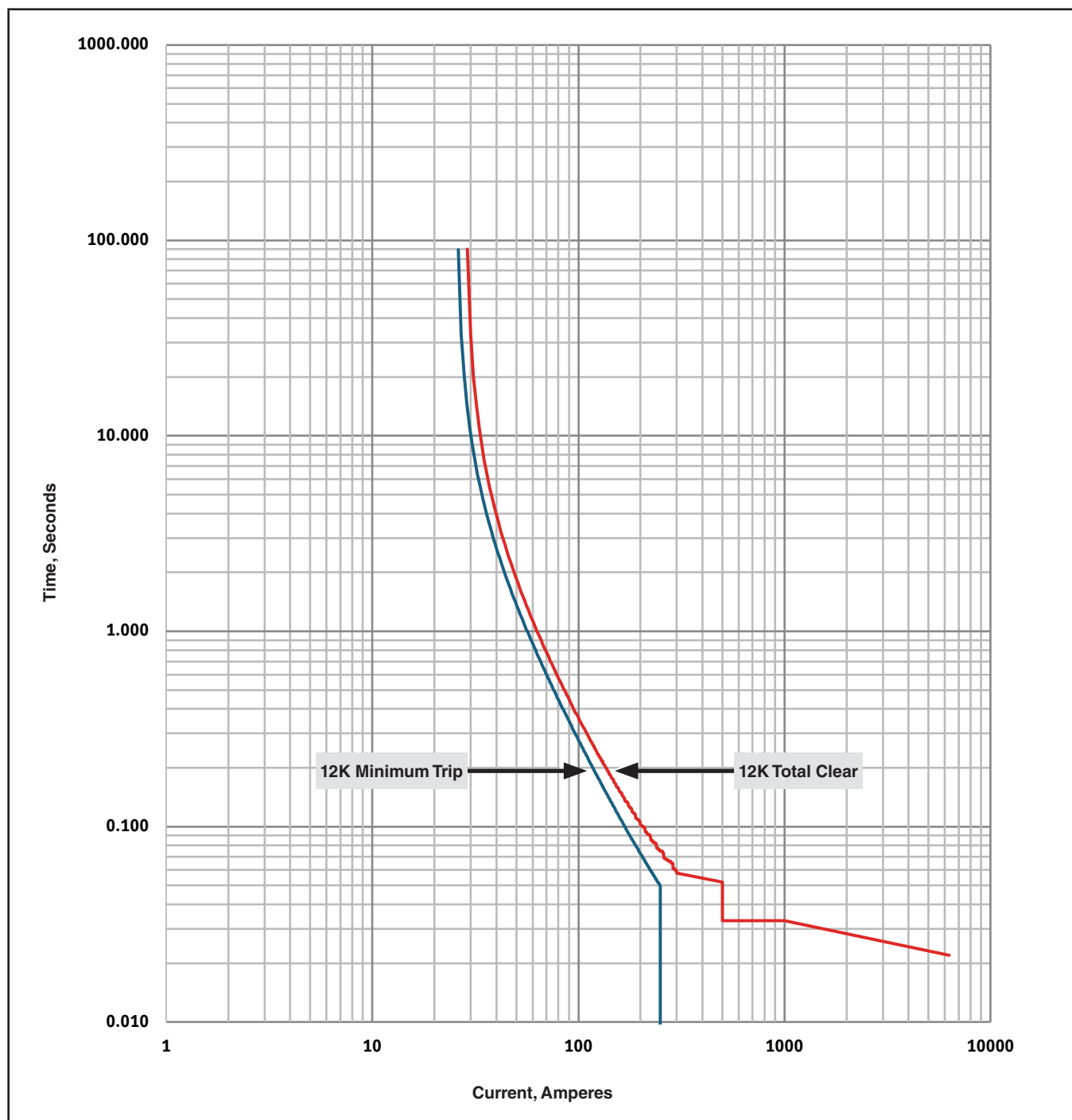


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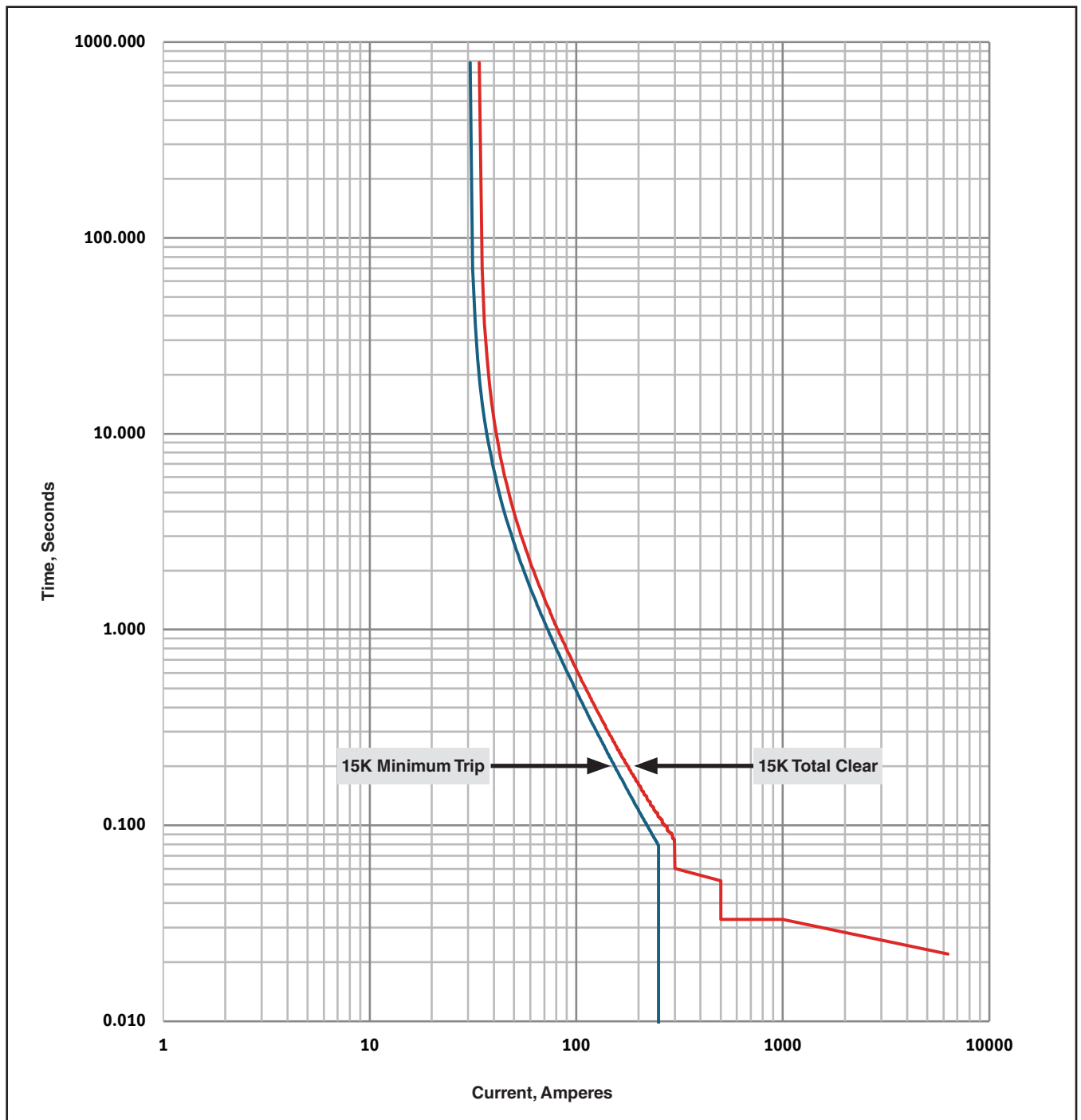


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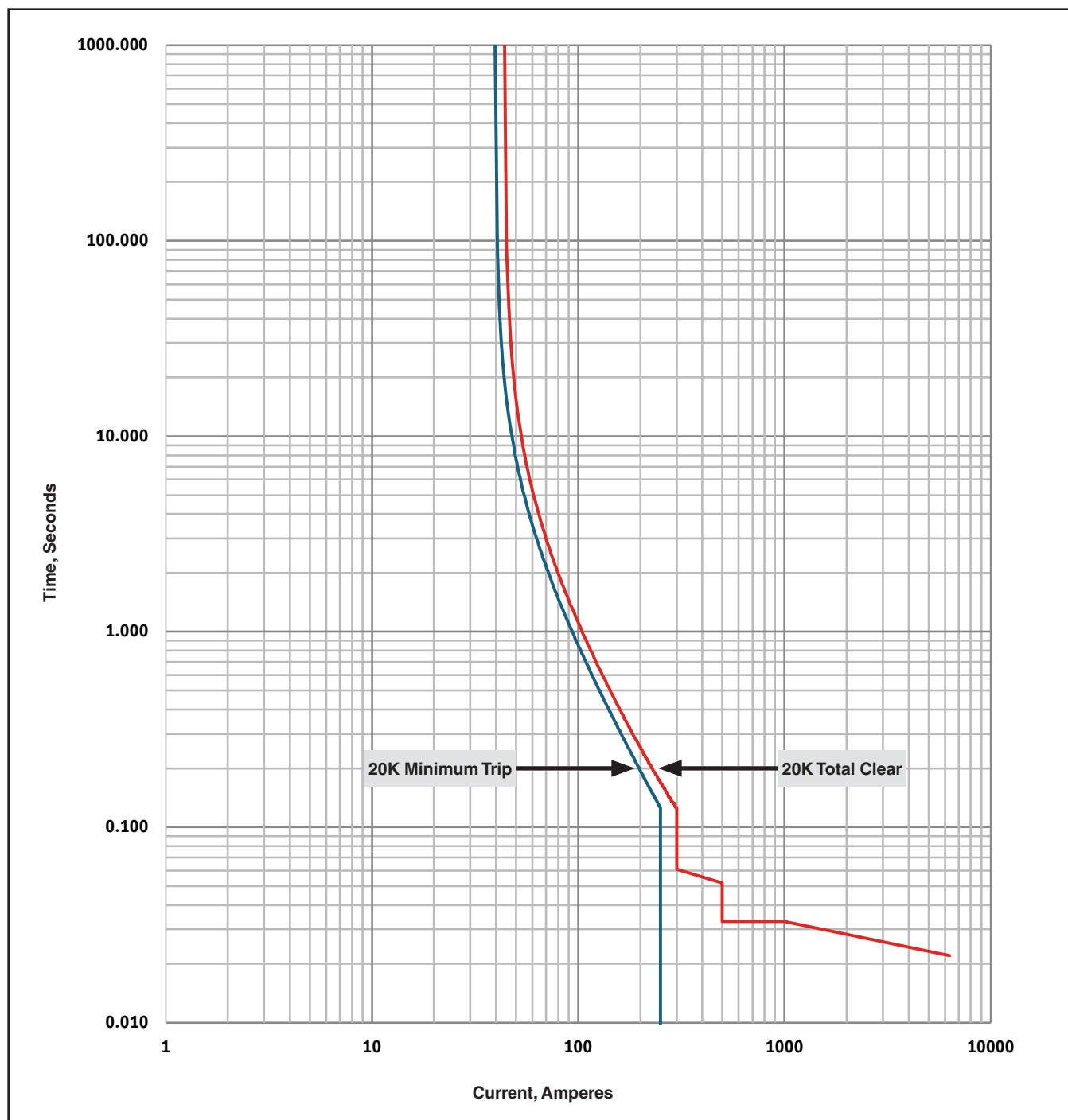


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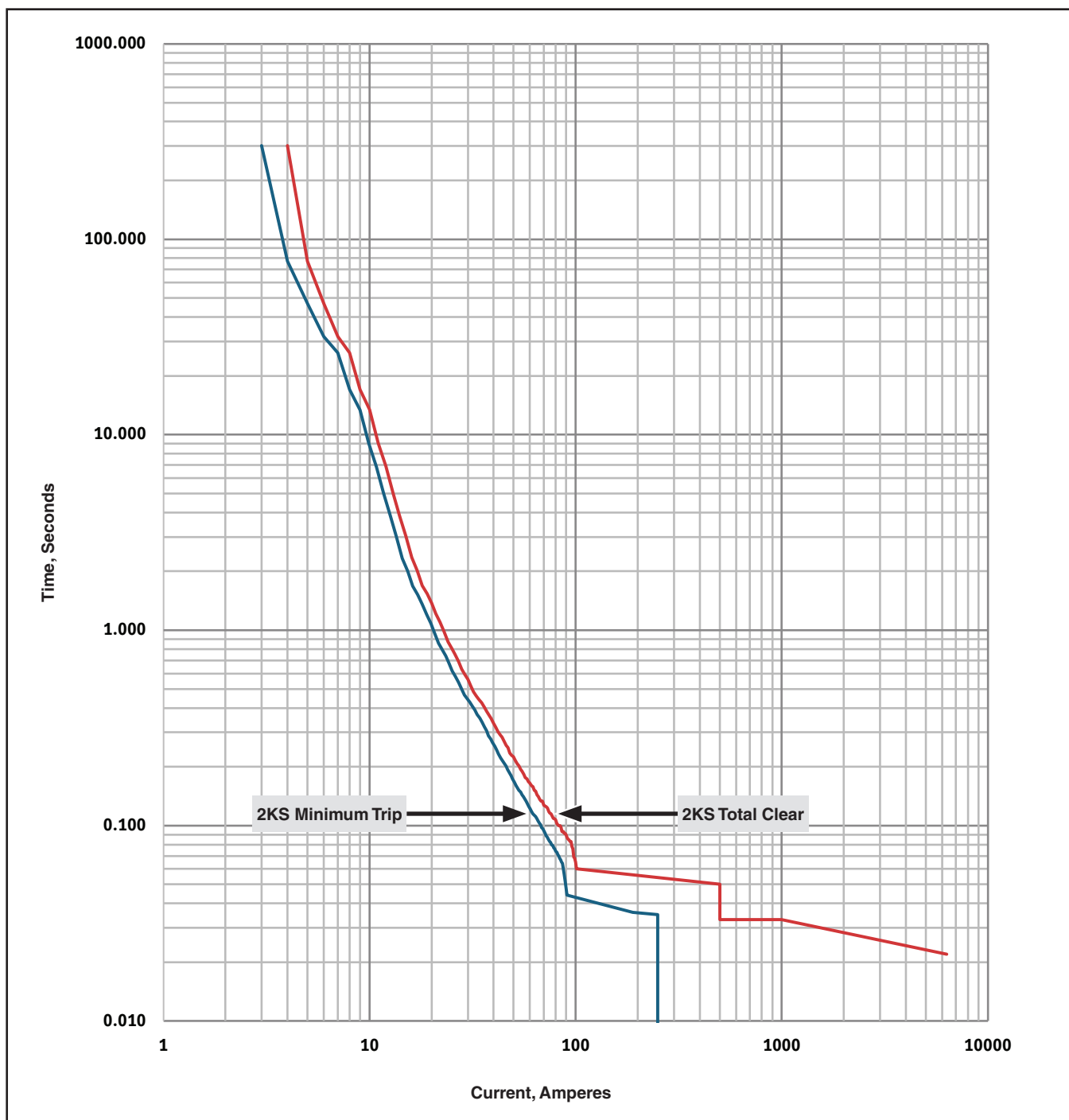


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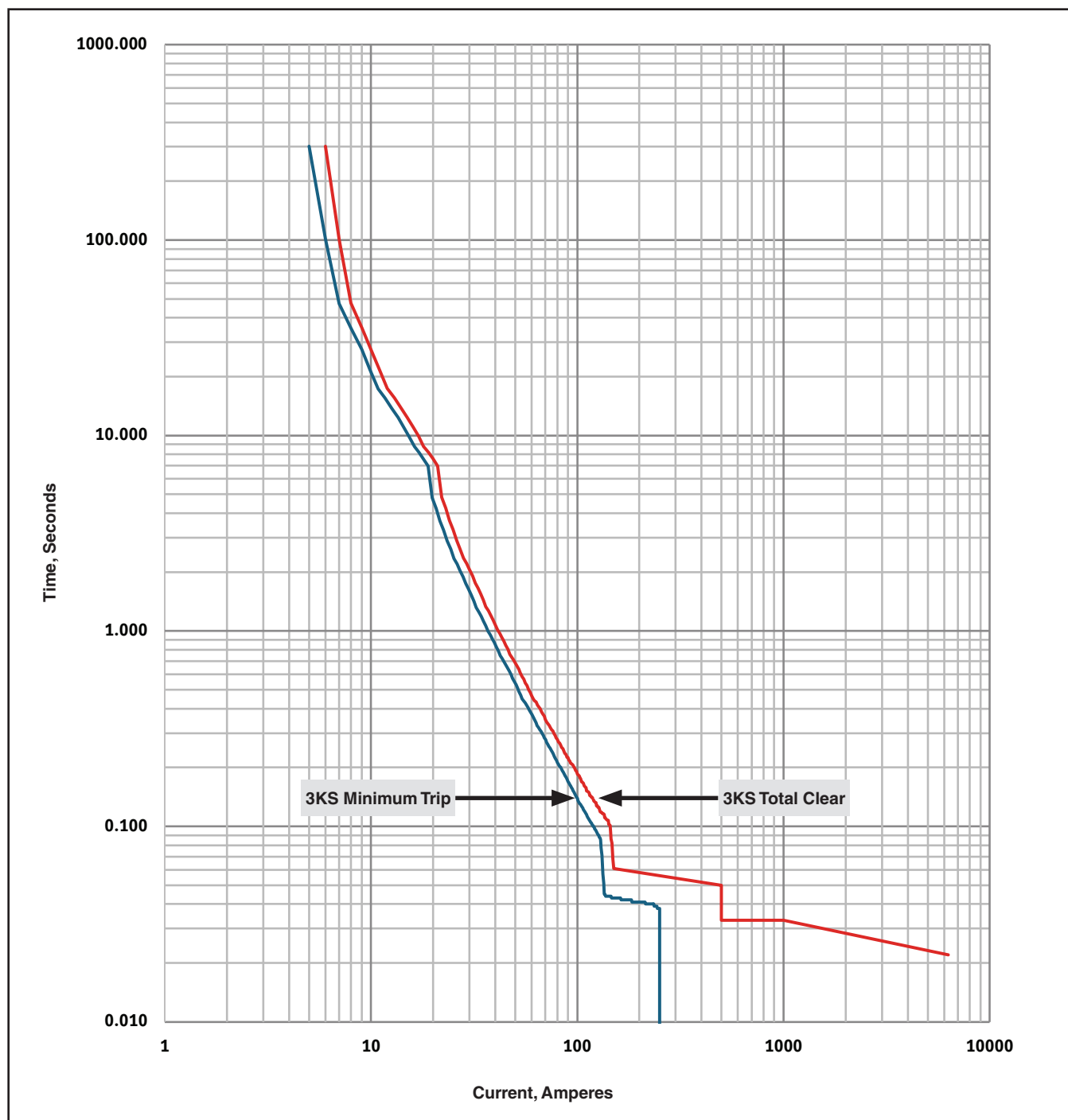


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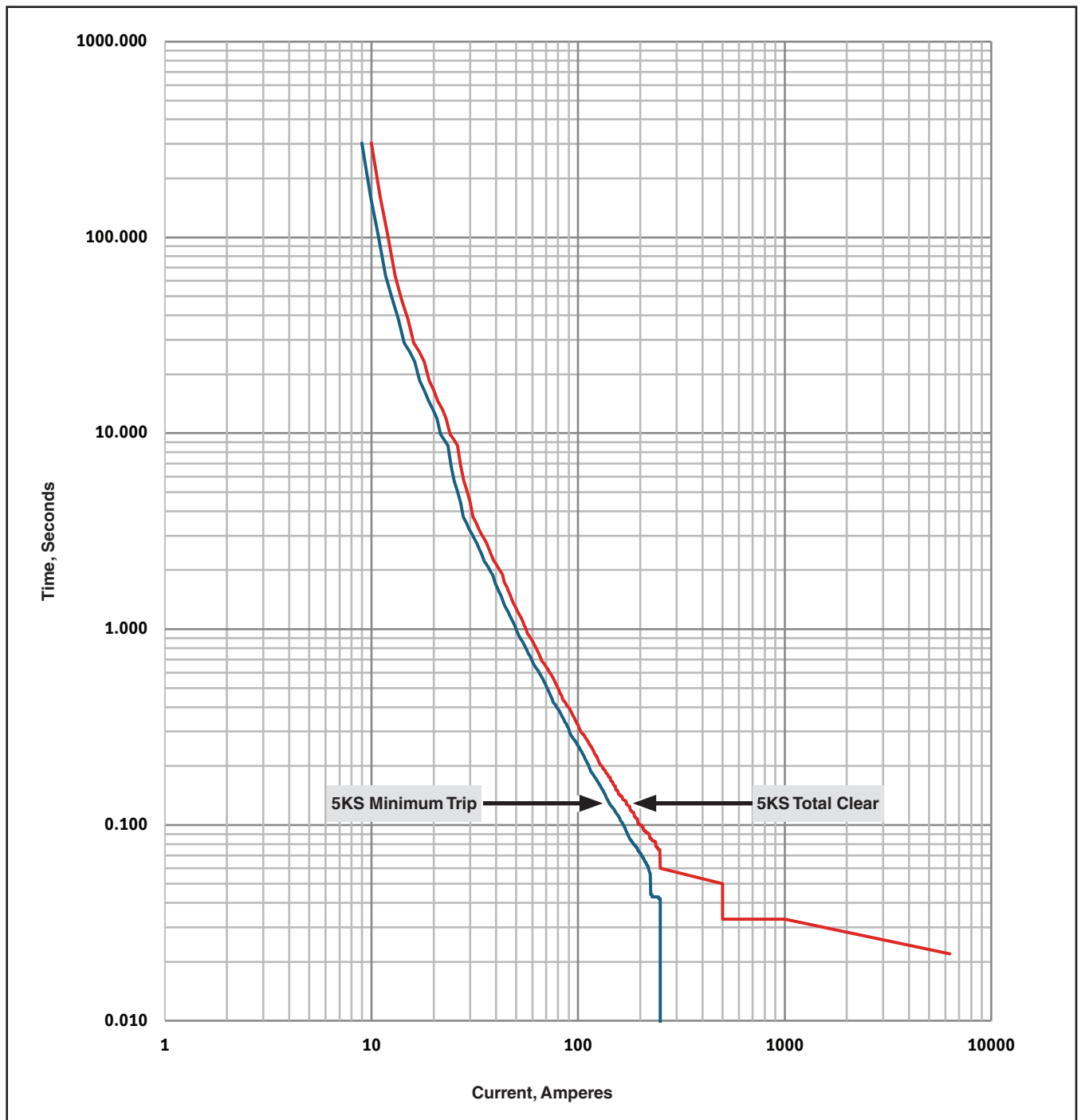
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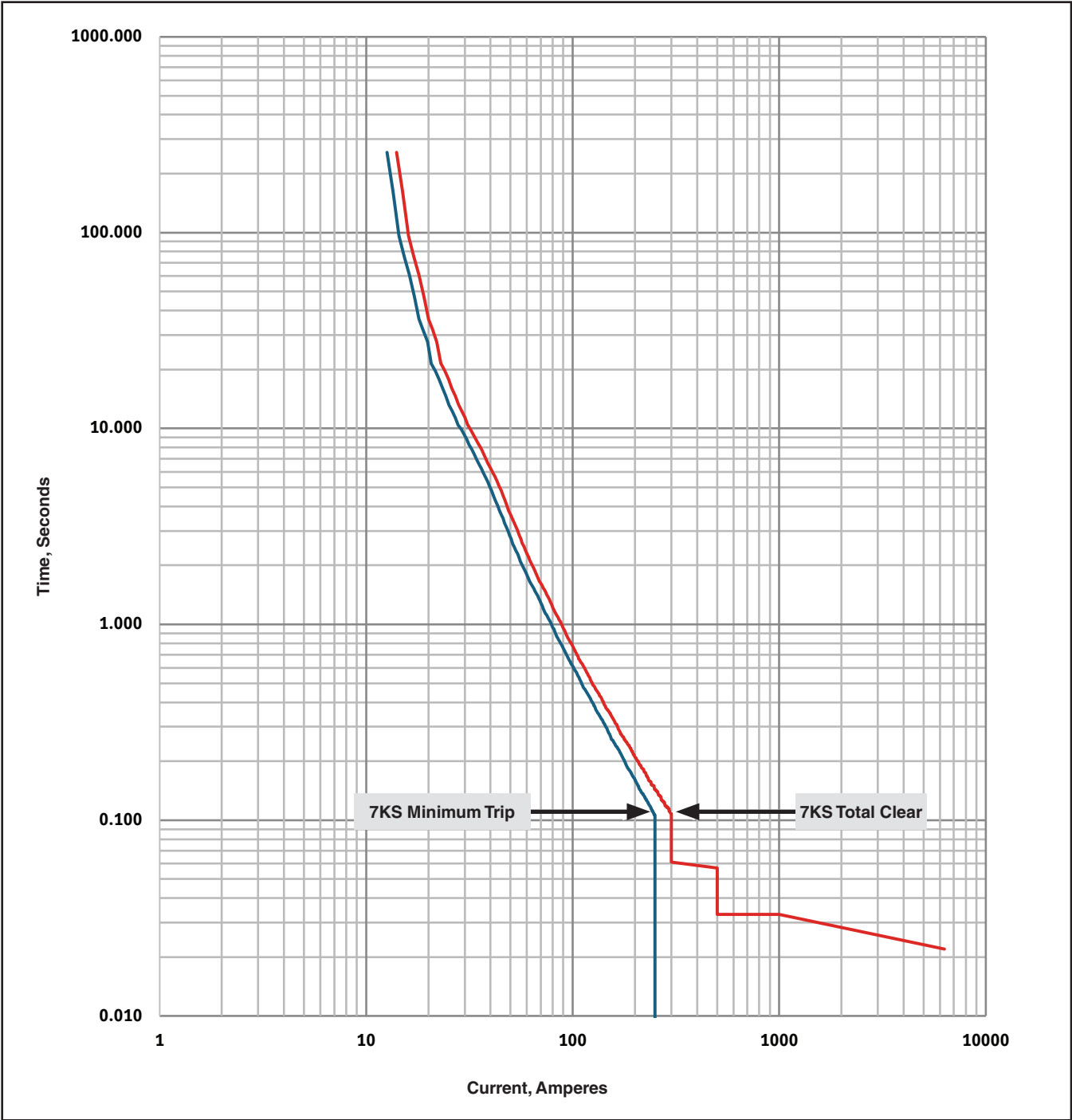




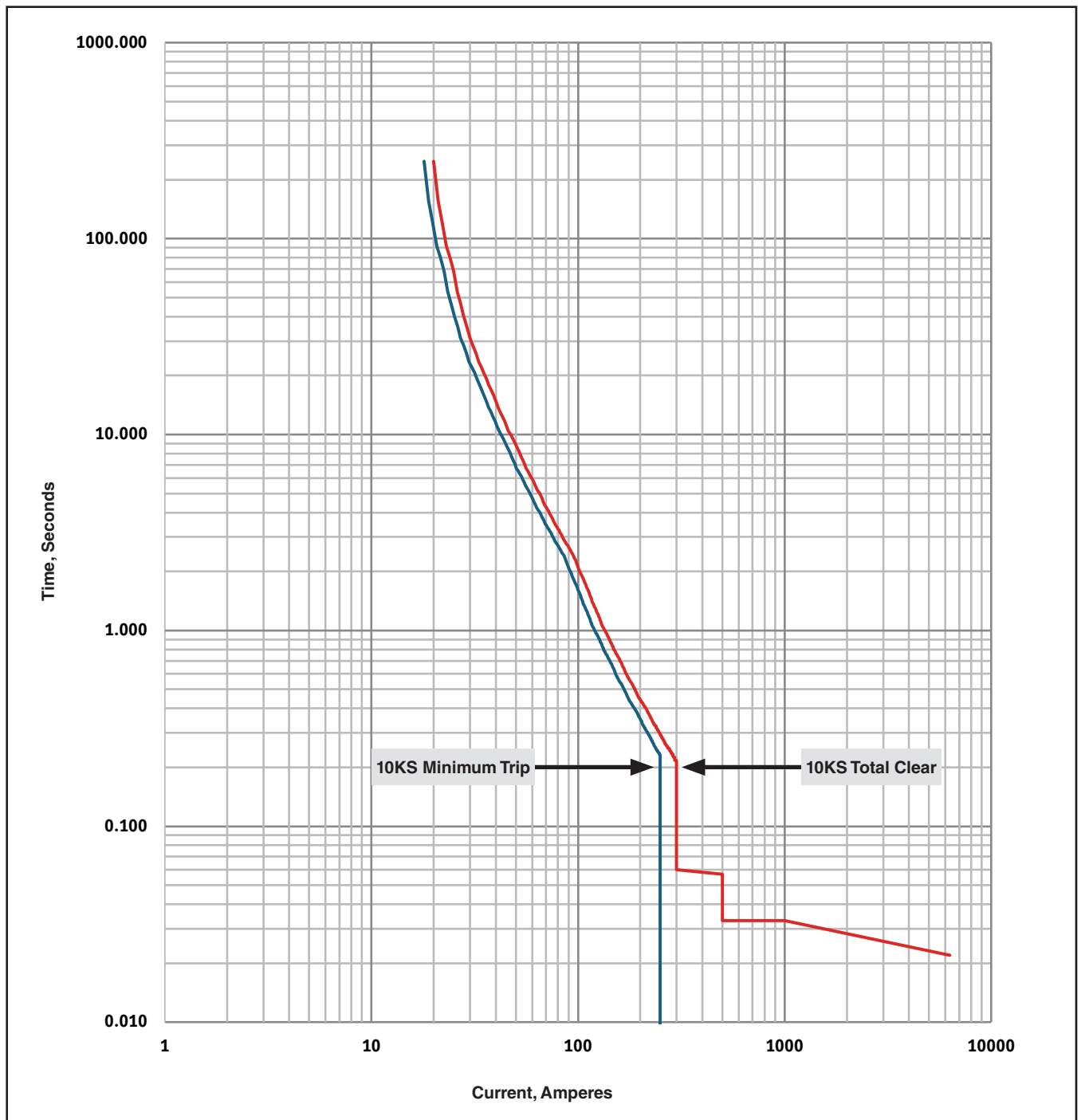
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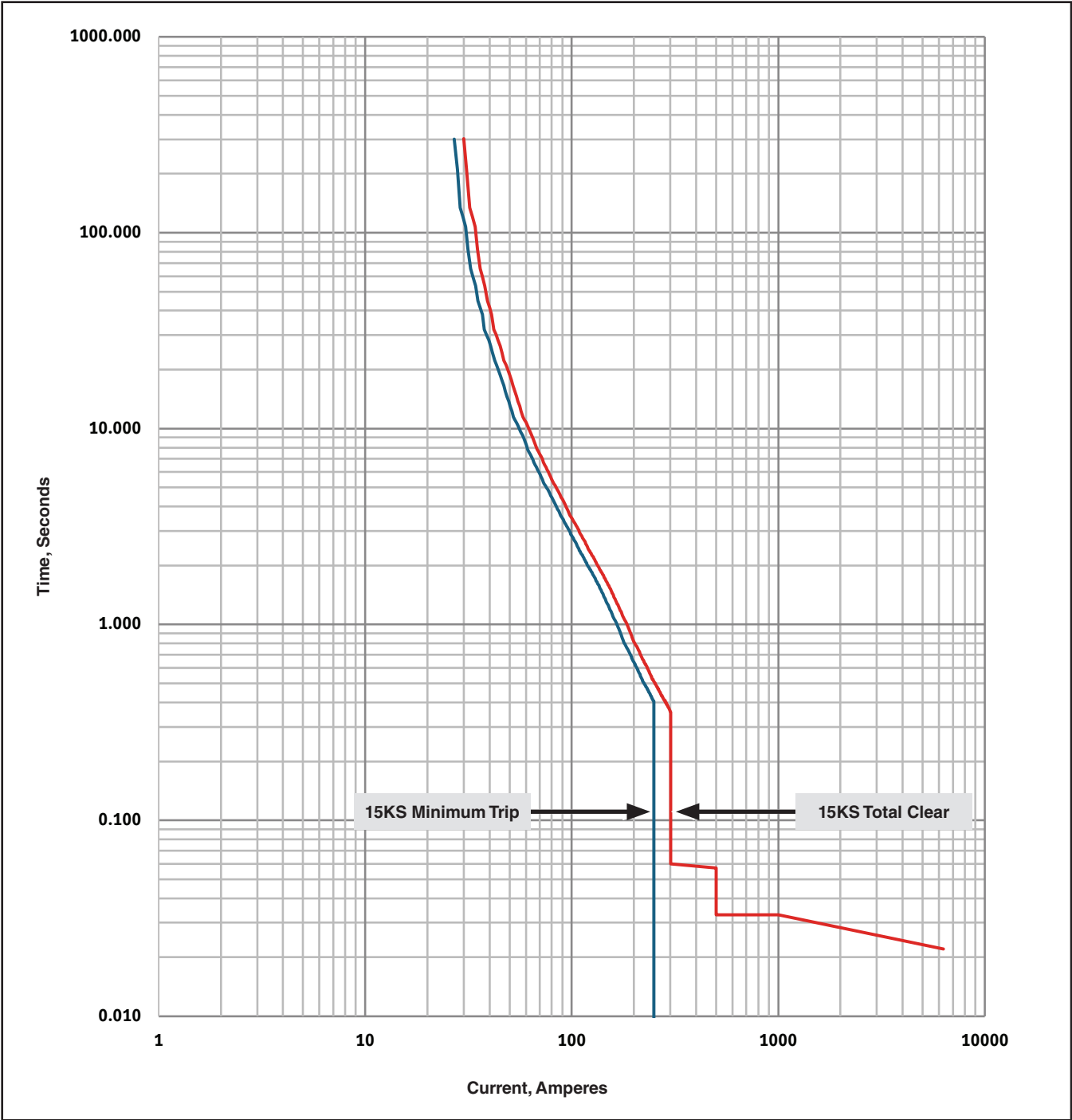


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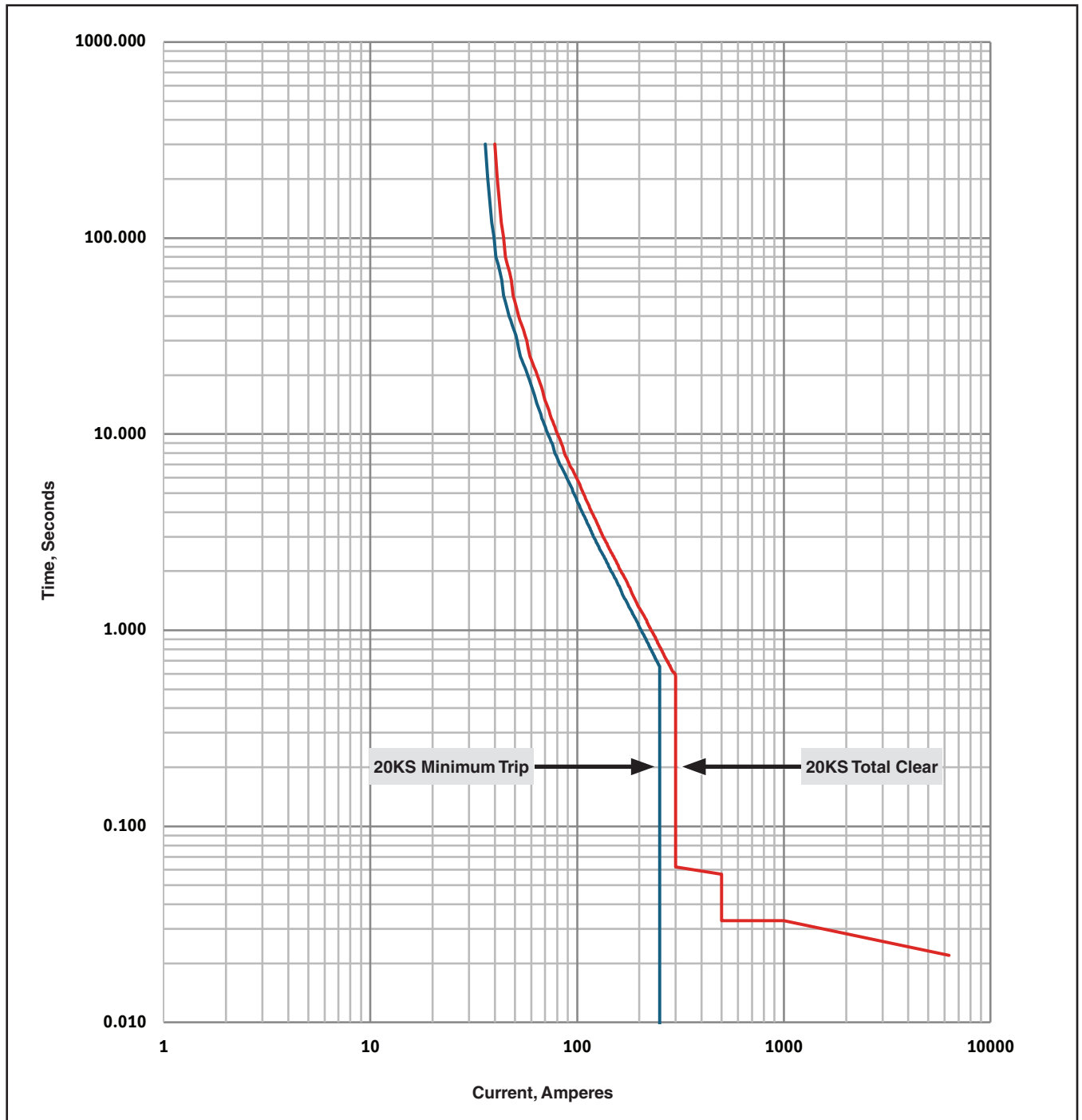


KS-Speed Time-Current Characteristic Curves with Definite Times at High Current

15-Ampere KS-Speed TCC Curve with Definite Times at High Current

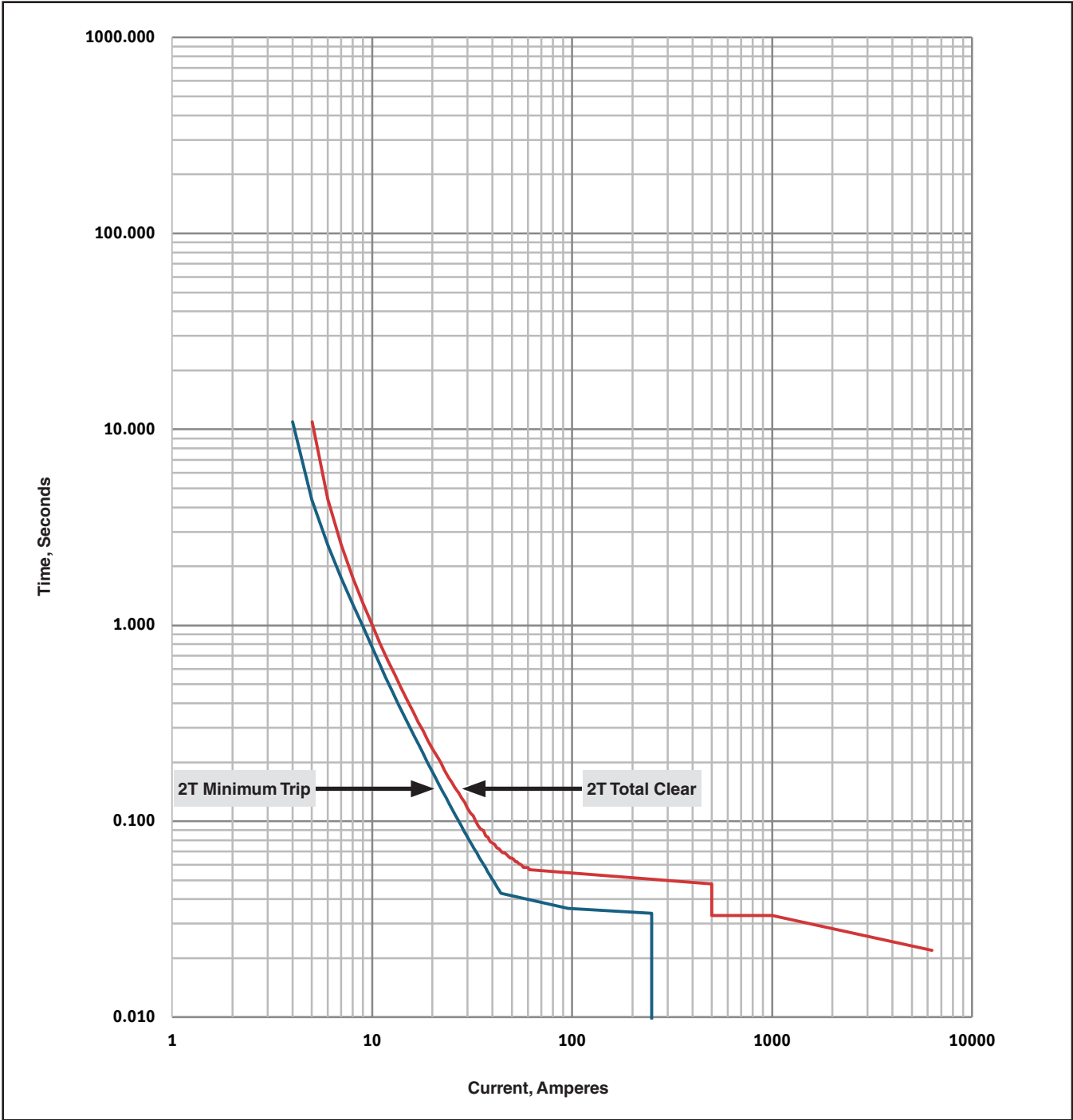


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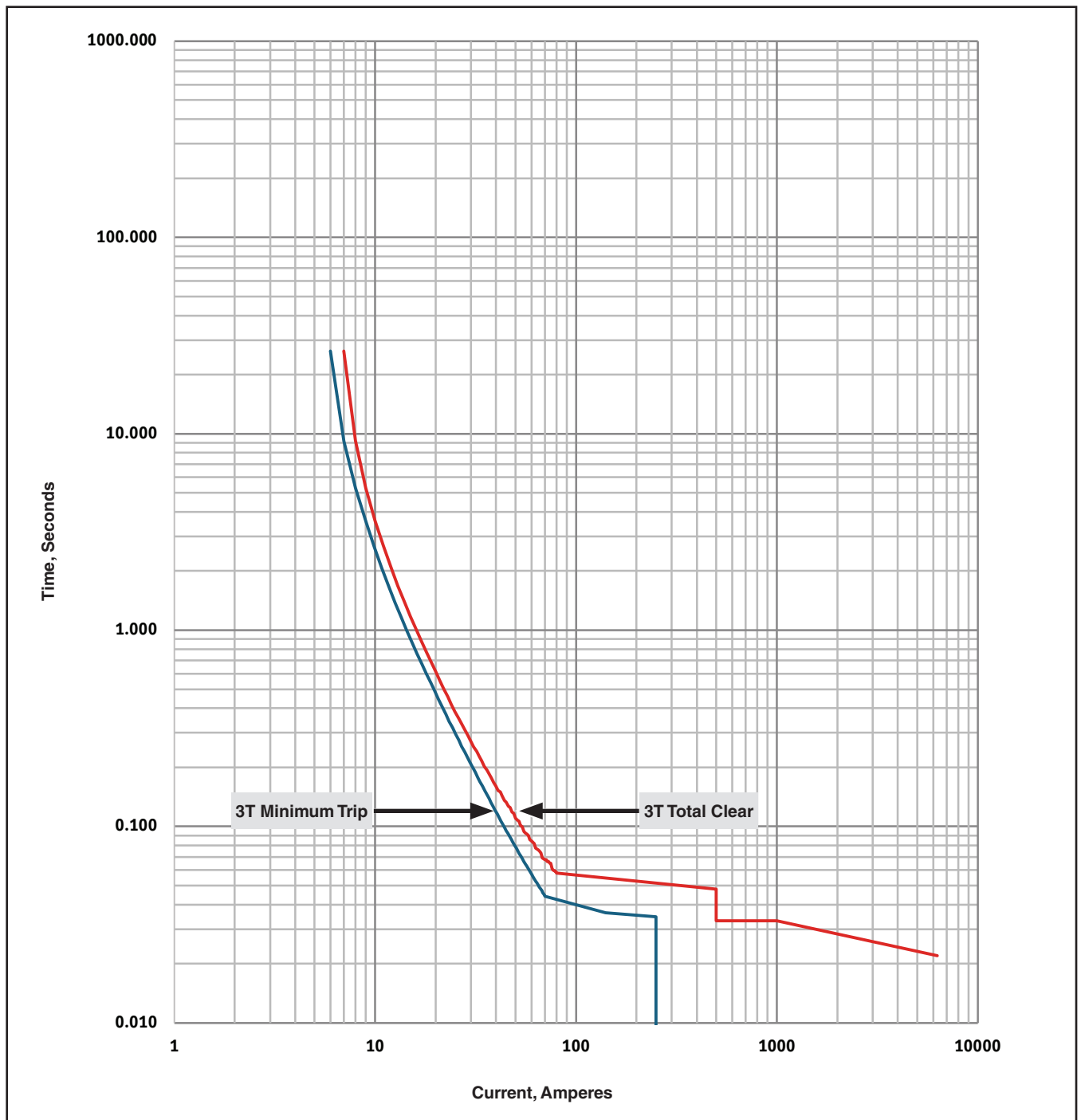


T-Speed Time-Current Characteristic Curves with Definite Times at High Current

2-Ampere T-Speed TCC Curve with Definite Times at High Current

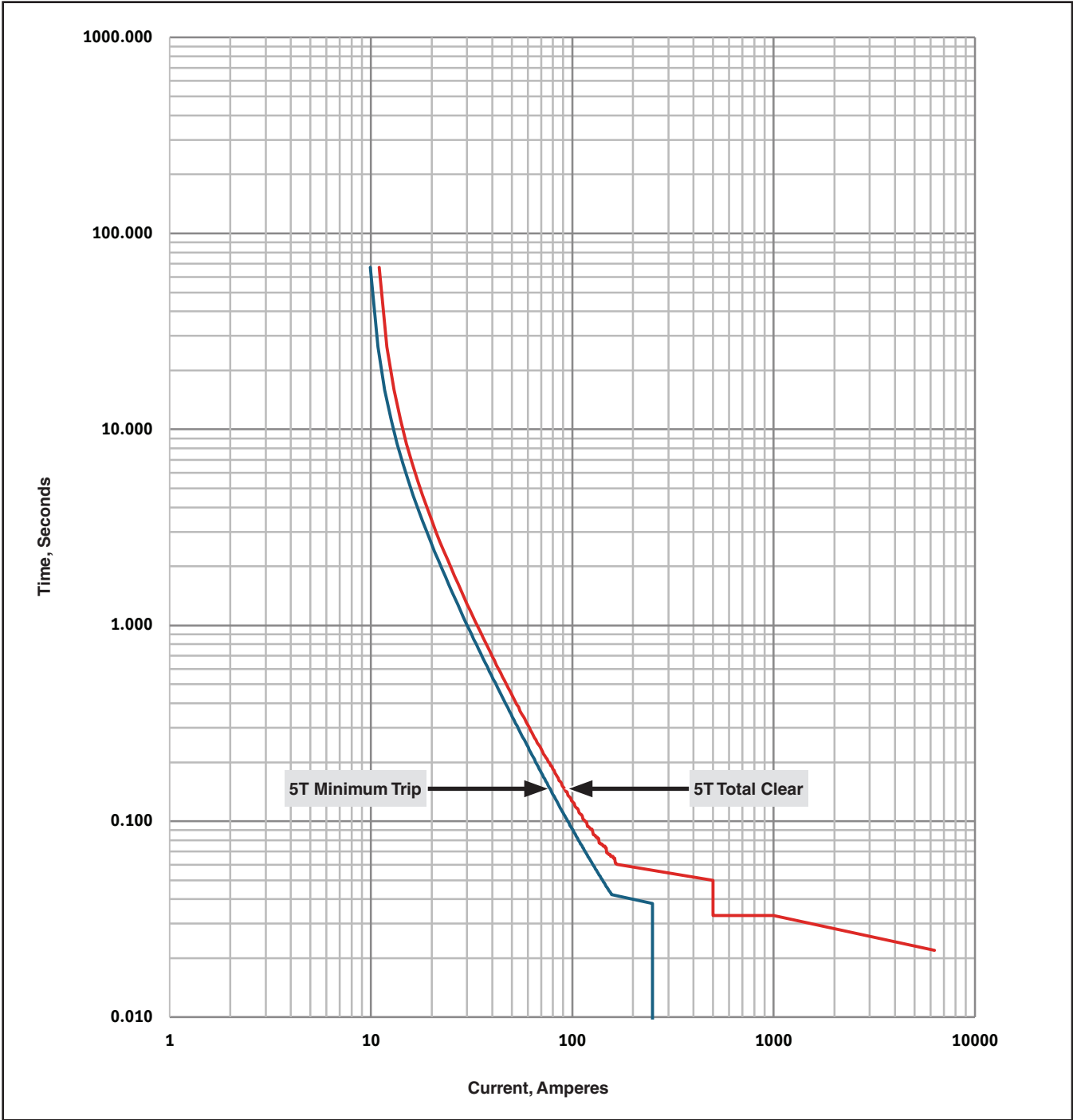


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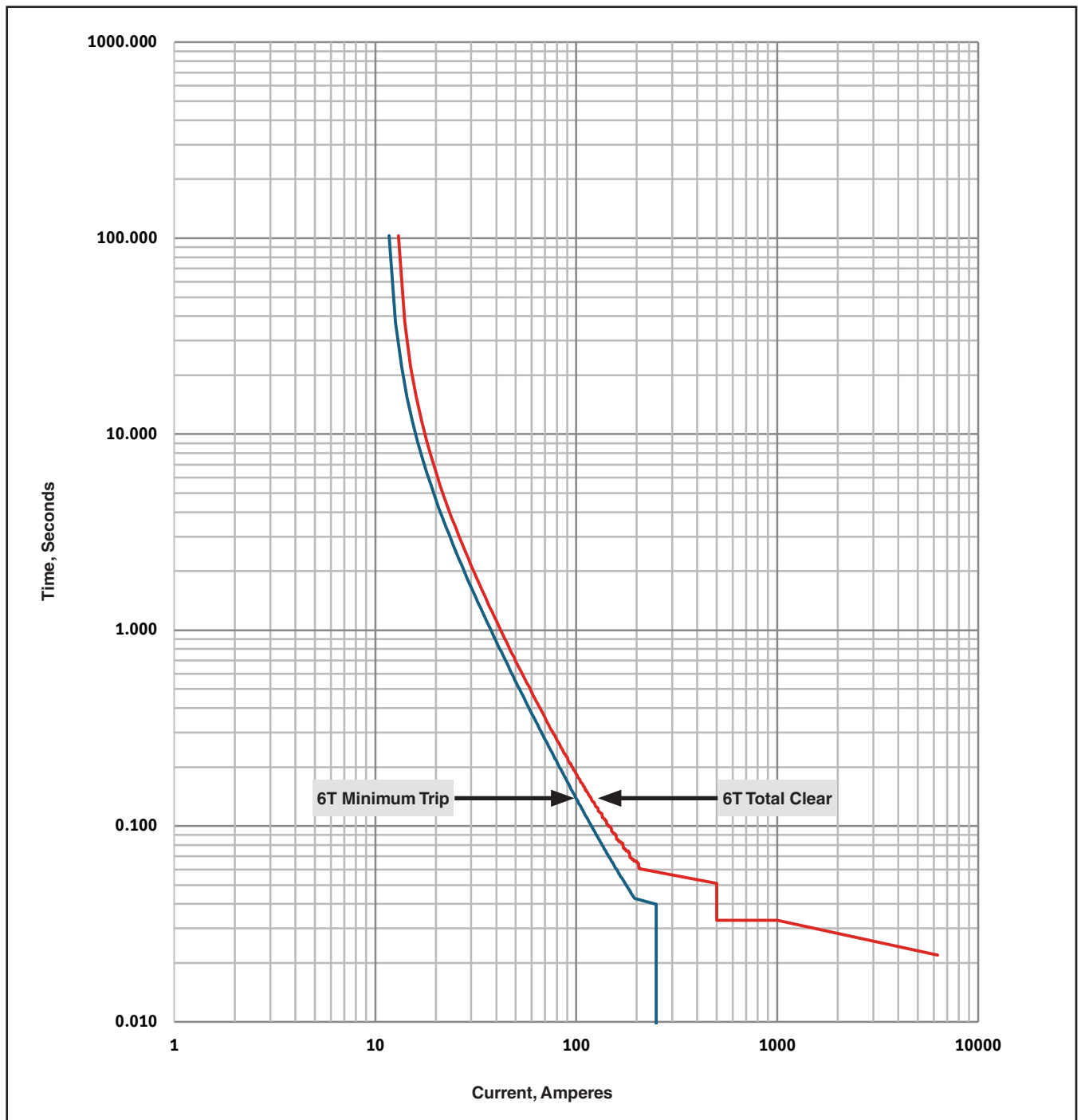
T-Speed Time-Current Characteristic Curves with Definite Times at High Current

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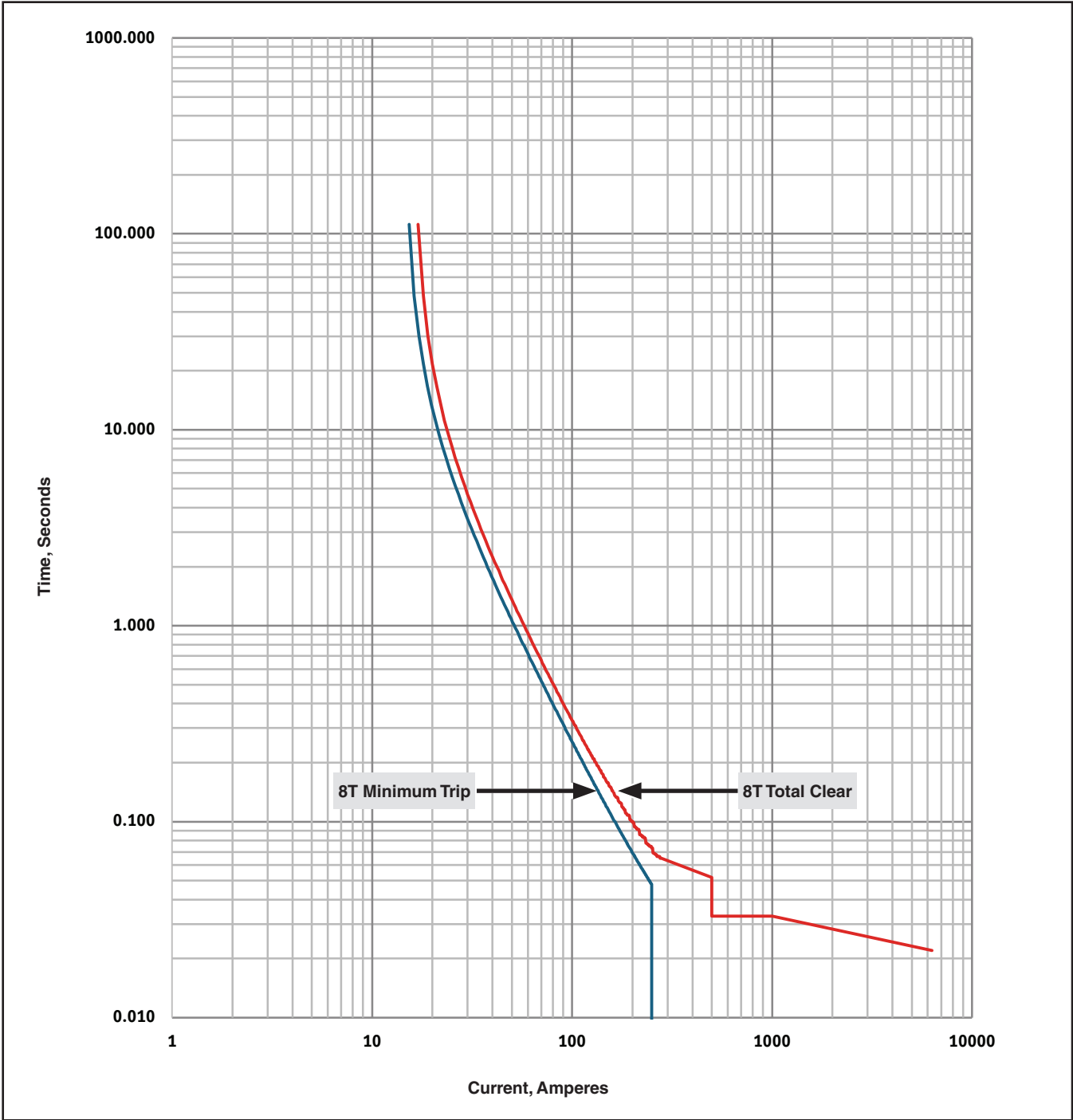




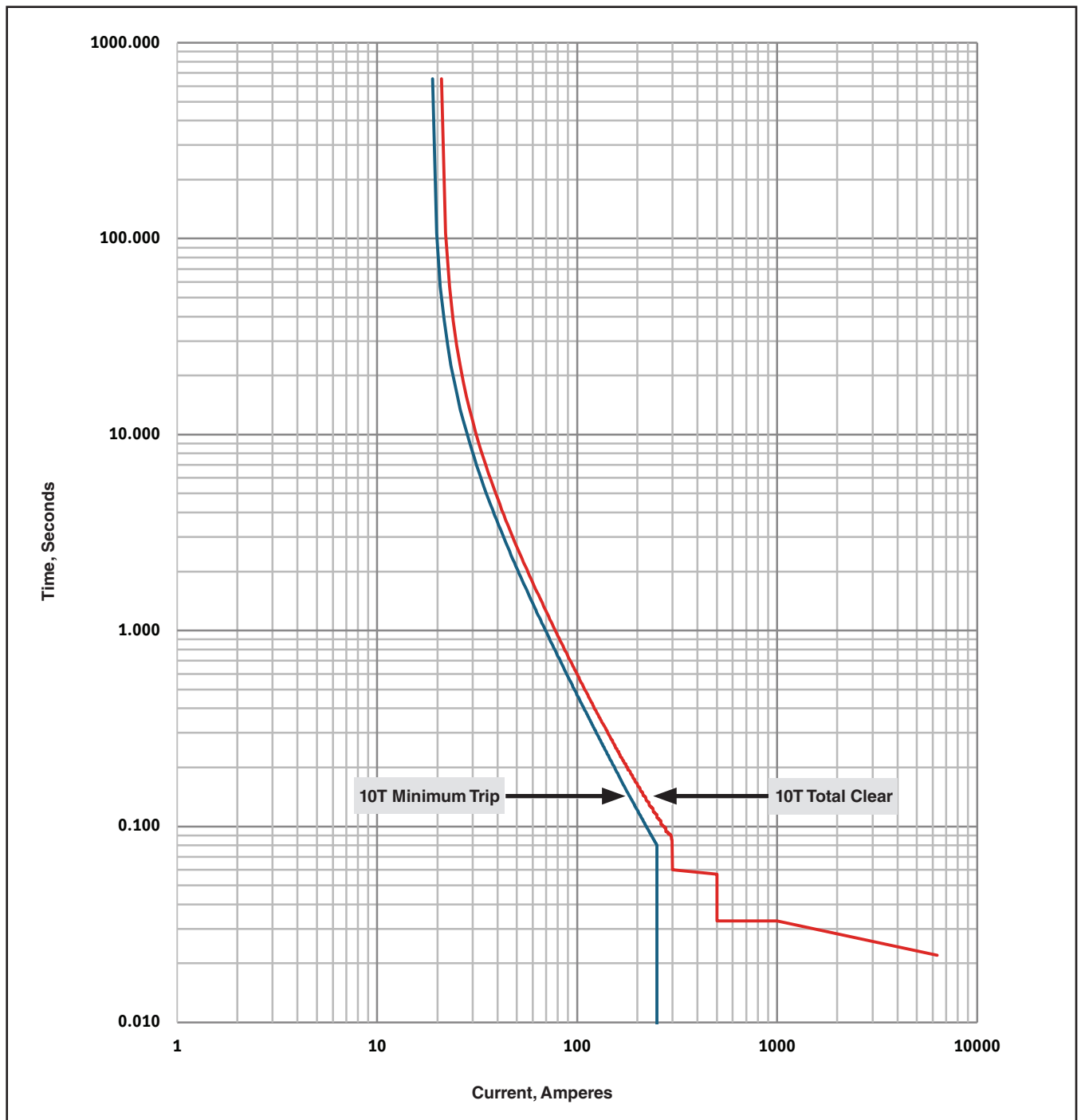
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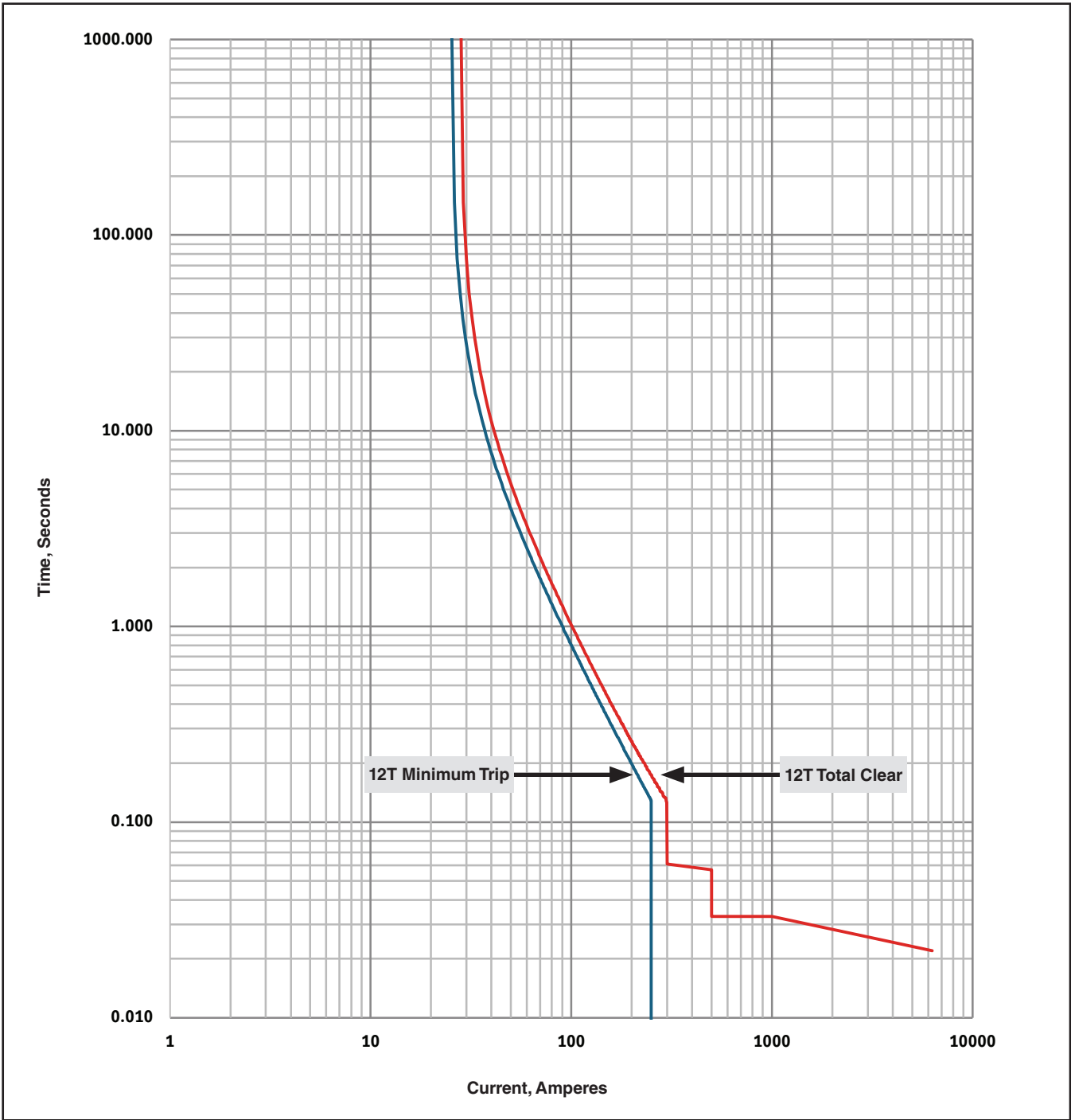
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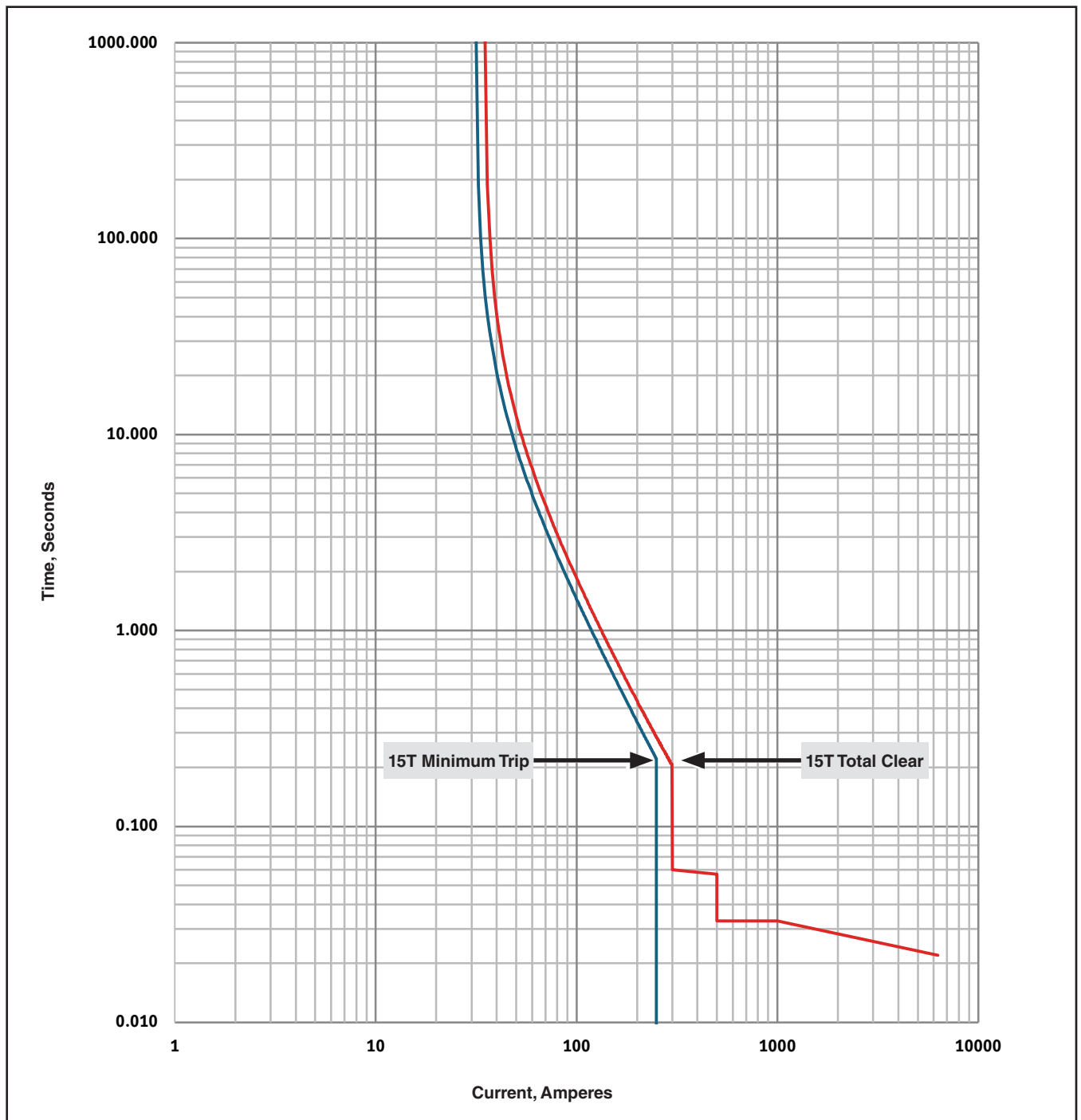
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12-Ampere T-Speed TCC Curve with Definite Times at High Current

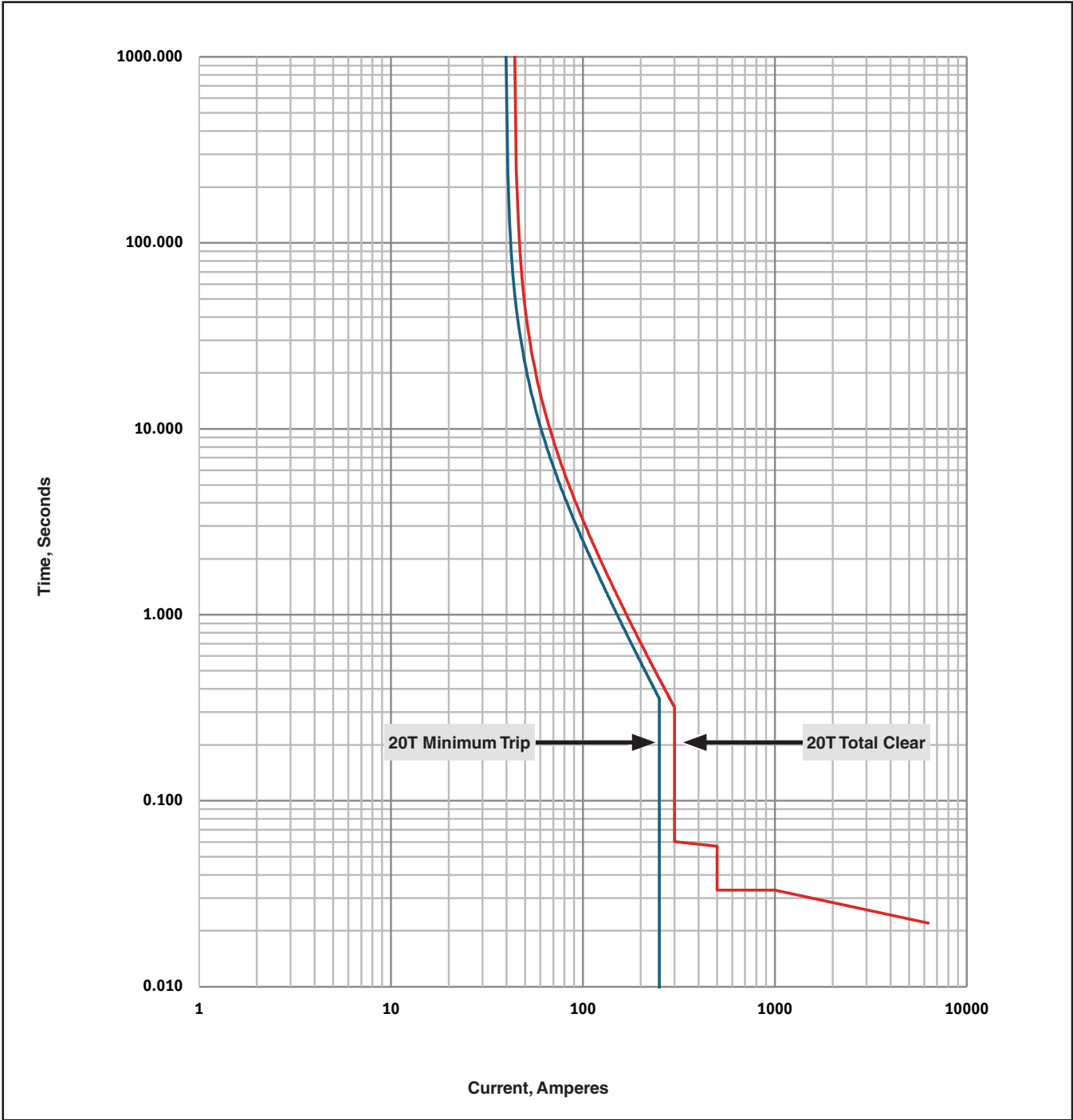


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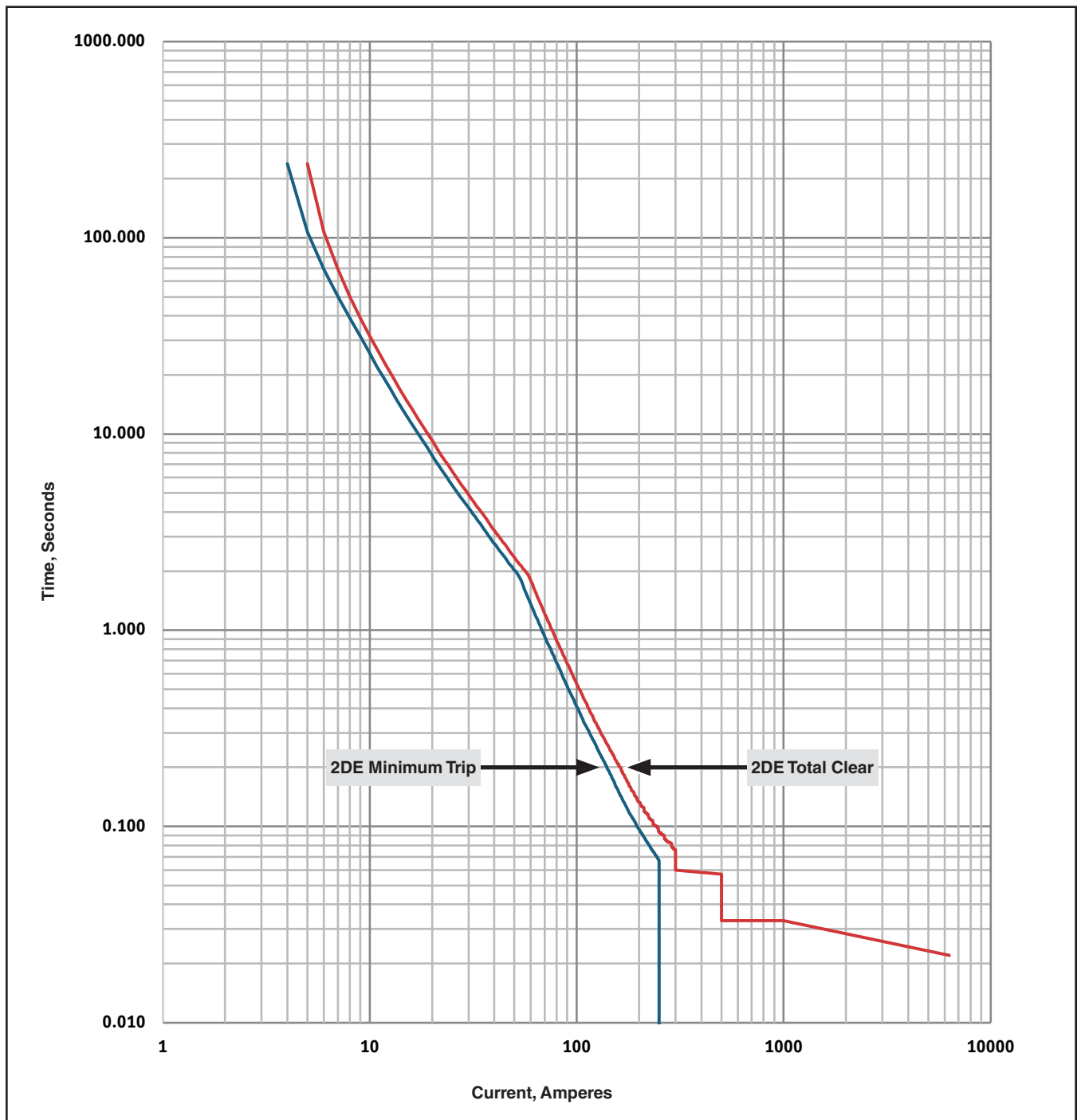


T-Speed Time-Current Characteristic Curves with Definite Times at High Current

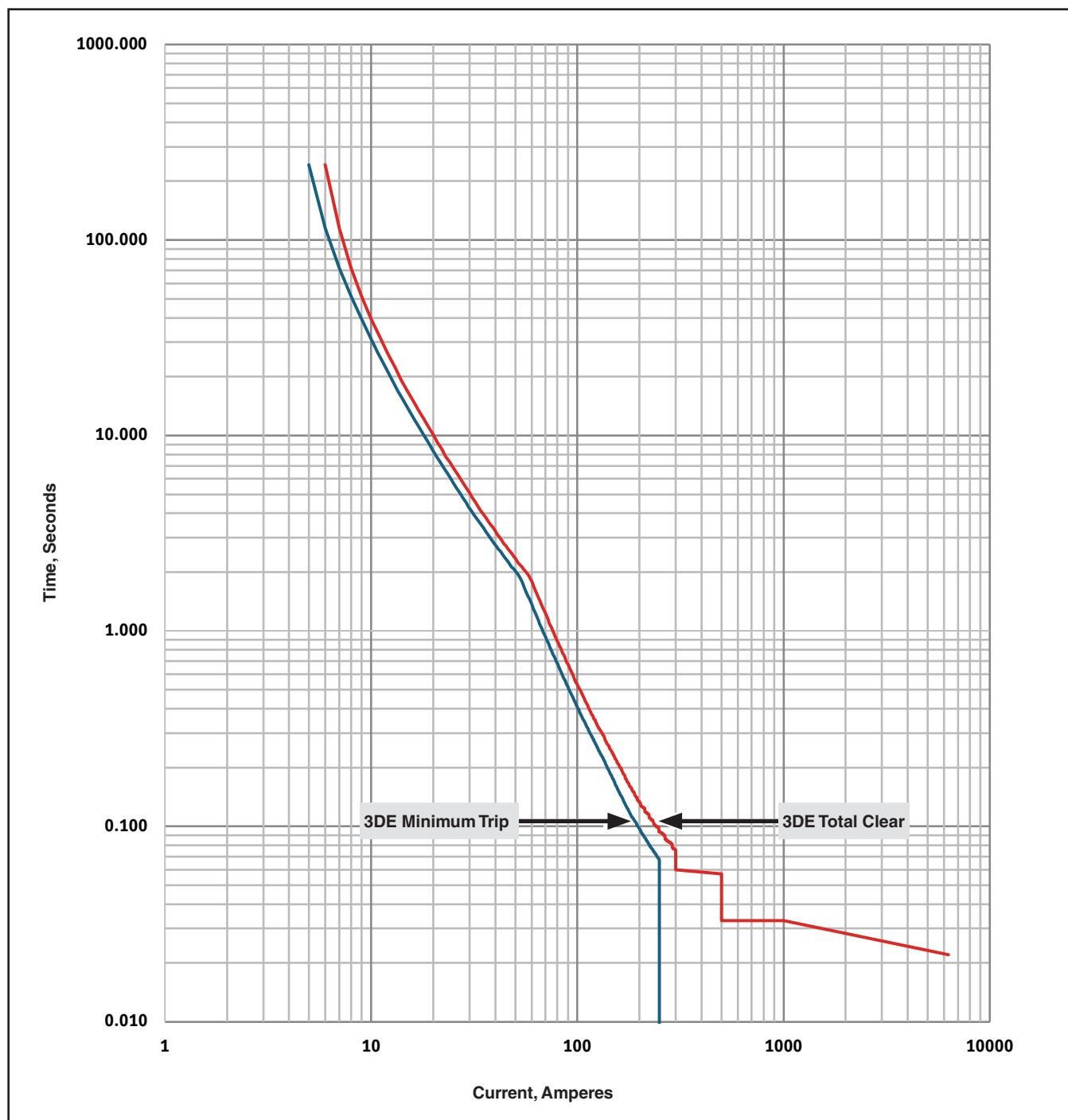
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## 2-Ampere DE-Speed TCC Curve with Definite Times at High Current

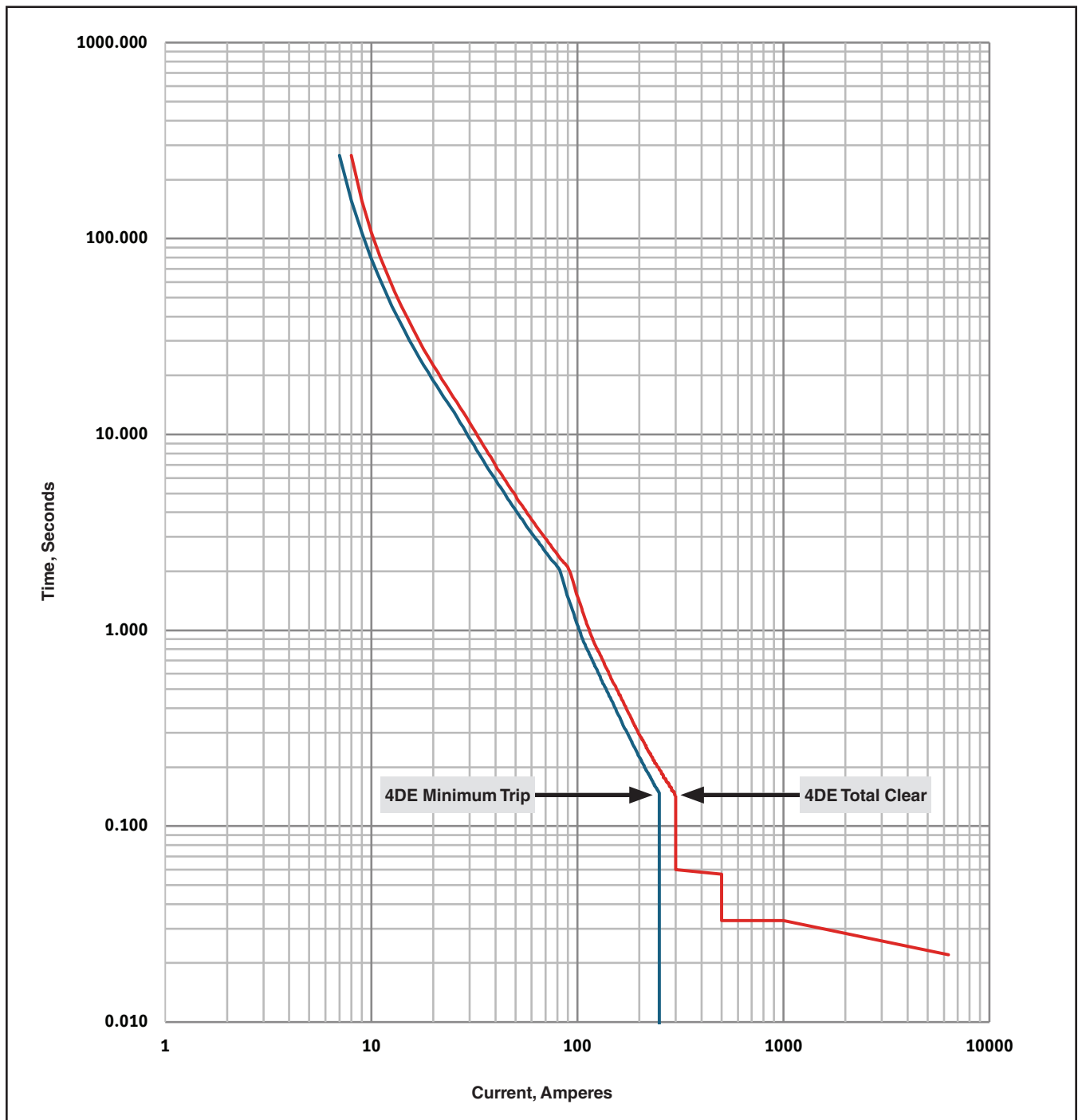


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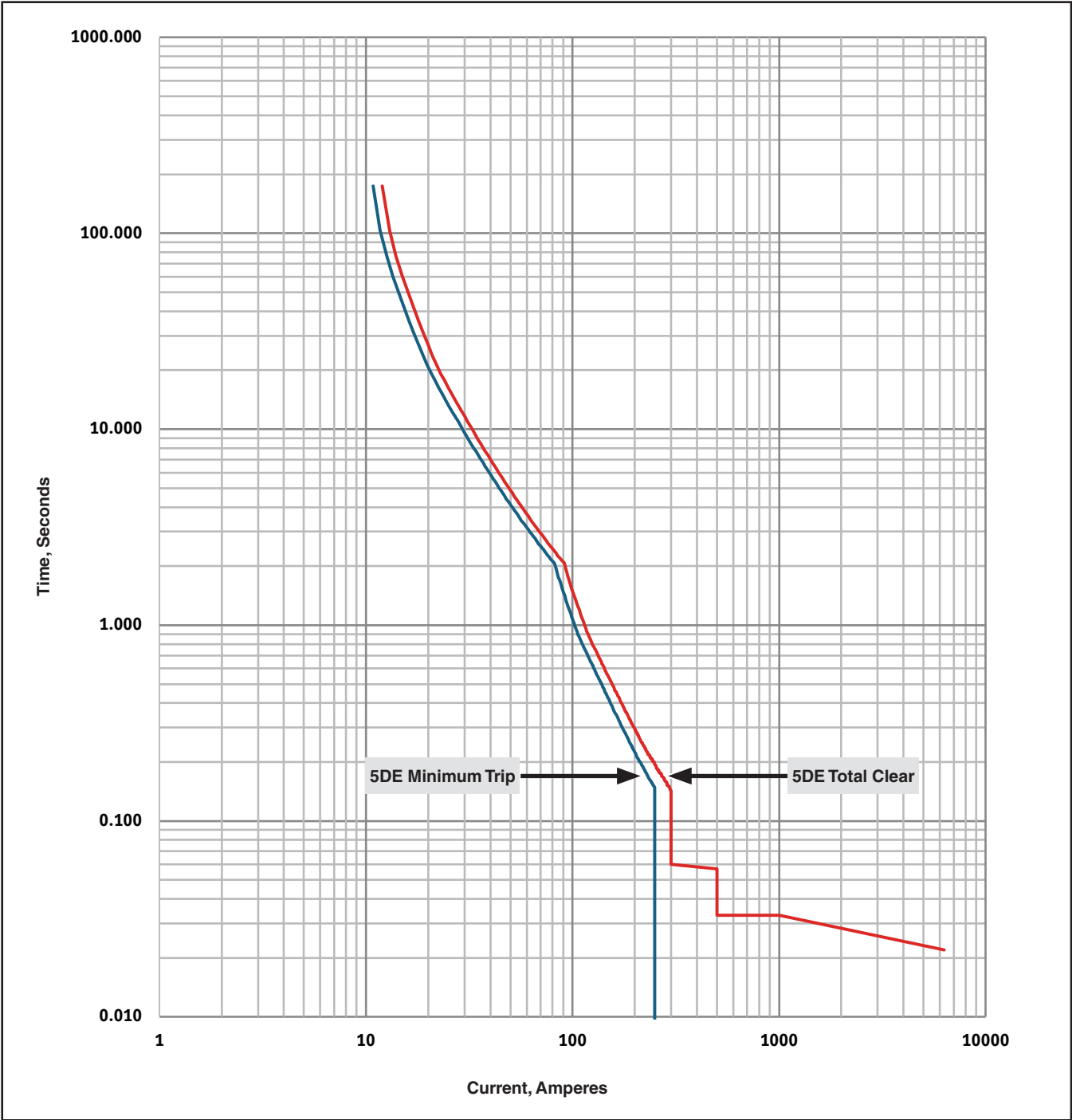




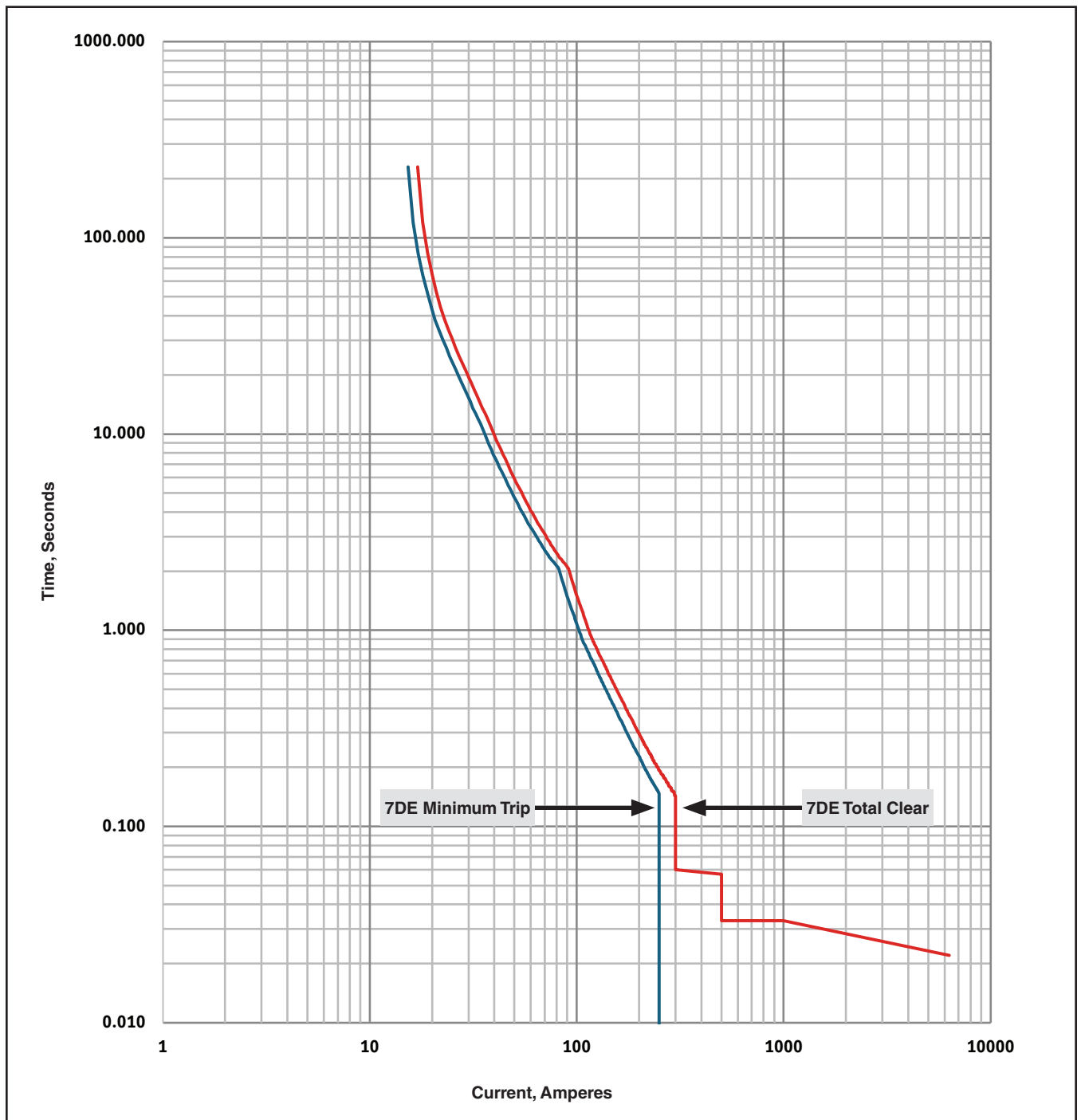
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5-Ampere DE-Speed TCC Curve with Definite Times at High Current

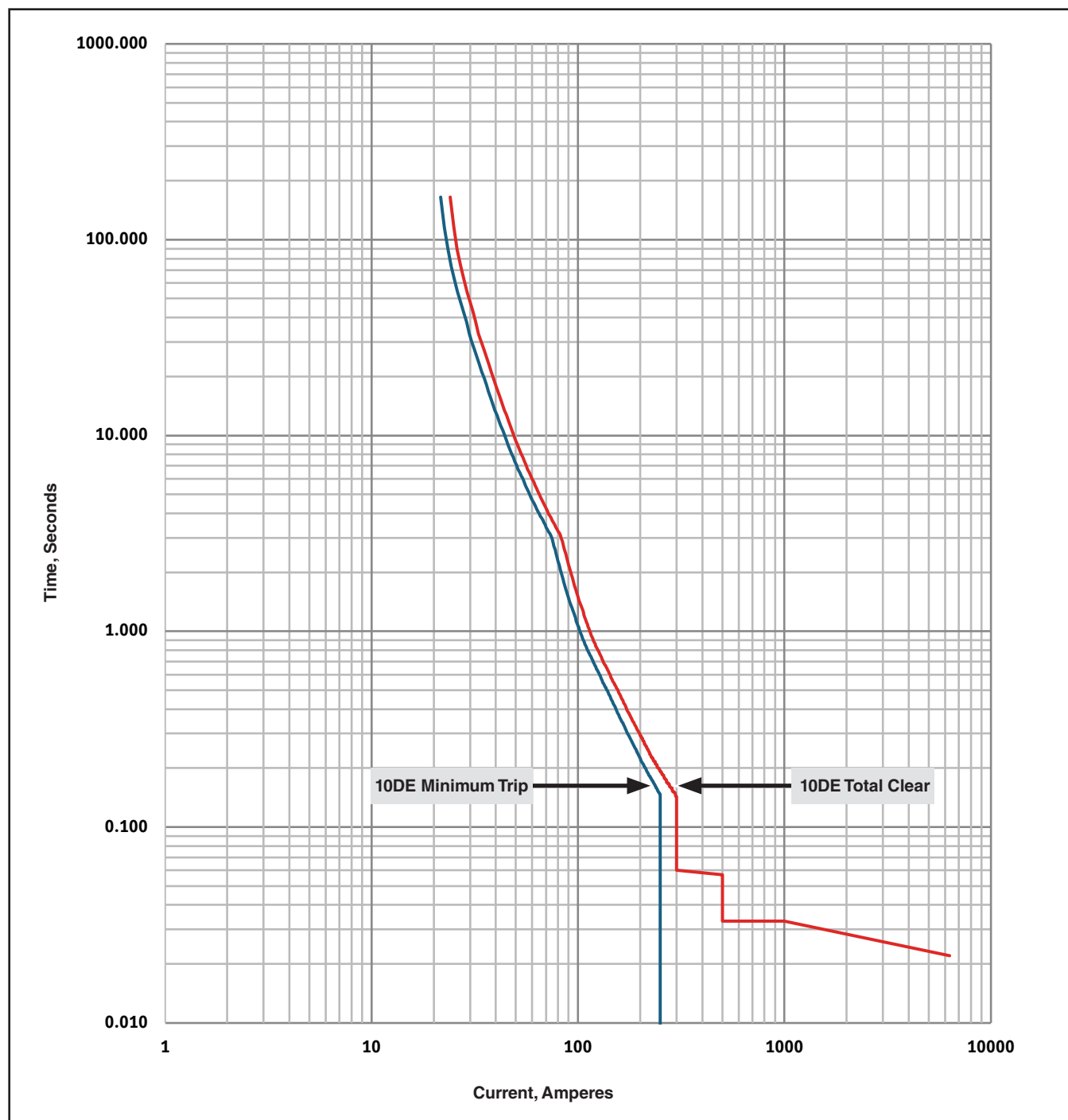


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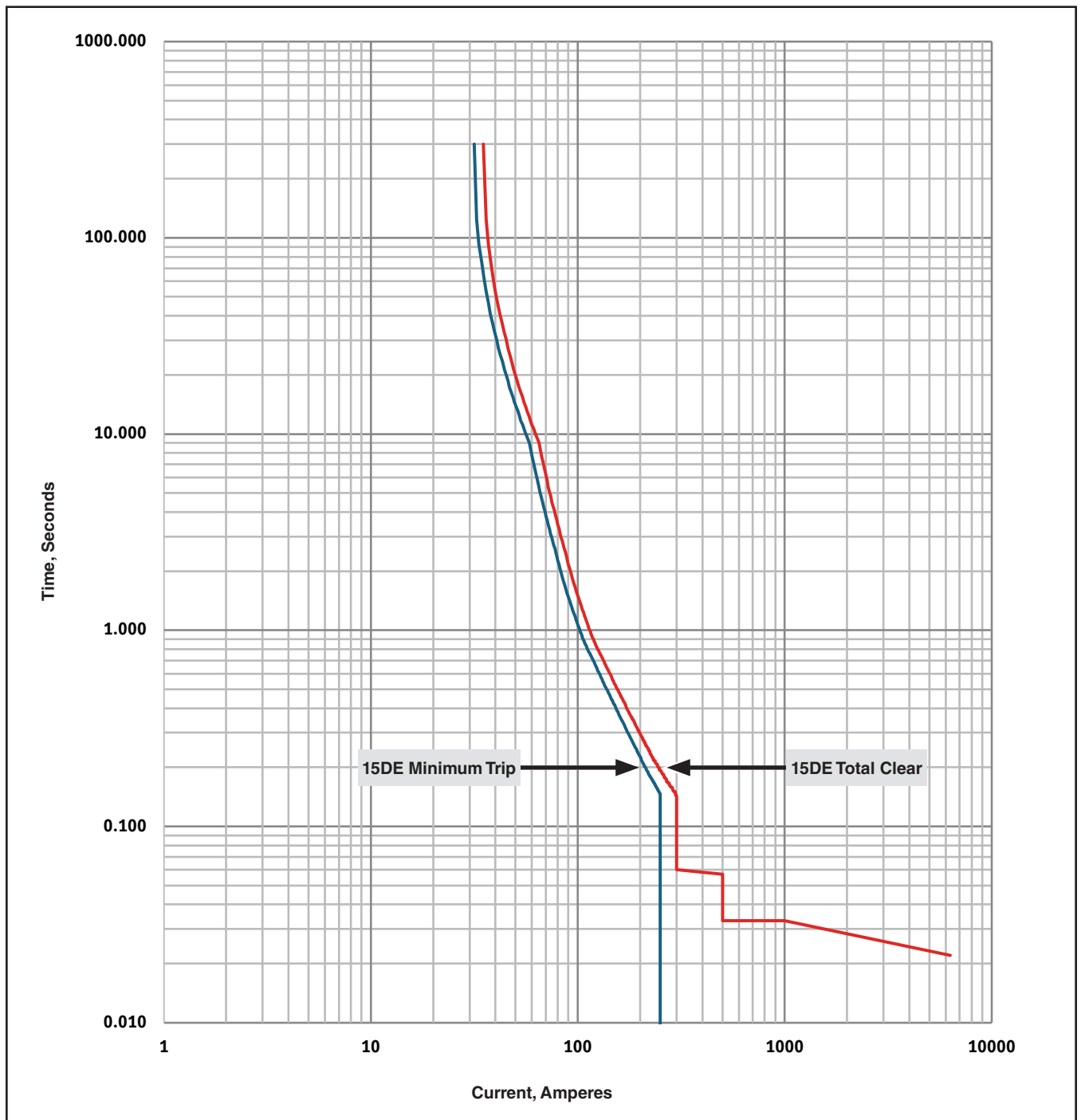


## DE-Speed Time-Current Characteristic Curves with Definite Times at High Current

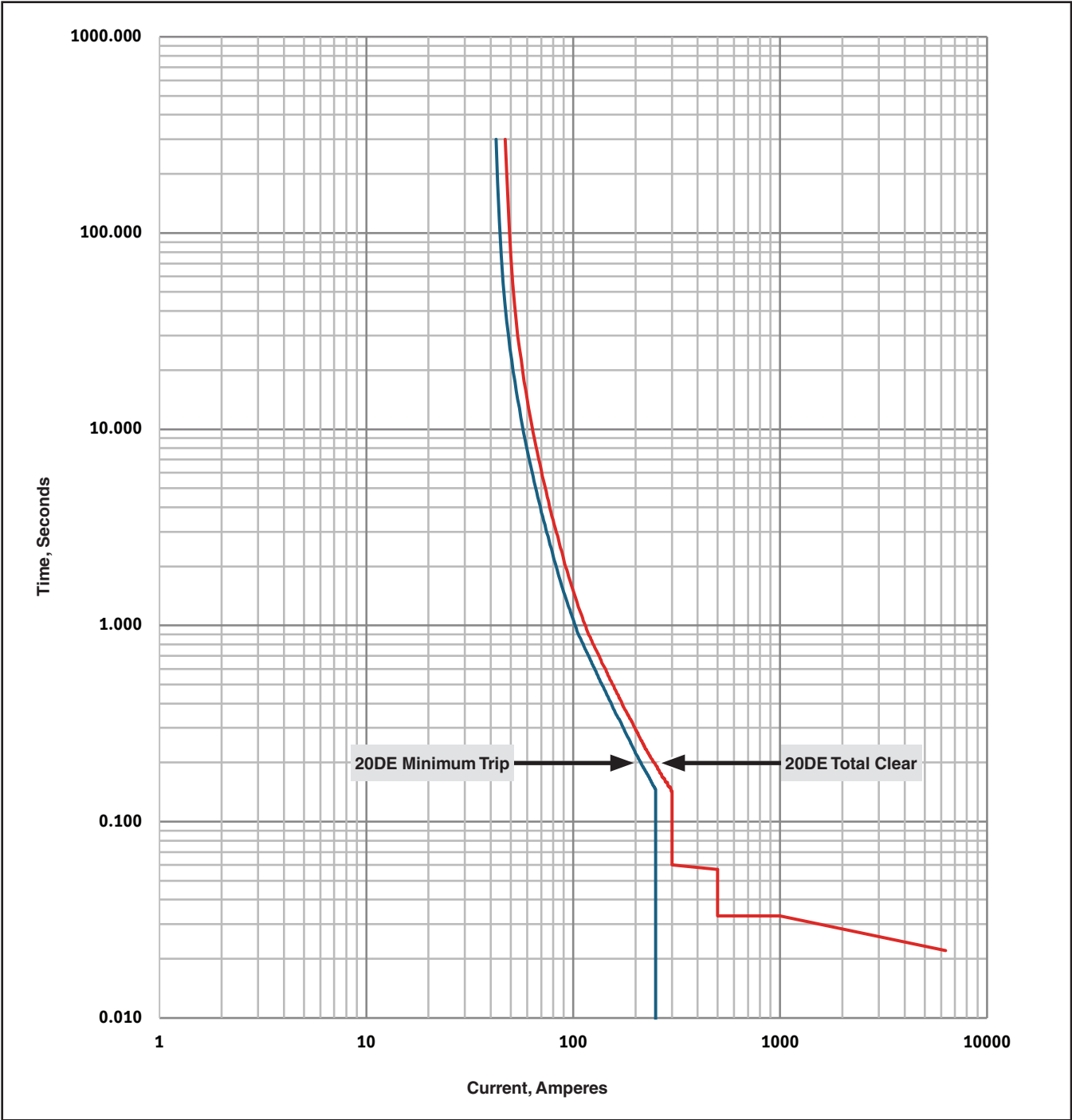
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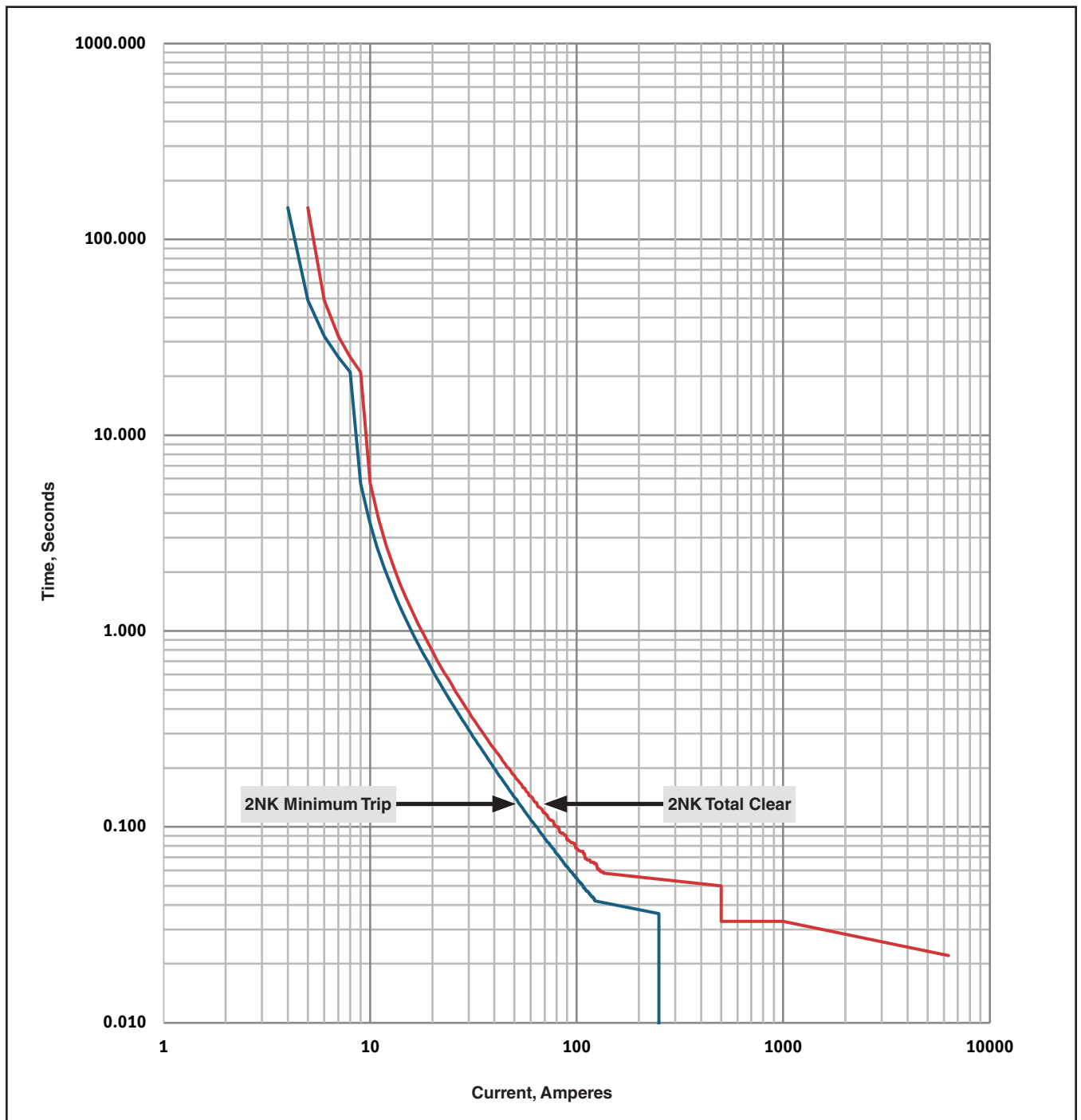
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20-Ampere DE-Speed TCC Curve with Definite Times at High Current

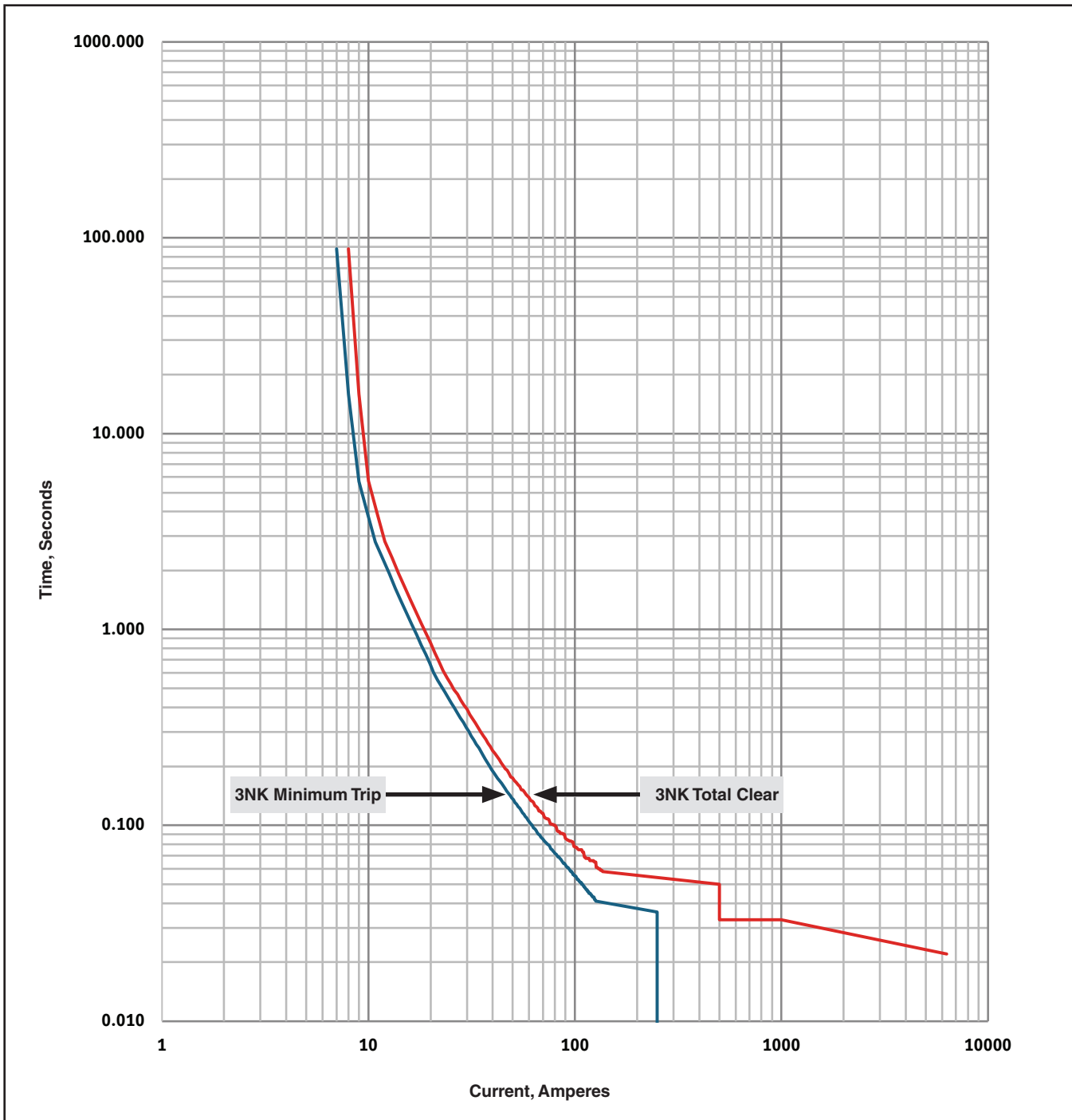


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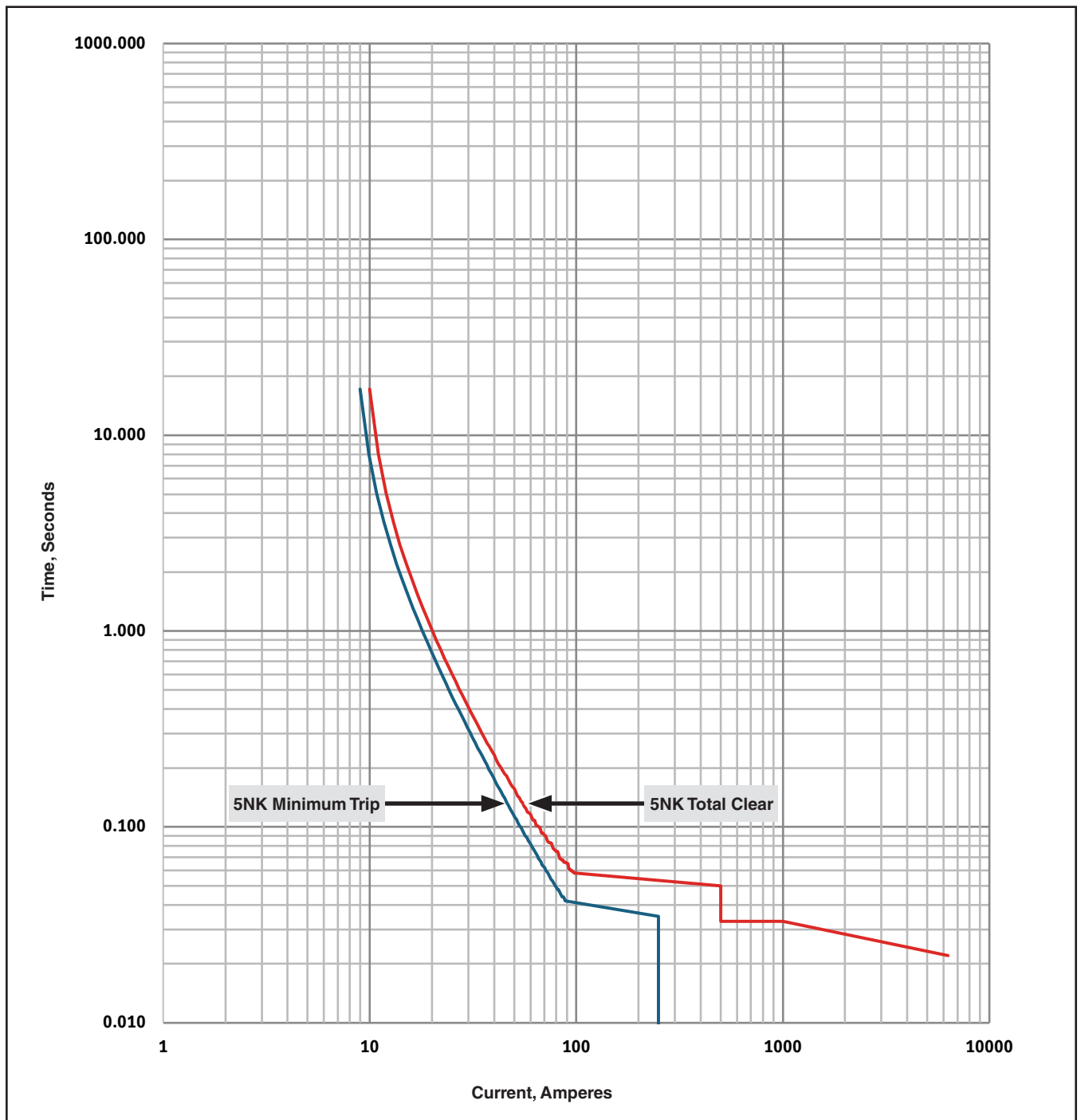
## NK-Speed Time-Current Characteristic Curves with Definite Times at High Current

### 3-Ampere NK-Speed TCC Curve with Definite Times at High Current

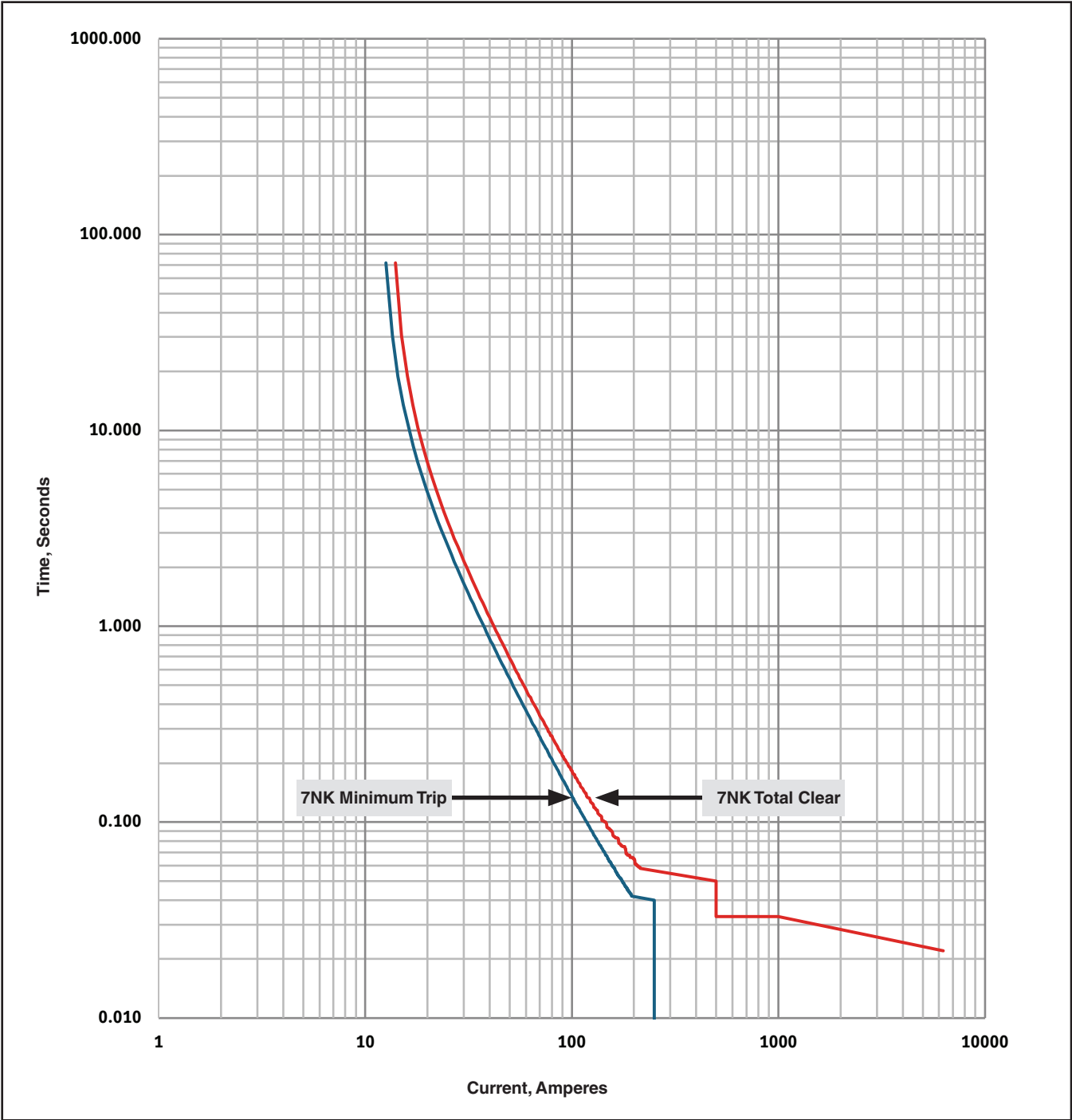




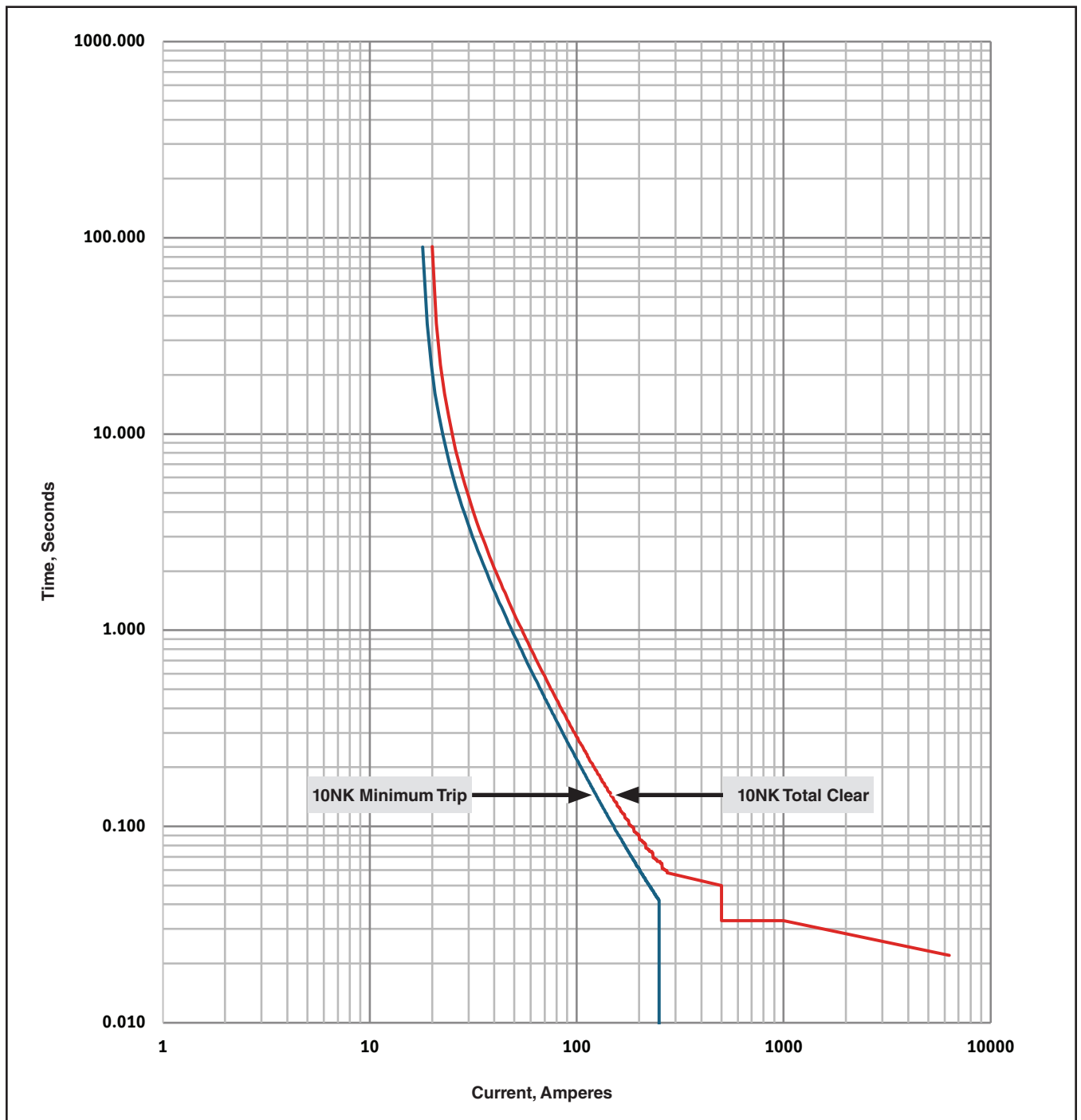
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7-Ampere NK-Speed TCC Curve with Definite Times at High Current

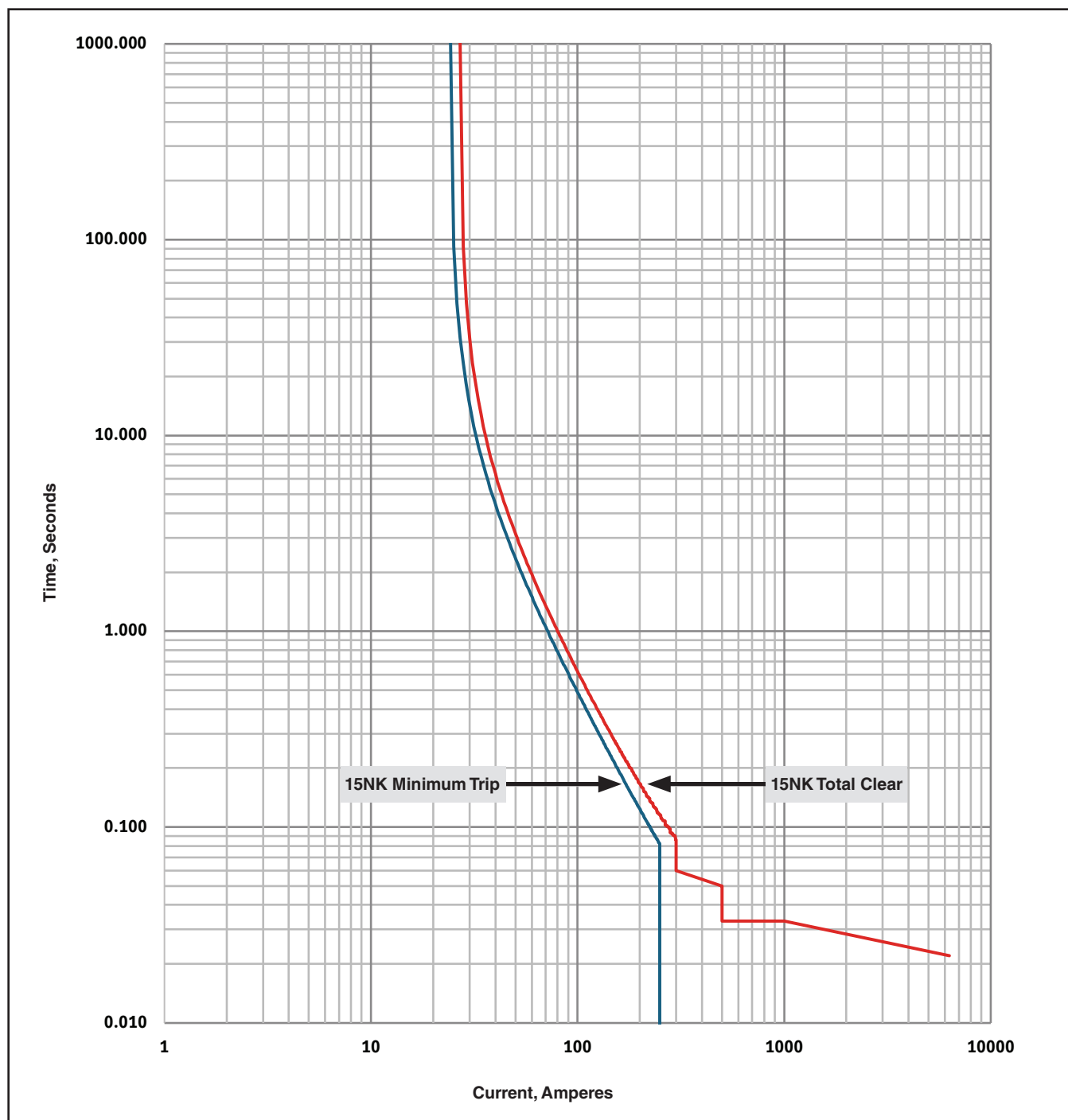


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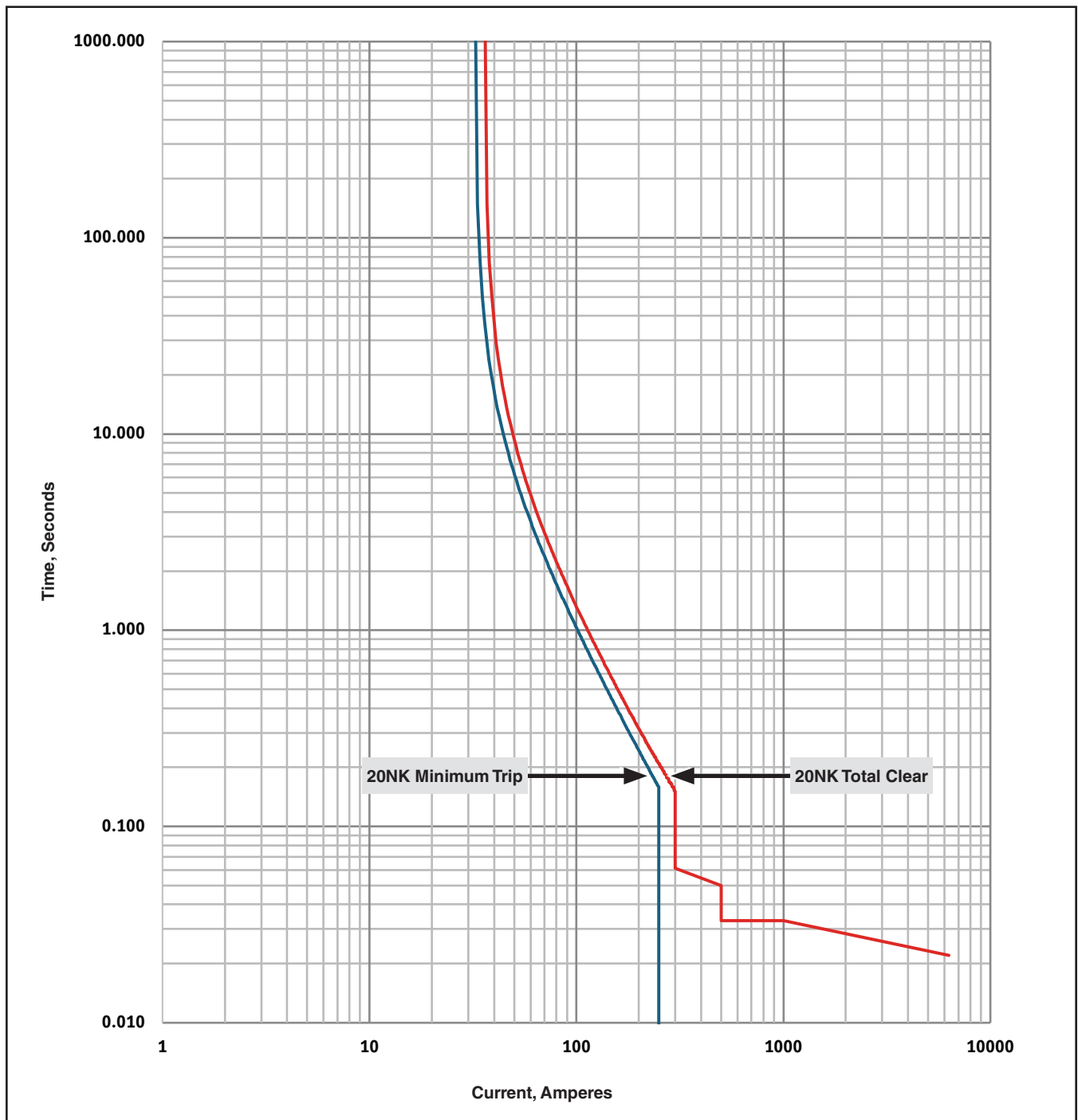


## NK-Speed Time-Current Characteristic Curves with Definite Times at High Current

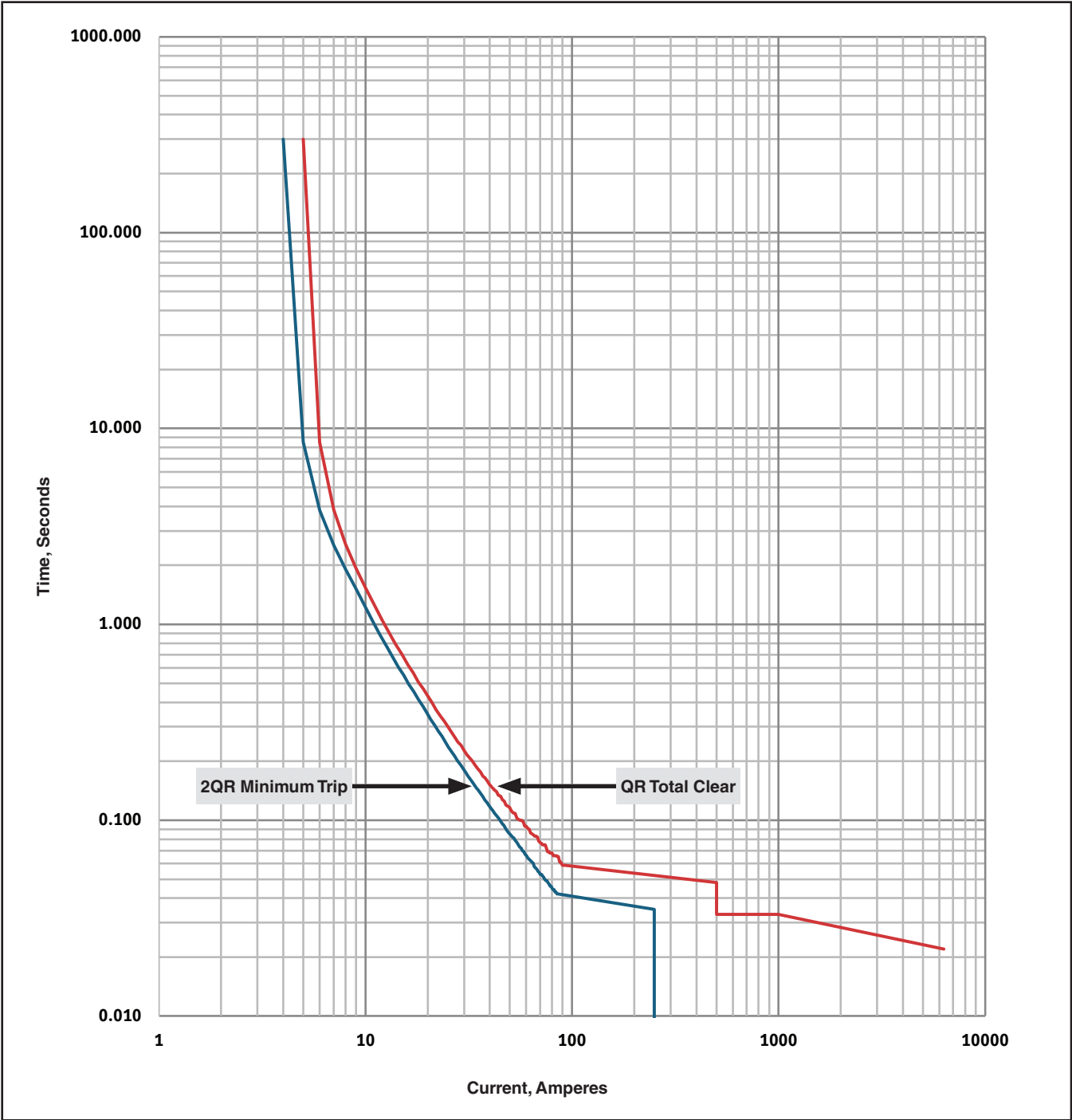
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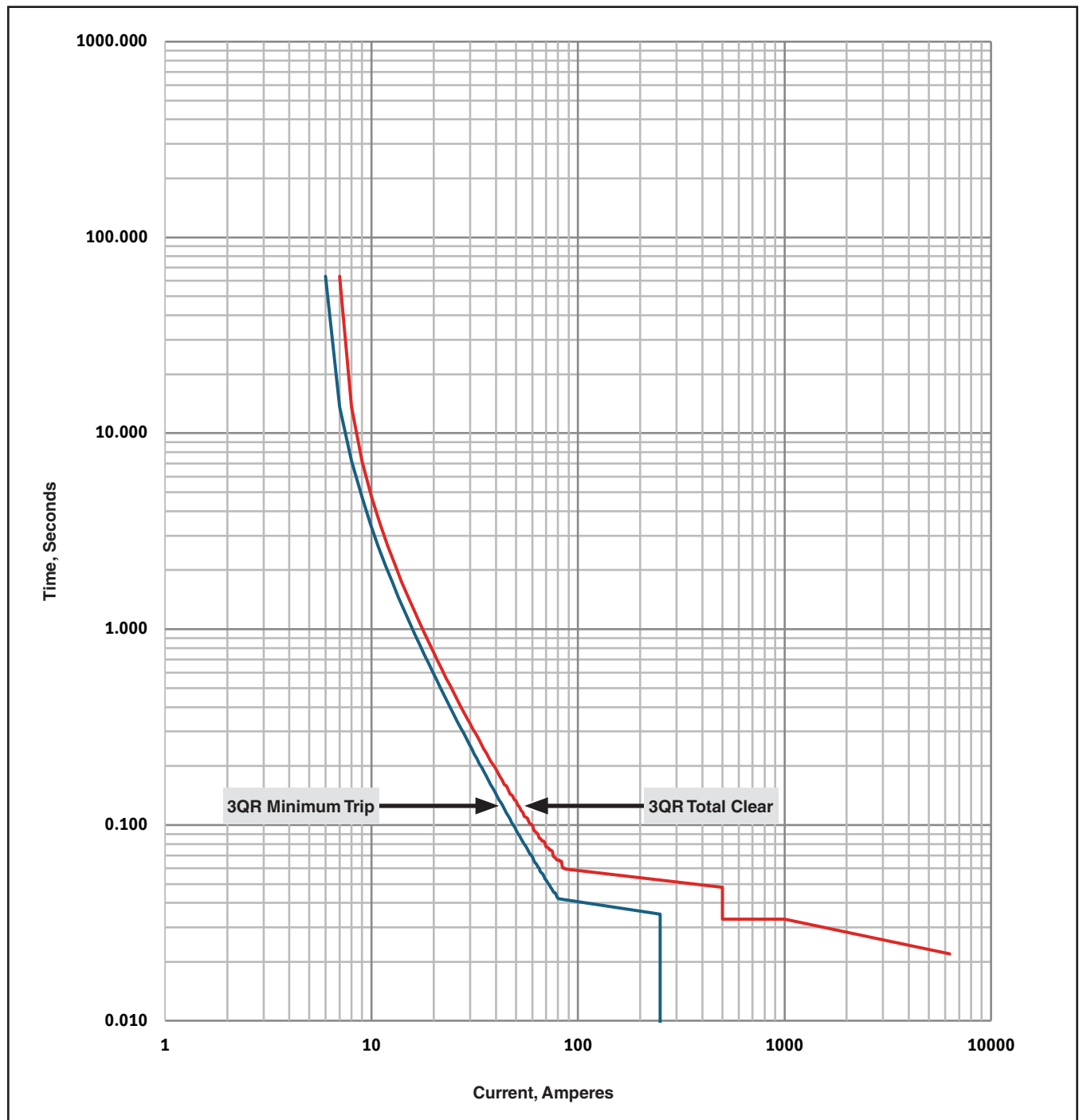
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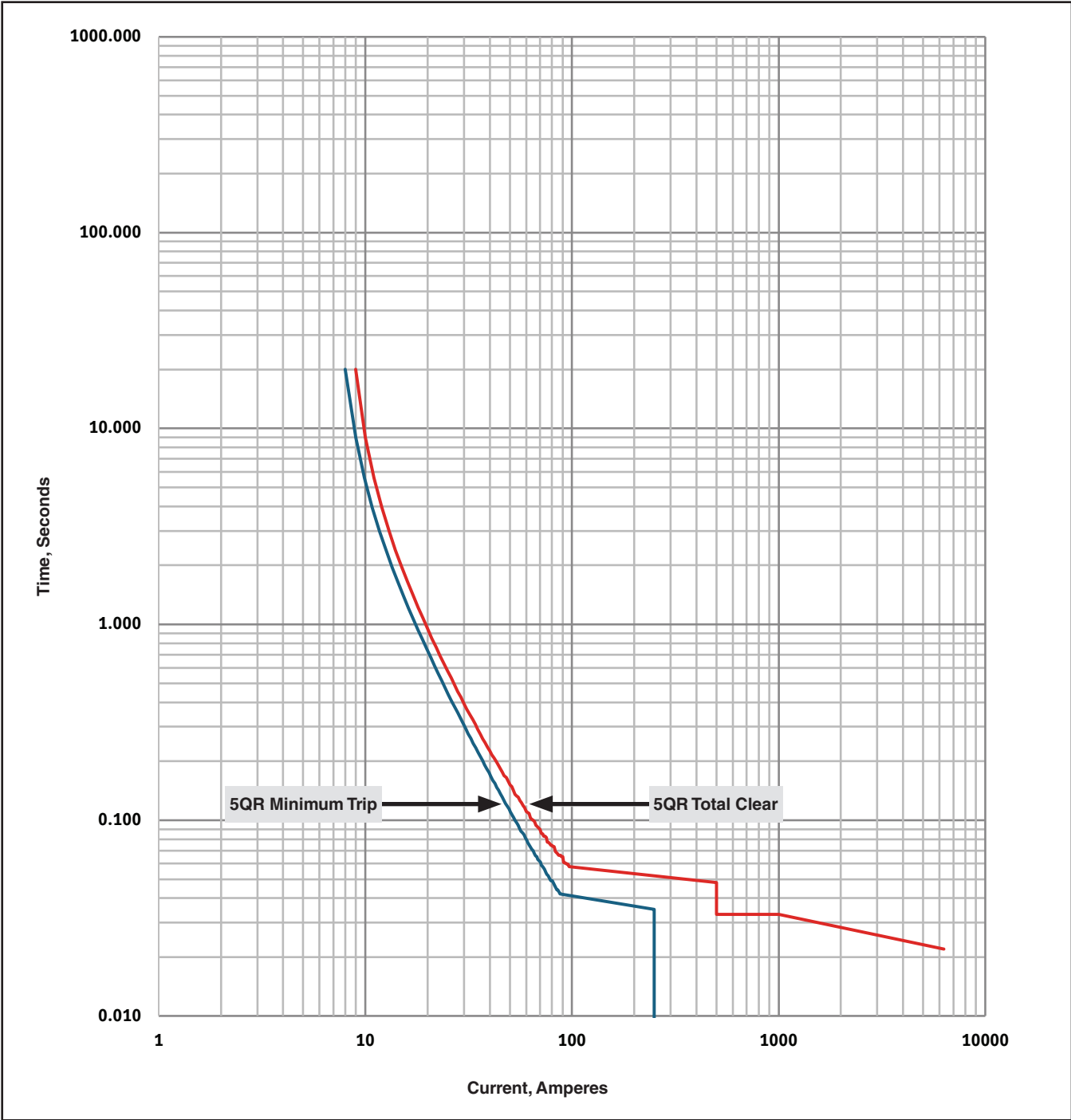
2-Ampere QR-Speed TCC Curve with Definite Times at High Current



## 3-Ampere QR-Speed TCC Curve with Definite Times at High Current

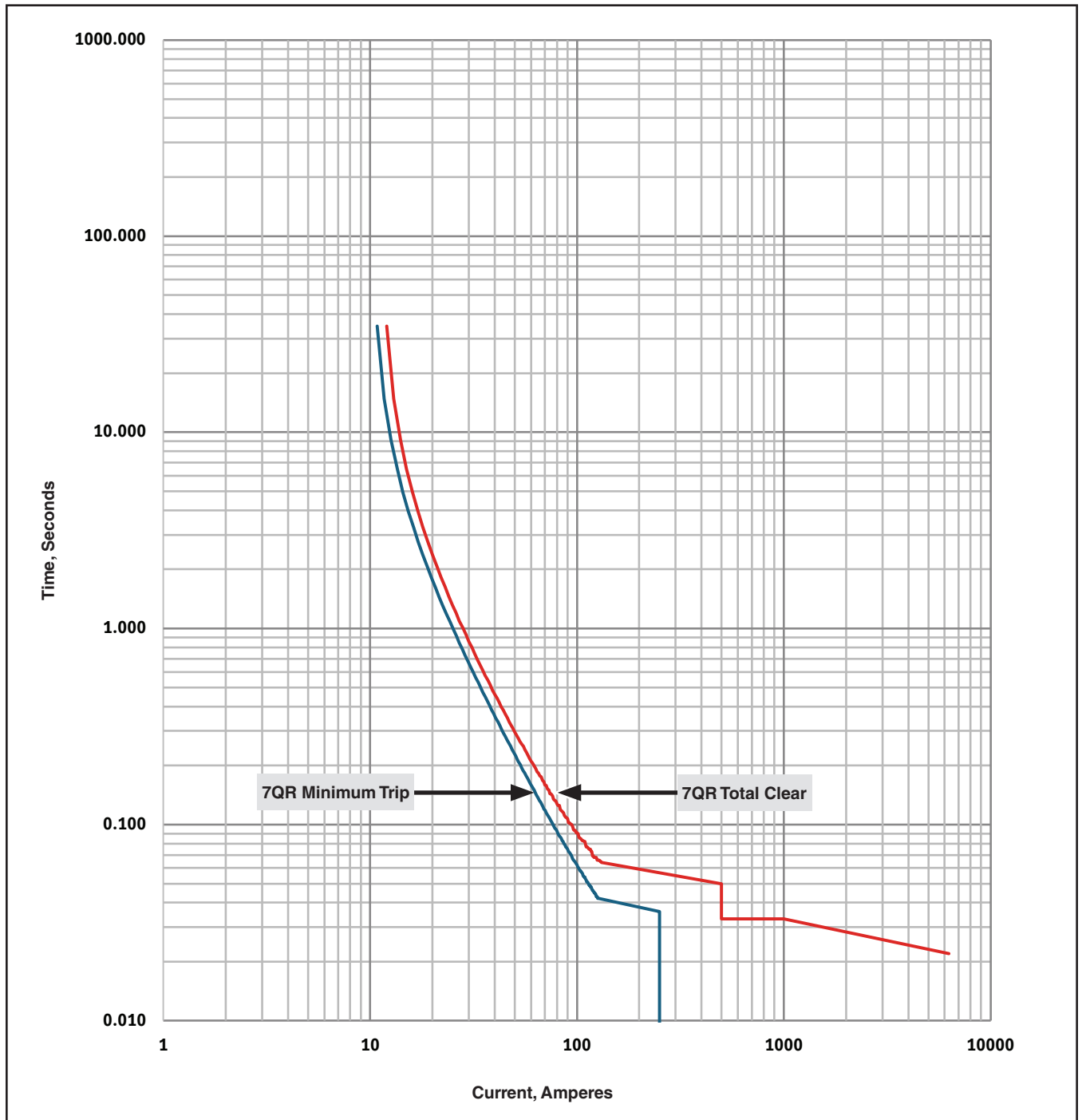


5-Ampere QR-Speed TCC Curve with Definite Times at High Current



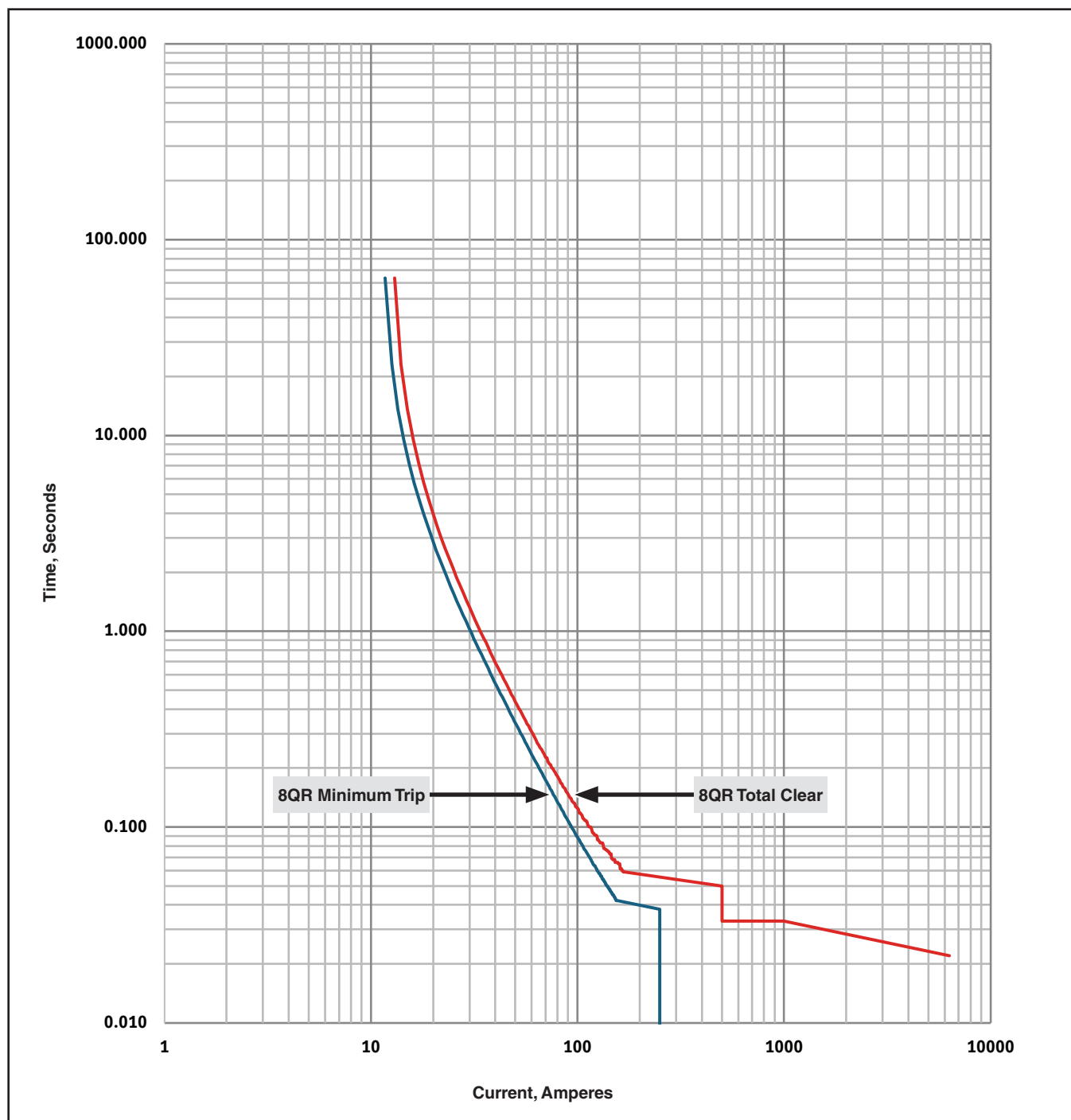


7-Ampere QR-Speed-Speed TCC Curve with Definite Times at High Current

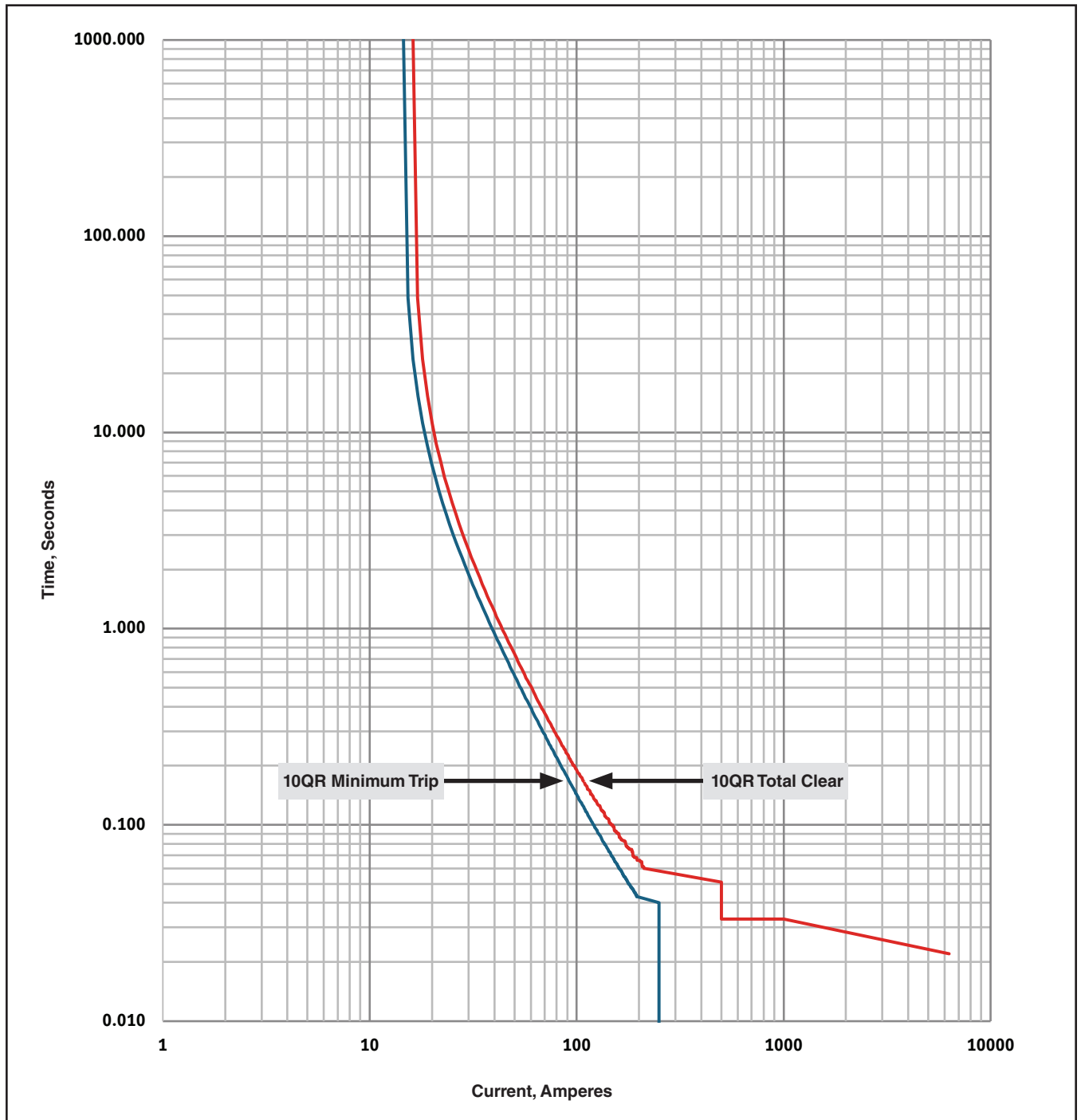


## QR-Speed Time-Current Characteristic Curves with Definite Times at High Current

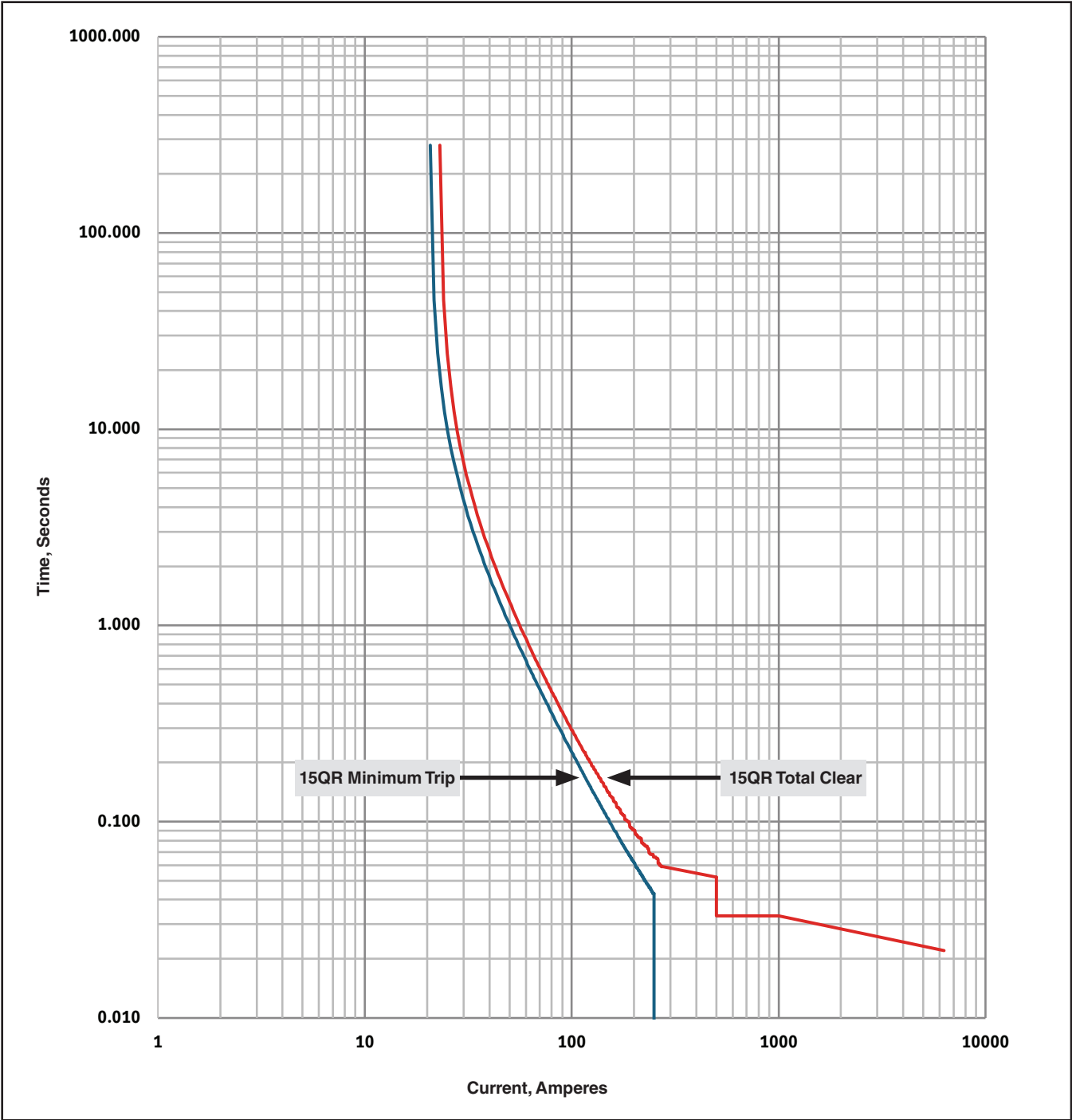
### 8-Ampere QR-Speed TCC Curve with Definite Times at High Current



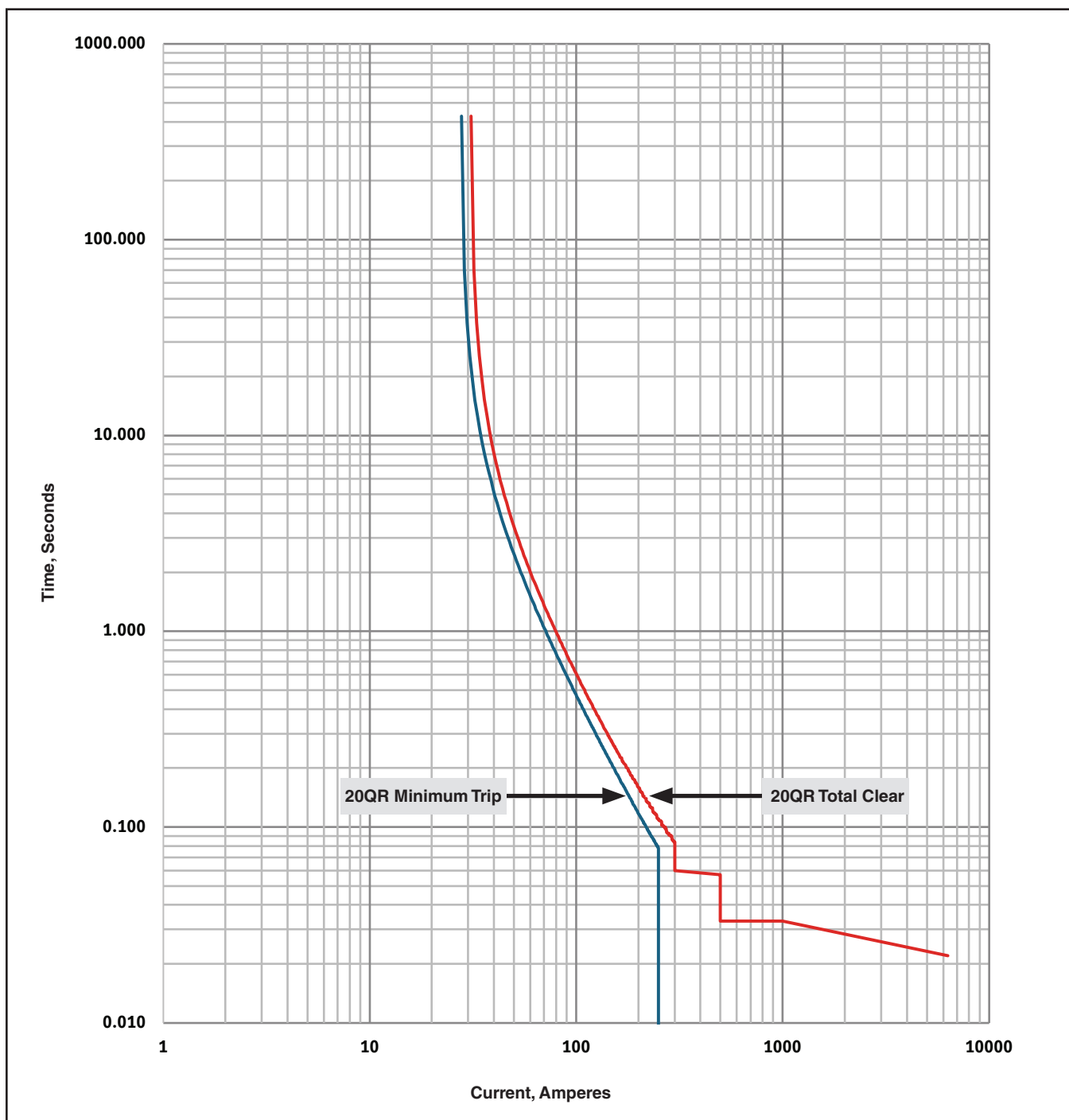
## 10-Ampere QR-Speed TCC Curve with Definite Times at High Current



15-Ampere QR-Speed TCC Curve with Definite Times at High Current

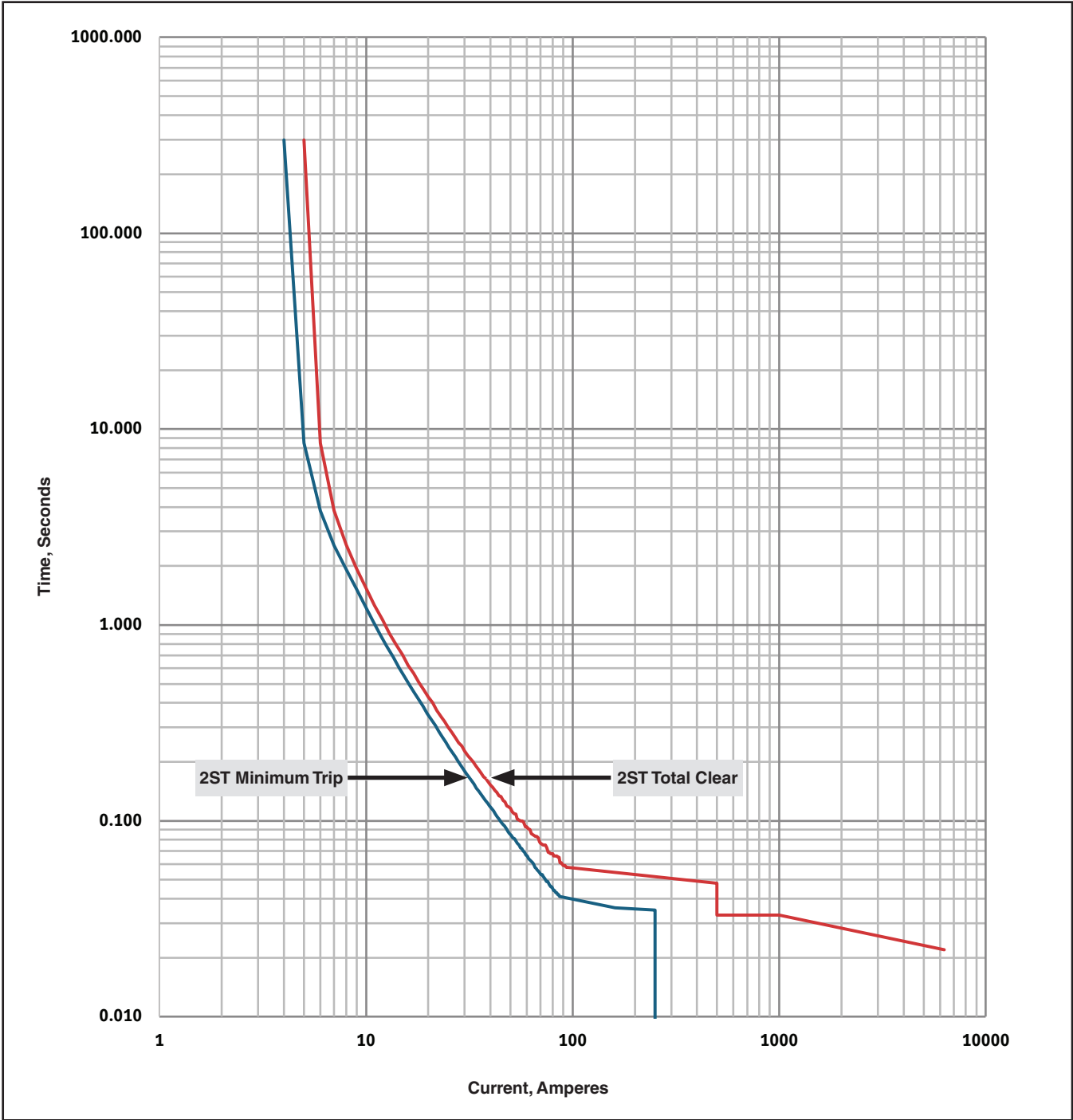


## 20-Ampere QR-Speed TCC Curve with Definite Times at High Current

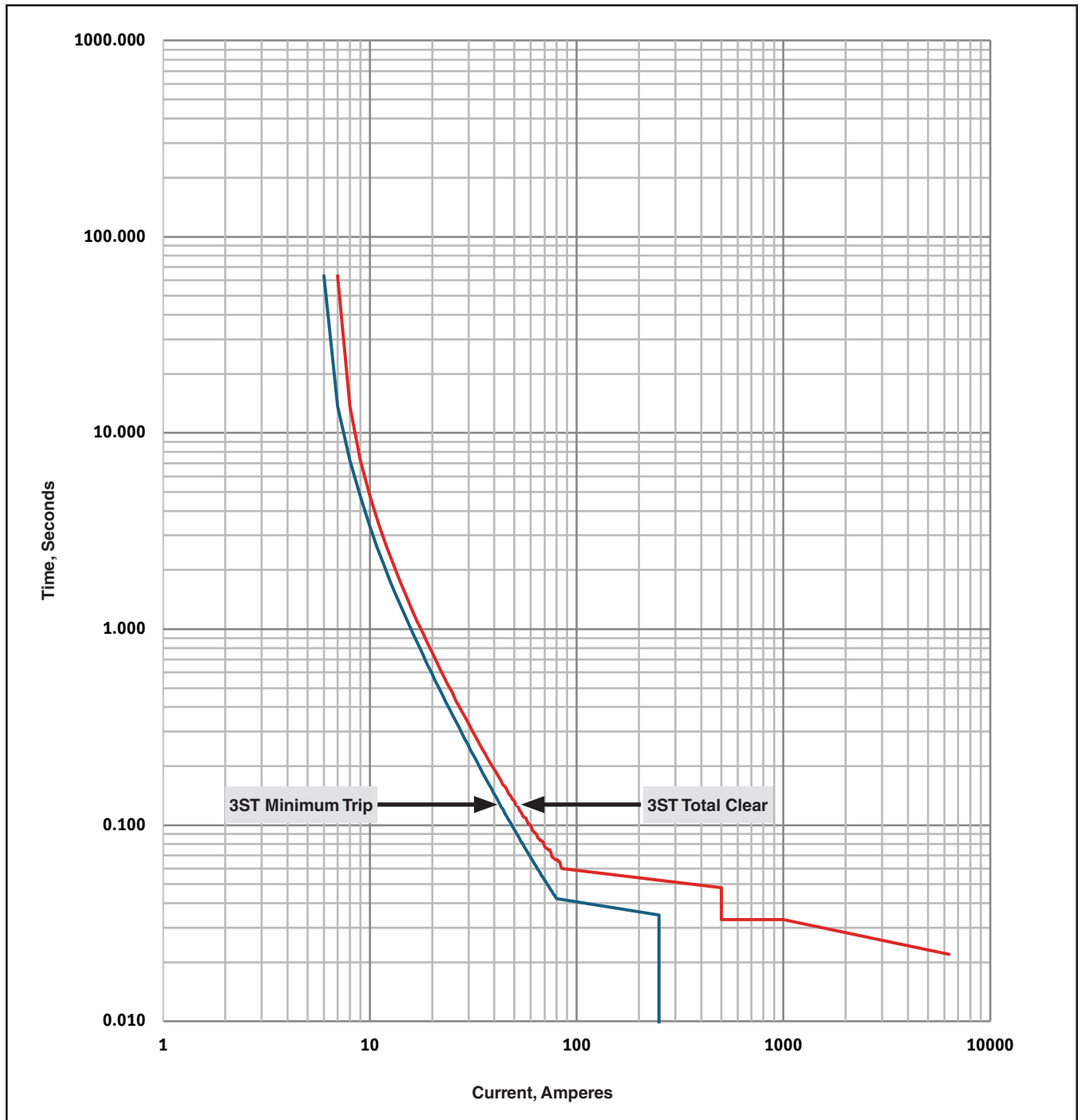


ST-Speed Time-Current Characteristic Curves with Definite Times at High Current

2-Ampere ST-Speed TCC Curve with Definite Times at High Current

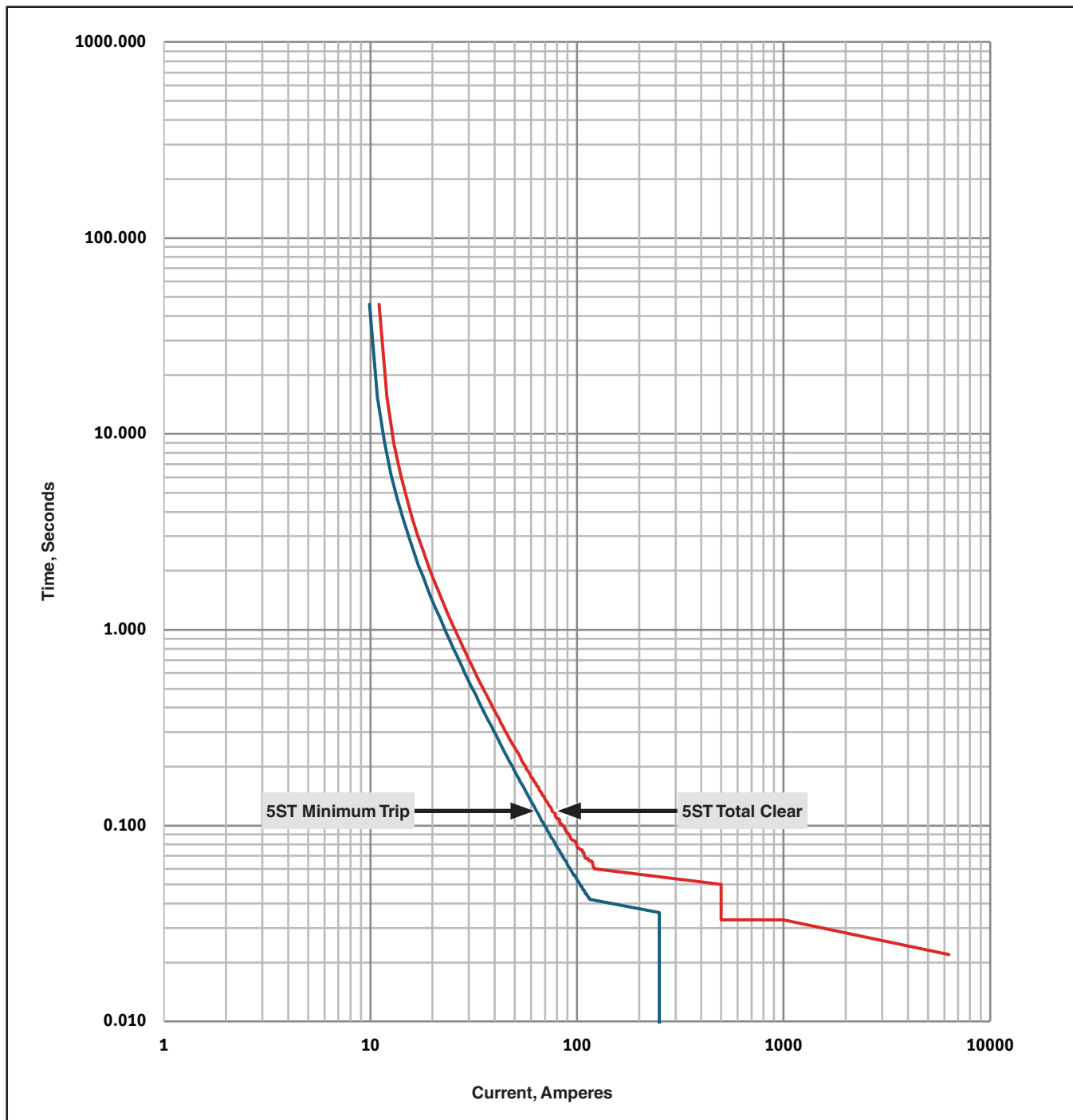


## 3-Ampere ST-Speed TCC Curve with Definite Times at High Current



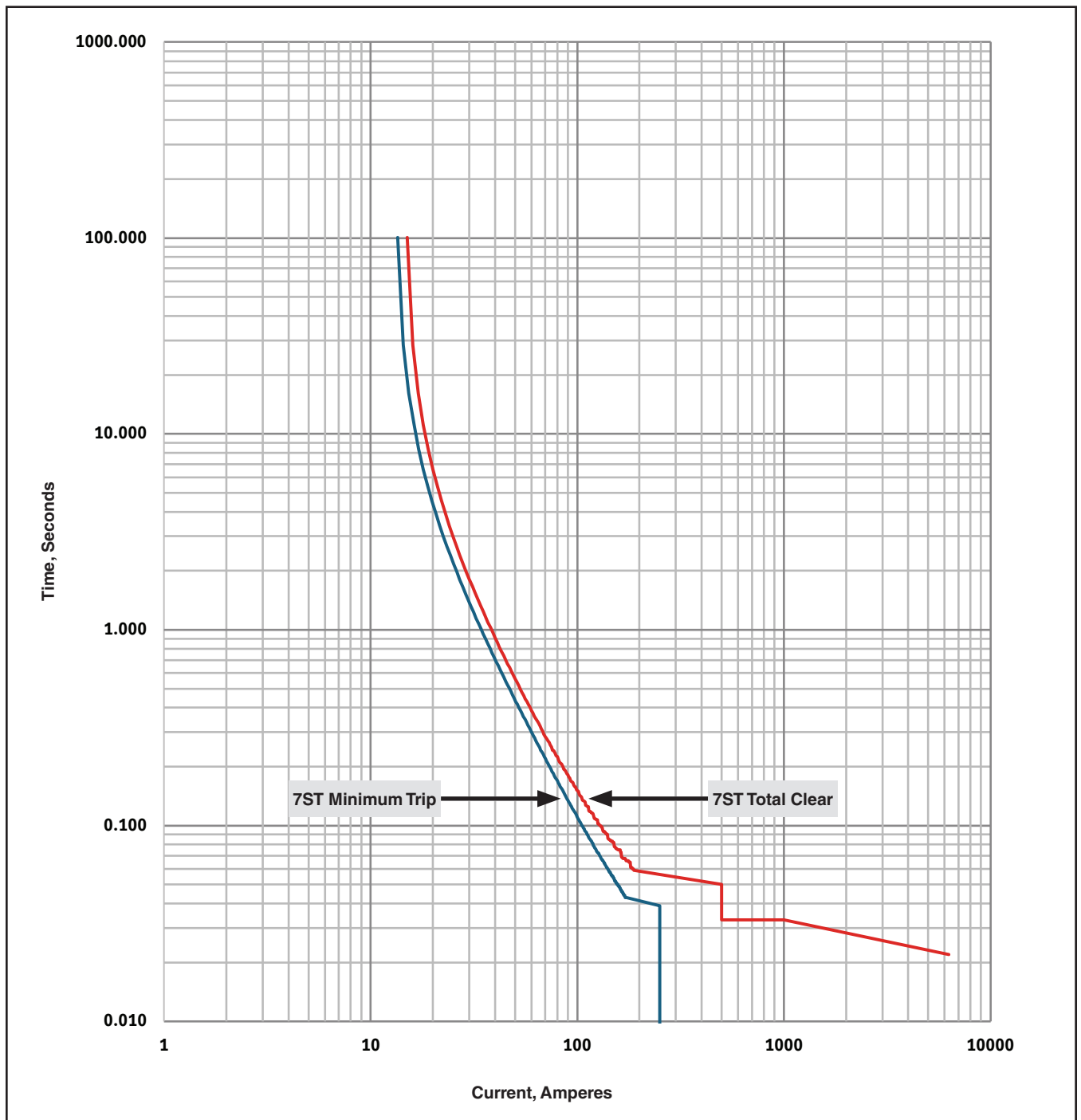
## ST-Speed Time-Current Characteristic Curves with Definite Times at High Current

### 5-Ampere ST-Speed TCC Curve with Definite Times at High Current



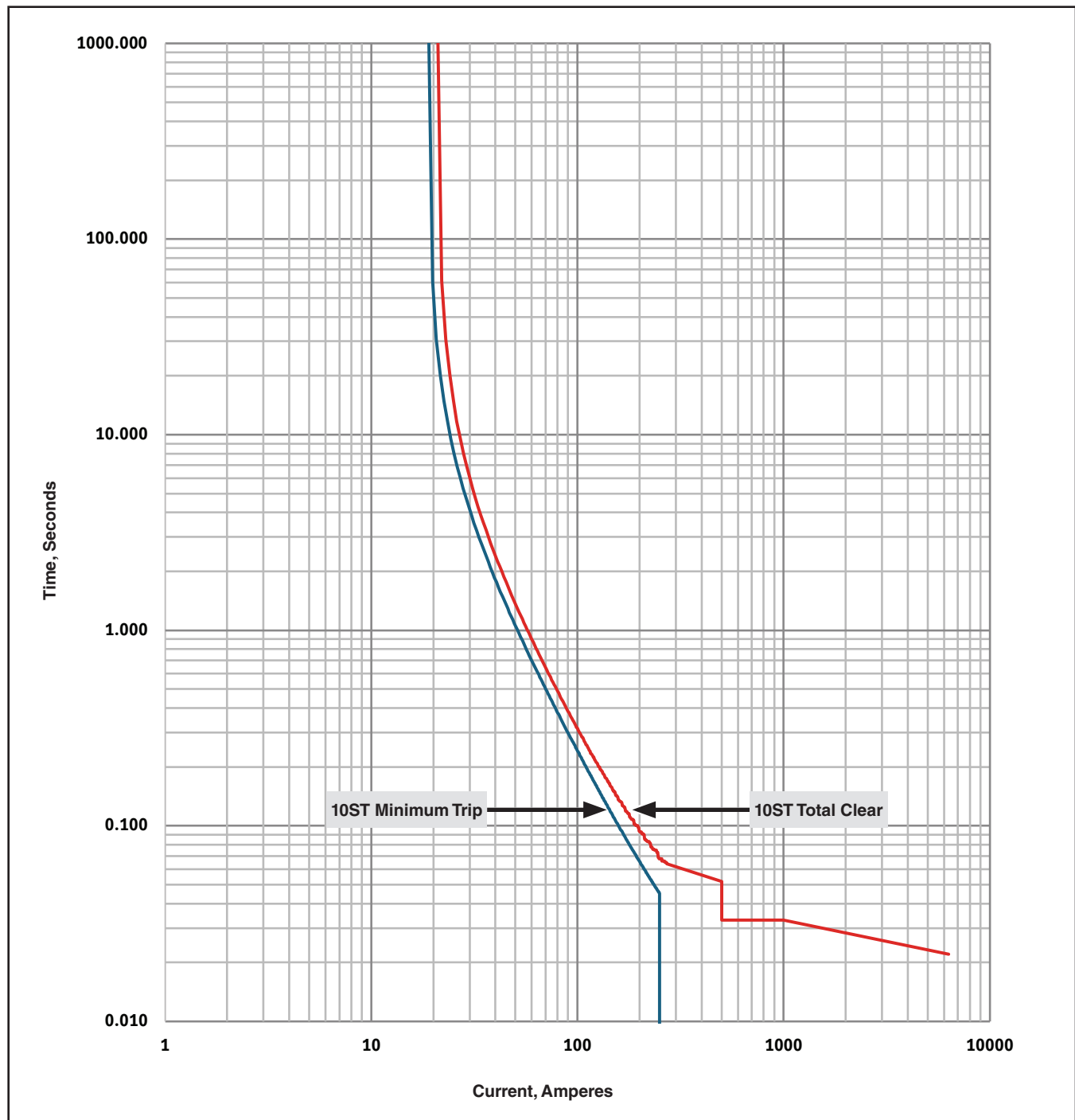


## 7-Ampere ST-Speed TCC Curve with Definite Times at High Current

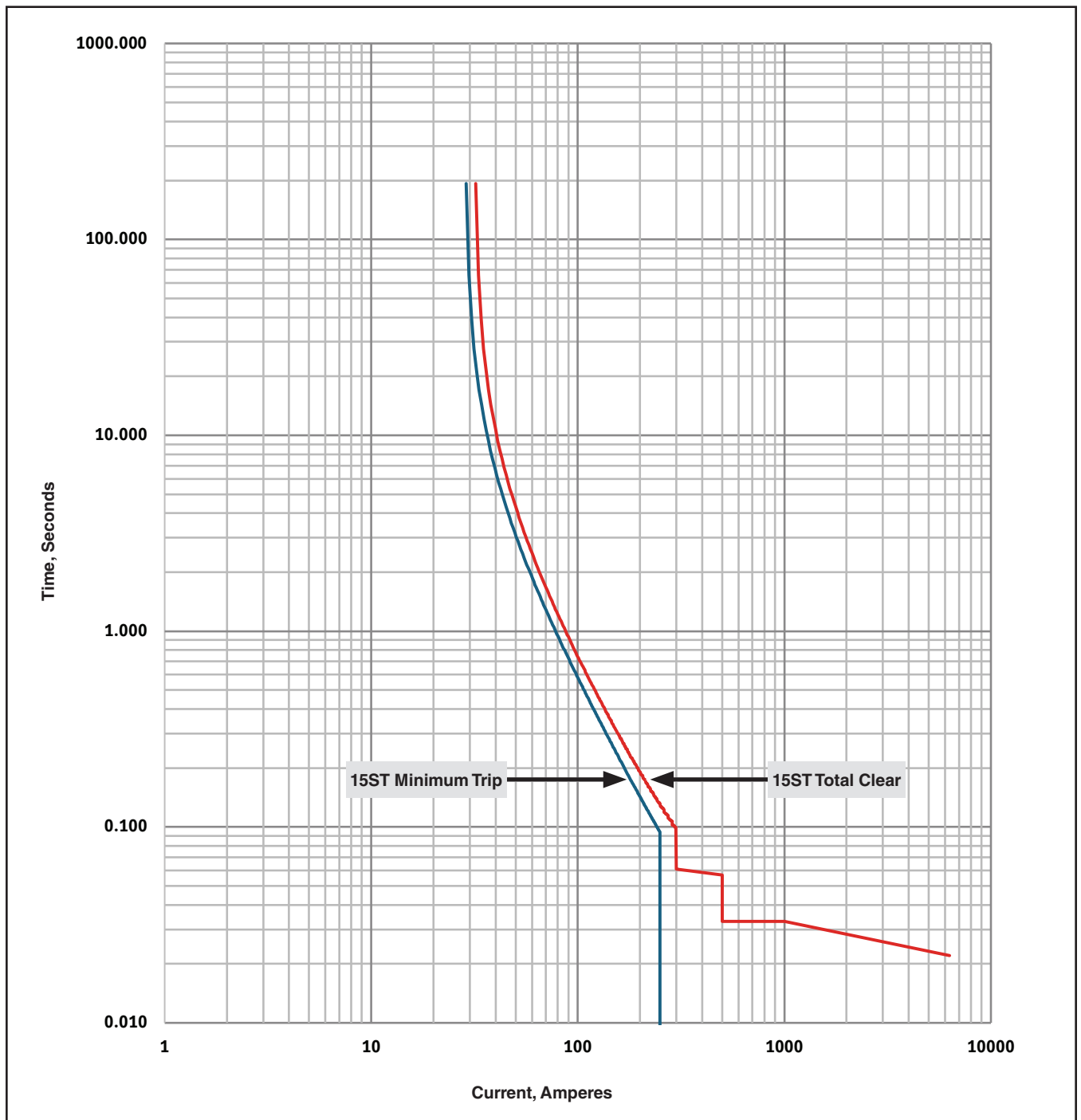


## ST-Speed Time-Current Characteristic Curves with Definite Times at High Current

### 10-Ampere ST-Speed TCC Curve with Definite Times at High Current



## 15-Ampere ST-Speed TCC Curve with Definite Times at High Current



20-Ampere ST-Speed TCC Curve with Definite Times at High Current

