Time-Current Characteristic Curves

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Basis—Time-current characteristic (TCC) curves for the Vista overcurrent control 2.0 are shown in this publication. These curves are plotted for a system frequency of 60 Hertz, and for Vista or Vista SD switchgear a CT ratio of 660:1. Except for the K-speed curve family, all TCC curves were developed using the following equation:

$$t(I_{rms}) = \left[\frac{A}{\left[\frac{I_{rms}}{I_{min-pickup}} \right]^{p} - C} + B \right] \bullet TM + TA$$

Where:

t is the minimum tripping time for Vista coordination and Vista speed curves, and the average tripping time for IEEE and IEC curves, in seconds;

A, B, C, and p coefficients are provided later for each time-current characteristic curve;

I_{rms} is the nominal power frequency (fundamental) current in amperes, measured by the Vista overcurrent control 2.0;

$I_{min\text{-}pickup}$ is the minimum power frequency (fundamental) pickup current, in amperes, at which the TCC curve begins timing;

TM is the time multiplier (time dial); and,

TA is the time adder.

The K-speed curve family was developed using discrete data points. These data points can be found in the "Time-Current Characteristic Curves" section of **sandc.com**.

Vista overcurrent control 2.0 TCC curves are applicable to both 50- and 60-Hertz systems. They are also applicable over the Vista or Vista SD switchgear's entire operating temperature range of -40°F (-40°C) to +104°F (+40°C). No adjustments must be made to these curves for ambient temperature within this temperature range.

Tolerances—Tolerances for each TCC curve family are listed on the first page of each curve family. The interrupting time is 29 milliseconds. The total minimum clearing time—from initiation of the fault to total clearing—is 43 milliseconds.

Power-Up Current—With a CT ratio of 660:1, the Vista overcurrent control 2.0 requires a minimum current level of 14 amperes in each phase or 42 amperes in a single phase to power up and trip.

With a CT ratio of 1320:1, the Vista overcurrent control 2.0 requires a minimum current level of 28 amperes in each phase or 84 amperes in a single phase to power up and trip.

Application—The maximum continuous current-carrying capability of Vista Underground Distribution Switchgear is 900 amperes, and the maximum continuous current-carrying capability of Vista SD Underground Distribution Switchgear is 630 amperes. The Vista overcurrent control 2.0 is capable of sensing current in the range of 14-25,000 amperes RMS.

Because the time-current characteristics in this document are electronically derived, they are not subject to change because of aging, transient overcurrents, or fault currents. It is, therefore, only necessary to reset the fault interrupters following a fault-clearing operation.

Vista Coordination Curves

Parameters for Vista Coordination curves generate the minimum tripping TCC curve. Tolerances for these curves are detailed in Table 1, and parameters for each TCC curve are shown below the corresponding graph.

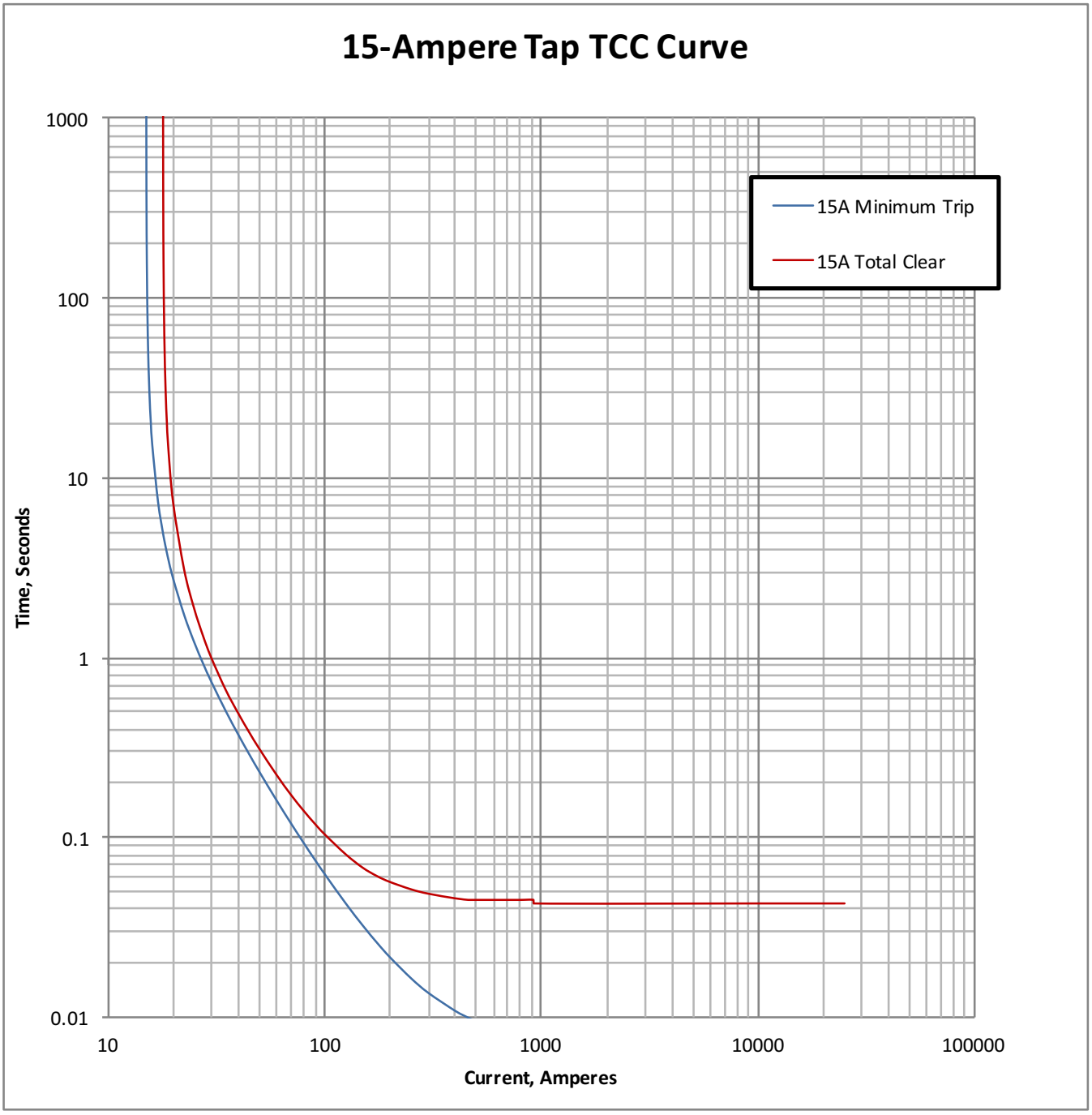
Table 1. Vista Coordination Curve Tolerances

Category	Setting	Current Above 30 A①	Current at or Below 30 A①
Time Overcurrent Response	Minimum Trip Time	The greatest of minimum tripping curve or 8 ms	
	Maximum Trip Time	Maximum trip time is greatest of: • Maximum trip times provided in tabular format in S&C TCC Number 680-9-3 • The minimum tripping curve plus 6 ms (60-Hz systems) or 10 ms (50-Hz systems) for currents less than 1 time the current corresponding to a 10-ms trip time • Minimum tripping curve plus 16 ms (60-Hz systems) or 20 ms (50-Hz systems) for currents from 1-2 times the current corresponding to a 10-ms trip time • Minimum tripping curve plus 14 ms for currents greater than 2 times the current corresponding to a 10-ms trip time	
	Timing starts if	Primary current -10% is equal to or greater than the minimum trip current, or low-current cutoff if enabled	Primary current -3 A is equal to or greater than the minimum trip current, or low-current cutoff if enabled●
	Timing does not start if primary current is less than the minimum trip current or low-current cutoff, if enabled		
Definite Time	Minimum Trip Time	8-ms minimum trip	
	Maximum Trip Time	The greatest of definite time setting times 1.03, or setting plus +16 ms (60-Hz systems) or +20 ms (50-Hz systems)	
	Timing starts if	Primary current -10% is equal to or greater than definite time current setting	Primary current -3 A is equal to or greater than the definite time current setting●
	Timing does not start if primary current is less than the minimum trip current or low-current cutoff, if enabled		

① With a CT ratio of 660:1, this value is 30 A. With a CT ratio of 1320:1, this value is 60 A.

● With a CT ratio of 660:1, tolerance is -3 A. With a CT ratio of 1320:1, tolerance is -6 A.

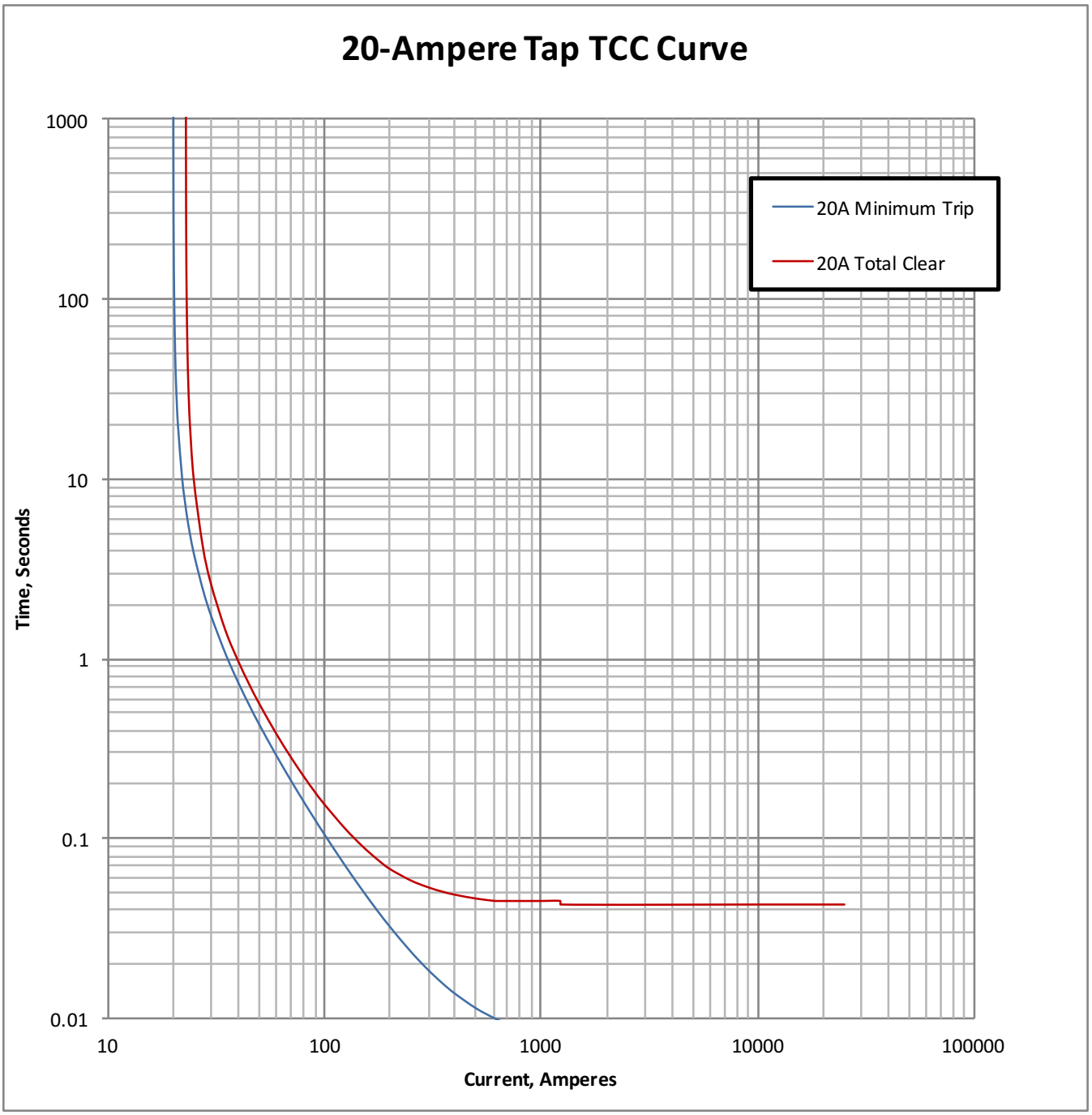
Tap Curves



Curve Parameter

	A	B	p	C	Min. Pickup (Amperes)
15-Ampere Tap	2	0.007	1.9	1	15

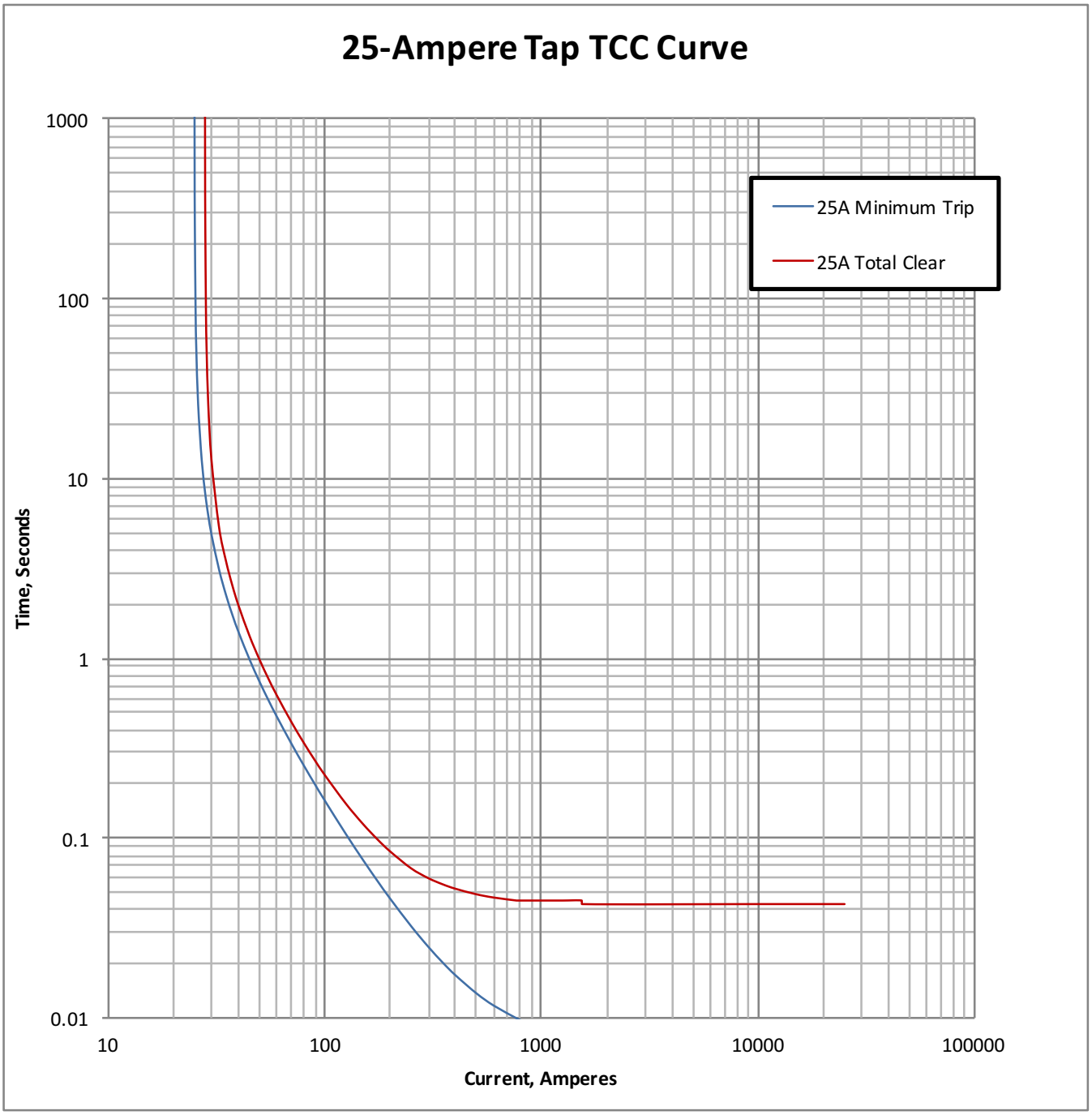
Tap Curves



Curve Parameter

	A	B	p	C	Min. Pickup (Amperes)
20-Ampere Tap	2	0.007	1.9	1	20

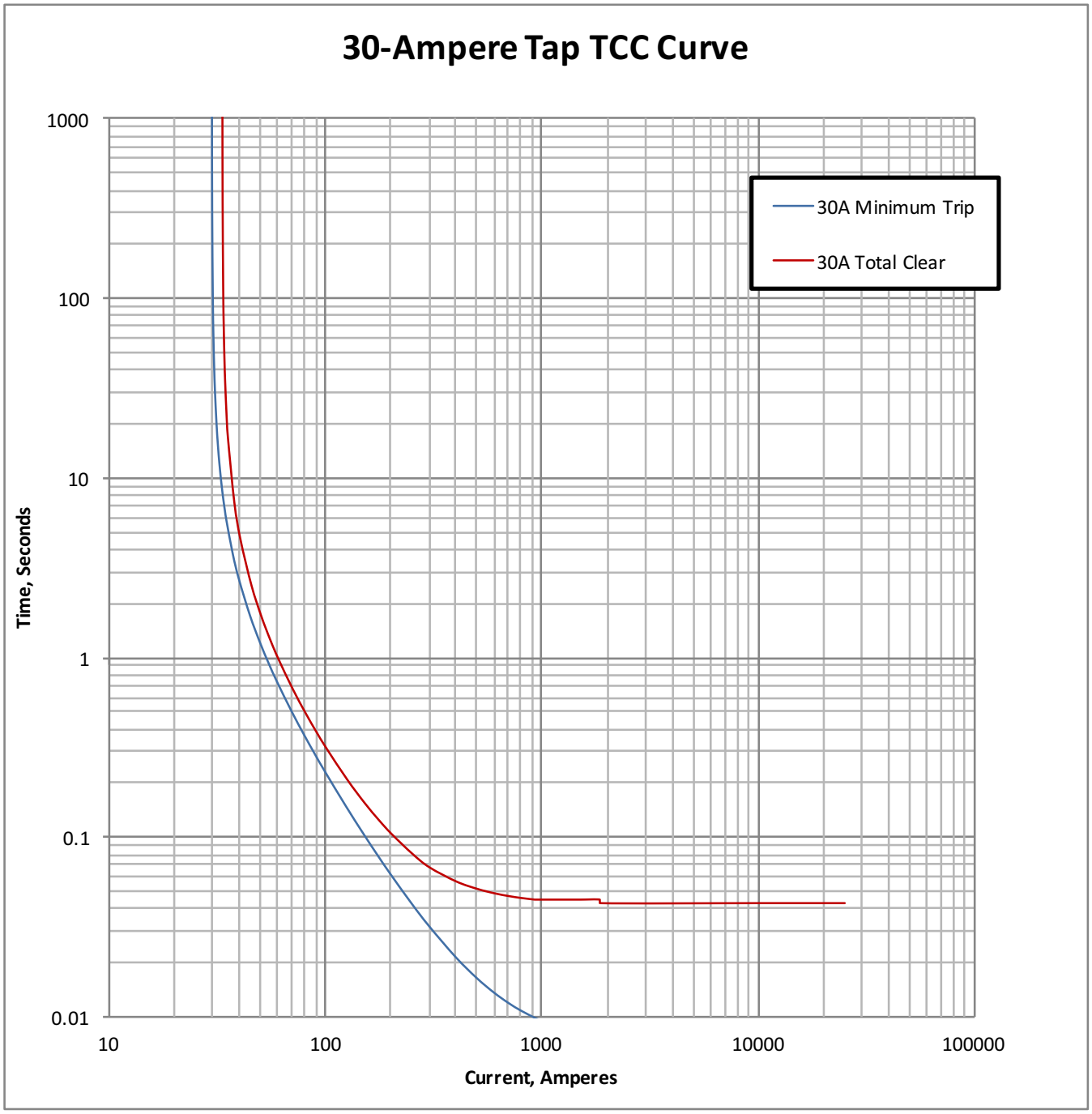
Tap Curves



TCC Curve Parameter

	A	B	p	C	Min. Pickup (Amperes)
25-Ampere Tap	2	0.007	1.9	1	25

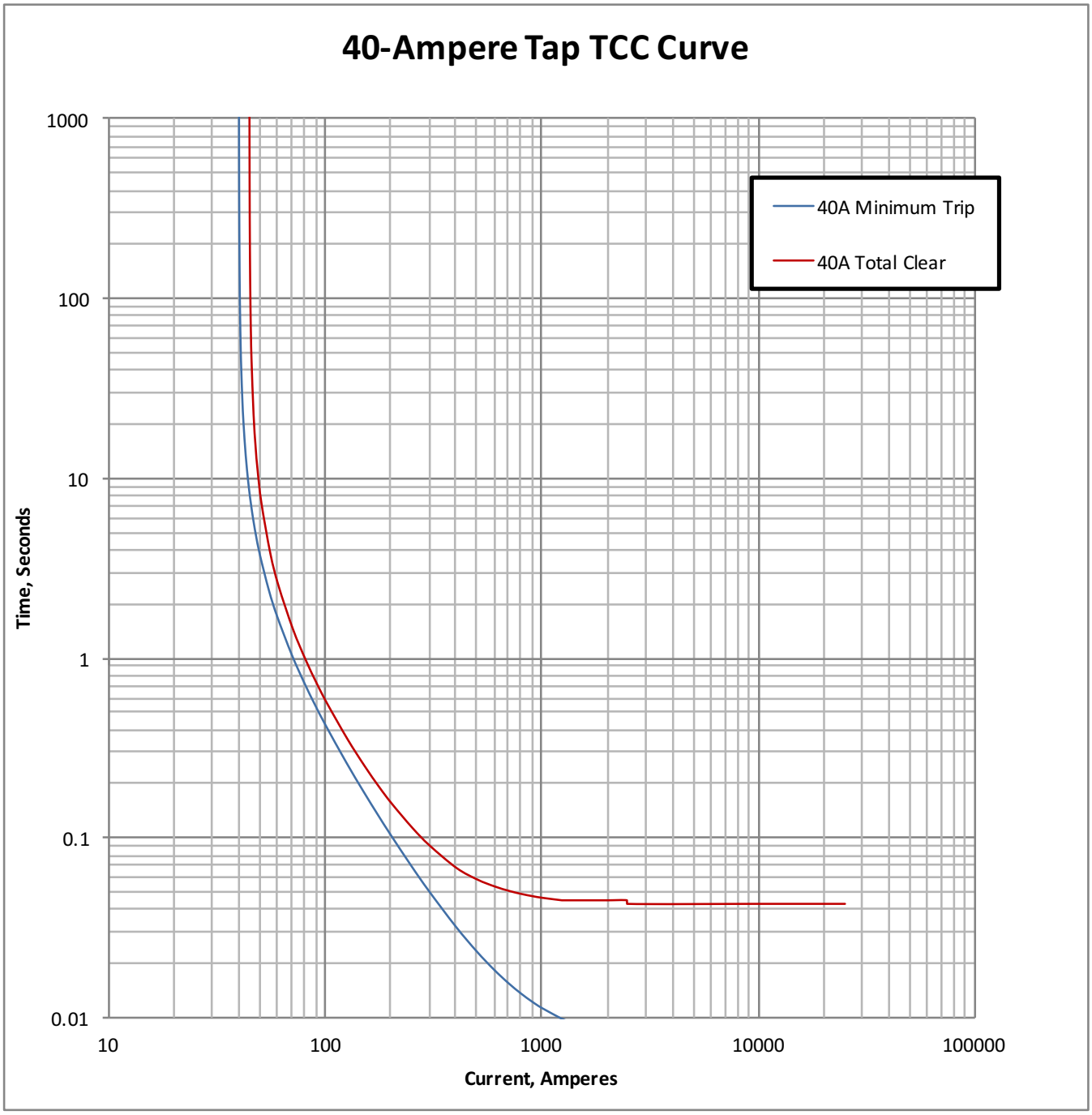
Tap Curves



TCC Curve Parameter

	A	B	p	C	Min. Pickup (Amperes)
30-Ampere Tap	2	0.007	1.9	1	30

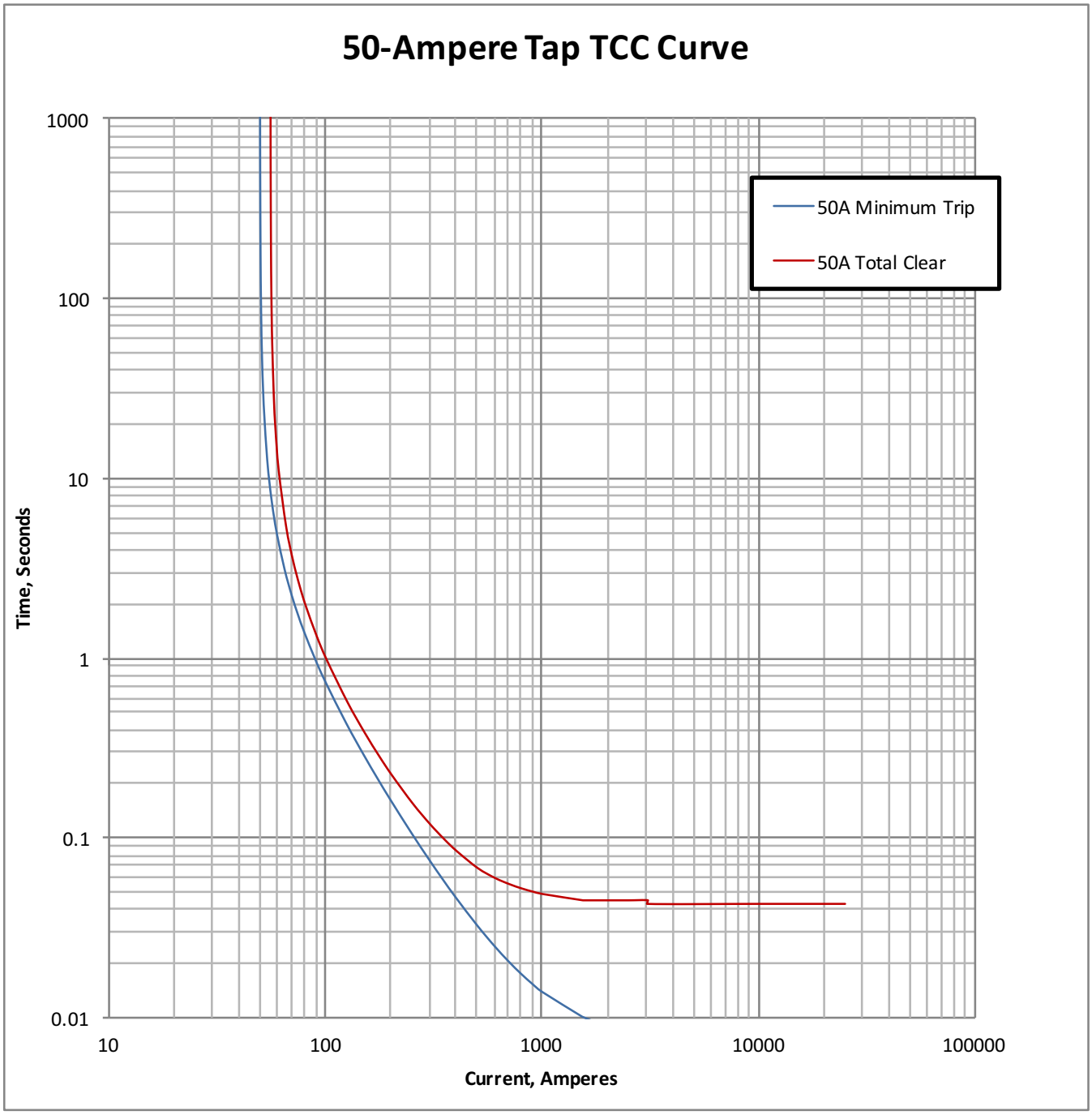
Tap Curves



TCC Curve Parameter

	A	B	p	C	Min. Pickup (Amperes)
40-Ampere Tap	2	0.007	1.9	1	40

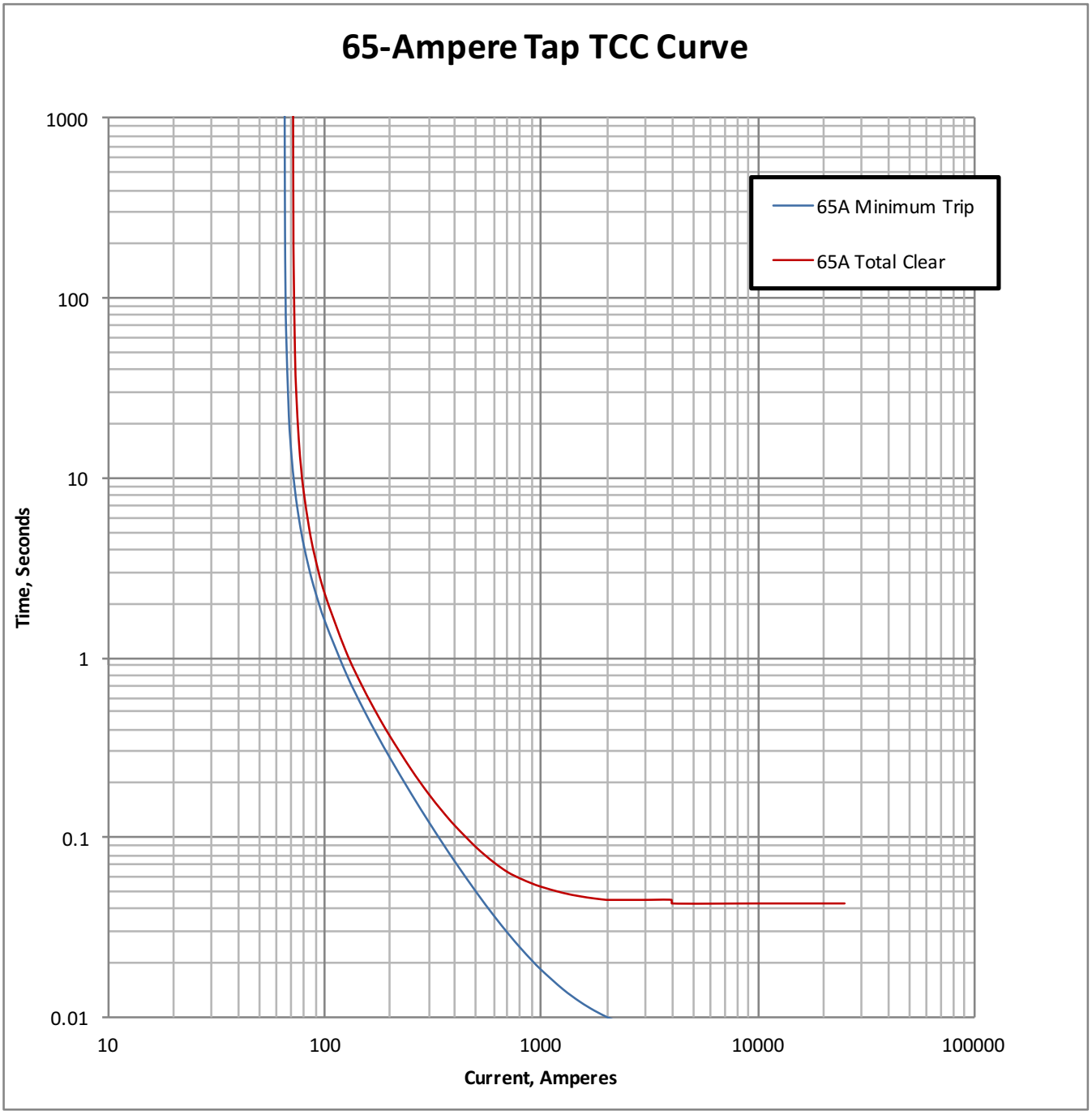
Tap Curves



TCC Curve Parameter

	A	B	p	C	Min. Pickup (Amperes)
50-Ampere Tap	2	0.007	1.9	1	50

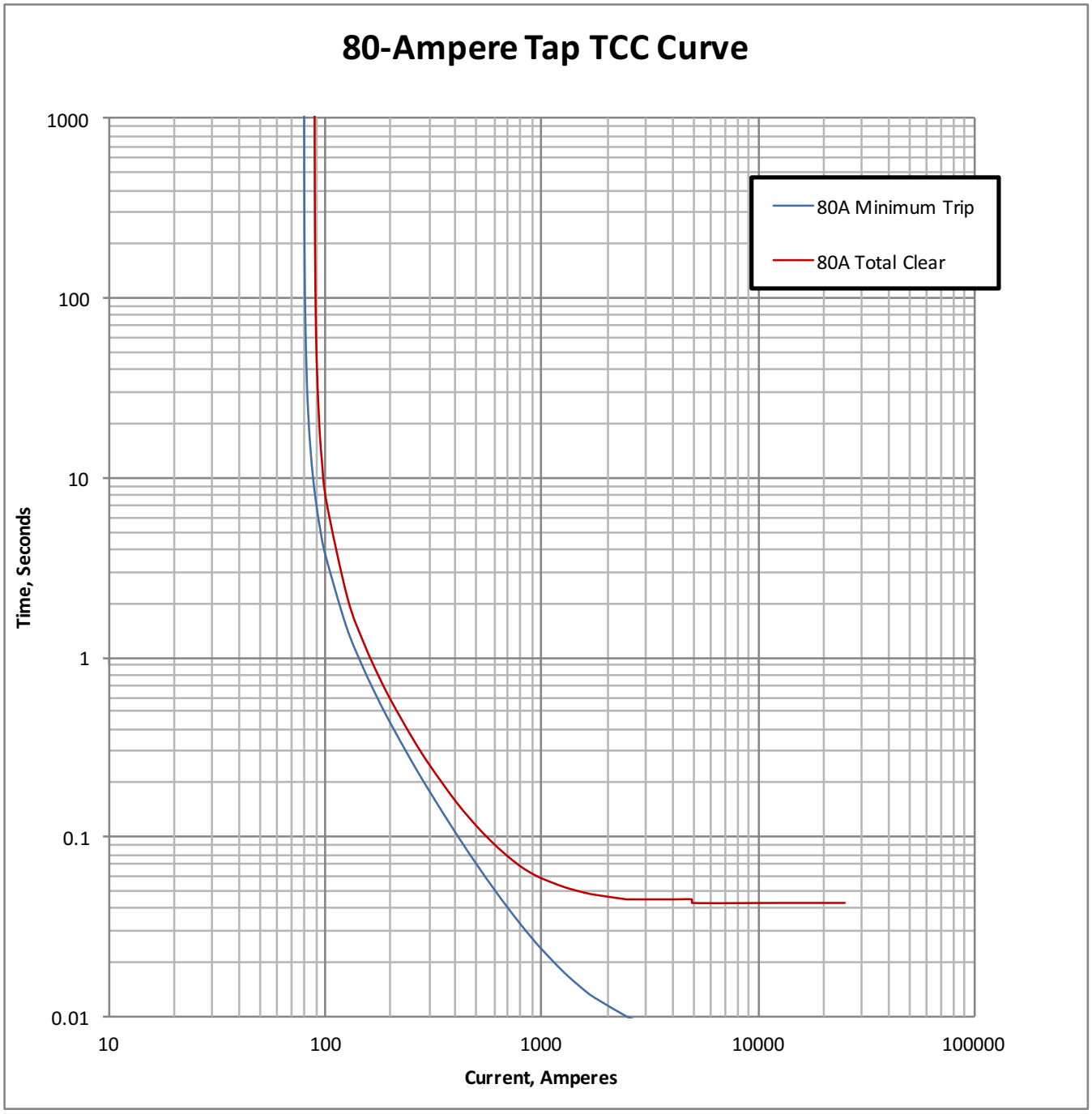
Tap Curves



TCC Curve Parameter

	A	B	p	C	Min. Pickup (Amperes)
65-Ampere Tap	2	0.007	1.9	1	65

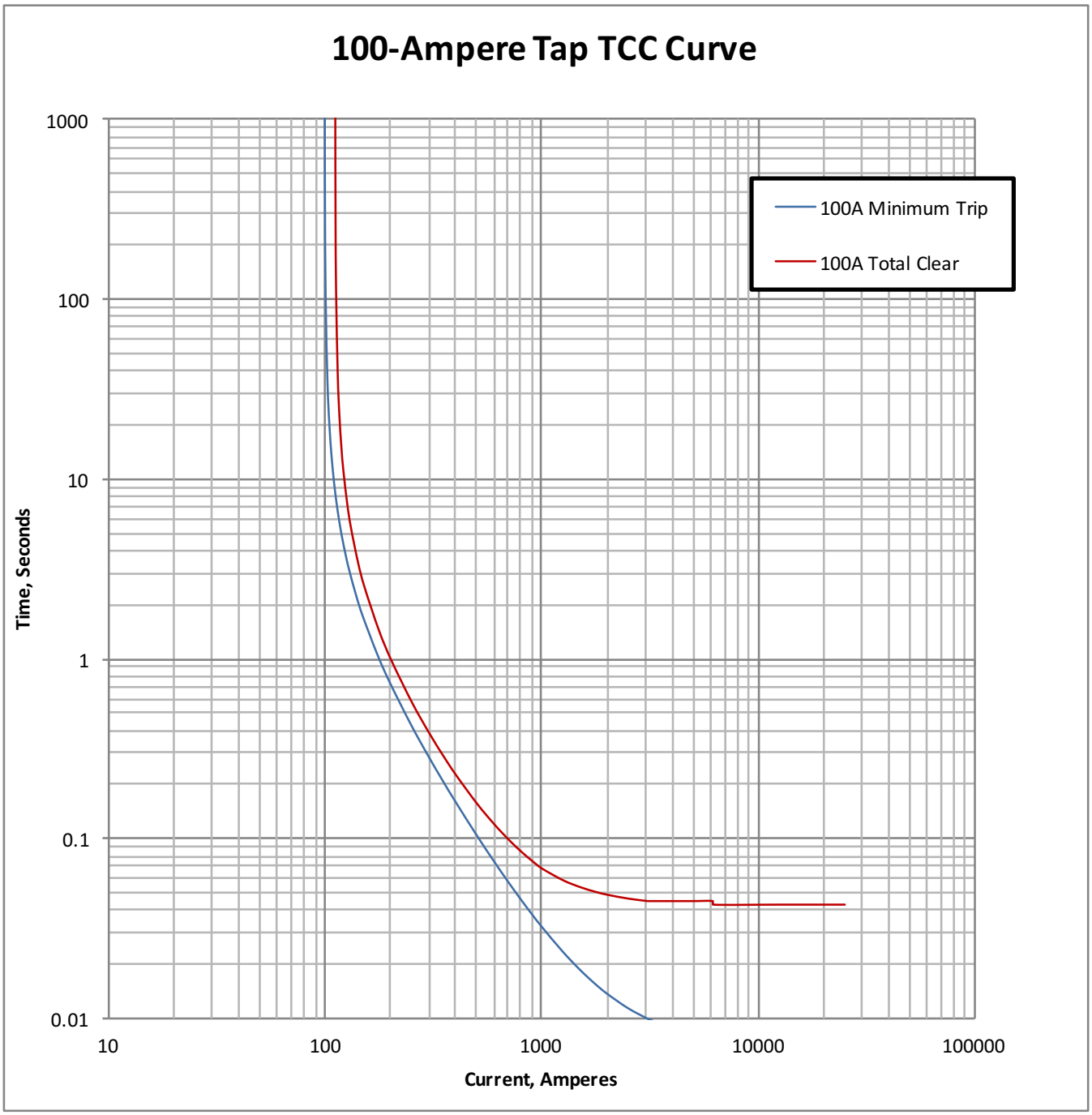
Tap Curves



TCC Curve Parameter

	A	B	p	C	Min. Pickup (Amperes)
80-Ampere Tap	2	0.007	1.9	1	80

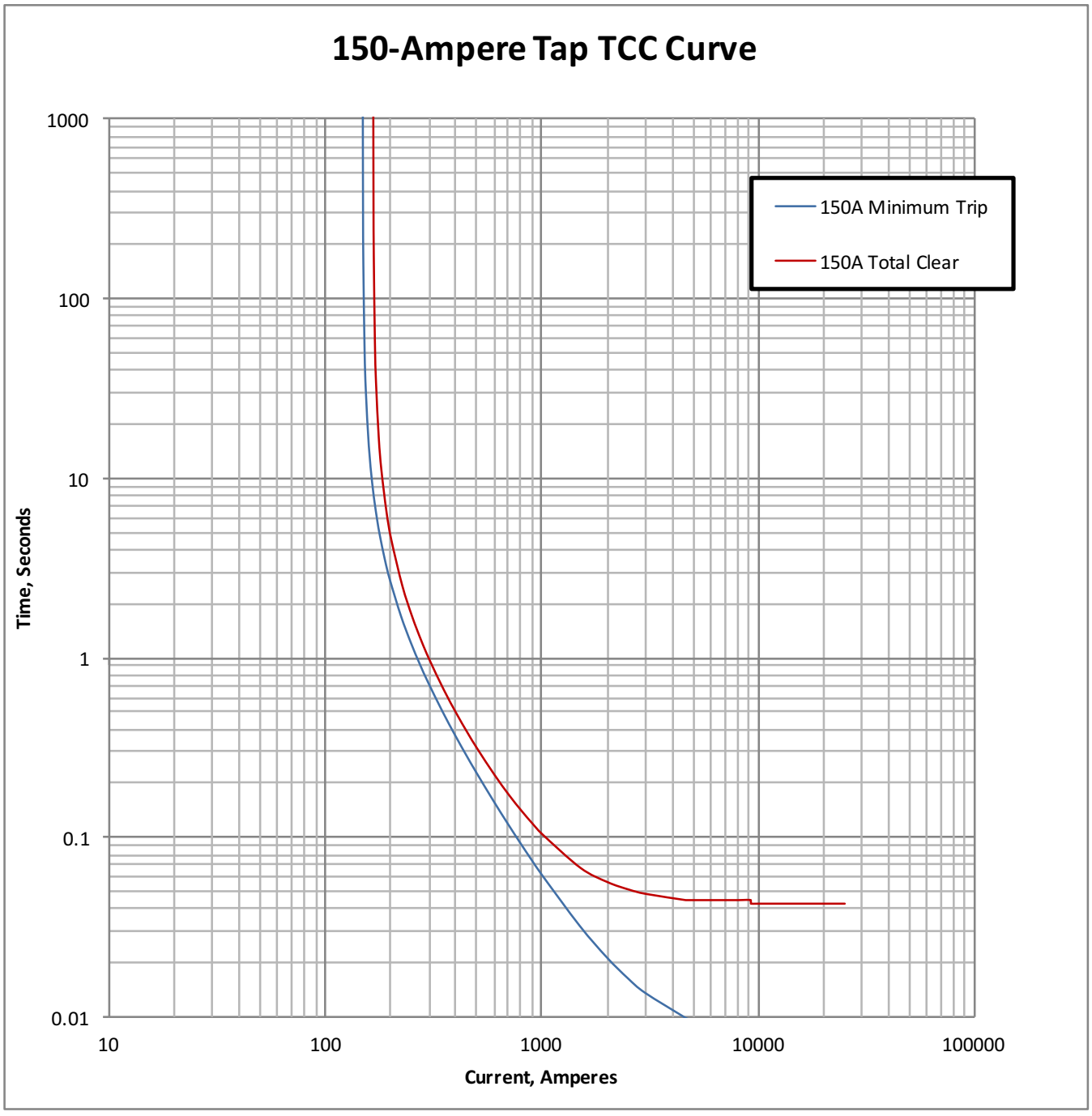
Tap Curves



TCC Curve Parameter

	A	B	p	C	Min. Pickup (Amperes)
100-Ampere Tap	2	0.007	1.9	1	100

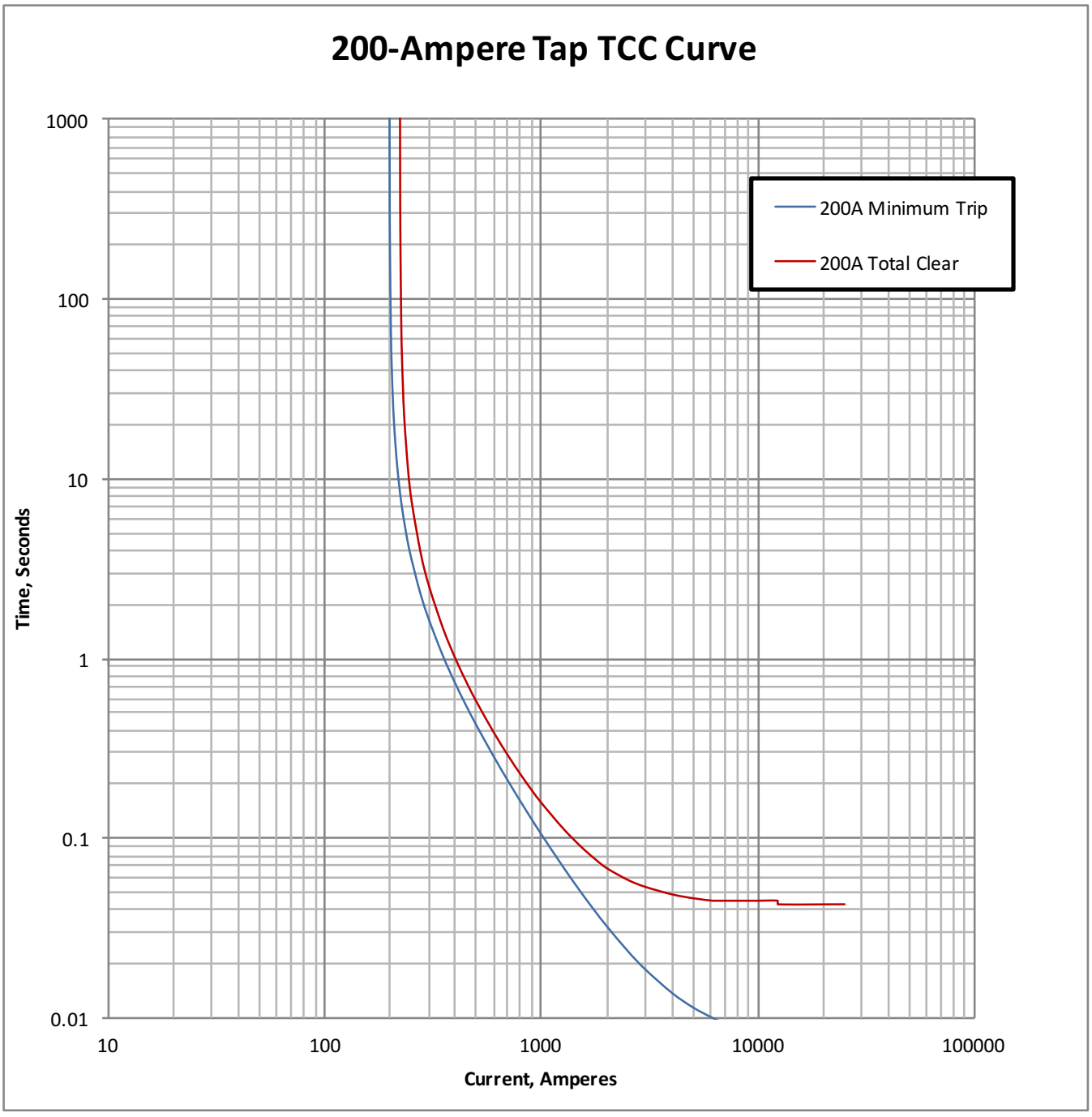
Tap Curves



TCC Curve Parameter

	A	B	p	C	Min. Pickup (Amperes)
150-Ampere Tap	2	0.007	1.9	1	150

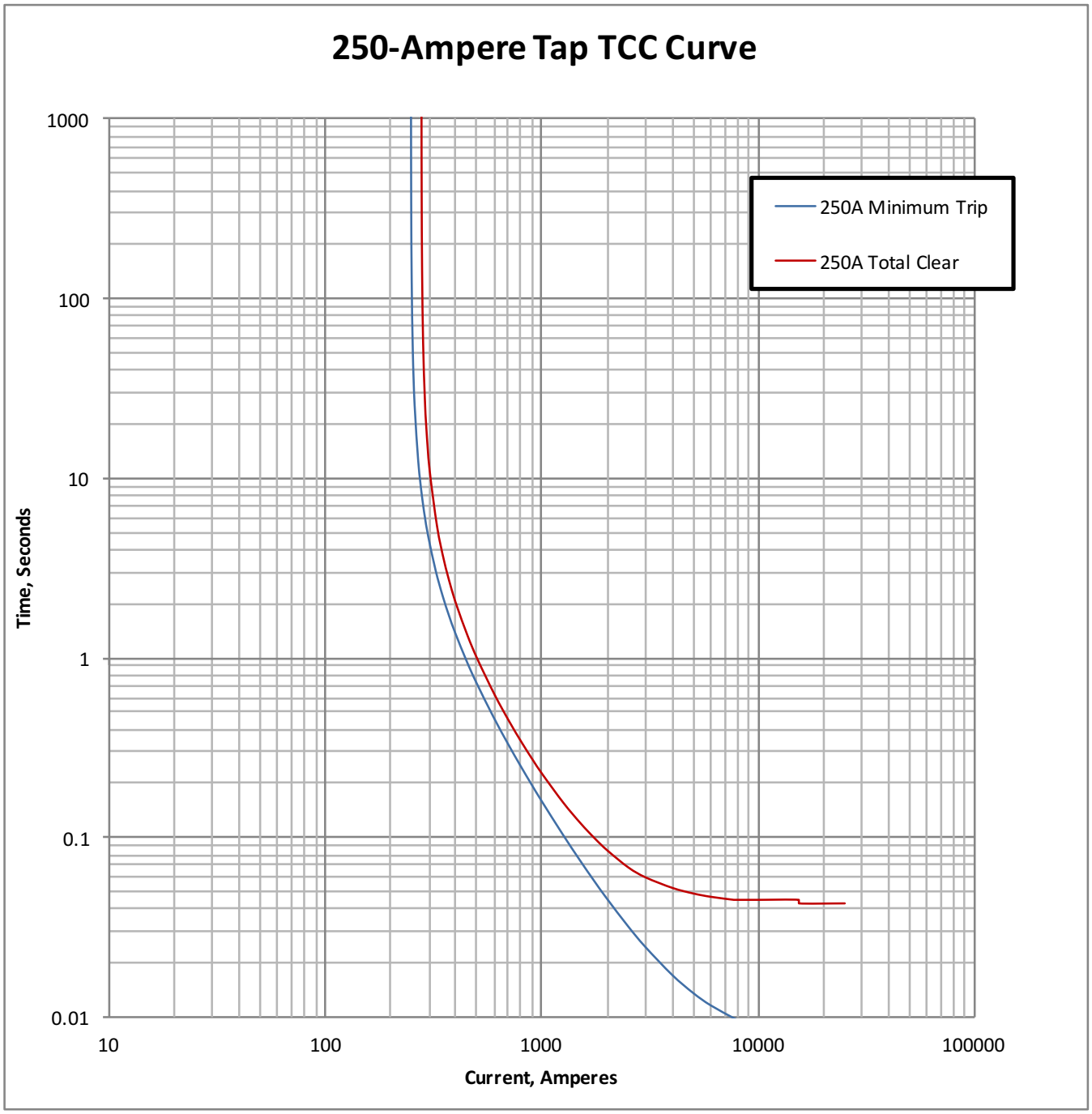
Tap Curves



TCC Curve Parameter

	A	B	p	C	Min. Pickup (Amperes)
200-Ampere Tap	2	0.007	1.9	1	200

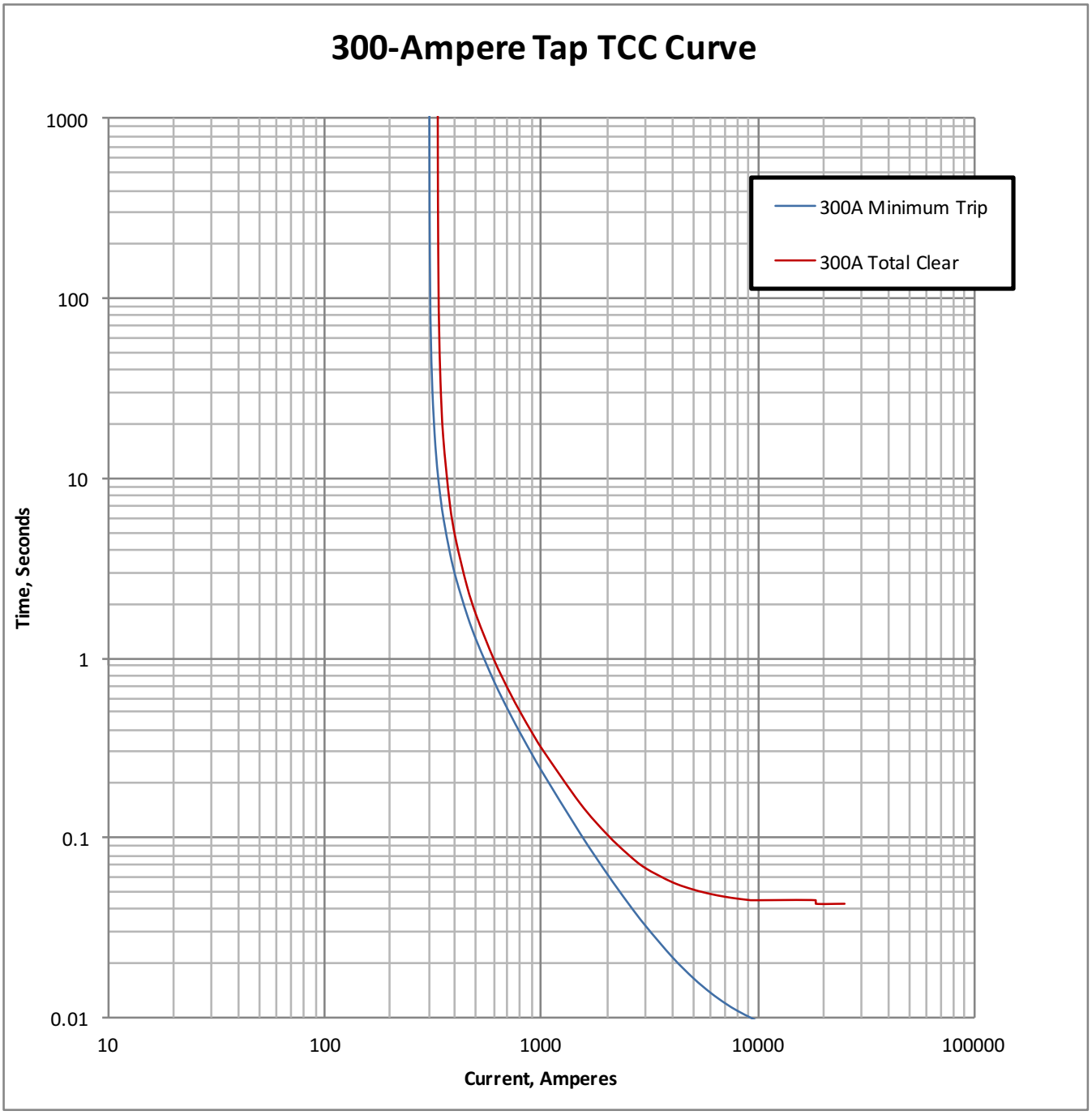
Tap Curves



TCC Curve Parameter

	A	B	p	C	Min. Pickup (Amperes)
250-Ampere Tap	2	0.007	1.9	1	250

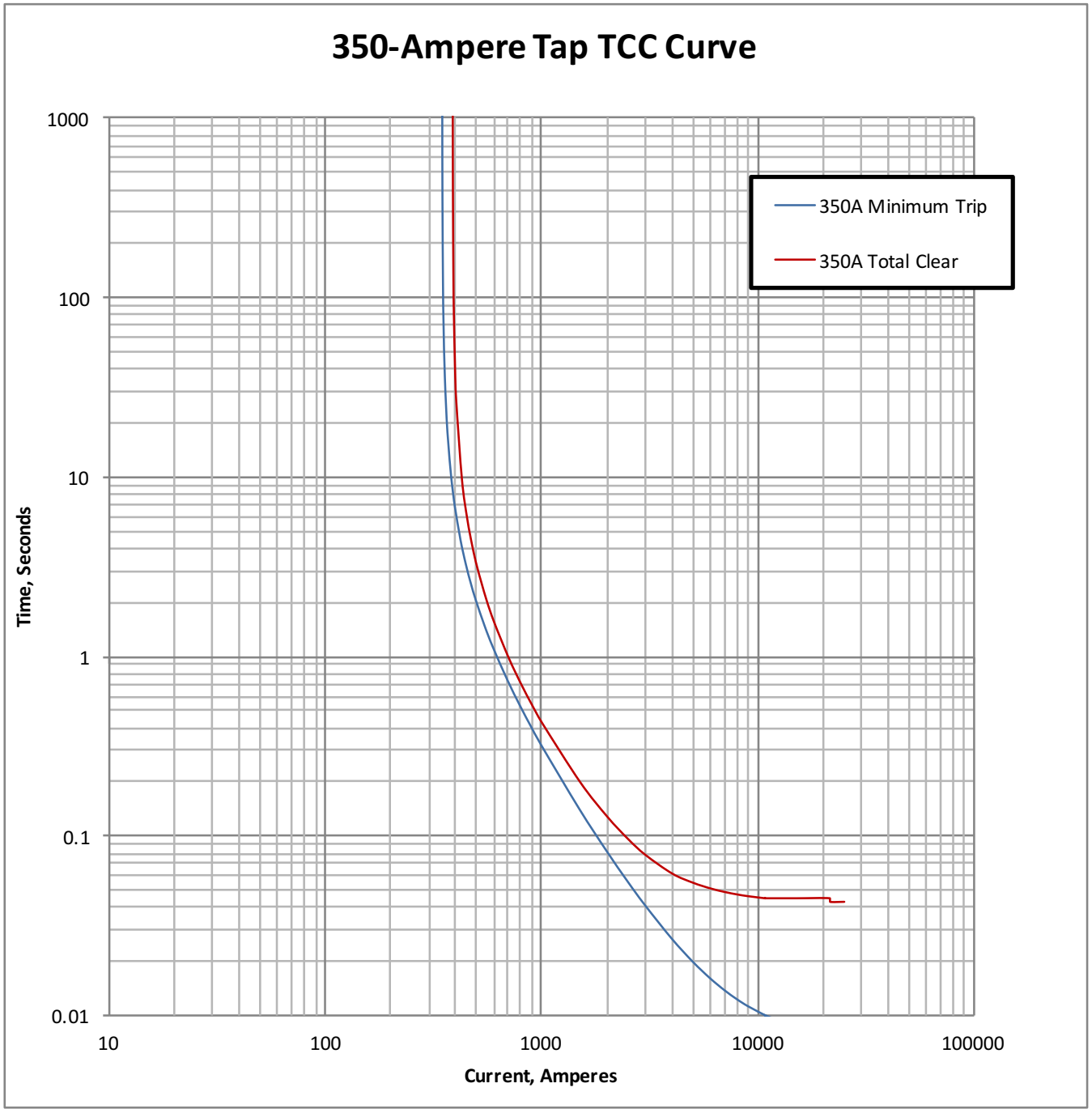
Tap Curves



TCC Curve Parameter

	A	B	p	C	Min. Pickup (Amperes)
300-Ampere Tap	2	0.007	1.9	1	300

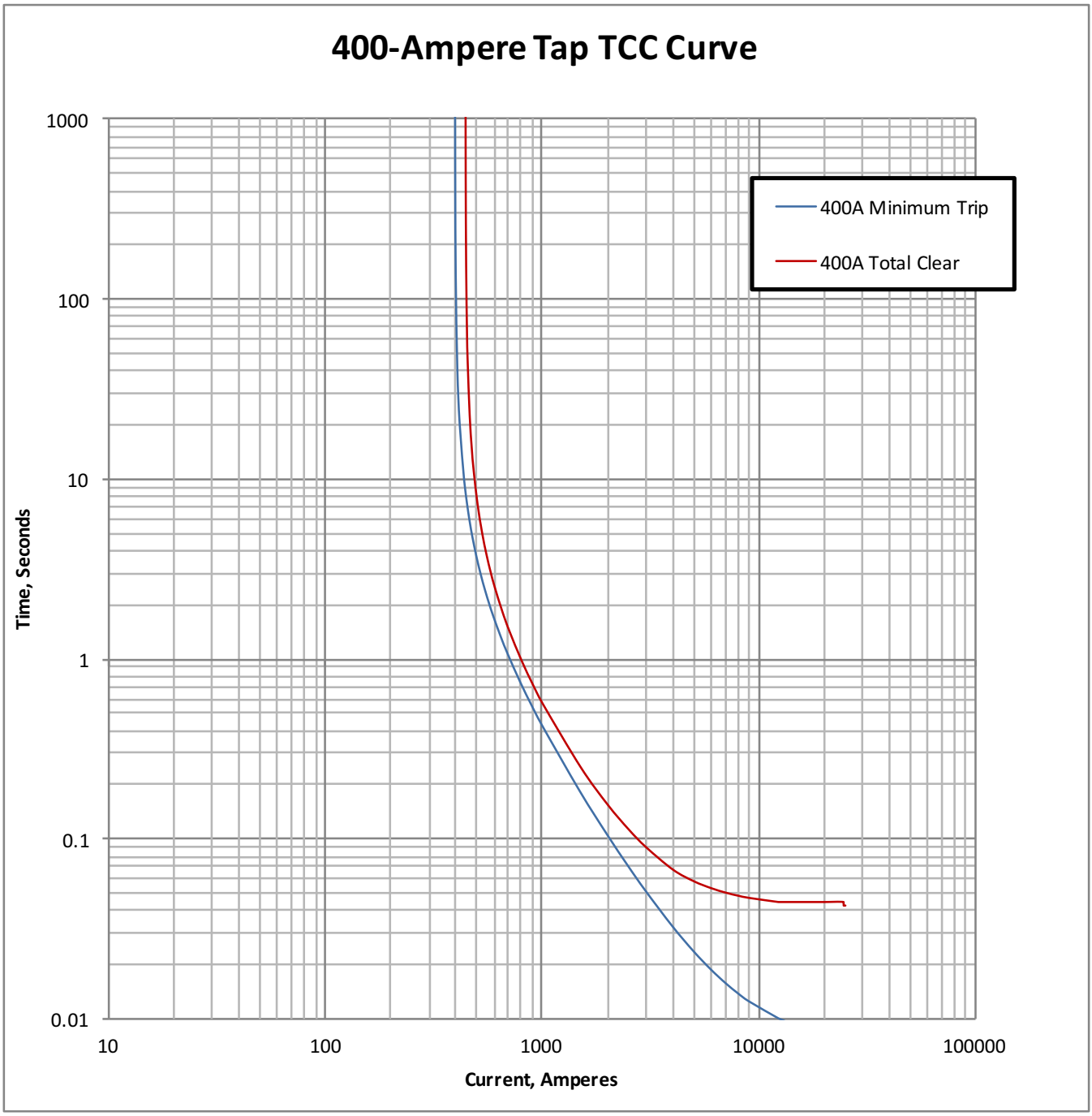
Tap Curves



TCC Curve Parameter

	A	B	p	C	Min. Pickup (Amperes)
350-Ampere Tap	2	0.007	1.9	1	350

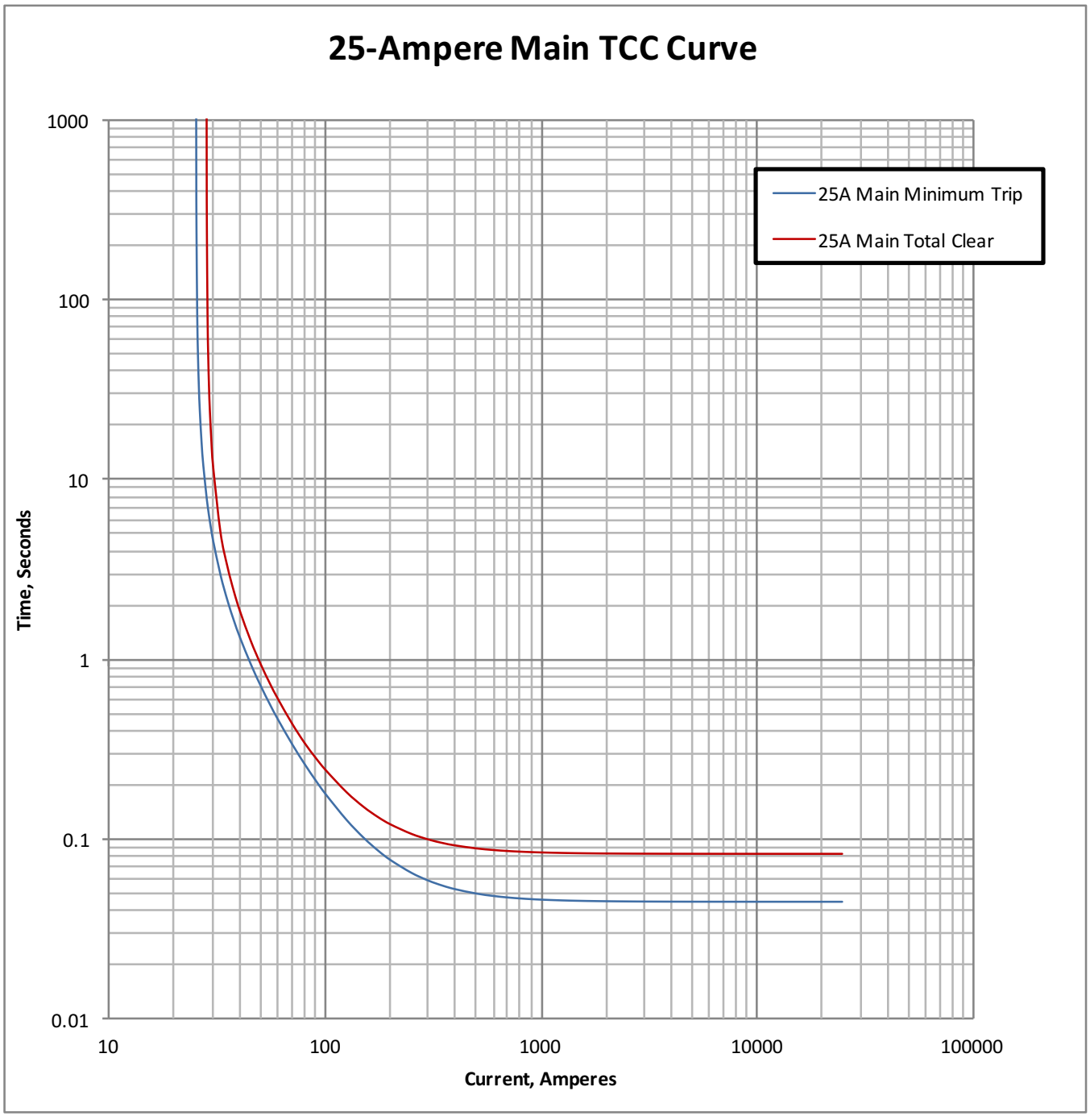
Tap Curves



TCC Curve Parameter

	A	B	p	C	Min. Pickup (Amperes)
400-Ampere Tap	2	0.007	1.9	1	400

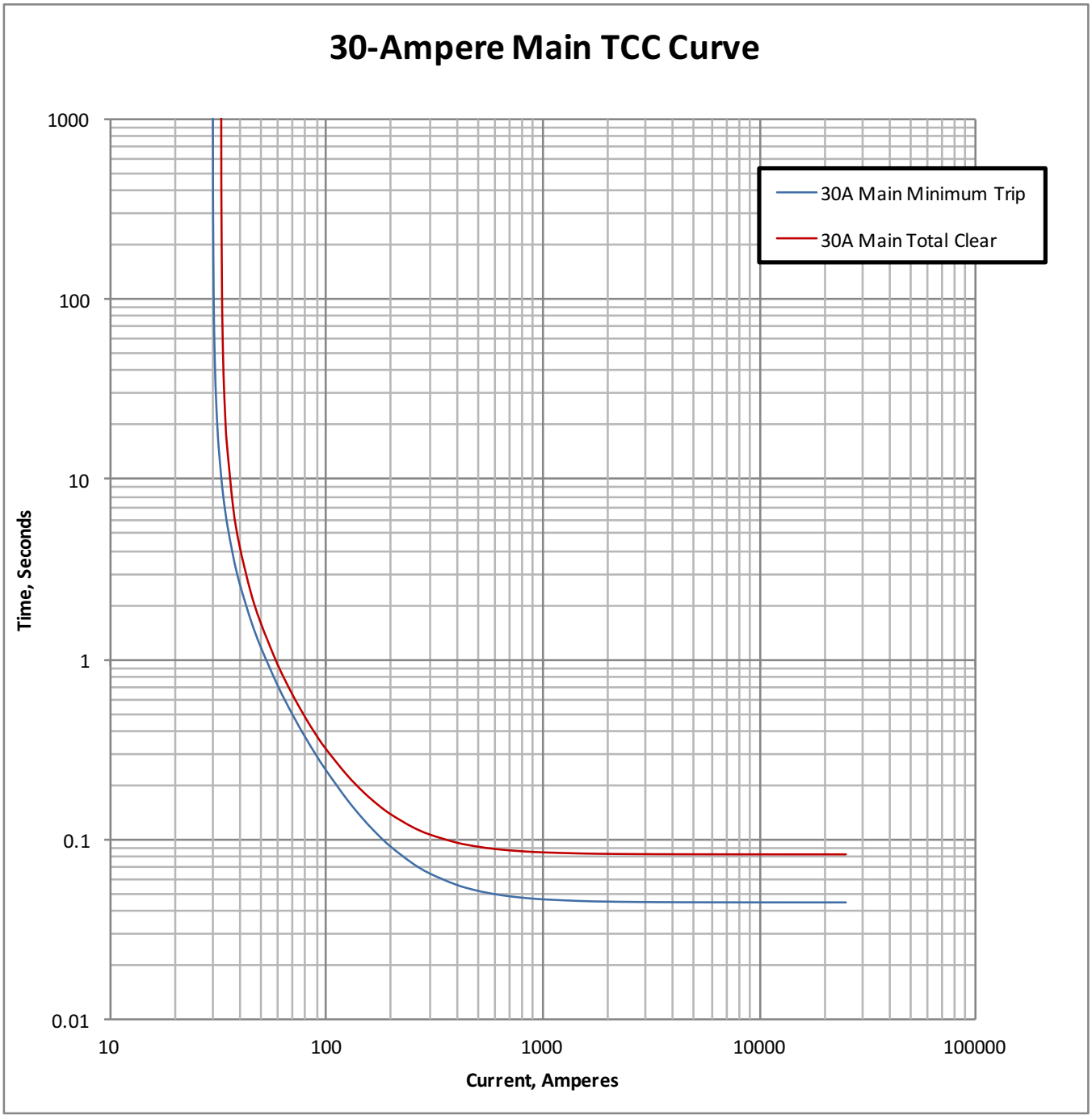
Main Curves



TCC Curve Parameter

	A	B	p	C	Min. Pickup (Amperes)
25-Ampere Main	2	0.045	2	1	25

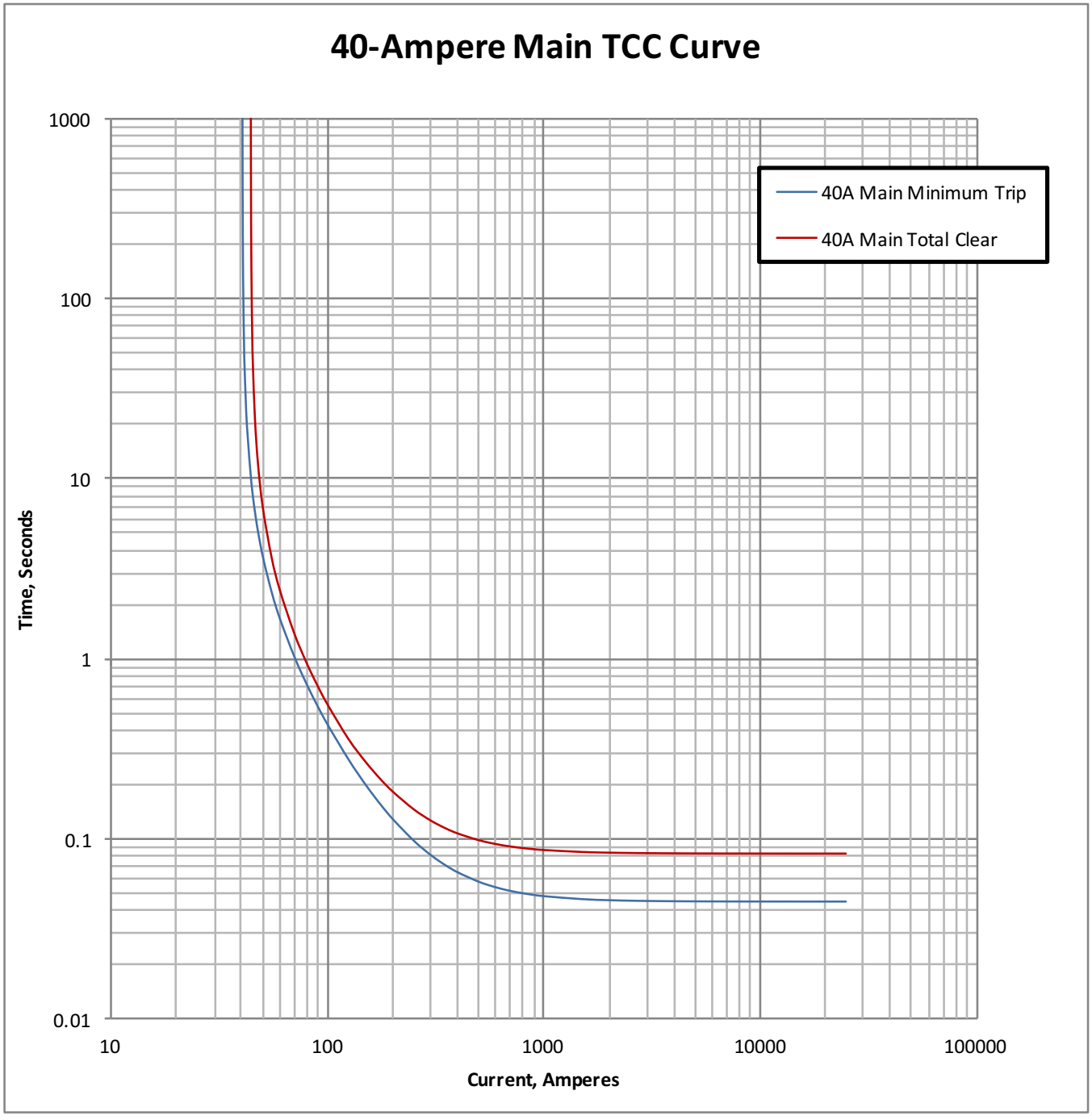
Main Curves



TCC Curve Parameter

	A	B	p	C	Min. Pickup (Amperes)
30-Ampere Main	2	0.045	2	1	30

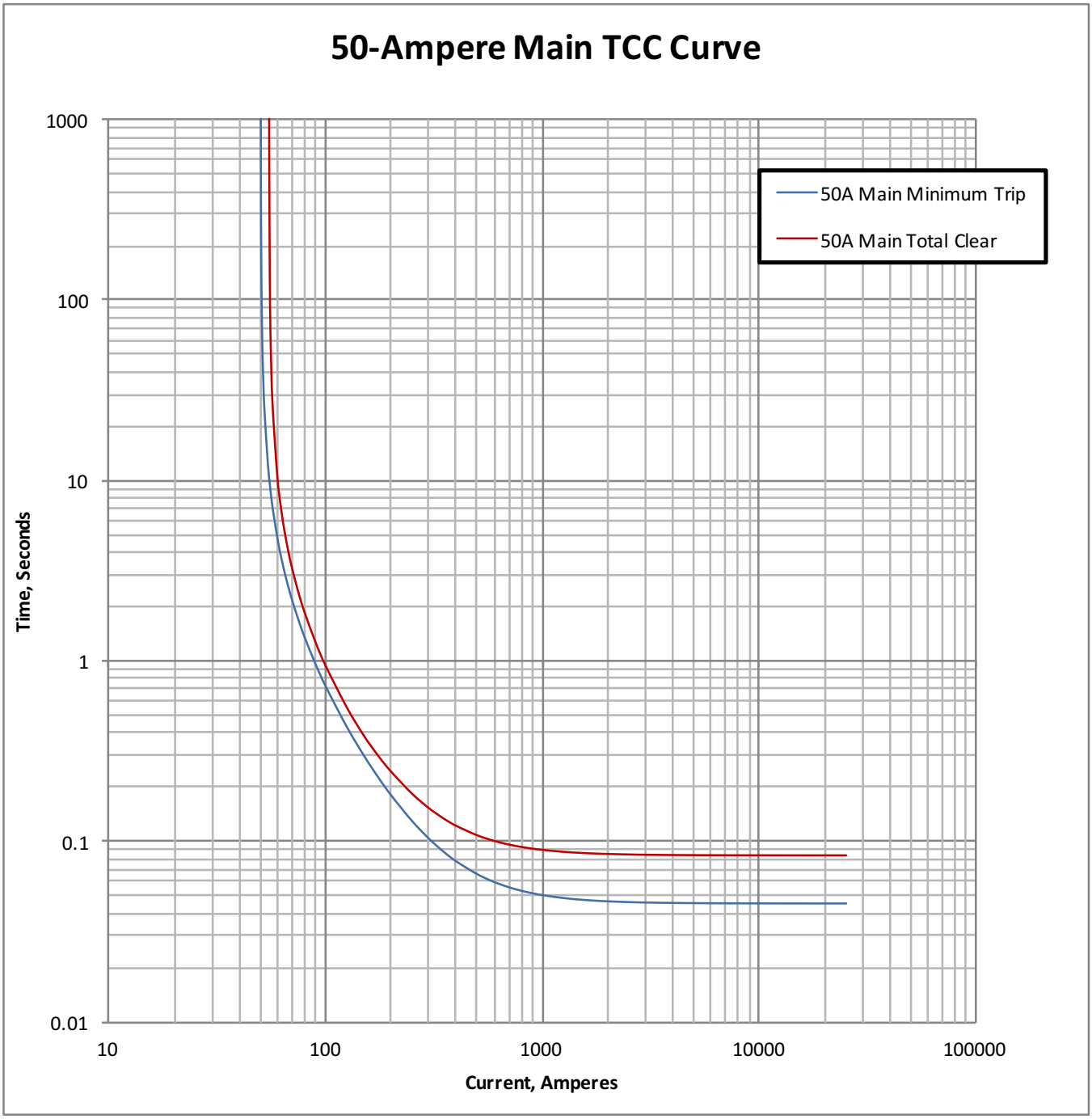
Main Curves



TCC Curve Parameter

	A	B	p	C	Min. Pickup (Amperes)
40-Ampere Main	2	0.045	2	1	40

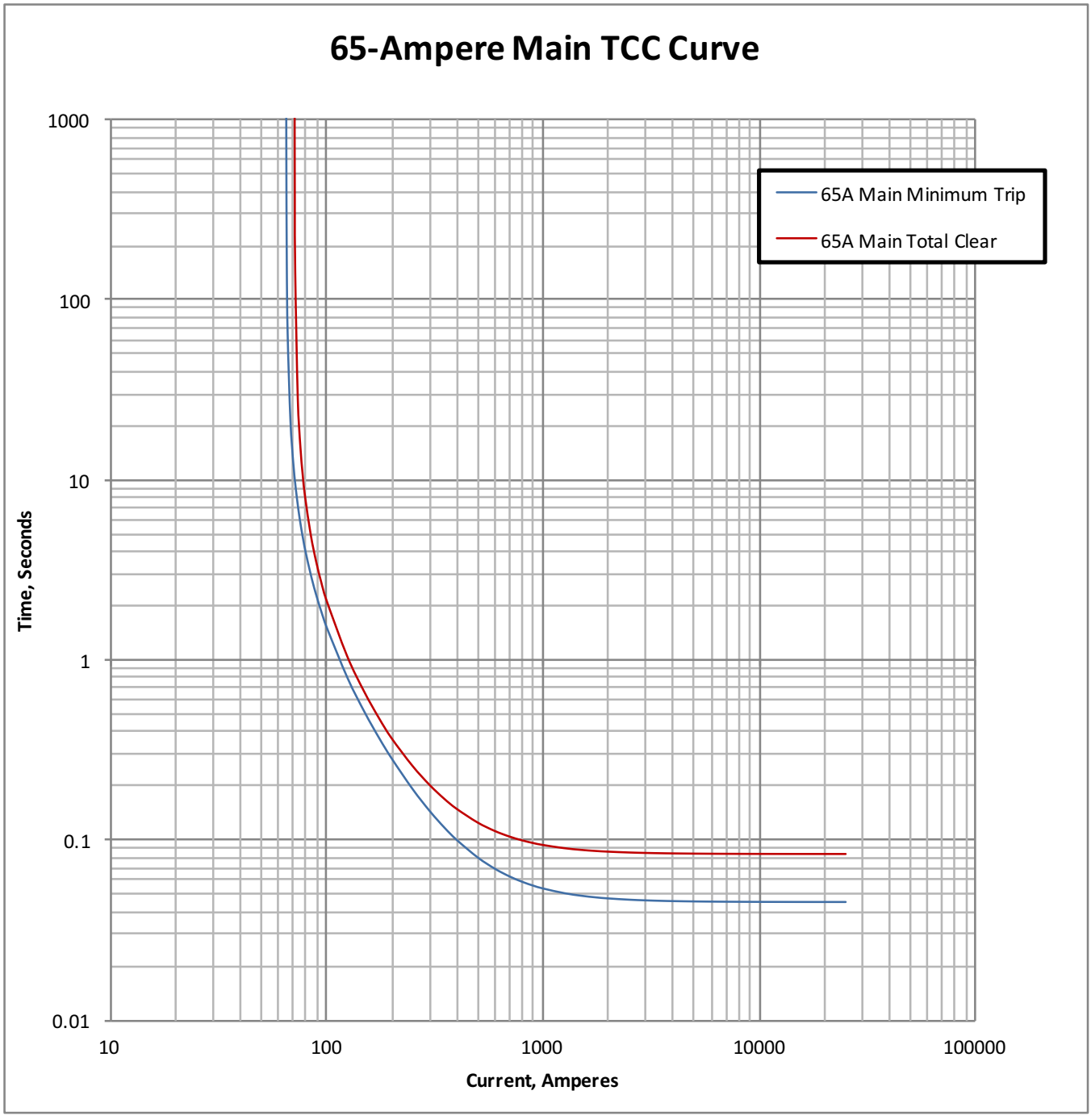
Main Curves



TCC Curve Parameter

	A	B	p	C	Min. Pickup (Amperes)
50-Ampere Main	2	0.045	2	1	50

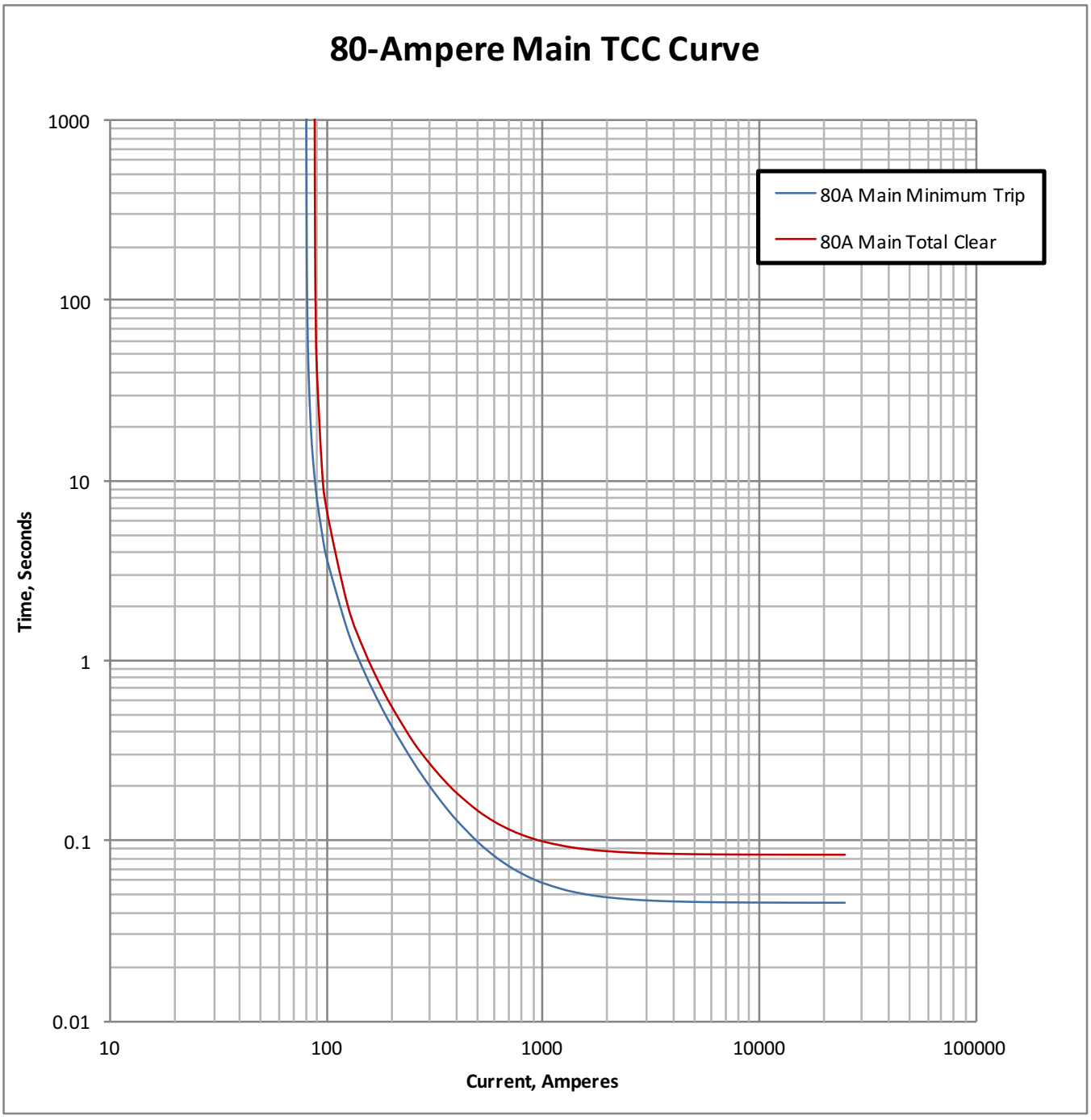
Main Curves



TCC Curve Parameter

	A	B	p	C	Min. Pickup (Amperes)
65-Ampere Main	2	0.045	2	1	65

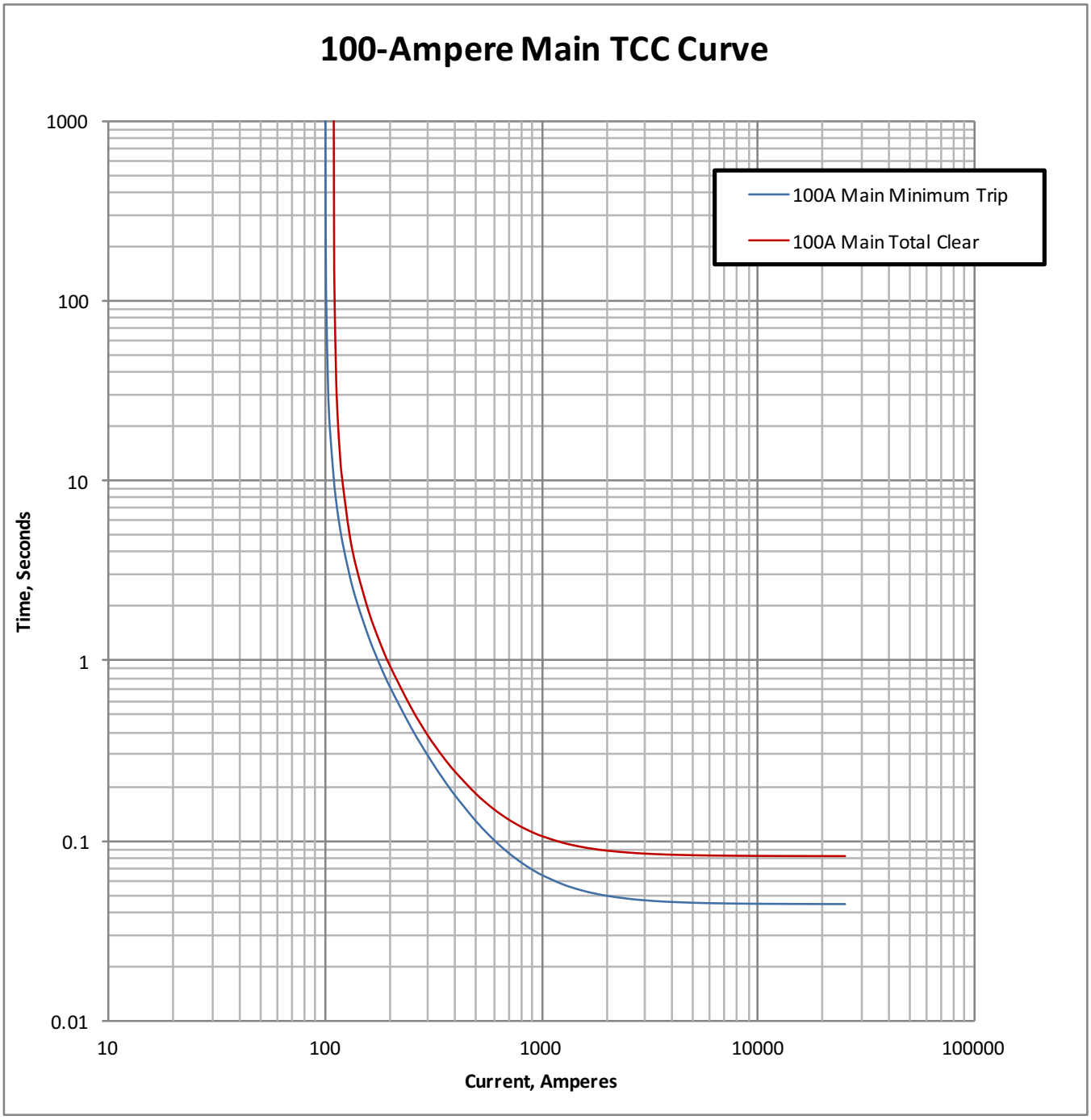
Main Curves



TCC Curve Parameter

	A	B	p	C	Min. Pickup (Amperes)
80-Ampere Main	2	0.045	2	1	80

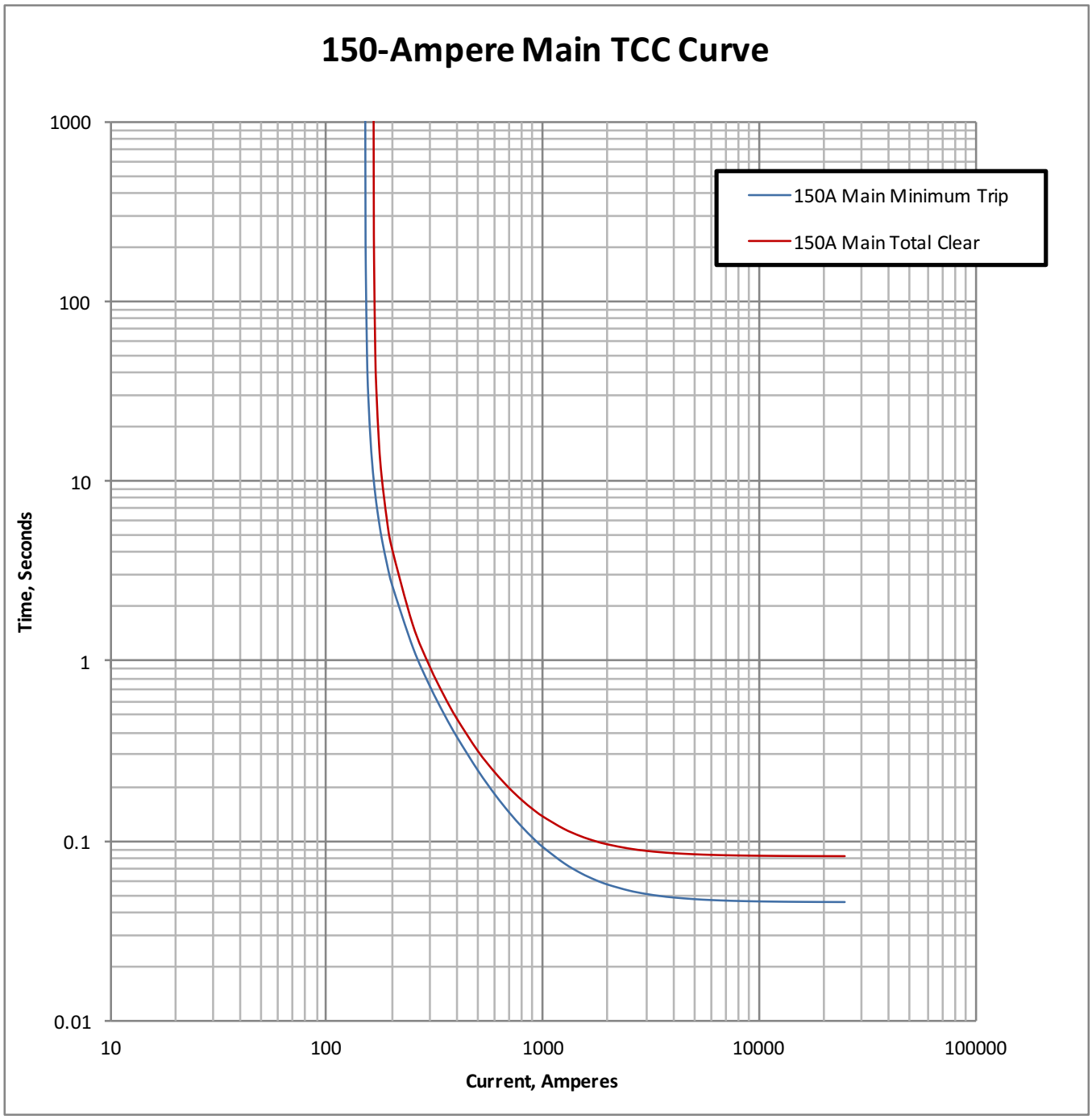
Main Curves



TCC Curve Parameter

	A	B	p	C	Min. Pickup (Amperes)
100-Ampere Main	2	0.045	2	1	100

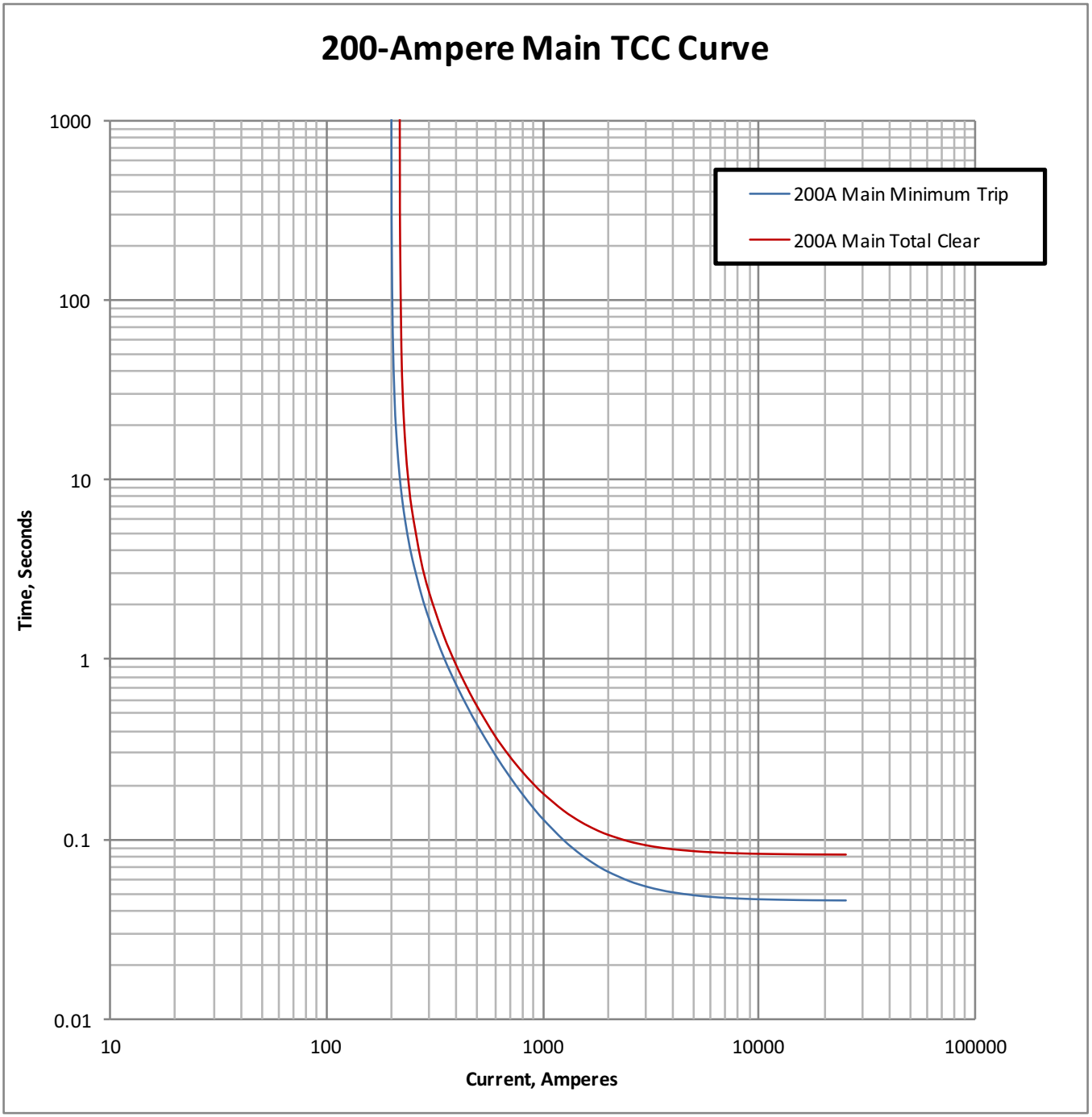
Main Curves



TCC Curve Parameter

	A	B	p	C	Min. Pickup (Amperes)
150-Ampere Main	2	0.045	2	1	150

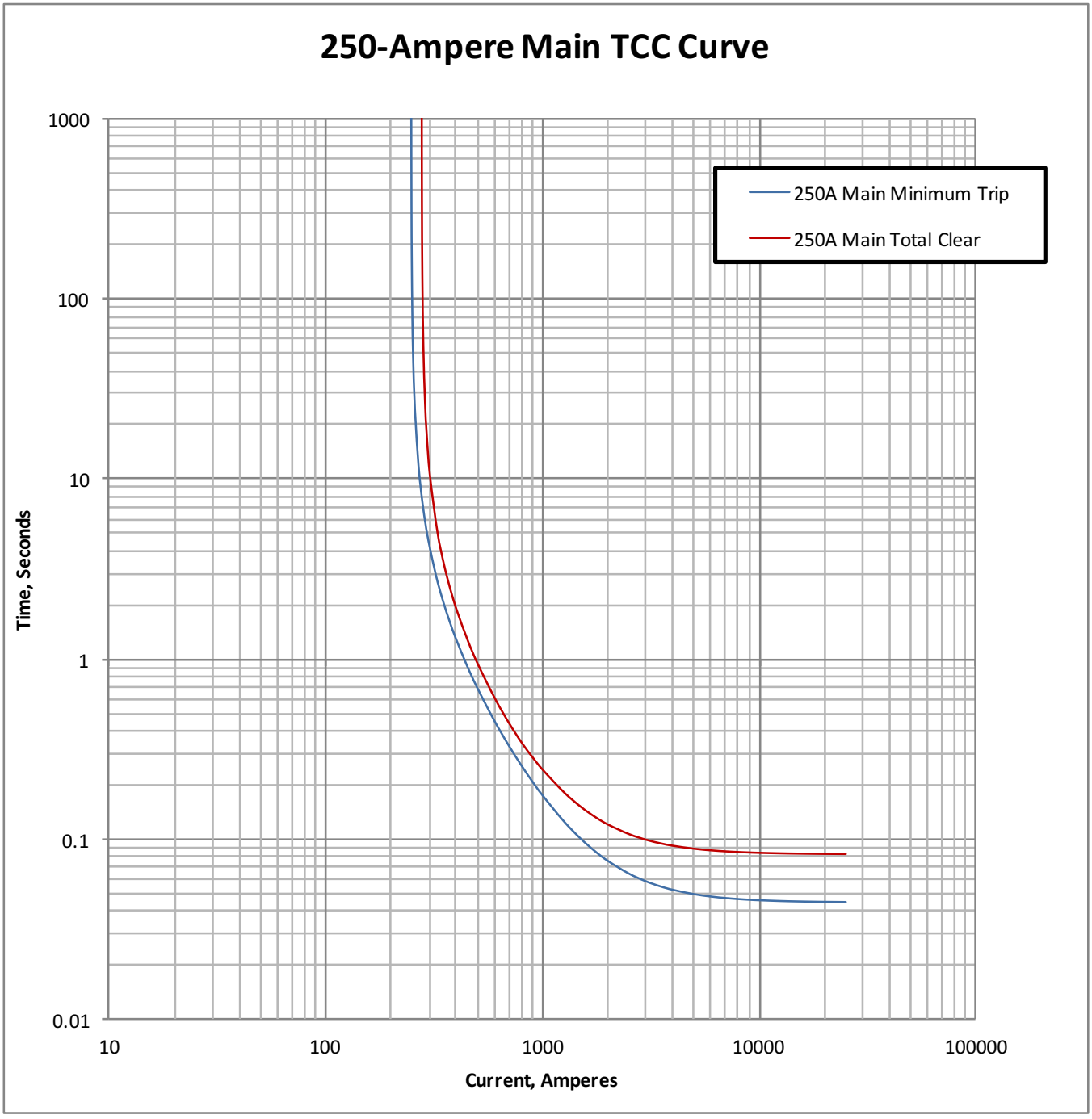
Main Curves



TCC Curve Parameter

	A	B	p	C	Min. Pickup (Amperes)
200-Ampere Main	2	0.045	2	1	200

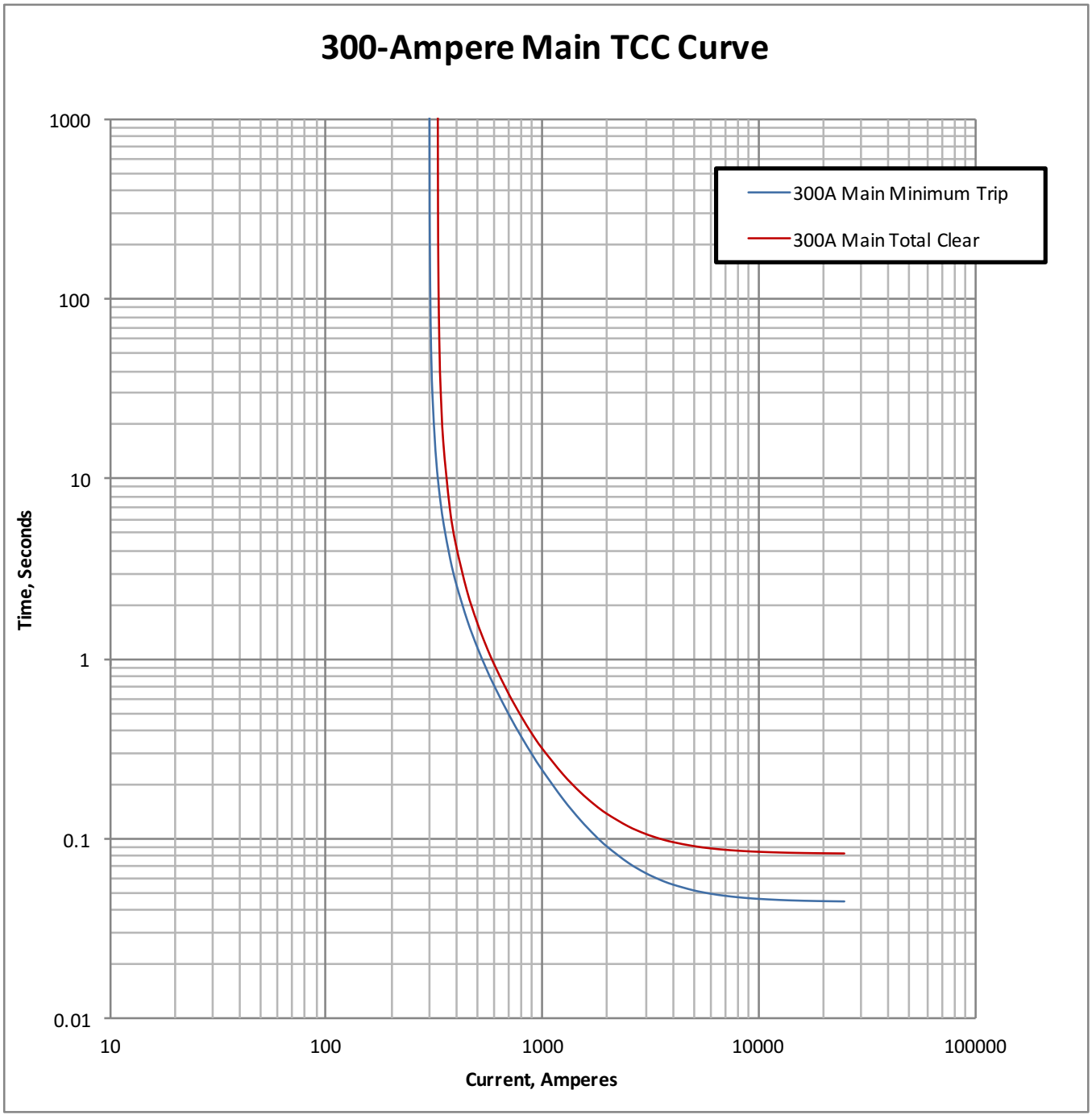
Main Curves



TCC Curve Parameter

	A	B	p	C	Min. Pickup (Amperes)
250-Ampere Main	2	0.045	2	1	250

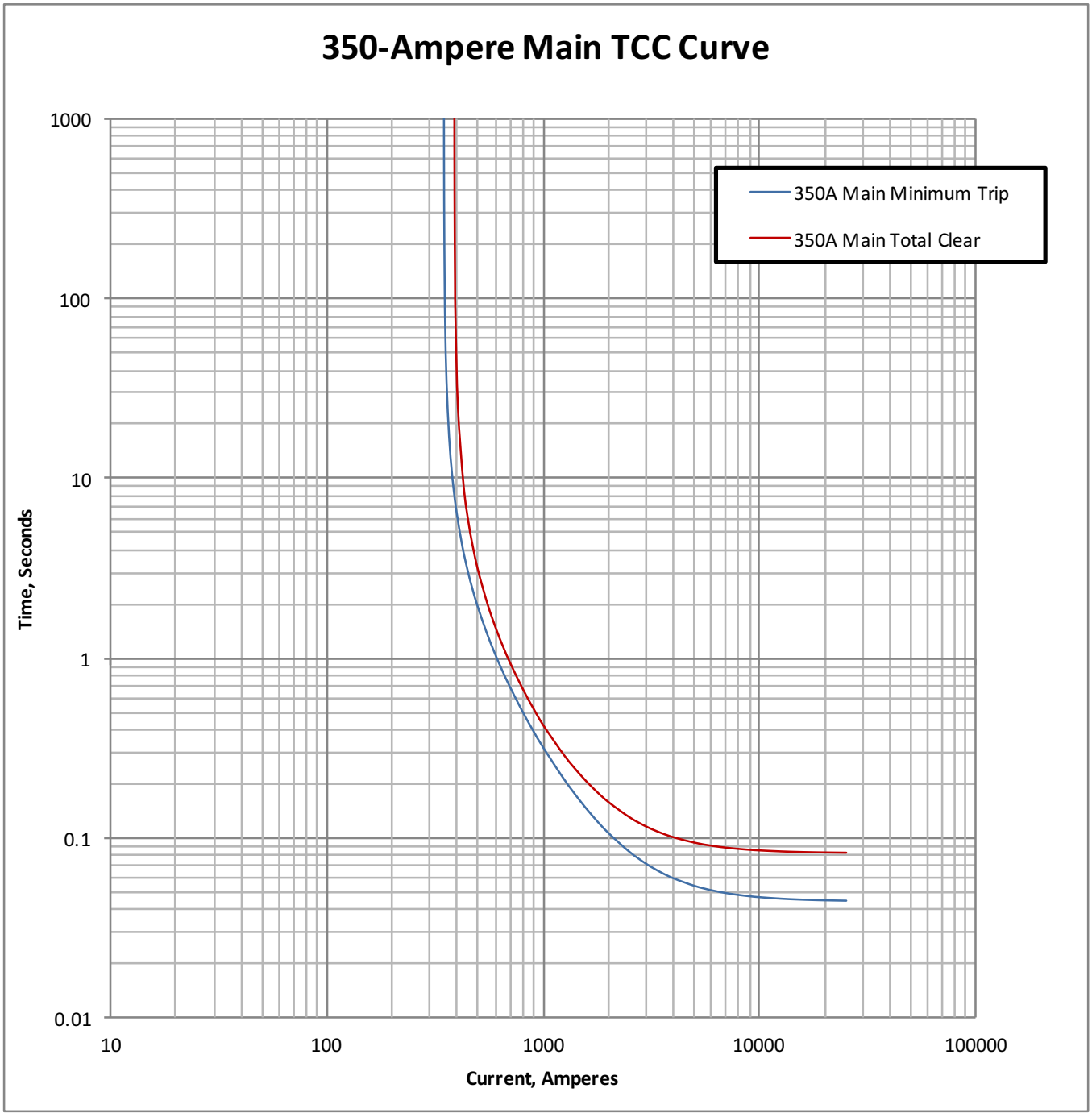
Main Curves



TCC Curve Parameter

	A	B	p	C	Min. Pickup (Amperes)
300-Ampere Main	2	0.045	2	1	300

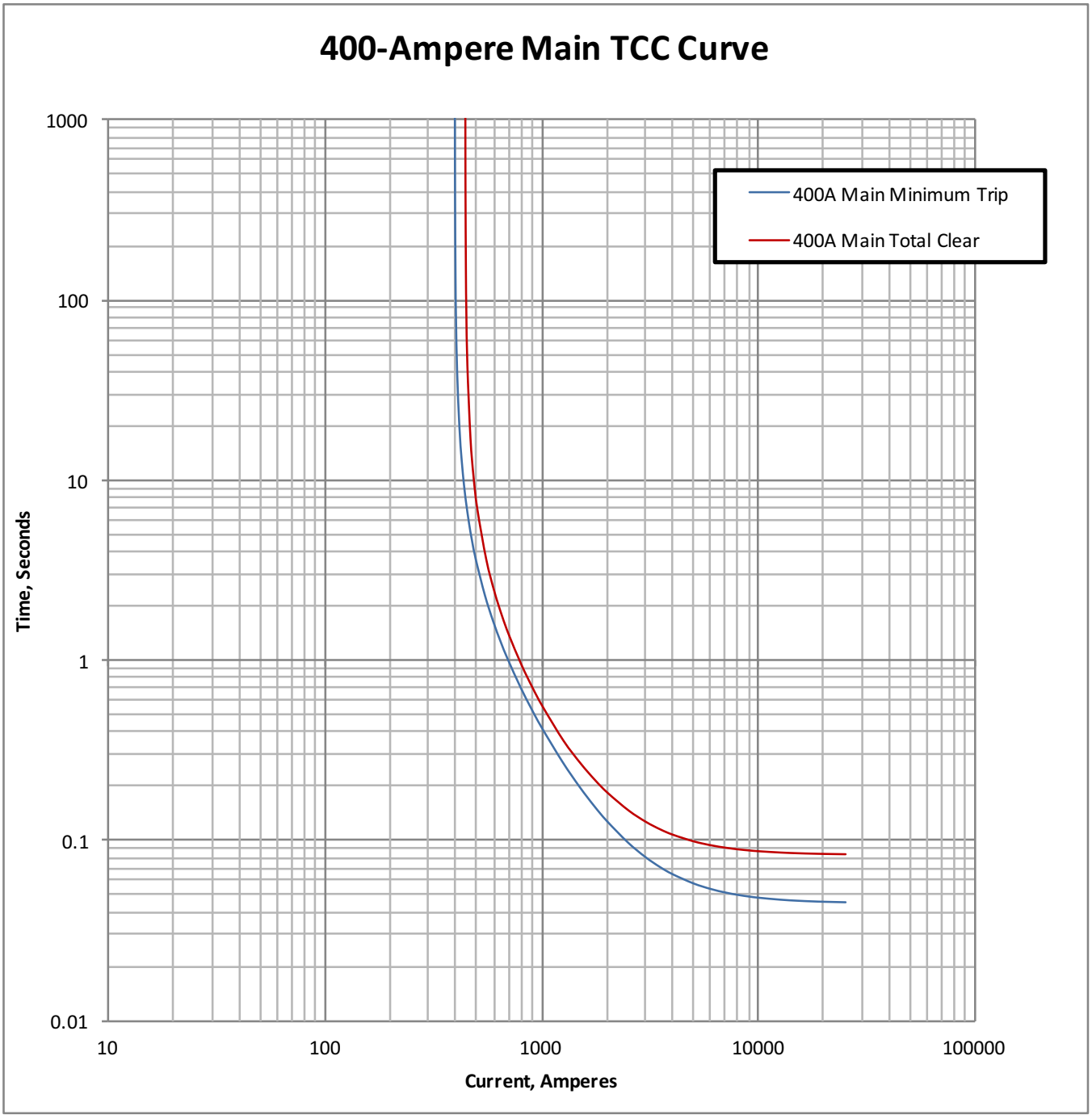
Main Curves



TCC Curve Parameter

	A	B	p	C	Min. Pickup (Amperes)
350-Ampere Main	2	0.045	2	1	350

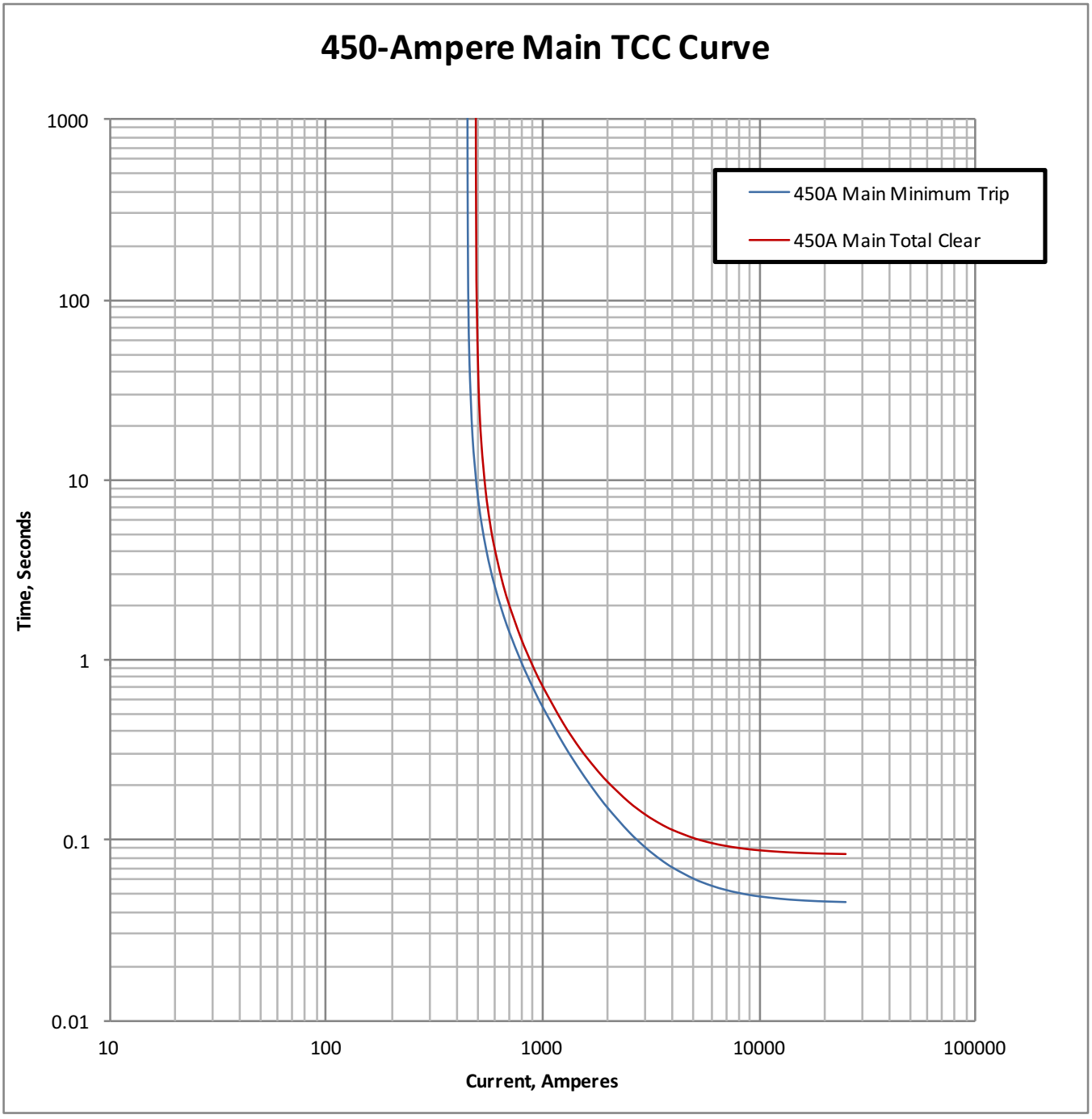
Main Curves



TCC Curve Parameter

	A	B	p	C	Min. Pickup (Amperes)
400-Ampere Main	2	0.045	2	1	400

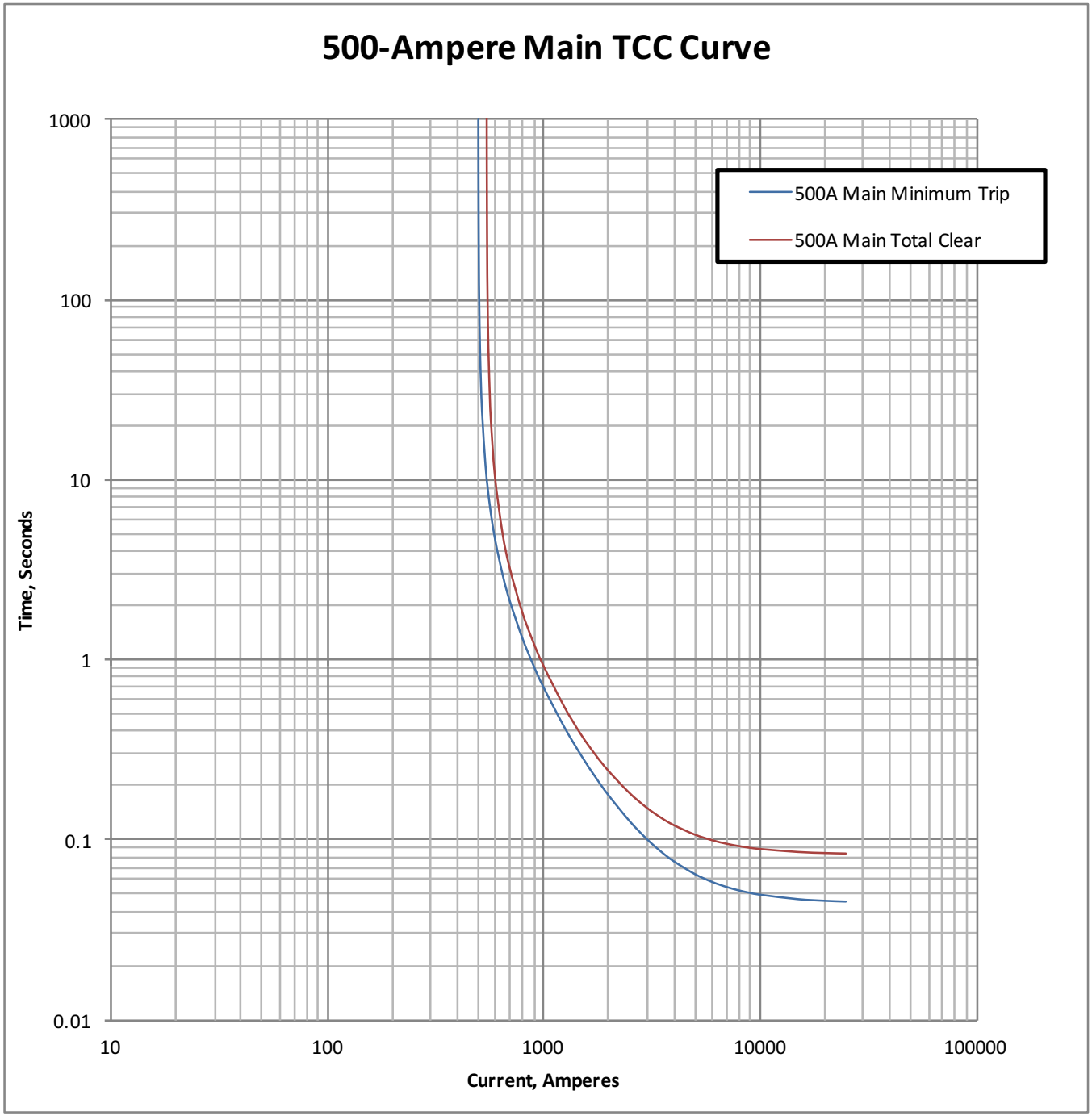
Main Curves



TCC Curve Parameter

	A	B	p	C	Min. Pickup (Amperes)
450-Ampere Main	2	0.045	2	1	450

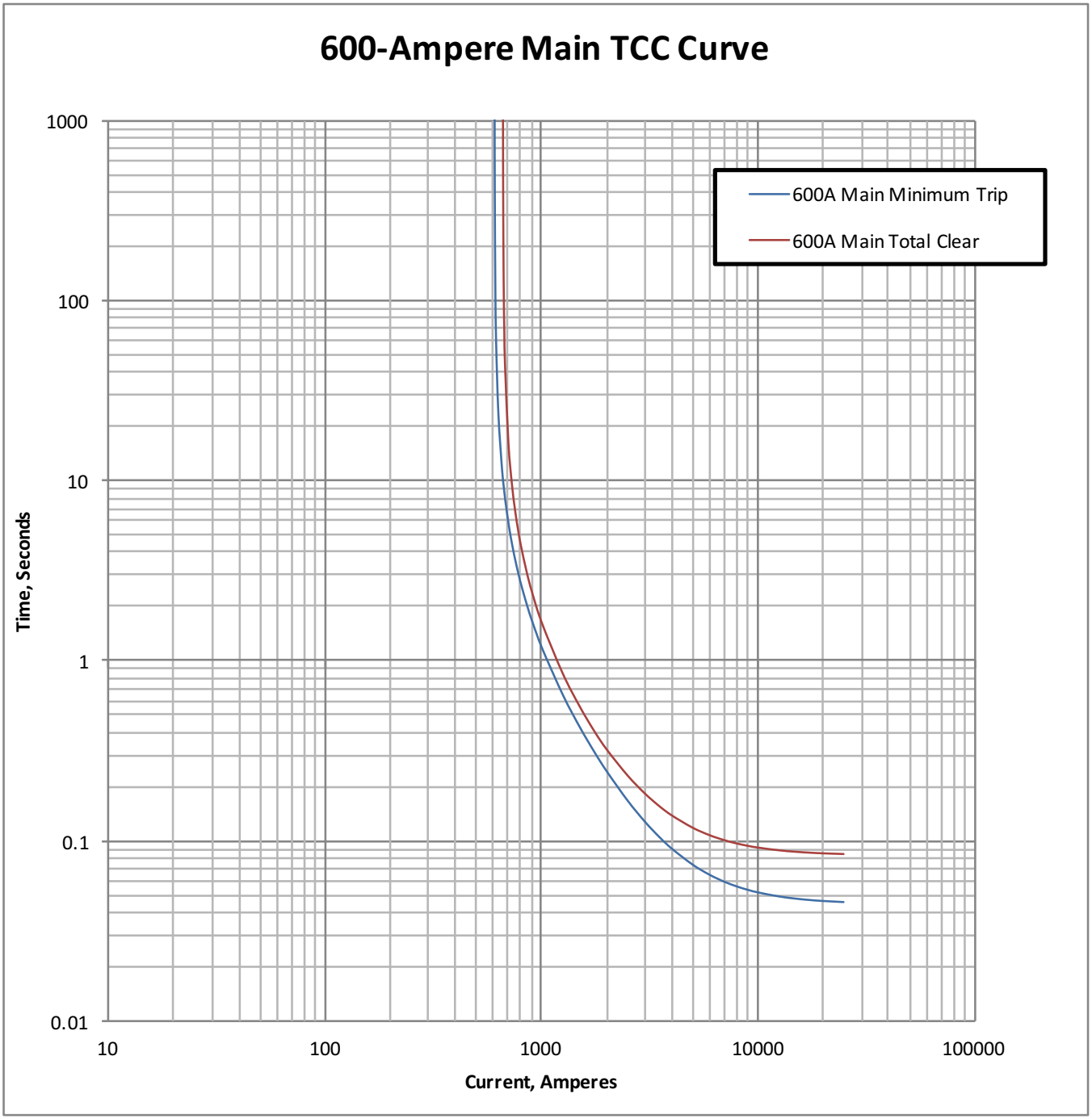
Main Curves



TCC Curve Parameter

	A	B	p	C	Min. Pickup (Amperes)
500-Ampere Main	2	0.045	2	1	500

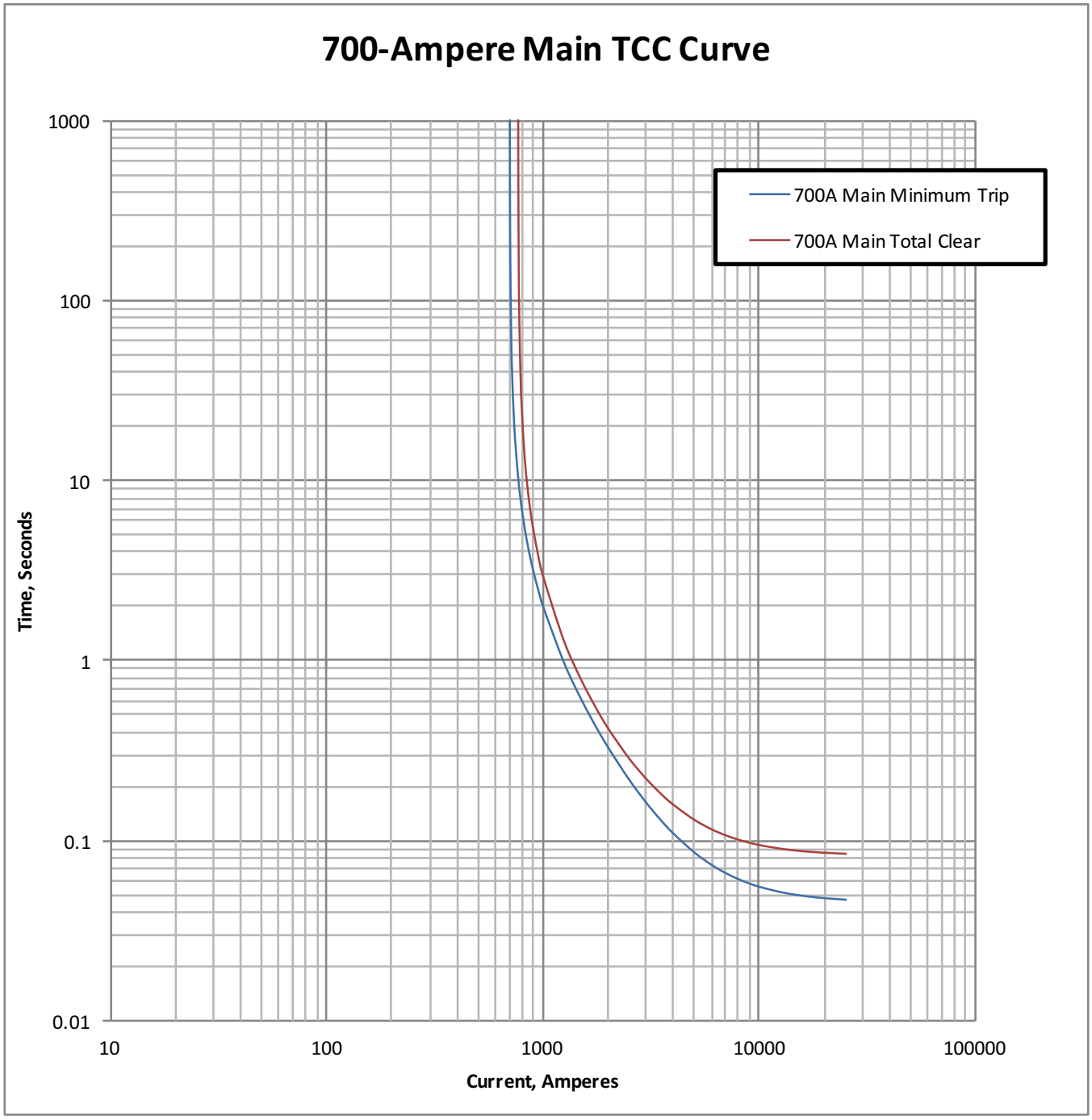
Main Curves



TCC Curve Parameter

	A	B	p	C	Min. Pickup (Amperes)
600-Ampere Main	2	0.045	2	1	600

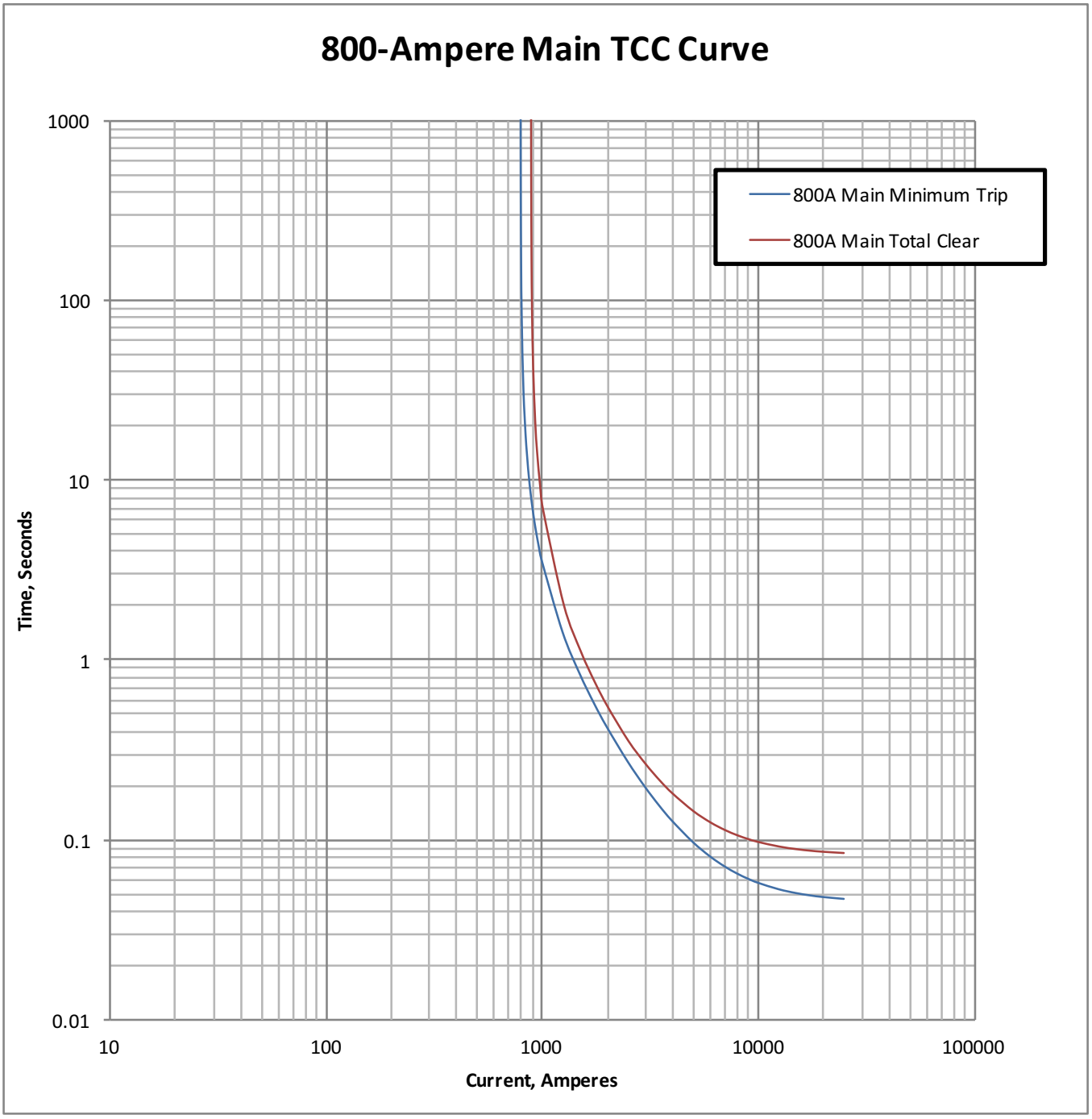
Main Curves



TCC Curve Parameter

	A	B	p	C	Min. Pickup (Amperes)
700-Ampere Main	2	0.045	2	1	700

Main Curves



TCC Curve Parameter

	A	B	p	C	Min. Pickup (Amperes)
800-Ampere Main	2	0.045	2	1	800

Vista Speed Curves

Parameters for Vista speed curves generate the minimum tripping TCC curve. Tolerances for these curves are detailed in Table 2, and parameters for each TCC curve are shown below the corresponding graph, with the exception of K Speed curves, whose data points are found in the "Time-Current Characteristic Curves" section of **sandc.com**.

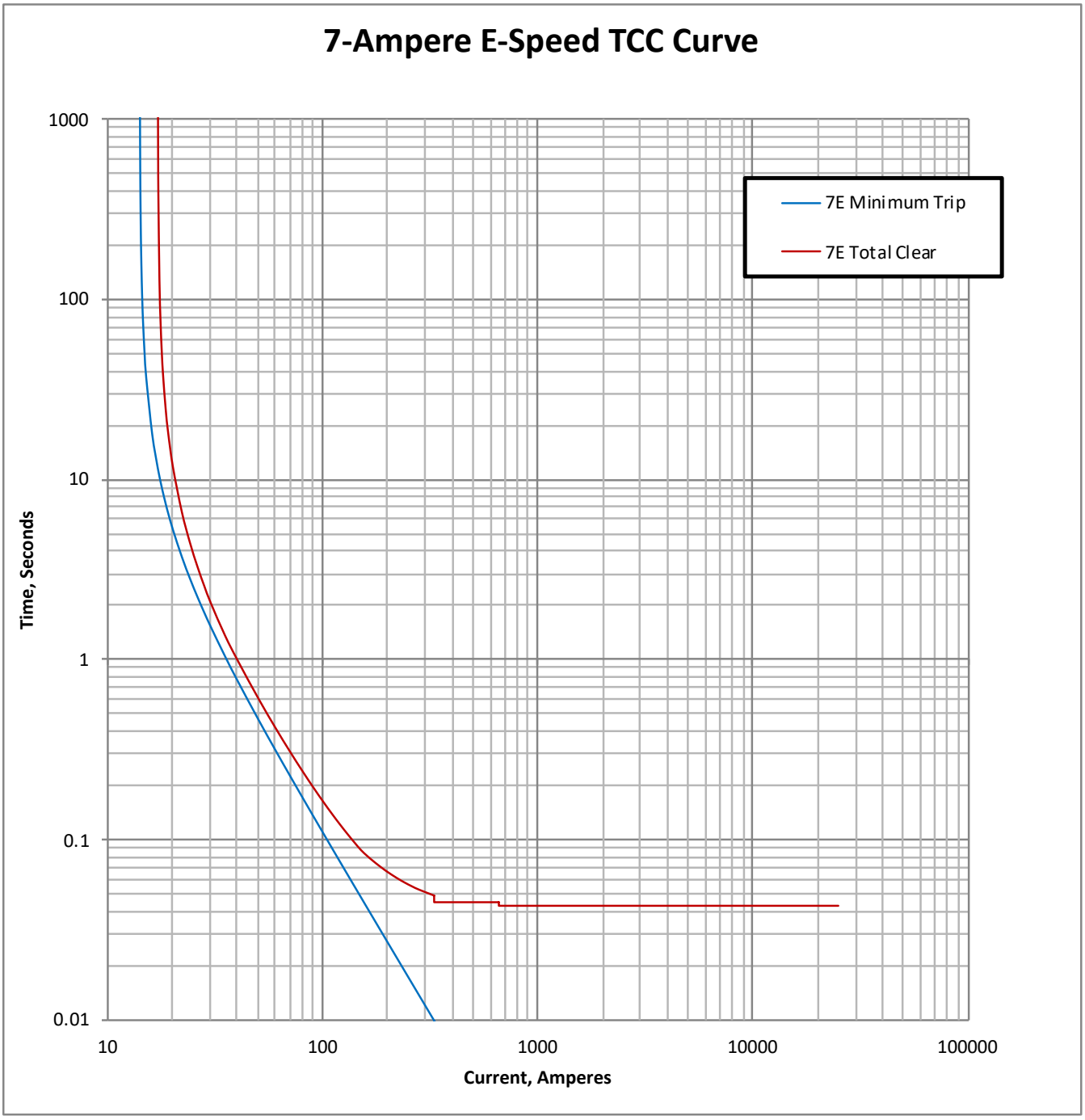
Table 2. Vista Speed Curve Tolerances

Category	Setting	Current Above 30 A①	Current at or Below 30 A①
Time Overcurrent Response	Minimum Trip Time	The greatest of minimum tripping curve or 8 ms	
	Maximum Trip Time	Maximum trip time is greatest of: • Maximum trip times provided in tabular format in S&C TCC Number 680-9-3 • The minimum tripping curve plus 6 ms (60-Hz systems) or 10 ms (50-Hz systems) for currents less than 1 time the current corresponding to a 10-ms trip time • Minimum tripping curve plus 16 ms (60-Hz systems) or 20 ms (50-Hz systems) for currents from 1-2 times the current corresponding to a 10-ms trip time • Minimum tripping curve plus 14 ms for currents greater than 2 times the current corresponding to a 10-ms trip time	
	Timing starts if	• Primary current -10% is equal to or greater than the minimum trip current, or low-current cutoff if enabled	• Primary current -3 A is equal to or greater than the minimum trip current or low-current cutoff if enabled●
	Timing does not start if primary current is less than the minimum trip current or low-current cutoff, if enabled		

① With a CT ratio of 660:1, this value is 30 A. With a CT ratio of 1320:1, this value is 60 A.

● With a CT ratio of 660:1, tolerance is -3 A. With a CT ratio of 1320:1, tolerance is -6 A.

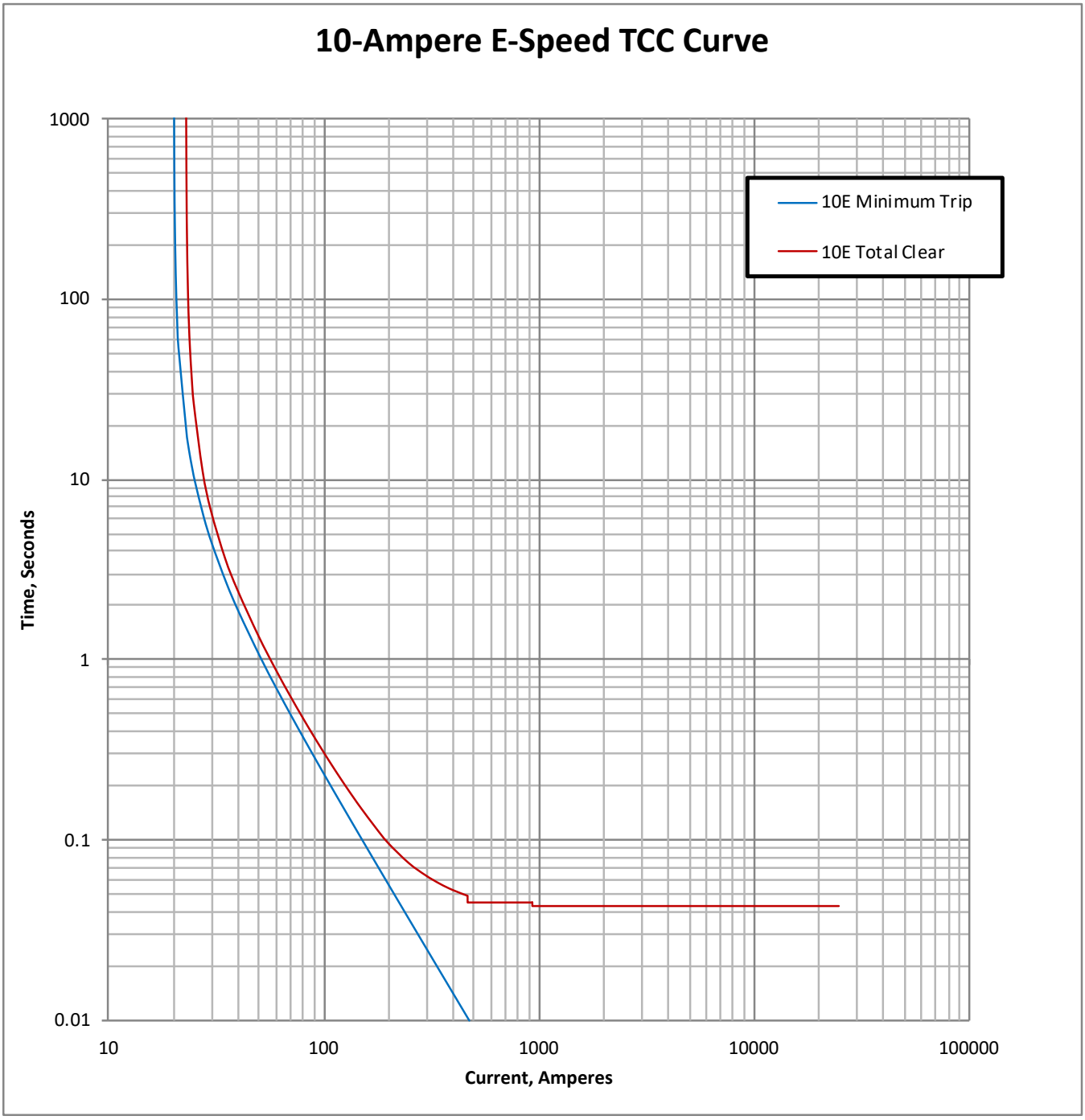
E Speed Curves



TCC Curve Parameter

	A	B	p	C	Min. Pickup (Amperes)
7E	5.5	0	2	1	14

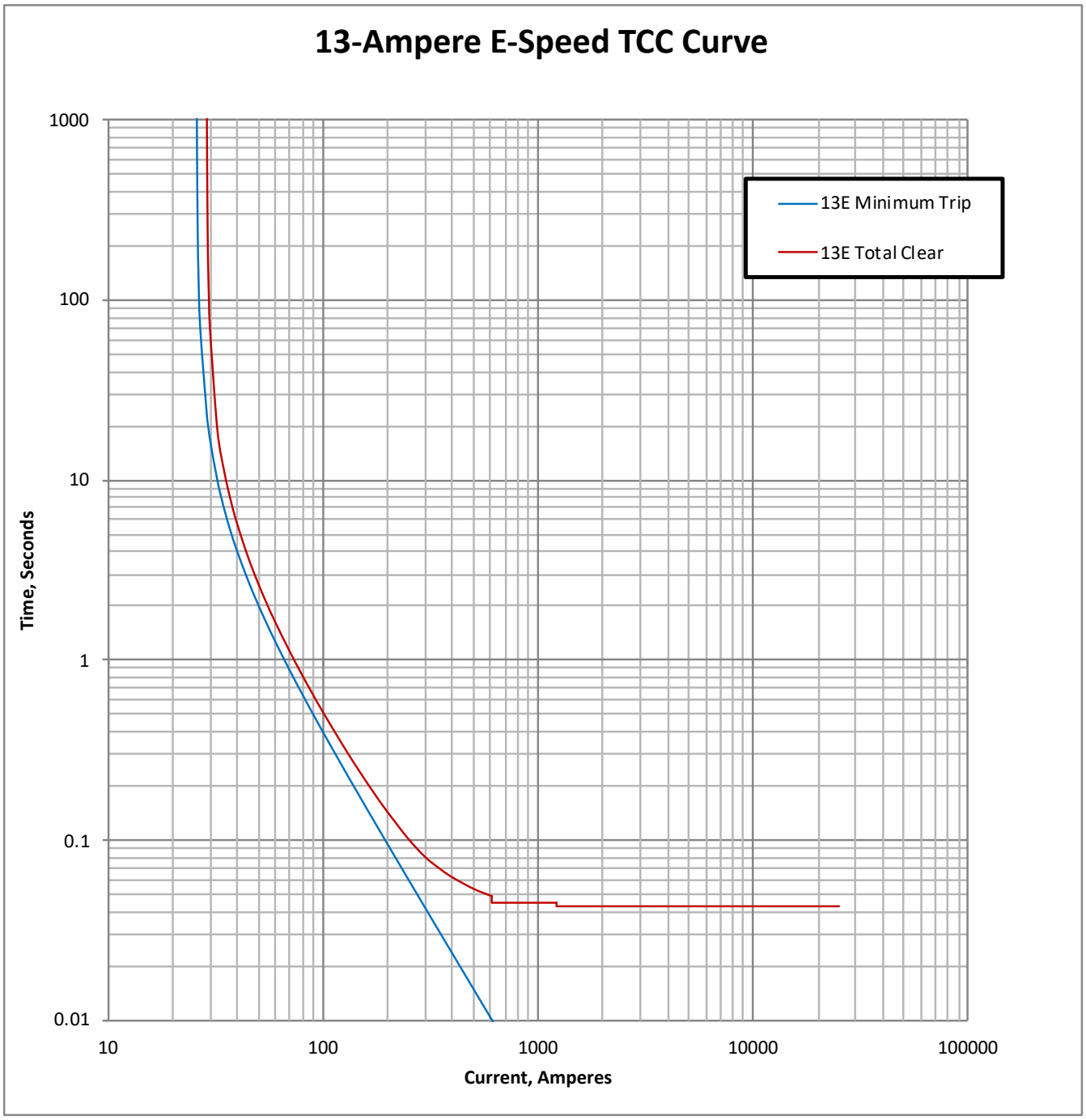
E Speed Curves



TCC Curve Parameter

	A	B	p	C	Min. Pickup (Amperes)
10E	5.5	0	2	1	20

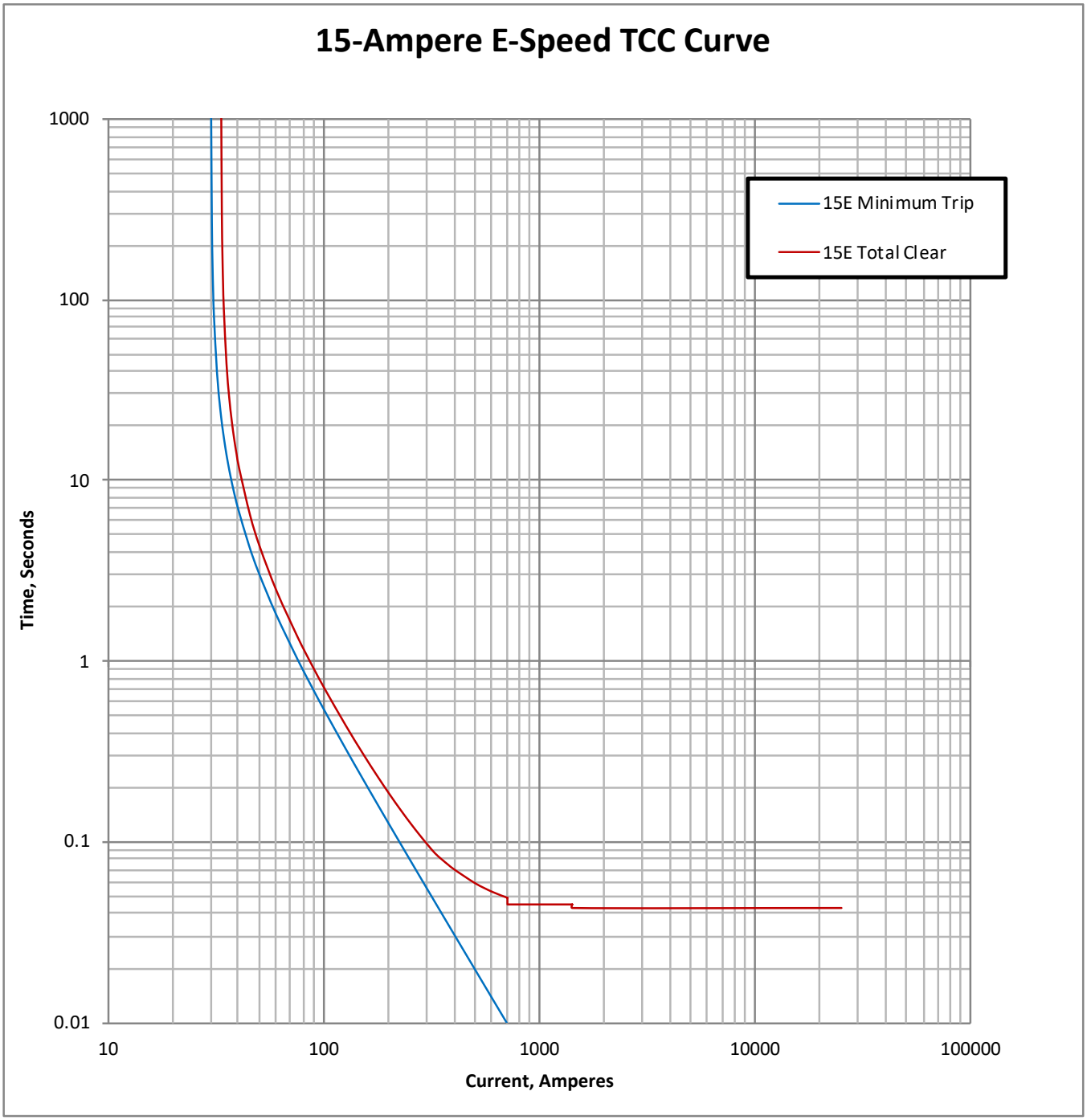
E Speed Curves



TCC Curve Parameter

	A	B	p	C	Min. Pickup (Amperes)
13E	5.5	0	2	1	26

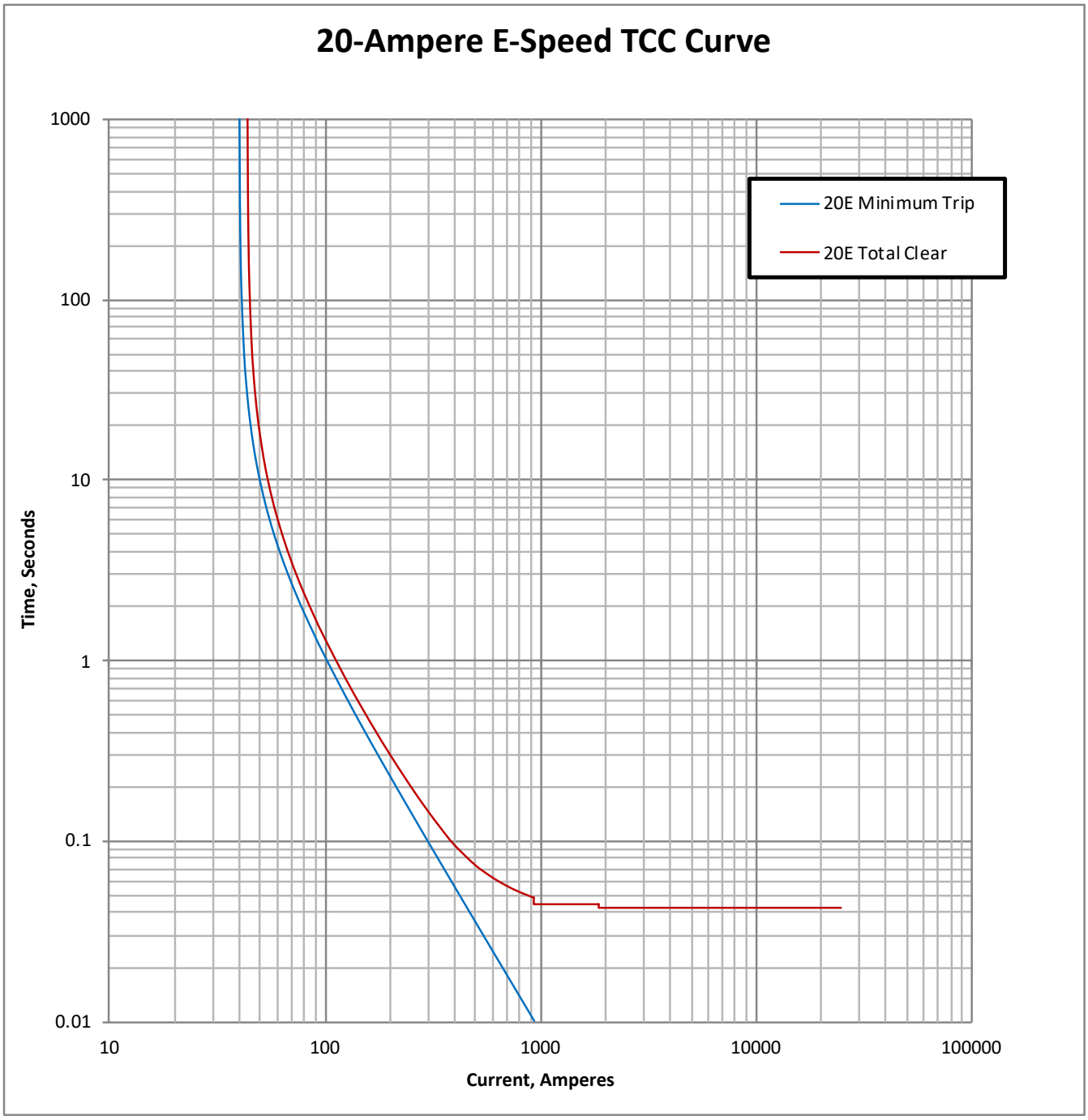
E Speed Curves



TCC Curve Parameter

	A	B	p	C	Min. Pickup (Amperes)
15E	5.5	0	2	1	30

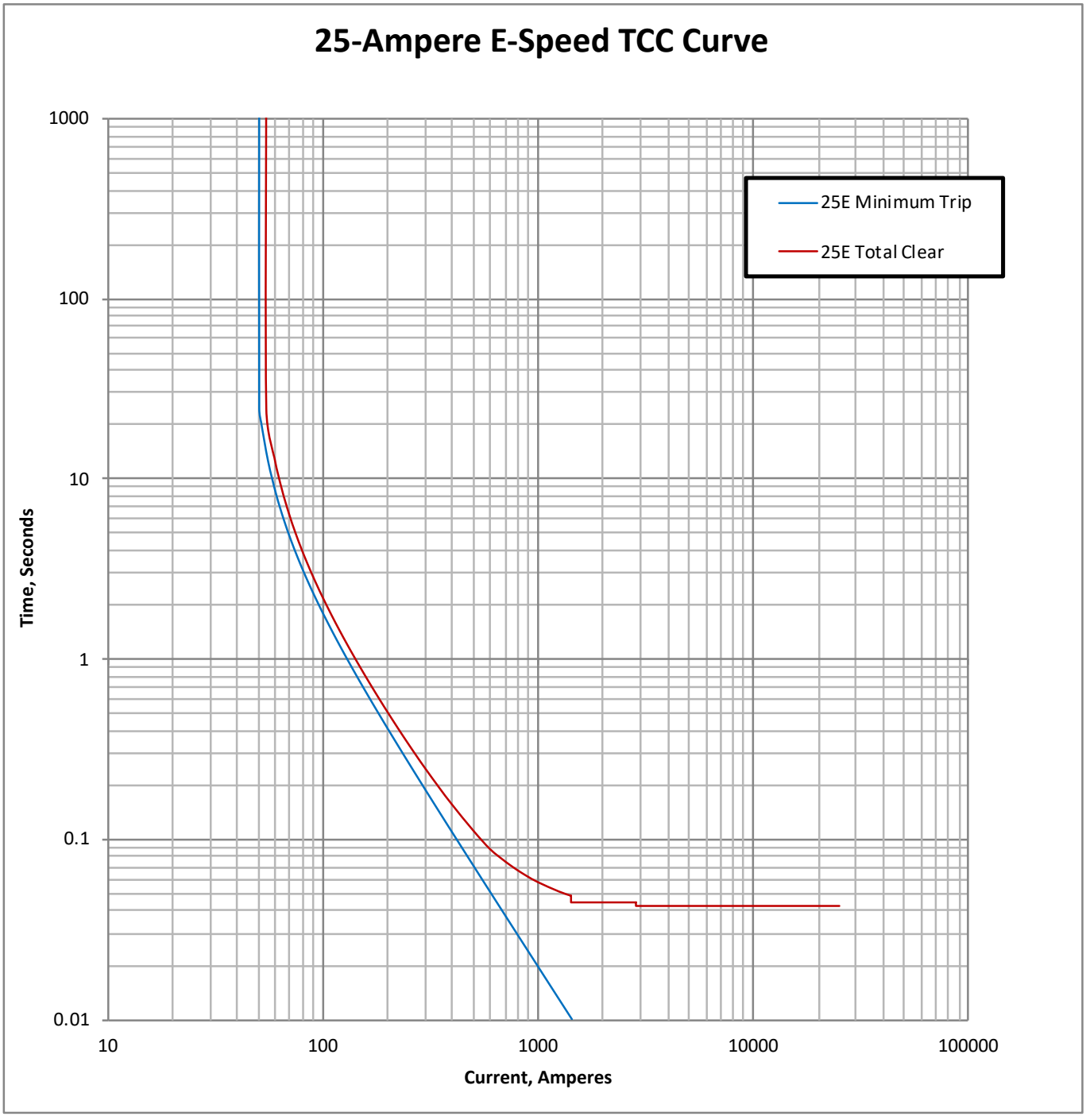
E Speed Curves



TCC Curve Parameter

	A	B	p	C	Min. Pickup (Amperes)
20E	5.5	0	2	1	40

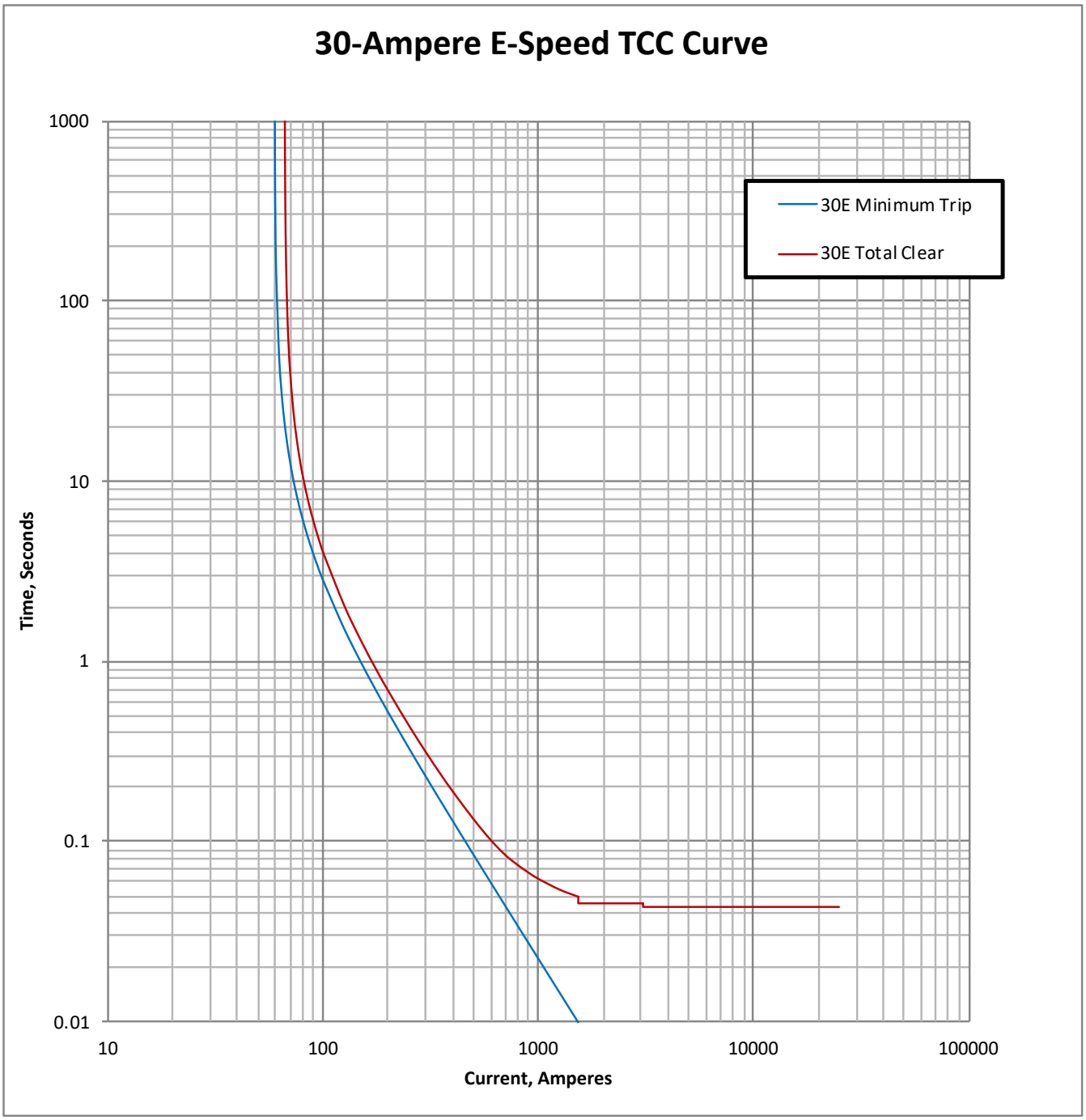
E Speed Curves



TCC Curve Parameter

	A	B	p	C	Min. Pickup (Amperes)
25E	4.9	0	1.85	0.8	50

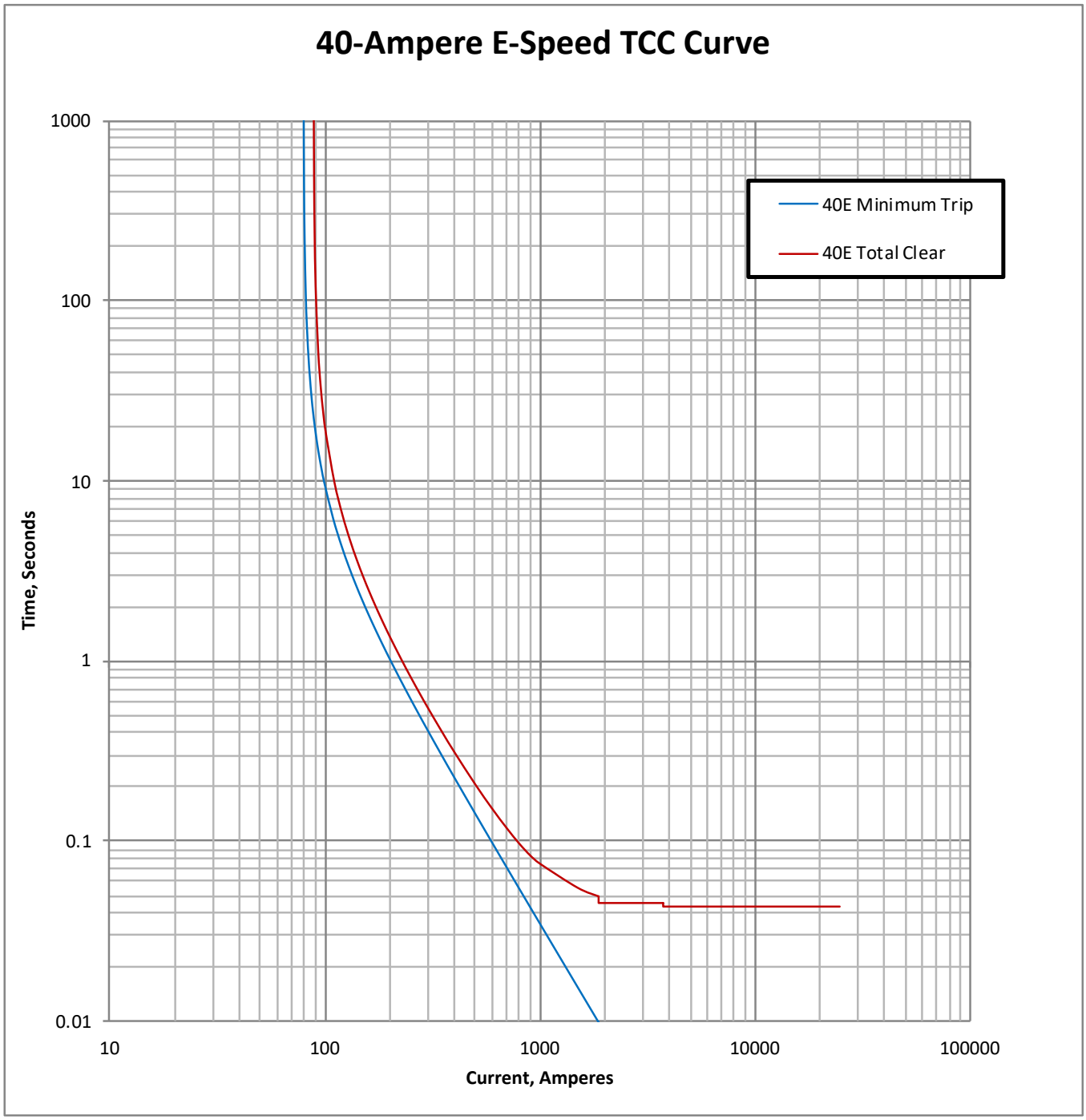
E Speed Curves



TCC Curve Parameter

	A	B	p	C	Min. Pickup (Amperes)
30E	4.7	0	1.9	1	60

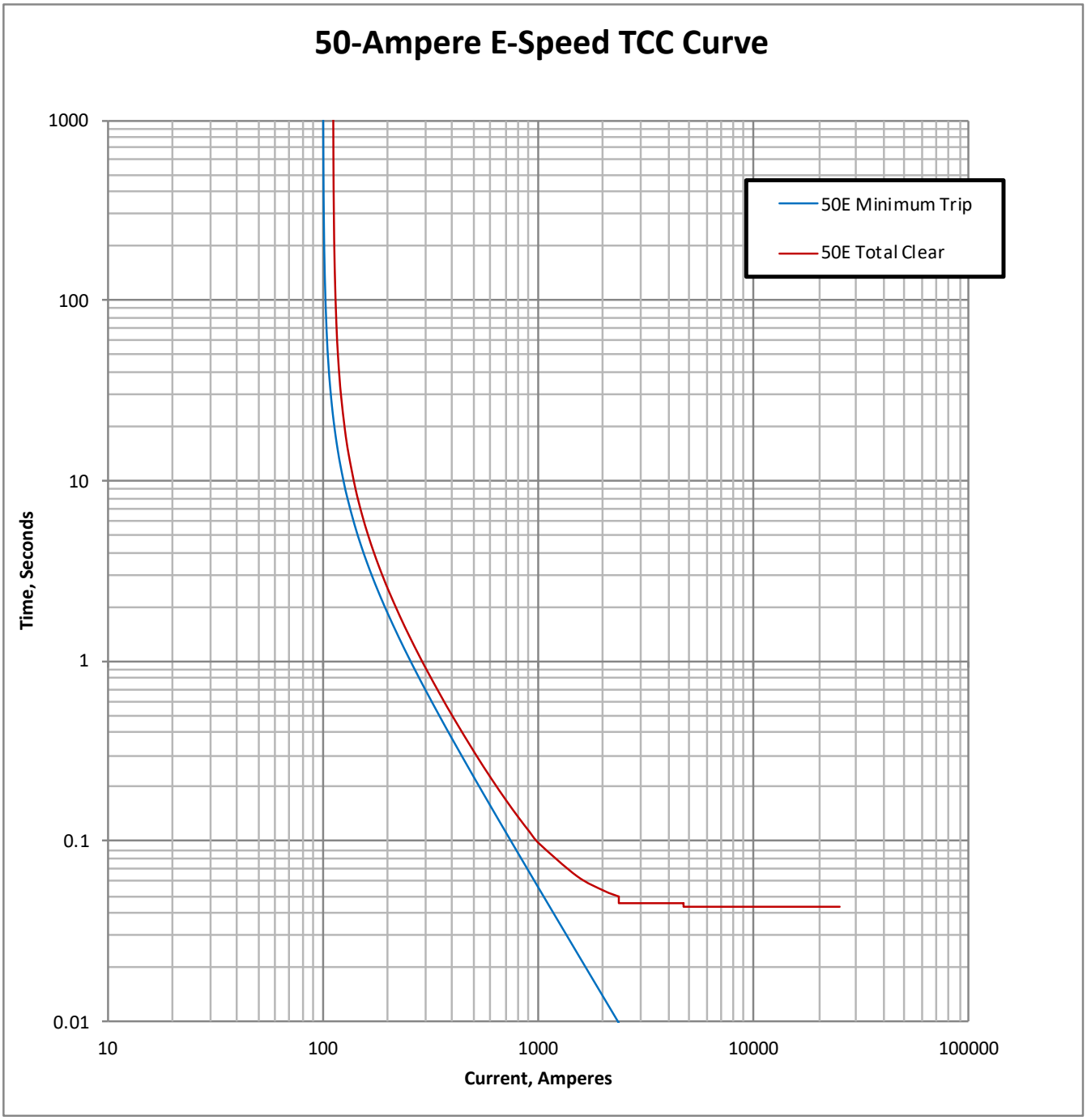
E Speed Curves



TCC Curve Parameter

	A	B	p	C	Min. Pickup (Amperes)
40E	5.5	0	2	1	80

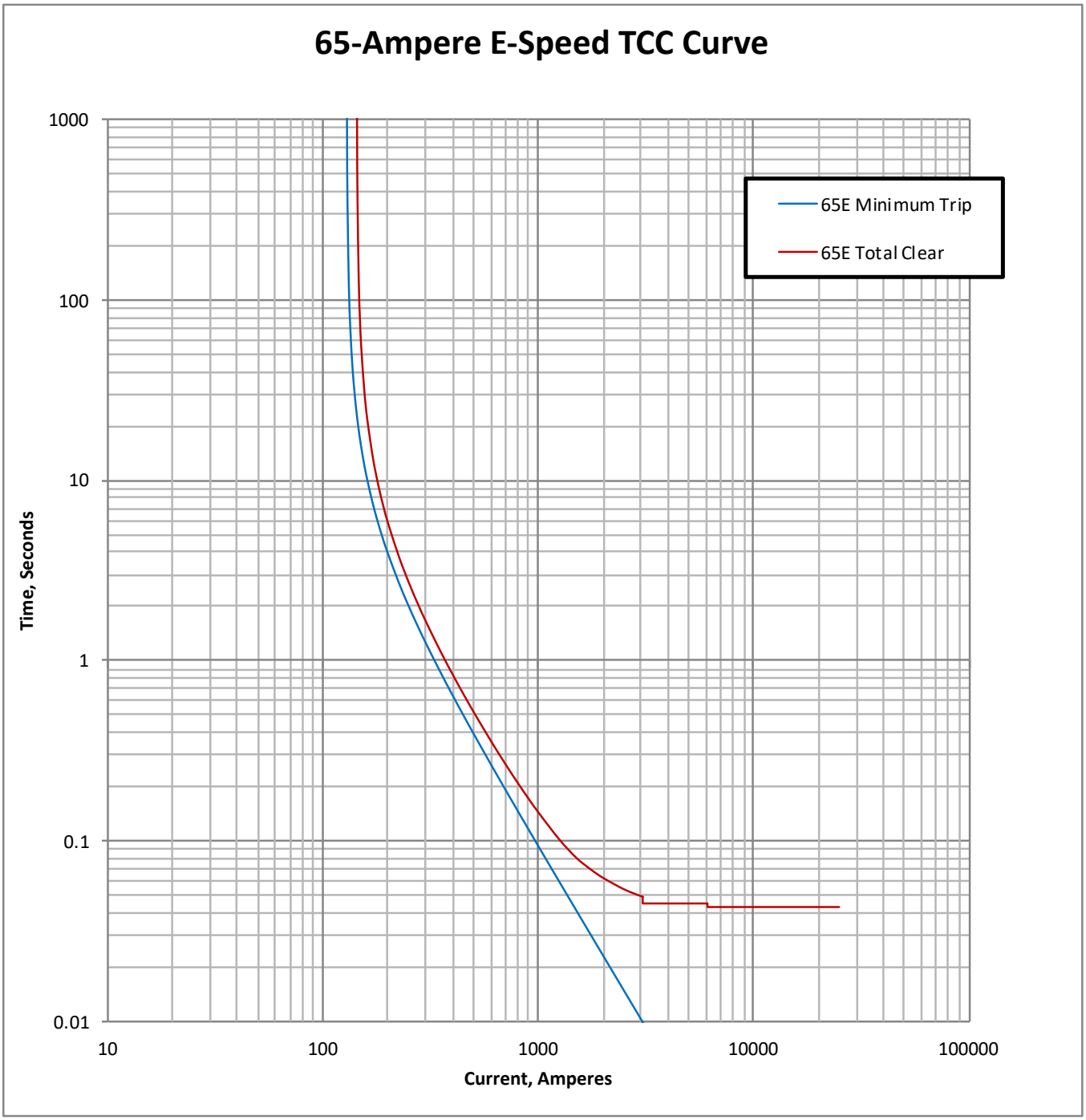
E Speed Curves



TCC Curve Parameter

	A	B	p	C	Min. Pickup (Amperes)
50E	5.5	0	2	1	100

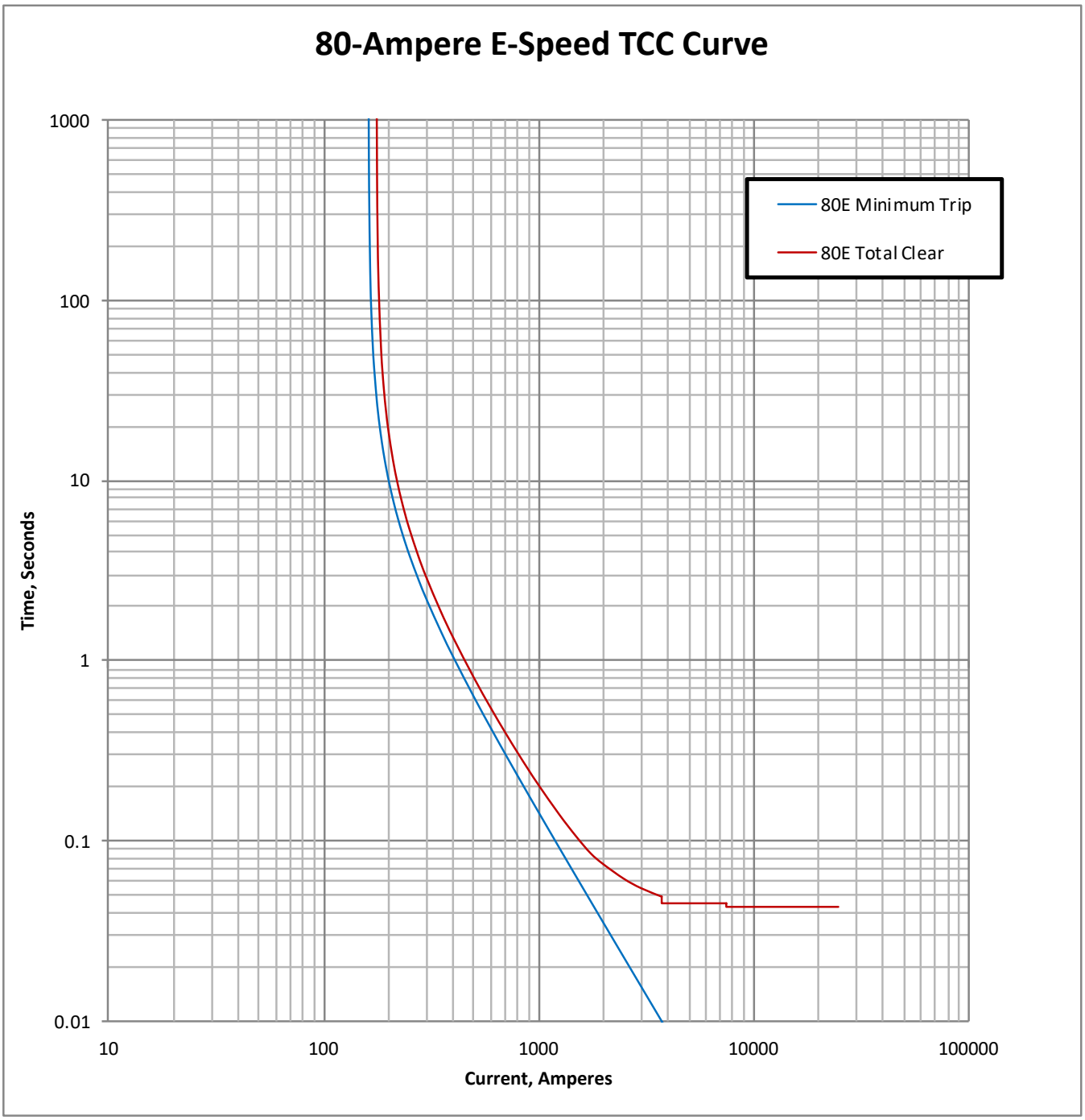
E Speed Curves



TCC Curve Parameter

	A	B	p	C	Min. Pickup (Amperes)
65E	5.5	0	2	1	130

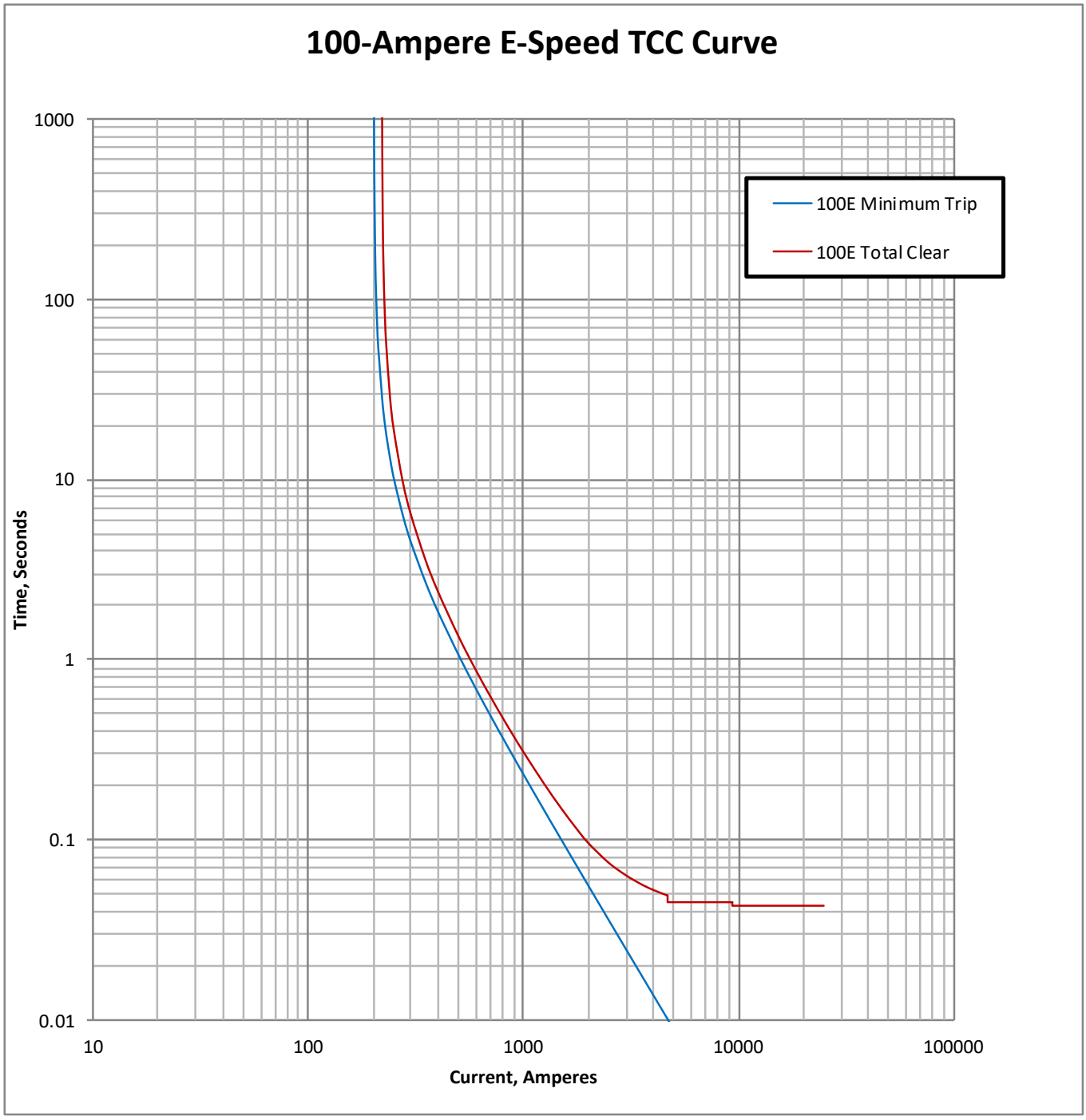
E Speed Curves



TCC Curve Parameter

	A	B	p	C	Min. Pickup (Amperes)
80E	5.5	0	2	1	160

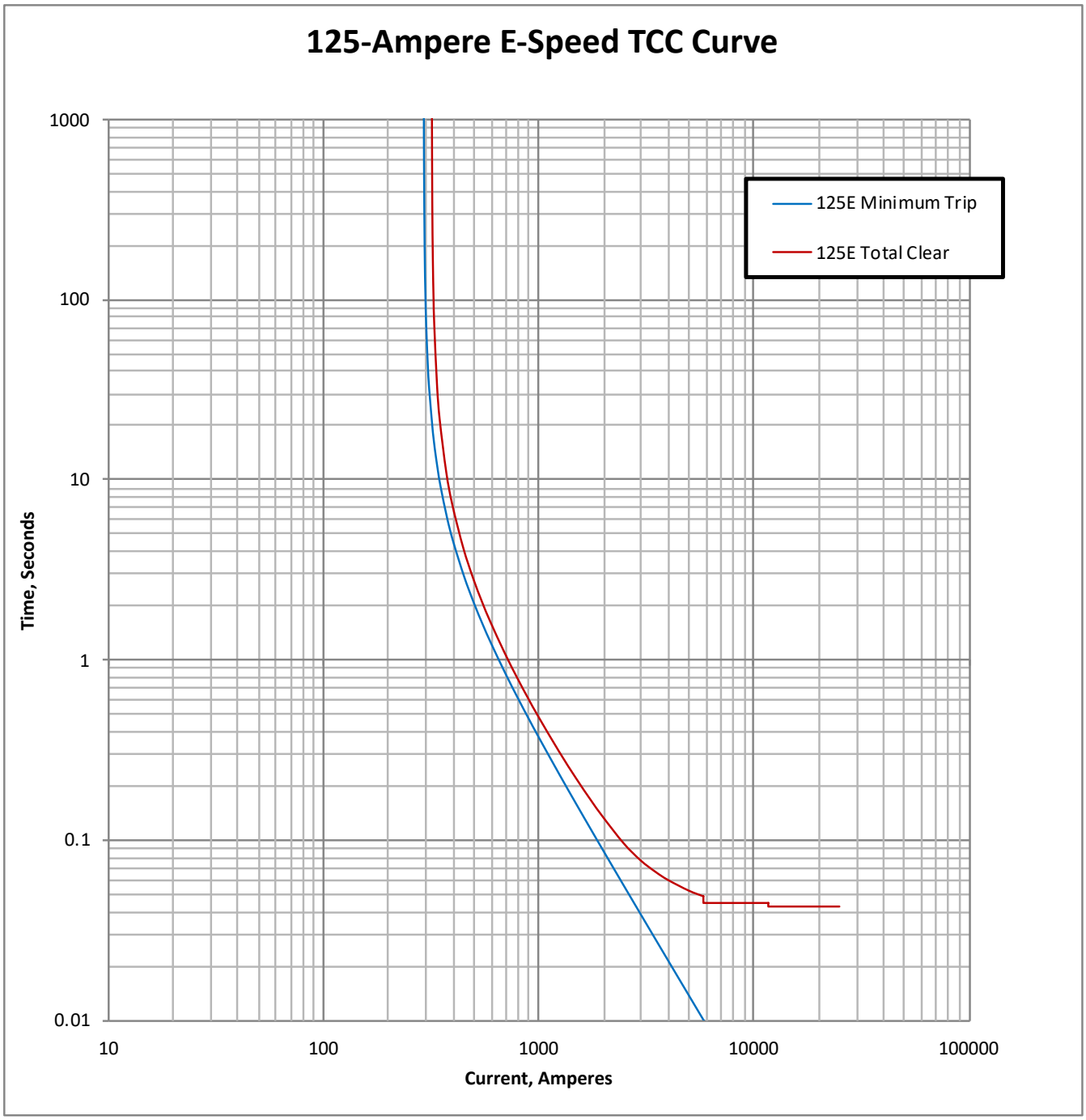
E Speed Curves



TCC Curve Parameter

	A	B	p	C	Min. Pickup (Amperes)
100E	5.5	0	2	1	200

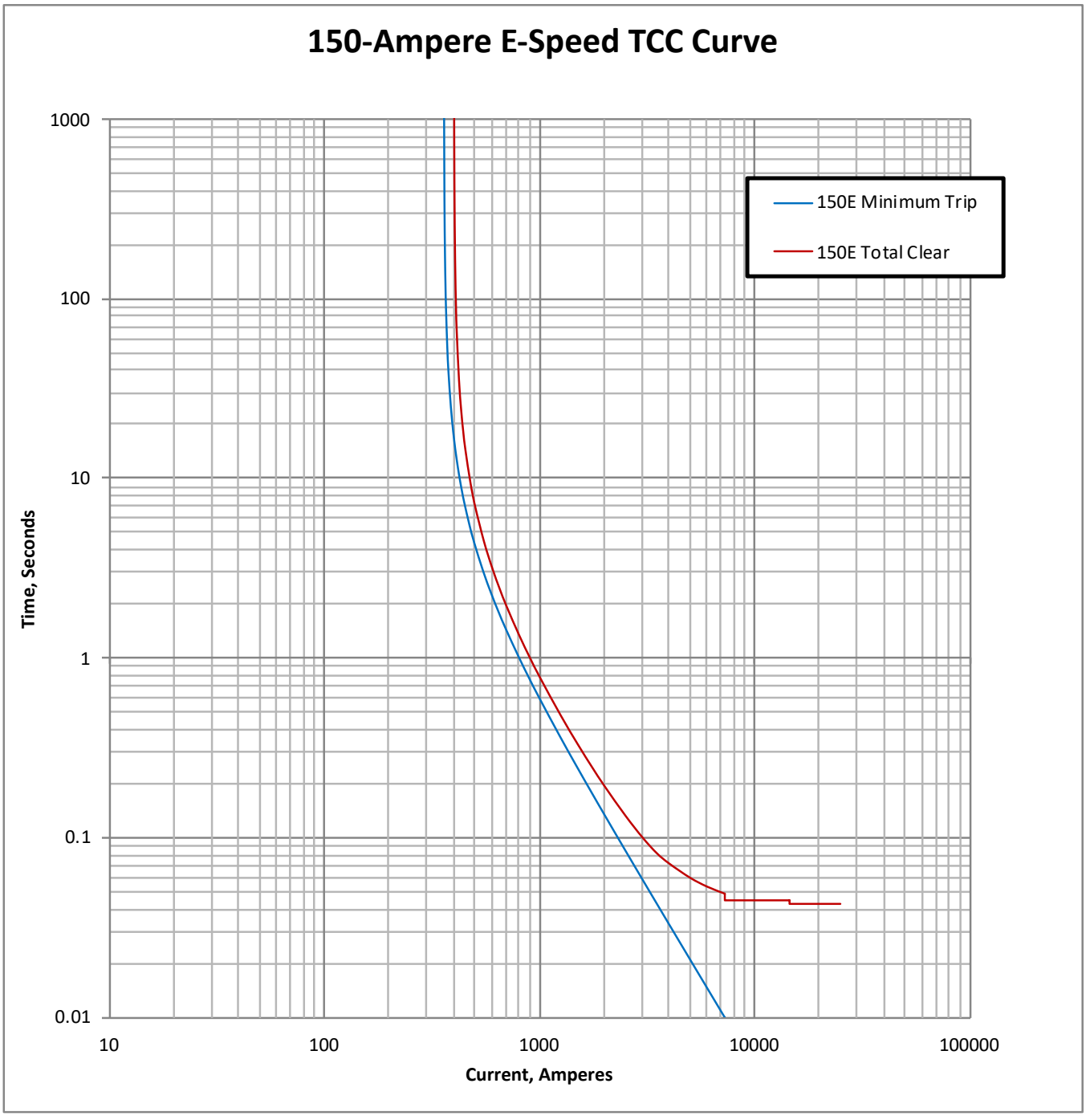
E Speed Curves



TCC Curve Parameter

	A	B	p	C	Min. Pickup (Amperes)
125E	4	0	2	1	292

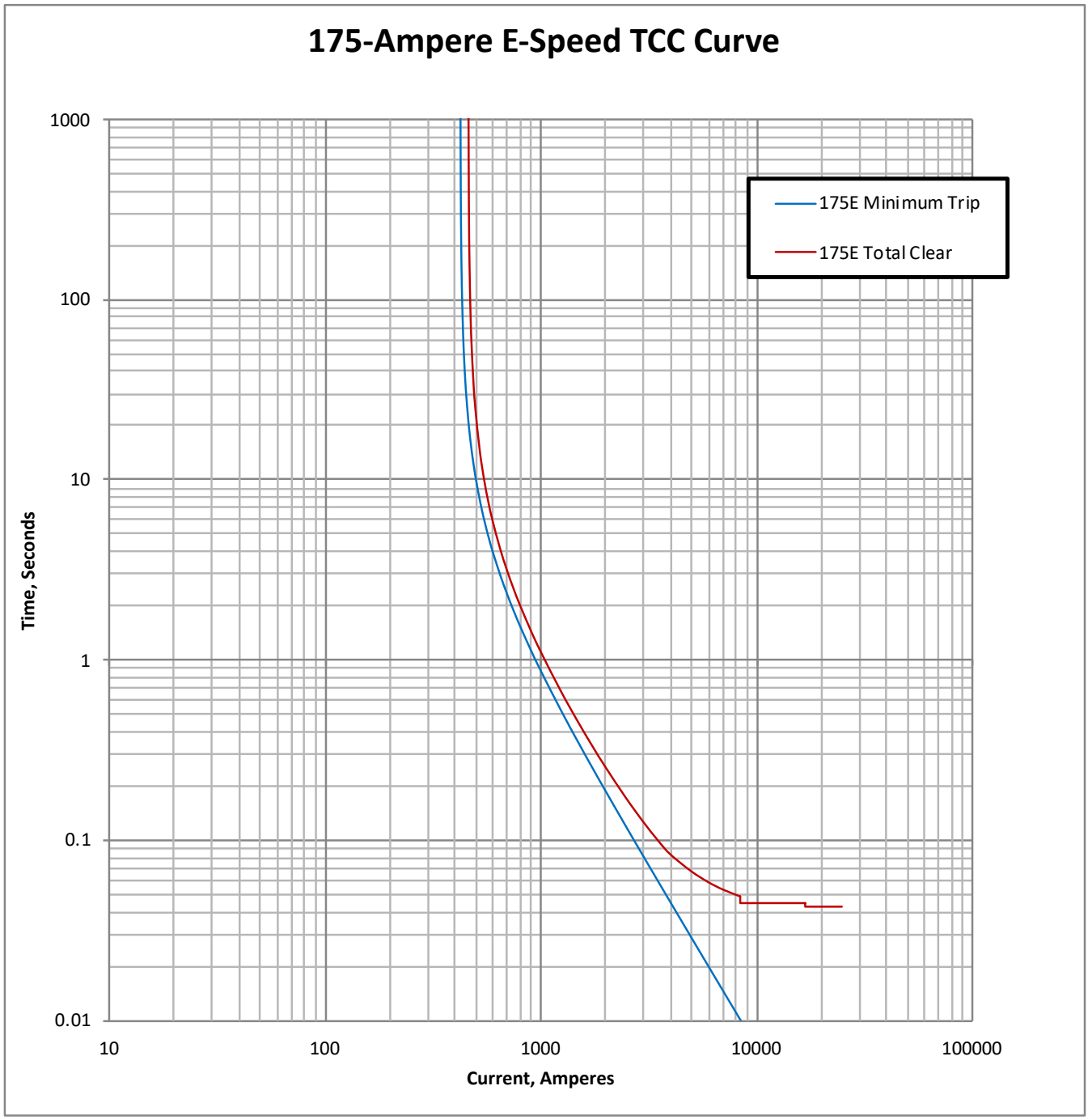
E Speed Curves



TCC Curve Parameter

	A	B	p	C	Min. Pickup (Amperes)
150E	4	0	2	1	362

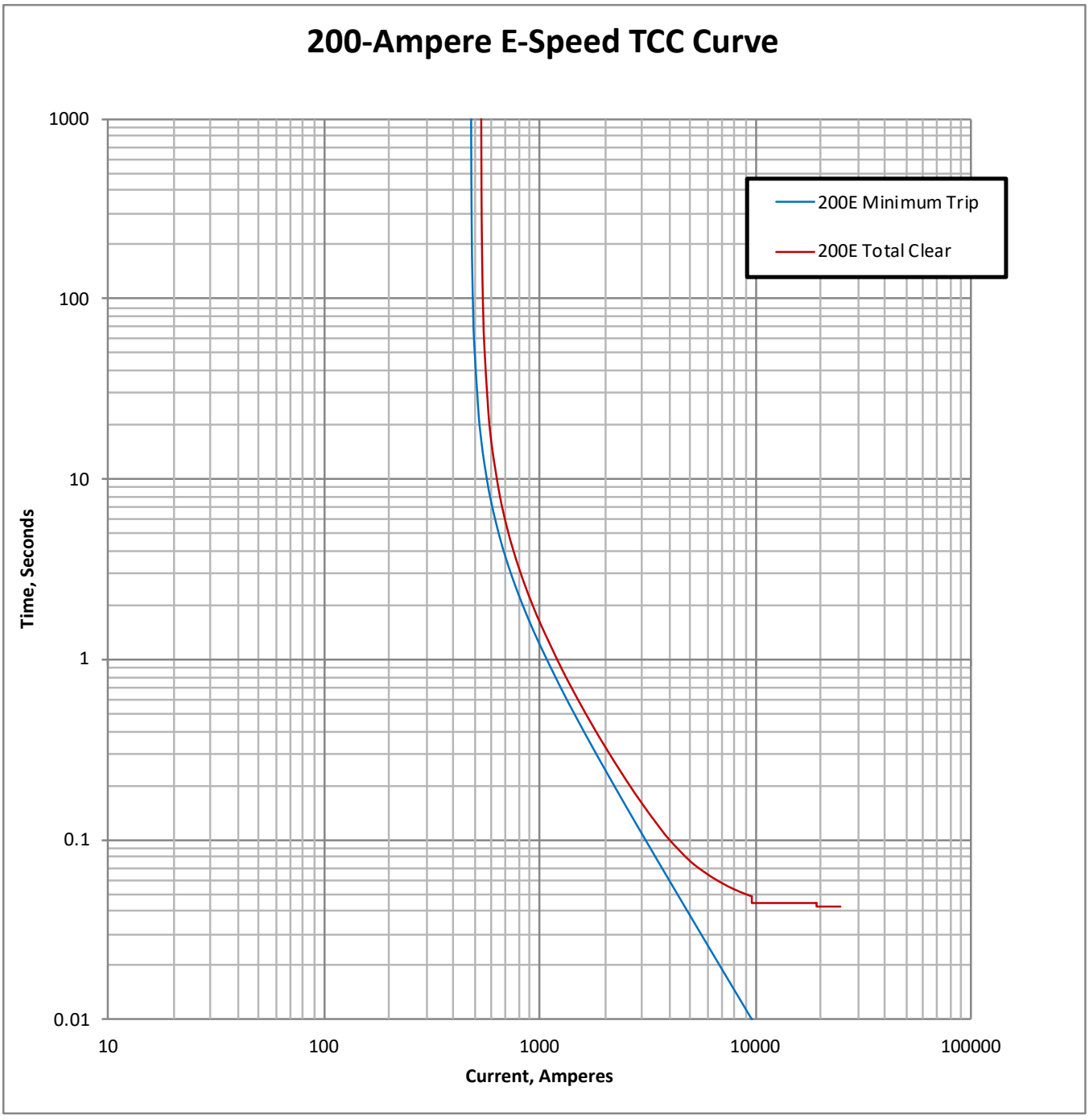
E Speed Curves



TCC Curve Parameter

	A	B	p	C	Min. Pickup (Amperes)
175E	4	0	2	1	422

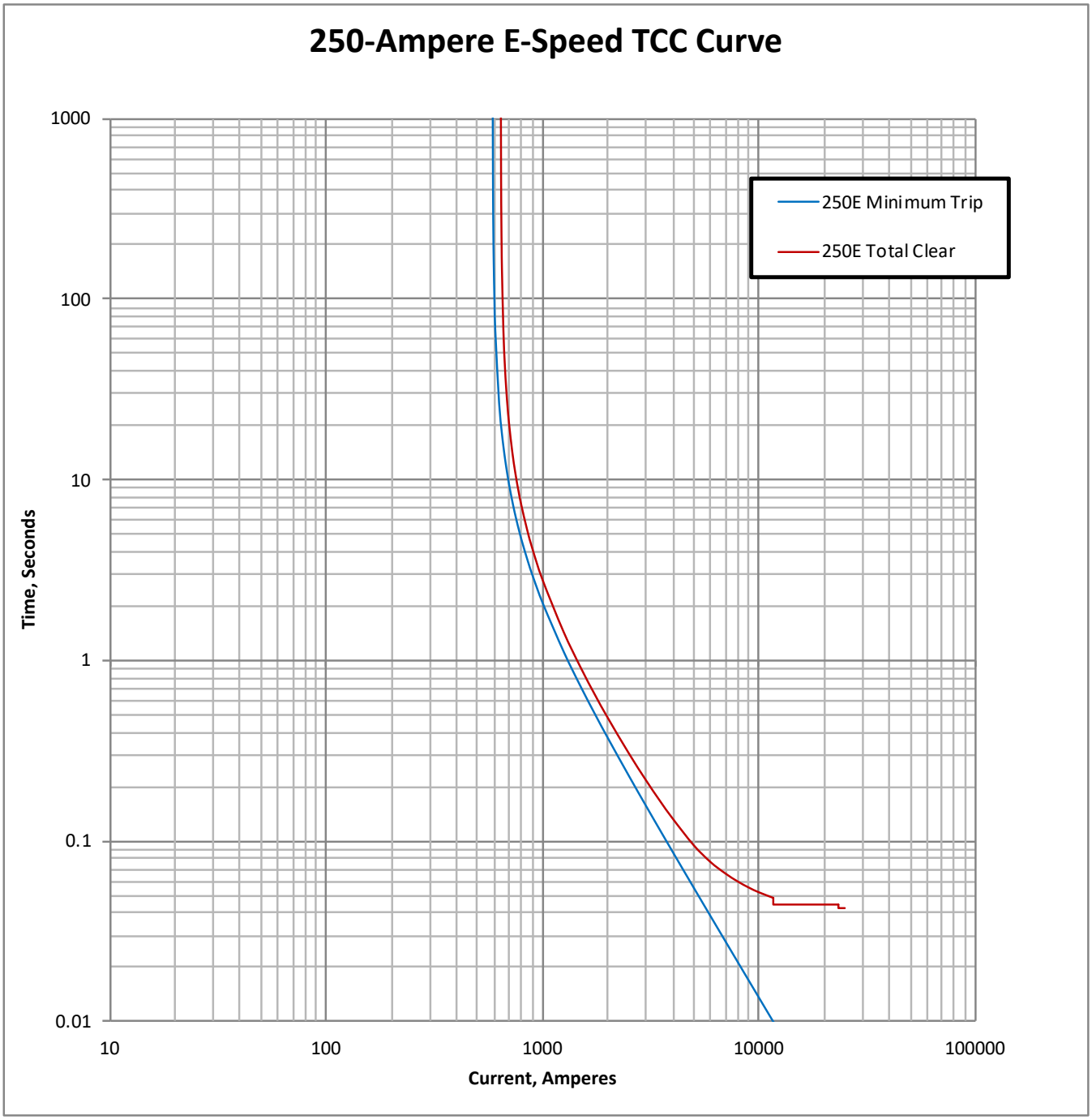
E Speed Curves



TCC Curve Parameter

	A	B	p	C	Min. Pickup (Amperes)
200E	4	0	2	1	483

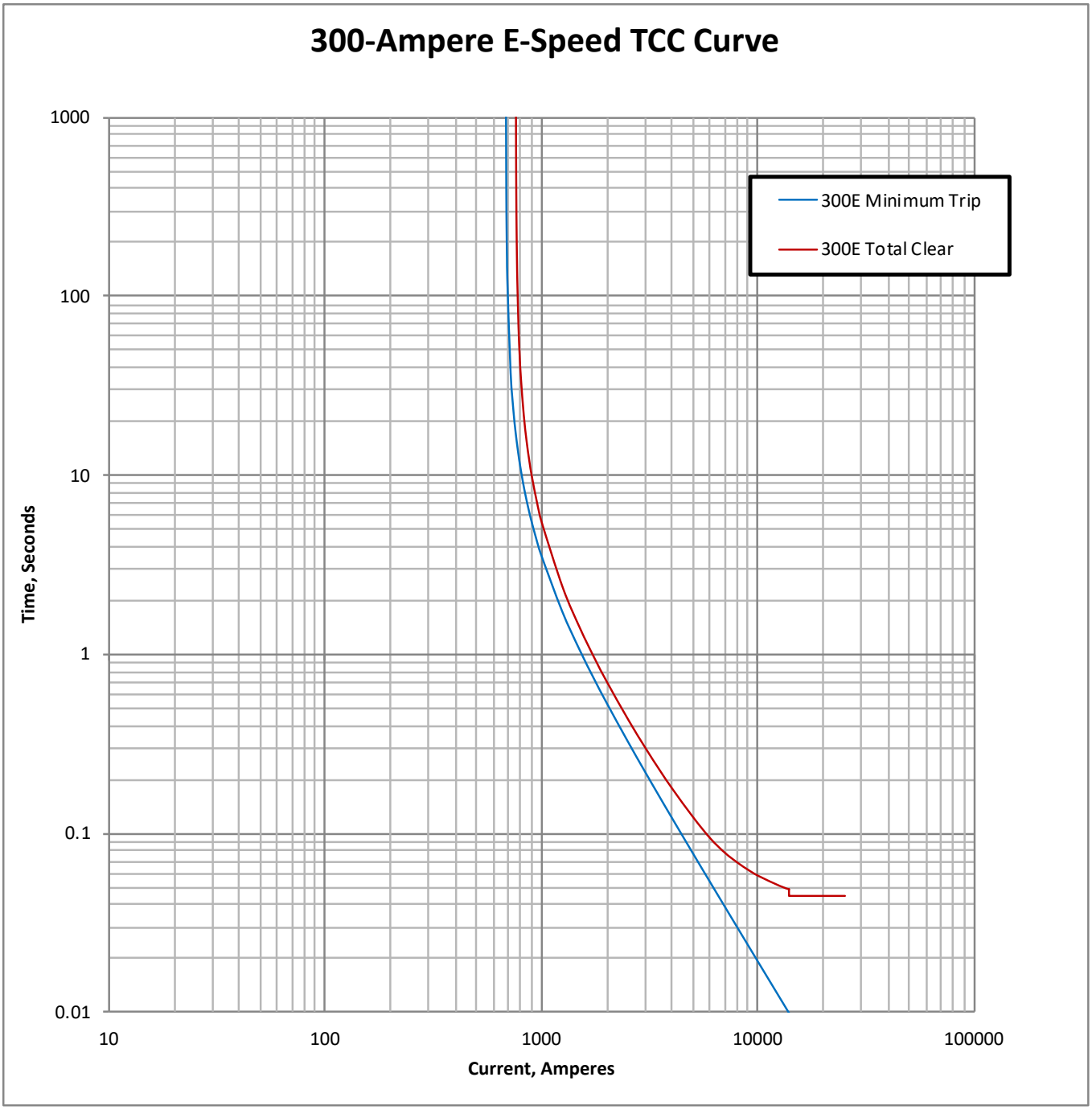
E Speed Curves



TCC Curve Parameter

	A	B	p	C	Min. Pickup (Amperes)
250E	4	0	2	1	583

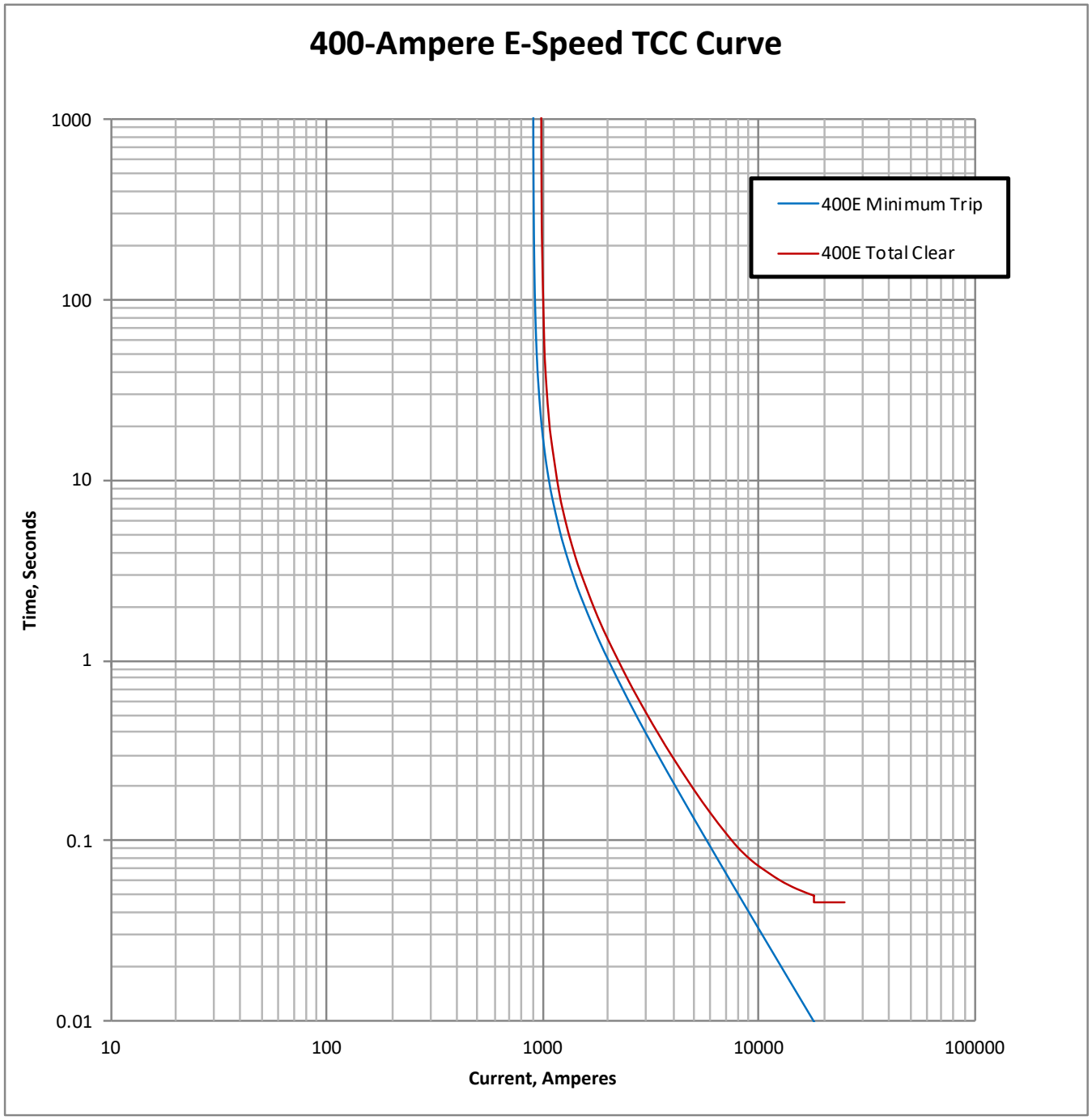
E Speed Curves



TCC Curve Parameter

	A	B	p	C	Min. Pickup (Amperes)
300E	4	0	2	1	689

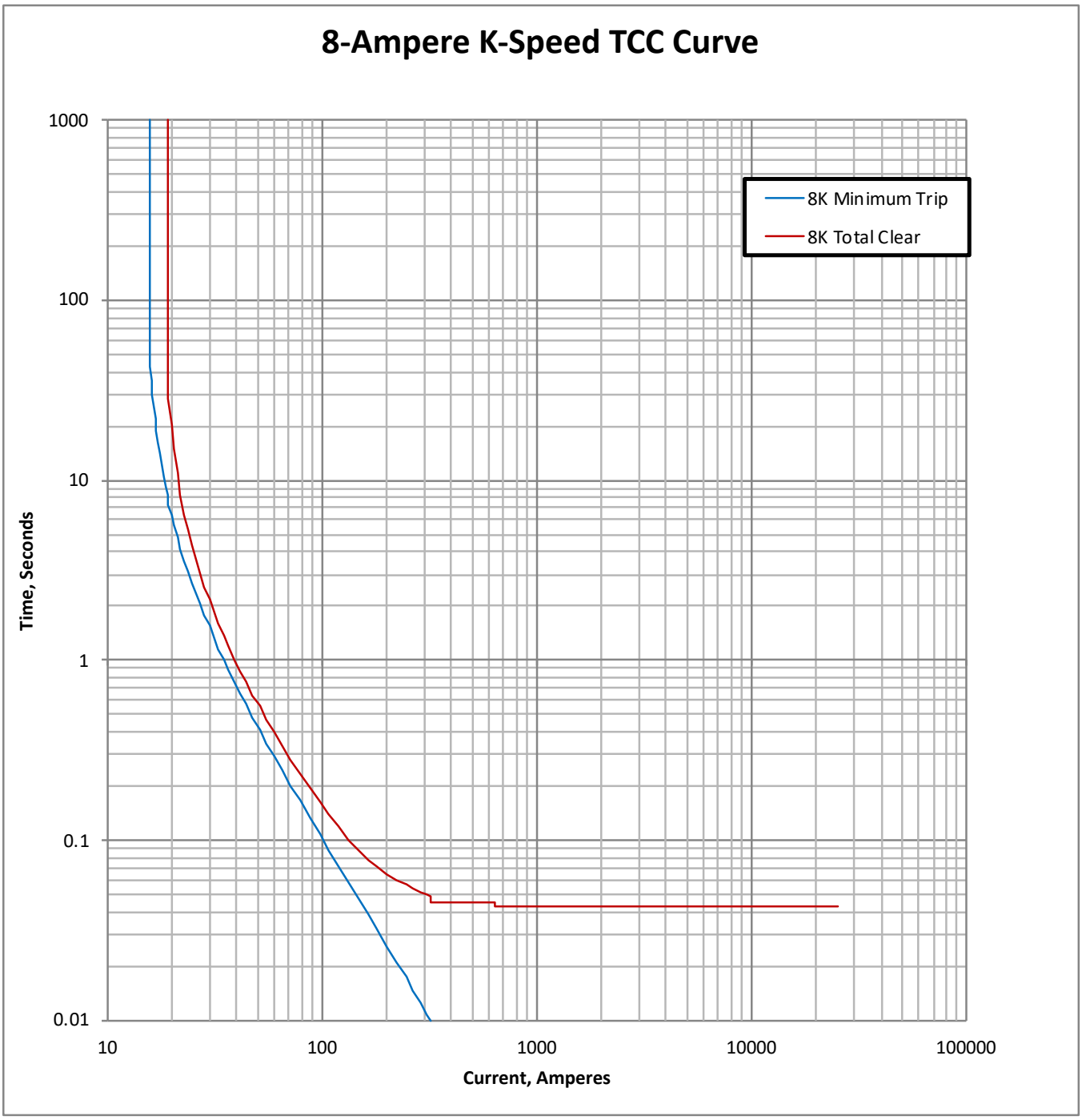
E Speed Curves



TCC Curve Parameter

	A	B	p	C	Min. Pickup (Amperes)
400E	4	0	2	1	901

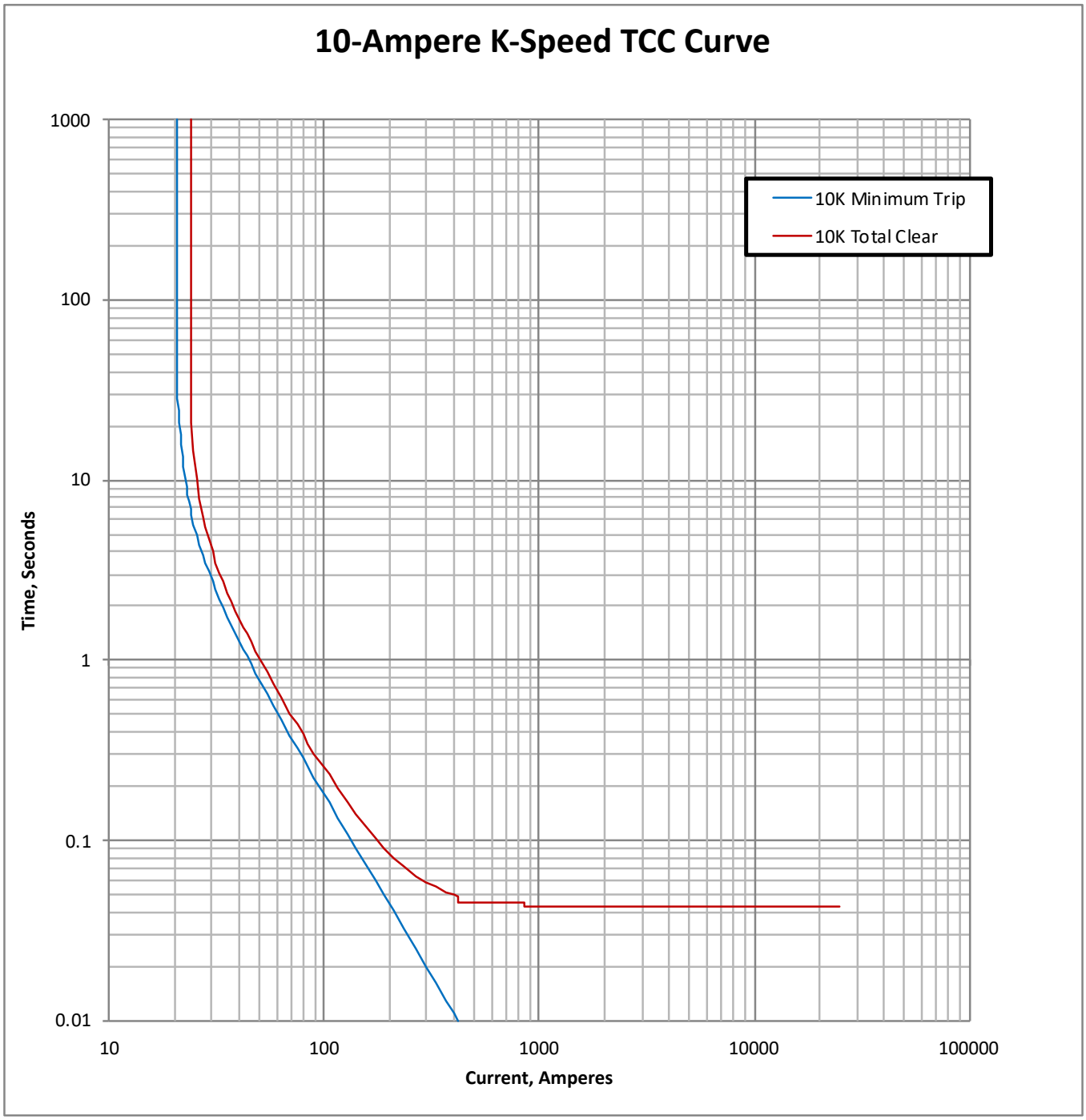
K Speed Curves



TCC Curve Parameter

	Min. Pickup (Amperes)
8K	15.60

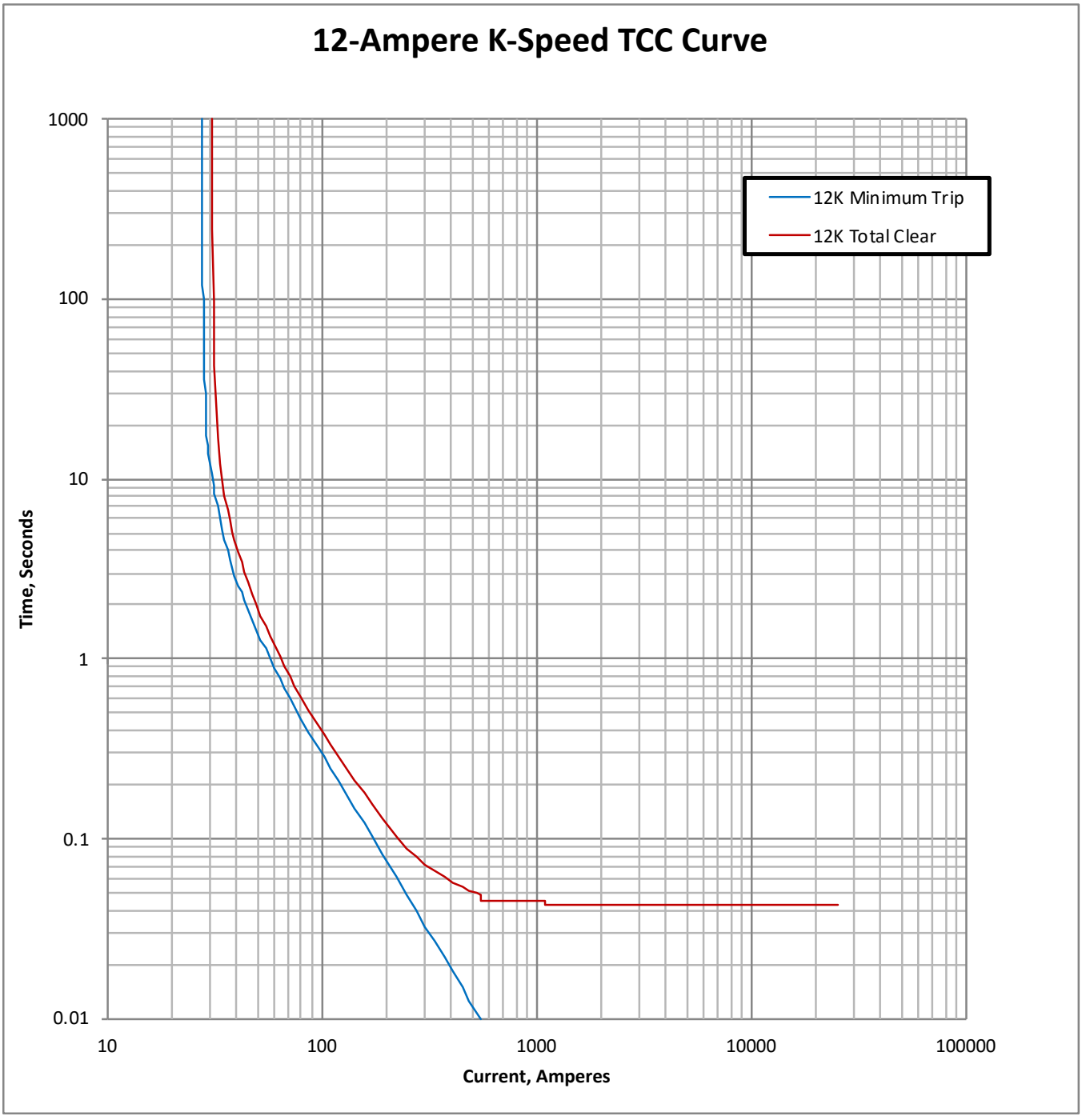
K Speed Curves



TCC Curve Parameter

	Min. Pickup (Amperes)
10K	20.40

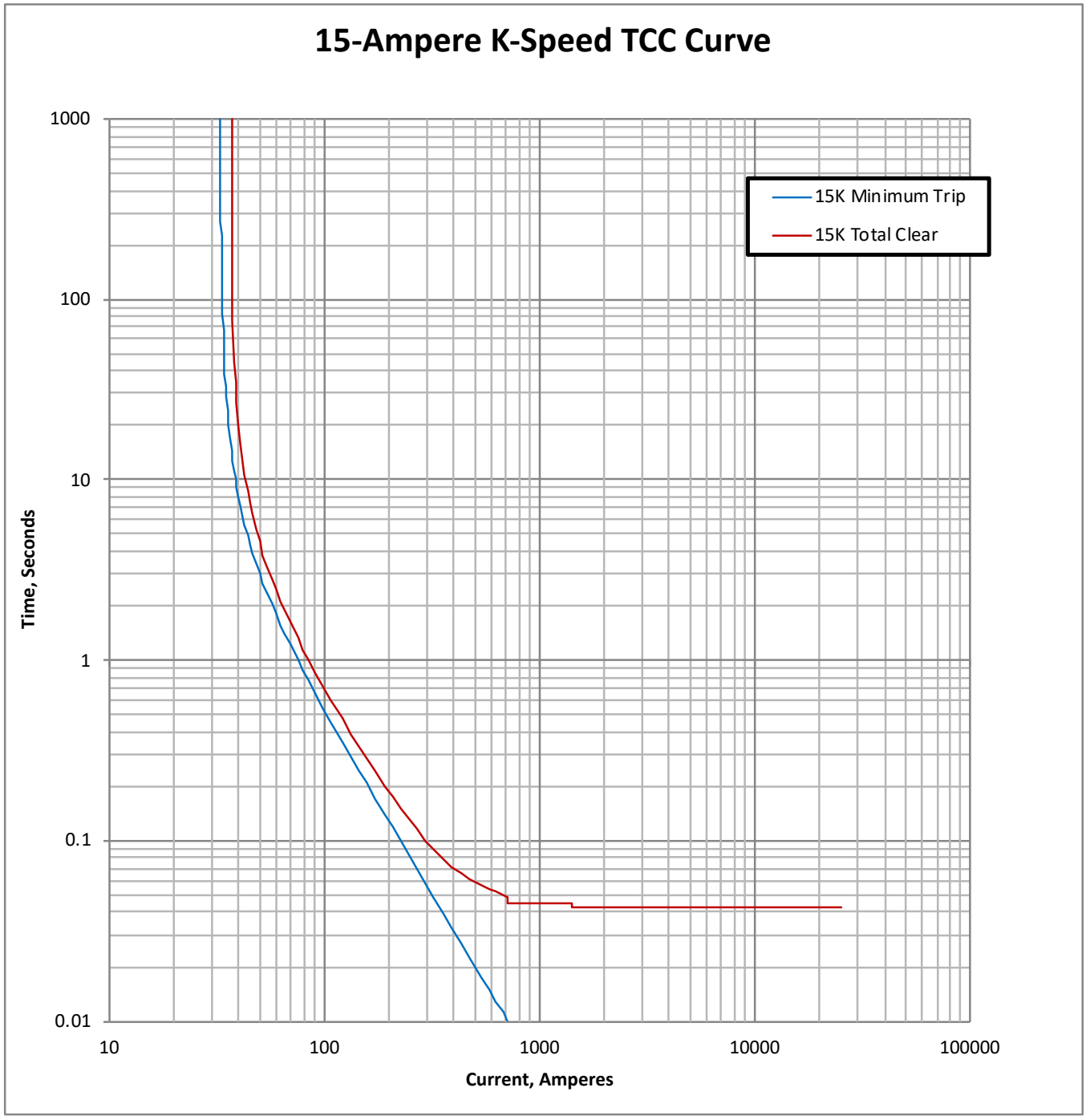
K Speed Curves



TCC Curve Parameter

	Min. Pickup (Amperes)
12K	27.31

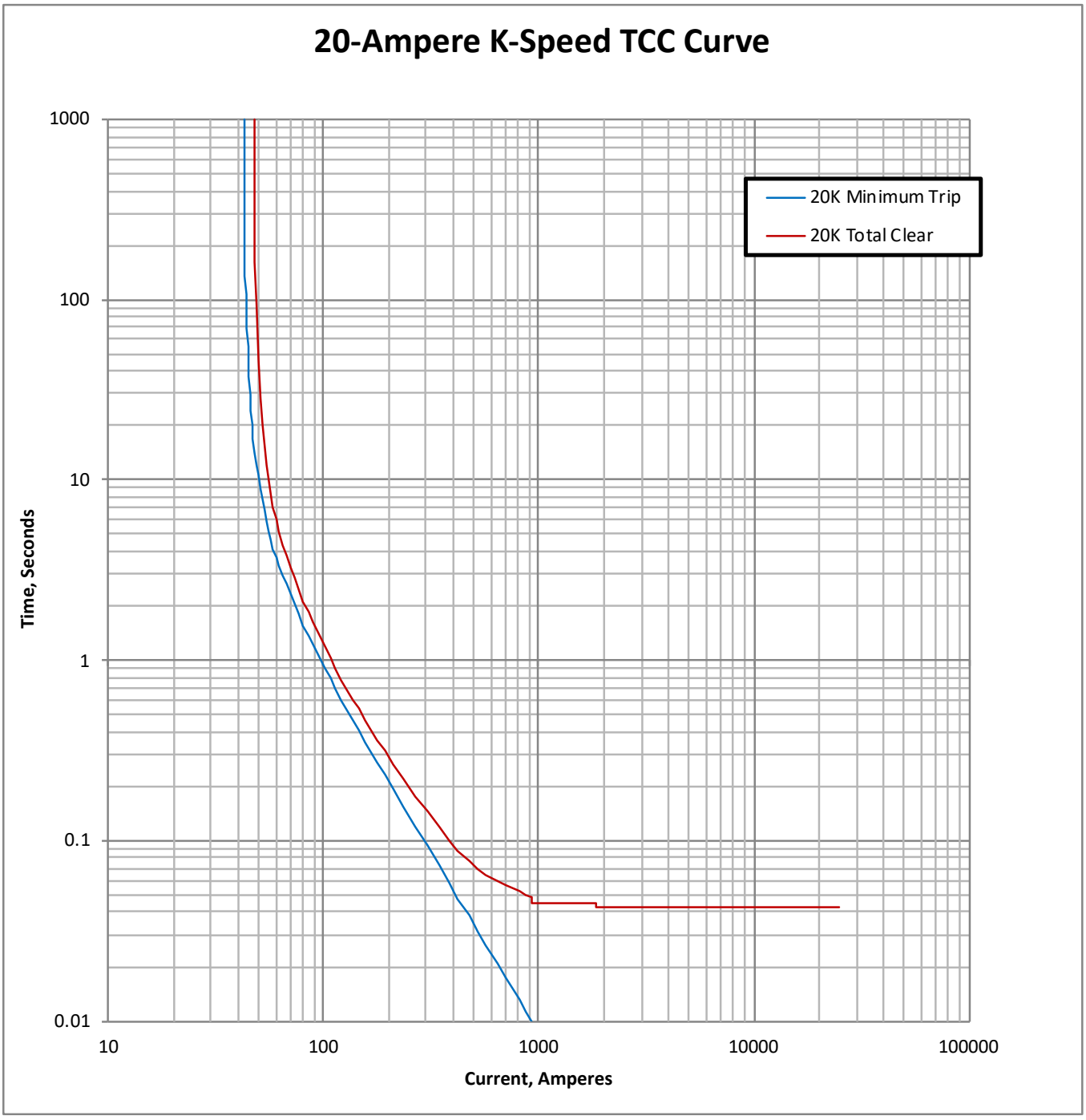
K Speed Curves



TCC Curve Parameter

	Min. Pickup (Amperes)
15K	32.90

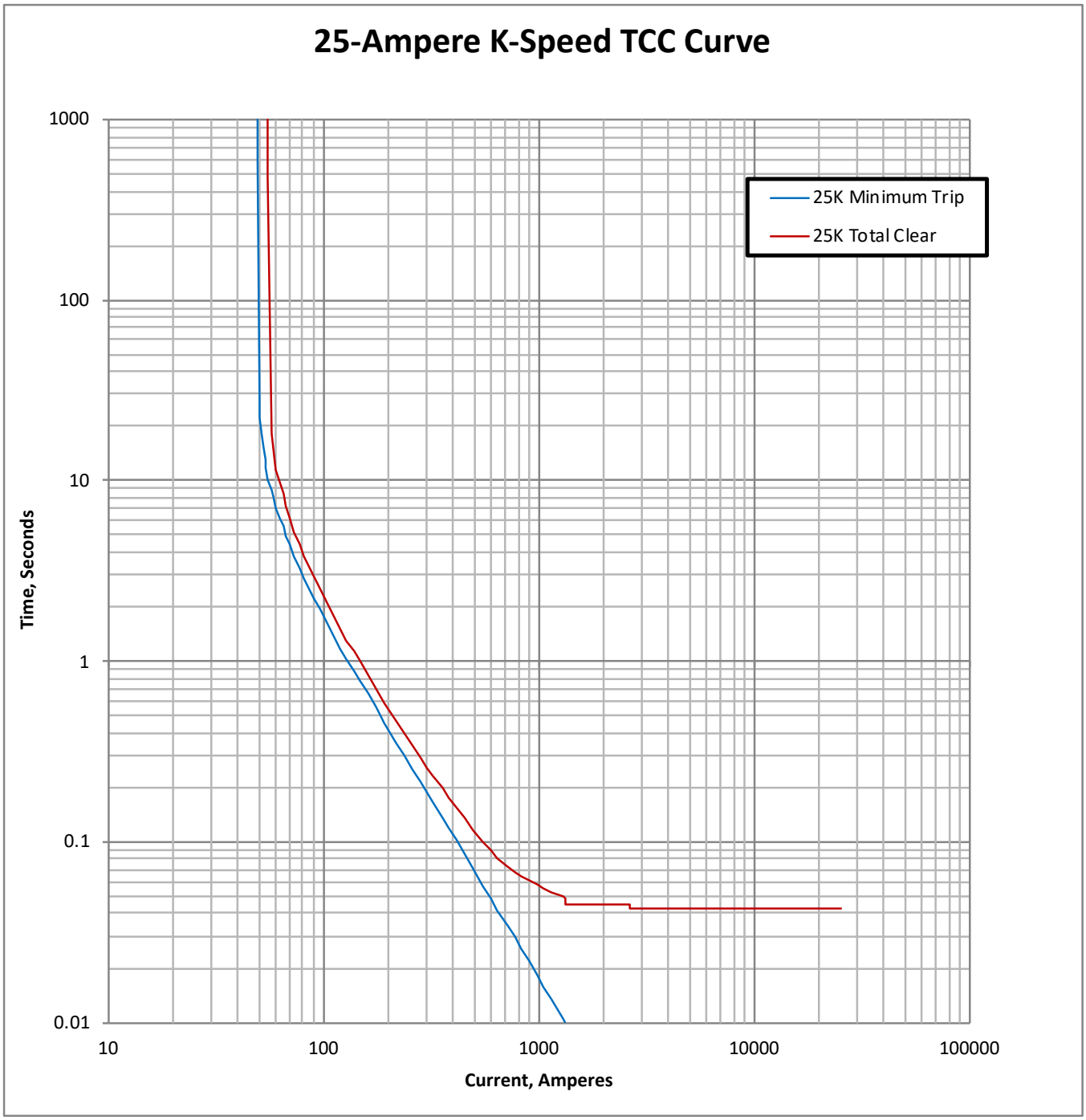
K Speed Curves



TCC Curve Parameter

	Min. Pickup (Amperes)
20K	42.45

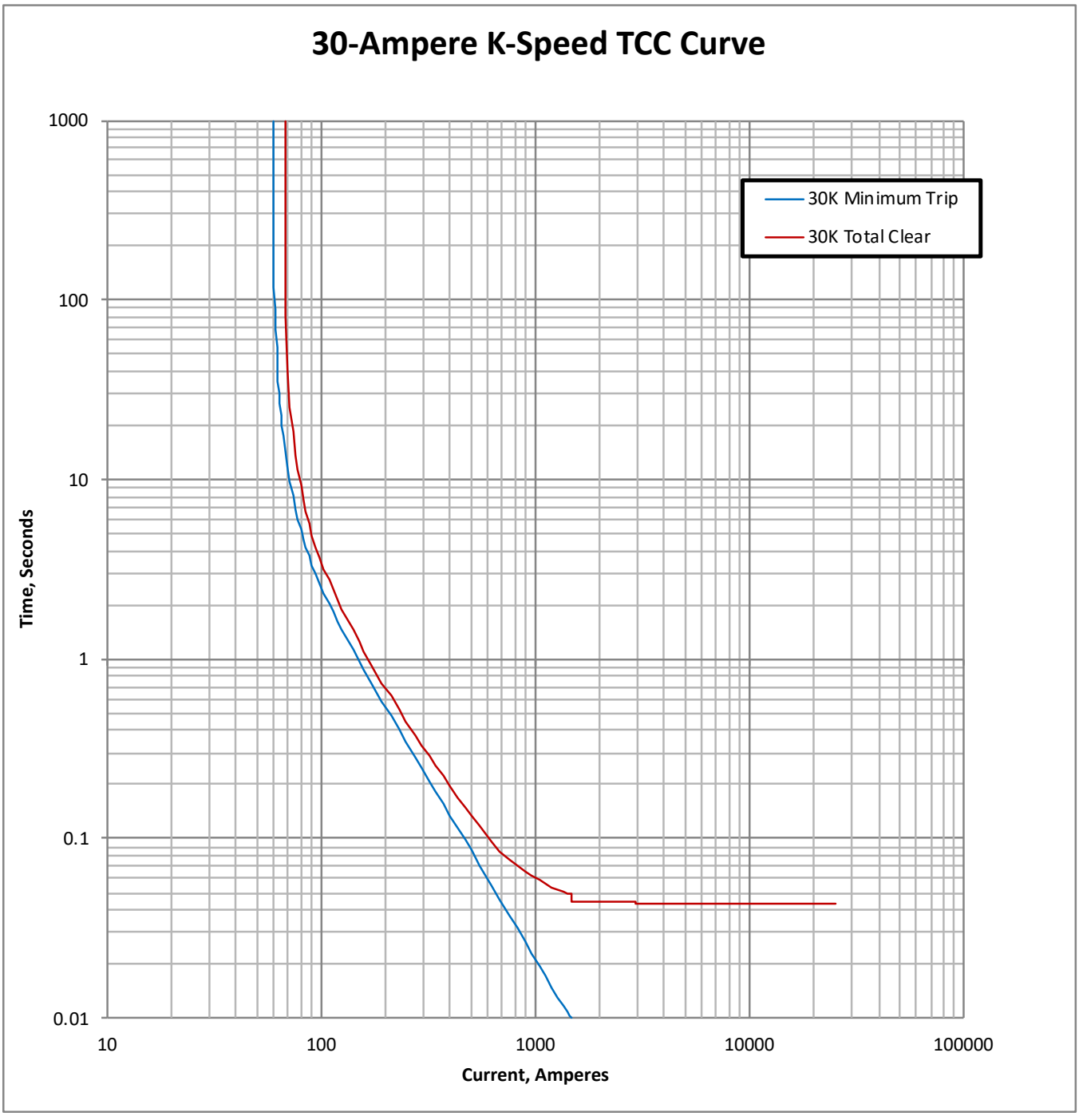
K Speed Curves



TCC Curve Parameter

	Min. Pickup (Amperes)
25K	49.60

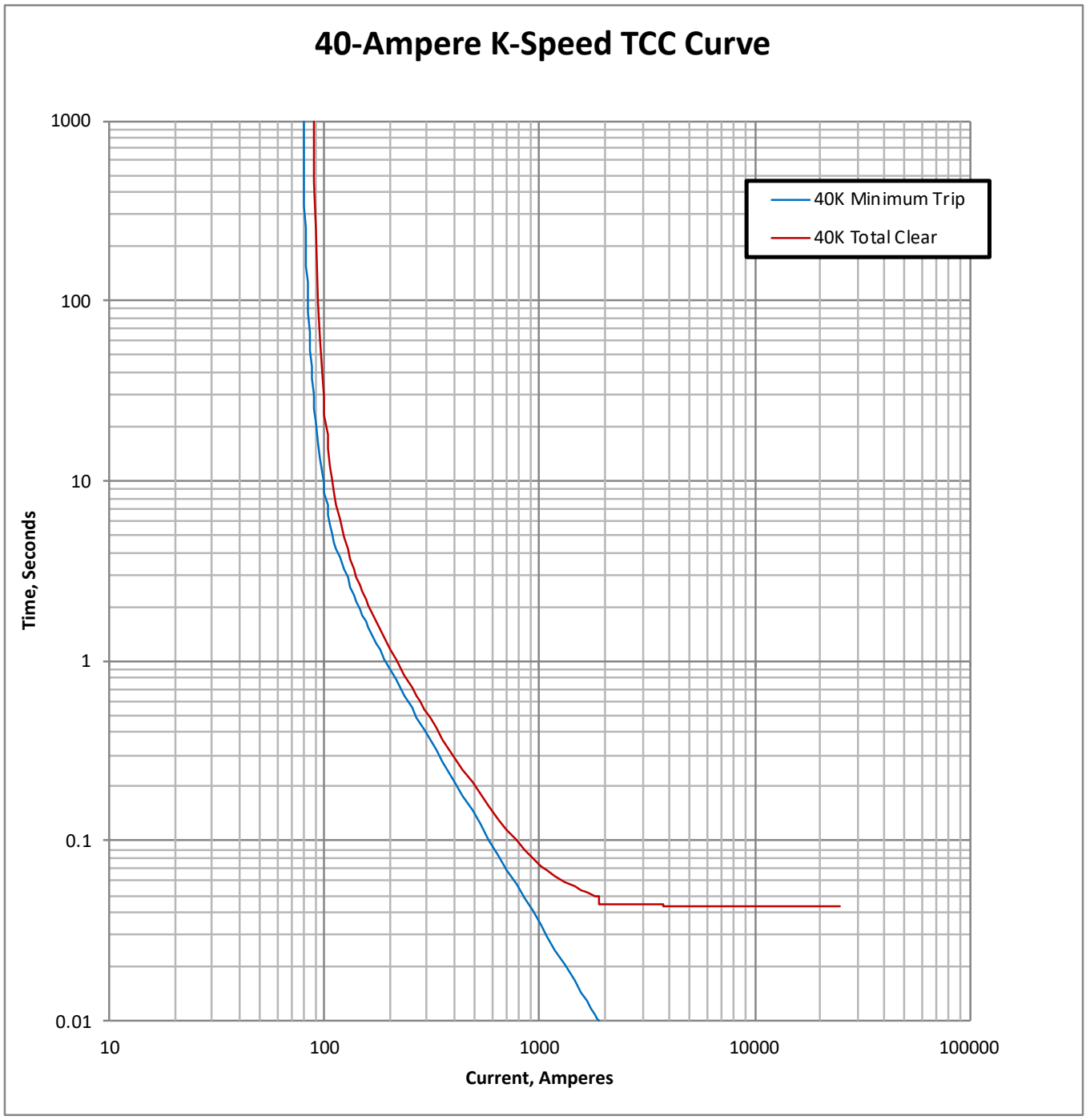
K Speed Curves



TCC Curve Parameter

	Min. Pickup (Amperes)
30K	59.92

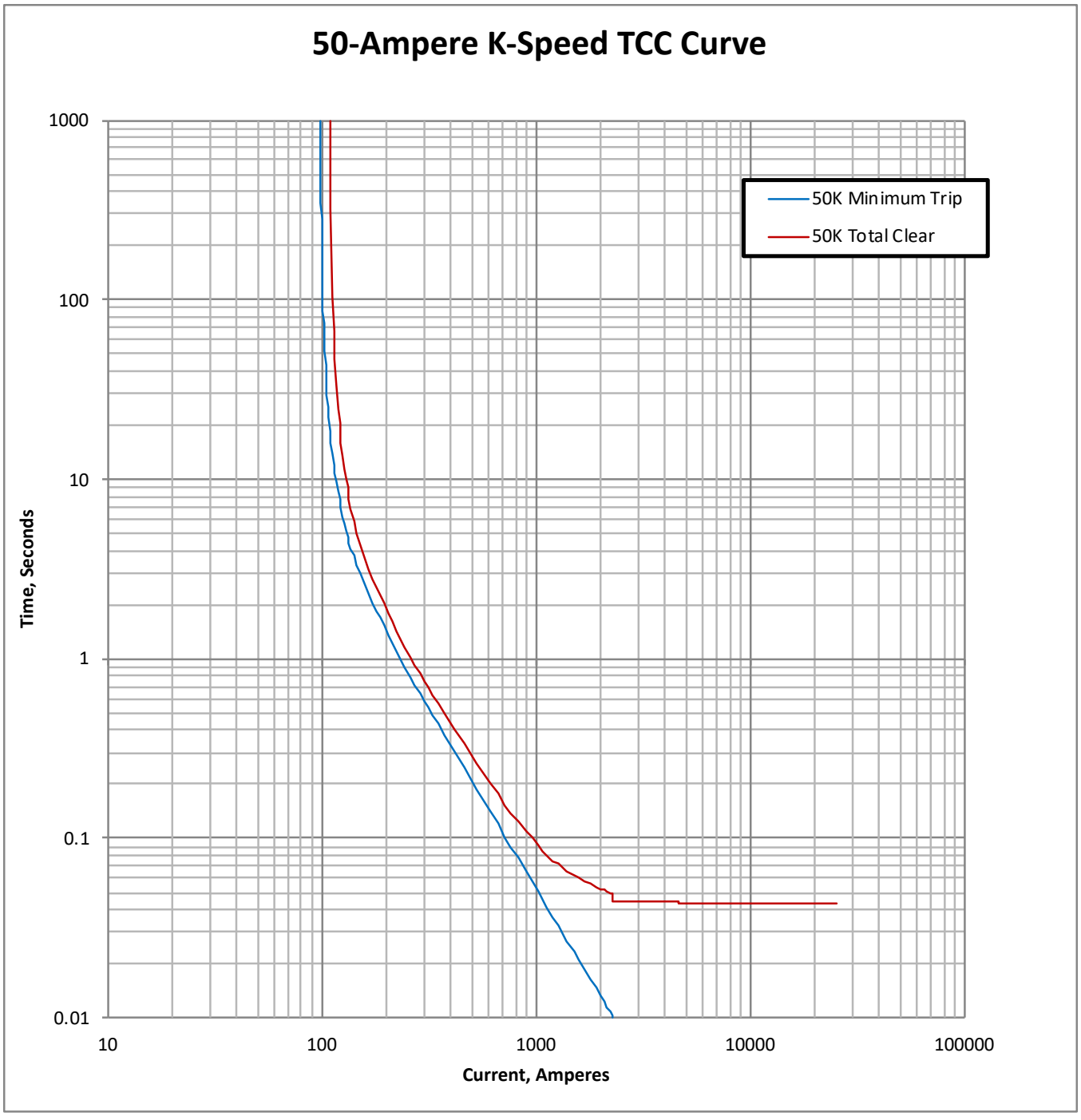
K Speed Curves



TCC Curve Parameter

	Min. Pickup (Amperes)
40K	79.59

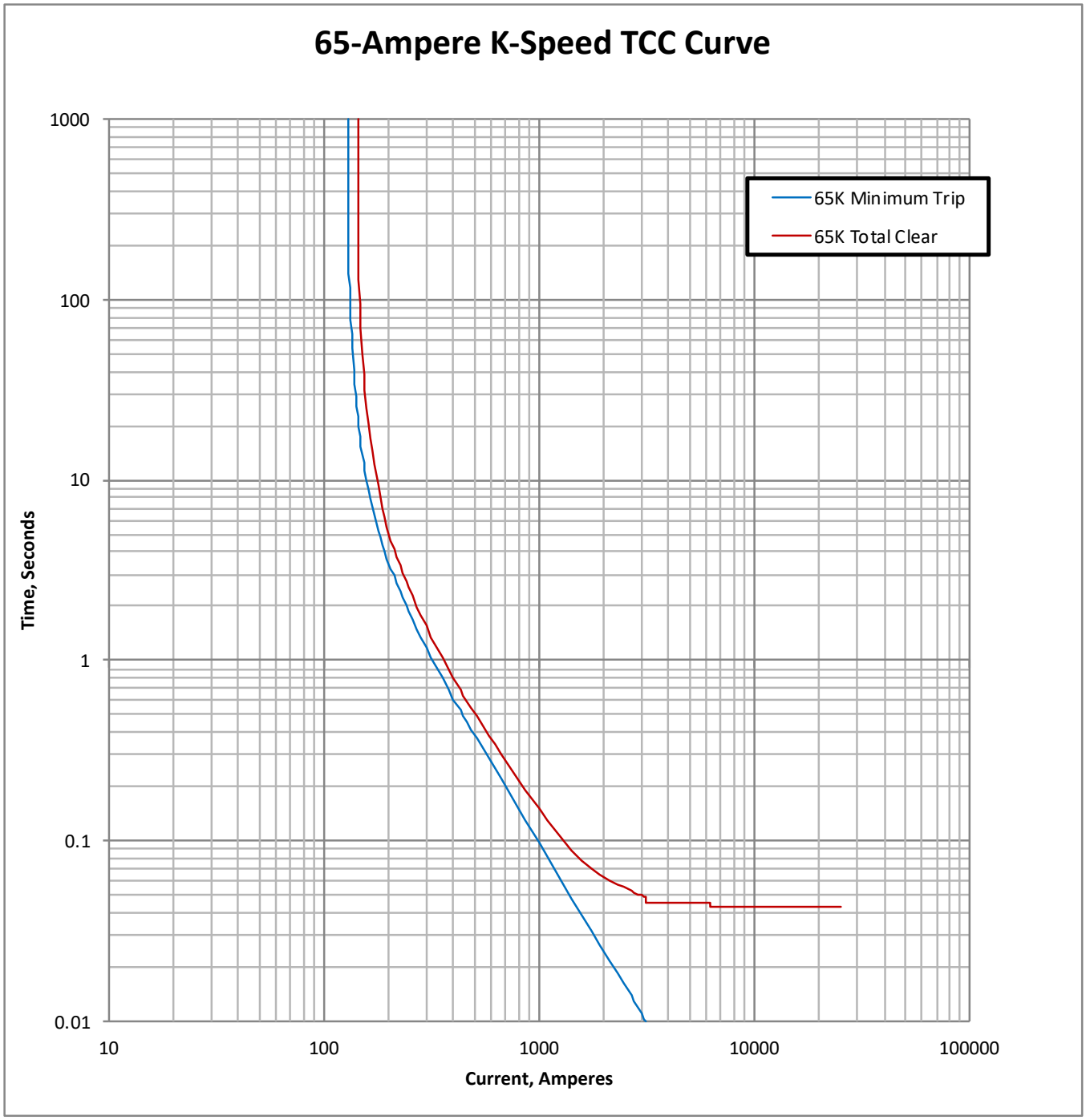
K Speed Curves



TCC Curve Parameter

	Min. Pickup (Amperes)
50K	98

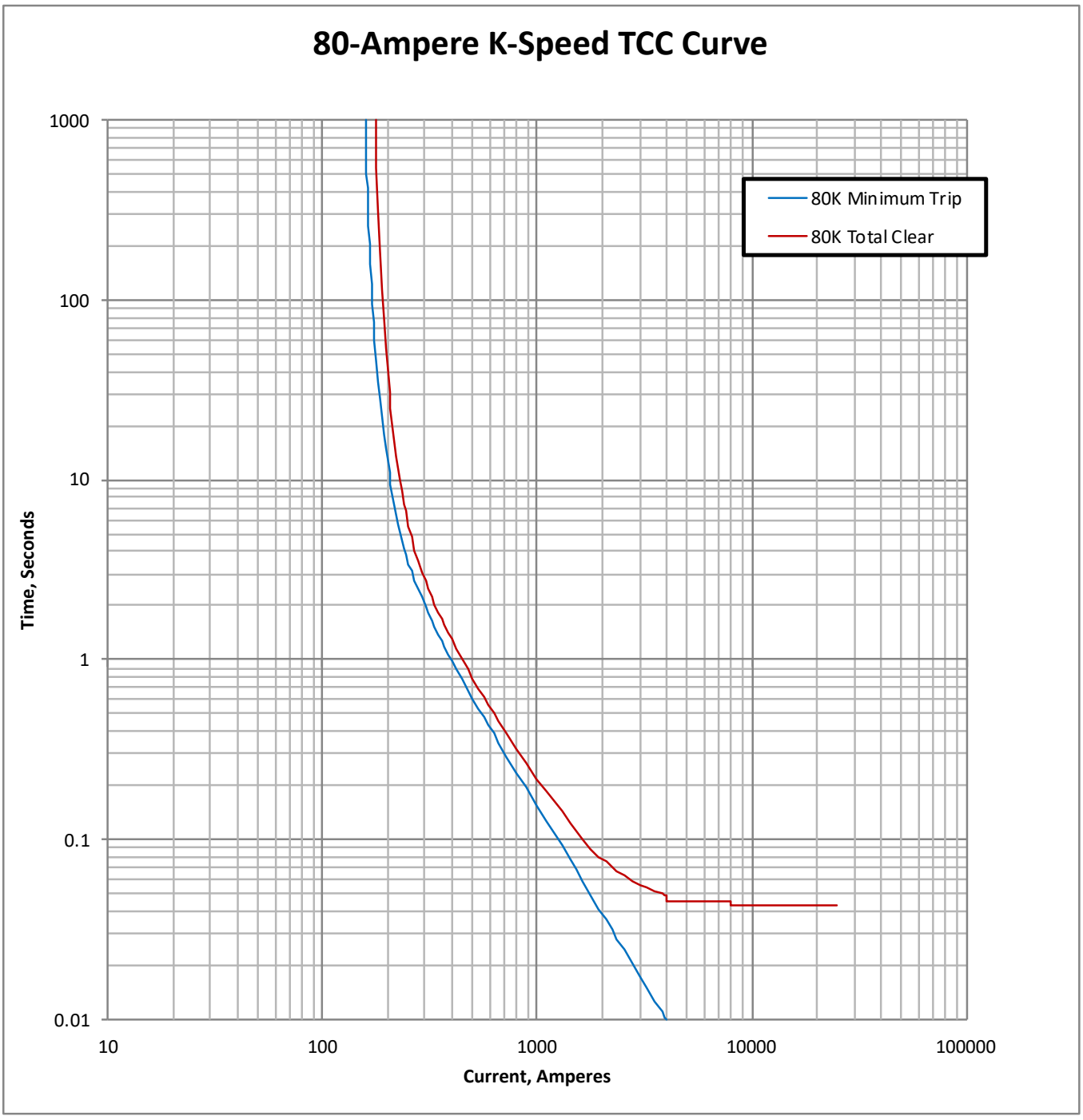
K Speed Curves



TCC Curve Parameter

	Min. Pickup (Amperes)
65K	128.37

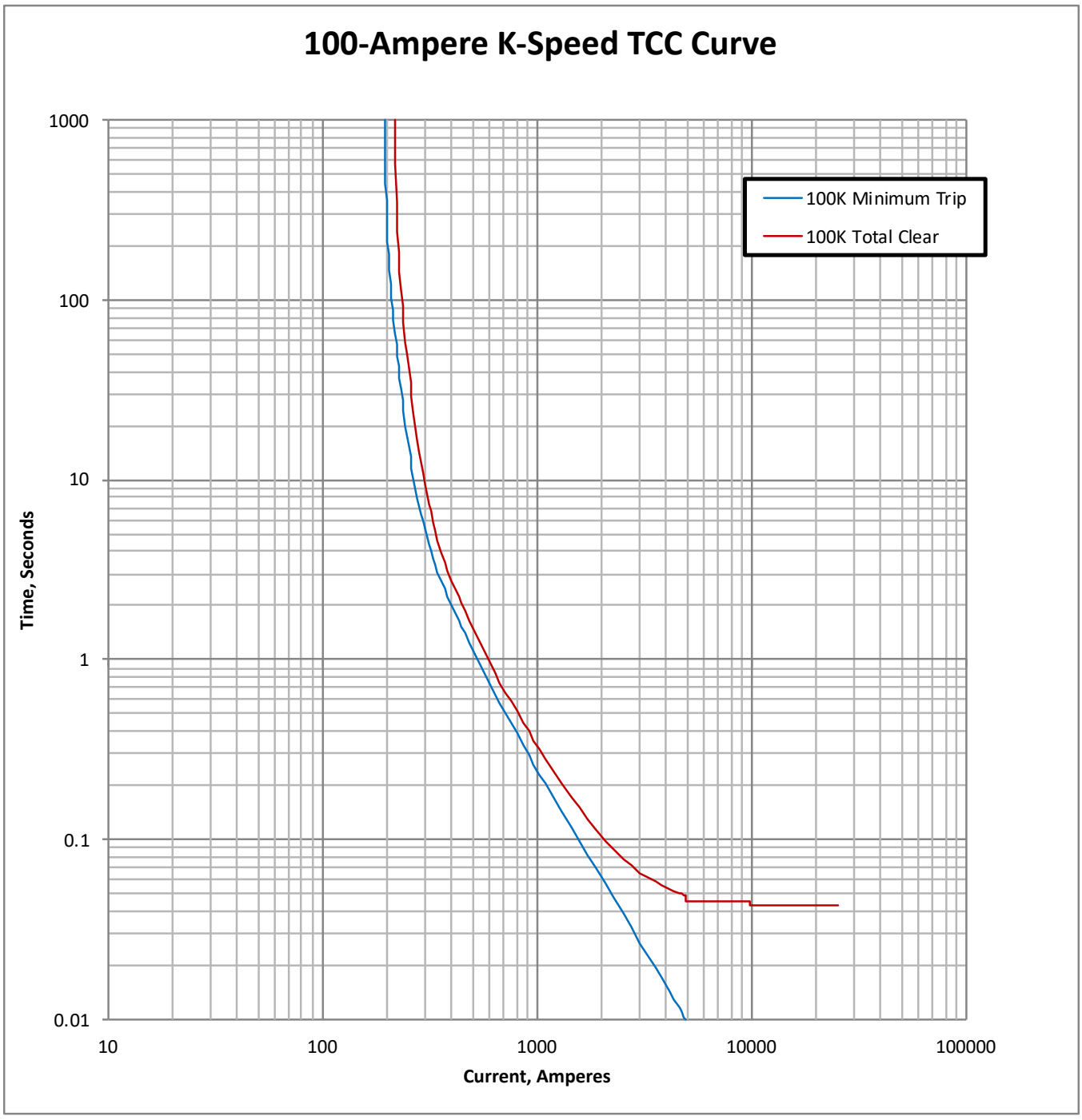
K Speed Curves



TCC Curve Parameter

	Min. Pickup (Amperes)
80K	159.32

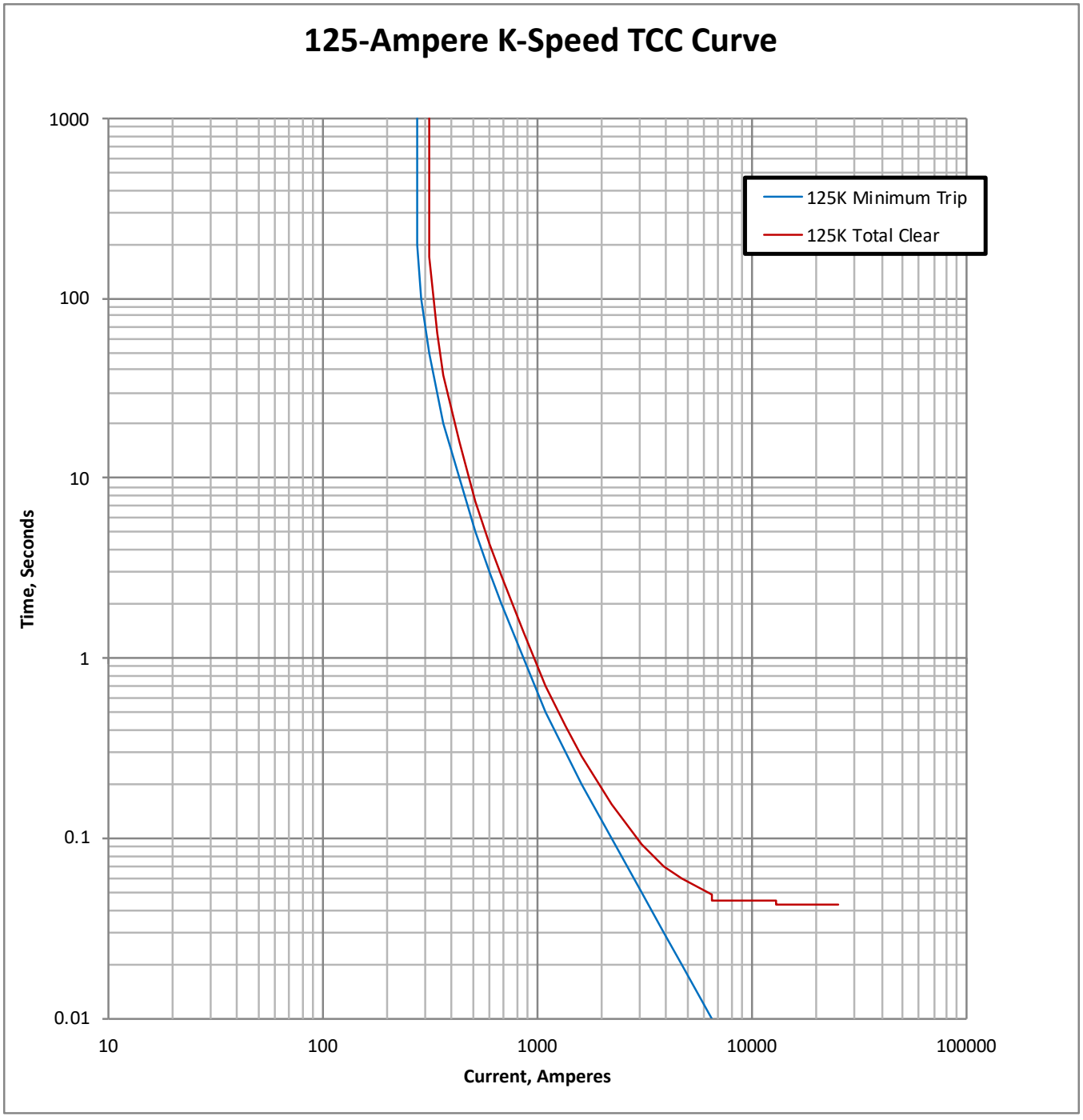
K Speed Curves



TCC Curve Parameter

	Min. Pickup (Amperes)
100K	195.18

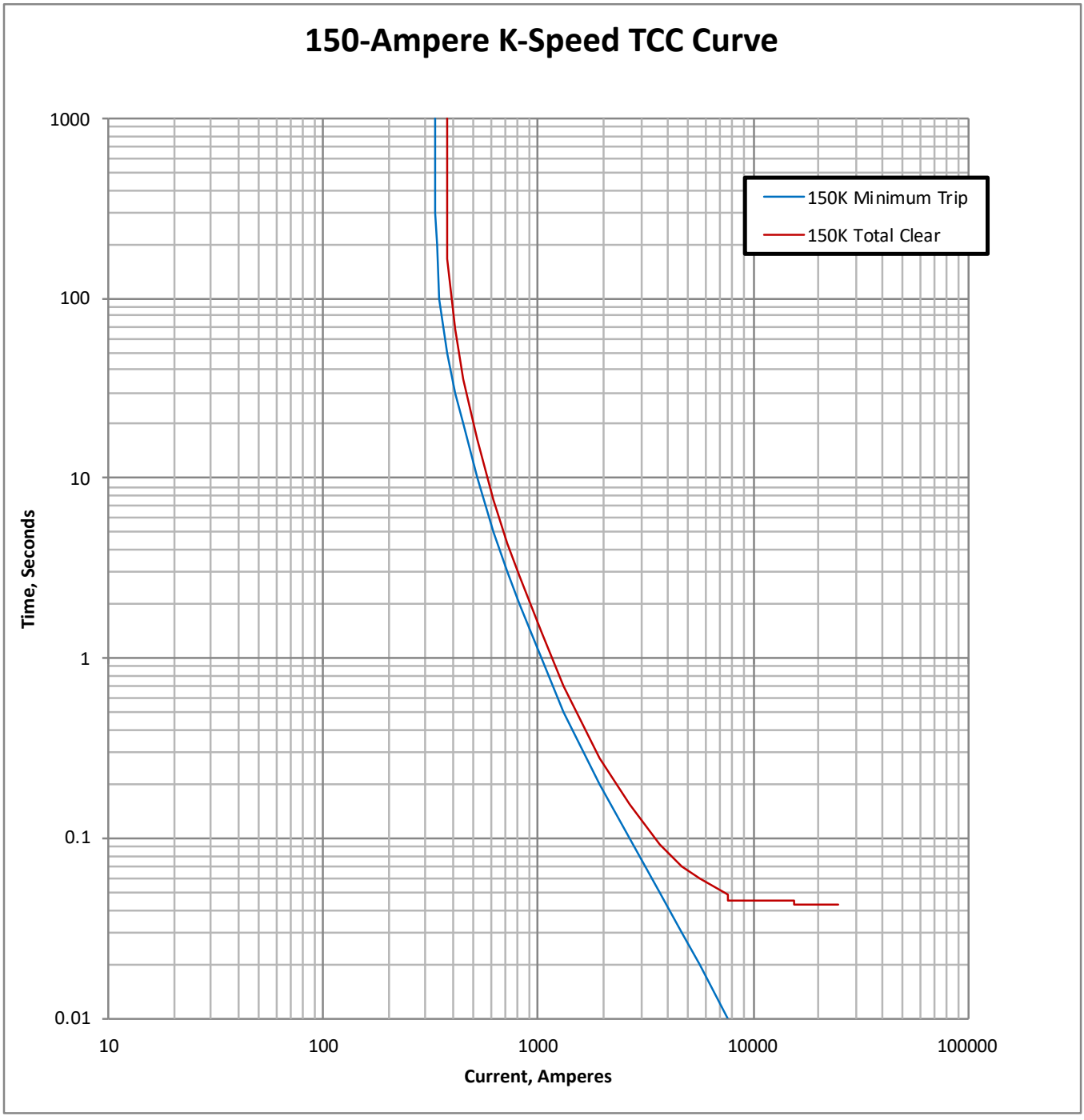
K Speed Curves



TCC Curve Parameter

	Min. Pickup (Amperes)
125K	274.55

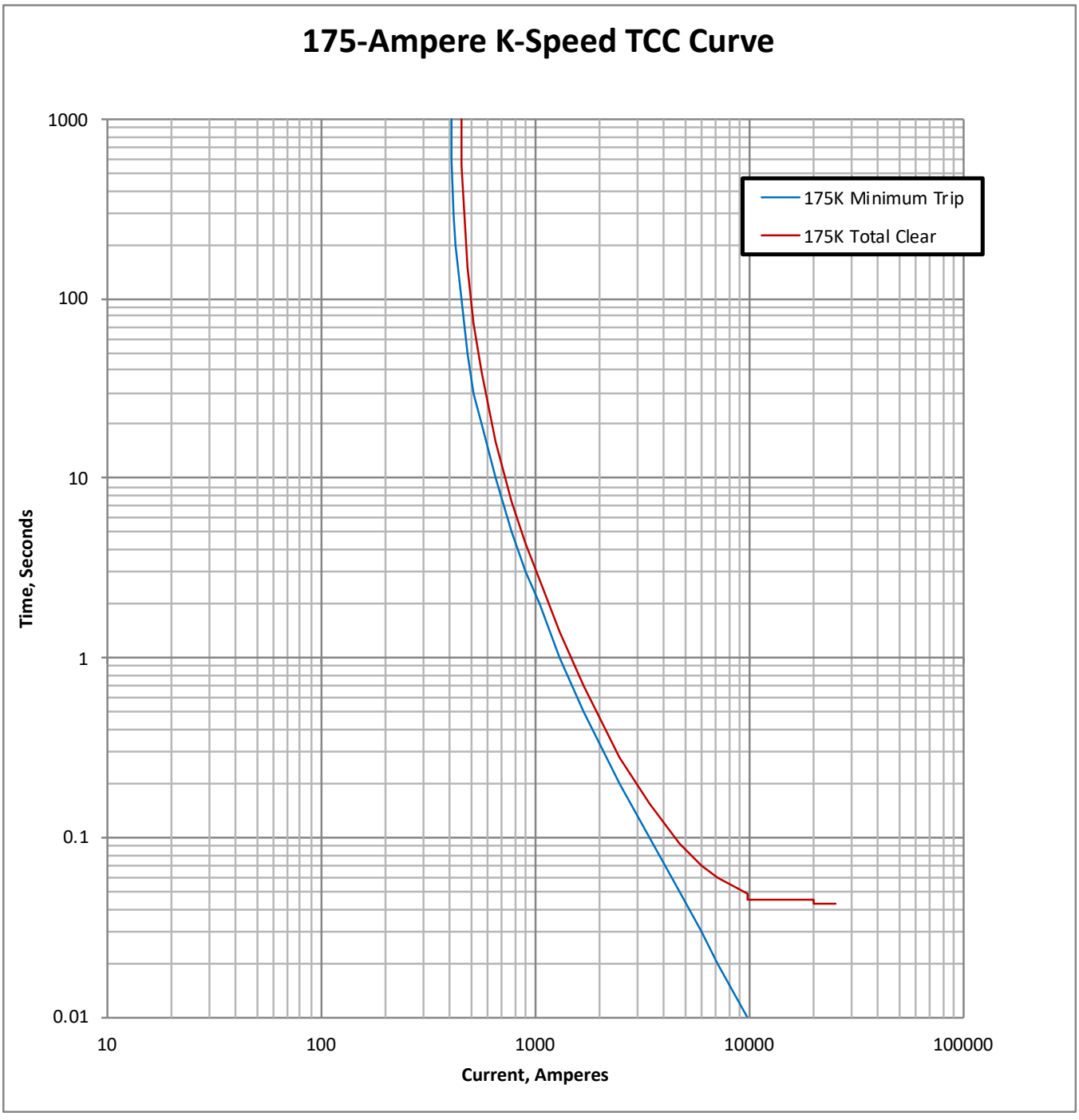
K Speed Curves



TCC Curve Parameter

	Min. Pickup (Amperes)
150K	329.65

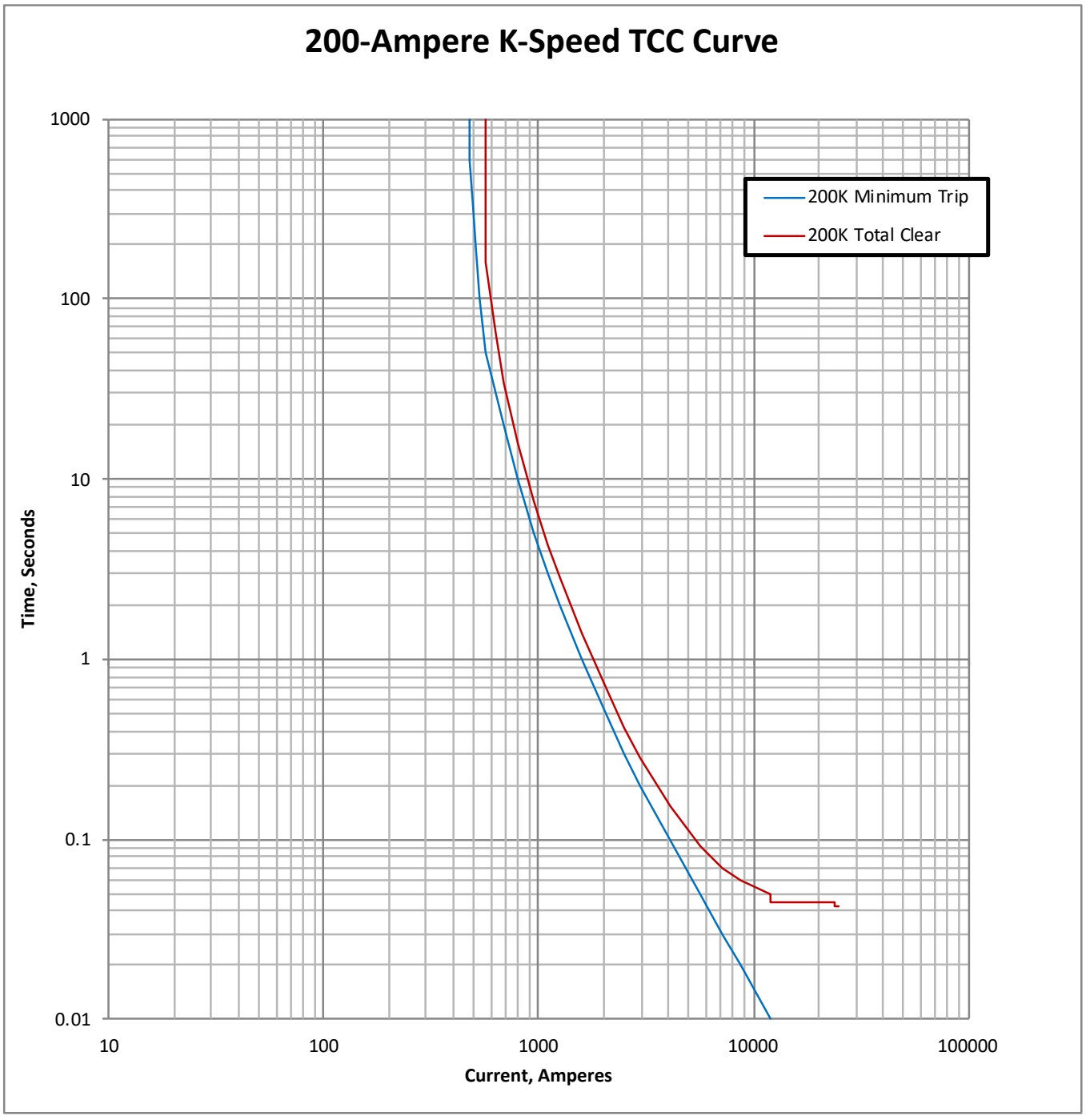
K Speed Curves



TCC Curve Parameter

	Min. Pickup (Amperes)
175K	401.85

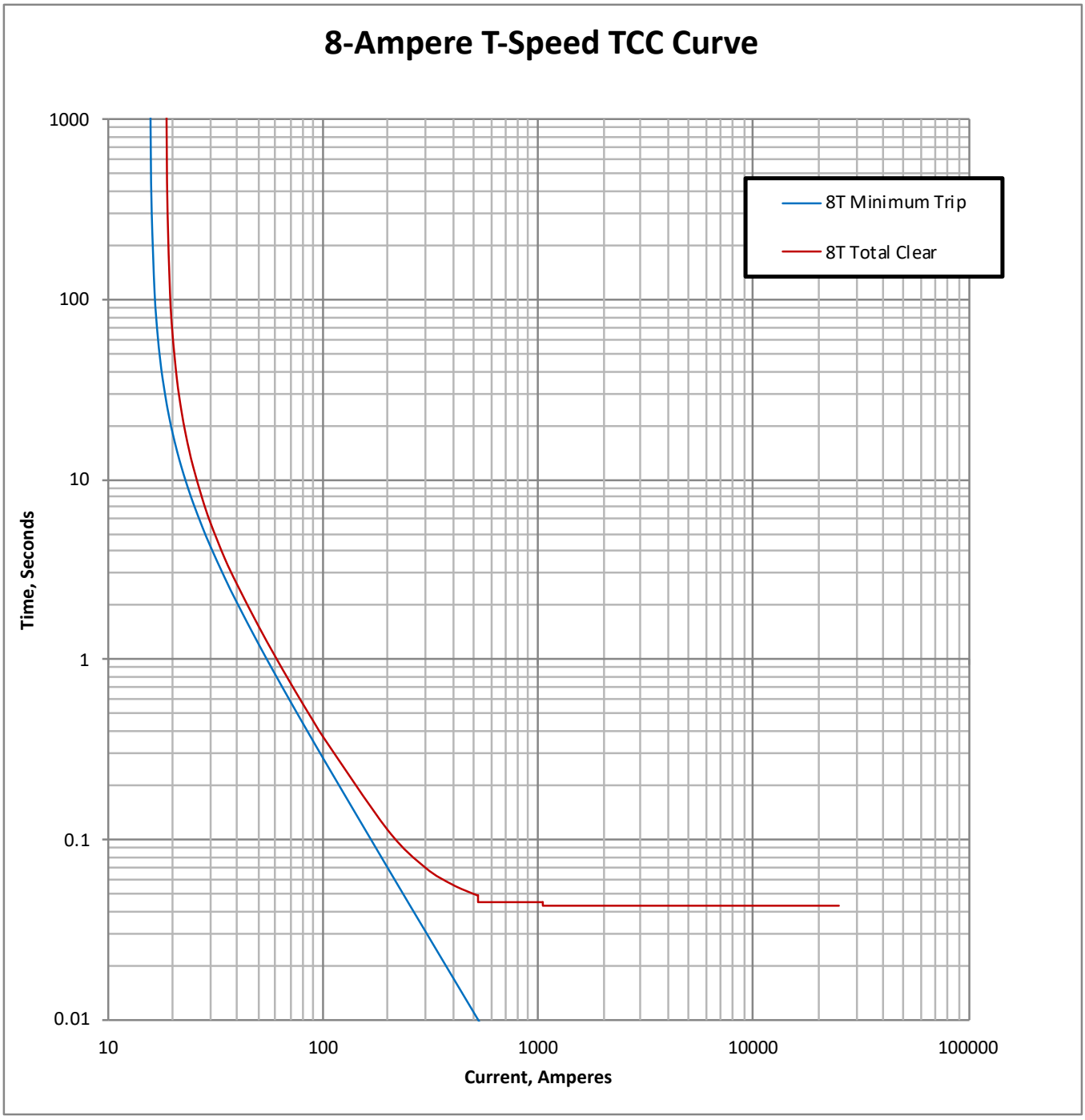
K Speed Curves



TCC Curve Parameter

	Min. Pickup (Amperes)
200K	479.75

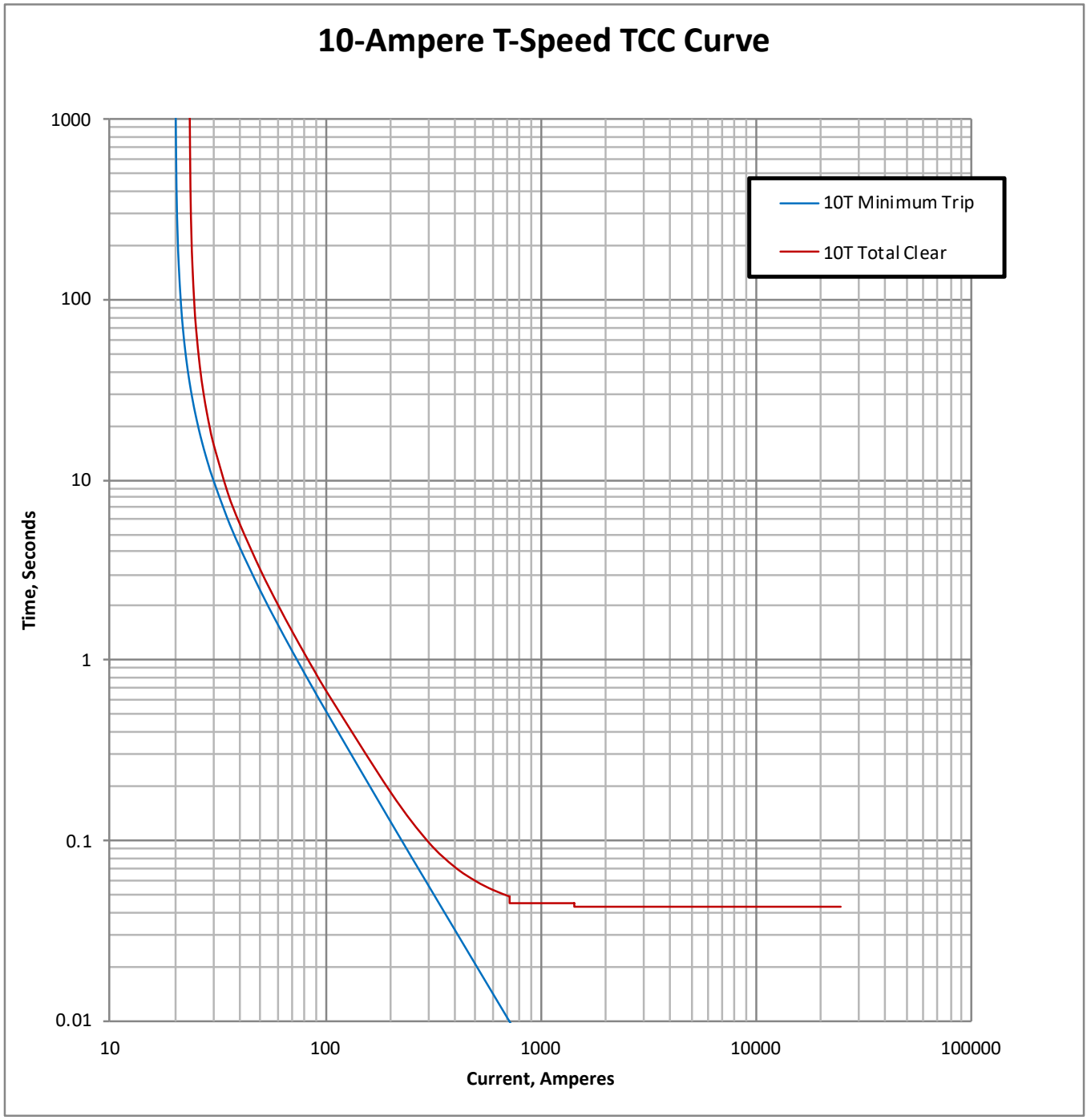
T Speed Curves



TCC Curve Parameter

	A	B	p	C	Min. Pickup (Amperes)
8T	11.2160	0	2	1	15.71

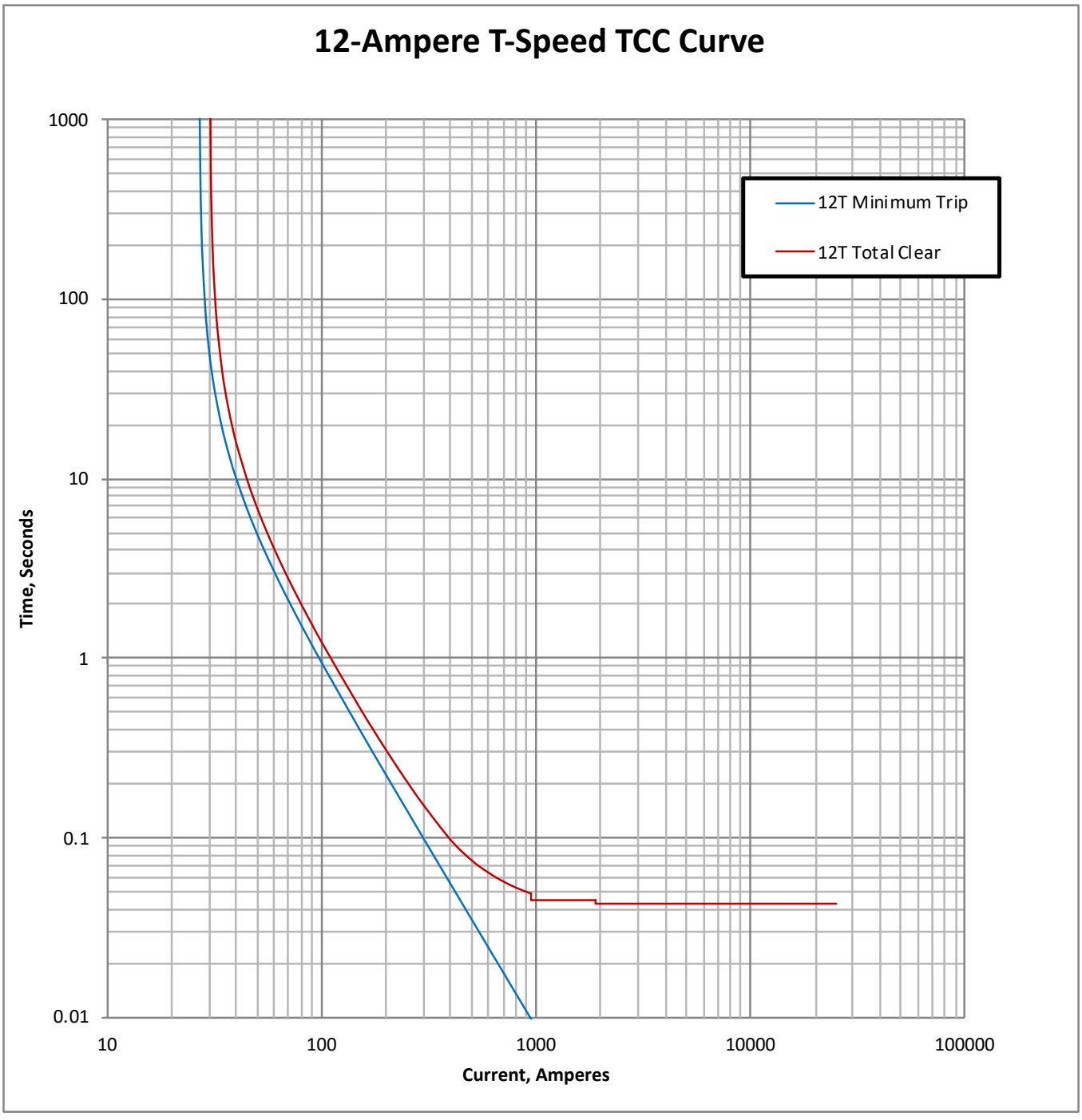
T Speed Curves



TCC Curve Parameter

	A	B	p	C	Min. Pickup (Amperes)
10T	12.6625	0	2	1	20.20

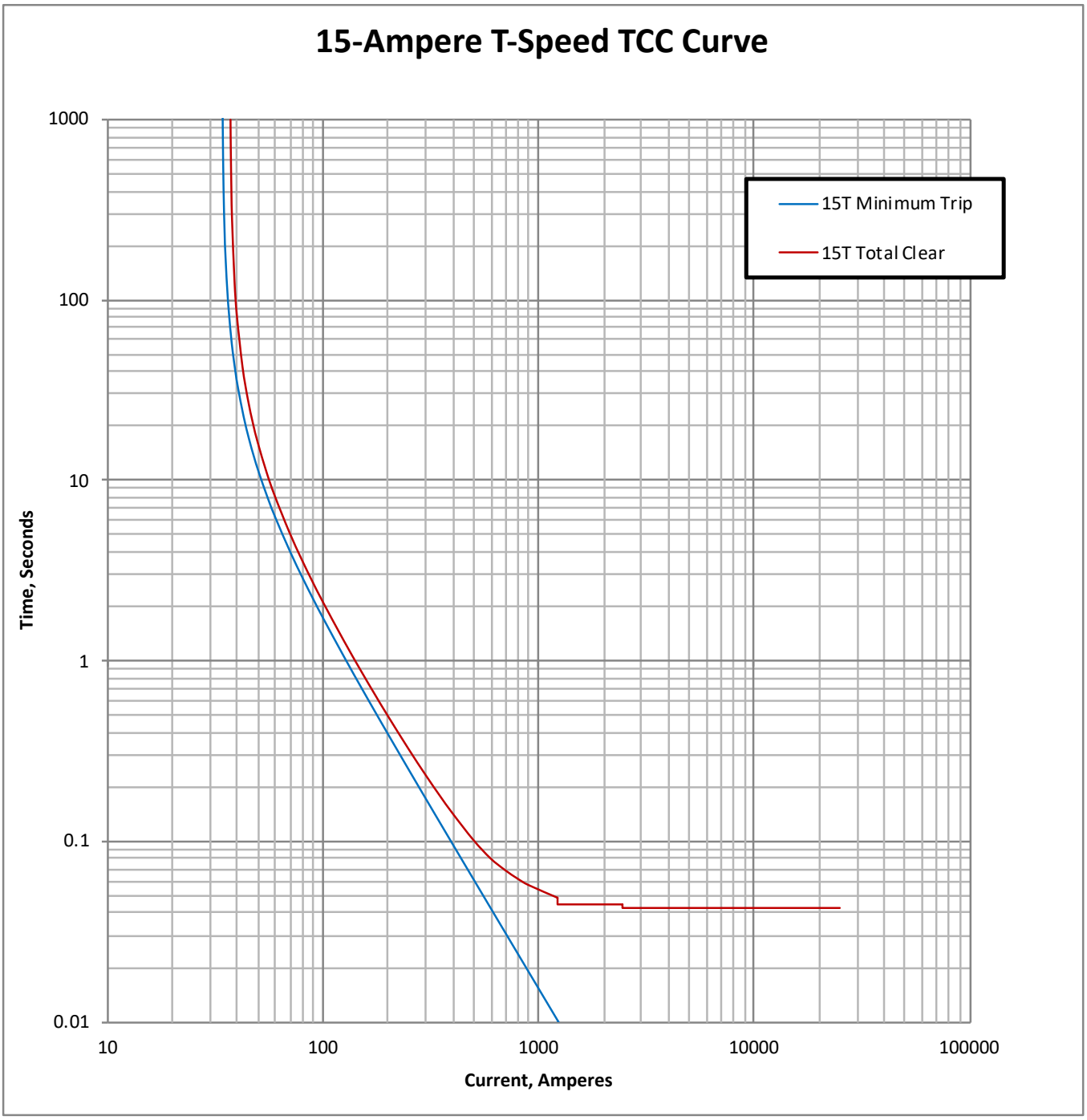
T Speed Curves



TCC Curve Parameter

	A	B	p	C	Min. Pickup (Amperes)
12T	12.0794	0	2	1	27.04

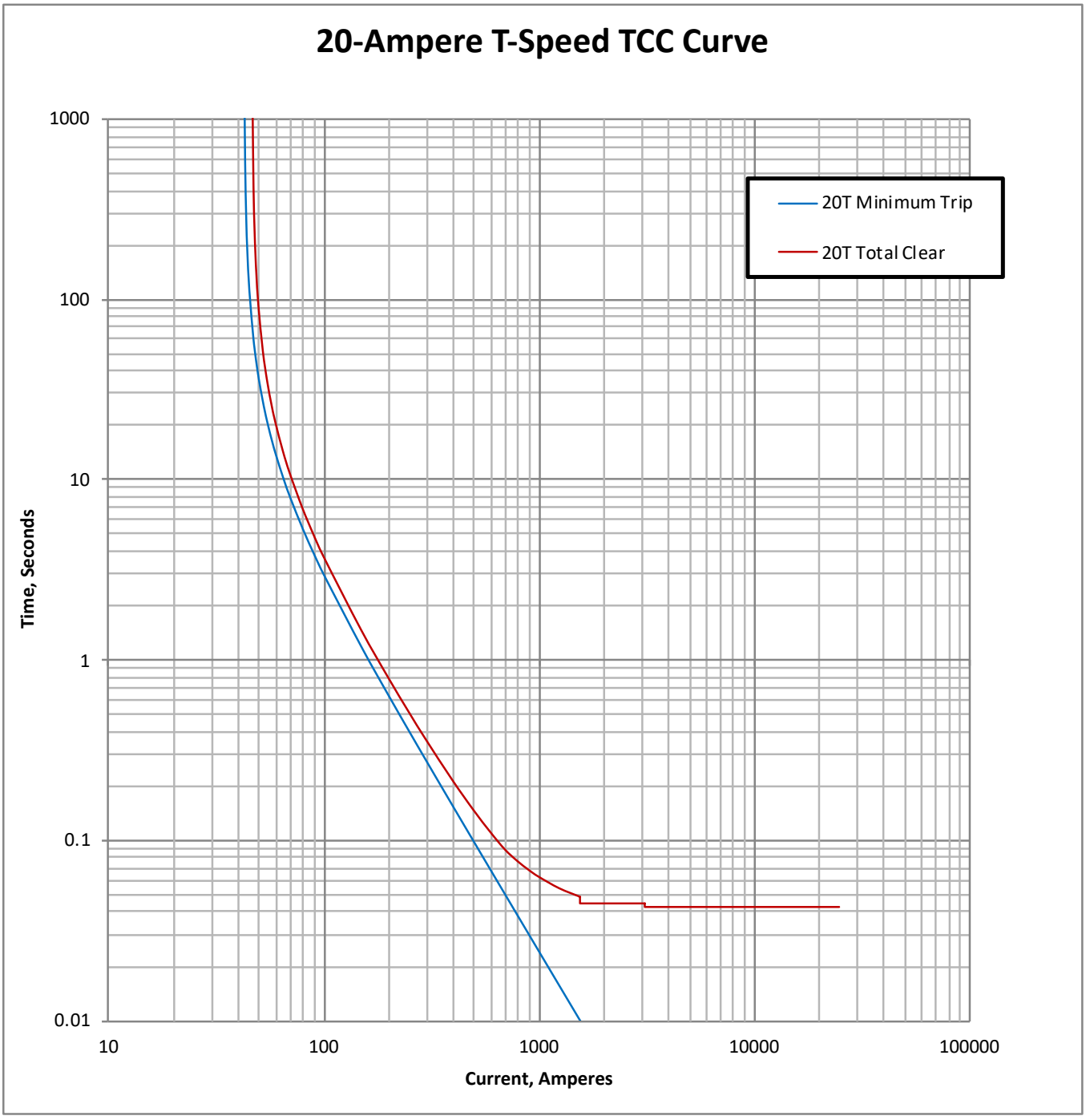
T Speed Curves



TCC Curve Parameter

	A	B	p	C	Min. Pickup (Amperes)
15T	13.2151	0	2	1	33.76

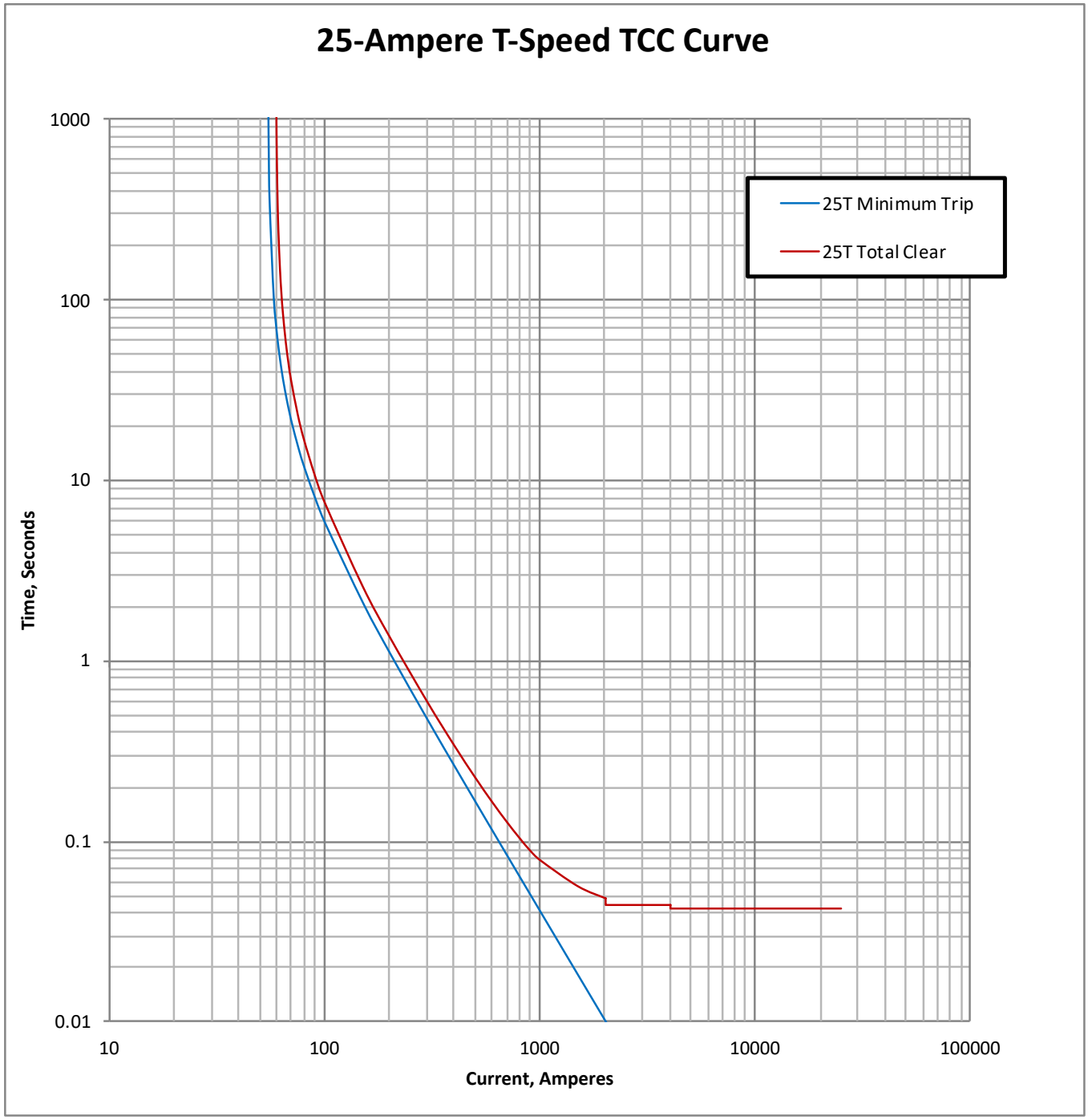
T Speed Curves



TCC Curve Parameter

	A	B	p	C	Min. Pickup (Amperes)
20T	13.4962	0	2	1	42.5

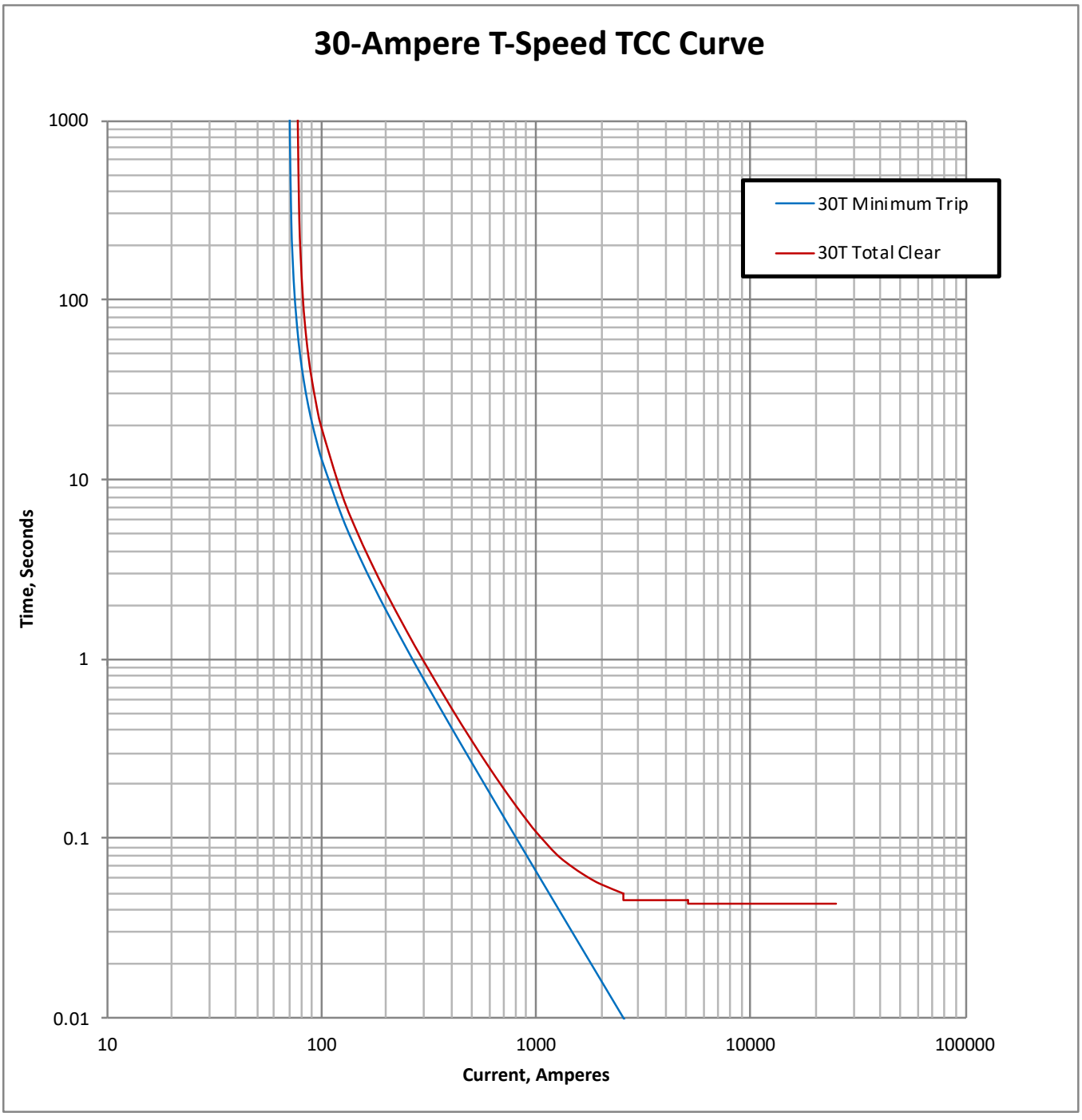
T Speed Curves



TCC Curve Parameter

	A	B	p	C	Min. Pickup (Amperes)
25T	13.974	0	2	1	53.92

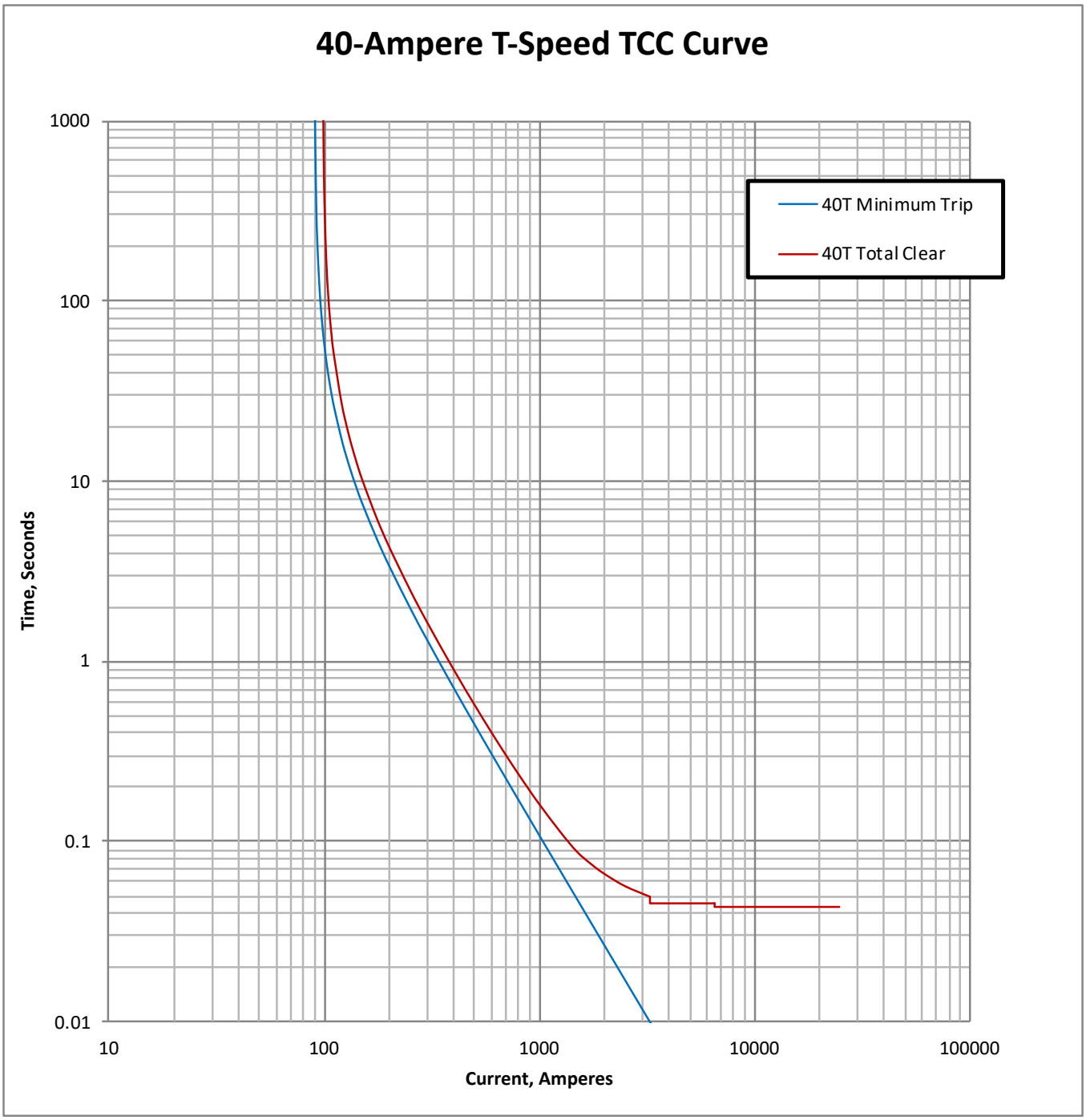
T Speed Curves



TCC Curve Parameter

	A	B	p	C	Min. Pickup (Amperes)
30T	13.1706	0	2	1	70.4

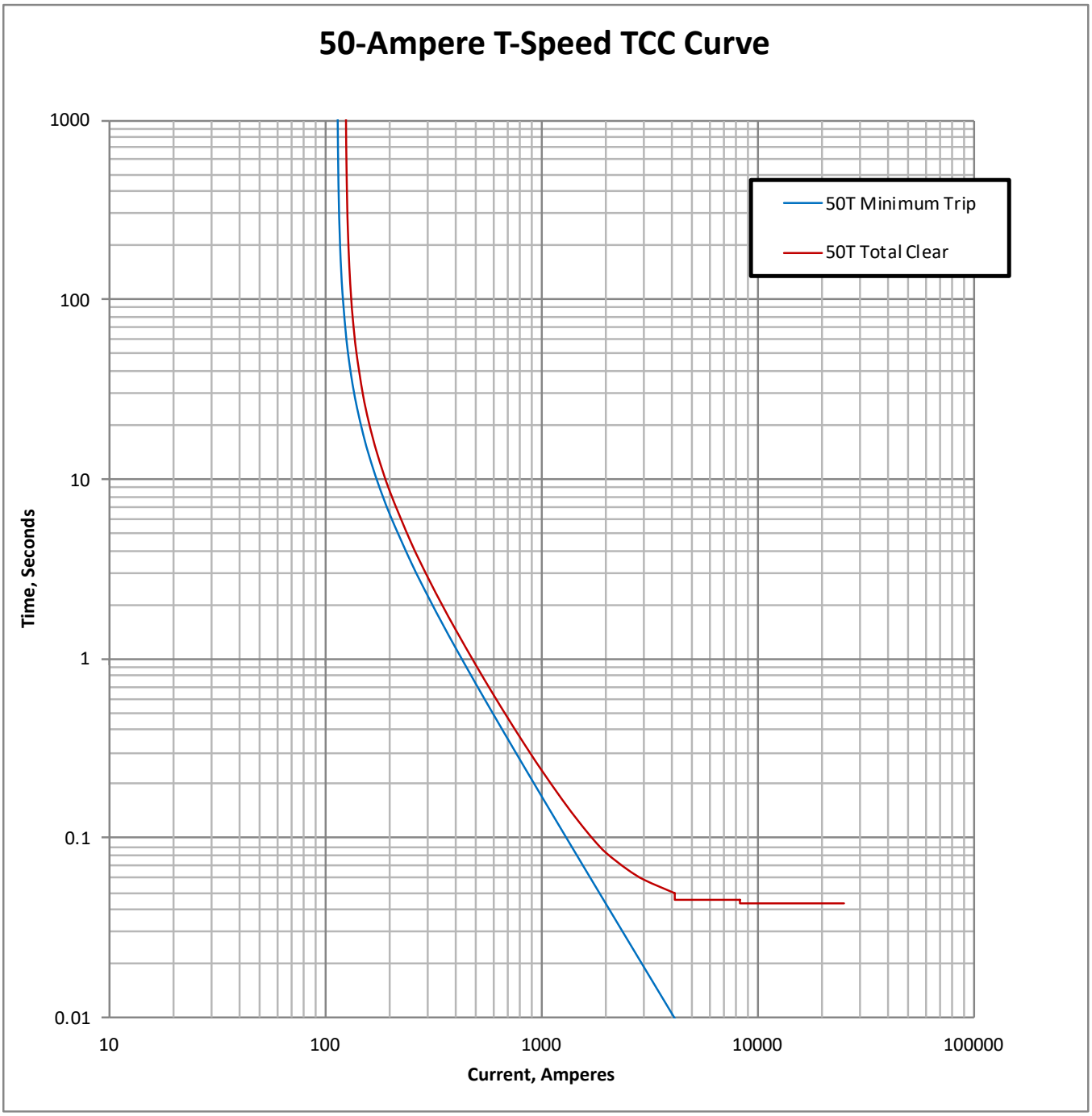
T Speed Curves



TCC Curve Parameter

	A	B	p	C	Min. Pickup (Amperes)
40T	13.5054	0	2	1	89.2

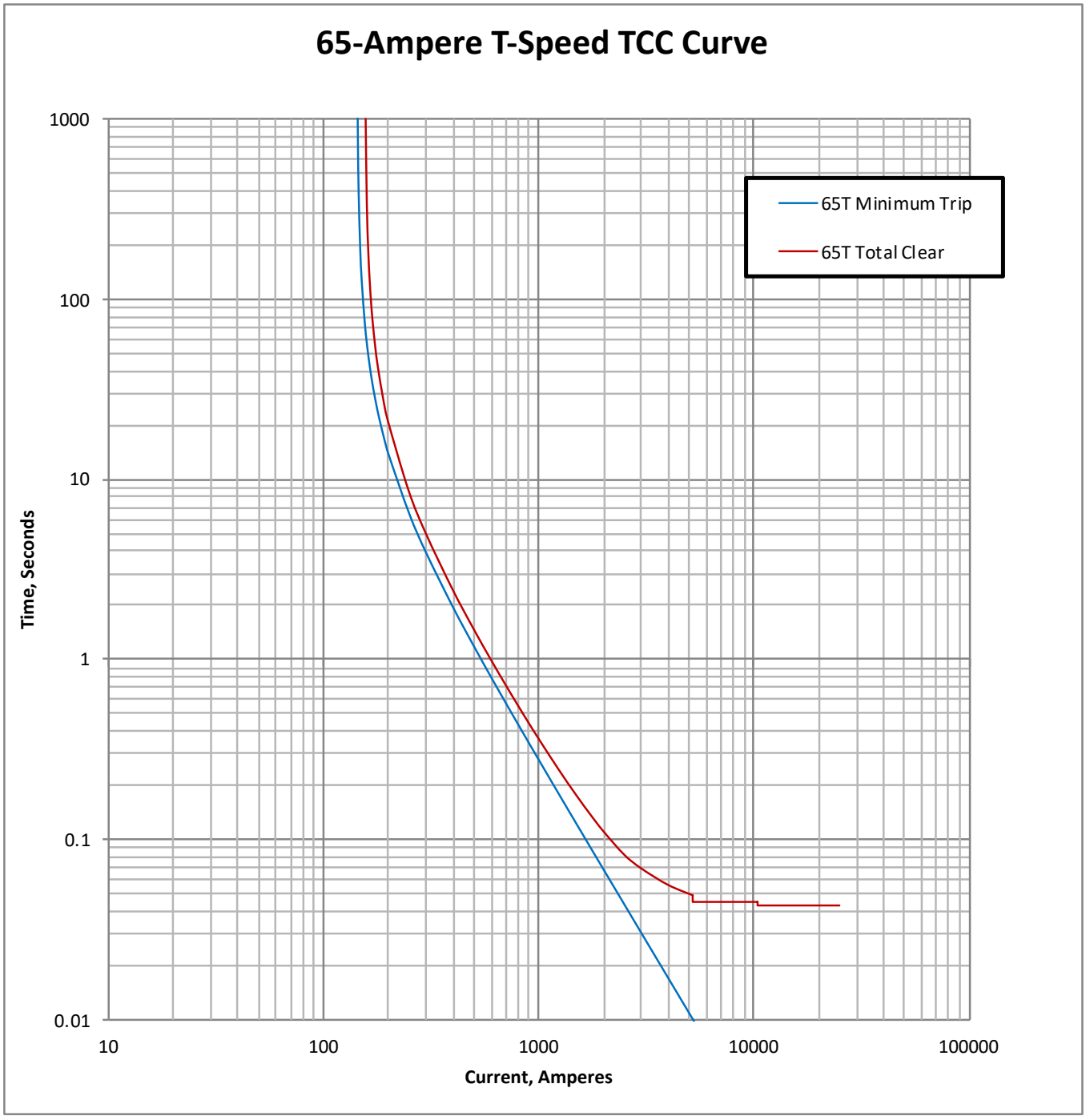
T Speed Curves



TCC Curve Parameter

	A	B	p	C	Min. Pickup (Amperes)
50T	13.31	0	2	1	113.3

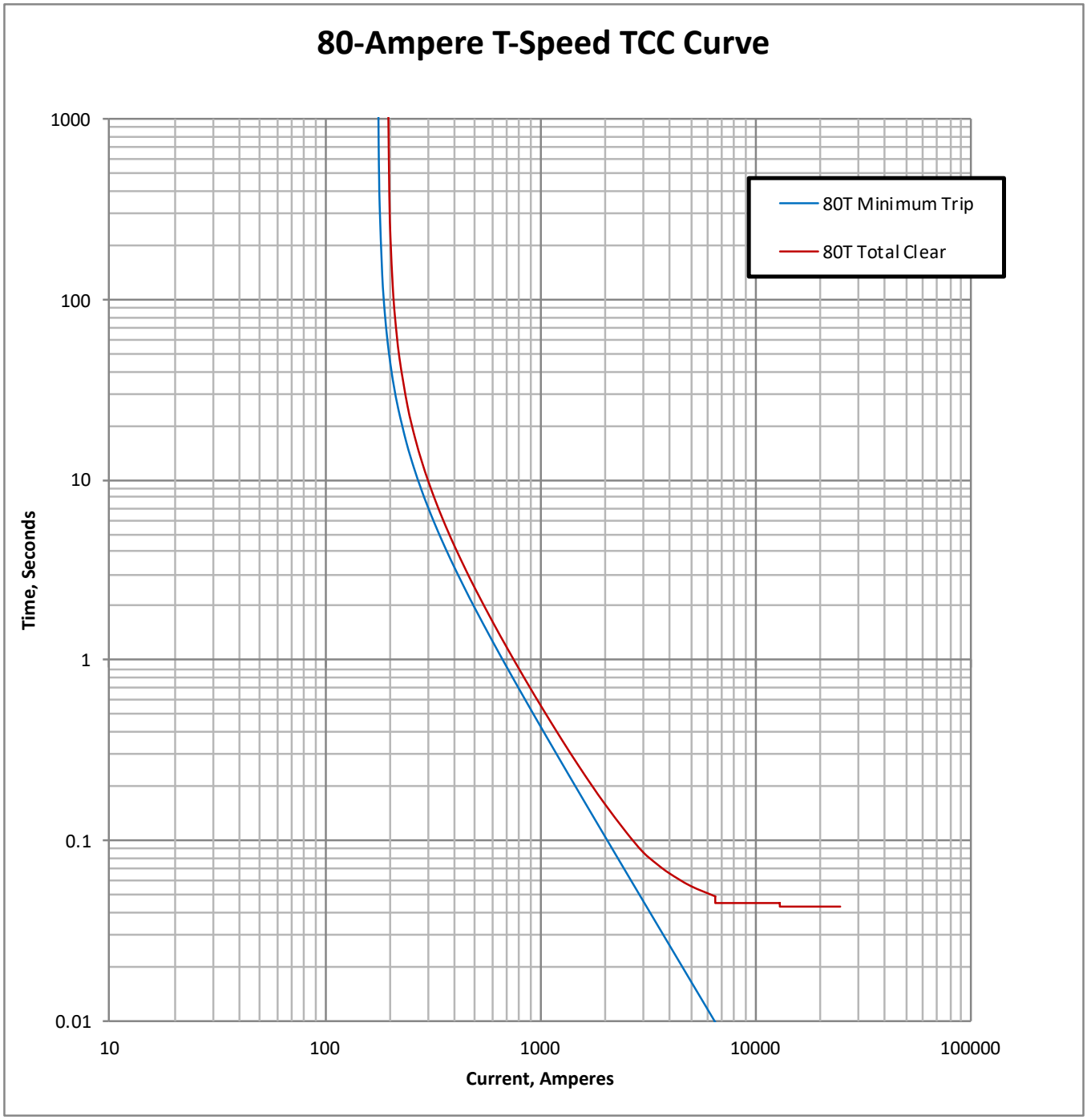
T Speed Curves



TCC Curve Parameter

	A	B	p	C	Min. Pickup (Amperes)
65T	13.3188	0	2	1	142.7

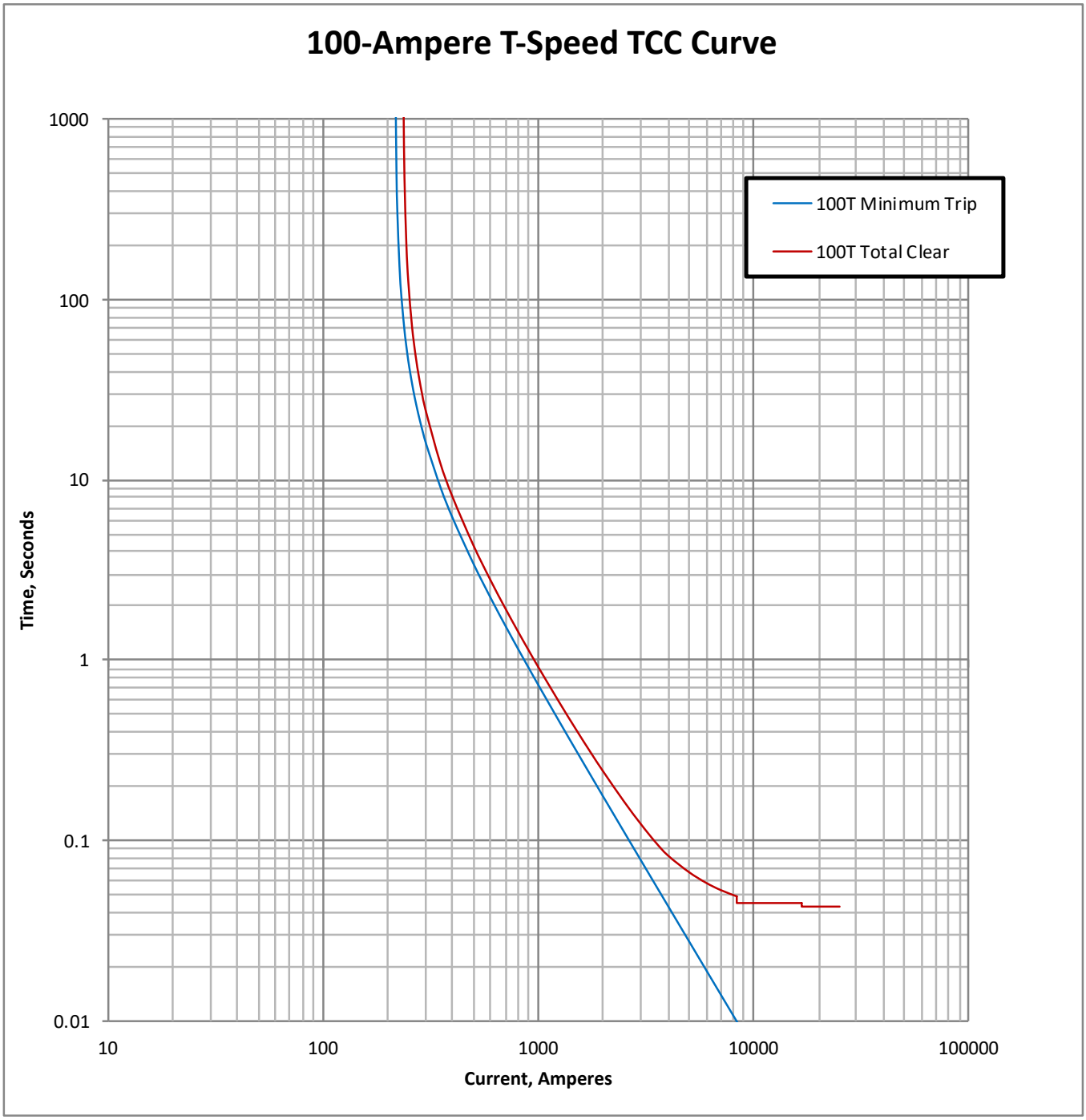
T Speed Curves



TCC Curve Parameter

	A	B	p	C	Min. Pickup (Amperes)
80T	13.7059	0	2	1	176.4

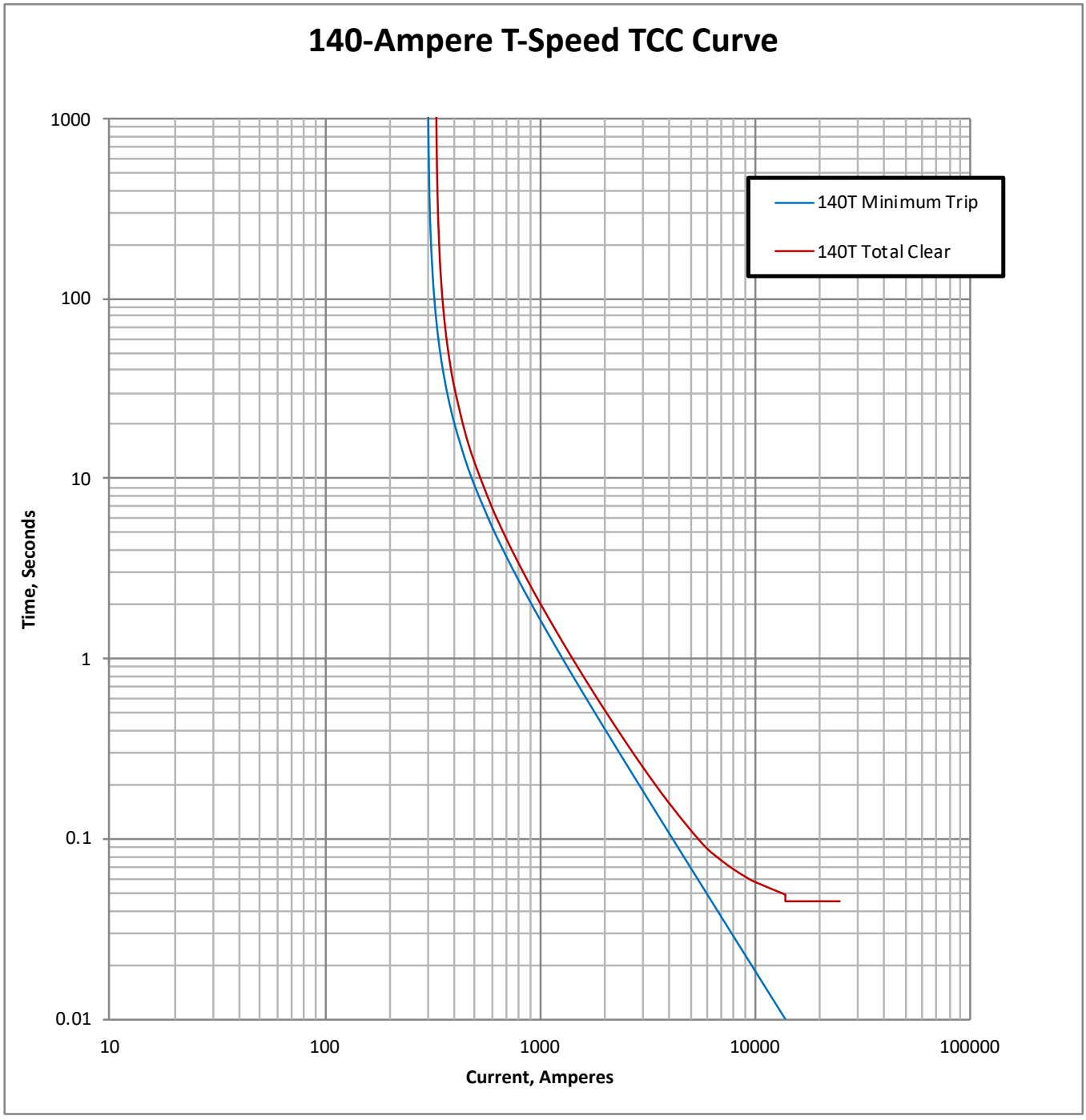
T Speed Curves



TCC Curve Parameter

	A	B	p	C	Min. Pickup (Amperes)
100T	15.0494	0	2	1	214.8

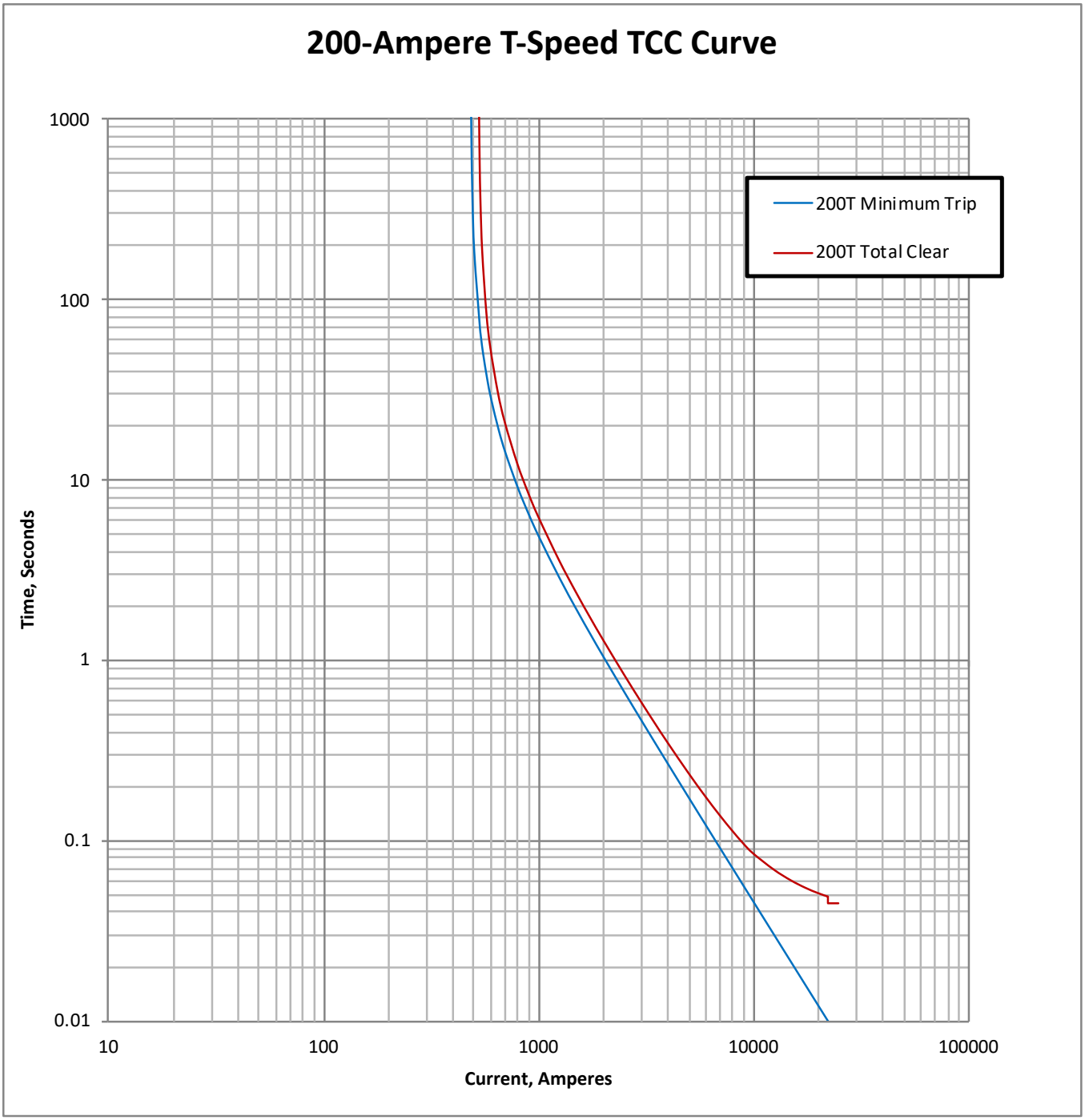
T Speed Curves



TCC Curve Parameter

	A	B	p	C	Min. Pickup (Amperes)
140T	14.75	0	2	1	300

T Speed Curves



TCC Curve Parameter

	A	B	p	C	Min. Pickup (Amperes)
200T	14.75	0	2	1	480

IEEE Curves

Parameters for IEEE curves generate the average tripping TCC curve. Tolerances for these curves are detailed in Table 3, and parameters for each TCC curve are shown below the corresponding graph.

Table 3. IEEE Curve Tolerances

Category	Setting	Current Above 30 A①	Current at or Below 30 A①
Time Overcurrent②	Minimum Trip Time	The lowest of average tripping curve: • +5% expressed in terms of current • The greatest of -10% expressed in terms of time -1 cycle or 8 ms	The lowest of average tripping curve: • +1.5 A expressed in terms of current● • The greatest of -10% expressed in terms of time -1 cycle or 8 ms
	Maximum Trip Time	The greatest of: • -5% expressed in terms of primary current • +10% expressed in terms of time +1 cycle	The greatest of: • -1.5 A expressed in terms of primary current● • +10% expressed in terms of time +1 cycle
	Timing starts if	Primary current -5% is equal or greater than the minimum trip current or low-current cutoff, if enabled	Primary current -1.5 A is equal or greater than the minimum trip current or low-current cutoff, if enabled●
	Timing does not start if	Primary current +5% is less than the minimum trip current or low-current cutoff, if enabled	Primary current +1.5 A is less than the minimum trip current or low-current cutoff, if enabled●
Definite Time③	Minimum Trip Time	The greatest of definite time setting -1.5 cycles or 8 ms	
	Maximum Trip Time	The greatest of definite time setting times 1.03 or +1.5 cycles	
	Timing starts if	Primary current -5% is equal to or greater than the definite time current setting	Primary current -1.5 A is equal to or greater than the definite time current setting●
	Timing does not start if	Primary current +5% is less than the definite time current setting	Primary current +1.5 A is less than the definite time current setting●

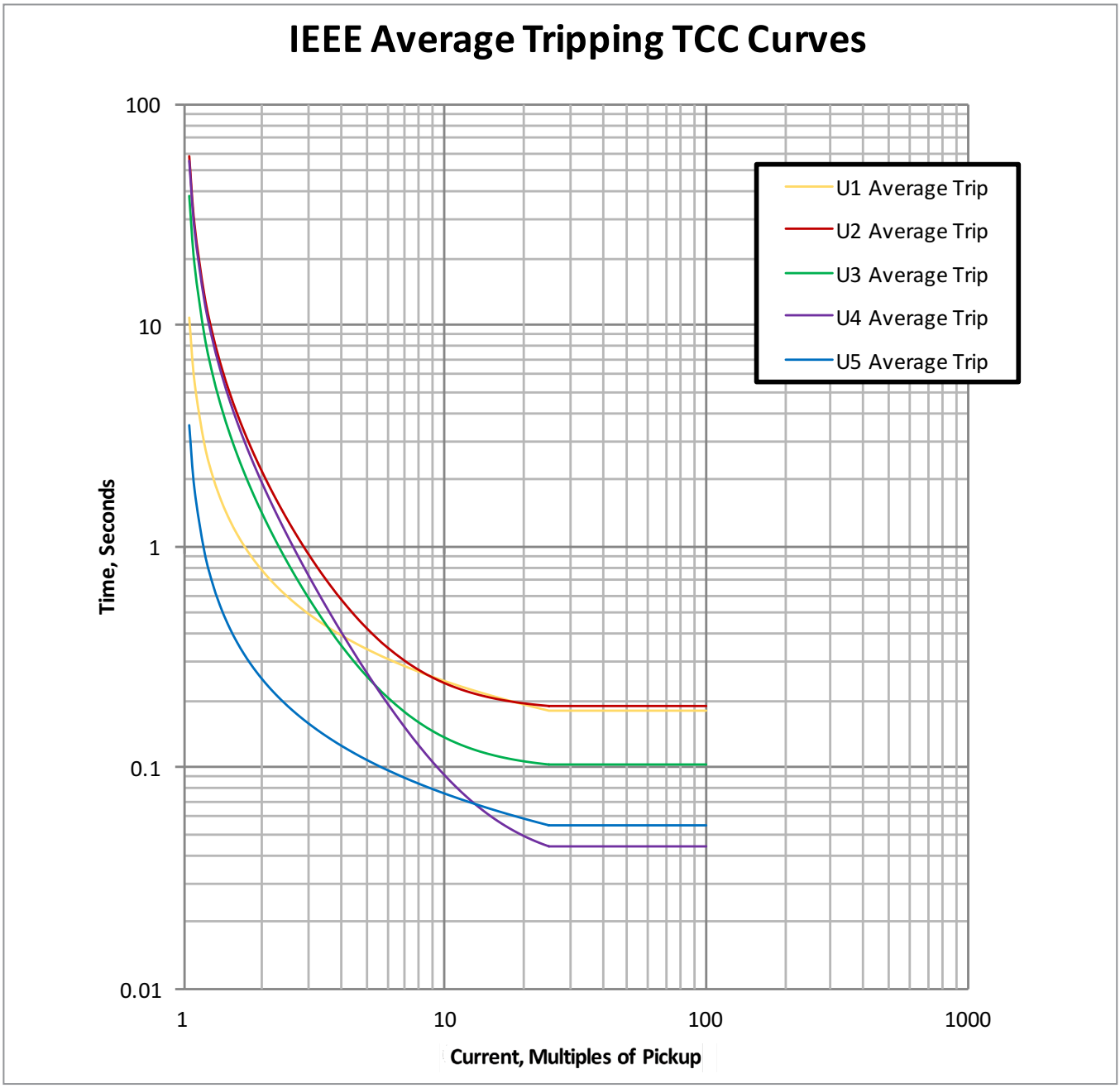
① With a CT ratio of 660:1, this value is 30 A. With a CT ratio of 1320:1, this value is 60 A.

② Tolerances apply for currents at or below 25 multiples of pickup, for faults not exceeding the maximum current rating. Above 25 multiples of pickup, the curves are approximated by a definite minimum time equal to the time on each curve at 25 multiples of pickup.

③ Tolerances also apply for Definite Time with Time Overcurrent disabled.

● With a CT ratio of 660:1, tolerance is +/- 1.5 A. With a CT ratio of 1320:1, tolerance is +/- 3 A.

IEEE Curves



TCC Curve Parameter

	A	B	p	C
IEEE Moderately Inverse (U1)	0.0104	0.0226	0.02	1
IEEE Inverse (U2)	5.95	0.18	2	1
IEEE Very Inverse (U3)	3.88	0.0963	2	1
IEEE Extremely Inverse (U4)	5.67	0.0352	2	1
IEEE Short-Time Inverse (U5)	0.00342	0.00262	0.02	1

IEC Curves

Parameters for IEC curves generate the average tripping TCC curve. Tolerances for these curves are detailed in Table 4, and parameters for each TCC curve are shown below the corresponding graph.

Table 4. IEC Curve Tolerances

Category	Setting	Current Above 30 A①	Current at or Below 30 A①
Time Overcurrent②	Minimum Trip Time	The lowest of average tripping curve: • +5% expressed in terms of current • The greatest of -10% expressed in terms of time -1 cycle or 8 ms	The lowest of average tripping curve: • +1.5 A expressed in terms of current● • -10% expressed in terms of time -1 cycle or 8 ms
	Maximum Trip Time	The greatest of: • -5% expressed in terms of primary current • +10% expressed in terms of time +1 cycle	The greatest of: • -1.5 A expressed in terms of primary current● • +10% expressed in terms of time +1 cycle
	Timing starts if	Primary current -5% is equal or greater than the minimum trip current or low-current cutoff, if enabled	Primary current -1.5 A is equal or greater than the minimum trip current or low-current cutoff, if enabled●
	Timing does not start if	Primary current +5% is less than the minimum trip current or low-current cutoff, if enabled	Primary current -1.5 A is less than the minimum trip current or low-current cutoff, if enabled●
Definite Time③	Minimum Trip Time	The greatest of definite time setting -1.5 cycles or 8 ms	
	Maximum Trip Time	The greatest of definite time setting times 1.03 or +1.5 cycles	
	Timing starts if	Primary current -5% is equal to or greater than the definite time current setting	Primary current +1.5 A is equal to or greater than the definite time current setting●
	Timing does not start if	Primary current +5% is less than the definite time current setting	Primary current +1.5 A is less than the definite time current setting●

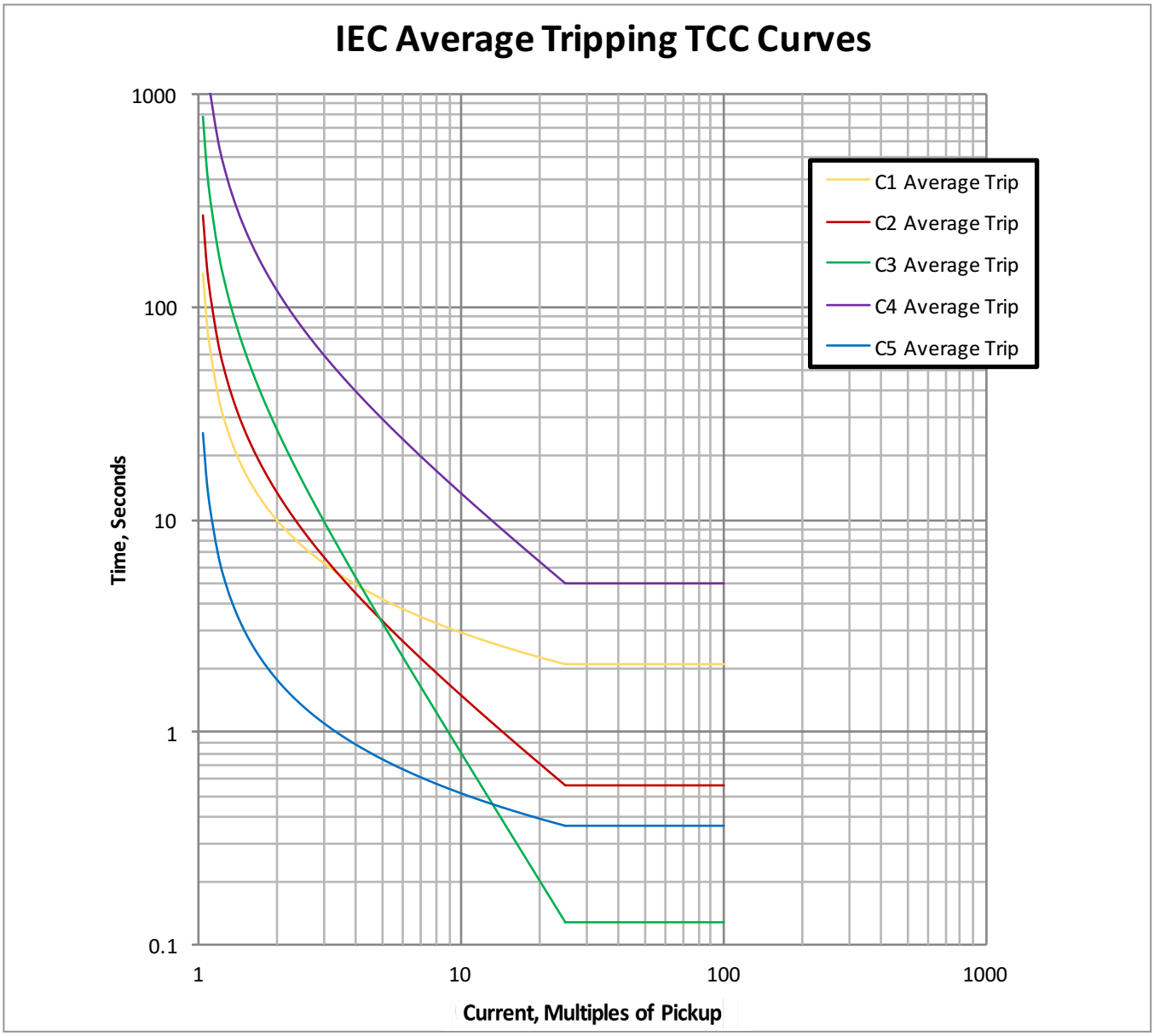
① With a CT ratio of 660:1, this value is 30 A. With a CT ratio of 1320:1, this value is 60 A.

② Tolerances apply for currents at or below 25 multiples of pickup, for faults not exceeding the maximum current rating. Above 25 multiples of pickup, the curves are approximated by a definite minimum time equal to the time on each curve at 25 multiples of pickup.

③ Tolerances also apply for Definite Time with Time Overcurrent disabled.

● With a CT ratio of 660:1, tolerance is +/-1.5 A. With a CT ratio of 1320:1, tolerance is +/-3 A.

IEC Curves



TCC Curve Parameter

	A	B	p	C
IEC Standard Inverse (C1)	0.14	0	0.02	1
IEC Very Inverse (C2)	13.5	0	1	1
IEC Extremely Inverse (C3)	80	0	2	1
IEC Long-Time Inverse (C4)	120	0	1	1
IEC Short-Time Inverse (C5)	0.05	0	0.04	1