Technical Data **TD012068EN**

Effective November 2019
Supersedes February 2019

Time current curves Power Defense MCCB Frame 6 PXR electronic trip units Standards: UL, CSA, IEC, CCC

Contents

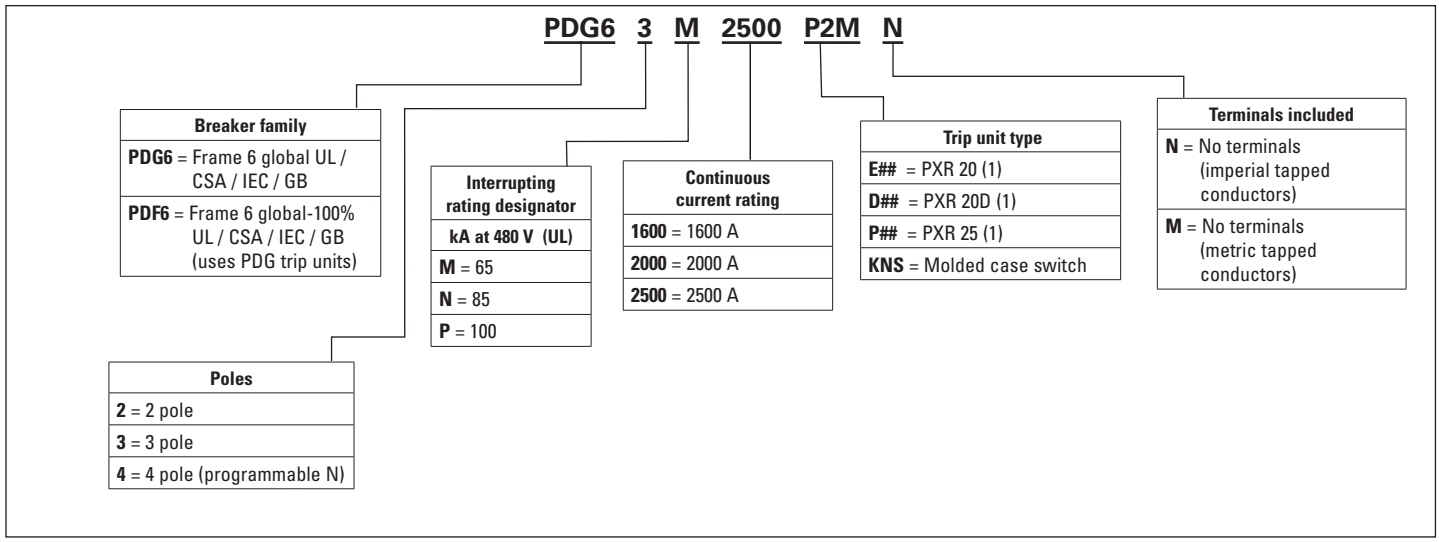
Powering Business Worldwide

Table 1. Revision notes

Note: Unless noted below, all curves remain unchanged from their prior revision.

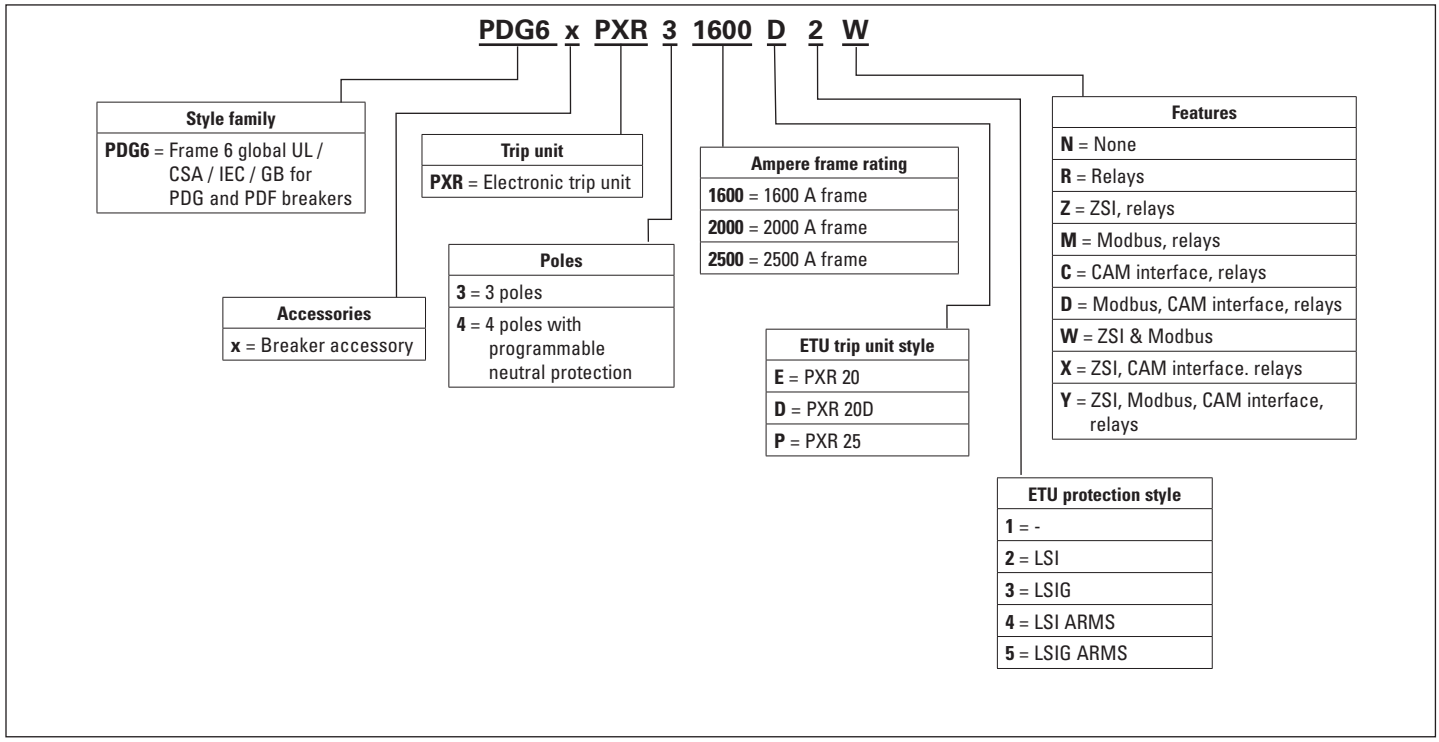
Revision	Curve number	Page	Date
1 Power Defense frame 6 initial release			12/14/2018
2 Edits to curve notes			02/06/2019
3 Short delay tolerances adjusted Ground delay tolerance adjusted			11/07/2019

Table 2. Breaker catalog number convention



Note: 1 See catalog for ## (protection type and available configured options).

Table 3. Electronic trip unit catalog number convention



Note: IEC standard breakers include the CE mark; GB standard breakers include the CCC mark.

This information is provided only as an aid to understand the catalog numbers.

It is not to be used to build catalog numbers for circuit breakers or trip units as all combinations may not be available.

Table 4. Symmetrical RMS interruption ratings I_{cu} (kA) for each breaker frame

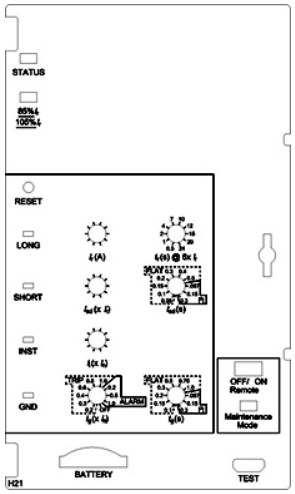
	Voltage / Frame	UL / CSA			IEC / CCC					
		240V	480V	600V	240V	415V	440V	480V	525V	690V
Globally Rated	PDG6xM	125	65	35	135	70	50	50	30	15
	PDG6xN	150	85	50	150	70	70	65	35	20
	PDG6xP	200	100	65	200	100	100	85	40	35
Globally Rated	PDF6xM	125	65	35	135	70	50	50	30	15
	PDF6xN	150	85	50	150	70	70	65	35	20
(UL 100%)	PDF6xP**	200	100	65	200	100	100	85	40	35

** 1600A and 2000A frames only.

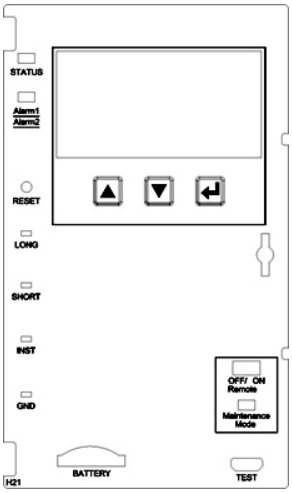
Table 5. Curve notes

1.	These curves apply for 50Hz and 60Hz applications
2.	The maximum voltage rating for the frame style is stated in Table 4
3.	These curves are comprehensive for Power Defense style circuit breakers including frame sizes, ratings and constructions stated.
4.	The total clearing times shown include the response time for the trip unit, the breaker opening and the interruption of the current. The bottom of the time band is the minimum commit to trip time.
5.	The end of the curve is determined by the application or the interrupting rating of the circuit breaker.
6.	All electronic trip units have an over temperature protection feature that will trip the breaker when the internal temperature of the ETU is over 105°C
7.	All time current data based on 3 phase testing.

Labels



PXR 20 - unit with LSIG protection and maintenance mode pictured.



PXR 25 and PXR 20D - unit with LSIG protection and maintenance mode pictured.

Figure 1. Power Defense frame 6 trip unit front labels.

Note: Trip unit drawings in Figure 1 are representative of the face plates provided. Values on the trip unit dials will change based upon the specific breaker and trip unit. Refer to the time current curve of the breaker or the PXR User Guide for the specific settings.

Curves

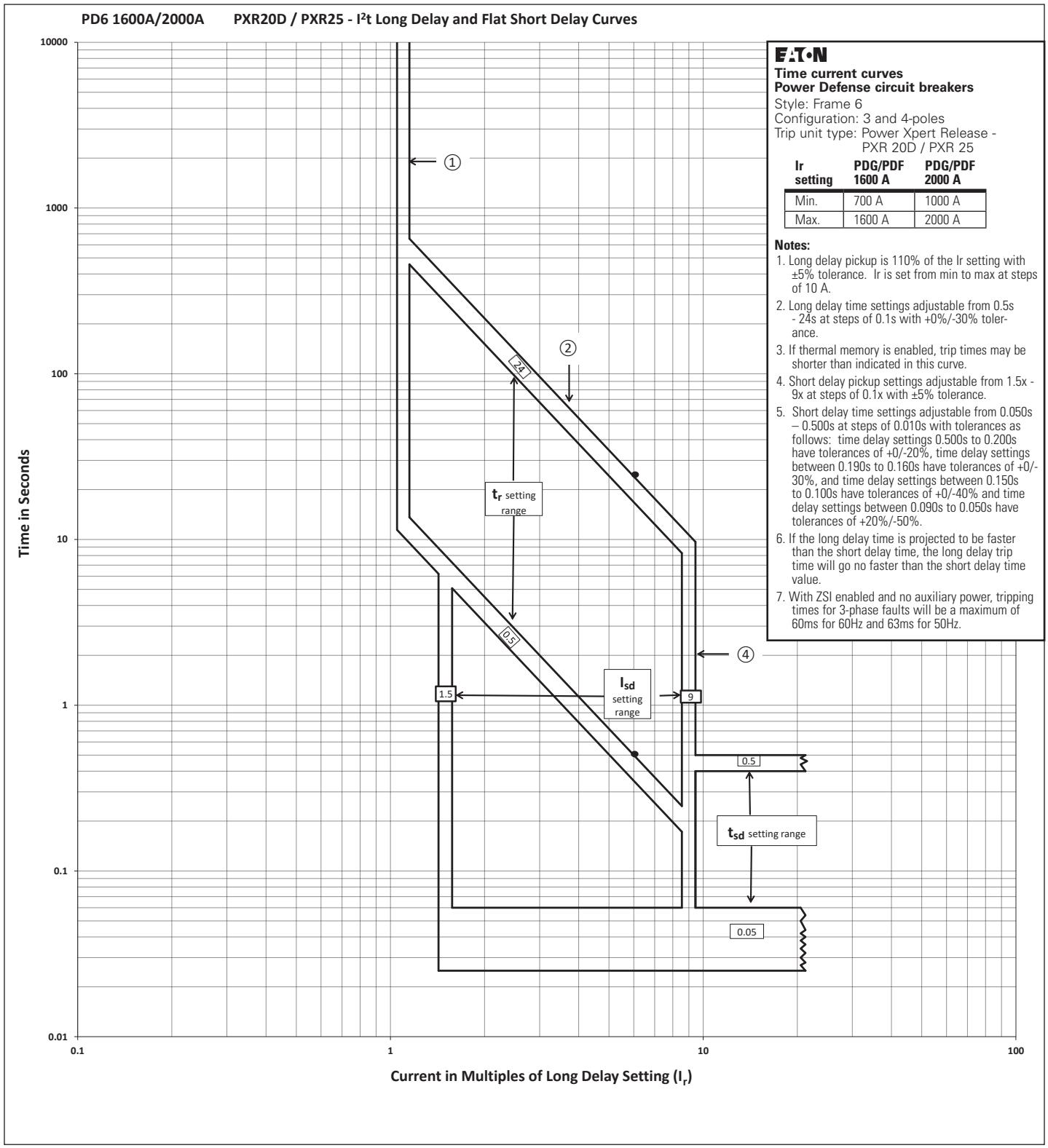


Figure 2. 1600A/2000A frame PXR 20D / PXR 25 - I²t long delay and flat short delay. **November 2019**

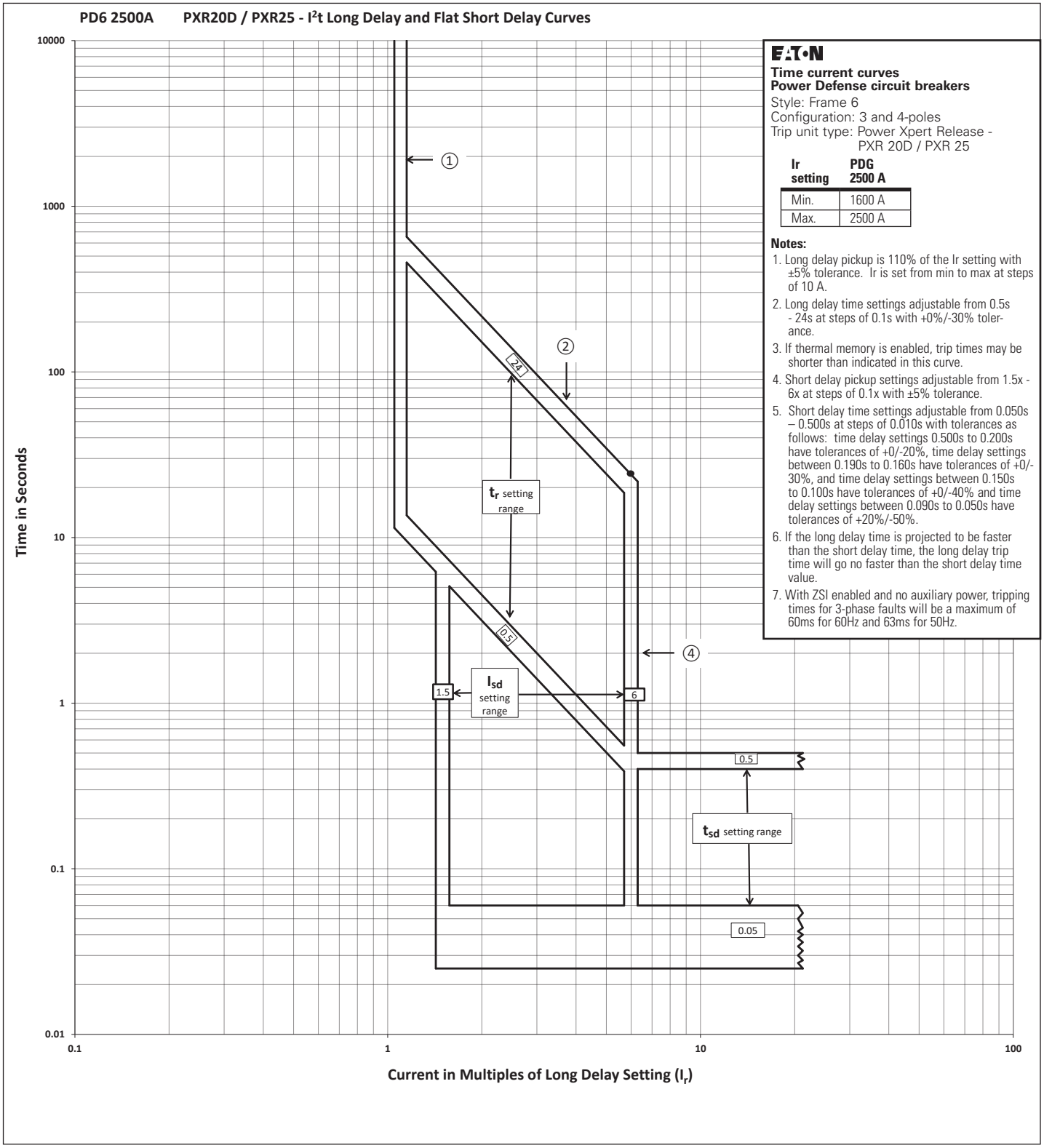


Figure 3. 2500A frame PXR 20D / PXR 25 - I²t long delay and flat short delay. **November 2019**

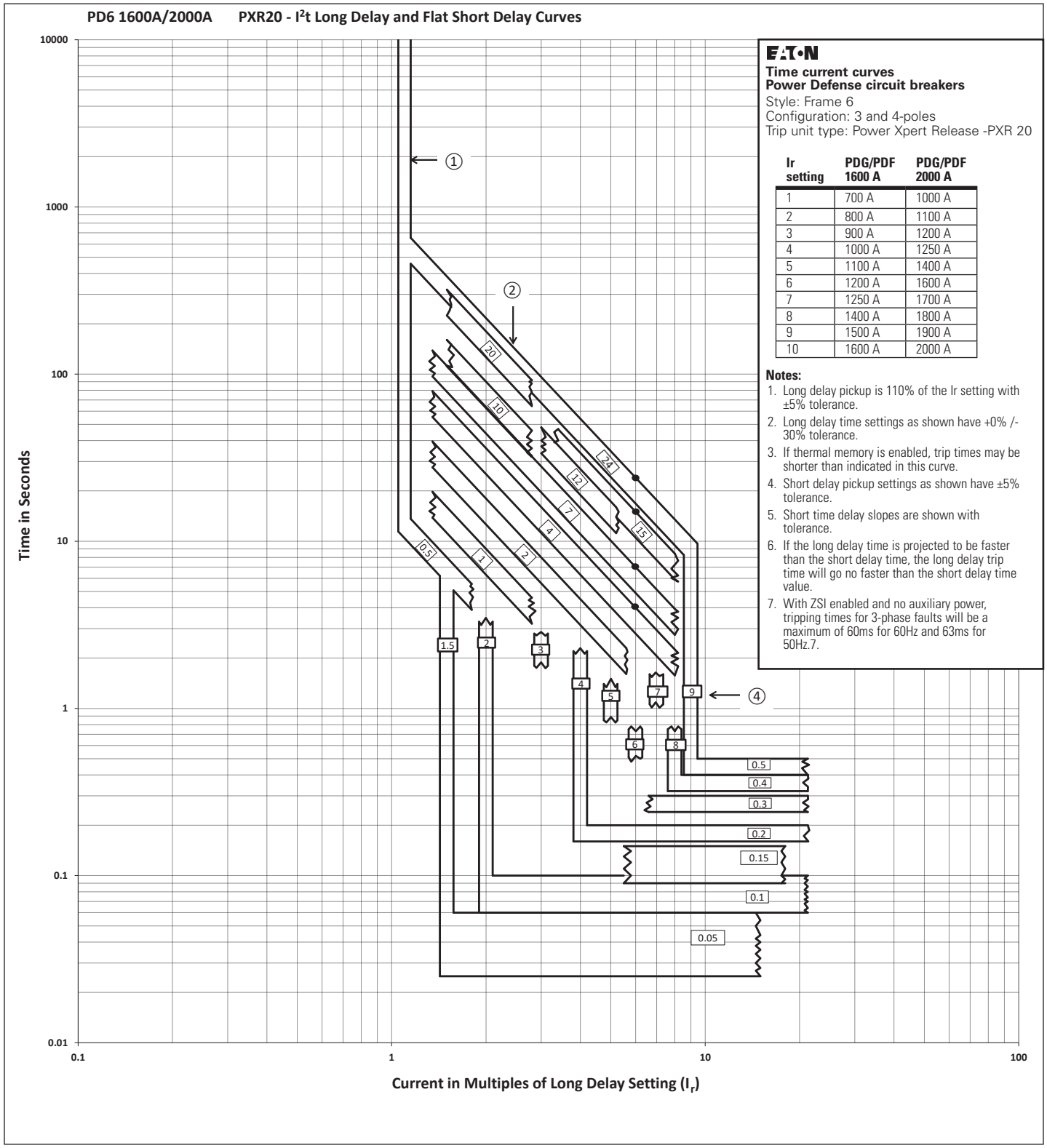


Figure 4. 1600A/2000A frame PXR 20 - I²t long delay and flat short delay.

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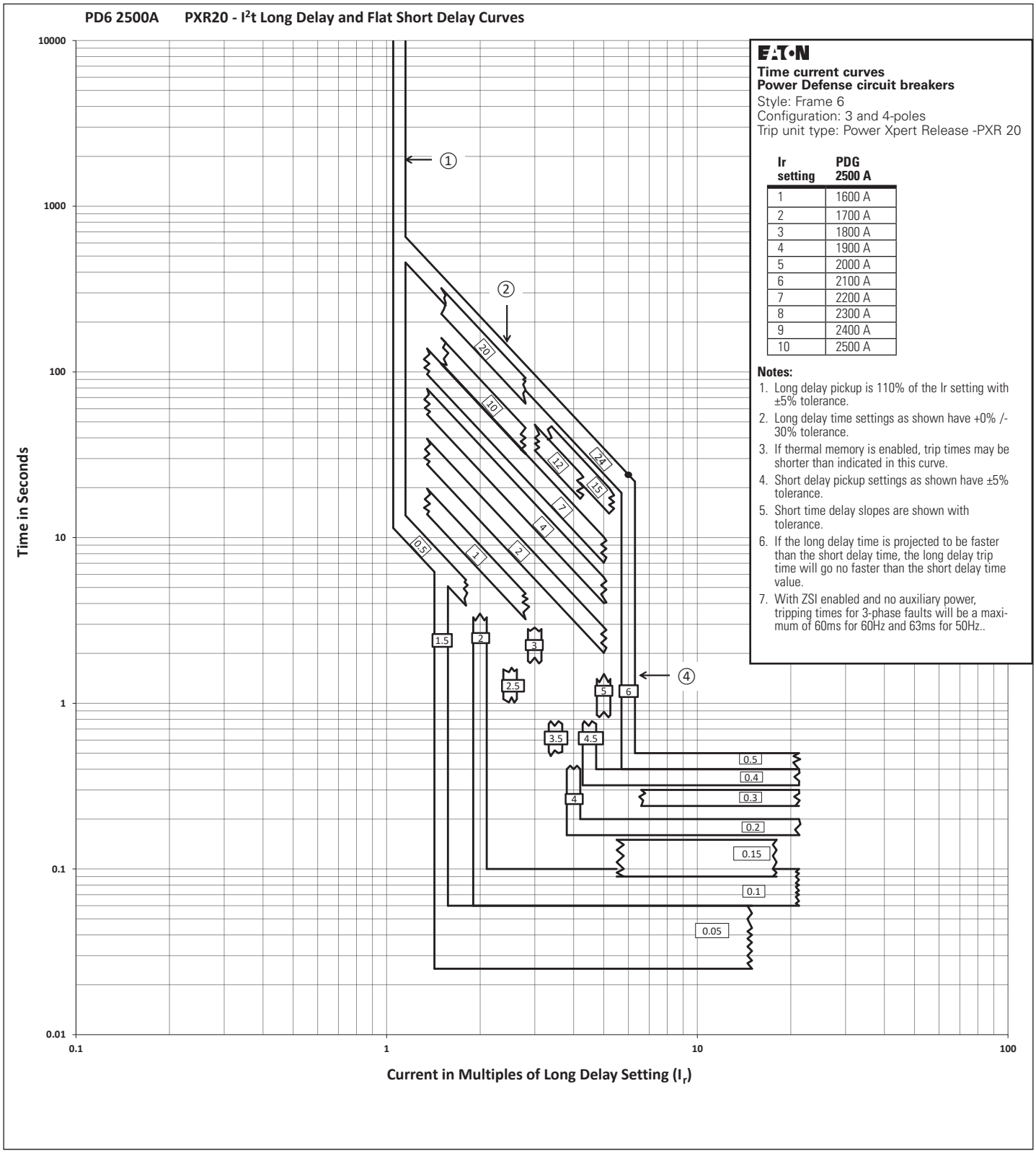

Figure 5. 2500A frame PXR 20 - I²t long delay and flat short delay.

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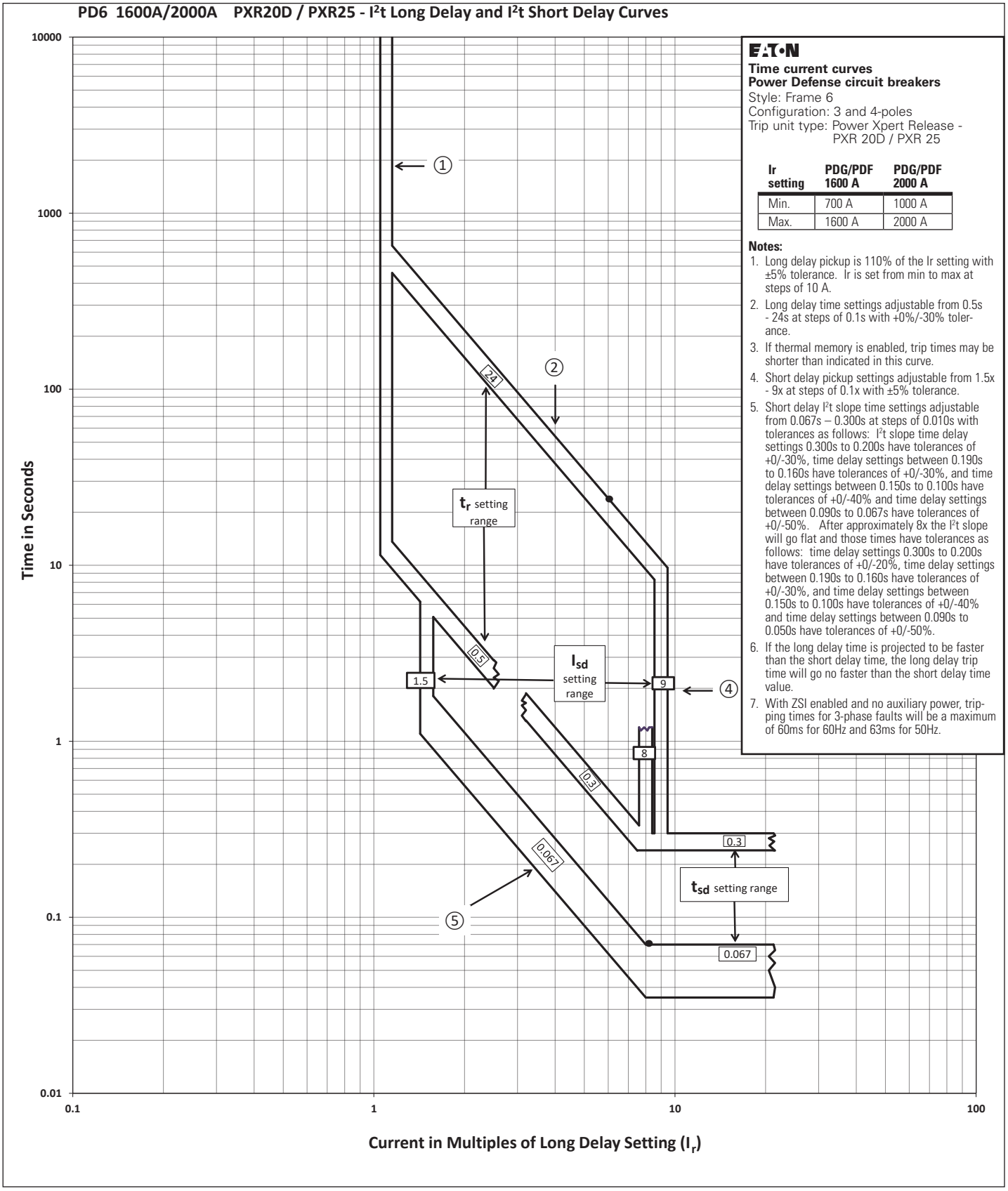


Figure 6. 1600A/2000A frame PXR 20D / PXR 25 - I²t long delay and I²t short delay. **November 2019**

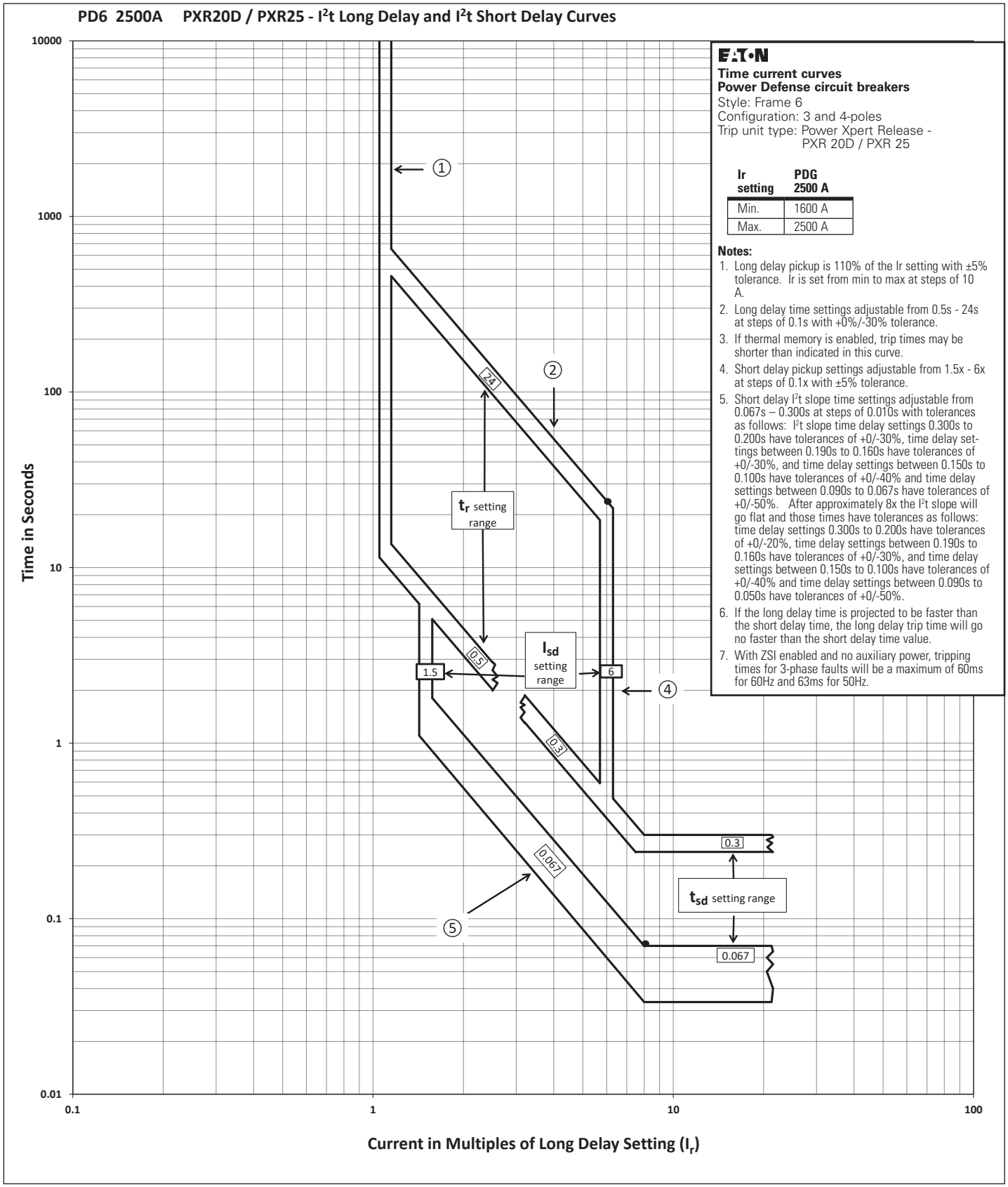
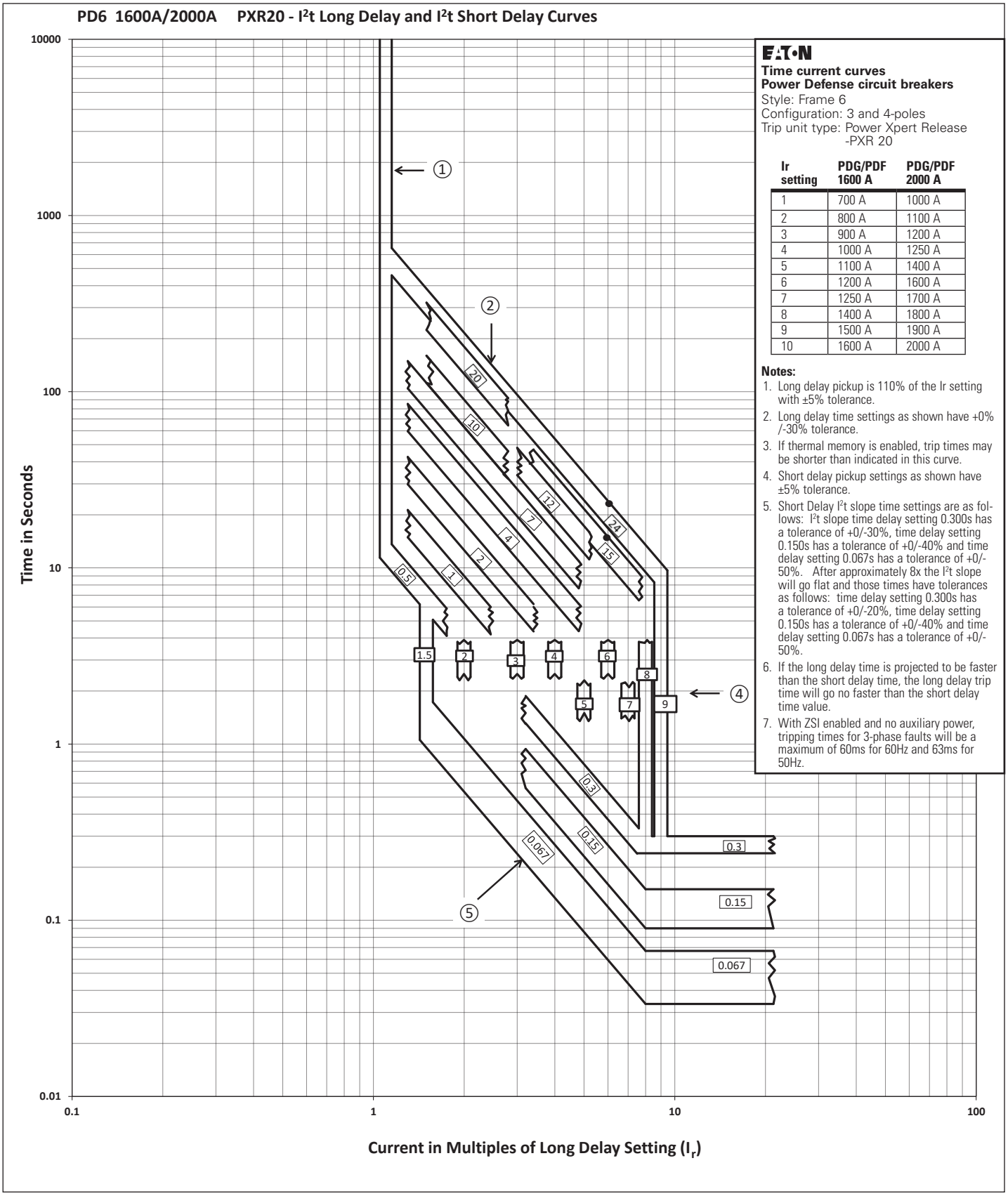


Figure 7. 2500A frame PXR 20D / PXR 25 - I²t long delay and I²t short delay. **November 2019**



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Time current curves
Power Defense circuit breakers
Style: Frame 6
Configuration: 3 and 4-poles
Trip unit type: Power Xpert Release -PXR 20

Ir setting	PDG/PDF 1600 A	PDG/PDF 2000 A
1	700 A	1000 A
2	800 A	1100 A
3	900 A	1200 A
4	1000 A	1250 A
5	1100 A	1400 A
6	1200 A	1600 A
7	1250 A	1700 A
8	1400 A	1800 A
9	1500 A	1900 A
10	1600 A	2000 A

Notes:

1. Long delay pickup is 110% of the Ir setting with ±5% tolerance.
2. Long delay time settings as shown have +0% /-30% tolerance.
3. If thermal memory is enabled, trip times may be shorter than indicated in this curve.
4. Short delay pickup settings as shown have ±5% tolerance.
5. Short Delay I^2t slope time settings are as follows: I^2t slope time delay setting 0.300s has a tolerance of +0/-30%, time delay setting 0.150s has a tolerance of +0/-40% and time delay setting 0.067s has a tolerance of +0/-50%. After approximately 8x the I^2t slope will go flat and those times have tolerances as follows: time delay setting 0.300s has a tolerance of +0/-20%, time delay setting 0.150s has a tolerance of +0/-40% and time delay setting 0.067s has a tolerance of +0/-50%.
6. If the long delay time is projected to be faster than the short delay time, the long delay trip time will go no faster than the short delay time value.
7. With ZSI enabled and no auxiliary power, tripping times for 3-phase faults will be a maximum of 60ms for 60Hz and 63ms for 50Hz.

Figure 8. 1600A/2000A frame PXR 20 I^2t long delay and I^2t short delay. **November 2019**

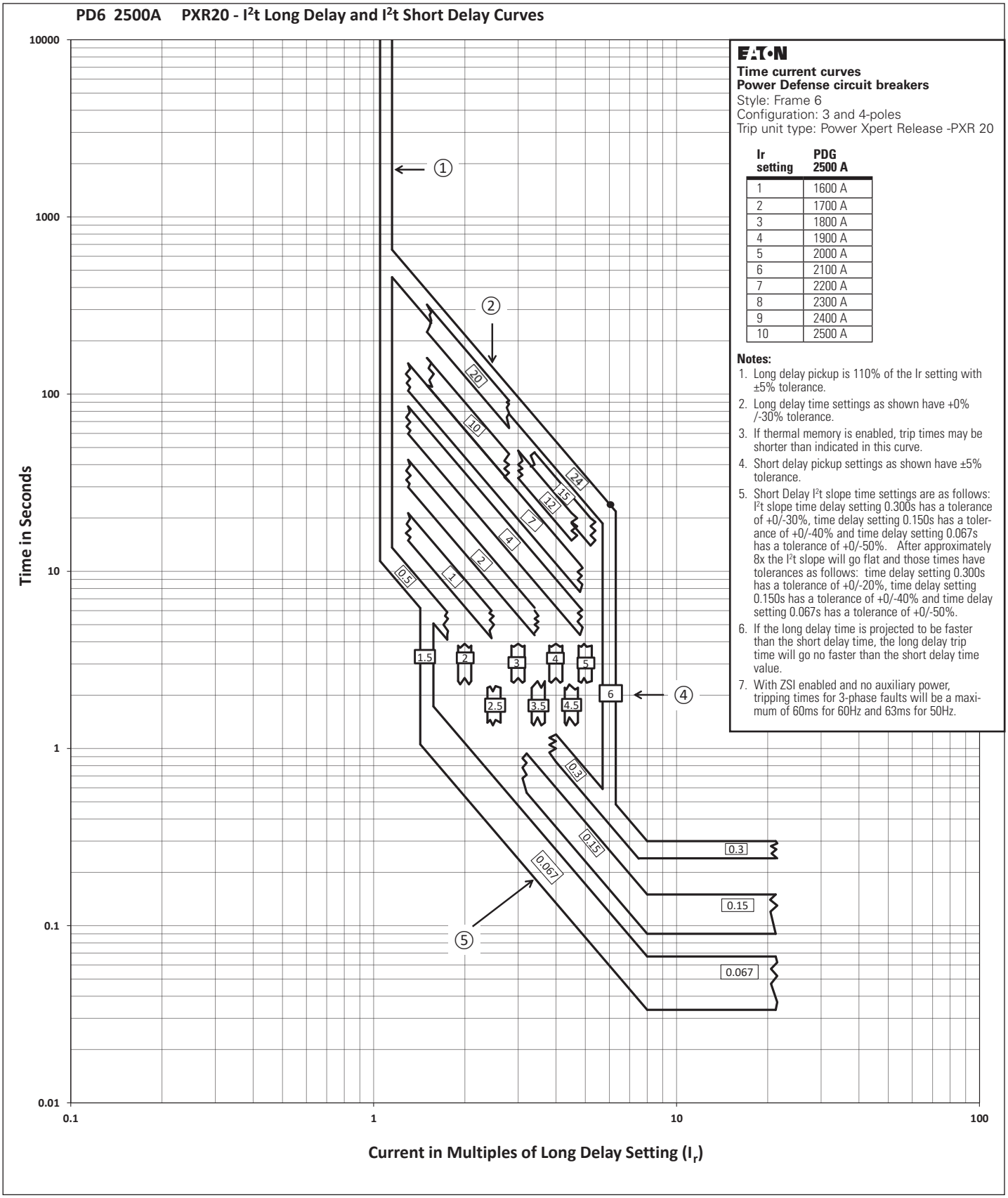

Figure 9. 2500A frame PXR 20 I²t long delay and I²t short delay. **November 2019**

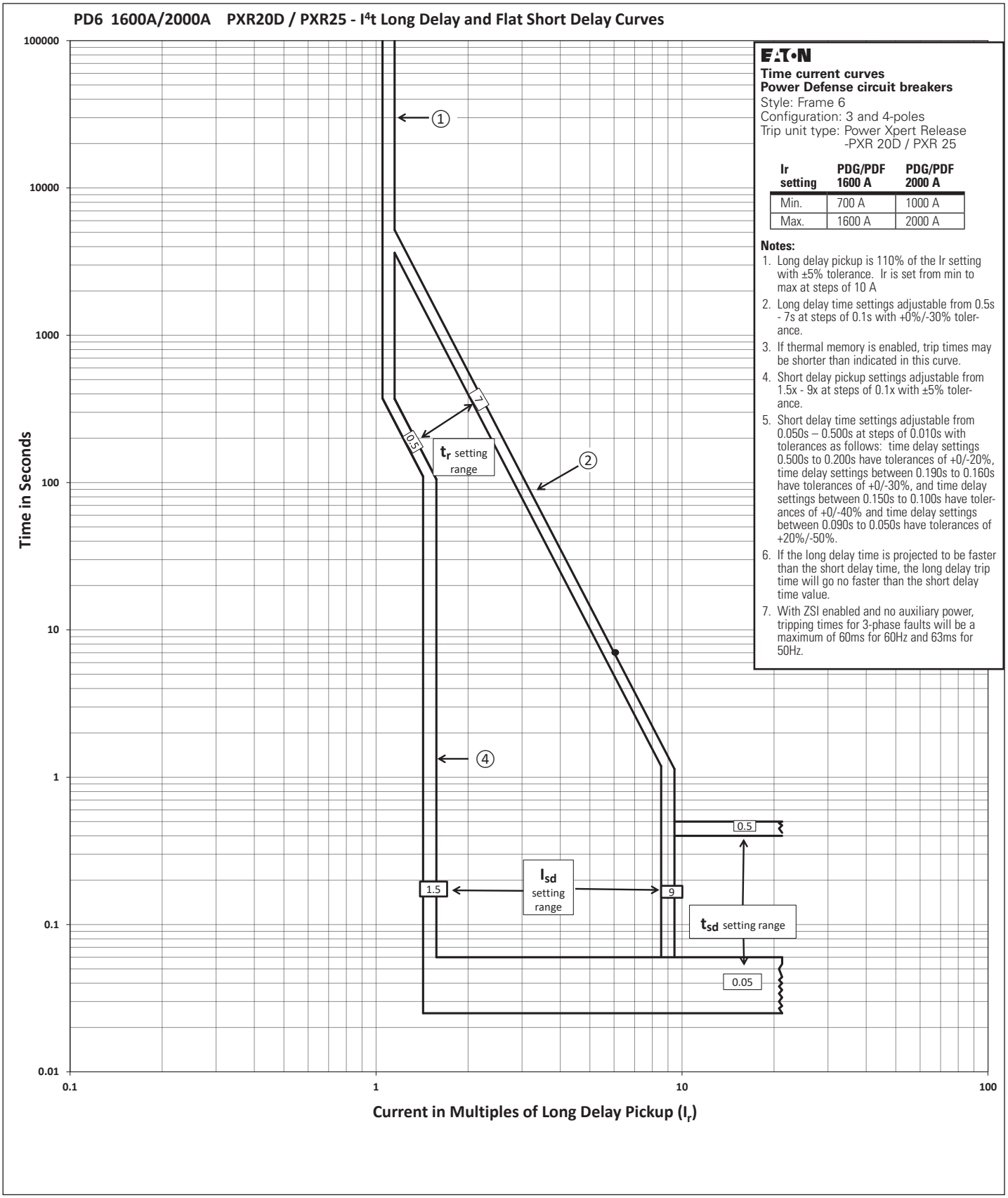

Figure 10. 1600A/2000A frame PXR 20D / PXR 25 - I4t long delay and flat short delay. **November 2019**

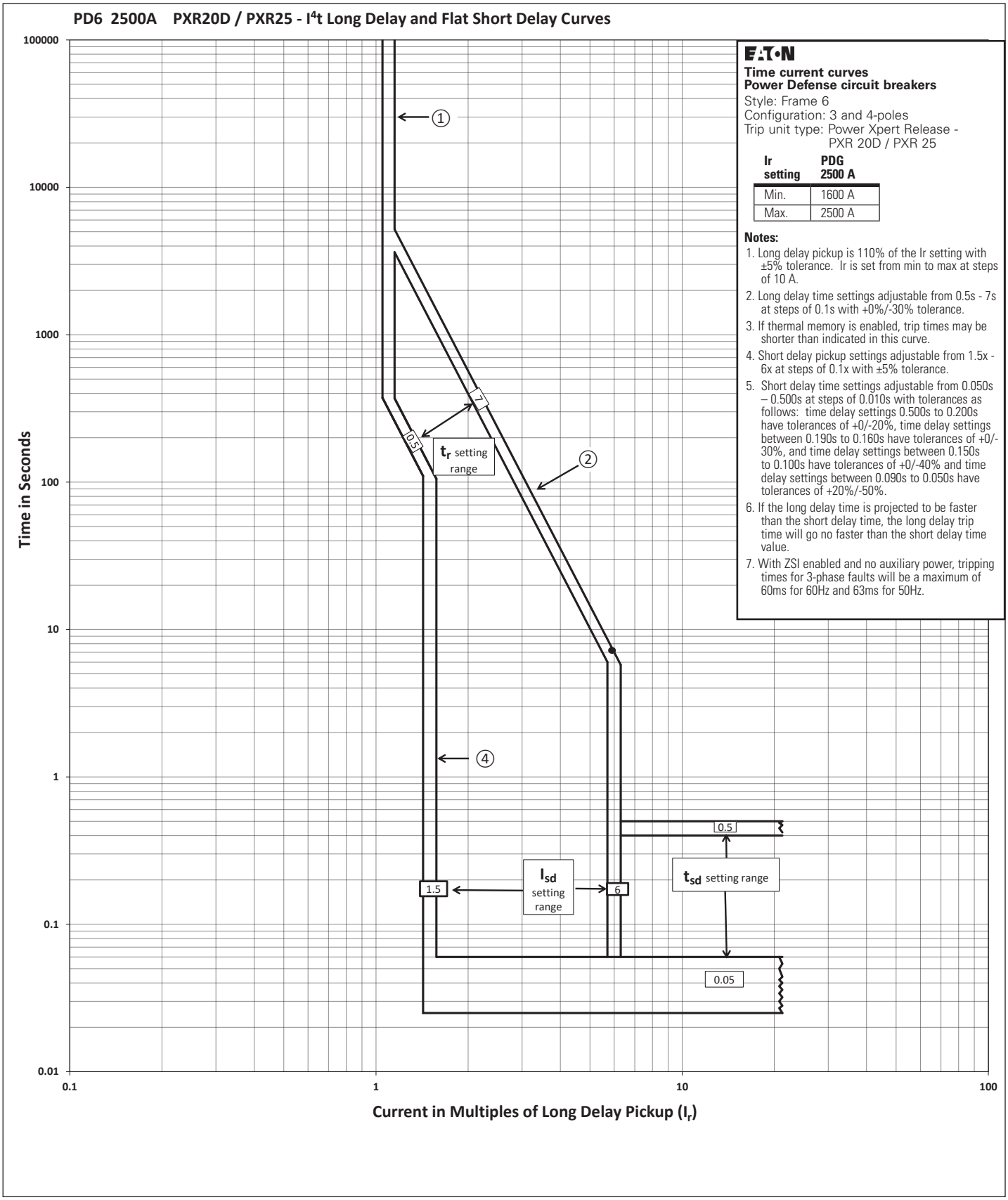

Figure 11. 2500A frame PXR 20D / PXR 25 - I4t long delay and flat short delay.

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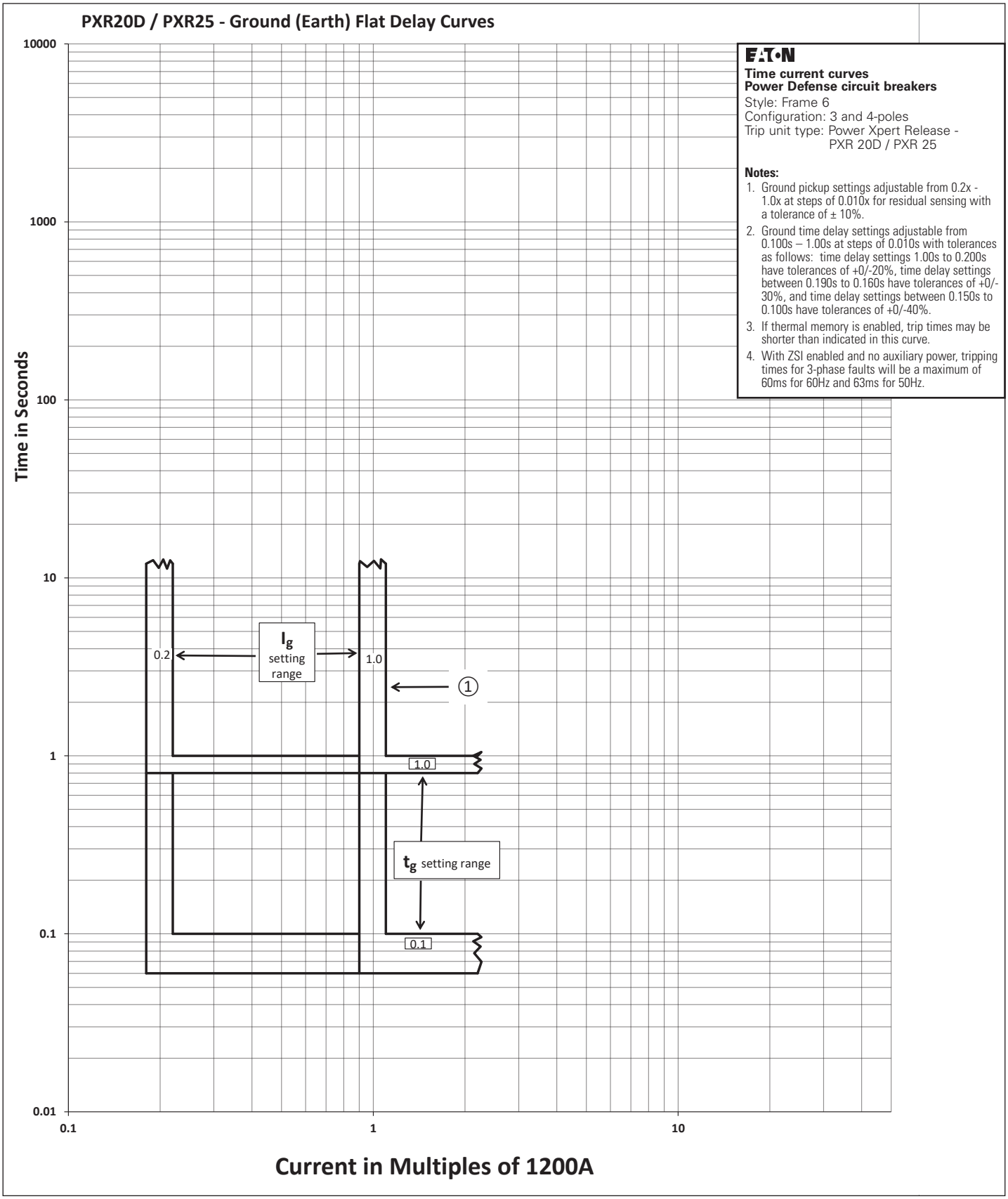

Figure 12. PXR 20D / PXR 25 ground (earth) flat delay.

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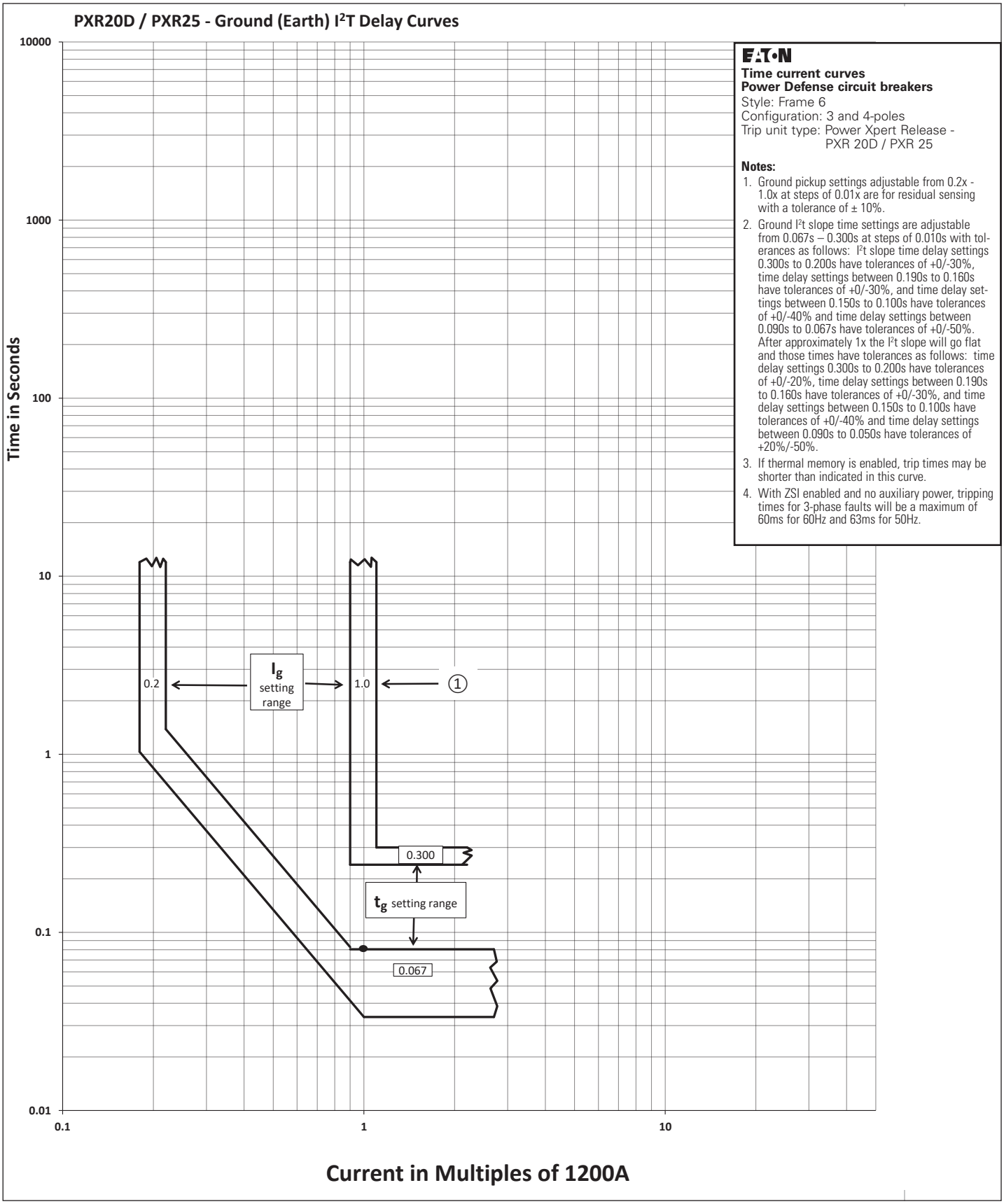

Figure 13. PXR 20D / PXR 25 - ground (earth) I²t delay.

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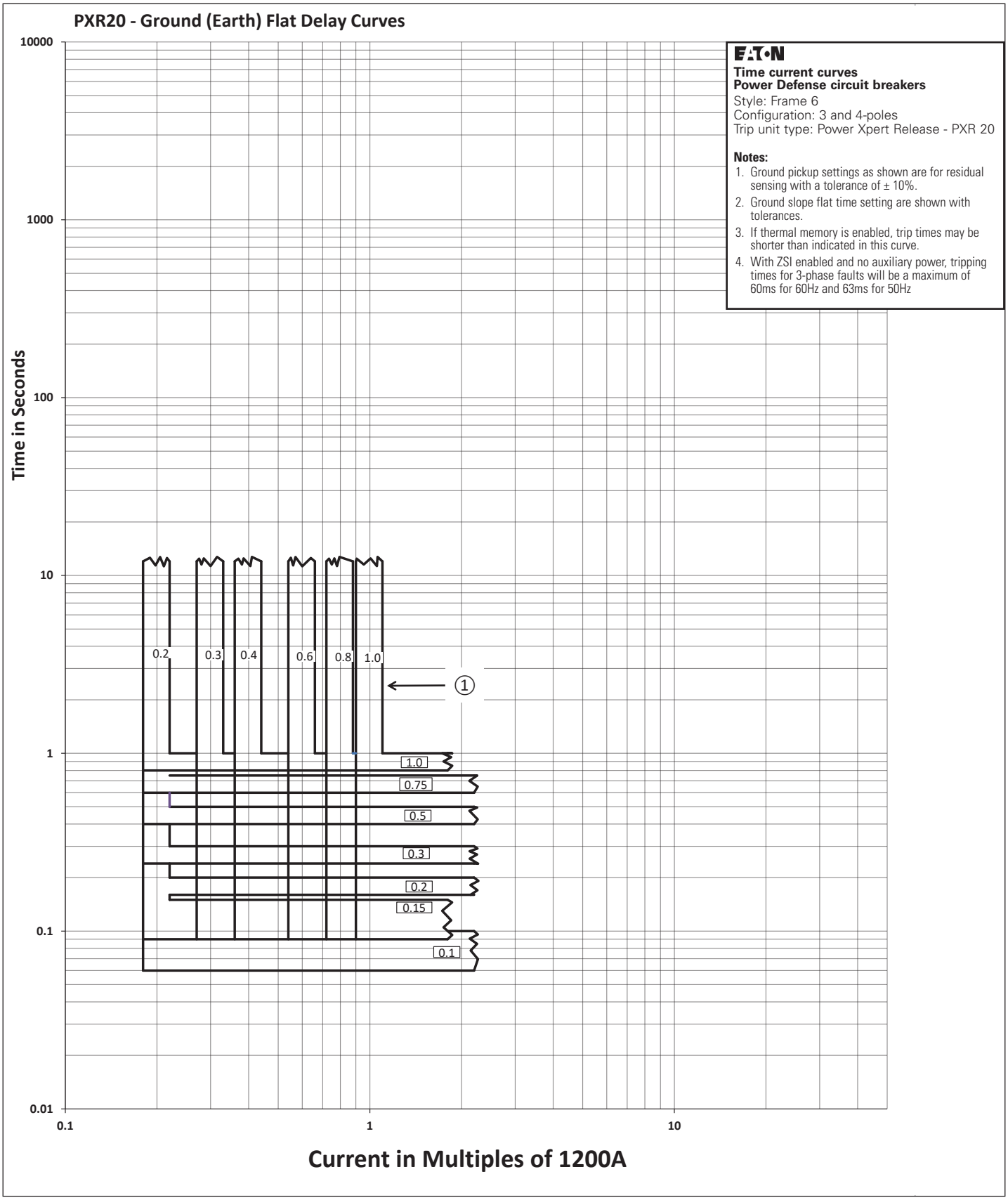

Figure 14. PXR 20 - ground (earth) flat delay.

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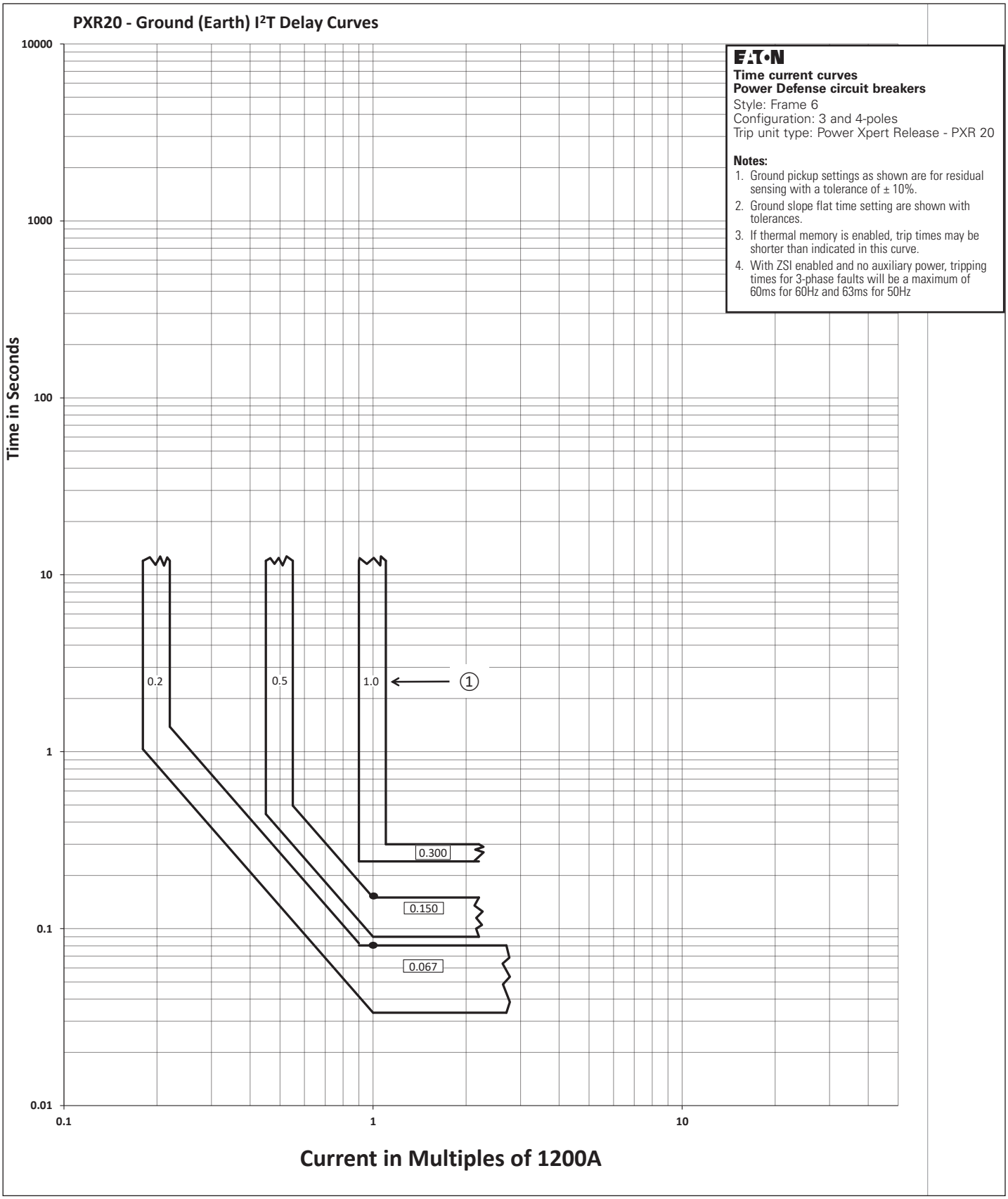

Figure 15. PXR 20 - ground (earth) I²t delay.

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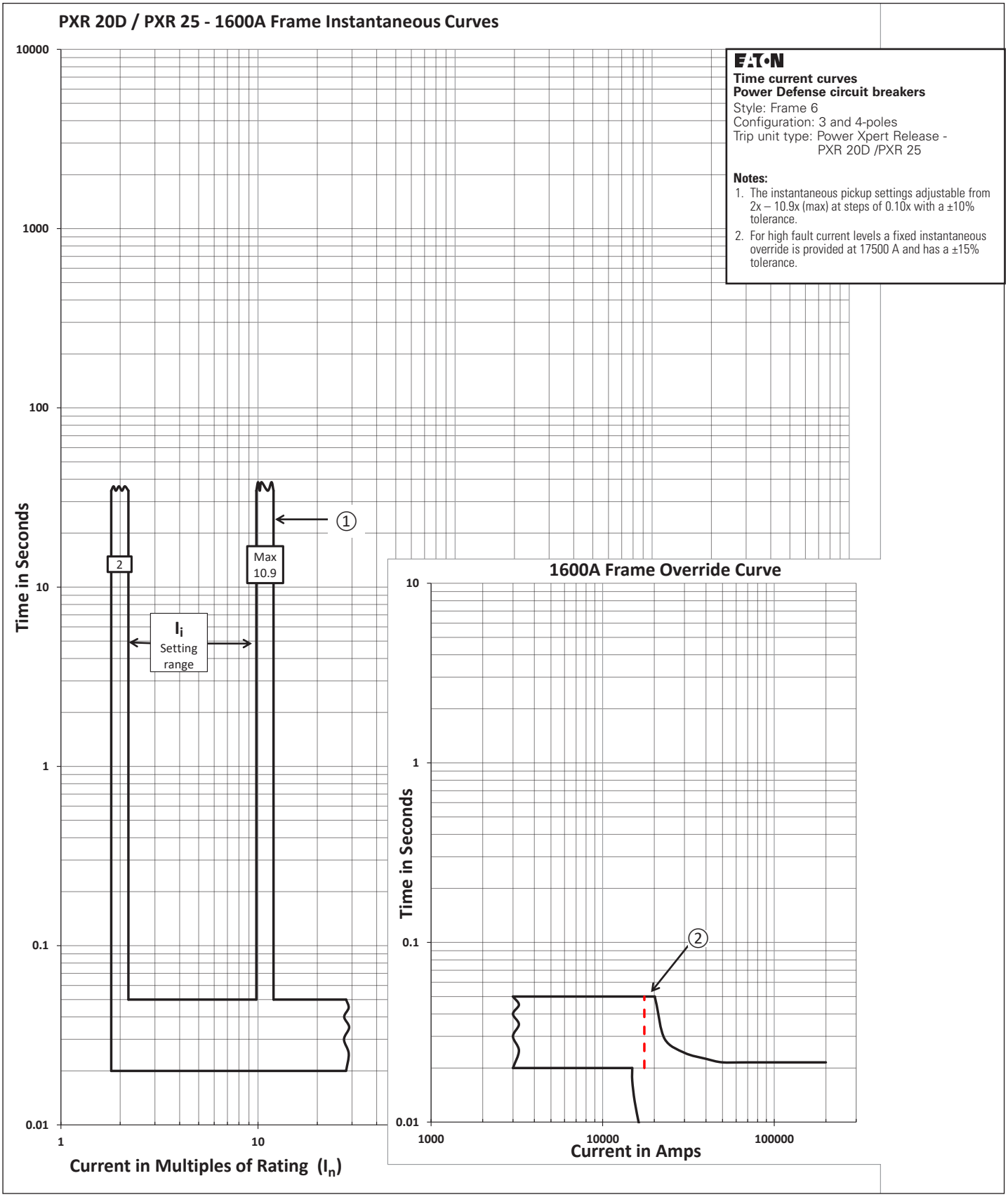

Figure 16. 1600A frame PXR 20D / PXR 25 - instantaneous and override.

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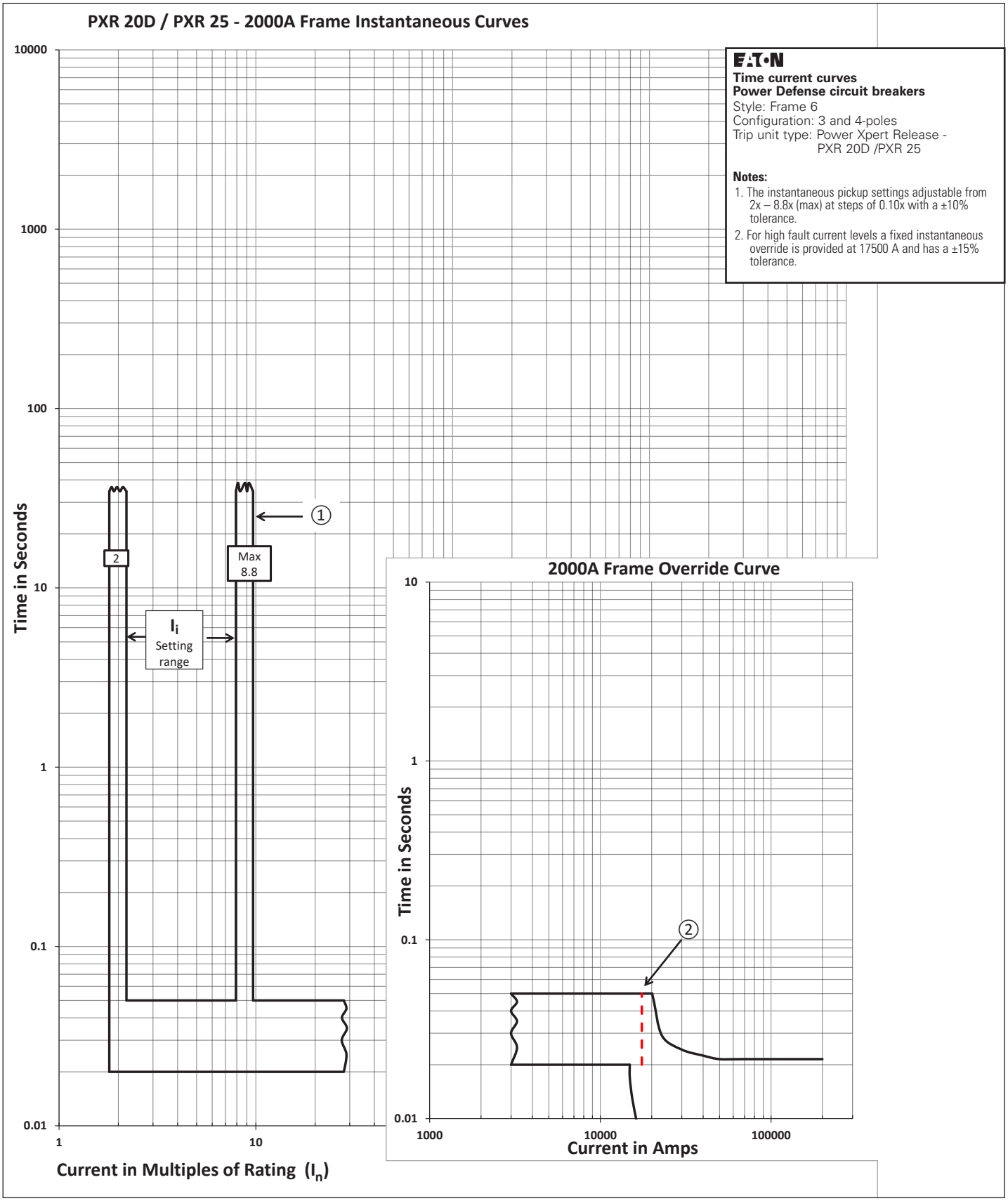

Figure 17. 2000A frame PXR 20D / PXR 25 - instantaneous and override.

November 2019

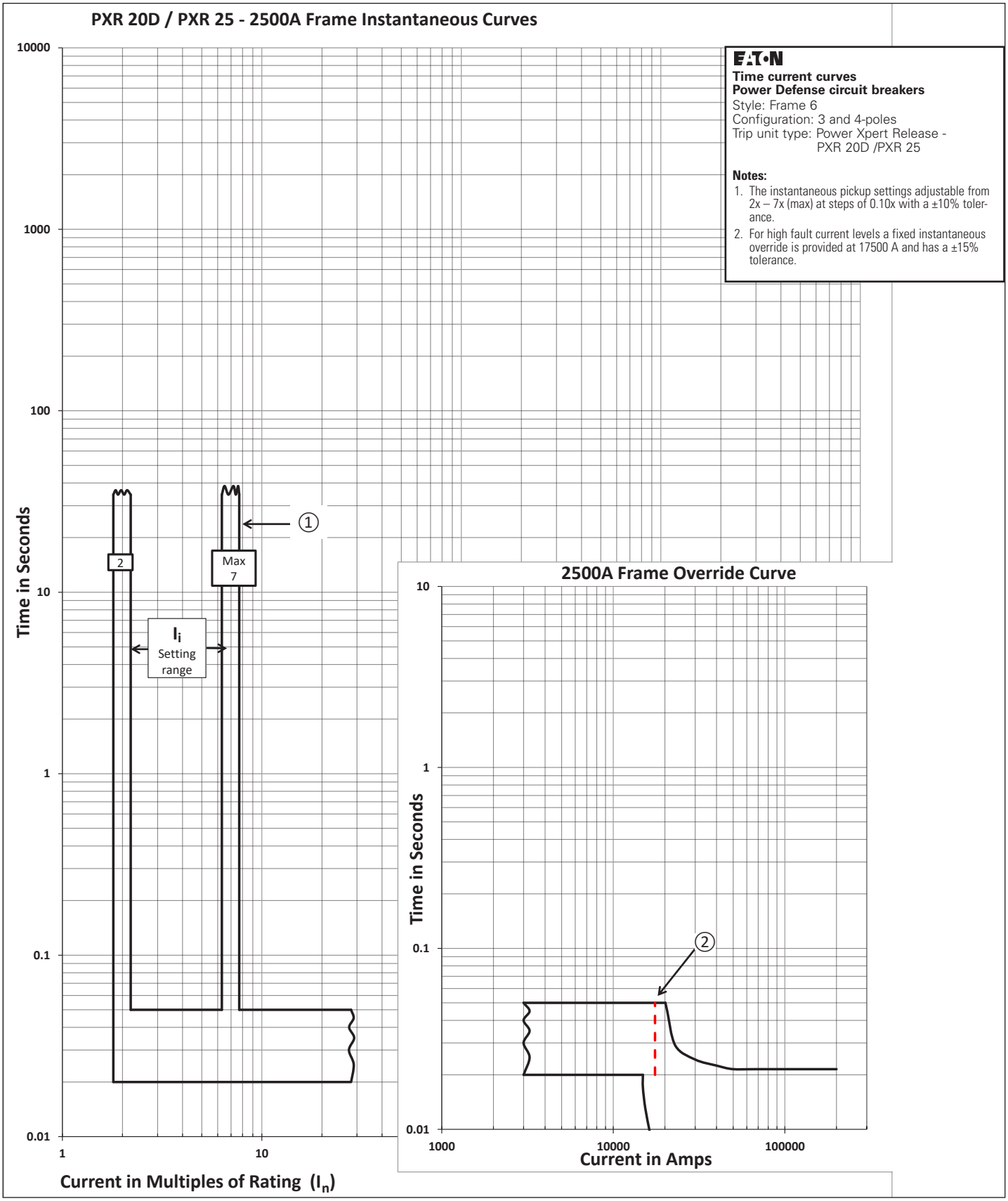

Figure 18. 2500A frame PXR 20D / PXR 25 - instantaneous and override.

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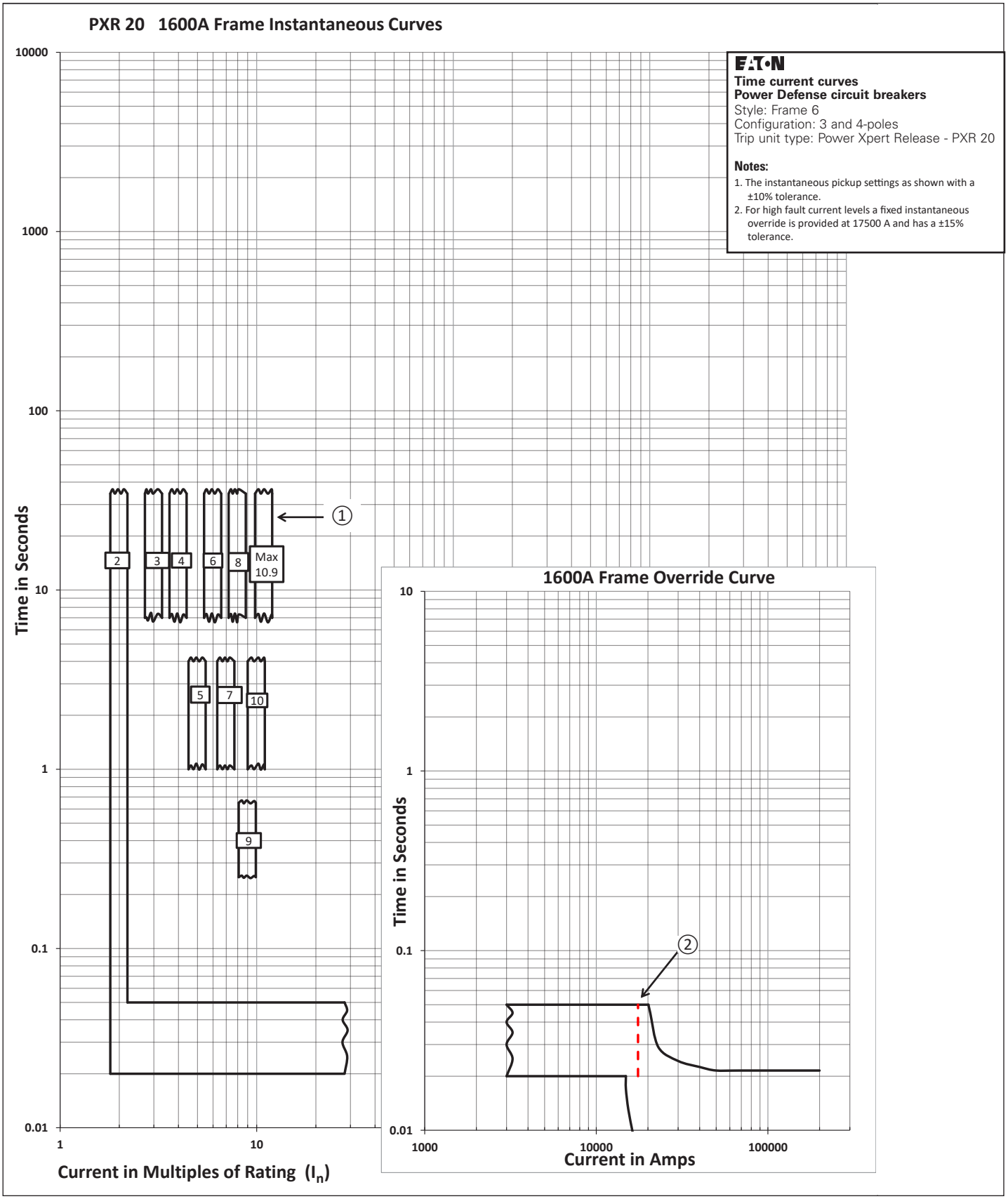

Figure 19. 1600A frame PXR 20 - instantaneous and override.

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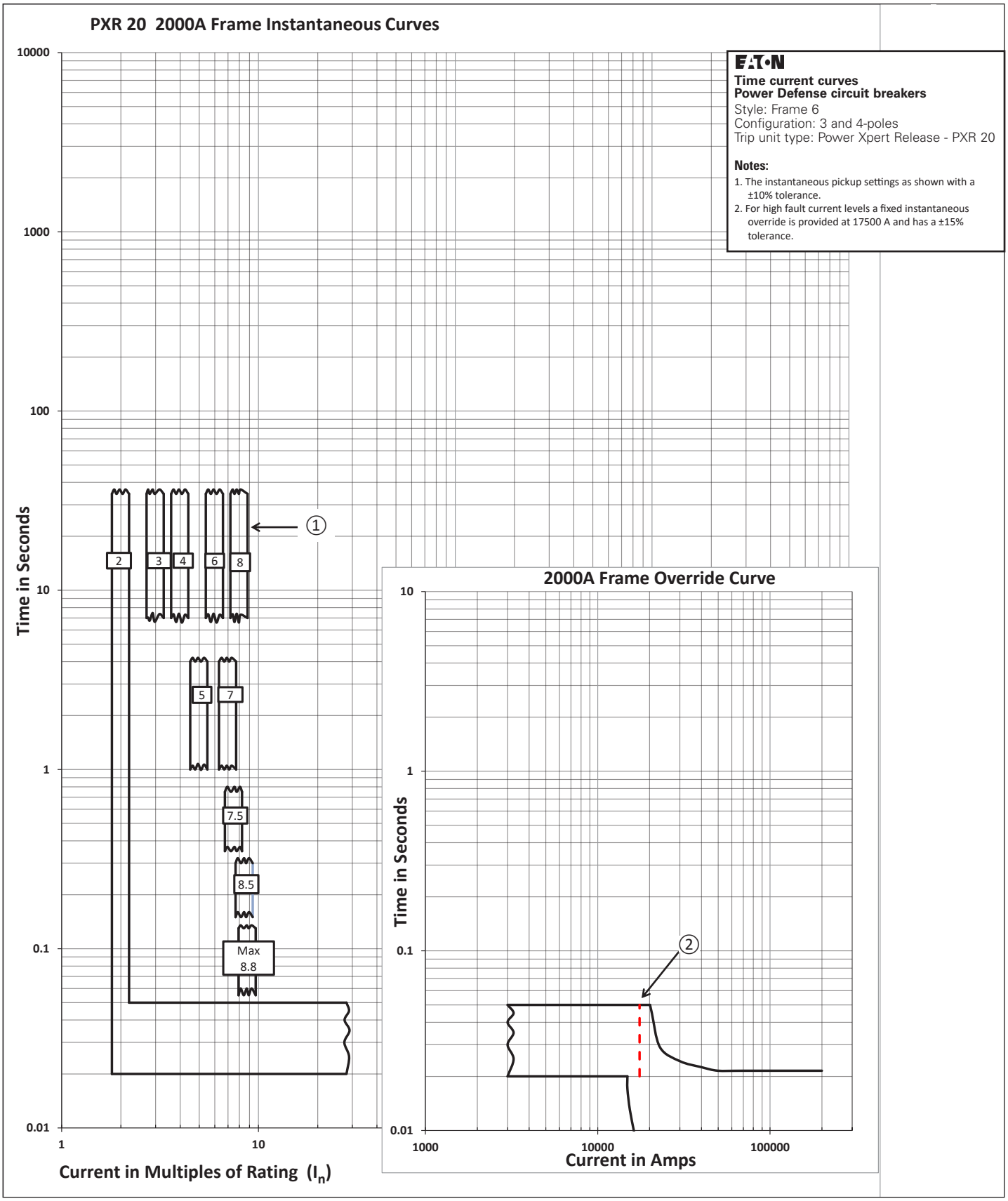

Figure 20. 2000A frame PXR 20 - instantaneous and override.

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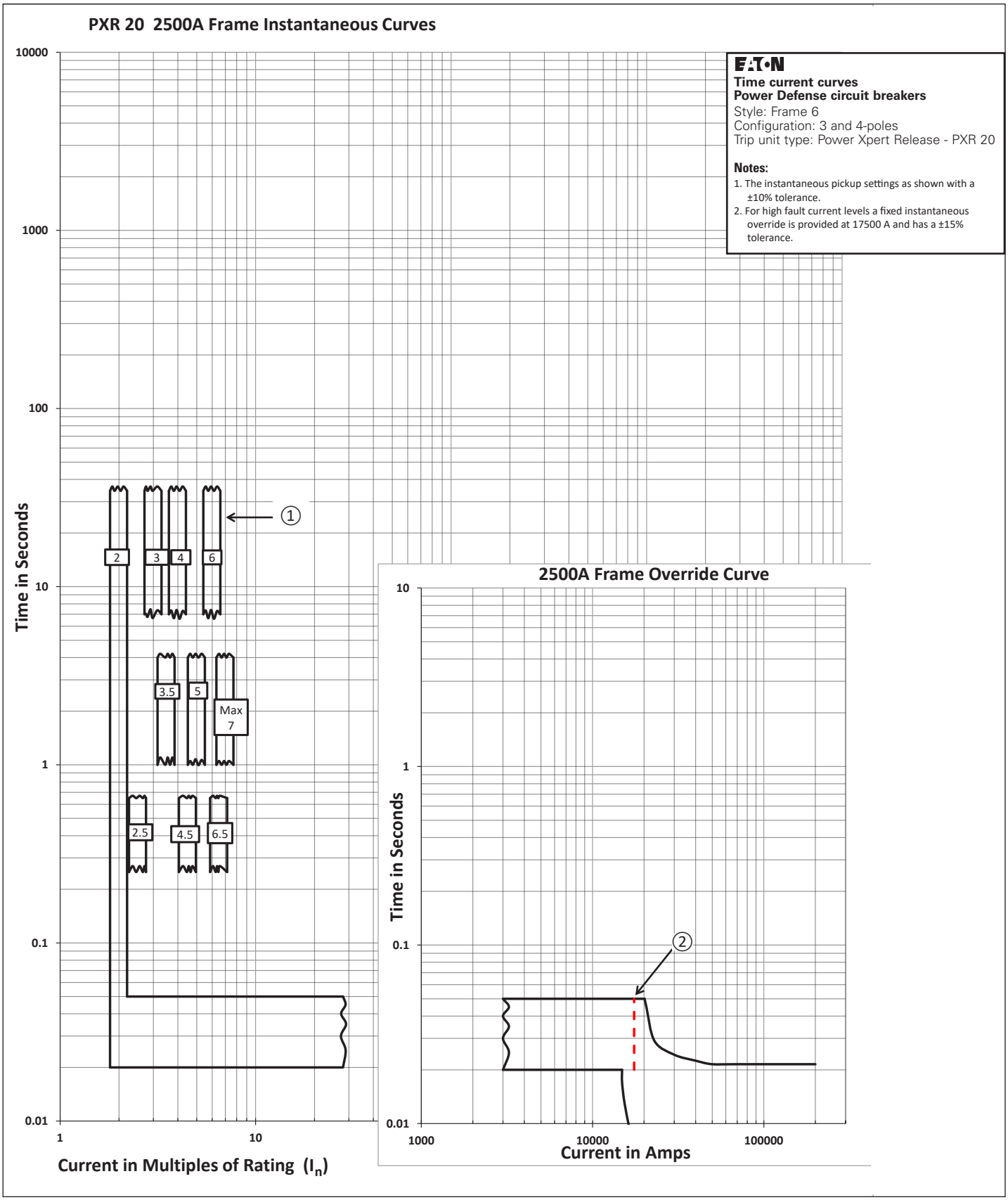

Figure 21. 2500A frame PXR 20 - instantaneous and override.

November 2019

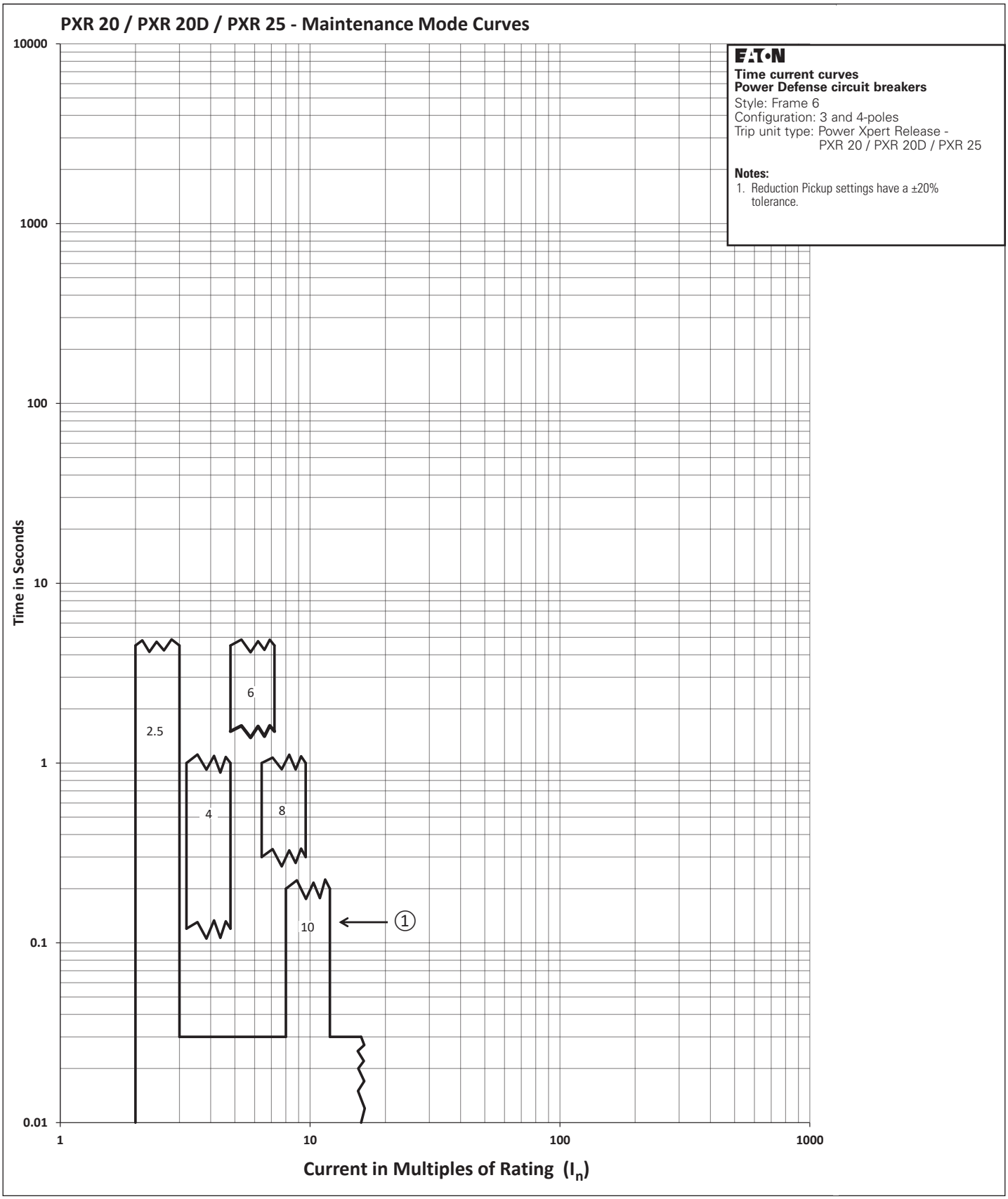

Figure 22. PXR 20 / PXR 20D / PXR 25 - maintenance mode.

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Time current curves Power Defense MCCB
Frame 6 PXR electronic trip units
Standards: UL, CSA, IEC, CCC

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