INTERNATIONAL STANDARD 1549

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

Aircraft — Precision fuse-links — Type B

Aéronefs — Porte-fusible de précision — Type B

First edition — 1976-03-01

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Descriptors : aircraft equipment, electric fuses, fuse-links, precision equipment, specifications, dimensions, ratings, tests

Price based on 12 pages

FOREWORD

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (ISO Member Bodies). The work of developing International Standards is carried out through ISO Technical Committees. Every Member Body interested in a subject for which a Technical Committee has been set up has the right to be represented on that Committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work.

Draft International Standards adopted by the Technical Committees are circulated to the Member Bodies for approval before their acceptance as International Standards by the ISO Council.

Prior to 1972, the results of the work of the Technical Committees were published as ISO Recommendations; these documents are now in the process of being transformed into International Standards. As part of this process, Technical Committee ISO/TC 20 has reviewed ISO Recommendation R 1549 and found it technically suitable for transformation. International Standard ISO 1549 therefore replaces ISO Recommendation R 1549-1971 to which it is technically identical.

ISO Recommendation R 1549 was approved by the Member Bodies of the following countries :

Australia	Israel	Switzerland
Belgium	Italy	Thailand
Canada	New Zealand	Turkey
Czechoslovakia	Peru	United Kingdom
Egypt, Arab Rep. of	South Africa, Rep. of	
Greece	Spain	

The Member Bodies of the following countries expressed disapproval of the Recommendation on technical grounds :

Germany
Netherlands
U.S.S.R.

The Member Bodies of the following countries disapproved the transformation of ISO/R 1549 into an International Standard :

Germany
U.S.S.R.

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Aircraft — Precision fuse-links — Type B

1 SCOPE AND FIELD OF APPLICATION

This International Standard specifies the dimensions and performance requirements for a range of precision fuse-links suitable for use in aircraft electrical systems having voltage and frequency characteristics conforming to ISO/R 222, at any ambient temperature from −65 to +85 °C, and all altitudes from 0 to 24 400 m. (See also ISO 1540.)

2 REFERENCES

ISO/R 222, *Voltages for aircraft electrical systems.*

ISO/R 469, *Dimensions and conductor resistance of general purpose electrical cables with copper conductors for aircraft.*

ISO/R 474, *Performance requirements for general purpose electrical cables with copper conductors for aircraft.*

ISO 1540, *Aerospace — Aircraft electrical systems — Characteristics.*[1)]

ISO 1547, *Aircraft — Precision fuse-links — General requirements.*

IEC Publication 269, *Low-voltage fuses — Part I : General requirements.*

3 TERMINOLOGY

The terminology used in this International Standard is in conformity with IEC Publication 269, as far as practicable

4 GENERAL REQUIREMENTS

The fuse-links shall comply with the requirements of ISO 1547.

5 DIMENSIONS

The dimensions of the fuse-links shall comply with table 1 for the ferrule type or table 2 for the tag type.

6 CURRENT, VOLTAGE AND BREAKING-CAPACITY RATINGS

The current ratings, the voltage ratings and the breaking-capacity ratings of the fuse-links shall be in accordance with those listed in table 3.

7 TIME/CURRENT CHARACTERISTICS

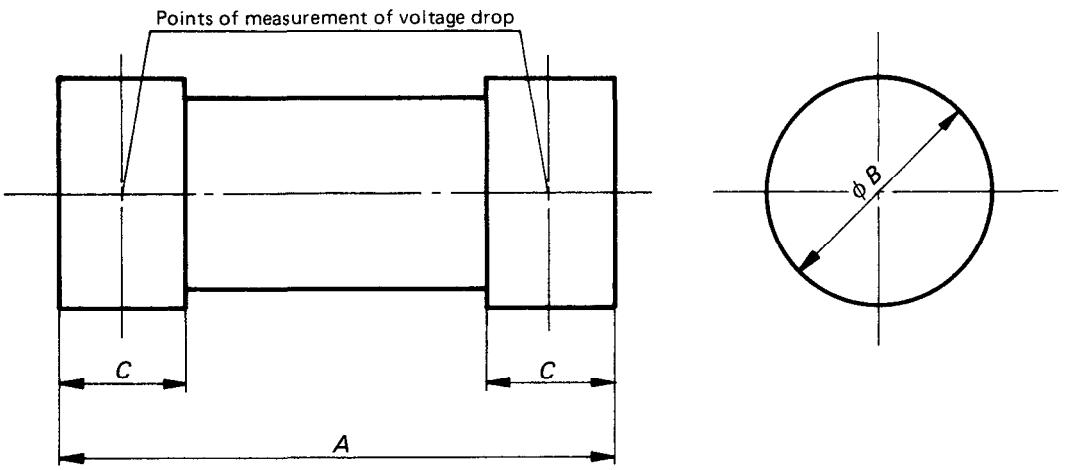
The pre-arcing time/current characteristics of the fuse-links shall be within the appropriate envelope curves shown in the annex.

8 TESTS

The fuse-links shall be tested in accordance with ISO 1547.

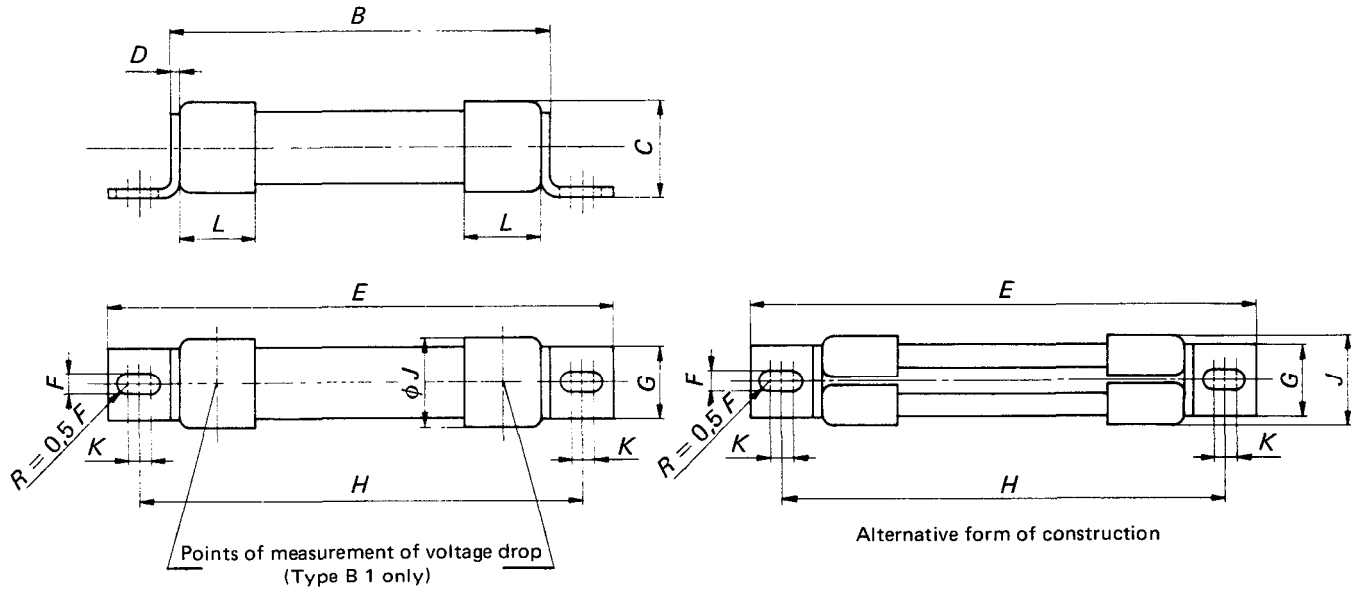
1) At present at the stage of draft.

TABLE 1 — **Dimensions of ferrule-type fuse-links**



Fuse type		A		B		C	
		max.	min.	max.	min.	max.	min.
B.1	mm	25,4	24,6	8,0	7,5	9,1	8,3
	in	1	0.969	0.313	0.297	0.360	0.328

TABLE 2 — **Dimensions of tag-type fuse-links**



Fuse type	Current rating		B	C	D	E		F	
	A		max.	max.	nom.	max.	min.	max.	min.
B.1	0,25 to 20	mm	27,0	8,7	0,8	44,9	44,0	4,1	4,0
		in	1.063	0.344	0.031	1.767	1.734	0.161	0.156
B.6	30, 40 and 50	mm	22,6	13,9	0,8	48,0	47,2	6,7	6,5
		in	0.891	0.547	0.031	1.891	1.859	0.262	0.257
B.7	80 and 100	mm	24,2	19,1	1,2	57,6	56,7	6,7	6,5
		in	0.953	0.750	0.047	2.266	2.234	0.262	0.257
B.8	160	mm	24,6	19,1	1,6	73,4	72,6	8,5	8,3
		in	0.969	0.750	0.063	2 891	2.859	0.333	0.328
B.9	200 and 300	mm	27,8	36,9	2,0	73,4	72,6	9,7	9,6
		in	1.094	1.453	0.073	2.891	2.859	0.382	0.377

Fuse type	Current rating		G	H		J	K		L
	A		nom.	max.	min.	max.	max.	min	max.
B.1	0,25 to 20	mm	6,4	36,9	35,3	8,0	1,3	1,0	9,1
		in	0.250	1.453	1.390	0.313	0.050	0.040	0.360
B.6	30, 40 and 50	mm	11,1	36,9	35,3	12,7	1,4	1,1	7,9
		in	0.438	1.453	1.390	0.500	0.055	0.045	0.310
B.7	80 and 100	mm	15,1	43,6	41,3	17,5	1,8	1,5	8,6
		in	0.594	1.718	1.625	0.683	0.070	0.060	0.340
B.8	160	mm	31,8	52,4	49,8	35,7	1,8	1,5	8,6
		in	1.25	2.063	1.960	1.406	0.070	0.060	0.340
B.9	200 and 300	mm	25,4	55,1	51,2	34,7	2,5	2,3	9,3
		in	1.00	2.171	2.015	1.391	0.100	0.090	0.365

TABLE 3 – Ratings of fuse-links

1	2	3	4	5	6	7	8	9	10	11	12	2
Fuse type	Rated current[1] (– 65 to + 35 °C ambient temperature)	Type of end cap	Voltage rating and breaking capacity				Voltage drop[2]		Duration of test for minimum fusing current	Copper core cable to be used during tests (in accordance with ISO/R 469 and ISO/R 474)		Rated current (– 65 to + 35 °C ambient temperature)
			Voltage	Prospective current of test circuit	Power factor (lagging) of test circuit (max.)	Time constant of test circuit (min.)	Upper limit of mean value	Percentage tolerance on actual mean value		Nominal cross-sectional area of conductor	Cable size number	
	A		V	A		s	mV	± %	h	mm^2		A
B.1	0,25 0,5 1,0 2,5 5,0 7,5 10,0 12,5 15,0 20,0	Ferrule or tag	250 a.c. 120 d.c.	16 500 16 500	0,3 –	– 0,010 0	3 050 2 890 620 296 167 110 106 99 74 62	15 12,5 10 7,5 7,5 7,5 7,5 7,5 7,5 7,5	1,5	0,347 0,556 0,966 1,17 2,05	22 20 18 16 14	0,25 0,5 1,0 2,5 5,0 7,5 10,0 12,5 15,0 20,0
B.6	30 40 50	Tag only	250 a.c. 120 d.c.	16 500 16 500	0,3 –	– 0,010 0	– – –	– – –	1,5	5,33 8,76	10 8	30 40 50
B.7	80 100	Tag only	250 a.c. 120 d.c.	16 500 16 500	0,3 –	– 0,010 0	– –	– –	2,0	13,3 21,5	6 4	80 100
B.8	160	Tag only	250 a.c. 120 d.c.	16 500 16 500	0,3 –	– 0,010 0	–	–	2,5	40,7	1	160
B.9	200 300	Tag only	250 a.c. 120 d.c.	16 500 16 500	0,3 –	– 0,010 0	– –	– –	2,5	68,3 109,0	00 0000	200 300

1) See ISO 1547.

2) As determined by the method described in the annex to ISO 1547. For fuse-links of ratings of 35 A and above, the voltage drop values are so low as to have no significant effect on the impedance of a circuit.

ANNEX

ENVELOPE CURVES OF TIME/CURRENT CHARACTERISTICS OF FUSE-LINKS

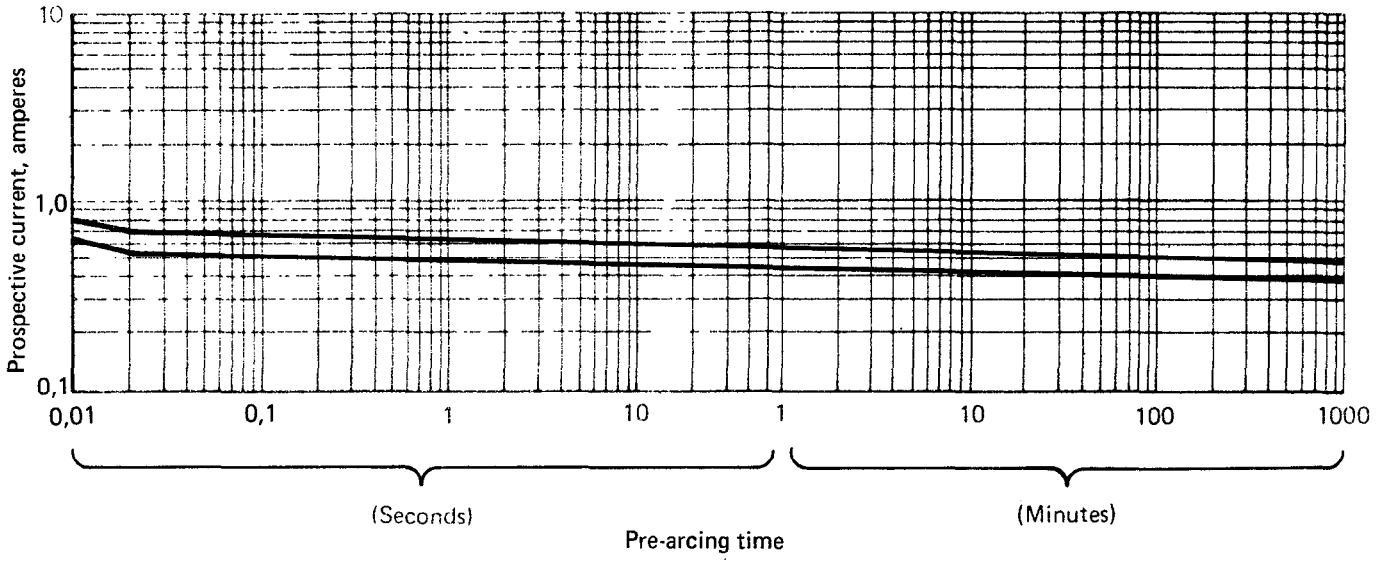


FIGURE 1 — **Type B.1; 0,25 A**

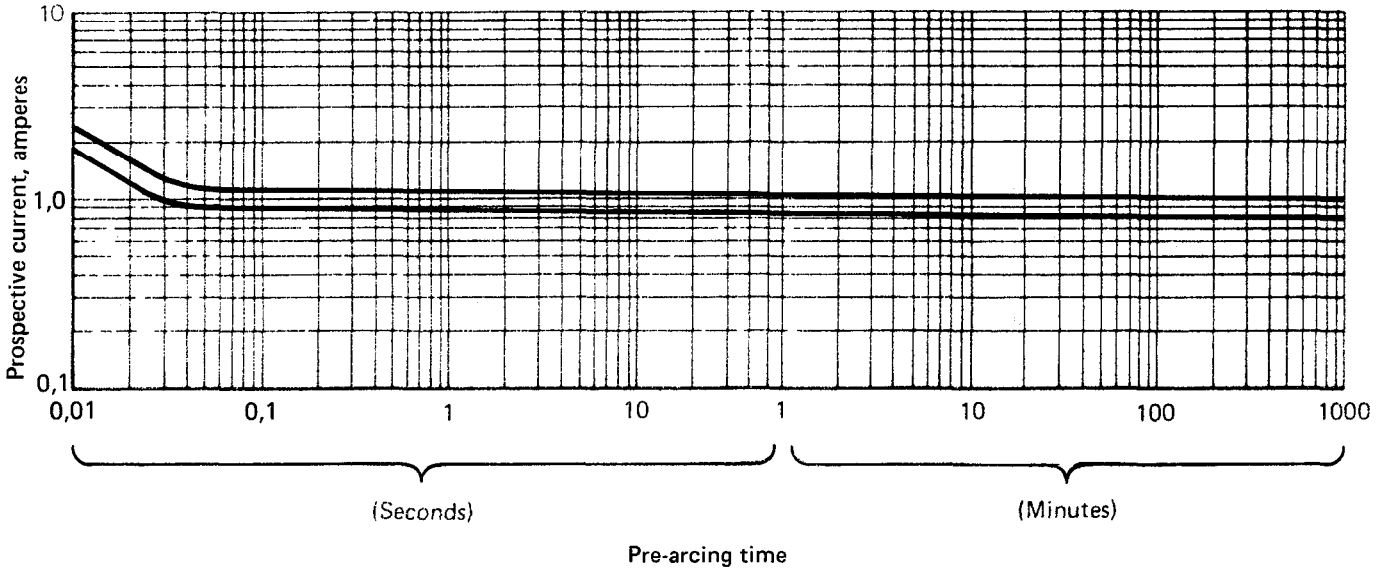


FIGURE 2 — **Type B.1; 0,5 A**

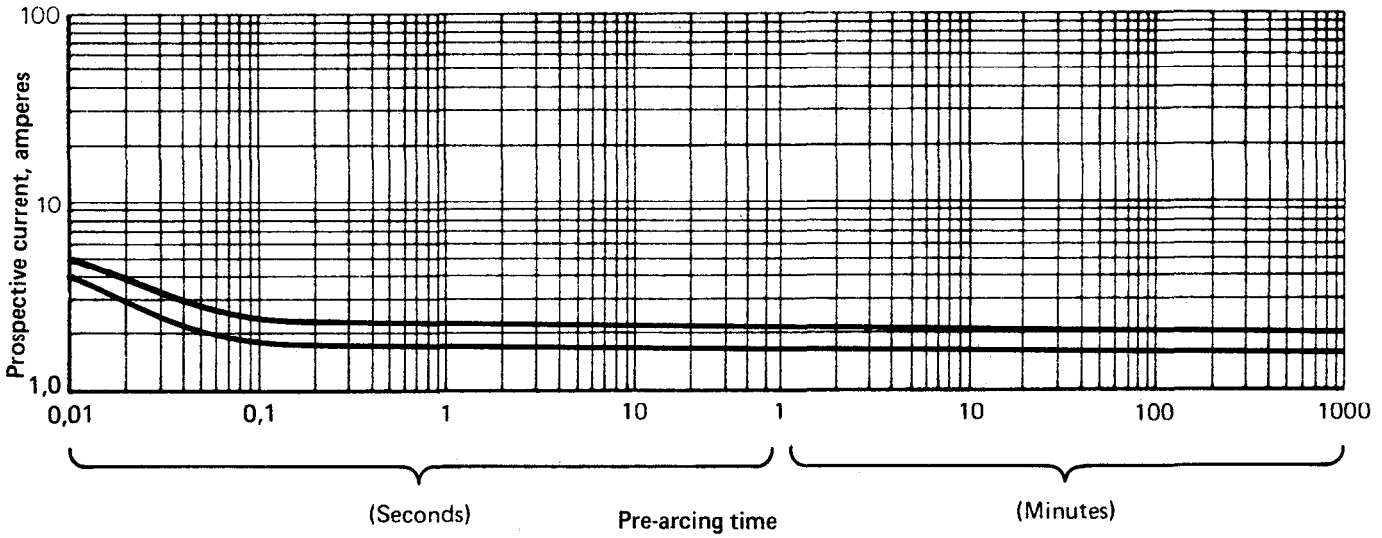


FIGURE 3 – **Type B.1; 1 A**

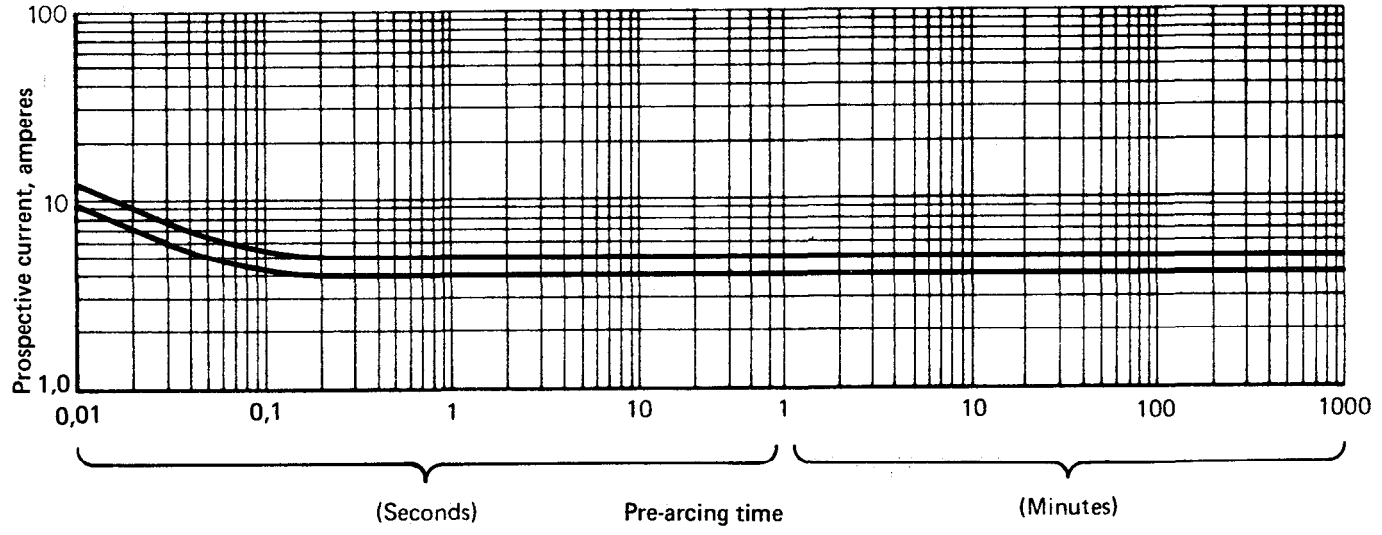


FIGURE 4 – **Type B.1; 2,5 A**

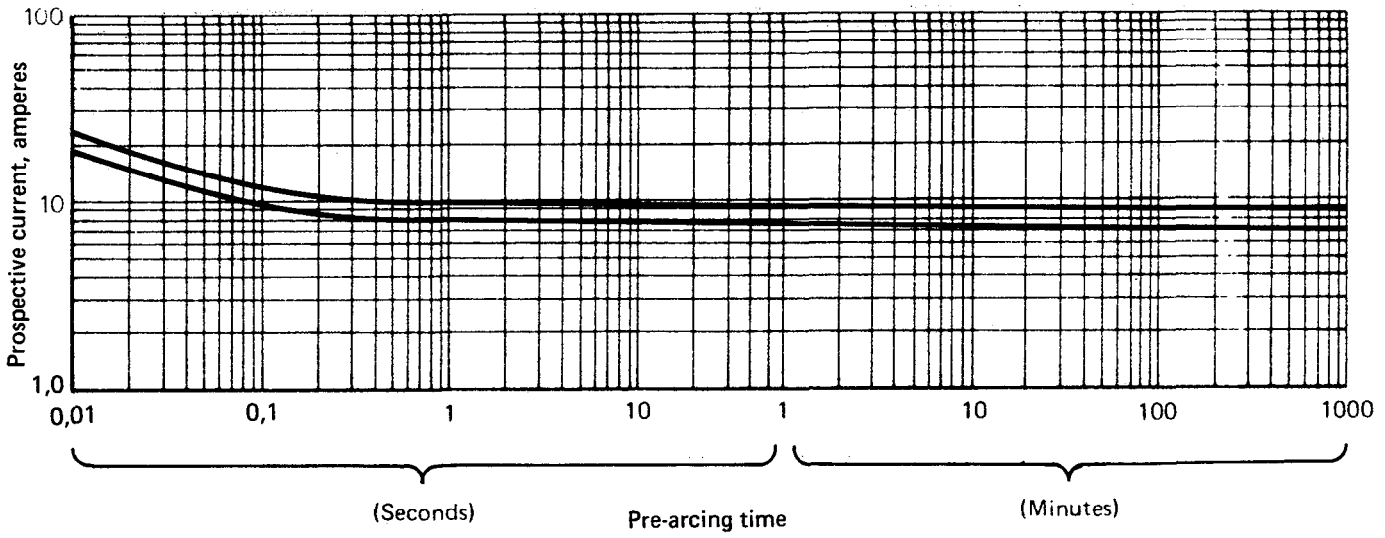


FIGURE 5 – **Type B.1; 5 A**

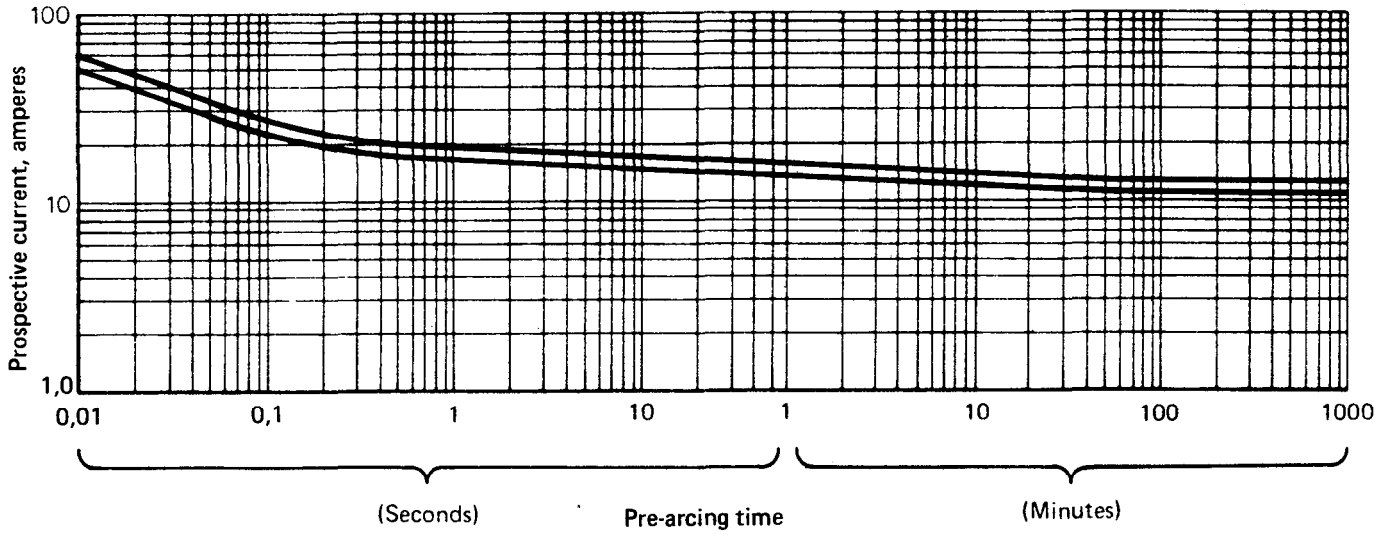


FIGURE 6 – **Type B.1; 7,5 A**

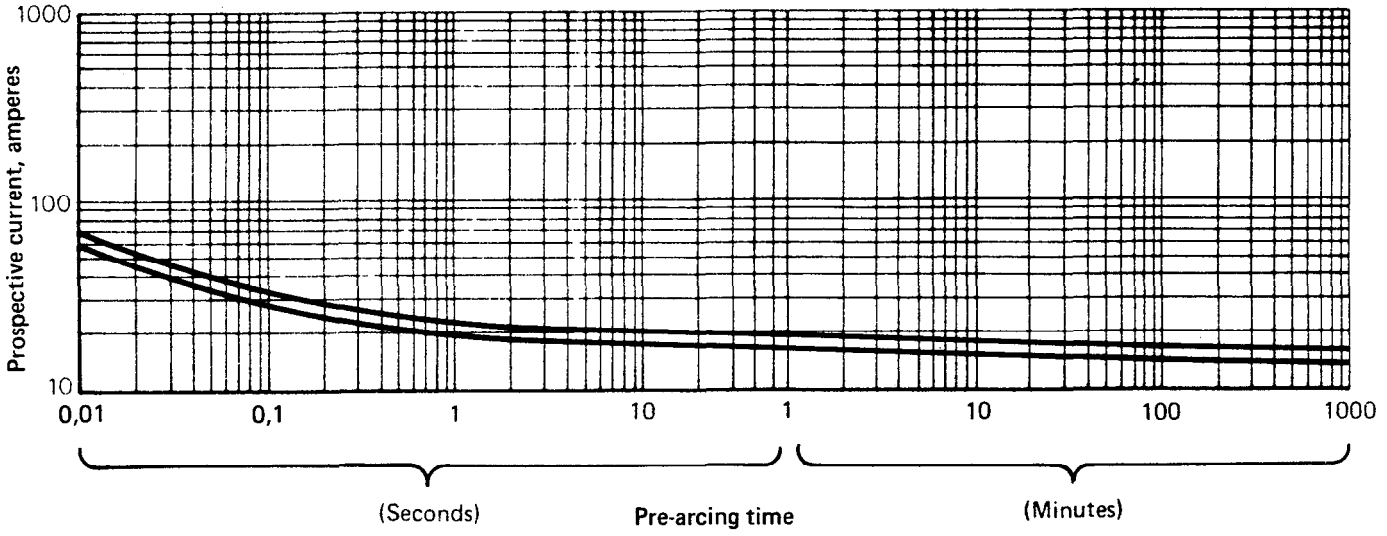


FIGURE 7 – **Type B.1; 10 A**

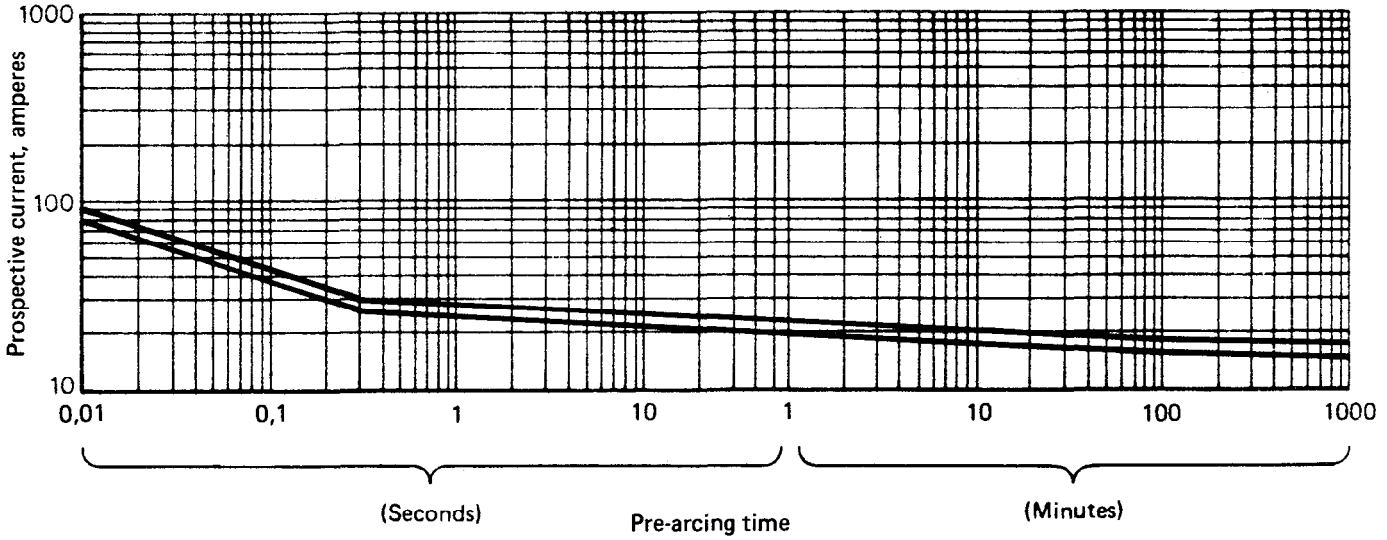


FIGURE 8 – **Type B.1; 12,5 A**

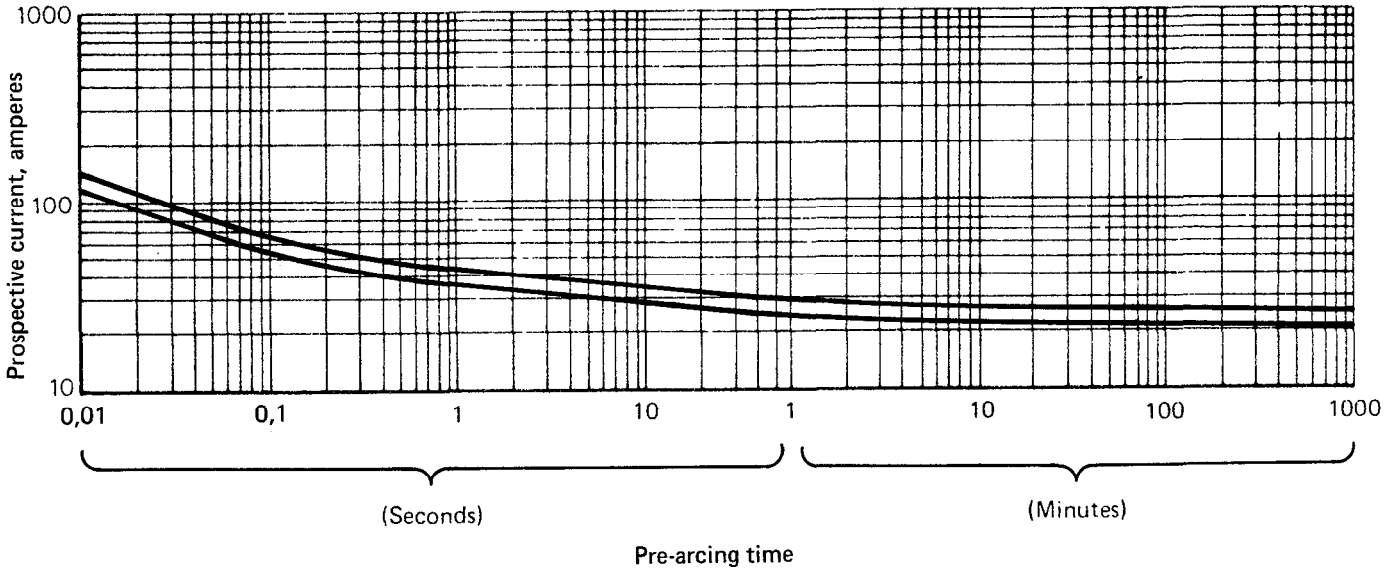


FIGURE 9 – **Type B.1; 15 A**

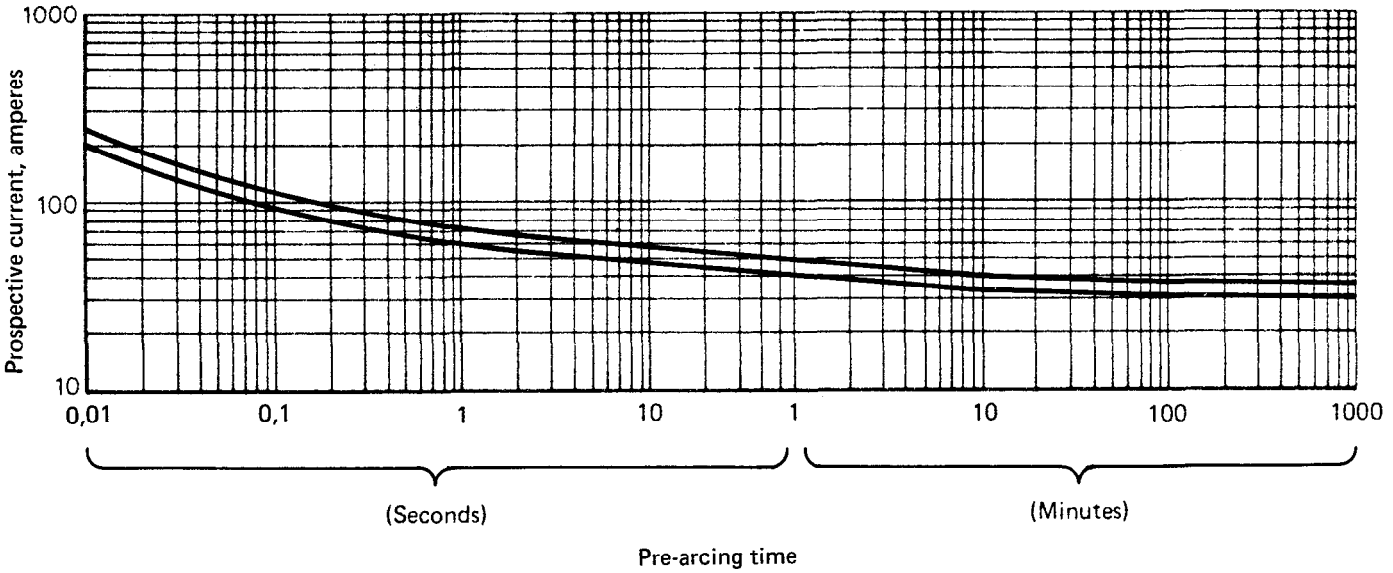


FIGURE 10 – **Type B.1; 20 A**

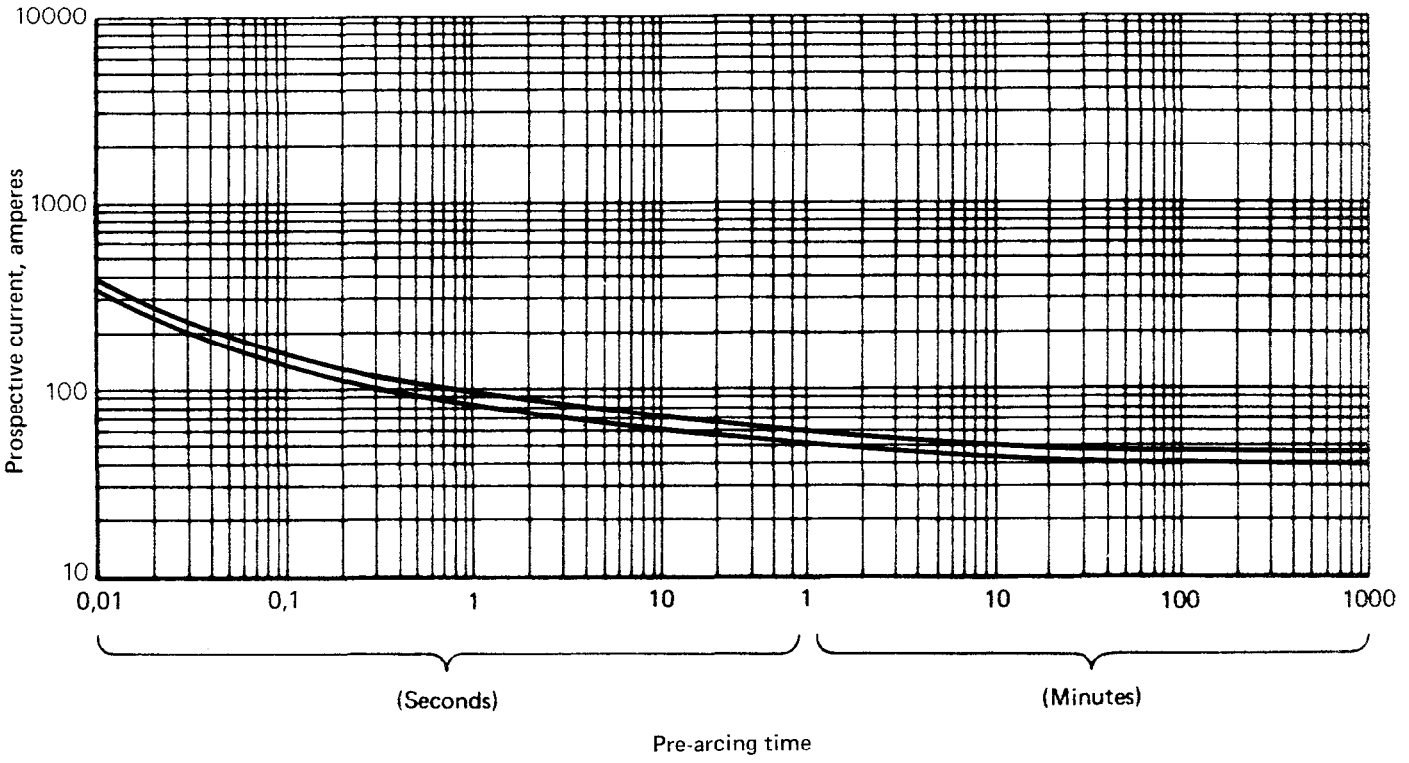


FIGURE 11 — **Type B.6; 30 A**

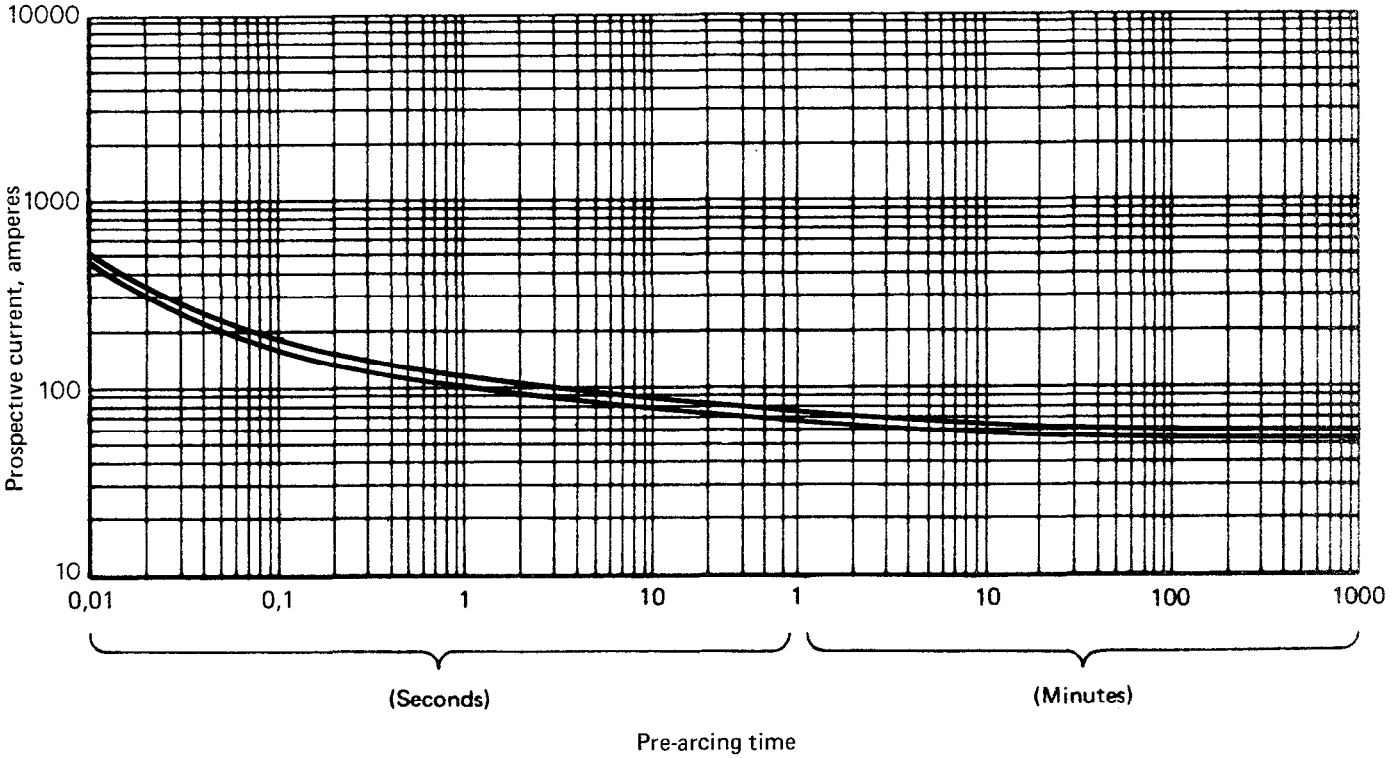


FIGURE 12 — **Type B.6; 40 A**

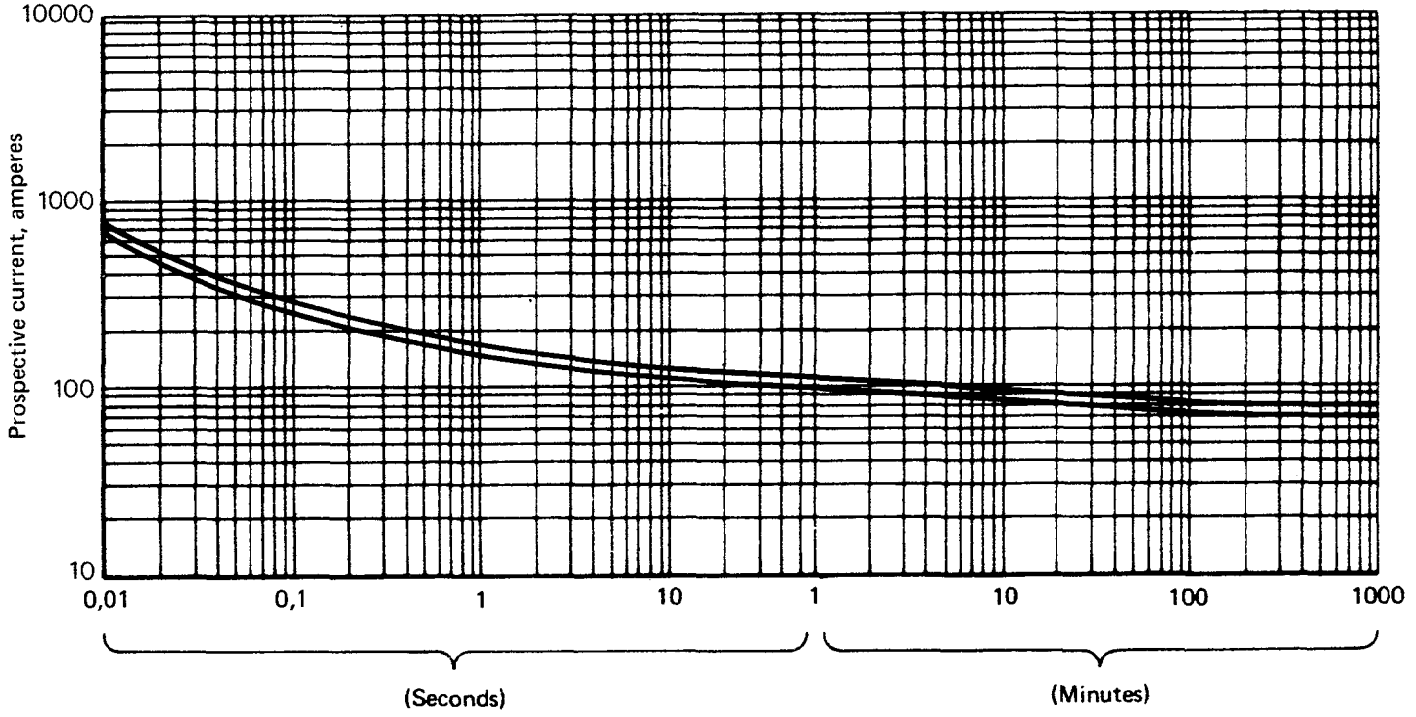


FIGURE 13 – **Type B.6; 50 A**

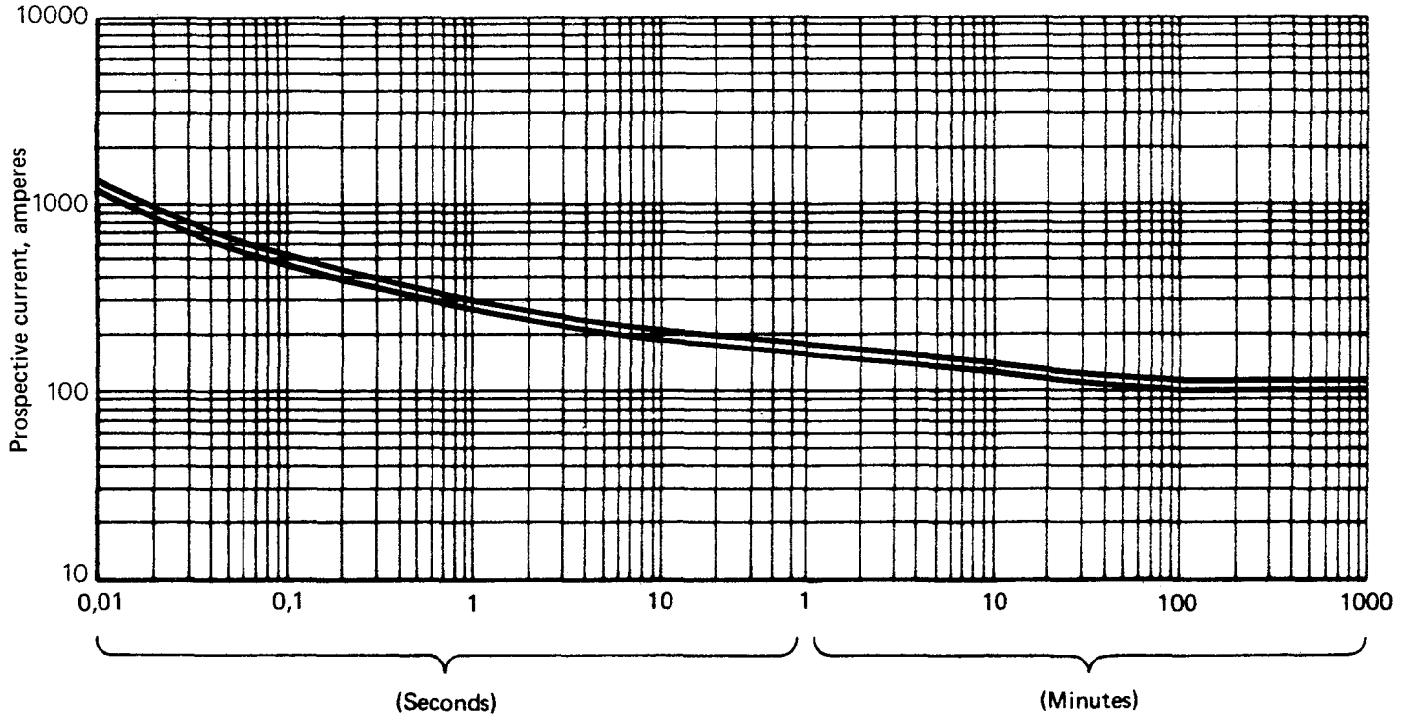


FIGURE 14 – **Type B.7; 80 A**

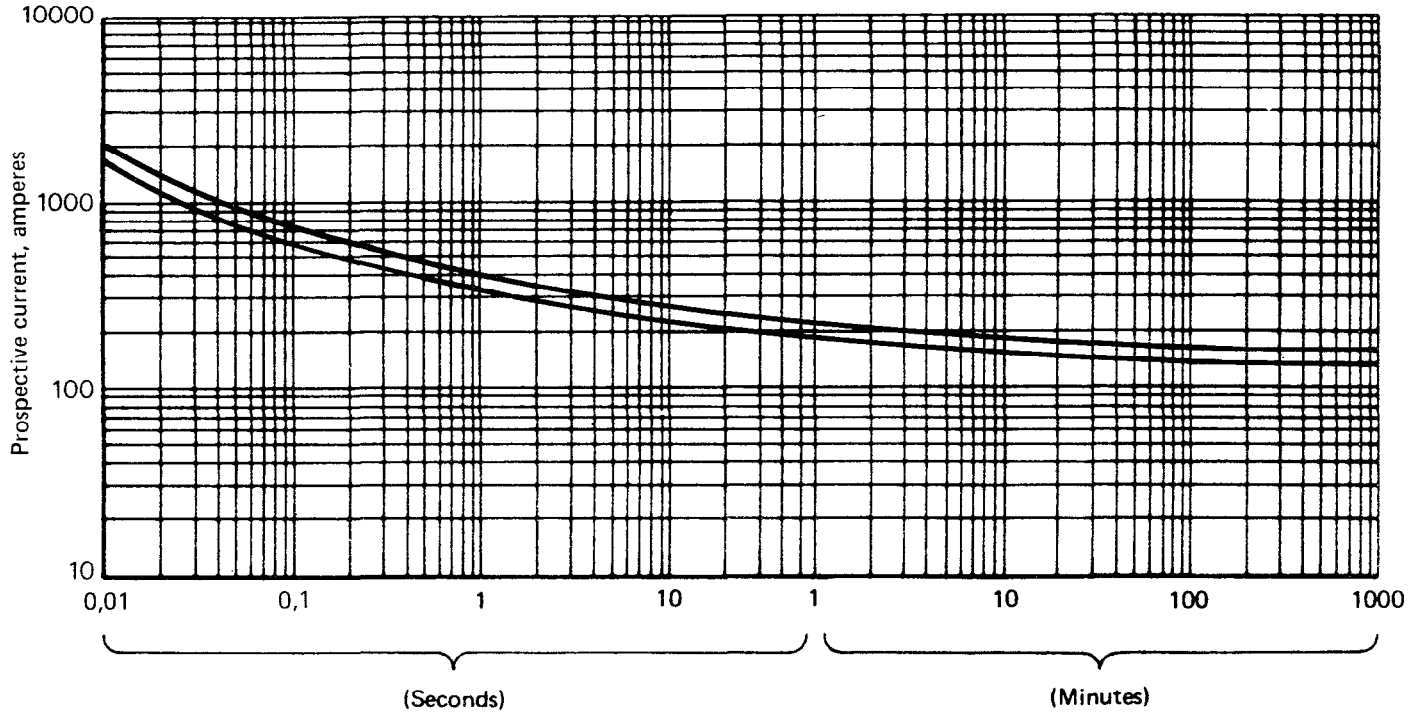


FIGURE 15 – **Type B.7; 100 A**

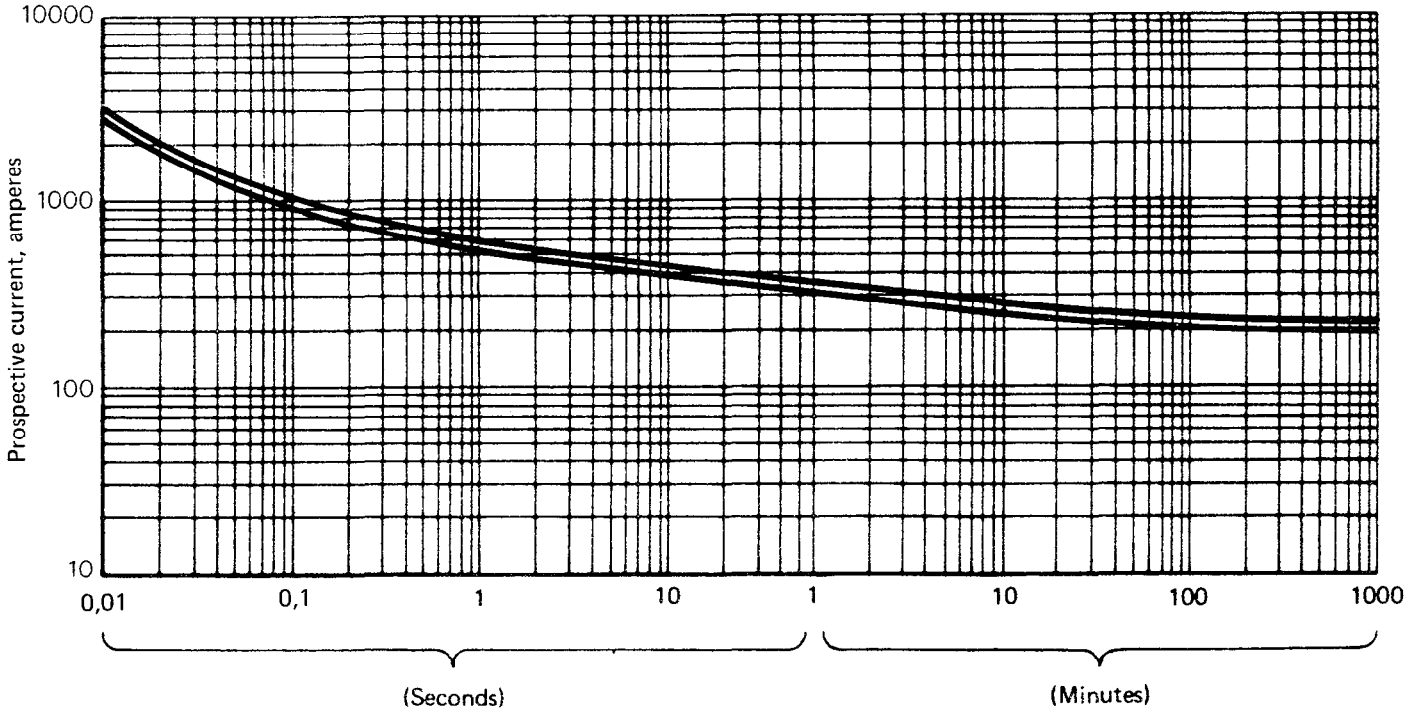


FIGURE 16 – **Type B.8; 160 A**

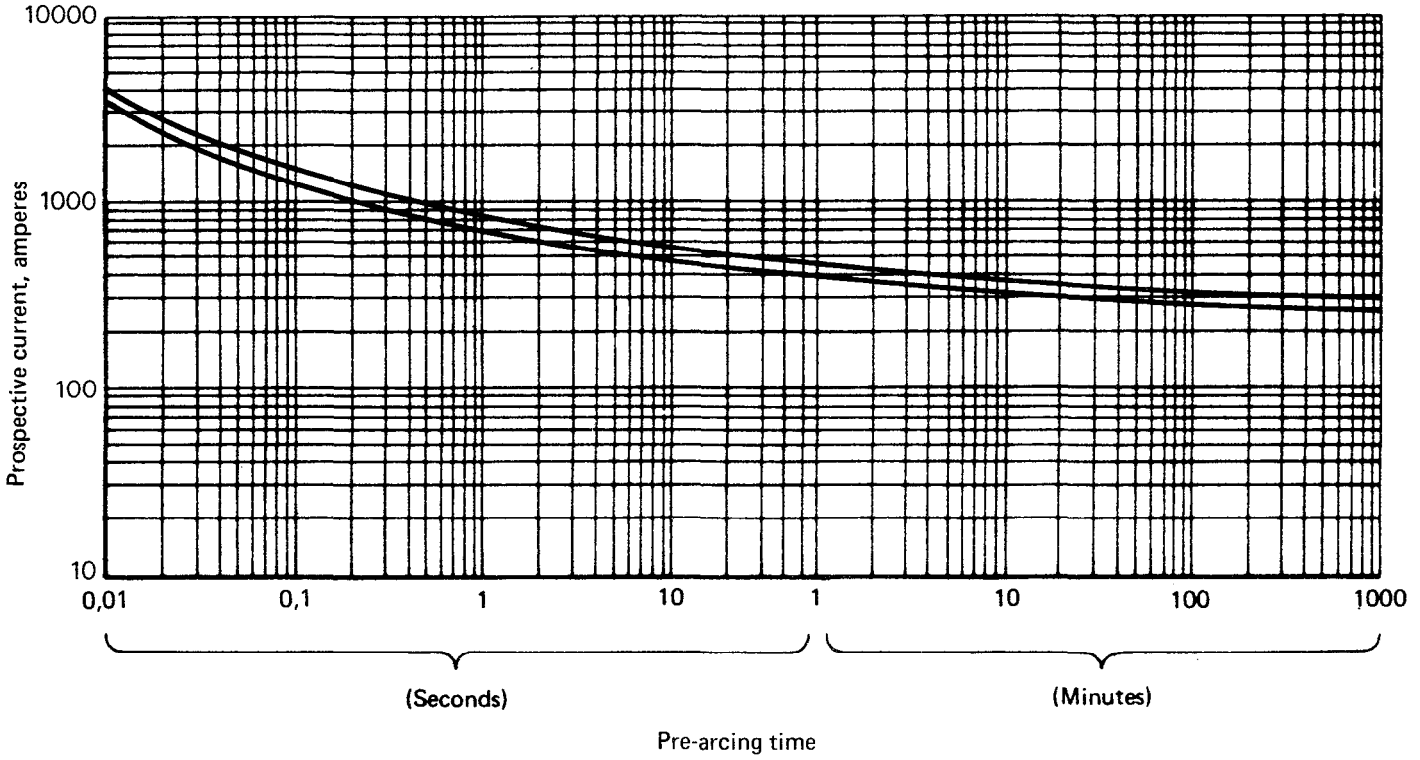


FIGURE 17 – **Type B.9; 200 A**

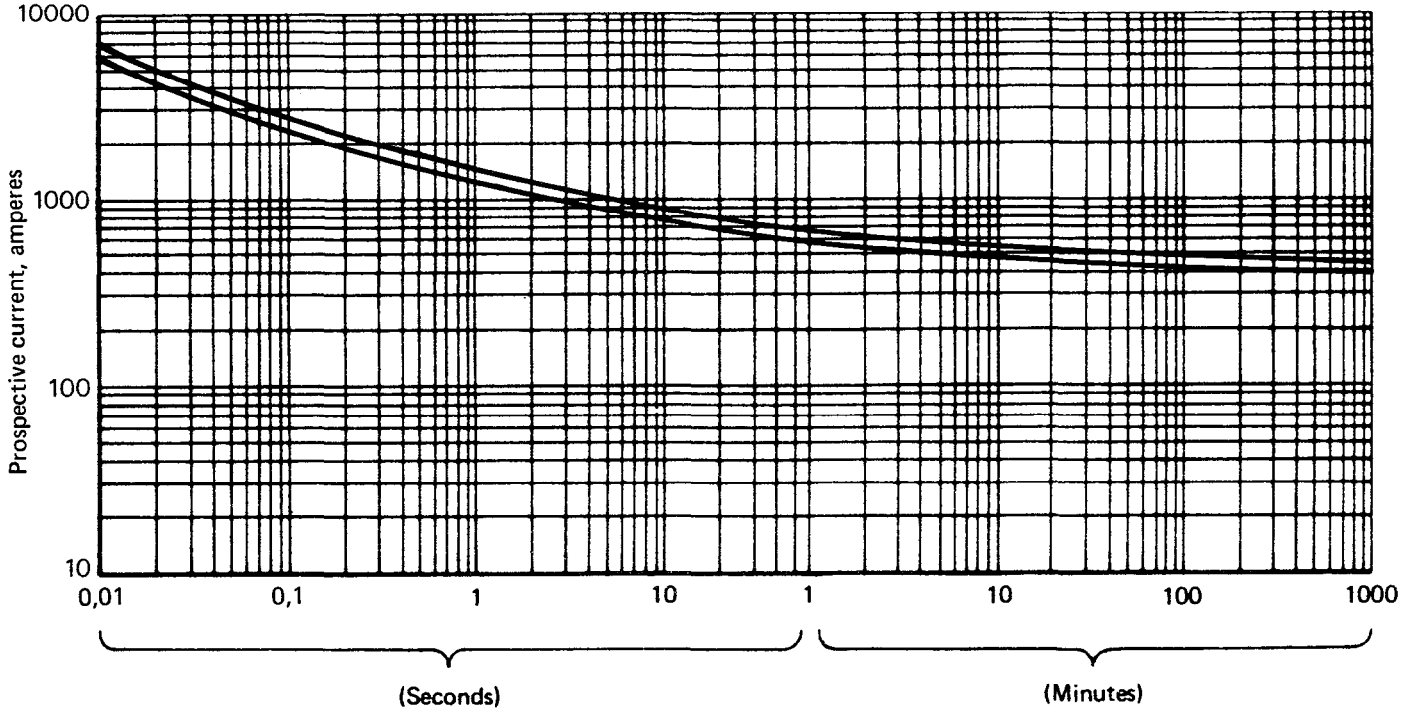


FIGURE 18 – **Type B.9; 300 A**