

DISTRIBUTION SOLUTIONS

HV Fuse-links type CEF/CEF-S



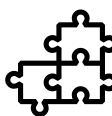
Fuse-links are designed for fast acting protection of distribution transformers, extending protection over transformer low voltage terminals



Superior performance versus standard fuses ensuring faster protection in case of low fault currents



Robust design suitable for harsh conditions, proven by tests according to the latest IEC standards, secures continuous protection and reliable operation



Compatibility with other ABB products provides fast and accurate product selection

Key features:

- Designed and type tested acc. to IEC 60282-1
- Follow Swedish energy companies association EBR recommendation
- Low power losses, generating additional savings during product life-cycle
- Top level fault current limitation and interruption performance up to 63kA RMS
- Outdoor sealing included in standard version, designed and tested for harsh conditions
- Welded current path
- Contacts made from silver coated copper
- Striker 80N (medium type)
- Equipped with Temperature Control Unit – additional protection against thermal stresses in small enclosures
- Low switching voltages secure safe operation in wide working voltage range (eg. from 10kV to 24kV marked as 10/24kV)

Ordering and technical table

Catalog number	Fuse name	Rated voltage U_r [kV]	Rated current I_r [A]	Rated frequency f_r [Hz]	Breaking capacity I_b [kA]	Minimal breaking current I_{3A} [A]	Breaking current at 100 ms $I_{0.1s}$ [A]	Diameter D [mm]	Length e [mm]	Rated power P_w [W]	Cold resistance [mΩ]	Pre-arcing integral [A ² s]	Total interrupting integral [A ² s]	Weight [kg]	EAN 13 Code
1YMB710716M1512	CEF	3/7.2	10	50	63	43	74	53	192	12	96.6	24	1800	1.2	5908270806894
1YMB710718M1512	CEF	3/7.2	16	50	63	72	110	53	192	18	59.5	135	6060	1.2	5908270806900
1YMB710721M1512	CEF	3/7.2	25	50	63	110	237	53	192	17	22.8	490	17000	1.2	5908270806924
1YMB710724M1512	CEF	3/7.2	31.5	50	63	115	308	53	192	23	17.1	890	29000	1.2	5908270806931
1YMB710725M1512	CEF	3/7.2	40	50	63	143.5	376	53	192	31	14.1	1600	49000	1.2	5908270806948
1YMB710727M1512	CEF	3/7.2	50	50	63	215	540	53	192	32	9.4	3375	99000	1.2	5908270806955
1YMB710729M1612	CEF	3/7.2	63	50	63	220	660	65	192	43	7.7	5150	106000	1.6	5908270806962
1YMB710731M1612	CEF	3/7.2	80	50	63	320	760	65	192	47	5.0	7040	215000	1.6	5908270806979
1YMB710733M1612	CEF	3/7.2	100	50	63	380	1018	65	192	62	3.9	10300	319000	1.6	5908270806986
1YMB710735M1812	CEF	3/7.2	125	50	63	380	1161	87	192	81	3.3	17200	472000	2.6	5908270806993
1YMB710716M2512	CEF	3/7.2	10	50	63	43	74	53	292	12	96.6	24	1800	1.6	5908270807013
1YMB710718M2512	CEF	3/7.2	16	50	63	72	110	53	292	18	57.3	135	6060	1.6	5908270807020
1YMB710721M2512	CEF	3/7.2	25	50	63	110	237	53	292	17	22.8	490	17000	1.6	5908270807044
1YMB710724M2512	CEF	3/7.2	31.5	50	63	115	308	53	292	23	17.1	890	29000	1.6	5908270807051
1YMB710725M2512	CEF	3/7.2	40	50	63	143.5	376	53	292	31	14.1	1600	49000	1.6	5908270807068
1YMB710727M2512	CEF	3/7.2	50	50	63	215	540	53	292	32	9.4	3375	99000	1.6	5908270807075
1YMB710729M2612	CEF	3/7.2	63	50	63	220	660	65	292	43	7.7	5150	106000	2.3	5908270807082
1YMB710731M2612	CEF	3/7.2	80	50	63	320	760	65	292	47	5.0	7040	215000	2.3	5908270807099
1YMB710733M2612	CEF	3/7.2	100	50	63	380	1018	65	292	62	3.9	10300	319000	2.3	5908270807105
1YMB710735M2812	CEF	3/7.2	125	50	63	380	1161	87	292	81	3.3	17200	472000	3.6	5908270807112
1YMB711213M2512	CEF	6/12	6.3	50	63	44	37	53	292	17	332.1	4.5	560	1.6	5908270806269
1YMB741216M2611	CEF-S	6/12	10	50	50	55	40	65	292	25	187	20	2520	2.3	5908270808034
1YMB741218M2611	CEF-S	6/12	16	50	50	55	69	65	292	38	108.5	80	2930	2.3	5908270808041
1YMB741219M2611	CEF-S	6/12	20	50	50	72	111	65	292	38	72.3	200	3200	2.3	5908270808058
1YMB741221M2611	CEF-S	6/12	25	50	50	72	146	65	292	36	46.5	390	7400	2.3	5908270808065
1YMB741225M2611	CEF-S	6/12	40	50	50	100	224	65	292	54	24.5	940	17600	2.3	5908270808072
1YMB741227M2611	CEF-S	6/12	50	50	50	190	299	65	292	71	18.8	2030	27000	2.3	5908270808089
1YMB741229M2611	CEF-S	6/12	63	50	63	190	410	65	292	82	14.1	4100	63500	2.3	5908270807495
1YMB712413M4512	CEF	10/24	6.3	50	63	43	37	53	442	28	572.6	4.5	560	2.3	5908270806542
1YMB742416M4611	CEF-S	10/24	10	50	25	55	40	65	442	54	373.2	20	1450	3.3	5908270808096
1YMB742418M4611	CEF-S	10/24	16	50	25	55	69	65	442	58	186.6	90	2910	3.3	5908270808102
1YMB742419M4611	CEF-S	10/24	20	50	25	72	111	65	442	66	124.4	240	3960	3.3	5908270808119
1YMB742421M4611	CEF-S	10/24	25	50	25	72	146	65	442	74	93.3	340	6140	3.3	5908270808126
1YMB742425M4611	CEF-S	10/24	40	50	25	110	224	65	442	107	48.7	930	13300	3.3	5908270808133
1YMB742427M4611	CEF-S	10/24	50	50	63	220	299	65	442	125	32.5	2360	57100	3.3	5908270807501

The breaking current at 100 ms I0.1 s and fuse minimal breaking current values refer to pre-arcing values.

Fuse selection table

Line voltage [kV]	Fuse rated voltage [kV]	Transformer size [kVA]									
		50	100	200	315	500	630	800	1000	1250	
		Fuse rating In (A)									
6.6	3/7.2	10	16	25	40	50	63	80	100	125	
7.2	3/7.2	10	16	25	31.5	50	63	80	80	125	
11	6/12	6.3	16	20	25	40	50	50	63		
12	6/12	6.3	16	20	25	40	50	50	63		
22	10/24	6.3	10	16	16	20	25	25	40	50	
24	10/24	6.3	10	16	16	20	25	25	40	50	

Recommended fuse rating is on the crossing of transformer rating and line voltage.

Applies for CEF-S type (6.6-7.2kV Line voltage and 6.3 A Fuse rating refer to CEF type) with dedicated I0.1 s performance.

Fuse link selected according to above table meet the following requirements:

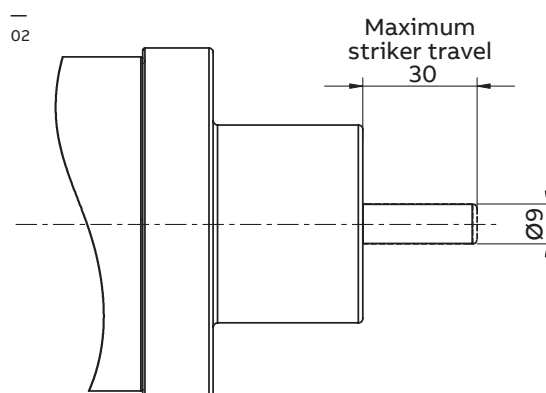
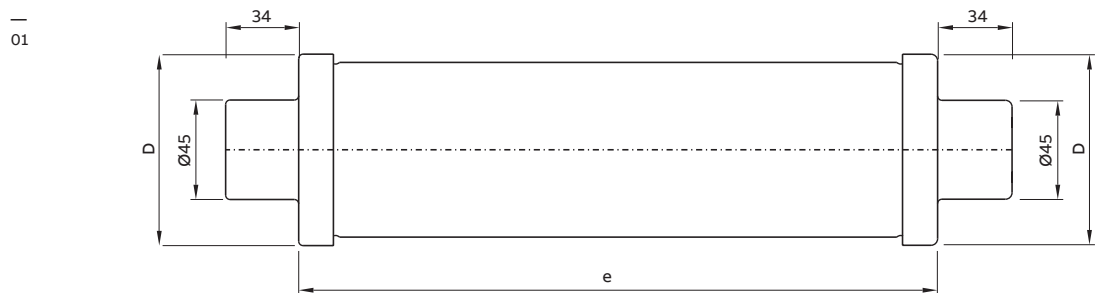
- rated current of the fuse link $>1.1 \times$ transformers rated current (I_n),
- the maximum breaking time is 100 ms or less for overload currents bigger than or equal to $I_{0,1s}$.
- For different line voltage level, closest smaller value from the table has to be used. The table was calculated in reference to § 17 STEV-FS requirements.

As appears from the technical table current-limiting fuse-links type CEF-S have a minimum current value ($I_{0,1s}$) specified which makes the fuse-link capable to interrupt the fault current within 100ms. This ensures very good protection and prevents many faults in low voltage switchgears as described in §17 (fuse with cut off time within 0.1 seconds "Sverigesäkkring").

CEF-S fuses are specially constructed to achieve as low as possible value for the breaking current at 100ms. However, this results in the reduction of the margin, which for standard CEF fuses prevents fuse-link operation due to inrush currents developed when an unloaded power transformer is energised

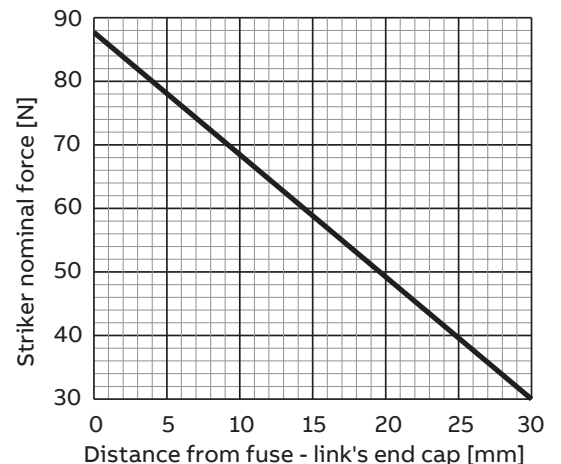
Fuses power losses at transformer rated power

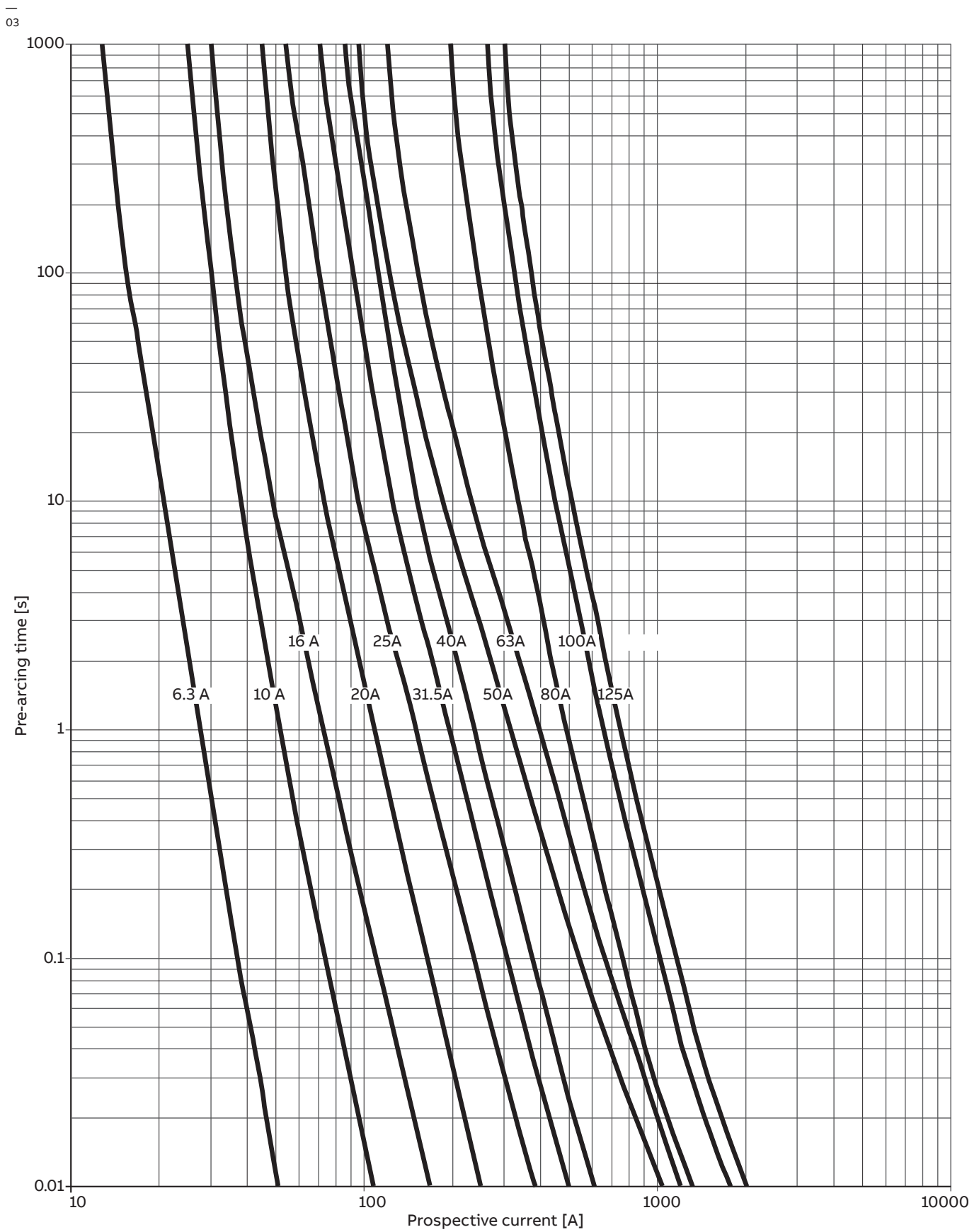
Line voltage [kV]	Fuse rated voltage [kV]	Transformer size [kVA]								
		50	100	200	315	500	630	800	1000	1250
		Power losses per single fuse (W)								
6.6	3/7.2	3	6	9	16	27	36	40	52	68
7.2	3/7.2	2	5	8	16	23	30	33	52	57
11	6/12	3	4	12	17	26	34	55	63	
12	6/12	3	4	10	15	22	29	46	53	
22	10/24	1	4	7	17	31	36	58	51	59
24	10/24	1	3	6	14	26	30	48	43	50



01 Dimensional drawing of fuse-link type CEF-S

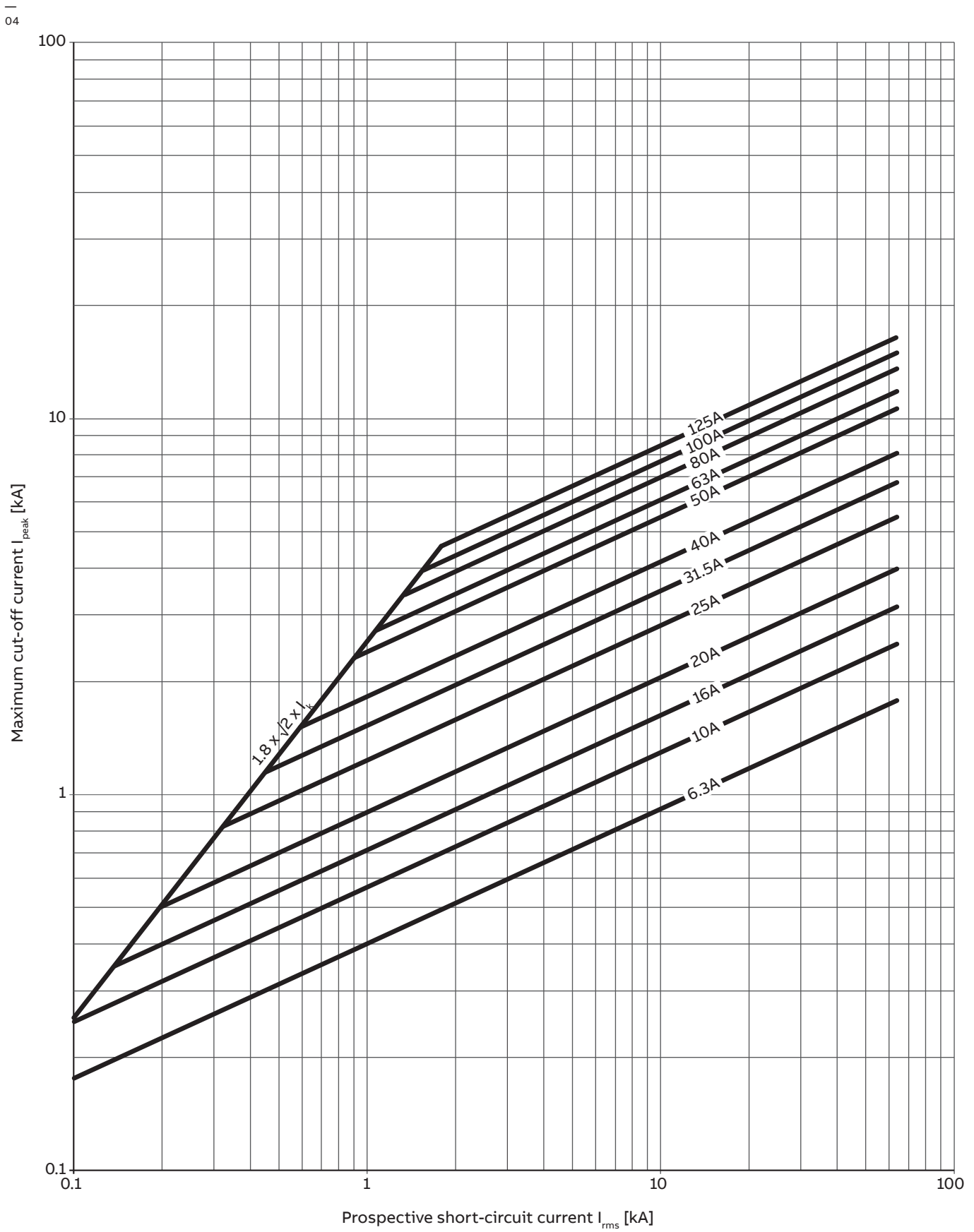
02 Fuse-link striker force and dimensions



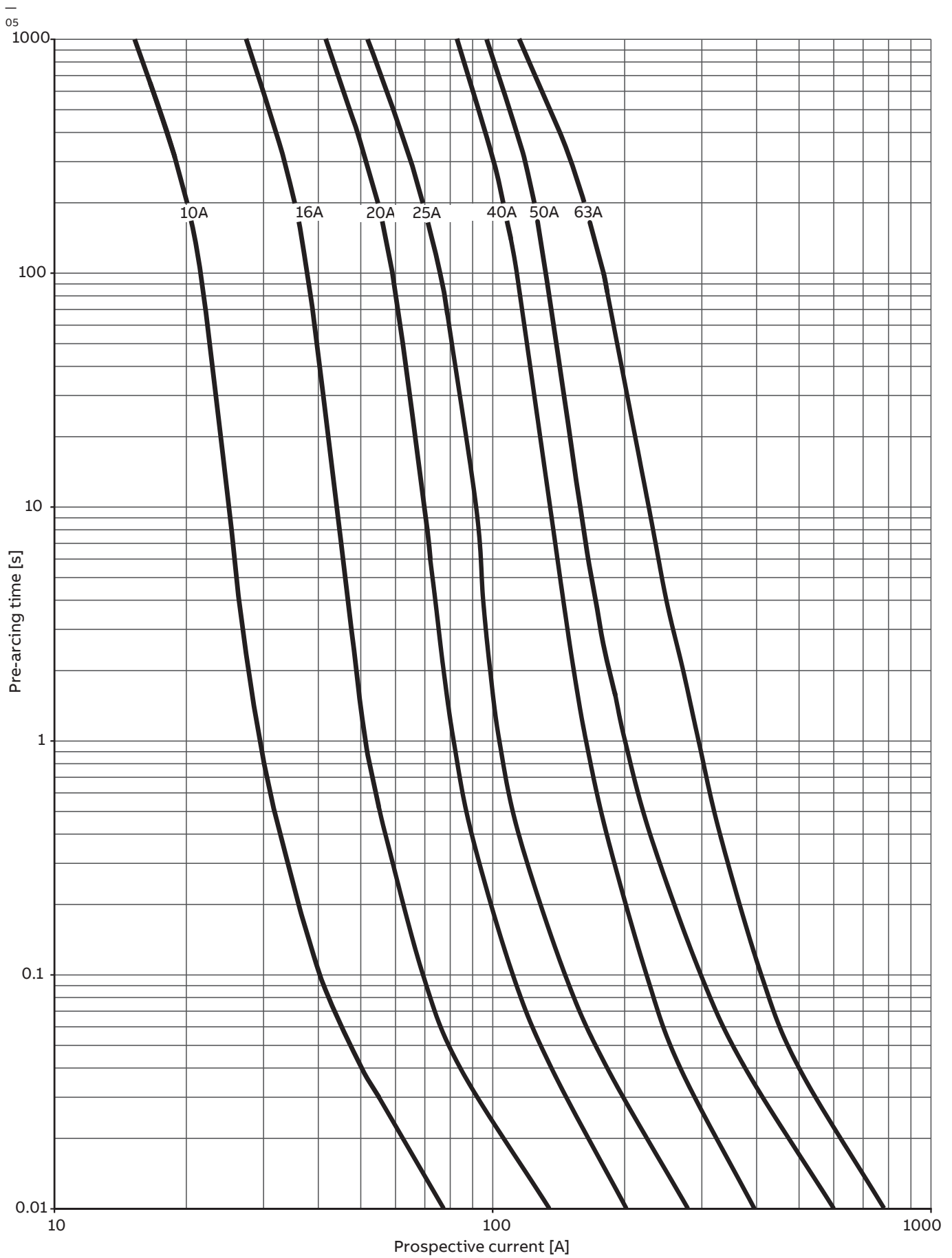


Characteristics show the average melting time as a function of the prospective current and are recorded from cold condition of fuse-link.

The tolerance is $\pm 10\%$ referred to the current. Characteristics are valid for frequency 50 Hz.

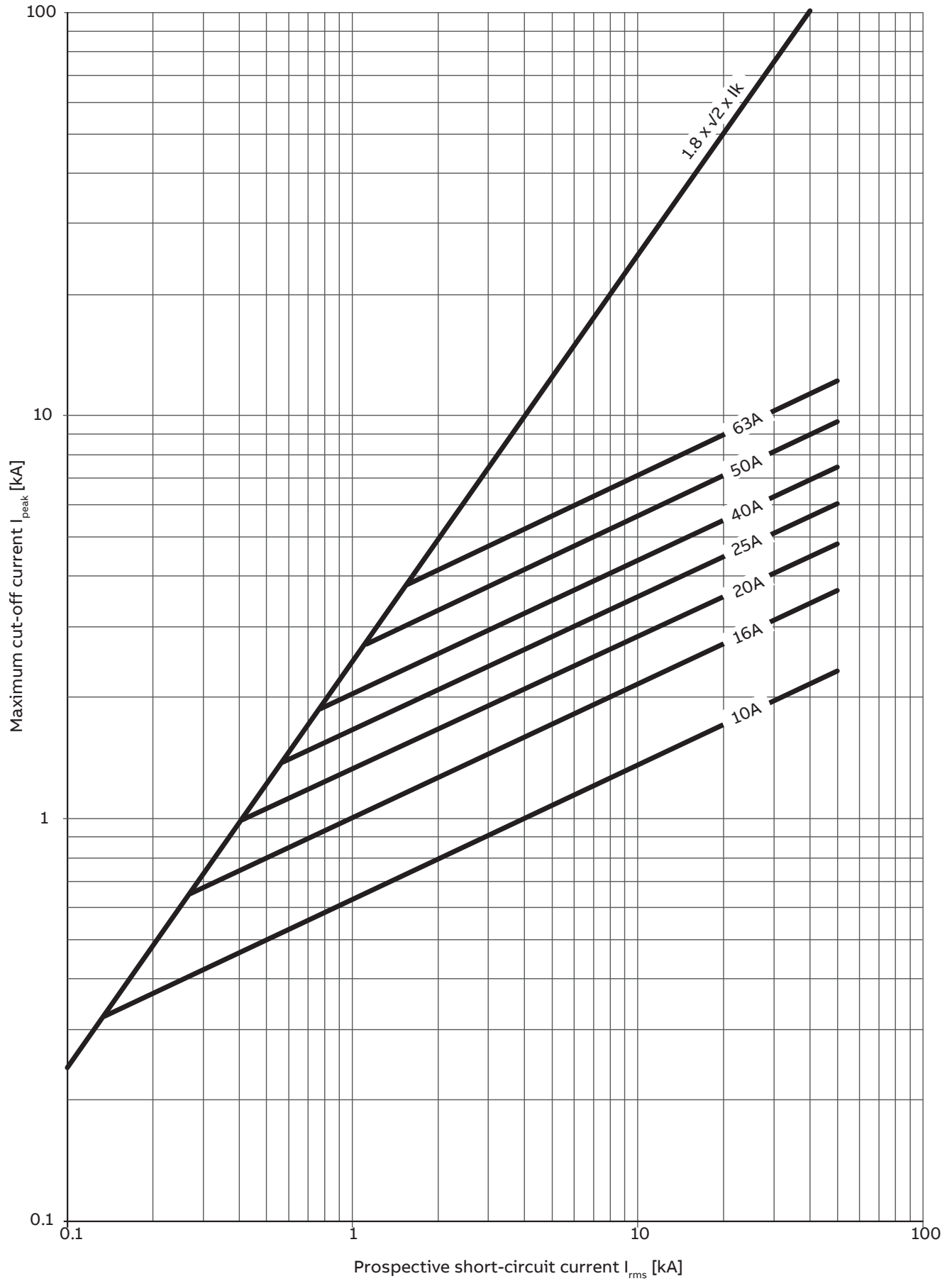


Characteristics show the cut-off current corresponding to a prospective short-circuit current. Characteristics are valid for frequency 50Hz.



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Characteristics show the cut-off current corresponding to a prospective short-circuit current. Characteristics are valid for frequency 50Hz.



CEF-S name plate and pre-installation message

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