

DISTRIBUTION SOLUTIONS

Fuse-links type CEF-VT

Rated voltages 3/7.2 kV - 10/24 kV

Rated current 0.5 A – 6.3 A



Efficient protection of voltage transformer circuits



Extending the lifetime of installed electrical equipment thanks to the limitation of the short-circuit current



Outdoor sealing included in standard version, designed and tested for harsh conditions

Fuse-links type CEF-VT are designed for protection against faults in voltage transformer installation

Key features:

- Designed and type tested acc. to IEC 60282-1
- 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) / without striker
- Equipped with Temperature Control Unit enabling the additional protection against thermal stresses in small enclosures

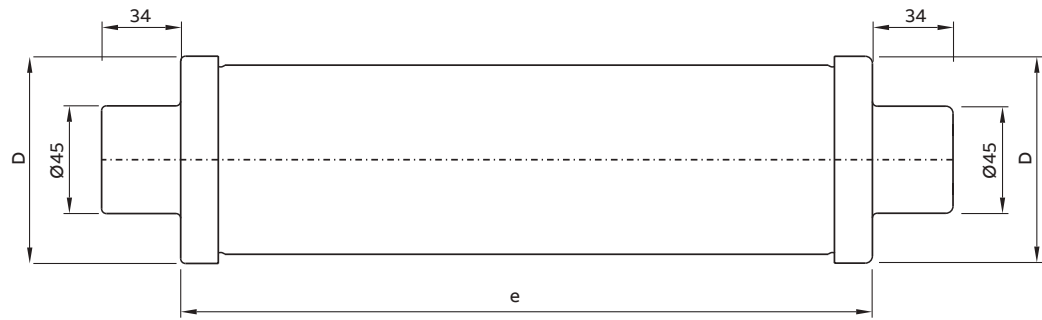


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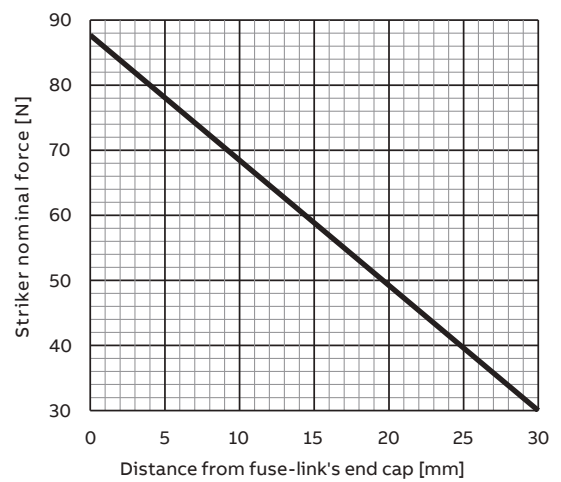
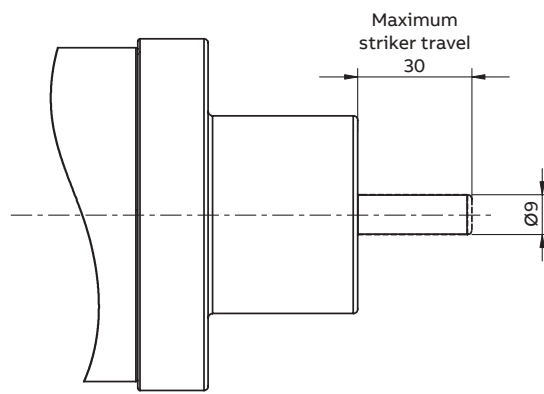
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01
Dimension drawing of
fuse-link type CEF-VT

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01



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02
Fuse-link striker force and
dimensions (applies only
for types with a striker)

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02



Choice of fuse-links for voltage transformer protection:

Rated voltage U_r – should be equal to or higher than the maximum operating system voltage
Rated current I_r – should be higher than the maximum continuous current of the voltage transformer

The following points should be observed:

- Initial starting current of voltage transformer should not cause fuse tripping under normal working conditions
- Rated breaking current of the fuse-links should be higher than the prospective value of the short-circuit in its place of installation
- The ability of the electrical system (switchgear) to withstand impulses should exceed the switching overvoltages generated by the fuse-links



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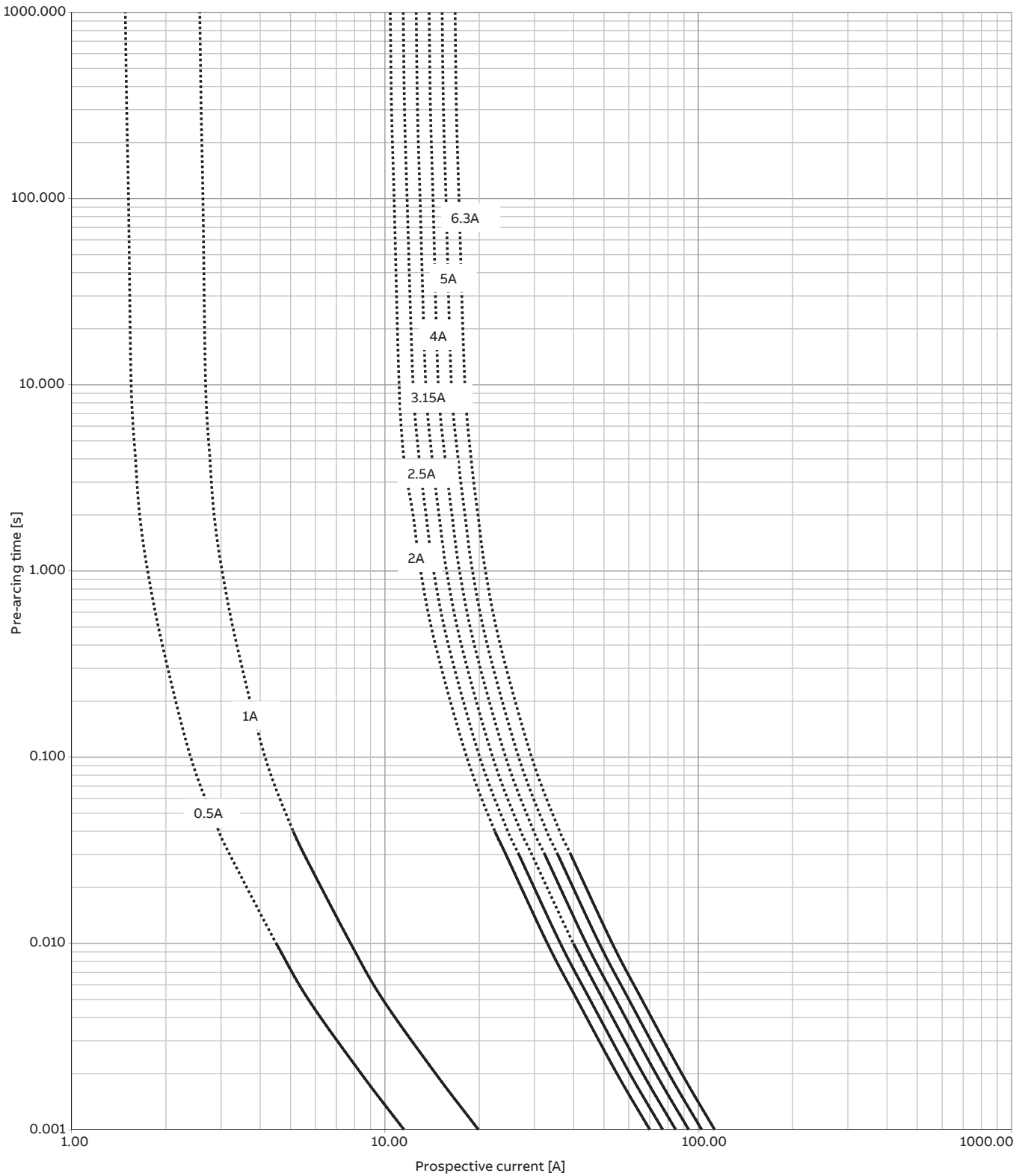
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Ordering and technical table of fuse-links CEF-VT

Catalog number	Fuse name	Striker force [N]	Rated voltage U_r [kV]	Rated current I_r [A]	Rated frequency f_r [Hz]	Breaking capacity I_{cs} [kA]	Minimal breaking current I_{cs} [A]	Diameter D [mm]	Length e [mm]	Rated power P_w [W]	Cold resistance [mΩ]	Weight [kg]	EAN 13 Code
1YMB750705M1502	CEF-VT	-	3/7.2	0.5	50	63	5	53	192	2	5957	1.2	5908270808577
1YMB750708M1502	CEF-VT	-	3/7.2	1	50	63	8	53	192	3	2149	1.2	5908270808584
1YMB750705M2502	CEF-VT	-	3/7.2	0.5	50	63	5	53	292	2	5957	1.6	5908270808591
1YMB750708M2502	CEF-VT	-	3/7.2	1	50	63	8	53	292	3	2149	1.6	5908270808607
1YMB751205M1502	CEF-VT	-	6/12	0.5	50	63	5	53	192	3	9660	1.2	5908270808614
1YMB751208M1502	CEF-VT	-	6/12	1	50	63	5	53	192	4.5	3485	1.2	5908270808621
1YMB751209M1512	CEF-VT	80	6/12	2	50	63	21	53	192	6.5	1311	1.2	5908270808638
1YMB751209M1502	CEF-VT	-	6/12	2	50	63	21	53	192	6.5	1607	1.2	5908270808645
1YMB751244M1512	CEF-VT	80	6/12	2.5	50	63	26	53	192	9.5	1100	1.2	5908270808652
1YMB751244M1502	CEF-VT	-	6/12	2.5	50	63	26	53	192	9.5	1317	1.2	5908270808669
1YMB751245M1512	CEF-VT	80	6/12	3.15	50	63	34	53	192	10.5	827	1.2	5908270808676
1YMB751245M1502	CEF-VT	-	6/12	3.15	50	63	34	53	192	10.5	951	1.2	5908270808683
1YMB751211M1512	CEF-VT	80	6/12	4	50	63	34	53	192	16	736	1.2	5908270808690
1YMB751211M1502	CEF-VT	-	6/12	4	50	63	34	53	192	16	835	1.2	5908270808706
1YMB751246M1512	CEF-VT	80	6/12	5	50	63	34	53	192	25.5	592	1.2	5908270808713
1YMB751246M1502	CEF-VT	-	6/12	5	50	63	34	53	192	25.5	659	1.2	5908270808720
1YMB751214M1512	CEF-VT	80	6/12	6.3	50	63	37	53	192	26	421	1.2	5908270808737
1YMB751214M1502	CEF-VT	-	6/12	6.3	50	63	37	53	192	26	458	1.2	5908270808744
1YMB751205M2502	CEF-VT	-	6/12	0.5	50	63	5	53	292	3	9660	1.6	5908270808751
1YMB751208M2502	CEF-VT	-	6/12	1	50	63	5	53	292	4.5	3485	1.6	5908270808768
1YMB751209M2512	CEF-VT	80	6/12	2	50	63	21	53	292	6.5	1311	1.6	5908270808775
1YMB751209M2502	CEF-VT	-	6/12	2	50	63	21	53	292	6.5	1607	1.6	5908270808782
1YMB751244M2512	CEF-VT	80	6/12	2.5	50	63	26	53	292	9.5	1100	1.6	5908270808799
1YMB751244M2502	CEF-VT	-	6/12	2.5	50	63	26	53	292	9.5	1317	1.6	5908270808805
1YMB751245M2512	CEF-VT	80	6/12	3.15	50	63	34	53	292	10.5	827	1.6	5908270808812
1YMB751245M2502	CEF-VT	-	6/12	3.15	50	63	34	53	292	10.5	951	1.6	5908270808829
1YMB751211M2512	CEF-VT	80	6/12	4	50	63	34	53	292	16	736	1.6	5908270808836
1YMB751211M2502	CEF-VT	-	6/12	4	50	63	34	53	292	16	835	1.6	5908270808843
1YMB751246M2512	CEF-VT	80	6/12	5	50	63	34	53	292	25.5	592	1.6	5908270808850
1YMB751246M2502	CEF-VT	-	6/12	5	50	63	34	53	292	25.5	659	1.6	5908270808867
1YMB751214M2512	CEF-VT	80	6/12	6.3	50	63	37	53	292	26	421	1.6	5908270808874
1YMB751214M2502	CEF-VT	-	6/12	6.3	50	63	37	53	292	26	458	1.6	5908270808881
1YMB751705M1502	CEF-VT	-	10/17.5	0.5	50	63	5	53	192	4	12880	1.2	5908270808898
1YMB751708M1502	CEF-VT	-	10/17.5	1	50	63	8	53	192	5.5	4716	1.2	5908270808904
1YMB751709M1512	CEF-VT	80	10/17.5	2	50	63	24	53	192	9.5	1994	1.2	5908270808911
1YMB751709M1502	CEF-VT	-	10/17.5	2	50	63	24	53	192	9.5	2410	1.2	5908270808928
1YMB751744M1512	CEF-VT	80	10/17.5	2.5	50	63	24	53	192	13.5	1618	1.2	5908270808935
1YMB751744M1502	CEF-VT	-	10/17.5	2.5	50	63	24	53	192	13.5	1882	1.2	5908270808942
1YMB751745M1512	CEF-VT	80	10/17.5	3.15	50	63	31	53	192	15.5	1174	1.2	5908270808959
1YMB751745M1502	CEF-VT	-	10/17.5	3.15	50	63	31	53	192	15.5	1307	1.2	5908270808966
1YMB751711M1512	CEF-VT	80	10/17.5	4	50	63	31	53	192	23	1063	1.2	5908270808973
1YMB751711M1502	CEF-VT	-	10/17.5	4	50	63	31	53	192	23	1171	1.2	5908270808980
1YMB751746M1512	CEF-VT	80	10/17.5	5	50	63	31	53	192	31.5	870	1.2	5908270808997
1YMB751746M1502	CEF-VT	-	10/17.5	5	50	63	31	53	192	31.5	941	1.2	5908270809000

Catalog number	Fuse name	Striker force [N]	Rated voltage U_r [kV]	Rated current I_r [A]	Rated frequency f_r [Hz]	Breaking capacity I_b [kA]	Minimal breaking current I_{b1} [A]	Diameter D [mm]	Length e [mm]	Rated power P_n [W]	Cold resistance [m Ω]	Weight [kg]	EAN 13 Code
1YMB751714M1512	CEF-VT	80	10/17.5	6.3	50	63	37	53	192	38	619	1.2	5908270809017
1YMB751714M1502	CEF-VT	-	10/17.5	6.3	50	63	37	53	192	38	654	1.2	5908270809024
1YMB751705M2502	CEF-VT	-	10/17.5	0.5	50	63	5	53	292	4	12880	1.6	5908270809031
1YMB751708M2502	CEF-VT	-	10/17.5	1	50	63	8	53	292	5.5	4716	1.6	5908270809048
1YMB751709M2512	CEF-VT	80	10/17.5	2	50	63	24	53	292	9.5	1994	1.6	5908270809055
1YMB751709M2502	CEF-VT	-	10/17.5	2	50	63	24	53	292	9.5	2410	1.6	5908270809062
1YMB751744M2512	CEF-VT	80	10/17.5	2.5	50	63	24	53	292	13.5	1618	1.6	5908270809079
1YMB751744M2502	CEF-VT	-	10/17.5	2.5	50	63	24	53	292	13.5	1882	1.6	5908270809086
1YMB751745M2512	CEF-VT	80	10/17.5	3.15	50	63	31	53	292	15.5	1174	1.6	5908270809093
1YMB751745M2502	CEF-VT	-	10/17.5	3.15	50	63	31	53	292	15.5	1307	1.6	5908270809109
1YMB751711M2512	CEF-VT	80	10/17.5	4	50	63	31	53	292	23	1063	1.6	5908270809116
1YMB751711M2502	CEF-VT	-	10/17.5	4	50	63	31	53	292	23	1171	1.6	5908270809123
1YMB751746M2512	CEF-VT	80	10/17.5	5	50	63	31	53	292	31.5	870	1.6	5908270809130
1YMB751746M2502	CEF-VT	-	10/17.5	5	50	63	31	53	292	31.5	941	1.6	5908270809147
1YMB751714M2512	CEF-VT	80	10/17.5	6.3	50	63	37	53	292	38	619	1.6	5908270809154
1YMB751714M2502	CEF-VT	-	10/17.5	6.3	50	63	37	53	292	38	654	1.6	5908270809161
1YMB752405M2502	CEF-VT	-	10/24	0.5	50	63	5	53	292	5	17709	1.6	5908270809178
1YMB752408M2502	CEF-VT	-	10/24	1	50	63	8	53	292	8	6389	1.6	5908270809185
1YMB752409M2512	CEF-VT	80	10/24	2	50	63	25	53	292	12	2568	1.6	5908270809192
1YMB752409M2502	CEF-VT	-	10/24	2	50	63	25	53	292	12	2962	1.6	5908270809208
1YMB752444M2512	CEF-VT	80	10/24	2.5	50	63	25	53	292	16.5	2138	1.6	5908270809215
1YMB752444M2502	CEF-VT	-	10/24	2.5	50	63	25	53	292	16.5	2404	1.6	5908270809222
1YMB752445M2512	CEF-VT	80	10/24	3.15	50	63	30	53	292	19	1537	1.6	5908270809239
1YMB752445M2502	CEF-VT	-	10/24	3.15	50	63	30	53	292	19	1670	1.6	5908270809246
1YMB752411M2512	CEF-VT	80	10/24	4	50	63	31	53	292	29.5	1375	1.6	5908270809253
1YMB752411M2502	CEF-VT	-	10/24	4	50	63	31	53	292	29.5	1481	1.6	5908270809260
1YMB752446M2512	CEF-VT	80	10/24	5	50	63	31	53	292	39	1132	1.6	5908270809277
1YMB752446M2502	CEF-VT	-	10/24	5	50	63	31	53	292	39	1202	1.6	5908270809284
1YMB752414M2512	CEF-VT	80	10/24	6.3	50	63	36	53	292	46	801	1.6	5908270809291
1YMB752414M2502	CEF-VT	-	10/24	6.3	50	63	36	53	292	46	835	1.6	5908270809307
1YMB752405M4502	CEF-VT	-	10/24	0.5	50	63	5	53	442	5	17709	2.3	5908270809314
1YMB752408M4502	CEF-VT	-	10/24	1	50	63	8	53	442	8	6389	2.3	5908270809321
1YMB752409M4512	CEF-VT	80	10/24	2	50	63	25	53	442	12	2568	2.3	5908270806528
1YMB752409M4502	CEF-VT	-	10/24	2	50	63	25	53	442	12	2962	2.3	5908270809338
1YMB752444M4512	CEF-VT	80	10/24	2.5	50	63	25	53	442	16.5	2138	2.3	5908270809345
1YMB752444M4502	CEF-VT	-	10/24	2.5	50	63	25	53	442	16.5	2404	2.3	5908270809352
1YMB752445M4512	CEF-VT	80	10/24	3.15	50	63	30	53	442	19	1537	2.3	5908270809369
1YMB752445M4502	CEF-VT	-	10/24	3.15	50	63	30	53	442	19	1670	2.3	5908270809376
1YMB752411M4512	CEF-VT	80	10/24	4	50	63	31	53	442	29.5	1375	2.3	5908270806535
1YMB752411M4502	CEF-VT	-	10/24	4	50	63	31	53	442	29.5	1481	2.3	5908270809383
1YMB752446M4512	CEF-VT	80	10/24	5	50	63	31	53	442	39	1132	2.3	5908270809390
1YMB752446M4502	CEF-VT	-	10/24	5	50	63	31	53	442	39	1202	2.3	5908270809406
1YMB752414M4512	CEF-VT	80	10/24	6.3	50	63	36	53	442	46	801	2.3	5908270809413
1YMB752414M4502	CEF-VT	-	10/24	6.3	50	63	36	53	442	46	835	2.3	5908270809420

CEF-VT 3/7.2 kV; 6/12 kV; 10/17.5 kV; 10/24 kV time-current characteristics



Characteristic show the average melting time as a function of the prospective current and are recorded from cold condition of fuse-link. The tolerance is $\pm 20\%$ referred to the current for

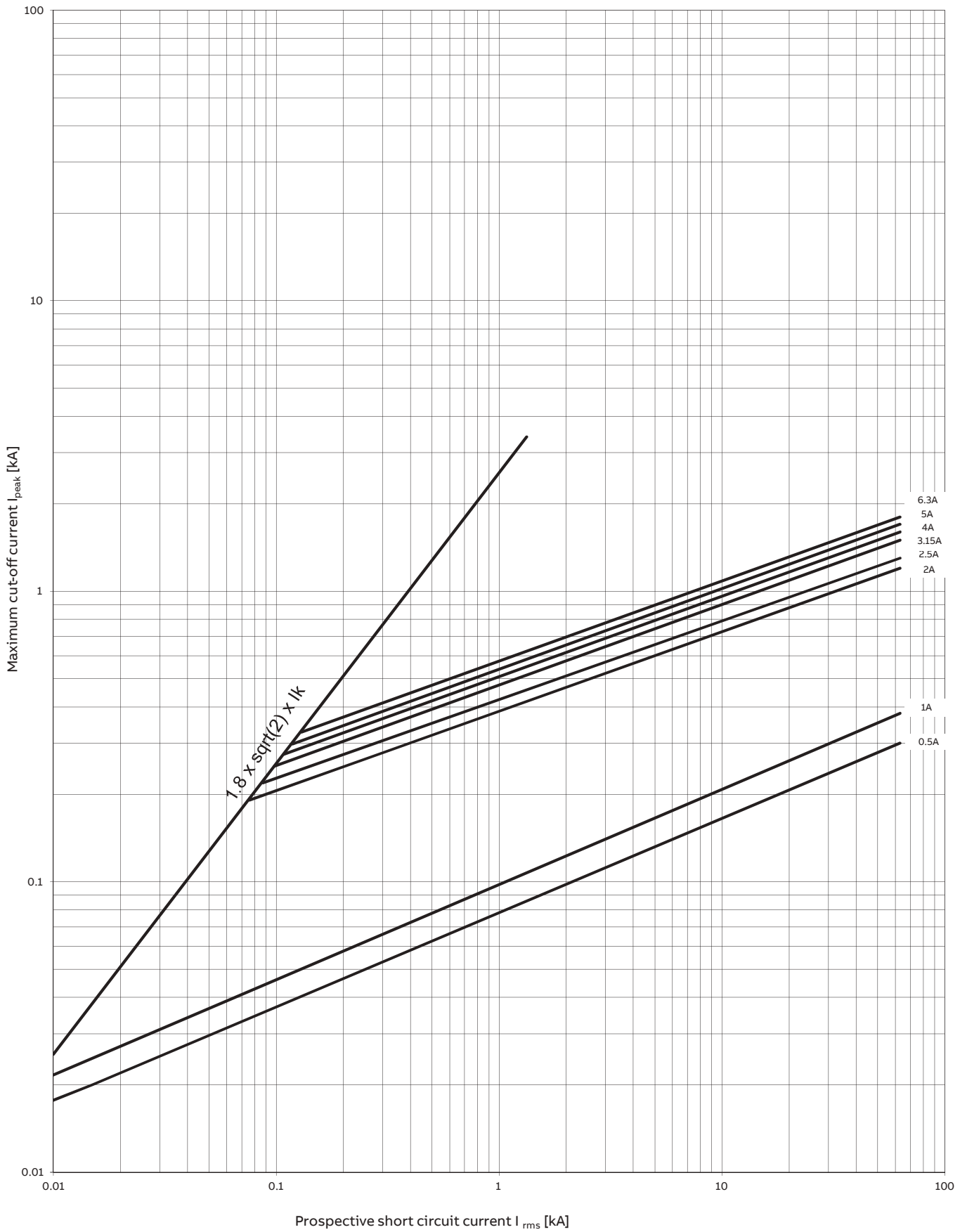
single fuses. Broken line indicates the uncertain interrupting zone. Characteristics are valid for frequency 50 Hz



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CEF-VT 3/7.2 kV; 6/12kV; 10/17.5 kV; 10/24 kV cut-off current characteristics



Characteristics show the upper limit of the cut-off current corresponding to a prospective short circuit current.

Characteristics are valid for frequency 50Hz.

Temperature Control Unit:

The Temperature Control Unit (TCU) is tripping device which is integrated with the striker of highvoltage (HV) fuses. It is activated when the allowable temperature in the switchgear is exceeded. When the temperature is too high the TCU activates the striker by releasing the switch disconnecter, which in turn opens the electric circuit and avoids further temperature increases. The high temperatures inside the switchgear interior may be caused by external conditions or by a high current passing through the fuse link. List of possible reasons of too high temperatures inside fuse compartment:

- reduced heat transfer inside the switchgear
- over-heating of degraded conducting contacts
- long-term fuse overloads
- improper selection of the fuse rating
- local melting of fuse elements caused by transformer inrush currents, starting currents of motors etc.

Safety is significantly increased when fuses are equipped with a TCU. This is especially true in devices where fuses are located inside closed fuse compartments, as is the case of SF6 switchgear. In gas insulated switchgear fuse canisters or in narrow panels of air switchgear the risk of overheating is high because cooling is limited. High temperatures in switchgears cause degradation and oxidation of the metal contacts, degradation of switchgear equipment or enclosures, and insulator ageing. Unfavorable effects, i.e. temperature rise inside the switchgear, leads to internal short-circuit and further temperature increases. In case of reaching too high temperature, TCU will be activated, releasing a striker and opening associated switch, thus eliminating the threat.



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