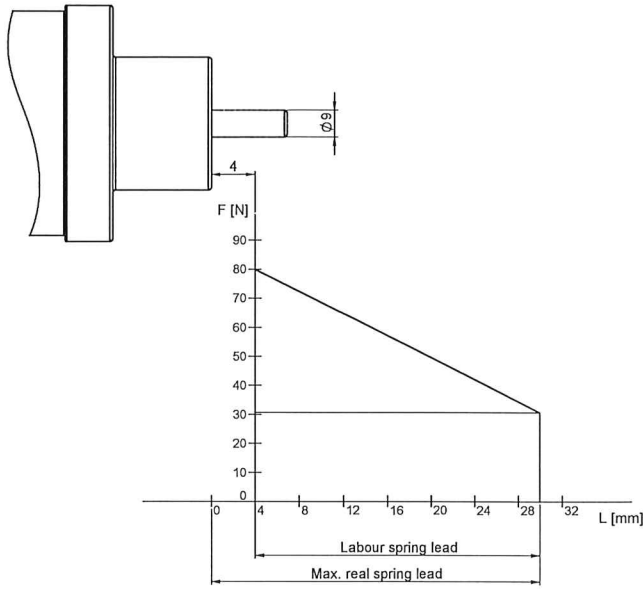


Indicator and striker pin

CEF and CMF series fuses are equipped with a combined indicator and striker system which is activated immediately when the fuse element melts. CEF-VT is available with and without a striker pin - please refer to the ordering tables. The force diagram is in accordance with the requirements of IEC 60282-1 (IEC 282-1) and DIN 43625.

The striker pin force diagram shown below refers to presently manufactured CEF/CMF fuses.



Nameplate

The symbols on the nameplate have the following meaning:

I_n = Rated current

U_n = Rated voltage (The digits before the slash mean the lowest voltage at which the fuse can be safely used. Digits after the slash mean the rated voltage of the fuse).

I_3 = Minimum breaking current

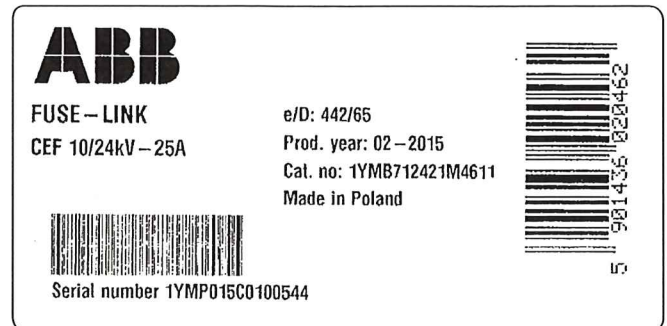
I_1 = Maximum short circuit current for which the fuse is tested

ABB	
CEF HV Back-up type fuse-link	
$U_n = 10/24kV$ $I_n = 25A$ $I_1 = 63kA$ $I_3 = 72A$	IEC60282-1 DIN43625 Indoor / Outdoor Temperature Control Unit Prod. year: 02-2015 Cat. no: 1YMB712421M4611 Rated resistance: $R_{20} = 90,2 \text{ m}\Omega \pm 10\%$
Striker 80N (MEDIUM)	
Made in ABB Serial number 1YMP015C0105946	

The arrowhead on the nameplate indicates at which end of the fuse link the indicator and striker pin appears. Additionally this end contact of the fuse link is specially marked.

CEF-U variant has been included in standard CEF, CEF-S and CEF-VT fuse design and is no more marked separately.

A typical ABB CEF fuse nameplate is shown above. The information presented varies for specific fuse types.



All CEF and CMF fuses are marked with EAN 13 codes (on their carton boxes). These are specified in the ordering tables and are positioned to the right of the catalogue numbers. An example of this nameplate is presented below.

Current limitation

All ABB fuse links presented are current limiting ones. A large short-circuit current will therefore not reach its full value. The cut-off characteristics show the relationship between the prospective short-circuit current and the peak value of the cut-off current. Substantial current limitation results in a considerable reduction in thermal and mechanical stress in a high-voltage installation.

Rated voltage: 3.6/7.2-36 kV

High voltage current limiting Fuse links type CEF

1. General

The HRC generation of fuse links type CEF is designed and tested according to IEC Publication 60282-1 (IEC 282-1). Dimensionally the fuse links are in accordance with DIN 43625. There are available CEF fuses marked as E-Rated. The detailed information are published in separate publication. ABB's high-voltage fuse links have the following properties:

- unified voltage ratings for more application flexibility,
- integrated striker pin with temperature control unit (TCU) to prevent overheating in installation place
- overload spots control internal arc initiation and determine outstanding temperature performance
- single fuse version for both indoor and outdoor operating conditions
- narrow tolerance of resistance for better fuse synchronizing in three phase networks
- graded fuse data for long term fuse recognition
- welded current path secures stable electrical contacts with active breaking elements,
- full range protection in application with switch-fuse combination,
- low power losses make fuses suitable for compact switchgear and ring main units,
- high current limitation significantly reduces prospective value of short circuit currents and therefore extends insulation live time,
- type tested acc. to IEC 60282-1,

CEF fuses are of a back-up type. They have a zone between the minimum melting current and the minimum breaking current where the fuse links may fail to interrupt. For CEF fuse links this zone is very narrow. The minimum breaking current, I_3 , for any type is specified in the table on pages 10 to 12.

2. Overvoltages

In order to be current limiting, the fuse link must generate an arc voltage that exceeds the instantaneous value of the operating voltage. The switching voltage generated by the CEF fuse link is below the maximum permissible value according to IEC 60282-1 (IEC 282-1). The CEF fuse link can be used within voltage range presented in fuse name (i.e. 10/24 kV means safe application between 10kV and 24 kV) please see rated voltage allowable ratings in fuse label area.

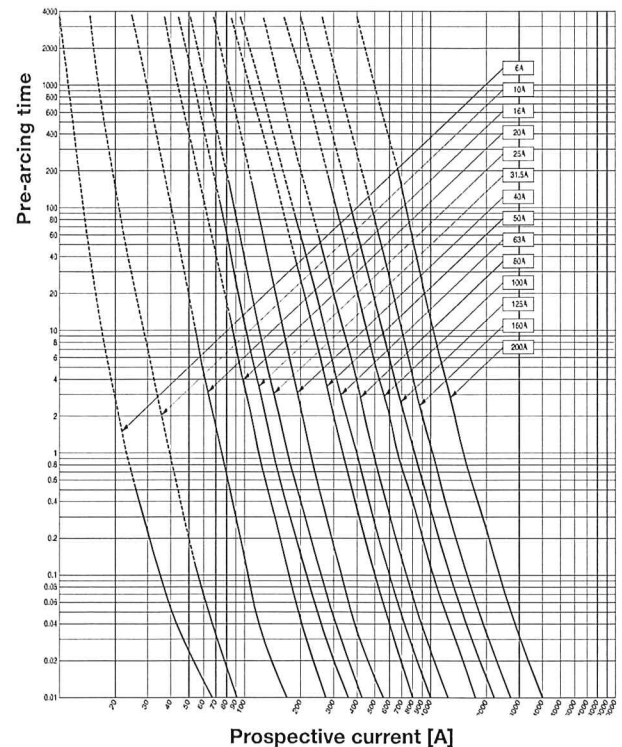
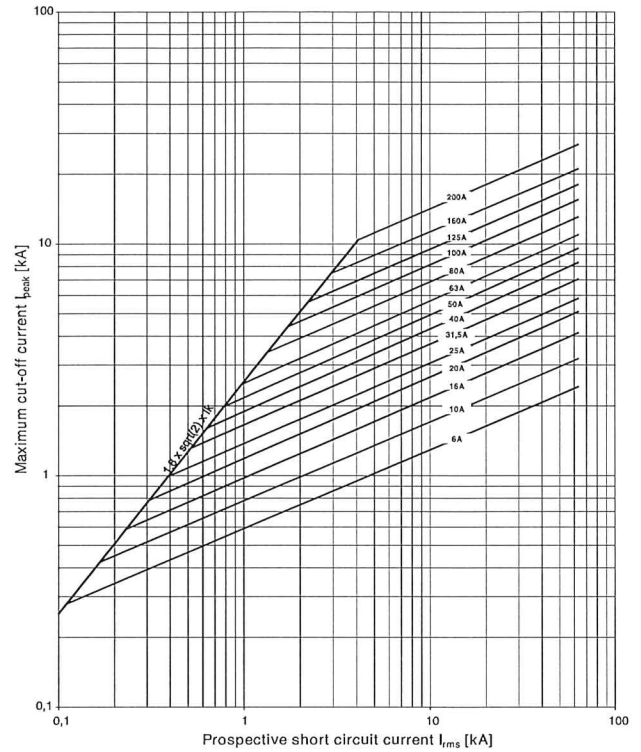
3. Pre-arcing times and cut-off characteristics

The characteristics are equal for all rated voltages and are recorded for cold fuse link. Dashed sections of the curves indicate an area of uncertain interruption. The tolerance is 10% and it refers to the current.

4. Choice of fuse links

Choice of rated current I_n

The selection of I_n for transformer protection for free air circulation is presented in Table 10. When fuses are placed in closed panels the selection should be taken from catalogues of these applications (SafeRing, SafePlus etc.)



Remarks:

1. Characteristics show the average melting time as a function of the prospective current.
2. The deviation of 10% refers to the current.
3. The characteristics are valid for all rated voltages and are recorded from fuse link cold condition.
4. Broken line indicates the uncertain interrupting zone.