

High voltage current limiting Fuse links type CEF

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Rated voltage: 3.6/7.2-36 kV

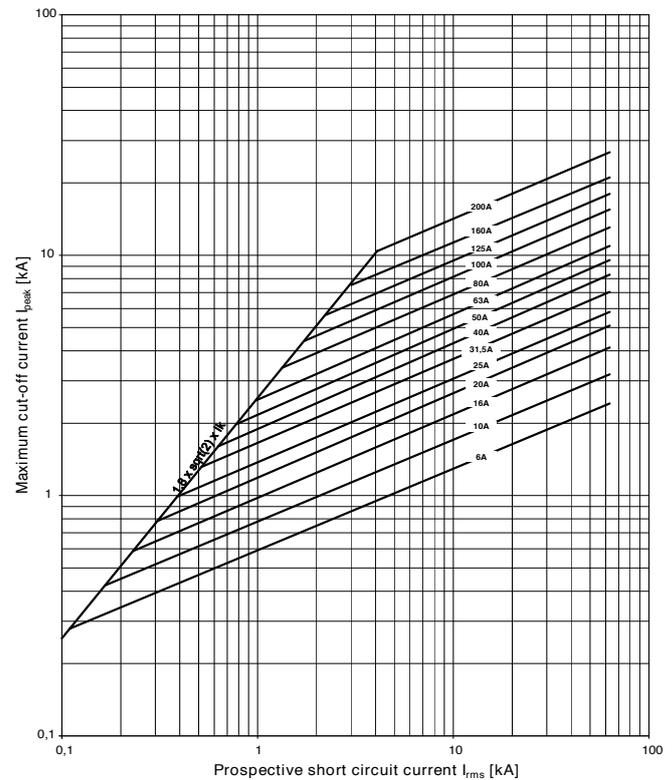
High voltage current limiting Fuse links type CEF

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 low minimum breaking current,
- high breaking capacity in combination with fuse tripped load break switch offers competitive solution for short circuit currents interruption,
- low power losses make fuses suitable for compact switchgear and ring main units,
- high current limitation significantly reduce 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 safely be used within voltage range presented in fuse name (i.e. 10/24 kV means that the fuse may be safely used between 10 kV 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 under cold conditions. 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

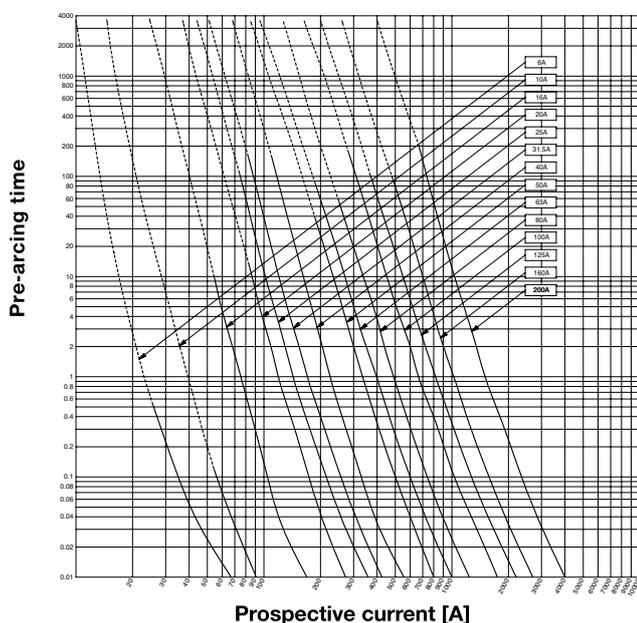
Choice of rated current I_n

In order to choose the current fuse link rated current for transformer protection, the relation between the power rating of the transformers, and the operating voltage and rated current of the fuse link is given in the table on page 10.

For the correct choice of fuse links for transformer protection in switchgear type SafeRing, SafePlus and SafeLink, see SF6 Insulation Compact Switchgear and Ring Main Unit catalogue.

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.



New smartcode	CEF	In	I ₁	I ₃	Pn	Pre-arcing integral I ² t	Operating integral I ² t	R ₀	D	Weight	Old catalogue No. CEF	Old catalogue No. CEF-TCU
		[A]	[kA]	[A]	[W]	[A ² s]	[A ² s]	[mΩ]	[mm]	[kg]		
Rated voltage: 6/12 kV Length „e“: 292 mm												
1YMB711218M2611		16	63	55	32	120	2000	105.2	65	2.3	1YMB531002M0003	1YMB531852M0003
1YMB711219M2511		20	63	83	38	365	5600	70.1	53	1.9	1YMB531042M0004	1YMB531892M0004
1YMB711221M2611		25	63	77	47	500	7000	52.6	65	2.3	1YMB531002M0004	1YMB531852M0004
1YMB711225M2611		40	63	105	52	1000	20000	23.0	65	2.3	1YMB531002M0005	1YMB531852M0005
1YMB711227M2611		50	63	190	70	2500	31000	17.9	65	2.3	1YMB531002M0006	1YMB531852M0006
1YMB711229M2611		63	63	190	78	4500	90000	13.4	65	2.3	1YMB531002M0007	1YMB531852M0007
1YMB711231M2811		80	63	250	82	9200	78000	9.2	87	3.6	1YMB531002M0008	1YMB531852M0008
1YMB711233M2811		100	63	275	84	15000	300000	6.6	87	3.6	1YMB531002M0009	1YMB531852M0009
1YMB711224M2611		31.5	63	100	41	610	12100	30.7	65	2.3	1YMB531002M0014	1YMB531852M0014
1YMB711231M2611		80	63	250	82	9200	78000	9.2	65	2.3	1YMB531002M0021	1YMB531852M0021
1YMB711233M2611		100	63	375	101	15000	300000	6.4	65	2.3	1YMB531002M0022	1YMB531852M0022
1YMB711235M2811		125	63	375	125	20000	400000	5.3	87	3.6	1YMB531043M0010	1YMB531893M0010
Rated voltage: 6/12 kV Length „e“: 442 mm												
1YMB711213M4511		6	63	36	46	20	300	665.0	53	2.5	1YMB531047M0001	1YMB531897M0001
1YMB711213M4611		6	63	35	41	20	300	665.0	65	3	1YMB531035M0001	1YMB531885M0001
1YMB711216M4511		10	63	65	25	30	500	180.5	53	2.5	1YMB531047M0002	1YMB531897M0002
1YMB711216M4611		10	63	55	33	30	500	180.5	65	3	1YMB531035M0002	1YMB531885M0002
1YMB711218M4511		16	63	65	34	120	2000	105.2	53	2.5	1YMB531047M0003	1YMB531897M0003
1YMB711218M4611		16	63	55	32	120	2000	105.2	65	3	1YMB531035M0003	1YMB531885M0003
1YMB711219M4511		20	63	83	38	365	5600	70.1	53	2.5	1YMB531047M0004	1YMB531897M0004
1YMB711221M4611		25	63	77	47	500	7000	52.6	65	3	1YMB531035M0004	1YMB531885M0004
1YMB711224M4611		31.5	63	100	41	610	12100	30.7	65	3	1YMB531035M0014	1YMB531885M0014
1YMB711225M4611		40	63	105	52	1000	20000	23.0	65	3	1YMB531035M0005	1YMB531885M0005
1YMB711227M4611		50	63	190	70	2500	31000	17.9	65	3	1YMB531035M0006	1YMB531885M0006
1YMB711229M4611		63	63	190	78	4500	90000	13.4	65	3	1YMB531035M0007	1YMB531885M0007
1YMB711231M4611		80	63	250	82	9200	78000	9.2	65	3	1YMB531035M0021	1YMB531885M0021
1YMB711231M4811		80	63	250	82	9200	78000	9.2	87	5.3	1YMB531035M0008	1YMB531885M0008
1YMB711233M4611		100	63	375	103	15000	300000	6.4	65	3	1YMB531035M0022	1YMB531885M0022
1YMB711233M4811		100	63	275	84	15000	300000	6.6	87	5.3	1YMB531035M0009	1YMB531885M0009
1YMB711235M4611		125	63	375	125	20000	400000	5.3	65	3	1YMB531002M0023	1YMB531852M0023
1YMB711235M4811		125	63	375	125	20000	400000	5.3	87	5.3	1YMB531002M0010	1YMB531852M0010
1YMB711238M4811		160	63	480	170	35000	600000	3.9	87	5.3	1YMB531002M0011	1YMB531852M0011
1YMB711239M4811		200	50	650	174	100000	900000	2.7	87	5.3	1YMB531002M0012	1YMB531852M0012
Rated voltage: 6/12 kV Length „e“: 537 mm												
1YMB711235M5611		125	50	375	125	20000	400000	5.3	65	4	1YMB531035M0023	1YMB531885M0023
1YMB711235M5811		125	50	375	125	20000	400000	5.3	87	5.3	1YMB531035M0010	1YMB531885M0010
1YMB711238M5811		160	50	480	170	35000	600000	3.9	87	5.3	1YMB531035M0011	1YMB531885M0011
1YMB711239M5811		200	50	650	174	100000	900000	2.7	87	5.3	1YMB531035M0012	1YMB531885M0012
Rated voltage: 10/17.5 kV Length "e": 292 mm												
1YMB711713M2611		6	20	35	54	20	300	807.0	65	2.3	1YMB531003M0001	1YMB531853M0001
1YMB711716M2611		10	20	55	41	30	500	270.7	65	2.3	1YMB531003M0002	1YMB531853M0002
1YMB711718M2611		16	20	55	67	120	2000	135.4	65	2.3	1YMB531003M0003	1YMB531853M0003
1YMB711719M2611		20	25	83	52.6	365	5600	90.3	65	2.3	1YMB531003M0013	1YMB531853M0013
1YMB711721M2611		25	25	72	64	500	7000	67.7	65	2.3	1YMB531003M0004	1YMB531853M0004
1YMB711724M2611		31.5	25	100	56.7	610	12100	46.0	65	2.3	1YMB531003M0014	1YMB531853M0014
1YMB711725M2611		40	25	210	80	1000	20000	34.7	65	2.3	1YMB531003M0021	1YMB531853M0021
1YMB711725M2811		40	25	100	80	1000	20000	34.5	87	3.6	1YMB531003M0005	1YMB531853M0005
1YMB711727M2611		50	25	210	90	2500	31000	23.1	65	2.3	1YMB531003M0022	1YMB531853M0022
1YMB711727M2811		50	25	210	90	2500	31000	23.1	87	3.6	1YMB531003M0006	1YMB531853M0006
1YMB711729M2811		63	25	210	100	4500	90000	17.3	87	3.6	1YMB531003M0007	1YMB531853M0007
Rated voltage: 10/17.5 kV Length "e": 367 mm												
1YMB711713M3611		6	20	35	54	20	300	807.0	65	2.7	1YMB531036M0001	1YMB531886M0001
1YMB711716M3611		10	20	55	41	30	500	270.7	65	2.7	1YMB531036M0002	1YMB531886M0002
1YMB711718M3611		16	20	55	67	120	2000	135.4	65	2.7	1YMB531036M0003	1YMB531886M0003
1YMB711719M3611		20	25	83	52.6	365	5600	90.3	65	2.7	1YMB531036M0013	1YMB531886M0013
1YMB711721M3611		25	25	72	64	500	7000	67.7	65	2.7	1YMB531036M0004	1YMB531886M0004
1YMB711724M3611		31.5	25	100	56.7	610	12100	46.0	65	2.7	1YMB531036M0014	1YMB531886M0014
1YMB711725M3611		40	25	210	80	1000	20000	34.7	65	2.7	1YMB531036M0021	1YMB531886M0021
1YMB711725M3811		40	25	100	80	1000	20000	34.5	87	4.4	1YMB531036M0005	1YMB531886M0005
1YMB711727M3611		50	25	210	90	2500	31000	23.1	65	2.7	1YMB531036M0022	1YMB531886M0022
1YMB711727M3811		50	25	210	90	2500	31000	23.1	87	4.4	1YMB531036M0006	1YMB531886M0006
1YMB711729M3811		63	25	210	100	4500	90000	17.3	87	4.4	1YMB531036M0007	1YMB531886M0007
1YMB711733M3811		100	25	375	136	15000	300000	9.5	87	4.4	1YMB531038M0001	1YMB531888M0001

New smartcode	CEF	In	I ₁	I ₃	Pn	Pre-arcing integral I ² t	Operating integral I ² t	R ₀	D	Weight	Old catalogue No. CEF	Old catalogue No. CEF-TCU
		[A]	[kA]	[A]	[W]	[A ² s]	[A ² s]	[mΩ]	[mm]	[kg]		
Rated voltage: 10/17.5 kV Length „e”: 442 mm												
1YMB711713M4611		6	20	35	54	20	300	807.0	65	3	1YMB531037M0001	1YMB531887M0001
1YMB711716M4611		10	20	55	41	30	500	270.7	65	3	1YMB531037M0002	1YMB531887M0002
1YMB711718M4611		16	20	55	67	120	2000	135.4	65	3	1YMB531037M0003	1YMB531887M0003
1YMB711719M4611		20	25	83	52.6	365	5600	90.3	65	3	1YMB531037M0013	1YMB531887M0013
1YMB711721M4611		25	25	72	64	500	7000	67.7	65	3	1YMB531037M0004	1YMB531887M0004
1YMB711724M4611		31.5	25	100	56.7	610	12100	46.0	65	3	1YMB531037M0014	1YMB531887M0014
1YMB711725M4611		40	25	210	80	1000	20000	34.7	65	3	1YMB531037M0021	1YMB531887M0021
1YMB711725M4811		40	25	100	80	1000	20000	34.5	87	5.3	1YMB531037M0005	1YMB531887M0005
1YMB711727M4611		50	25	210	90	2500	31000	23.1	65	3	1YMB531037M0022	1YMB531887M0022
1YMB711727M4811		50	25	210	90	2500	31000	23.1	87	5.3	1YMB531037M0006	1YMB531887M0006
1YMB711729M4811		63	25	210	100	4500	90000	17.3	87	5.3	1YMB531037M0007	1YMB531887M0007
1YMB711731M4811		80	25	250	124	9200	78000	13.8	87	5.3	1YMB531003M0008	1YMB531853M0008
1YMB711733M4811		100	25	275	136	15000	300000	9.9	87	5.3	1YMB531003M0009	1YMB531853M0009
Rated voltage: 10/17.5 kV Length "e": 537 mm												
1YMB711731M5811		80	25	250	124	9200	78000	13.8	87	5.3	1YMB531037M0008	1YMB531887M0008
1YMB711733M5811		100	25	275	136	15000	300000	9.9	87	5.3	1YMB531037M0009	1YMB531887M0009
1YMB711735M5811		125	25	375	175	20000	400000	7.9	87	5.3	1YMB531037M0010	1YMB531887M0010
Rated voltage: 10/24 kV Length „e”: 442 mm												
1YMB712413M4511		6	63	25	82	20	300	1229.0	53	2.5	1YMB531044M0001	1YMB531894M0001
1YMB712413M4611		6	63	35	91	20	300	1229.0	65	3	1YMB531004M0001	1YMB531854M0001
1YMB712416M4511		10	63	65	48	30	500	360.9	53	2.5	1YMB531044M0002	1YMB531894M0002
1YMB712416M4611		10	63	55	62	30	500	360.9	65	3	1YMB531004M0002	1YMB531854M0002
1YMB712418M4511		16	63	65	63	120	2000	180.5	53	2.5	1YMB531044M0003	1YMB531894M0003
1YMB712418M4611		16	63	55	72	120	2000	180.5	65	3	1YMB531004M0003	1YMB531854M0003
1YMB712419M4511		20	63	83	64	365	5600	120.3	53	2.5	1YMB531044M0004	1YMB531894M0004
1YMB712419M4611		20	63	82	61	365	5600	120.3	65	3	1YMB531004M0011	1YMB531854M0011
1YMB712421M4611		25	63	72	79	500	7000	90.2	65	3	1YMB531004M0004	1YMB531854M0004
1YMB712424M4611		31.5	63	82	98	610	12100	72.2	65	3	1YMB531004M0012	1YMB531854M0012
1YMB712425M4611		40	63	110	106	1000	20000	46.0	65	3	1YMB531004M0005	1YMB531854M0005
1YMB712427M4611		50	63	210	130	2500	31000	30.7	65	3	1YMB531004M0021	1YMB531854M0021
1YMB712427M4811		50	63	210	130	2500	31000	30.7	87	5.3	1YMB531004M0006	1YMB531854M0006
1YMB712429M4611		63	63	250	147	4500	90000	23.0	65	3	1YMB531004M0022	1YMB531854M0022
1YMB712429M4811		63	63	210	147	4500	90000	23.0	87	5.3	1YMB531004M0007	1YMB531854M0007
1YMB712431M4811		80	63	250	165	9200	78000	18.4	87	5.3	1YMB531022M0001	1YMB531872M0001
Rated voltage: 10/24 kV Length „e”: 537 mm												
1YMB712431M5611		80	63	250	165	9200	78000	18.4	65	4	1YMB531004M0023	1YMB531854M0023
1YMB712431M5811		80	63	250	165	9200	78000	18.4	87	6.2	1YMB531004M0008	1YMB531854M0008
1YMB712433M5811		100	63	300	186	15000	300000	13.2	87	6.2	1YMB531004M0009	1YMB531854M0009
1YMB712435M5811		125	63	375	234	20000	400000	10.5	87	6.2	1YMB531004M0010	1YMB531854M0010
Rated voltage: 27 kV Length „e”: 442 mm												
1YMB712713M4611		6	20	35	91	20	300	1295.0	65	3	1YMB531005M0001	1YMB531855M0001
1YMB712716M4611		10	20	55	80	30	500	451.2	65	3	1YMB531005M0002	1YMB531855M0002
1YMB712718M4611		16	20	55	90	120	2000	225.6	65	3	1YMB531005M0003	1YMB531855M0003
1YMB712721M4811		25	20	72	100	500	7000	112.8	87	3	1YMB531005M0004	1YMB531855M0004
1YMB712725M4811		40	20	110	130	1000	20000	55.6	87	3	1YMB531005M0005	1YMB531855M0005
1YMB712727M4811		50	20	210	130	2500	20000	30.7	87	5.3	1YMB531005M0006	1YMB531855M0006
1YMB712729M4811		63	20	210	147	4500	20000	23.0	87	5.3	1YMB531005M0007	1YMB531855M0007
Rated voltage: 27 kV Length "e": 537 mm												
1YMB712731M5811		80	20	250	210	9200	20000	18.4	87	5.3	1YMB531005M0008	1YMB531855M0008
Rated voltage: 20/36 kV Length "e": 537 mm												
1YMB713613M5611		6	20	35	137	20	300	1860.0	65	4	1YMB531006M0001	1YMB531856M0001
1YMB713616M5611		10	20	55	93	30	500	571.5	65	4	1YMB531006M0002	1YMB531856M0002
1YMB713618M5611		16	20	55	109	120	2000	285.8	65	4	1YMB531006M0003	1YMB531856M0003
1YMB713621M5811		25	20	72	144	500	7000	142.9	87	6.2	1YMB531006M0004	1YMB531856M0004
1YMB713625M5811		40	20	100	176	1000	20000	69.1	87	6.2	1YMB531006M0005	1YMB531856M0005

Legend:

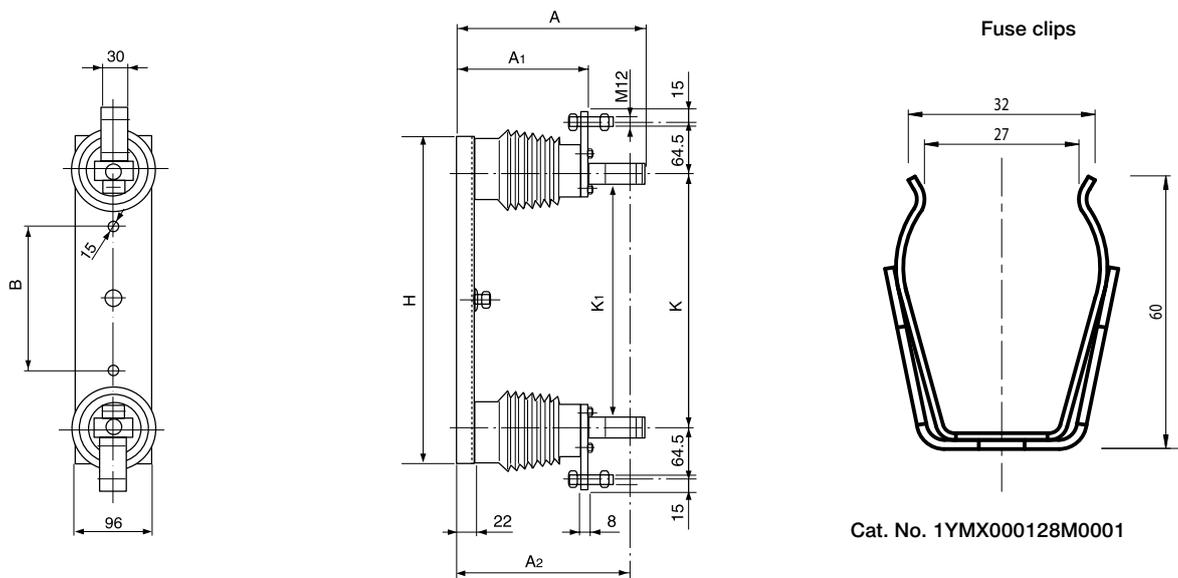
In – rated current
I₁ – rated maximum breaking current
I₃ – rated minimum breaking current
Pw – rated power
R₀ – resistance
D – diameter

Remark:

Above table is for reference purpose and is not commercial offer. The present technical data and product availability information should be obtained from our sales representatives.

6. Accessories

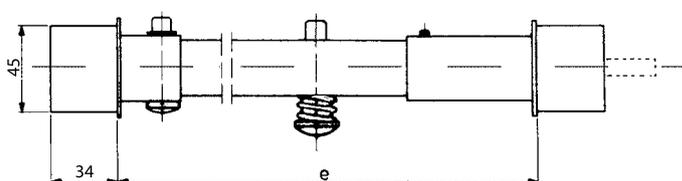
Fuse bases type UCE (suitable for CEF, CEF-S, CEF-VT fuses)



Type	Rated voltage	Rated current	Fuse length	Dimensions in mm							Weight	Catalogue No.
	Un [kV]	In [A]		A	A1	A2	H	K	K1	B		
UCE 7.2	3.6/7.2	6-100	192	242	160	221	310	218	193	55	3.4	1YMX052501M0001
UCE12	3.6/12	6-200	292	242	160	221	410	318	293	180	3.7	1YMX052503M0001
UCE 12L	12	125-200	442	242	160	221	570	468	443	300	4.2	1YMX052505M0001
UCE 17.5	17.5	6-63	292	327	245	306	410	318	293	180	3.7	1YMX052507M0001
UCE 24	24	6-125	292	327	245	306	410	318	293	180	3.7	1YMX052508M0001
UCE 24	17.5/24	6-125	442	327	245	306	570	468	443	300	6.9	1YMX052509M0001
UCE 24L	24	80-125	537	327	245	306	675	563	538	380	7.4	1YMX052511M0001
UCE 36	36	6-40	537	422	340	401	675	563	538	380	7.6	1YMX052513M0001

CEF test fuse link 3.6/7.2-40.5 kV for test of striker system

Catalogue No.	Weight [kg]	Dimension in mm	
		e*)	Total length
1YMX300062M0001	1.4	192	605
		292	
		442	
		537	

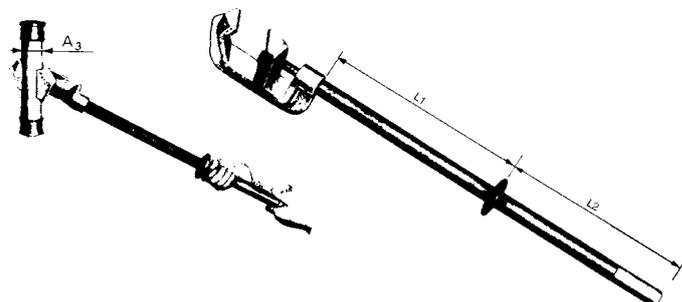


*) Adjustable

The striker has a force-travel characteristic as shown in the figure on page 7.

Operating tong for fuse links CEF 3.6/7.2 – 36 kV

Catalogue No.	Test voltage [kV]	Weight [kg]
1YMX053006M0001	75	2.59



Dimensions in mm

Clamping range	50 ... 90 mm
Total length (IG)	1500 mm
Insulating clearance (II)	525 mm
Length (handle) (IH)	780 mm
Insertion depth (IO)	195 mm

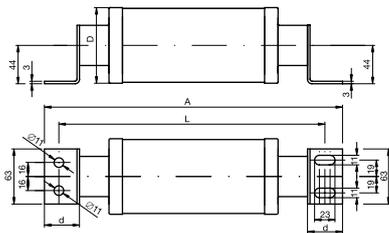
7. Data and dimension CEF-BS acc. To IEC 60282-1:1996

Type	Rated voltage Un [kV]	Rated current In [A]	L/D [mm]	A/d [mm]	Catalogue No.	EAN13 Codes
CEF-BS-B	3,6/7,2	6	305/65	340/40	1YMB531007M0021	5901436020844
CEF-BS-B	3,6/7,2	10	305/65	340/40	1YMB531007M0022	5901436020851
CEF-BS-B	3,6/7,2	16	305/65	340/40	1YMB531007M0023	5901436020868
CEF-BS-B	3,6/7,2	25	305/65	340/40	1YMB531007M0024	5901436020875
CEF-BS-B	3,6/7,2	40	305/65	340/40	1YMB531007M0025	5901436020882
CEF-BS-B	3,6/7,2	50	305/65	340/40	1YMB531007M0026	5901436020899
CEF-BS-B	3,6/7,2	63	305/65	340/40	1YMB531007M0027	5901436020905
CEF-BS-B	3,6/7,2	80	305/87	340/40	1YMB531007M0028	5901436020912
CEF-BS-B	3,6/7,2	100	305/87	340/40	1YMB531007M0029	5901436020929
CEF-BS-D	3,6/7,2	125	419/87	461/50,5	1YMB531007M0030	5901436020936
CEF-BS-D	3,6/7,2	160	419/87	461/50,5	1YMB531007M0031	5901436020943
CEF-BS-D	3,6/7,2	200	419/87	461/50,5	1YMB531007M0032	5901436020950
CEF-BS-D	12	6	419/65	461/50,5	1YMB531008M0021	5901436021292
CEF-BS-D	12	10	419/65	461/50,5	1YMB531008M0022	5901436021308
CEF-BS-D	12	16	419/65	461/50,5	1YMB531008M0023	5901436021315
CEF-BS-D	12	25	419/65	461/50,5	1YMB531008M0024	5901436021322
CEF-BS-D	12	40	419/65	461/50,5	1YMB531008M0025	5901436021339
CEF-BS-D	12	50	419/65	461/50,5	1YMB531008M0026	5901436021346
CEF-BS-D	12	63	419/65	461/50,5	1YMB531008M0027	5901436021353
CEF-BS-D	12	80	419/87	461/50,5	1YMB531008M0028	5901436021360
CEF-BS-D	12	100	419/87	461/50,5	1YMB531008M0029	5901436021377
CEF-BS-B	12	125	553/87	590/40	1YMB531008M0030	5901436021384
CEF-BS-B	12	160	553/87	590/40	1YMB531008M0031	5901436021391
CEF-BS-B	12	200	553/87	590/40	1YMB531008M0032	5901436021407
CEF-BS-D	17,5	6	419/65	461/50,5	1YMB531009M0021	5901436021605
CEF-BS-D	17,5	10	419/65	461/50,5	1YMB531009M0022	5901436021612
CEF-BS-D	17,5	16	419/65	461/50,5	1YMB531009M0023	5901436021629
CEF-BS-D	17,5	25	419/65	461/50,5	1YMB531009M0024	5901436021636
CEF-BS-D	17,5	40	419/87	461/50,5	1YMB531009M0025	5901436021643
CEF-BS-D	17,5	50	419/87	461/50,5	1YMB531009M0026	5901436021650
CEF-BS-D	17,5	63	419/87	461/50,5	1YMB531009M0027	5901436021667
CEF-BS-B	17,5	80	553/87	590/40	1YMB531009M0028	5901436021674
CEF-BS-B	17,5	100	553/87	590/40	1YMB531009M0029	5901436021681
CEF-BS-B	24	6	553/65	590/40	1YMB531010M0021	5901436021841
CEF-BS-B	24	10	553/65	590/40	1YMB531010M0022	5901436021858
CEF-BS-B	24	16	553/65	590/40	1YMB531010M0023	5901436021865
CEF-BS-B	24	25	553/65	590/40	1YMB531010M0024	5901436021872
CEF-BS-B	24	40	553/65	590/40	1YMB531010M0025	5901436021889
CEF-BS-B	24	50	553/87	590/40	1YMB531010M0026	5901436021896
CEF-BS-B	24	63	553/87	590/40	1YMB531010M0027	5901436021902

Remark:

BS styles are available on request only.

Dimension CEF-BS-B



Dimension CEF-BS-D

