

European Fuses NF/UTE Fuses 7,2kV - 36kV Type FR



FR TYPE
RATED VOLTAGES 7.2, 12, 24 AND 36 kV
CURRENT RATINGS 6.3 TO 63 A

HIGH VOLTAGE FUSES FOR TRANSFORMER PROTECTION
SUPERIOR MECHANICAL STRENGTH
OUTSTANDING WITHSTAND TO OPERATING STRESSES
FOR INDOOR USE
100% SYNTHETIC STRUCTURE
UTE C 62110, UTE C 64200, UTE C 64203 AND IEC 282-1 COMPLIANT
MODEL WITH STRIKER IEC 420 COMPLIANT

Presentation

FR-type fuses are designed to protect HV/LV power distribution transformers. Designed to be coordinated with other equipment, these current-limiting fuses interrupt fault currents before they reach their peak. The fault current is interrupted inside the fuse body and although this is very fast there is no sign of it outside.

The main elements in these fuses are:

- a barrel of class F insulating synthetic material
- nickel plated aluminum end contacts
- very pure silver fuse elements
- composite material fuse element holder to withstand high temperatures

Thanks to their structure, based on a synthetic material, FR fuses are the perfect answer to the stresses involved in use inside HV bays and fuse chambers.

Technical characteristics

Rated voltage U_n 7.7 to 36 kV

Current rating I_n 6.3 – 10 – 16 – 20 – 25 – 32 – 43 – 63 A
depending on voltage

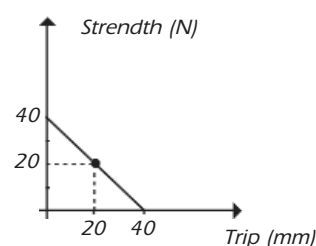
Minimum interrupting current I_B as per chart page over

Breaking capacity I_{II} 12,500 A

Temperature of use -25°C to $+40^{\circ}\text{C}$

Striker: minimum force 0.5 Joules for minimum stroke 20 mm.

CHARACTERISTICS OF TRIP INDICATOR



Medium voltage fuses

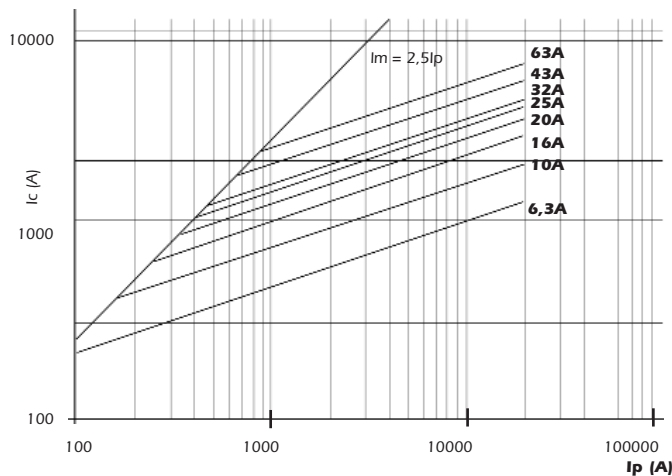
European Fuses

NF/UTE Fuses

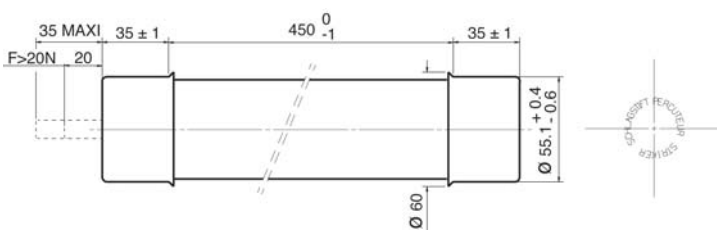
7,2kV - 36kV Type FR

Rated voltage U_n (kV)	Current rating I_n (A)	Dimensions		Minimum interrupting current (A)	Breaking capacity (kA)	Peak interrupting voltage (kV)	Power dissipation at I_n (W)	Total operating I^2t at U_n ($10^3 A^2s$)	Weight (kg)
		L (mm)	D (mm)						
7,2	6,3	520	55	31,5	12,5	20	12	0,3	2,1
7,2	16	520	55	80	12,5	20	26	1,6	2,1
7,2	32	520	55	160	12,5	20	44	6	2,1
7,2	43	520	55	215	12,5	20	61	12	2,1
7,2	63	520	55	315	12,5	20	71	24	2,1
12	6,3	520	55	31,5	12,5	34	25	0,3	2,1
12	16	520	55	80	12,5	34	53	1,6	2,1
12	32	520	55	160	12,5	34	89	6	2,1
12	43	520	55	215	12,5	34	123	12	2,1
12	63	520	55	315	12,5	34	142	24	2,1
24	6,3	520	55	31,5	12,5	58	25	0,63	2,1
24	16	520	55	80	12,5	58	53	3,3	2,1
24	32	520	55	160	12,5	58	89	13	2,1
24	43	520	55	215	12,5	58	123	25	2,1
24	63	520	55	315	12,5	58	142	50	2,1
36	6,3	520	55	31,5	12,5	-	-	-	2,1
36	10	520	55	50	12,5	-	-	-	2,1
36	16	520	55	80	12,5	-	-	-	2,1
36	20	520	55	100	12,5	-	-	-	2,1
36	25	520	55	125	12,5	-	-	-	2,1
36	32	520	55	160	12,5	-	-	-	2,1

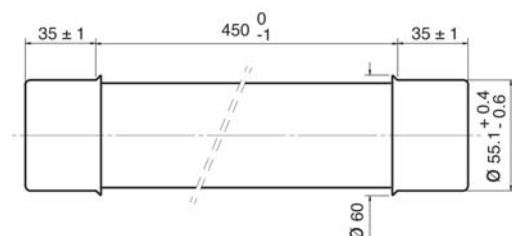
Amplitude of current interrupted 15 262 A



Dimension drawings with striker



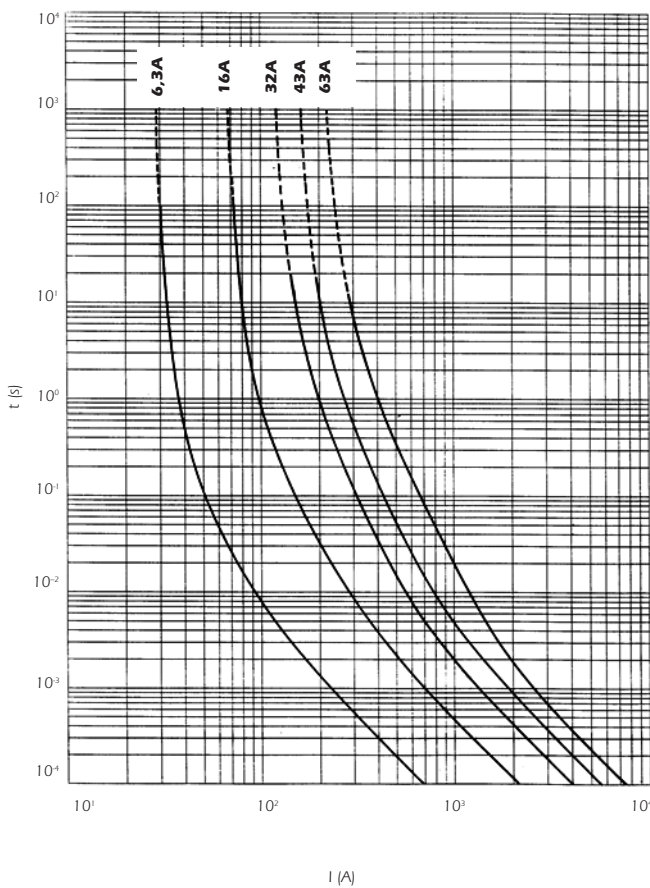
Dimension drawings w/o striker



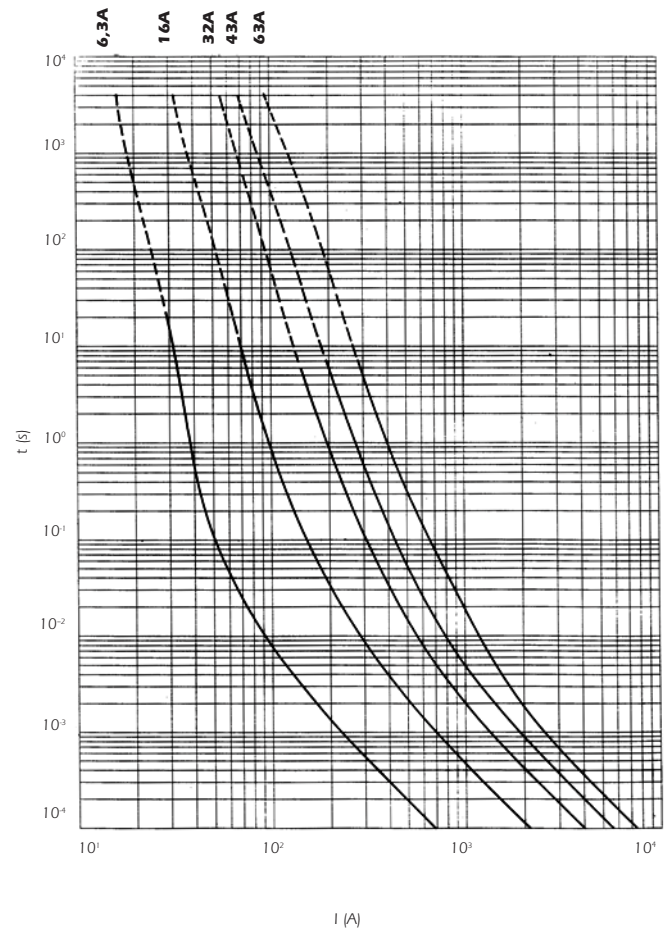
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Time/current data

FR 7.2/36 type w/o striker



FR 7.2/36 type with striker



Guidelines for use

Rated network voltage (kV)	EDF recommendations Rated transformer power						
	50	100	160	250	400	630	1000
10	6,3	16	32	32	63	63	
15	6,3	16	16	16	43	43	63
20	6,3	6,3	16	16	43	43	43*

* Use of a 63 A fuse instead of a 43 A fuse is accepted when installed in an oil-tight compartment.

Medium voltage fuses

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Rated network voltage (kV)	C 13100 recommendations Rated transformer power																
	25	40	50	63	80	100	125	160	200	250	315	400	500	630	800	1000	1250
5,5	6,3	16	16	16	32	32	32	63	63	63	63	63					
10	6,3	6,3	6,3	6,3	16	16	16	32	32	32	63	63	63	63			
15	6,3	6,3	6,3	6,3	6,3	16	16	16	16	16	43	43	43	43	43	63	
20	6,3	6,3	6,3	6,3	6,3	6,3	6,3	16	16	16	16	43	43	43	43	43	63
30																	

Reference and catalog number

Rated voltage Un (kV)	Current Rating In (A)	Without trip-indicator				With trip-indicator		
		Designation	EDF parts list number (3 fuses)	Reference Number	Catalog Number	Designation	Reference Number	Catalog Number
7,2	6,3	FR 7,2/6,3		Z227584	FR72V6,3	FR 7,2/6,3 P	E227589	FR72V6,3P
7,2	16	FR 7,2/16		A227585	FR72V16	FR 7,2/16 P	F227590	FR72V16P
7,2	32	FR 7,2/32		B227586	FR72V32	FR 7,2/32 P	G227591	FR72V32P
7,2	43	FR 7,2/43		C227587	FR72V43	FR 7,2/43 P	H227592	FR72V43P
7,2	63	FR 7,2/63		D227588	FR72V63	FR 7,2/63 P	J227593	FR72V63P
12	6,3	FR 12/6,3		X210240	FR120V6,3	FR 12/6,3 P	D210246	FR120V6,3P
12	16	FR 12/16	73.02.136	Y210241	FR120V16	FR 12/16 P	E210247	FR120V16P
12	32	FR 12/32	73.02.137	Z210242	FR120V32	FR 12/32 P	F210248	FR120V32P
12	43	FR 12/43		A210243	FR120V43	FR 12/43 P	G210249	FR120V43P
12	63	FR 12/63	73.02.138	B210244	FR120V63	FR 12/63 P	H210250	FR120V63P
24	6,3	FR 24/6,3	73.02.132	A210795	LOT-FR240V6,3	FR 24/6,3 P	G227430	LOT-FR240V6,3P
24	16	FR 24/16	73.02.133	B210796	LOT-FR240V16	FR 24/16 P	H227431	LOT-FR240V16P
24	32	FR 24/32		G226234	LOT-FR240V32	FR 24/32 P	J227432	LOT-FR240V32P
24	43	FR 24/43	73.02.134	C210797	LOT-FR240V43	FR 24/43 P	K227433	LOT-FR240V43P
24	63	FR 24/63	73.02.135	D210798	LOT-FR240V63	FR 24/63 P	L227434	LOT-FR240V63P
36	6,3	FR 36/6,3		K227594	FR360V6,3	FR 36/6,3 P	J227616	FR360V6,3P
36	10	FR 36/10		L227595	FR360V10	FR 36/10 P	K227617	FR360V10P
36	16	FR 36/16		M227596	FR360V16	FR 36/16 P	L227618	FR360V16P
36	20	FR 36/20		N227597	FR360V20	FR 36/20 P	M227619	FR360V20P
36	25	FR 36/25		P227598	FR360V25	FR 36/25 P	N227620	FR360V25P
36	32	FR 36/32		Q227599	FR360V32	FR 36/32 P	P227621	FR360V32P