

Limiter® - PTS Back-up Fuses

with Low Power Dissipation and Thermal Striker

HIGH VOLTAGE IEC FUSES

DIN HV BACK-UP FUSES FOR TRANSFORMERS



Mersen HV fuse-links have been used for reliable protection in high-voltage switchgear and controlgear and high-voltage systems for decades.

For the Limiter®-PTS range, Mersen innovates with new fuse-element designs to reduce power losses and new thermal striker to prevent overheating in the fuse compartment of the switch gear.

Mersen uses the best materials : fuse-elements are in pure silver, caps are in copper coated with silver and body is in ceramic.

Limiter®-PTS HV fuse-links are dedicated to protect transformers in combination with air or gas insulated switchgear against the thermal and dynamic effects of short-circuits.

Siemens and Ormazabal recommend Limiter®-PTS HV fuses to be used in their gas-insulated switchgear.

FEATURES & BENEFITS

- Low switching voltage
- Large current ratings range
- Very low power losses
- Energy efficiency
- New thermal striker patented by Mersen to prevent overheating
- Medium striker 80N / 30mm
- New cap design for a better compatibility with all types of clips and easier assembly
- Outdoor and indoor use
- Coordination with IEC 60787, IEC 62271-105 and VDE 0670 T303

APPLICATIONS

- Best used in SF6 insulated switch gear and compact switch gear
- HV Transformer protection

STANDARDS

- IEC 60282-1
- VDE 0670 part 4
- VDE 0670 part 402
- DIN 43625

TECHNICAL DATA

	6/12 kV 292mm	6/12 kV 442mm	10/24 kV 442mm	20/36 kV 537mm
Rated current	10 ... 160 A	100 ... 160 A	10 ... 125 A	10 ... 80 A
Rated voltage range U_n	6/12kV	6/12kV	10/24 kV	20/36 kV
Rated voltage of transformer	10 kV	10 kV	20 kV	30 kV
Package	1	1	1	1



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PRODUCT RANGE

Rated voltage 6 / 12 kV, length 292mm

Catalog number	Item number	Rated current I_n	Clearing I^2t at Rated Voltage	Breaking capacity I_b	Minimum breaking current $I_s = I_{min}$	Cold resistance R_{20} (+/-10%)	Power dissipation at I_n	Package	Weight
Ø 56mm									
45DB120V10PTS2	R1032945	10 A	3000 A²s	65 kA	35 A	227 mΩ	29 W	1	1.6 kg
45DB120V16PTS2	S1032946	16 A	3700 A²s	65 kA	64 A	66 mΩ	21 W	1	1.6 kg
45DB120V20PTS2	T1032947	20 A	4700 A²s	65 kA	90 A	51 mΩ	25 W	1	1.6 kg
45DB120V25PTS2	V1032948	25 A	4920 A²s	65 kA	95 A	40 mΩ	29 W	1	1.6 kg
45DB120V32PTS2	W1032949	31.5 A	7000 A²s	65 kA	110 A	30 mΩ	39 W	1	1.6 kg
45DB120V40PTS2	X1032950	40 A	14 kA²s	65 kA	134 A	20 mΩ	46 W	1	1.6 kg
45DB120V50PTS2	Y1032951	50 A	25.3 kA²s	65 kA	190 A	15 mΩ	62 W	1	1.6 kg
Ø 65mm									
45DB120V63PTS2	M1018313	63 A	57 kA²s	80 kA	260 A	11.9 mΩ	58 W	1	2.1 kg
45DB120V80PTS2	N1018314	80 A	90 kA²s	80 kA	280 A	9.6 mΩ	82 W	1	2.1 kg
Ø 78mm									
45DB120V100PTS2	P1018315	100 A	145 kA²s	80 kA	350 A	7.5 mΩ	105 W	1	3.2 kg
Ø 88mm									
45DB120V125PTS2	Q1018316	125 A	296 A²s	80 kA	440 A	5.3 mΩ	110 W	1	4.2 kg

Rated voltage 6 /12 kV, length 442mm



45DB120V100PTS3

Catalog number	Item number	Rated current I_n	Clearing I^2t at Rated Voltage	Breaking capacity I_b	Minimum breaking current $I_s = I_{min}$	Cold resistance R_{20} (+/-10%)	Power dissipation at I_n	Package	Weight
Ø 78mm									
45DB120V100PTS3	R1018317	100 A	150 kA²s	80 kA	350 A	7.5 mΩ	95 W	1	5.1 kg
45DB120V125PTS3	S1018318	125 A	300 kA²s	80 kA	440 A	5.4 mΩ	105 W	1	5.1 kg
45DB120V160PTS3	V1018320	160 A	500 kA²s	80 kA	660 A	4.1 mΩ	145 W	1	5.1 kg

Rated voltage 10 / 24 kV, length 442mm

Catalog number	Item number	Rated current I_n	Clearing I^2t at Rated Voltage	Breaking capacity I_b	Minimum breaking current $I_s = I_{min}$	Cold resistance R_{20} (+/-10%)	Power dissipation at I_n	Package	Weight
Ø 56mm									
45DB240V10PTS	Z1032952	10 A	2000 A²s	65 kA	36 A	386 mΩ	48 W	1	2.3 kg
45DB240V16PTS	A1032953	16 A	2340 A²s	65 kA	73 A	127 mΩ	42 W	1	2.3 kg
45DB240V20PTS	B1032954	20 A	3900 A²s	65 kA	91 A	97 mΩ	53 W	1	2.3 kg
45DB240V25PTS	C1032955	25 A	6500 A²s	65 kA	113 A	73 mΩ	60 W	1	2.3 kg
45DB240V32PTS	D1032956	31.5 A	7000 A²s	65 kA	125 A	57 mΩ	84 W	1	2.3 kg
45DB240V40PTS	E1032957	40 A	14.2 kA²s	65 kA	161 A	41 mΩ	96 W	1	2.3 kg
Ø 65mm									
45DB240V50PTS	X1018322	50 A	39 kA²s	65 kA	230 A	27.4 mΩ	82 W	1	3.3 kg
Ø 78mm									
45DB240V63PTS	Y1018323	63 A	63 kA²s	65 kA	250 A	21.6 mΩ	102 W	1	5.1 kg
45DB240V80PTS	Z1018324	80 A	99 kA²s	65 kA	280 A	17.3 mΩ	153 W	1	5.1 kg
Ø 88mm									
45DB240V100PTS	A1018325	100 A	159 kA²s	65 kA	350 A	13.6 mΩ	200 W	1	6.1 kg
45DB240V125PTS	B1018326	125 A	290 kA²s	65 kA	440 A	10.1 mΩ	254 W	1	6.1 kg

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PRODUCT RANGE

Rated voltage 20 / 36 kV, length 537mm

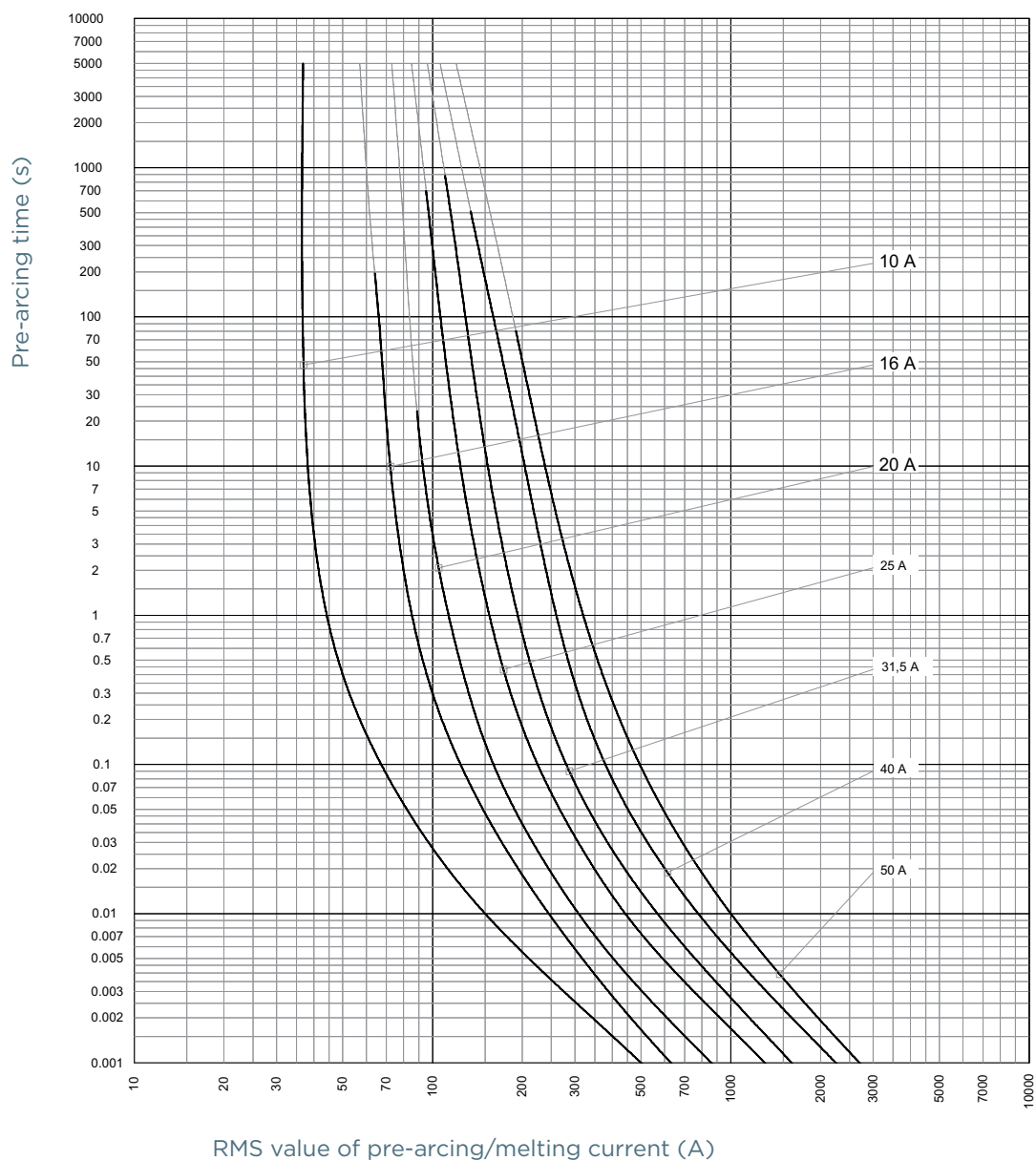
Catalog number	Item number	Rated current I_n	Clearing I^2t at Rated Voltage	Breaking capacity I_b	Minimum breaking current $I_3 = I_{min}$	Cold resistance R_{20} (+/-10%)	Power dissipation at I_n	Package	Weight
Ø 56mm									
45DB360V10PTS	F1032958	10 A	2000 A²s	31.5 kA	34 A	529 mΩ	66 W	1	2.8 kg
45DB360V16PTS	G1032959	16 A	2340 A²s	31.5 kA	66 A	190 mΩ	67 W	1	2.8 kg
45DB360V20PTS	H1032960	20 A	3900 A²s	31.5 kA	95 A	153 mΩ	84 W	1	2.8 kg
45DB360V25PTS	J1032961	25 A	6500 A²s	31.5 kA	110 A	118 mΩ	100 W	1	2.8 kg
Ø 65mm									
45DB360V32PTS	K1032962	31.5 A	7000 A²s	20 kA	135 A	82 mΩ	119 W	1	3.8 kg
45DB360V40PTS	L1032963	40 A	14200 A²s	20 kA	200 A	63 mΩ	176 W	1	3.8 kg
Ø 88mm									
45DB360V50PTS	M1032964	50 A	40000 A²s	20 kA	225 A	40 mΩ	183 W	1	6.6 kg
45DB360V63PTS	C1018327	63 A	65000 A²s	36 kA	260 A	31.9 mΩ	165 W	1	6.6 kg
45DB360V80PTS	F1018330	80 A	112 kA²s	36 kA	350 A	24.2 mΩ	230 W	1	6.6 kg

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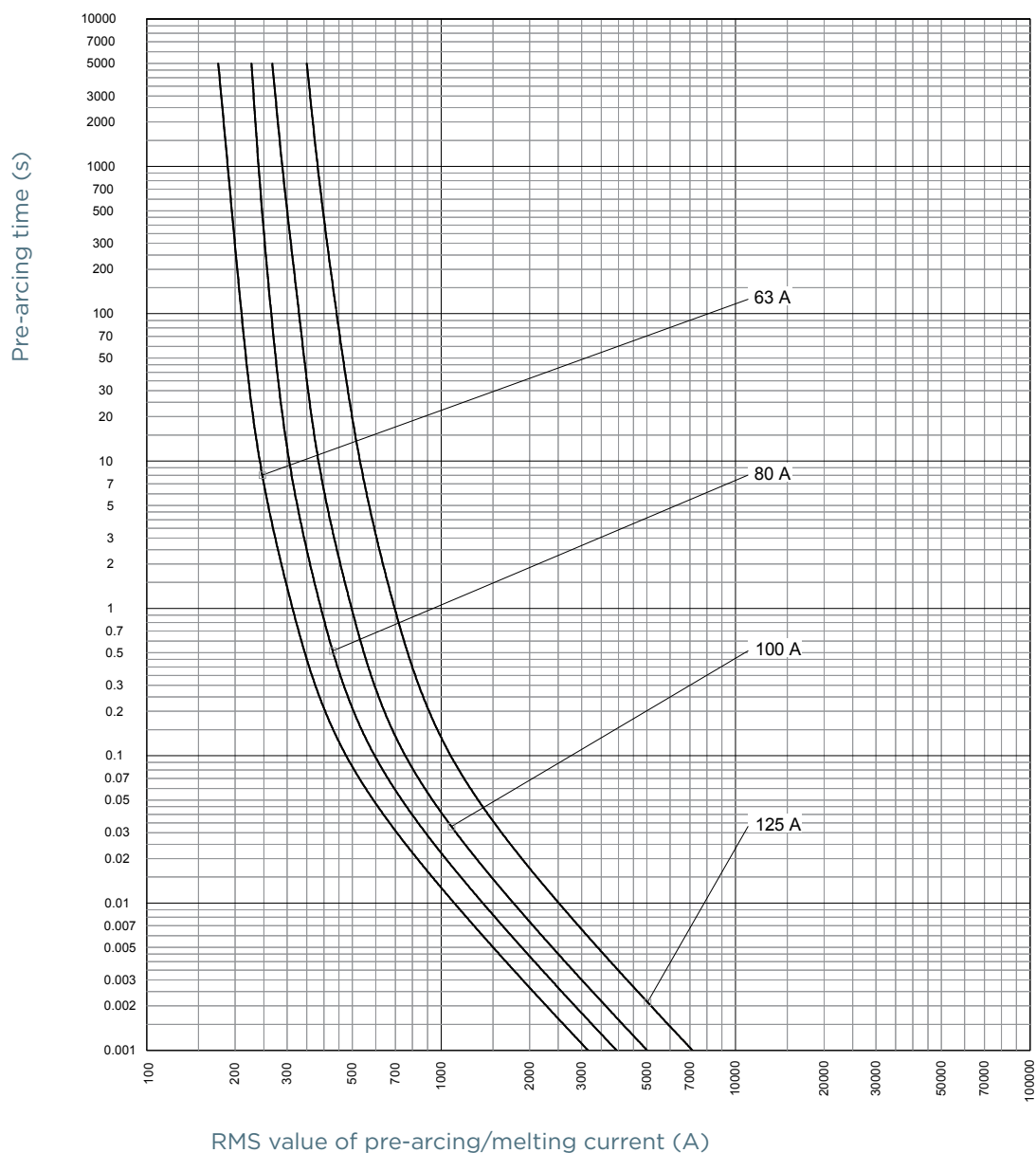
TIME CURRENT CHARACTERISTIC CURVES

Limiter®-PTS 6/12kV 292mm 10-50A



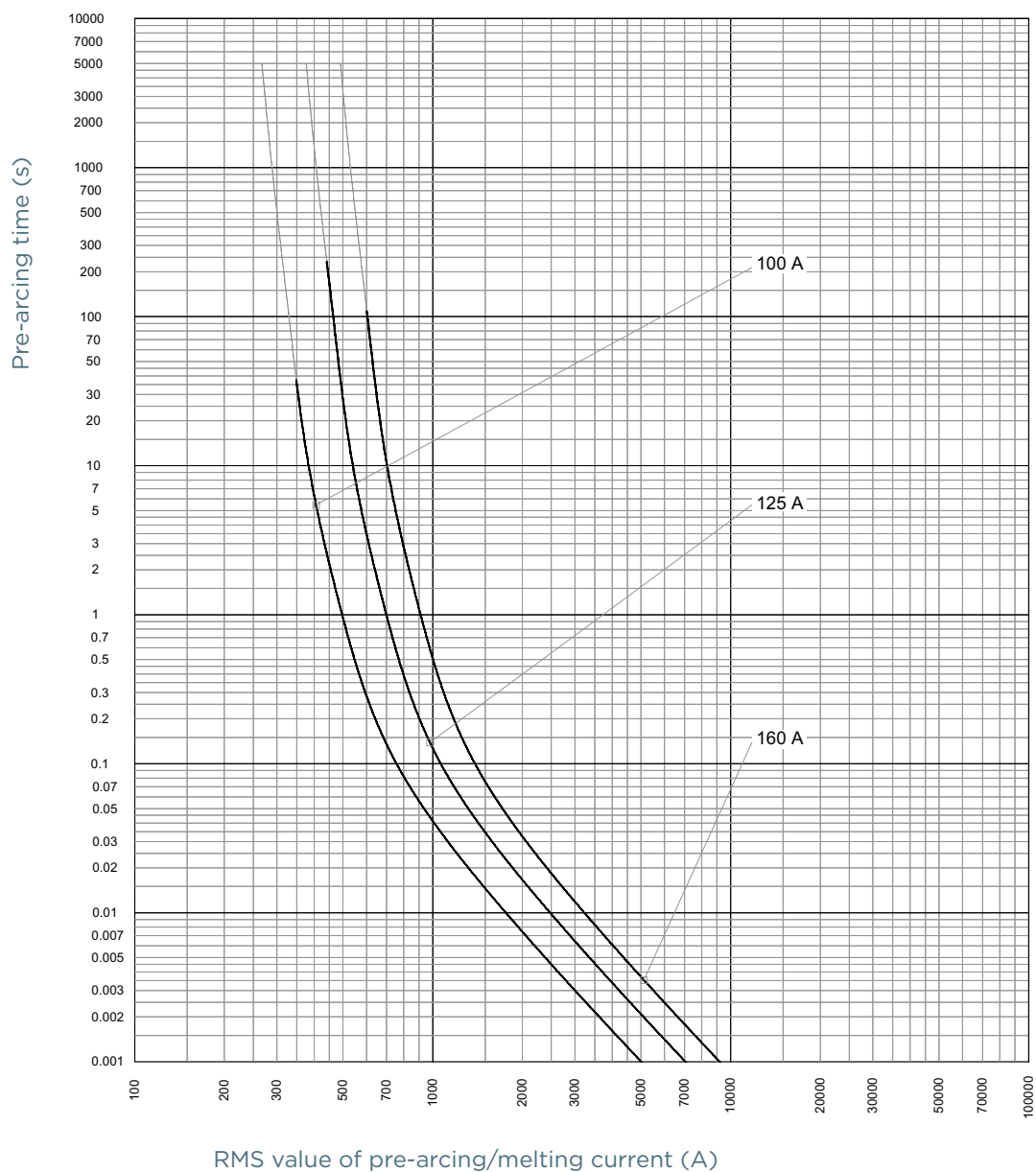
TIME CURRENT CHARACTERISTIC CURVES

Limator®-PTS 6/12kV 292mm 63-125A



TIME CURRENT CHARACTERISTIC CURVES

Limiter®-PTS 6/12kV 442mm 100-160A

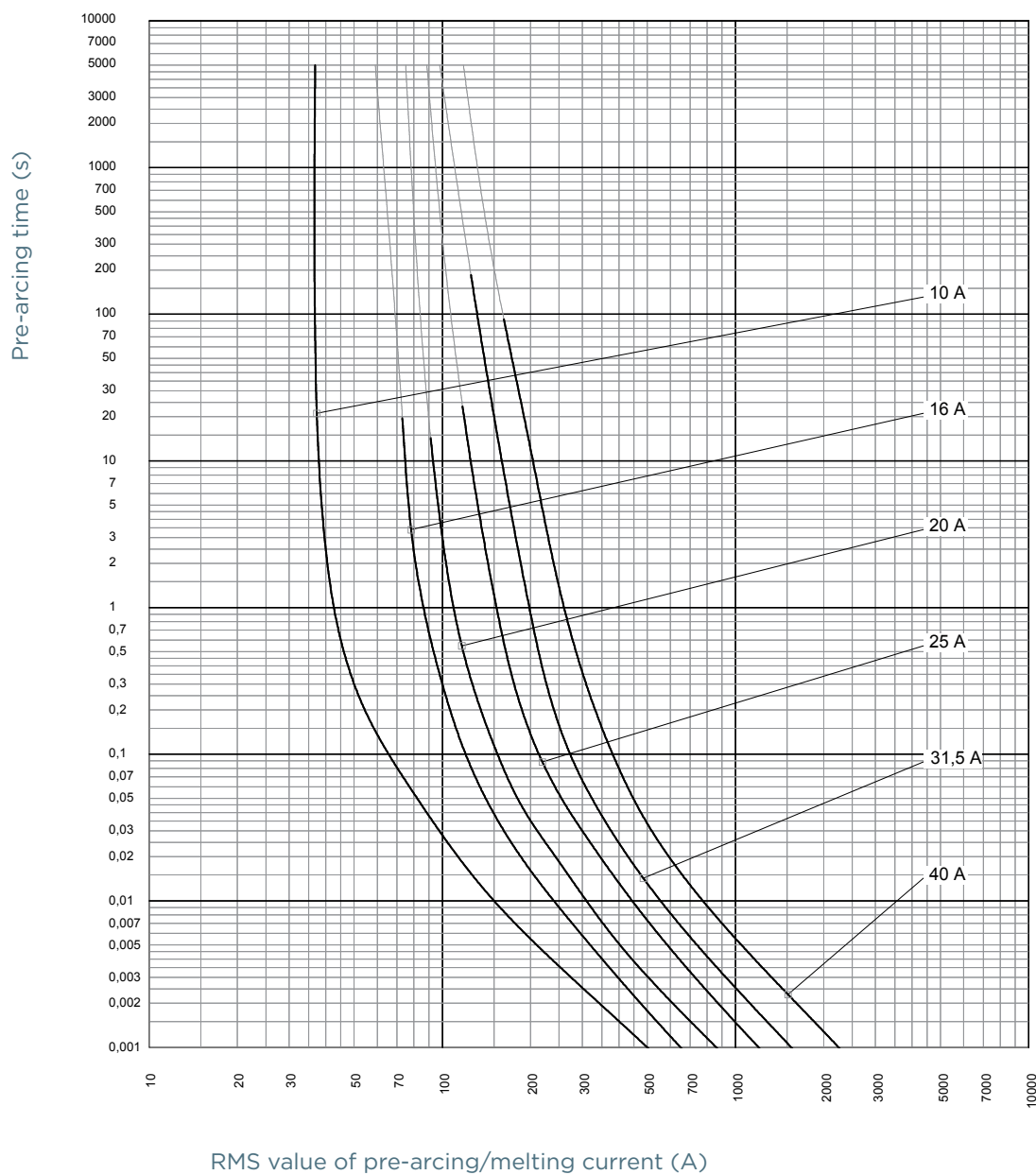


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TIME CURRENT CHARACTERISTIC CURVES

Limiter®-PTS 10/24kV 442mm 10A-40A

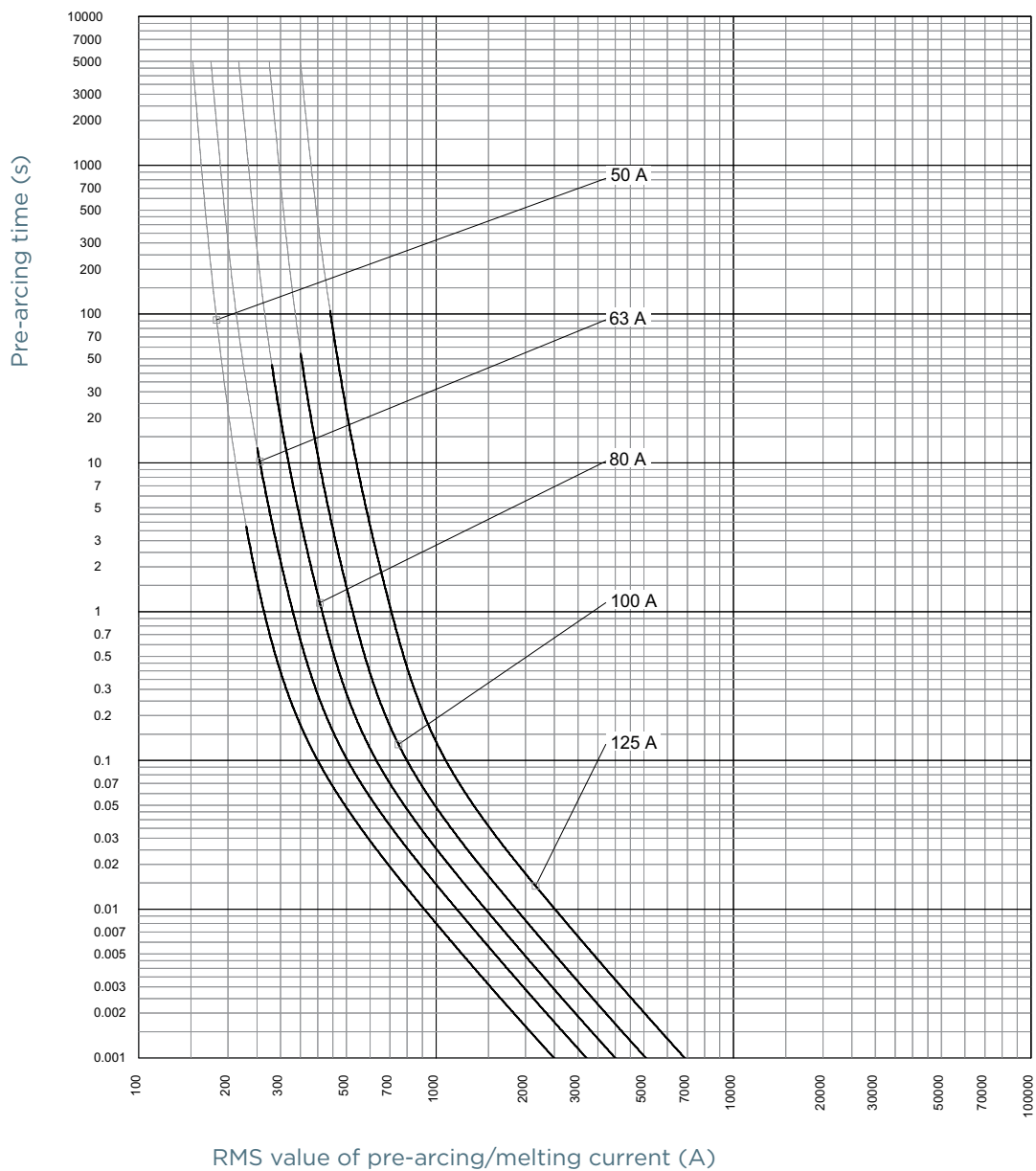


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TIME CURRENT CHARACTERISTIC CURVES

Limiter®-PTS 10/24kV 442mm 50-125A

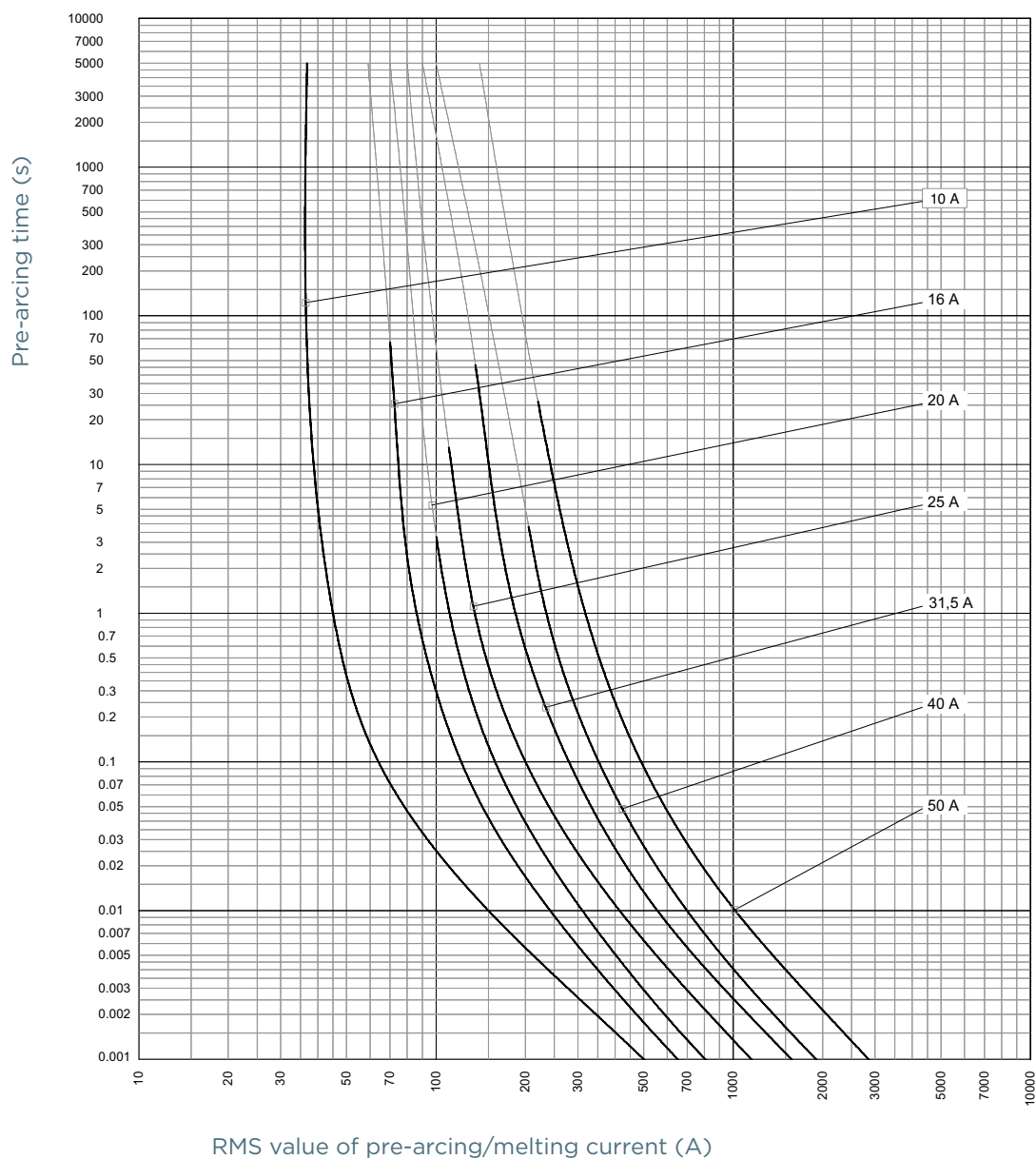


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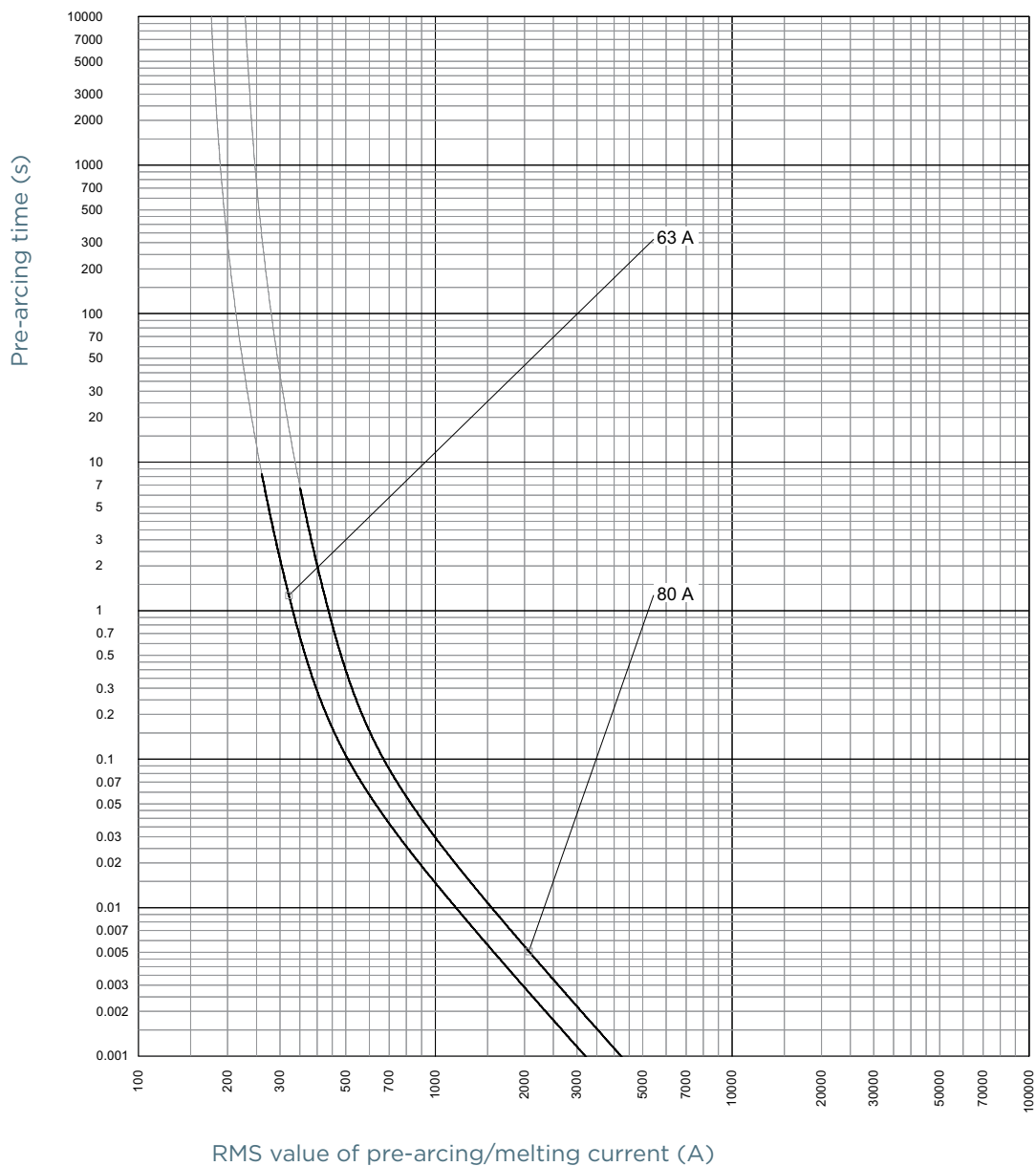
TIME CURRENT CHARACTERISTIC CURVES

Limator®-PTS 20/36kV 537mm 10-50A



TIME CURRENT CHARACTERISTIC CURVES

Limator®-PTS 20/36kV 537mm 63-80A

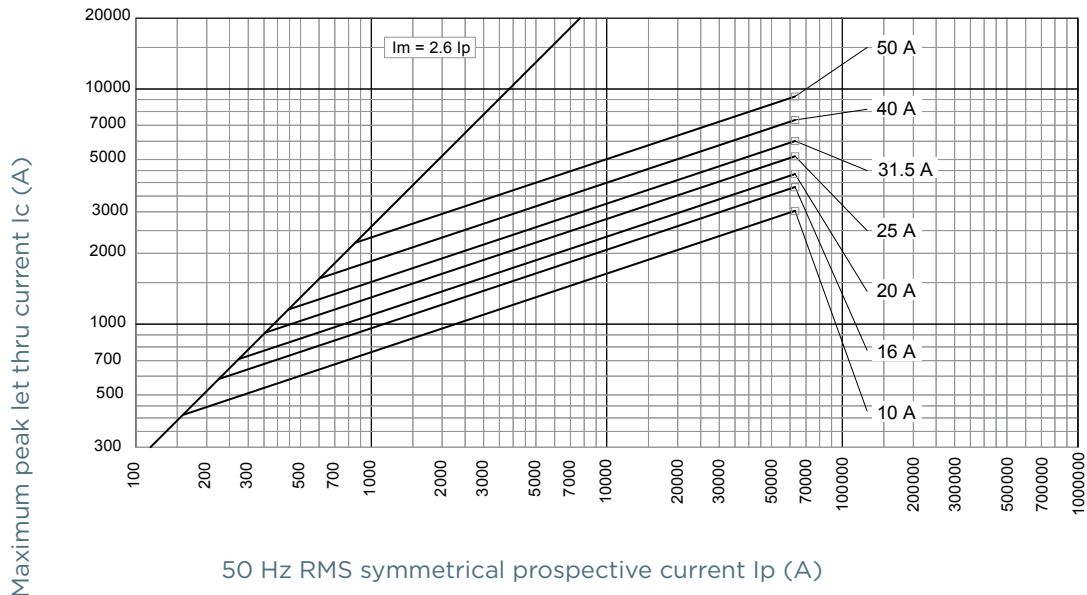


Limiter® - PTS Back-up Fuses

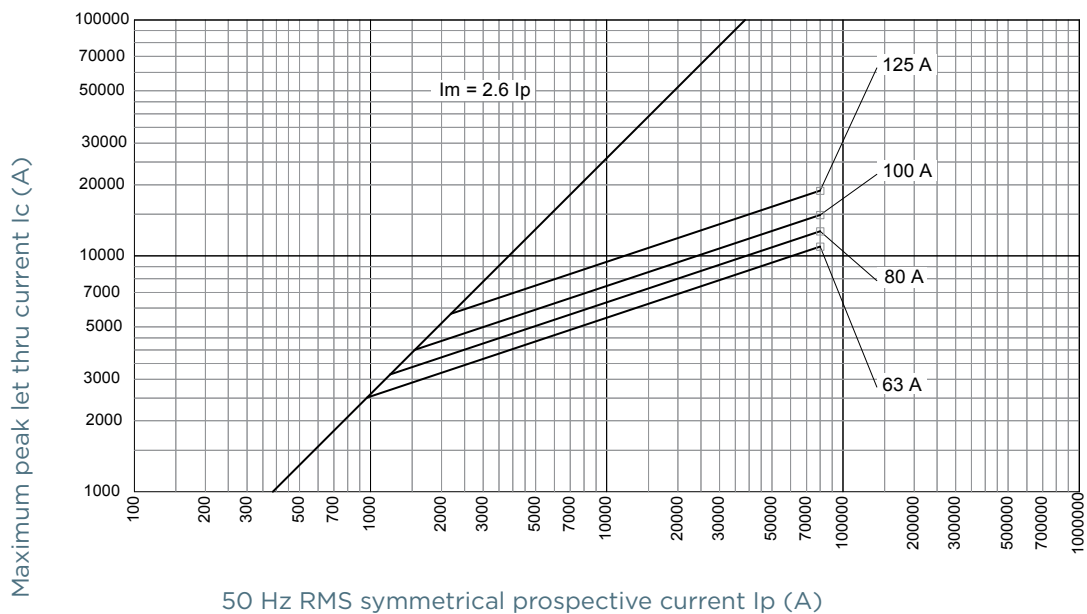
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CUT-OFF CURRENT CHARACTERISTIC

Limiter®-PTS 6/12kV 292mm 10-50A

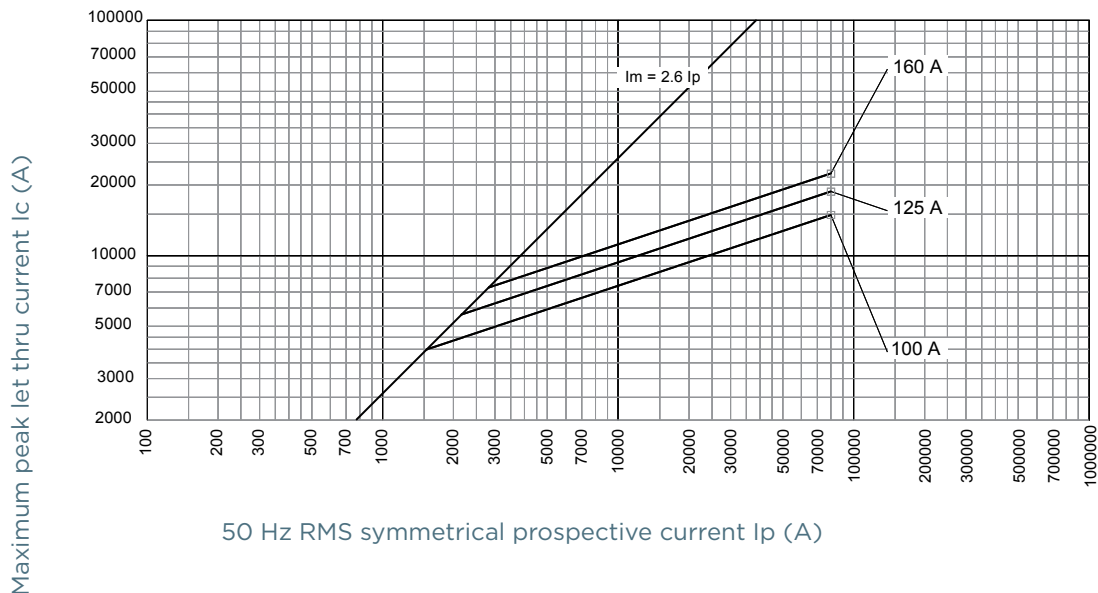


Limiter®-PTS 6/12kV 292mm 63-125A

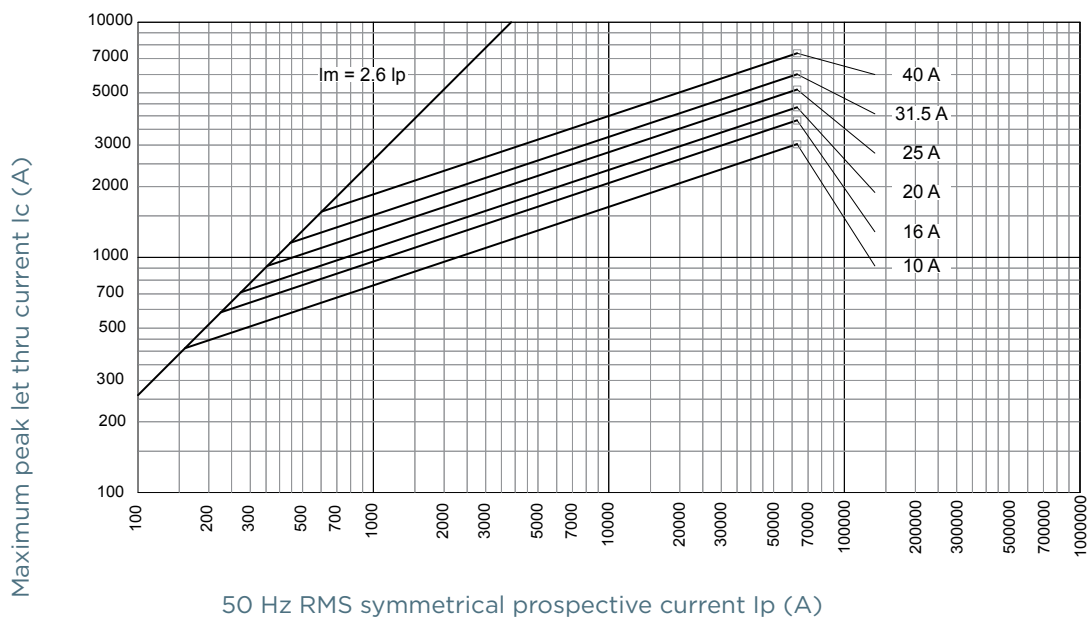


CUT-OFF CURRENT CHARACTERISTIC

Limiter®-PTS 6/12kV 442mm 100-160A

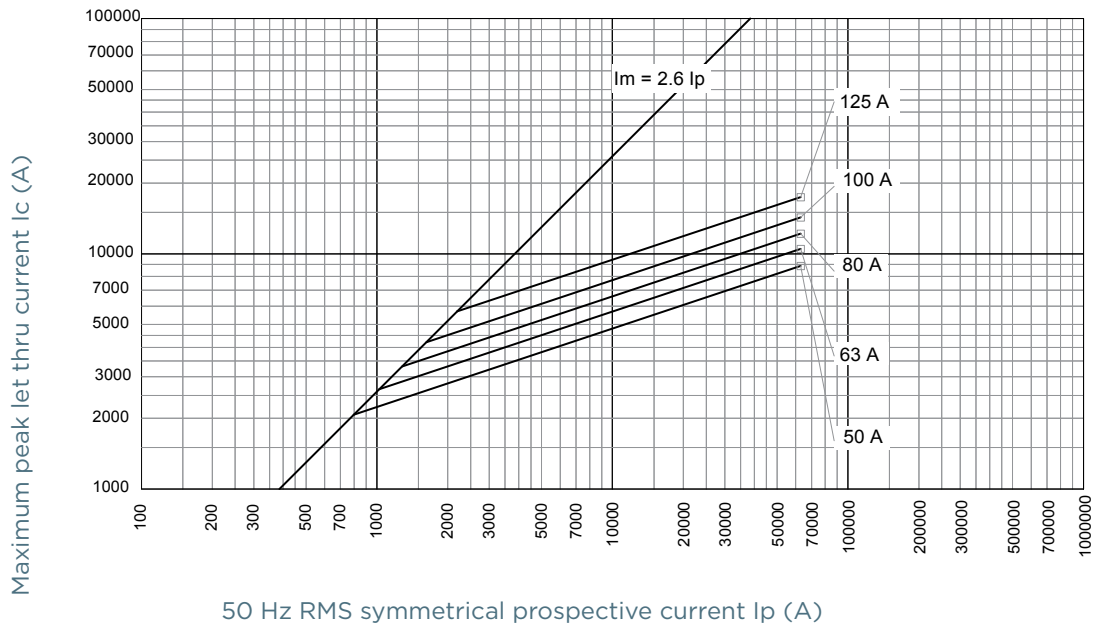


Limiter®-PTS 10/24kV 442mm 10A-40A

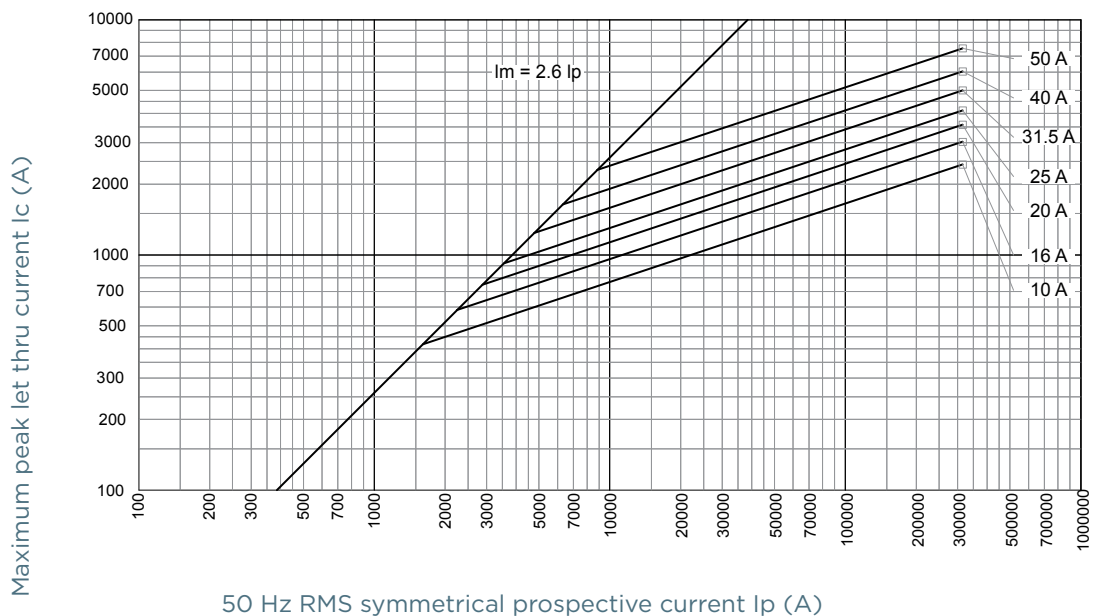


CUT-OFF CURRENT CHARACTERISTIC

Limitor®-PTS 10/24kV 442mm 50-125A



Limitor®-PTS 20/36kV 537mm 10-50A

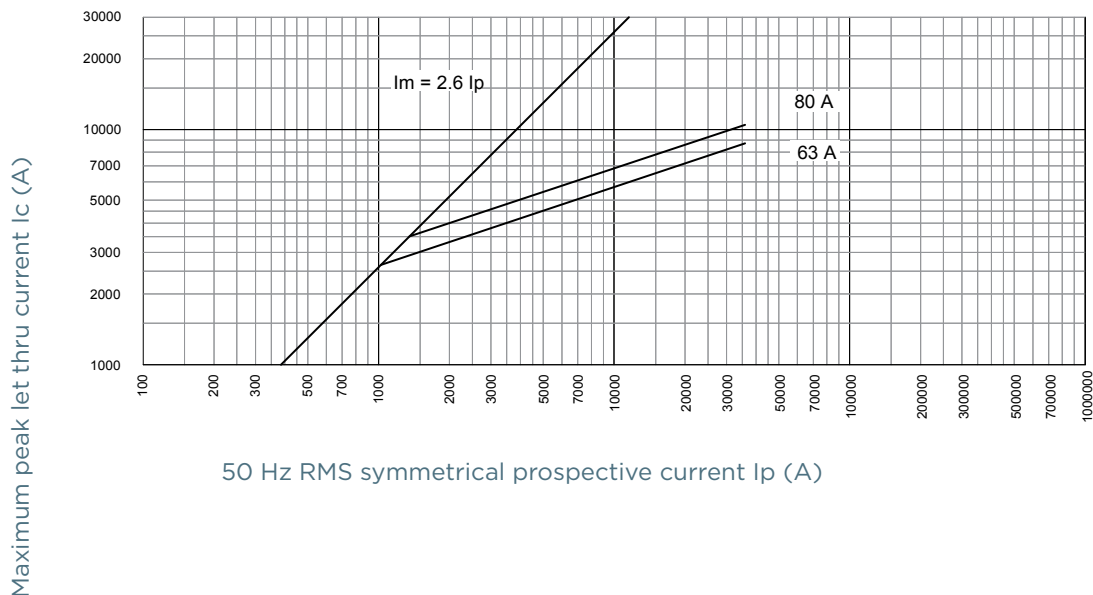


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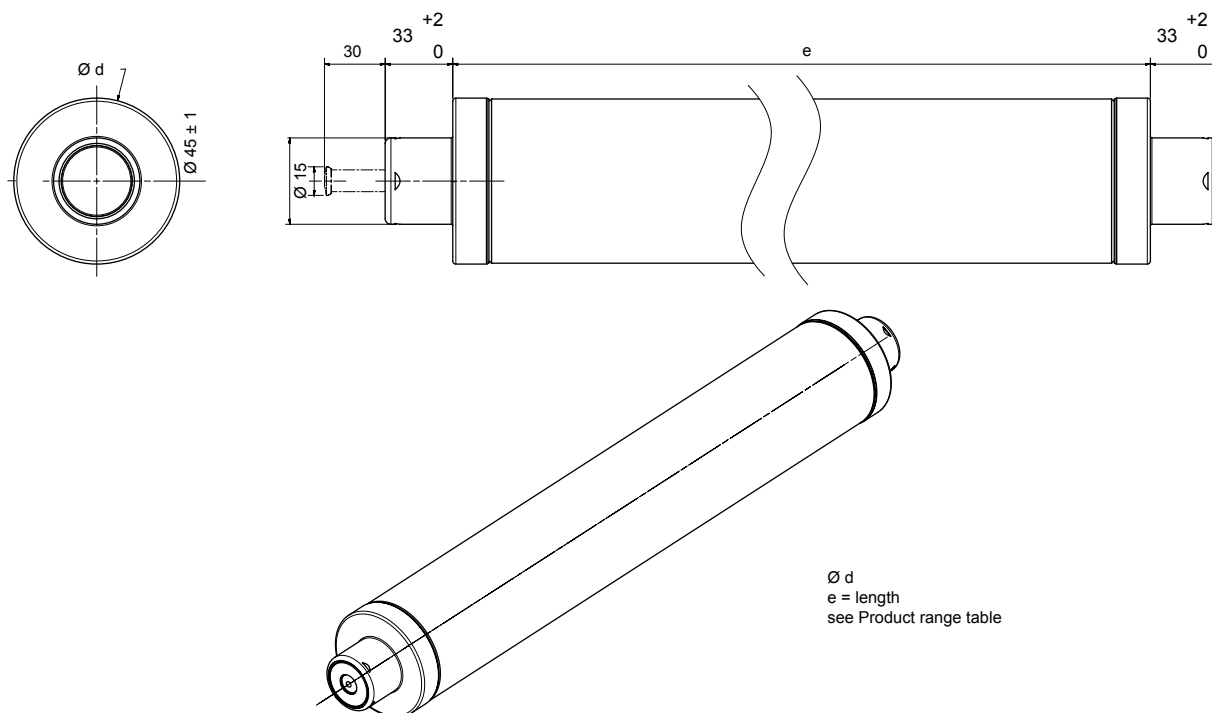
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CUT-OFF CURRENT CHARACTERISTIC

Limator®-PTS 20/36kV 537mm 63-80A



DIMENSIONS



Rated voltage	e
6/12 kV	292
12/24 kV	442
20/36 kV	537

Dimensions in mm

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SELECTION TABLE

Rated voltage range of fuse-link [kV]		6/12			10/24			20/36		
Service voltage of transformer [kV]		10			20			30		
Relative short-circuit voltage	Transformer output [kVA]	Transformer rated current [A]	Rated current of fuse-link [A]	Power dissipation of HV fuse-links at rated current of transformer [W]	Transformer rated current [A]	Rated current of fuse-link [A]	Power dissipation of HV fuse-links at rated current of transformer [W]	Transformer rated current [A]	Rated current of fuse-link [A]	Power dissipation of HV fuse-links at rated current of transformer [W]
U _k = 4%	100	5,8	16	1,9	2,9	10	2,4	1,9	6,3	2,3
	125	7,2	16	3,4	3,6	10	4,3	2,4	10	1,3
	160	9,2	20	4,3	4,6	16	2,1	3,1	10	4,0
	200	11,5	25	4,9	5,8	16	3,8	3,8	16	1,3
	250	14,4	31,5	6,6	7,2	16–25	3–6,7	4,8	16	3,4
	315	18,2	40	7,4	9,1	25	5,4	6,1	20	4,2
	400	23,1	50	10,5	11,5	25–31	8,4–10,2	7,7	25	6,0
	500	28,9	63	9,9	14,4	31,5	14,3	9,6	25	11
U _k = 5%	630	36,4	80	13,1	18,2	40	15,4	12,1	31,5	13,1
	800	46,2	100	17,9	23,1	50	13,9	15,4	40	19,4
U _k = 6%	1000	57,7	125	18,7	28,9	63	17,3	19,2	40–50	20,1–32
	1250	72,2	125	30,3	36,1	63	26,5	24,1	40	52,8
	1600	92,4	160	39,9	46,2	80	42,1	30,8	50	58,6
	2000	–	–	–	57,7	100	55	38,6	63	50,3