Limitor®- P Back-up Fuses

without Controlled Power Dissipation

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.

Limitor®-P HV fuses are back-up fuses as defined in the IEC 60282-1 standard and dedicated to protect transformers against effects of short-circuit currents.

To guarantee high quality, Mersen uses the best materials: fuse-elements are in pure silver, caps are in copper coated with silver and bodies are in ceramic.

TECHNICAL DATA

	3/7,2kV 192 mm 292 mm 442 mm	6/12kV 292 mm 442 mm	10/17,5kV 292 mm 367 mm 442 mm 537 mm	10/24kV 442 mm 537 mm	20/36kV 537 mm
Rated current	2 ... 200 A	1 ... 250 A	6.3 ... 125 A	1 ... 200 A	2 ... 4 A
Rated voltage range U_n	3/7.2 kV	6/12kV	10/17,5 kV	10/24 kV	30/36 kV
Rated voltage of transformer	6 kV	10 kV	15 kV	20 kV	30 kV
Package	1	1	1	1	1

FEATURES & BENEFITS

- High breaking capacity
- High current limitation
- Low switching voltage
- Quick breaking
- Medium striker 80N/30mm
- Indoor and outdoor applications
- Energy efficency
- New cap design for a better compatibility with all types of clips and easier assembly
- Coordination with IEC 60787, IEC 62271-105, IEC/TR 62655

APPLICATIONS

- HV Transformer protection

STANDARDS

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

lead-free

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PRODUCT RANGE

45DB72V2P

Limitor- P, Rated voltage 3 / 7,2 kV

Catalog number	Reference number	Rated current I_n	Clearing I^2t at Rated Voltage	Breaking capacity I_1	Minimum breaking current $I_3 = I_{min}$	Cold resistance	Power dissipation at In	Weight	Package
Ø56mm, length 192mm									
45DB72V2P	N1000098	2 A	0.6 kA²s	63 kA	15 A	256 mΩ	1.8 W	1.2 kg	1
45DB72V4P	P1000099	4 A	0.8 kA²s	63 kA	20 A	256 mΩ	5 W	1.2 kg	1
Ø65mm, length 192mm									
45DB72V63P	B209301	63 A	41.2 kA²s	63 kA	220 A	8.75 mΩ	60 W	1.5 kg	1
45DB72V80P	C209302	80 A	84 kA²s	63 kA	300 A	6.25 mΩ	85 W	1.5 kg	1
45DB72V100P	D209303	100 A	93.6 kA²s	63 kA	350 A	5 mΩ	85 W	1.5 kg	1
Ø88mm, length 192mm									
45DB72V160P	R1000101	160 A	500 kA²s	63 kA	435 A	3 mΩ	75 W	2.6 kg	1
45DB72V200P	S1000102	200 A	654 kA²s	63 kA	610 A	2.5 mΩ	200 W	2.9 kg	1
Ø63mm, length 292mm									
45DB72V6,3P-2	Q1005689	6.3 A	1 kA²s	63 kA	28 A	147 mΩ	6 W	2.2 kg	1
45DB72V10P-2	M1005686	10 A	1.5 kA²s	63 kA	45 A	80.3 mΩ	9 W	2.2 kg	1
45DB72V16P-2	N1005273	16 A	3.4 kA²s	63 kA	64 A	44.3 mΩ	12.8 W	2.2 kg	1
45DB72V25P-2	A1005882	25 A	5.5 kA²s	63 kA	100 A	27.5 mΩ	21 W	2.2 kg	1
45DB72V32P-2	N1005687	31.5 A	10 kA²s	63 kA	126 A	20.6 mΩ	25 W	2.2 kg	1
45DB72V40P-2	B1005699	40 A	12 kA²s	63 kA	160 A	16.2 mΩ	33 W	2.2 kg	1
45DB72V50P-2	P1005688	50 A	22 kA²s	63 kA	200 A	11.3 mΩ	37 W	2.2 kg	1
45DB72V63P-2	R1005690	63 A	42 kA²s	63 kA	252 A	8.5 mΩ	46 W	2.2 kg	1
45DB72V80P-2	S1005691	80 A	120 kA²s	63 kA	320 A	6.8 mΩ	63 W	2.2 kg	1
45DB72V100P-2	B1005883	100 A	220 kA²s	63 kA	400 A	4.7 mΩ	70 W	2.2 kg	1
Ø63mm, length 442mm									
45DB72V6,3P-3	N1005664	6.3 A	1 kA²s	63 kA	28 A	166.6 mΩ	7 W	2.9 kg	1
45DB72V10P-3	F1005657	10 A	1.5 kA²s	63 kA	45 A	90.87 mΩ	10 W	2.9 kg	1
45DB72V16P-3	H1005659	16 A	3.4 kA²s	63 kA	64 A	46.79 mΩ	14 W	2.9 kg	1
45DB72V25P-3	J1005660	25 A	5.5 kA²s	63 kA	100 A	31.19 mΩ	23 W	2.9 kg	1
45DB72V32P-3	C1005884	31.5 A	10 kA²s	63 kA	126 A	23.4 mΩ	29 W	2.9 kg	1
45DB72V40P-3	K1005661	40 A	12 kA²s	63 kA	160 A	18.37 mΩ	38 W	2.9 kg	1
45DB72V50P-3	L1005662	50 A	22 kA²s	63 kA	200 A	12.86 mΩ	41 W	2.9 kg	1
45DB72V63P-3	M1005663	63 A	42 kA²s	63 kA	252 A	9.64 mΩ	50 W	2.9 kg	1
45DB72V80P-3	P1005665	80 A	120 kA²s	63 kA	320 A	7.72 mΩ	69 W	2.9 kg	1
45DB72V100P-3	E1005656	100 A	220 kA²s	63 kA	400 A	5.37 mΩ	76 W	2.9 kg	1
Ø88mm, length 442mm									
45DB72V125P-3	E1005886	125 A	450 kA²s	63 kA	500 A	4.62 mΩ	107 W	5.7 kg	1
45DB72V160P-3	Q1005275	160 A	530 kA²s	40 kA	640 A	3.6 mΩ	146 W	5.7 kg	1

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PRODUCT RANGE

Limitor- P, Rated voltage 6 /12 kV

Catalog number	Reference number	Rated current I_n	Clearing I^2t at Rated Voltage	Breaking capacity I_1	Minimum breaking current I_3 = I_{min}	Cold resistance	Power dissipation at In	Weight	Package
Ø56mm, length 292mm									
45DB120V1P	T1000103	1 A	0.2 kA²s	63 kA	14 A	1400 mΩ	1.6 W	1.7 kg	1
45DB120V2P	V1000104	2 A	0.4 kA²s	63 kA	16 A	500 mΩ	2.2 W	1.7 kg	1
45DB120V4P	W1000105	4 A	0.7 kA²s	63 kA	22 A	340 mΩ	6 W	1.7 kg	1
45DB120V6,3P	F209305	6.3 A	1 kA²s	63 kA	30 A	185 mΩ	9 W	1.7 kg	1
45DB120V10P	G209306	10 A	1.5 kA²s	63 kA	42 A	138 mΩ	17 W	1.7 kg	1
45DB120V16P	H209307	16 A	2 kA²s	63 kA	54 A	107 mΩ	38 W	1.7 kg	1
45DB120V20P	J209308	20 A	4 kA²s	63 kA	73 A	71 mΩ	38 W	1.7 kg	1
45DB120V25P	K209309	25 A	6 kA²s	63 kA	93 A	52 mΩ	46 W	1.7 kg	1
45DB120V32P	L209310	31.5 A	10 kA²s	63 kA	105 A	42 mΩ	65 W	1.7 kg	1
45DB120V40P	M209311	40 A	30 kA²s	63 kA	125 A	22.5 mΩ	54 W	1.7 kg	1
45DB120V50P	N209312	50 A	50 kA²s	63 kA	160 A	18 mΩ	70 W	1.7 kg	1
45DB120V63P	P209313	63 A	100 kA²s	63 kA	230 A	12.8 mΩ	85 W	1.7 kg	1
Ø65mm, length 292mm									
45DB120V80P	Q209314	80 A	150 kA²s	63 kA	350 A	10.6 mΩ	115 W	2.1 kg	1
Ø78mm, length 292mm									
45DB120V100P	R209315	100 A	200 kA²s	63 kA	500 A	8.5 mΩ	156 W	3.1 kg	1
Ø88mm, length 292mm									
45DB120V125P	X1000106	125 A	440 kA²s	63 kA	480 A	4.75 mΩ	117 W	3.7 kg	1
45DB120V160P	Y1000107	160 A	500 kA²s	63 kA	560 A	4.25 mΩ	217 W	3.7 kg	1
45DB120V200P	Z1000108	200 A	654 kA²s	63 kA	610 A	3.75 mΩ	333 W	3.7 kg	1
45DB120V250P	Y1014919	250 A	-	63 kA	740 A	3.7 mΩ	335 W	3.7 kg	1
Ø63mm, length 442mm									
45DB120V6,3P-3	F1006094	6.3 A	1 kA²s	31.5 kA	31.5 A	244.9 mΩ	11 W	2.3 kg	1
45DB120V10P-3	G1006095	10 A	1.5 kA²s	31.5 kA	45 A	133.6 mΩ	15 W	2.3 kg	1
45DB120V16P-3	H1006096	16 A	3.4 kA²s	31.5 kA	64 A	73.9 mΩ	21.8 W	2.3 kg	1
45DB120V25P-3	J1006097	25 A	5.5 kA²s	31.5 kA	100 A	45.9 mΩ	35 W	2.3 kg	1
45DB120V32P-3	K1006098	31.5 A	10 kA²s	31.5 kA	126 A	34.4 mΩ	43 W	2.3 kg	1
45DB120V40P-3	L1006099	40 A	12 kA²s	31.5 kA	160 A	27 mΩ	57 W	2.3 kg	1
45DB120V50P-3	M1006100	50 A	22 kA²s	31.5 kA	200 A	18.9 mΩ	63 W	2.3 kg	1
45DB120V63P-3	N1006101	63 A	42 kA²s	31.5 kA	252 A	14.2 mΩ	78 W	2.3 kg	1
Ø88mm, length 442mm									
45DB120V80P-3	P1006102	80 A	120 kA²s	31.5 kA	320 A	9.4 mΩ	83 W	2.3 kg	1
45DB120V100P-3	Q1006103	100 A	220 kA²s	31.5 kA	400 A	6.55 mΩ	91 W	3.2 kg	1
45DB120V125P-3	R1006104	125 A	450 kA²s	31.5 kA	500 A	5.46 mΩ	130 W	4.2 kg	1
45DB120V160P-3	S1006105	160 A	530 kA²s	31.5 kA	640 A	4.07 mΩ	170 W	4.2 kg	1

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PRODUCT RANGE

45DB175V6,3P

Limitor- P, Rated voltage 10 / 17,5

Catalog number	Reference number	Rated current I_n	Clearing I^2t at Rated Voltage	Breaking capacity I_1	Minimum breaking current $I_3 = I_{min}$	Cold resistance	Power dissipation at In	Weight	Package
Ø63mm, length 292mm									
45DB175V6,3P-2	A1005698	6.3 A	1 kA²s	25 kA	32 A	331 mΩ	15.1 W	2.2 kg	1
45DB175V10P-2	T1005692	10 A	1.2 kA²s	25 kA	45 A	181 mΩ	22 W	2.2 kg	1
45DB175V16P-2	X1005695	16 A	3.4 kA²s	25 kA	64 A	99.6 mΩ	32 W	2.2 kg	1
45DB175V25P-2	S1005277	25 A	5.5 kA²s	25 kA	100 A	62.1 mΩ	54 W	2.2 kg	1
45DB175V32P-2	Y1005696	31.5 A	10 kA²s	25 kA	126 A	46.5 mΩ	69 W	2.2 kg	1
45DB175V40P-2	Z1005697	40 A	12 kA²s	25 kA	160 A	36.5 mΩ	94.3 W	2.2 kg	1
Ø88mm, length 292mm									
45DB175V50P-2	L1005685	50 A	23 kA²s	25 kA	200 A	21.4 mΩ	77 W	3.8 kg	1
Ø56mm, length 367mm									
45DB175V6,3P	V1000564	6.3 A	1 kA²s	63 kA	30 A	245 mΩ	11 W	2.2 kg	1
45DB175V10P	W1000565	10 A	1.5 kA²s	63 kA	43 A	180 mΩ	22 W	2.2 kg	1
45DB175V16P	X1000566	16 A	2 kA²s	63 kA	54 A	150 mΩ	53 W	2.2 kg	1
45DB175V20P	Y1000567	20 A	4 kA²s	63 kA	73 A	102 mΩ	56 W	2.2 kg	1
45DB175V25P	Z1000568	25 A	6 kA²s	63 kA	93 A	78 mΩ	73 W	2.2 kg	1
45DB175V32P	A1000569	31.5 A	10 kA²s	63 kA	105 A	59 mΩ	95 W	2.2 kg	1
45DB175V40P	B1000570	40 A	30 kA²s	63 kA	125 A	33.8 mΩ	79 W	2.2 kg	1
45DB175V50P	C1000571	50 A	50 kA²s	63 kA	205 A	26 mΩ	106 W	2.2 kg	1
45DB175V63P	D1000572	63 A	100 kA²s	63 kA	280 A	18.4 mΩ	130 W	2.2 kg	1
Ø65mm, length 367mm									
45DB175V80P	E1000573	80 A	150 kA²s	63 kA	350 A	15 mΩ	180 W	2.6 kg	1
Ø78mm, length 367mm									
45DB175V100P	F1000574	100 A	200 kA²s	63 kA	500 A	13 mΩ	280 W	3.1 kg	1
Ø63mm, length 442mm									
45DB175V50P-3	D1005655	50 A	22 kA²s	31.5 kA	200 A	23.2 mΩ	83 W	2.9 kg	1
45DB175V63P-3	F1005887	63 A	42 kA²s	31.5 kA	252 A	17.4 mΩ	104 W	2.9 kg	1
Ø88mm, length 442mm									
45DB175V80P-3	J1005637	80 A	120 kA²s	31.5 kA	320 A	13.7 mΩ	135 W	5.7 kg	1
45DB175V100P-3	Y1005282	100 A	220 kA²s	31.5 kA	400 A	9.6 mΩ	151 W	5.7 kg	1
45DB175V125P-3	C1005677	125 A	300 kA²s	31.5 kA	500 A	8 mΩ	217 W	5.7 kg	1
Ø88mm, length 537mm									
45DB175V100P-4	H1005636	100 A	220 kA²s	31.5 kA	400 A	9.6 mΩ	151 W	6.8 kg	1
45DB175V125P-4	A1005284	125 A	300 kA²s	31.5 kA	500 A	8 mΩ	217 W	6.8 kg	1

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PRODUCT RANGE

Limitor- P, Rated voltage 10 / 24 kV

Catalog number	Reference number	Rated current I_n	Clearing I^2t at Rated Voltage	Breaking capacity I_1	Minimum breaking current $I_3 = I_{min}$	Cold resistance	Power dissipation at In	Weight	Package
Ø56mm, length 442mm									
45DB240V1P	A1000109	1 A	0.2 kA²s	63 kA	14 A	2170 mΩ	2.2 W	2.5 kg	1
45DB240V2P	B1000110	2 A	0.4 kA²s	63 kA	16 A	800 mΩ	3.4 W	2.5 kg	1
45DB240V4P	C1000111	4 A	0.7 kA²s	63 kA	23 A	545 mΩ	10 W	2.5 kg	1
45DB240V6,3P	S209339	6.3 A	1 kA²s	63 kA	30 A	297 mΩ	13 W	2.5 kg	1
45DB240V10P	T209340	10 A	1.5 kA²s	63 kA	43 A	220 mΩ	26 W	2.5 kg	1
45DB240V16P	V209341	16 A	2 kA²s	63 kA	54 A	197 mΩ	73 W	2.5 kg	1
45DB240V20P	W209342	20 A	4 kA²s	63 kA	73 A	132 mΩ	76 W	2.5 kg	1
45DB240V25P	X209343	25 A	6 kA²s	63 kA	93 A	96 mΩ	89 W	2.5 kg	1
45DB240V32P	Y209344	31.5 A	10 kA²s	63 kA	105 A	78 mΩ	127 W	2.5 kg	1
45DB240V40P	Z209345	40 A	30 kA²s	63 kA	125 A	45 mΩ	114 W	2.5 kg	1
45DB240V50P	A209346	50 A	50 kA²s	63 kA	205 A	35 mΩ	147 W	2.5 kg	1
45DB240V63P	B209347	63 A	100 kA²s	63 kA	280 A	24 mΩ	170 W	2.5 kg	1
Ø65mm, length 442mm									
45DB240V80P	C209348	80 A	150 kA²s	63 kA	310 A	20 mΩ	233 W	3.1 kg	1
Ø78mm, length 442mm									
45DB240V100P	D209349	100 A	200 kA²s	63 kA	430 A	18 mΩ	400 W	4.2 kg	1
Ø88mm, length 442mm									
45DB240V125P	D1000112	125 A	350 kA²s	40 kA	760 A	11.7 mΩ	340 W	4.3 kg	1
45DB240V160P	E1000113	160 A	500 kA²s	31.5 kA	900 A	9.45 mΩ	515 W	4.3 kg	1
45DB240V200P	F1000114	200 A	730 kA²s	31.5 kA	1050 A	7 mΩ	740 W	4.3 kg	1
Ø88mm, length 537mm									
45DB240V80P-4	B1008551	80 A	120 kA²s	25 kA	360 A	17.5 mΩ	185 W	6.7 kg	1
45DB240V100P-4	C1008552	100 A	220 kA²s	25 kA	450 A	13.1 mΩ	234 W	6.7 kg	1

Limitor-P, Rated voltage 20 / 36kV

Catalog number	Reference number	Rated current I_n	Clearing I^2t at Rated Voltage	Breaking capacity I_1	Minimum breaking current $I_3 = I_{min}$	Cold resistance	Power dissipation at In	Weight	Package
Ø56mm, length 537mm									
45DB360V2P	G1000115	2 A	0.6 kA²s	31.5 kA	15 A	950 mΩ	9 W	2.7 kg	1
45DB360V4P	H1000116	4 A	0.8 kA²s	31.5 kA	20 A	900 mΩ	32 W	2.7 kg	1

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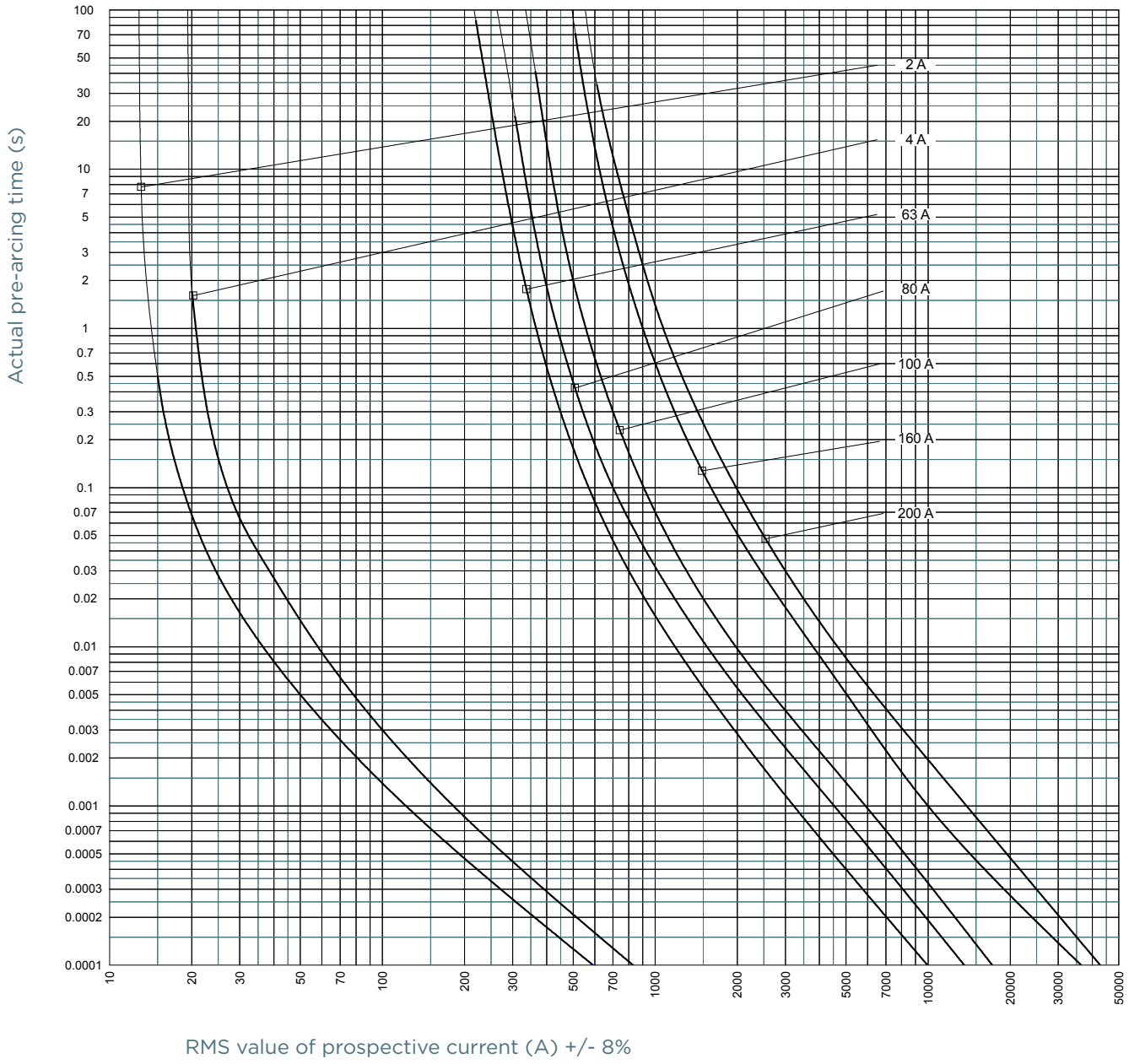
TIME CURRENT CHARACTERISTIC CURVES

Limitor® P 7,2kV 192mm



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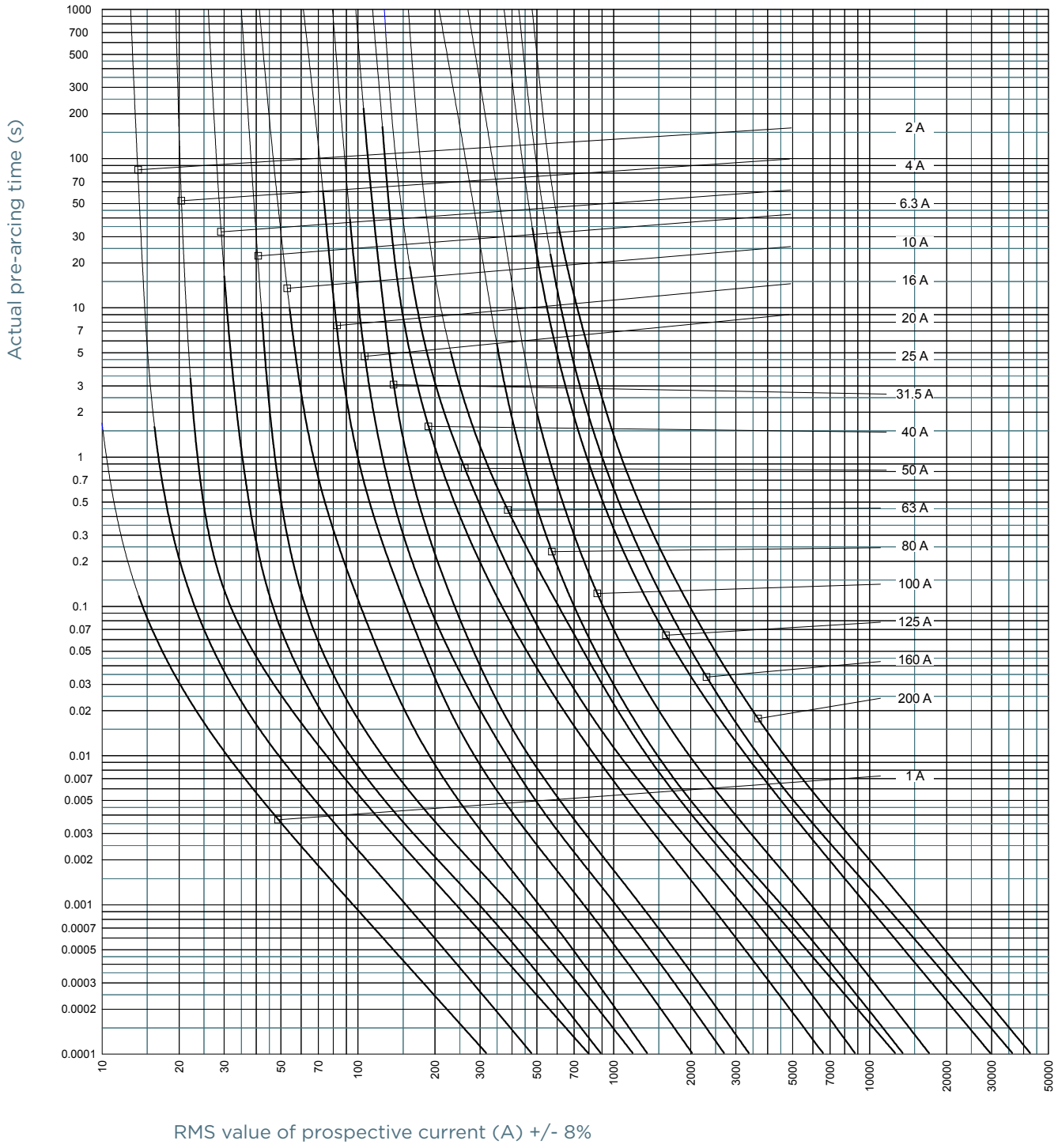
TIME CURRENT CHARACTERISTIC CURVES

Limitor® P 12kV 292mm



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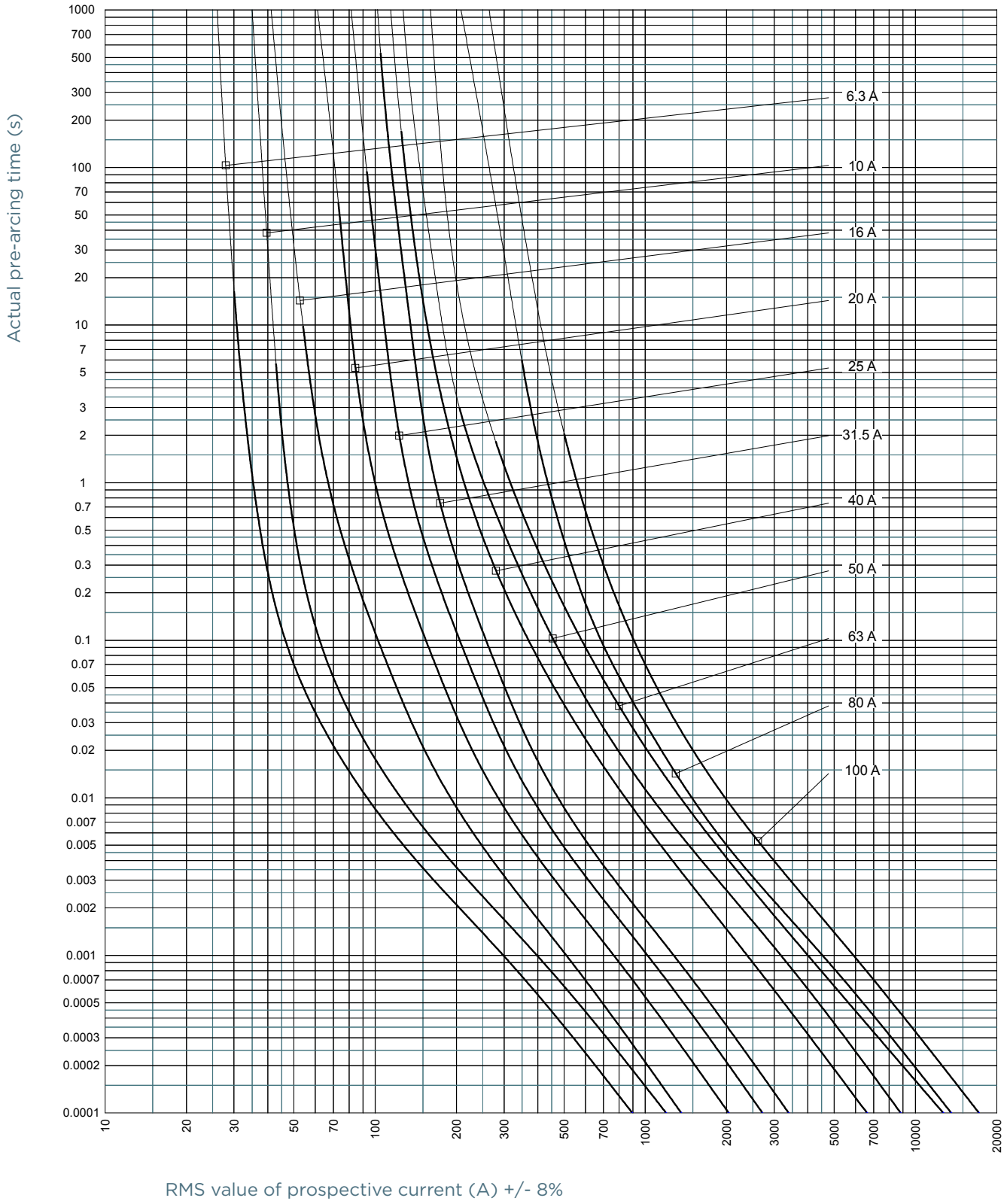
TIME CURRENT CHARACTERISTIC CURVES

Limitor® P 17,5V 367mm



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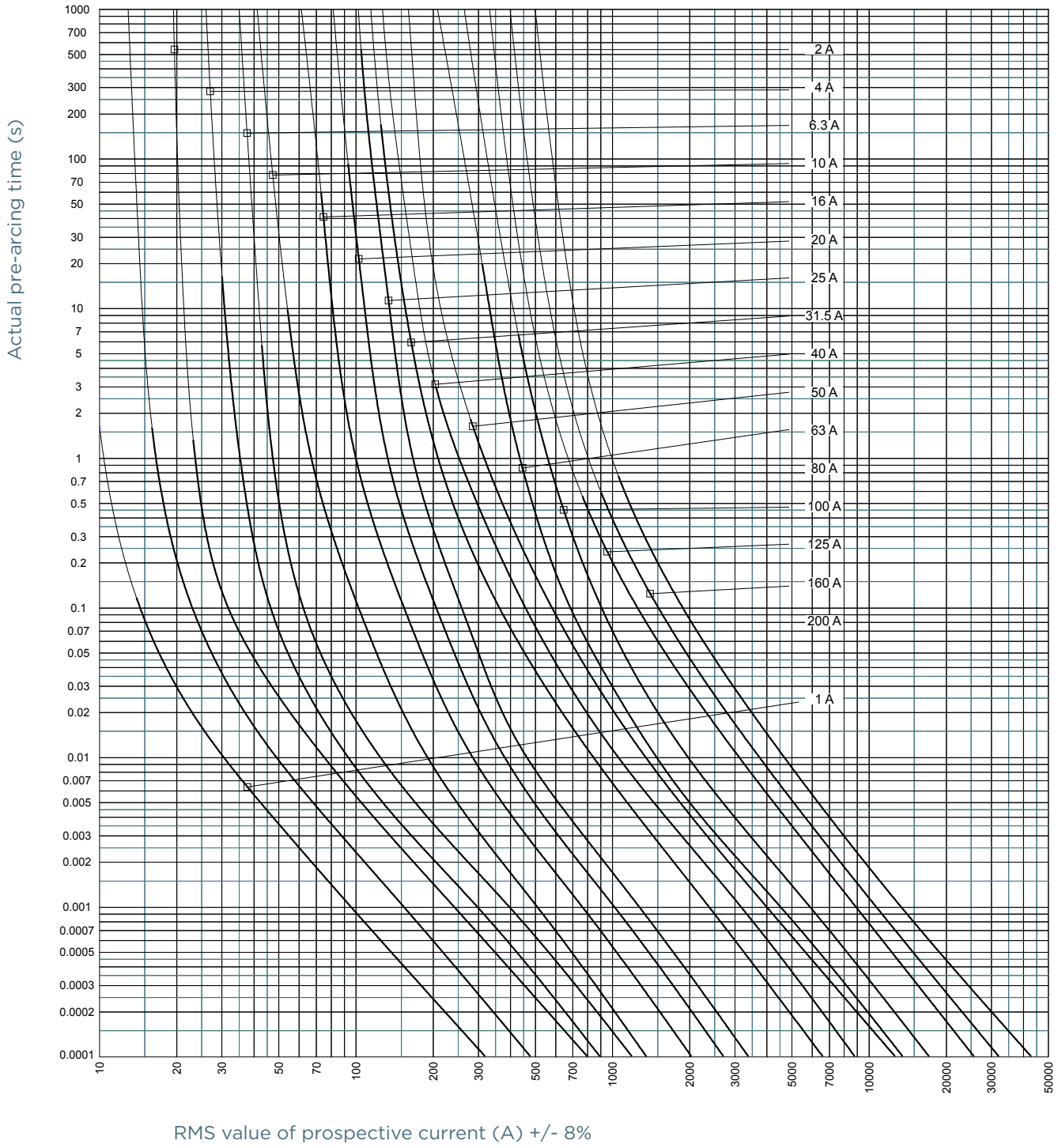
TIME CURRENT CHARACTERISTIC CURVES

Limitor® P 24kV 442mm



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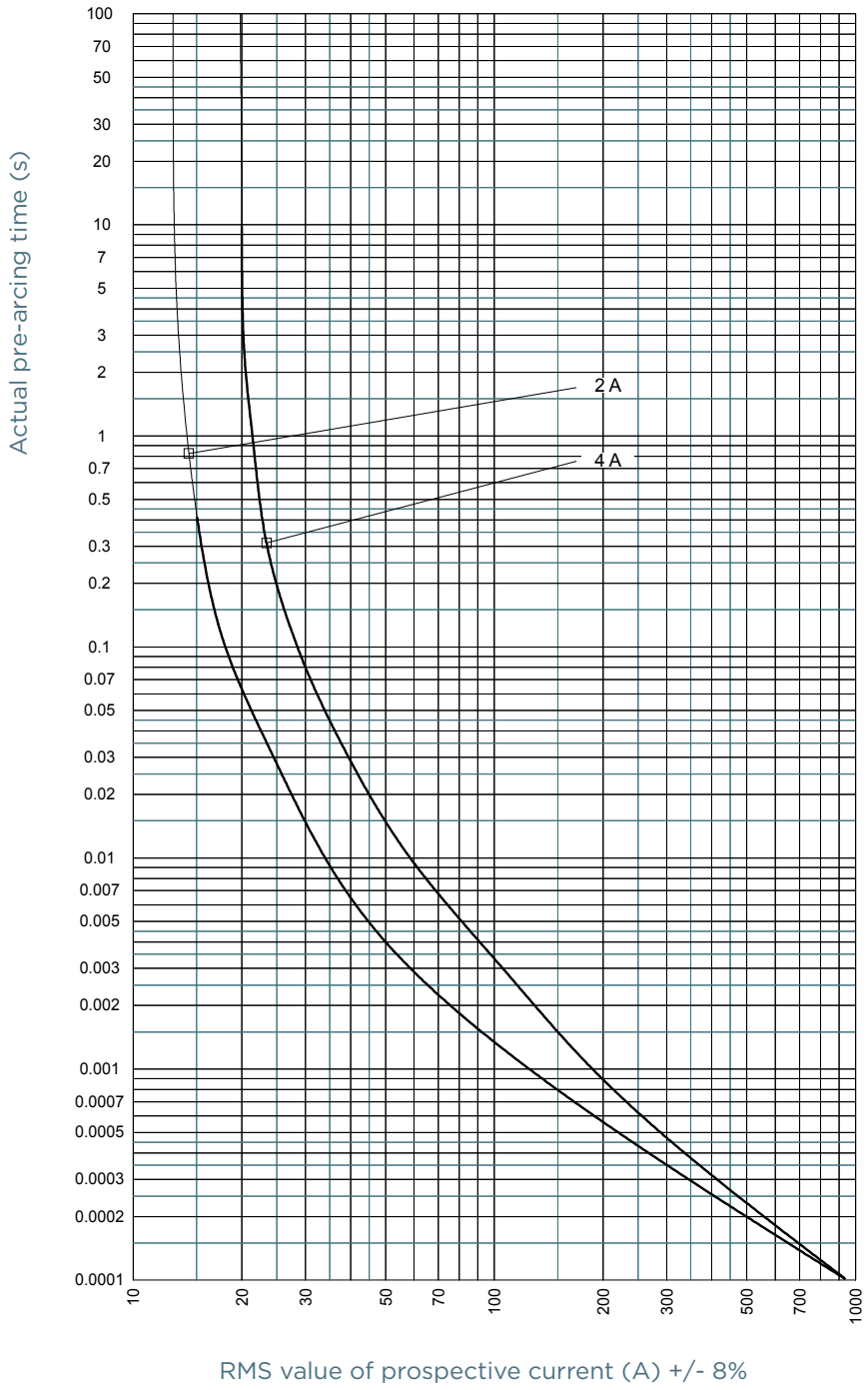
TIME CURRENT CHARACTERISTIC CURVES

Limitor® P 36kV 537mm



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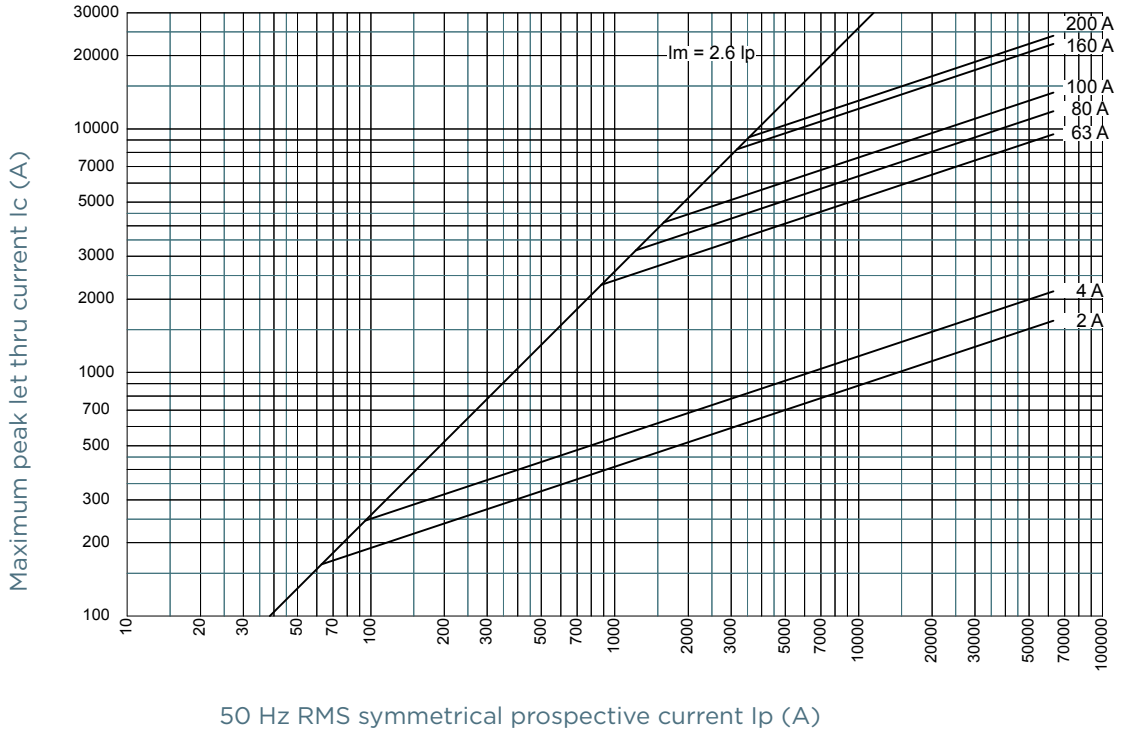
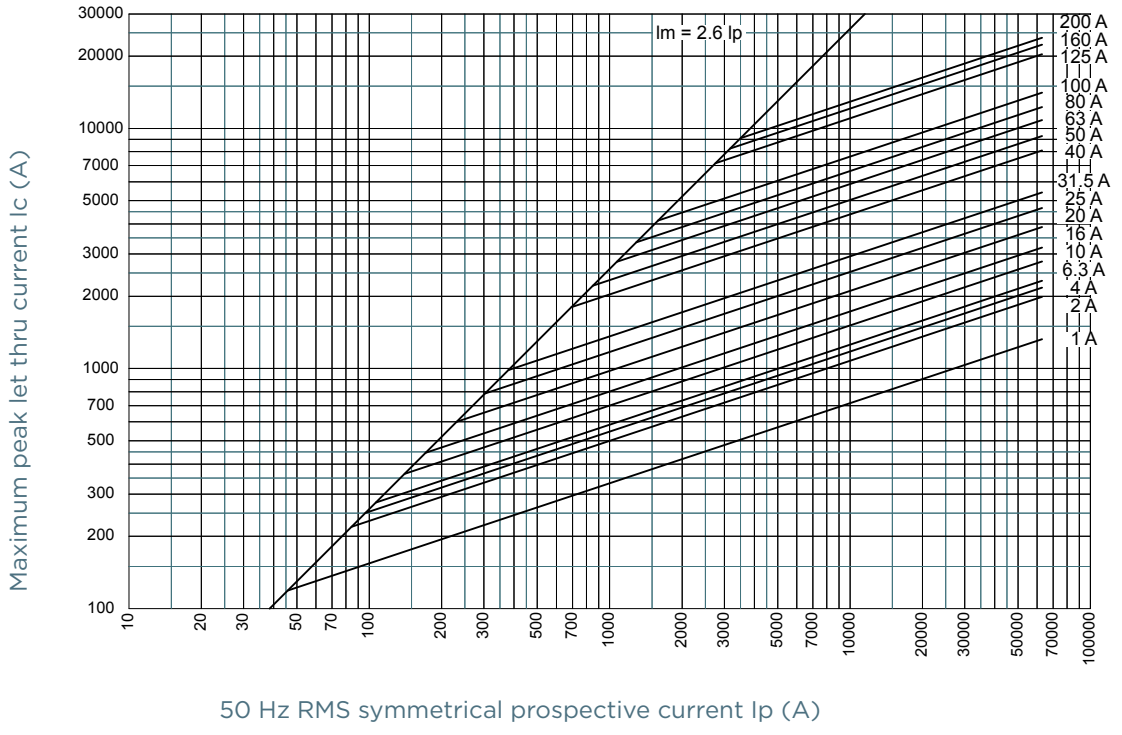
CUT-OFF CURRENT CHARACTERISTIC

Limitor® P 7,2kV 192mm



Limitor® P 12kV 292mm



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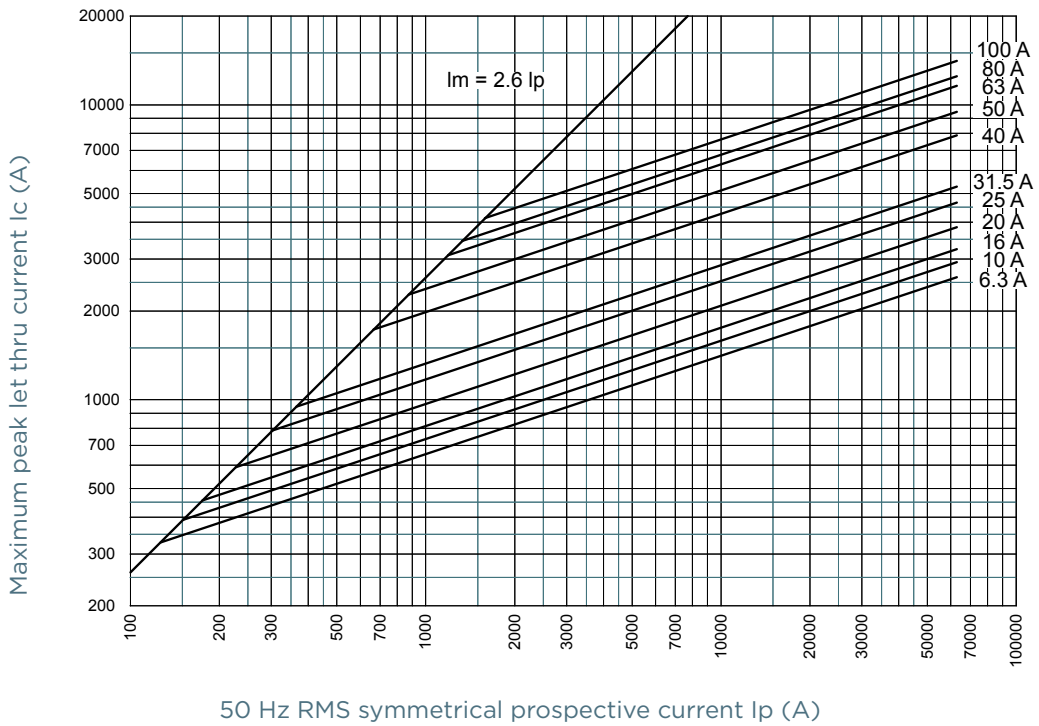
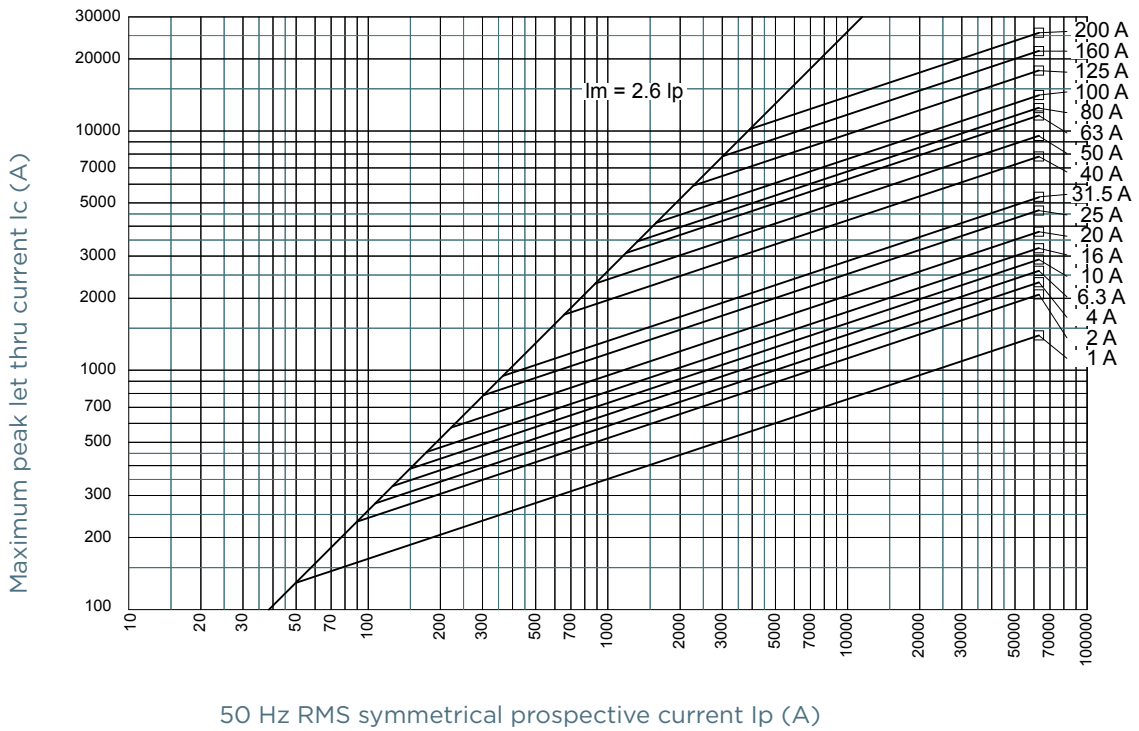
CUT-OFF CURRENT CHARACTERISTIC

Limitor® P 17,5V 367mm



Limitor® P 24kV 442mm



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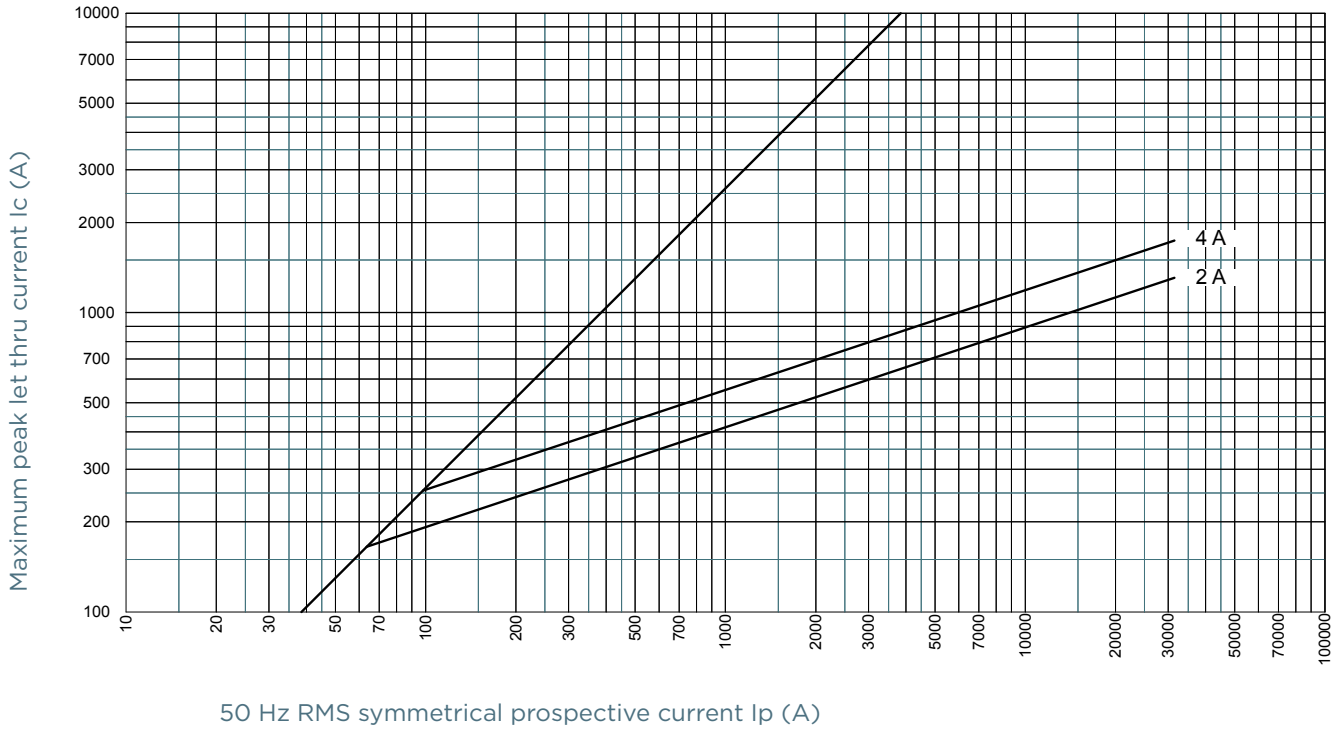
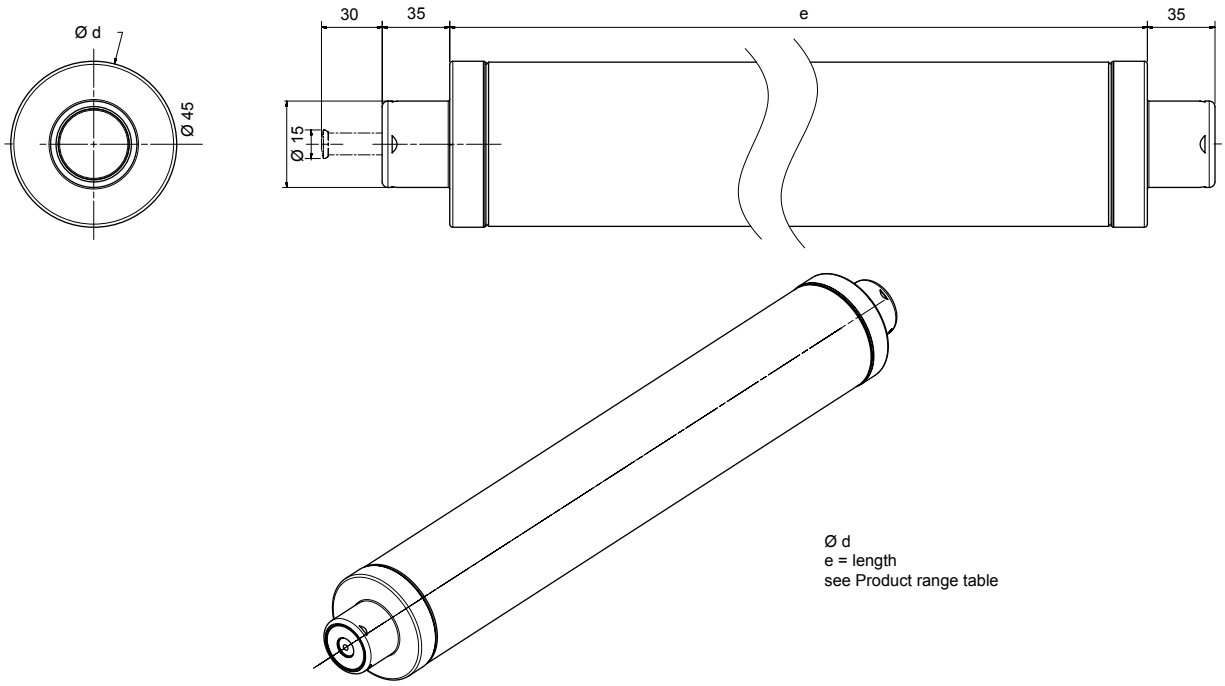
CUT-OFF CURRENT CHARACTERISTIC

Limitor® P 36kV 537mm



DIMENSIONS



Dimensions in mm

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SELECTION TABLE

Rated voltage range of fuse-link [kV]		3/7.2		6/12		10/24		20/36	
Service voltage of transformer [kV]		6		10		20		30	
Relative short-circuit voltage	Trans-former output [kVA]	Trans-former rated current [A]	Rated current of fuse-link [A]	Trans-former rated current [A]	Rated current of fuse-link [A]	Trans-former rated current [A]	Rated current of fuse-link [A]	Trans-former rated current [A]	Rated current of fuse-link [A]
Uk = 4%	50	4.8	16-20	2.9	10	1.5	4	0.96	2-6.3
	100	9.6	20-31.5	5.8	16-20	2.9	10	1.9	6.3-10
	125	12	25-40	7.2	20-25	3.6	10-16	2.4	10
	160	15.4	31.5-50	9.2	20-31.5	4.6	16-20	3.1	10
	200	19.2	40-63	11.5	25-40	5.8	16-20	3.8	10-16
	250	24.1	40-80	14.4	31.5-50	7.2	20-25	4.8	16-20
	315	30.3	50-100	18.2	40-63	9.1	20-31.5	6.1	16-25
	400	38.5	63-125	23.1	40-80	11.5	25-40	7.7	20-25
	500	48.1	80-160	28.9	50-100	14.4	31.5-50	9.6	20-31.5
	630	60.6	100-200	36.4	63-100	18.2	40-63	12.1	25-40
	800	77.1	125-200	46.2	80-125	23.1	40-63	15.4	31.5-40
Uk = 5%	1000	96.3	125-160	57.7	100-160	28.9	50-80	19.2	40-50
	1250	120.3	160-200	72.2	125-200	36.1	63-100	24.1	40-50
Uk = 6%	1600	154	200	92.4	125-200	46.2	80-100	30.8	50-63

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