

# Limitor<sup>®</sup>- PT Back-up Fuses

with 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<sup>®</sup>-PT HV fuses are back-up fuses as defined in the IEC 60282-1 standard and dedicated to protect transformers against the 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

	6/12kV 292mm	10/17,5kV 367mm	10/24kV 442mm
Rated current	1 ... 200 A	6.3 ... 100 A	1 ... 125 A
Rated voltage range $U_n$	6/12kV	10/17,5 kV	10/24 kV
Rated voltage of transformer	10 kV	15 kV	20 kV

## FEATURES & BENEFITS

- High breaking capacity
- High current limitation
- Low switching voltage
- Quick breaking
- Energy efficiency
- 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
- Medium striker 80N/30mm
- CPD striker: controlled power dissipation
- Indoor and outdoor applications

## APPLICATIONS

- HV Transformer protection

## STANDARDS

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



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# Limitor®- PT Back-up Fuses

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## PRODUCT RANGE



45DB120V1PT



45DB120V125PT

### Limitor- PT, Rated voltage 6 / 12 kV

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
<b>Ø56mm, length 292mm</b>									
45DB120V1PT	L1000119	1 A	0.09 kA <sup>2</sup> s	63 kA	14 A	1500 mΩ	1.6 W	1	1.6 kg
45DB120V2PT	M1000120	2 A	0.28 kA <sup>2</sup> s	63 kA	16 A	510 mΩ	2 W	1	1.6 kg
45DB120V4PT	N1000121	4 A	0.5 kA <sup>2</sup> s	63 kA	22 A	338 mΩ	6 W	1	1.6 kg
45DB120V6,3PT	P1000122	6.3 A	0.6 kA <sup>2</sup> s	63 kA	30 A	190 mΩ	8 W	1	1.6 kg
45DB120V10PT	Q1000123	10 A	1.15 kA <sup>2</sup> s	63 kA	42 A	139 mΩ	16 W	1	1.6 kg
45DB120V16PT	R1000124	16 A	1.29 kA <sup>2</sup> s	63 kA	54 A	107 mΩ	38 W	1	1.6 kg
45DB120V20PT	S1000125	20 A	3.2 kA <sup>2</sup> s	63 kA	73 A	71 mΩ	38 W	1	1.6 kg
45DB120V25PT	T1000126	25 A	5.2 kA <sup>2</sup> s	63 kA	93 A	52 mΩ	46 W	1	1.6 kg
45DB120V32PT	V1000127	31.5 A	7.2 kA <sup>2</sup> s	63 kA	105 A	43 mΩ	65 W	1	1.6 kg
45DB120V40PT	W1000128	40 A	23.3 kA <sup>2</sup> s	63 kA	125 A	23 mΩ	54 W	1	1.6 kg
45DB120V50PT	X1000129	50 A	34.9 kA <sup>2</sup> s	63 kA	160 A	18 mΩ	70 W	1	1.6 kg
45DB120V63PT	Y1000130	63 A	58.3 kA <sup>2</sup> s	63 kA	230 A	12 mΩ	85 W	1	1.6 kg
<b>Ø65mm, length 292mm</b>									
45DB120V80PT	Z1000131	80 A	90 kA <sup>2</sup> s	63 kA	350 A	10.6 mΩ	114 W	1	2.2 kg
<b>Ø78mm, length 292mm</b>									
45DB120V100PT	A1000132	100 A	140 kA <sup>2</sup> s	63 kA	500 A	8.5 mΩ	156 W	1	2.2 kg
<b>Ø88mm, length 292mm</b>									
45DB120V125PT	B1000133	125 A	440 kA <sup>2</sup> s	63 kA	480 A	4 mΩ	117 W	1	3.8 kg
45DB120V160PT	C1000134	160 A	500 kA <sup>2</sup> s	63 kA	560 A	4.3 mΩ	217 W	1	3.8 kg
45DB120V200PT	D1000135	200 A	654 kA <sup>2</sup> s	63 kA	610 A	3.8 mΩ	333 W	1	3.8 kg

### Limitor- PT, Rated voltage 10 /17,5 kV



45DB175V100PT

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
<b>Ø56mm, length 367mm</b>									
45DB175V6,3PT	G1006118	6.3 A	1 kA <sup>2</sup> s	63 kA	30 A	245 mΩ	11 W	1	2.2 kg
45DB175V10PT	H1006119	10 A	1.5 kA <sup>2</sup> s	63 kA	43 A	180 mΩ	22 W	1	2.2 kg
45DB175V16PT	J1006120	16 A	2 kA <sup>2</sup> s	63 kA	54 A	150 mΩ	53 W	1	2.2 kg
45DB175V25PT	K1006121	25 A	6 kA <sup>2</sup> s	63 kA	93 A	78 mΩ	73 W	1	2.2 kg
45DB175V32PT	L1006122	31.5 A	10 kA <sup>2</sup> s	63 kA	105 A	59 mΩ	95 W	1	2.2 kg
45DB175V40PT	M1006123	40 A	30 kA <sup>2</sup> s	63 kA	125 A	33.8 mΩ	79 W	1	2.2 kg
45DB175V50PT	N1006124	50 A	50 kA <sup>2</sup> s	63 kA	205 A	26 mΩ	106 W	1	2.2 kg
45DB175V63PT	P1006125	63 A	100 kA <sup>2</sup> s	63 kA	280 A	18.4 mΩ	135 W	1	2.2 kg
<b>Ø65mm, length 367mm</b>									
45DB175V80PT	Q1006126	80 A	150 kA <sup>2</sup> s	63 kA	350 A	15 mΩ	183 W	1	2.6 kg
<b>Ø88mm, length 367mm</b>									
45DB175V100PT	S1006128	100 A	200 kA <sup>2</sup> s	63 kA	500 A	13 mΩ	240 W	1	3.5 kg

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## PRODUCT RANGE



45DB240V1PT



45DB240V125PT

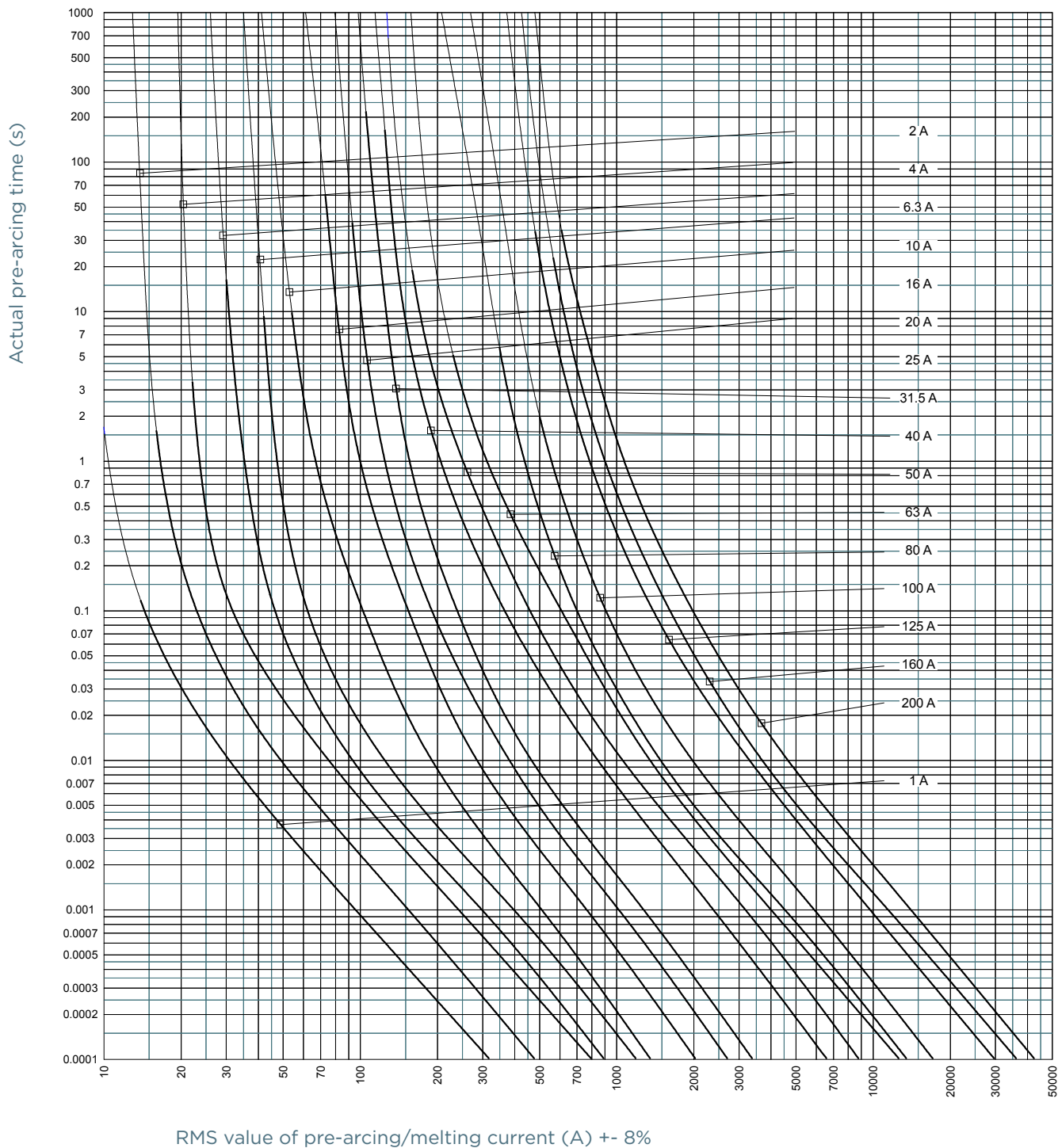
### Limitor- PT, Rated voltage 10 / 24 kV

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
<b>Ø56mm, length 442mm</b>									
45DB240V1PT	E1000136	1 A	0.09 kA <sup>2</sup> s	63 kA	14 A	2100 mΩ	2 W	1	2.3 kg
45DB240V2PT	F1000137	2 A	0.34 kA <sup>2</sup> s	63 kA	16 A	800 mΩ	3 W	1	2.3 kg
45DB240V4PT	G1000138	4 A	0.45 kA <sup>2</sup> s	63 kA	23 A	550 mΩ	10 W	1	2.3 kg
45DB240V6,3PT	H1000139	6.3 A	0.53 kA <sup>2</sup> s	63 kA	30 A	300 mΩ	13 W	1	2.3 kg
45DB240V10PT	J1000140	10 A	0.94 kA <sup>2</sup> s	63 kA	43 A	220 mΩ	26 W	1	2.3 kg
45DB240V16PT	K1000141	16 A	1.4 kA <sup>2</sup> s	63 kA	60 A	197 mΩ	73 W	1	2.3 kg
45DB240V20PT	L1000142	20 A	3.1 kA <sup>2</sup> s	63 kA	76 A	134 mΩ	76 W	1	2.3 kg
45DB240V25PT	M1000143	25 A	4.5 kA <sup>2</sup> s	63 kA	93 A	96 mΩ	89 W	1	2.3 kg
45DB240V32PT	N1000144	31.5 A	5.9 kA <sup>2</sup> s	63 kA	105 A	79 mΩ	127 W	1	2.3 kg
45DB240V40PT	P1000145	40 A	18.8 kA <sup>2</sup> s	63 kA	130 A	45 mΩ	114 W	1	2.3 kg
45DB240V50PT	Q1000146	50 A	33.5 kA <sup>2</sup> s	63 kA	205 A	35 mΩ	147 W	1	2.3 kg
45DB240V63PT	R1000147	63 A	46.4 kA <sup>2</sup> s	63 kA	280 A	25 mΩ	163 W	1	2.3 kg
<b>Ø65mm, length 442mm</b>									
45DB240V80PT	S1000148	80 A	84 kA <sup>2</sup> s	63 kA	360 A	20.5 mΩ	233 W	1	3.1 kg
<b>Ø78mm, length 442mm</b>									
45DB240V100PT	T1000149	100 A	93.6 kA <sup>2</sup> s	63 kA	430 A	18 mΩ	400 W	1	3.6 kg
<b>Ø88mm, length 442mm</b>									
45DB240V125PT	V1000150	125 A	350 kA <sup>2</sup> s	40 kA	760 A	11 mΩ	340 W	1	4.3 kg

# Limitor<sup>®</sup>- PT Back-up Fuses with Controlled Power Dissipation

## TIME CURRENT CHARACTERISTIC CURVES

Limitor<sup>®</sup> PT 12kV 292mm

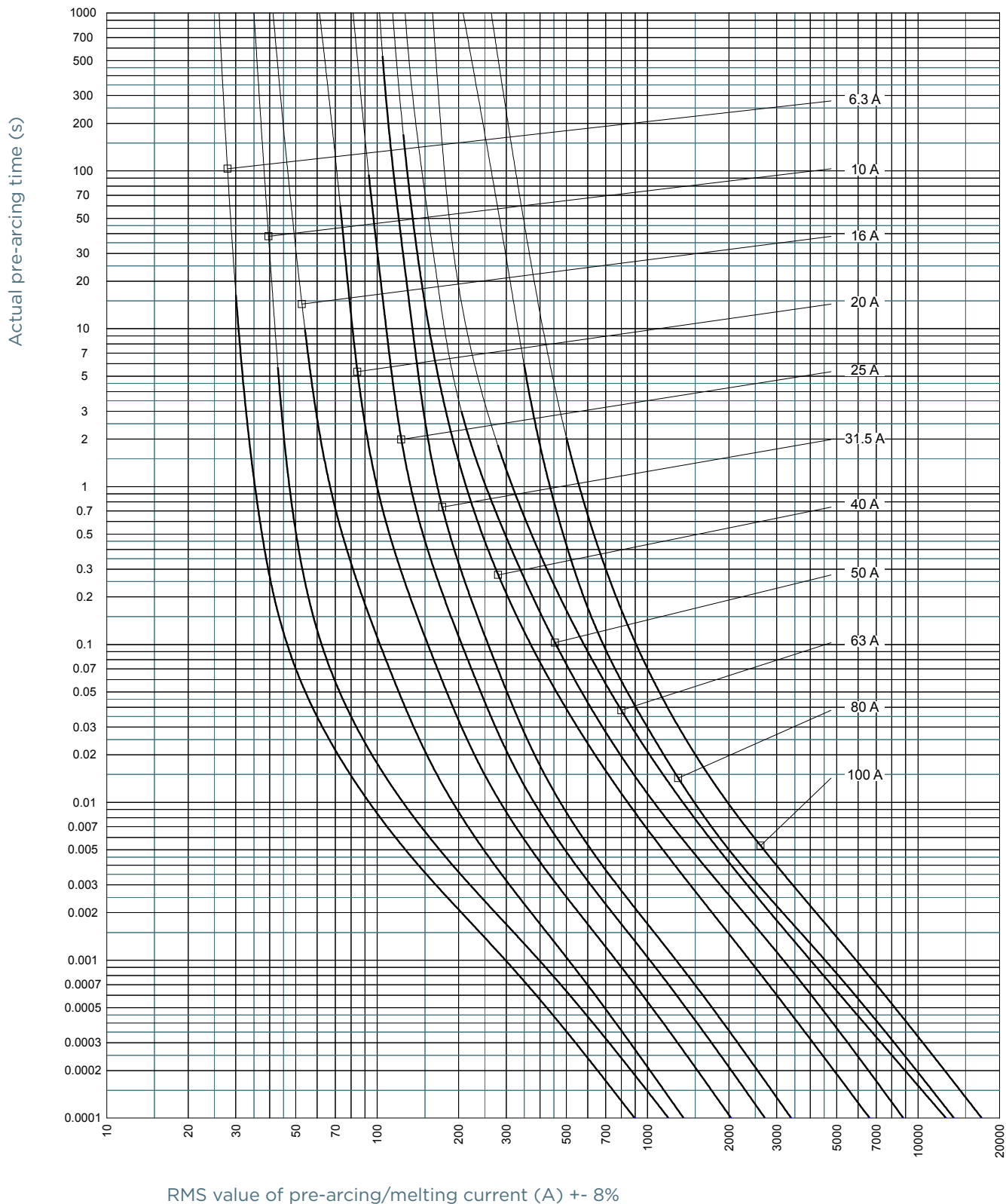


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## TIME CURRENT CHARACTERISTIC CURVES

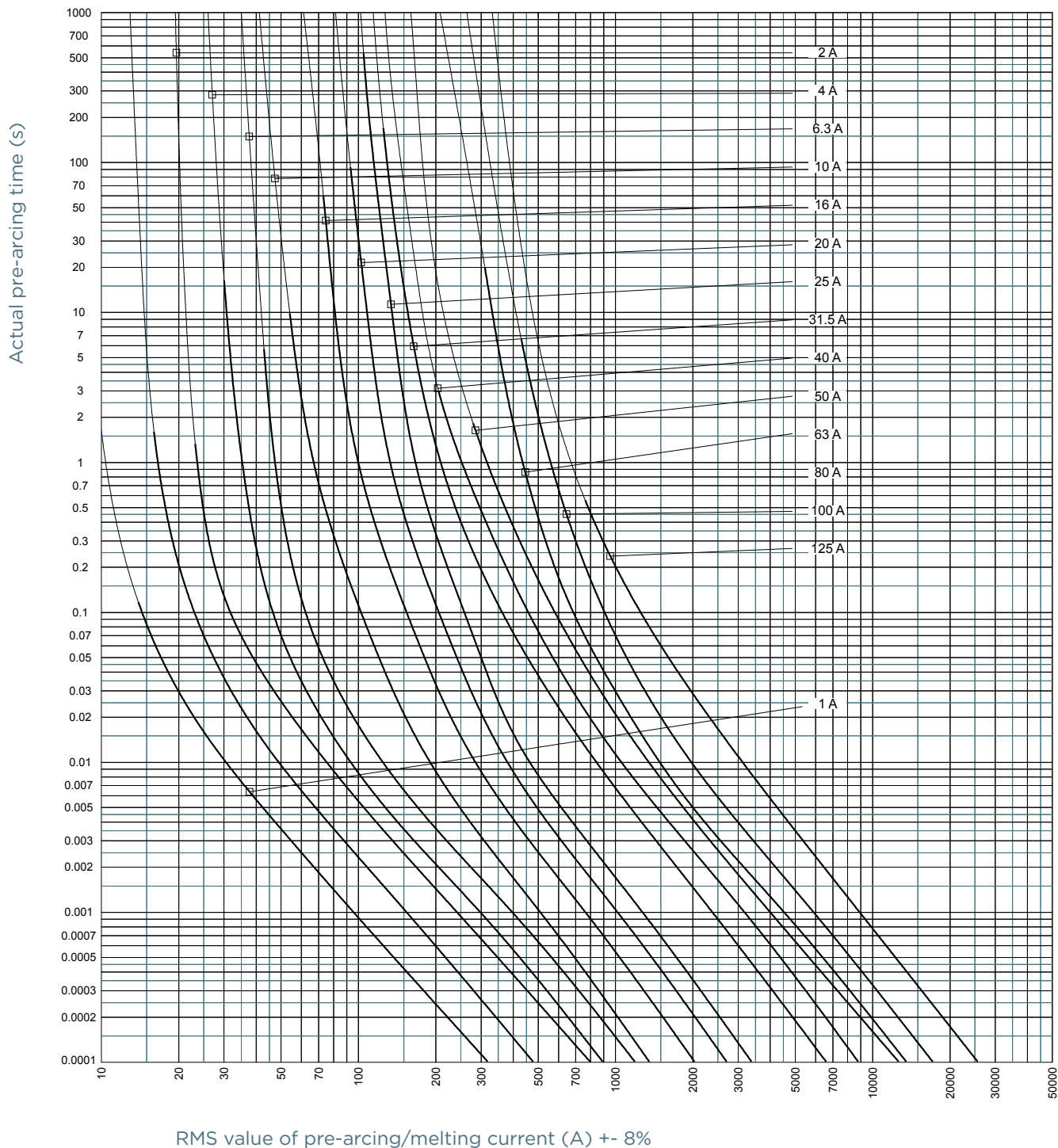
Limitor<sup>®</sup> PT 17,5V 367mm



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## TIME CURRENT CHARACTERISTIC CURVES

### Limitor<sup>®</sup> PT 24kV 442mm



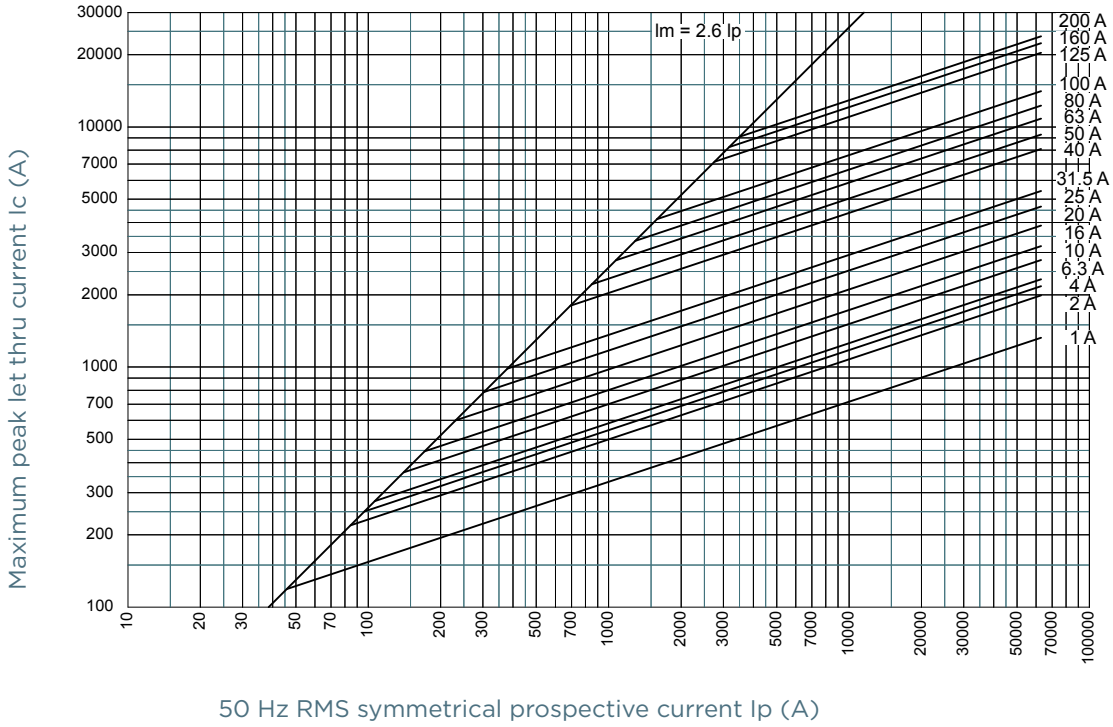
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# Limitor®- PT Back-up Fuses

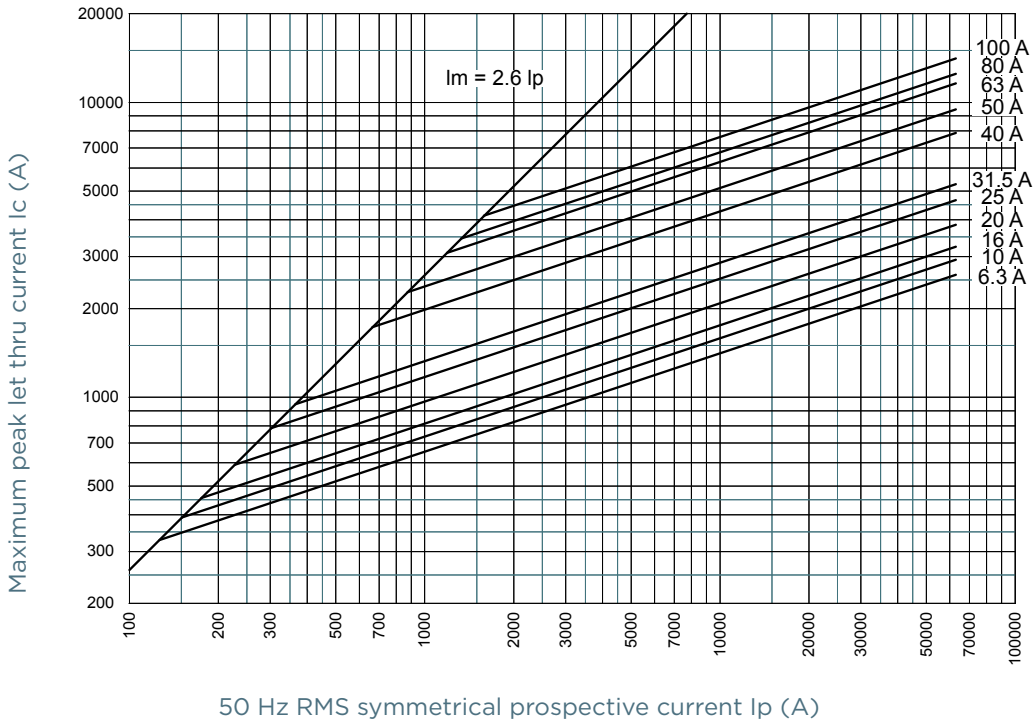
with Controlled Power Dissipation

## CUT-OFF CURRENT CHARACTERISTIC

### Limitor® PT 12kV 292mm



### Limitor® PT 17,5V 367mm



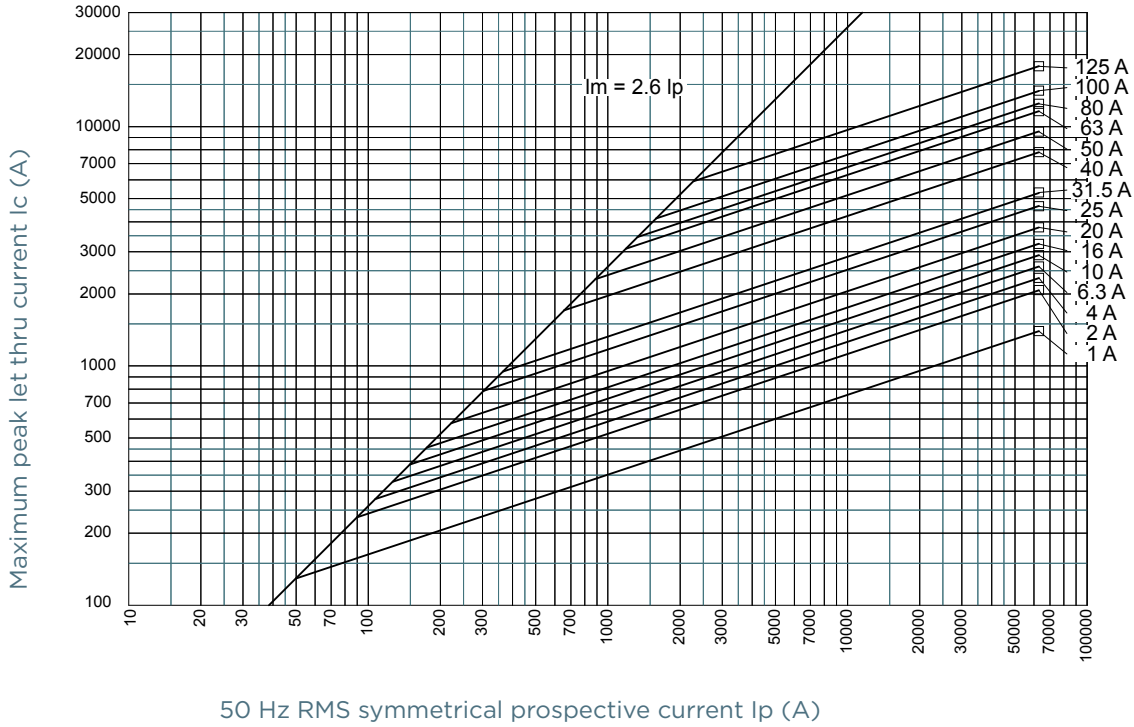
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# Limitor®- PT Back-up Fuses

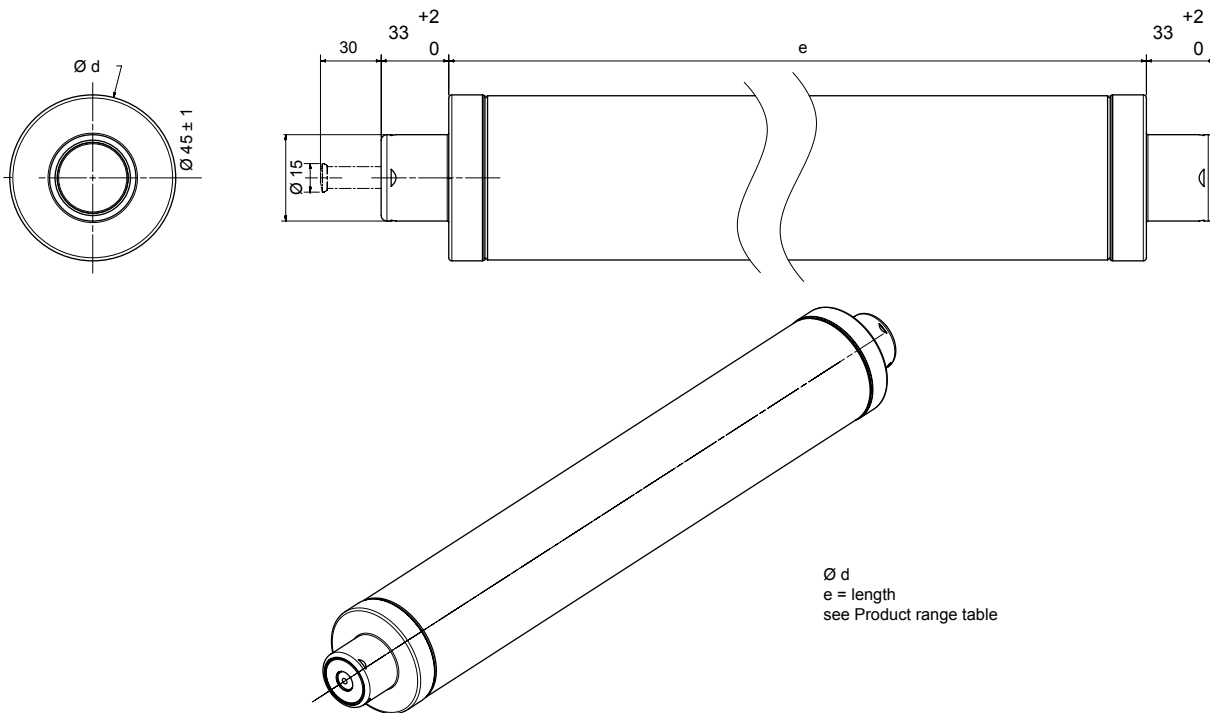
with Controlled Power Dissipation

## CUT-OFF CURRENT CHARACTERISTIC

Limitor® PT 24kV 442mm



## DIMENSIONS



Dimensions in mm



# Limitor®- PT Back-up Fuses

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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	Transformer output [kVA]	Transformer rated current [A]	Rated current of fuse-link [A]	Transformer rated current [A]	Rated current of fuse-link [A]	Transformer rated current [A]	Rated current of fuse-link [A]	Transformer 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
Uk = 5%	800	77.1	125-200	46.2	80-125	23.1	40-63	15.4	31.5-40
	1000	96.3	125-160	57.7	100-160	28.9	50-80	19.2	40-50
Uk = 6%	1250	120.3	160-200	72.2	125-200	36.1	63-100	24.1	40-50
	1600	154	200	92.4	125-200	46.2	80-100	30.8	50-63

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