

# Limitor®- PT Back-up Fuses

with Controlled Power Dissipation

## 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®-PT HV fuses are back-up fuses as defined in the standard: IEC 60282-1 and VDE 0670 T4 and dedicated to protect transformers against the thermal and dynamic effects of short-circuit currents.

For low power losses fuses, fuses compliant with the VDE 0670 T402 and other ratings, thanks to consult Limitor®-PTS HV fuses range

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.

### Features Benefits

- High breaking capacity
- High current limitation
- Low switching voltage
- Quick breaking
- Non-ageing
- 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 and VDE 0670 T303
- Medium striker 80N/30mm
- CPD striker: controlled power dissipation
- Indoor and outdoor applications

### Applications

- HV Transformer protection

### Technical Data

	PT-2 3/7,2kV	PT 6/12kV	PT 10/17,5kV	PT 10/24kV
Rated current	6.3 ... 125 A	1 ... 200 A	6.3 ... 125 A	1 ... 125 A
Rated voltage range $U_n$	3/7.2 kV	6/12kV	10/17,5 kV	10/24 kV
Nominal voltage of transformer	6 kV	10 kV	15 kV	20 kV
Package	1	1	1	1



### Standards

IEC 60282-1  
VDE 0670 part 4  
DIN 43625



# Limitor®- PT Back-up Fuses

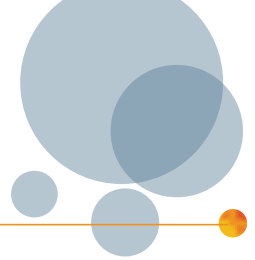
with Controlled Power Dissipation

## Product range

### Limitor- PT, Rated voltage 3 / 7,2 kV

Catalog number	Reference number	Size	Rated current $I_n$	Pre-arcing $I^2t$	Clearing $I^2t$ at Rated Voltage	Breaking capacity $I_b$	Minimum breaking current $I_3 = I_{min}$	Cold resistance	Power dissipation at $I_n$	Weight
<b>Ø63mm, length 292mm</b>										
45DB72V6,3PT-2	H1005889	292	6.3 A	60 A <sup>2</sup> s	1000 A <sup>2</sup> s	63 kA	28 A	147 mΩ	6 W	1.9 kg
45DB72V10PT-2	L1005892	292	10 A	100 A <sup>2</sup> s	1500 A <sup>2</sup> s	63 kA	45 A	80.3 mΩ	9 W	1.9 kg
45DB72V16PT-2	M1005893	292	16 A	600 A <sup>2</sup> s	3400 A <sup>2</sup> s	63 kA	64 A	44.3 mΩ	12.8 W	1.9 kg
45DB72V25PT-2	N1005894	292	25 A	1000 A <sup>2</sup> s	5500 A <sup>2</sup> s	63 kA	100 A	27.5 mΩ	21 W	1.9 kg
45DB72V32PT-2	P1005895	292	31.5 A	1200 A <sup>2</sup> s	10000 A <sup>2</sup> s	63 kA	126 A	20.6 mΩ	25 W	1.9 kg
45DB72V40PT-2	Q1005896	292	40 A	2000 A <sup>2</sup> s	12000 A <sup>2</sup> s	63 kA	160 A	16.2 mΩ	33 W	1.9 kg
45DB72V50PT-2	R1005897	292	50 A	4000 A <sup>2</sup> s	22000 A <sup>2</sup> s	63 kA	200 A	11.3 mΩ	37 W	1.9 kg
45DB72V63PT-2	S1005898	292	63 A	8000 A <sup>2</sup> s	42000 A <sup>2</sup> s	63 kA	252 A	8.5 mΩ	46 W	1.9 kg
45DB72V80PT-2	T1005899	292	80 A	12000 A <sup>2</sup> s	120000 A <sup>2</sup> s	63 kA	320 A	6.8 mΩ	63 W	1.9 kg
45DB72V100PT-2	P1005274	292	100 A	15000 A <sup>2</sup> s	220000 A <sup>2</sup> s	63 kA	400 A	4.7 mΩ	70 W	1.9 kg
<b>Ø63mm, length 442mm</b>										
45DB72V6,3PT-3	A1005675	442	6.3 A	60 A <sup>2</sup> s	1000 A <sup>2</sup> s	63 kA	28 A	166 mΩ	7 W	2.9 kg
45DB72V10PT-3	Y1005650	442	10 A	100 A <sup>2</sup> s	1500 A <sup>2</sup> s	63 kA	45 A	90.8 mΩ	10 W	2.9 kg
45DB72V16PT-3	T1005669	442	16 A	600 A <sup>2</sup> s	3400 A <sup>2</sup> s	63 kA	64 A	46.7 mΩ	14 W	2.9 kg
45DB72V25PT-3	V1005670	442	25 A	1000 A <sup>2</sup> s	5500 A <sup>2</sup> s	63 kA	100 A	31.1 mΩ	23 W	2.9 kg
45DB72V32PT-3	W1005671	442	31.5 A	1200 A <sup>2</sup> s	10000 A <sup>2</sup> s	63 kA	126 A	23.4 mΩ	29 W	2.9 kg
45DB72V40PT-3	X1005672	442	40 A	2000 A <sup>2</sup> s	12000 A <sup>2</sup> s	63 kA	160 A	18.3 mΩ	38 W	2.9 kg
45DB72V50PT-3	Y1005673	442	50 A	4000 A <sup>2</sup> s	22000 A <sup>2</sup> s	63 kA	200 A	12.8 mΩ	41 W	2.9 kg
45DB72V63PT-3	Z1005674	442	63 A	8000 A <sup>2</sup> s	42000 A <sup>2</sup> s	63 kA	252 A	9.6 mΩ	50 W	2.9 kg
45DB72V80PT-3	B1005676	442	80 A	12000 A <sup>2</sup> s	120000 A <sup>2</sup> s	63 kA	320 A	7.7 mΩ	69 W	2.9 kg
45DB72V100PT-3	S1005668	442	100 A	15000 A <sup>2</sup> s	220000 A <sup>2</sup> s	63 kA	400 A	5.3 mΩ	76 W	2.9 kg
<b>Ø88mm, length 442mm</b>										
45DB72V125PT-3	R1005276	442	125 A	22000 A <sup>2</sup> s	450000 A <sup>2</sup> s	63 kA	500 A	4.6 mΩ	107 W	5.2 kg

# Limitor®- PT Back-up Fuses with Controlled Power Dissipation



## Product range



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

Catalog number	Reference number	Size	Rated current $I_n$	Clearing $I^2t$ at Rated Voltage	Breaking capacity $I_b$	Minimum breaking current $I_s = I_{min}$	Cold resistance	Power dissipation at $I_n$	Weight
<b>Ø56mm, length 292mm</b>									
45DB120V1PT	L1000119	292	1 A	90 A <sup>2</sup> s	63 kA	14 A	1500 mΩ	1.6 W	1.6 kg
45DB120V2PT	M1000120	292	2 A	280 A <sup>2</sup> s	63 kA	16 A	510 mΩ	2 W	1.6 kg
45DB120V4PT	N1000121	292	4 A	500 A <sup>2</sup> s	63 kA	22 A	338 mΩ	6 W	1.6 kg
45DB120V6,3PT	P1000122	292	6.3 A	600 A <sup>2</sup> s	63 kA	30 A	190 mΩ	8 W	1.6 kg
45DB120V10PT	Q1000123	292	10 A	1150 A <sup>2</sup> s	63 kA	42 A	139 mΩ	16 W	1.6 kg
45DB120V16PT	R1000124	292	16 A	1290 A <sup>2</sup> s	63 kA	54 A	107 mΩ	38 W	1.6 kg
45DB120V20PT	S1000125	292	20 A	3200 A <sup>2</sup> s	63 kA	73 A	71 mΩ	38 W	1.6 kg
45DB120V25PT	T1000126	292	25 A	5200 A <sup>2</sup> s	63 kA	93 A	52 mΩ	46 W	1.6 kg
45DB120V32PT	V1000127	292	31.5 A	7200 A <sup>2</sup> s	63 kA	105 A	43 mΩ	65 W	1.6 kg
45DB120V40PT	W1000128	292	40 A	23300 A <sup>2</sup> s	63 kA	125 A	23 mΩ	54 W	1.6 kg
45DB120V50PT	X1000129	292	50 A	34900 A <sup>2</sup> s	63 kA	160 A	18 mΩ	70 W	1.6 kg
45DB120V63PT	Y1000130	292	63 A	58300 A <sup>2</sup> s	63 kA	230 A	12 mΩ	85 W	1.6 kg
<b>Ø65mm, length 292mm</b>									
45DB120V80PT	Z1000131	292	80 A	90000 A <sup>2</sup> s	63 kA	350 A	10.6 mΩ	114 W	2.1 kg
45DB120V100PT	A1000132	292	100 A	140000 A <sup>2</sup> s	63 kA	500 A	8.5 mΩ	156 W	2.1 kg
<b>Ø88mm, length 292mm</b>									
45DB120V125PT	B1000133	292	125 A	440000 A <sup>2</sup> s	63 kA	480 A	4 mΩ	117 W	3.7 kg
45DB120V160PT	C1000134	292	160 A	500000 A <sup>2</sup> s	63 kA	560 A	4.3 mΩ	217 W	3.7 kg
45DB120V200PT	D1000135	292	200 A	654000 A <sup>2</sup> s	63 kA	610 A	3.8 mΩ	333 W	3.7 kg

# Limitor®- PT Back-up Fuses

with Controlled Power Dissipation

## Product range



45DB175V100PT

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

Catalog number	Reference number	Size	Rated current $I_n$	Pre-arcing $I^2t$	Clearing $I^2t$ at Rated Voltage	Breaking capacity $I_b$	Minimum breaking current $I_s = I_{min}$	Cold resistance	Power dissipation at $I_n$	Weight
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#### Ø63mm, length 292mm

45DB175V6,3PT-2	V1005900	292	6.3 A	60 A <sup>2</sup> s	1000 A <sup>2</sup> s	25 kA	32 A	331 mΩ	15.1 W	1.9 kg
45DB175V10PT-2	W1005901	292	10 A	100 A <sup>2</sup> s	1500 A <sup>2</sup> s	25 kA	45 A	181 mΩ	22 W	1.9 kg
45DB175V16PT-2	V1005279	292	16 A	600 A <sup>2</sup> s	3400 A <sup>2</sup> s	25 kA	64 A	99.6 mΩ	32 W	1.9 kg
45DB175V25PT-2	X1005902	292	25 A	1000 A <sup>2</sup> s	5500 A <sup>2</sup> s	25 kA	100 A	62.1 mΩ	54 W	1.9 kg
45DB175V32PT-2	Y1005903	292	31.5 A	1200 A <sup>2</sup> s	10000 A <sup>2</sup> s	25 kA	126 A	46.5 mΩ	69 W	1.9 kg
45DB175V40PT-2	Z1005904	292	40 A	1800 A <sup>2</sup> s	12000 A <sup>2</sup> s	25 kA	160 A	36.5 mΩ	94.3 W	1.9 kg

#### Ø88mm, length 292mm

45DB175V50PT-2	A1005905	292	50 A	2200 A <sup>2</sup> s	23000 A <sup>2</sup> s	25 kA	200 A	21.4 mΩ	77 W	3 kg
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#### Ø56mm, length 367mm

45DB175V6,3PT	G1006118	367	6.3 A	-	1000 A <sup>2</sup> s	63 kA	30 A	245 mΩ	11 W	2.1 kg
45DB175V10PT	H1006119	367	10 A	-	1500 A <sup>2</sup> s	63 kA	43 A	180 mΩ	22 W	2.1 kg
45DB175V16PT	J1006120	367	16 A	-	2000 A <sup>2</sup> s	63 kA	54 A	150 mΩ	53 W	2.1 kg
45DB175V25PT	K1006121	367	25 A	-	6000 A <sup>2</sup> s	63 kA	93 A	78 mΩ	73 W	2.1 kg
45DB175V32PT	L1006122	367	31.5 A	-	10000 A <sup>2</sup> s	63 kA	105 A	59 mΩ	95 W	2.1 kg
45DB175V40PT	M1006123	367	40 A	-	30000 A <sup>2</sup> s	63 kA	125 A	33.8 mΩ	79 W	2.1 kg
45DB175V50PT	N1006124	367	50 A	-	50000 A <sup>2</sup> s	63 kA	205 A	26 mΩ	106 W	2.1 kg
45DB175V63PT	P1006125	367	63 A	-	100000 A <sup>2</sup> s	63 kA	280 A	18.4 mΩ	130 W	2.1 kg

#### Ø65mm, length 367mm

45DB175V80PT	Q1006126	367	80 A	-	150000 A <sup>2</sup> s	63 kA	350 A	15 mΩ	180 W	2.6 kg
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#### Ø88mm, length 367mm

45DB175V100PT	S1006128	367	100 A	-	200000 A <sup>2</sup> s	63 kA	500 A	13 mΩ	280 W	3.5 kg
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#### Ø63mm, length 442mm

45DB175V50PT-3	B1005906	442	50 A	4000 A <sup>2</sup> s	22000 A <sup>2</sup> s	31.5 kA	200 A	23.2 mΩ	83 W	2.9 kg
45DB175V63PT-3	Z1005283	442	63 A	8000 A <sup>2</sup> s	42000 A <sup>2</sup> s	31.5 kA	252 A	17.4 mΩ	104 W	2.9 kg

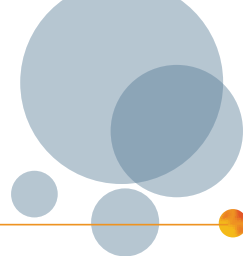
#### Ø88mm, length 442mm

45DB175V80PT-3	L1005639	442	80 A	12000 A <sup>2</sup> s	120000 A <sup>2</sup> s	31.5 kA	320 A	13.7 mΩ	135 W	5.2 kg
45DB175V100PT-3	C1005907	442	100 A	15000 A <sup>2</sup> s	220000 A <sup>2</sup> s	31.5 kA	400 A	9.6 mΩ	151 W	5.2 kg
45DB175V125PT-3	D1005908	442	125 A	22000 A <sup>2</sup> s	300000 A <sup>2</sup> s	31.5 kA	500 A	8 mΩ	217 W	5.2 kg

#### Ø88mm, length 537mm

45DB175V100PT-4	E1005909	537	100 A	15000 A <sup>2</sup> s	220000 A <sup>2</sup> s	31.5 kA	400 A	9.6 mΩ	151 W	6 kg
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# Limitor®- PT Back-up Fuses with Controlled Power Dissipation



## Product range



45DB240V1PT



45DB240V125PT

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

Catalog number	Reference number	Size	Rated current $I_n$	Clearing $I^2t$ at Rated Voltage	Breaking capacity $I_b$	Minimum breaking current $I_s = I_{min}$	Cold resistance	Power dissipation at $I_n$	Weight
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#### Ø56mm, length 442mm

45DB240V1PT	E1000136	442	1 A	200 A <sup>2</sup> s	63 kA	14 A	2100 mΩ	2 W	2.3 kg
45DB240V2PT	F1000137	442	2 A	400 A <sup>2</sup> s	63 kA	16 A	800 mΩ	3 W	2.3 kg
45DB240V4PT	G1000138	442	4 A	700 A <sup>2</sup> s	63 kA	23 A	550 mΩ	10 W	2.3 kg
45DB240V6,3PT	H1000139	442	6.3 A	1000 A <sup>2</sup> s	63 kA	30 A	300 mΩ	13 W	2.3 kg
45DB240V10PT	J1000140	442	10 A	1500 A <sup>2</sup> s	63 kA	43 A	220 mΩ	26 W	2.3 kg
45DB240V16PT	K1000141	442	16 A	2000 A <sup>2</sup> s	63 kA	54 A	197 mΩ	73 W	2.3 kg
45DB240V20PT	L1000142	442	20 A	4000 A <sup>2</sup> s	63 kA	73 A	134 mΩ	76 W	2.3 kg
45DB240V25PT	M1000143	442	25 A	6000 A <sup>2</sup> s	63 kA	93 A	96 mΩ	89 W	2.3 kg
45DB240V32PT	N1000144	442	31.5 A	10000 A <sup>2</sup> s	63 kA	105 A	79 mΩ	127 W	2.3 kg
45DB240V40PT	P1000145	442	40 A	30000 A <sup>2</sup> s	63 kA	125 A	45 mΩ	114 W	2.3 kg
45DB240V50PT	Q1000146	442	50 A	50000 A <sup>2</sup> s	63 kA	205 A	35 mΩ	147 W	2.3 kg
45DB240V63PT	R1000147	442	63 A	100000 A <sup>2</sup> s	63 kA	280 A	24 mΩ	170 W	2.3 kg

#### Ø65mm, length 442mm

45DB240V80PT	S1000148	442	80 A	150000 A <sup>2</sup> s	63 kA	310 A	20.5 mΩ	233 W	3.1 kg
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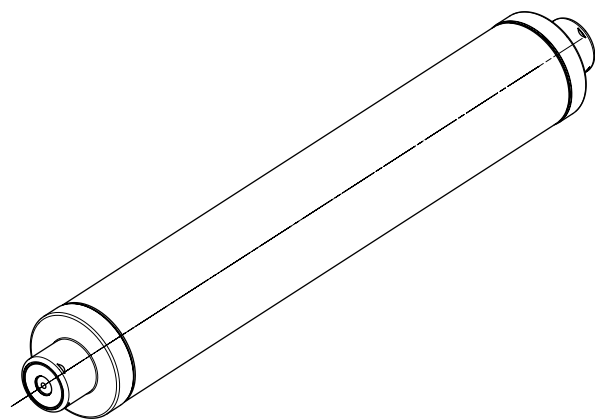
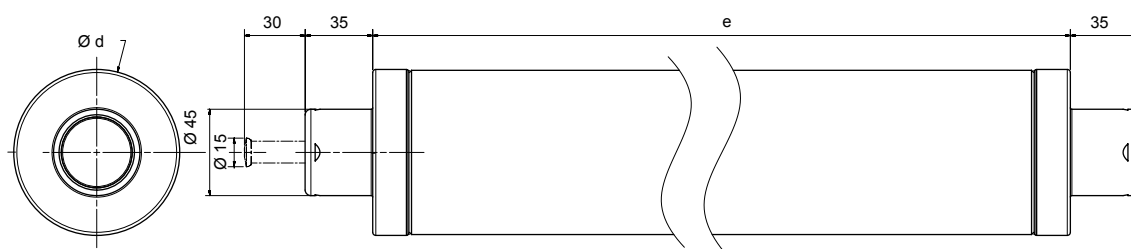
#### Ø78mm, length 442mm

45DB240V100PT	T1000149	442	100 A	200000 A <sup>2</sup> s	63 kA	430 A	18 mΩ	300 W	4.1 kg
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#### Ø88mm, length 442mm

45DB240V125PT	V1000150	442	125 A	350000 A <sup>2</sup> s	40 kA	760 A	11.7 mΩ	340 W	5.9 kg
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## Dimensions

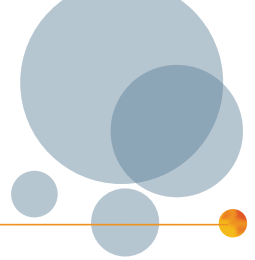


$\varnothing d$  see table  
 $e$  = length see table

Dimensions in mm

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

with Controlled Power Dissipation



## 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]
U <sub>k</sub> = 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
U <sub>k</sub> = 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
U <sub>k</sub> = 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